SONY

CAMERA CONTROL UNIT

HDCU4300

NETWORKED MEDIA INTERFACE BOARD
HKCU-IP43F

12G-SDI EXTENSION KIT
HKCU-4002

ST 2110 INTERFACE KIT
HKCU-4001

SERVICE MANUAL

1st Edition (Revised 3)

⚠ 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.
HDCU4300/L	10001 and Higher
HDCU4300/T	30001 and Higher

CAUTION

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

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

This Baseband Processor Unit 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。

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2. Replacement of Main Parts

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Manual Structure

Purpose of this manual

This manual is intended for the use of the system engineers and the service engineers, and provides the limited information for block service and the information related to maintenance of the unit, Service Overview, Replacement of Main Parts, Electrical Alignment, Menu Settings, etc..

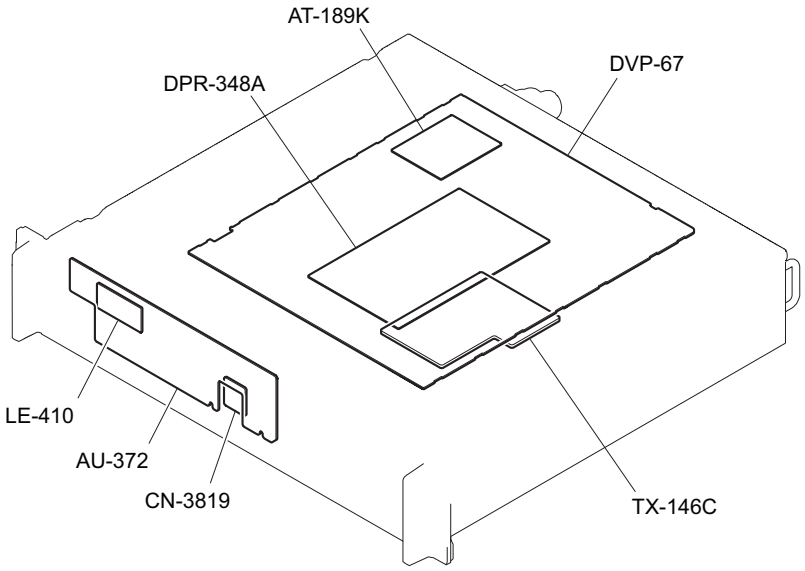
Related manuals

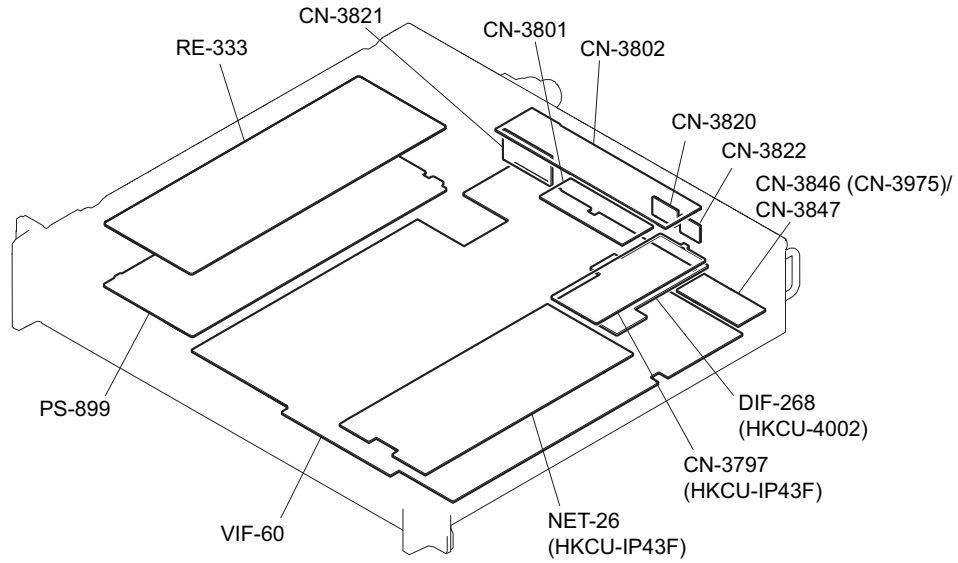
The following manuals are available for this model.
If any of these manuals is required, please contact your local Sony Sales Office/Service Center.

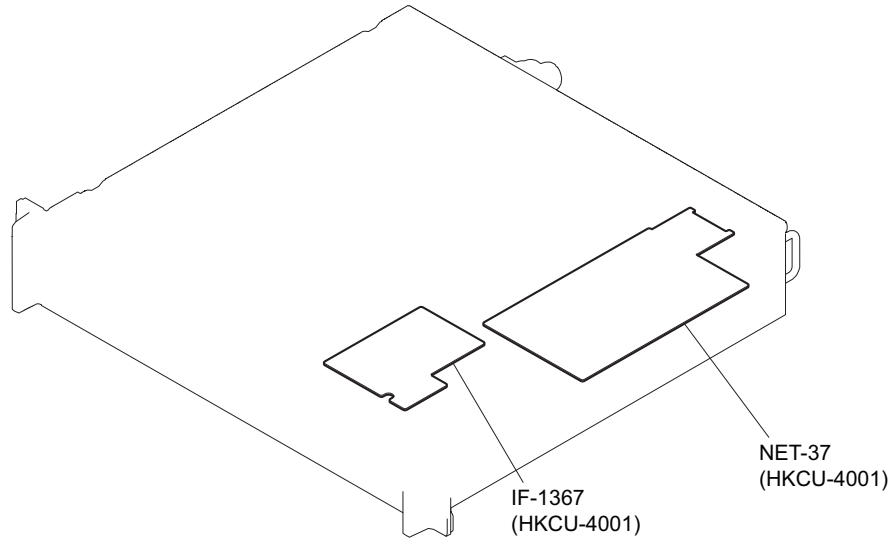
- Operation Guide (supplied with the unit)
  This manual contains information required to operate and use the unit.
- Operation Manual CD-ROM (supplied with the unit)
  This manual contains information required to operate and use the unit.
- Installation Manual (available on request)
  This manual provides the information on installing the unit.
- Factory Service Manual (available on request)
  This manual provides the limited information for component service and the information related to maintenance of the unit.

Section 1
Service Overview

1-1. Location of Printed Wiring Boards







1-2. Circuit Description

1-2-1. TX-146C Board

The TX-146C board receives the return signal (multiplexed from the digital audio signal in the DVP-67 board) and the command signal sent through the DVP-67 board, and then multiplexes these signals and converts them to a serial electrical signal. This serial electrical signal is converted to an optical signal, and the optical signal is sent to the color camera HDC4300.
Furthermore, this board converts the serial optical signal sent from the color camera HDC4300 to an electrical signal, and separates the main-line signals into a video signal and a command signal, and then sends these signals to the DVP-67 board.

1-2-2. DVP-67 Board

The DVP-67 board has functions equivalent to the baseband processor unit (BPU).
This board sends/receives the RET signal and camera main-line signals to/from the VIF-60 board that has functions equivalent to the camera control unit (CCU).
Furthermore, the DVP-67 board performs the following processing.

- Relays commands to the TX-146C board used for communication with the color camera HDC4300.
- Converts the format of the RET signal sent from the VIF-60 board.
- Processes the RET signal and the VF-RET signal and sends these processed signals to the TX-146C board, and then sends them to the color camera HDC4300.
- Generates voltages necessary for each board and blocks in boards.
- Processes and develops the RAW data from the TX-146C board and sends it to the DPR-348A board that makes adjustments for 4K video signals. Also generates a down-converted signal, converts formats of HD color adjustment, resolution adjustment, and level adjustment), and generates SDI signals, CCU main-line signals, and VF-RET signal for the monitor.
- Maps the 4K signals adjusted in the DPR-348A board to SDI signals.
- Generates SDI signals and outputs them from SLOT1 of the SDI output connector (BNC type).
- Performs PsF conversion, Square Division (into four parts) conversion, and delay adjustment by using the DRAM (IC1201 to IC1204) on this board.
- Performs embedded audio processing to SDI output signals and CCU main-line signals.
- Functions as a bridge between the main CPU on the AT-189K board and each FPGA/ASIC.
- Provided with communication interfaces.
- Provided with a LAN function.

1-2-3. DPR-348A Board

The DPR-348A board receives 4K main-line video signals and adjusts image quality (including color adjustment, resolution adjustment, and level adjustment), and then outputs 4K main-line signals.

1-2-4. VIF-60 Board

The VIF-60 board has conventional camera control unit (CCU) functions.

Main-line video signals

The image capture data that is output from the camera is developed and converted to 8b10b data in the DVP-67 board, and the converted data is input to the connector (CN3002) on the VIF-60 board.
The VIF-60 board converts the video format for six SDI output signals and two VBS output signals.

Four DDR3 SDRAM ICs (IC1801, IC1802, IC1803, IC1804) are connected to the FPGA (IC1301) on the VIF-60 board. In addition to the timing adjustment function, this board has p-to-i (progressive to interlace) conversion function, 2-3 pull-down function, and down-conversion (to SD) function. This board also converts data from the camera to 3G-SDI (Level-A/B, 2SI, SQD), HD-SDI, and SD-SDI data.
The VIF-60 board contains two 2-pin output connectors SDI OUT (J3203, J3204) and 2-pin input/output connector SDI I/O (J3202), enabling output of up to 6-channel SDI video signals.
Furthermore, down-converted SD image is converted to an analog composite signal in the video encoder ICs (IC2719, IC2727) on this board, and the analog composite signal is output to the CN-3801 board. The analog composite signal that is input to the CN-3801 board is output from the VBS MONITOR connector and the CHARACTER/SYNC connector. Then this analog composite signal is sent from the connector (CN3002) on VIF-60 board, and is then output through the DVP-67 board to the RCP/CNU connector.

Return video signals

Return signals are input from the RETURN SDI IN connector (J3201) and the SDI input/output connector (J3202) on the VIF-60 board, and from the CN-3801 board. The CN-3801 board contains two VBS IN connectors. The VIF-60 board can receive up to four 3G/HD/SD-SDI input return signals and two VBS input return signals. The FPGA (IC1301) has the frame synchronize function and also supports asynchronous return signals.
3G-SDI-format data is converted to a signal equivalent to HD-SDI by p-to-i conversion. SD-SDI or VBS data is up-converted to a signal equivalent to HD-SDI. This data is converted to a8b10b serial digital video signal and this converted signal is sent to the DVP-67 board. The return signal sent to the DVP-67 board is finally sent to the camera.

Audio signals

The PGM signal from the connector (CN3104) is converted to a digital signal in the A/D and D/A converter ICs (IC1910, IC1908), and the digital signal is input to the FPGA (IC801).
The system Intercom signal from the connector (CN3104) is converted to a digital signal in the A/D and D/A converter IC (IC2106), and the digital signal is input to the FPGA (IC801).
The TALK signal of the front INTERCOM from the connector (CN3004) is converted to a digital signal in the A/D and D/A converter IC (IC1917), and the digital signal is input to the FPGA (IC801).
The stand-by Intercom signal from the connector (CN3101) is converted to a digital signal in the A/D and D/A converter IC (IC1908), and the digital signal is input to the FPGA (IC801).
The MIC signal processed in the VIF-60 board is converted to an analog signal in the A/D and D/A converter IC (IC2403), and the analog signal is output to the connector (CN3006).
The system Intercom signal processed in the VIF-60 board is converted to an analog signal in the A/D and D/A converter IC (IC2106), and the analog signal is output to the connector (CN3104).
The RCV/PGM signal of the front INTERCOM processed in the VIF-60 board is converted to an analog signal in the A/D and D/A converter IC (IC1917), and the analog signal is output to the connector (CN3004).
The stand-by Intercom signal processed in the VIF-60 board is converted to an analog signal in the A/D and D/A converter IC (IC1908), and the analog signal is output to the connector (CN3101).
The VIF-60 board sends and receives the following signals.

- The VIF-60 board outputs the MIC signal and the AES/EBU signal (from the camera) to the AUDIO OUT connector.
- The VIF-60 board embeds the PGM signal from the D-sub connector into the return signal, and then sends the embedded signal to the camera.
- The VIF-60 board outputs the Intercom signal embedded in the signal from the camera to the front INTERCOM and the system Intercom. At this time, the front INTERCOM input signal, system Intercom input signal, and PGM signal can be mixed.
- The VIF-60 board embeds the front INTERCOM input signal and the system Intercom input signal into the return signal, and then sends the embedded signal to the camera.
- The VIF-60 board outputs the stand-by Intercom input signal from the camera to the front INTERCOM connector and the system Intercom.
- The VIF-60 board mixes the front INTERCOM input signal and the system Intercom input signal, and then sends the mixed signal to the camera as the stand-by Intercom signal.

PROMPTER signal

The PROMPTER signals from the PROMPTER 1 and PROMPTER 2 connectors on the CN-3801 board on the rear panel are input to the connector (CN3005) on the VIF-60 board. The signals are A/D converted in the VIF-60 board. The converted signal is embedded into the return signal and is then sent to the DVP-67 board. The PROMPTER signal sent to the DVP-67 board is finally sent to the camera.

TRUNK signal

The TRUNK signal from the TRUNK connector on the CN-3820 board is input to the VIF-60 board. The input TRUNK signal is multiplexed with the audio channel of the return signal in the VIF-60 board, and the multiplexed signal is sent to the DVP-67 board. The audio signal multiplexed with the TRUNK signal is sent to the camera.
The TRUNK signal from the camera is multiplexed with the audio channel of the serial digital video signal sent from the DVP-67 board to the VIF-60 board. In the VIF-60 board, the TRUNK signal from the camera is extracted and is output to the TRUNK connector on the CN-3820 board.

HD TRUNK signal

The SDI I/O 2 connector (J3202) on the VIF-60 board can be used as an HD TRUNK output connector.

HD PROMPTER signal

The SDI I/O 1 connector (J3202) on the VIF-60 board can be used as an HD PROMPTER input connector.

NETWORK TRUNK signal

Packet data that passes through the NETWORK TRUNK connector (J2941) on the VIF-60 board is embedded into the serial digital video signal that is sent to and received from the DVP-67 board for communication with the camera.

REFERENCE signal

The SD reference synchronization signal (black burst) and the HD3 value reference synchronization signal for external synchronization can be input to the REFERENCE connector on the CN-3801 board. The REFERENCE signal is output from the connector (CN001) on the CN-3801 board to the connector (CN3005) on the VIF-60 board.
The Sync Separator IC (IC604) removes color burst and serration pulses from the input REFERENCE signal sent from the connector (CN3005) and then extracts V-Sync (HD/SD-TEMP-V) and H-Sync (HD/SD-TEMP-H).
The FPGA IC (IC801) verifies whether extracted HD/SD-TEMP-V and HD/SD-TEMP-H are effective as a video synchronization signal.
When the input REFERENCE signal is correct, a 27 MHz clock signal locked to the input REFERENCE signal is generated in the FPGA IC (IC801), phase comparator (IC505), and VCO (VC504).
If the REFERENCE signal is not input, the VCO (VC504) oscillates 27 MHz clock.
The input voltage to the VCO (VC504) is converted to digital data in the A/D and D/A converter IC (IC1106), and this digital data can be read from the CPU. This value is proportional to the 27 MHz reference clock frequency.
IC801, IC503, VC502, and VC503 generate 148.5 MHz and 148.35 MHz clock signals locked to 27 MHz, and divide the frequencies of the 148.5 MHz and 148.35 MHz clock signals to generate 74.25 MHz and 74.176 MHz clock signals locked to 27 MHz.
IC801, IC504, and VC501 generate a 24.576 MHz (512fs) clock signal locked to 27 MHz.
Thus reference clock signals for HD video, SD video, and audio are generated.
Furthermore, the FPGA IC (IC801) generates reference synchronization signals MST-HD-F, MST-HD-H, MST-SD-F, and MST-SD-H by using 27 MHz, 74.25/74.176 MHz, HD/SD-TEMP-V, and HD/SD-TEMP-H signals.
The 27 MHz clock is distributed by IC515; the 148.5 MHz and 148.35 MHz clock signals are distributed by IC516; the 74.25 MHz and 74.176 MHz clock signals are distributed by IC514; MST-HD-F and MST-HD-H signals are distributed by IC1004; and MST-SD-F and MST-SD-H signals are distributed by IC1005. These signals are supplied to each circuit.

SYNC output signal

The FPGA IC (IC801) generates an SD SYNC signal or HD SYNC signal based on the reference clock and the reference synchronization signal. This SD SYNC signal or HD SYNC signal is output from the CHARACTER/SYNC connector on the CN-3801 board.

Power unit interface

The FPGA IC (IC801) monitors and controls the power unit through the I^2C interface. The power unit is connected through the connector (CN102) on the VIF-60 board.

Power IC interface

Power ICs (IC101, IC122, IC201) are monitored and controlled from the FPGA IC (IC801) through the I^2C interface.

Front panel interface

The VIF-60 board functions as an IO Expander for the CPU (AT-189K board) to control switches and LEDs on the front panel (AU-372 board).
The value (F_INC_VR) of the potentiometer on the front panel is converted to digital data in the A/D and D/A converter IC (IC1106) for the CPU to read.

GPIO control signals

Eleven GPIO control signals (including PREVIEW OUT and AUX3) are assigned to the D-sub connector (CN3104) on the VIF-60 board. The FPGA IC (IC801) controls the input/output direction of the GPIO control signals through the IO Expander (IC902) for I^2C control. In the signal output mode, values are set. In the signal input mode, values are monitored.

Tally control signal

Three channels of tally control input signals are assigned to the six signal lines of the D-sub connector (CN3104) on the VIF-60 board. Tally control input signals can be selected from Contact, TTL, and Power signal formats. Tally control input signals are input to the FPGA IC (IC801) and can be read from the CPU.
GPIO0, GPIO1, and GPIO2 of the D-sub connector (CN3104) on the VIF-60 board are assigned as tally control output signals. Tally control output signals are controlled by the FPGA IC (IC801).

MIC Remote signal and WFM Remote signal

MIC Remote input or WFM Remote output signals are assigned to eight signal lines of the D-sub connector (CN3104) on the VIF-60 board. MIC Remote and WFM Remote operate exclusively. When MIC Remote is assigned, signal values that are input to the FPGA IC (IC801) can be read from the CPU. When WFM Remote is assigned, setting values can be controlled from the FPGA IC (IC801).

1-2-5. AT-189K Board

The AT-189K board consists of a system control microcomputer (IC200) and a peripheral circuit.
The main program is stored in the flash memory (IC401) on this board.
This board is connected to the DVP-67 board.

1-2-6. AU-372 Board

The AU-372 board contains switches for setting menus, INTERCOM interface, and a USB connector for service.
This board also contains LEDs including the MAIN POWER (main power) ON indicator, optical signal receiving status indicator, and status display indicators (REFIN, UNLOCK, NETWORK).
This board is connected to the VIF-60 board.

1-2-7. LE-410 Board

The LE-410 board contains a 7-segment LED to show the camera number.
This board is connected to the AU-372 board.

1-2-8. CN-3801 Board

The CN-3801 board contains the REFERENCE connector, PROMPTER connector, RETURN VBS IN connector, and VBS MONITOR analog video signal input/output connector on the rear panel. This board is connected to the VIF-60 board.

1-2-9. CN-3802 Board

The CN-3802 board contains the SLOT1 SDI output connector (BNC type) on the rear panel. This board is connected to the DVP-67 board.

1-2-10. CN-3819 Board

The CN-3819 board contains the INTERCOM connector on the front panel. This board is connected to the AU-372 board.

1-2-11. CN-3820 Board

The CN-3820 board contains the TRUNK connector on the rear panel. This board is connected to the VIF-60 board.

1-2-12. CN-3821 Board

The CN-3821 board contains the AUDIO OUT connector on the rear panel. This board is connected to the VIF-60 board.

1-2-13. CN-3822 Board

The CN-3822 board contains the RCP/CNU connector on the rear panel. This board is connected to the DVP-67 board.

1-2-14. CN-3846 Board

The CN-3846 board contains interface 25-pin D-Sub connectors SYSTEM-INTERCOM (ENG/PROD), PGM, and TALLY. The SYSTEM-INTERCOM (ENG/PROD) connector supports one input signal line and one output signal line. The PGM connector supports two input signal lines and the TALLY connector supports three input signal lines. The CN-3846 board is connected from the CN1001 connector to the VIF-60 board through the FFC cable.

1-2-15. CN-3847 Board

The CN-3847 board contains interface 50-pin D-Sub connectors SYSTEM-INTERCOM (ENG/PROD), PGM, TALLY, MIC-REMOTE, WF-REMOTE, ASPECT CONTROL, and GPIO. The SYSTEM-INTERCOM (ENG/PROD) connector supports one input signal line and one output signal line. The PGM connector supports two input signal lines and the TALLY connector supports three input signal lines. The MIC-REMOTE, ASPECT CONTROL, and WF-REMOTE functions can be selected by the menu for use. The CN-3847 board is connected from the CN1001 connector to the VIF-60 board through the FFC cable.

1-2-16. NET-26 Board (HKCU-IP43F)

The NET-26 board has a function to convert video signals to IP transmission signals.
This board performs the following processes for IP transmission of video signals.

- Controls the network with CPU commands sent via the VIF-60 board for IP stream transmission.
- Sends/receives IP routing control signals of the LSM connected through the network via the CN-3797 board and notifies the VIF-60 board as needed.
- IC001 on this board adds baseband processing (2SI conversion, phase adjustment, and sorting) to the SDI data sent via the DVP-67 board as needed.
- The NMI LSI (IC002) on this board converts the processed baseband SDI data to IP data and outputs the IP data to the CN-3797 board.

1-2-17. CN-3797 Board (HKCU-IP43F)

The CN-3797 board contains the SFP+ slot. This board detects the SFP+ module and notifies the VIF-60 board via the NET-26 board.
The CN-3797 board converts the IP data to be sent via the NET-26 board to serial data. The converted serial data is sent through the network (routing control and video stream) via the SFP+ module (NMI1 and NMI2 connectors).

1-2-18. DIF-268 Board (HKCU-4002)

The DIF-268 board contains the BNC terminal and 6G-SDI/12G-SDI processing IC. Detects the abnormality of SDI and notifies the VIF-60 board. SDI data sent from the DVP-67 board converts to 6G-SDI/12G-SDI. The converted serial data is sent to other peripheral equipments via BNC.

1-2-19. IF-1367 Board (HKCU-4001)

The IF-1367 board is a bridge board for exchanging signals between the VIF-60 board, DVP-67 board and the NET-37 board.

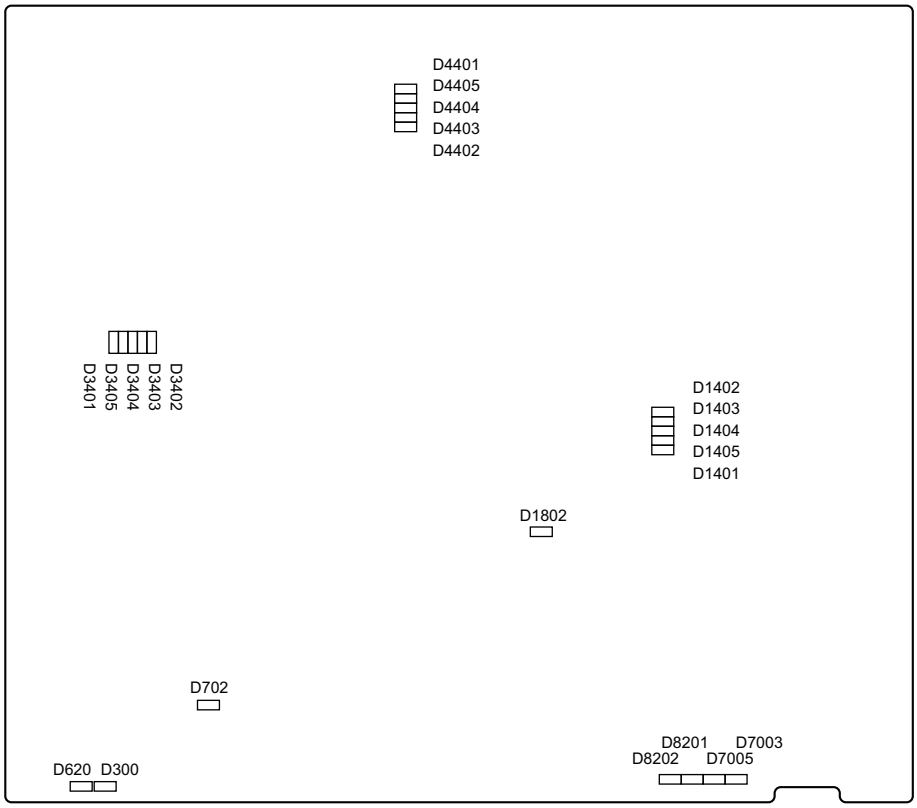
1-2-20. NET-37 Board (HKCU-4001)

The NET-37 board is processes the IP signal of ST 2110 standard.

1-3. Functions of Onboard Switches and LED Indicators

1-3-1. Function of Onboard LED Indicators

DVP-67 Board



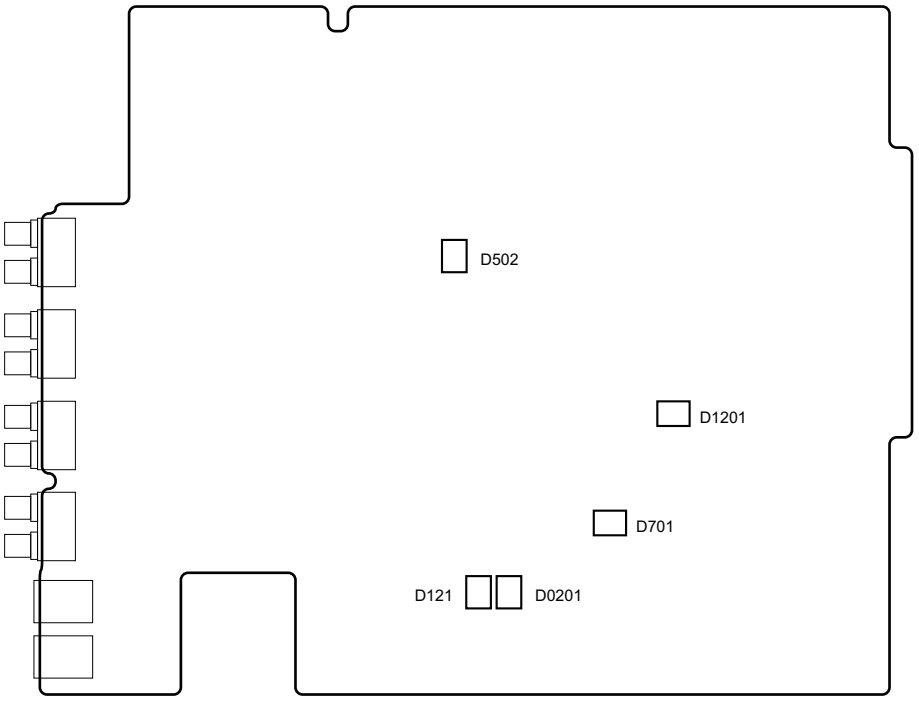
DVP-67 Board (B Side)

Ref. No.	Name	Color	Description	Normal State (Power On)
D300	-	Green	Factory use	Inconstant
D620	-	Green	Factory use	Inconstant
D1402	-	Green	Factory use	Inconstant
D1403	-	Green	Factory use	Inconstant
D1404	-	Green	Factory use	Inconstant
D1405	-	Green	Factory use	Inconstant
D1802	-	Green	Factory use	Inconstant
D3402	-	Green	Factory use	Inconstant
D3403	-	Green	Factory use	Inconstant
D3404	-	Green	Factory use	Inconstant
D3405	-	Green	Factory use	Inconstant
D4402	-	Green	Factory use	Inconstant
D4403	-	Green	Factory use	Inconstant
D4404	-	Green	Factory use	Inconstant
D4405	-	Green	Factory use	Inconstant
D7003	SQ1	Green	This LED lights when the power sequence system 1 is activated.	On

Continued

Ref. No.	Name	Color	Description	Normal State (Power On)
D7005	SQ2	Green	This LED lights when the power sequence system 2 is activated.	On
D8201	SQ3	Green	This LED lights when the power sequence system 3 is activated.	On
D8202	SQ4	Green	This LED lights when the power sequence system 4 is activated.	On
D702	SY-PLD Conf_Done	Red	This LED displays the SY PLD (IC705) configuration execution status. This LED lights while configuration is NG or in progress.	Off
D1401	DEC Conf_Done	Red	This LED displays the DEC FPGA (IC1001) configuration execution status. This LED lights while configuration is NG or in progress.	Off
D3401	4K-Post Conf_Done	Red	This LED displays the 4K-Post FPGA (IC3001) configuration execution status. This LED lights while configuration is NG or in progress.	Off
D4401	SDP Conf_Done	Red	This LED displays the SDP FPGA (IC4001) configuration execution status. This LED lights while configuration is NG or in progress.	Off

VIF-60 Board



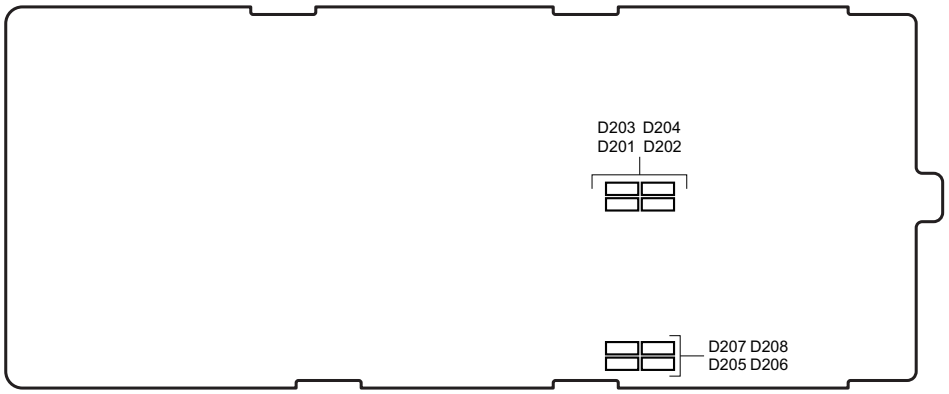
VIF-60 Board (A side)

Ref. No.	Name	Color	Description	Normal State (Power On)
D121	SQ1	Green	This LED lights when power Gp1 of the VIF-60 board works normally at power-on.	—
D0201	SQ2	Green	This LED lights when power Gp2 of the VIF-60 board works normally at power-on.	—

Continued

Ref. No.	Name	Color	Description	Normal State (Power On)
D502	EXT	Green	This LED lights when the external REFERENCE signal is input.	—
D701	CONF_DONE	Red	This LED lights while configuration of the FPGA IC (IC801) is in progress and goes out after the configuration ends.	—
D1201	CONF_DONE	Red	This LED lights while configuration of the VIF IC (IC1301) is in progress and goes out after the configuration ends.	—

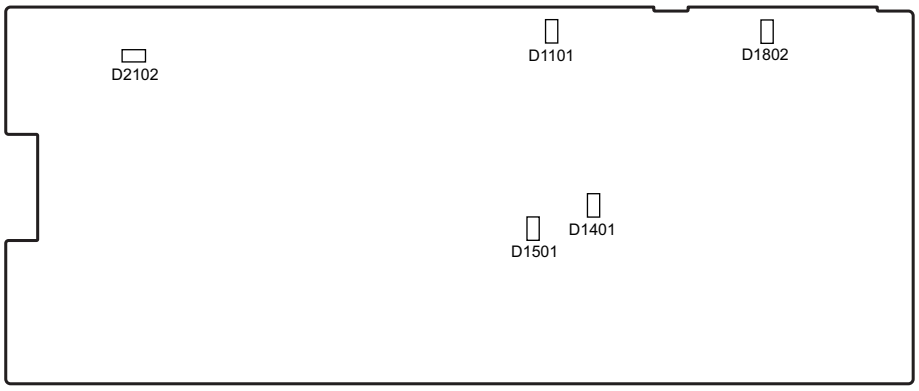
CN-3797 Board



CN-3797 Board (A side)

Ref. No.	Name	Color	Description	Normal State (Power On)
D201	TDIS_A	Red	Factory use	Inconstant
D202	TFAULT_A	Red	Factory use	Inconstant
D203	MOD_ABS_A	Red	Factory use	Inconstant
D204	RX_LOS_A	Red	Factory use	Inconstant
D205	TDIS_B	Red	Factory use	Inconstant
D206	TFAULT_B	Red	Factory use	Inconstant
D207	MOD_ABS_B	Red	Factory use	Inconstant
D208	RX_LOS_B	Red	Factory use	Inconstant

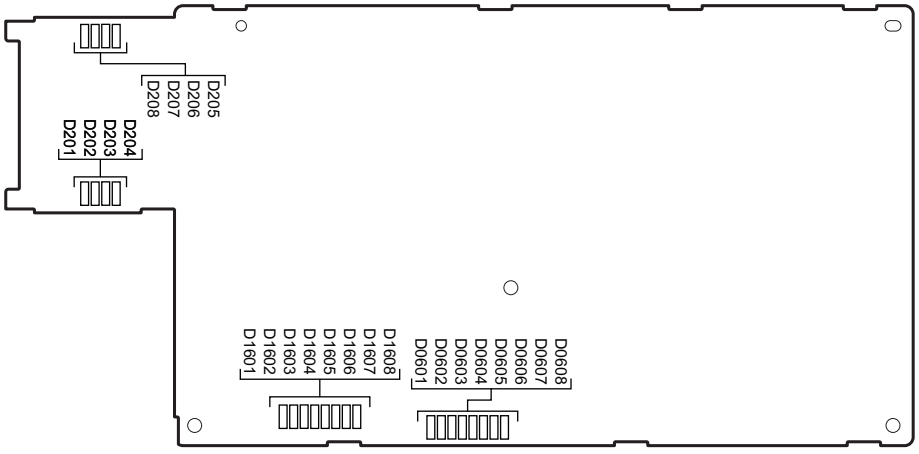
NET-26 Board



NET-26 Board (A Side)

Ref. No.	Name	Color	Description	Normal State (Power On)
D1082	OLED0	Blue	Factory use	Inconstant
D1101	CFG_DONE	Red	This LED goes out when NET_PLD (IC001)is normally completed configuration.	Off
D1401	MS_SEL	Red	Factory use	Inconstant
D1501	1001/1000	Green	Factory use	Inconstant
D2102	PWR_GOOD	Green	Factory use	Inconstant

NET-37 Board



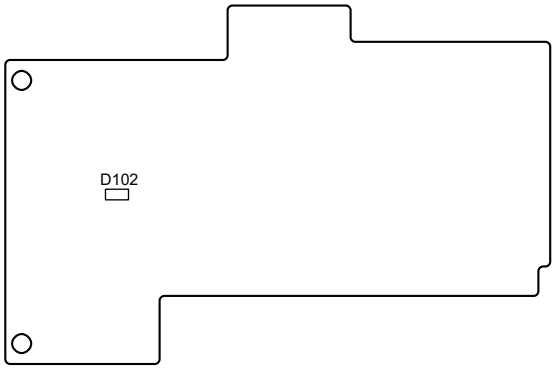
NET-37 Board (A Side)

Ref. No.	Name	Color	Description	Normal State (Power On)
D0201	TDIS_A	Red	Factory use	Inconstant
D0202	TFAULT_A	Red	Factory use	Inconstant
D0203	MOD ABS_A	Red	Factory use	Inconstant
D0204	RX_LOS_A	Red	Factory use	Inconstant

Continued

Ref. No.	Name	Color	Description	Normal State (Power On)
D0205	TDIS_B	Red	Factory use	Inconstant
D0206	TFAULT_B	Red	Factory use	Inconstant
D0207	MOD ABS_B	Red	Factory use	Inconstant
D0208	RX_LOS_B	Red	Factory use	Inconstant
D0601	BiBi-LED7	Yellowish green	Factory use	Inconstant
D0602	BiBi-LED6	Yellowish green	Factory use	Inconstant
D0603	BiBi-LED5	Yellowish green	Factory use	Inconstant
D0604	BiBi-LED4	Yellowish green	Factory use	Inconstant
D0605	BiBi-LED3	Yellowish green	Factory use	Inconstant
D0606	BiBi-LED2	Yellowish green	Factory use	Inconstant
D0607	BiBi-LED1	Yellowish green	Factory use	Inconstant
D0608	BiBi-LED0	Yellowish green	Factory use	Inconstant
D1601	NENE-LED7	Yellowish green	Factory use	Inconstant
D1602	NENE-LED6	Yellowish green	Factory use	Inconstant
D1603	NENE-LED5	Yellowish green	Factory use	Inconstant
D1604	NENE-LED4	Yellowish green	Factory use	Inconstant
D1605	NENE-LED3	Yellowish green	Factory use	Inconstant
D1606	NENE-LED2	Yellowish green	Factory use	Inconstant
D1607	NENE-LED1	Yellowish green	Factory use	Inconstant
D1608	NENE-LED0	Yellowish green	Factory use	Inconstant

DIF-268 Board

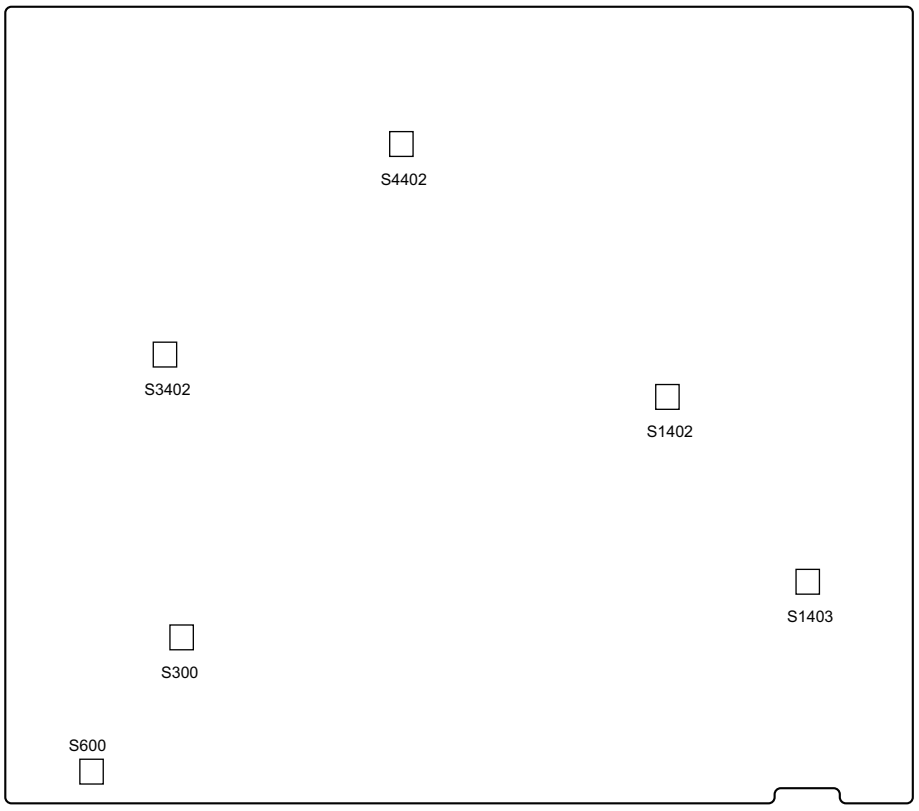


DIF-268 Board (A side)

Ref. No.	Name	Color	Description	Normal State (Power On)
D102	—	Green	This LED lights when the power is activated.	On

1-3-2. Functions of Onboard Switches

DVP-67 Board



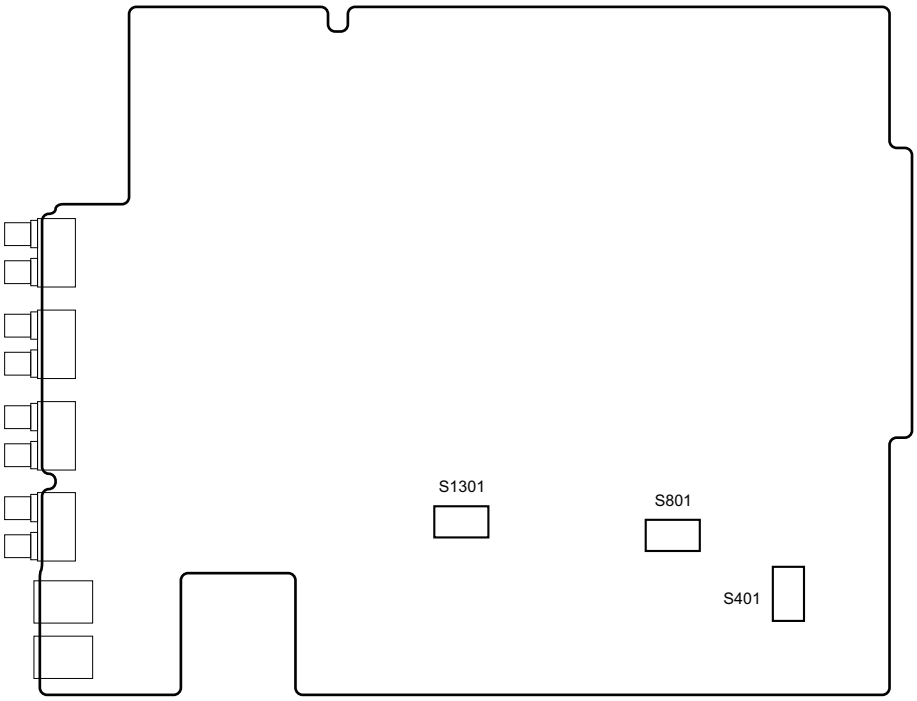
DVP-67 Board (B Side)

Note

Do not change the setting of "Factory use" switch.

Ref. No.	Bit	Function	Factory default setting
S600	1－4	Factory use	OFF (ALL)
S1402	1－4	Factory use	OFF (ALL)
S3402	1－4	Factory use	OFF (ALL)
S4402	1－4	Factory use	OFF (ALL)
S300	1	Factory use	OFF
S1403	1	Factory use	OFF

VIF-60 Board



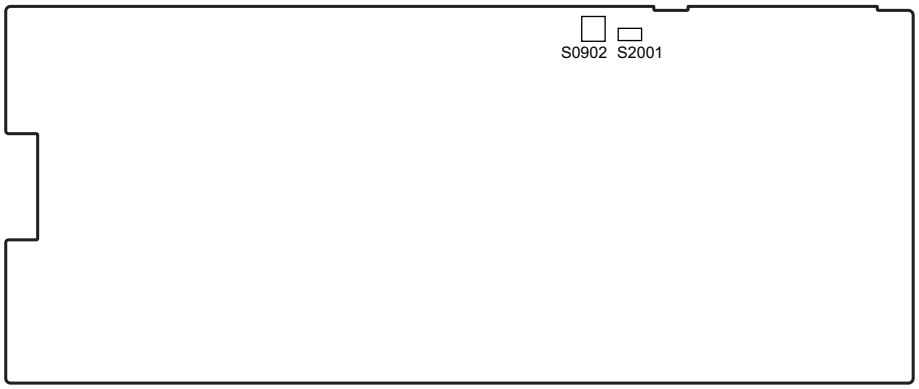
VIF-60 Board (A side)

Note

Do not change the setting of “Factory use” switch.

Ref. No.	Bit	Function	Factory default setting
S401	—	Factory use	OFF
S801	1—4	Factory use	OFF (ALL)
S1301	1—4	Factory use	OFF (ALL)

NET-26 Board



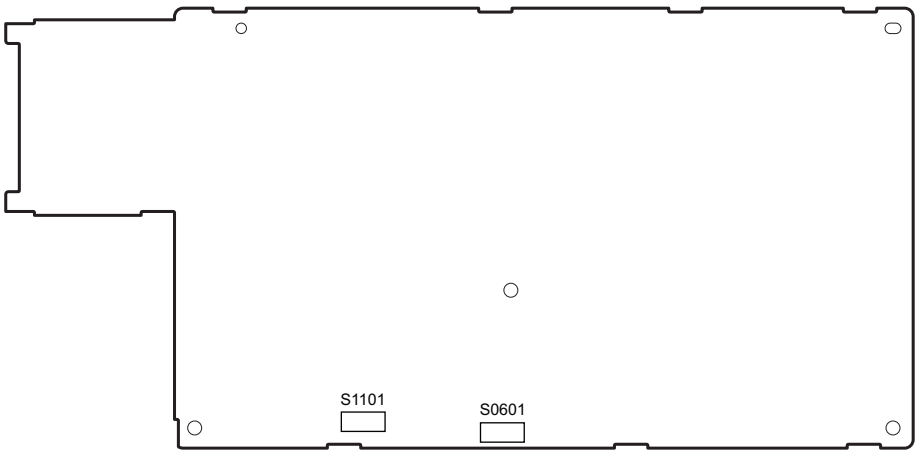
NET-26 Board (A Side)

Note

Do not change the setting of “Factory use” switch.

Ref. No.	Bit	Function	Factory default setting
S0902	1-4	Factory use	OFF (ALL)
S2001	—	Factory use	OFF

NET-37 Board



NET-37 Board (A Side)

Note

Do not change the setting of "Factory use" switch.

Ref. No.	Bit	Function	Factory default setting
S0601	1-4	Factory use	OFF (ALL)
S1101	1-4	Factory use	OFF (ALL)

1-4. Notes on Replacement of Circuit Board

1-4-1. AT-189K Board, DVP-67 Board, and VIF-60 Board

AT-189K board, DVP-67 board, and VIF-60 board store the important information including the model name and serial number.
After replacing the AT-189K board, DVP-67 board, or VIF-60 board, perform RESTORE on the [04 <SERIAL NUMBER>] page of the SERVICE menu. (Refer to “4-2-2. Description of SERVICE Menu”.)

1-5. Cautions when Replacing the Lithium Battery

The lithium battery is installed on the DVP-67 board. This lithium battery is used to back up the real-time clock (RTC). RTC stops operating when the battery life expires. Replace the battery and reset the DATE (M05) of the MAINTENANCE menu. (Refer to OPERATION MANUAL.)

Part No.	Name	Usage
⚠1-756-134-1X	Lithium Battery (ML621 (U))	For internal clock

CAUTION

Ensure that the battery is installed with + and – poles connected to the correct terminals. An incorrect connection may cause an explosion or leakage of fluid.

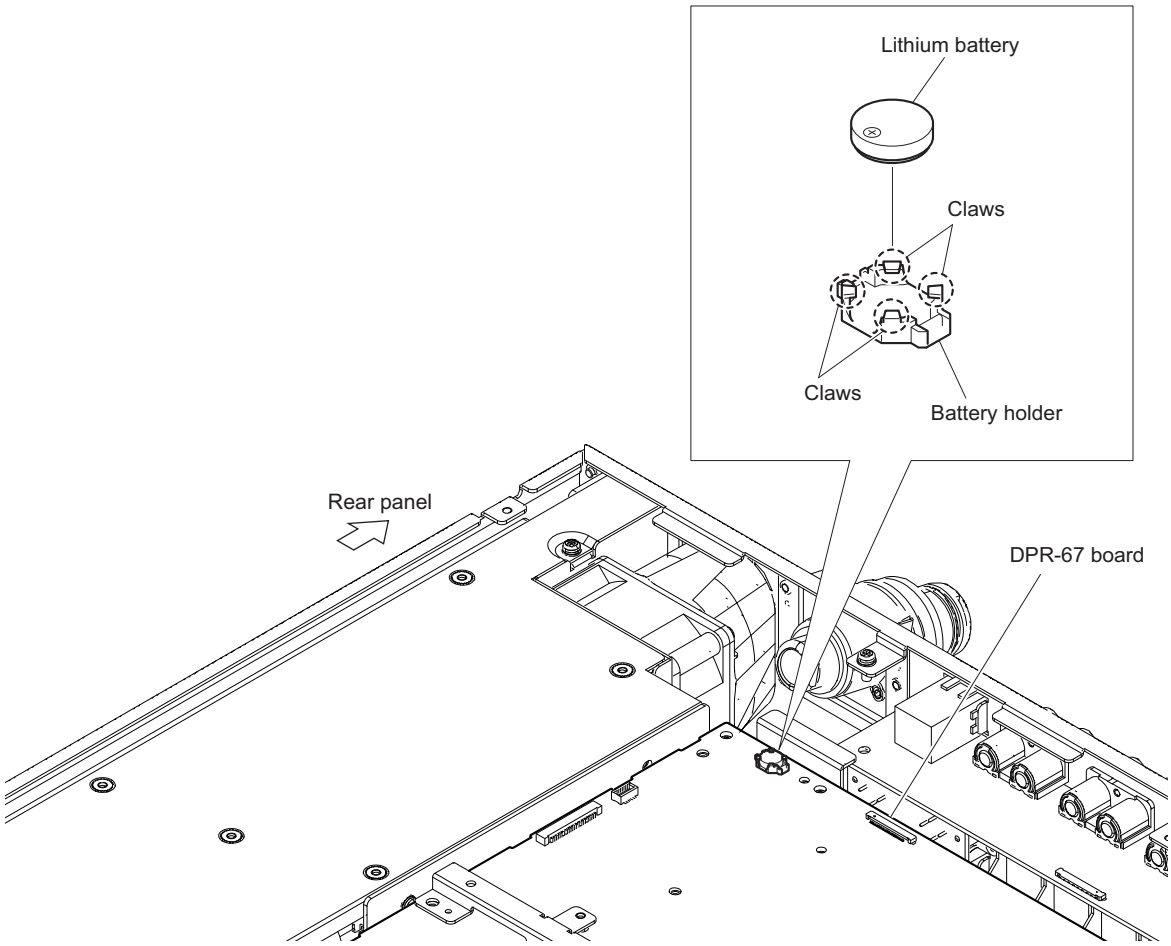
1-5-1. Replacing Procedure

Preparations

1. Remove the front panel assembly. (Refer to "2-2-1. Front Panel Assembly".)
2. Remove the top cover. ("2-3. Top Cover".)

Procedure

1. Replace the lithium secondary battery (ML621 (U)) on the DVP-67 board.



Note

Be sure to use an insulated stick when removing the lithium secondary battery (ML621 (U)).

2. Install the top cover by reversing the steps of removal.

1-6. Cleaning of Connector/Cable

- Lit in two green indicators (right): Receive signal condition is very good.
- Lit in one green indicator (2nd from right): Receive signal condition is OK.
- Lit in one yellow indicator (2nd from left): Receive signal level is weak.
- Lit in one red indicator (left): Receive signal level is severely degraded.

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 this unit or camera control, and in the optical/electrical cables.

1-6-1. When the Optical Connector Cleaner (Commercially Available) is Available

Fixtures

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

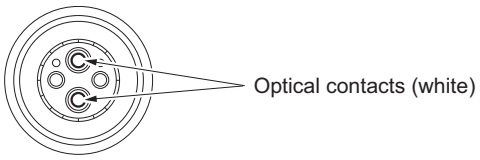
Tip

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

Cleaning Procedure

Male connector

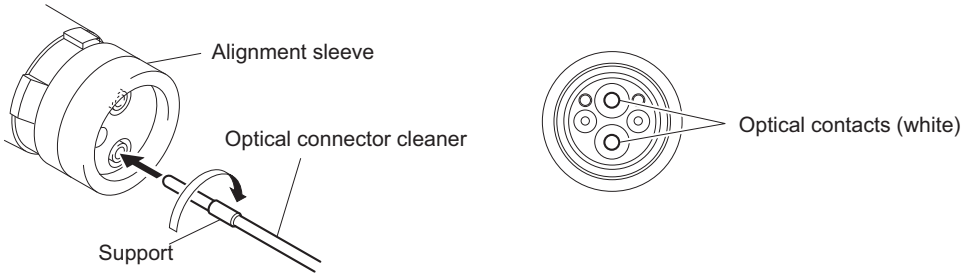
Clean the tip of the optical contacts (white) using the optical connector cleaner.



Female connector

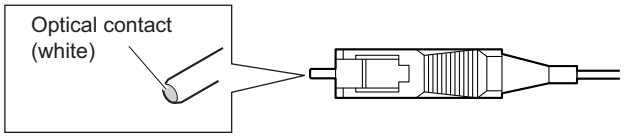
1. Insert the optical connector cleaner straight.
2. Apply sufficient pressure (approximately 600 g to 700 g) to ensure that the optical contact is a little depressed.

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 optical contacts (white) using the optical connector cleaner.



1-6-2. When the Optical Connector Cleaner (Commercially Available) is not Available (Connectors/Cables of LEMO)

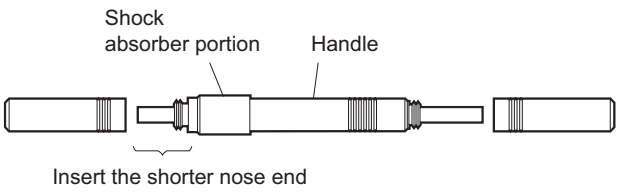
Clean the LEMO connectors and cables using the following procedure.

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. This fixture contains shock absorber portion. Grasp not the shock absorber portion of the remover but the handle in use.



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

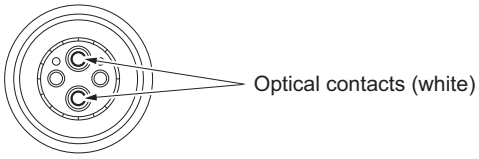
  Note

  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

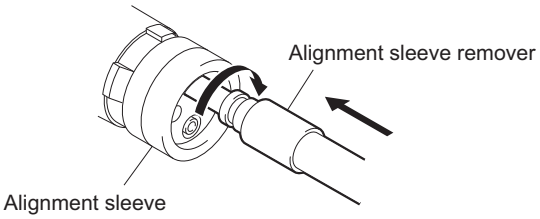
Clean the tip of the optical contacts (white) with a cotton swab moistened with alcohol.



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.

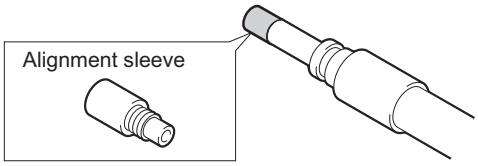
1. Insert the alignment sleeve remover into the alignment sleeve in the straight line and turn it clockwise.



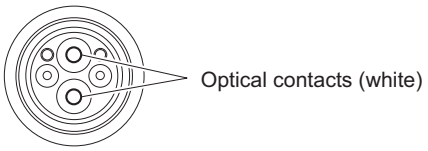
2. When the turn stops, pull out the remover in the straight line forcedly.

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 optical contacts (white) 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.

1-6-3. When the Optical Connector Cleaner (Commercially Available) is not Available (Connector of Tajimi Electronics Co., Ltd./Cable)

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

Fixtures

- Alcohol (commercially available)

- Cotton swabs (commercially available)

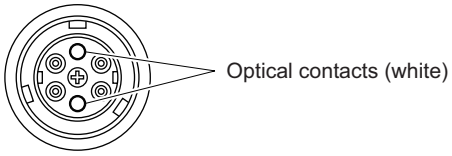
  Note

  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 optical contacts (white) with a cotton swab moistened with alcohol.



Female connector

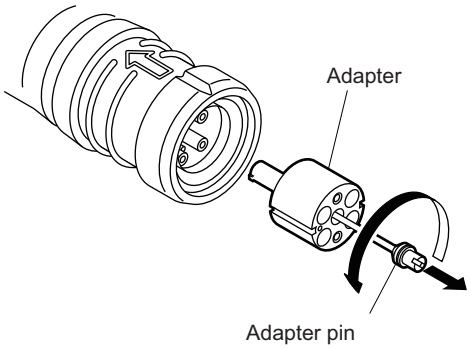
The optical contacts for female connector are in an unexposed state. In cleaning, it is necessary to be exposed by removing the adapter in the connector in advance. Proceed as follows.

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

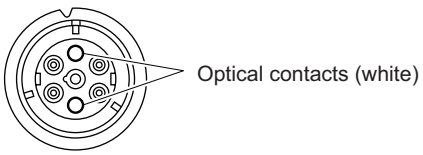
   Tip

   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. Remove the adapter from the connector.



