SONY

BASEBAND PROCESSOR UNIT

BPU4800

INTERNAL MEMORY ARRAY

SKC-MEM4

SERVICE MANUAL

1st Edition

⚠ 警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠ WARNING

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

⚠ WARNUNG

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

⚠ AVERTISSEMENT

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

Model Name	Serial No.
BPU4800 (SY): LEMO Optical Fiber Connector	10001 and Higher
BPU4800 (SY): Tajimi Optical Fiber Connector	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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Revision History

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, periodic maintenance and inspection, error message, maintenance menu, replacement of main parts, update, file system, circuit description, 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.

- Operating Instructions 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.

Trademarks

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

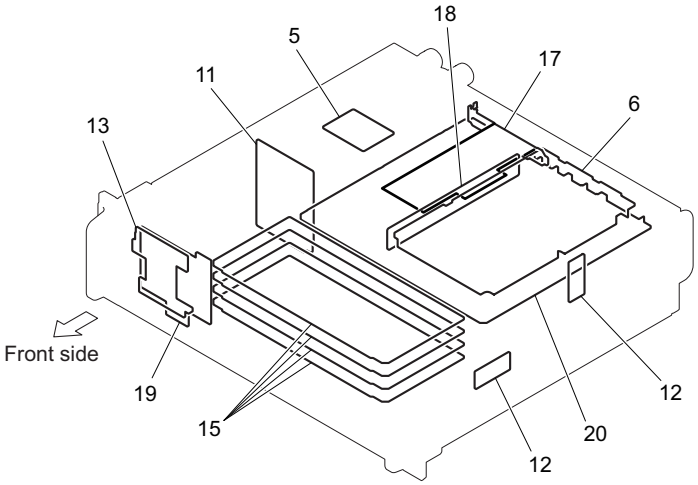
- FRAM is a registered trademark of Ramtron International Corporation.
- Internet Explorer is a trademark or registered trademark of Microsoft Corporation in the United States and Other countries.
- Chrome browser and Chrome are trademarks of Google Inc.
- Mozilla and Firefox are registered trademarks of the Mozilla Foundation.

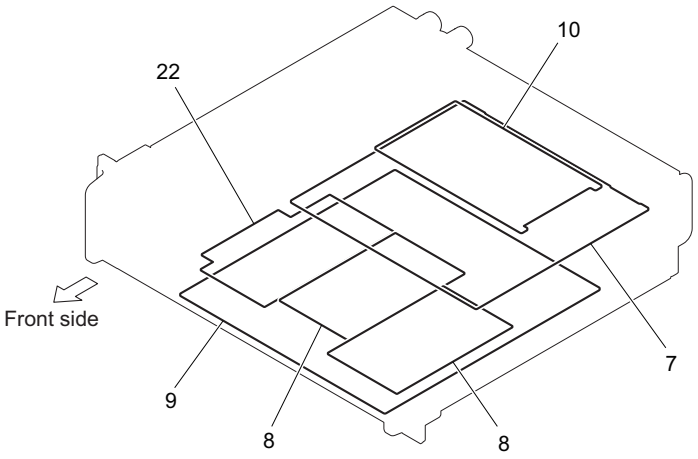
Other system names and product names written in this manual are usually registered trademarks or trademarks of respective development manufacturers.

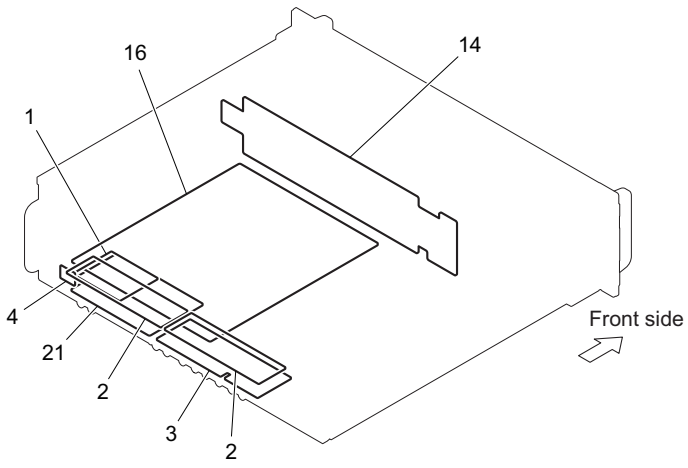
Section 1
Service Overview

1-1. Location of Main Parts

1-1-1. Location of Boards and Circuit Configuration





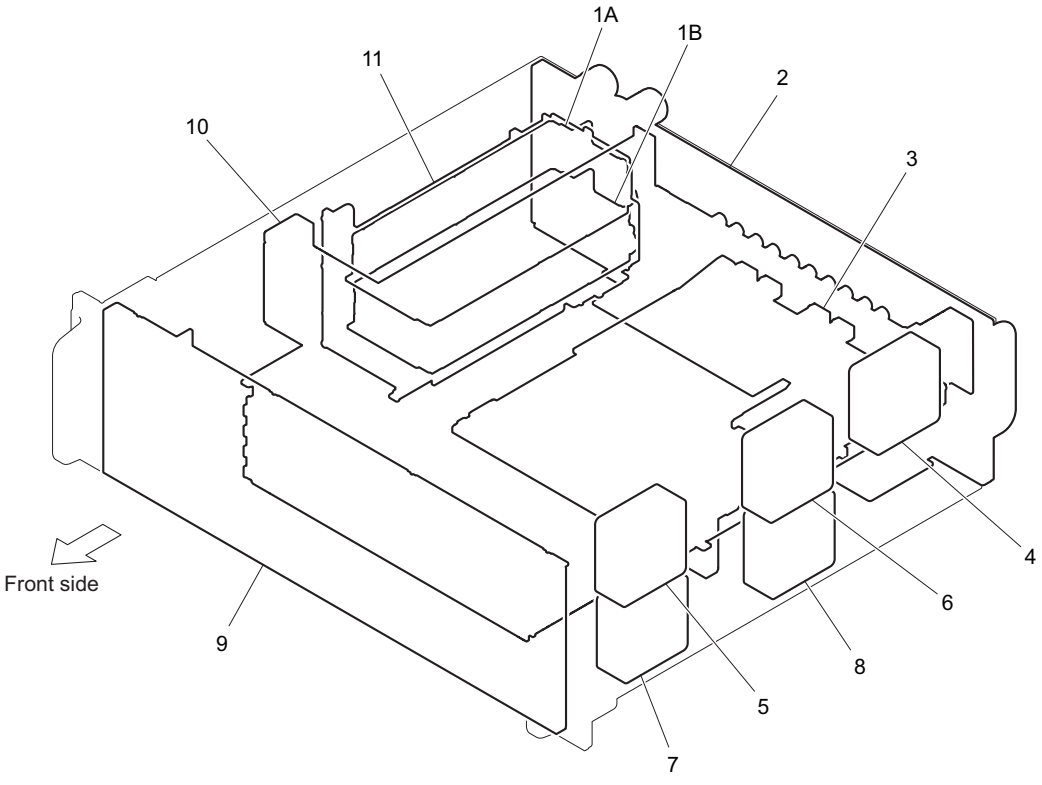


Location No.	Board Name	Circuit Function
1	AT-189	CPU Board

Continued

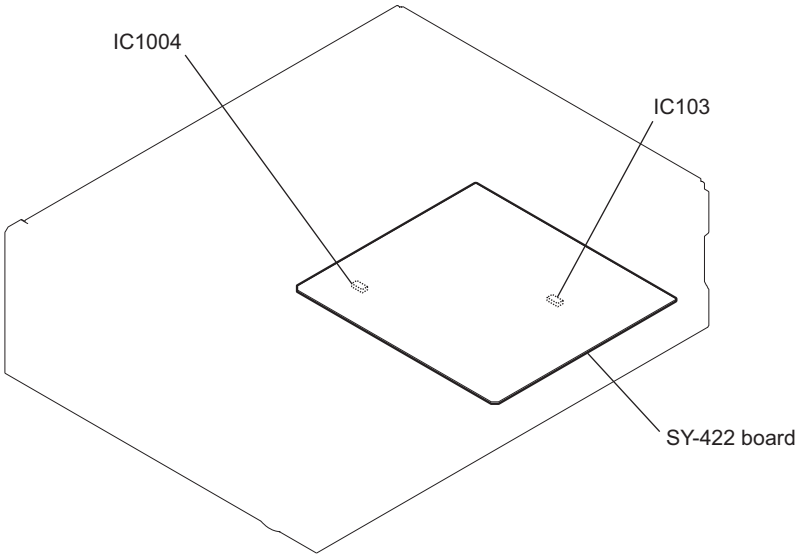
Location No.	Board Name	Circuit Function
2	CN-3784	SDI Output System Board
3	CN-3834	SDI Output System Board
4	CN-3838	Remote Control Connection
5	CN-3839	Interconnection for Camera Power
6	CPU-453A	System Control (2/2) & Network Control
7	DM-156	Bank Memory/SharePlay/Host Control
8	DPR-348A	4K Image Making Processing/HD Cut Out Processing
9	DVP-65	Main Signal Processing Board
10	ENC-168	XAVC Codec
11	HN-427	Power Supply Relay
12	IF-1287	Interconnection for the fans
13	LE-404	LED Board
14	MB-1216	Mother Board
15	MDC-20 (SKC-MEM4)	NAND Memory Board
16	NET-30	NetMedia (Baseband)
17	NIC	Network Card
18	RC-107	PCI Express Card Connection
19	SW-1669	User I/F/SW Board
20	SY-422	System Control (1/2) & Network IF
21	SY-442	CPU I/F Bridge Board
22	TX-155	100G I/F Board

1-1-2. Location of Main Mechanical Parts



Location No.	Part Name	Location	Identification Name
1A	Switching regulator	Power supply block	Switching regulator A
1B	Switching regulator		Switching regulator B
2	Rear panel block		
3	NetMedia block		
4	DC fan	Server block	DC fan 3 (Rear)
5	DC fan		DC fan 1 (Front)
6	DC fan		DC fan 2 (Center)
7	DC fan	BPU/NetMedia block	DC fan 4 (Front)
8	DC fan		DC fan 5 (Center)
9	Front panel block		
10	Server block		
11	Power supply block		

1-1-3. Location of Sensors and Their Functions

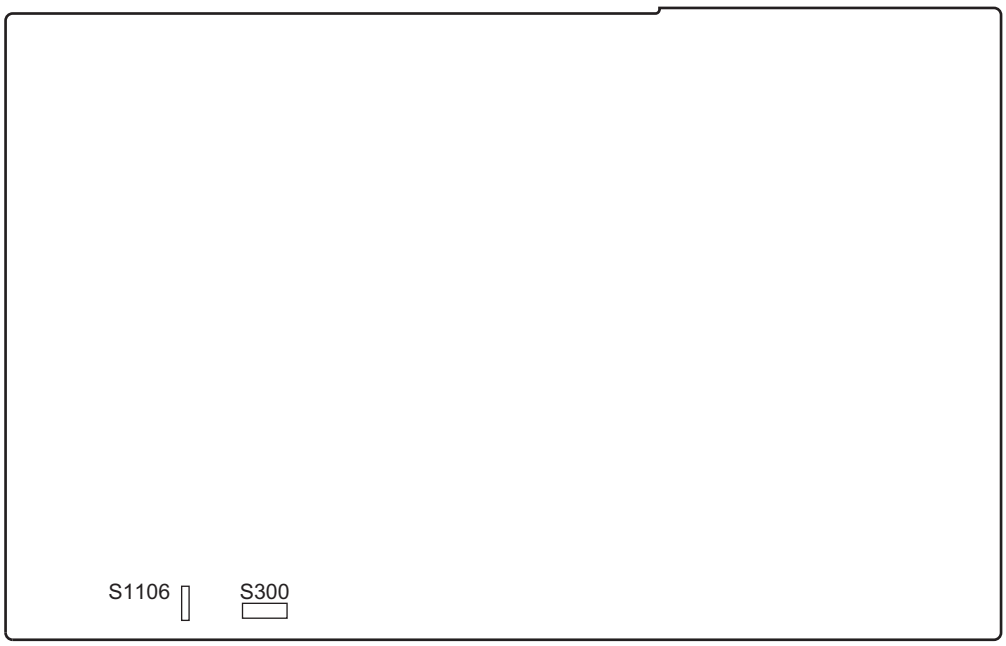


Board Name	Ref. No. (Address)	Function
SY-422	IC103 (D-8) (Side B)	Internal temperature monitoring
SY-422	IC1004 (K-2) (Side B)	Internal temperature monitoring

1-2. Functions of Onboard Switches and LED Indicators

1-2-1. Functions of Onboard Switches

CPU-453A Board



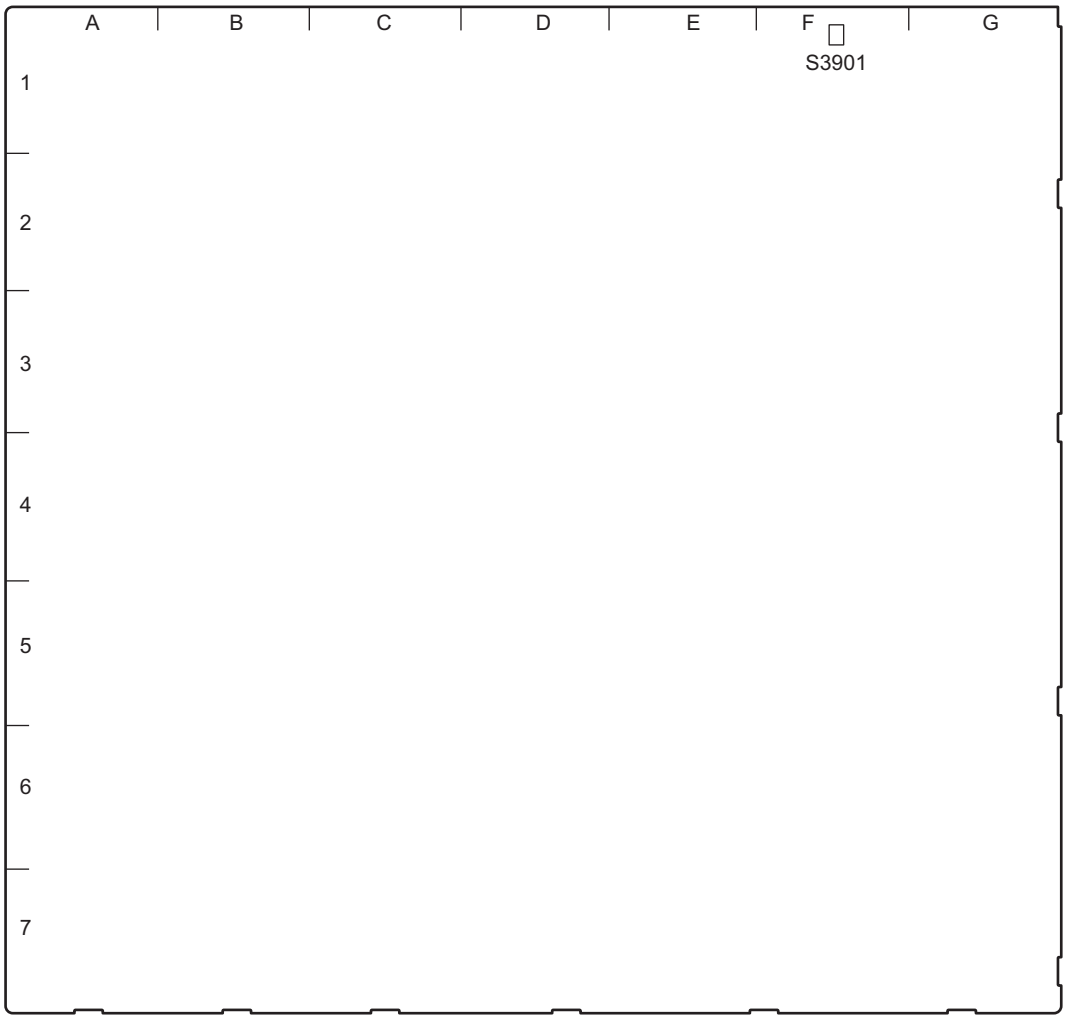
CPU-453A board (Side A)

Note

Do not change the settings of the switches described as “Factory use”.

Ref. No. (Address)	Bit	Description	Factory Setting
S300 (—)	1-8	Factory use	OFF (ALL)
S1106 (—)	—	Factory use	—

DVP-65 Board



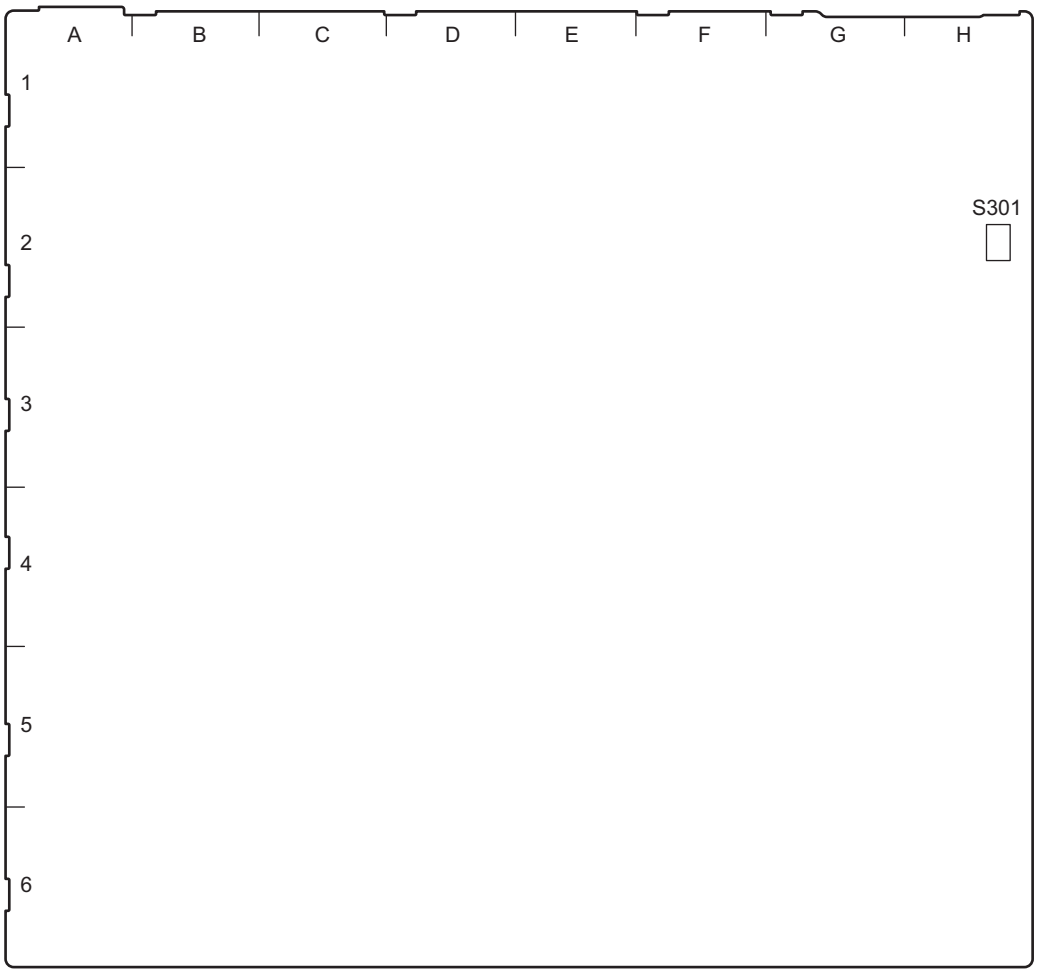
DVP-65 board (Side A)

Note

Do not change the settings of the switches described as “Factory use”.

Ref. No. (Address)	Bit	Description	Factory Setting
S3901 (F-1)	1-4	Factory use	—

DM-156 Board



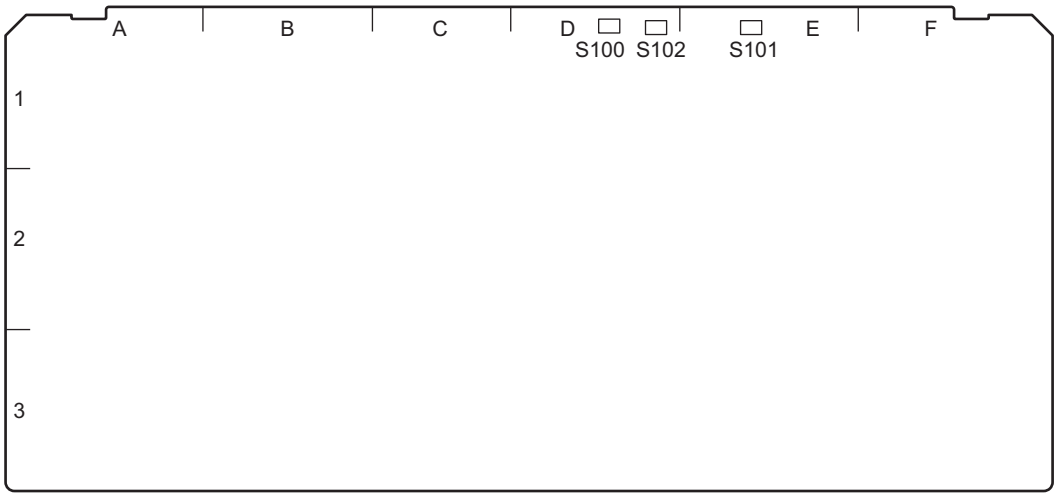
DM-156 board (Side A)

Note

Do not change the settings of the switches described as “Factory use”.

Ref. No. (Address)	Bit	Description	Factory Setting
S301 (H-2)	1-8	Factory use	OFF (ALL)

MDC-20 Board



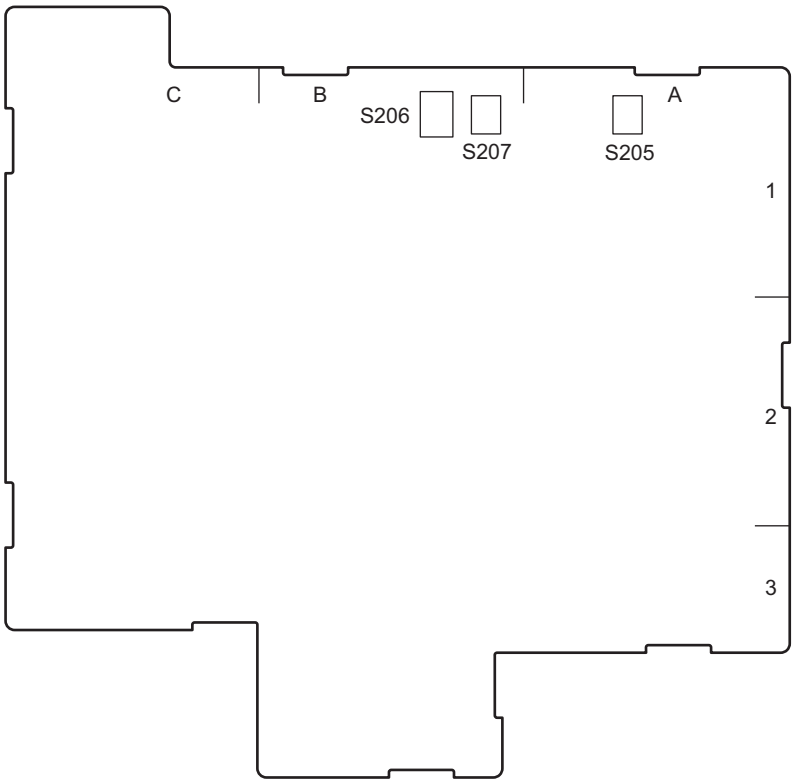
MDC-20 board (Side A)

Note

Do not change the settings of the switches described as “Factory use”.

Ref. No. (Address)	Bit	Description	Factory Setting
S100 (D-1)	1-8	Factory use	OFF (ALL)
S101 (E-1)	—	Factory use	—
S102 (D-1)	—	Factory use	—

SW-1669 Board



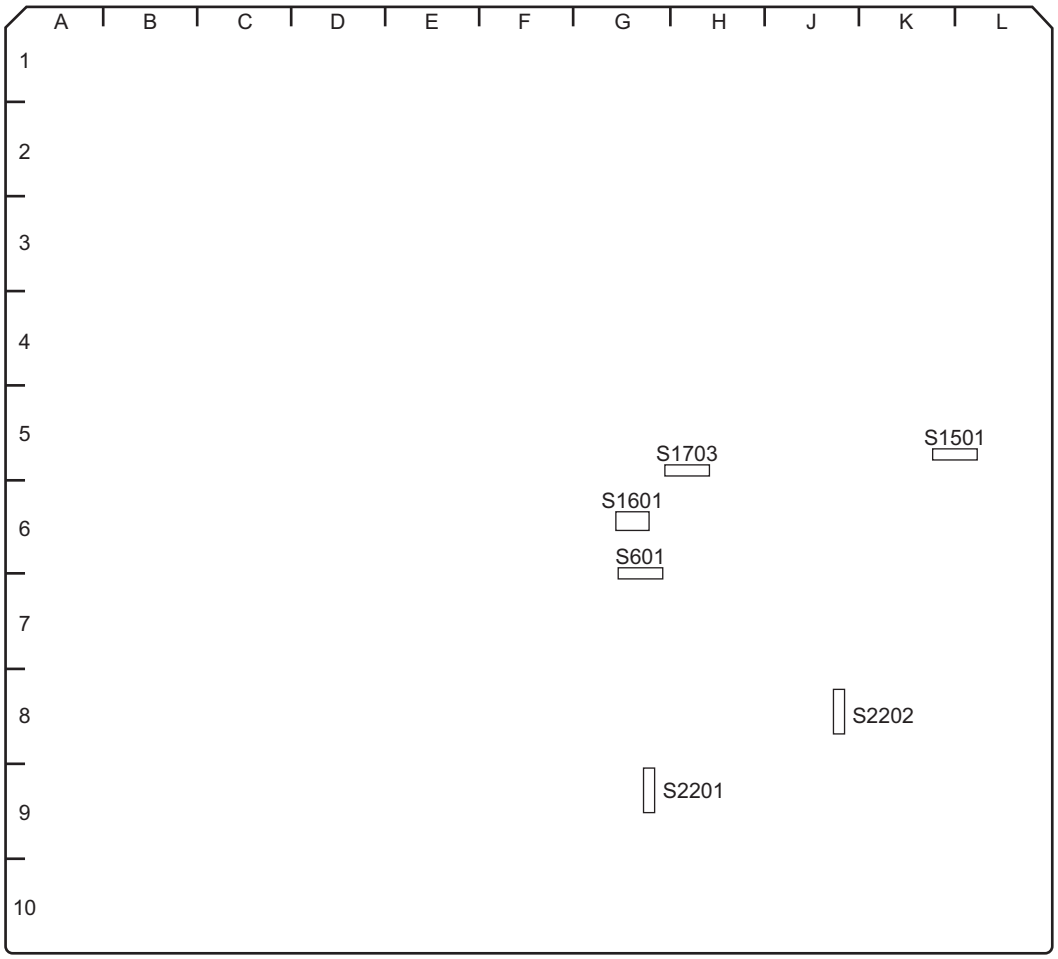
SW-1669 board (Side B)

Note

Do not change the settings of the switches described as “Factory use”.

Ref. No. (Address)	Bit	Description	Factory Setting
S205 (A-1)	—	Factory use	—
S206 (B-1)	1-4	Factory use	OFF (ALL)
S207 (B-1)	—	Factory use	—

SY-422 Board



SY-422 board (Side A)

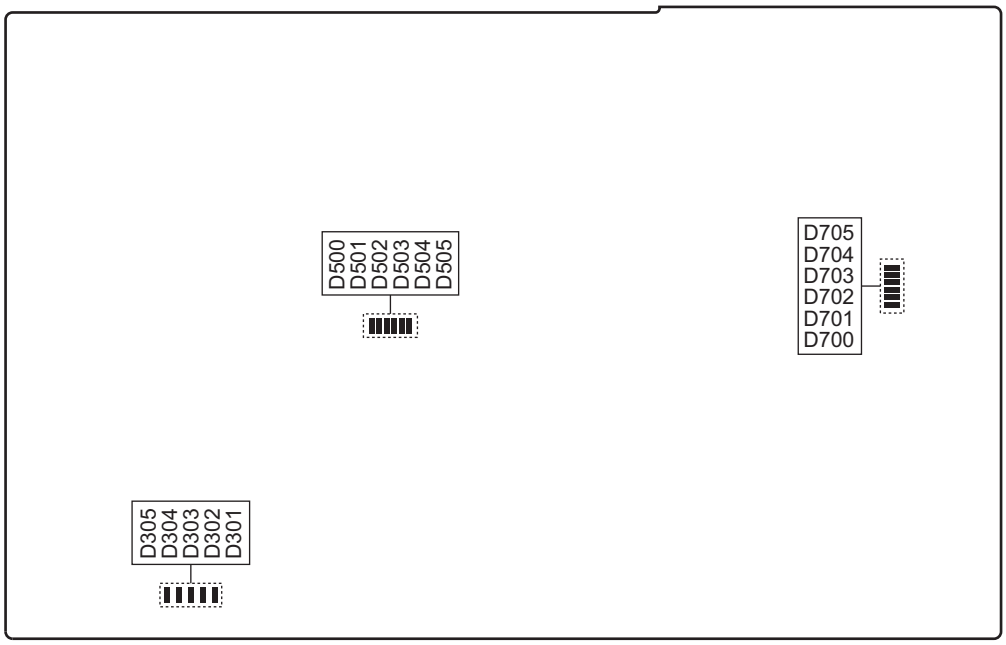
Note

Do not change the settings of the switches described as “Factory use”.

Ref. No. (Address)	Bit	Description	Factory Setting
S601 (G-6)	1	Flash Write mode switch	ON
	2-6	Factory use	OFF (ALL)
	7	Software start-up data select 2	ON
	8	Software start-up data select 1	OFF
S1501 (K-5)	1-6	Factory use	OFF (ALL)
	7	Software start-up data select 2	ON
	8	Software start-up data select 1	OFF
S1601 (G-6)	1-4	Factory use	OFF (ALL)
S1703 (H-5)	1	Configuration data selection OFF: Activated with routinely-used settings. ON: Activated with factory settings.	OFF
	2-8	Factory use	OFF (ALL)
S2201 (G-9)	—	Factory use	—
S2202 (J-8)	—	Factory use	—

1-2-2. Description of Onboard LED Indicators

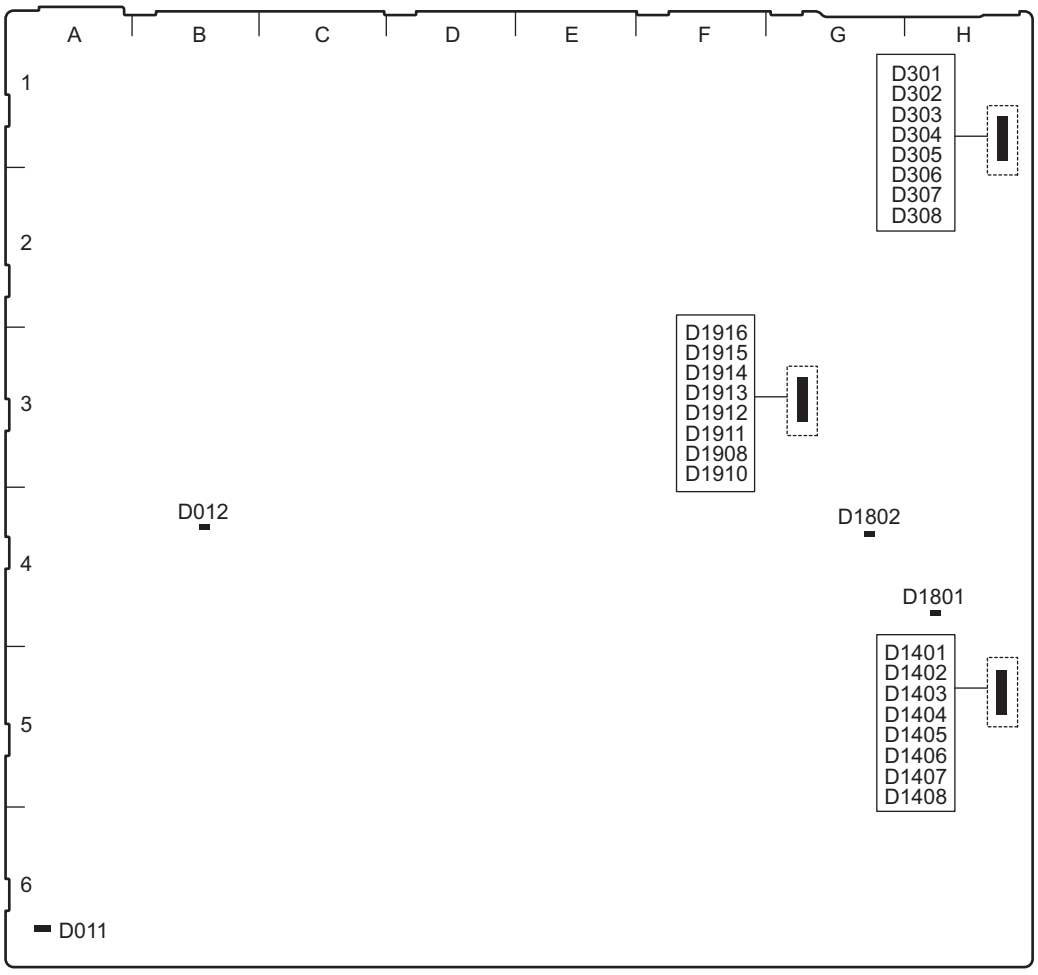
CPU-453A Board



CPU-453A board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D301 (—)	—	Red	On when the error occurs.	Off
D302 (—)	—	Green	On in normal operation mode.	On
D303 (—)	—	Green	On in normal operation mode.	On
D304 (—)	—	Green	On in normal operation mode.	On
D305 (—)	—	Green	Blink in normal operation mode.	Blinks
D500 (—)	—	Green	Factory use	Off
D501 (—)	—	Green	Factory use	Off
D502 (—)	—	Green	Factory use	Off
D503 (—)	—	Green	Factory use	Off
D504 (—)	—	Green	Factory use	Off
D505 (—)	—	Green	Factory use	Off
D700 (—)	—	Green	On when SYS3 (IC100) is connected to PCI Express switch (IC704).	On
D701 (—)	—	Green	On when PCI Express switch (IC704) is connected to PCI Express card.	Inconstant
D702 (—)	—	Green	On when PCI Express switch (IC704) is connected to FPGA1 (IC3: SY-422 board).	On
D703 (—)	—	Green	On when SYS3 (IC100) is connected to PCI Express switch (IC704).	Blinks
D704 (—)	—	Green	On when PCI Express switch (IC704) is connected to PCI Express card.	Inconstant
D705 (—)	—	Green	On when PCI Express switch (IC704) is connected to FPGA1 (IC3: SY-422 board).	Blinks

DM-156 Board



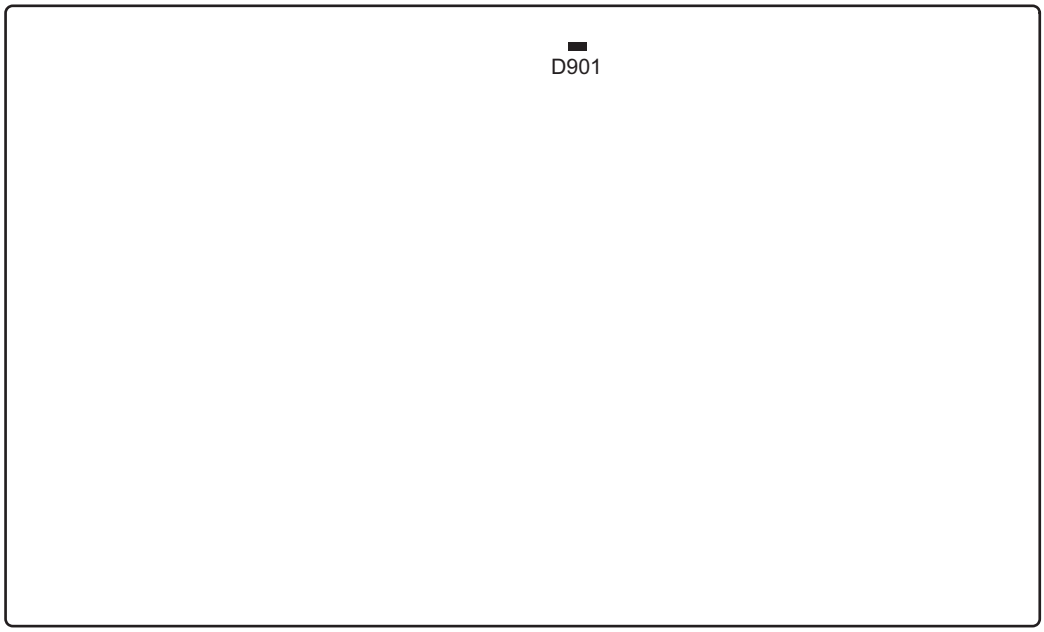
DM-156 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D011 (A-6)	—	Green	+12 V is supplied to a DM-156 board.	On
D012 (B-4)	—	Green	+12 V is supplied to an ENC-168 board.	On
D301 (H-1)	—	Green	Factory use	Inconstant
D302 (H-1)	—	Green	Factory use	Inconstant
D303 (H-1)	—	Green	Factory use	Inconstant
D304 (H-1)	—	Green	Factory use	Inconstant
D305 (H-1)	—	Green	Factory use	Inconstant
D306 (H-1)	—	Green	Factory use	Inconstant
D307 (H-1)	—	Green	BANK_FPGA (IC001) has been configured.	On
D308 (H-1)	—	Green	Blink in normal operation mode.	Blinks
D1401 (H-5)	—	Green	Factory use	Inconstant
D1402 (H-5)	—	Green	Factory use	Inconstant
D1403 (H-5)	—	Green	Factory use	Inconstant
D1404 (H-5)	—	Green	Factory use	Inconstant
D1405 (H-5)	—	Green	Factory use	Inconstant
D1406 (H-5)	—	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D1407 (H-5)	—	Green	Factory use	Inconstant
D1408 (H-5)	—	Green	Factory use	Inconstant
D1801 (H-4)	—	Green	Factory use	Inconstant
D1802 (G-4)	—	Green	Factory use	Inconstant
D1908 (G-3)	—	Green	Factory use	Inconstant
D1910 (G-3)	—	Green	Factory use	Inconstant
D1911 (G-3)	—	Green	Factory use	Inconstant
D1912 (G-3)	—	Green	Factory use	Inconstant
D1913 (G-3)	—	Green	Factory use	Inconstant
D1914 (G-3)	—	Green	Factory use	Inconstant
D1915 (G-3)	—	Green	Factory use	Inconstant
D1916 (G-3)	—	Green	Factory use	Inconstant

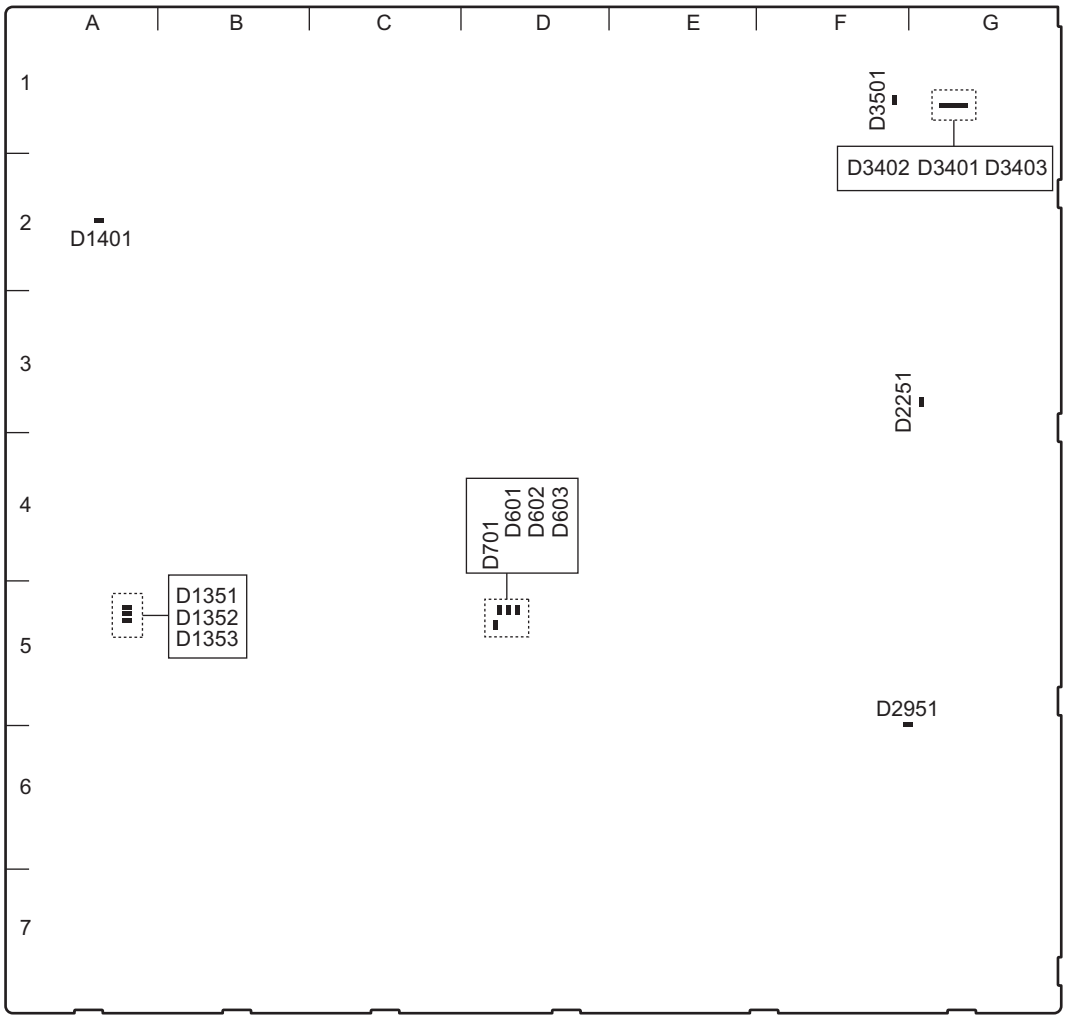
DPR-348A Board



DPR-348A board (Side B)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D901 (—)	Conf Done	Red	Goes off when FPGA (IC001) is normally configured.	Off