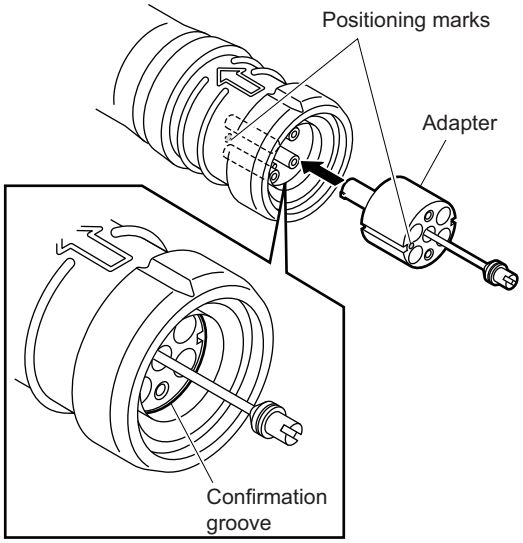
3. Clean the optical contacts (white) with a cotton swab moistened with alcohol.



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)

1-6-4. When the Optical Connector Cleaner (Commercially Available) is not Available (Connector)

Fixtures

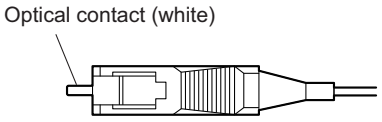
- Alcohol (commercially available)
- Cotton swabs (commercially available)

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 optical contacts (white) with a cotton swab moistened with alcohol.



1-7. Service Fixtures/Measuring Equipment List

1-7-1. Service Fixtures

Part No.	Name	Usage/Note
J-6480-010-A	Alignment sleeve remover HC-001	For female optical connector (LEMO® DCC. 91.312.5LA or equivalent)
—	Cotton swab	Commercially available, for cleaning optical contact block (4 mm or less in diameter)

1-7-2. Measuring Equipment

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

Equipment	Type name
Frequency counter	Advantest TR5821AK or equivalent

1-8. 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 “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.

Tip

The USB connector for connection to a USB drive is located to the right of the CALL button on the front panel. Detach the USB connector lid to connect the USB drive.

1-8-1. Corresponding PLDs

Board name	Ref. No.	File name
DVP-67	IC1001	hdcu4300_dec_hdc4300.pkg
	IC4001	hdcu4300_sdp.pkg
	IC3001	hdcu4300_4kpost.pkg
DPR-348A	IC001	hdcu4300_dpr.pkg
VIF-60	IC801	hdcu4300_mif.pkg
	IC1301	hdcu4300_vif.pkg
TX-146C	IC004	hdcu4300_tx.pkg
NET-26*1	IC001	hdcu4300_net.pkg
NET-37*2	IC001	hdcu4300_4001net1.pkg
	IC002	hdcu4300_4001net2.pkg

1-8-2. Upgrading PLD Data

Equipment Required

- USB drive (commercially available)

  Tip

  For recommended USB drive, contact your local Sony Sales Office/Service Center.

Preparation

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

Note

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

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HDCU4300

*1: When installed the HKCU-IP43F.
*2: When installed the HKCU-4001.

2. Copy the data files for PLD update to be updated to the directory created.

Procedure

1. Connect the USB drive that contains the program for update to the USB connector of this unit.
2. Turn on the power of the unit.
3. Display the PLD PACKAGE page of the SERVICE menu.

   Tip

   For the SERVICE menu, refer to “4-2. SERVICE Menu”.

4. Select the PLD to be upgraded and then press the control knob.
5. A message “UPDATE OK?” appears. Select “YES.”
   The unit restarts automatically and the version update starts.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.

1-9. Upgrading Software Programs

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

Tip

The USB connector for connection to a USB drive is located to the right of the CALL button on the front panel. Detach the USB connector lid to connect the USB drive.

1-9-1. Upgrading Application

Equipment Required

- USB drive (commercially available)

  Tip

  For recommended USB drive, contact your local Sony Sales Office/Service Center.

Preparation

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

Note

For how to obtain the data file for update (hdcu4300_app.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HDCU4300
2. Copy the data file for update “hdcu4300_app.pkg” to the directory created.

Procedure

1. Connect the USB drive that contains the program for update to the USB connector of this unit.
2. Turn on the power of the unit.
3. Open the [01<SOFTWARE PACKAGE>] page of the SERVICE menu. (Refer to “4-2-2. Description of SERVICE Menu”.)
4. Select “APPLICATION” and then press the control knob.
5. A message “UPDATE OK?” appears. Select “YES.”
   The unit restarts automatically and the version update starts.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.
6. Turn off and on the power of the unit and confirm that the version has been updated on the VERSION1 page of the DIAGNOSIS menu.

1-9-2. Upgrading OS

Equipment Required

- USB drive (commercially available)

  Tip

  For recommended USB drive, contact your local Sony Sales Office/Service Center.

Preparation

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

Note

For how to obtain the data file for update (hdcu4300_os.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HDCU4300
2. Copy the data file for update “hdcu4300_os.pkg” to the directory created.

Procedure

1. Connect the USB drive that contains the program for update to the USB connector of this unit.
2. Turn on the power of the unit.
3. Open the [01<SOFTWARE PACKAGE>] page of the SERVICE menu. (Refer to “4-2-2. Description of SERVICE Menu”.)
4. Select “OS” and then press the control knob.
5. A message “UPDATE OK?” appears. Select “YES.”
   The unit restarts automatically and the version update starts.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.
6. Turn off and on the power of the unit and confirm that the version has been updated on the VERSION1 page of the DIAGNOSIS menu.

1-9-3. Upgrading Update Software

Equipment Required

- USB drive (commercially available)

  Tip

  For recommended USB drive, contact your local Sony Sales Office/Service Center.

Preparation

Copy the upgrading update software update data files to be updated to the directory created.

Note

For how to obtain the data file for update (hdcu4300_updater.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HDCU4300

2. Copy the data file for update “hdcu4300_updater.pkg” to the directory created.

Procedure

1. Connect the USB drive that contains the program for update to the USB connector of this unit.
2. Turn on the power of the unit.
3. Open the [01<SOFTWARE PACKAGE>] page of the SERVICE menu. (Refer to “4-2-2. Description of SERVICE Menu”.)
4. Select “UPDATER” and then press the control knob.
5. A message “UPDATE OK?” appears. Select “YES.”
   The unit restarts automatically and the version update starts.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.
6. Turn off and on the power of the unit and confirm that the version has been updated on the VERSION1 page of the DIAGNOSIS menu.

1-9-4. Upgrading NMI LSI Firmware

This section describes how to update NMI LSI firmware when the HKCU-IP43F has been installed.
Perform the firmware update of the NMI LSI by the Web menu with using the NMI LAN (SFP+) connector.

Equipment Required

- Personal computer (PC): A PC that can be connected to NMI-LAN connectors (SFP+) on this unit through a network and supports the following recommended web browsers.
  Recommended web browsers:
  - Internet Explorer 8 or later
  - Google Chrome 43.0 or later
  - Firefox 35.0.1 or later
- USB drive: commercially available, 1 GB or more recommended

Preparation

1. Copy the data file for update to the USB drive.
   Note
   Use the data file for update without extracting it.
   For how to obtain the data files for update, contact your local Sony Sales Office/Service Center.
2. Deactivate the unit by using the IP Live System Manager. (Refer to the help of IP Live System Manager.)

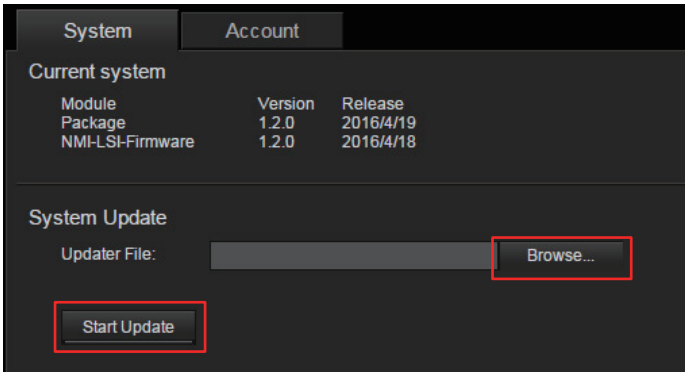
Procedure

1. Connect the USB drive that contains the program for update to the USB connector of the PC.
2. Run the web browser on the PC.
3. Open the [01<SOFTWARE PACKAGE>] page of the SERVICE menu. (Refer to “4-2-2. Description of SERVICE Menu”.)

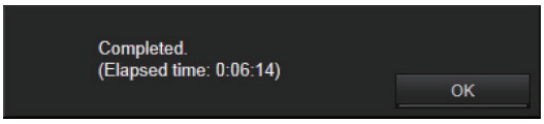
4. Type “https://(IP address of NMI LAN1)/ ” in the address bar, and then press the Enter key. The Web menu appears.
   The Web menu appears.

   Tip

   You may be required to enter the account and password.
   The factory default settings of account are as follows.
   - User: admin
   - Password: nmidev123



5. Click [System] tab.
6. Click [Browse] of [System Update], and then select the data file for update in the connected USB drive.
7. Click the [Start Update].
   Firmware update starts.
   Upon completion of update, a message “Completed” appears.



8. Click [OK].

1-10. Forced Version Update

If the version of program or data cannot be updated from the SOFTWARE PACKAGE page of the SERVICE menu, the software or PLD data version can be updated by the “forced version update.”

Tip

The USB connector for connection to a USB drive is located to the right of the CALL button on the front panel. Detach the USB connector lid to connect the USB drive.

1-10-1. Forced Version Upgrade of Software or PLD Data

Equipment Required

- USB drive (commercially available)

  Tip

  For recommended USB drive, contact your local Sony Sales Office/Service Center.

Preparation

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

Note

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

1. Create the following directory in the USB drive.
   \MSSONY\PRO\CAMERA\HDCU4300
2. Copy the data file for update 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 program for update to the USB connector of this unit.
2. In the MENU control block on the front panel, turn the DISP/MENU lever to the MENU side, and turn the CANCEL/ENTER lever to the CANCEL side.
3. While pressing the control knob, turn on the power of the unit.
   Each data file for update copied in the USB drive is updated.
   Upon completion of the version update, a message “UPDATE SUCCEEDED” appears.

   Tip

   The version update progress status is displayed on the monitor.

4. Turn off and on the power of the unit and confirm that the version has been updated on the VERSION1, VERSION2 page of the DIAGNOSIS menu.

1-11. Flexible Flat Cable and Coaxial Cable

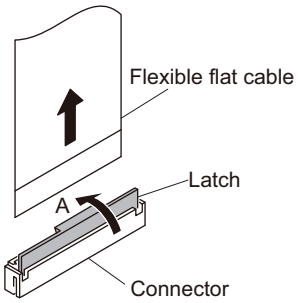
1-11-1. Disconnecting and Connecting Flexible Flat Cable

Note

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

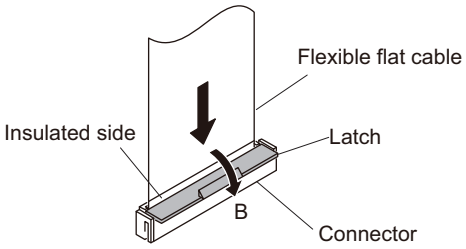
Type A

Disconnecting



1. Open the latch of the connector in the direction of arrow A to unlock.
2. Disconnect the flexible flat cable.

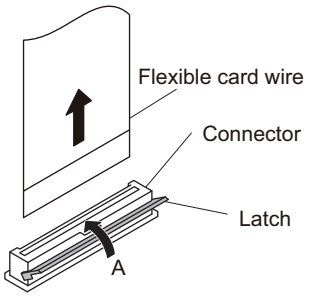
Connecting



1. Insert the flexible flat cable firmly as far as it will go with the insulating surface facing front.
2. Close the latch of the connector in the direction of arrow B to lock the flexible flat cable.

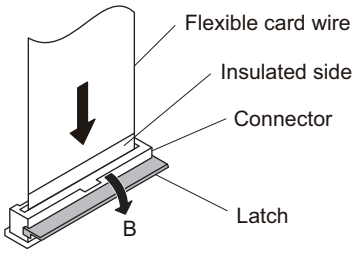
Type B

Disconnecting



1. Open the latch of the connector in the direction of arrow A to unlock.
2. Disconnect the flexible card wire.

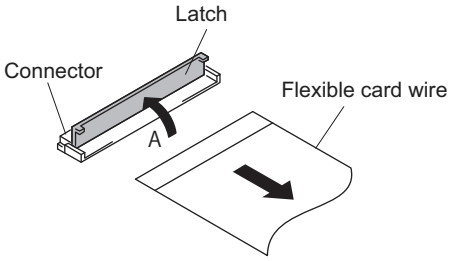
Connecting



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

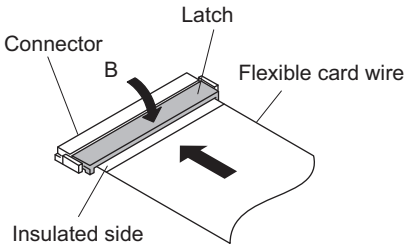
Type C

Disconnecting



1. Open the latch of the connector in the direction of arrow A to unlock.
2. Disconnect the flexible card wire.

Connecting



1. Insert the flexible card wire firmly as far as it will go with the insulated side up.
2. Close the latch of the connector in the direction of arrow B to lock the flexible card wire.

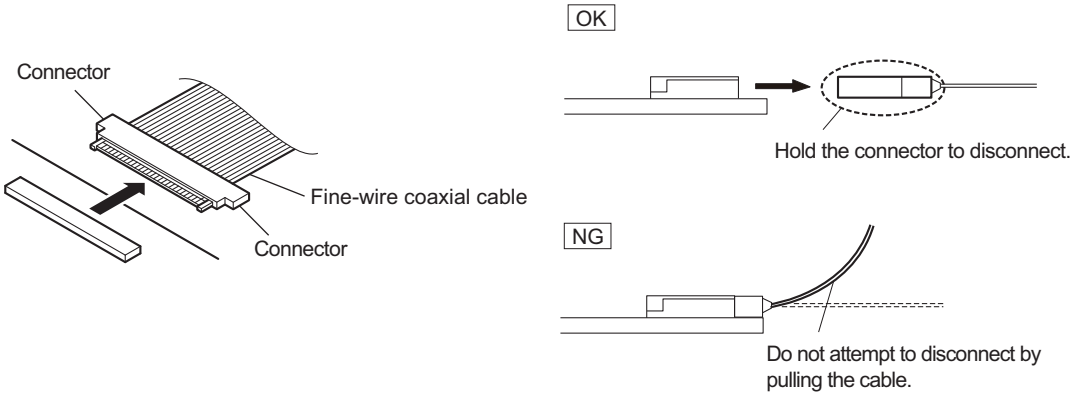
1-11-2. Disconnecting/Connecting Fine-Wire Coaxial Cable

Note

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

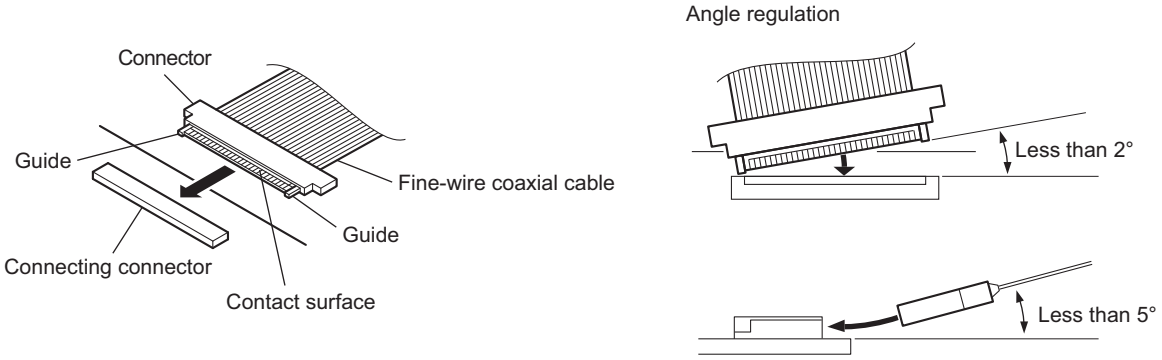
Type A

Disconnecting



1. Hold both sides of the fine-wire coaxial cable connector, and pull the connector straight to disconnect it.

Connecting



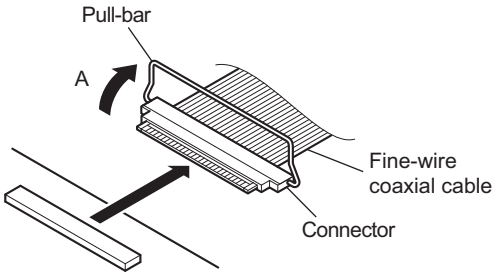
Note

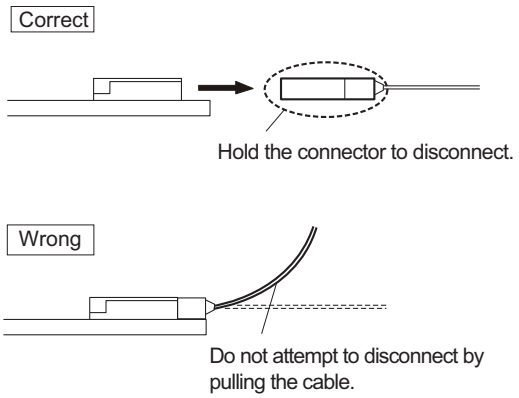
Insert the connector carefully so that the connector guides are not caught by the edge of the mating connector.

1. Hold both sides of the fine-wire coaxial cable connector with the contact surface facing up.
2. Insert the connector straight to meet the angle specified.

Type B

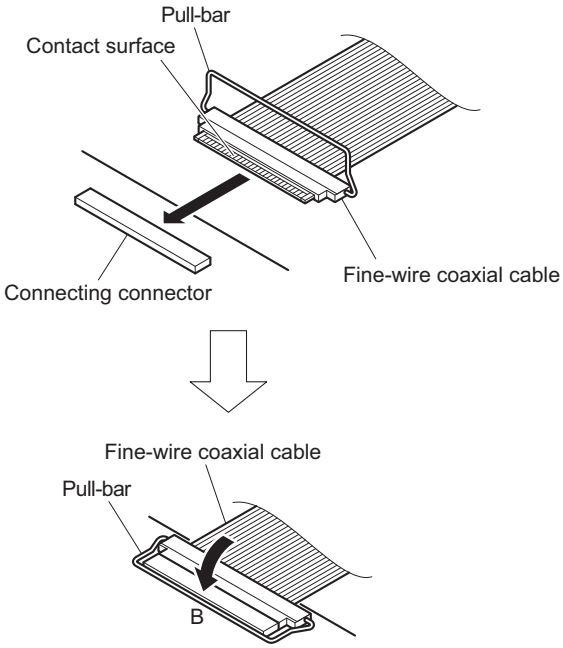
Disconnecting

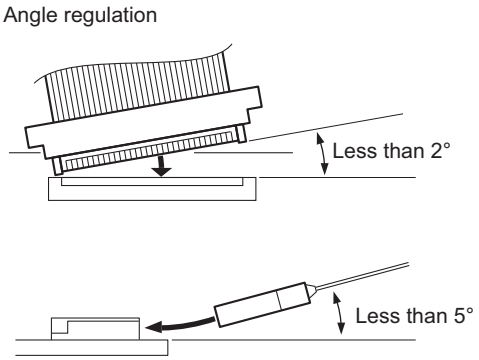




1. Raise the pull-bar in the direction of arrow A to unlock it.
2. Hold both sides of the fine-wire coaxial cable connector, and pull the connector straight to disconnect it.

Connecting





Note

Insert the connector carefully so that the connector guides are not caught by the edge of the mating connector.

1. Hold both sides of the fine-wire coaxial cable connector with the contact surface facing up.
2. Insert the connector straight to meet the angle specified.
3. Turn the pull-bar in the direction of arrow B and lock it.

1-12. Circuit Protective Devices

1-12-1. Fuse

WARNING

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

CAUTION

If fuse is replaced while the main power is kept on, this may cause electric shock.
Before replacing fuse, not only turn off the POWER switch but also remove the power cable that is connected to the Optical/electrical connector.

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

Board name	Ref. No.	Address	Name	Part No,
PS-899	F101	Side A	Fuse (10 A/250 V)	⚠ 1-576-395-51
NET-37	F0301	Side A	Fuse (8 A/125 V)	⚠ 1-576-328-21
	F0302	Side A	Fuse (8 A/125 V)	⚠ 1-576-328-21

1-12-2. 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	Ref. No.	Name	Part No.
PS-899	TH101	POWER THERMISTOR (10D2-18LCS)	⚠ 1-811-559-31
	TH102	POWER THERMISTOR (10D2-18LCS)	⚠ 1-811-559-31
RE-333	TH2001	THERMISTOR	⚠ 1-804-045-11
	TH2002	THERMISTOR	⚠ 1-804-045-11
	TH2003	THERMISTOR	⚠ 1-804-045-11
	TH3001	THERMISTOR (POSITIVE) (PTFM04BC222Q***S)	⚠ 1-811-824-11
VIF-60	TH001	THERMISTOR (POSITIVE)	⚠ 1-803-615-21
DVP-67	TH301	THERMISTOR (POSITIVE)	⚠ 1-805-726-11
	TH7002	THERMISTOR	⚠ 1-811-701-11

1-13. Lead-free Solder

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

 : LEAD FREE MARK

Note

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

1-14. Installing the CN-3847 Board

Use the CN-3847 board after it is replaced with the CN-3846 board (CN-3975 board).
CN-3847 board: A-2116-281-A

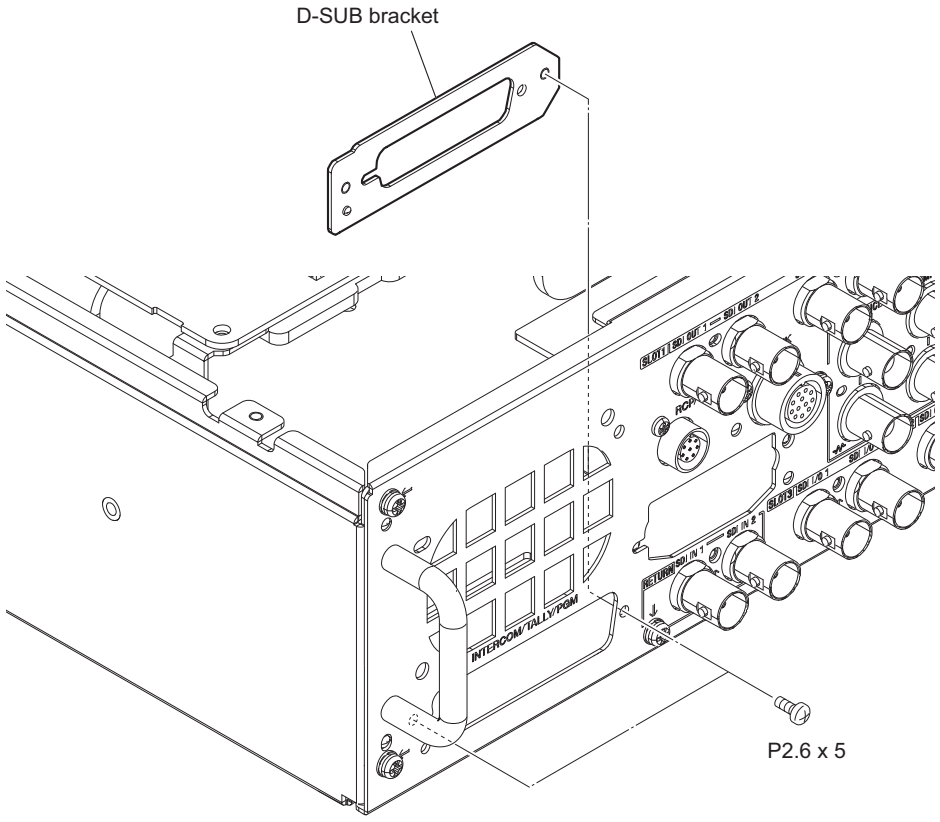
Tip

Accessories: Hexagonal screws (2), washers (2)

When installing the CN-3847 board, perform the following procedure.

Procedure

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DC fan assembly. (Refer to "2-5. DC Fan")
3. Remove the CN-3846 board (CN-3975 board). (Refer to "2-19. CN-3846 Board (CN-3975 Board)")
4. Remove the two screws, then remove the D-SUB bracket.



5. Install the CN-3847 board.
   (1) Attach the CN-3847 board in the direction of the arrow.
   (2) Attach the two washers, then attach the two hexagonal screws.

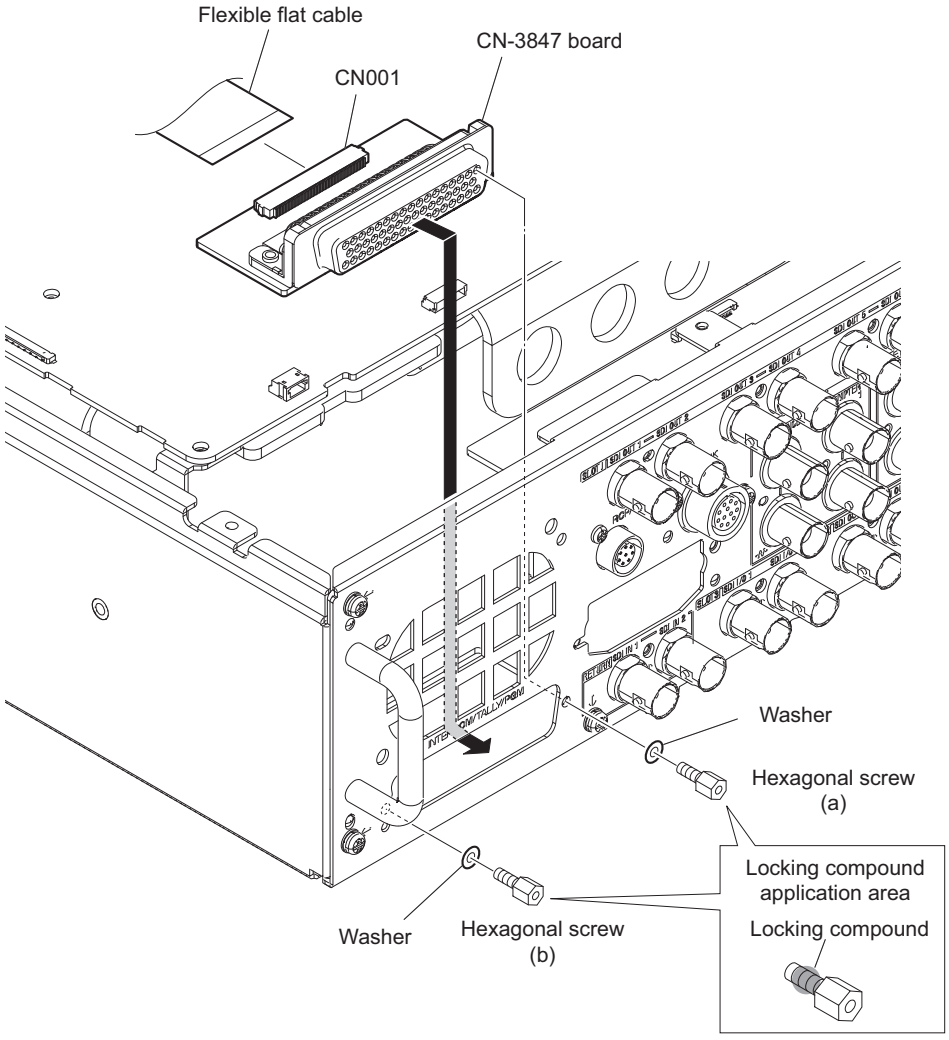
Note

When installing the hexagonal screws, apply locking compound to them.
Locking compound 1401B (7-600-002-52)

Note

When installing two hexagonal screws, temporarily tighten the hexagonal screw (a) and (b), and then secure them.

   (3) Connect the flexible flat cable to the connector (CN001) on the CN-3847 board.



6. Install the DC fan assembly. (Refer to "2-5. DC Fan")
7. Install the top cover. (Refer to "2-3. Top Cover")

Section 2
Replacement of Main Parts

2-1. Tightening Torque

Torque driver and screw tightening torque

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

Tightening Torque
M2.6: 0.53 ±0.07 N·m
M3: 0.8 ±0.12 N·m

Tip

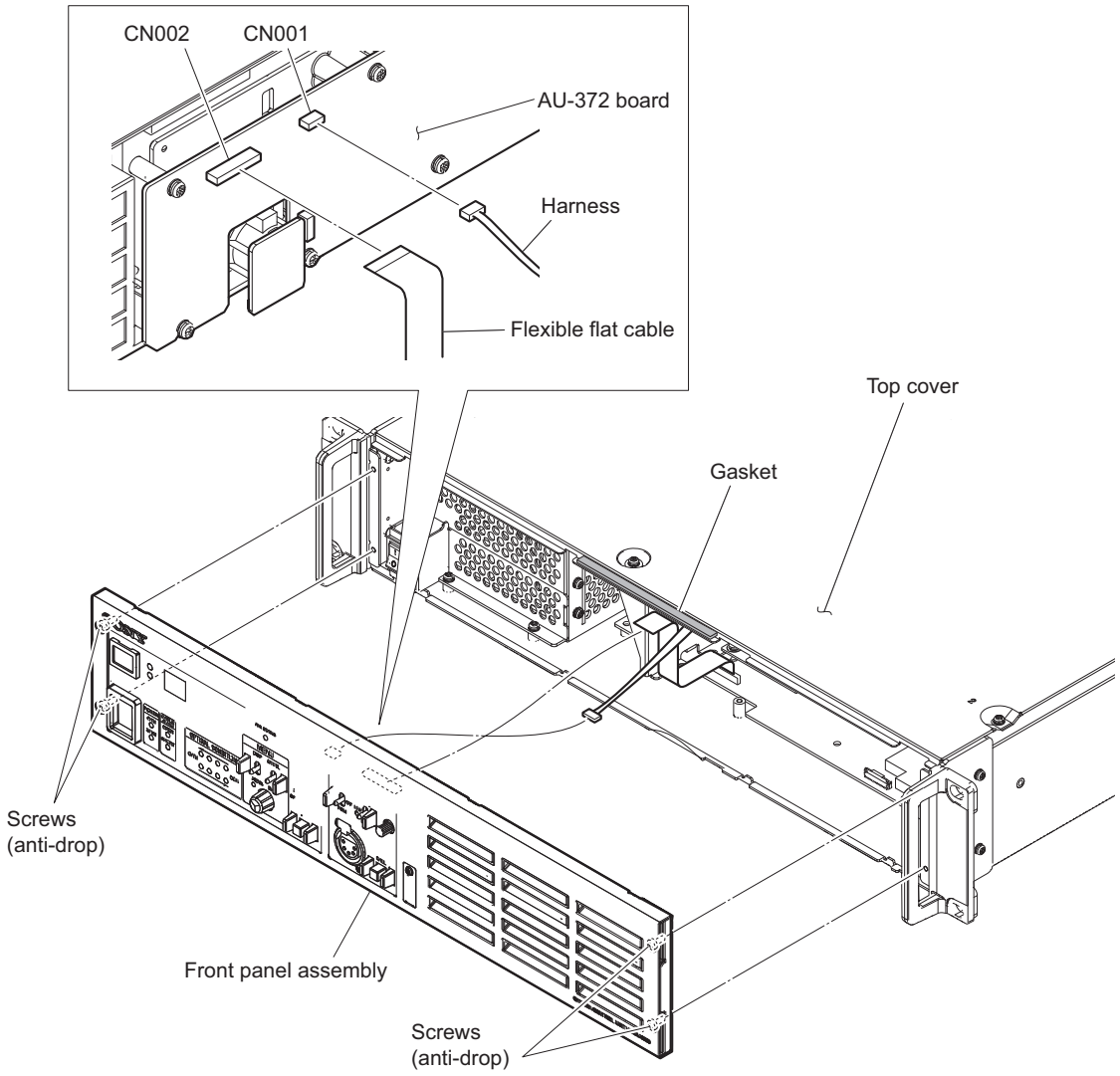
- When using the torque driver with the notation of cN· m, interpret it as follows.
  Example: 0.8 N· m = 80 cN· m
- Since small screws are used in the unit, they may fall into the unit when they are removed and installed. To prevent screws from falling, it is recommended that the bit of each torque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

2-2. Front Panel

2-2-1. Front Panel Assembly

Procedure

1. Loosen the four screws (anti-drop), then remove the front panel assembly.
2. Disconnect the flexible flat cable and harness from the two connectors (CN001, CN002) on the AU-372 board.



Note

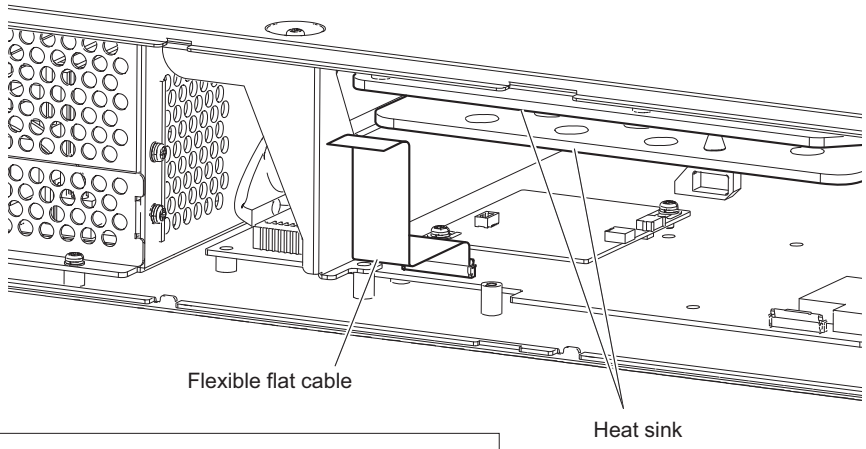
When installing the front panel assembly, note the following instructions.

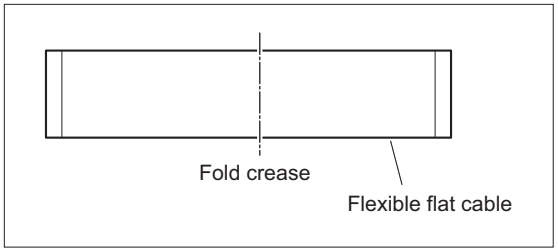
- Install the front panel assembly with the top cover attached.
- When installing the front panel assembly, the gasket on the top cover should be settled inside of the front panel.
- Be careful not to peel off the gasket.

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

Note

When the flexible flat cable has been replaced with a new one, make a fold crease at the center of the new flexible flat cable so that it does not contact the heat sink.





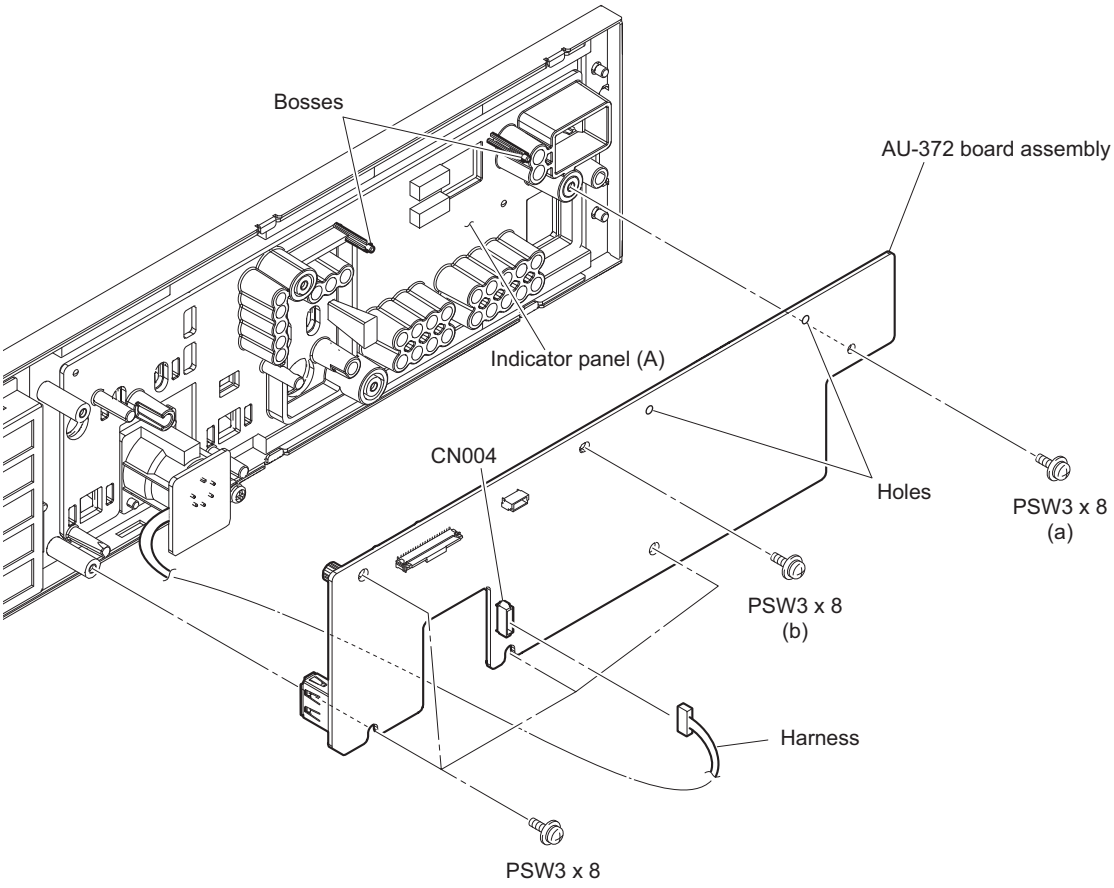
2-2-2. AU-372 Board, LE-410 Board

Preparation

1. Remove the front panel assembly. (Refer to "2-2-1. Front Panel Assembly")

Procedure

1. Remove the AU-372 board assembly.
   (1) Disconnect the harness from the connector (CN004) on the AU-372 board assembly.
   (2) Remove the six screws, then remove the AU-372 board assembly.

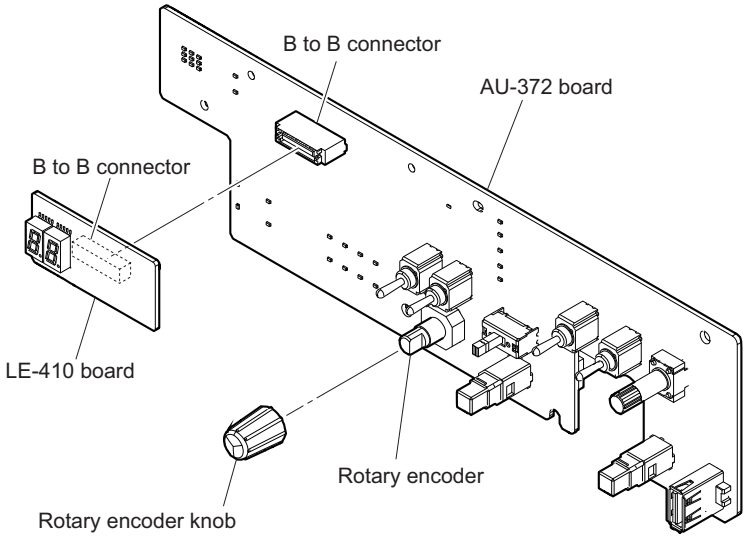


Note

When installing the AU-372 board assembly, note the following instructions.

- Confirm that the two bosses on the indicator panel (A) are inserted into the two holes in the AU-372 board assembly.
- Tighten the screws in the following sequence: (a), (b) and others.

2. Remove the parts from the AU-372 board.
   (1) Disconnect the LE-410 board from the AU-372 board.
   (2) Remove the rotary encoder knob from the rotary encoder.



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

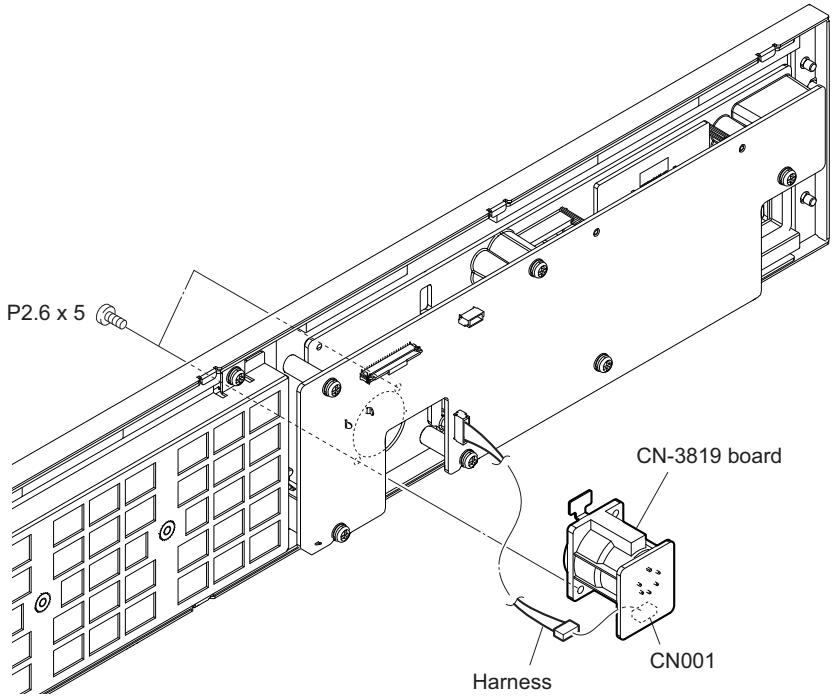
2-2-3. CN-3819 Board

Preparation

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

Procedure

1. Remove the two screws, then remove the CN-3819 board.
2. Disconnect the harness from the connector (CN001) on the CN-3819 board.



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

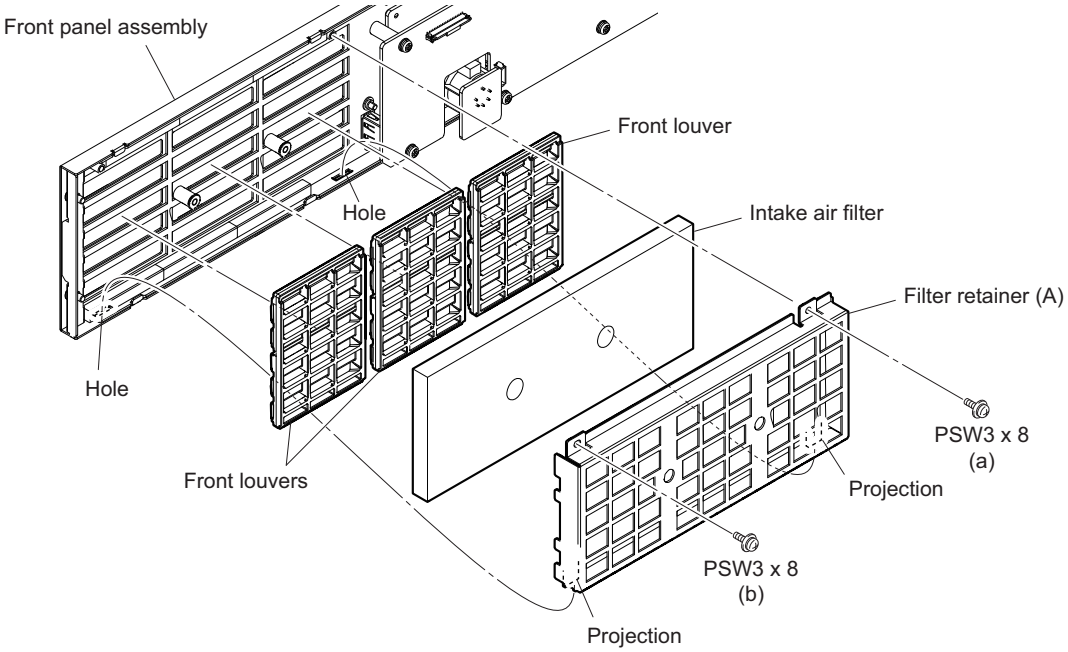
2-2-4. Front Louver

Preparation

1. Remove the front panel assembly. (Refer to "2-2-1. Front Panel Assembly")

Procedure

1. Remove the two screws and remove the two projections from the two holes, and then remove the filter retainer (A).
2. Remove the intake air filter.
3. Remove the three front louvers.



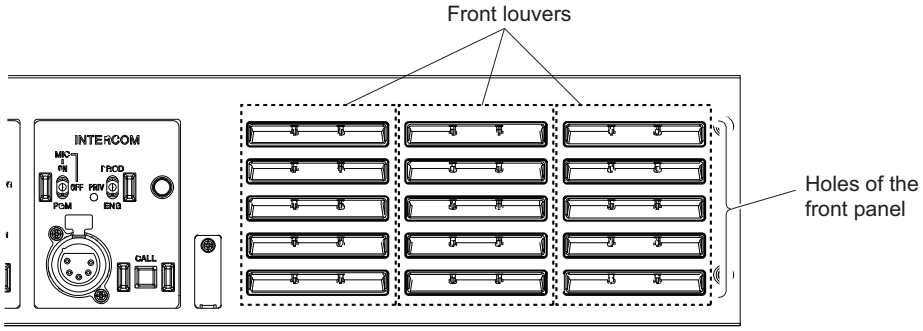
Note

When installing the filter retainer (A), note the following instructions.

- Insert the two projections to the two holes.
- Tighten the screws in the following sequence: (a), (b).

Note

When installing the front louvers, confirm that they are inserted into the holes in the front panel.



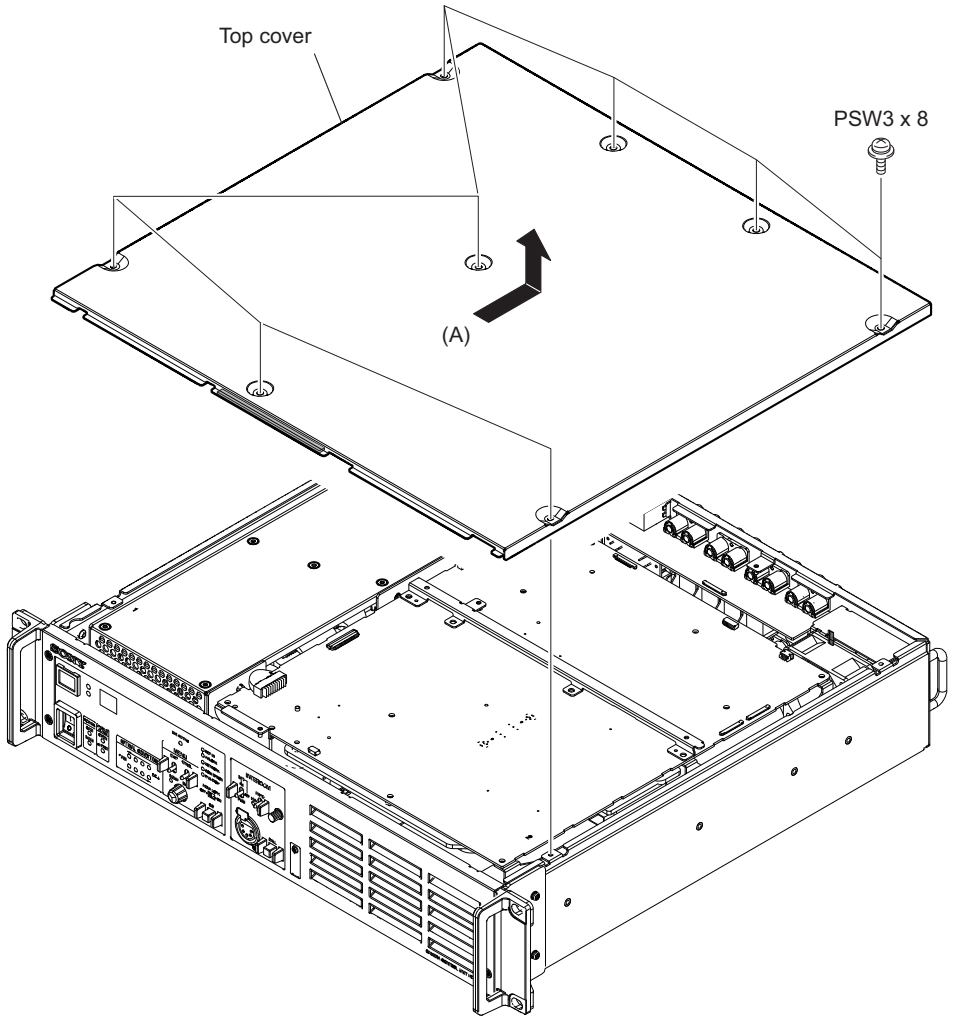
4. Install the removed parts by reversing the steps of removal.

2-3. Top Cover

2-3-1. Removal

Procedure

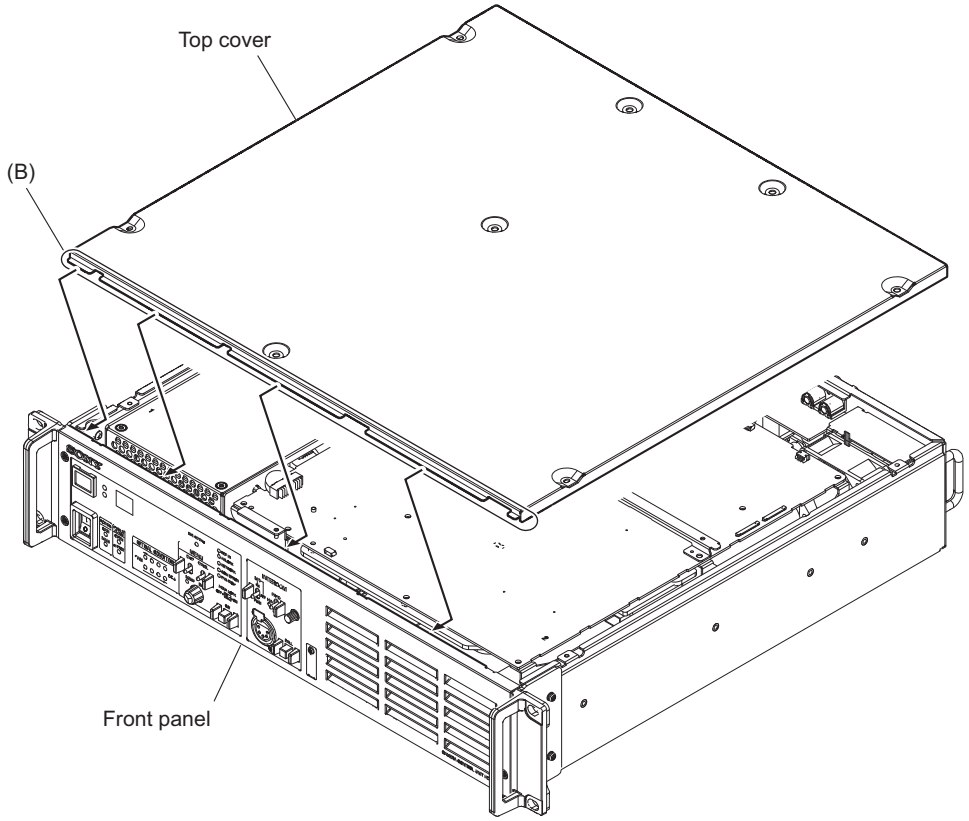
1. Remove the eight screws, then remove the top cover in the direction of the arrow (A).



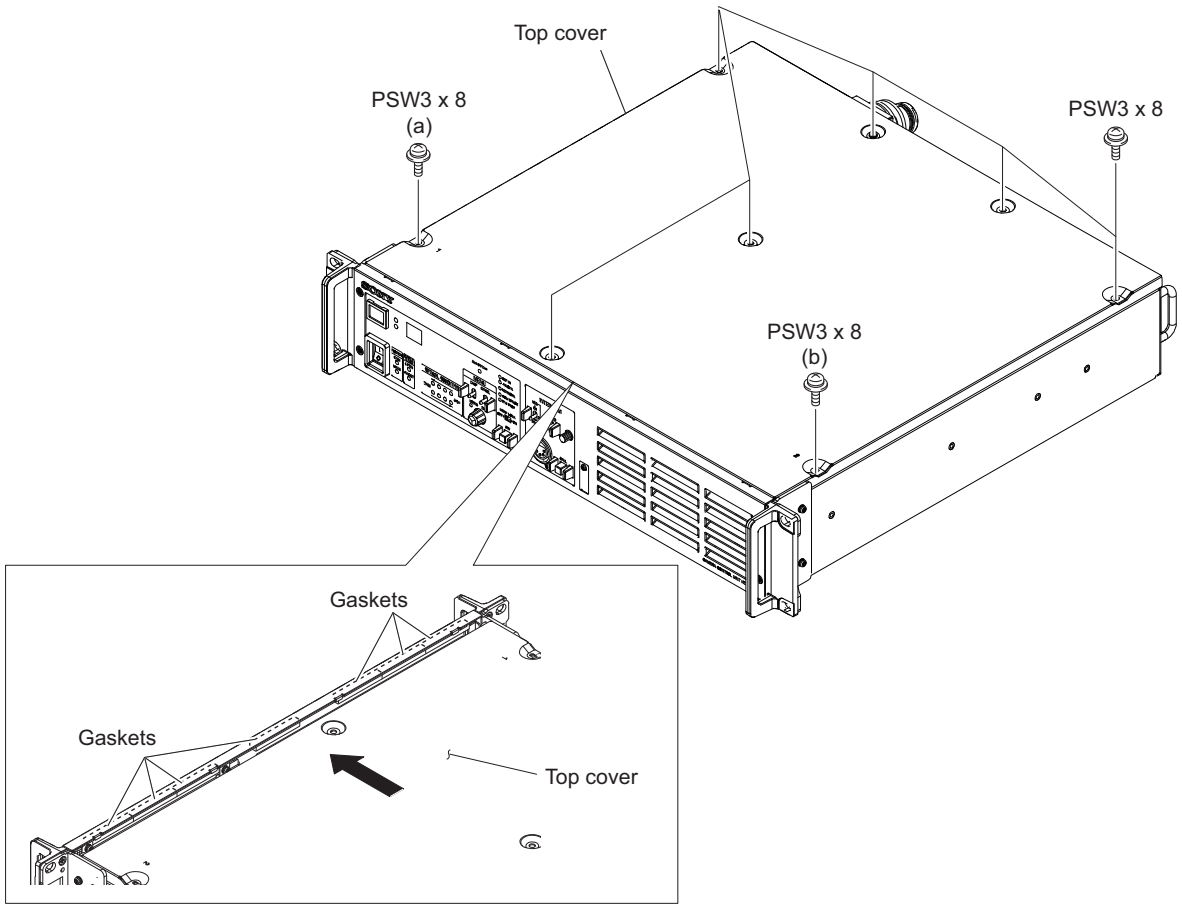
2-3-2. Installation

Procedure

1. Insert the portion (B) of the top cover to the inside of the front panel.



2. Push the top cover to the gaskets of the front panel assembly, tighten the screws in the following sequence: (a), (b) and others.



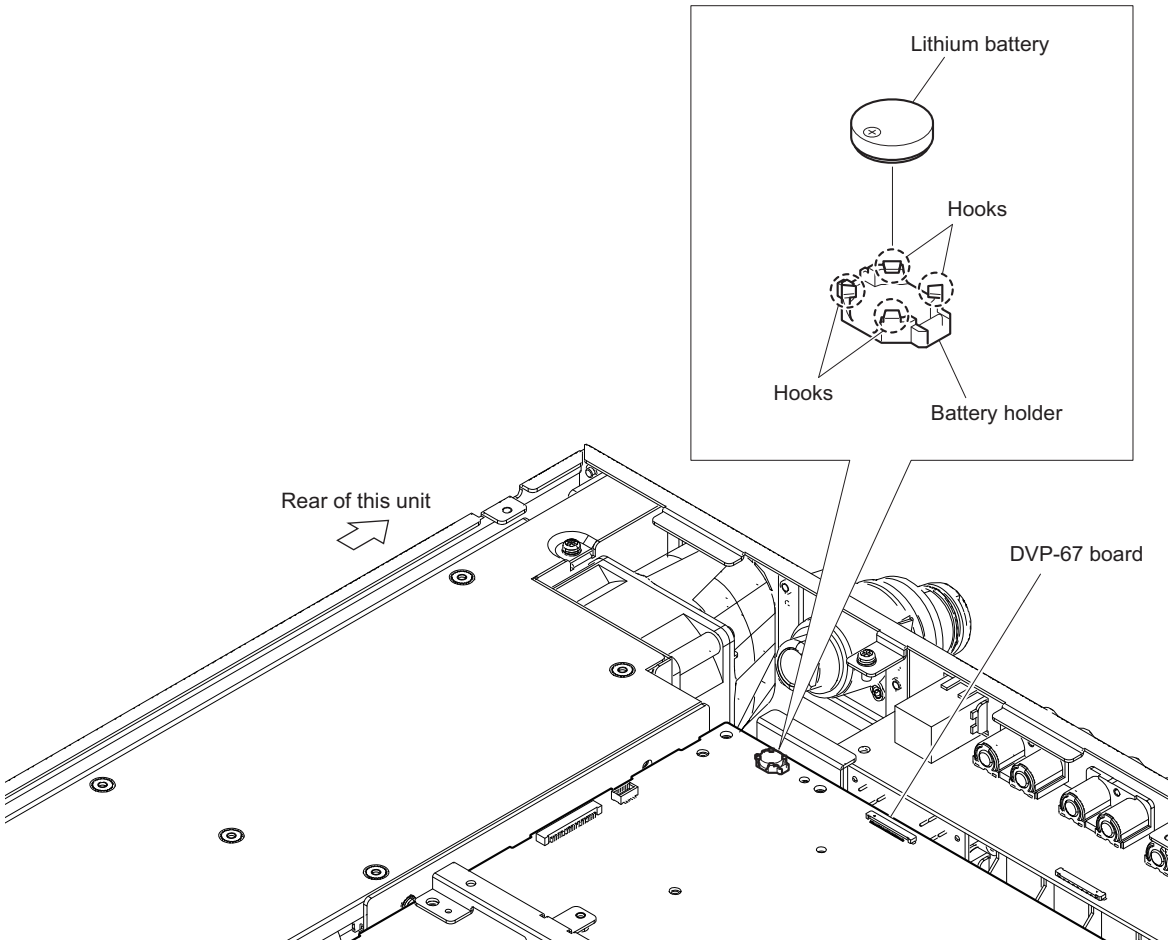
2-4. Lithium Battery

Preparation

1. Remove the top cover. (Refer to “2-3. Top Cover”)

Procedure

1. Remove the lithium battery from the four hooks of the battery holder.



Note

When installing the lithium battery, install it to the orientation shown in the figure.

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

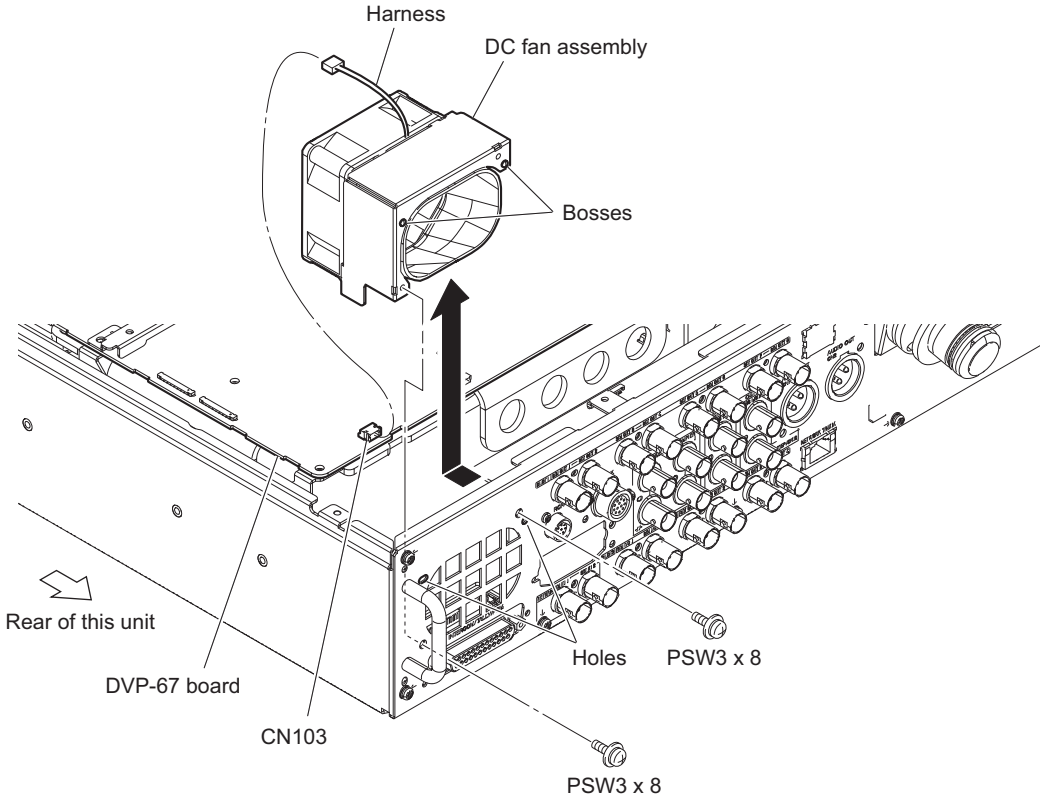
2-5. DC Fan

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")

Procedure

1. Remove the DC fan assembly.
   (1) Disconnect the harness from the connector (CN103) on the DVP-67 board.
   (2) Remove the two screws, then remove the DC fan assembly in the direction of the arrow.



Note

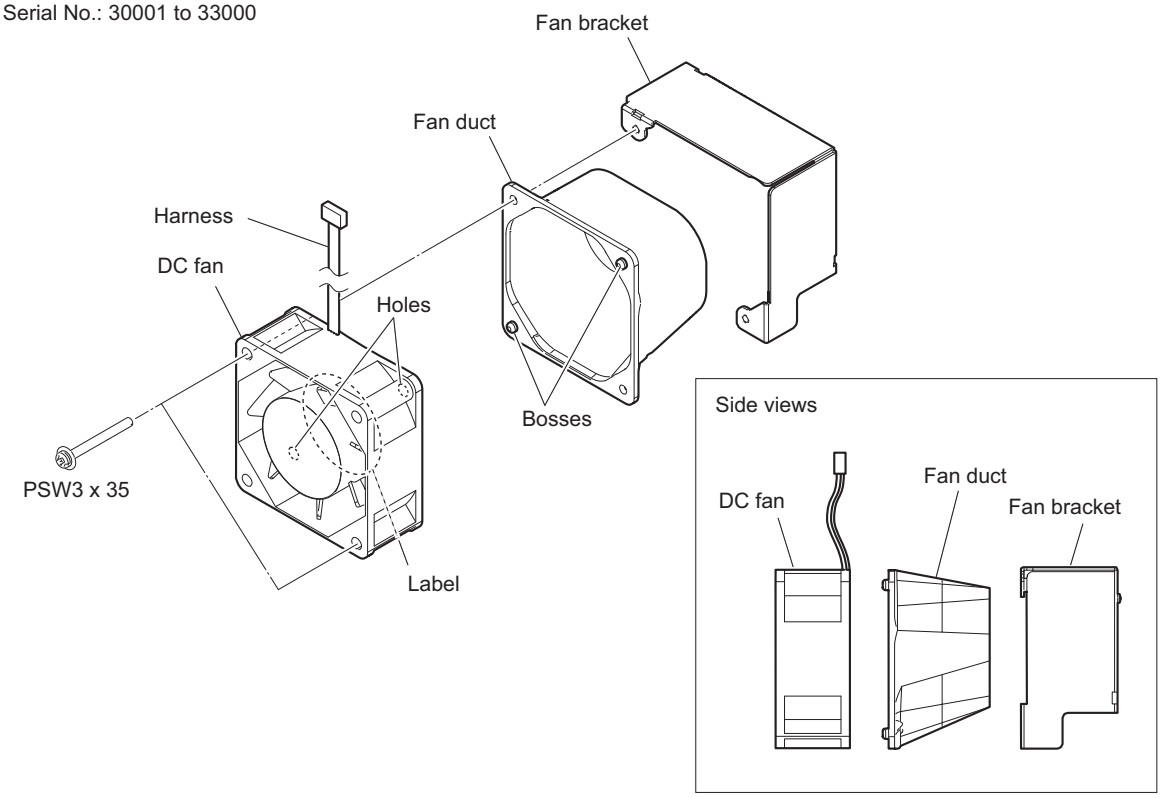
When attaching DC fan assembly, align the two bosses with the two holes.

2. Remove the two screws, then remove the fan duct and fan bracket from the DC fan.

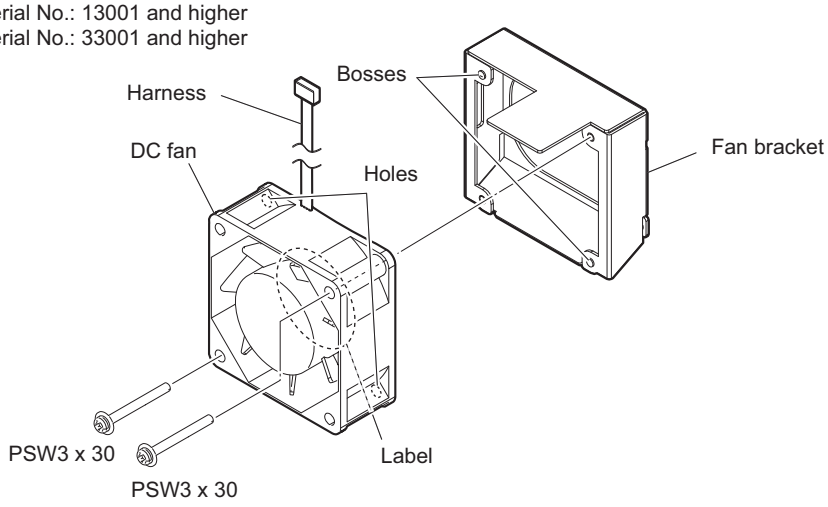
Tip

For serial numbers 13001 (and higher) and 33001 (and higher) of the unit, no fan duct is provided.

Serial No.: 10001 to 13000
Serial No.: 30001 to 33000



Serial No.: 13001 and higher
Serial No.: 33001 and higher



Note

When installing the DC fan, note the following instructions.

- Be careful to the position of label side and harness.
- Be careful to the direction of the fan duct shown in the figure. (Refer to the side views.) [Serial No.: 10001 to 13000, Serial No.: 30001 to 33000]
- Align the two bosses of the fan duct with the two holes of the DC fan. [Serial No.: 10001 to 13000, Serial No.: 30001 to 33000]

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

2-6. Power Block

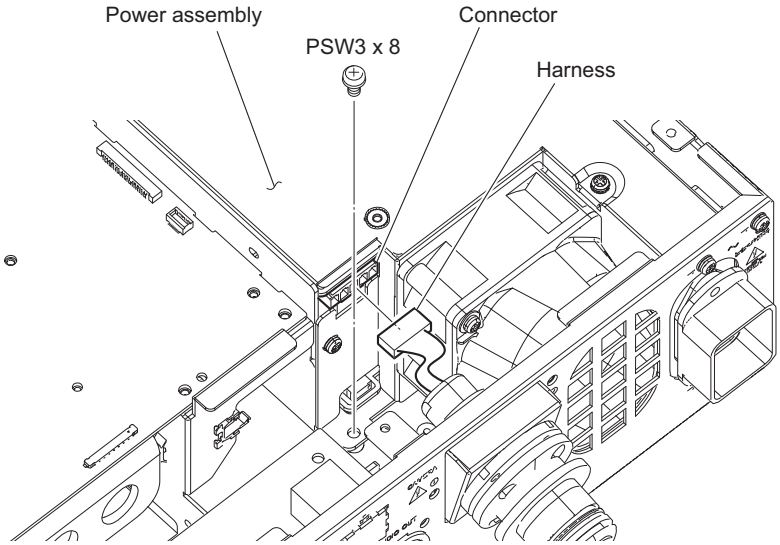
2-6-1. Power Assembly

Preparation

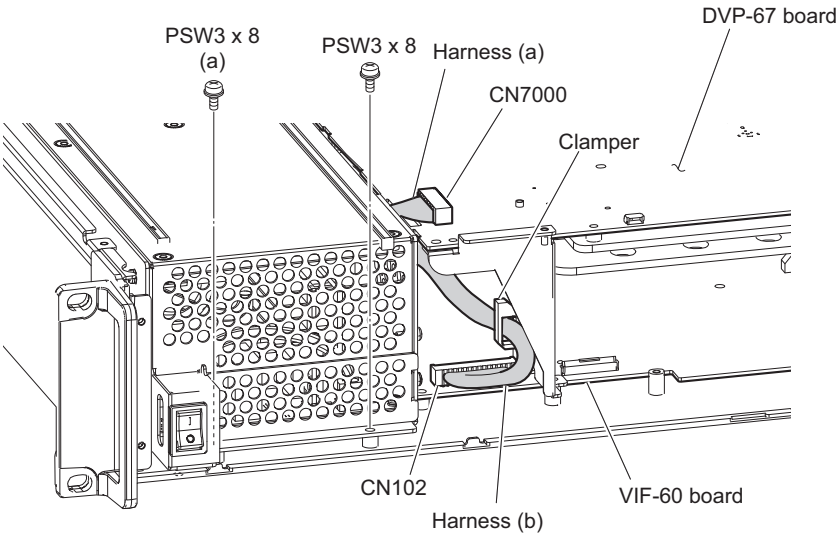
1. Remove the front panel assembly. (Refer to “2-2-1. Front Panel Assembly”)
2. Remove the top cover. (Refer to“2-3. Top Cover”)

Procedure

1. Disconnect the harness from the connector of the power assembly, and remove the screw.



2. Disconnect the harnesses, and remove the screws.
   (1) Disconnect the harness (a) from the connector (CN7000) on the DVP-67 board.
   (2) Disconnect the harness (b) from the connector (CN102) on the VIF-60 board, and release the harness from the clamper.
   (3) Remove the two screws.



Note

When installing, note the following instructions.

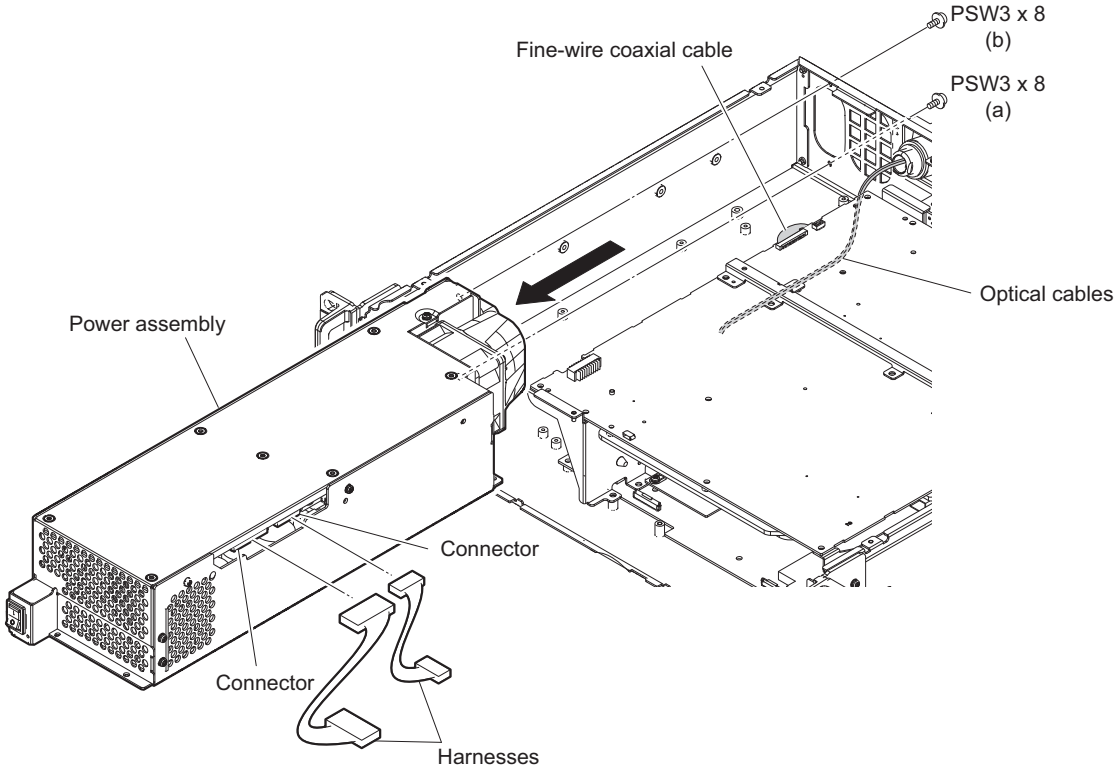
- When installing the three screws removed in steps 1 and 2, tighten the two screws removed in step 3, tighten the screws in the following sequence: (a), (b) and others.
- Connect the harness (a) to the connector, and then push the harness into the space under the DPR-67 board.
- Connect the harness (b) to the connector, push the redundant part of the harness to the rear side of the unit, and then clamp the harness with a clamper.

3. Remove the power assembly.
   (1) Remove the two screws, then remove the power assembly in the direction of the arrow.

   Note

   When removing the power assembly, be careful not to break the fine-wire coaxial cable and optical cables.

   (2) Disconnect the two harnesses from the two connectors of the power assembly.



   Note

   When installing two screws, press the top surface of the power supply assembly, tighten the screws in the following sequence: (a), (b).

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

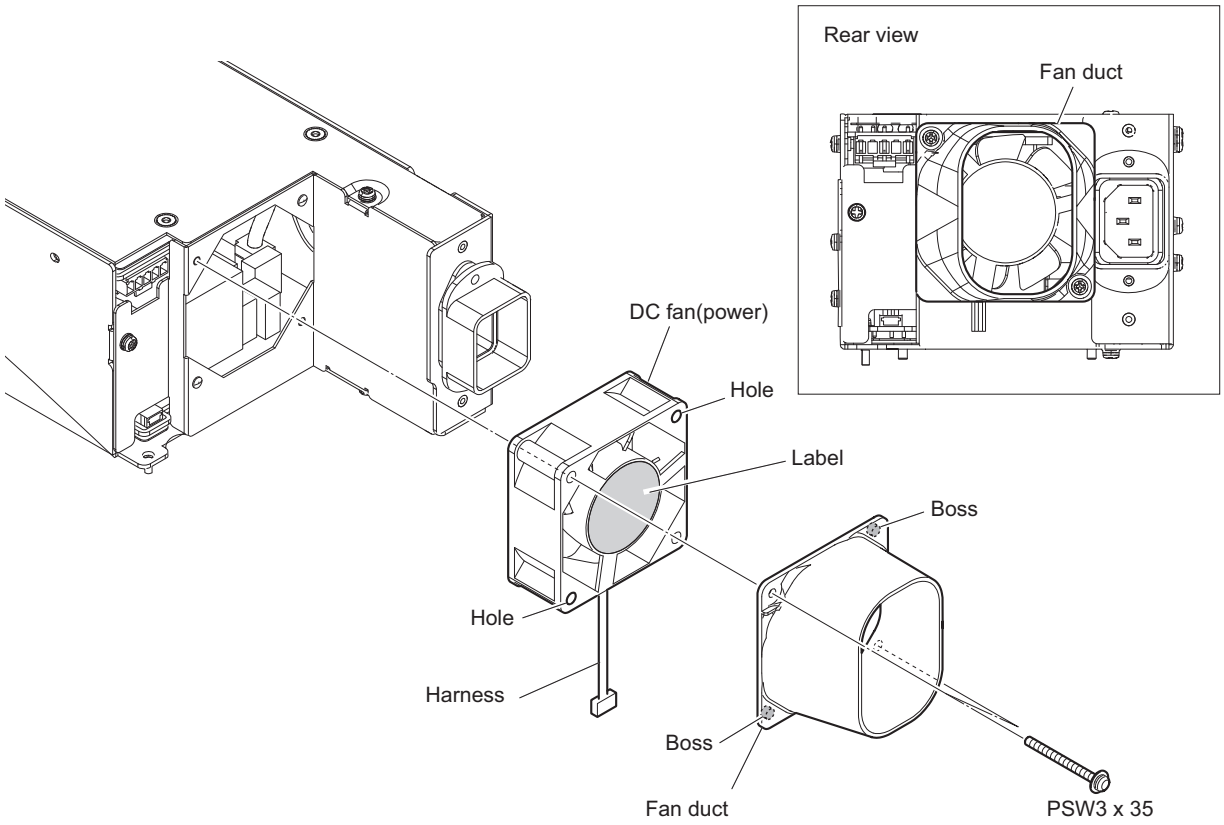
2-6-2. DC Fan (Power)

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the power assembly. (Refer to "2-6-1. Power Assembly")

Procedure

1. Remove the two screws, then remove the fan duct and DC fan (power).



Note

When installing the DC fan (power), note the following instructions.

- Be careful to the positions of label side and harness of the DC fan (power).
- Be careful to the direction of the fan duct as shown in the figure. (Refer to the rear view.)
- Align the two bosses of the fan duct with the two holes of the DC fan.

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

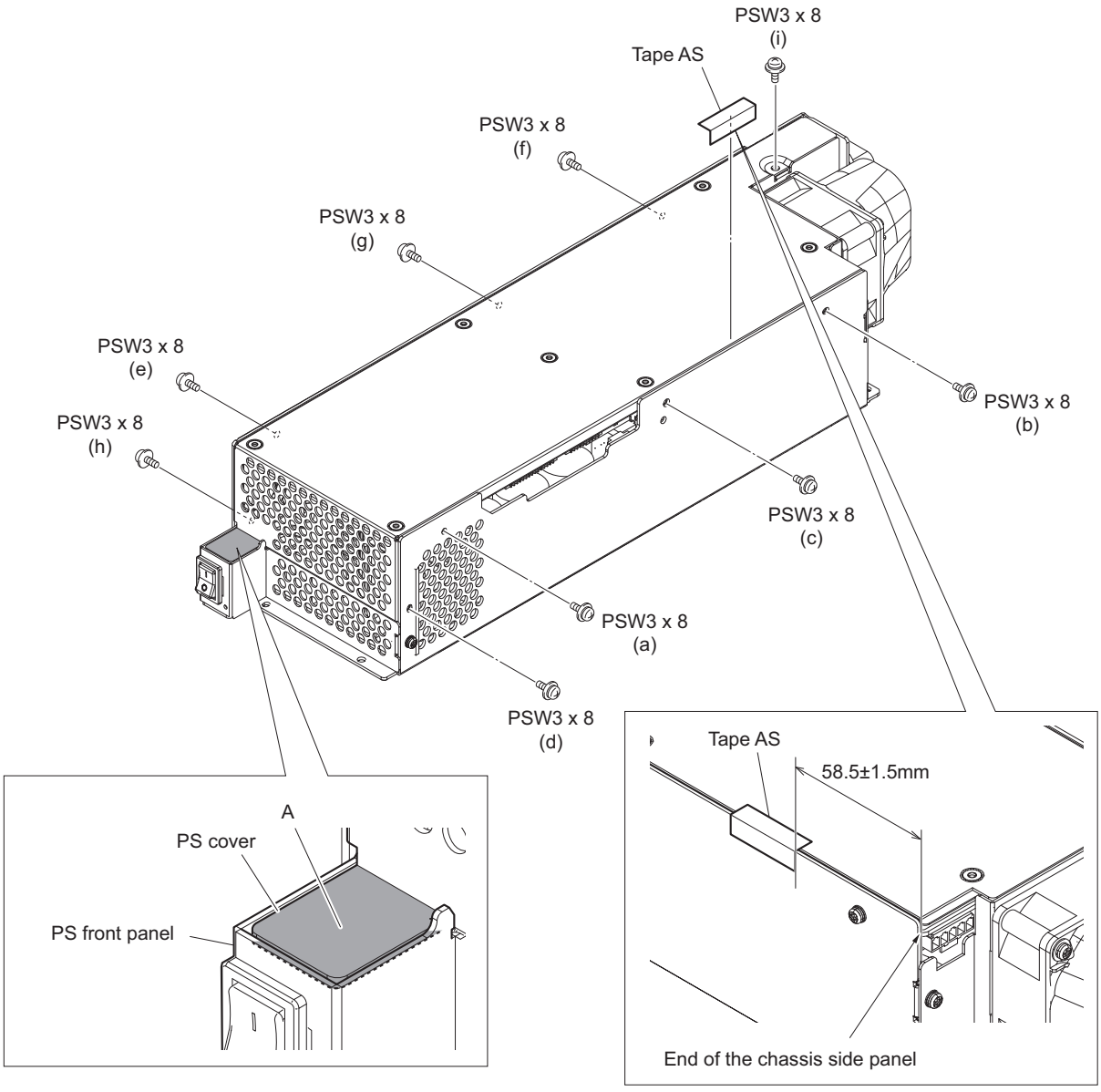
2-6-3. RE-333 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the power assembly. (Refer to "2-6-1. Power Assembly")

Procedure

1. Peel off the tape AS, then remove the nine screws.



Note

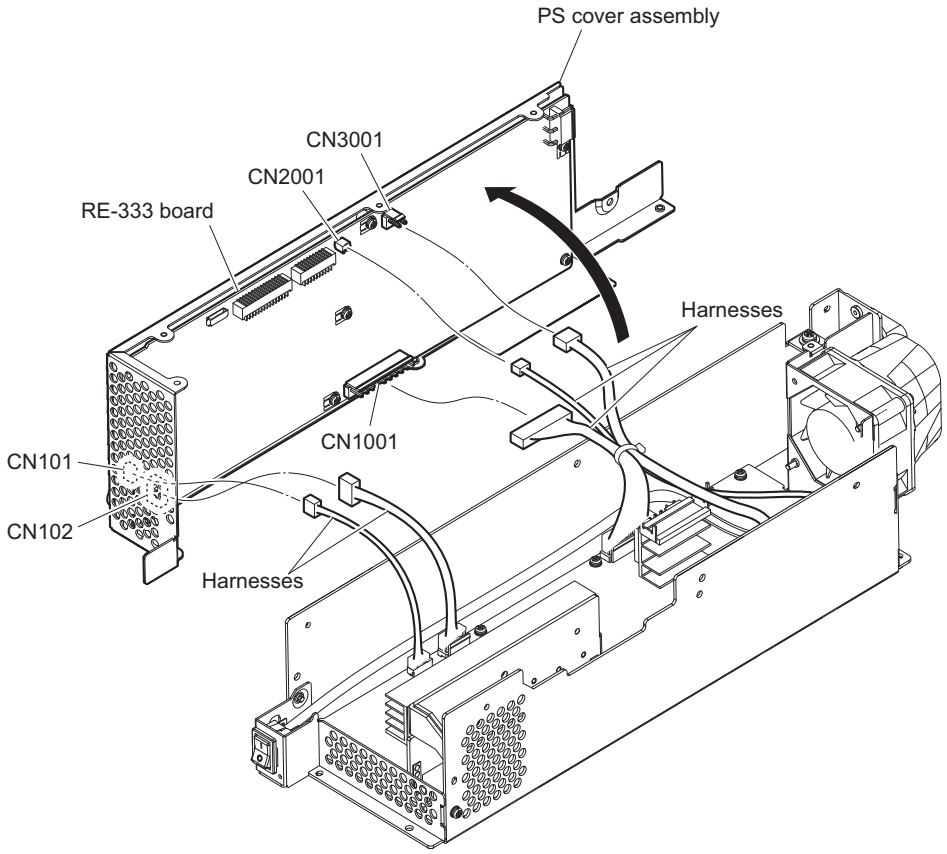
When installing the screws, note the following instructions.

- Check that the portion A of the PS cover is not on the PS front panel.
- Tighten the screws in the following sequence: (a), (b), (c), (d), (e), (f), (g), (h), (i).

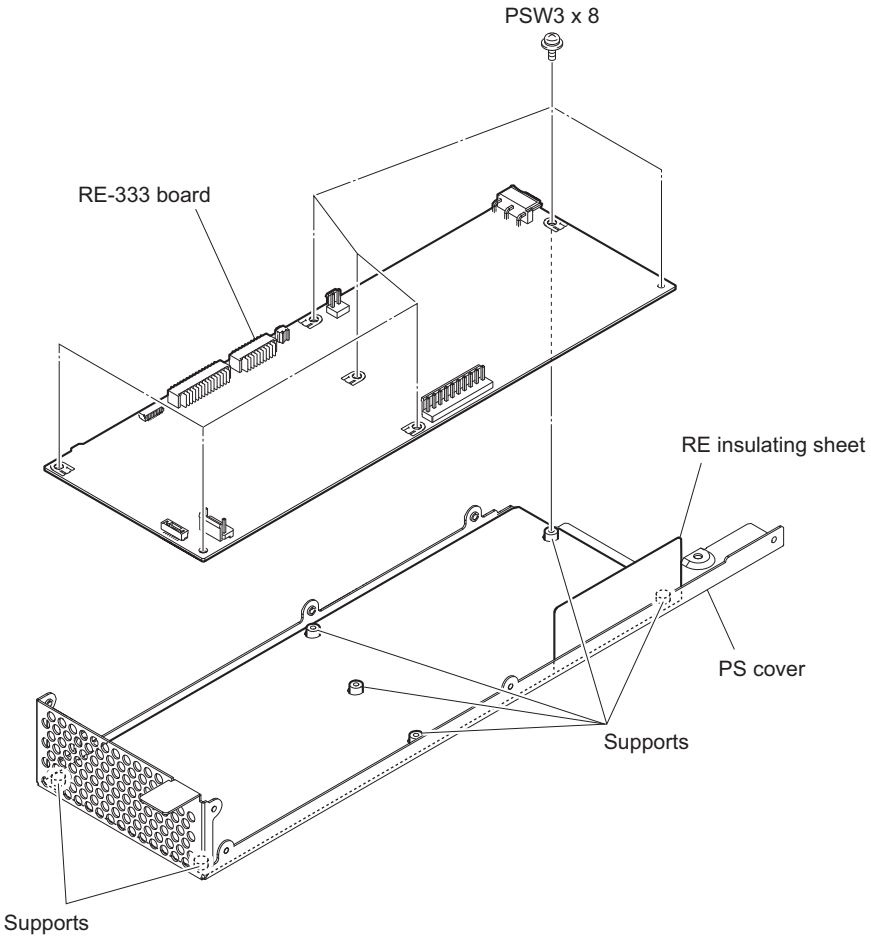
Note

When sticking tape AS, fold it at its center as shown above and stick it at a distance of 58.5 ±1.5 mm from the end of the chassis side panel.

2. Remove the PS cover assembly.
   (1) Raise the PS cover assembly in the direction of the arrow.
   (2) Disconnect the five harnesses from the connectors (CN101, CN102, CN1001, CN2001, CN3001) on the RE-333 board.



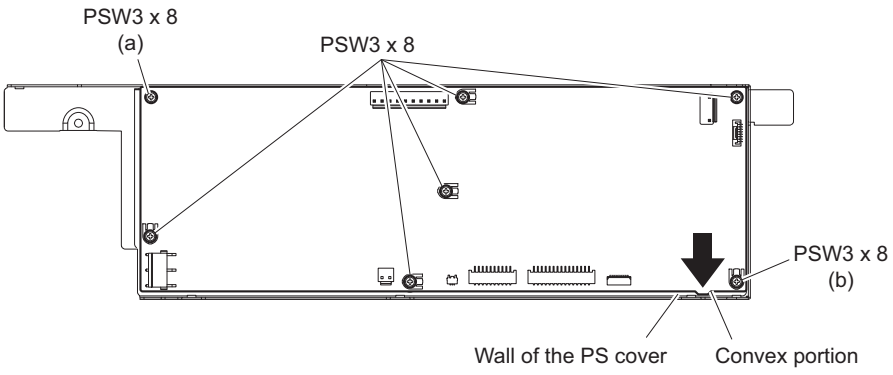
3. Remove the seven screws, then remove the RE-333 board.



Note

When installing the RE-333 board, note the following instructions.

- Check that the RE insulating sheet is not on any support of the PS cover.
- Push the convex portion of the RE-333 board to the wall of the PS cover, and tighten the screws in the following sequence: (a), (b) and others. (Refer to the figure below.)



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

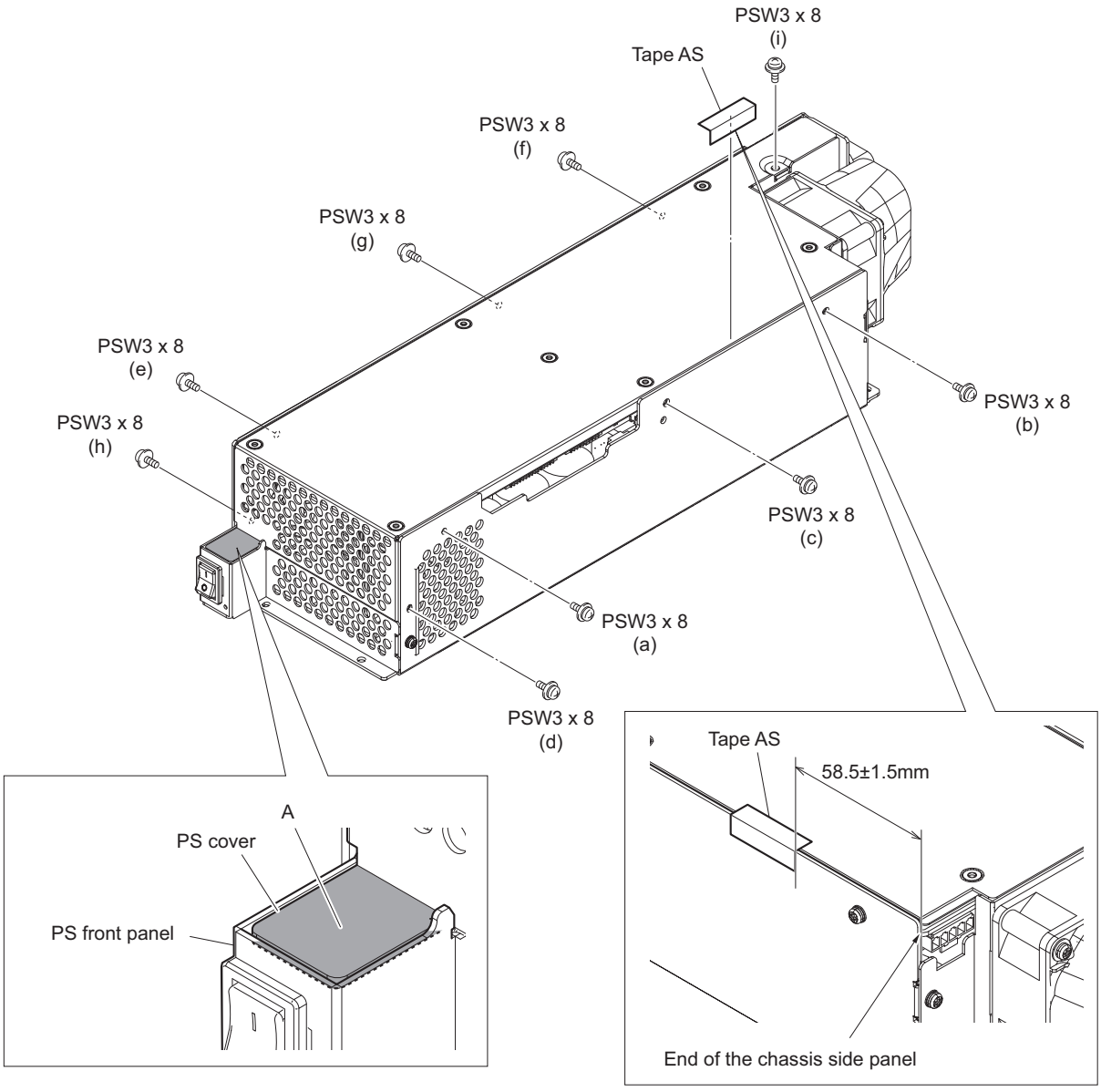
2-6-4. PS-899 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the power assembly. (Refer to "2-6-1. Power Assembly")

Procedure

1. Peel off the tape AS, and remove the nine screws.



Note

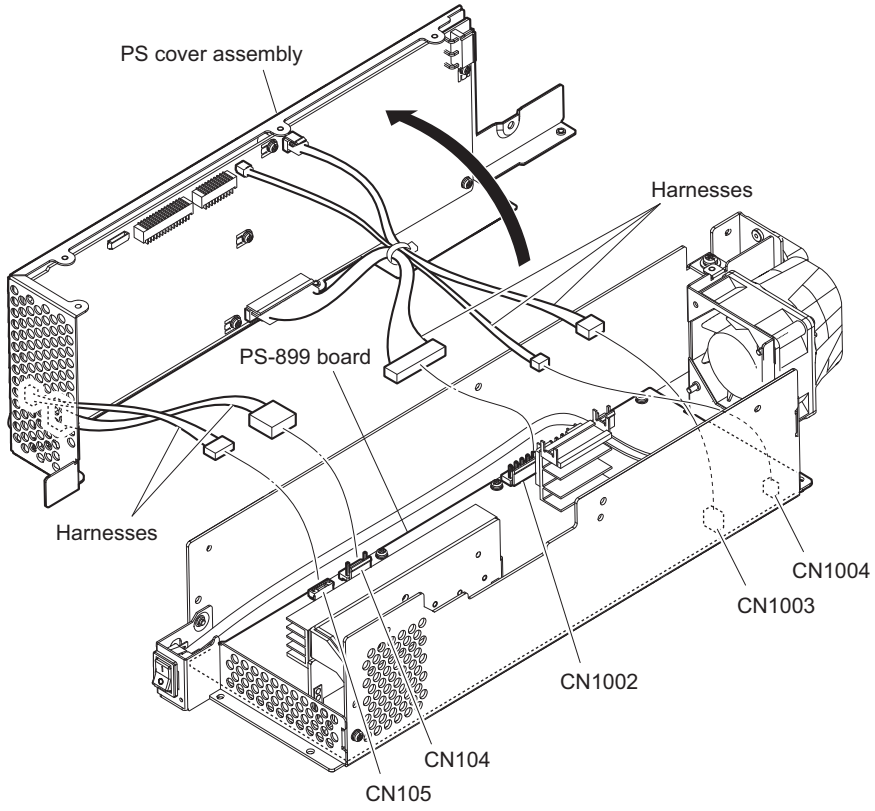
When installing the screws, note the following instructions.

- Check that the portion A of the PS cover is not on the PS front panel.
- Tighten the screws in the following sequence: (a), (b), (c), (d), (e), (f), (g), (h), (i).

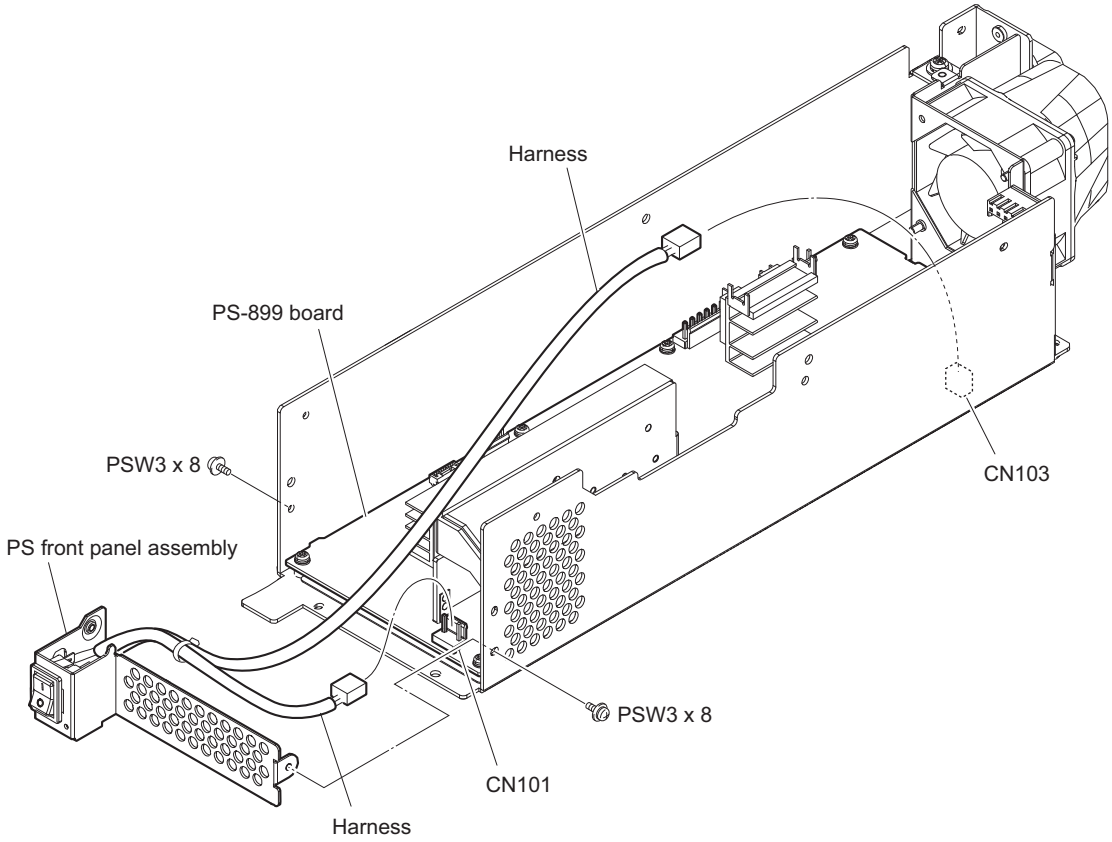
Note

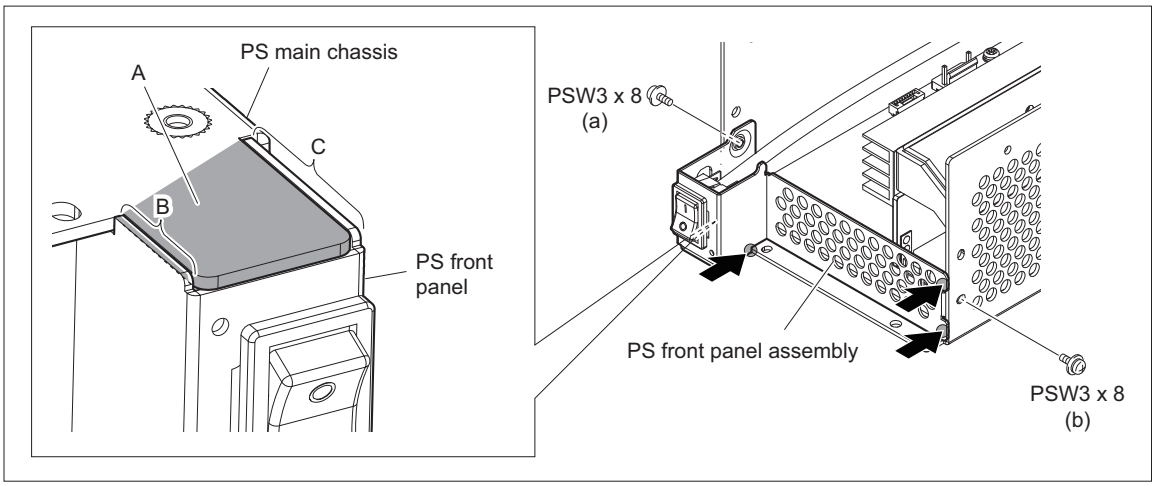
When sticking tape AS, fold it at its center as shown above and stick it at a distance of 58.5 ±1.5 mm from the end of the chassis side panel.

2. Remove the PS cover assembly.
   (1) Raise the PS cover assembly in the direction of the arrow.
   (2) Disconnect the five harnesses from the connectors (CN104, CN105, CN1002, CN1003, CN1004) on the PS-899 board.



3. Remove the PS front panel assembly.
   (1) Remove the two screws, then draw the PS front panel assembly.
   (2) Disconnect the two harnesses from the two connectors (CN101, CN103) on the PS-899 board.



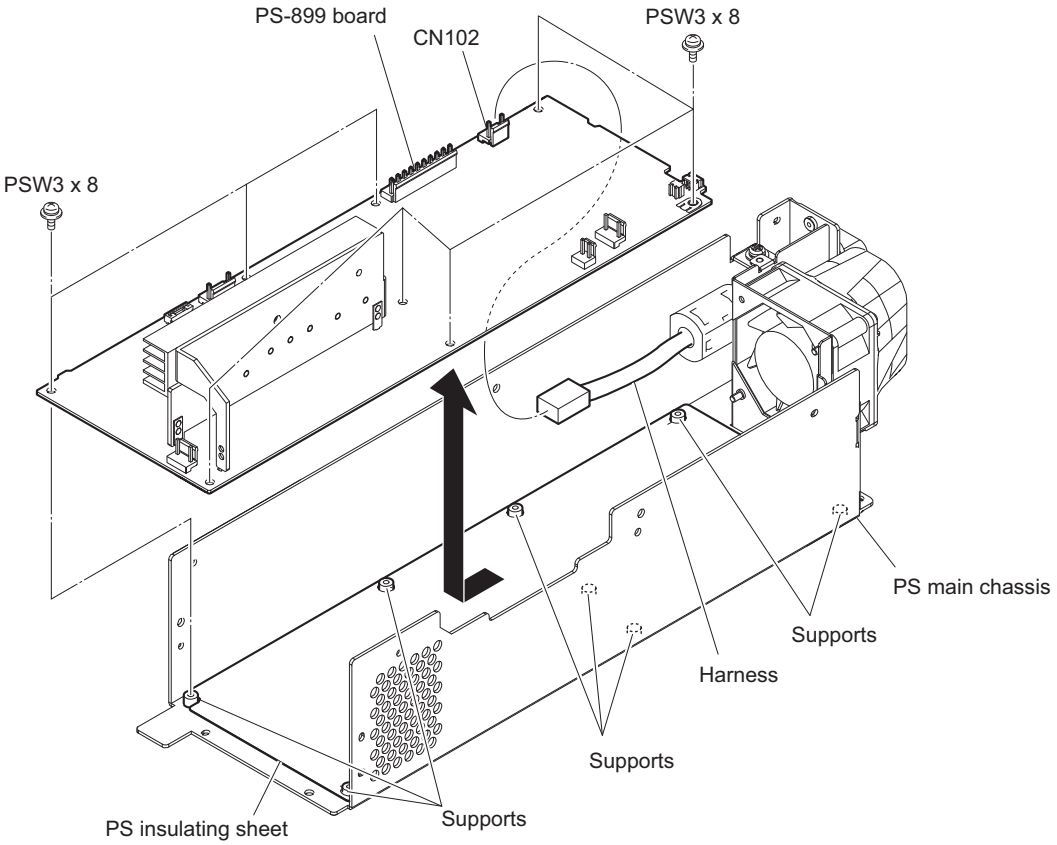


Note

When installing the PS front panel assembly, note the following instructions.

- Check that portion A of the PS main chassis is sandwiched between portion B and C of the PS front panel.
- Push the three portions of the PS front panel assembly in the direction of arrow, and tighten the screws in the following sequence: (a), (b).

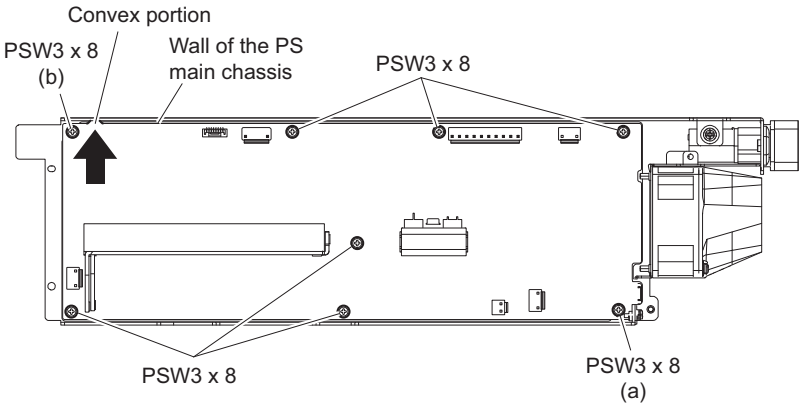
4. Remove the PS-899 board.
   (1) Disconnect the harness from the connector (CN102) on the PS-899 board.
   (2) Remove the eight screws, then remove the PS-899 board in the direction of the arrow.



Note

When installing the PS-899 board, note the following instructions.

- Check that the PS insulating sheet is not on any support of the PS main chassis.
- Push the convex portion of the PS-899 board to the wall of the PS main chassis, and tighten the screws in the following sequence: (a), (b) and others. (Refer to the figure below.)



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

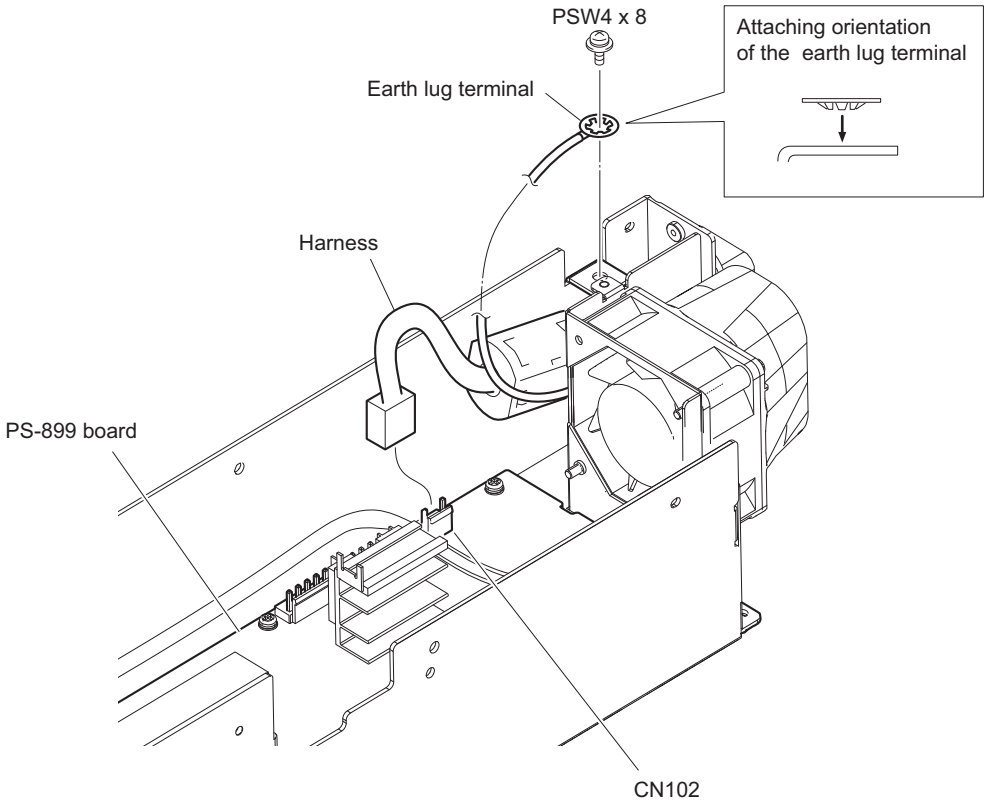
2-6-5. AC Inlet

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the power assembly. (Refer to "2-6-1. Power Assembly")
3. Remove the PS cover assembly. (Refer to "2-6-4. PS-899 Board")

Procedure

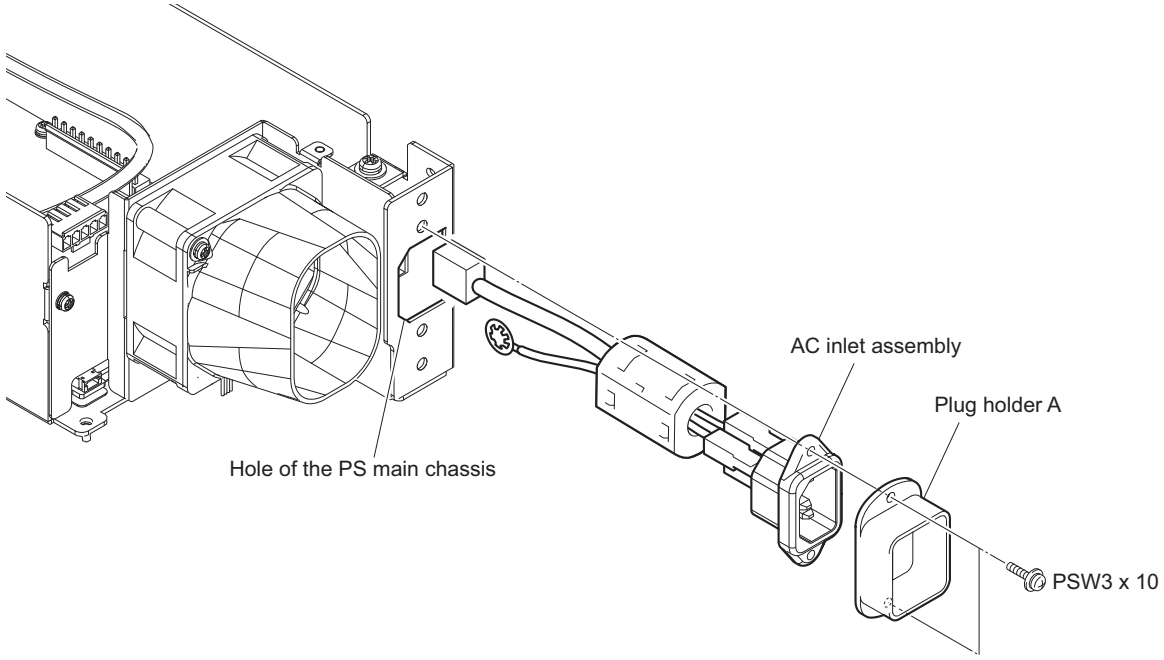
1. Remove the harness.
   (1) Disconnect the harness from the connector (CN102) on the PS-899 board.
   (2) Remove the screw, then remove the earth lug terminal.



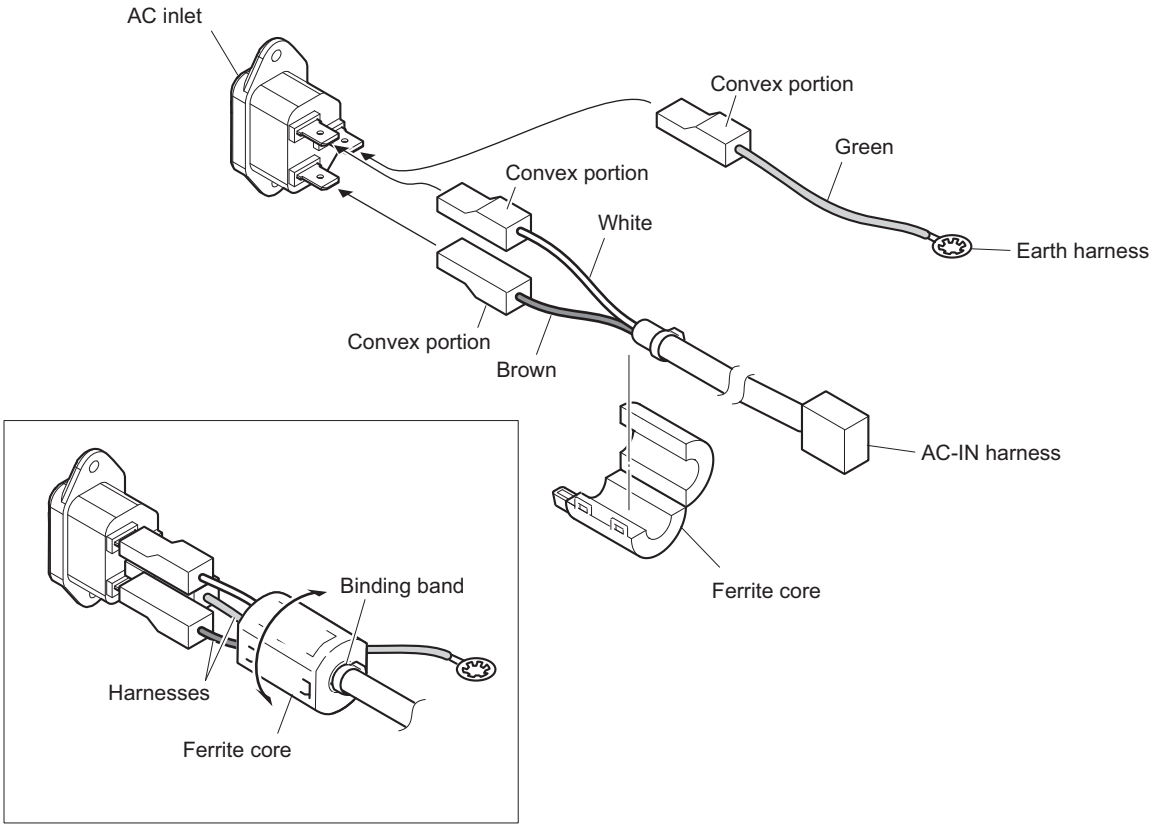
Note

Carefully attach the earth lug terminal in the correct orientation.