DVP-65 Board



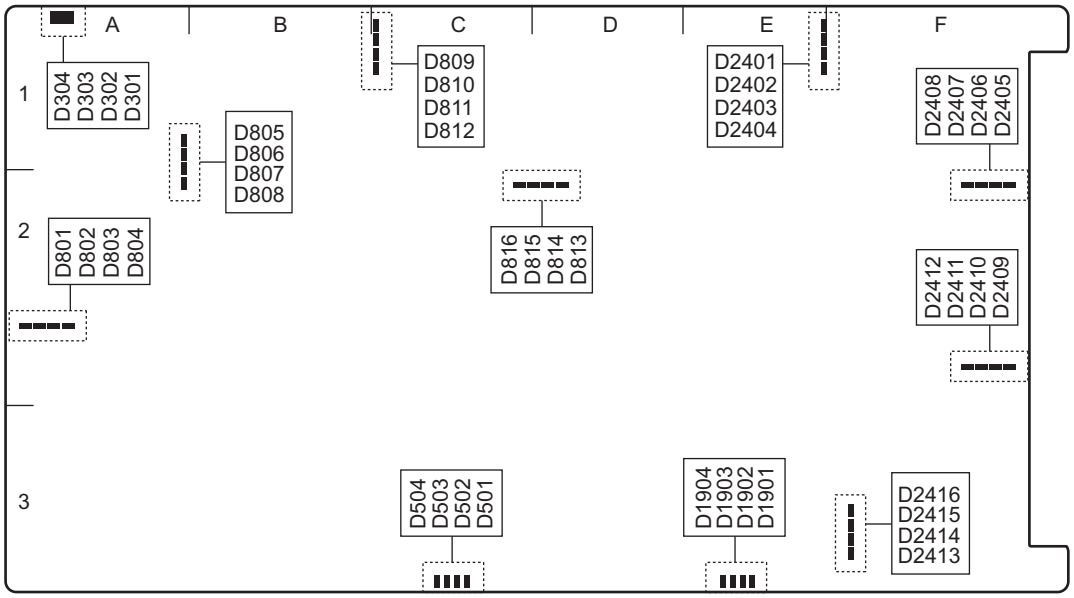
DVP-65 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D601 (D-5)	LED0-LED3	Yel-low/ Green	Factory use	Inconstant
D602 (D-5)	LED0-LED3	Yel-low/ Green	Factory use	Inconstant
D603 (D-5)	LED0-LED3	Yel-low/ Green	Factory use	Inconstant
D701 (D-5)	CONF_DONE	Red	Goes off when HUB_FPGA (IC601) is normally configured.	Off
D1351 (A-5)	LED0-LED3	Yel-low/ Green	Factory use	Inconstant
D1352 (A-5)	LED0-LED3	Yel-low/ Green	Factory use	Inconstant
D1353 (A-5)	LED0-LED3	Yel-low/ Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D1401 (A-2)	CONF_DONE	Red	Goes off when DEC2_FPGA (IC901) is normally configured.	Off
D2251 (G-3)	CONF_DONE	Red	Goes off when 4K-POST_FPGA (IC2051) is normally configured.	Off
D2951 (G-5)	CONF_DONE	Red	Goes off when 2K-POST_FPGA (IC2701) is normally configured.	Off
D3401 (G-1)	TFAULT	Red	Factory use	Inconstant
D3402 (G-1)	TDIS	Red	Factory use	Inconstant
D3403 (G-1)	LOS	Red	Factory use	Inconstant
D3501 (F-1)	CONF_DONE	Red	Goes off when SDP_FPGA (IC3401) is normally configured.	Off

ENC-168 Board



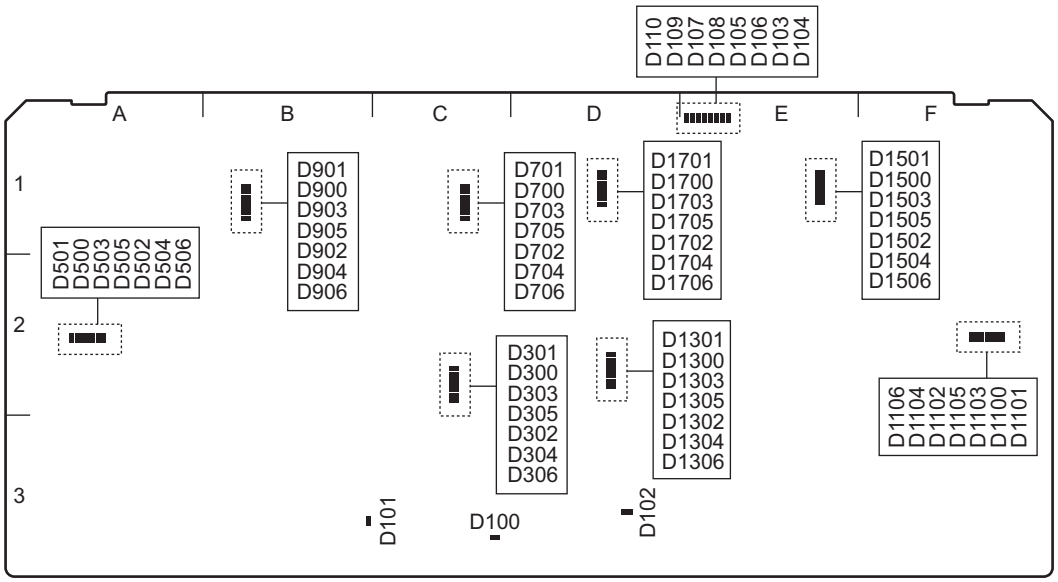
ENC-168 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D301 (A-1)	—	Green	XDEC_FPGA (IC002) has been configured.	On
D302 (A-1)	—	Green	XENC_FPGA (IC001) has been configured.	On
D303 (A-1)	—	Green	Lights during FPGA configuration.	Off
D304 (A-1)	—	Green	Blink in normal operation mode.	Blinks
D501 (C-3)	—	Green	Factory use	Inconstant
D502 (C-3)	—	Green	Factory use	Inconstant
D503 (C-3)	—	Green	Factory use	Inconstant
D504 (C-3)	—	Green	Factory use	Inconstant
D801 (A-2)	—	Green	Factory use	Inconstant
D802 (A-2)	—	Green	Factory use	Inconstant
D803 (A-2)	—	Green	Factory use	Inconstant
D804 (A-2)	—	Green	Factory use	Inconstant
D805 (A-1)	—	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D806 (A-1)	—	Green	Factory use	Inconstant
D807 (A-1)	—	Green	Factory use	Inconstant
D808 (A-1)	—	Green	Factory use	Inconstant
D809 (C-1)	—	Green	Factory use	Inconstant
D810 (C-1)	—	Green	Factory use	Inconstant
D811 (C-1)	—	Green	Factory use	Inconstant
D812 (C-1)	—	Green	Factory use	Inconstant
D813 (D-1)	—	Green	Factory use	Inconstant
D814 (D-1)	—	Green	Factory use	Inconstant
D815 (D-1)	—	Green	Factory use	Inconstant
D816 (C-1)	—	Green	Factory use	Inconstant
D1901 (E-3)	—	Green	Factory use	Inconstant
D1902 (E-3)	—	Green	Factory use	Inconstant
D1903 (E-3)	—	Green	Factory use	Inconstant
D1904 (E-3)	—	Green	Factory use	Inconstant
D2401 (E-1)	—	Green	Factory use	Inconstant
D2402 (E-1)	—	Green	Factory use	Inconstant
D2403 (E-1)	—	Green	Factory use	Inconstant
D2404 (E-1)	—	Green	Factory use	Inconstant
D2405 (F-2)	—	Green	Factory use	Inconstant
D2406 (F-2)	—	Green	Factory use	Inconstant
D2407 (F-2)	—	Green	Factory use	Inconstant
D2408 (F-2)	—	Green	Factory use	Inconstant
D2409 (F-2)	—	Green	Factory use	Inconstant
D2410 (F-2)	—	Green	Factory use	Inconstant
D2411 (F-2)	—	Green	Factory use	Inconstant
D2412 (F-2)	—	Green	Factory use	Inconstant
D2413 (F-2)	—	Green	Factory use	Inconstant
D2414 (F-2)	—	Green	Factory use	Inconstant
D2415 (F-2)	—	Green	Factory use	Inconstant
D2416 (F-2)	—	Green	Factory use	Inconstant

MDC-20 Board



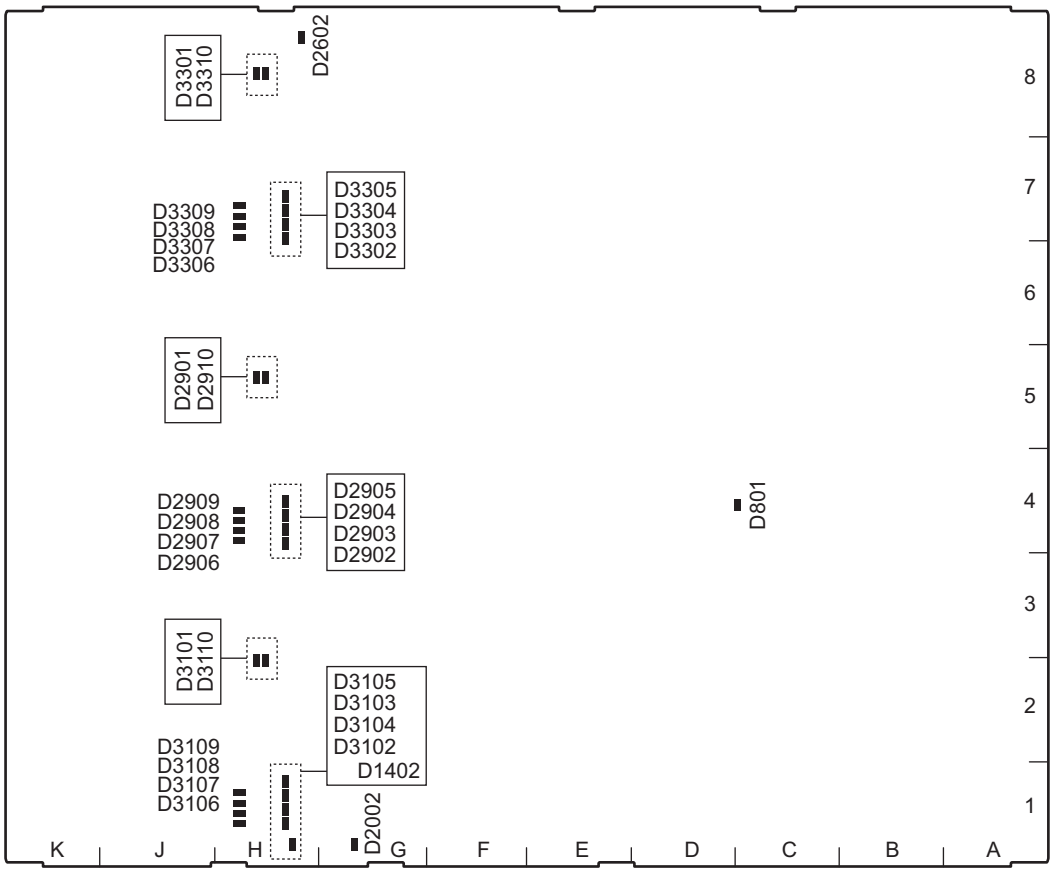
MDC-20 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D100 (C-3)	12 V	Green	Power indicator of 12 V	On
D101 (B-3)	3.3 V-1	Green	Power indicator of 3.3 V-1	On
D102 (D-3)	3.3 V-2	Green	Power indicator of 3.3 V-2	On
D103 (E-1)	PLD_LED	Green	Factory use	Inconstant
D104 (E-1)	PLD_LED	Green	Factory use	Inconstant
D105 (E-1)	PLD_LED	Green	Factory use	Inconstant
D106 (E-1)	PLD_LED	Green	Factory use	Inconstant
D107 (E-1)	PLD_LED	Green	Factory use	Inconstant
D108 (E-1)	PLD_LED	Green	Factory use	Inconstant
D109 (E-1)	PLD_LED	Green	Factory use	Inconstant
D110 (E-1)	PLD_LED	Green	Factory use	Inconstant
D300 (C-2)	—	Green	Factory use	Inconstant
D301 (C-2)	—	Green	Factory use	Inconstant
D302 (C-2)	—	Green	Factory use	Inconstant
D303 (C-2)	—	Green	Factory use	Inconstant
D304 (C-2)	—	Green	Factory use	Inconstant
D305 (C-2)	—	Green	Factory use	Inconstant
D306 (C-2)	—	Green	Factory use	Inconstant
D500 (A-2)	—	Green	Factory use	Inconstant
D501 (A-2)	—	Green	Factory use	Inconstant
D502 (A-2)	—	Green	Factory use	Inconstant
D503 (A-2)	—	Green	Factory use	Inconstant
D504 (A-2)	—	Green	Factory use	Inconstant
D505 (A-2)	—	Green	Factory use	Inconstant
D506 (A-2)	—	Green	Factory use	Inconstant
D700 (C-1)	—	Green	Factory use	Inconstant
D701 (C-1)	—	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D702 (C-1)	—	Green	Factory use	Inconstant
D703 (C-1)	—	Green	Factory use	Inconstant
D704 (C-1)	—	Green	Factory use	Inconstant
D705 (C-1)	—	Green	Factory use	Inconstant
D706 (C-1)	—	Green	Factory use	Inconstant
D900 (B-1)	—	Green	Factory use	Inconstant
D901 (B-1)	—	Green	Factory use	Inconstant
D902 (B-1)	—	Green	Factory use	Inconstant
D903 (B-1)	—	Green	Factory use	Inconstant
D904 (B-1)	—	Green	Factory use	Inconstant
D905 (B-1)	—	Green	Factory use	Inconstant
D906 (B-1)	—	Green	Factory use	Inconstant
D1100 (F-2)	—	Green	Factory use	Inconstant
D1101 (F-2)	—	Green	Factory use	Inconstant
D1102 (F-2)	—	Green	Factory use	Inconstant
D1103 (F-2)	—	Green	Factory use	Inconstant
D1104 (F-2)	—	Green	Factory use	Inconstant
D1105 (F-2)	—	Green	Factory use	Inconstant
D1106 (F-2)	—	Green	Factory use	Inconstant
D1300 (D-2)	—	Green	Factory use	Inconstant
D1301 (D-2)	—	Green	Factory use	Inconstant
D1302 (D-2)	—	Green	Factory use	Inconstant
D1303 (D-2)	—	Green	Factory use	Inconstant
D1304 (D-2)	—	Green	Factory use	Inconstant
D1305 (D-2)	—	Green	Factory use	Inconstant
D1306 (D-2)	—	Green	Factory use	Inconstant
D1500 (E-1)	—	Green	Factory use	Inconstant
D1501 (E-1)	—	Green	Factory use	Inconstant
D1502 (E-1)	—	Green	Factory use	Inconstant
D1503 (E-1)	—	Green	Factory use	Inconstant
D1504 (E-1)	—	Green	Factory use	Inconstant
D1505 (E-1)	—	Green	Factory use	Inconstant
D1506 (E-1)	—	Green	Factory use	Inconstant
D1700 (D-1)	—	Green	Factory use	Inconstant
D1701 (D-1)	—	Green	Factory use	Inconstant
D1702 (D-1)	—	Green	Factory use	Inconstant
D1703 (D-1)	—	Green	Factory use	Inconstant
D1704 (D-1)	—	Green	Factory use	Inconstant
D1705 (D-1)	—	Green	Factory use	Inconstant
D1706 (D-1)	—	Green	Factory use	Inconstant

NET-30 Board



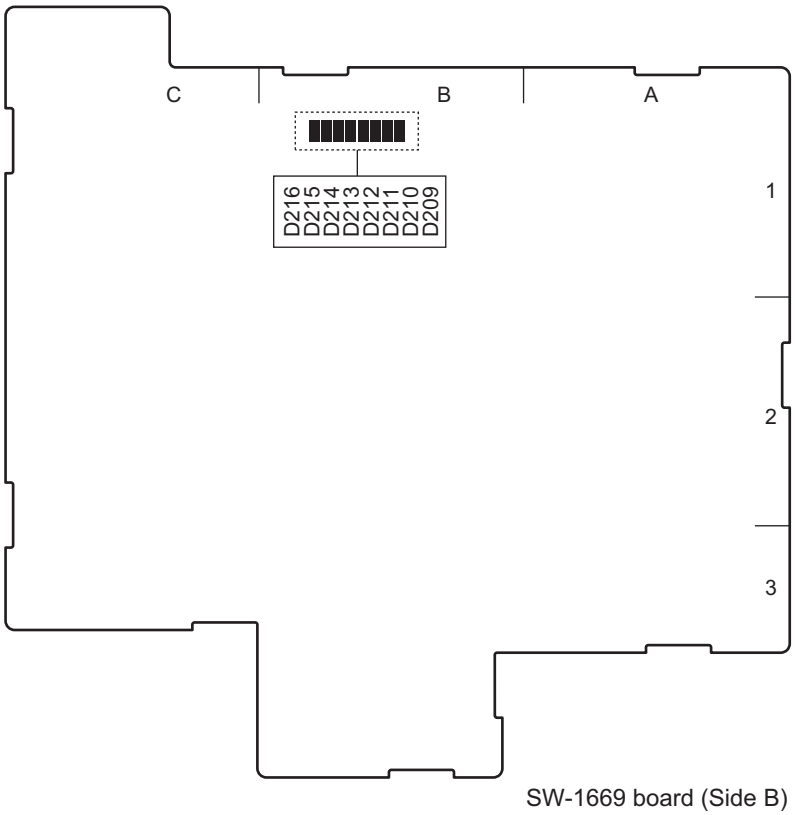
NET-30 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D801 (C-4)	CFG_DONE	Red	Goes off when 6K-NET_FPGA (IC100) is normally configured.	Off
D1402 (H-1)	—	Blue	Factory use	Inconstant
D2002 (G-1)	—	Blue	Factory use	Inconstant
D2602 (H-8)	—	Blue	Factory use	Inconstant
D2901 (H-5)	LOS_A	Red	Factory use	Inconstant
D2902 (H-4)	TDIS_A	Red	Factory use	Inconstant
D2903 (H-4)	TFAULT_A	Red	Factory use	Inconstant
D2904 (H-4)	MOD_ABS_A	Red	Factory use	Inconstant
D2905 (H-4)	RX_LOS_A	Red	Factory use	Inconstant
D2906 (H-4)	TDIS_B	Red	Factory use	Inconstant
D2907 (H-4)	TFAULT_B	Red	Factory use	Inconstant
D2908 (H-4)	MOD_ABS_B	Red	Factory use	Inconstant
D2909 (H-4)	RX_LOS_B	Red	Factory use	Inconstant
D2910 (H-5)	LOS_B	Red	Factory use	Inconstant
D3101 (H-2)	LOS_A	Red	Factory use	Inconstant
D3102 (H-1)	TDIS_A	Red	Factory use	Inconstant
D3103 (H-1)	TFAULT_A	Red	Factory use	Inconstant
D3104 (H-1)	MOD_ABS_A	Red	Factory use	Inconstant
D3105 (H-1)	RX_LOS_A	Red	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D3106 (H-1)	TDIS_B	Red	Factory use	Inconstant
D3107 (H-1)	TFAULT_B	Red	Factory use	Inconstant
D3108 (H-1)	MOD_ABS_B	Red	Factory use	Inconstant
D3109 (H-1)	RX_LOS_B	Red	Factory use	Inconstant
D3110 (H-2)	LOS_B	Red	Factory use	Inconstant
D3301 (H-8)	LOS_A	Red	Factory use	Inconstant
D3302 (H-7)	TDIS_A	Red	Factory use	Inconstant
D3303 (H-7)	TFAULT_A	Red	Factory use	Inconstant
D3304 (H-7)	MOD_ABS_A	Red	Factory use	Inconstant
D3305 (H-7)	RX_LOS_A	Red	Factory use	Inconstant
D3306 (H-7)	TDIS_B	Red	Factory use	Inconstant
D3307 (H-7)	TFAULT_B	Red	Factory use	Inconstant
D3308 (H-7)	MOD_ABS_B	Red	Factory use	Inconstant
D3309 (H-7)	RX_LOS_B	Red	Factory use	Inconstant
D3310 (H-8)	LOS_B	Red	Factory use	Inconstant

SW-1669 Board



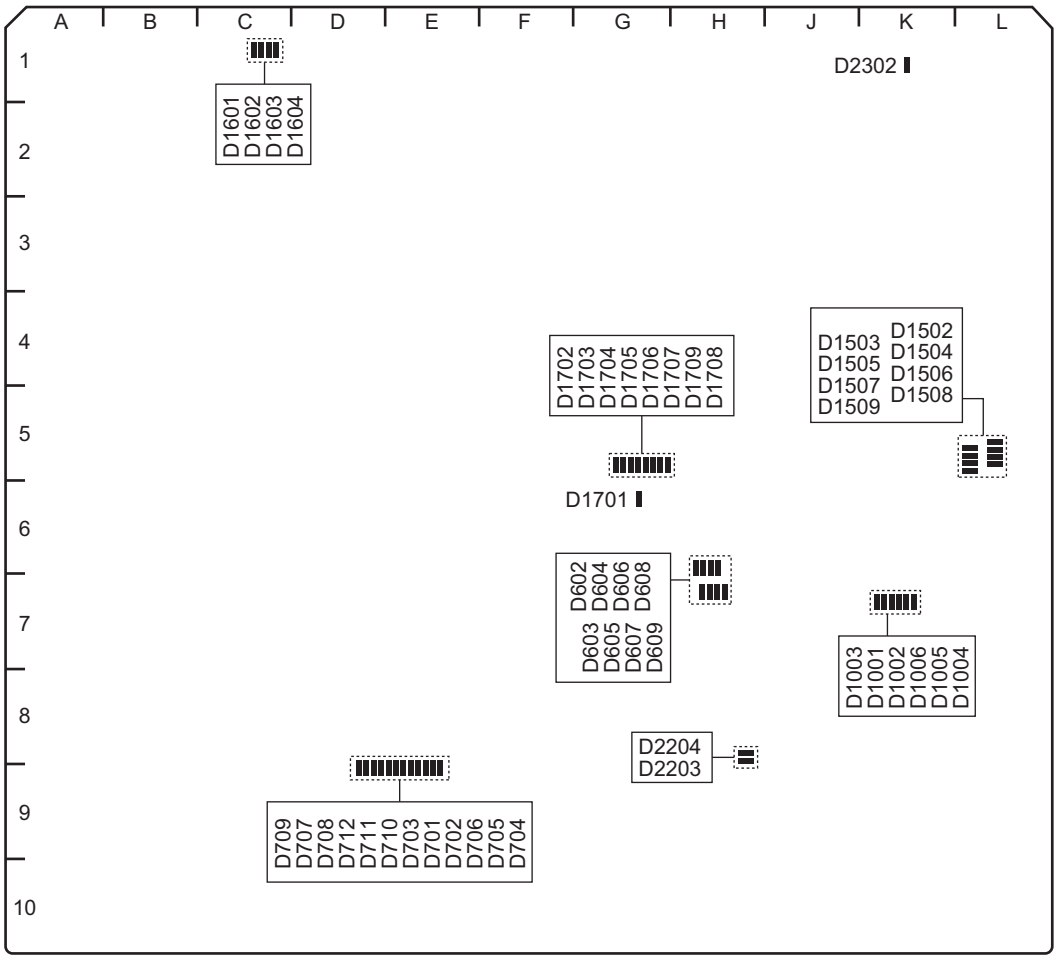
SW-1669 board (Side B)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D209 (B-1)	—	Green	Factory use	Inconstant
D210 (B-1)	—	Green	Factory use	Inconstant
D211 (B-1)	—	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D212 (B-1)	—	Green	Factory use	Off
D213 (B-1)	—	Green	Factory use	Inconstant
D214 (B-1)	—	Green	Factory use	Inconstant
D215 (B-1)	—	Green	Factory use	Inconstant
D216 (B-1)	—	Green	Factory use	Off

SY-422 Board



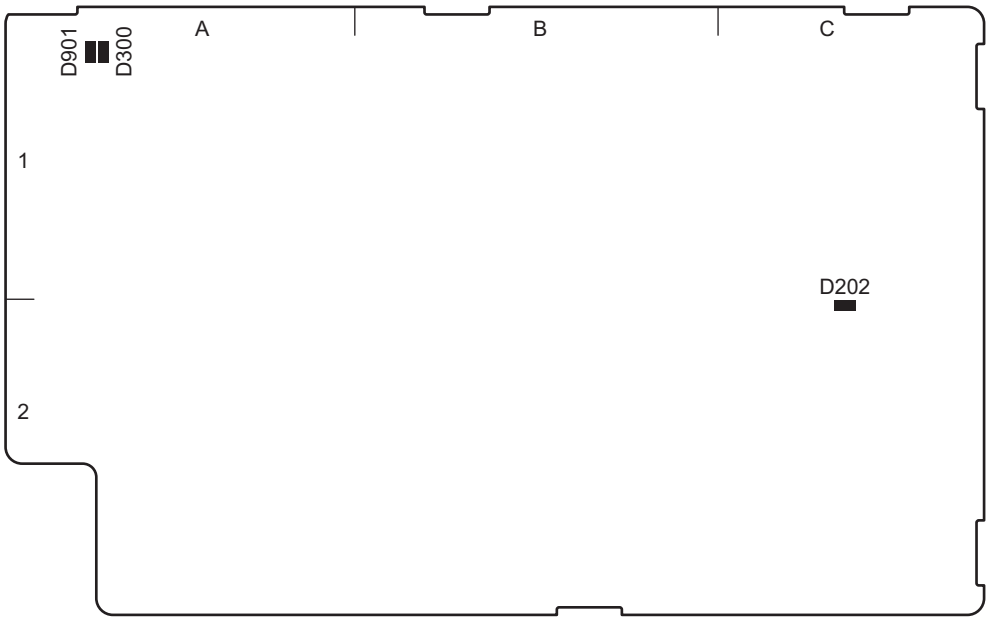
SY-422 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D602 (H-7)	—	Green	On when SYS1 functions normally	On
D603 (H-7)	—	Green	On when SYS1 functions normally	On
D604 (H-7)	—	Green	On when SYS1 functions normally	On
D605 (H-7)	—	Green	On when SYS1 functions normally	On
D606 (H-7)	—	Green	On when SYS1 functions normally	On
D607 (H-7)	—	Green	On when SYS1 functions normally	On
D608 (H-7)	—	Green	On when SYS1 functions normally	On
D609 (H-7)	—	Green	On when SYS1 functions normally	On

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D701 (E-8)	—	Green	On when SYS1 Ether1 is connecting in TX	Off
D702 (E-8)	—	Green	On when SYS1 Ether1 is connecting in RX	Off
D703 (E-8)	—	Green	On when SYS1 Ether1 is connecting in DUPLEX	Off
D704 (E-8)	—	Green	On when SYS1 Ether1 is connecting in LINK1000	Off
D705 (E-8)	—	Green	On when SYS1 Ether1 is connecting in LINK100	Off
D706 (E-8)	—	Green	On when SYS1 Ether1 is connecting in LINK10	Off
D707 (D-8)	—	Green	On when SYS1 Ether2 is connecting in TX	Off
D708 (D-8)	—	Green	On when SYS1 Ether2 is connecting in RX	Off
D709 (D-8)	—	Green	On when SYS1 Ether2 is connecting in DUPLEX	Off
D710 (D-8)	—	Green	On when SYS1 Ether2 is connecting in LINK1000	Off
D711 (D-8)	—	Green	On when SYS1 Ether2 is connecting in LINK100	Off
D712 (D-8)	—	Green	On when SYS1 Ether2 is connecting in LINK10	Off
D1001 (K-7)	—	Green	On when SYS2 Ether is connecting in TX	Off
D1002 (K-7)	—	Green	On when SYS2 Ether is connecting in RX	Off
D1003 (K-7)	—	Green	On when SYS2 Ether is connecting in DUPLEX	Off
D1004 (K-7)	—	Green	On when SYS2 Ether is connecting in LINK1000	Off
D1005 (K-7)	—	Green	On when SYS2 Ether is connecting in LINK100	Off
D1006 (K-7)	—	Green	On when SYS2 Ether is connecting in LINK10	Off
D1502 (L-5)	—	Green	On when SYS2 functions normally	On
D1503 (L-5)	—	Green	On when SYS2 functions normally	On
D1504 (L-5)	—	Green	On when SYS2 functions normally	On
D1505 (L-5)	—	Green	On when SYS2 functions normally	On
D1506 (L-6)	—	Green	On when SYS2 functions normally	On
D1507 (L-6)	—	Green	On when SYS2 functions normally	On
D1508 (L-6)	—	Green	On when SYS2 functions normally	On
D1509 (L-6)	—	Green	On when SYS2 functions normally	On
D1601 (C-1)	—	Green	On when internal PLL of FPGA1 (IC3) started up normally.	On
D1602 (C-1)	—	Green	FPGA1 (IC3) configuration status	On
D1603 (C-1)	—	Green	FPGA1 (IC3) configuration status	On
D1604 (C-1)	—	Green	FPGA1 (IC3) configuration status	Blinks
D1701 (G-6)	—	Green	FPGA1 (IC3) configuration status	On
D1702 (G-5)	—	Green	Factory use	On
D1703 (G-5)	—	Green	Factory use	On
D1704 (G-5)	—	Green	Factory use	On
D1705 (G-5)	—	Green	On when configuration is completed.	On
D1706 (G-5)	—	Green	On when configuration is completed.	On
D1707 (G-5)	—	Green	On in factory default setting mode	Off
D1708 (G-5)	—	Green	On when configuration loader is starting up.	On
D1709 (G-5)	—	Green	On when configuration loader is operating normally.	Blinks
D2203 (H-9)	—	Green	On when FPGA1 (IC3) is working in normal configuration.	On
D2204 (H-9)	—	Red	On when power supply is operating abnormally on SY board.	Off
D2302 (K-1)	—	Green	+12 V power is supplied.	On

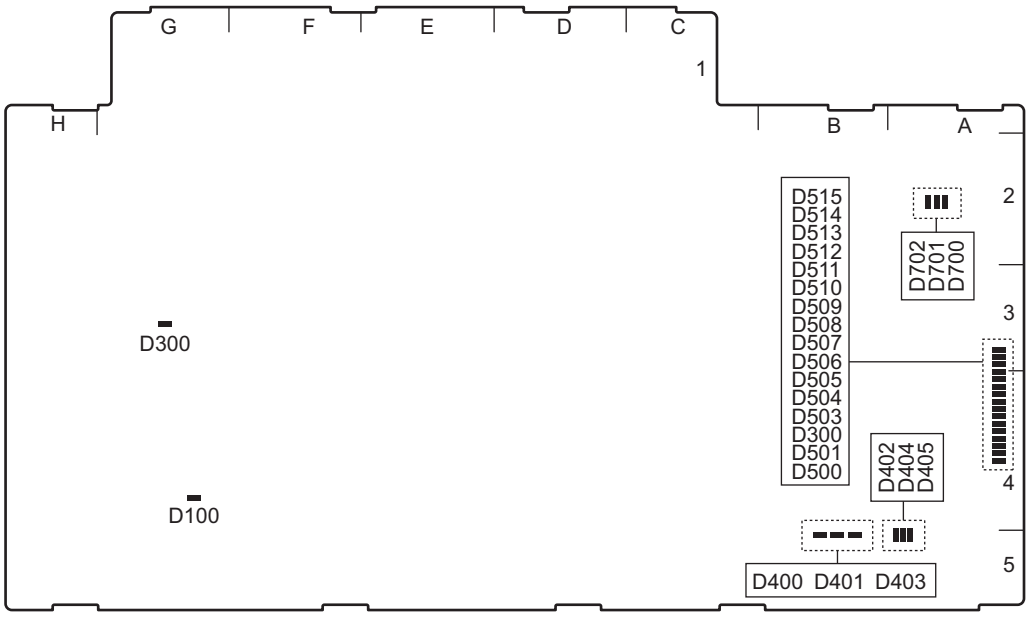
SY-442 Board



SY-442 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D202 (C-2)	SY-PW	Green	Goes off when SY_FPGA (IC705) is normally configured.	On
D300 (A-1)	STATUS	Green	Factory use	Inconstant
D901 (A-1)	Conf Done	Red	Factory use	Off

TX-155 Board



TX-155 board (Side B)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D100 (G-4)	Power_NG	Red	Lights when the power on a TX-155 board does not properly operate.	Off
D300 (G-3)	CONF_DONE	Red	Goes off when FPGA (IC200) is normally configured.	Off
D400 (B-5)	LOCK1	Red	Lights when a clock synthesizer (IC404) is not locked.	Off
D401 (B-5)	REF1	Red	Lights when a reference clock is not input to a clock synthesizer (IC404).	Off
D403 (B-5)	VCXO1	Red	Lights when a VCXO clock is not input to a clock synthesizer (IC404).	Off
D402 (A-5)	LOCK2	Red	Lights when a clock synthesizer (IC405) is not locked.	Off
D404 (A-5)	REF2	Red	Lights when a reference clock is not input to a clock synthesizer (IC405).	Off
D405 (A-5)	VCXO2	Red	Lights when a VCXO clock is not input to a clock synthesizer (IC405).	Off
D500 (A-4)	—	Red	Factory use	Inconstant
D501 (A-4)	—	Red	Factory use	Inconstant
D502 (A-4)	—	Red	Factory use	Inconstant
D503 (A-4)	—	Red	Factory use	Inconstant
D504 (A-4)	—	Red	Factory use	Inconstant
D505 (A-4)	—	Red	Factory use	Inconstant
D506 (A-4)	—	Red	Factory use	Inconstant
D507 (A-4)	—	Red	Factory use	Inconstant
D508 (A-4)	—	Yellow/ Green	Factory use	Inconstant
D509 (A-4)	—	Yellow/ Green	Factory use	Inconstant
D510 (A-4)	—	Yellow/ Green	Factory use	Inconstant
D511 (A-4)	—	Yellow/ Green	Factory use	Inconstant
D512 (A-4)	—	Yellow/ Green	Factory use	Inconstant
D513 (A-3)	—	Yellow/ Green	Factory use	Inconstant
D514 (A-3)	—	Yellow/ Green	Factory use	Inconstant
D515 (A-3)	—	Yellow/ Green	Factory use	Inconstant
D700 (A-2)	LPMODE	Red	Factory use	Inconstant
D701 (A-2)	FAULT	Red	Factory use	Inconstant
D702 (A-2)	MOD ABS	Red	Factory use	Inconstant

1-3. Notes on Replacement of Circuit Board

1-3-1. AT-189 Board and DVP-65 Board

AT-189 board and DVP-65 board store the important information including the model name and serial number.
After replacing the AT-189 board or DVP-65 board, select the right model name and serial number on the SERIAL NO. SELECT page of the SERVICE menu. (Refer to "8-2-2. Description of SERVICE Menu".)

Note

When the AT-189 board and DVP-65 board are both replaced, information is lost.
If both replace the two boards, first select the right serial number on the SERIAL NO. SELECT page of the SERVICE menu after replacing the one board. Then after replacing the other board, select again right serial number.

1-4. Replacing EEPROMs

The following EEPROMs are mounted in this unit.
These EEPROMs retain system setting data, adjustment data, and other data.
These data cannot be set again by replacing only relevant EEPROMs. When an EEPROM needs to be replaced, replace the board that contains the EEPROM.

- SY-422 board: IC610, IC1510, IC2901 to IC2903

1-5. Writing and Rewriting the PLD Internal Data

This unit (server block) uses the PLD (Programmable Logic Device). Writing and rewriting the PLD internal data shown below is compatible with the e-Production (EPR) system.
When updating the PLD, contact your local Sony sales Office/Service Center.

Tip

The PLD not supported by the e-Production (ERR) system is upgraded using the USB memory.
The USB terminal used for the update of server block is located on the SY-422 board of the rear panel block.
When it is necessary to update using a USB memory, contact your local Sony sales Office/Service Center.

e-Production system has the advantages shown below

- The PLD compatible with the e-Production method can write and rewrite data by using the standard tool (cable) and the standard software (PLD Download Tool).
- Data to be written is provided in the Project file (E_xxx_xxx_xx_xx) format.
- The printed circuit board is equipped with the standard connector (EPR connector) to write the PLD internal data. The indication “EPR2” is shown on the printed circuit board.

PLD supported by the e-Production

Board	PLD Ref. No.
SY-422	IC2201
	IC1701

- PLD upgraded using USB memory

Board	PLD Ref. No.
DM-156	IC007
ENC-168	IC007
MDC-20 (SKC-MEM4)	IC200
SW-1669	IC205

Equipment required

- PLD download tool (Sony Part No.: J-7120-220-A): The cable connects a PC to this unit.
- Personal computer (PC):
  - A PC having USB terminal.
  - A PC in which the PLD Download Tool software is already installed.

  Tip

  For the applicable OS and the operating environment, refer to “Download Tool Operating Instruction for Device Programming”.

Data write procedure

Data write procedure in the PLD is outlined below.
For details of data write procedure, refer to “Download Tool Operating Instruction for Device Programming”.
To obtain the Project file and “Download Tool Operating Instruction for Device Programming”, contact your local Sony sales Office/Service Center.

1. Prepare the Project file.
2. Turn off the power of this unit. Connect the PC parallel port and the EPR connector of the target board using the PLD download tool (cable).
3. Turn on the power of this unit.
   Start the PLD Download Tool software and read the Project file.
4. Push the Program button of the PLD Download Tool software and write data in PLD.

5. Upon completion of programming, check that error message is not displayed. Turn off the power of this unit and back on.

1-6. Upgrading SharePlay LSI Firmware

1-6-1. Equipment Required

- Personal computer (PC): A PC that can be connected to SharePlay connectors (SFP+) on this unit through a network and supports the following recommended web browsers.
  Recommended web browsers:
  - Google Chrome 43.0 or later
- USB drive: commercially available, 1 GB or more recommended
- 10G network switch (The network switch for 1G cannot be used.)

1-6-2. Preparation

1. Connect the PC to the same network as SharePlay connectors (SFP+) on this unit.
2. Set TCP/IP of the LAN connector of the PC to the same segment as SharePlay connectors (SFP+) on this unit.
   Example)
   - For this unit

Network interface	IP address	Subnet mask
SharePlay 1	192.168.0.021	255.255.255.000 (common setting in each slot)
SharePlay 2	— *1	

   - For the PC
     For the PCIP address: 192.168. 0 .10
     Subnet mask: 255.255.255. 0
3. Copy the data file for update to the USB drive.

   Note

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

1-6-3. Procedure

1. Connect the USB drive that contains the program for update to the USB connector of the PC.

*1: Not supported in version 1.0.

2. Run the web browser on the PC and type “http://(IP address of the unit)/” in the address bar, and then press the Enter key.

Note

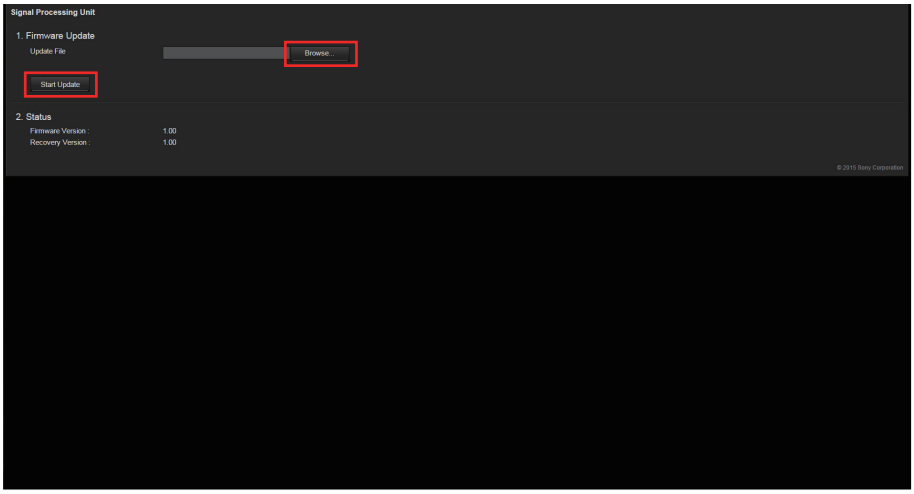
Type the IP address that was set as the SharePlay in “IP address of the unit”.

Tip

Account and password may be requested.
Initial account settings of the factory default is shown below.

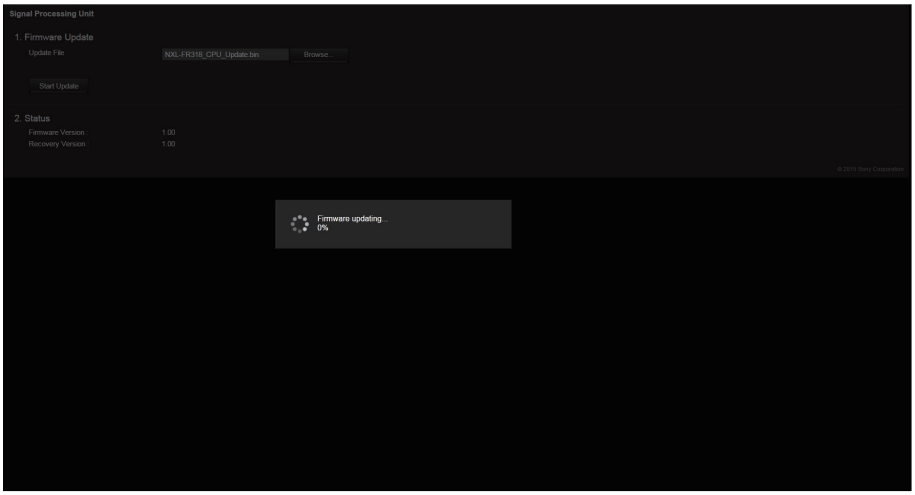
- User: admin
- Password: nmidev123

The Service menu of the unit appears.

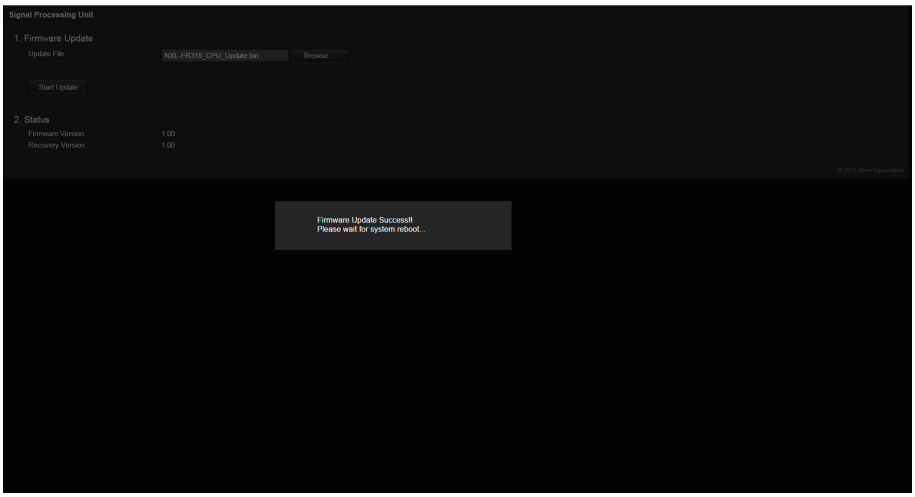


3. Click [Browse], and then select the data file for update in the connected USB drive.

4. Click the [Start Update] button.
   Firmware update starts.
   The firmware update progress is shows as percentage during update process.