2. Remove the AC inlet assembly.
   (1) Remove the two screws, then remove the plug holder A.
   (2) Pull the AC inlet assembly from the hole of the PS main chassis.



3. Remove the AC inlet.
   (1) Remove the ferrite core from the AC-IN harness.
   (2) Remove the AC-IN harness and the earth harness from the AC inlet.



Note

When installing the harnesses to the AC inlet, note the following instructions.

- Insert the three connectors of the harnesses into the terminals of the AC inlet in correct cable colors and orientation of convex as shown above.
- Insert the connectors of harnesses until the lock.

Note

When installing the ferrite core, note the following instructions.

- Attach the ferrite core in contact with the binding band on side where the harness is exposed.
- After the ferrite core has been attached, check whether it rotates.

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

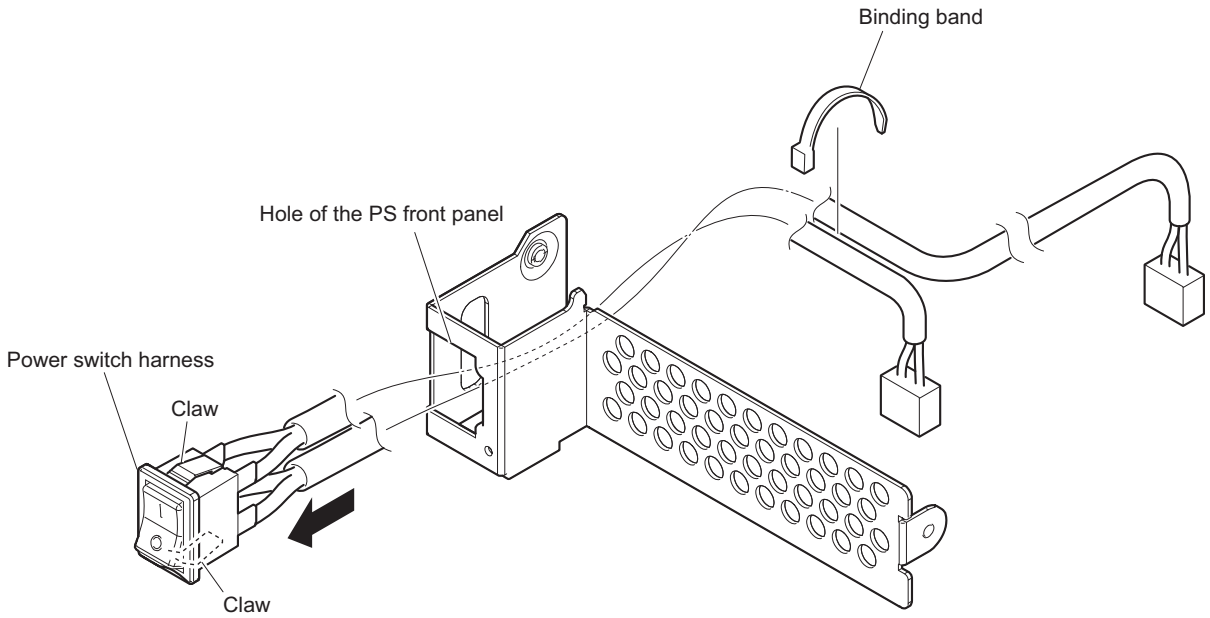
2-6-6. Power Switch Harness

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the power assembly. (Refer to "2-6-1. Power Assembly")
3. Remove the PS cover assembly and the PS front panel assembly. (Refer to "2-6-4. PS-899 Board")

Procedure

1. Remove the binding band.
2. Release the two claws, then pull the power switch harness from the hole of the PS front panel.



Note

Carefully attach the switch part to the hole of the PS front panel in the correct top and bottom orientation of the switch part as shown above.

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

2-7. DVP Block

2-7-1. DVP Assembly

Preparation

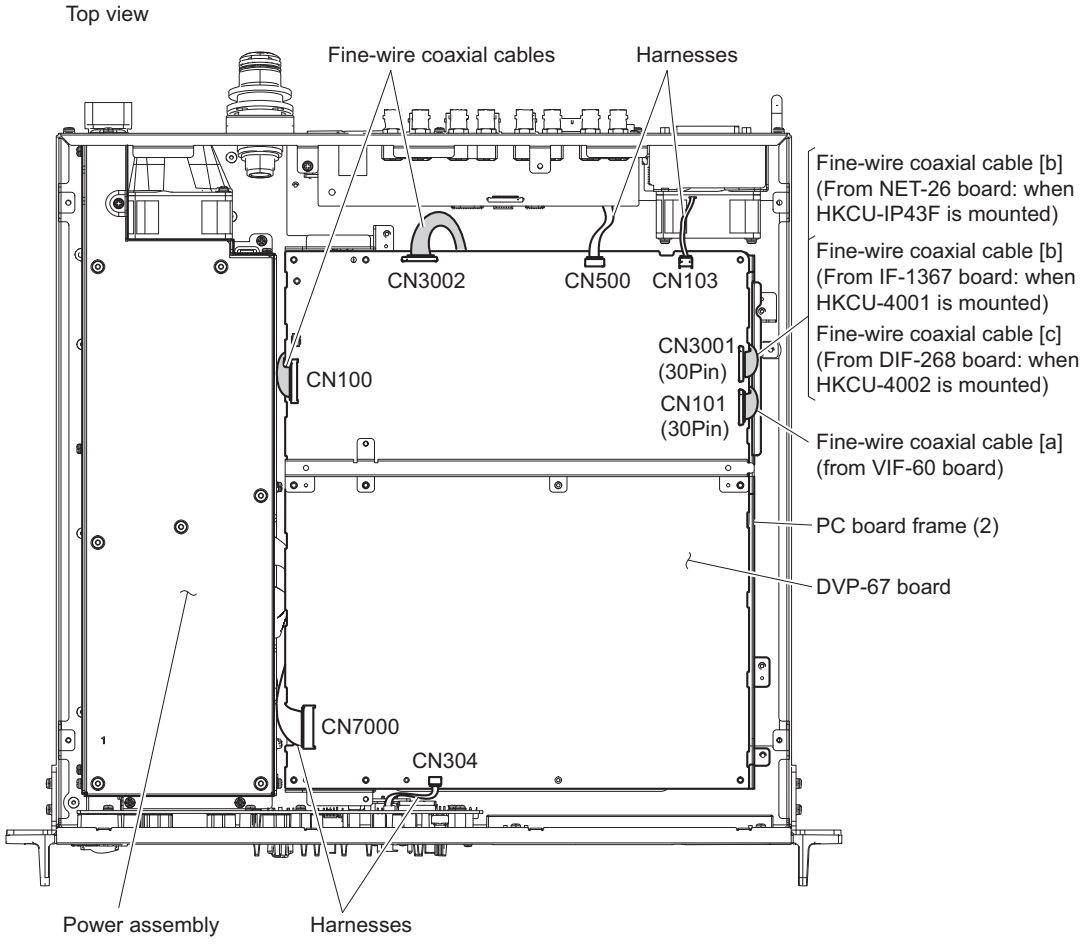
1. Remove the top cover. (Refer to "2-3. Top Cover")

Procedure

1. Disconnect the harnesses.
   (1) Disconnect the four harnesses from the four connectors (CN103, CN304, CN500, CN7000) on the DVP-67 board.
   (2) Disconnect the three fine-wire coaxial cables from the three connectors (CN100, CN101, CN3002) on the DVP-67 board.
   (3) Disconnect the fine-wire coaxial cable [b]/[c]/[d] from the connector (CN3001) on the DVP-67 board.

Tip

This procedure is not necessary when HKCU-IP43F/HKCU-4001/HKCU-4002 is not installed.



Note

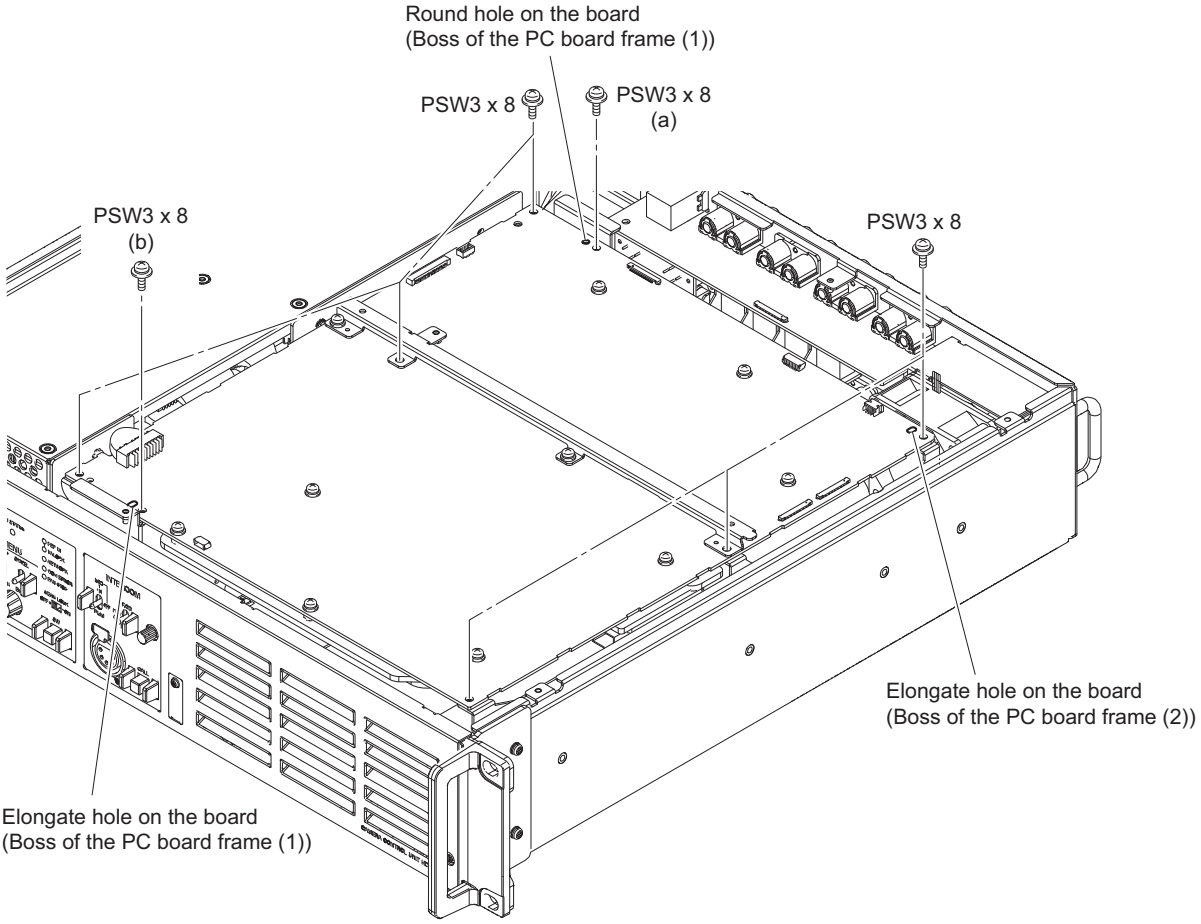
Carefully connect the connectors of the fine-wire coaxial cables [a] and [b]/[c]/[d] correctly checking the indication printed on the DVP-67 board.

Note

After the harnesses and fine-wire coaxial cables have been connected, push them into the space under the DVP-67 board.

- Push the slack of fine-wire coaxial cable and the harness connected to CN100 and CN7000 into the space between the DVP-67 board and the power assembly to suppress the slack.
- Push the slack of fine-wire coaxial cables connected to CN3001 and CN101 into the space between the DVP-67 board and the board frame 2 to suppress the slack.

2. Remove the eight screws.



Note

When installing screws, match the three holes in the board with two bosses on the board frame (1) and the boss on the board frame (2) as shown above, and tighten the screw (a), then screw (b), and then other screws.

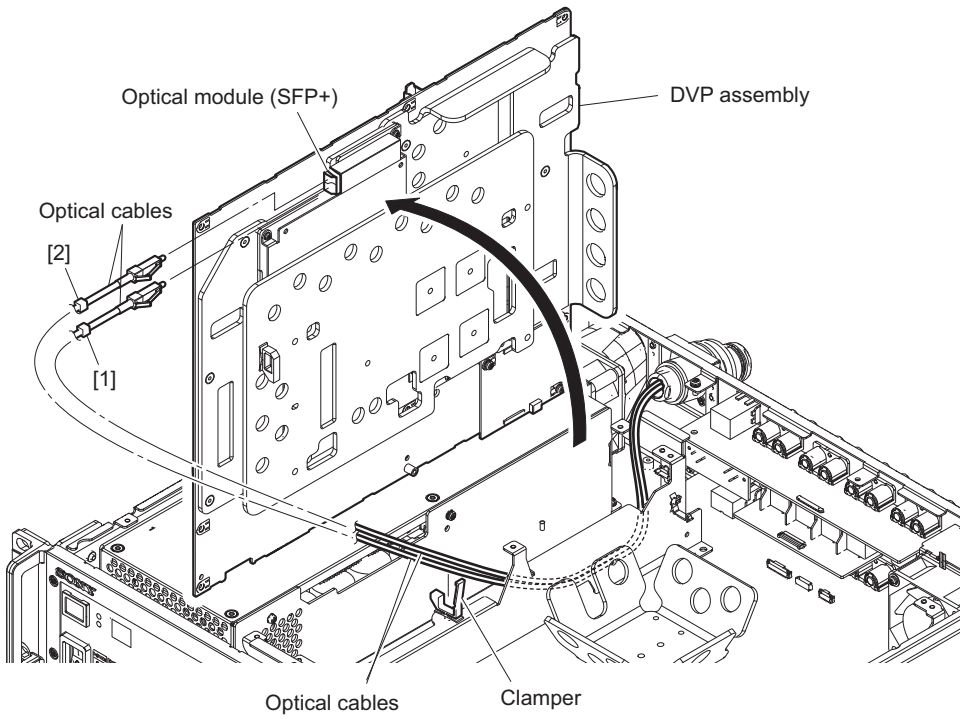
3. Remove the DVP assembly.

Note

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

(1) Lift up the DVP assembly in the direction of the arrow.
(2) Release the two optical cables from the clamper.

(3) Disconnect the two optical cables from the optical module (SFP+).



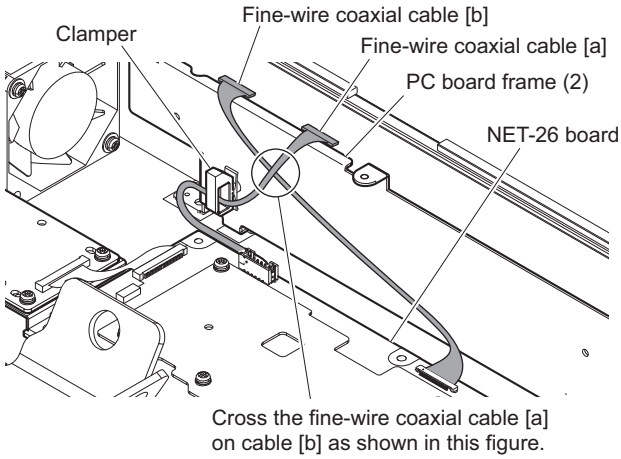
Note

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

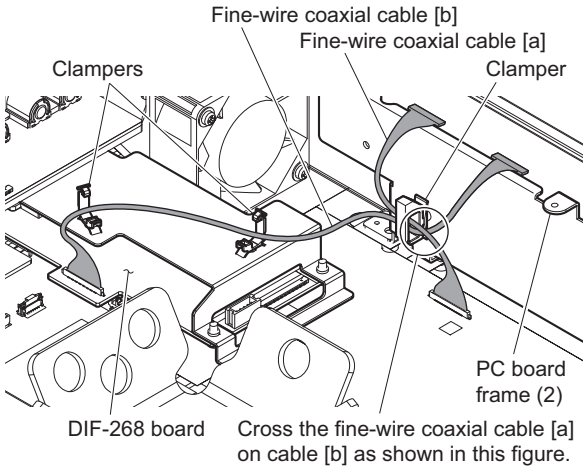
Note

Before installing the DVP assembly to the unit, hook the two fine-wire coaxial cables to the board frame 2 to prevent it falling to inside of the unit. Install the DVP assembly to the unit, and then connect it to the specified connectors.
(When HKCU-IP43F/HKCU-4001/HKCU-4002 is not installed, connection of the fine-wire coaxial cable [b] is not necessary.)
Set the longitudinal edge of the clamper to the vertical direction and collect the slack of the fine-wire coaxial cable [a] (HKCU-IP43F) to the rear panel side from the clamper.

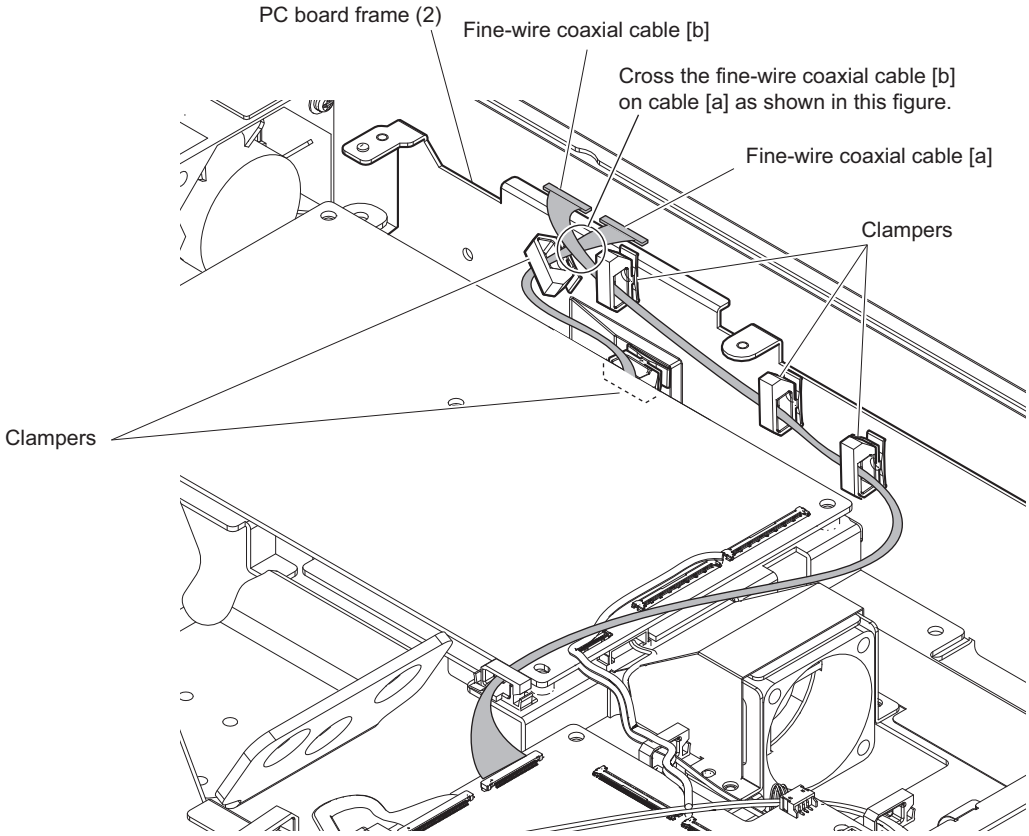
In the case of HKCU-IP43F



In the case of HKCU-4002



In the case of HKCU-4001



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

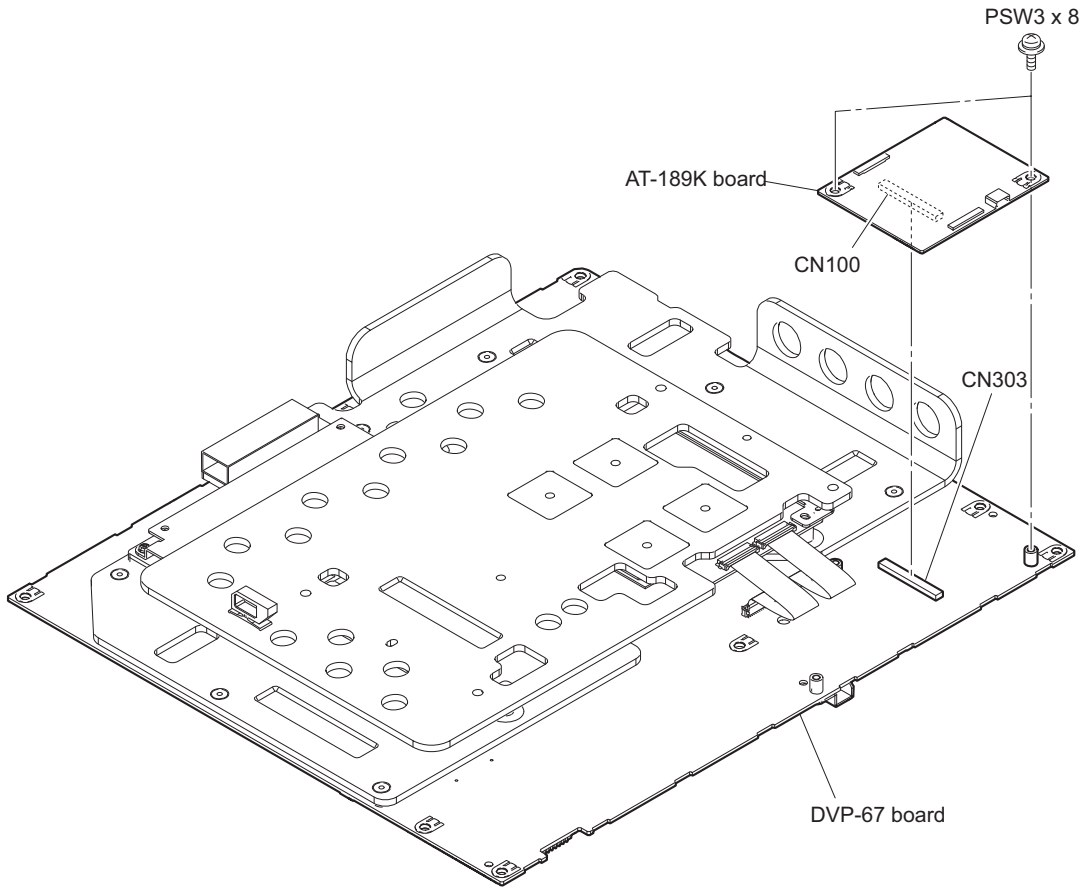
2-7-2. AT-189K Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")

Procedure

1. Remove the two screws, then disconnect the AT-189K board from the connector (CN303) on the DVP-67 board.



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

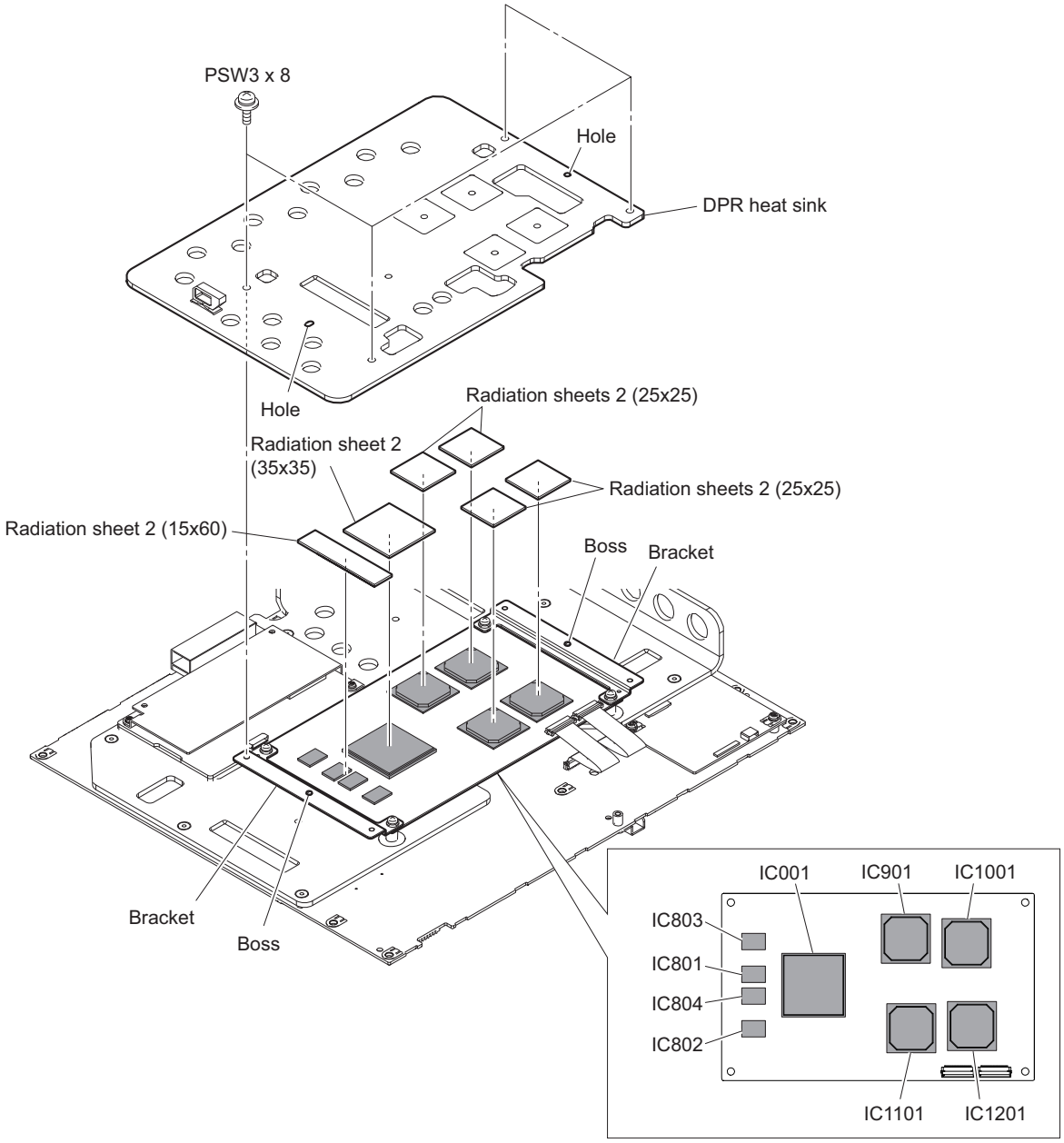
2-7-3. DPR-348A Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")

Procedure

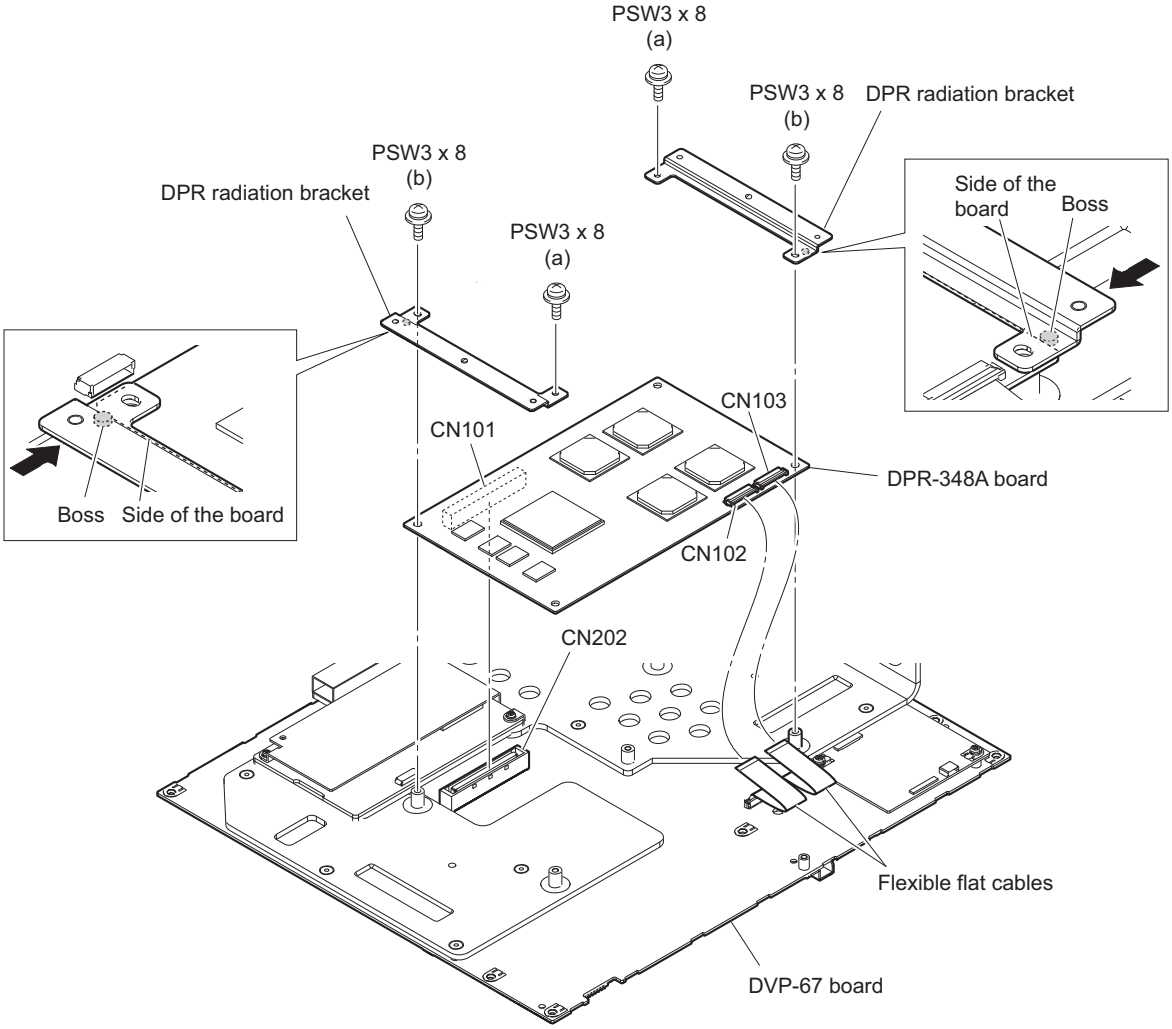
1. Remove the DPR heat sink.
   (1) Remove the four screws, then remove the DPR heat sink.
   (2) Remove the four radiation sheets 2 (25 x 25), radiation sheet 2 (35 x 35), and radiation sheet 2 (15 x 60).



Note

When attaching the DPR heat sink, match the two bosses on the bracket with the two holes in the DPR heat sink and tighten screws.

2. Remove the DPR-348A board.
   (1) Disconnect the two flexible flat cables from the two connectors (CN102 and CN103) on the DPR-348A board.
   (2) Remove the four screws, then remove the two DPR radiation brackets.
   (3) Disconnect the DPR-348A board from the connector (CN202) on the DVP-67 board.



Note

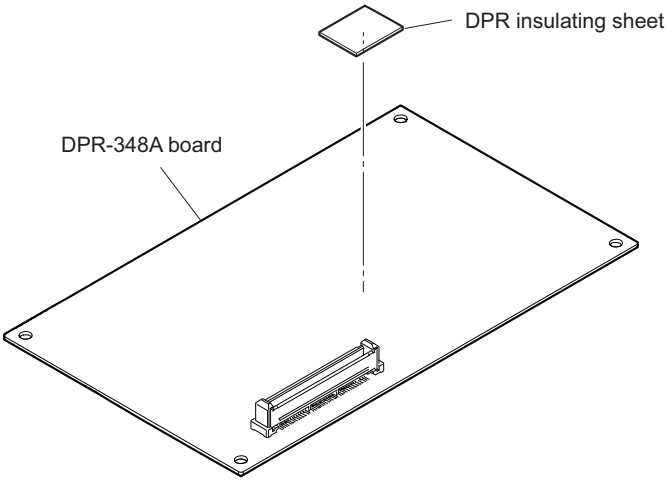
When attaching the DPR radiator brackets, push the bosses to the side of the board, tighten the screws (a), and then tighten the screws (b).

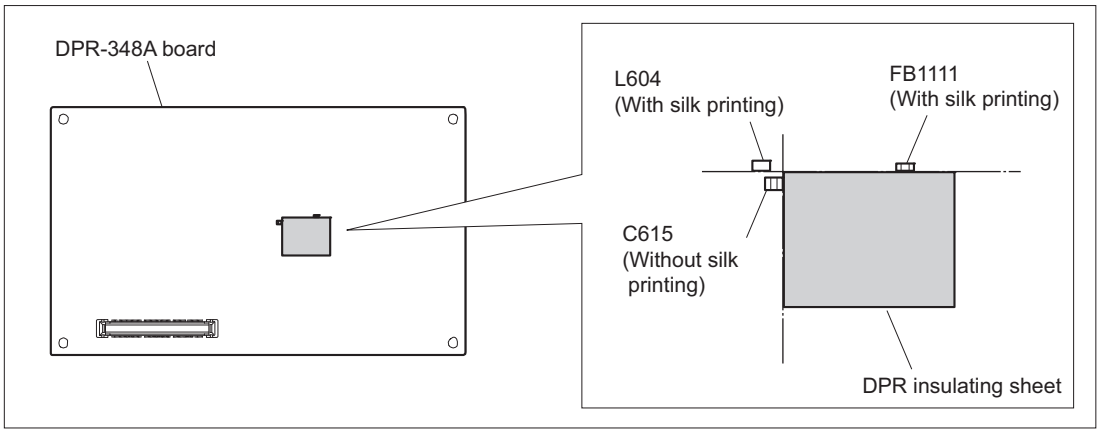
3. Install the removed parts by reversing the steps of removal.

Note

When using a new DPR-348A board, prepare a new DPR insulating sheet and stick it according to the following notes.

- Stick the DPR insulating sheet to an area with no component on the board.
- Set the sheet in contact with the two components (C615 and FB1111). Because C615 has not been silk printing, find C615 that is close to L604 as shown in the figure.
- After the sheet has been stuck, confirm from the side of the board that the sheet does not overlap any component.





Tip

Refer to the location of the sheet that was stuck on the DPR-348A board before replacement.

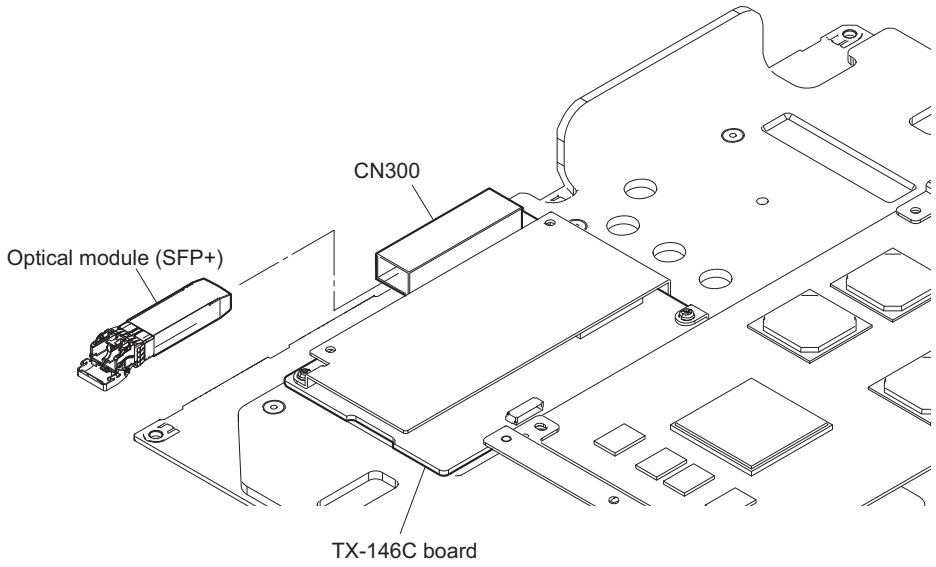
2-7-4. TX-146C Board

Preparation

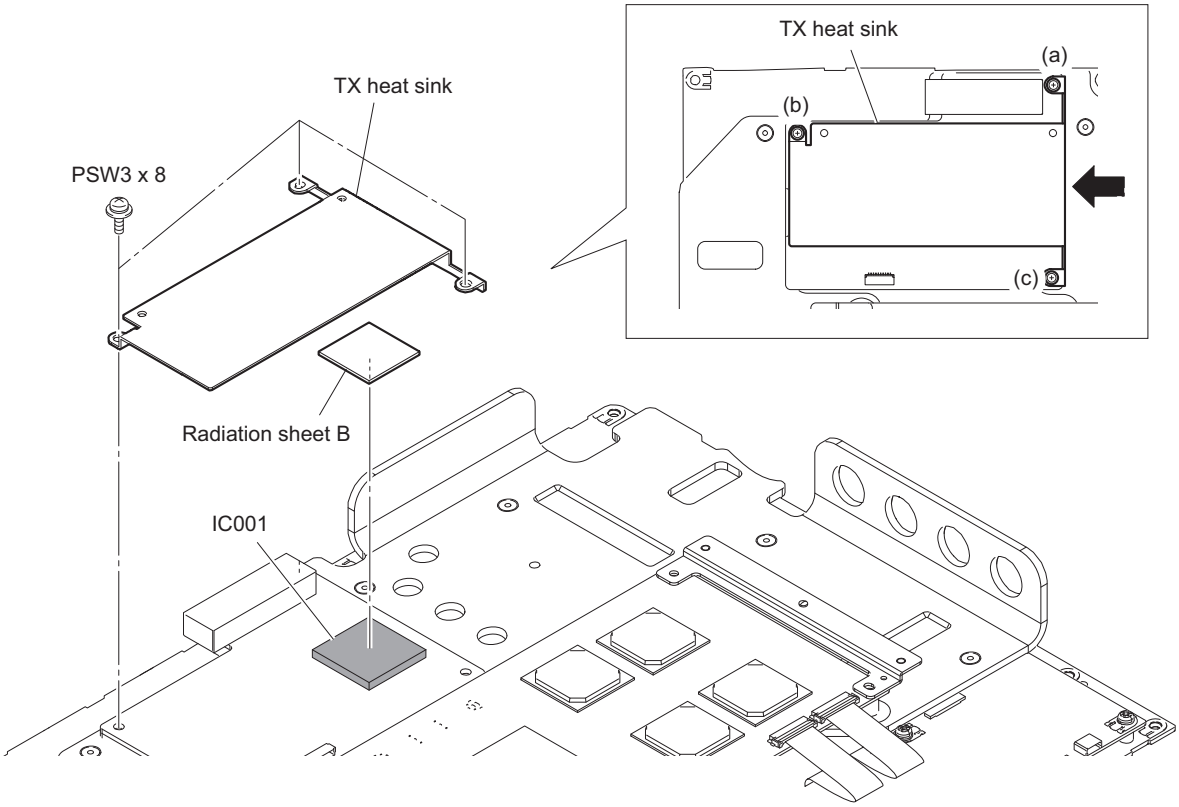
1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
3. Remove the DPR heat sink. (Refer to "2-7-3. DPR-348A Board")

Procedure

1. Disconnect the optical module (SFP+) from the connector (CN300) on the TX-146C board.



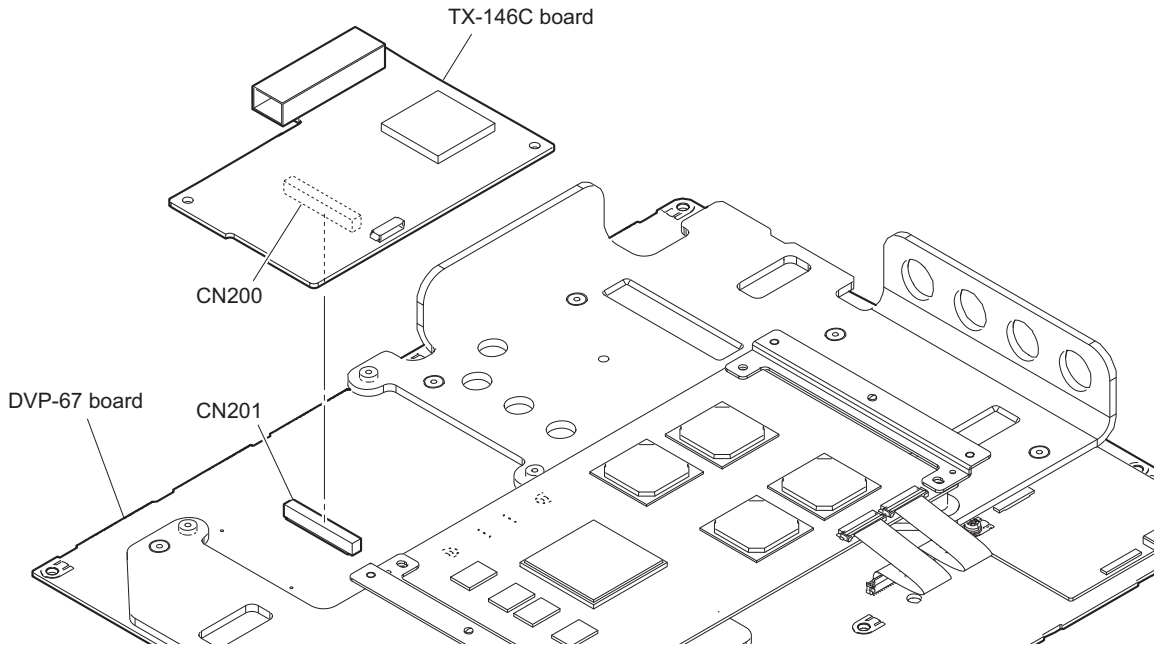
2. Remove the TX heat sink.
   (1) Remove the three screws, then remove the TX heat sink.
   (2) Remove the radiation sheet B.



Note

When attaching the TX heat sink, push it in the direction of arrow and tighten the screws in the following sequence: (a), (b), (c).

3. Disconnect the TX-146C board from the connector (CN201) on the DVP-67 board.



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

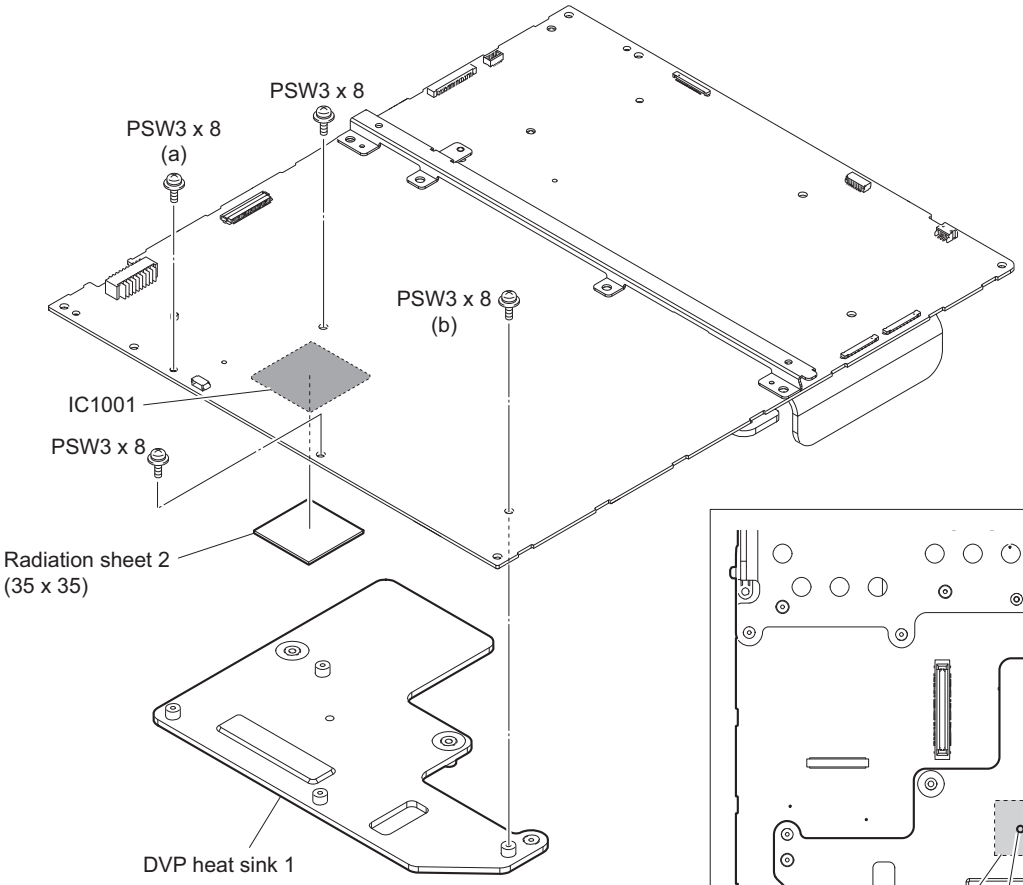
2-7-5. DVP-67 Board

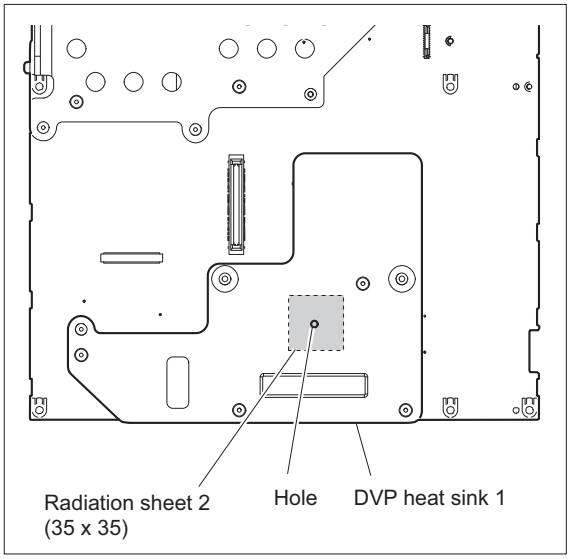
Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the lithium battery. (Refer to "2-4. Lithium Battery")
3. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
4. Remove the AT-189K board. (Refer to "2-7-2. AT-189K Board")
5. Remove the DPR-348A board. (Refer to "2-7-3. DPR-348A Board")
6. Remove the TX-146C board. (Refer to "2-7-4. TX-146C Board")

Procedure

1. Remove the DVP heat sink 1.
   (1) Remove the four screws, then remove the DVP heat sink 1.
   (2) Remove the radiation sheet 2 (35 x 35).



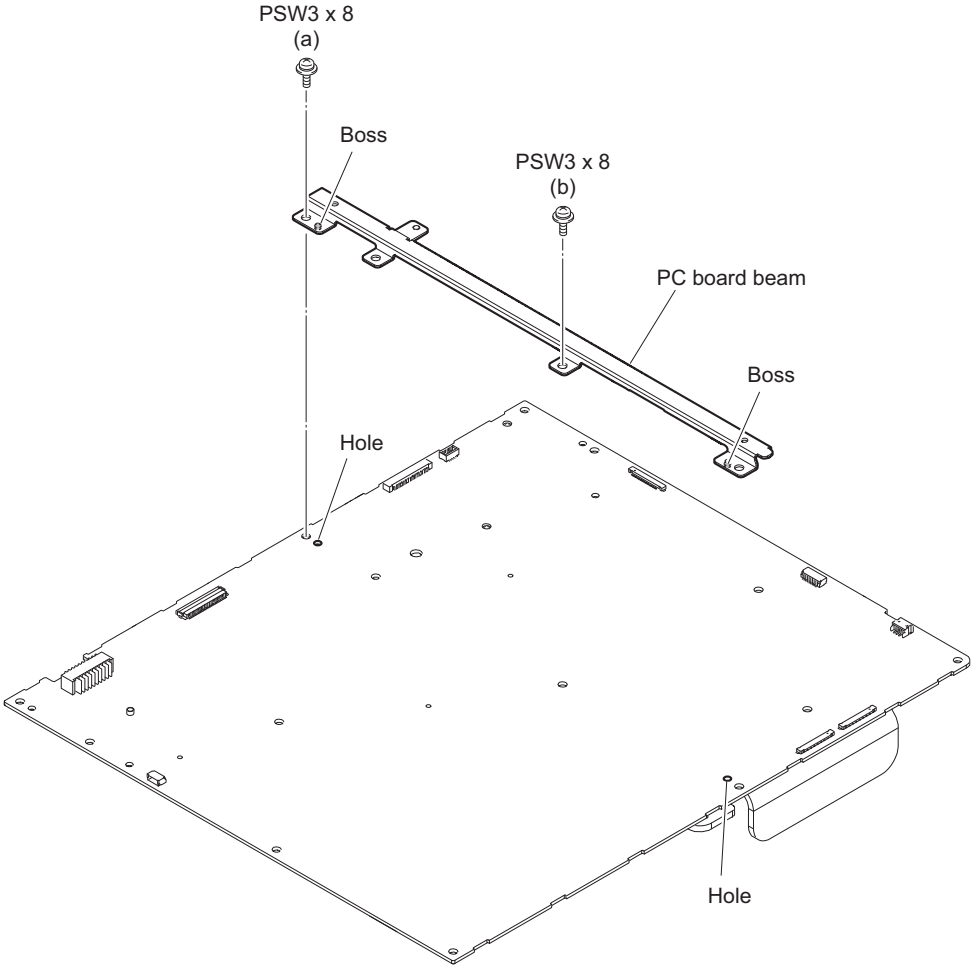


Note

When installing the DVP heat sink 1, note the following instructions.

- Check whether the radiation sheet 2 (35 x 35) is misaligned with the hole in the DVP heat sink 1.
- Tighten the screws in the following sequence: (a), (b) and others.

2. Remove the two screws, then remove the PC board beam.



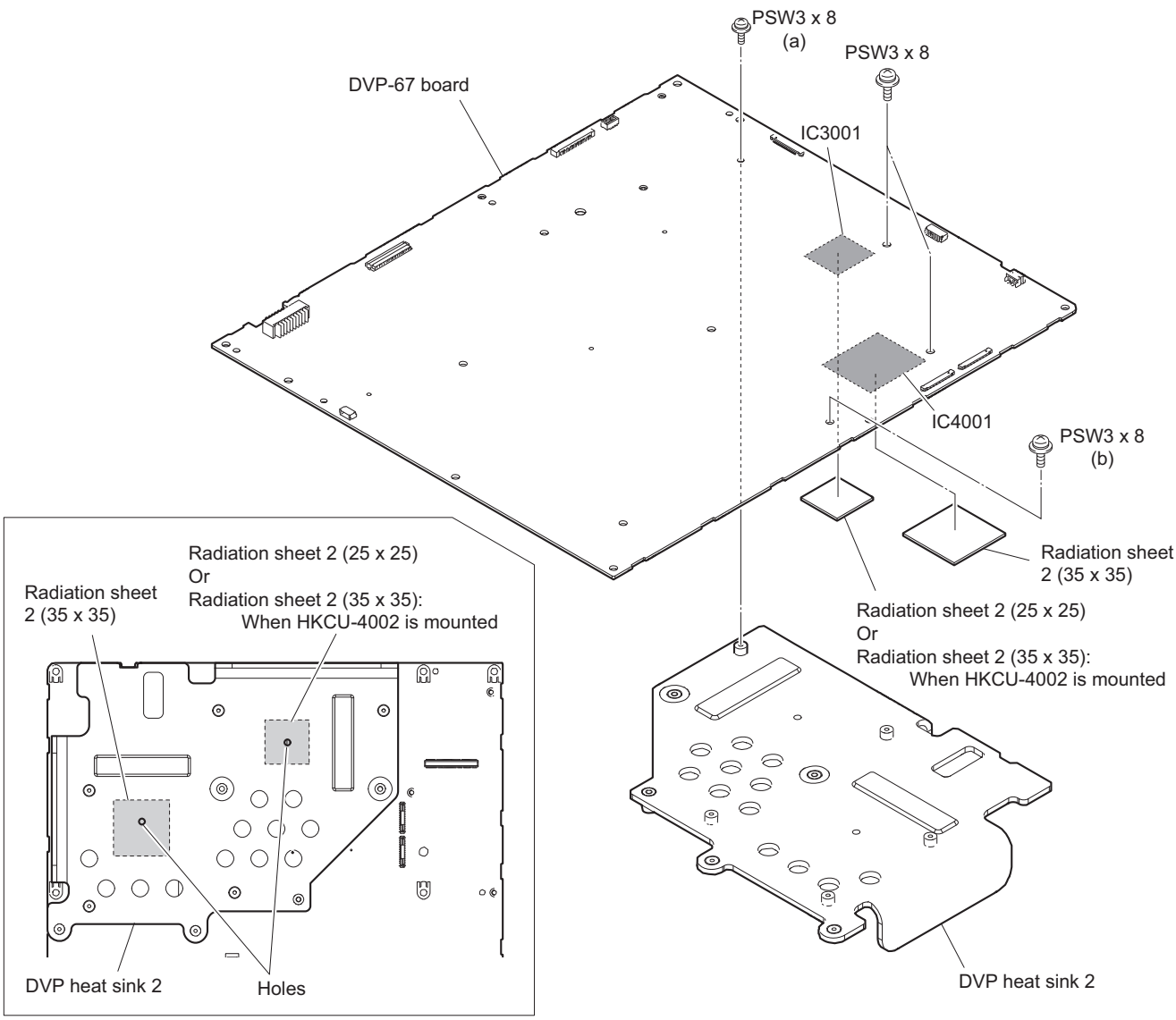
Note

When attaching the PC board beam, match the two bosses on the PC board beam with the two holes in the board and tighten the screw (a) and then screw (b).

3. Remove the DVP heat sink 2.
   (1) Remove the four screws, then remove the DVP heat sink 2.
   (2) Remove the radiation sheet 2 (25 x 25), or remove the radiation sheet 2 (35 x 35) (when HKCU-4002 is mounted) and radiation sheet 2 (35 x 35).

Note

The radiation sheet 2 (25 x 25) is not reusable. Prepare new parts in advance.



Note

When installing the DVP heat sink 2, note the following instructions.

- Check whether the radiation sheet 2 (25 x 25) or radiation sheet 2 (35 x 35) (when HKCU-4002 is mounted) and radiation sheet 2 (35 x 35) is misaligned with the hole in the DVP heat sink 2.
- Tighten the screws in the following sequence: (a), (b) and others.