   Upon completion of update, a message “Firmware Update Success!! Please wait system reboot...” appears.



   After that, the Service menu is automatically reloaded and the updated version information is shown.

   Note

   If an error occurs in the update process, an error message appears in red.
   When an error message is displayed, close the browser or reload it and then retry the update.

5. After the update, turn OFF the power of the unit.

1-7. To Initialize the IP Address (NETWORK 1/2)

1. Put the unit in standby mode.
2. Insert a screwdriver (diameter 1 mm or less) or the like into the hole at the lower left of the front panel, and turn on the ON/Standby button (secondary power supply) while pressing the reset switch at the back of the hole.

   Note

   - Insert a screwdriver or the like perpendicularly to the front panel.
   - Strongly pushing a screwdriver or the like may damage the tactile switch at the back of the hole.
     The distance from the hole entrance to the tactile switch is approx. 17 mm. Pay attention to this distance when inserting a screwdriver or the like into the hole.

   The SYSTEM indicator on the front of the unit blinks in purple and the IP addresses of NETWORK 1/2 are initialized.

Note

The IP address of NETWORK 3 is not initialized by this procedure.

1-8. Formatting of SKC-MEM4 (MDC-20 Board)

When installing or removing the MDC-20 board, format the MDC-20 board according to the following procedure.

1-8-1. When Installing the MDC-20 Board

Procedure

1. Display the Web menu. (Refer to “4-2. Displaying the Menu”.)
2. Click the [Storage] tab.
3. Click the [Setup] tab.
4. Click [FS Expand] or [FS Format].

Tip

- FS Expand: Increases the memory capacity for the MDC-20 board installed.
  (The data recorded in the MDC-20 board that has already been installed is retained.)
- FS Format: Initializes all memories.

1-8-2. When Installing the MDC-20 Board

Tip

When removing the MDC-20 board, the SYSTEM indicator on the front panel of this unit blinks during the next startup. Also, “E43100 INTERNAL MEMORY LACK” is displayed on the [Error/Warning Status] screen in the Web menu. The error display disappears when the formatting is completed.

Procedure

1. Display the Web menu. (Refer to “4-2. Displaying the Menu”.)
2. Click the [Storage] tab.
3. Click the [Setup] tab.
4. Click [FS Format].

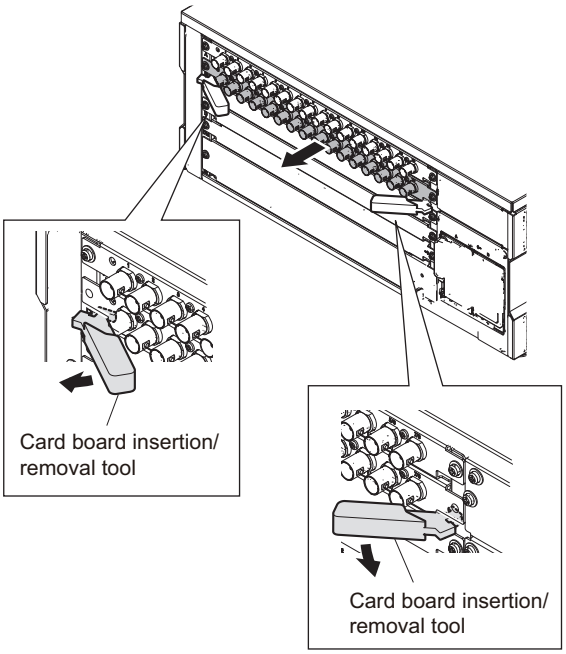
1-9. Extension Board and Fixtures List

It is recommended to use the equipment listed below or the equivalents for the maintenance. Also, dedicated extension boards of this unit are provided.

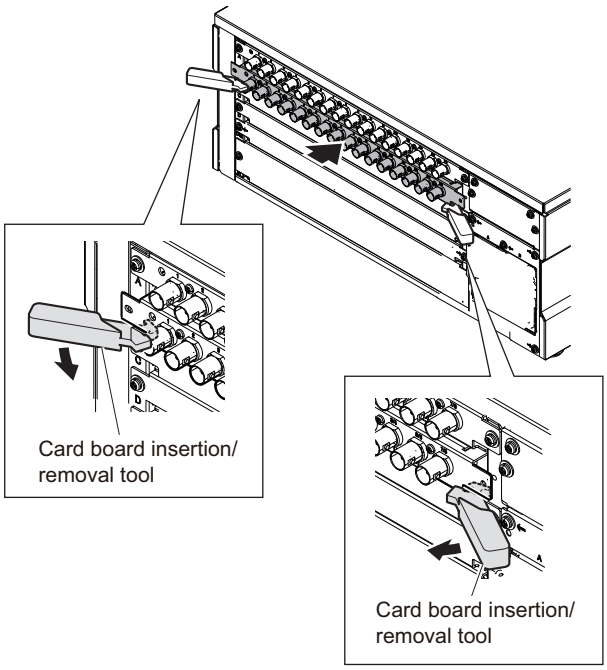
Name	Part No.	Usage
Torque screwdriver's bit (M1.4/M1.7)	J-6325-110-A	Screw tightening
Torque screwdriver's bit (M2)	J-6325-380-A	Screw tightening
Torque screwdriver's bit (M3)	J-6323-430-A	Screw tightening
Torque screwdriver (3 kg • cm) (0.3 N • m)	J-6325-400-A	Screw tightening
Torque screwdriver (6 kg • cm) (0.6 N • m)	J-6252-510-A	Screw tightening
Torque screwdriver (12 kg • cm) (1.2 N • m)	J-6252-520-A	Screw tightening
Locking compound 200 g	7-432-114-11	Prevents screws from loosening.
PLD Download Tool	J-7120-220-A	For writing the PLD internal data (e-Production system) (Refer to "1-5. Writing and Rewriting the PLD Internal Data")
Extension board (EX-1145)	A-1837-202-A	Extension of plug-in board (SY-422 board)
Card board insertion/removal tool (including two pieces)	J-7120-800-A	For installing/removing plug-in board (SY-422 board)
Alignment sleeve remover HC-001	J-6480-010-A	For female connector, DCC.91.312.5LA manufactured by LEMO or equivalent
USB memory	Commercially available	Software updating, writing and rewriting the PLD internal data

1-9-1. How to Use the Card Board Insertion/Removal Tool

Removing the board



Installing the board



1-10. Flexible Flat Cable and Coaxial Cable

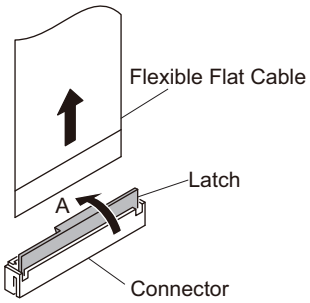
1-10-1. Disconnecting and Connecting Flexible Flat Cable

Note

- Be very careful not to fold flexible flat cables. Life of flexible card wire will be significantly shortened if it is folded.
- Each flexible card wire has conductive side and insulated side. If the flexible 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.

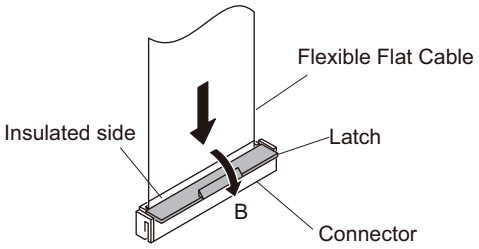
Type A

Disconnecting



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

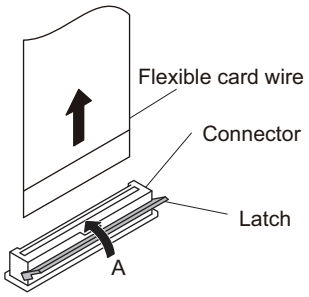
Connecting



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 card wire.

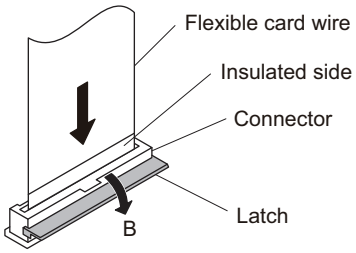
Type B

Disconnecting



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

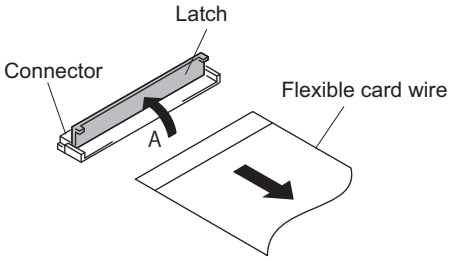
Connecting



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.

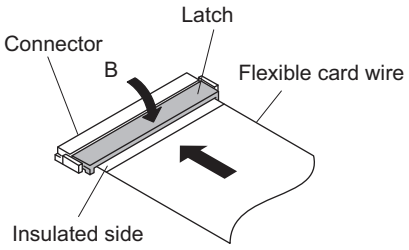
Type C

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.

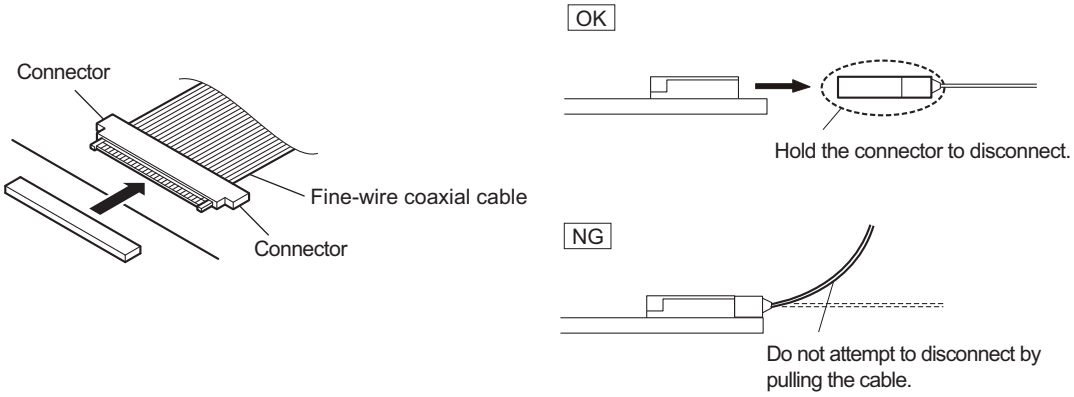
1-10-2. Disconnecting/Connecting Fine-Wire Coaxial Cable

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.

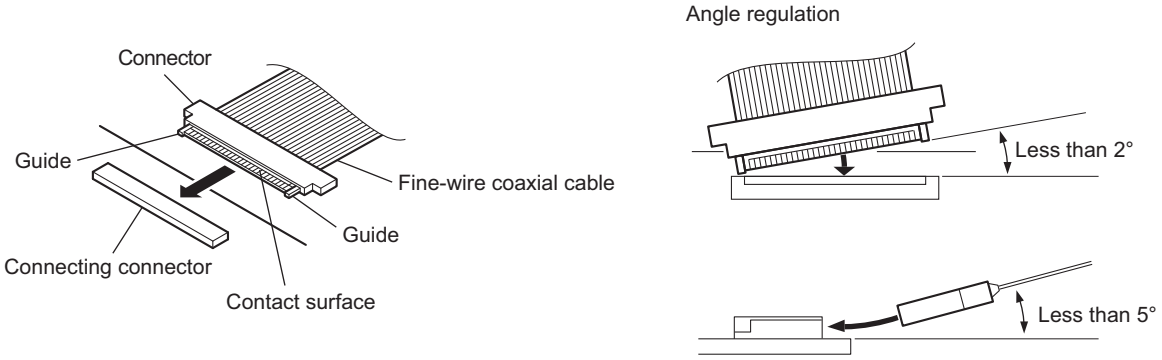
Type A

Disconnecting



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

Connecting



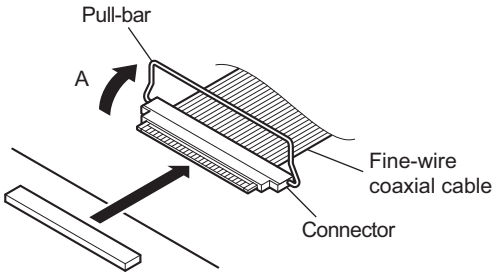
Note

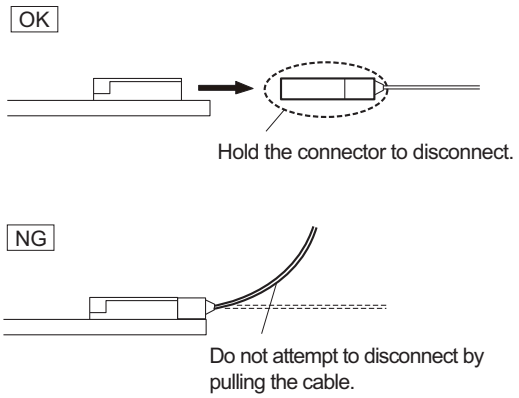
Insert the connector carefully so that the connector guides are not caught by the edge of the mating connector.

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

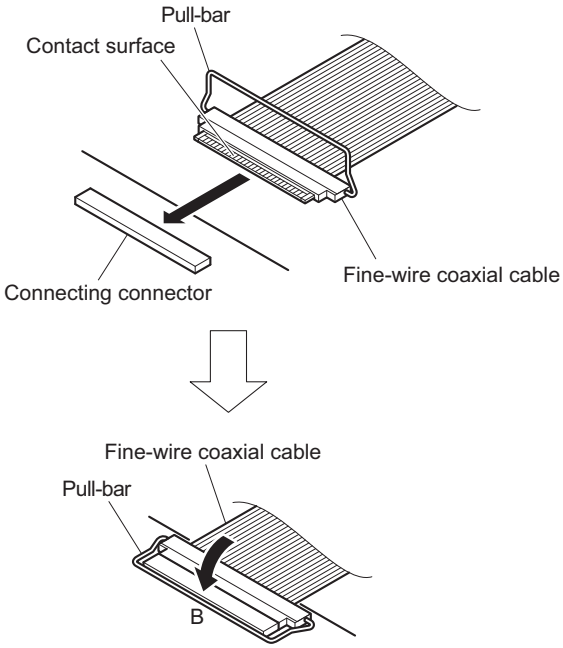
Disconnecting

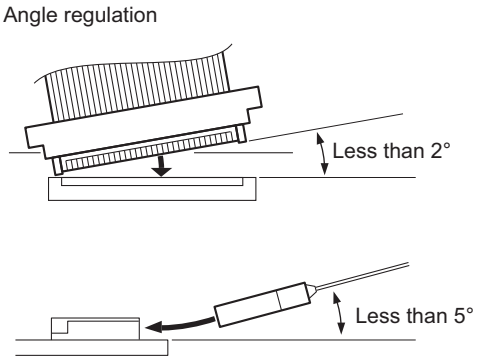




1. Raise the pull-bar in the direction of arrow A to unlock it.
2. Hold both sides of the fine-wire coaxial cable connector, and pull the connector straight to disconnect it.

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.

1-11. Lead-free Solder

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

 : LEAD FREE MARK

Note

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

Section 2
Periodic Maintenance and Inspection

2-1. Recommended Replacement Parts

This table does not describe the guarantee period of part.
The replacement period of each part is changed according to the environment and condition. Refer to "5. Replacement of Main Parts" about the method of the replacing parts.

Part Name	Part No.	Replacement Cycle	Procedure
DC fan (60 square)	1-855-064-11	The life span of a fan is about 40,000 hours. It is about four years and a half when a fan is used with the electric current applied at all times. It is recommended to replace a fan with the life span described above as a rough standard.	"5-12. Fans of Server Block" "5-13. Fan of BPU/NetMedia Block"
Air filter	4-595-092-01	It is recommended to clean the air filter every two months because dust is easy to adhere to an air filter. Remove the front panel and absorb the dust adhering to the filter using a cleaner.	"5-37. Filter"

Tip

To check the total power-on hours, refer to "Hours Mater" in "4-3-3. Time Menu"

2-2. 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.

2-2-1. 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

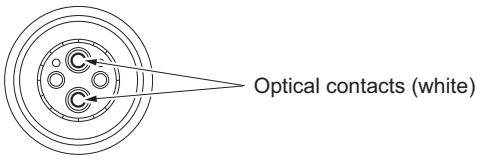
Tip

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

Cleaning Procedure

Male connector

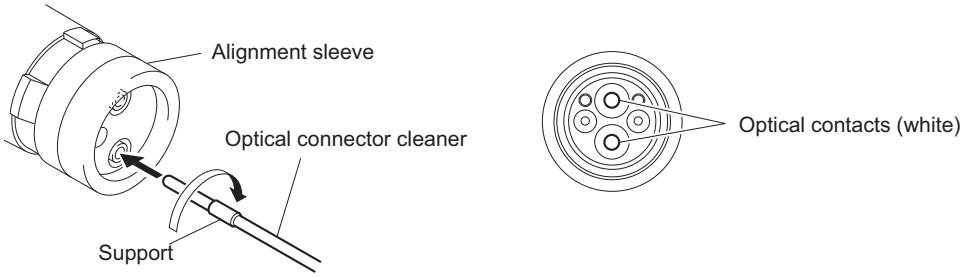
Clean the tip of the optical contacts (white) using the optical connector cleaner.



Female connector

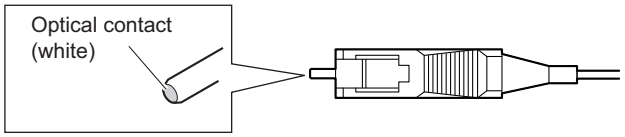
1. Insert the optical connector cleaner straight.
2. Apply sufficient pressure (approximately 600 g to 700 g) to ensure that the optical contact is a little depressed.

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.



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

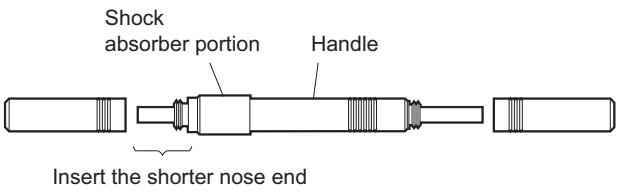
Clean the LEMO connectors and cables using the following procedure.

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)

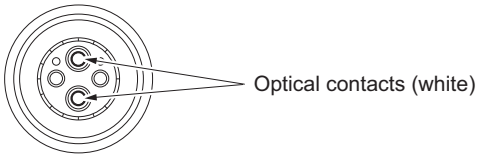
  Note

  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

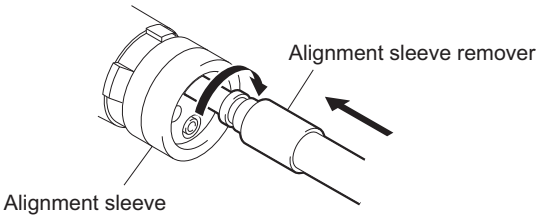
Clean the tip of the optical contacts (white) with a cotton swab moistened with alcohol.



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.

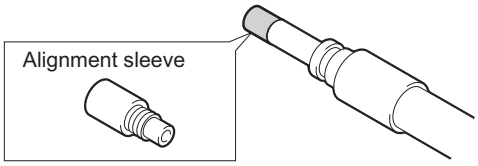
1. Insert the alignment sleeve remover into the alignment sleeve in the straight line and turn it clockwise.



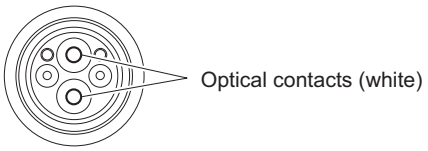
2. When the turn stops, pull out the remover in the straight line forcedly.

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.

2-2-3. 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)

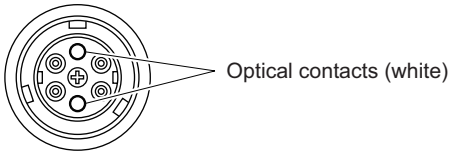
  Note

  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

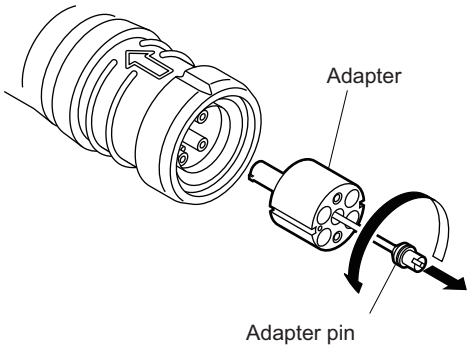
The optical contacts for female connector are in an unexposed state. In cleaning, it is necessary to be exposed by removing the adapter in the connector in advance. Proceed as follows.

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

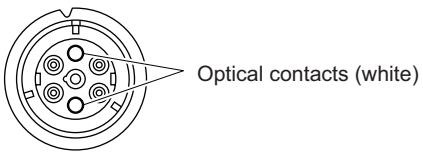
   Tip

   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.



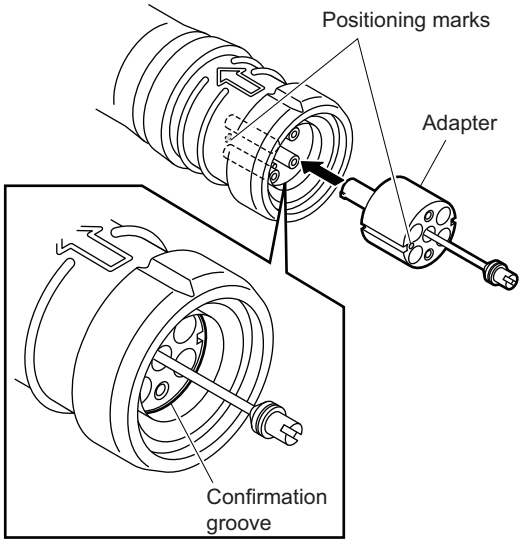
3. Clean the optical contacts (white) with a cotton swab moistened with alcohol.



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)

2-2-4. When the Optical Connector Cleaner (Commercially Available) is not Available (Connector)

Fixtures

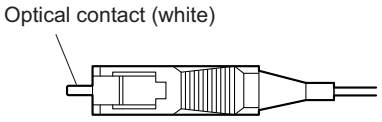
- Alcohol (commercially available)
- Cotton swabs (commercially available)

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.



2-3. Replacing Lithium Battery

A lithium battery is mounted on the SY-422 board and SY-442 board to back up the real time clock (RTC). If a battery comes to the lifetime, then RTC stops. Therefore, the battery must be replaced. (Refer to “5-36. Lithium Battery”.) After the battery has been replaced, set the date and time in the internal clock referring the Operating Instructions.

SY-422 board

- Part name: Lithium battery (CR2032)
- Part number: ⚠1-528-174-73

SY-442 board

- Part name: Lithium secondary battery (ML621 (U))
- Part number: ⚠1-756-134-17

CAUTION

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

2-4. Circuit Protection Parts

2-4-1. Circuit Protection Element

This unit is provided with positive thermistors for power circuit.
If an overcurrent flows in a positive thermistor or it heats up to a certain degree with the increase of the ambient temperature, its internal resistance increases sharply to limit the current flowing in the circuit. When a thermistor is activated, turn off the power and check the circuit of the unit.
After the cause of the problem is removed and the device cools down, turn on the power again. The unit will work normally. It takes about one minute for the device to cool down after power-off.

Board Name	Ref. No.	Address	Part No.	Holding Current
DM-156	TH2301	G-1/Side B	⚠1-805-719-12	6 V/1.1 A
	TH2302	H-1/Side B	⚠1-805-719-12	6 V/1.1 A
NET-30	TH2901	J-4/Side B	⚠1-805-719-12	6 V/1.1 A
	TH2902	J-5/Side B	⚠1-805-719-12	6 V/1.1 A
	TH3101	J-1/Side B	⚠1-805-719-12	6 V/1.1 A
	TH3102	J-2/Side B	⚠1-805-719-12	6 V/1.1 A
	TH3301	J-7/Side B	⚠1-805-719-12	6 V/1.1 A
SW-1669	TH3302	J-8/Side B	⚠1-805-719-12	6 V/1.1 A
SY-422	THP001	A-10/Side A	⚠ 1-804-458-21	24 V/1.1 A
SY-442	THP001	A-2/Side A	⚠1-802-063-21	13.2 V/1 A

2-4-2. Fuses

WARNING

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

CAUTION

Replacing any fuse is replaced while power is supplied to the unit may cause electric shock.
Before replacing any fuse, turn off the POWER switch and also unplug the power cord.

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

Board Name	Ref. No.	Address	Part No.	Part Name and Rating
DM-156	F010	A-6/Side A	⚠ 1-576-328-21	Fuse (SMD) 8 A 125 VAC/DC
	F011	B-4/Side A	⚠1-533-627-21	Fuse (SMD) 5 A 125 VAC/DC
DVP-65	F4501	A-1/Side A	⚠1-576-329-21	Fuse (SMD) 10 A 125 VAC/DC
	F4502	A-6/Side A	⚠1-576-329-21	Fuse (SMD) 10 A 125 VAC/DC
	F4503	A-1/Side A	⚠1-576-329-21	Fuse (SMD) 10 A 125 VAC/DC
MDC-20	F100	C-3/Side A	⚠1-576-270-21	Fuse (SMD) 4 A 125 VAC/DC
NET-30	F101	B-1/Side A	⚠1-576-329-21	Fuse (SMD) 10 A 125 VAC/DC
SW-1669	F101	A-3/Side A	⚠1-533-999-21	Fuse (SMD) 2 A 125 VAC/DC
SY-422	F2301	J-1/Side A	⚠1-576-329-21	Fuse (SMD) 10 A 125 VAC/DC

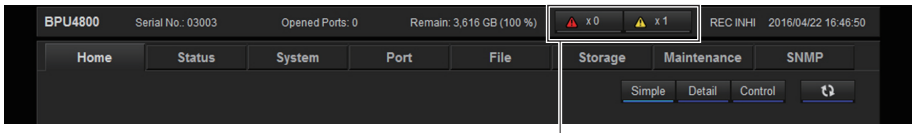
Section 3
Error Message

3-1. Overview of Error Message

This unit has self-diagnostics function.
When the unit does not work correctly due to malfunction or an error in the system, the SYSTEM indicator on the front panel of the unit blinks and the error and the warning count are displayed on the status bar at the upper part of the Web menu window. Error information is stored in the error logger.

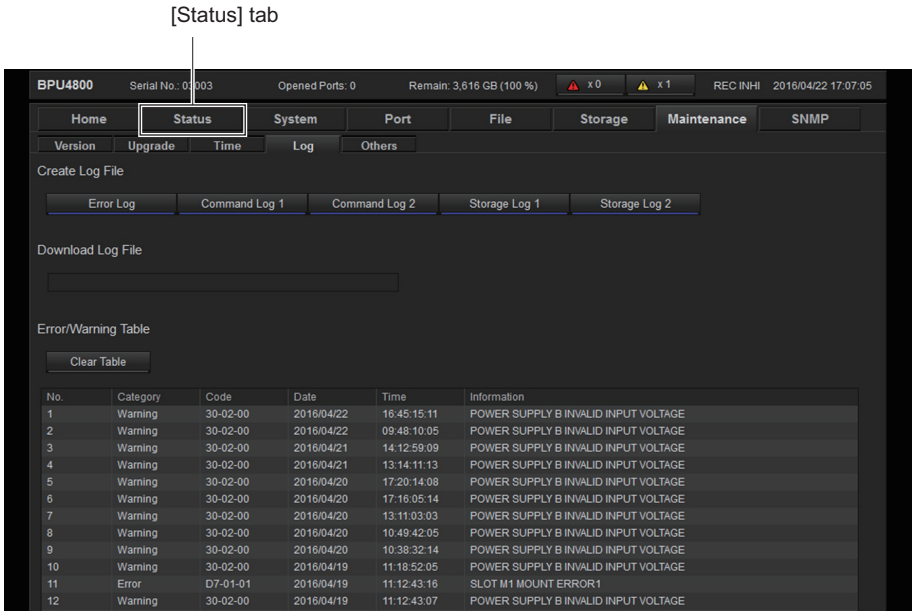
Tip

For how to display the Web menu, refer to “4-2. Displaying the Menu”.



Error/Warning display
(⚠ mark button)

The present error and warning count are displayed together with the ⚠ mark button on the status bar.
Selecting the [Status] tab displays the “Error/Warning Status” screen to show error and warning information.



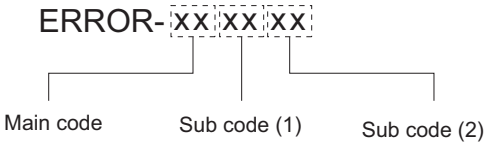
“Error/Warning Status” screen

Tip

The “Error/Warning Status” screen is also displayed by clicking the ⚠ mark button on the status bar.

3-2. Error Code List

An error code is displayed in combination of main code, sub code (1), sub code (2).



Tip

"ss", "pp" and "ii" that appear in the sub-code (2) have the following meaning.

- ss: The following numbers which identifies the internal memory slot
  - 01: Slot 1
  - 02: Slot 2
  - 03: Slot 3
  - 04: Slot 4
- pp: The following numbers which identifies the port
  - 81: HFR Data Record Port
  - 82: Replay Port or HD Cut Out Port
  - B1: Transcode Port
- ii: The following numbers which identify the SHARE PLAY terminal position of the DM-156 board
  - 11: Common to SHARE PLAY 1 and 2
  - 91: SHARE PLAY 1
  - 92: SHARE PLAY 2

A character "x" used in error messages and their description indicates a memory slot number (SLOT Mx) or a port location (PORT x).
SLOT M1 = Internal memory slot A
SLOT M2 = Internal memory slot B
SLOT M3 = Internal memory slot C
SLOT M4 = Internal memory slot D
PORT 1 = HFR Data Record Port
PORT 2 = Replay Port or HD Cut Out Port

Tip

The internal memory means the MDC-20 board.

3-2-1. Main Code 14

Note

When main error code "14" occurs, immediately stop using the unit and turn it off. If the unit is used continuously with any fan stopped, the internal temperature rises, which may cause other failures or fire.
When the cooling fan's abnormal operation is detected, one of the following errors occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
14	01	00	POWER SUPPLY A FAN TROUBLE	Power supply unit fan failure	Replace the switching regulator A (upper). (Refer to "5-10. Switching Regulator".)
14	02	00	POWER SUPPLY B FAN TROUBLE	Power supply unit fan failure	Replace the switching regulator B (lower). (Refer to "5-10. Switching Regulator".)

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
14	03	00	FRONT FAN1 TROUBLE	DC fan 1 (front) of the server block is defective. Q2207 (transistor) on the SY-422 board is defective.	Replace the DC fan 1 (front) or SY-422 board. (Refer to "5-12. Fans of Server Block", "5-19. SY-422 Board".)
14	04	00	FRONT FAN2 TROUBLE	DC fan 2 (center) of the server block is defective. Q2206 (transistor) on the SY-422 board is defective.	Replace the DC fan 2 (center) or SY-422 board. (Refer to "5-12. Fans of Server Block", "5-19. SY-422 Board".)
14	05	00	FRONT FAN3 TROUBLE	DC fan 4 (front) of the BPU/ NetMedia block is defective. Q2207 (transistor) on the SY-422 board is defective.	Replace the DC fan 4 (front) or SY-422 board."5-13. Fan of BPU/NetMedia Block", "5-19. SY-422 Board".)
14	06	00	FRONT FAN4 TROUBLE	DC fan 5 (center) of the BPU/ NetMedia block is defective. Q2207 (transistor) on the SY-422 board is defective.	Replace the DC fan 5 (center) or SY-422 board. (Refer to "5-13. Fan of BPU/NetMedia Block", "5-19. SY-422 Board".)
14	07	00	REAR FAN1 TROU-BLE	DC fan 3 (rear) of the server block is defective. Q2206 (transistor) on the SY-422 board is defective.	Replace the DC fan 3 (rear) or SY-422 board. (Refer to "5-12. Fans of Server Block", "5-19. SY-422 Board".)

Note

For the location of each DC fan refer to "1-1-2. Location of Main Mechanical Parts".

3-2-2. Main Code 26

When a power supply error is detected, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
26	01	00	POWER SUPPLY A UNIT TROUBLE	Power supply unit A failure	Replace the switching regulator A (upper). (Refer to "5-10. Switching Regulator".)
26	02	00	POWER SUPPLY B UNIT TROUBLE	Power supply unit B failure	Replace the switching regulator B (lower). (Refer to "5-10. Switching Regulator".)

3-2-3. Main Code 96

When an internal calendar clock error is detected, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
96	01	00	CALENDAR CLOCK ERROR	IC110 on the SY-422 board or lithium battery failure	Replace the lithium battery or SY-422 board. (Refer to "5-36. Lithium Battery" or "5-19. SY-422 Board".)

3-2-4. Main Code B3

Note

If main error code “B3” occurs each time the unit is turned on, contact your local Sony Sales Office/Service Center.

When a trouble was detected in the device initialization process, one of the following errors occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
B3	01	00	SY CPLD2 INITIAL ERROR	IC1701 on the SY-422 board is defective.	Replace the SY-422 board. (Refer to “5-19. SY-422 Board”.)
B3	02	00	SY FPGA1 INITIAL ERROR	IC3 on the SY-422 board is defective.	Replace the SY-422 board. (Refer to “5-19. SY-422 Board”.)
B3	04	00	SY FPGA NOT LATEST	IC3 on the SY-422 board is defective.	Upgrade FPGA1 on the SY-422 board or replace the SY-422 board. (Refer to “5-19. SY-422 Board”.)
B3	2A	00	SW PLD INITIAL ERROR	IC205 on the SW-1669 board is defective.	Pull out and insert the AC cable, turn off and on the power, or replace the SW-1669 board. (Refer to “5-14. LE-404 and SW-1669 Boards”.)
B3	31	00	DM CPLD INITIAL ERROR	IC007 on the DM-156 board is defective.	Replace the DM-156 board. (Refer to “5-25. DM-156 Board”.)
B3	32	00	DM FPGA INITIAL ERROR	IC001 on the DM-156 board is defective.	Replace the DM-156 board. (Refer to “5-25. DM-156 Board”.)
B3	36	00	DM FPGA BANK MEMORY INITIAL ERROR	IC001 on the DM-156 board is defective.	Turn off and on the power or replace the DM-156 board. (Refer to “5-25. DM-156 Board”.)
B3	39	00	DM FPGA NOT LATEST	IC302 or IC305 on the DM-156 board is defective.	Upgrade DM-156 board or replace the DM-156 board. (Refer to “5-25. DM-156 Board”.)
B3	3E	ss	SLOT Mx MDC CPLD INITIAL ERROR	IC200 on the MDC-20 board (SKC-MEM4) is defective.	Replace the MDC-20 board (SKC-MEM4). (Refer to “5-15. MDC-20 Board (SKC-MEM4)”.)
B3	41	00	ENC CPLD INITIAL ERROR	IC007 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to “5-26. ENC-168 Board”.)
B3	42	00	ENC XENC INITIAL ERROR	IC001 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to “5-26. ENC-168 Board”.)
B3	43	00	ENC XDEC INITIAL ERROR	IC002 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to “5-26. ENC-168 Board”.)
B3	47	00	ENC FPGA NOT LATEST	IC304 on the ENC-168 board is defective.	Upgrade ENC-168 board or replace the ENC-168 board. (Refer to “5-26. ENC-168 Board”.)
B3	51	pp	PORT x XAVC PROC1 INITIAL ERROR1	IC1000 or IC2000 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to “5-26. ENC-168 Board”.)
B3	52	pp	PORT x XAVC PROC1 INITIAL ERROR2	IC1000 or IC2000 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to “5-26. ENC-168 Board”.)
B3	53	pp	PORT x XAVC PROC1 INITIAL ERROR3	IC1000 or IC2000 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to “5-26. ENC-168 Board”.)

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
B3	54	pp	PORT x XAVC PROC2 INITIAL ERROR1	IC1200 or IC2200 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	55	pp	PORT x XAVC PROC2 INITIAL ERROR2	IC1200 or IC2200 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	56	pp	PORT x XAVC PROC2 INITIAL ERROR3	IC1200 or IC2200 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	57	pp	PORT x XAVC PROC3 INITIAL ERROR1	IC1400 or IC2400 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	58	pp	PORT x XAVC PROC3 INITIAL ERROR2	IC1400 or IC2400 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	59	pp	PORT x XAVC PROC3 INITIAL ERROR3	IC1400 or IC2400 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	5A	pp	PORT x XAVC PROC4 INITIAL ERROR1	IC1600 or IC2600 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	5B	pp	PORT x XAVC PROC4 INITIAL ERROR2	IC1600 or IC2600 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	5C	pp	PORT x XAVC PROC4 INITIAL ERROR3	IC1600 or IC2600 on the ENC-168 board is defective.	Replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
B3	86	00	NET PLD INITIAL ERROR	NET-30 board failure	Replace the NET-30 board. (Refer to "5-27. NET-30 Board".)
B3	91	ii	NMI PROC INITIAL ERROR	ii = 11: IC002 on the DM-156 board is defective.	Replace the DM-156 board. (Refer to "5-25. DM-156 Board".)
B3	92	ii	NMI MAC ADDRESS ERROR	IC002 on the DM-156 board is defective. ii = 91: Share Play1 ii = 92: Share Play2	Replace the DM-156 board. (Refer to "5-25. DM-156 Board".)
B3	93	ii	NMI PROC RECOVERY MODE ERROR	IC002 on the DM-156 board is defective. ii = 91: Share Play1 ii = 92: Share Play2	Replace the DM-156 board. (Refer to "5-25. DM-156 Board".)
B3	A1	00	AT PLD INITIAL ERROR	AT-189 board failure	Replace the AT-189 board. (Refer to "5-35. AT-189 and SY-442 Boards".)
B3	A2	00	SY2 PLD INITIAL ERROR	SY-442 board failure	Replace the SY-442 board. (Refer to "5-35. AT-189 and SY-442 Boards".)
B3	A3	00	TX1 PLD INITIAL ERROR	TX-155 board failure	Replace the TX-155 board. (Refer to "5-28. TX-155 Board".)
B3	A4	00	TX2 PLD INITIAL ERROR	TX-155 board failure	Replace the TX-155 board. (Refer to "5-28. TX-155 Board".)
B3	A5	00	DPR1 PLD INITIAL ERROR	DPR-348A board failure	Replace the DPR-348A board. (Refer to "5-30. DPR-348A Board (REPLAY)".)
B3	A6	00	DPR2 PLD INITIAL ERROR	DPR-348A board failure	Replace the DPR-348A board. (Refer to "5-30. DPR-348A Board (REPLAY)".)
B3	A7	00	DVP PLD INITIAL ERROR	DVP-65 board failure	Replace the DVP-65 board. (Refer to "5-31. DVP-65 Board".)

3-2-5. Main Code B8

When SYS1 CPU detects the communication abnormality between CPU (SY-422 board and CPU-453A board), the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
B8	01	00	SYS1-SYS2 NO COMMUNICATION ERROR	SY-442 board failure	Turn off and on the power or replace the SY-422 board. (Refer to "5-19. SY-422 Board".)
B8	03	00	SYS1-NW NO COMMUNICATION ERROR	Contact defect between SY-422 and CPU-453A boards	Pull out and insert the CPU-453A board. Replace the CPU-453A board if symptoms are not improved. (Refer to "5-18. CPU-453A Board".)

3-2-6. Main Code B9

When SYS1 CPU detects the communication abnormality between any of CPUs, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
B9	01	00	SYS1 INTERNAL ERROR	An abnormal state of task in SYS1 CPU was detected.	Turn off and on the power

3-2-7. Main Code BC

When SYS1 CPU detects the communication abnormality between SYS 1 CPU and CAMERA APP CPU, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
BC	01	00	SYS1-APP NO COMMUNICATION ERROR 1	IC601 on the DVP-65 board is defective.	Turn off and on the power or replace the DVP-65 board. (Refer to "5-31. DVP-65 Board" .)
BC	02	00	SYS1-APP NO COMMUNICATION ERROR 2	Power supply unit fan failure	Turn off and on the power or replace the DVP-65 board. (Refer to "5-31. DVP-65 Board" .)
BC	03	00	SYS1-APP NO COMMUNICATION ERROR 3	FRONT FAN1 failure IC3 (FPGA) on the SY-422 board is defective.	Turn off and on the power or replace the DVP-65 board. (Refer to "5-31. DVP-65 Board" .)

3-2-8. Main Code D1

When an error was detected during recording, one of the following errors occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D1	03	pp	PORT x ENC PROC ERROR	IC1000, IC1200, IC1400, IC1600, or IC1800 on the ENC-168 board is defective.	Check the recording in port x and replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)

3-2-9. Main Code D2

When an error was detected during playback process, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D2	02	pp	PORT x DEC DMA2 ERROR	IC002 on the ENC-168 board is defective.	Check the recording in port x and replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)
D2	03	pp	PORT x DEC PROC ERROR	IC2000, IC2200, IC2400, or IC2600 on the ENC-168 board is defective.	Check the recording in port x and replace the ENC-168 board. (Refer to "5-26. ENC-168 Board".)

3-2-10. Main Code D3

When an error was detected while writing to the internal memory, one of the following errors occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D3	01	ss	SLOT Mx AV WRITE ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)
D3	02	ss	SLOT Mx AV WRITE ERROR2	MDC-20 board failure	Replace the MDC-20 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)".)
D3	03	ss	SLOT Mx DATA WRITE ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)
D3	04	ss	SLOT Mx DATA WRITE ERROR2	MDC-20 board failure	Replace the MDC-20 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)".)
D3	05	pp	TRANSCODE DATA WRITE ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)

3-2-11. Main Code D4

When an error was detected while reading from the internal memory, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D4	01	ss	SLOT Mx AV READ ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)
D4	03	ss	SLOT Mx DATA READ ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)
D4	04	ss	SLOT Mx DATA READ ERROR2	MDC-20 board failure	Replace the MDC-20 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)".)
D4	05	pp	TRANSCODE DATA READ ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)

3-2-12. Main Code D5

When an error was detected on communication with the internal memory, one of the following errors occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D5	01	ss	SLOT Mx INTERFACE ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)
D5	02	ss	SLOT Mx INTERFACE ERROR2	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)

3-2-13. Main Code D6

When abnormality of the internal memory was detected at the power-off, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D6	01	ss	SLOT Mx UNMOUNT ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)
D6	02	ss	SLOT Mx UNMOUNT ERROR2	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)

3-2-14. Main Code D7

When abnormality of the internal memory (MDC-20 board) was detected at the power-on, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D7	01	ss	SLOT M x MOUNT ERROR1	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)
D7	02	ss	SLOT M x MOUNT ERROR2	IC001 on the DM-156 board is defective.	Replace the MDC-20 board or DM-156 board. (Refer to "5-15. MDC-20 Board (SKC-MEM4)" or "5-25. DM-156 Board".)

3-2-15. Main Code D8

When an error was detected in the file system on the internal memory, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
D8	01	ss	SLOT Mx FILE SYSTEM ERROR	MDC-20 board failure	Format the internal memory.

3-2-16. Main Code E1

When an error related to usage restrictions was detected, one of the following errors occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
E1	01	pp	PORT x COND3 BAD, STOP REC	MDC-20 board failure	
E1	06	pp	PORT x FS STUFFED, STOP REC	MDC-20 board failure Recording was interrupted because the file system of internal memory reached a control limit.	
E1	08	pp	PORT x WRITE FAIL, STOP REC	MDC-20 board failure	Format the internal memory.
E1	09	ss	SLOT Mx CANNOT REC	MDC-20 board failure	Format the internal memory.
E1	0A	pp	PORT x MAX LENGTH STOP REC		

3-2-17. Main Code E4

When incorrect installation of the internal memory is detected, one of the following errors occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description	Remedy
E4	31	00	INTERNAL MEMORY LACK	MDC-20 board failure	Format the internal memory.
E4	32	00	INTERNAL MEMORY WRONG POSITION	The MDC-20 is not properly installed or a new MDC-20 board was installed.	Install the MDC-20 board in a proper position or format it.

Section 4
Maintenance Menu

4-1. Overview of Maintenance Menu

This unit is provided with the Maintenance menu useful for maintenance and troubleshooting.
The Maintenance menu is displayed on the web browser of the PC connected to the unit.

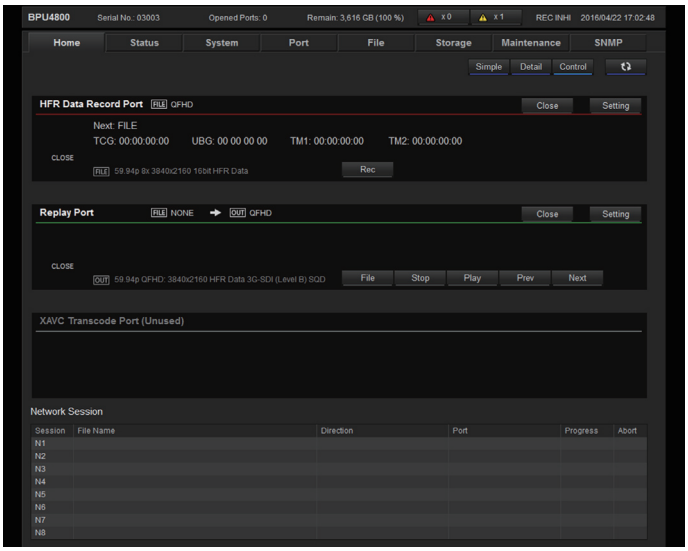
4-1-1. Hierarchy of Maintenance Menu

The Maintenance menu consists of the following items.

Menu Layer 1	Menu Layer 2	Usage	Reference
Version	—	ROM version display	"Version"
Upgrade	Select Board & Module	Selection of the module to be upgraded and board that is mounted with its module	"Select Board & Module"
	Current Version	Display the current version of selected module	"Current Version"
	Select Upload File	Selection of the upload file	"Select Upload File"
	Execute Version Upgrade	Execute Version Upgrade	"Execute Version Upgrade"
Time	Real Time Clock Setup	Calendar clock setting	"Real Time Clock Setup"
	Hours Meter	Hours meter data display	"Hours Meter"
Warning	Warning Cancel	Deletion of items from the warning list	"Warning Cancel"
Log	Create Log File	Acquire the log list	"Create Log File"
	Download Log File	Downloading error log file	"Download Log File"
	Error/Warning Table	Error log/warning log display	"Error/Warning Table"
Others	Network	Disconnect the control session of the FTP	"Network"
	USB Memory	Display the mount state of the USB memory	"USB Memory"

4-2. Displaying the Menu

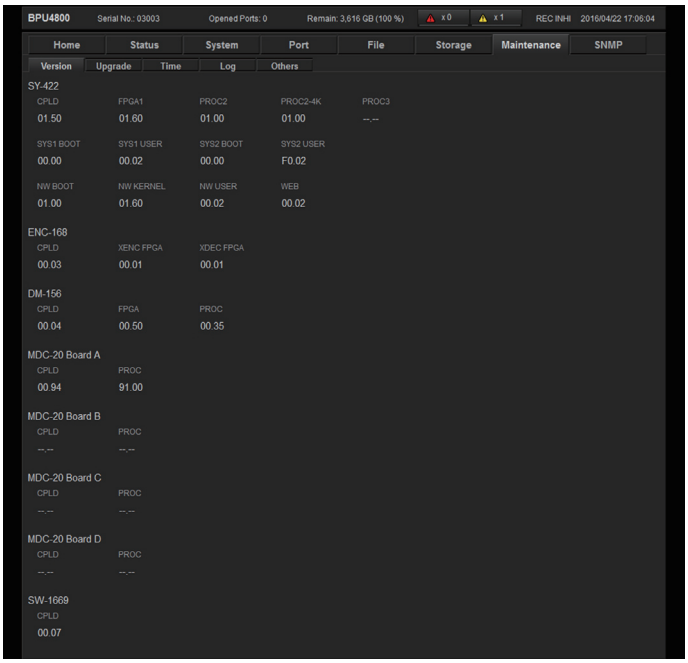
1. Connect a commercially available network cable between the NETWORK 1 connector on the rear of the unit and a personal computer (PC).
2. Change the TCP/IP setting for the LAN connector of the PC.
   Example of setting:
   IP Address (I): 192.168.0.100
   Subnet mask (U): 255.255.255.0
3. Turn on the unit.
4. Start the web browser on the PC and enter “http://192.168.0.1” in the address field.
   The Home menu will appear.



Tip

When the unit has started for the first time, the “Real Time Clock Setup” screen is displayed.

5. To display the Maintenance menu, click the Maintenance tab.
   To display the SNMP menu, click the SNMP tab.



4-3. Maintenance Tab

4-3-1. Version Menu

Version

Program version numbers of onboard PLDs and FPGAs and the software version numbers are displayed.

4-3-2. Upgrade Menu

This menu is used to upgrade firmware and FPGA programs for each module.

Select Board & Module

- Pull-down list
  Selects a module to be upgraded.

Current Version

A current version of the module that was selected in the [Select Board & Module] is displayed.

Select Upload File

Select the Upload file.

- Browse button
  Click this button to select the Upload file in the PC.

Execute Version Upgrade

Execute version upgrade.

- Start button
  Click this button to start upgrading.

4-3-3. Time Menu

Real Time Clock Setup

This item is used to set the calendar clock.

Local Time

- Text box
  The internal clock (year, month, day, hour, minute, and second) of the unit is displayed.

Time Zone Offset (Hours)

- Text box
  The time zone of the unit is displayed.

- Pull-down list
  Select a setting from the list.
  To activate the change, press the Submit button.

Setup Local Time Data

- Text boxes (six boxes for year, month, day, hour, minute, and second)
  Enter one-byte characters of year, month, day, hour, minute, and second.
  To activate the changes, press the Submit button.
- Submit button
  Press the button to set Time Zone Offset and Local Time of the unit.
- Cancel button
  Press the button to cancel the ongoing update operation.

Hours Meter

This item displays hours meter data.

Operation Time (Normal)

- Text box
  Hours meter data is displayed.

Operation Time (Resettable)

- Text box
  Data of the resettable hours meter is displayed.
- Reset button
  Press the button to reset the resettable hours meter.

4-3-4. Warning Menu

Warning Cancel

The selected warning message can be hidden.

Tip

When a warning message is hidden, any related errors are no longer detected.

- Checkboxes
  Check a box to hide a warning message.
- Description of items in the table
  - No.: Number
  - Type: Warning type
  - Code: Error code
  - Information: Error message

Tip

For details of error codes and error messages, refer to “3. Error Message”.

4-3-5. Log Menu

Create Log File

This item is used to acquire the log list collected by the unit.

- Error Log button
  This button is used to acquire the Error/Warning message log list.
- Command Log 1 button
  This button is used to acquire the log list of commands that the SYS1 CPU issued to the SYS2 CPU.
- Command Log 2 button
  This button is used to acquire the log list of commands that the SYS2 CPU received from the SYS1 CPU and execution results that the SYS2 CPU sent back to the SYS1 CPU.
- Storage Log 1
  This item is used to acquire the log list of errors detected in the interface between SYS2 CPU and memory board.
- Storage Log 2
  This item is used to acquire the log list of memory device states and memory board errors.

Download Log File

Log data collected by the unit is stored on the PC as a file.

- Text box
  Error log file acquired by [Create Log File] is displayed.
  Right-click a file name and save the target file.

Error/Warning Table

Up to 99 errors/warnings are shown in this table beginning with the most recent one.

- Clear Table button
  Press the button to delete errors/warnings from the table.
- Description of items in the table
  - No.: Number
  - Category: Type of the trouble
  - Code: Error code
  - Date: Error occurrence date
  - Time: Error occurrence time
  - Information: Error message

Tip

For details of error codes and error messages, refer to “3. Error Message”.

4-3-6. Others Menu

Network

Close Control Session

This item is used to forcibly disconnect the control session of the FTP.

- Submit button
  This button is used to disconnect the currently connected control session of the FTP.

Clear NMI Setting

This item is used to delete the NMI setting information and replace it with the initial values.

- Submit button
  This button is used to initialize the current NMI setting information.

USB Memory

This item is used to indicate whether the USB memory device inserted into the rear panel is usable.
Used for pre-check of USB memory devices.

- Text box
  Indicates whether a USB memory device is mounted or not.

4-4. SNMP Tab

4-4-1. SNMP Menu

The SNMP menu is used to register names and locations belonging to the SNMP system group and IP address of trap destination.

SNMP System Gp. Table

This table shows the SNMP object status of the unit.

Updating SNMP Object Values (SNMP SETs)

Register management information of the unit.

- System Contact text box
  Enter the administrator of the unit.
- System Name text box
  Enter the management name (domain name) of the unit.
- System Location text box
  Enter the installation location of the unit.
- Submit button
  Press the button to activate the changes.
- Cancel button
  Press the button to cancel the change.
- Clear button
  Press the button to clear entered information.

Updating SNMP Trap Object Values (SNMP SETs)

Set the trap destination.

The SNMP agent installed in the unit has a function to send events occurred in devices to the SNMP manager by using a mechanism called trap.

The following describes how to register community name of SNMP and IP address of trap destination as trap transmission settings.

- Community Name text box
  Community name of SNMP
- Trap Destination IP Address 1 to Trap Destination IP Address 4 text boxes
  IP address of trap destination SNMP manager
- Submit button
  Press the button to activate the changes.
- Cancel button
  Press the button to cancel the change.
- Clear button
  Press the button to clear entered information.

The following describes specifications of the SNMP agent installed in this unit.

SNMP Version	SNMPv1
MIB definition	SMIv2
Support PDU	GetRequest, GetNextRequest, SetRequest, GetResponce, Trap
Standard MIB	MIB-2
Extended MIB	SONY-PRO-MIB

Section 5
Replacement of Main Parts

5-1. 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
B3 x 6: 0.80 ±0.12 N·m
K3 x 6: 0.80 ±0.12 N·m
M2: 0.53 ±0.07 N·m
P2.6 x 5 (for rear panel): 0.53 ±0.07 N·m
P2.6 x 5 (for excluding rear panel): 0.80 ±0.12 N·m
P5 x 8: 1.40 ±0.20 N·m
PSW3 x 6: 0.80 ±0.12 N·m
PSW3 x 8: 0.80 ±0.12 N·m
PSW3 x 30: 0.80 ±0.12 N·m
PSW4 x 12: 1.40 ±0.20 N·m

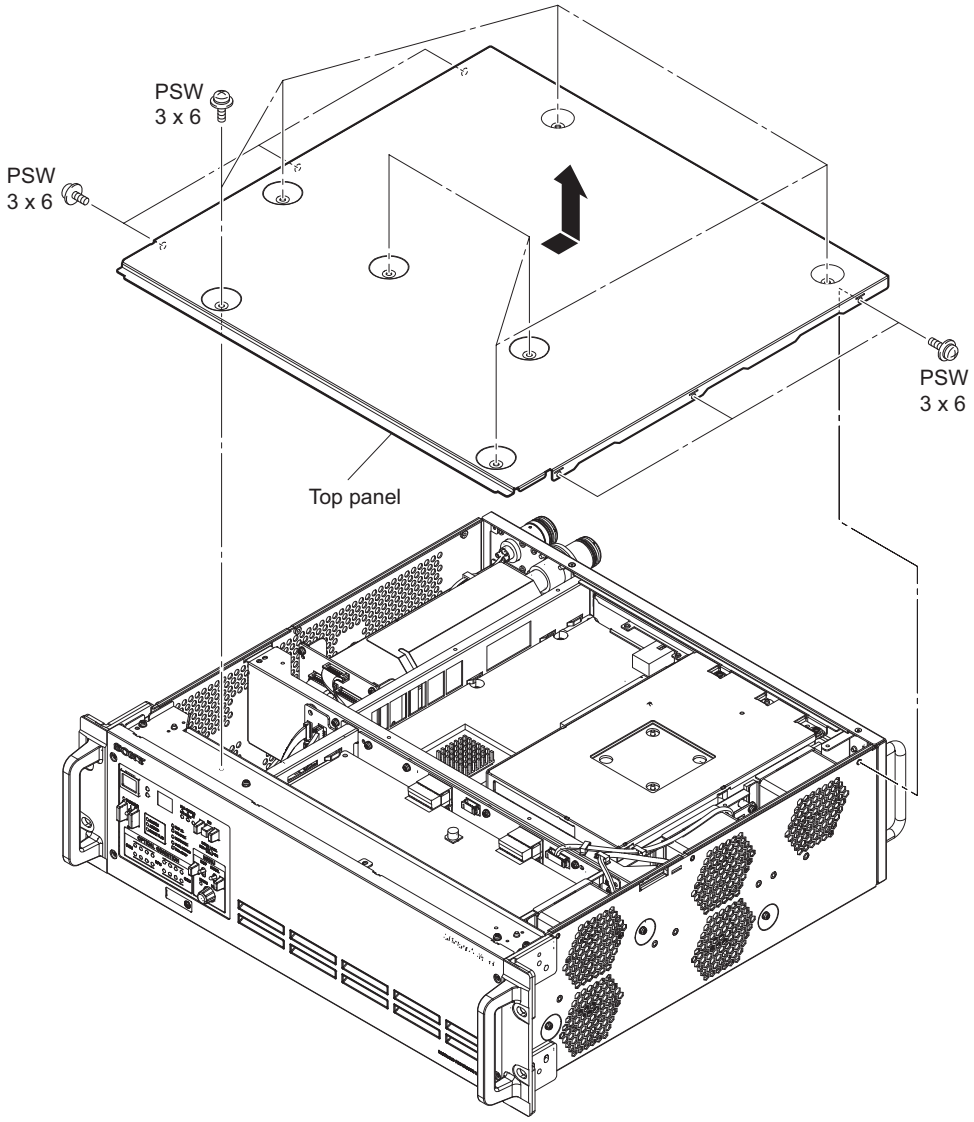
Tip

- 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.

5-2. Top Panel

Procedure

1. Remove the 13 screws, then remove the top panel.

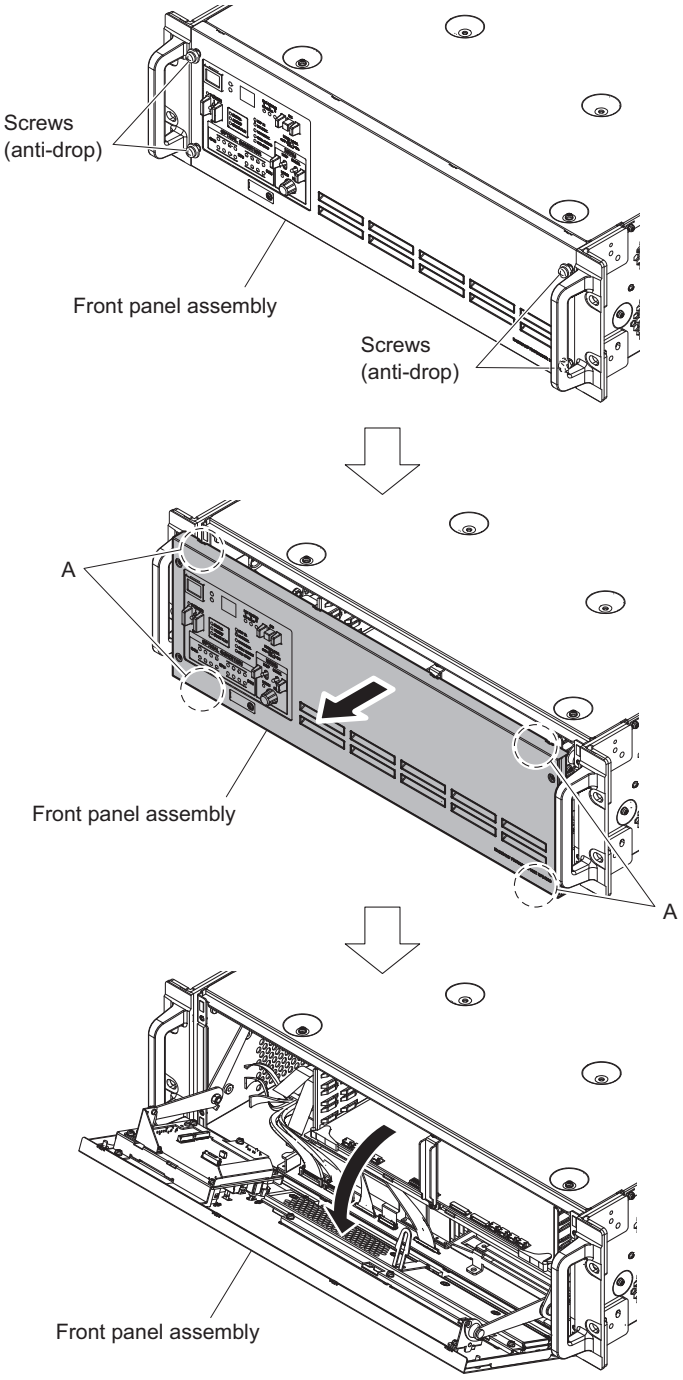


2. Install the removed parts by reversing the steps of removal.

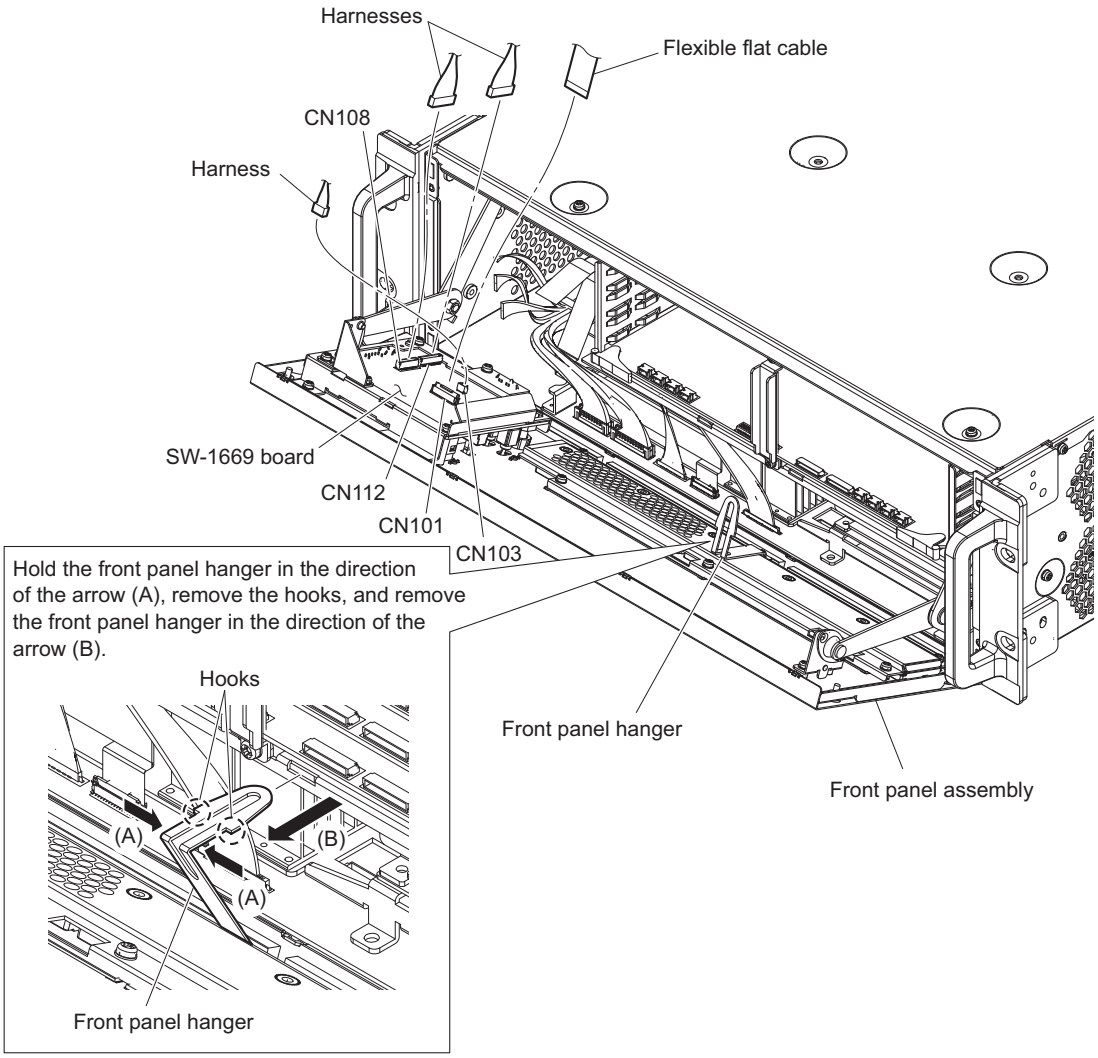
5-3. Front Panel Assembly

Procedure

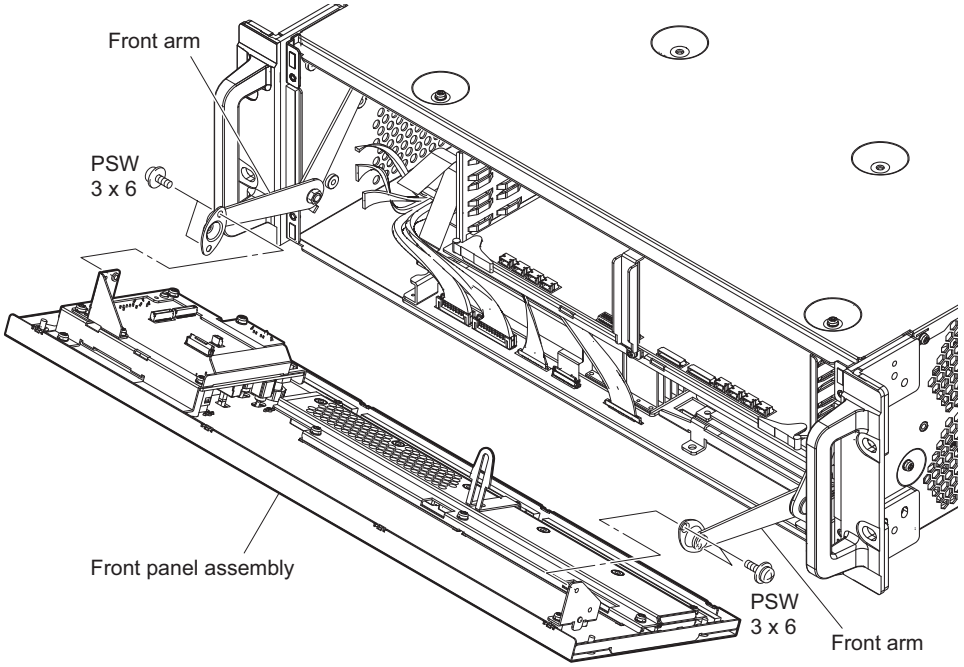
1. Open the front panel assembly.
   (1) Loosen the four screws (anti-drop).
   (2) Hold the four portions A of the front panel assembly and pull it out to the position as shown in the illustration.
   (3) Open the front panel assembly in the direction of the arrow.



2. Disconnect the harness and flexible flat cable.
   (1) Remove the front panel hanger as shown in the figure.
   (2) Disconnect the three harnesses and the flexible flat cable from the connectors (CN101, CN103, CN108, and CN112) on the SW-1669 board.



3. Remove the four screws of two front arms, then remove the front panel assembly.

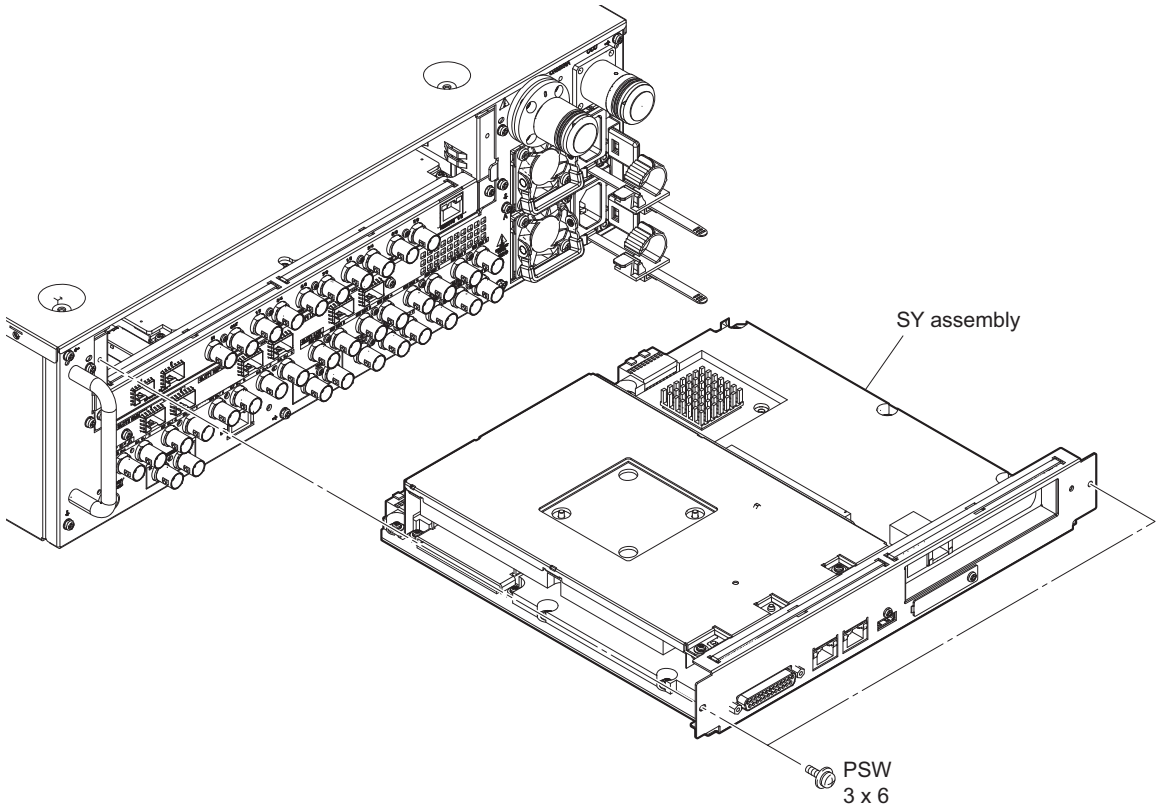


4. Install the removed parts by reversing the steps of removal.

5-4. SY Assembly

Procedure

1. Remove the two screws.
2. Pull out the plug-in board forward by using the card board insertion/removal tool (refer to "1-9-1. How to Use the Card Board Insertion/Removal Tool").



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

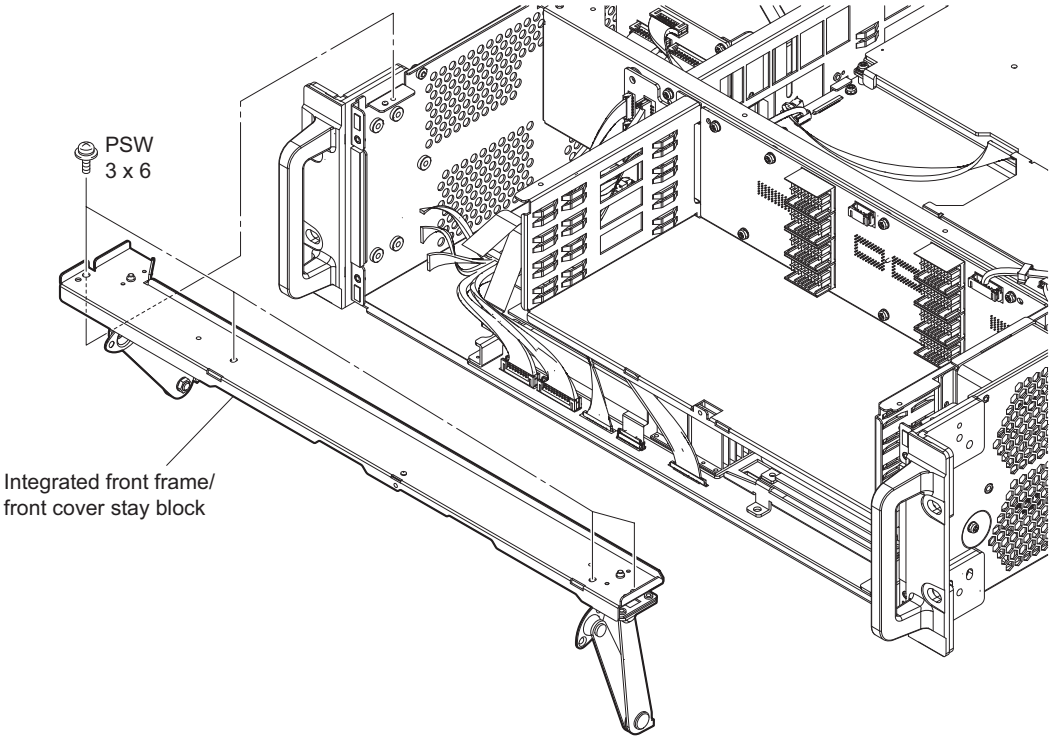
5-5. Server Block

Preparation

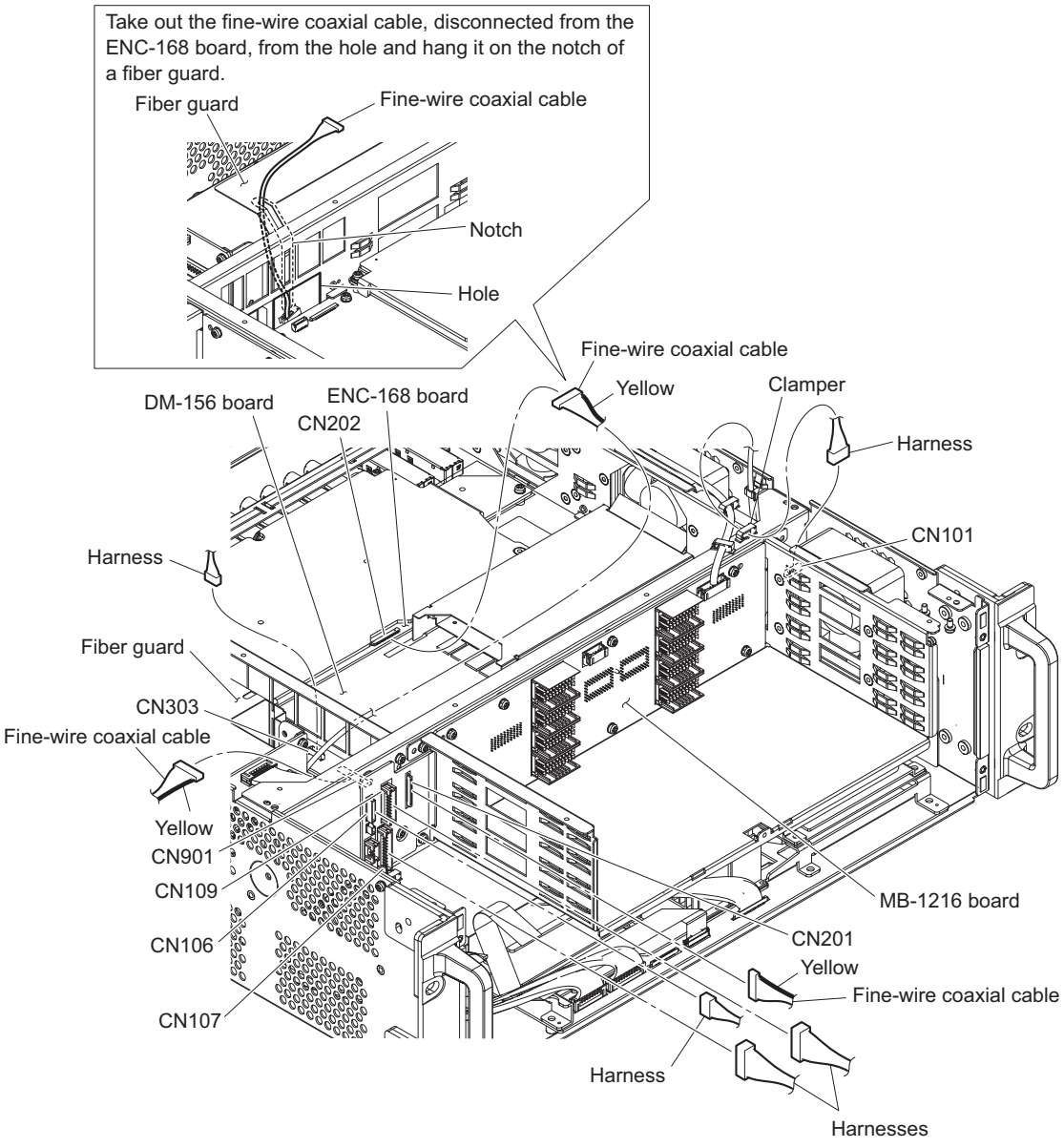
1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")

Procedure

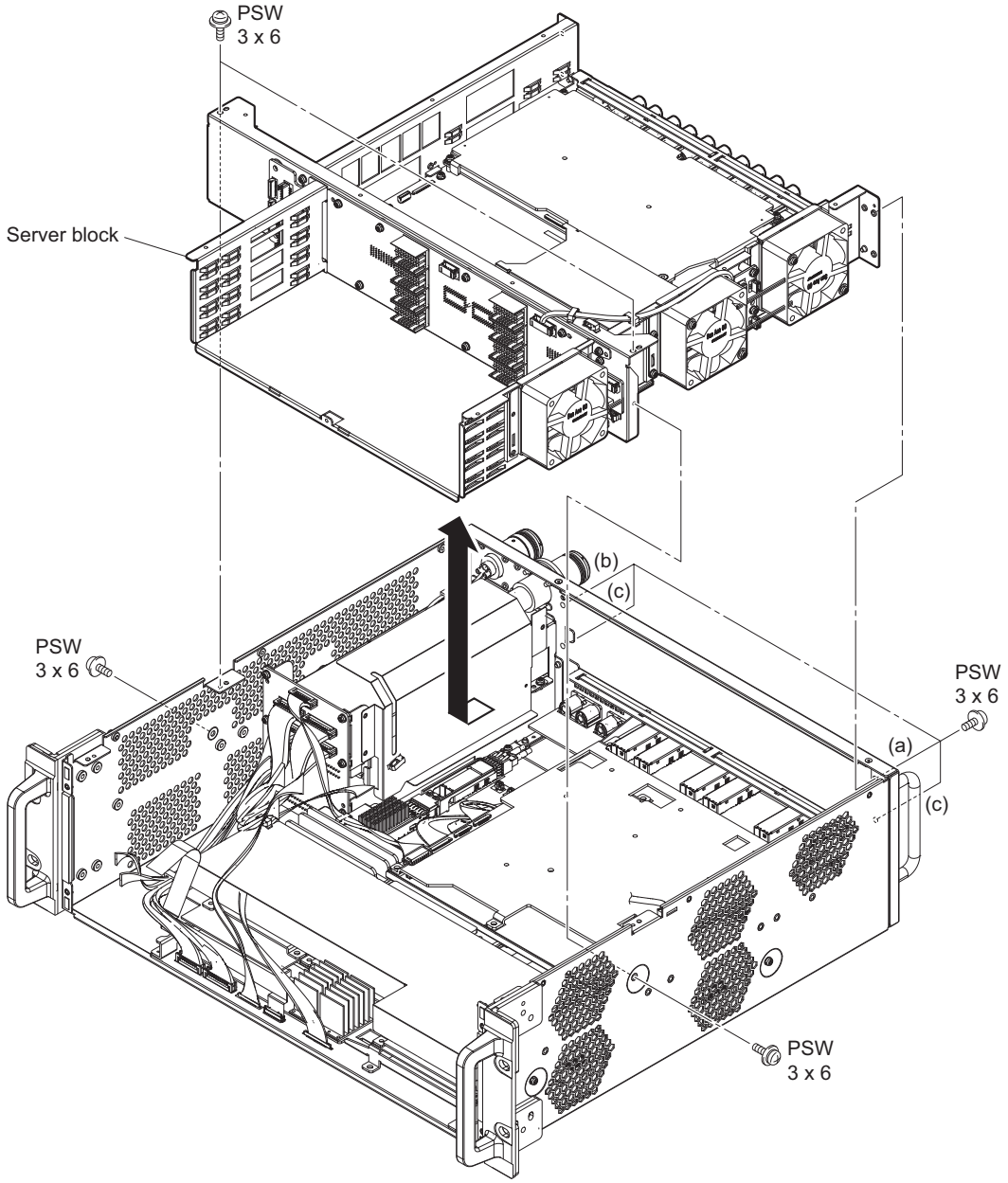
1. Remove the four screws, then remove the integrated front frame/ front cover stay block.



2. Disconnect harness and cable.
   (1) Open the clamper and disconnect the harness from the connector (CN101) on the MB-1216 board.
   (2) Disconnect the fine-wire coaxial cable from the connector (CN202) on the ENC-168 board.
   (3) Disconnect the harness and fine-wire coaxial cable from the connectors (CN303 and CN901) on the DM-156 board.
   (4) Disconnect the three harnesses and the fine-wire coaxial cable from the connectors (CN106, CN107, CN109, and CN201) on the MB-1216 board.



3. Remove the eight screws, then remove the server block in the direction of the arrow.



Note

When installing the server block, tighten the screws in the following sequence: (a), (b) and others.