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

2-8. CN-3797 Board (HKCU-IP43F)

Tip

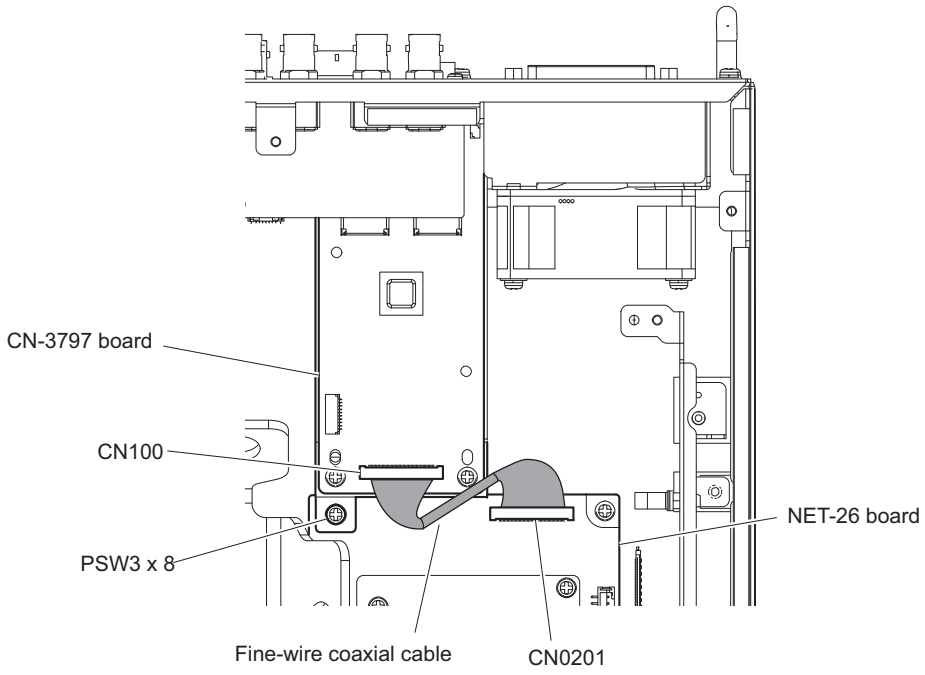
When the CN-3797 board (HKCU-IP43F) is installed, perform the following work.

Preparation

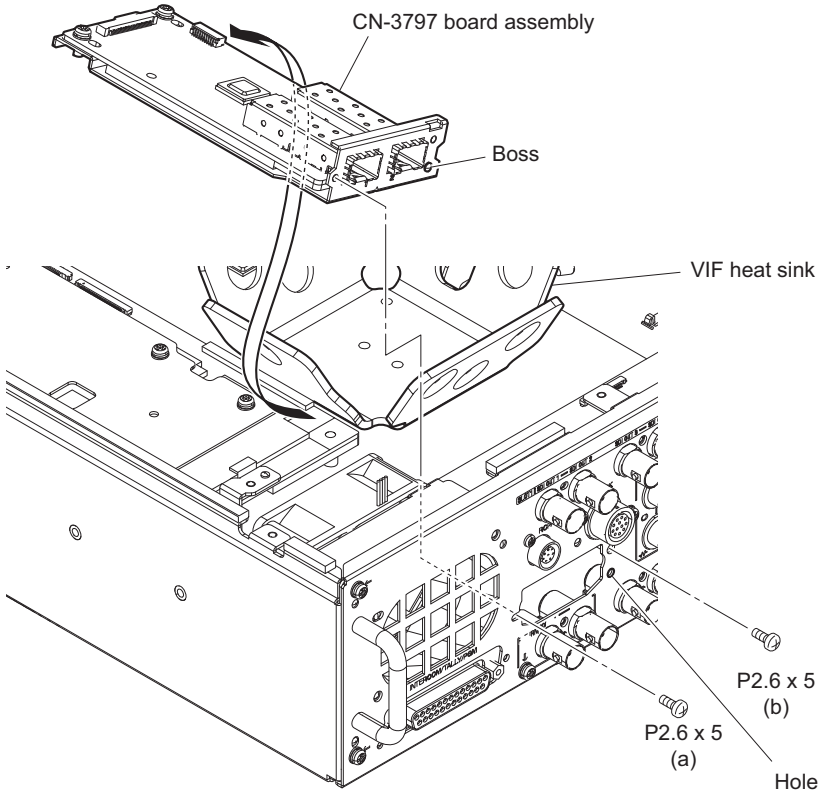
1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")

Procedure

1. Disconnect the fine-wire coaxial cable and remove the screw.
   (1) Disconnect the fine-wire coaxial cable from the connector (CN0201) on the NET-26 board and the connector (CN100) on the CN-3797 board.
   (2) Remove the screw.



2. Remove the two screws, then remove the CN-3797 board assembly in the direction of the arrow.

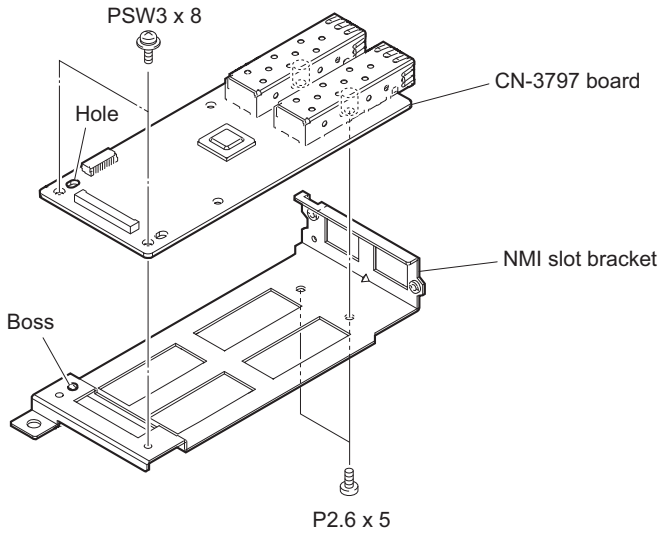


Note

When installing the CN-3797 board assembly, note the following instructions.

- Align the boss with the hole.
- Tighten the screws in the following sequence: (a), (b).

3. Remove the two screws (P2.6 x 5) and two screws (PSW3 x 8), then remove the NMI slot bracket.



Note

When attaching NMI slot bracket, align the boss with the hole.

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

2-9. DIF-268 Board (HKCU-4002)

Note

The tape (20 x 30) is not reusable. Prepare new parts in advance.

Tip

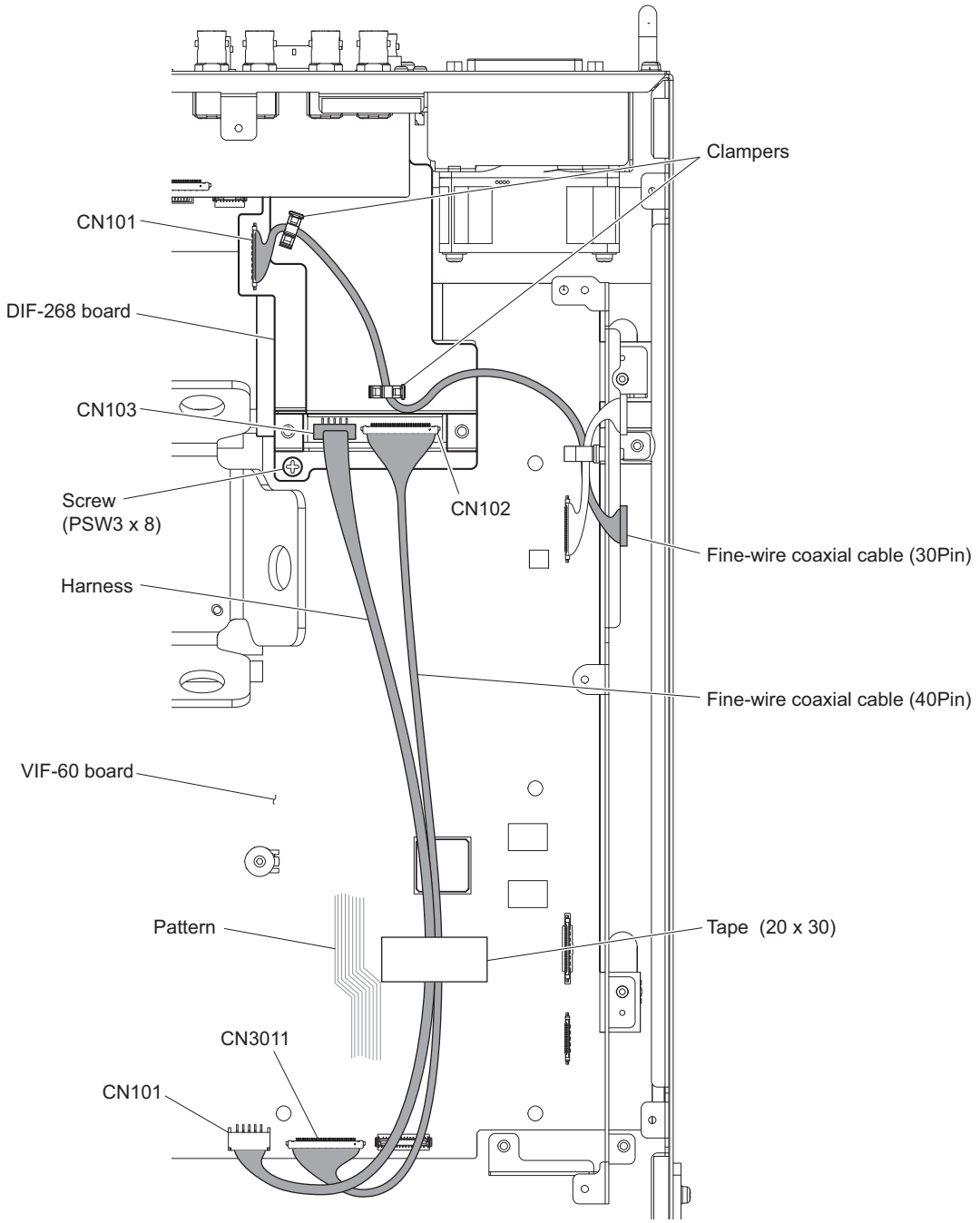
When the DIF-268 board (HKCU-4002) is installed, perform the following work.

Preparation

1. Remove the top cover. (Refer to “2-3. Top Cover”.)
2. Remove the DVP assembly. (Refer to “2-7-1. DVP Assembly”.)

Procedure

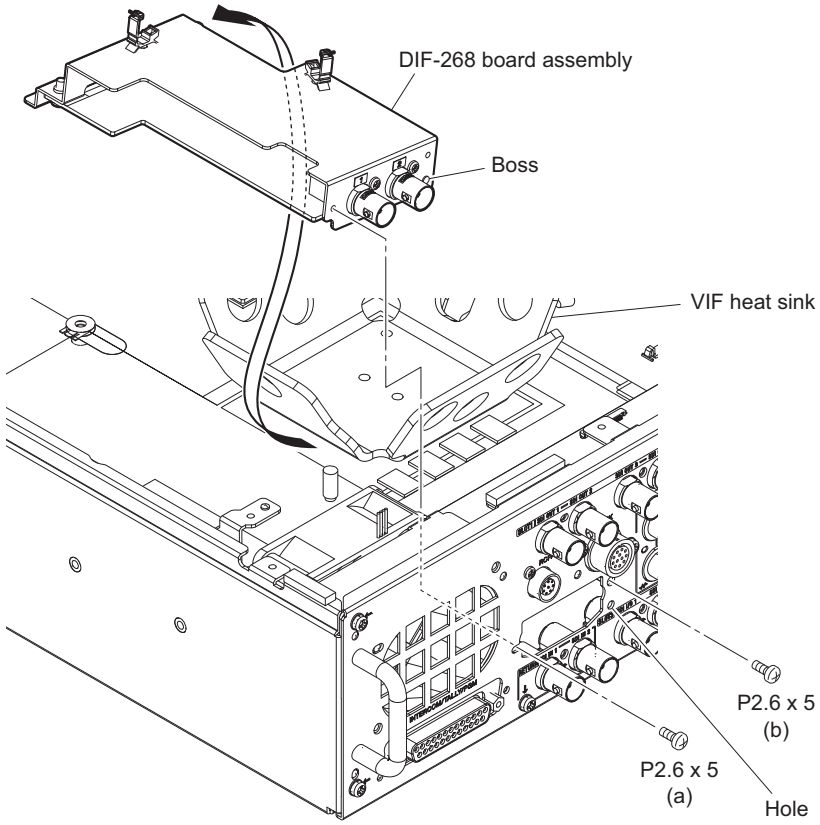
1. Disconnect the fine-wire coaxial cable, harness and remove the screw.
   (1) Remove the fine-wire coaxial cable from the two clampers.
   (2) Disconnect the two fine-wire coaxial cables and harness from the connectors (CN101 to CN103) on the DIF-268 board.
   (3) Peel off the tape (20 x 30).
   (4) Disconnect the fine-wire coaxial cable and harness from the connectors (CN101 and CN3011) on the VIF-60 board.
   (5) Remove the screw.



Note

Secure the fine-wire coaxial cable and harness to the position shown in the illustration with the tape (20 x 30).

2. Remove the two screws, then remove the DIF-268 board assembly in the direction of the arrow.

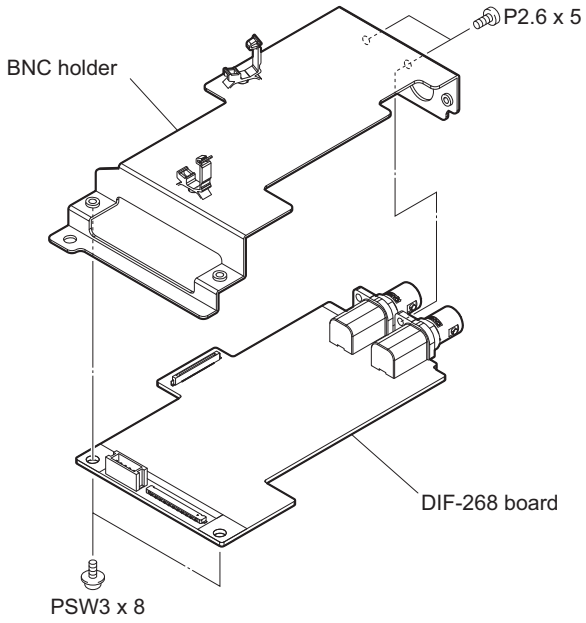


Note

When installing the DIF-268 board assembly, note the following instructions.

- Align the boss with the hole.
- Tighten the screws in the following sequence: (a), (b).

3. Remove the two screws (P2.6 x 5) and two screws (PSW3 x 8), then remove the BNC holder.



Note

When attaching the BNC holder, attach the two screws (P2.6 x 5) first.

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

2-10. NET-26 Board (HKCU-IP43F)

Tip

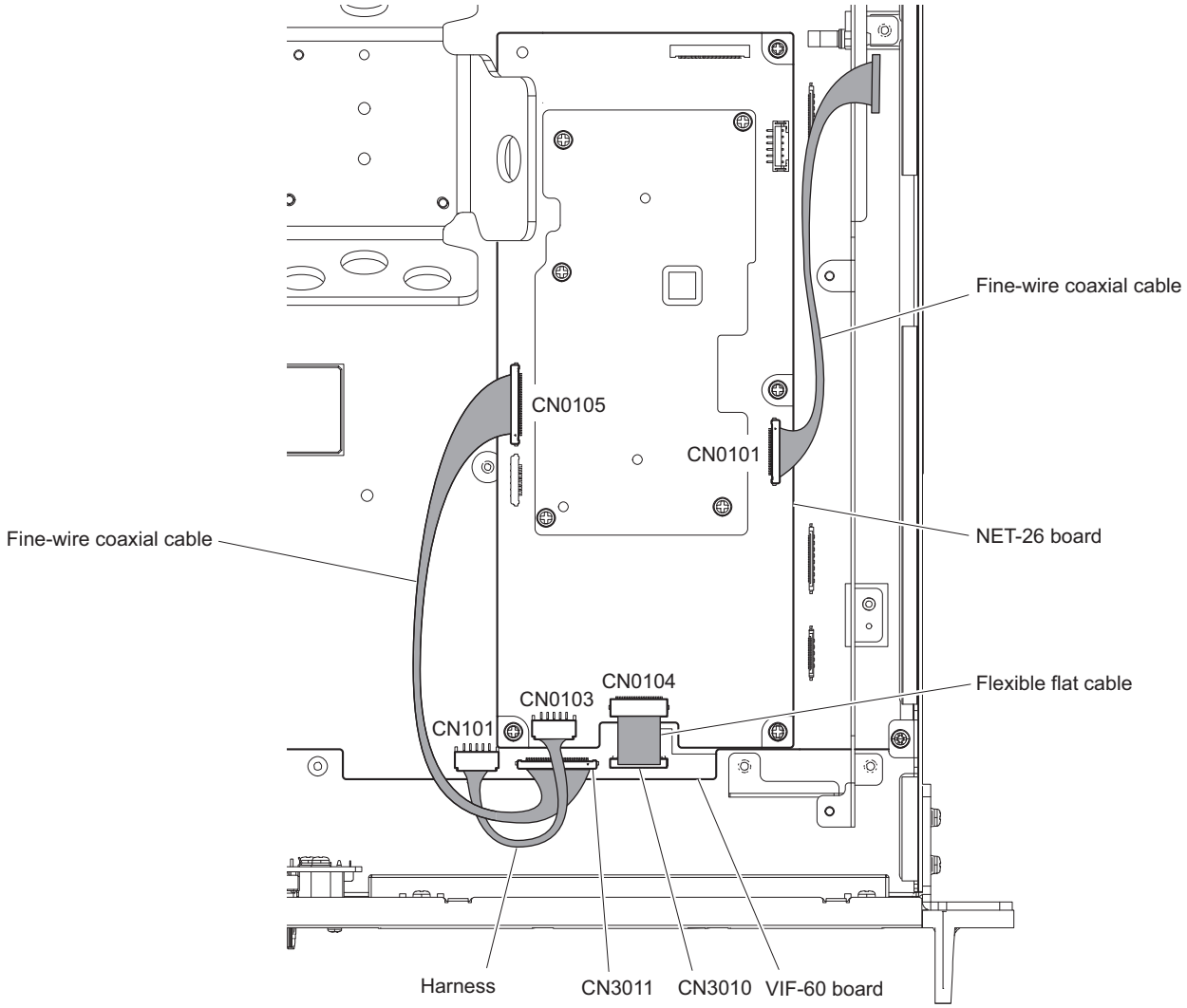
When the NET-26 board (HKCU-IP43F) is installed, perform the following work.

Preparation

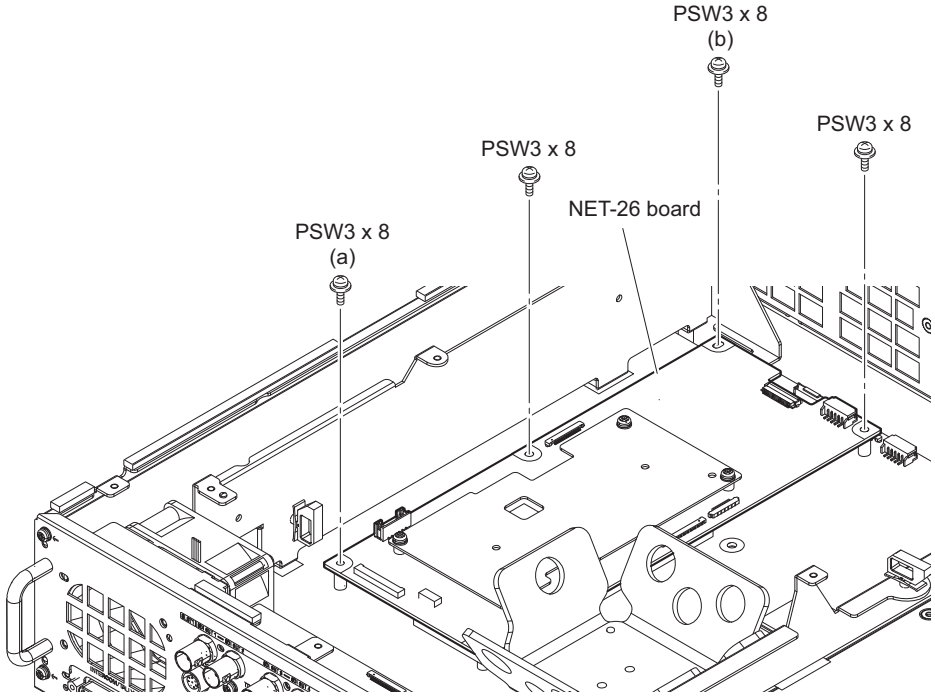
1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
3. Remove the CN-3797 board assembly. (Refer to "2-8. CN-3797 Board (HKCU-IP43F)")

Procedure

1. Disconnect the harnesses.
   (1) Disconnect the two fine-wire coaxial cables from the two connectors (CN0101, CN0105) on the NET-26 board and the connector (CN3011) on the VIF-60 board.
   (2) Disconnect the harness from the connector (CN0103) on the NET-26 board and the connector (CN101) on the VIF-60 board.
   (3) Disconnect the flexible flat cable from the connector (CN0104) on the NET-26 board and the connector (CN3010) on the VIF-60 board.



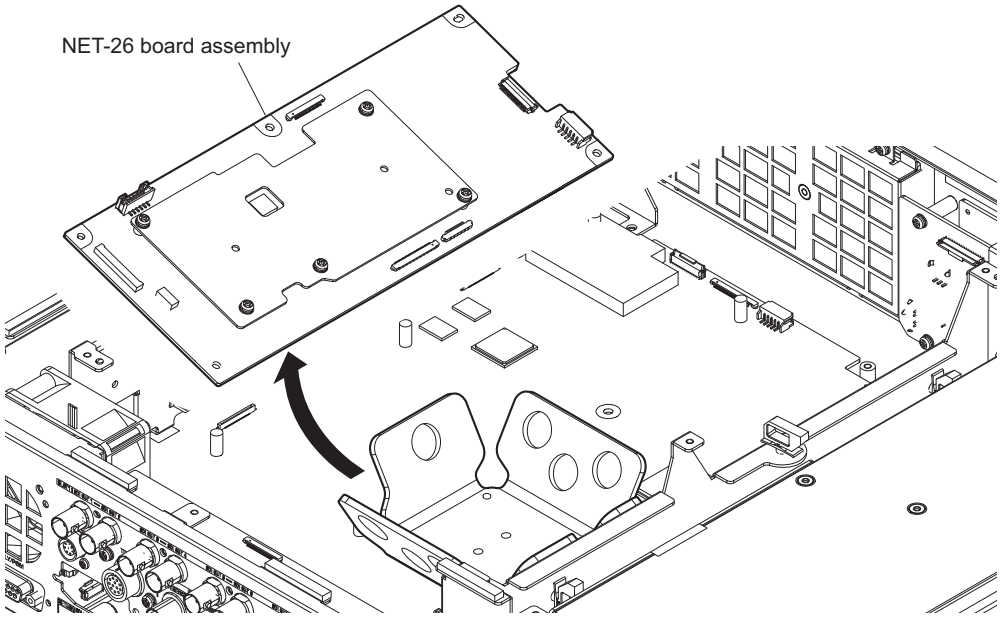
2. Remove the four screws.



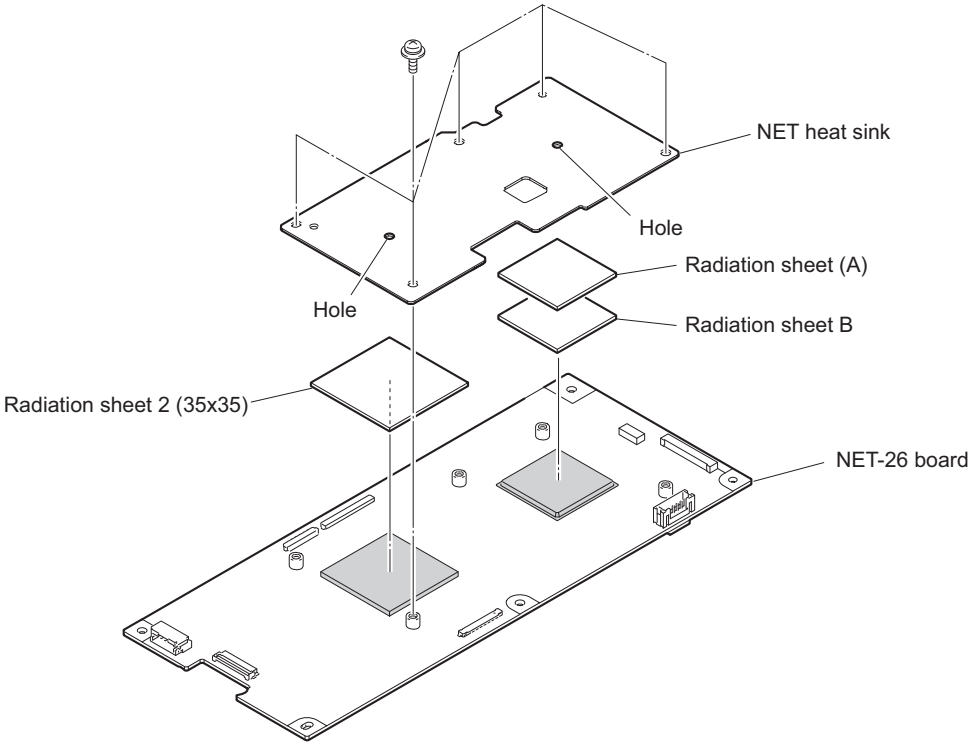
Note

Tighten the screws in the following sequence: (a), (b) and others.

3. Remove the NET-26 board assembly in the direction of the arrow.



4. Remove the NET-26 board.
   (1) Remove the five screws, then remove the NET heat sink.
   (2) Remove the radiation sheet B, radiation sheet (A) and radiation sheet 2 (35x35).



Note

When attaching the NET heat sink, check whether the radiation sheet B, radiation sheet (A) and radiation sheet 2 (35x35) are misaligned with the hole in the NET heat sink.

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

2-11. HKCU-4001 (IF-1367 Board, NET-37 Board)

Tip

When the HKCU-4001 is installed, perform the following work.

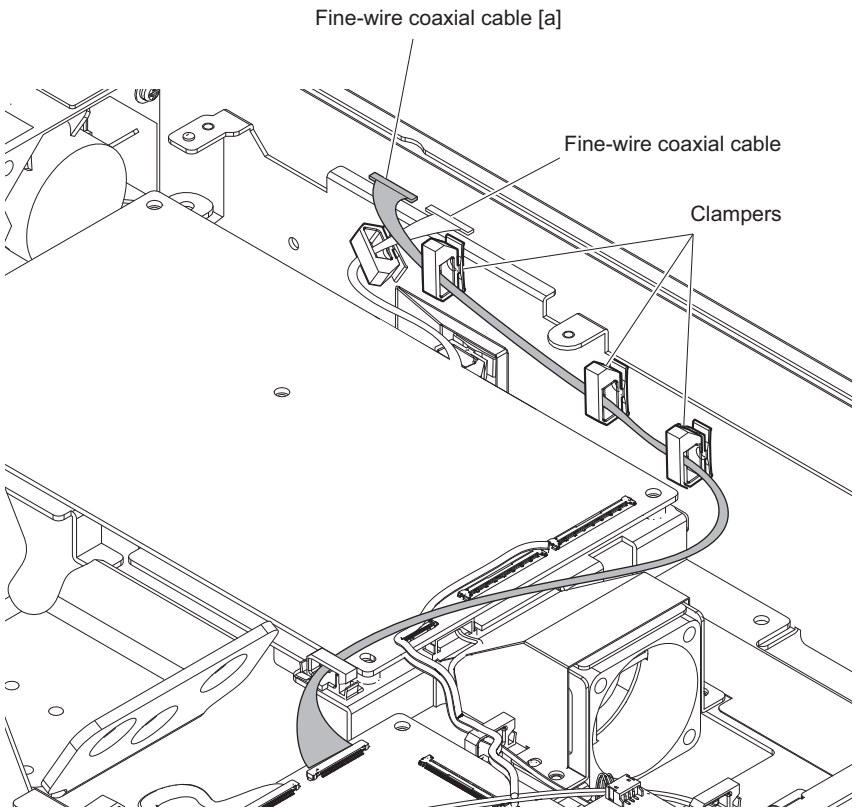
2-11-1. IF-1367/NET-37 Board Assembly

Preparation

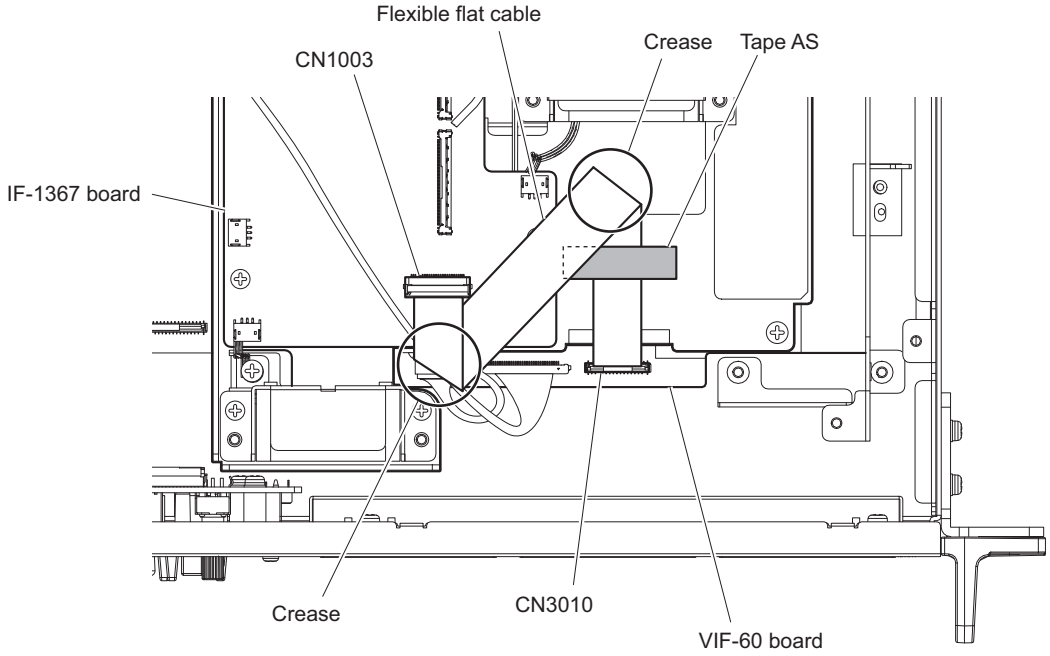
1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")

Procedure

1. Release the fine-wire coaxial cable from the three clampers.



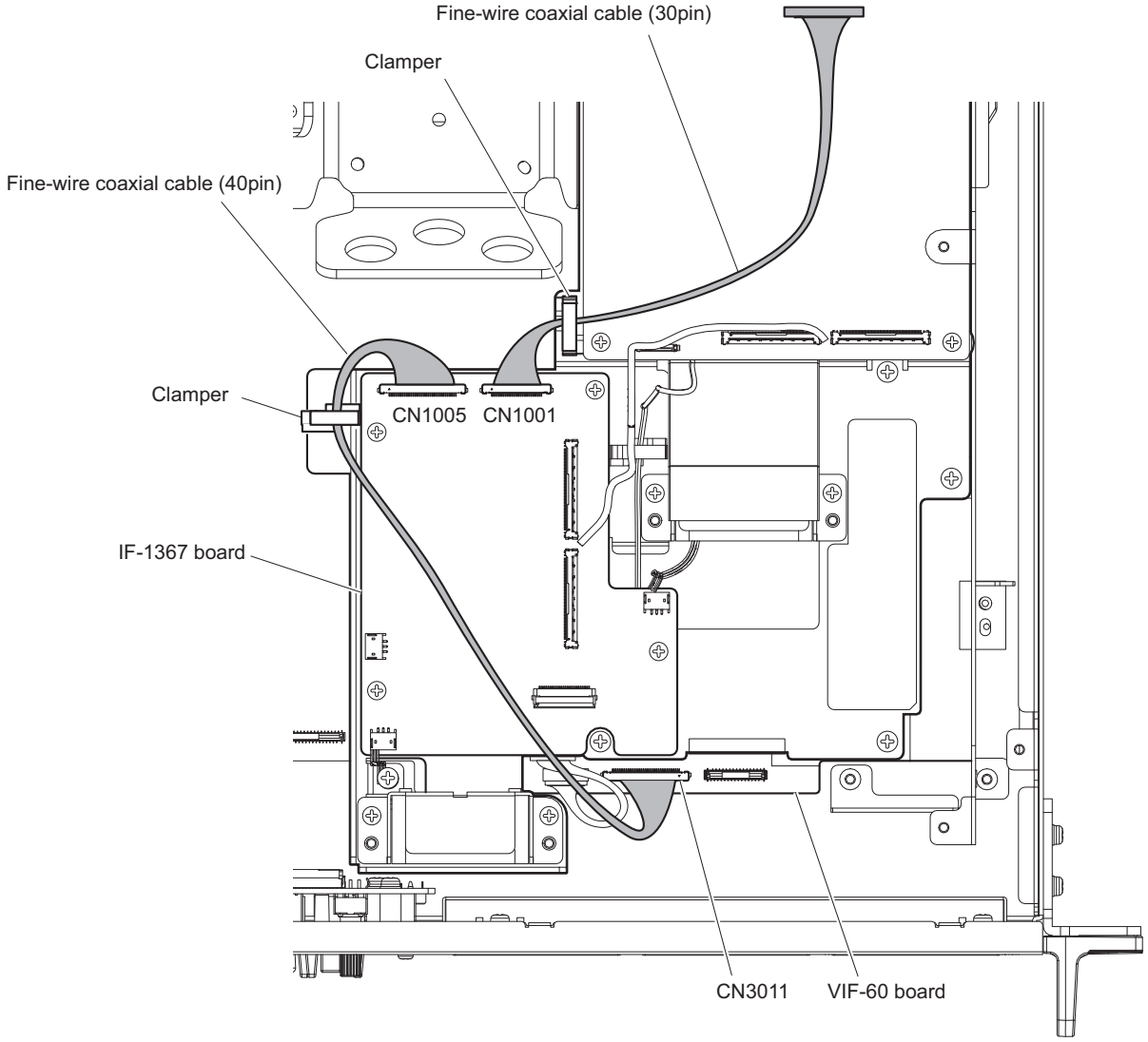
2. Disconnect the flexible flat cable.
   (1) Peel off the tape AS.
   (2) Disconnect the flexible flat cable from the connector (CN3010) on the VIF-60 board and the connector (CN1003) on the IF-1367 board.



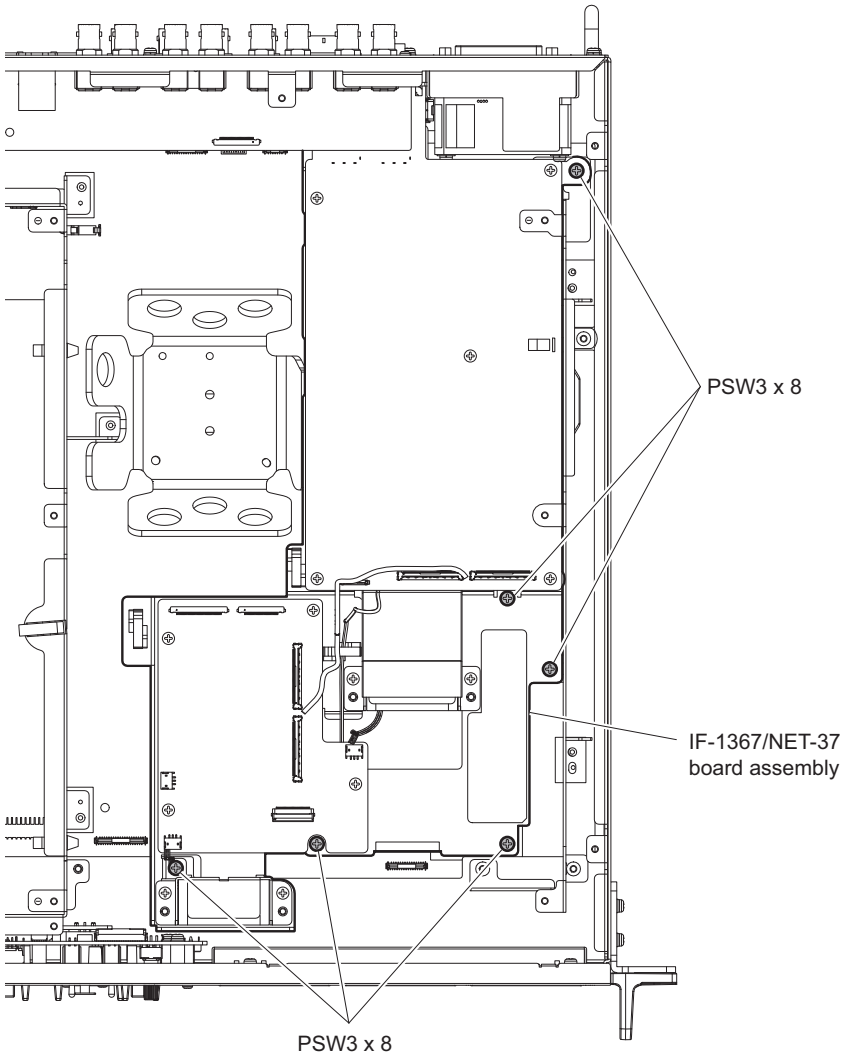
Note

When connecting the flexible flat cable, make folding creases at two locations of the flexible flat cable, and then stick the tape AS as shown above.

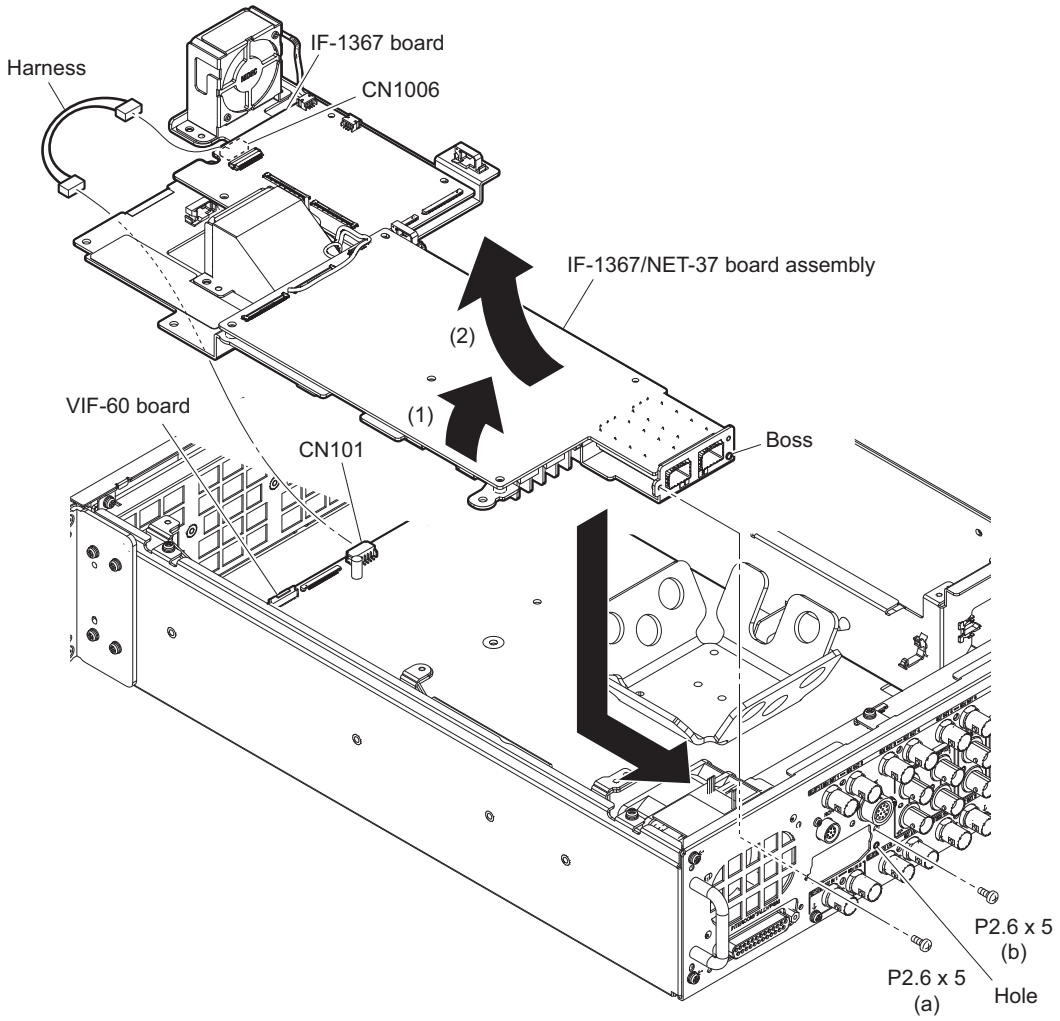
3. Disconnect the fine-wire coaxial cables and the harness.
   (1) Release the fine-wire coaxial cable from the two clampers.
   (2) Disconnect the fine-wire coaxial cable (30pin) from the connector (CN1001) on the IF-1367 board.
   (3) Disconnect the fine-wire coaxial cable (40pin) from the connector (CN3011) on the VIF-60 board and the connector (CN1005) on the IF-1367 board.



4. Remove the six screws.



5. Remove the IF-1367/NET-37 board assembly.
   (1) Remove the two screws.
   (2) Disconnect the harness from the connector (CN101) on the VIF-60 board and the connector (CN1006) on the IF-1367 board.
   (3) Tilt one side of the IF-1367/NET-37 board assembly in the direction of the arrow (1), and then remove it in the direction of the arrow (2).



Note

When installing the IF-1367/NET-37 board assembly, note the following instructions.

- Align the boss with the hole.
- Tighten the screws in the following sequence: (a), (b).

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

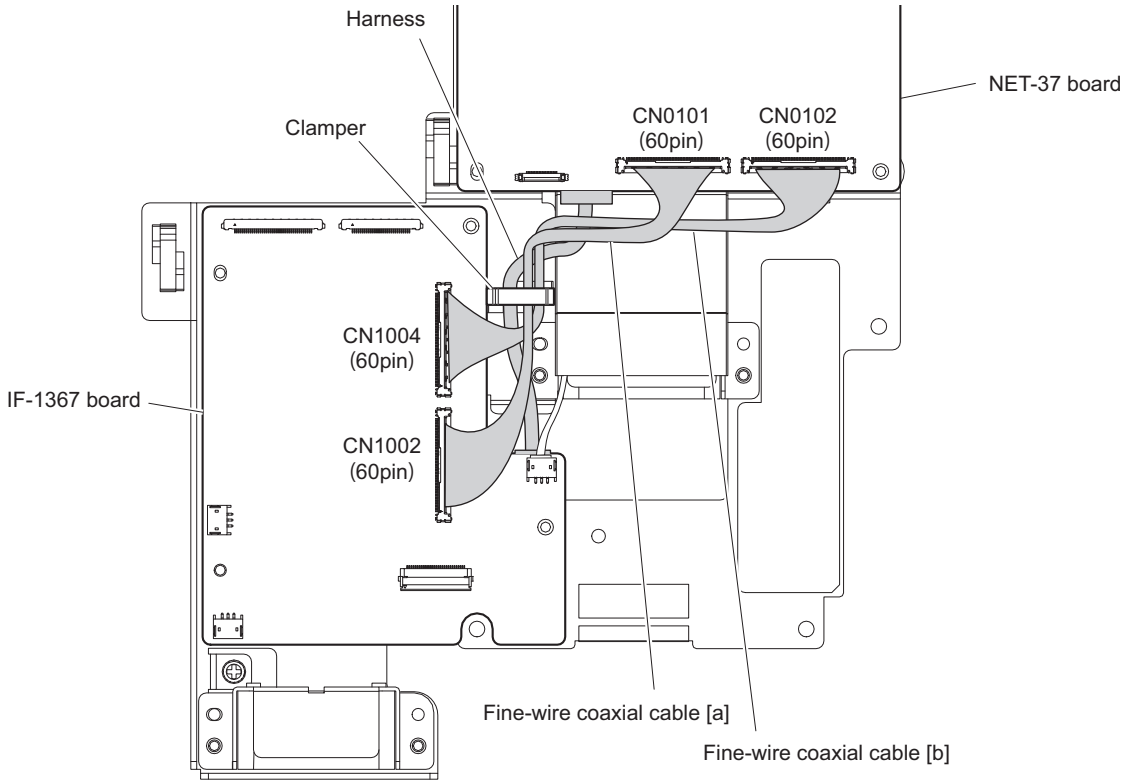
2-11-2. NET-37 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
3. Remove the IF-1367/NET-37 board assembly. (Refer to "2-11-1. IF-1367/NET-37 Board Assembly")

Procedure

1. Disconnect the harness.
   (1) Release the two fine-wire coaxial cables and the harness from the clamper.
   (2) Disconnect the two fine-wire coaxial cables from the two connectors (CN0101, CN0102) on the NET-37 board.

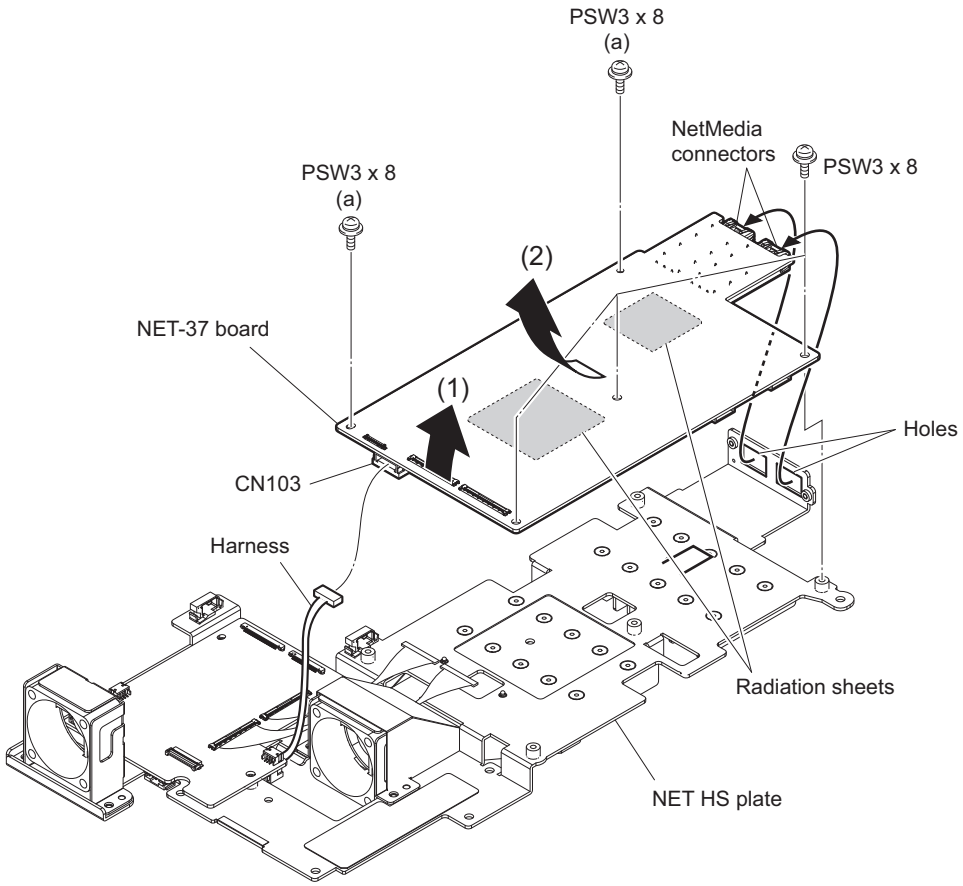


Note

When reassembling removed components, connect the fine-wire coaxial cables to the following connectors.

- Fine-wire coaxial cable [a]: CN0101 (NET-37 board) and CN1002 (IF-1367 board)
- Fine-wire coaxial cable [b]: CN0102 (NET-37 board) and CN1004 (IF-1367 board)

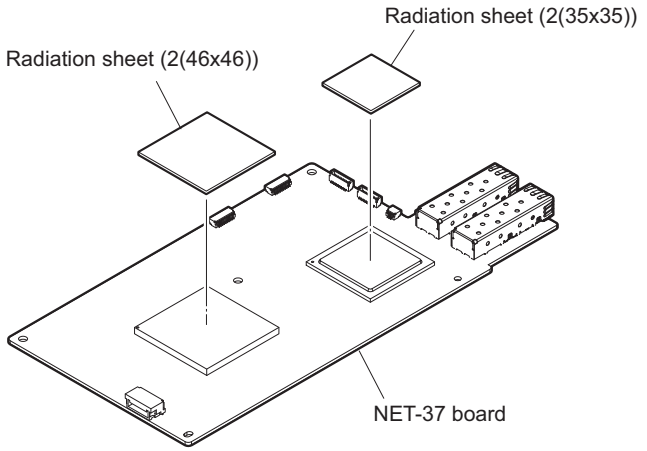
2. Remove the NET-37 board.
   (1) Disconnect the harness from the connector (CN103) on the NET-37 board.
   (2) Remove the five screws.
   (3) Slowly lift the NET-37 board in the direction of the arrow (1), and then remove the radiation sheet from the NET HS plate.
   (4) Remove the two NetMedia connectors through the holes, and then remove the NET-37 board in the direction of the arrow (2).



Note

When tightening the screws, tighten the screws in the following sequence: (a), (b), others.

3. Remove the radiation sheet (2(46x46)) and the radiation sheet (2(35x35)) from the NET-37 board.



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

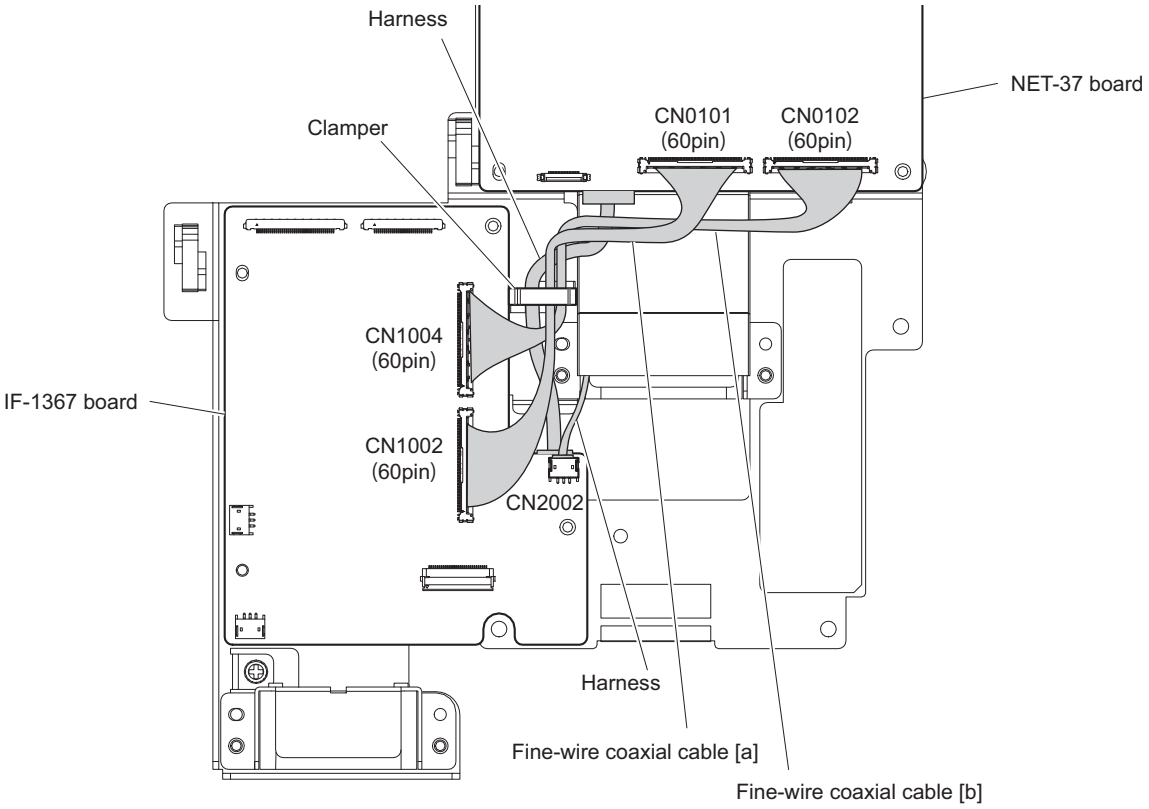
2-11-3. IF-1367 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
3. Remove the IF-1367/NET-37 board assembly. (Refer to "2-11-1. IF-1367/NET-37 Board Assembly")

Procedure

1. Disconnect the harnesses.
   (1) Release the two fine-wire coaxial cables and the harness from the clamper.
   (2) Disconnect the two fine-wire coaxial cables from the two connectors (CN1002, CN1004) on the IF-1367 board.
   (3) Disconnect the harness from the connector (CN2002) on the IF-1367 board.

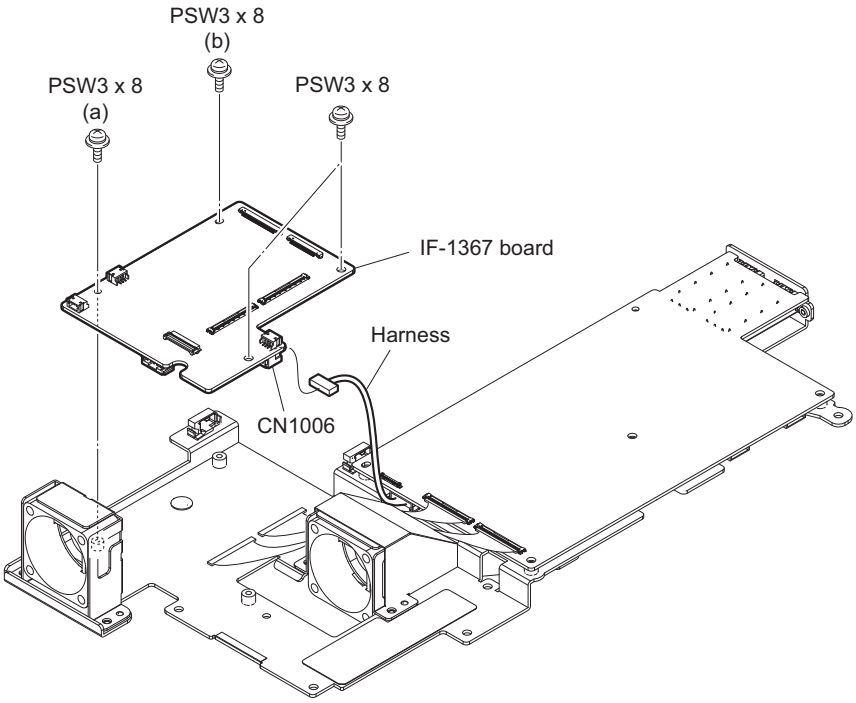


Note

When reassembling removed components, connect the fine-wire coaxial cables to the following connectors.

- Fine-wire coaxial cable [a]: CN0101 (NET-37 board) and CN1002 (IF-1367 board)
- Fine-wire coaxial cable [b]: CN0102 (NET-37 board) and CN1004 (IF-1367 board)

2. Remove the IF-1367 board.
   (1) Remove the four screws, and then remove the IF-1367 board.
   (2) Disconnect the harness from the connector (CN1006) on the IF-1367 board.



Note

When tightening the screws, tighten the screws in the following sequence: (a), (b), others.