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

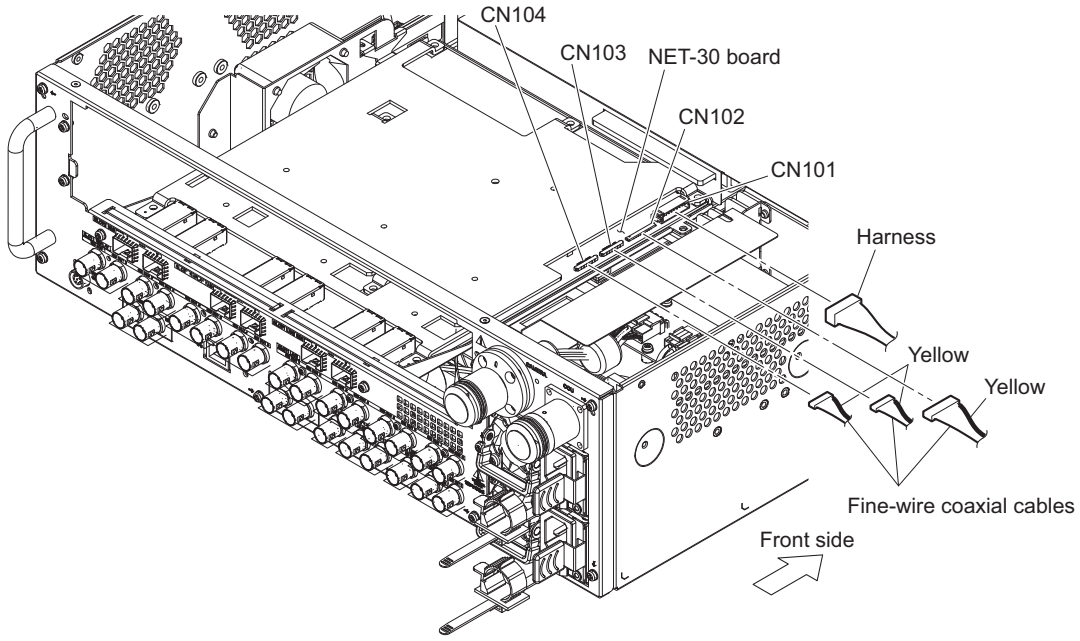
5-6. NetMedia Block

Preparation

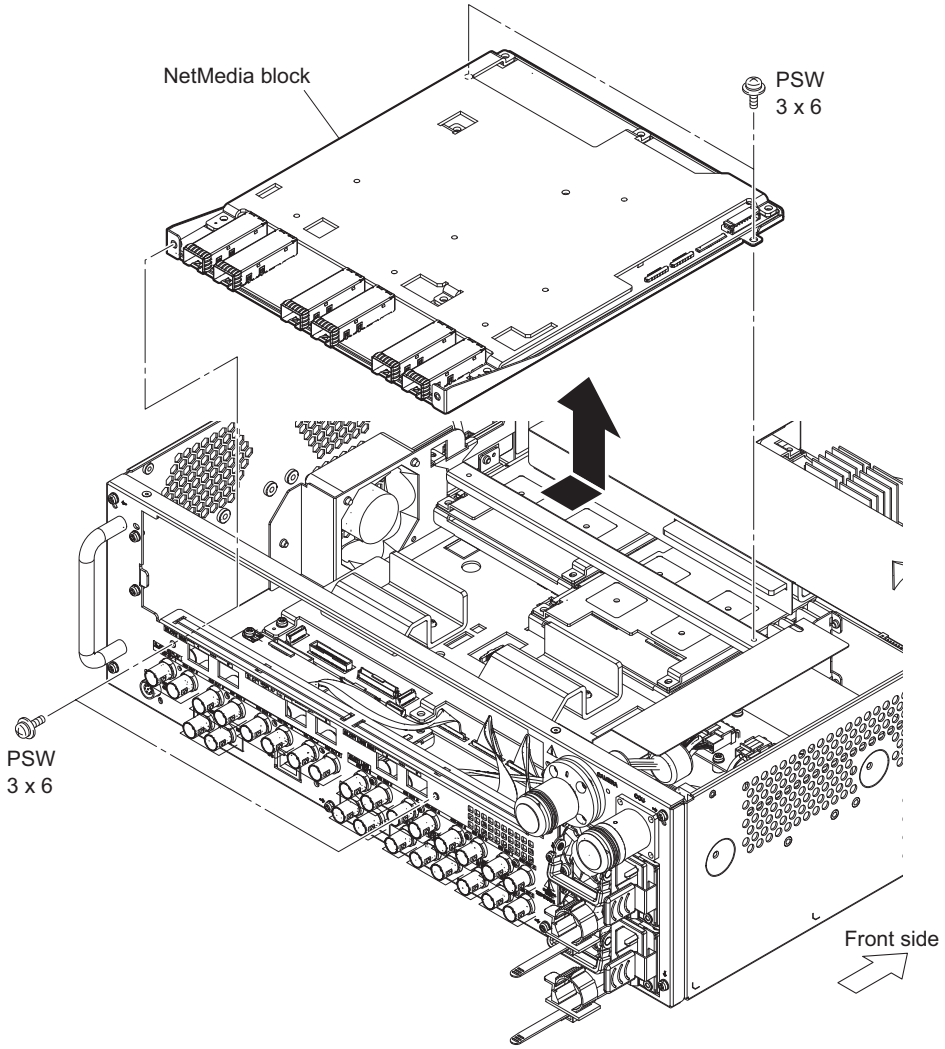
1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")

Procedure

1. Disconnect the harness and three fine-wire coaxial cables from the connectors (CN101 to CN104) on the NET-30 board.



2. Remove the four screws, then remove the NetMedia block in the direction of the arrow.



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

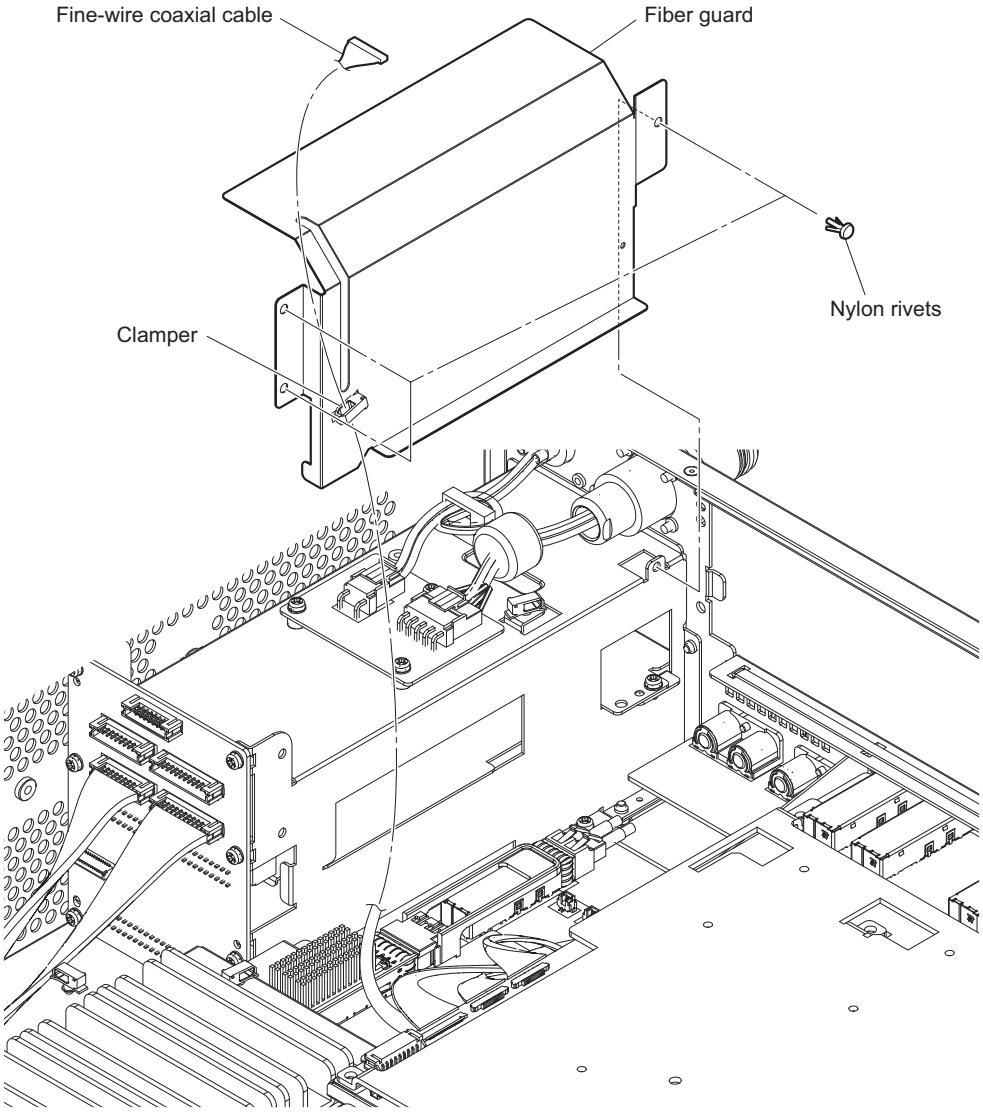
5-7. Optical Composite Cable-M

Preparation

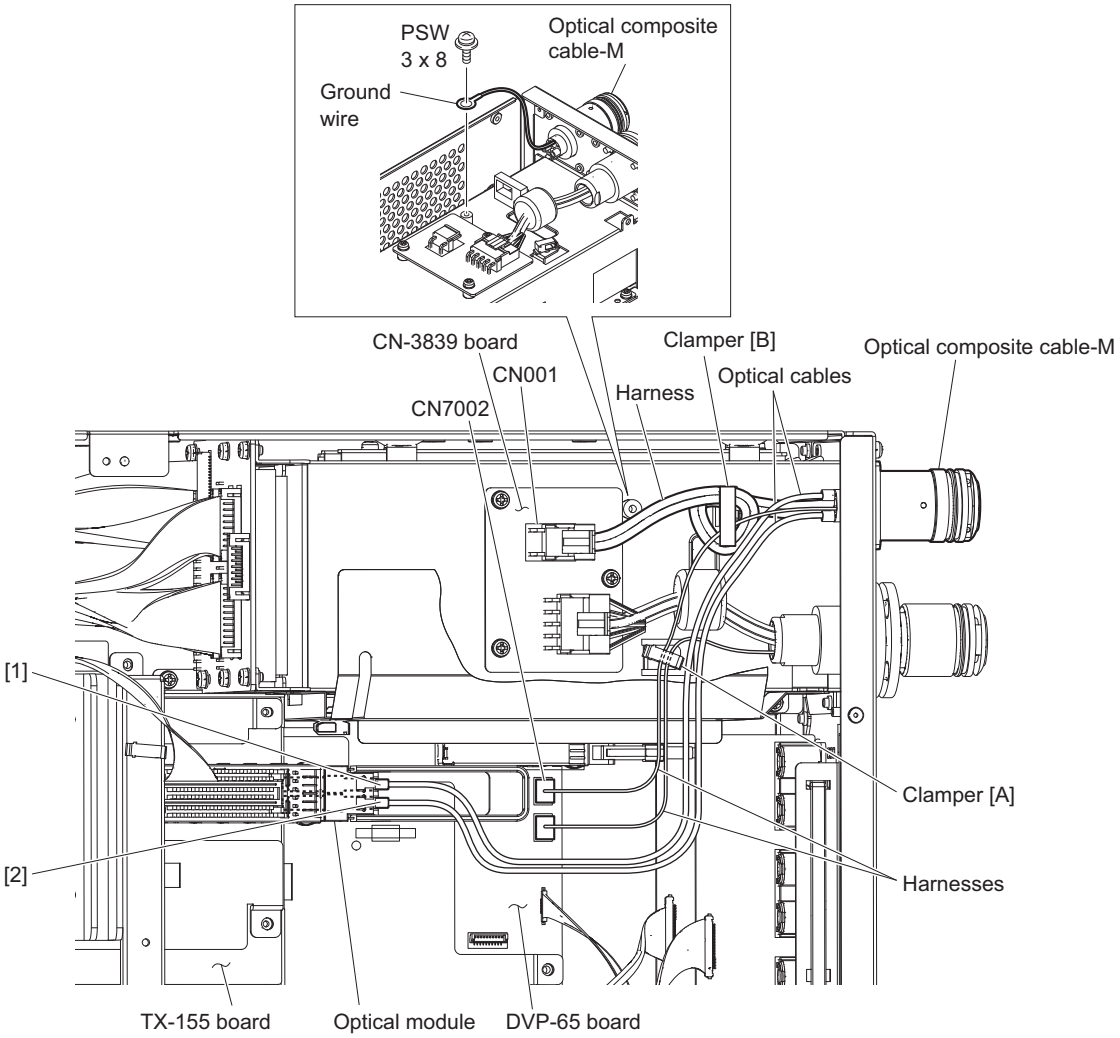
1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")

Procedure

1. Remove the fiber guard.
   (1) Remove the clamper, then disconnect the fine-wire coaxial cable.
   (2) Remove the three nylon rivets, then remove the fiber guard.



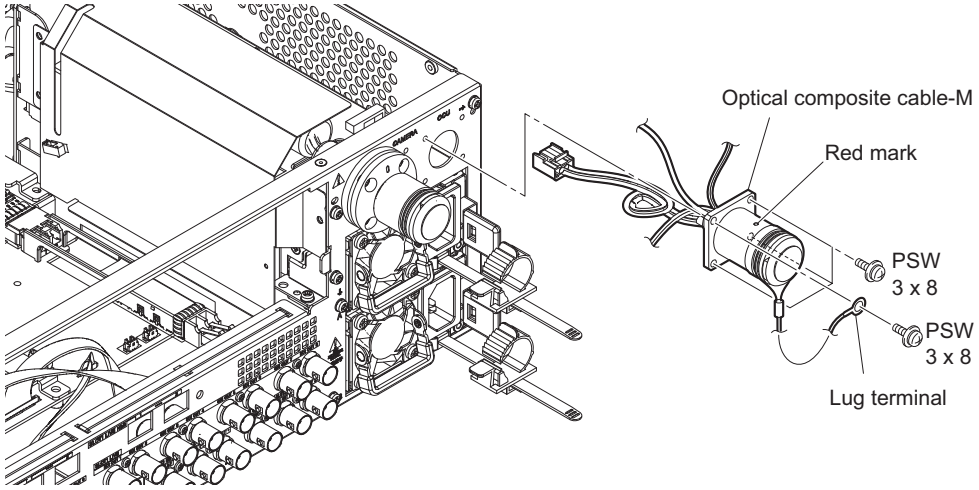
2. Disconnect harness and cable.
   (1) Open clamper [A], then disconnect the harness from the connector (CN7002) on the DVP-65 board.
   (2) Disconnect the two optical cables from the optical module on the TX-155 board.
   (3) Open clamper [B], then disconnect the harness from the connector (CN001) on the CN-3839 board.
   (4) Remove the screw, then disconnect the ground wire.



Note

- Be careful not to mistake connectors when installing optical cables.
- Clean them when installing optical cables and connectors. (Refer to "2-2. Cleaning of Connector/Cable")

3. Remove the optical composite cable-M.
   (1) Remove the screw, then remove the lug terminal.
   (2) Remove the three screws, then disconnect thee optical composite cable-M.



Note

Install it with the red mark up when installing an optical composite cable-M.

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

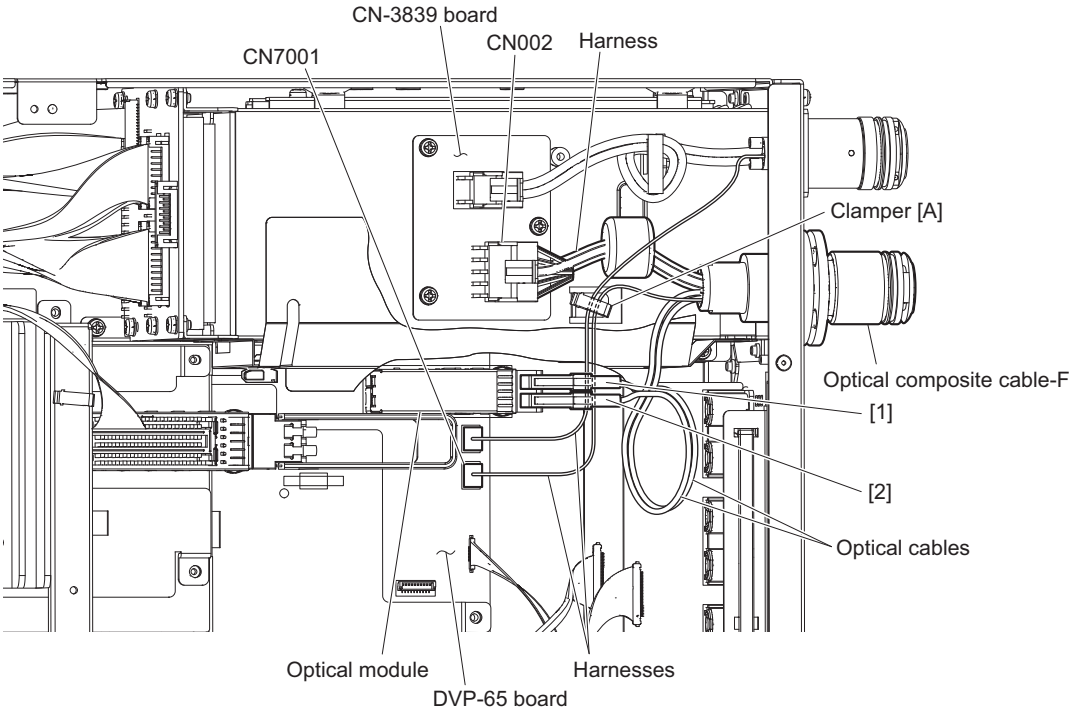
5-8. Optical Composite Cable-F

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the fiber guard. (Refer to "5-7. Optical Composite Cable-M")

Procedure

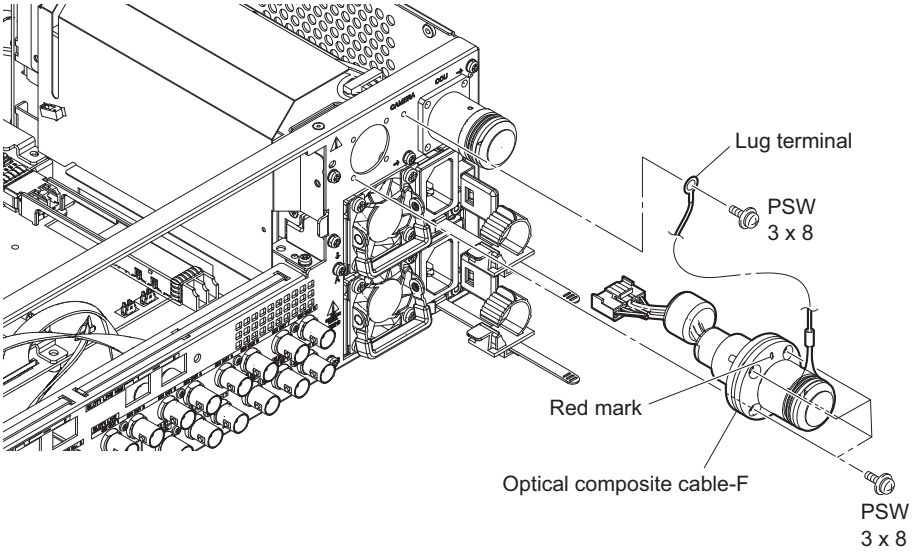
1. Disconnect the harness.
   (1) Open clamper [A], then disconnect the harness from the connector (CN7001) on the DVP-65 board.
   (2) Disconnect the two optical cables from the optical module on the DVP-65 board.
   (3) Disconnect the harness from the connector (CN002) on the CN-3839 board.



Note

- Be careful not to mistake connectors when installing optical cables.
- Clean them when installing optical cables and connectors. (Refer to "2-2. Cleaning of Connector/Cable")

2. Remove the optical composite cable-F.
   (1) Remove the screw, then remove the lug terminal.
   (2) Remove the three screws, then disconnect the optical composite cable-F.



Note

Install it with the red mark up when installing an optical composite cable-F.

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

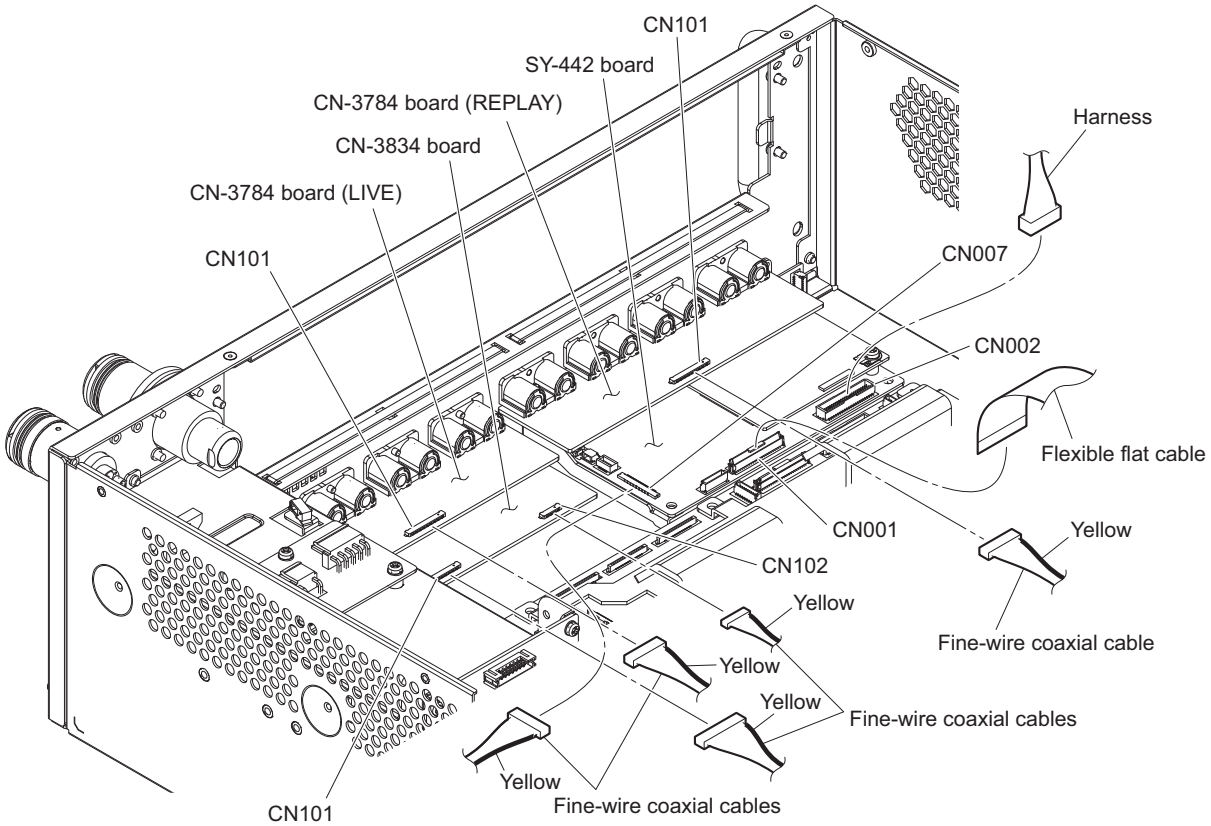
5-9. Rear Panel Block

Preparation

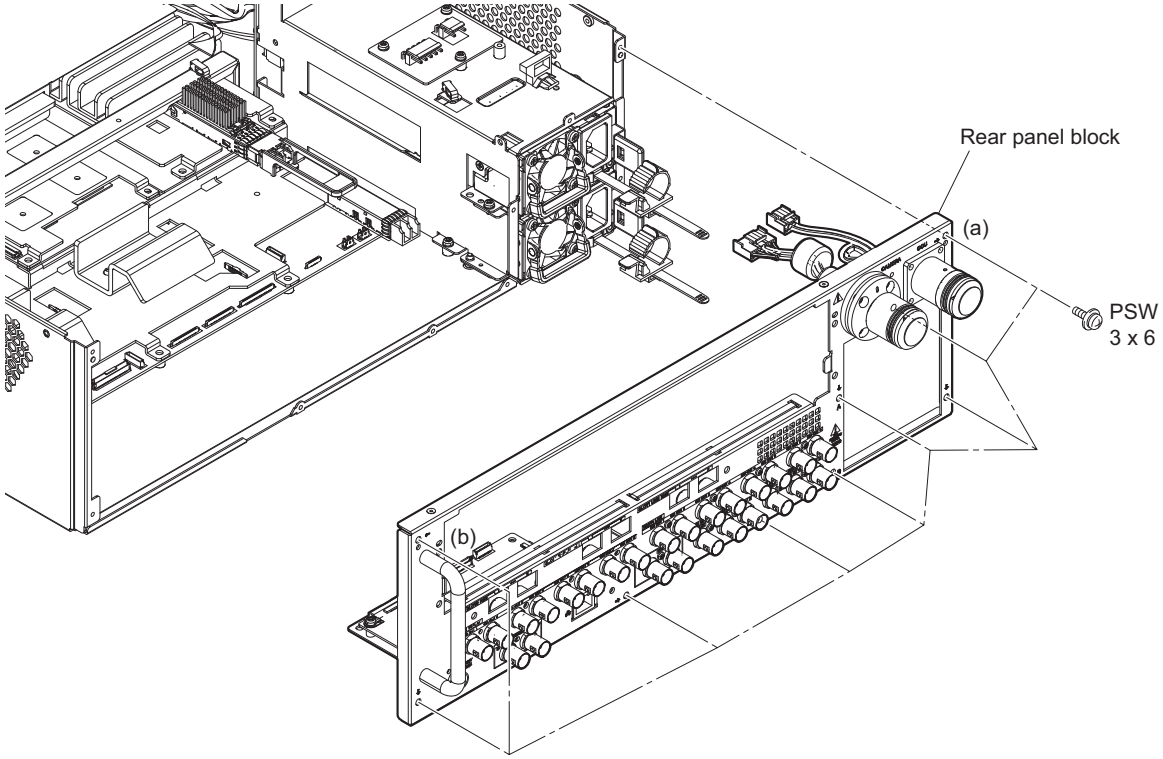
1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Remove the fiber guard. (Refer to "5-7. Optical Composite Cable-M")
8. Disconnect the harness. (Refer to "5-7. Optical Composite Cable-M")
9. Disconnect the harness. (Refer to "5-8. Optical Composite Cable-F")

Procedure

1. Disconnect the harness and cable.
   (1) Disconnect the fine-wire coaxial cable from the connector (CN101) on the CN-3784 board (LIVE).
   (2) Disconnect the fine-wire coaxial cable from the connector (CN101) on the CN-3784 board (REPLAY).
   (3) Disconnect the two fine-wire coaxial cables from the connectors (CN101 and CN102) on the CN-3834 board.
   (4) Disconnect the harness from the connector (CN002) on the SY-442 board.
   (5) Disconnect the flexible flat cable from the connector (CN001) on the SY-442 board.
   (6) Disconnect the fine-wire coaxial cable from the connector (CN007) on the SY-442 board.



2. Remove the nine screws, then remove the rear panel block.



Note

When installing the rear panel block, tighten the screws in the following sequence: (a), (b) and others.

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

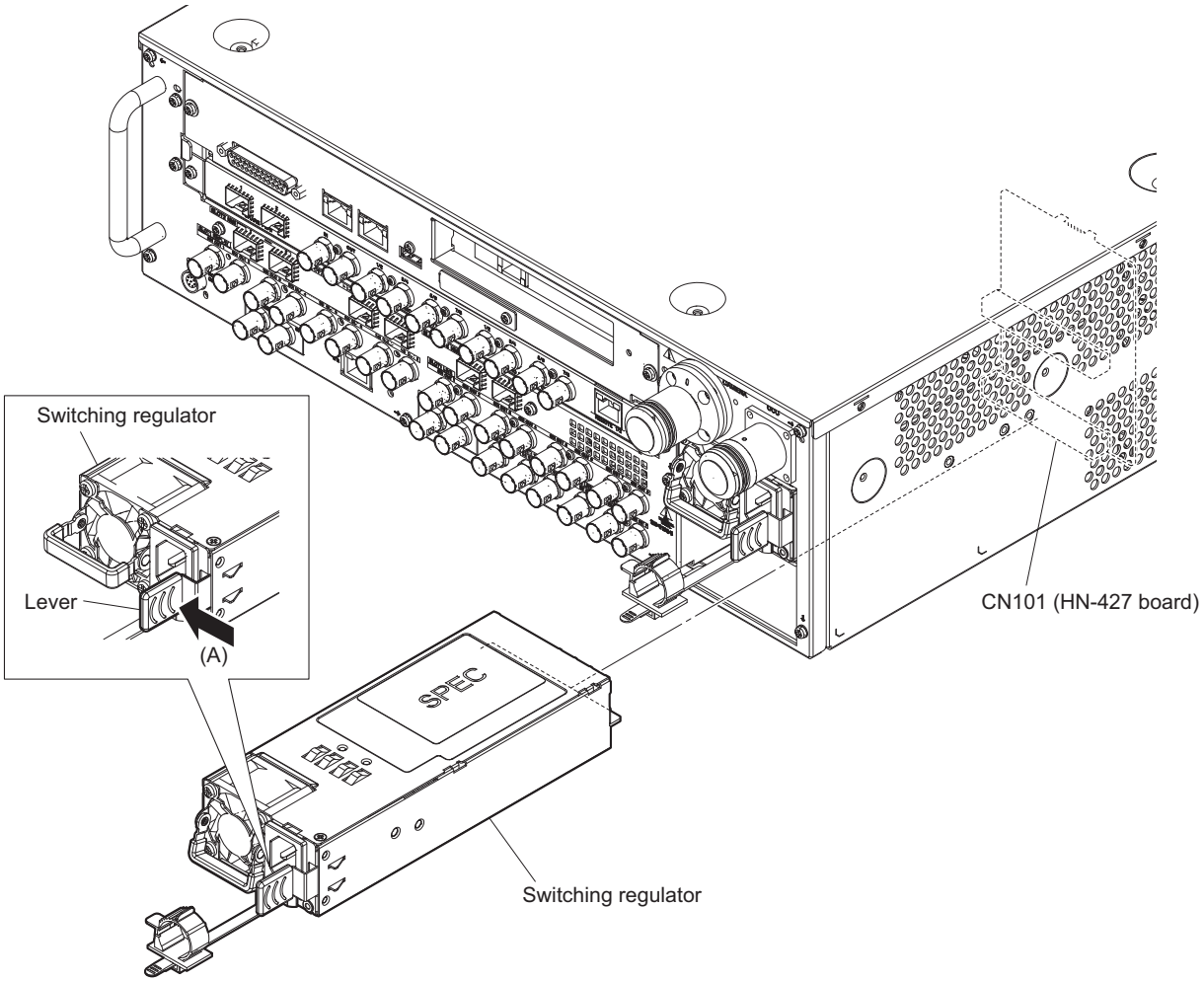
5-10. Switching Regulator

Tip

Two switching regulators are installed. They are the same in the procedure for removal.

Procedure

1. Push the lever in the direction of the arrow (A) and pull out the switching regulator.



Note

When installing the switching regulator, push it until it is locked.

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

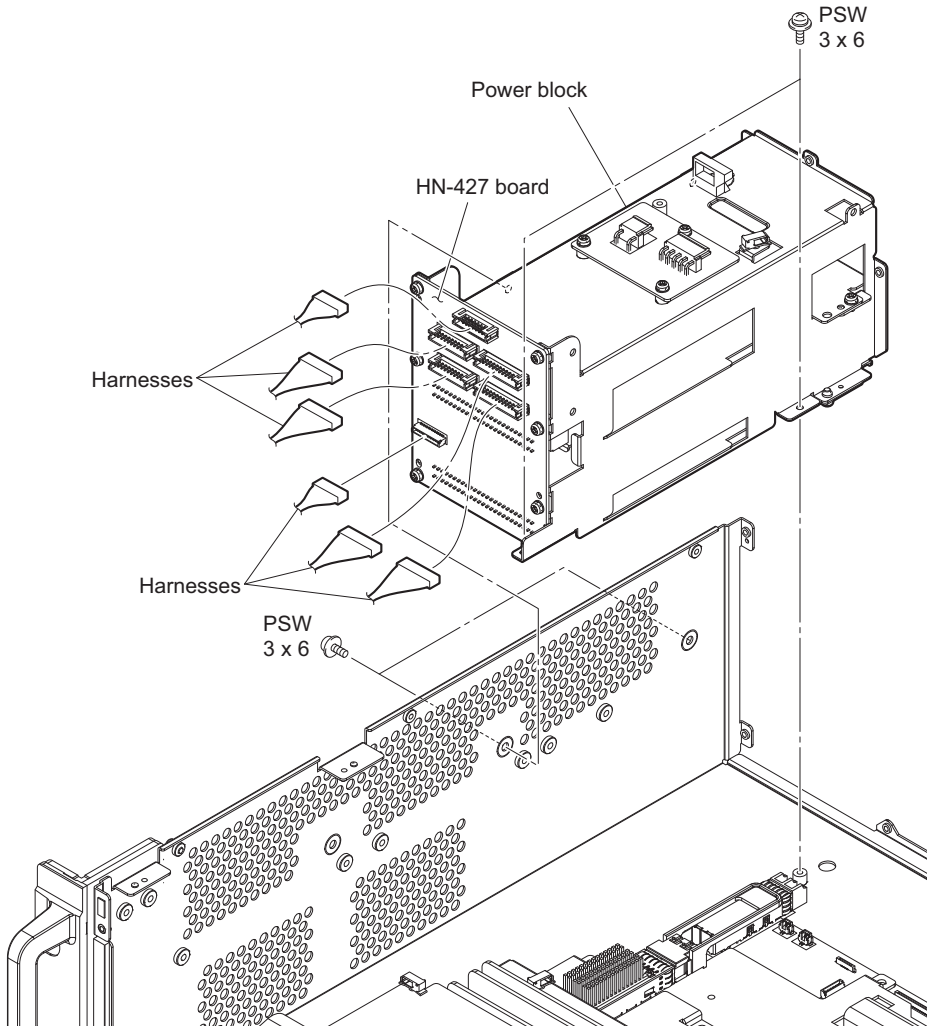
5-11. Power Block

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Disconnect the harness. (Refer to "5-7. Optical Composite Cable-M")
8. Disconnect the harness. (Refer to "5-8. Optical Composite Cable-F")
9. Remove the rear panel block. (Refer to "5-9. Rear Panel Block")
10. Remove the two switching regulators. (Refer to "5-10. Switching Regulator")

Procedure

1. Disconnect all harnesses from the connectors on the HN-427 board.
2. Remove the four screws, then remove the power block.



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

5-12. Fans of Server Block

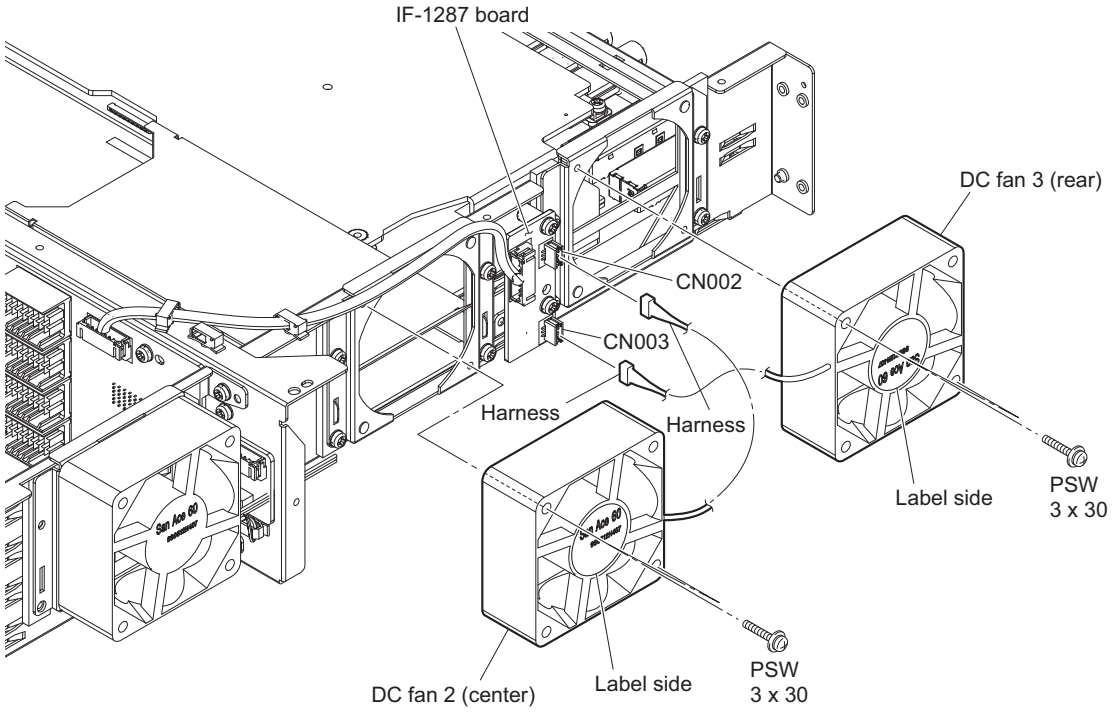
Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")

5-12-1. DC Fan 2 (Center) and DC Fan 3 (Rear)

Procedure

1. Disconnect the harness from the connector (CN002) on the IF-1287 board.
2. Remove the two screws, then remove the DC fan 2 (center).
3. Disconnect the harness from the connector (CN003) on the IF-1287 board.
4. Remove the two screws, then remove the DC fan 3 (rear).



Note

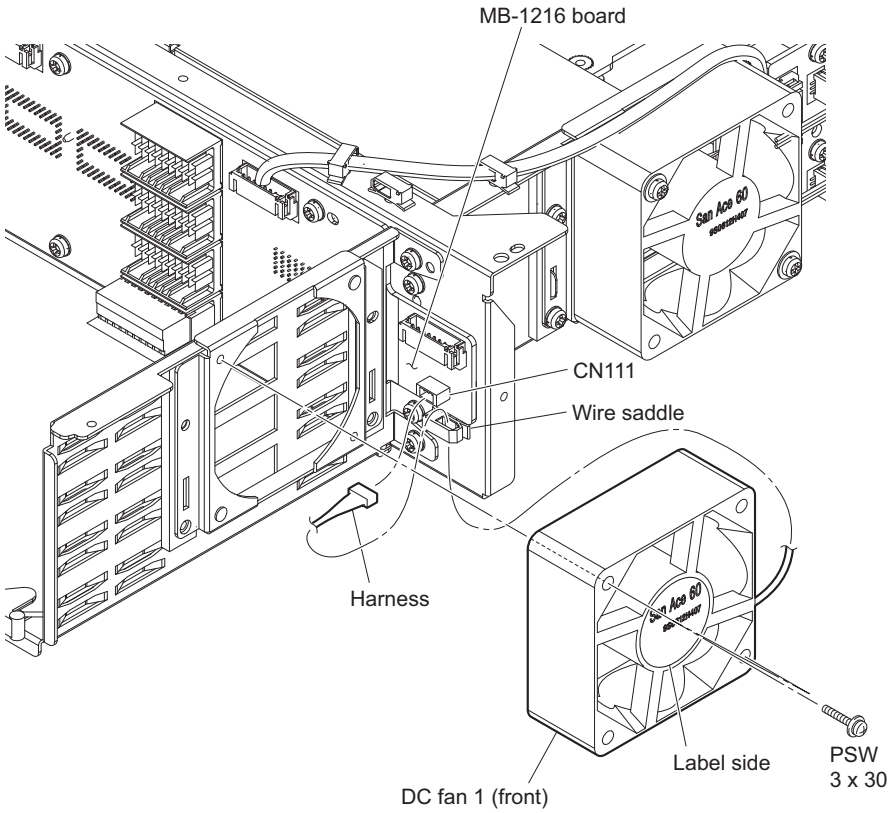
When installing the DC fan, install the DC fan carefully paying attention to the label side and the harness position.

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

5-12-2. DC Fan 1 (Front)

Procedure

1. Remove the two screws, then remove the DC fan 1 (front).
2. Open the wire saddle, then disconnect the harness from the connector (CN111) on the MB-1216 board.



Note

When installing the DC fan, install the DC fan carefully paying attention to the label side and the harness position.

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

5-13. Fan of BPU/NetMedia Block

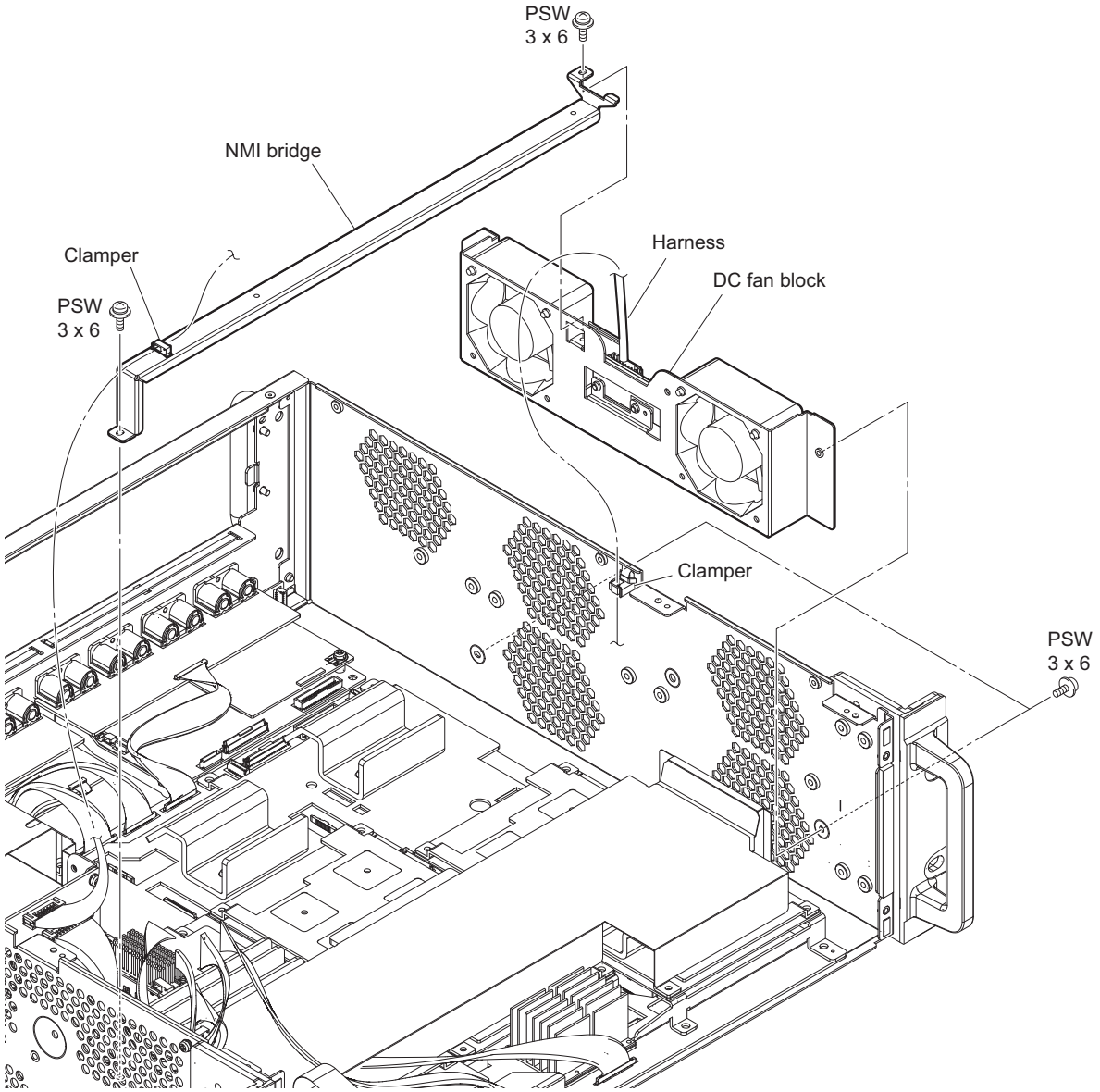
Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")

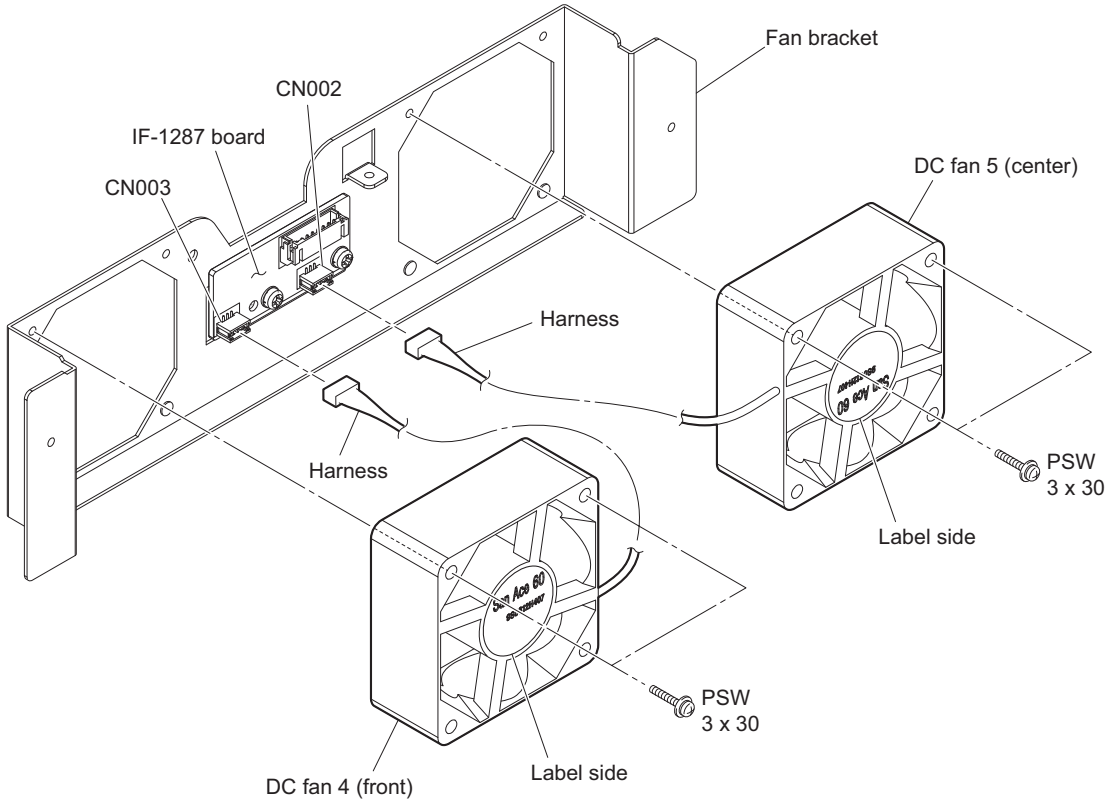
5-13-1. DC Fan 4 (Front) and DC Fan 5 (Center)

Procedure

1. Remove the DC fan block.
   (1) Remove the two screws, then remove the NMI bridge.
   (2) Open the two clampers, then disconnect the harness.
   (3) Remove the two screws, then remove the DC fan block.



2. Remove the DC fan.
   (1) Disconnect the harness from the connector (CN002) on the IF-1287 board.
   (2) Remove the two screws, then remove the DC fan 5 (center).
   (3) Disconnect the harness from the connector (CN003) on the IF-1287 board.
   (4) Remove the two screws, then remove the DC fan 4 (front).



Note

When installing the DC fan, install the DC fan carefully paying attention to the label side and the harness position.

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

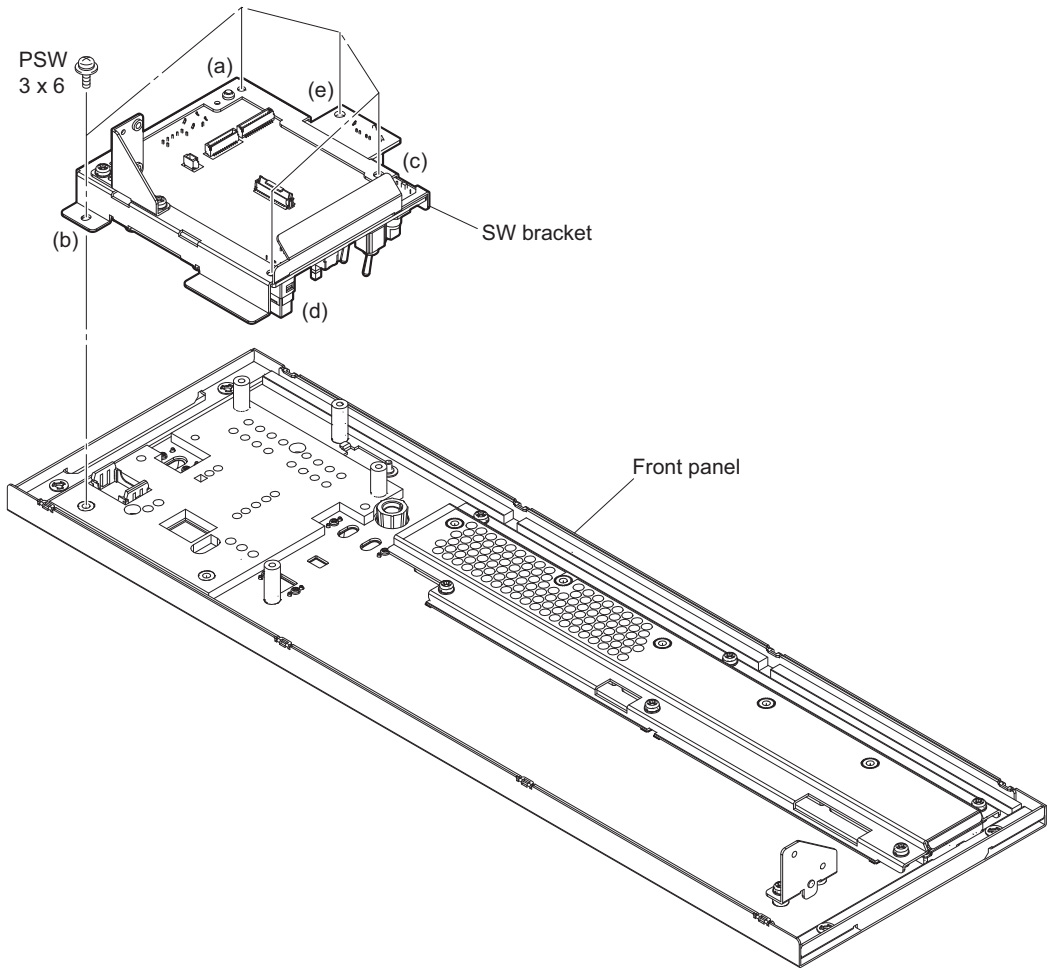
5-14. LE-404 and SW-1669 Boards

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")

Procedure

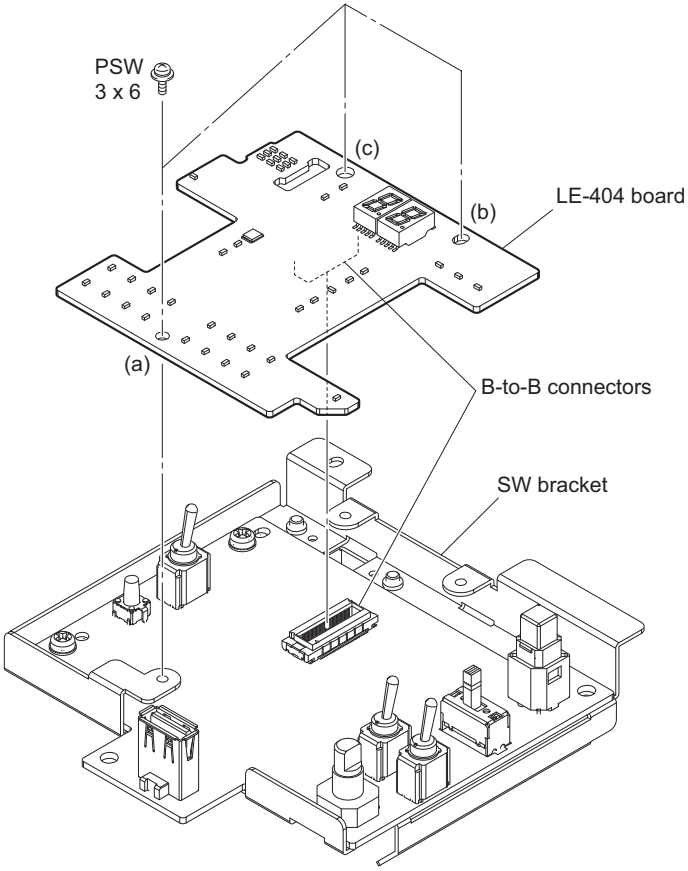
1. Remove the five screws, then remove the SW bracket.



Note

When installing the SW bracket, tighten the screws in the following sequence: (a) to (e).

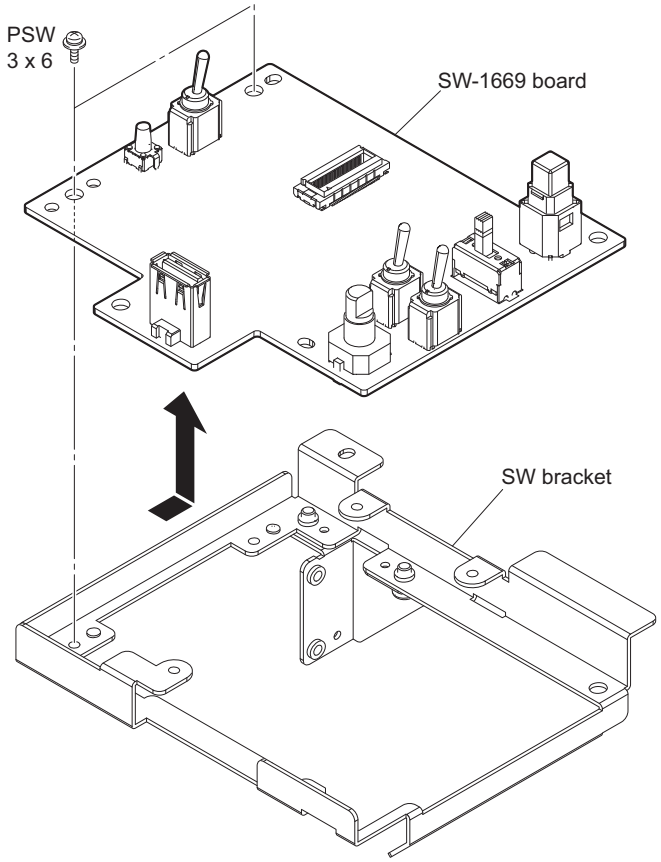
2. Remove the three screws, then remove the LE-404 board.



Note

When installing the LE-404 board, tighten the screws in the following sequence: (a) to (c).

3. Remove the two screws, then remove the SW-1669 board in the direction of the arrow.



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

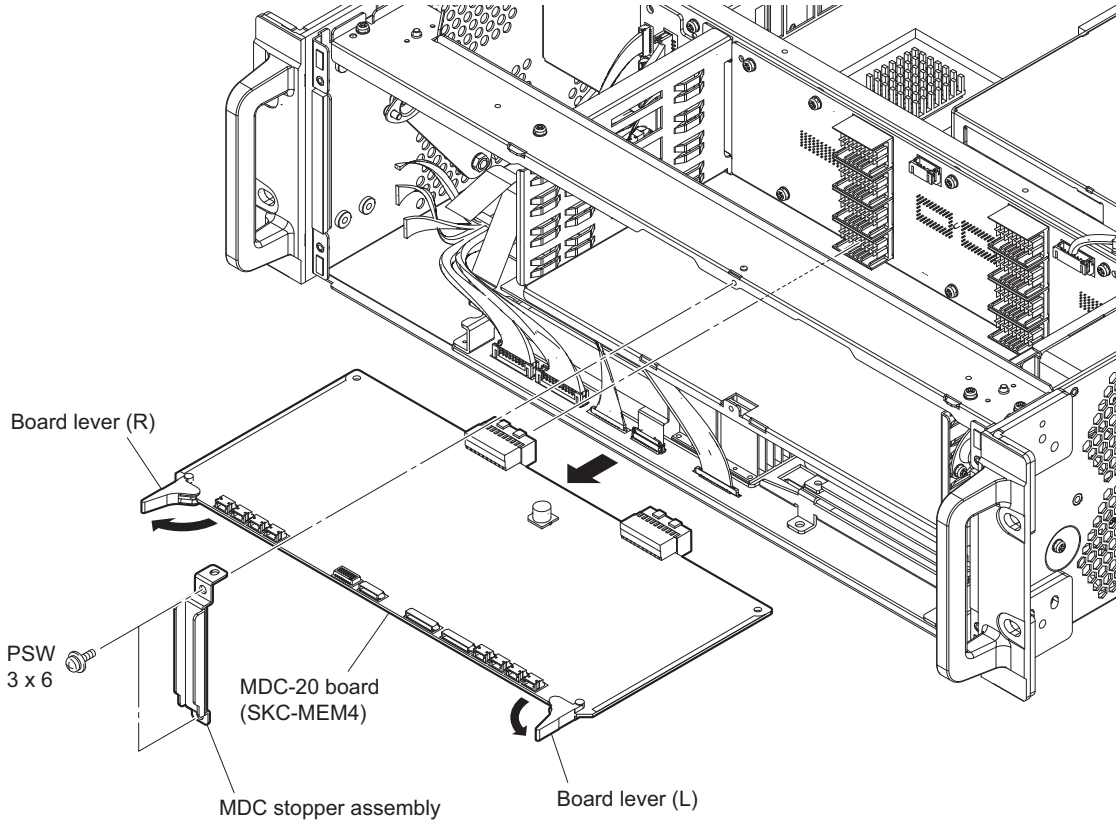
5-15. MDC-20 Board (SKC-MEM4)

Preparation

1. Open the front panel assembly. (Refer to "5-3. Front Panel Assembly")

Procedure

1. Remove the two screws, then remove the MDC stopper assembly.
2. Open the board levers (L) and (R), then remove the MDC-20 board in the direction of the arrow.



Note

When reinstalling the removed MDC-20 board, be sure to install it in the slot where it was installed.

3. Format the MDC-20 board. (Refer to "1-8. Formatting of SKC-MEM4 (MDC-20 Board)".)
4. Install the removed parts by reversing the steps of removal.
5. Format the MDC-20 board. (Refer to "1-8. Formatting of SKC-MEM4 (MDC-20 Board)".)

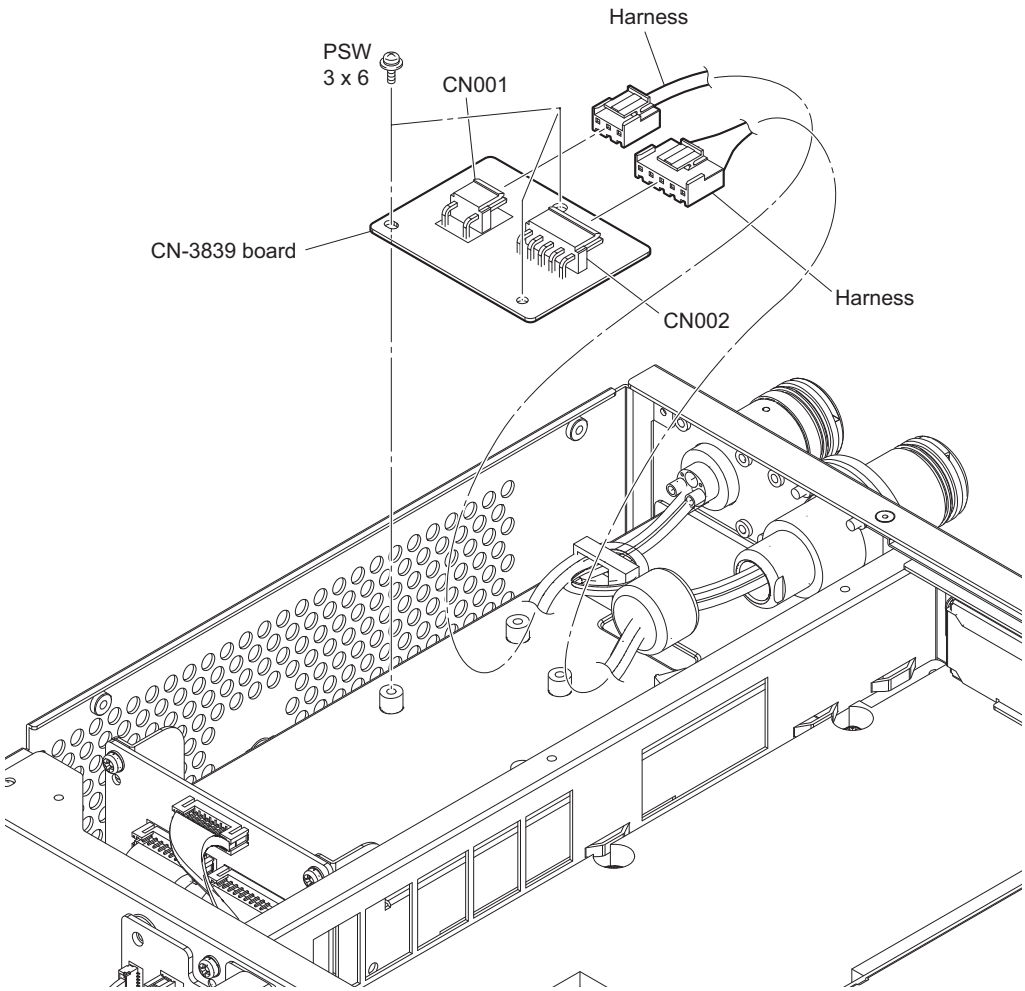
5-16. CN-3839 Board

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")

Procedure

1. Disconnect the two harnesses from the connectors (CN001 and CN002) on the CN-3839 board.
2. Remove the three screws, then remove the CN-3839 board.



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

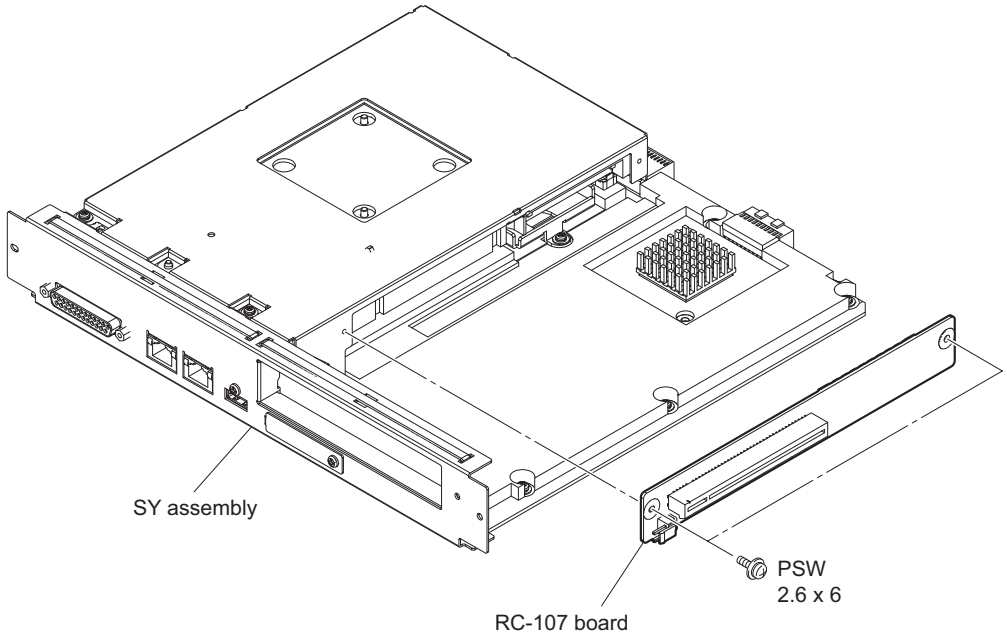
5-17. RC-107 Board

Preparation

1. Remove the SY assembly. (Refer to "5-4. SY Assembly")
2. Remove the NIC board. (Refer to "5-20. NIC Board")

Procedure

1. Remove the two screws, then remove the RC-107 board.



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

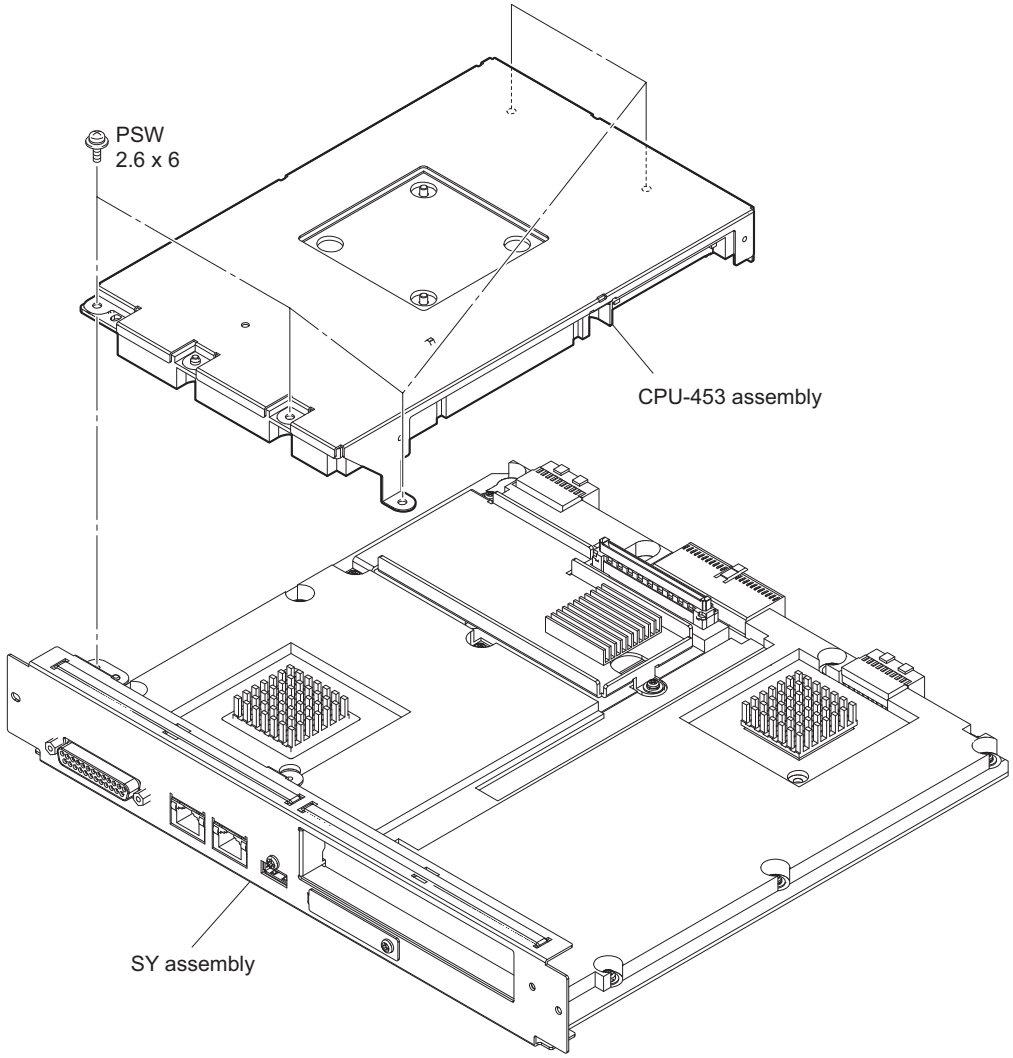
5-18. CPU-453A Board

Preparation

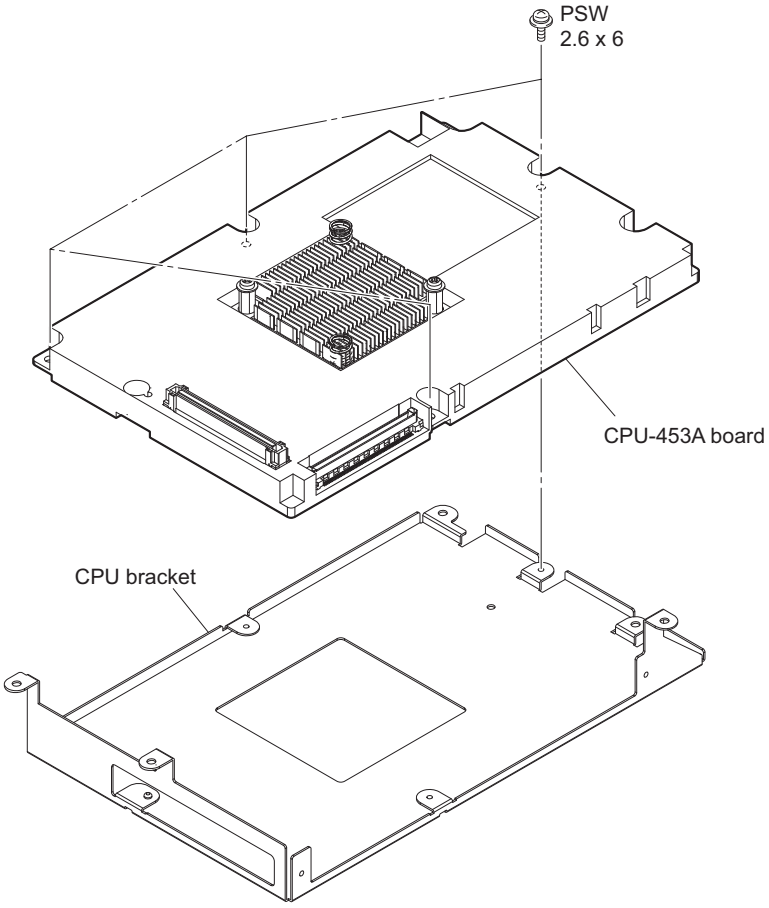
1. Remove the SY assembly. (Refer to "5-4. SY Assembly")
2. Remove the NIC board. (Refer to "5-20. NIC Board")
3. Remove the RC-107 board. (Refer to "5-17. RC-107 Board")

Procedure

1. Remove the five screws, then remove the CPU-453 assembly.



2. Remove the four screws, then remove the CPU-453A board.



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

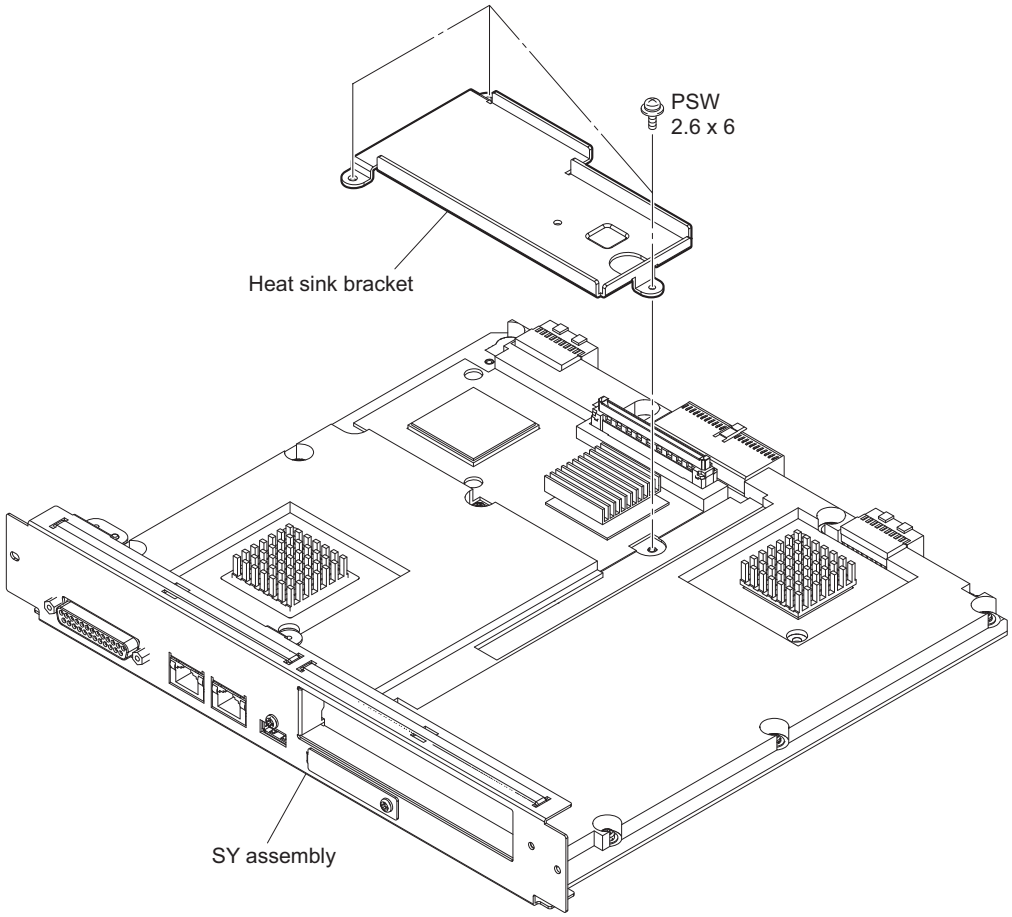
5-19. SY-422 Board

Preparation

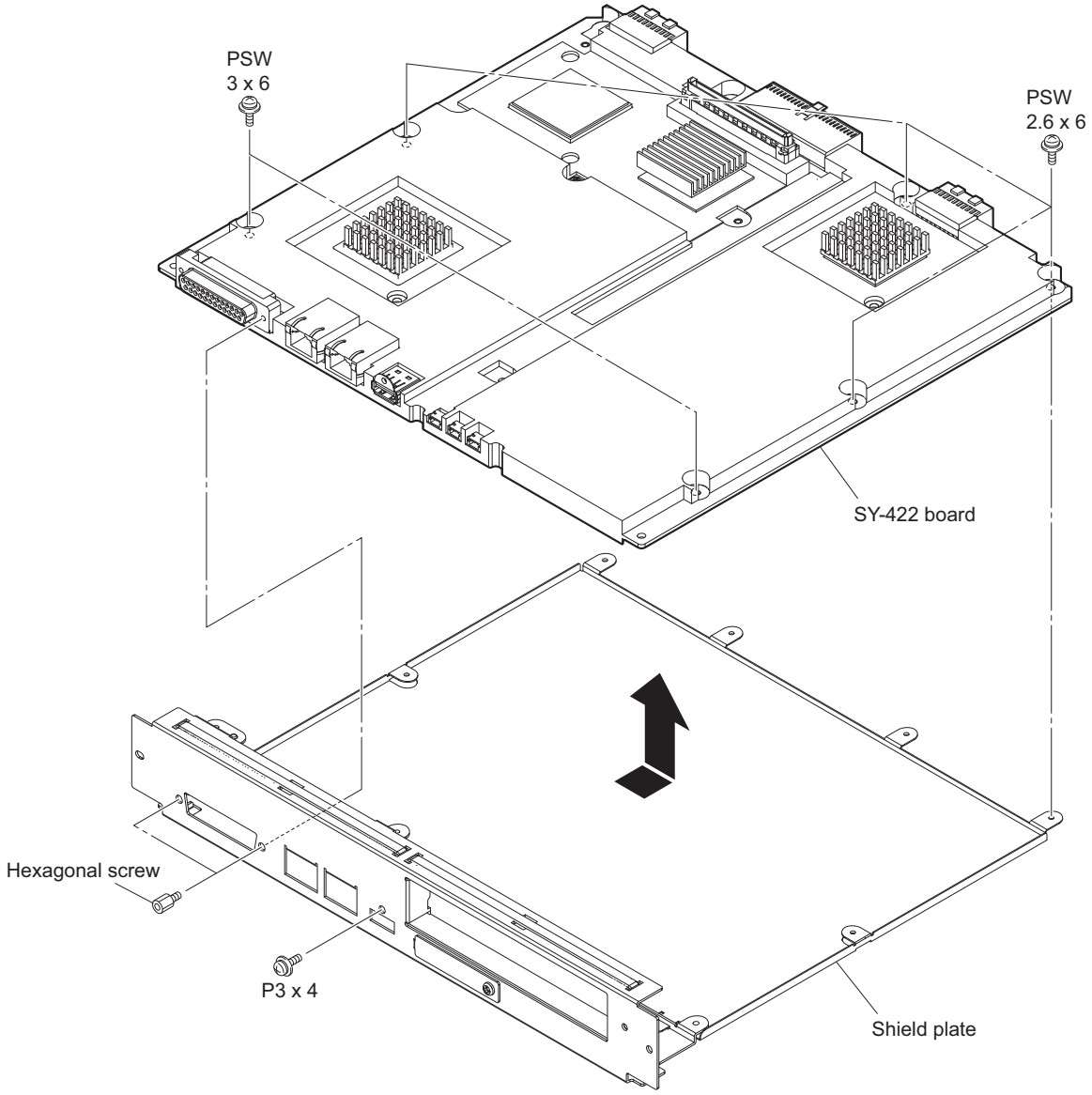
1. Remove the SY assembly. (Refer to "5-4. SY Assembly")
2. Remove the NIC board. (Refer to "5-20. NIC Board")
3. Remove the RC-107 board. (Refer to "5-17. RC-107 Board")
4. Remove the CPU-453A board. (Refer to "5-18. CPU-453A Board")

Procedure

1. Remove the three screws, then remove the heat sink bracket.



2. Remove the SY-422 board.
   (1) Remove the two screws (PSW3 x 6) and four screws (PSW2.6 x 6).
   (2) Remove the two screws (P3 x 4) and two hexagonal screws, then remove the SY-422 board in the direction of the arrow.



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

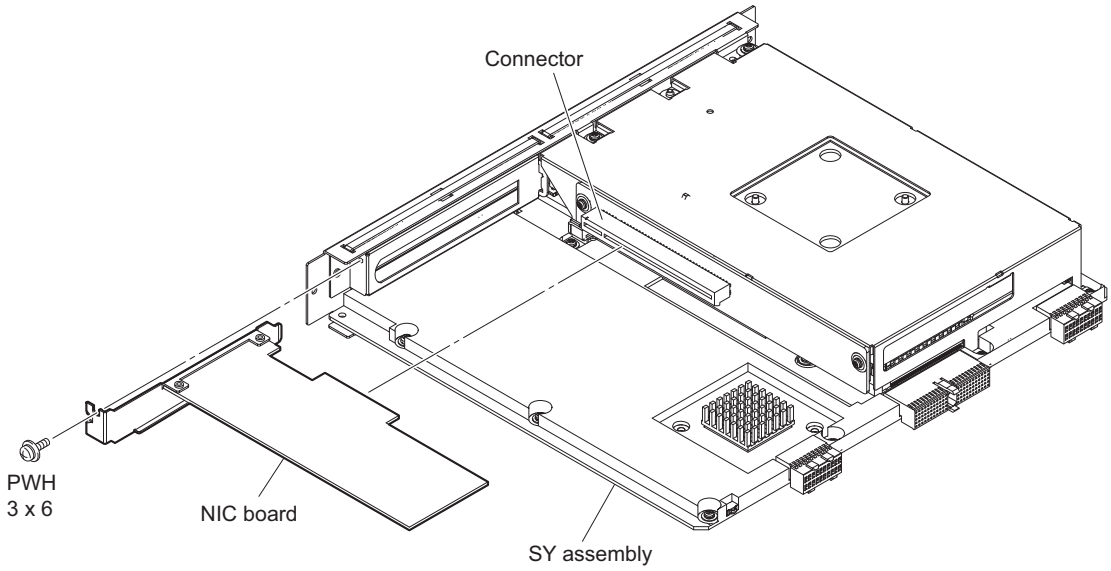
5-20. NIC Board

Preparation

1. Remove the SY assembly. (Refer to "5-4. SY Assembly")

Procedure

1. Remove the screw.
2. Remove the NIC board from the connector.



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

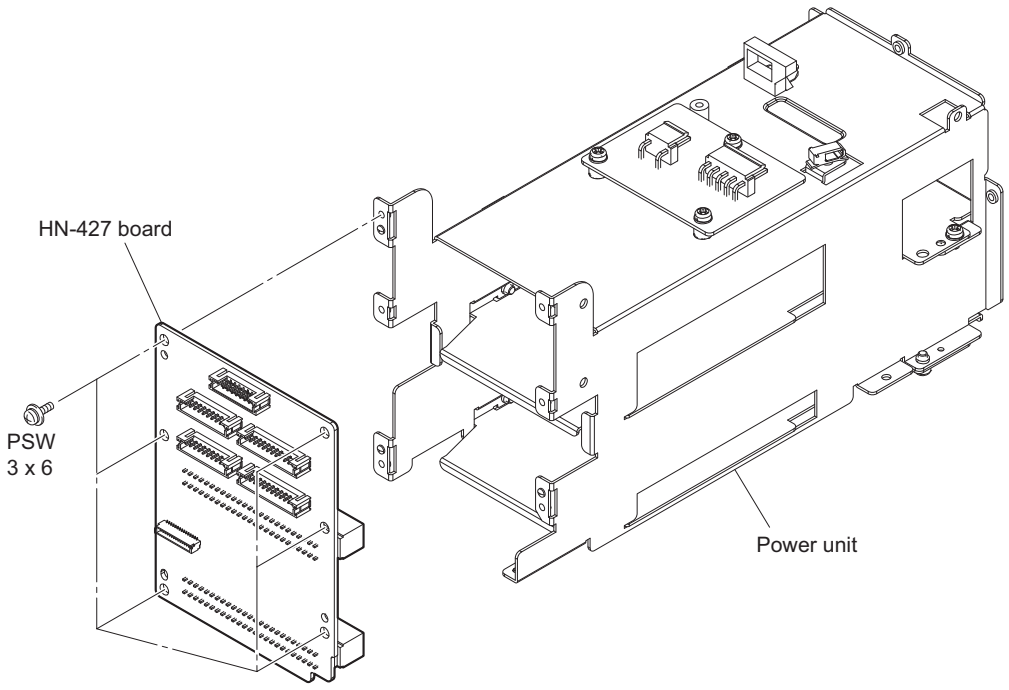
5-21. HN-427 Board

Preparation

1. Remove the top panel. (Refer to “5-2. Top Panel”)
2. Remove the front panel assembly. (Refer to “5-3. Front Panel Assembly”)
3. Remove the MDC-20 board (SKC-MEM4). (Refer to “5-15. MDC-20 Board (SKC-MEM4)”)
4. Remove the SY assembly. (Refer to “5-4. SY Assembly”)
5. Remove the server block. (Refer to “5-5. Server Block”)
6. Remove the NetMedia block. (Refer to “5-6. NetMedia Block”)
7. Disconnect the harness. (Refer to “5-7. Optical Composite Cable-M”)
8. Disconnect the harness. (Refer to “5-8. Optical Composite Cable-F”)
9. Remove the rear panel block. (Refer to “5-9. Rear Panel Block”)
10. Remove the two switching regulators. (Refer to “5-10. Switching Regulator”)
11. Remove the power block. (Refer to “5-11. Power Block”)

Procedure

1. Remove the six screws, then remove the HN-427 board.



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

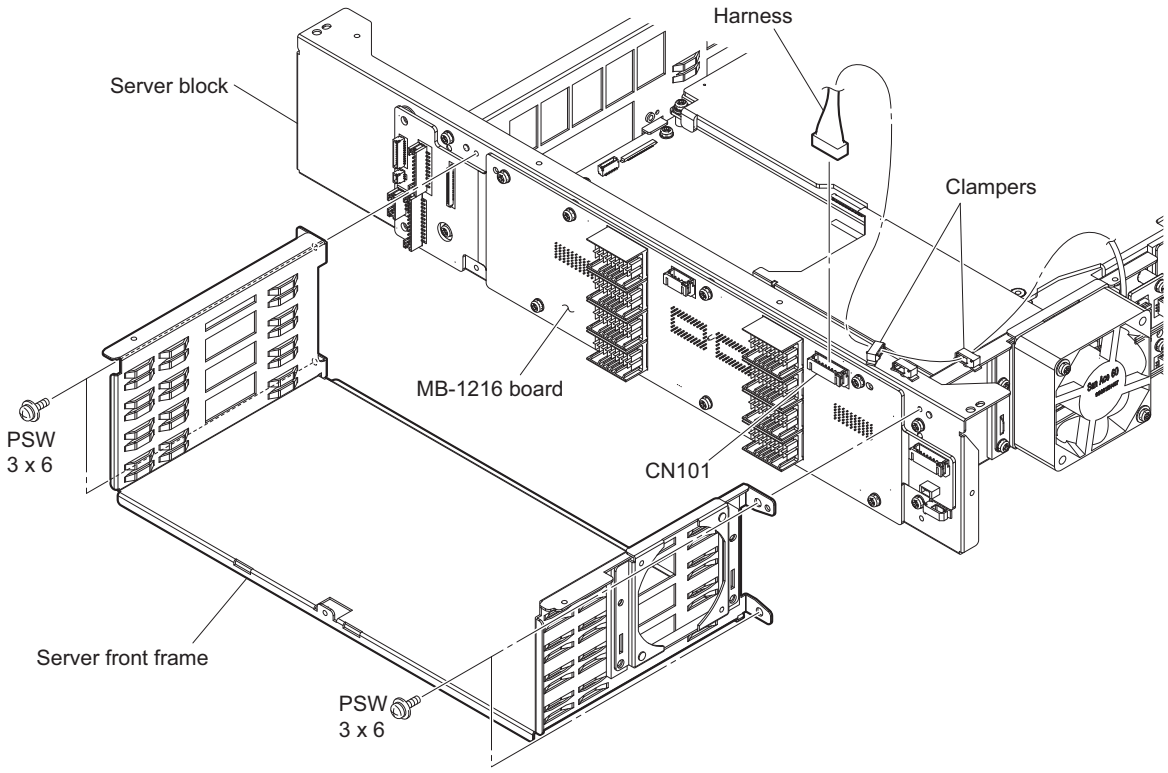
5-22. MB-1216 Board

Preparation

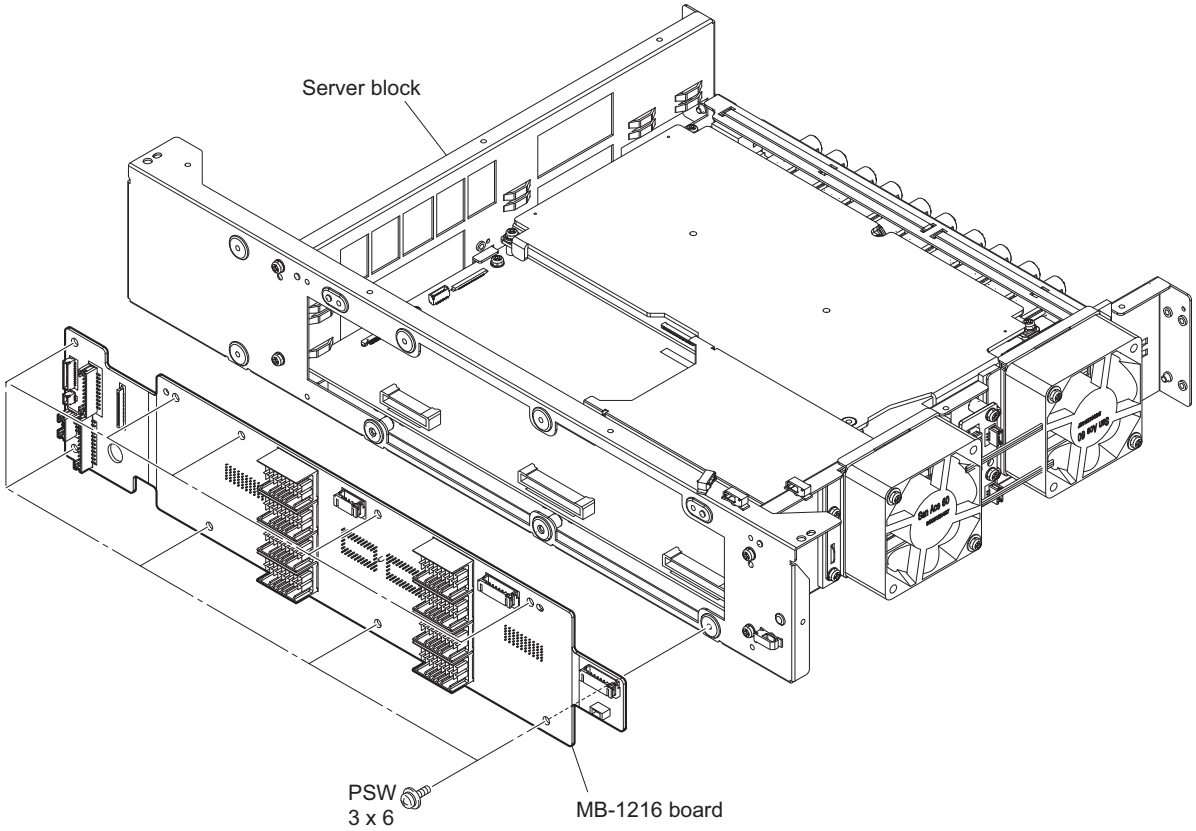
1. Remove the top panel. (Refer to “5-2. Top Panel”)
2. Remove the front panel assembly. (Refer to “5-3. Front Panel Assembly”)
3. Remove the MDC-20 board (SKC-MEM4). (Refer to “5-15. MDC-20 Board (SKC-MEM4)”)
4. Remove the SY assembly. (Refer to “5-4. SY Assembly”)
5. Remove the server block. (Refer to “5-5. Server Block”)
6. Remove the DC fan 1 (front). (Refer to “5-12-2. DC Fan 1 (Front)”)

Procedure

1. Open the two clampers, then disconnect the harness from the connector (CN101) on the MB-1216 board.
2. Remove the four screws, then remove the server front frame.