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

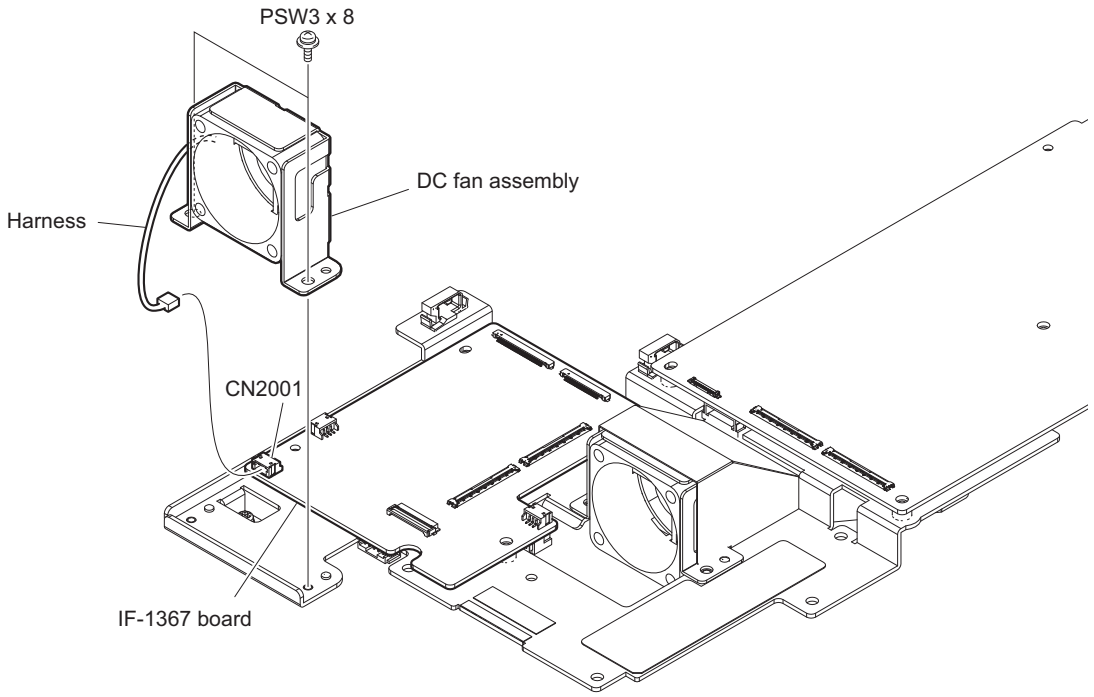
2-11-4. DC Fan 1

Preparation

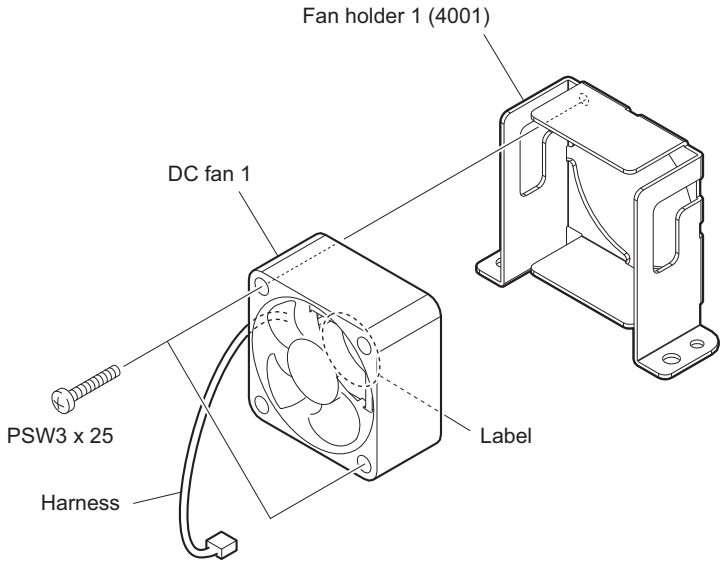
1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
3. Remove the IF-1367/NET-37 board assembly. (Refer to "2-11-1. IF-1367/NET-37 Board Assembly")

Procedure

1. Remove the DC fan assembly.
   (1) Remove the two screws.
   (2) Remove the DC fan assembly.
   (3) Disconnect the harness from the connector (CN2001) on the IF-1367 board.



2. Remove the two screws, and then remove the DC fan 1 from the fan holder 1 (4001).



Note

When installing the DC fan, be careful to the position of label side and harness.

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

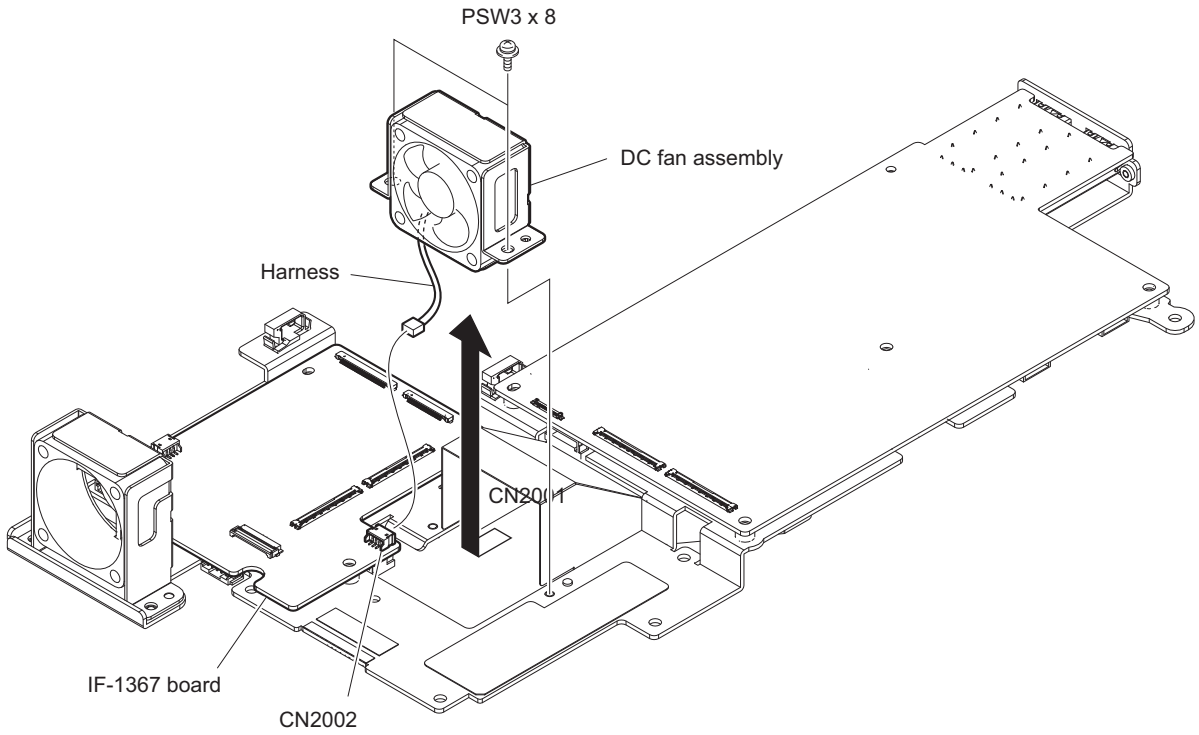
2-11-5. DC Fan 2

Preparation

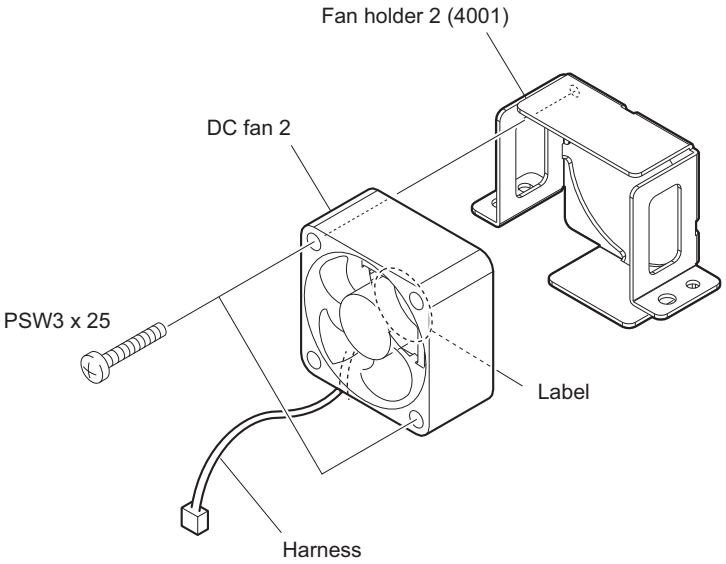
1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
3. Remove the IF-1367/NET-37 board assembly. (Refer to "2-11-1. IF-1367/NET-37 Board Assembly")

Procedure

1. Remove the DC fan assembly.
   (1) Remove the two screws.
   (2) Remove the DC fan assembly in the direction of the arrow.
   (3) Disconnect the harness from the connector (CN2002) on the IF-1367 board.



2. Remove the two screws, and then remove the DC fan 2 from the fan holder 2 (4001).



Note

When installing the DC fan, be careful to the position of label side and harness.

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

2-12. VIF-60 Board

Note

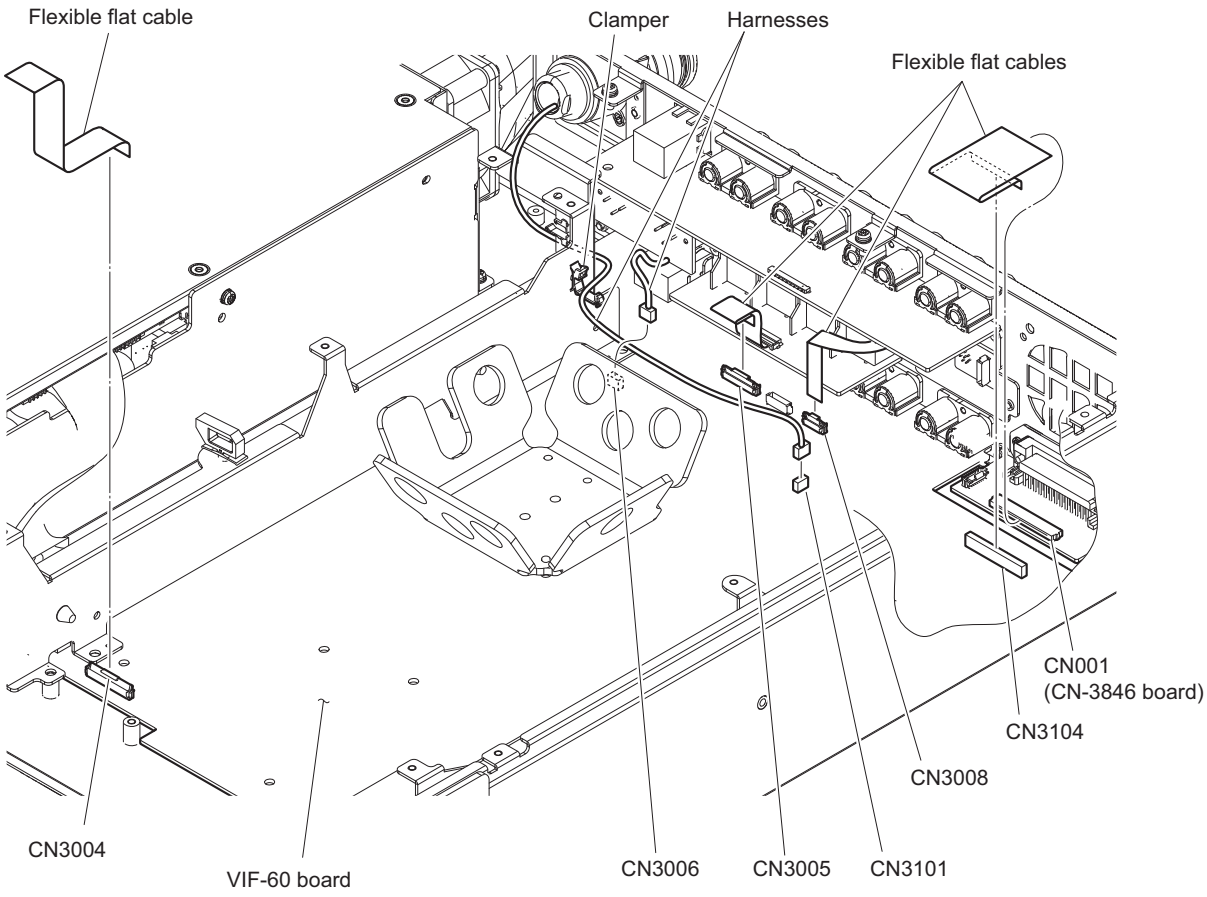
The tape (20 x 30) is not reusable. Prepare new parts in advance. (When HKCU-4002 is mounted)

Preparation

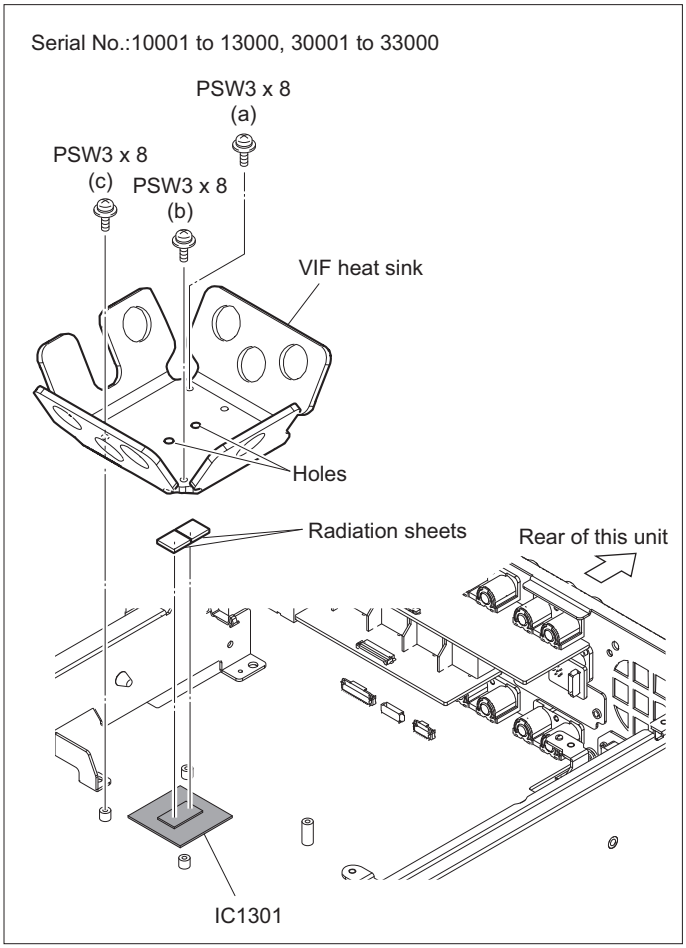
1. Remove the front panel assembly. (Refer to "2-2-1. Front Panel Assembly")
2. Remove the top cover. (Refer to "2-3. Top Cover")
3. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")
4. Remove HKCU-IP43F or HKCU-4002. (Refer to "2-8. CN-3797 Board (HKCU-IP43F)", "2-9. DIF-268 Board (HKCU-4002)", "2-10. NET-26 Board (HKCU-IP43F)".)
5. Remove the DC fan assembly. (Refer to "2-5. DC Fan")

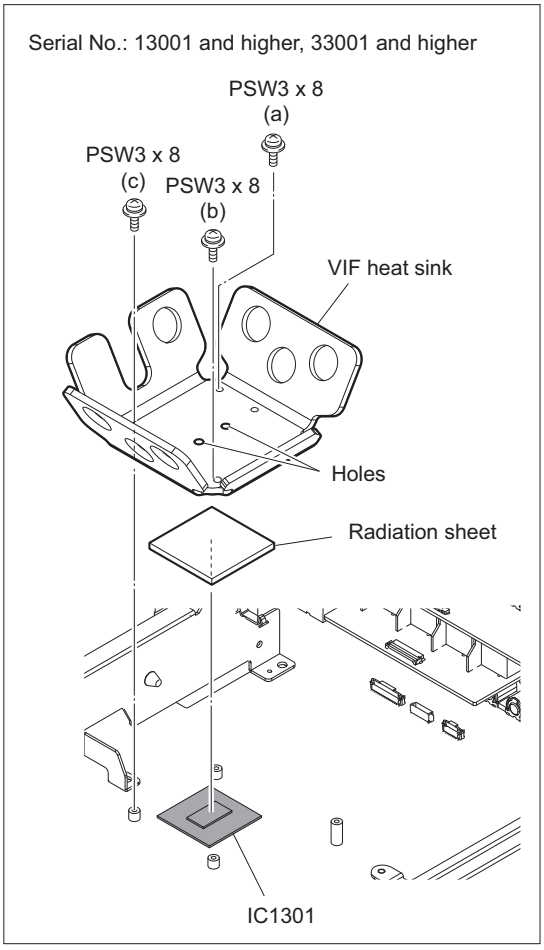
Procedure

1. Disconnect the harnesses and flexible flat cables.
   (1) Disconnect the flexible flat cable from the connector (CN3004) on the VIF-60 board.
   (2) Release the harness from the clamper, then disconnect the two harnesses from the two connectors (CN3006, CN3101) on the VIF-60 board.
   (3) Disconnect the two flexible flat cables from the two connectors (CN3005, CN3008) on the VIF-60 board.
   (4) Disconnect the flexible flat cable from the connector (CN001) on the CN-3846 board and connector (CN3104) on the VIF-60 board.



2. Remove the VIF heat sink.
   (1) Remove the three screws, then remove the VIF heat sink.
   (2) Remove the two radiation sheets.

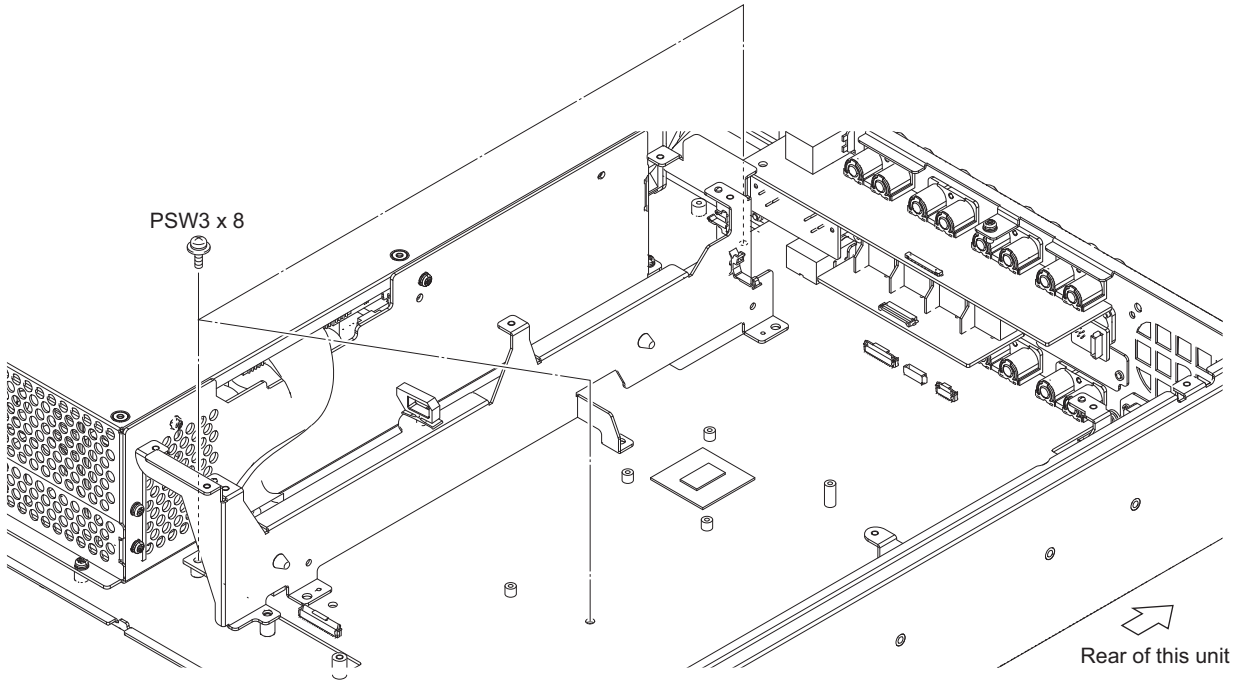




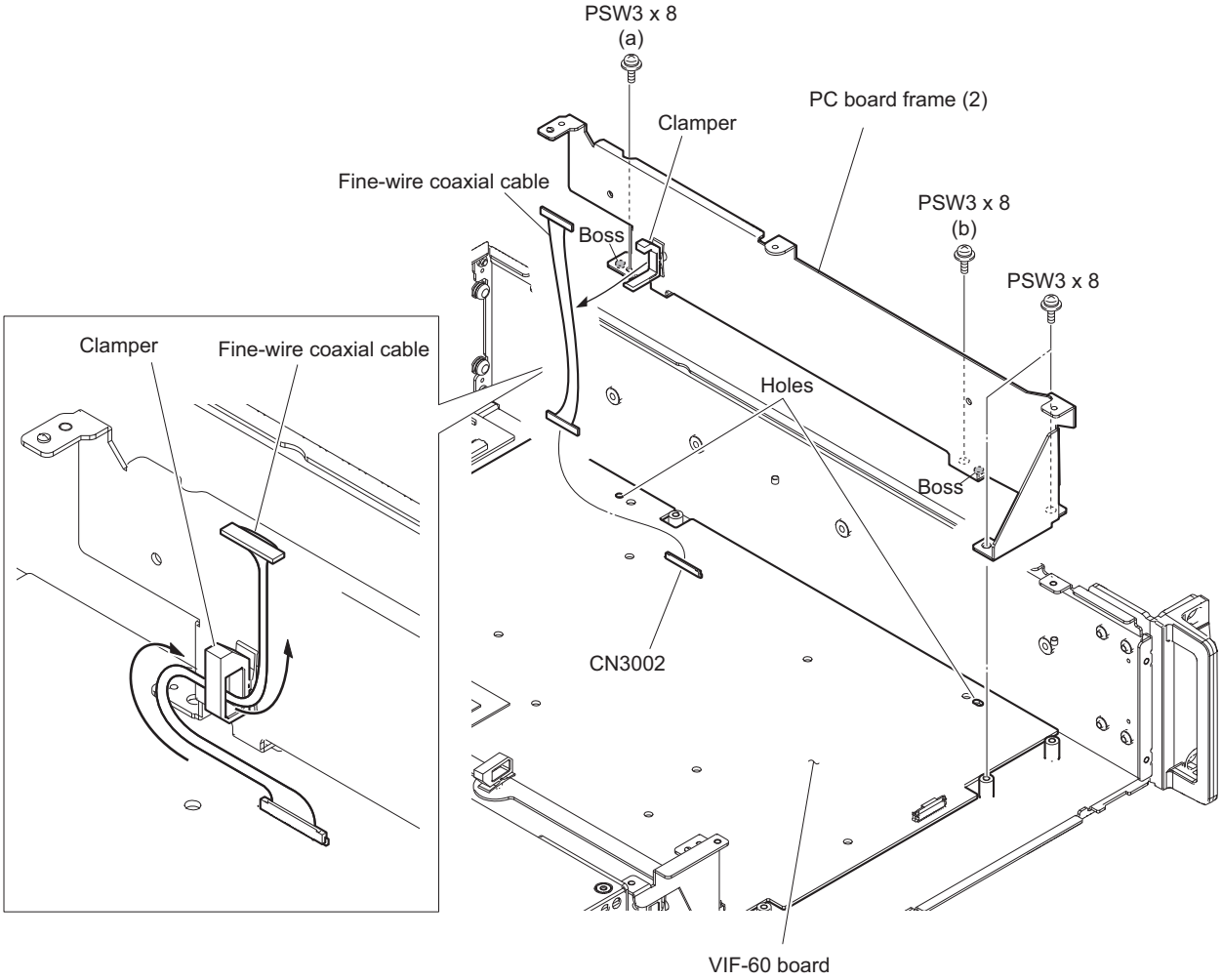
Note

When installing the VIF heat sink, tighten the screws in the following sequence: (a), (b), (c).

3. Remove the three screws.



4. Remove the PC board frame (2).
   (1) Release the fine-wire coaxial cable from the clamper, then disconnect the fine-wire coaxial cable from the connector (CN3002) on the VIF-60 board.
   (2) Remove the four screws, then remove the PC board frame (2).



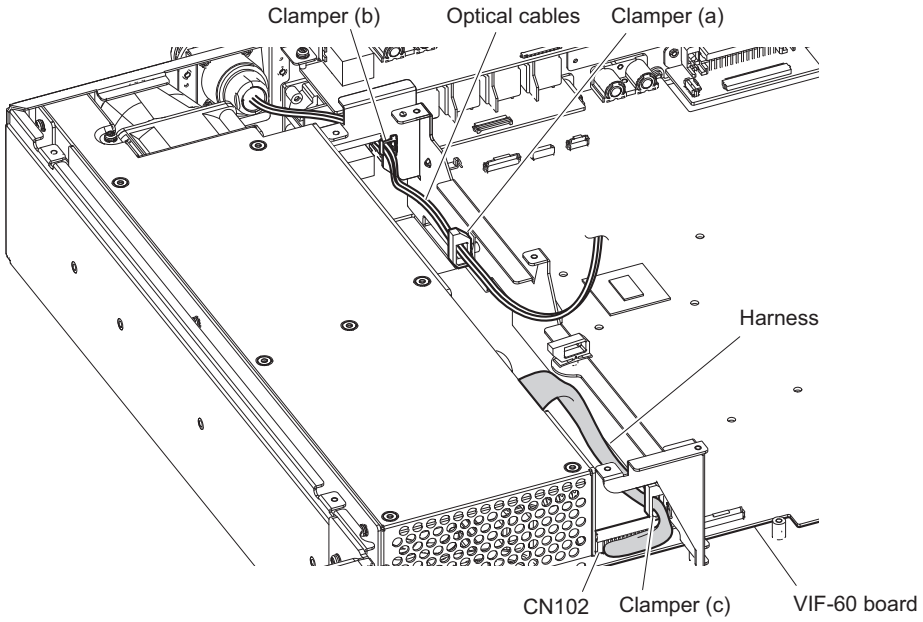
Note

When installing the PC board frame (2), align the two bosses with the two holes. Furthermore, confirm that the four screws removed in step 6 are tightened, and tighten the screws in the following sequence: (a), (b) and others.

Note

When passing the fine-wire coaxial cable through the clamper, set the longitudinal edge of the clamper to the vertical direction and collect the slack of the cable to the rear panel side from the clamper.

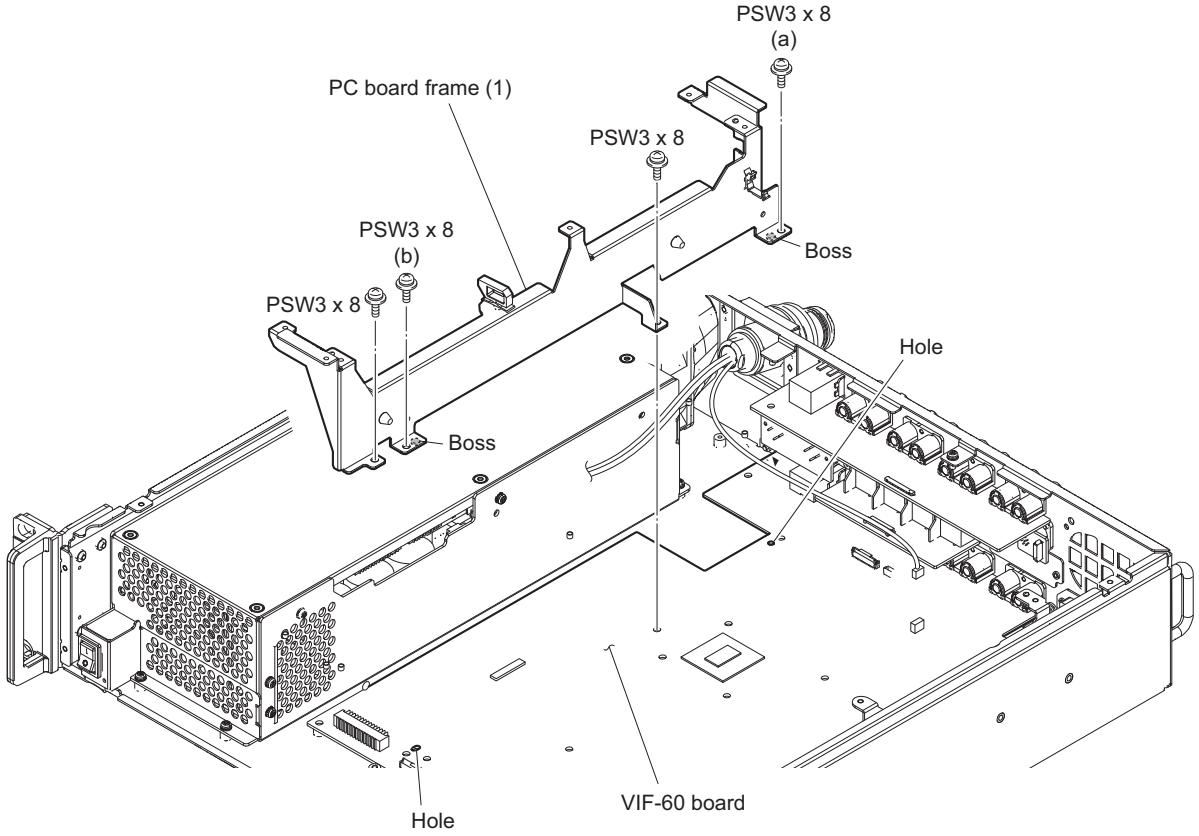
5. Remove the PC board frame (1).
   (1) Release the two optical cables from the clamper (a) and clamper (b).
   (2) Release the harness from the clamper (c), then disconnect the harness from the connector (CN102) on the VIF-60 board.



Note

When clamping the harness with the clamper (c), push the harness to the rear side of the unit.

(3) Remove the four screws, then remove the PC board frame (1).



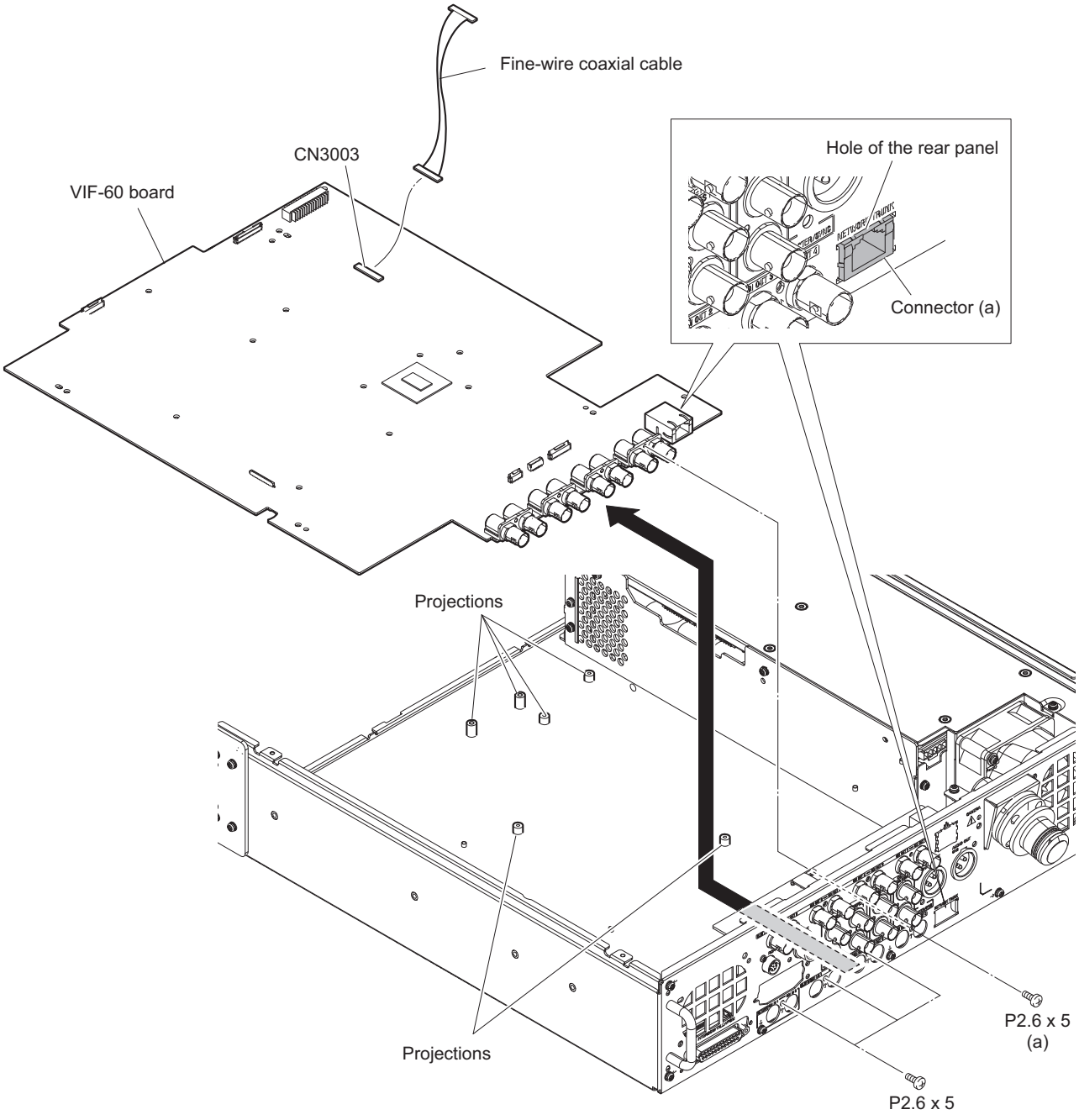
Note

When installing the PC board frame (1), align the two bosses with the two holes. Furthermore, confirm that the four screws removed in step 6 are tightened, and tighten the screws in the following sequence: (a), (b) and others.

6. Remove the VIF-60 board.
   (1) Disconnect the fine-wire coaxial cable from the connector (CN3003) on the VIF-60 board.
   (2) Remove the four screws, then remove the VIF-60 board in the direction of the arrow.

Note

Be careful not to damage the VIF-60 board with the projections on the chassis.



Note

When installing the VIF-60 board, note the following instructions.

- Carefully install the VIF-60 board to the chassis so as not to damage the VIF-60 board with the projections on the chassis.
- Confirm that the connector (a) is inserted into the hole in the rear panel.
- Tighten the screws in the following sequence: (a), and others.

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

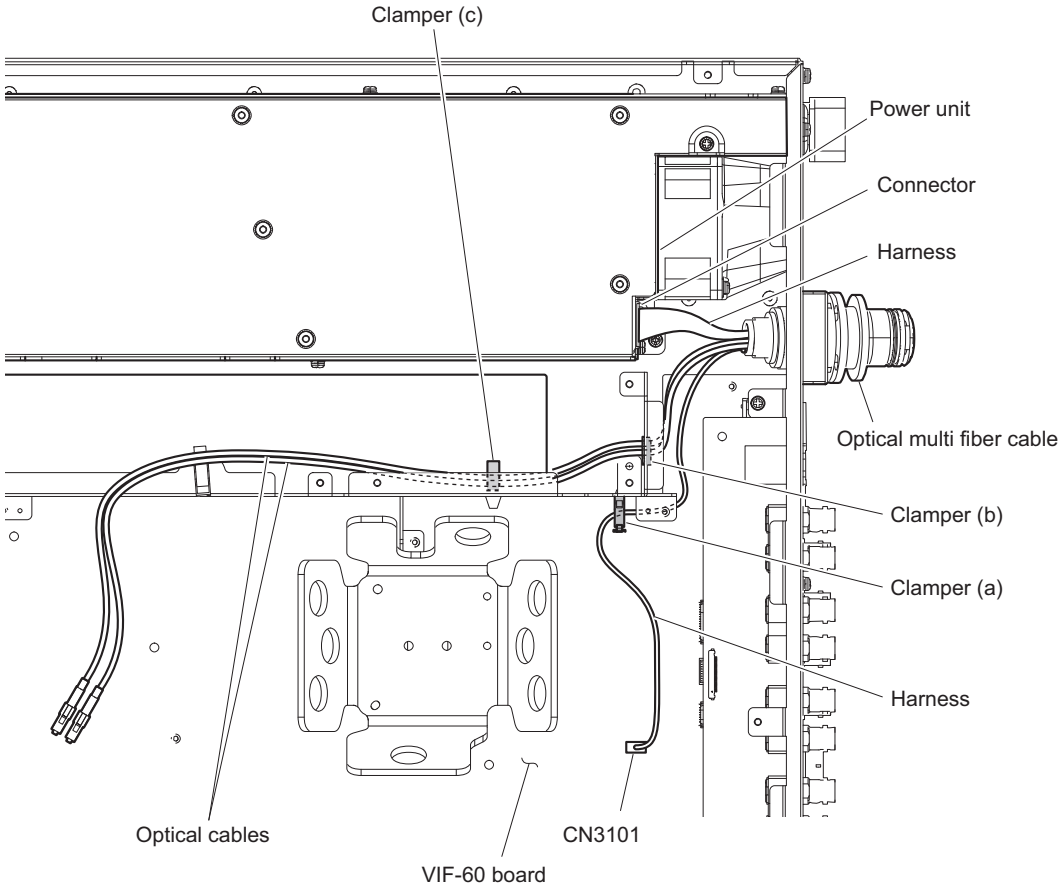
2-13. Optical Multi Fiber Cable

Preparation

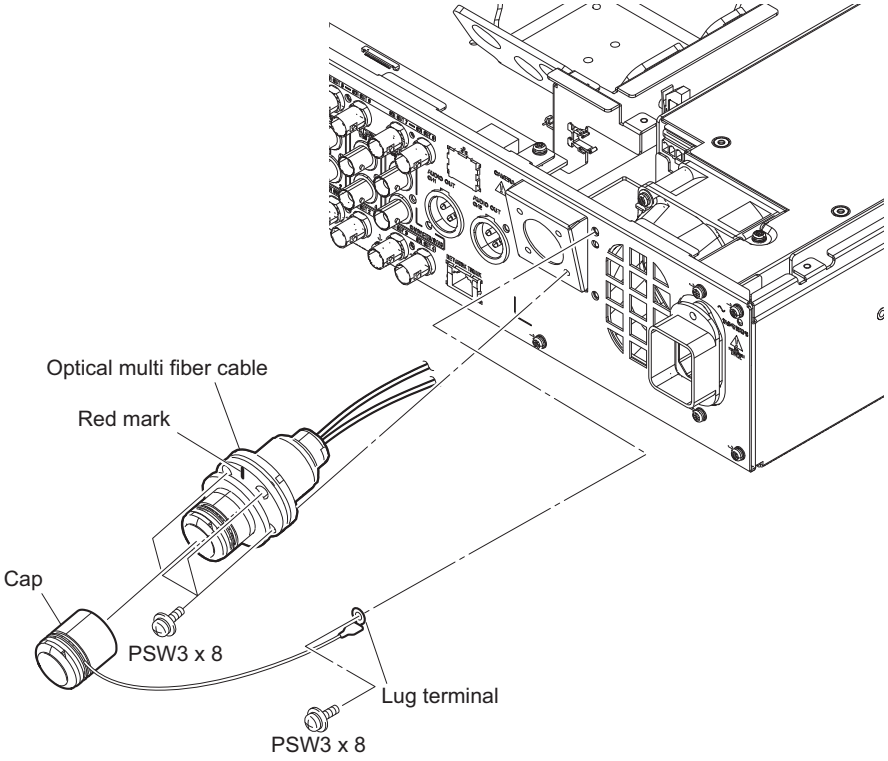
1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DVP assembly. (Refer to "2-7-1. DVP Assembly")

Procedure

1. Disconnect the harnesses.
   (1) Release the harness from the clamper (a), then disconnect the harness from the connector (CN3101) on the VIF-60 board.
   (2) Release the two optical cables from the clamper (b) and clamper (c).
   (3) Disconnect the harness from the connector of the power unit.



2. Remove the optical multi fiber cable.
   (1) Remove the cap.
   (2) Remove the screw, then remove the lug terminal.
   (3) Remove the four screws, then remove the optical multi fiber cable.



Note

When installing the optical multi cable assembly, attach it with the red mark facing up.

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

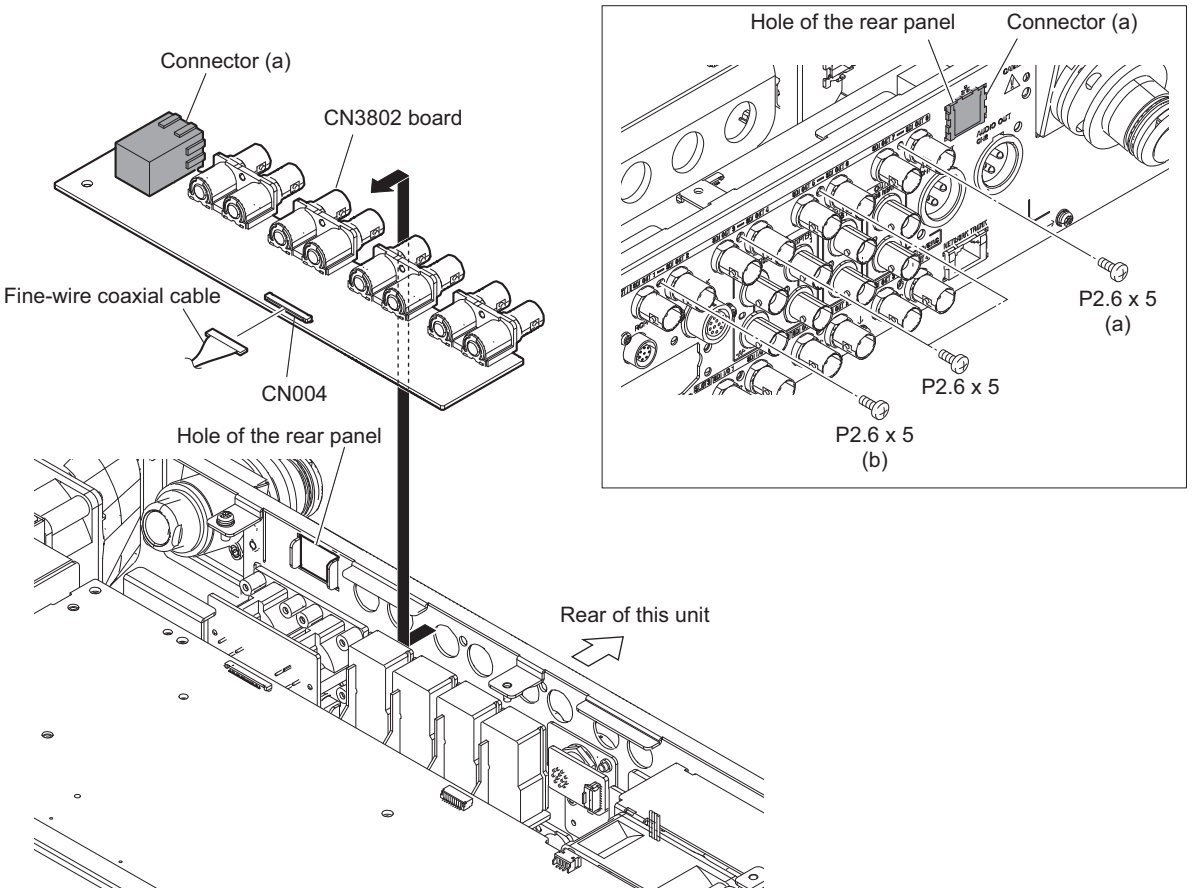
2-14. CN-3802 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")

Procedure

1. Disconnect the fine-wire coaxial cable from the connector (CN004) on the CN-3802 board.
2. Remove the four screws, then remove the CN-3802 board in the direction of the arrow.



Note

When installing the CN-3802 board, note the following instructions.

- Confirm that the connector (a) is inserted into the hole in the rear panel.
- Tighten the screws in the following sequence: (a), (b) and others.
- Push the slack of the fine-wire coaxial cable into the space under the CN-3802 and DVP-67 boards.

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

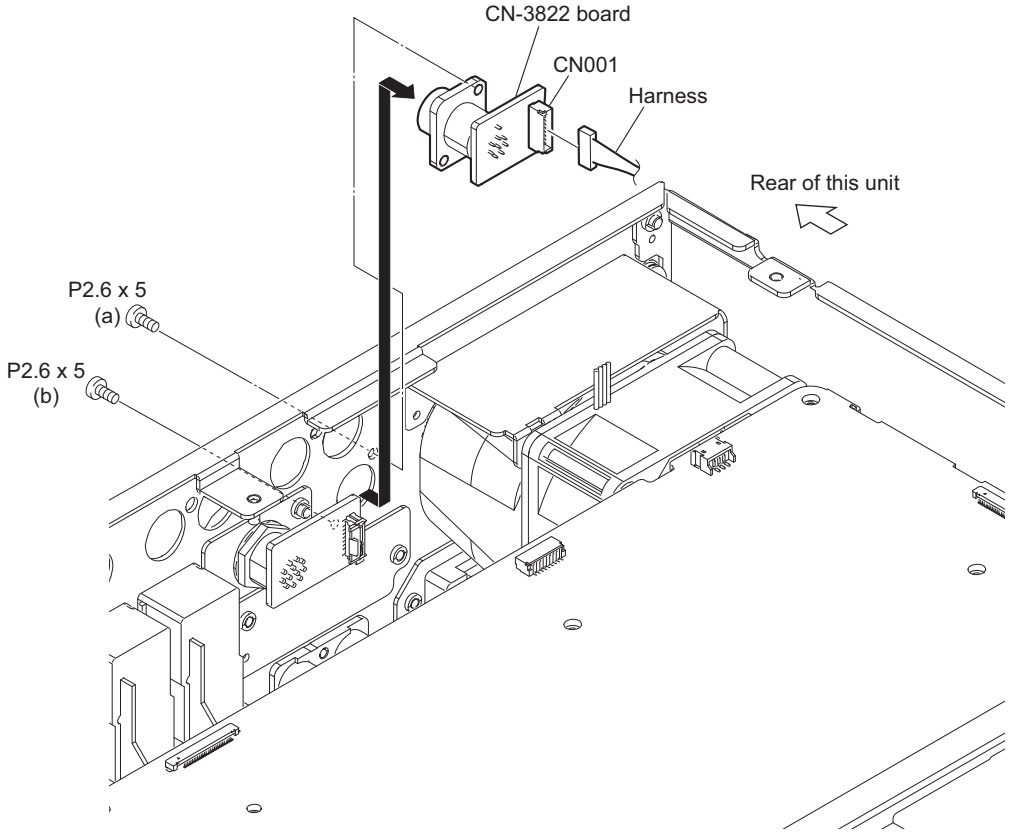
2-15. CN-3822 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the CN-3802 board. (Refer to "2-14. CN-3802 Board")

Procedure

1. Disconnect the harness from the connector (CN001) on the CN-3822 board.
2. Remove the two screws, then remove the CN-3822 board in the direction of the arrow.



Note

When installing the CN-3822 board, tighten the screws in the following sequence: (a), (b).

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

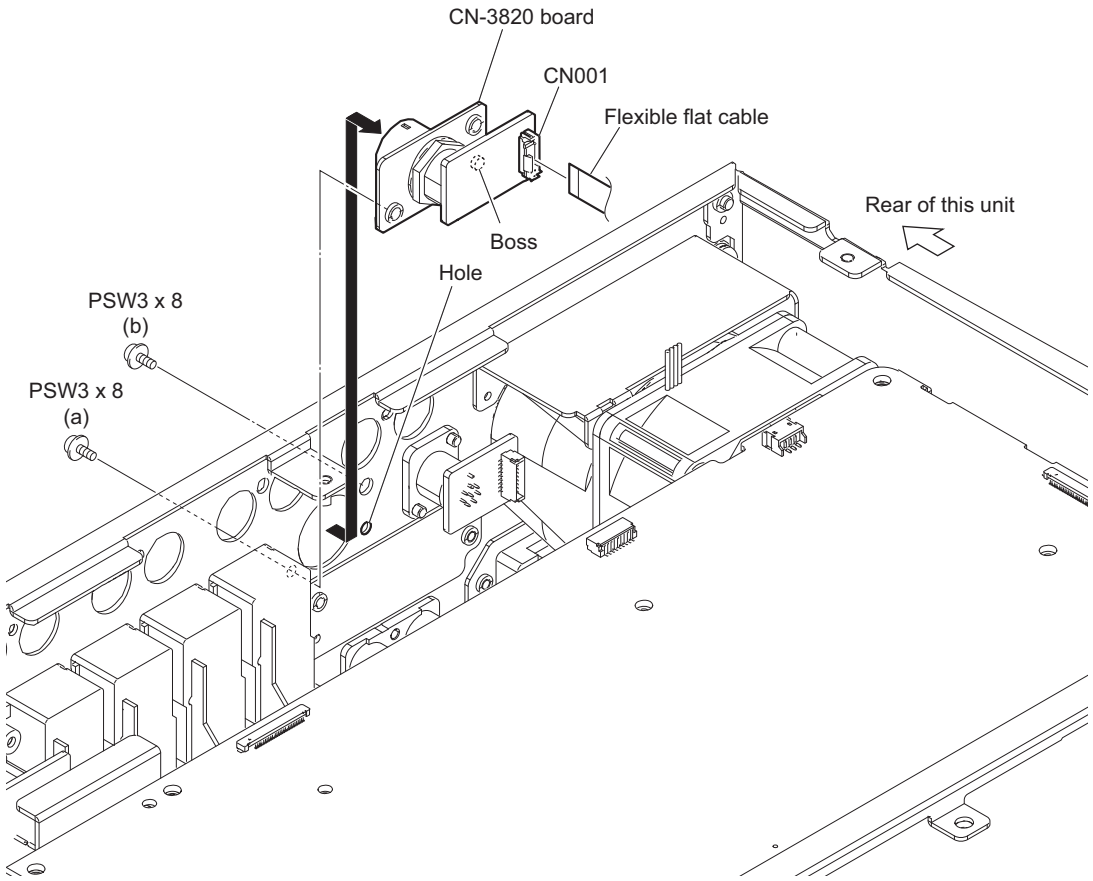
2-16. CN-3820 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the CN-3802 board. (Refer to "2-14. CN-3802 Board")

Procedure

1. Disconnect the flexible flat cable from the connector (CN001) on the CN-3820 board.
2. Remove the two screws, then remove the CN-3820 board in the direction of the arrow.



Note

When installing the CN-3820 board, note the following instructions.

- Align the boss with hole of the rear panel.
- Tighten the screws in the following sequence: (a), (b).

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

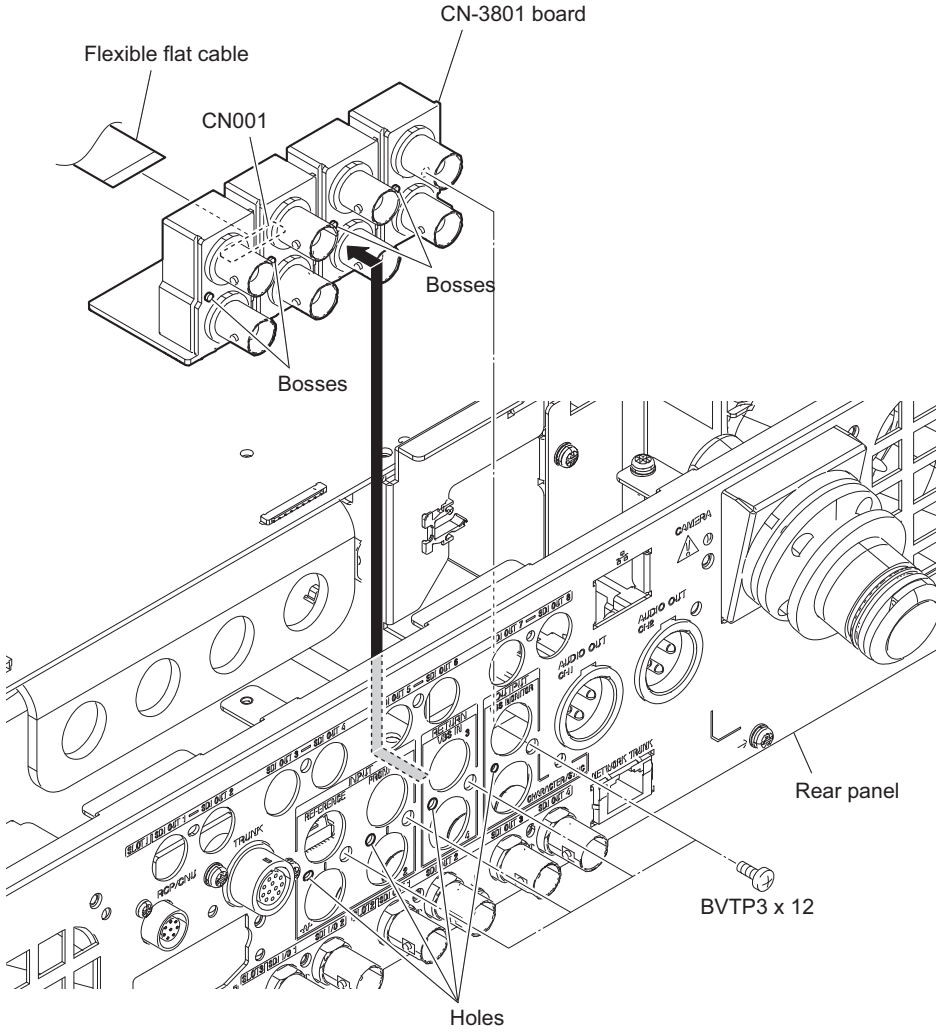
2-17. CN-3801 Board

Preparation

1. Remove the top cover. (Refer to “2-3. Top Cover”)
2. Remove the CN-3802 board. (Refer to “2-14. CN-3802 Board”)

Procedure

1. Disconnect the flexible flat cable from the connector (CN001) on the CN-3801 board.
2. Remove the four screws, then remove the CN-3801 board in the direction of the arrow.



Note

When attaching the CN-3801 board, align the four bosses with the four holes of the rear panel.

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

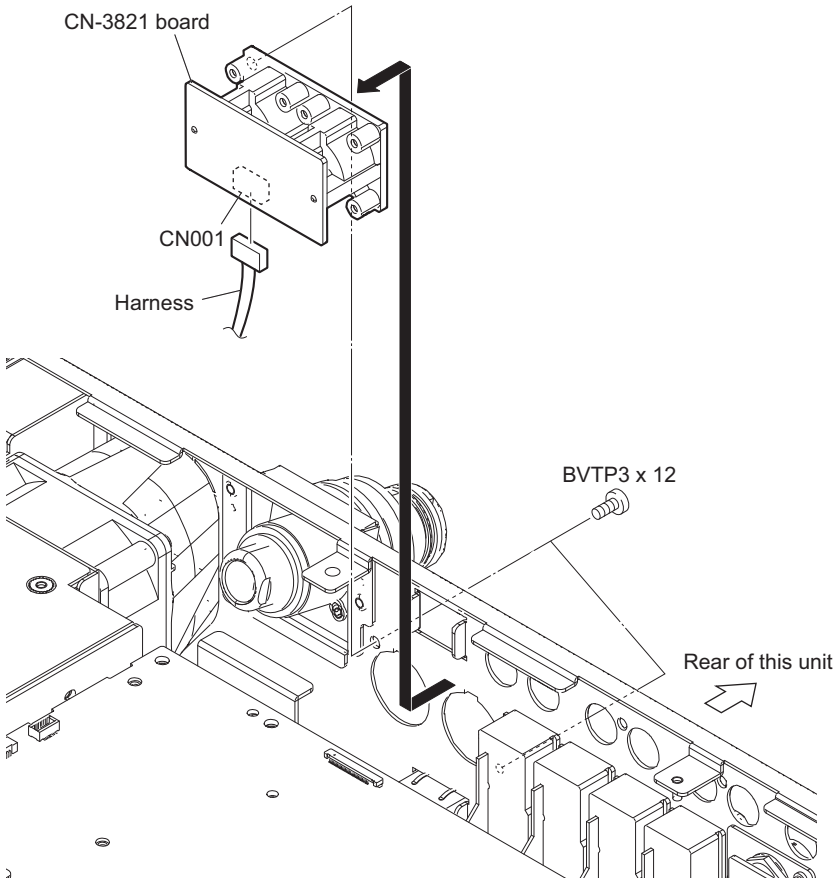
2-18. CN-3821 Board

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the CN-3802 board. (Refer to "2-14. CN-3802 Board")

Procedure

1. Remove the two screws, then draw the CN-3821 board in the direction of the arrow.
2. Disconnect the harness from the connector (CN001) on the CN-3821 board.