3. Remove the nine screws, then remove the MB-1216 board.



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

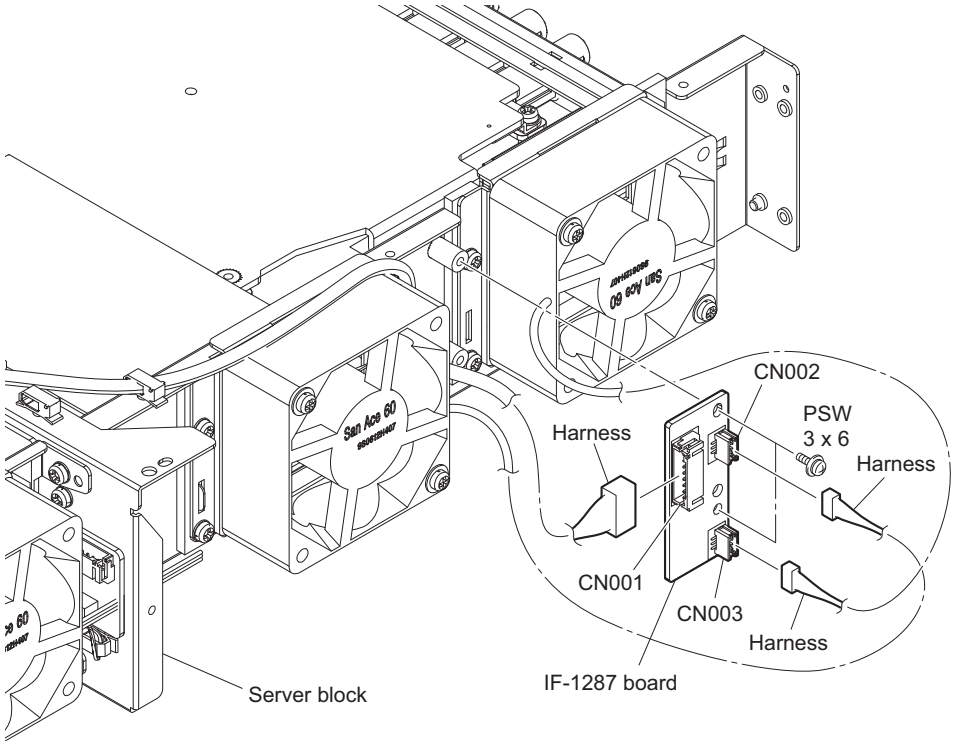
5-23. IF-1287 Board (Server Block)

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")

Procedure

1. Disconnect the three harnesses from the connectors (CN001 to CN003) on the IF-1287 board.
2. Remove the two screws, then remove the IF-1287 board.



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

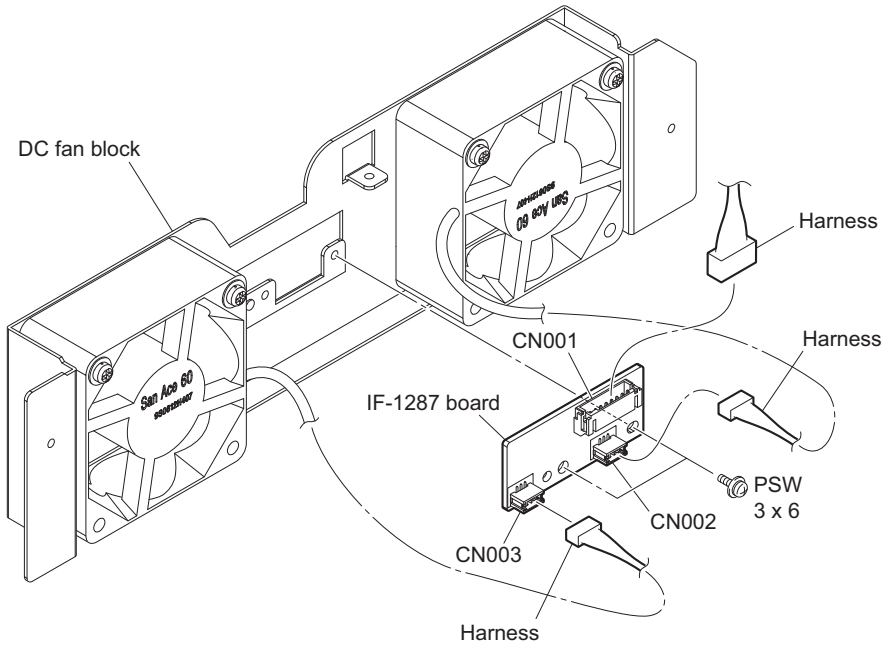
5-24. IF-1287 Board (BPU/NetMedia Block)

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Remove the DC fan block. (Refer to "5-13. Fan of BPU/NetMedia Block")

Procedure

1. Disconnect the three harnesses from the connectors (CN001 to CN003) on the IF-1287 board.
2. Remove the two screws, then remove the IF-1287 board.



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

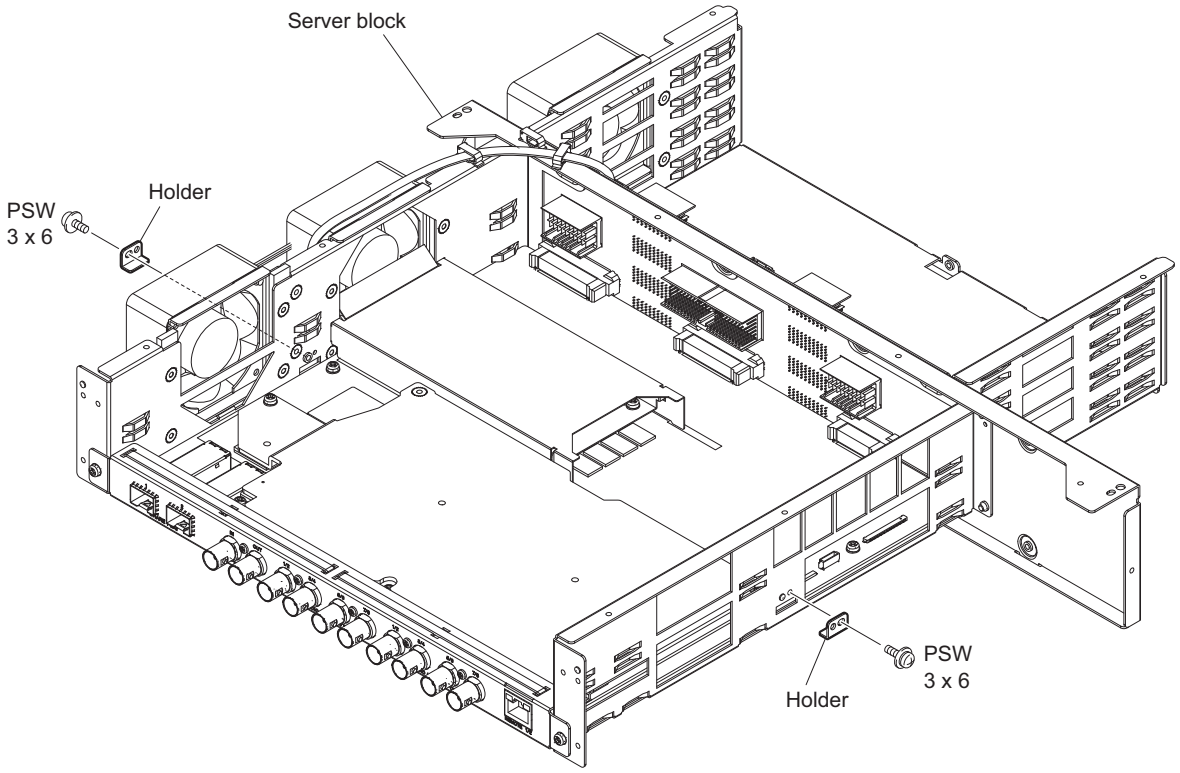
5-25. DM-156 Board

Preparation

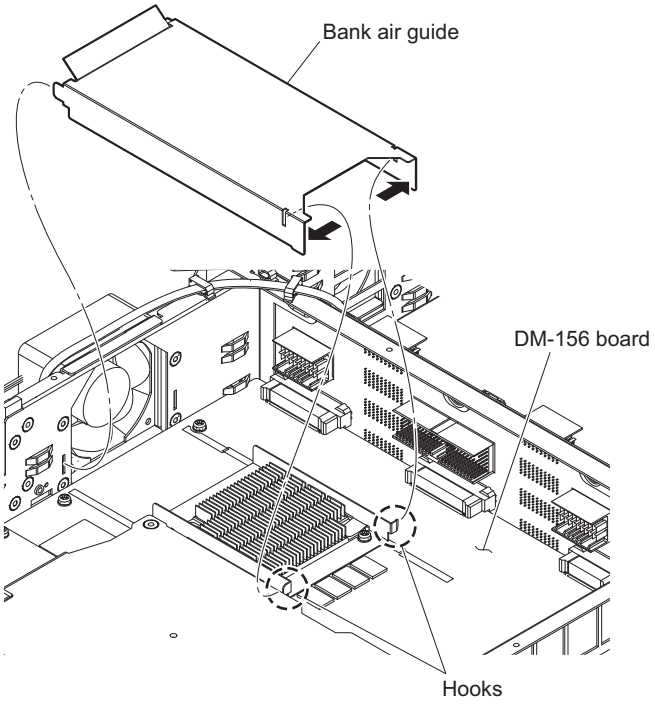
1. Remove the top panel. (Refer to “5-2. Top Panel”)
2. Remove the front panel assembly. (Refer to “5-3. Front Panel Assembly”)
3. Remove the MDC-20 board (SKC-MEM4). (Refer to “5-15. MDC-20 Board (SKC-MEM4)”)
4. Remove the SY assembly. (Refer to “5-4. SY Assembly”)
5. Remove the server block. (Refer to “5-5. Server Block”)
6. Remove the IF-1287 board (server block). (Refer to “5-23. IF-1287 Board (Server Block)”)

Procedure

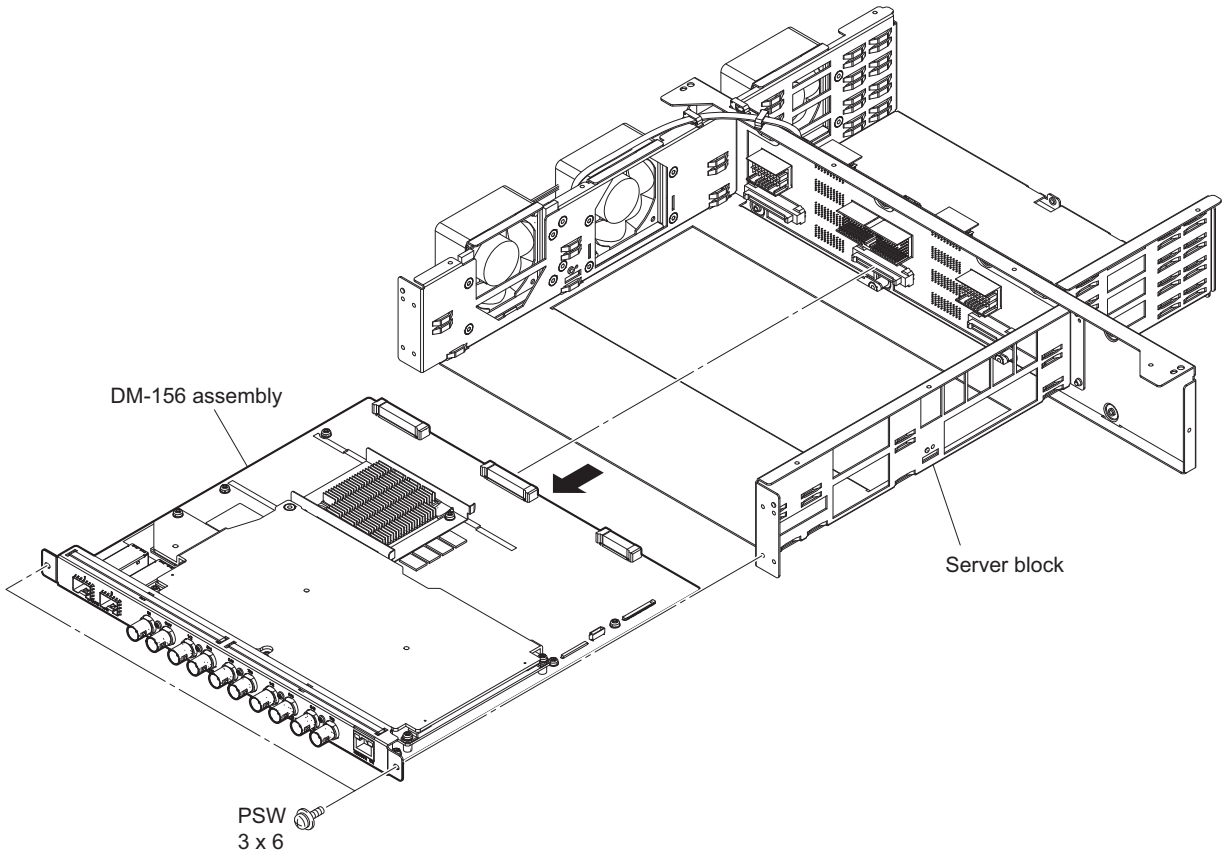
1. Remove the two screws, then remove the two holders.



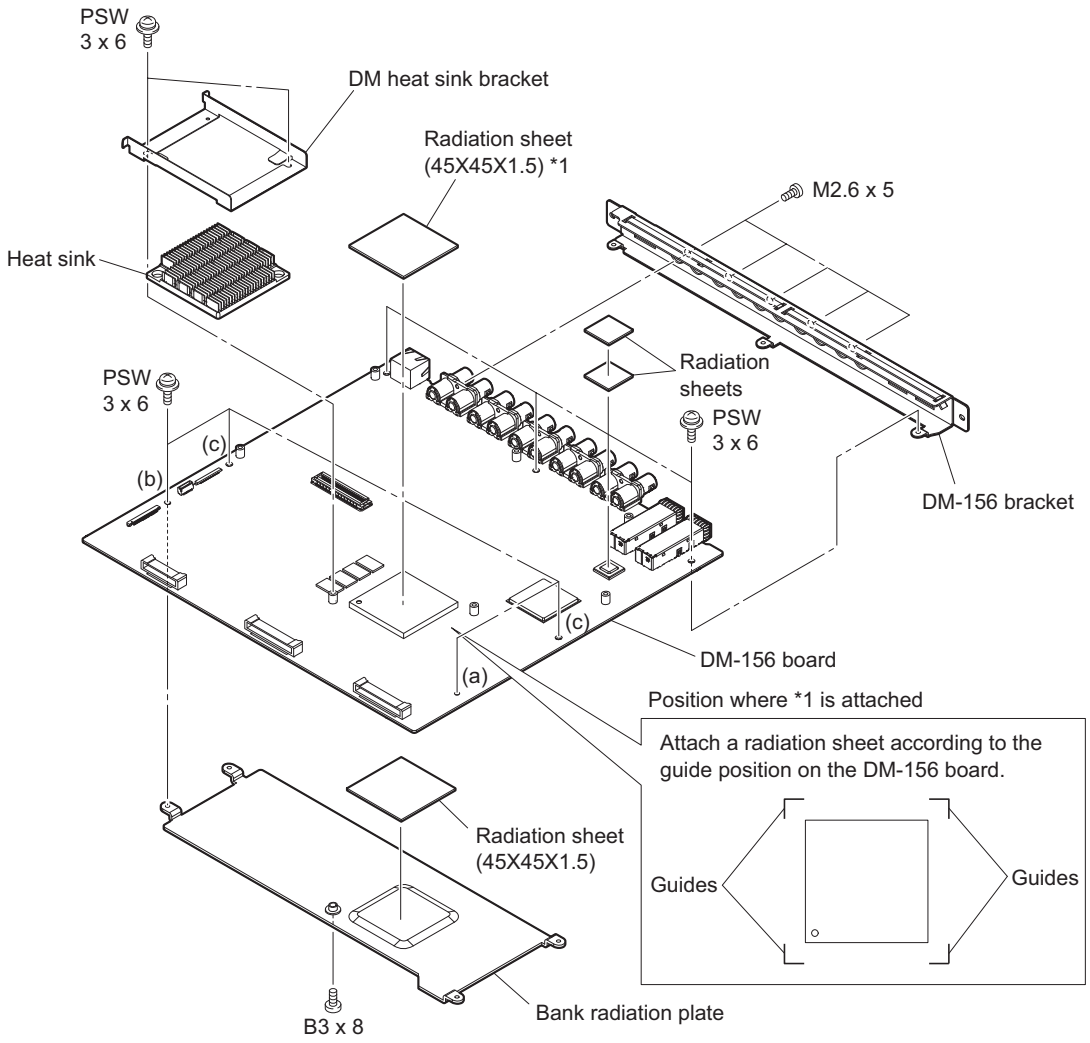
2. Spread out the bank air guide in the direction of the arrow, then remove it from two hooks.



3. Remove the two screws, then remove the DM-156 assembly.



4. Remove the DM-156 board.
   (1) Remove the ENC-168 board. (Refer to "5-23. IF-1287 Board (Server Block)")
   (2) Remove the five screws (M2.6 x 5) and three screws (PSW3 x 6), then remove the DM-156 bracket.
   (3) Remove the four screws (PSW3 x 6) and the screw (B3 x 8), then remove the bank radiation plate.
   (4) Remove the radiation sheet (45X45X1.5) from the bank radiation plate.
   (5) Remove the three radiation sheets from the DM-156 board.
   (6) Remove the two screws (PSW3 x 6), then remove the DM heat sink bracket and heat sink.



Note

Follow the procedure below when installing the bank radiation plate.
(1) Tighten the screw (a) temporarily.
(2) Tighten the screw (b).
(3) Tighten the screw (a) finally.
(4) Tighten the screw (c).
(5) Tighten the screw (B3 x 8).

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

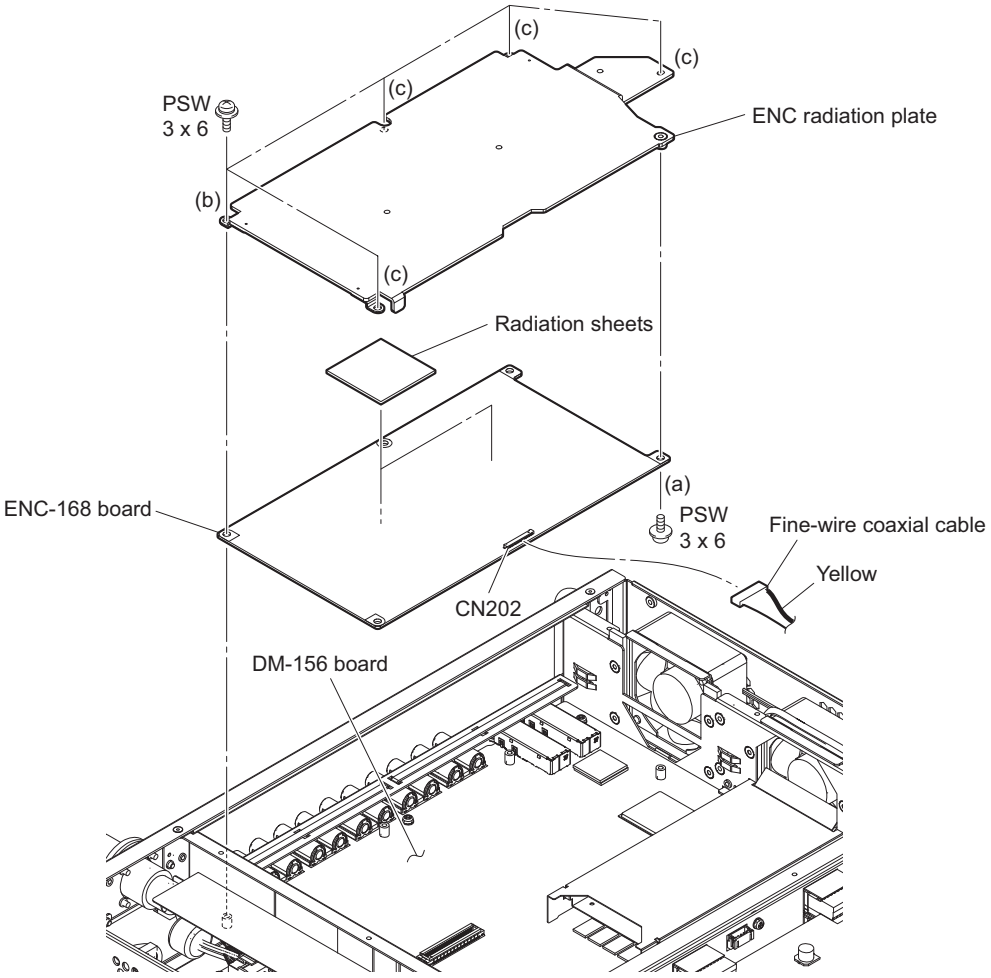
5-26. ENC-168 Board

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")

Procedure

1. Disconnect the fine-wire coaxial cable from the connector (CN202) on the ENC-168 board.
2. Remove the screw (a) and five screws (b) and (c), then remove the ENC radiation plate.
3. Remove the ENC-168 board.
4. Remove the two radiation sheets.



Note

When installing the ENC radiation plate, tighten the screws in the following sequence: (a), (b) and others.

Tip

Attach it to the ENC-168 board when a radiation sheet has been attached to the ENC radiation plate.

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

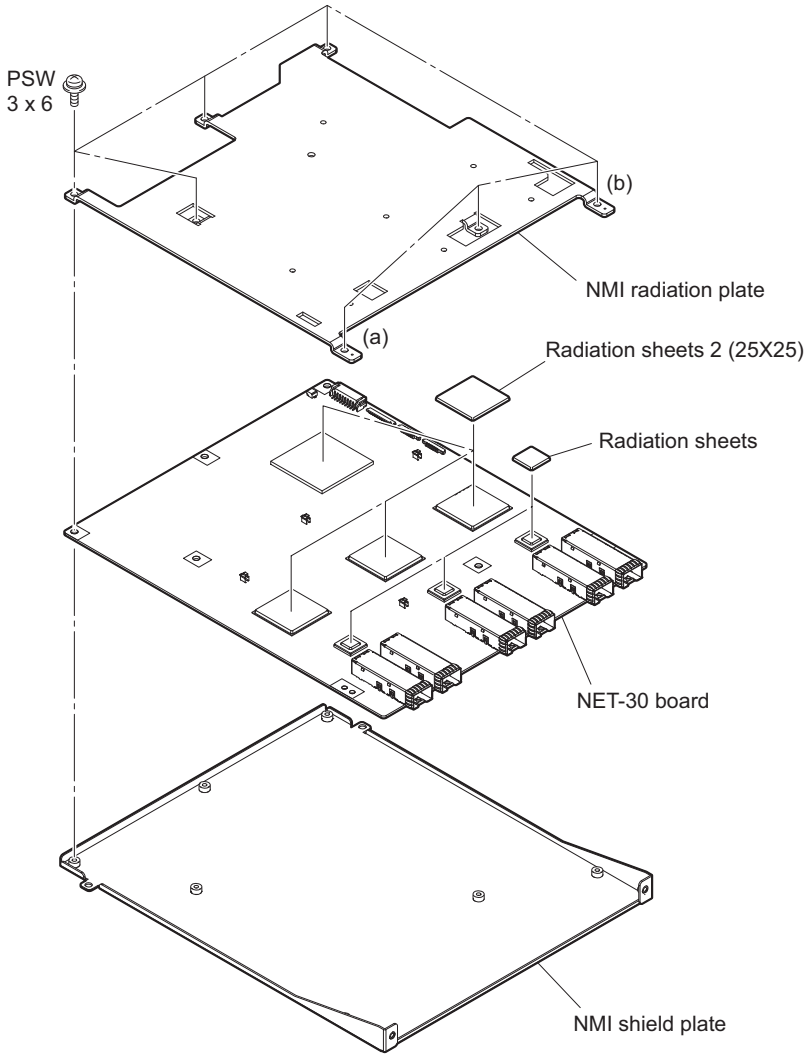
5-27. NET-30 Board

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")

Procedure

1. Remove the seven screws, then remove the NMI radiation plate.
2. Remove the three radiation sheets and four radiation sheets (2 (25X25)).
3. Remove the NET-30 board from the NMI shield plate.



Note

When installing the NMI shield plate, tighten the screws in the following sequence: (a), (b) and others.

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

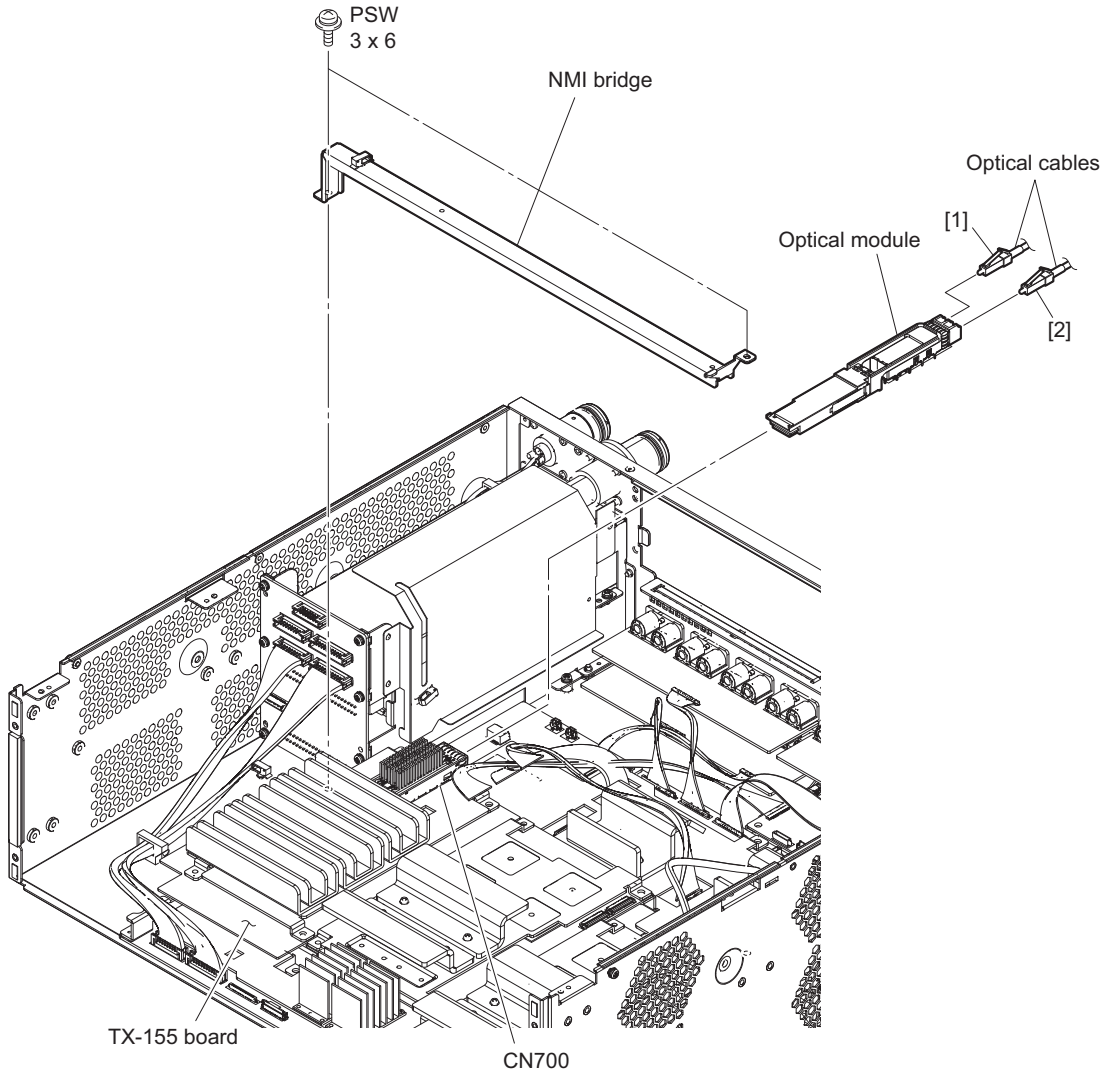
5-28. TX-155 Board

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")

Procedure

1. Remove the two screws, then remove the NMI bridge.
2. Disconnect the two optical cables.
3. Remove the optical module from the connector (CN700) on the TX-155 board.



Note

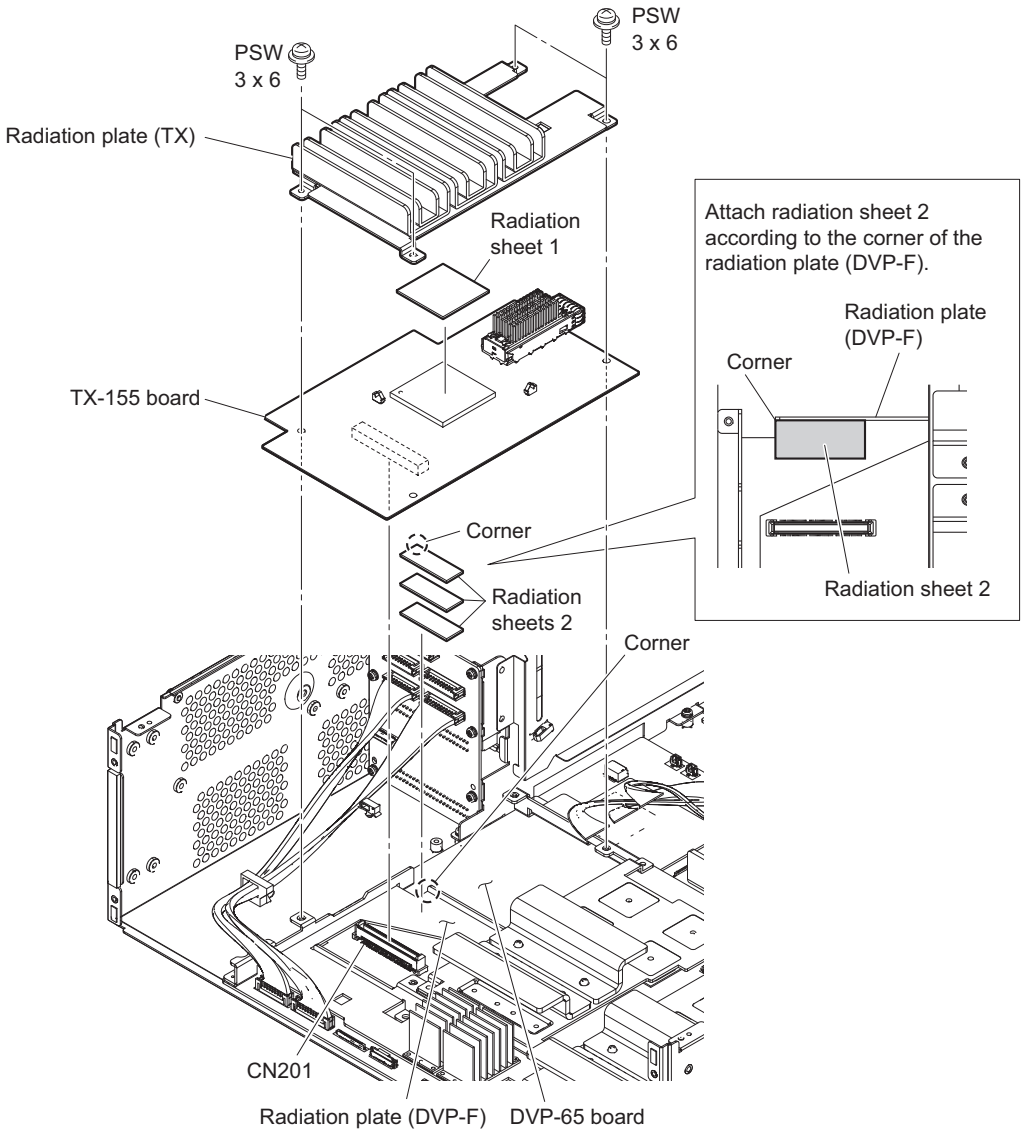
Be careful not to mistake the connector during connection when installing optical cables.

4. Remove the TX-155 board.
   (1) Remove the four screws, then remove the TX-155 board.

   Tip

   - Attach it to the TX-155 board when radiation sheet 1 has been attached to the radiation plate (TX).
   - Attach it to the radiation plate (DVP-F) when radiation sheet 2 has been attached to the TX-155 board.

   (2) Remove the radiation plate (TX) and radiation sheet from the TX-155 board.

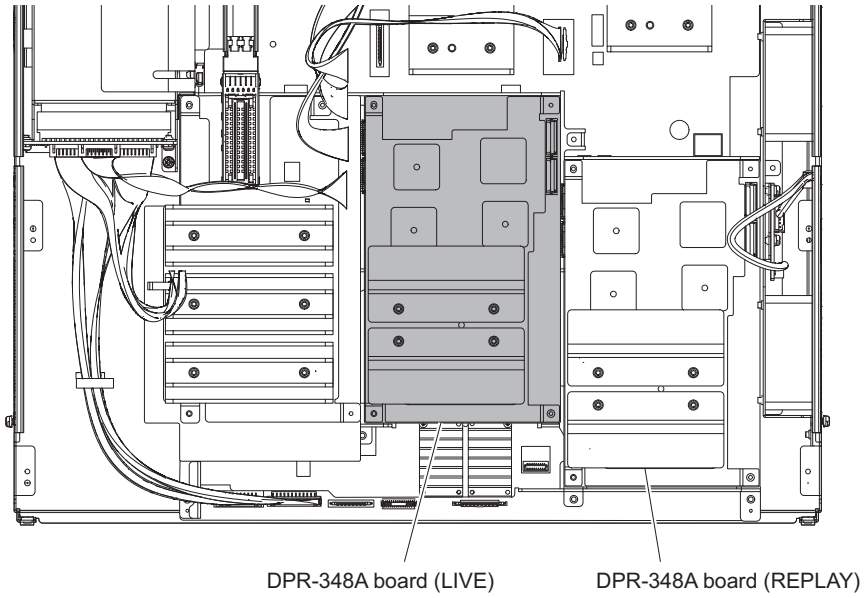


5. Install the removed parts by reversing the steps of removal.

5-29. DPR-348A Board (LIVE)

Note

- The parts described below cannot be reused. Prepare new parts.
  - Radiation sheet (A), radiation sheet (2 (25X25)), and radiation sheet (2 (15X60))
- Be careful not to install it in the DPR-348A board (REPLAY) when removing and replacing the DPR-348A board (LIVE). This unit does not operate when the DPR-348A board (LIVE) is installed improperly.
- Perform "6-2. PLD" operation when the DPR-348A board (LIVE) is replaced.

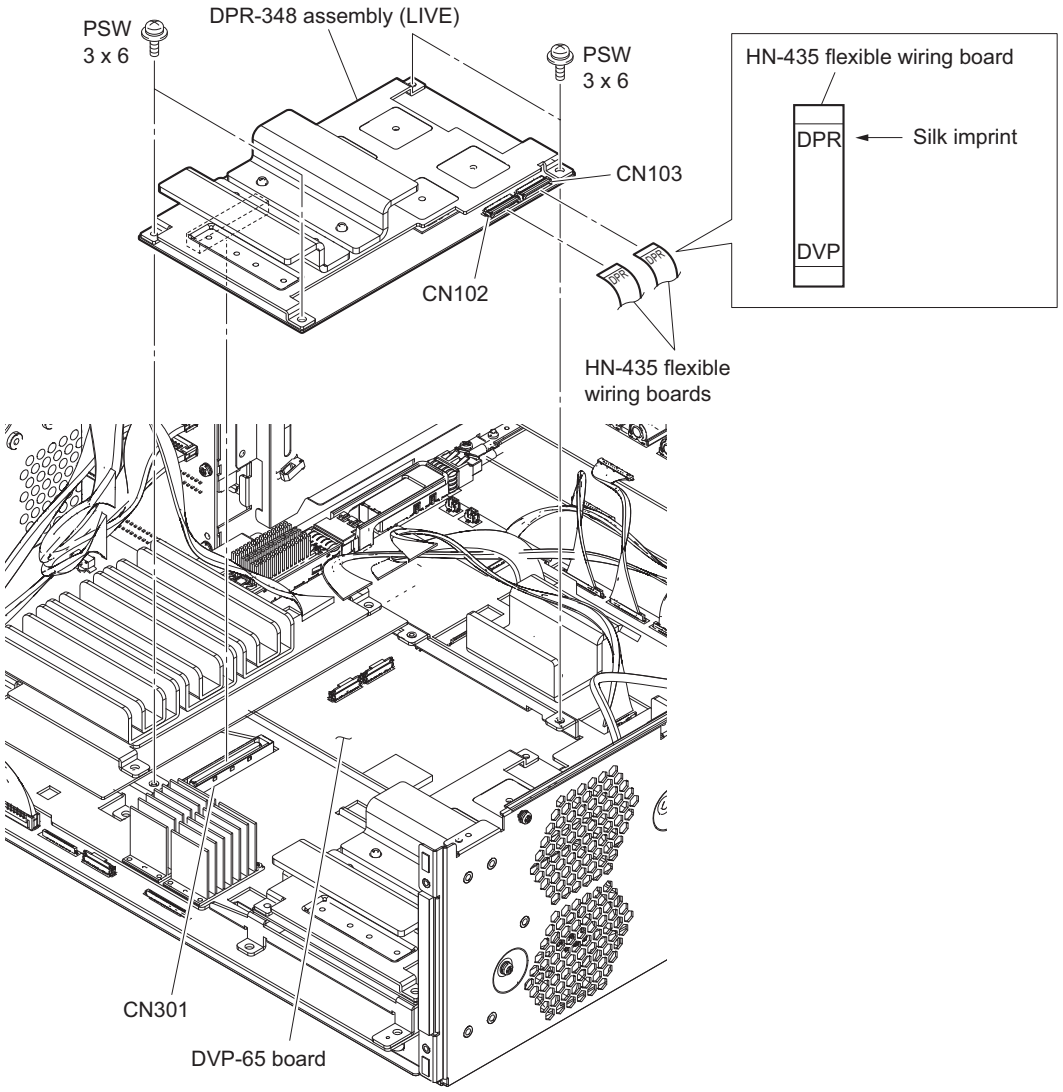


Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Remove the NMI bridge. (Refer to "5-13-1. DC Fan 4 (Front) and DC Fan 5 (Center)")

Procedure

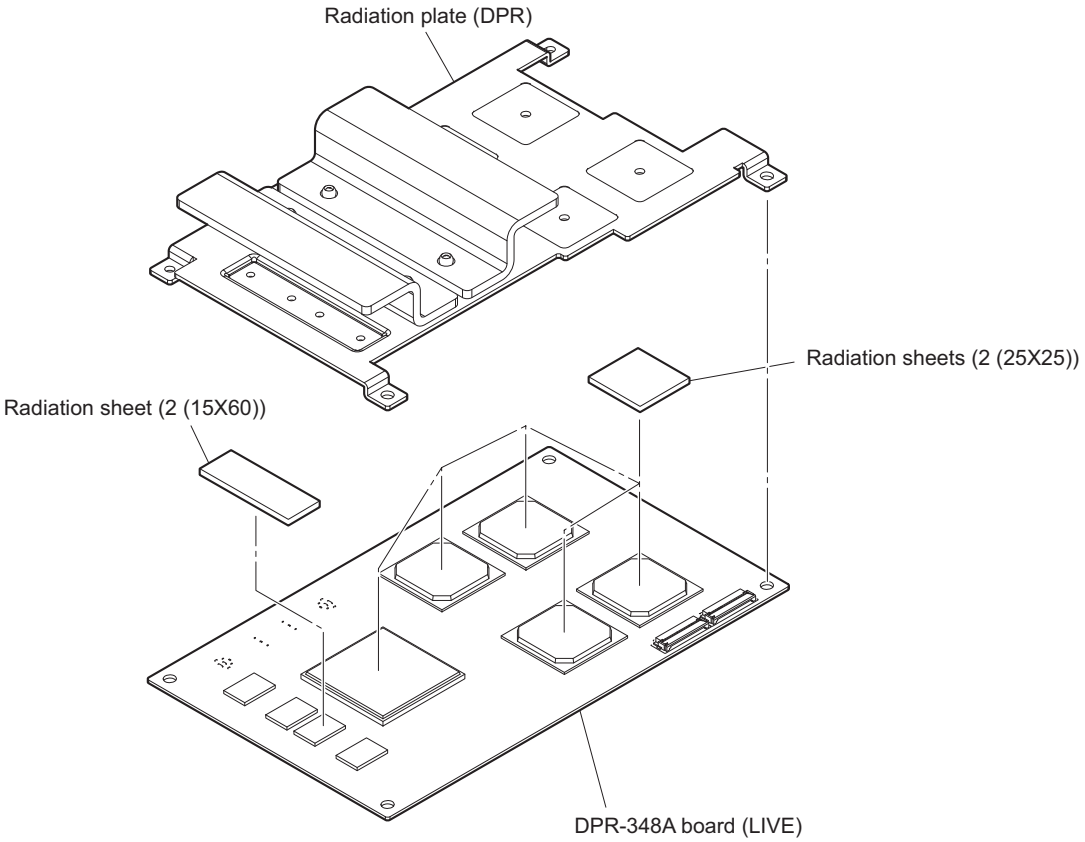
1. Remove the DPR-348 assembly (LIVE).
   (1) Disconnect the two HN-435 flexible wiring boards from the connectors (CN102 and CN103) on the DPR-348 assembly (LIVE).
   (2) Remove the four screws, then remove the DPR-348 assembly (LIVE).