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

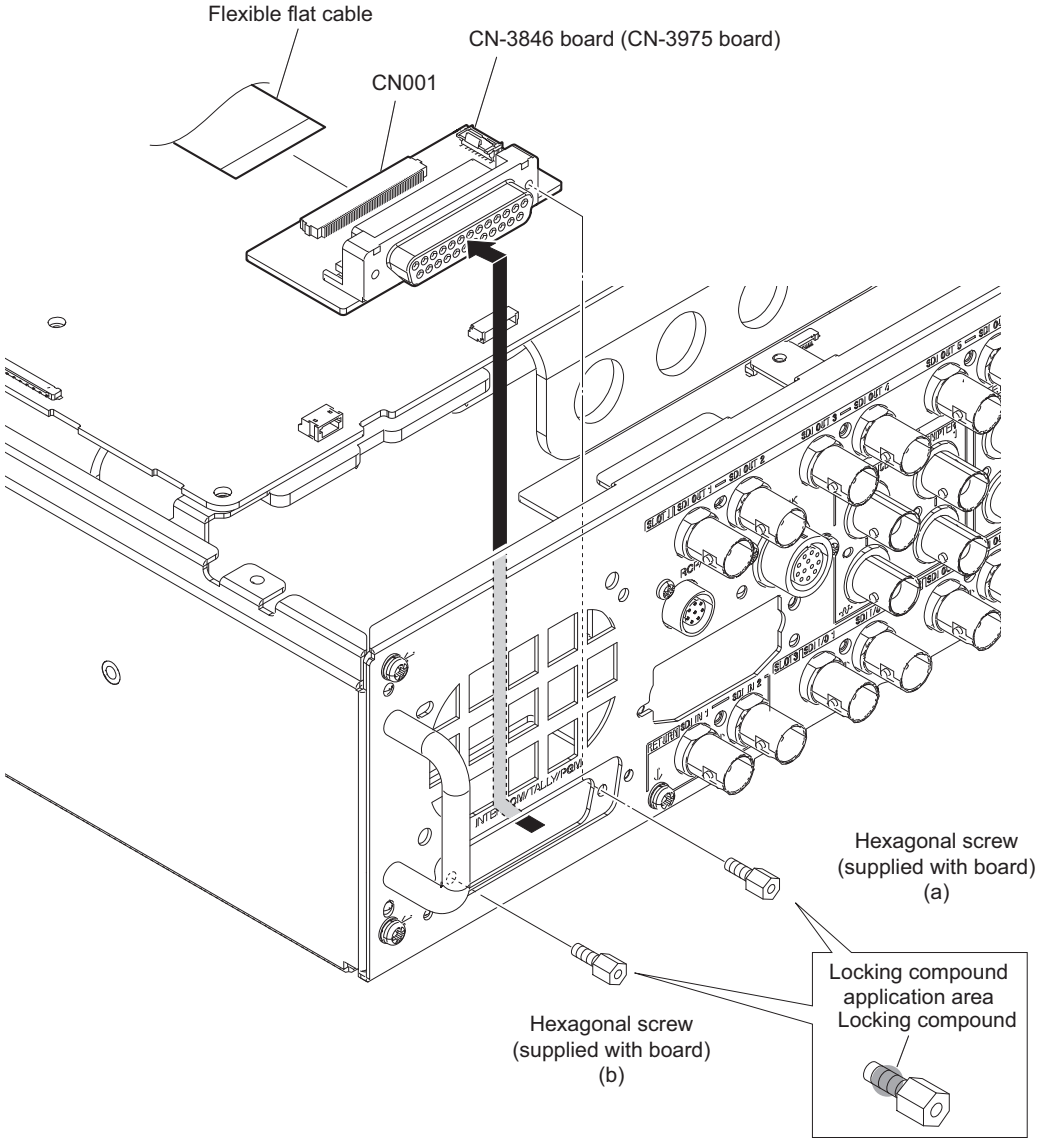
2-19. CN-3846 Board (CN-3975 Board)

Preparation

1. Remove the top cover. (Refer to "2-3. Top Cover")
2. Remove the DC fan assembly. (Refer to "2-5. DC Fan")

Procedure

1. Disconnect the flexible flat cable from the connector (CN001) on the CN-3846 board (CN-3975 board).
2. Remove the two hexagonal screws, then remove the CN-3846 board (CN-3975) in the direction of the arrow.



Note

- When installing the hexagonal screws, apply locking compound to them.
  Locking compound 1401B (7-600-002-52)
- When installing two hexagonal screws, temporarily tighten the hexagonal screw (a) and (b), and then secure them.

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

Section 3
Electrical Adjustment

3-1. Preparations

3-1-1. Equipment Required

Measuring equipment

Equipment	Type name
Digital oscilloscope (300 MHz or higher)	Tektronix TDS460A or equivalent
Frequency counter	Advantest TR5821AK or equivalent

Related equipment

Model name	Description
HDC4300	Color video camera
MSU-1000/1500	Master setup unit

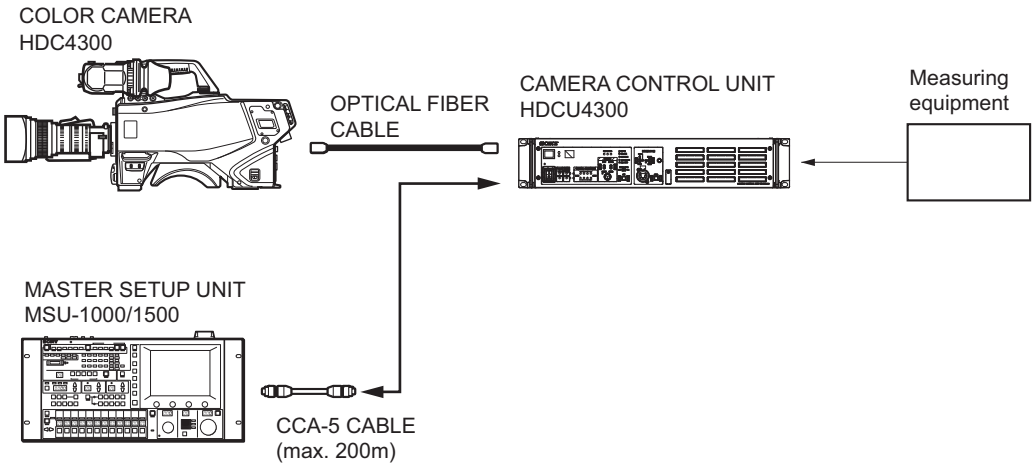
3-1-2. Notes on Adjustments

- Make sure all the measuring equipment have already been calibrated.
- Make sure "3-1-4. Initialization Settings" have already been finished.
- Make sure the adjustment of the HDC4300 has already been finished.
- Types of the color bars to be output from the built-in synchronizing signal generator :

Signal format	Y	C
HD-SDI	100 %	100 %
SD	100 %	75 %

- Before starting adjustment, warm up for about 10 minutes.
- Before using the MSU-1000/1500, check the version of the ROM. For details, refer to Installation manual.

3-1-3. Connection of Equipment



3-1-4. Initialization Settings

When MSU-1000 is used

Power supply and signal switching block

Name	Setting
ALL buttons	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)

3-2. Video/Reference Signal System Adjustment

3-2-1. 27 MHz VCO Free-Running Adjustment

Measuring equipment

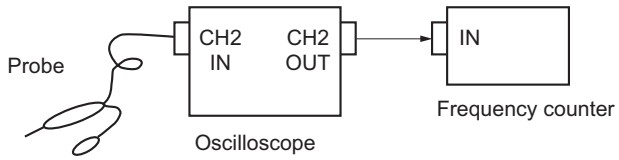
- Frequency counter
- Oscilloscope

Preparation

1. Open the top panel of HDCU4300.
2. Disconnect the cable from the REFERENCE INPUT connector.
3. Connect the measuring equipment to the TP terminal on the DVP-67 board (B side).
4. Turn on the power of the unit.

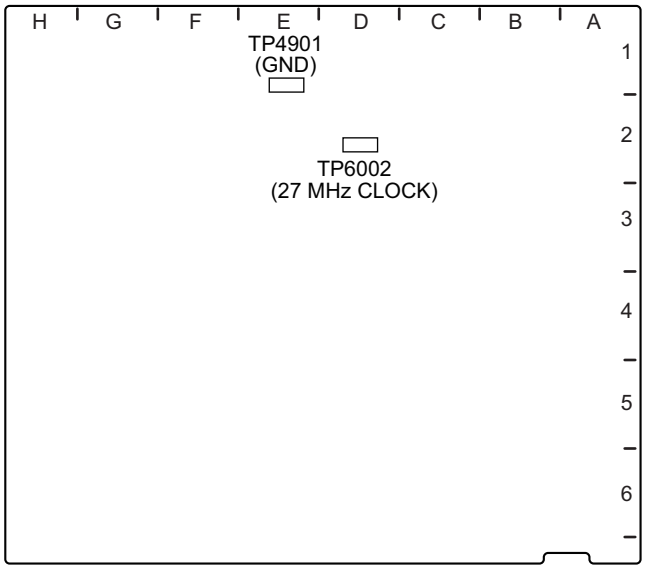
Note

Wait for at least 10 minutes after the unit is turned on, and then start adjustment.



Adjustment Procedure

Test Point: TP6002 (D-2)/DVP-67 board
Adjusting Point: SERVICE menu → ANALOG ADJUST (S06) → 27 MHz CLOCK
Specification: 27,000,000 ±50 Hz



DVP-67 Board (B Side)

Setting after Adjustment

After adjustment is completed, turn off the power of the HDCU4300, close the top panel and reconnect the disconnected cable.

Section 4
Menu Settings

This unit can display the unit status and entire system status on the monitor connected to the SDI output connectors (SLOT2, SLOT3, CHARACTER) to check or change settings.

4-1. Preparations

4-1-1. Display/Hide the Status Screen

To display the status screen

Turn the DISP/MENU lever to the DISP side.

Tip

Turning the control knob changes the displayed page.

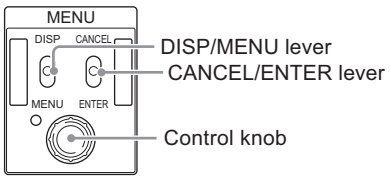
To exit the status screen display

In status screen display mode, set the DISP/MENU lever to the DISP position.

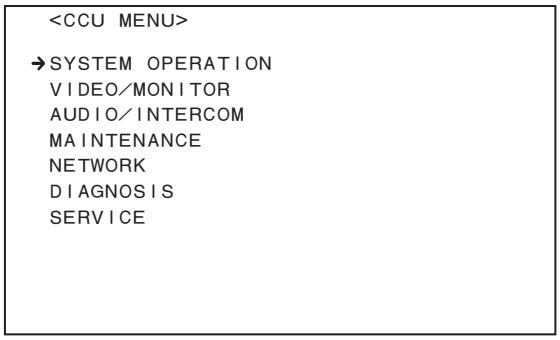
4-1-2. Starting and Exiting the SERVICE Menu

Starting

1. When the status screen or menu screen is displayed, hide the screen.
   - When the status screen is displayed, turn the DISP/MENU lever to the DISP side once.
   - When the menu screen is displayed, turn the DISP/MENU lever to the MENU side once.
2. While pressing the control knob, turn the CANCEL/ENTER lever quickly to the ENTER side twice.
3. Turn the DISP/MENU lever to the MENU side within two seconds.



4. Check that the following screen appears. If it does not appear, repeat steps 1 to 3.



5. Set the cursor to [SERVICE] and press the control knob.
   The SERVICE menu is displayed.

Exiting

1. When the status screen or menu screen is displayed, hide the screen.
2. Turn the CANCEL/ENTER lever quickly to the CANCEL side twice.

4-1-3. Changing Setting Values

To enter:

Press the control knob. Or turn the CANCEL/ENTER lever to the ENTER side.

To cancel:

Turn the CANCEL/ENTER lever to the CANCEL side before pressing the control knob. The setting of the selected item is restored.

To suspend:

Turn the DISP/MENU lever to the MENU. The menu disappears.

To restart the setting operation, turn the DISP/MENU lever again to the MENU side.

4-2. SERVICE Menu

This unit is provided with the SERVICE menu useful for maintenance.
For how to display the SERVICE menu, refer to "4-1-2. Starting and Exiting the SERVICE Menu".

4-2-1. SERVICE Menu List

Screen display

```
      CONTENTS                  S00 TOP

→01 <SOFTWARE PACKAGE>
 02 <PLD PACKAGE>
 03 <RESET>
 04 <SERIAL NUMBER>
 05 <ANALOG ADJUST>
 06 <POWER UNIT STATUS>
 07 <BOARD STATUS (DVP) >
 08 <BOARD STATUS (VIF) >
 09 <BOARD STATUS (NET) >*1
 10 <OTHERS>
```

Description

Menu Page No.	Menu Page Name	Remarks
S01	SOFTWARE PACKAGE	Displaying and updating software version
S02	PLD PACKAGE	Displaying and updating PLD version
S03	RESET	Initializing setting values
S04	SERIAL NUMBER	Displaying serial number
S05	ANALOG ADJUST	Fine-adjusting PROMPTER input level and 27 MHz VCO flee-run
S06	POWER UNIT STATUS	Displaying power unit status
S07	BOARD STATUS(DVP)	Displaying DVP board status
S08	BOARD STATUS(VIF)	Displaying VIF board status
S09	BOARD STATUS(NET)*1	Displaying NET board status
S10	OTHERS	Displaying and setting other information

4-2-2. Description of SERVICE Menu

Tip

The display screen appearing in this section shows the indication example.

*1: It will be displayed only when installed the HKCU-IP43F.

SOFTWARE PACKAGE

Screen display

```
<SOFTWARE PACKAGE>          ?S01 TOP

  APPLICATION      :   V1.00
  OS               :   V1.00
  UPDATER          :   V1.00
  NMI LSI INSTALL  :   V1.2.0*1
```

Description

Item	Setting Value	Description
APPLICATION	—	Display the current software version. Place the cursor on the version to update the version.
OS	—	
UPDATER	—	
NMI LSI INSTALL*1	—	

PLD PACKAGE

Screen display

```
<PLD PACKAGE>                 ?S02 TOP

  SY              : V1.00
  TX              : V1.00
  DEC (HDC4300)   : V1.00


  DPR (NORMAL)    : V1.00


  4K-POST         : V1.00
  SDP             : V1.00
  MIF             : V1.00
  VIF             : V1.00
  NET             : V1.01*1
```

*1: It will be displayed only when installed the HKCU-IP43F.

Description

Item	Setting Value	Description
SY	—	Display the current PLD version. Place the cursor on the version to update the version.
TX	—	
DEC(HDC4300)	—	
DPR(NORMAL)	—	
4K-POST	—	
SDP	—	
MIF	—	
VIF	—	
NET*1	—	

RESET

Screen display

```
<RESET>                          ?S03 TOP

 RECALL FACTORY SETTINGS: EXEC

 RESET HOUR METER       : EXEC
```

Description

Item	Setting Value	Description
RECALL FACTORY SETTINGS	—	Re-set all setting values except for the following to factory default values. • ANALOG ADJUST page PROMPTER1 LEVEL PROMPTER2 LEVEL 27 MHz Clock
RESET HOUR METER	—	Reset the cumulative power-on time.

*1: It will be displayed only when installed the HKCU-IP43F.

SERIAL NUMBER

Screen display

```
<SERIAL NUMBER>              ?S04 TOP
     STORE OK?  YES →NO

 MODEL NAME    : HDCU4300


 SERIAL NUMBER: 0000000
```

Description

Item	Setting Value	Description
MODEL NAME	**HDCU4300**	Display the model name of the unit.
SERIAL NUMBER	**00000000** to 99999999	Display the serial number set in the unit.

ANALOG ADJUST

Screen display

```
<ANALOG ADJUST>              ?S05 TOP

 PROMPTER1 LEVEL :   0
 PROMPTER2 LEVEL :   0
 27MHz CLOCK     : 136
```

Description

Item	Setting Value	Description
PROMPTER1 LEVEL	-127 to 128	Adjust the PORMPTER1 input signal level.
PROMPTER2 LEVEL	-127 to 128	Adjust the PORMPTER2 input signal level.
27MHz CLOCK	0 to 255	Adjust the 27 MHz oscillation frequency.

POWER UNIT STATUS

Screen display

```
<POWER UNIT STATUS>          ?S06 TOP

 CAM POWER
  180V  1.0A     OK



 RCP POWER       OK

 FAN             OK

 TEMP            55.2℃
```

Description

Item	Setting Value	Description
CAM POWER	—	Display the camera power supply status, voltages, and current measurement values.
RCP POWER	—	Display the RCP power supply status.
FAN	—	Display the operating status of the fan on the power unit.
TEMP.	—	Display the temperature of the power unit.

BOARD STATUS (DVP)

Screen display

```
<BOARD STATUS (DVP) >          ?S07 TOP

 POWER
  INPUT1:OK   13.90V   3.05A   123.45W
  INPUT2:ERR  13.90V   3.05A   123.45W
```

Description

Item	Setting Value	Description
POWER • INPUT1 • INPUT2	—	Display the power consumption of each power supply system in the DVP-67 board.

BOARD STATUS (VIF)

Screen display

```
<BOARD STATUS (VIF)>                ?S08 TOP

 POWER
  INPUT1:OK   14.20V   1.67A    23.45W
```

Description

Item	Setting Value	Description
POWER • INPUT	—	Display the power consumption of each power supply system in the VIF-60 board.

BOARD STATUS (NET)

Screen display

```
<BOARD STATUS (NET)>                ?S09 TOP

 POWER
  INPUT1:OK   14.28V   1.15A    16.44W
```

Description

Item	Setting Value	Description
POWER • INPUT	—	Display the power consumption of each power supply systems in the NET-26 board.

OTHERS

Screen display

```
<OTHERS>                          ?S09 TOP

 CAM POWER REMOTE   : NORMAL

 AUX3               : PREVIEW
 MIC REMOTE         : MIC1&2

 4K INTERLACE OUTPUT: DISABLE
                      (SET & REPOWER)
```

Description

Item	Setting Value	Description
CAM POWER REMOTE	**NORMAL**, BACKUP	NORMAL: When the CCU is turned on, the camera is forcibly turned on. BACKUP: While the CCU is turned off, the command status from the panel is retained.
AUX3	**PREVIEW**, FLAG	Set the function of the AUX3 pin of the INTERCOM/TALLY/PGM connector. PREVIEW: Used as a PREVIEW switching signal output pin. FLAG: Used as a FLAG signal output pin.
MIC REMOTE	**MIC1&2**, MIC1,2, MIC+NETWORK	MIC1&2: • MIC1, 2 amplifier gains are common. MIC1, 2: • MIC1, 2 amplifier gains are each. MIC+NETWORK: • MIC1,2 amplifier gains are common. • Pin 14 is forcibly legacy.
4K INTERLACE OUTPUT	**DISABLE**, ENABLE	About the SLOT1 output format, set the disable or enable the selection of 4K interlace format (4K/59.94I, 4K/50I). • DISABLE: Disable the selection of 4K Interlace format • ENABLE: Enable the selection of 4K Interlace format

Section 5
Spare Parts

5-1. 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

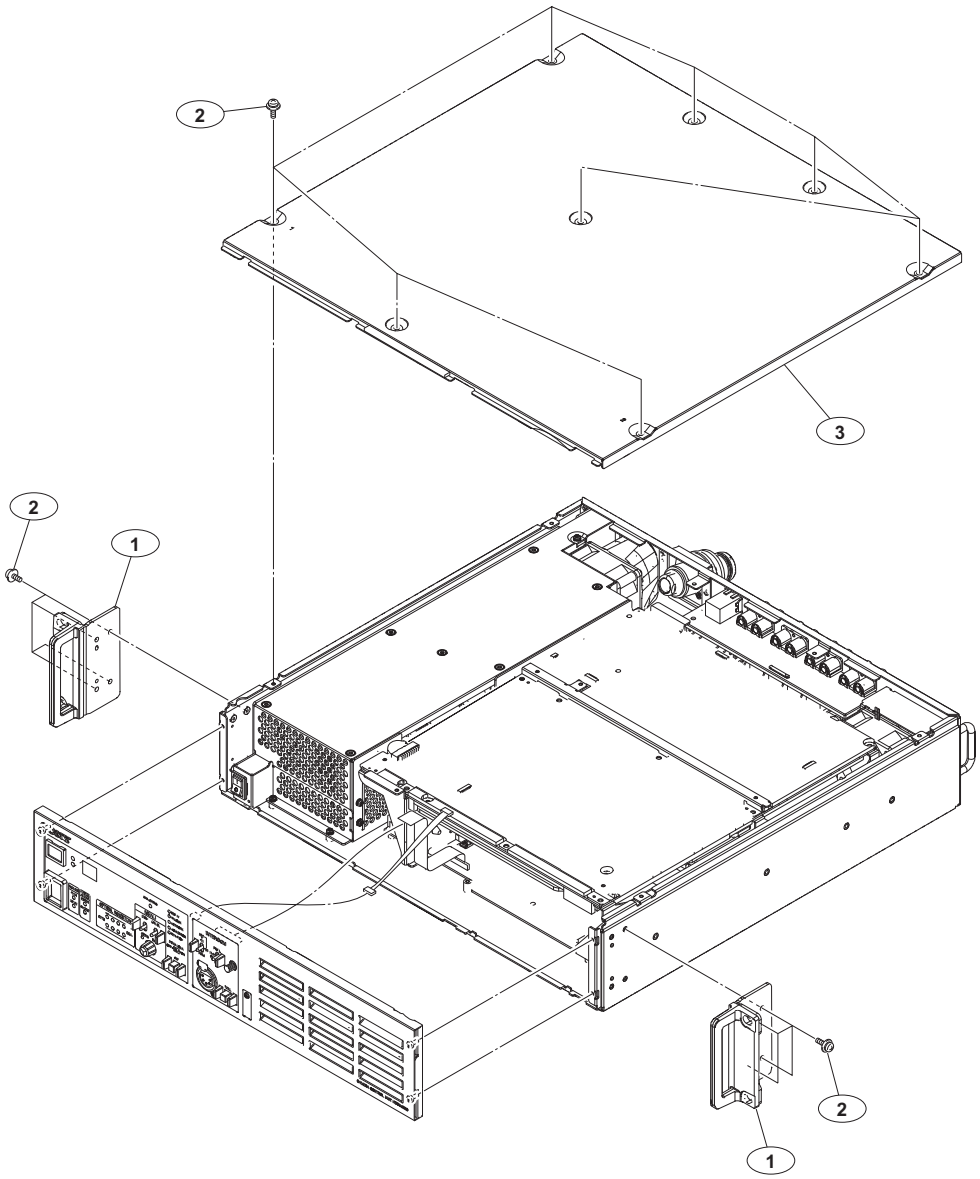
部品表の SP（Supply code）欄に "o" で示される部品は在庫していないことがあり，納期が長くなることがあります。

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。

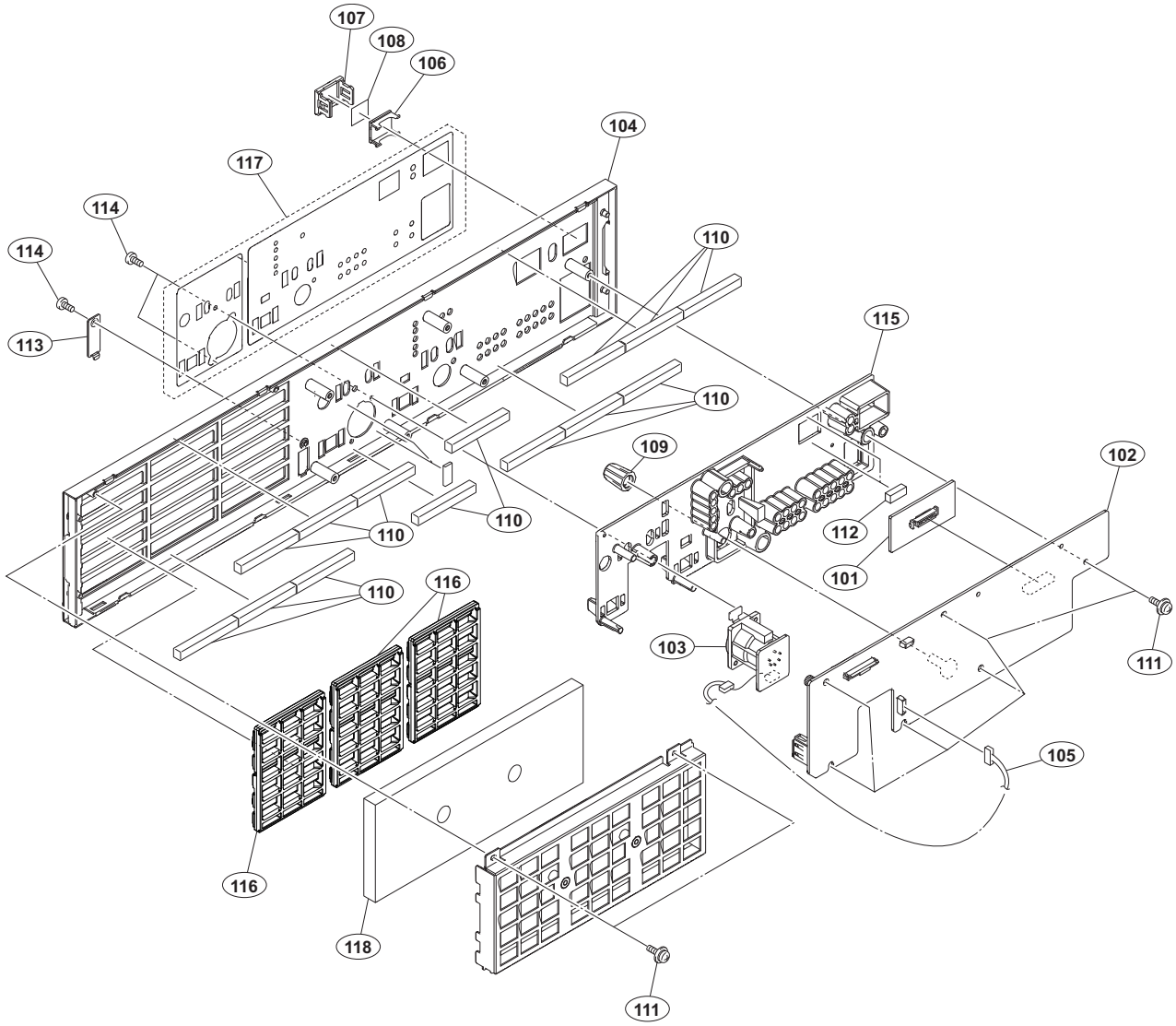
5-2. Exploded Views

Cover



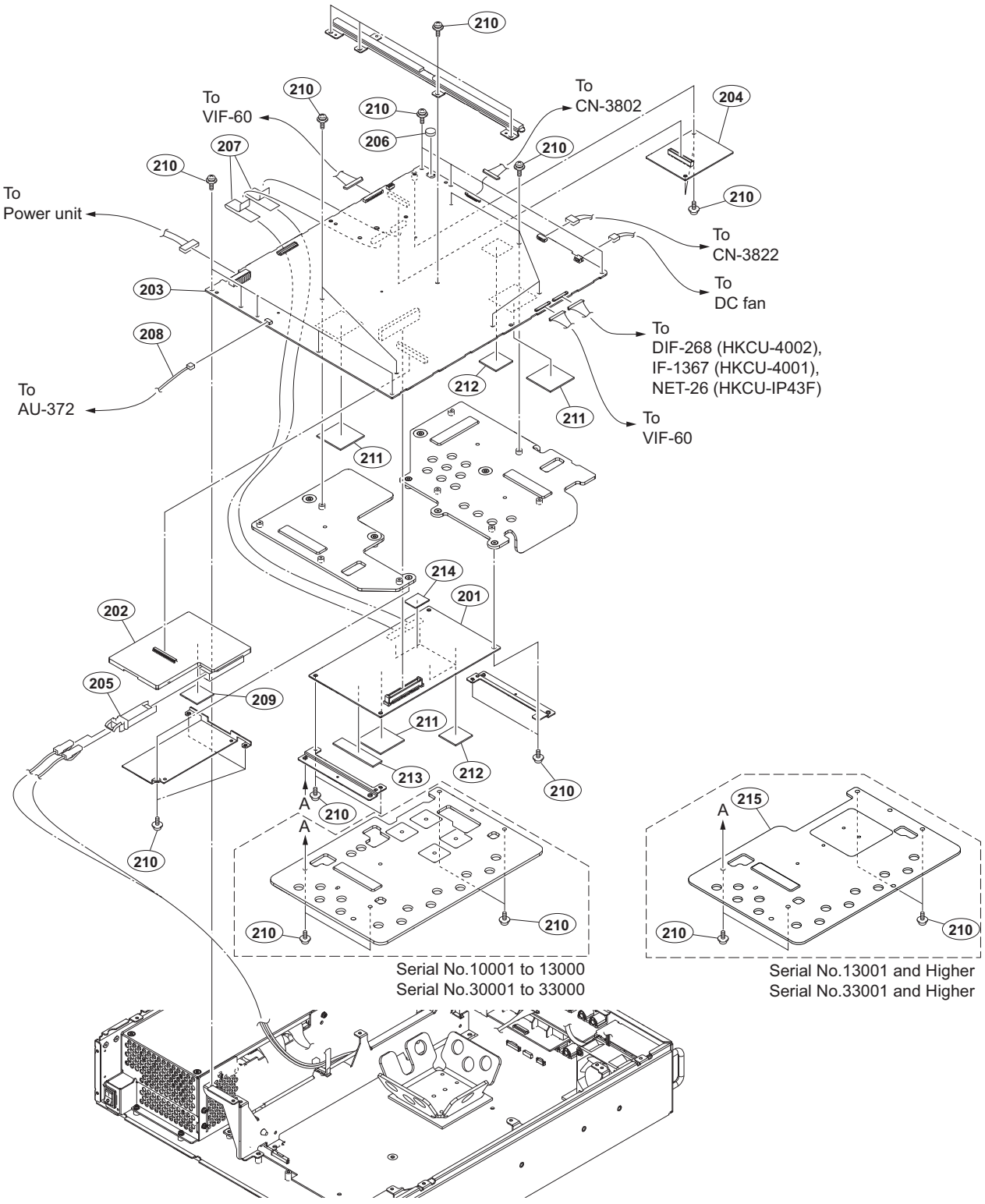
No.	Part No.	SP	Description
1	A-2103-436-A	s	BRACKET ASSY, RACK
2	4-382-854-01	s	SCREW (M3X8), P, SW (+)
3	4-585-779-01	s	COVER, TOP

Front Panel



No.	Part No.	SP	Description
101	A-2116-186-A	s	LE-410 MOUNT
102	A-2116-189-A	s	AU-372 MOUNT
103	A-2116-192-A	s	CN-3819 MOUNT
104	A-2116-290-A	s	PANEL ASSY (A), FRONT
105	1-971-261-11	s	HARNESS, SUB (AU-CN)
106	2-139-192-01	s	FRAME, INDICATOR WINDOW
107	2-139-193-02	s	WINDOW, INDICATOR
108	2-249-353-01	s	COVER, LAMP
109	4-139-232-01	s	KNOB, ROTARY ENCODER
110	4-279-434-01	s	GASKET , ND TOP
111	4-382-854-01	s	SCREW (M3X8), P, SW (+)
112	4-413-881-01	s	CUSHION(7SEG)-P
113	4-489-665-01	s	USB LID
114	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
115	4-585-771-01	s	PANEL(A), INDICATOR
116	4-585-772-01	s	LOUVER, FRONT
117	4-588-554-01	s	SHEET (A), FRONT PANEL
118	4-588-557-01	s	FILTER (A), INTAKE AIR

Chassis-1

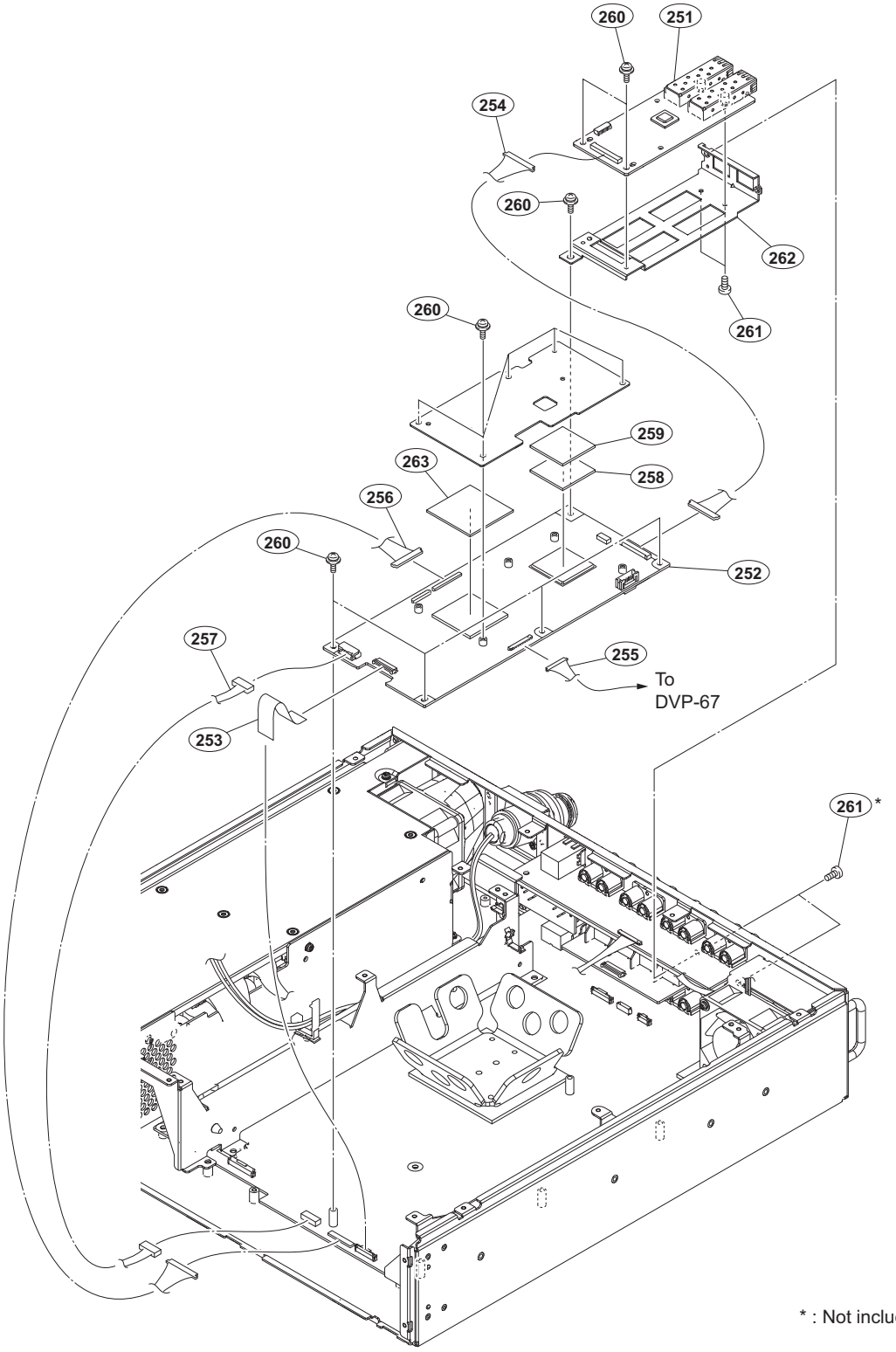


No.	Part No.	SP	Description
201	A-2091-260-A	s	DPR-348A COMPL (Serial No.10001 to 13000, Serial No.30001 to 33000)
	A-2224-937-A	s	COMPL, DPR-392 (Serial No.13001 and higher, Serial No.33001 and higher)
202	A-2103-114-A	s	TX-146C COMPL
203	A-2116-199-A	s	DVP-67 COMPL
204	A-2116-206-A	s	AT-189K COMPL
205	⚠ 1-458-776-21	s	MODULE, OPTICAL(SFP+)
206	⚠ 1-756-134-18	s	BATTERY, LITHIUM (SECONDARY)
207	1-831-125-11	s	CABLE, FLEXIBLE FLAT (30 CORE)
208	1-971-259-11	s	HARNESS, SUB (DVP-AU)
209	2-586-175-11	s	SHEET B, RADIATION
210	4-382-854-01	s	SCREW (M3X8), P, SW (+)
211	4-587-426-01	s	SHEET (2 (35X35)), RADIATION
212	4-590-083-01	s	SHEET (2 (25X25)), RADIATION
213	4-590-083-11	s	SHEET (2 (15X60)), RADIATION

Chassis-1

No.	Part No.	SP	Description
214	4-590-867-01	s	INSULATING SHEET, DPR
215	4-744-803-01	s	HEAT SINK P, DPR

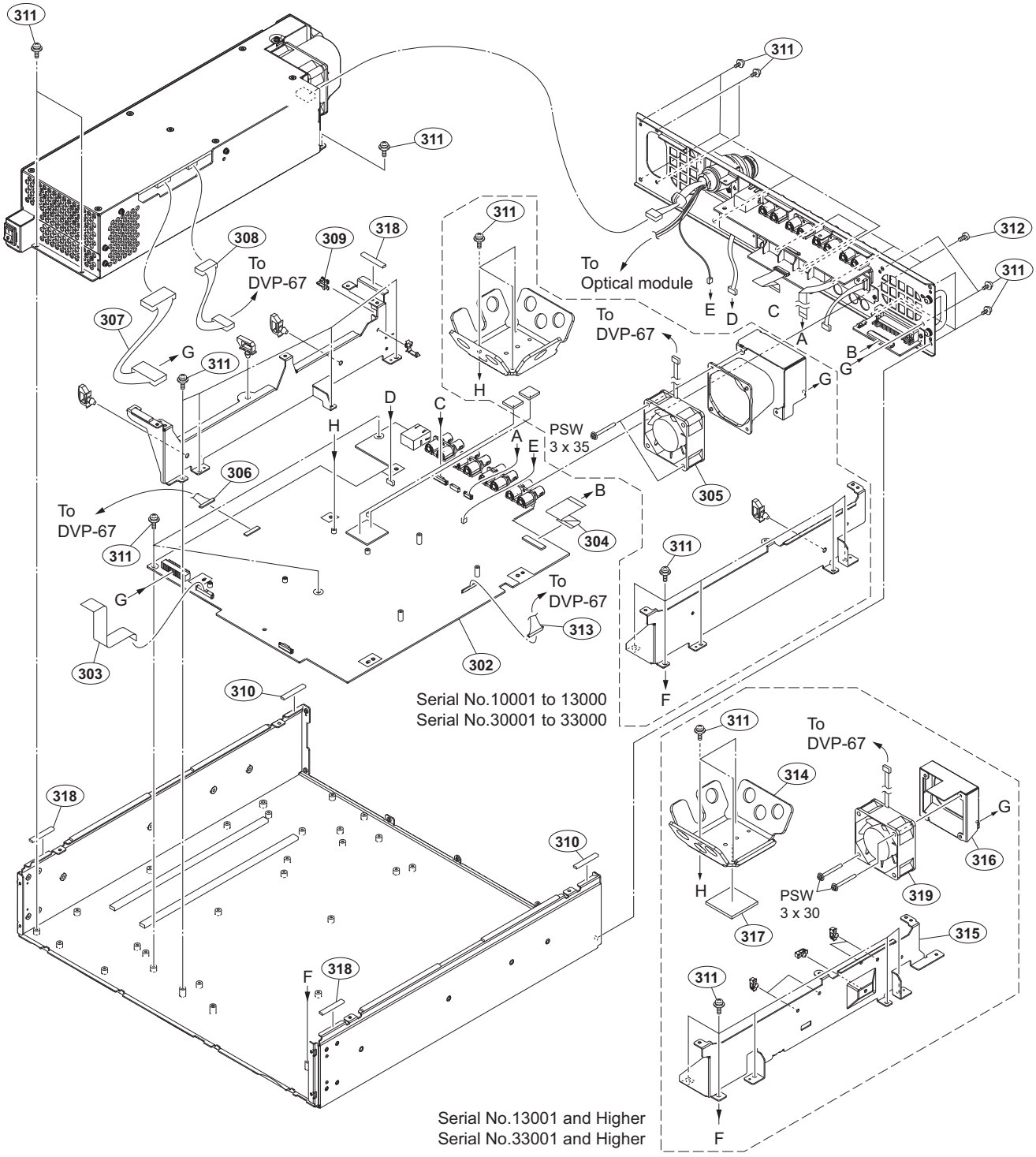
HKCU-IP43F (NET-26 Board, CN-3797 Board)



* : Not included in HKCU-IP43F.

No.	Part No.	SP	Description
251	A-2103-421-A	s	MOUNT, CN-3797
252	A-2126-557-A	s	NET-26 COMPL
253	1-831-125-11	s	CABLE, FLEXIBLE FLAT (30 CORE)
254	1-971-378-11	s	HARNESS (NET-CN)
255	1-971-379-11	s	HARNESS (DVP-NET)
256	1-971-380-11	s	HARNESS (VIF-NET)
257	1-971-381-11	s	HARNESS, SUB (NET POWER)
258	2-586-175-11	s	SHEET B, RADIATION
259	3-617-806-01	s	SHEET,RADIATION(A)
260	4-382-854-01	s	SCREW (M3X8), P, SW (+)
261	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
262	4-585-792-01	s	BRACKET, NMI SLOT
263	4-587-426-01	s	SHEET (2 (35X35)), RADIATION

Chassis-2

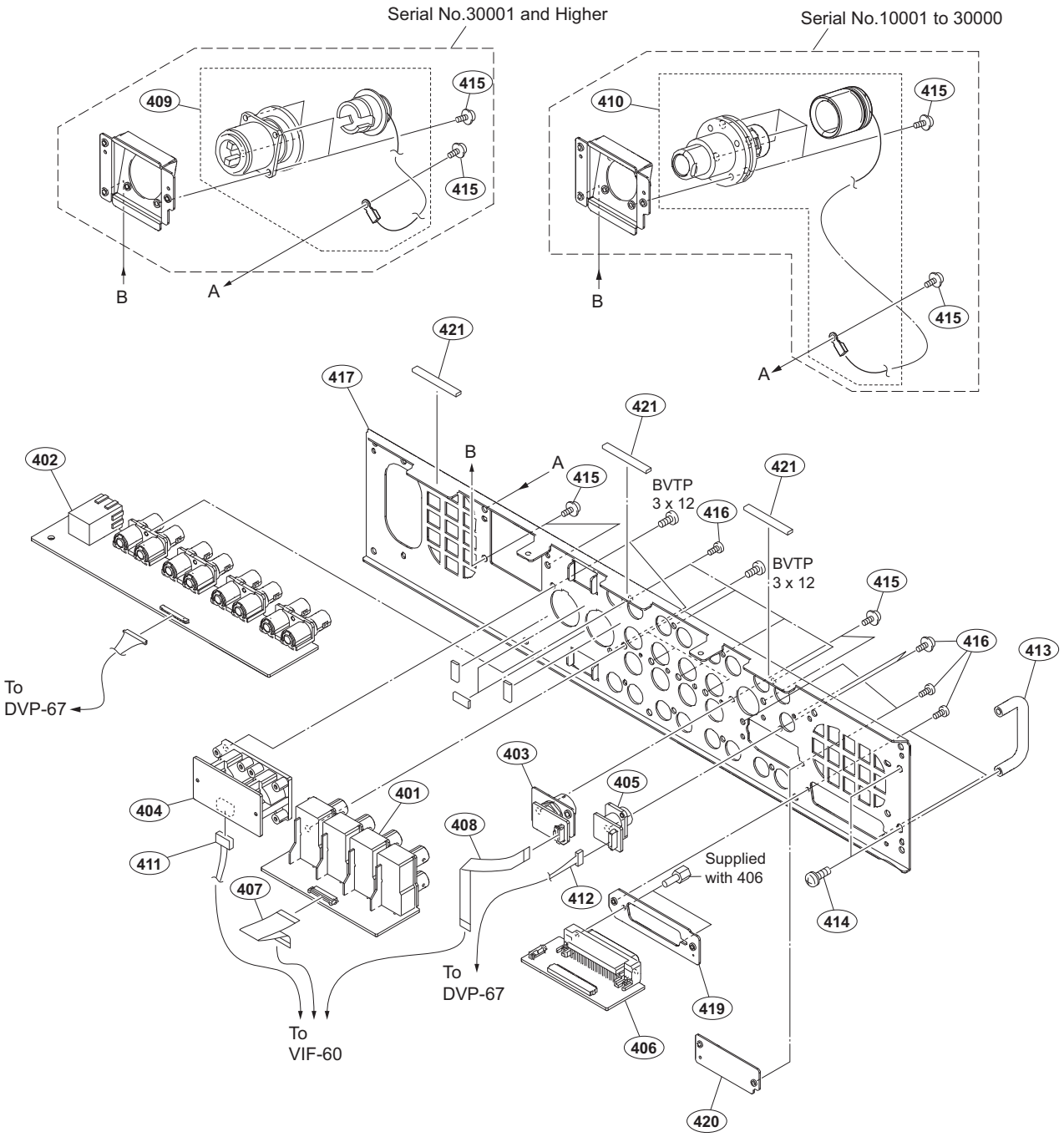


No.	Part No.	SP	Description
302	A-2116-198-A	s	VIF-60 COMPL
303	1-831-068-11	s	CABLE, FLEXIBLE FLAT (45 CORE)
304	1-849-394-11	s	CABLE, FLEXIBLE FLAT (60 CORE)
305	⚠ 1-855-064-11	s	FAN, DC (60 SQUARE)
306	1-971-258-11	s	HARNESS (DVP-VIF)
307	1-971-262-11	s	HARNESS, SUB (VIF POWER)
308	1-971-263-11	s	HARNESS, SUB (DVP POWER)
309	4-137-926-01	s	SADDLE (LES-0505), EDGE
310	4-279-796-01	s	GASKET (TOP)
311	4-382-854-01	s	SCREW (M3X8), P, SW (+)
312	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
313	1-839-702-11	s	CABLE, CONNECTOR WITH COAXIAL
314	4-588-565-11	s	HIAT SINK,VIF
315	4-588-564-02	s	FRAME(2) PC BOARD
316	4-747-503-01	s	BRACKET,FAN(4001)
317	4-587-426-01	s	SHEET (2(35X35)), RADIATION
318	3-287-506-02	s	GASKET (R3) 3X5X33
319	1-001-755-11	s	DC FAN (60 SQUARE X 25) 12V
	7-682-955-01	s	SCREW +PSW 3X30

Chassis-2

No.	Part No.	SP	Description
	7-682-956-01	s	SCREW +PSW 3X35

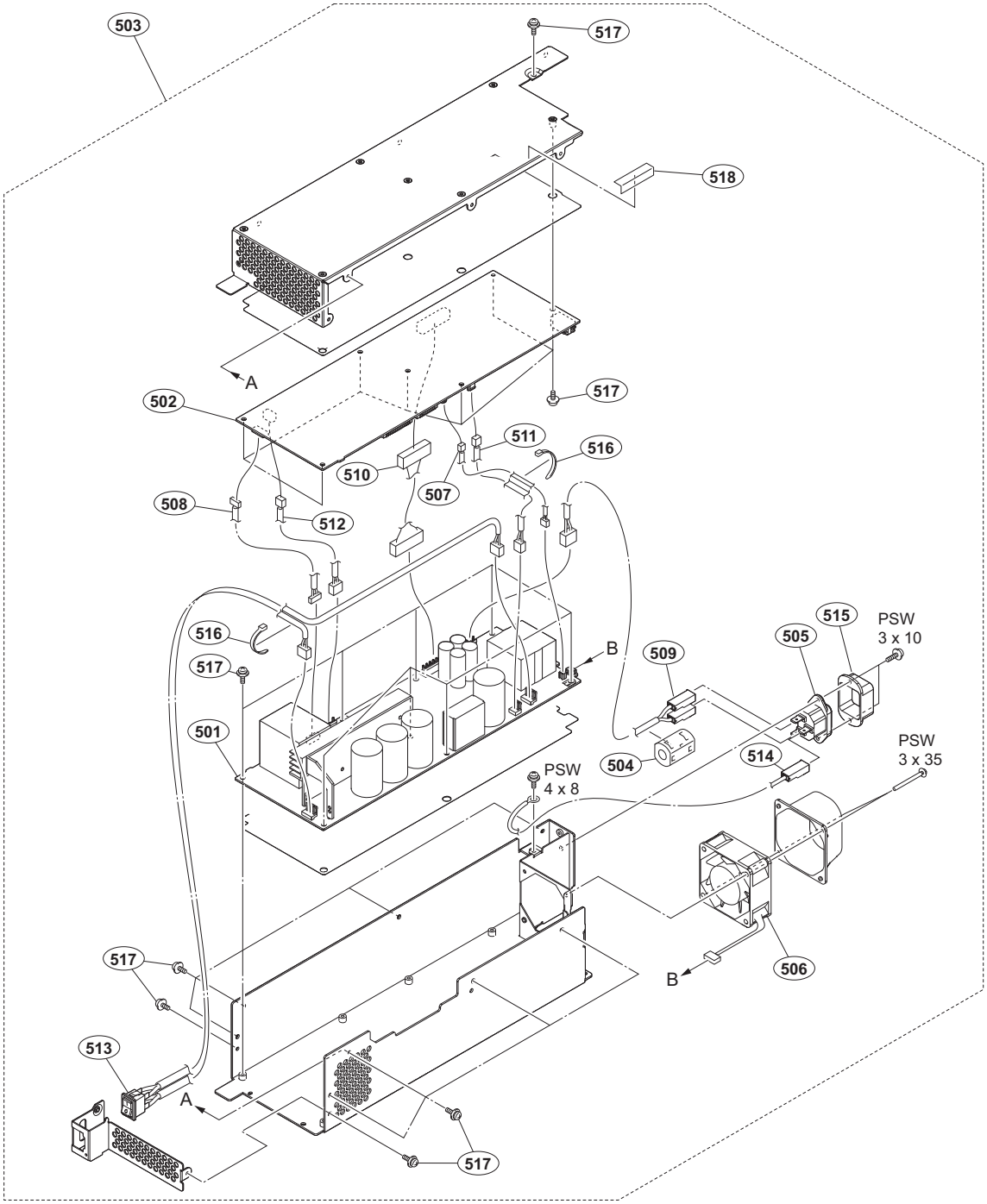
Rear Panel



No.	Part No.	SP	Description
401	A-2116-190-A	s	CN-3801 MOUNT
402	A-2116-191-A	s	CN-3802 MOUNT
403	A-2116-193-A	s	CN-3820 MOUNT
404	A-2116-194-A	s	CN-3821 MOUNT
405	A-2116-195-A	s	CN-3822 MOUNT
406	A-2226-249-A	s	CN-3975 MOUNT
407	1-831-125-11	s	CABLE, FLEXIBLE FLAT (30 CORE)
408	1-836-443-11	s	CABLE, FLEXIBLE FLAT (15 CORE)
409	⚠ 1-849-370-11	s	OPTICAL MULTI CABLE ASSEMBLY (Serial No.30001 and Higher)
410	⚠ 1-849-371-11	s	OPTICAL MULTI CABLE ASSEMBLY-F (Serial No.10001 to 30000)
411	1-971-260-11	s	HARNESS, SUB (VIF-CN)
412	1-971-264-11	s	HARNESS, SUB (DVP-CN)
413	3-648-409-01	o	HANDLE, (1)
414	3-869-367-51	s	SET SCREW(M4 PSW)

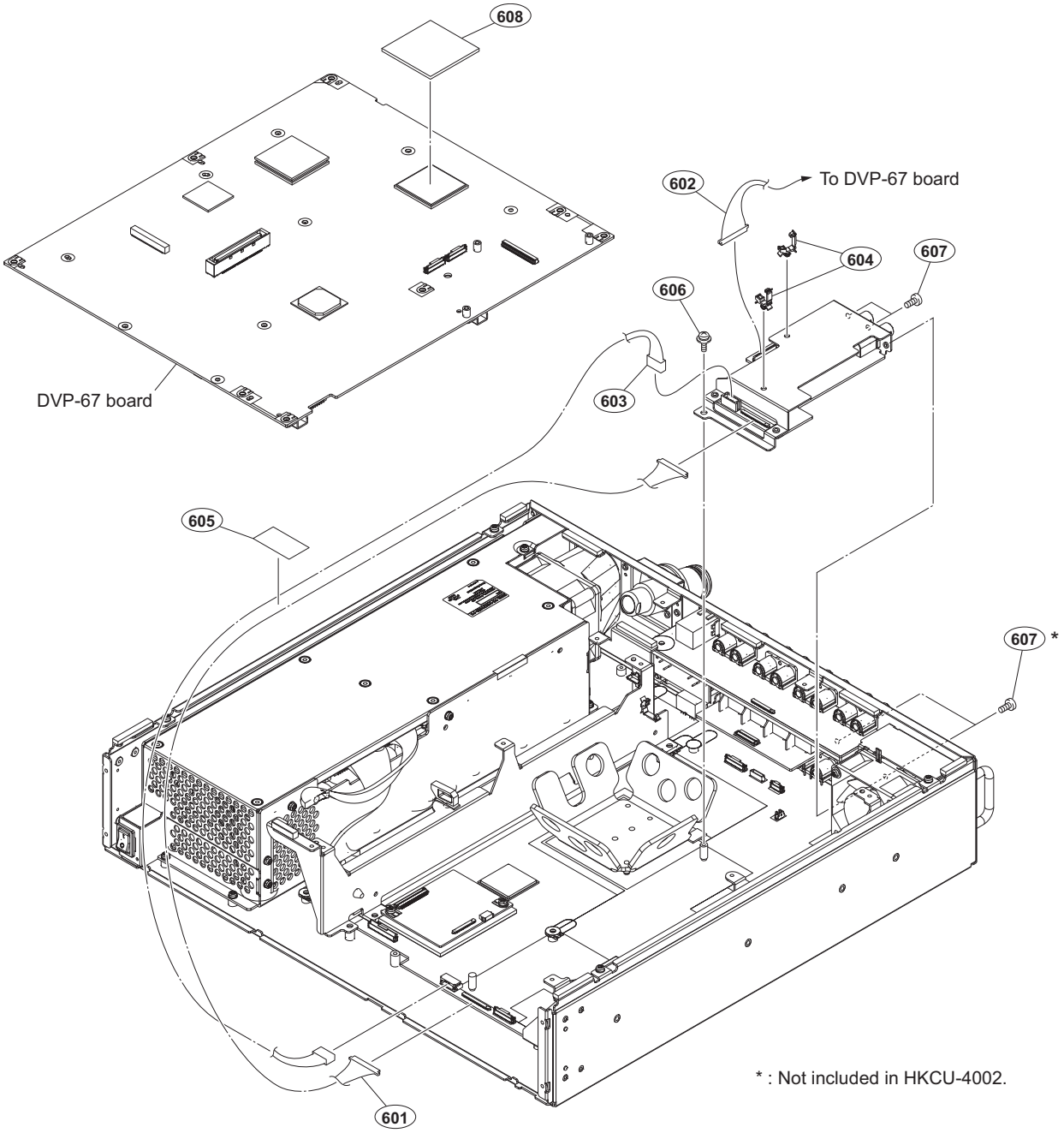
No.	Part No.	SP	Description
415	4-382-854-01	s	SCREW (M3X8), P, SW (+)
416	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
417	4-588-558-02	s	PANEL, REAR
419	4-588-560-01	s	D-SUB BRACKET
420	4-588-559-01		PANEL, BLANK
421	3-287-506-02	s	GASKET (R3) 3X5X33
	7-685-648-91	s	SCREW +BVTP 3X12 TYPE2 TT(B)

Power Block



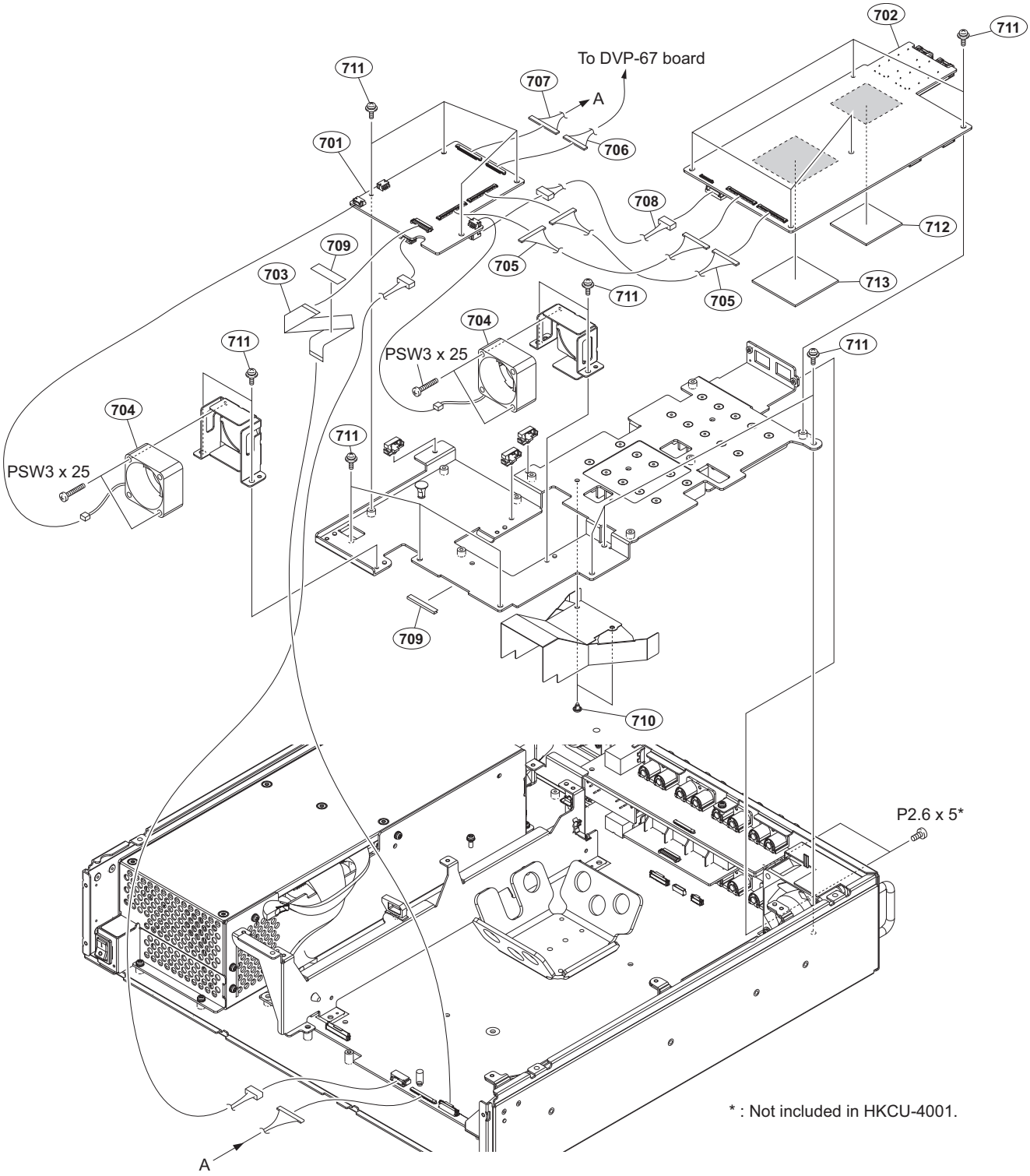
No.	Part No.	SP	Description
501	A-2115-521-A	s	PS-899 MOUNT
502	A-2115-523-A	s	RE-333 COMPL
503	A-2116-197-A	s	POWER BLOCK ASSY (S/N: 10001 to 13000, 30001 to 33000)
	A-2116-197-B		POWER BLOCK ASSY (S/N: 13001 and higher, 33001 and higher)
504	1-482-018-11	s	FERRITE CORE (GRFC-8)
505	1-842-404-11	s	AC INLET (SCREW) 3P FASTEN
506	⚠ 1-855-064-11	s	FAN, DC (60 SQUARE)
507	1-971-227-11	s	SUB HARNESS FAN
508	1-971-228-11	s	SUB HARNESS PRIMARY SIGNAL
509	1-971-229-11	s	SUB HARNESS AC IN
510	1-971-230-11	s	SUB HARNESS SECONDARY POWER
511	1-971-231-11	s	SUB HARNESS HV
512	1-971-232-11	s	SUB HARNESS PFC
513	1-971-233-11	s	SUB HARNESS POWER SW
514	1-971-234-11	s	SUB HARNESS EARTH
515	2-990-241-02	s	HOLDER (A), PLUG
516	3-691-877-01	s	BAND, BINDING
517	4-382-854-01	s	SCREW (M3X8), P, SW (+)
518	4-431-734-01	s	TAPE AS
	7-682-949-01	s	SCREW +PSW 3X10
	7-682-956-01	s	SCREW +PSW 3X35
	7-682-961-01	s	SCREW +PSW 4X8

HKCU-4002 (DIF-268 Board)



No.	Part No.	SP	Description
601	1-830-364-11	s	CABLE, CONNECTOR WITH COAXIAL
602	1-968-193-11	s	HARNESS(COAXIAL CABLE)
603	1-972-292-11	s	SUB HARNESS (DIF POWER)
604	4-098-036-01	s	SADDLE WIRE (A)
605	4-121-237-01	s	TAPE (20X30)
606	4-382-854-01	s	SCREW (M3X8), P, SW (+)
607	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
608	4-587-426-01	s	SHEET (2 (35X35)), RADIATION

HKCU-4001 (IF-1367 Board, NET-37 Board)



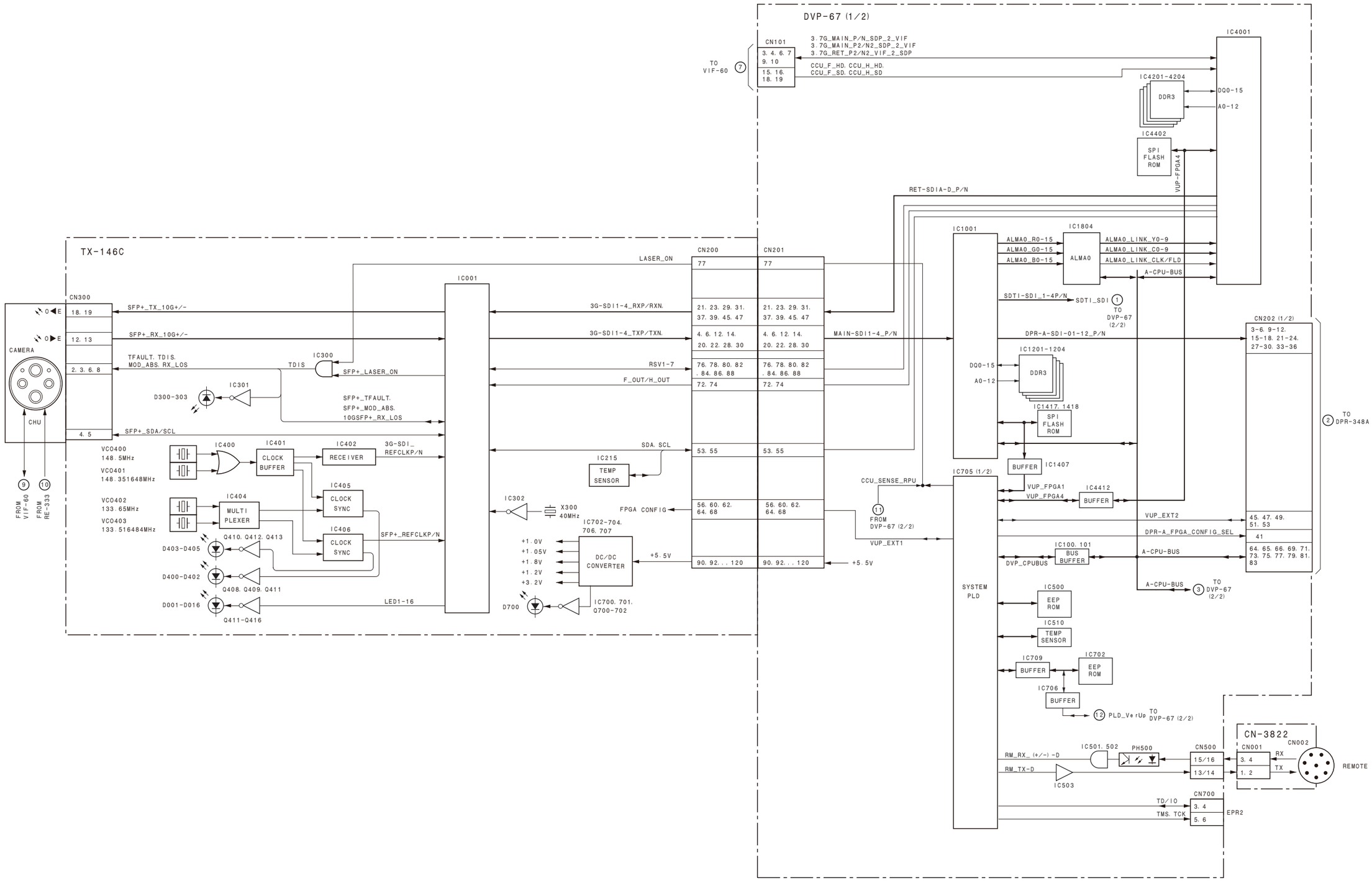
No.	Part No.	SP	Description	No.	Part No.	SP	Description
701	A-2227-698-A	s	IF-1367 MOUNT	710	3-531-576-01	s	RIVET
702	A-2231-206-A	s	NET-37A COMPL				
703	1-832-098-11	s	CABLE, FLEXIBLE FLAT (30 CORE)	711	4-382-854-01	s	SCREW (M3X8), P, SW (+)
704	1-855-512-11	s	DC FAN (40 SQUARE)	712	4-587-426-01	s	SHEET (2 (35X35)), RADIATION
705	1-912-709-11	s	MICRO COAXIAL CABLE (CA60 155)	713	4-587-426-21	s	SHEET (2 (46X46)), RADIATION
706	1-968-193-11	s	HARNESS(COAXIAL CABLE)				
707	1-971-380-11	s	HARNESS (VIF-NET)		7-621-259-35	s	SCREW +P 2.6X5
708	1-972-575-11	s	SUB HARNESS (SLOT POWER)		7-682-954-01	s	SCREW +PSW 3X25
709	3-079-115-01	s	TAPE AS				

5-3. Supplied Accessories

Q'ty		Part No.	SP	Description
1pc		A-8278-054-B	s	REMOTE INDICATOR ASSY
1pc	⚠	4-589-988-03	s	OPERATION GUIDE(JAPANESE)
1pc	⚠	4-589-988-14	s	OPERATION GUIDE(ENGLISH,SIMPLIFIED CHINESE)
1pc	⚠	4-589-988-24	s	OPERATION GUIDE(FRENCH,GERMAN)
1pc		4-589-988-33	s	OPERATION GUIDE(RUSSIAN, KAZAKH)
1pc	⚠	4-589-989-03	s	CD-ROM PACK

Section 6
Block Diagrams and Frame Wiring

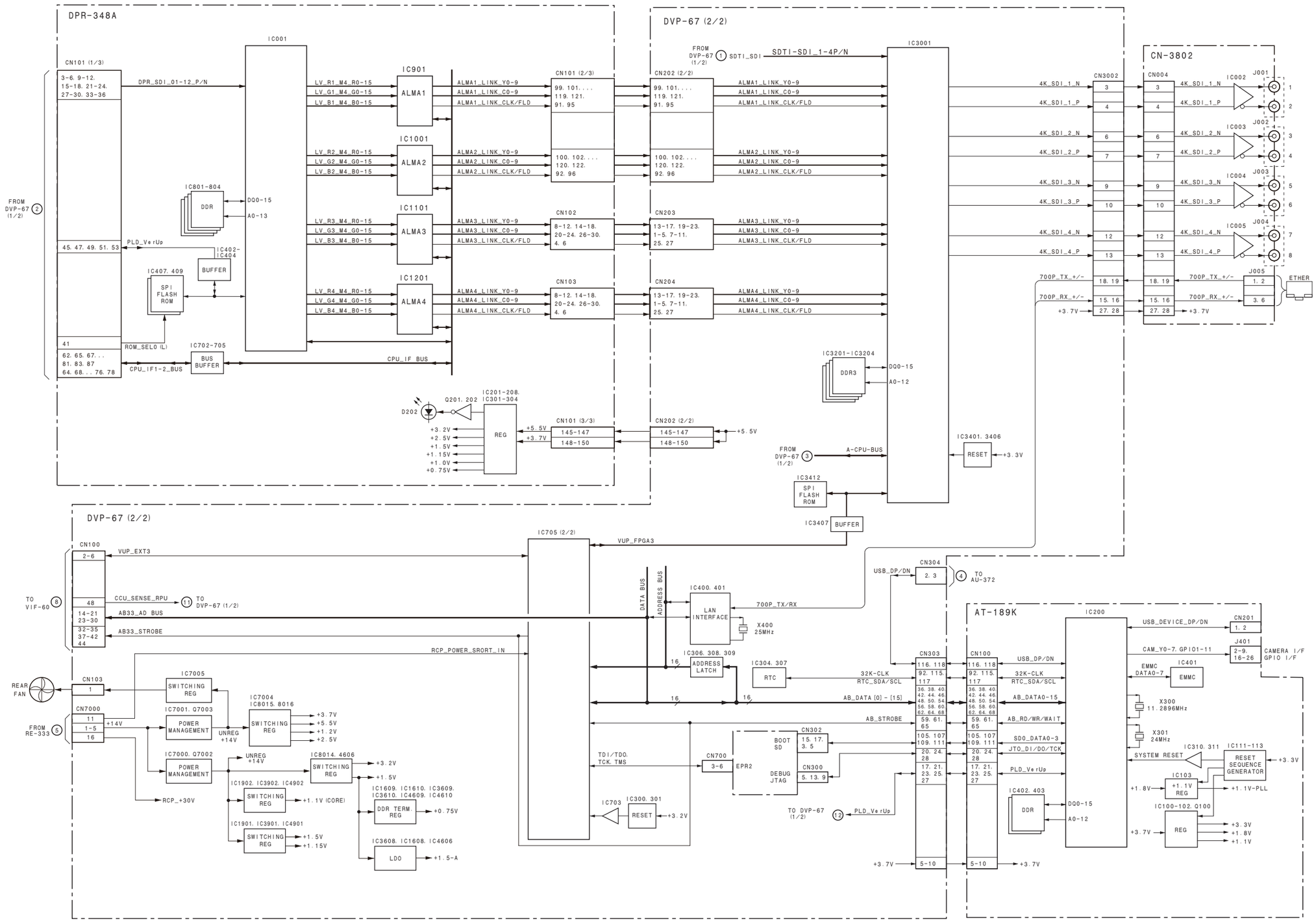
Overall
Overall (1/6)



Overall (2/6)

Serial No. 10001 to 13000

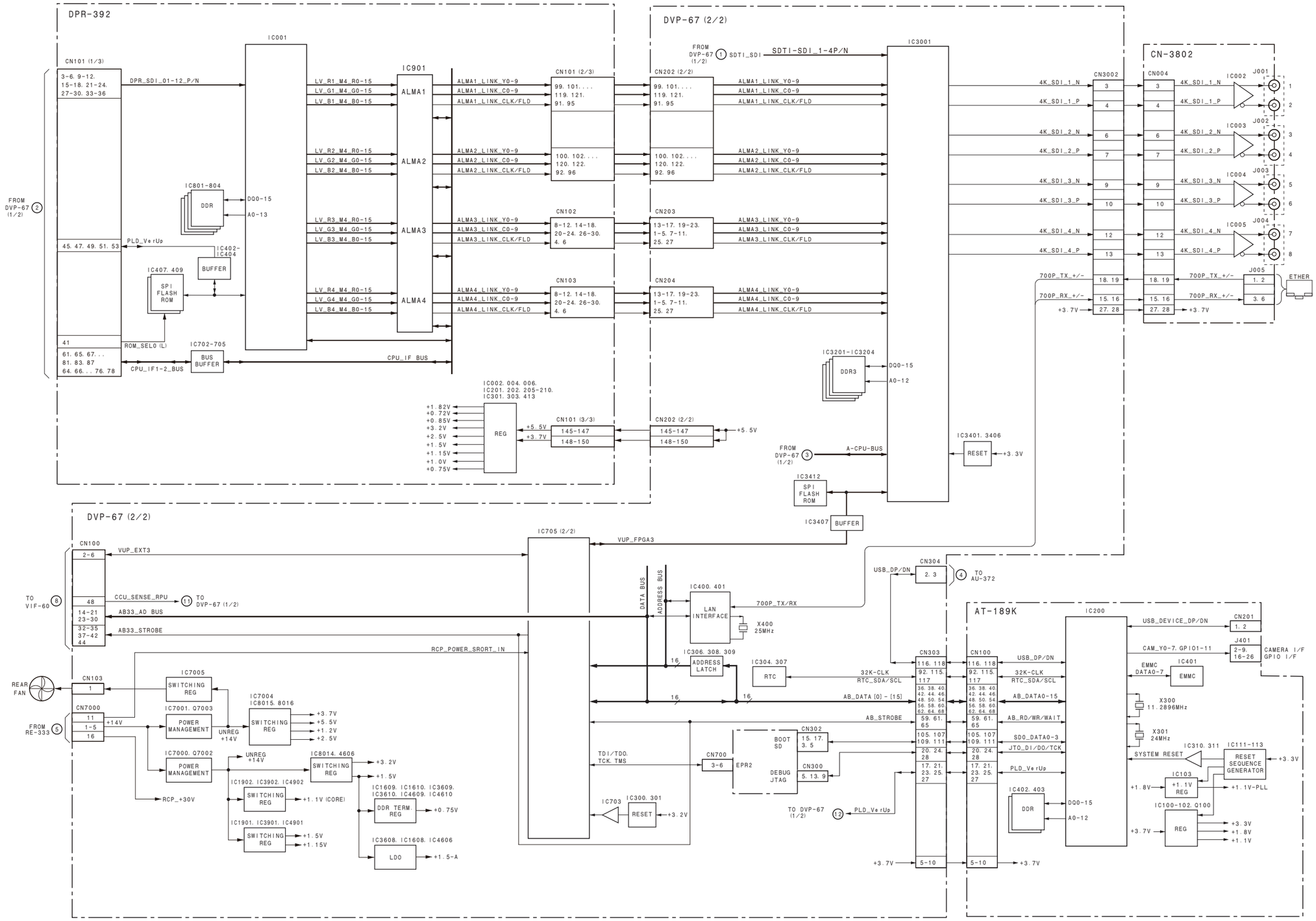
Serial No. 30001 to 33000



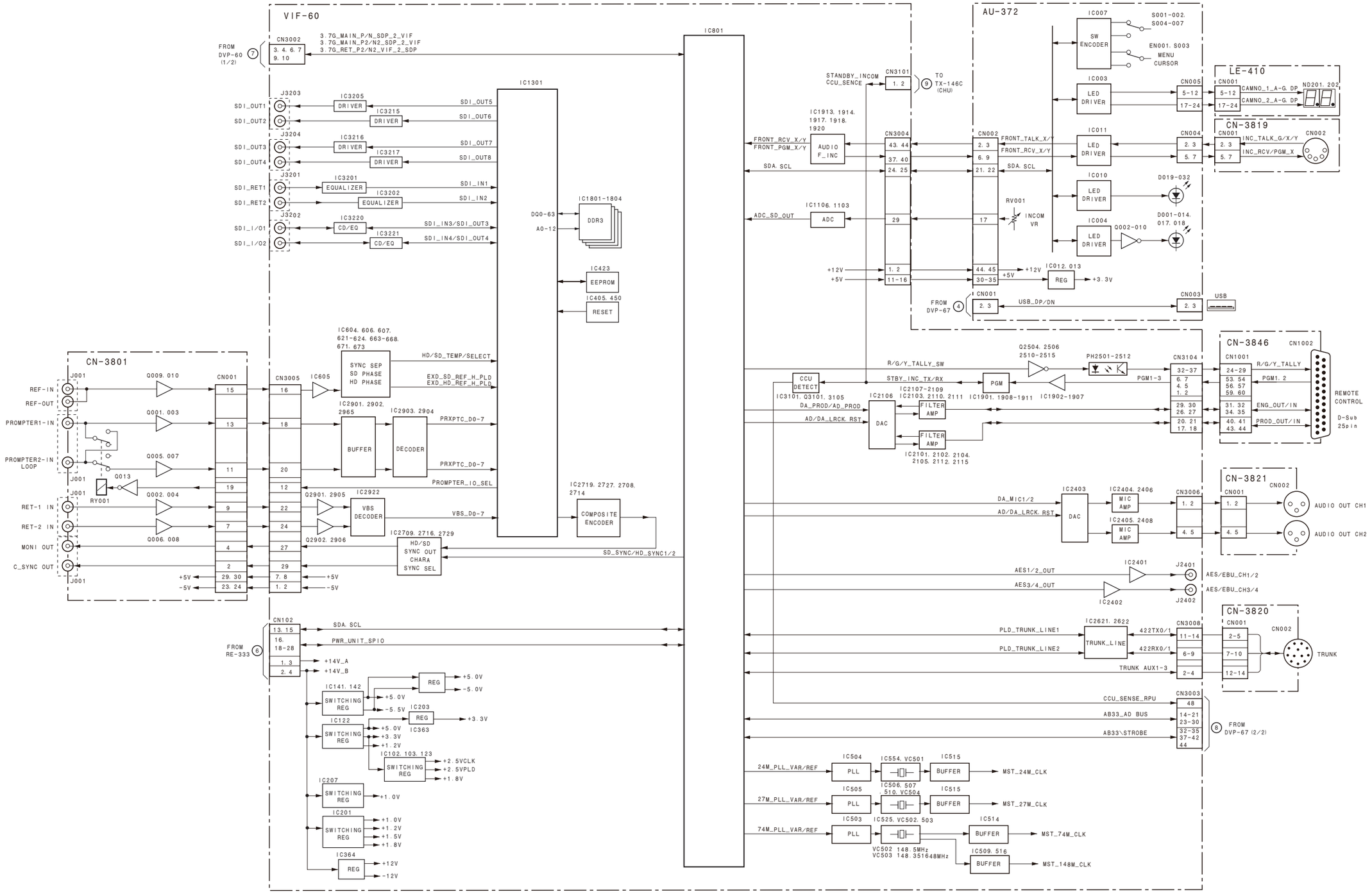
Overall (2/6)

Serial No. 13001 and higher

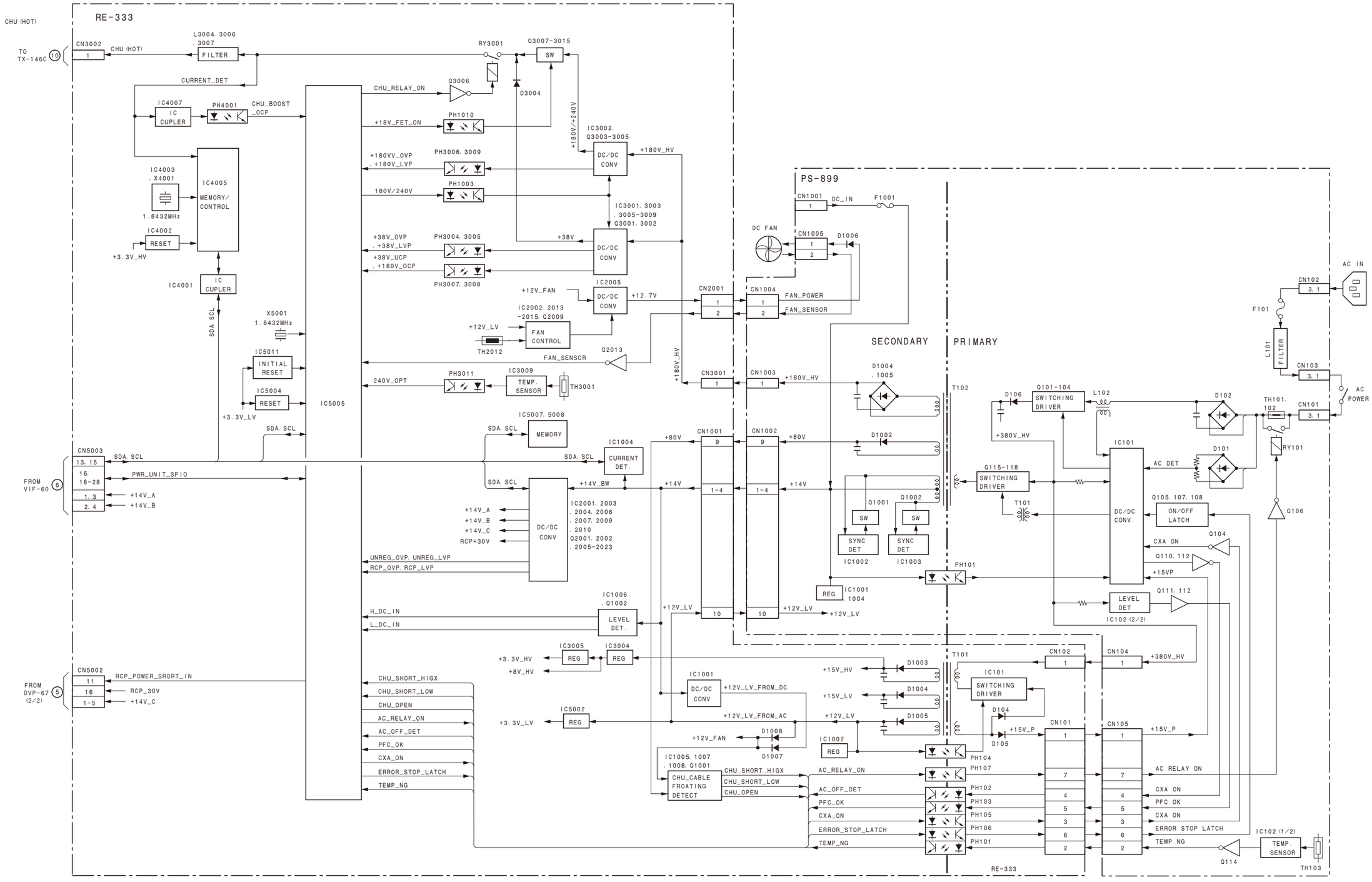
Serial No. 33001 and higher



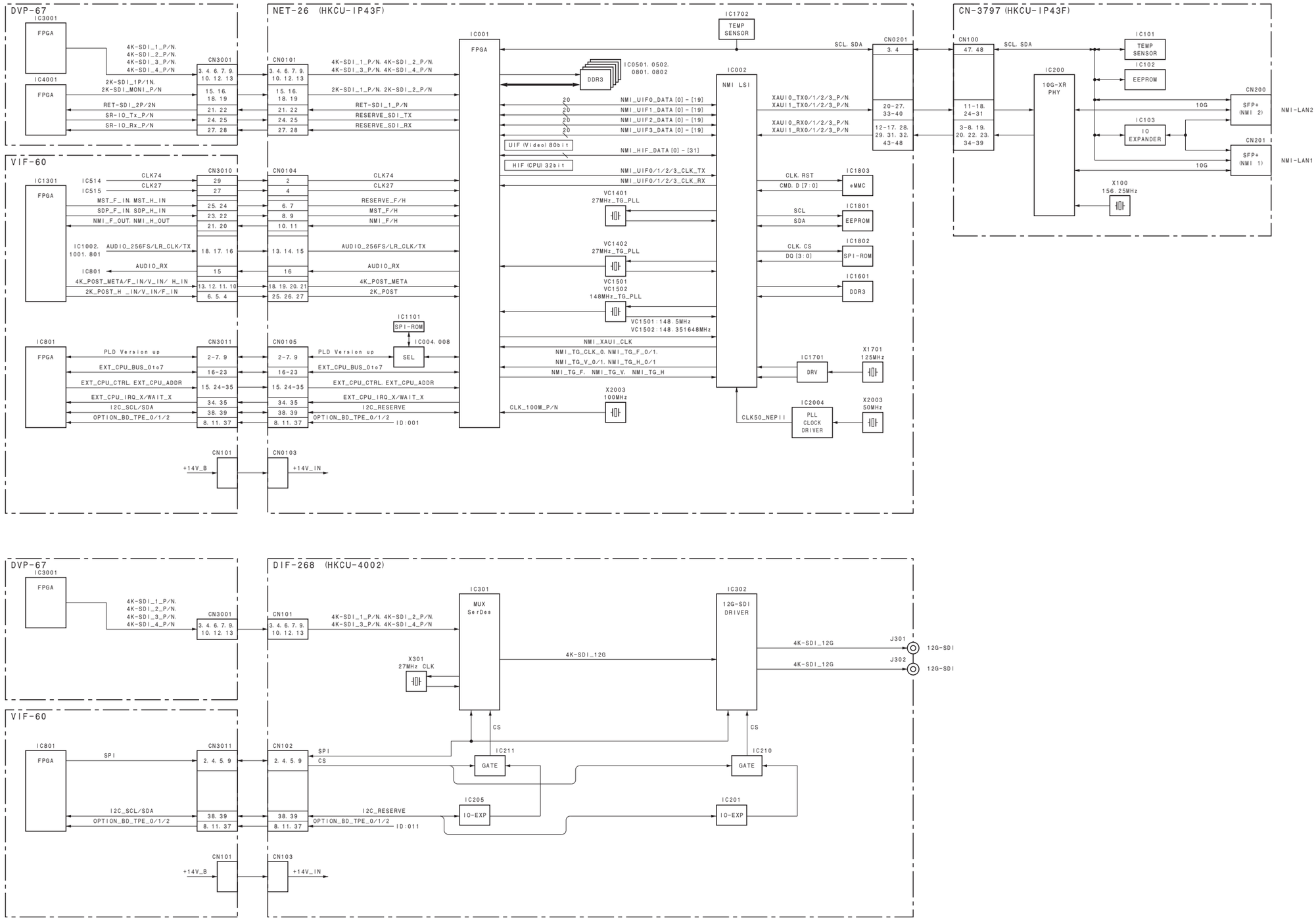
Overall (3/6)


VIF-60
CN3002
3. 4. 6. 7
9. 10
FROM DVP-60 (1/2)
3. 7G_MAIN_P/N_SDP_2_VIF
3. 7G_MAIN_P2/N2_SDP_2_VIF
3. 7G_RET_P2/N2_VIF_2_SDP
IC801
IC1301
J3203
SDI_OUT1
SDI_OUT2
IC3205 DRIVER
IC3215 DRIVER
SDI_OUT5
SDI_OUT6
J3204
SDI_OUT3
SDI_OUT4
IC3216 DRIVER
IC3217 DRIVER
SDI_OUT7
SDI_OUT8
J3201
SDI_RET1
SDI_RET2
IC3201 EQUALIZER
IC3202 EQUALIZER
SDI_IN1
SDI_IN2
J3202
SDI_I/O1
SDI_I/O2
IC3220 CD/EQ
IC3221 CD/EQ
SDI_IN3/SDI_OUT3
SDI_IN4/SDI_OUT4
D00-63
A0-12
IC1801-1804
DDR3
IC423
EEPROM
IC405. 450
RESET
IC604. 606. 607. 621-624. 663-668. 671. 673
SYNC SEP SD PHASE HD PHASE
HD/SD_TEMP/SELECT
EXD_SD_REF_H_PLD
EXD_HD_REF_H_PLD
CN-3801
J001
REF-IN
REF-OUT
PROMPTER1-IN
PROMPTER2-IN LOOP
RET-1 IN
RET-2 IN
MONI OUT
C_SYNC OUT
Q009. 010
Q001. 003
Q005. 007
Q013
RY001
Q002. 004
Q006. 008
CN001
CN3005
IC605
IC2901. 2902. 2965
BUFFER
IC2903. 2904
DECODER
PRXPTC_D0-7
PROMPTER_IO_SEL
IC2922
VBS DECODER
VBS_D0-7
IC2719. 2727. 2708. 2714
COMPOSITE ENCODER
IC2709. 2716. 2729
HD/SD SYNC OUT CHARA SYNC SEL
SD_SYNC/HD_SYNC1/2
Q2901. 2905
Q2902. 2906
+5V
-5V
CN102
FROM RE-333 (6)
SDA. SCL
PWR_UNIT_SPIO
+14V_A
+14V_B
IC141. 142
SWITCHING REG
IC122
IC102. 103. 123
IC207
IC201
IC364
REG
IC203
IC363
+5.0V
-5.5V
+3.3V
+1.2V
+2.5VCLK
+2.5VPLD
+1.8V
+1.0V
+1.5V
+12V
-12V
AU-372
IC007
SW ENCODER
S001-002. S004-007
EN001. S003
MENU CURSOR
IC003
LED DRIVER
IC011
IC010
IC004
Q002-010
D019-032
D001-014. 017. 018
RV001
INCOM VR
CN005
CN004
LE-410
CN001
5-12
17-24
CAMNO_1_A-G. DP
CAMNO_2_A-G. DP
ND201. 202
CN-3819
INC_TALK_G/X/Y
INC_RCV/PGM_X
CN002
STANDBY_INCOM
CCU_SENCE
CN3101
1. 2
TO TX-146C (CHU)
IC1913. 1914. 1917. 1918. 1920
AUDIO F_INC
CN3004
FRONT_RCV_X/Y
FRONT_PGM_X/Y
FRONT_TALK_X/Y
FRONT_RCV_X/Y
SDA. SCL
IC1106. 1103
ADC
ADC_SD_OUT
+12V
+5V
IC012. 013
REG
+3.3V
FROM DVP-67 (4)
USB_DP/DN
USB
CN-3846
CN1002
R/G/Y_TALLY_SW
Q2504. 2506 2510-2515
PH2501-2512
CN3104
PGM1-3
R/G/Y_TALLY
PGM1. 2
ENG_OUT/IN
PROD_OUT/IN
REMOTE CONTROL
D-Sub 25pin
CCU DETECT
STBY_INC_TX/RX
IC3101. Q3101. 3105
PGM
IC1901. 1908-1911
IC1902-1907
IC2106
DAC
IC2107-2109
IC2103. 2110. 2111
FILTER AMP
DA_PROD/AD_PROD
AD/DA_LRCK. RST
IC2101. 2102. 2104. 2105. 2112. 2115
CN-3821
CN002
DA_MIC1/2
AD/DA_LRCK. RST
IC2403
IC2404. 2406
IC2405. 2408
MIC AMP
CN3006
AUDIO OUT CH1
AUDIO OUT CH2
AES1/2_OUT
AES3/4_OUT
IC2401
IC2402
J2401
J2402
AES/EBU_CH1/2
AES/EBU_CH3/4
CN-3820
IC2621. 2622
TRUNK_LINE
PLD_TRUNK_LINE1
PLD_TRUNK_LINE2
TRUNK AUX1-3
422TX0/1
422RX0/1
CN3008
TRUNK
CCU_SENSE_RPU
AB33_AD BUS
AB33\STROBE
CN3003
FROM DVP-67 (2/2)
24M_PLL_VAR/REF
27M_PLL_VAR/REF
74M_PLL_VAR/REF
IC504
IC505
IC503
PLL
IC554. VC501
IC506. 507. 510. VC504
IC525. VC502. 503
VC502 148.5MHz
VC503 148.351648MHz
IC515
IC514
IC509. 516
BUFFER
MST_24M_CLK
MST_27M_CLK
MST_74M_CLK
MST_148M_CLK

Overall (4/6)

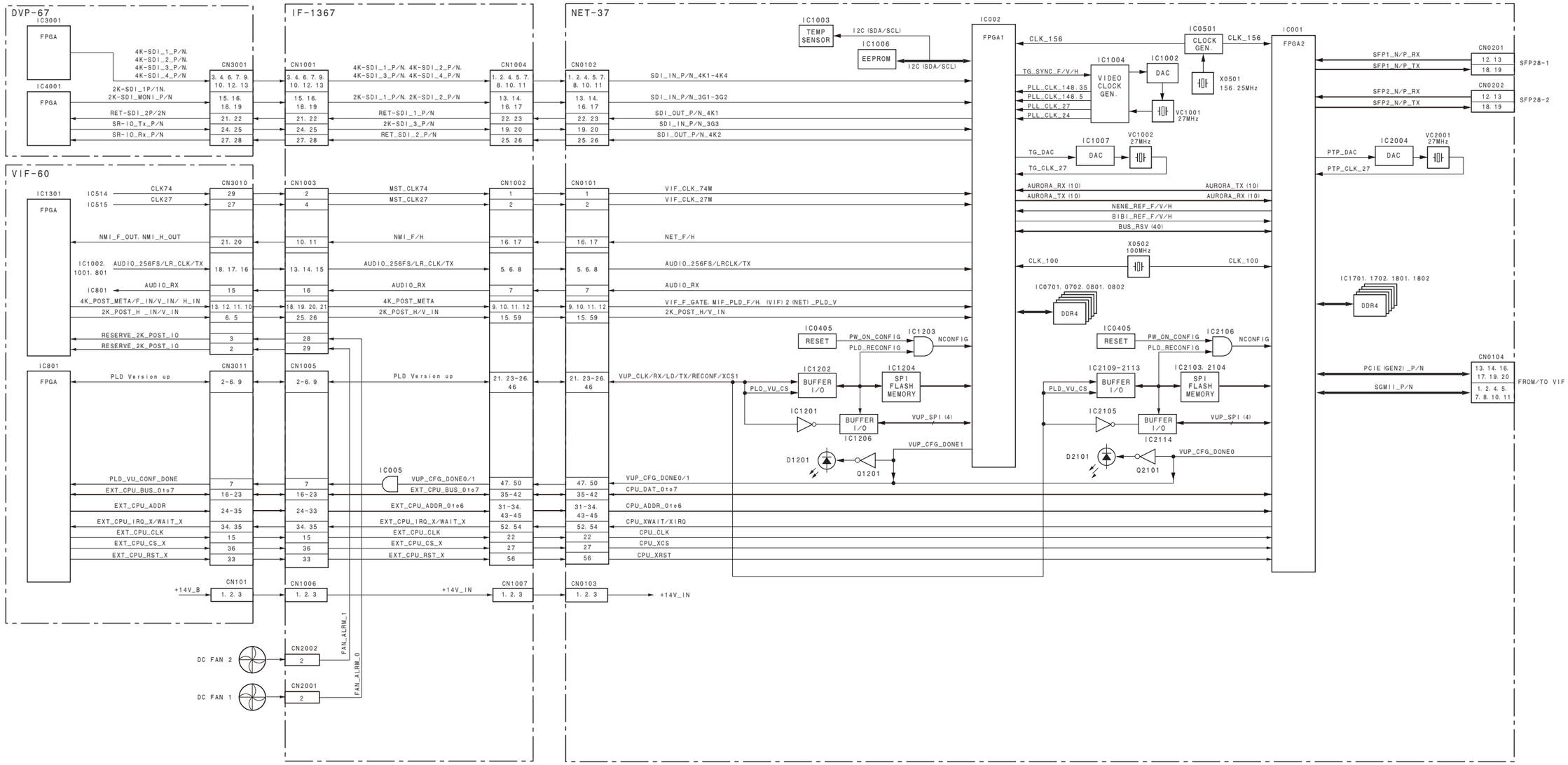

RE-333
CHU (HOT)
TO TX-146C (10)
CN3002
1
CHU (HOT)
L3004. 3006 . 3007
FILTER
RY3001
Q3007-3015
SW
D3004
CURRENT_DET
CHU_RELAY_ON
Q3006
IC4007
IC CUPLER
PH4001
CHU_BOOST _OCP
+18V_FET_ON
PH1010
+180V/+240V
IC3002. Q3003-3005
DC/DC CONV
+180V_HV
IC4003 . X4001
1.8432MHz
IC4005
MEMORY/ CONTROL
+180VV_OVP
+180V_LVP
PH3006. 3009
180V/240V
PH1003
IC3001. 3003 . 3005-3009 Q3001. 3002
IC4002
RESET
+3. 3V_HV
+38V_OVP
+38V_LVP
+38V_UCP
+180V_OCP
PH3004. 3005
PH3007. 3008
+38V
IC4001
IC CUPLER
SDA. SCL
IC2005
DC/DC CONV
+12V_FAN
+12.7V
IC2002. 2013 -2015. Q2009
FAN CONTROL
+12V_LV
TH2012
FAN_SENSOR
Q2013
X5001
1.8432MHz
IC5011
INITIAL RESET
IC5004
RESET
+3. 3V_LV
240V_OPT
PH3011
IC3009
TEMP. SENSOR
TH3001
IC5005
IC5007. 5008
MEMORY
SDA. SCL
CN5003
13. 15
16. 18-28
1. 3
2. 4
FROM VIF-60 (6)
PWR_UNIT_SPIO
+14V_A
+14V_B
IC1004
CURRENT DET.
+14V_BW
+80V
+14V
IC2001. 2003 . 2004. 2006 . 2007. 2009 . 2010 Q2001. 2002 . 2005-2023
DC/DC CONV
+14V_A
+14V_B
+14V_C
RCP+30V
UNREG_OVP. UNREG_LVP
RCP_OVP. RCP_LVP
IC1006 . Q1002
LEVEL DET.
H_DC_IN
L_DC_IN
+12V_LV
IC3005
IC3004
REG
+3. 3V_HV
+8V_HV
CN5002
11
16
1-5
FROM DVP-67 (5) (2/2)
RCP_POWER_SRORT_IN
RCP_30V
+14V_C
CHU_SHORT_HIGX
CHU_SHORT_LOW
CHU_OPEN
AC_RELAY_ON
AC_OFF_DET
PFC_OK
CXA_ON
ERROR_STOP_LATCH
TEMP_NG
IC1001
DC/DC CONV
+12V_LV_FROM_DC
+12V_LV_FROM_AC
IC5002
REG
+3. 3V_LV
+12V_FAN
D1008
D1007
IC1005. 1007 . 1008. Q1001
CHU_CABLE FROATING DETECT
CN1001
CN1002
CN1003
CN1004
CN2001
CN3001
1-4
9
10
PS-899
DC_IN
F1001
DC FAN
CN1005
D1006
FAN_POWER
FAN_SENSOR
SECONDARY
PRIMARY
D1004 . 1005
D1002
Q1001
Q1002
SW
SYNC DET
IC1002
IC1003
REG
IC1001 1004
PH101
T102
D106
Q101-104
SWITCHING DRIVER
L102
D102
+380V_HV
Q115-118
SWITCHING DRIVER
T101
IC101
AC DET
D101
DC/DC CONV.
Q105. 107. 108
ON/OFF LATCH
Q106
CXA ON
Q104
Q110. 112
+15VP
Q111. 112
LEVEL DET
IC102 (2/2)
AC IN
CN102
3. 1
F101
L101
FILTER
CN103
AC POWER
TH101. 102
CN101
RY101
T101
IC101
SWITCHING DRIVER
D104
D105
+15V_P
CN101
CN105
PH104
PH107
PH102
PH103
PH105
PH106
PH101
AC RELAY ON
CXA ON
PFC OK
CXA ON
ERROR STOP LATCH
TEMP NG
IC102 (1/2)
TEMP. SENSOR
TH103
Q114
RE-333

Overall (5/6)

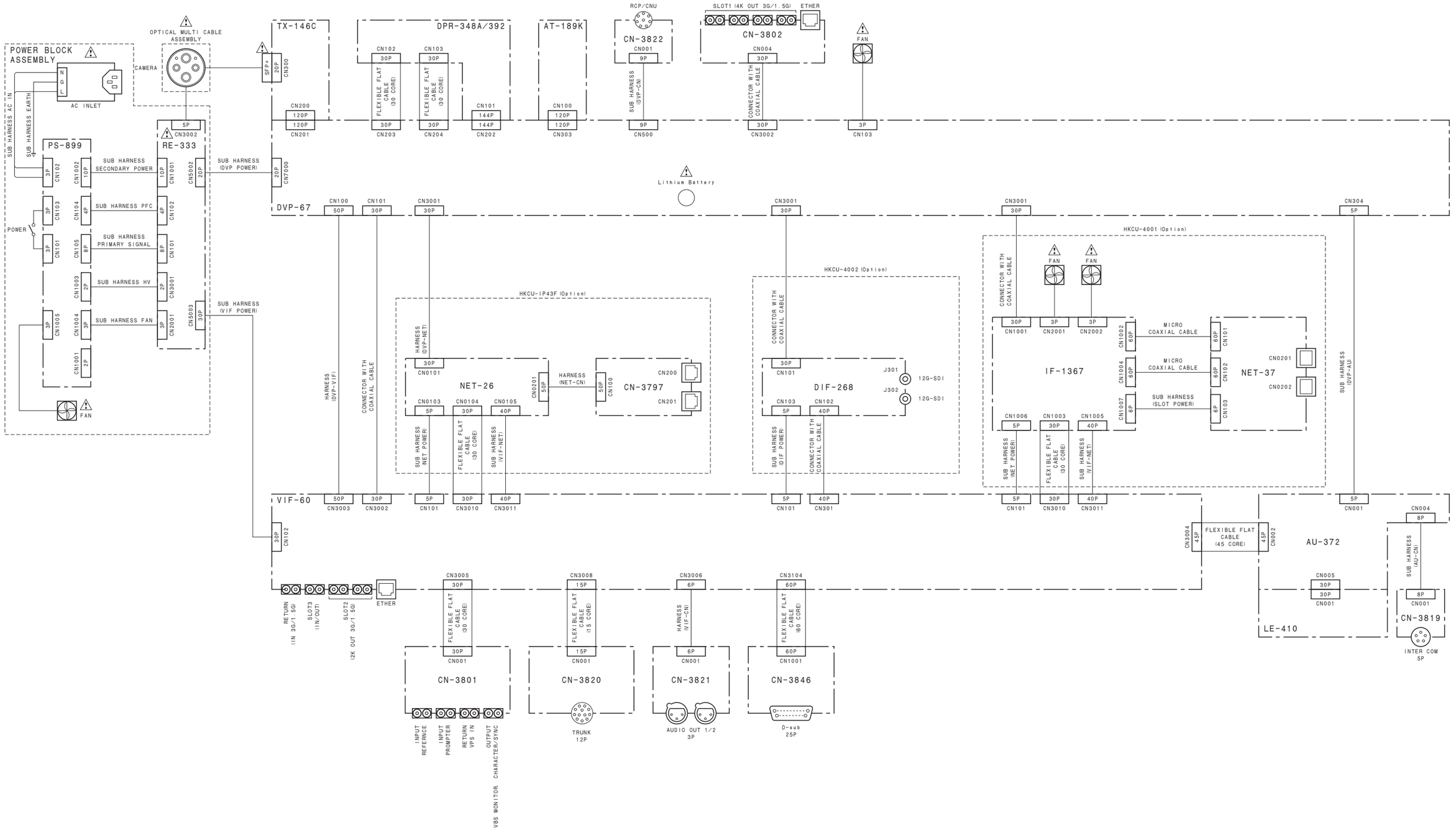

DVP-67
IC3001
FPGA
IC4001
FPGA
4K-SDI_1_P/N.
4K-SDI_2_P/N.
4K-SDI_3_P/N.
4K-SDI_4_P/N
2K-SDI_1P/1N.
2K-SDI_MONI_P/N
RET-SDI_2P/2N
SR-IO_Tx_P/N
SR-IO_Rx_P/N
CN3001
3. 4. 6. 7. 9. 10. 12. 13
15. 16. 18. 19
21. 22
24. 25
27. 28
NET-26 (HKCU-IP43F)
CN0101
IC001
FPGA
DDR3
IC0501. 0502. 0801. 0802
IC1702
TEMP SENSOR
SCL. SDA
CN0201
3. 4
20-27. 33-40
12-17. 28. 29. 31. 32. 43-48
IC002
NMI LSI
NMI_UIF0_DATA [0] - [19]
NMI_UIF1_DATA [0] - [19]
NMI_UIF2_DATA [0] - [19]
NMI_UIF3_DATA [0] - [19]
UIF (Video) 80bit
HIF (CPU) 32bit
NMI_HIF_DATA [0] - [31]
NMI_UIF0/1/2/3_CLK_TX
NMI_UIF0/1/2/3_CLK_RX
XAUI0_TX0/1/2/3_P/N.
XAUI1_TX0/1/2/3_P/N.
XAUI0_RX0/1/2/3_P/N.
XAUI1_RX0/1/2/3_P/N
CN-3797 (HKCU-IP43F)
CN100
47. 48
11-18. 24-31
3-8. 19. 20. 22. 23. 34-39
IC200
10G-XR PHY
IC101
TEMP SENSOR
IC102
EEPROM
IC103
IO EXPANDER
CN200
SFP+ (NMI 2)
CN201
SFP+ (NMI 1)
10G
NMI-LAN2
NMI-LAN1
X100
156. 25MHz
VIF-60
IC1301
FPGA
IC514
IC515
CLK74
CLK27
MST_F_IN. MST_H_IN
SDP_F_IN. SDP_H_IN
NMI_F_OUT. NMI_H_OUT
IC1002. 1001. 801
AUDIO_256FS/LR_CLK/TX
AUDIO_RX
IC801
4K_POST_META/F_IN/V_IN/ H_IN
2K_POST_H _IN/V_IN/F_IN
CN3010
29
27
25. 24
23. 22
21. 20
18. 17. 16
15
13. 12. 11. 10
6. 5. 4
CN0104
2
4
6. 7
8. 9
10. 11
13. 14. 15
16
18. 19. 20. 21
25. 26. 27
RESERVE_F/H
MST_F/H
NMI_F/H
4K_POST_META
2K_POST
VC1401
27MHz_TG_PLL
VC1402
27MHz_TG_PLL
VC1501
VC1502
148MHz_TG_PLL
VC1501:148.5MHz
VC1502:148.351648MHz
NMI_XAUI_CLK
NMI_TG_CLK_0. NMI_TG_F_0/1.
NMI_TG_V_0/1. NMI_TG_H_0/1
NMI_TG_F. NMI_TG_V. NMI_TG_H
CLK_100M_P/N
X2003
100MHz
CLK. RST
CMD. D [7:0]
IC1803
eMMC
SCL
SDA
IC1801
EEPROM
CLK. CS
DQ [3:0]
IC1802
SPI-ROM
IC1601
DDR3
IC1701
DRV
X1701
125MHz
IC2004
PLL CLOCK DRIVER
CLK50_NEPII
X2003
50MHz
IC1101
SPI-ROM
IC004. 008
SEL
IC801
FPGA
PLD Version up
EXT_CPU_BUS_0to7
EXT_CPU_CTRL. EXT_CPU_ADDR
EXT_CPU_IRQ_X/WAIT_X
I2C_SCL/SDA
OPTION_BD_TPE_0/1/2
CN3011
2-7. 9
16-23
15. 24-35
34. 35
38. 39
8. 11. 37
CN0105
I2C_RESERVE
ID:001
CN101
+14V_B
CN0103
+14V_IN

DVP-67
IC3001
FPGA
4K-SDI_1_P/N.
4K-SDI_2_P/N.
4K-SDI_3_P/N.
4K-SDI_4_P/N
CN3001
3. 4. 6. 7. 9. 10. 12. 13
DIF-268 (HKCU-4002)
CN101
IC301
MUX SerDes
X301
27MHz CLK
IC302
12G-SDI DRIVER
J301
J302
12G-SDI
CS
IC211
GATE
IC210
IC205
IO-EXP
IC201
VIF-60
IC801
FPGA
SPI
I2C_SCL/SDA
OPTION_BD_TPE_0/1/2
CN3011
2. 4. 5. 9
38. 39
8. 11. 37
CN102
I2C_RESERVE
ID:011
CN103
+14V_IN

Overall (6/6)


DVP-67
IC3001
FPGA
IC4001
FPGA
4K-SDI_1_P/N.
4K-SDI_2_P/N.
4K-SDI_3_P/N.
4K-SDI_4_P/N
2K-SDI_1P/1N.
2K-SDI_MONI_P/N
RET-SDI_2P/2N
SR-IO_Tx_P/N
SR-IO_Rx_P/N
CN3001
3. 4. 6. 7. 9. 10. 12. 13
15. 16. 18. 19
21. 22
24. 25
27. 28
IF-1367
CN1001
CN1004
4K-SDI_1_P/N. 4K-SDI_2_P/N. 4K-SDI_3_P/N. 4K-SDI_4_P/N
2K-SDI_1_P/N. 2K-SDI_2_P/N
RET-SDI_1_P/N
2K-SDI_3_P/N
RET-SDI_2_P/N
1. 2. 4. 5. 7. 8. 10. 11
13. 14. 16. 17
22. 23
19. 20
25. 26
NET-37
CN0102
SDI_IN_P/N_4K1-4K4
SDI_IN_P/N_3G1-3G2
SDI_OUT_P/N_4K1
SDI_IN_P/N_3G3
SDI_OUT_P/N_4K2
IC1003
TEMP SENSOR
I2C (SDA/SCL)
IC1006
EEPROM
IC002
FPGA1
IC0501
CLOCK GEN.
X0501
156.25MHz
IC1004
VIDEO CLOCK GEN.
IC1002
DAC
VC1001
27MHz
TG_SYNC_F/V/H
PLL_CLK_148.35
PLL_CLK_148.5
PLL_CLK_27
PLL_CLK_24
IC1007
DAC
VC1002
27MHz
TG_DAC
TG_CLK_27
CLK_156
IC001
FPGA2
AURORA_RX (10)
AURORA_TX (10)
NENE_REF_F/V/H
BIBI_REF_F/V/H
BUS_RSV (40)
X0502
100MHz
CLK_100
SFP1_N/P_RX
SFP1_N/P_TX
SFP2_N/P_RX
SFP2_N/P_TX
CN0201
CN0202
12. 13
18. 19
SFP28-1
SFP28-2
IC2004
DAC
VC2001
27MHz
PTP_DAC
PTP_CLK_27
IC1701. 1702. 1801. 1802
DDR4
IC0701. 0702. 0801. 0802
DDR4
VIF-60
IC1301
FPGA
IC514
IC515
CLK74
CLK27
CN3010
29
27
CN1003
CN1002
CN0101
MST_CLK74
MST_CLK27
VIF_CLK_74M
VIF_CLK_27M
NMI_F_OUT. NMI_H_OUT
NMI_F/H
NET_F/H
21. 20
10. 11
16. 17
IC1002. 1001. 801
AUDIO_256FS/LR_CLK/TX
AUDIO_256FS/LRCLK/TX
18. 17. 16
13. 14. 15
5. 6. 8
AUDIO_RX
IC801
15
16
7
4K_POST_META/F_IN/V_IN/ H_IN
2K_POST_H _IN/V_IN
13. 12. 11. 10
6. 5
18. 19. 20. 21
25. 26
9. 10. 11. 12
15. 59
4K_POST_META
2K_POST_H/V_IN
VIF_F_GATE. MIF_PLD_F/H. (VIF) 2 (NET) _PLD_V
RESERVE_2K_POST_IO
3
2
28
29
IC801
FPGA
PLD Version up
CN3011
CN1005
2-6. 9
21. 23-26. 46
IC0405
RESET
PW_ON_CONFIG
PLD_RECONFIG
IC1203
NCONFIG
IC2106
IC1202
BUFFER I/O
IC1204
SPI FLASH MEMORY
IC2109-2113
IC2103. 2104
IC1201
IC1206
IC2105
IC2114
VUP_CLK/RX/LD/TX/RECONF/XCS1
PLD_VU_CS
VUP_SPI (4)
VUP_CFG_DONE1
VUP_CFG_DONE0
D1201
Q1201
D2101
Q2101
IC005
PLD_VU_CONF_DONE
EXT_CPU_BUS_0to7
EXT_CPU_ADDR
EXT_CPU_IRQ_X/WAIT_X
EXT_CPU_CLK
EXT_CPU_CS_X
EXT_CPU_RST_X
VUP_CFG_DONE0/1
EXT_CPU_ADDR_0to6
CPU_DAT_0to7
CPU_ADDR_0to6
CPU_XWAIT/XIRQ
CPU_CLK
CPU_XCS
CPU_XRST
7
16-23
24-35
34. 35
15
36
33
47. 50
35-42
31-34. 43-45
52. 54
22
27
56
CN0104
PCIE (GEN2) _P/N
SGMII_P/N
13. 14. 16. 17. 19. 20
1. 2. 4. 5. 7. 8. 10. 11
FROM/TO VIF
CN101
CN1006
CN1007
CN0103
+14V_B
+14V_IN
1. 2. 3
DC FAN 2
DC FAN 1
CN2002
CN2001
2
FAN_ALRM_1
FAN_ALRM_0

Frame Wiring



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