Note

The HN-435 flexible wiring boards have the orientation. When connecting the HN-435 flexible wiring boards, check the silk imprint (DPR) before attaching them.

2. Remove the DPR-348A board (LIVE).
   (1) Remove the radiation plate (DPR) from the DPR-348A board (LIVE)
   (2) Remove the radiation sheets (2 (25X25)) and radiation sheet (2 (15X60)) from the DPR-348A board (LIVE).



Note

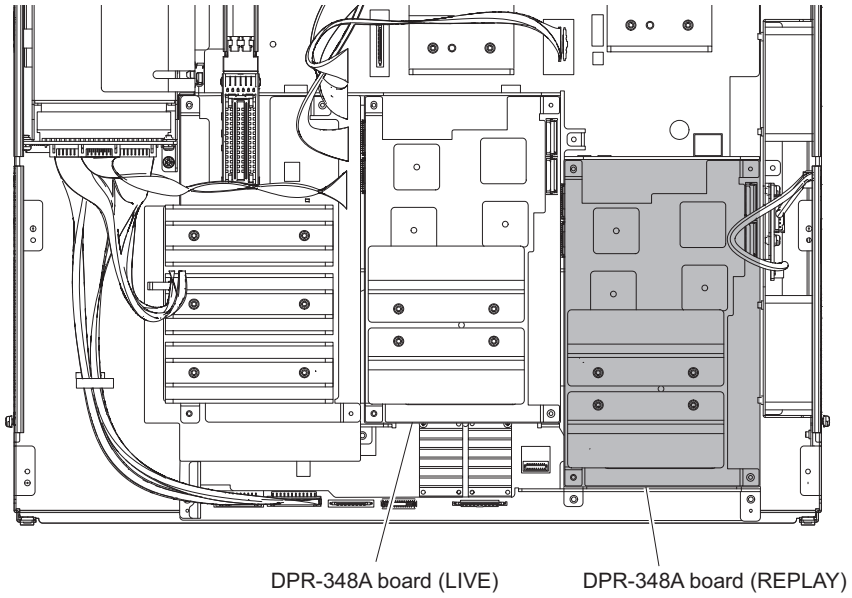
Attach the radiation sheets to the position shown in the figure.

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

5-30. DPR-348A Board (REPLAY)

Note

- The parts described below cannot be reused. Prepare new parts.
  - Radiation sheet (2 (25X25)), and radiation sheet (2 (15X60))
- Be careful not to install it in the DPR-348A board (LIVE) when removing and replacing the DPR-348A board (REPLAY). This unit does not operate when the DPR-348A board (REPLAY) is installed improperly.
- Perform "6-2. PLD" operation when the DPR-348A board (REPLAY) is replaced.

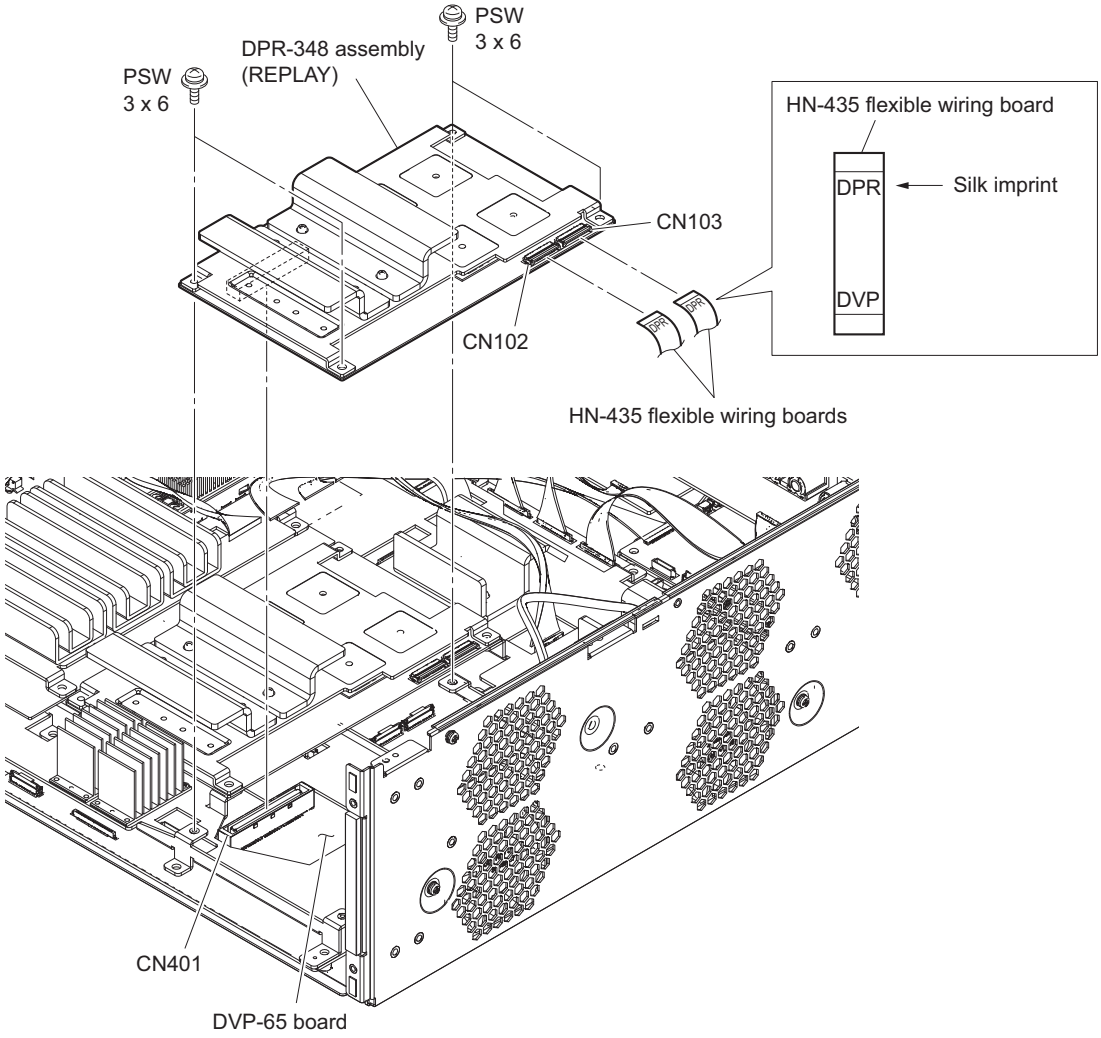


Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Remove the NMI bridge. (Refer to "5-13-1. DC Fan 4 (Front) and DC Fan 5 (Center)")

Procedure

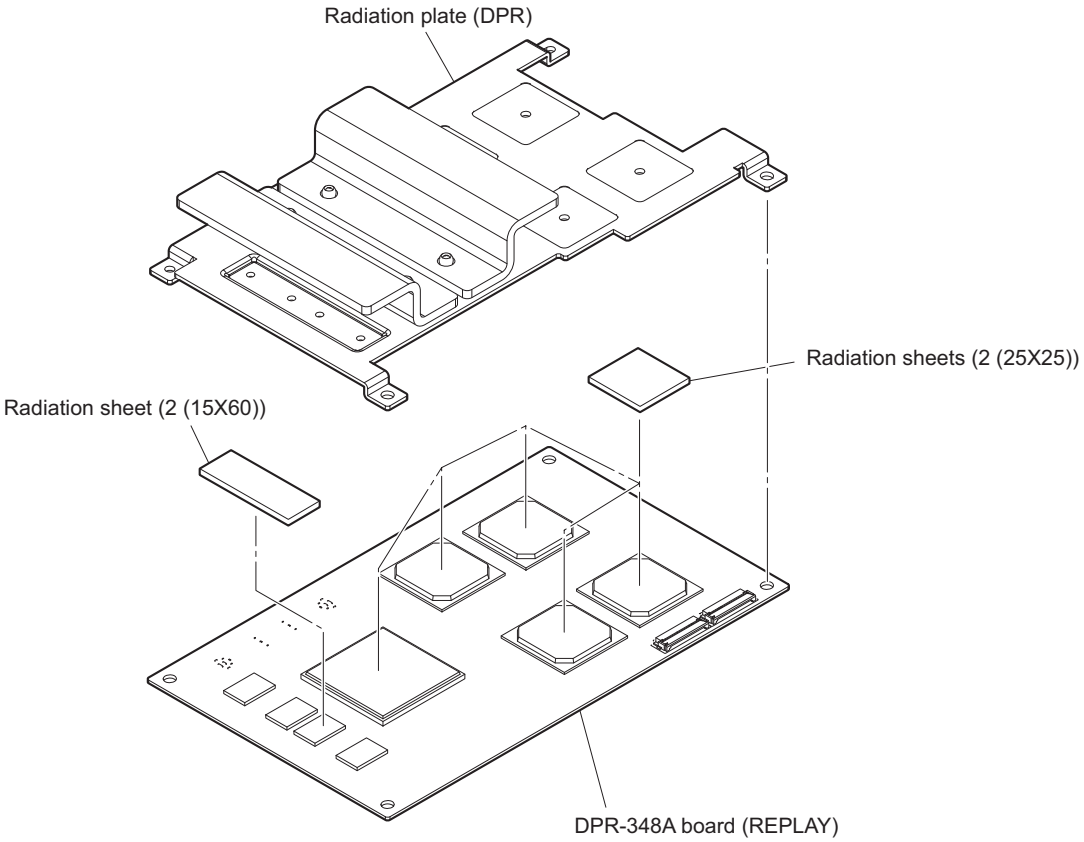
1. Remove the DPR-348 assembly (REPLAY).
   (1) Disconnect the two HN-435 flexible wiring boards from the connectors (CN102 and CN103) on the DPR-348 assembly (REPLAY).
   (2) Remove the four screws, then remove the DPR-348 assembly (REPLAY).



Note

The HN-435 flexible wiring boards have the orientation. When connecting the HN-435 flexible wiring boards, check the silk imprint (DPR) before attaching them.

2. Remove the DPR-348A board (REPLAY).
   (1) Remove the radiation plate (DPR) from the DPR-348A board (REPLAY).
   (2) Remove the radiation sheets (2 (25X25)) and radiation sheet (2 (15X60)) from the DPR-348A board (REPLAY).



Note

Attach the radiation sheets to the position shown in the figure.

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

5-31. DVP-65 Board

When the DVP-65 board is replaced, perform the operation after replacement while referring to "6-2. PLD".

Note

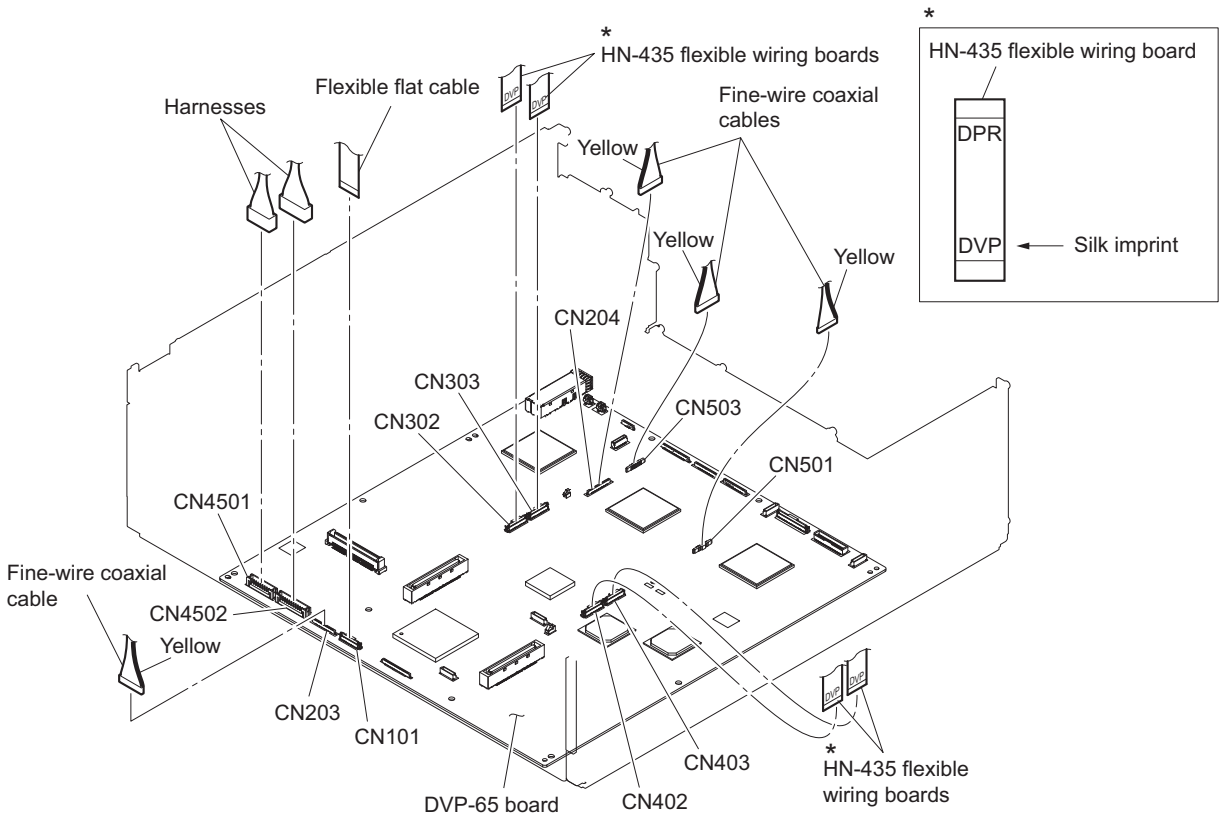
- The parts described below cannot be reused. Prepare new parts.
  - Radiation sheet (2 (35X35))

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Remove the rear panel block. (Refer to "5-9. Rear Panel Block")
8. Remove the NMI bridge. (Refer to "5-13-1. DC Fan 4 (Front) and DC Fan 5 (Center)")
9. Remove the TX-155 board. (Refer to "5-28. TX-155 Board")
10. Remove the DPR-348A board (LIVE). (Refer to "5-29. DPR-348A Board (LIVE)")
11. Remove the DPR-348A board (REPLAY). (Refer to "5-30. DPR-348A Board (REPLAY)")

Procedure

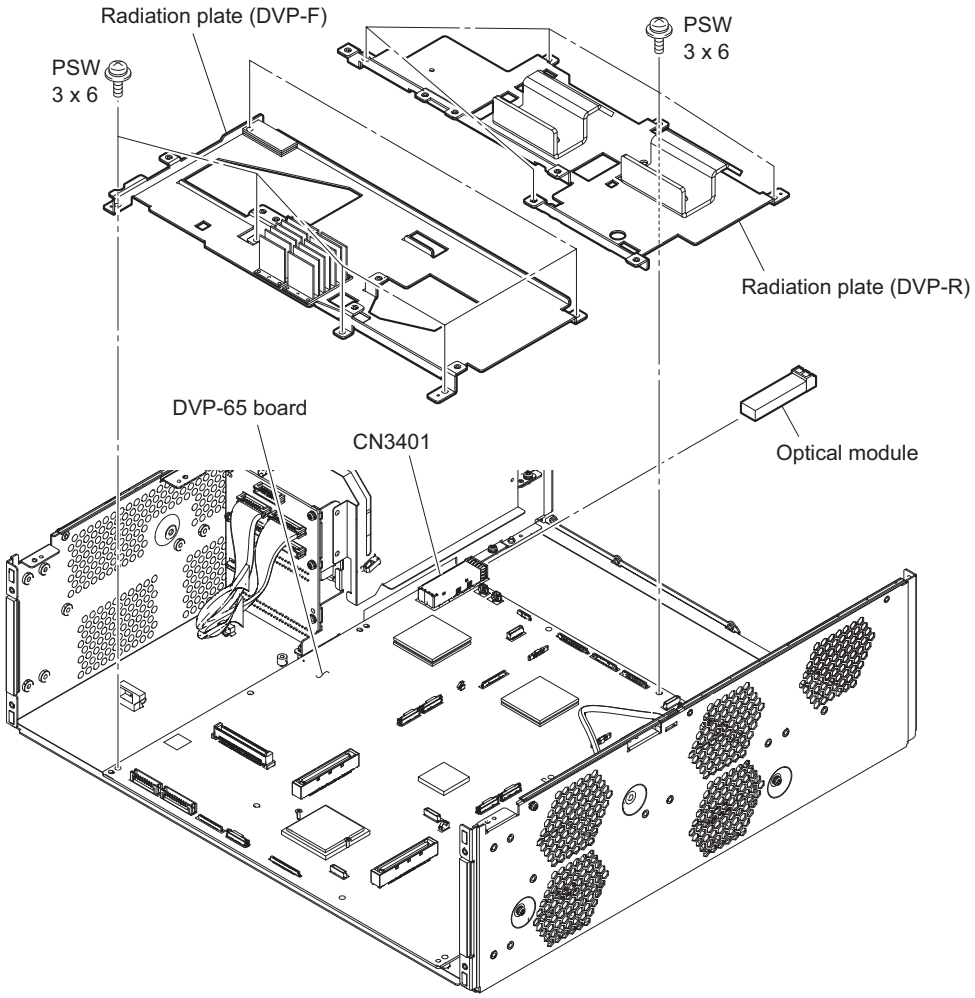
1. Disconnect all harnesses, fine-wire coaxial cable, flexible flat cable and HN-435 flexible wiring boards connected to the DVP-65 board.



Note

The HN-435 flexible wiring boards have the orientation. When connecting the HN-435 flexible wiring boards, check the silk imprint (DVP) before attaching them.

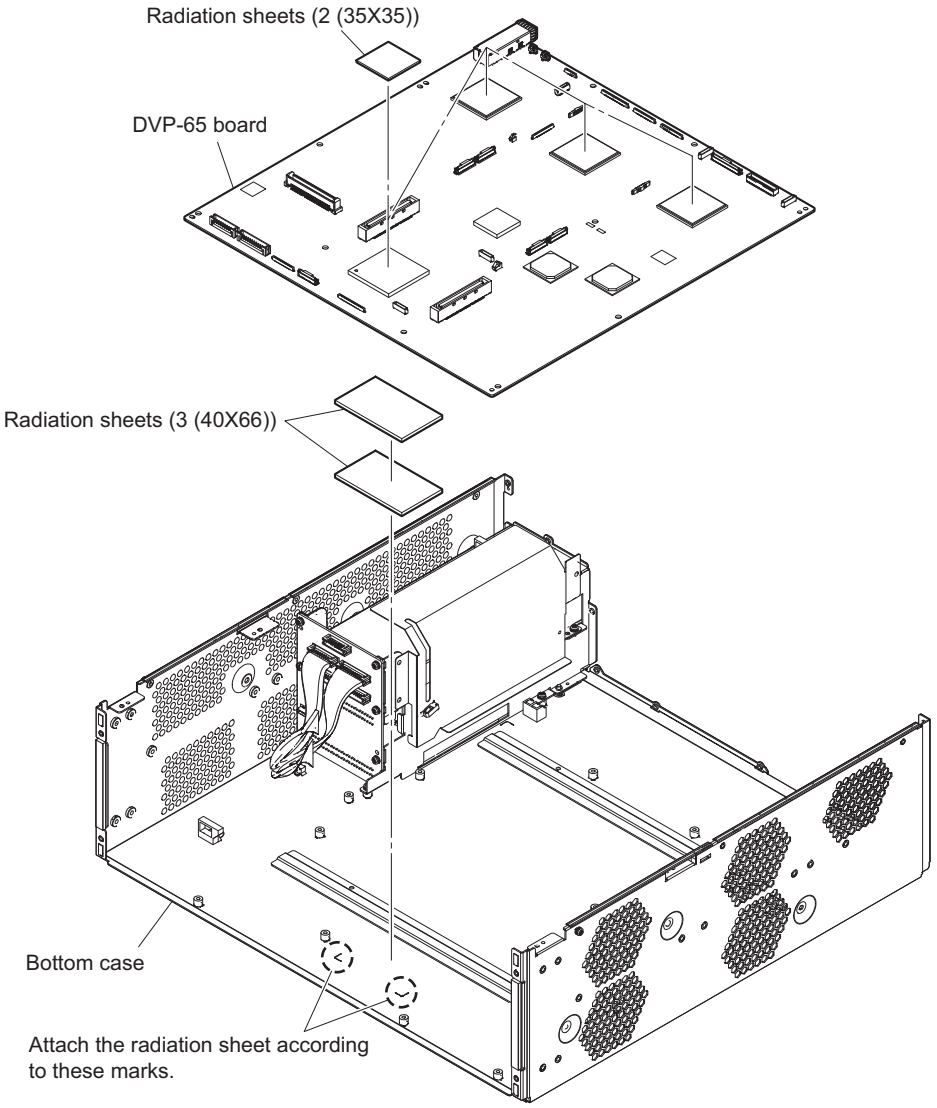
2. Remove the optical module and radiation plate.
   (1) Remove the optical module from the connector (CN3401) on the DVP-65 board.
   (2) Remove the six screws, then remove the radiation plate (DVP-F).
   (3) Remove the five screws, then remove the radiation plate (DVP-R).



3. Remove the DVP-65 board.
   (1) Remove the DVP-65 board.
   (2) Remove the four radiation sheets (2 (35X35)).

Tip

Attach it to the bottom case when the radiation sheet (3 (40X66)) has been attached to the DVP-65 board.



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

5-32. CN-3784 Board

Tip

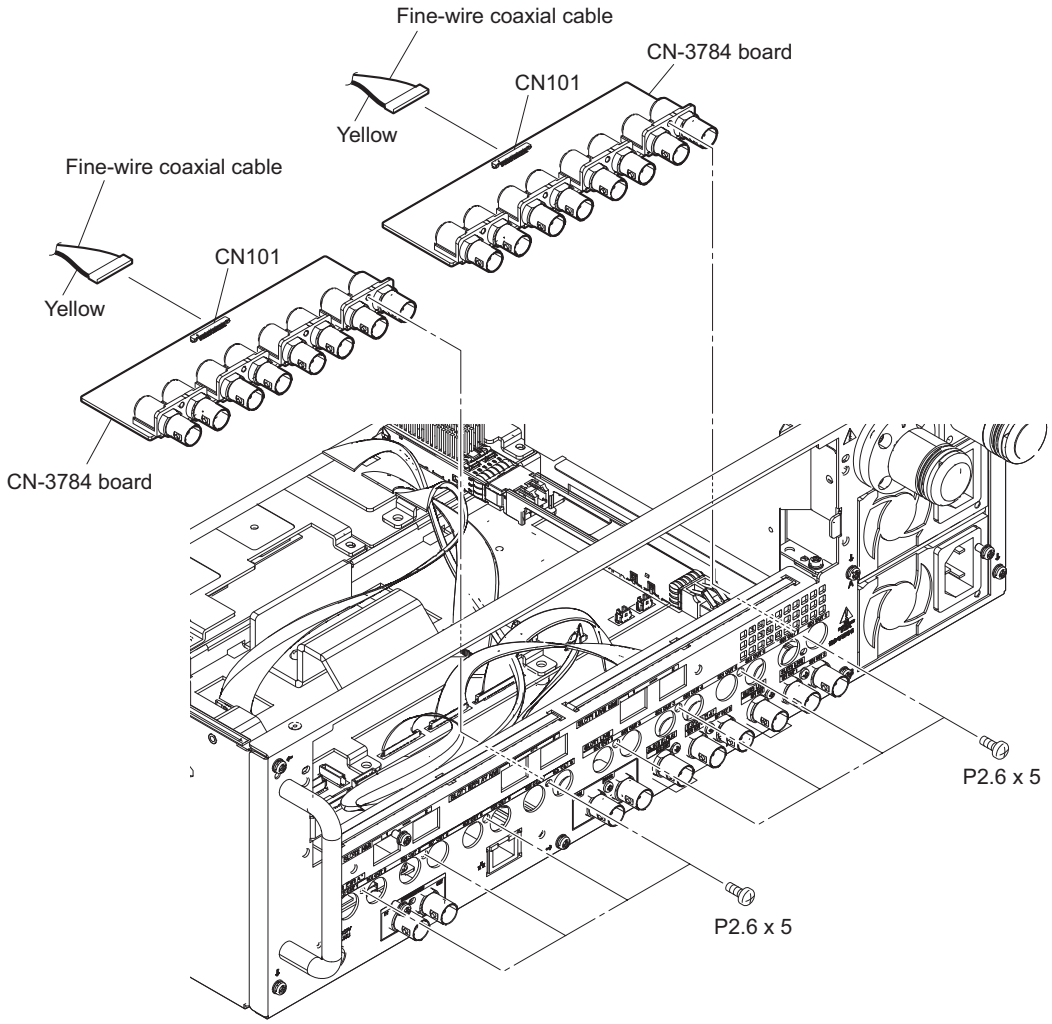
Two CN-3784 boards are installed. They are the same in the procedure for removal.

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")

Procedure

1. Disconnect the fine-wire coaxial cable from the connector (CN101) on the CN-3784 board.
2. Remove the four screws, then remove the CN-3784 board.



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

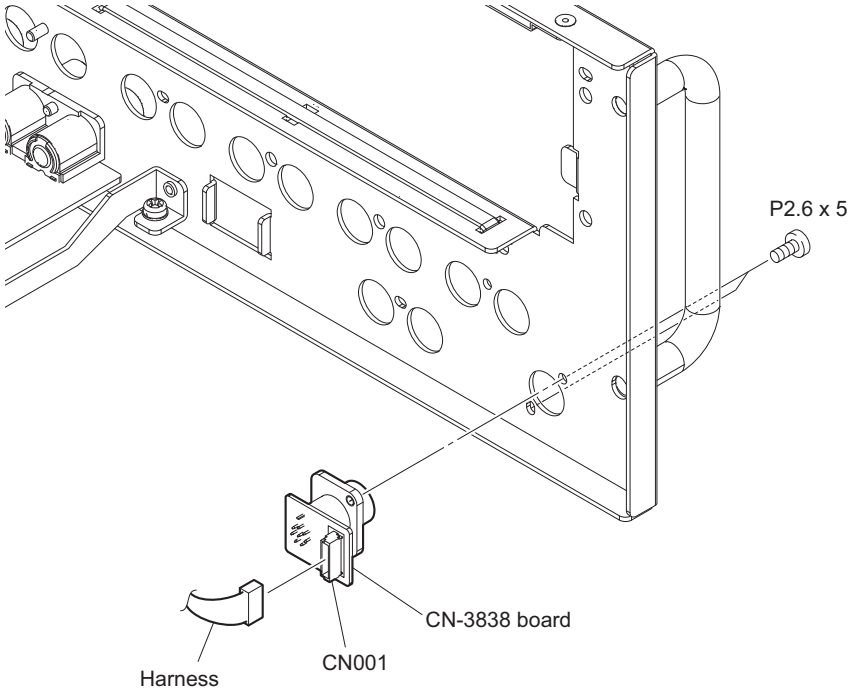
5-33. CN-3838 Board

Preparation

1. Remove the top panel. (Refer to “5-2. Top Panel”)
2. Remove the front panel assembly. (Refer to “5-3. Front Panel Assembly”)
3. Remove the MDC-20 board (SKC-MEM4). (Refer to “5-15. MDC-20 Board (SKC-MEM4)”)
4. Remove the SY assembly. (Refer to “5-4. SY Assembly”)
5. Remove the server block. (Refer to “5-5. Server Block”)
6. Remove the NetMedia block. (Refer to “5-6. NetMedia Block”)
7. Remove the rear panel block. (Refer to “5-9. Rear Panel Block”)
8. Remove the SY-422 board. (Refer to “5-35. AT-189 and SY-442 Boards”)

Procedure

1. Disconnect the harness from the connector (CN001) on the CN-3838 board.
2. Remove the two screws, then remove the CN-3838 board in the direction of the arrow.



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

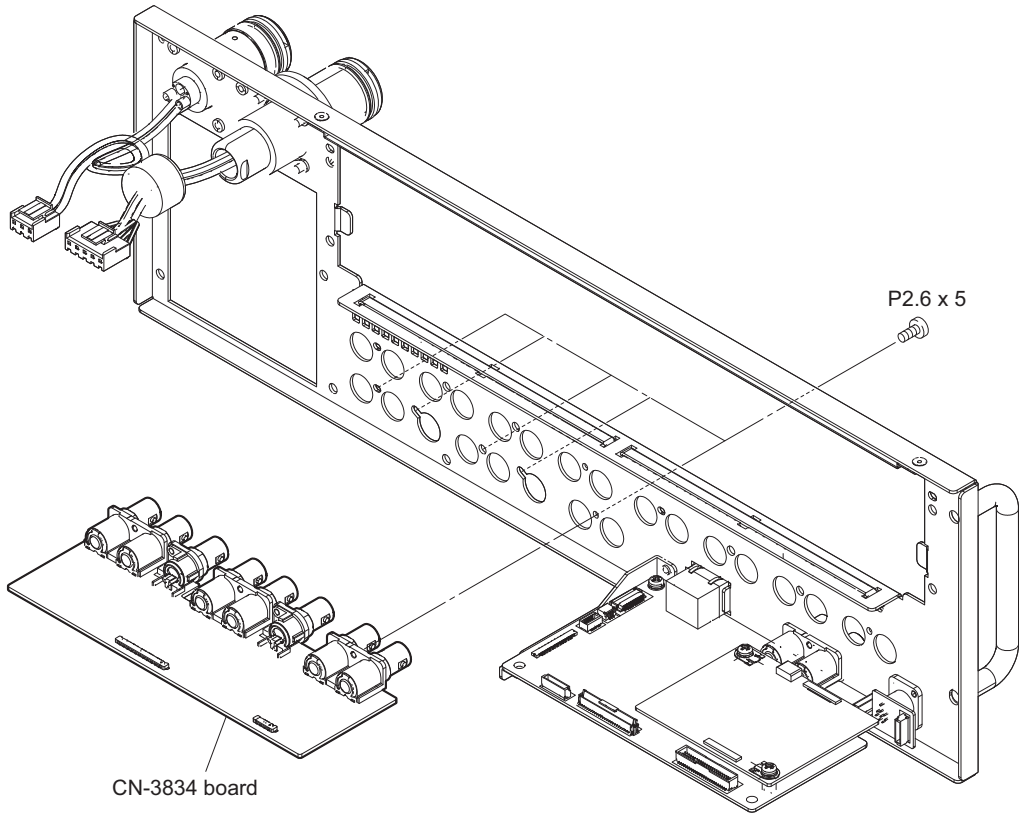
5-34. CN-3834 Board

Preparation

1. Remove the top panel. (Refer to “5-2. Top Panel”)
2. Remove the front panel assembly. (Refer to “5-3. Front Panel Assembly”)
3. Remove the MDC-20 board (SKC-MEM4). (Refer to “5-15. MDC-20 Board (SKC-MEM4)”)
4. Remove the SY assembly. (Refer to “5-4. SY Assembly”)
5. Remove the server block. (Refer to “5-5. Server Block”)
6. Remove the NetMedia block. (Refer to “5-6. NetMedia Block”)
7. Remove the rear panel block. (Refer to “5-9. Rear Panel Block”)

Procedure

1. Remove the five screws, then remove the CN-3834 board.



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

5-35. AT-189 and SY-442 Boards

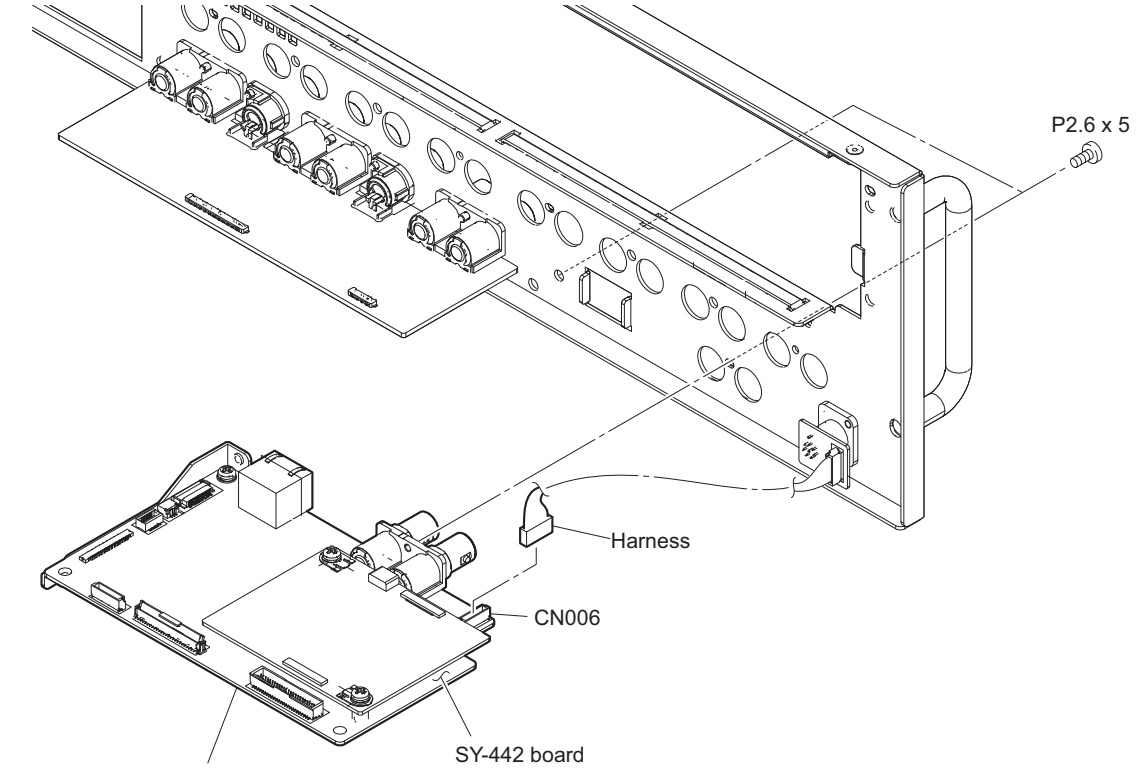
When the SY-442 board is replaced, perform the operation after replacement while referring to "6-2. PLD".

Preparation

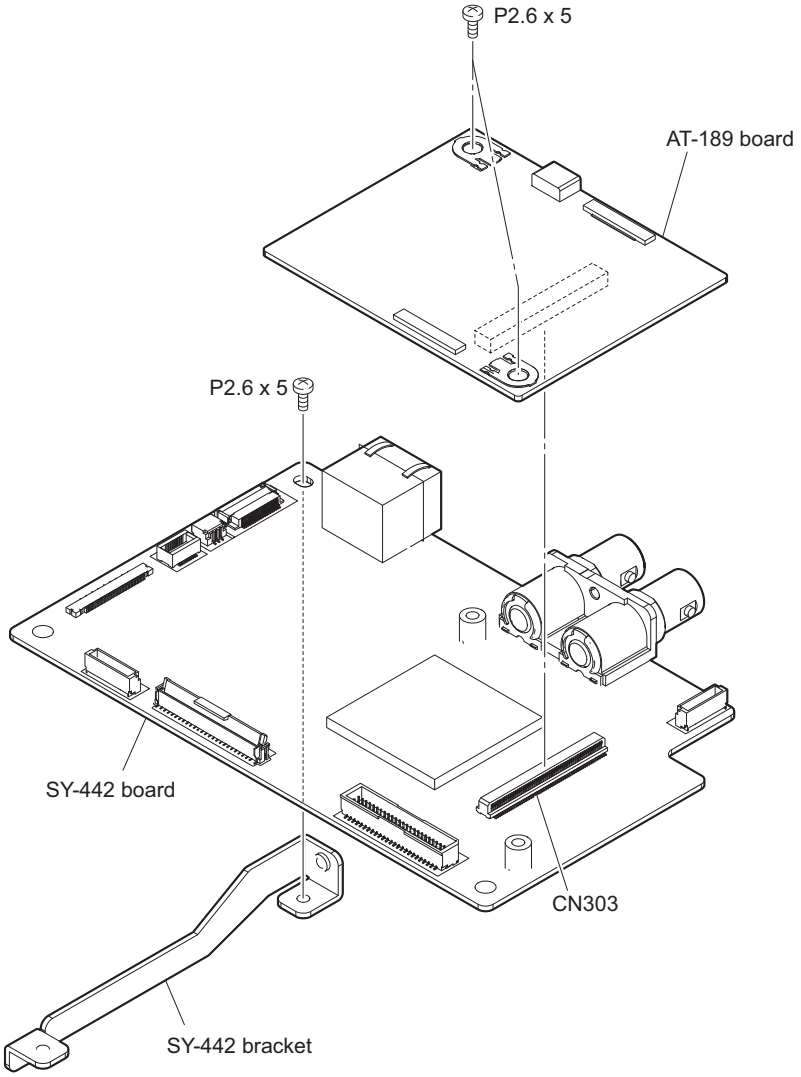
1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Remove the rear panel block. (Refer to "5-9. Rear Panel Block")

Procedure

1. Disconnect the harness from the connector (CN006) on the SY-442 board.
2. Remove the two screws, then remove the integrated SY-442 and AT-189 board block.



3. Remove the AT-189 board.
   (1) Remove the two screws.
   (2) Remove the AT-189 board from the connector (CN303) on the SY-442 board.
   (3) Remove the screw, then remove the SY-442 bracket.



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

5-36. Lithium Battery

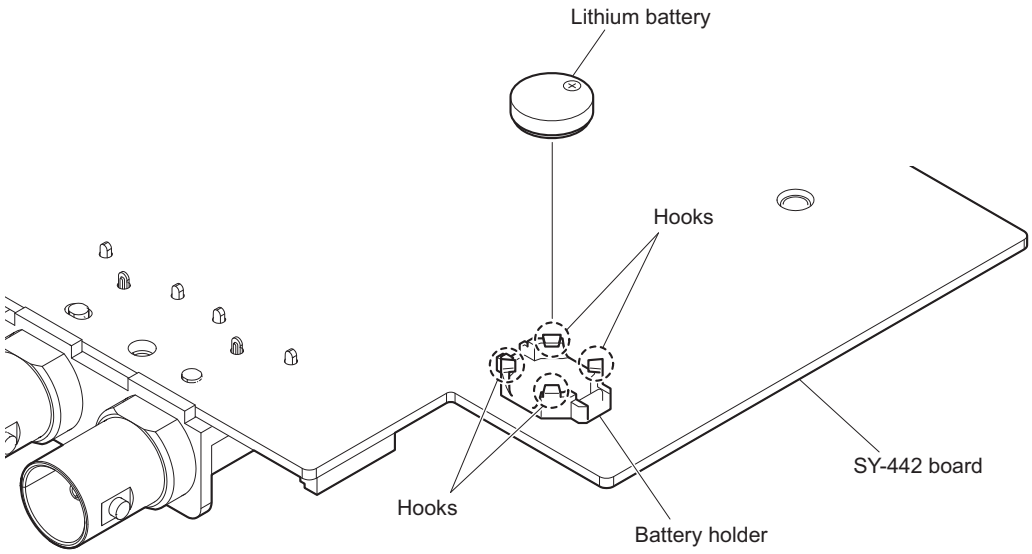
5-36-1. SY-442 Board

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")
5. Remove the server block. (Refer to "5-5. Server Block")
6. Remove the NetMedia block. (Refer to "5-6. NetMedia Block")
7. Remove the rear panel block. (Refer to "5-9. Rear Panel Block")
8. Remove the integrated SY-442 and AT-189 board block. (Refer to "5-35. AT-189 and SY-442 Boards")

Procedure

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



Note

Put it in the direction shown in the figure when installing the lithium battery.

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

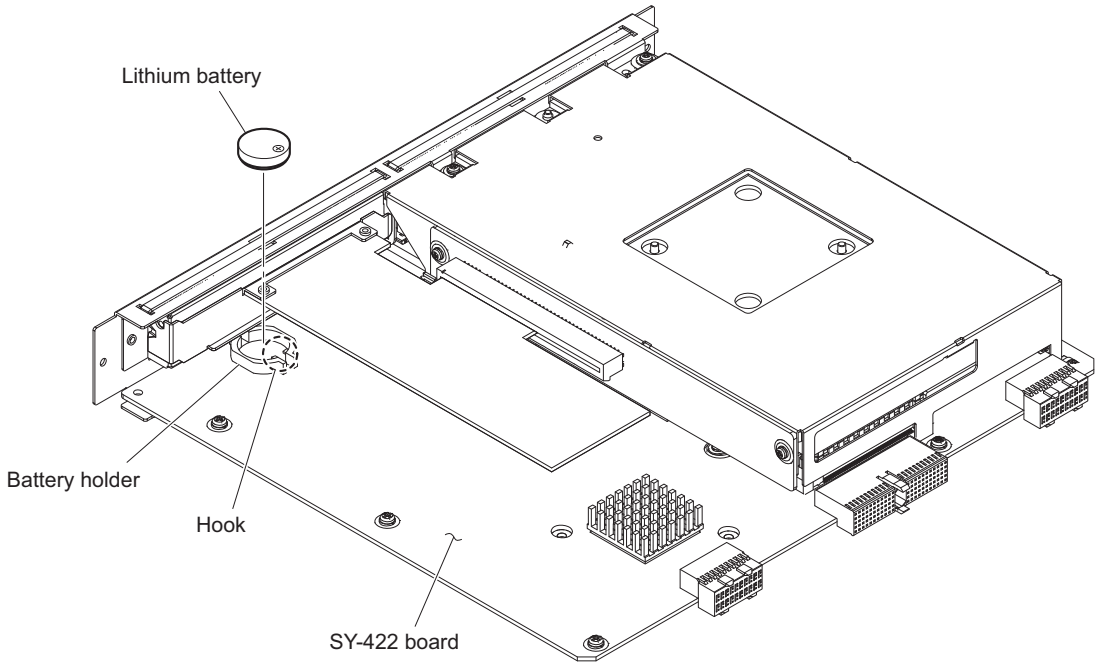
5-36-2. SY-422 Board

Preparation

1. Remove the top panel. (Refer to "5-2. Top Panel")
2. Remove the front panel assembly. (Refer to "5-3. Front Panel Assembly")
3. Remove the MDC-20 board (SKC-MEM4). (Refer to "5-15. MDC-20 Board (SKC-MEM4)")
4. Remove the SY assembly. (Refer to "5-4. SY Assembly")

Procedure

1. Remove the lithium battery from the hook of a battery holder.



Note

Put it in the direction shown in the figure when installing the lithium battery.

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

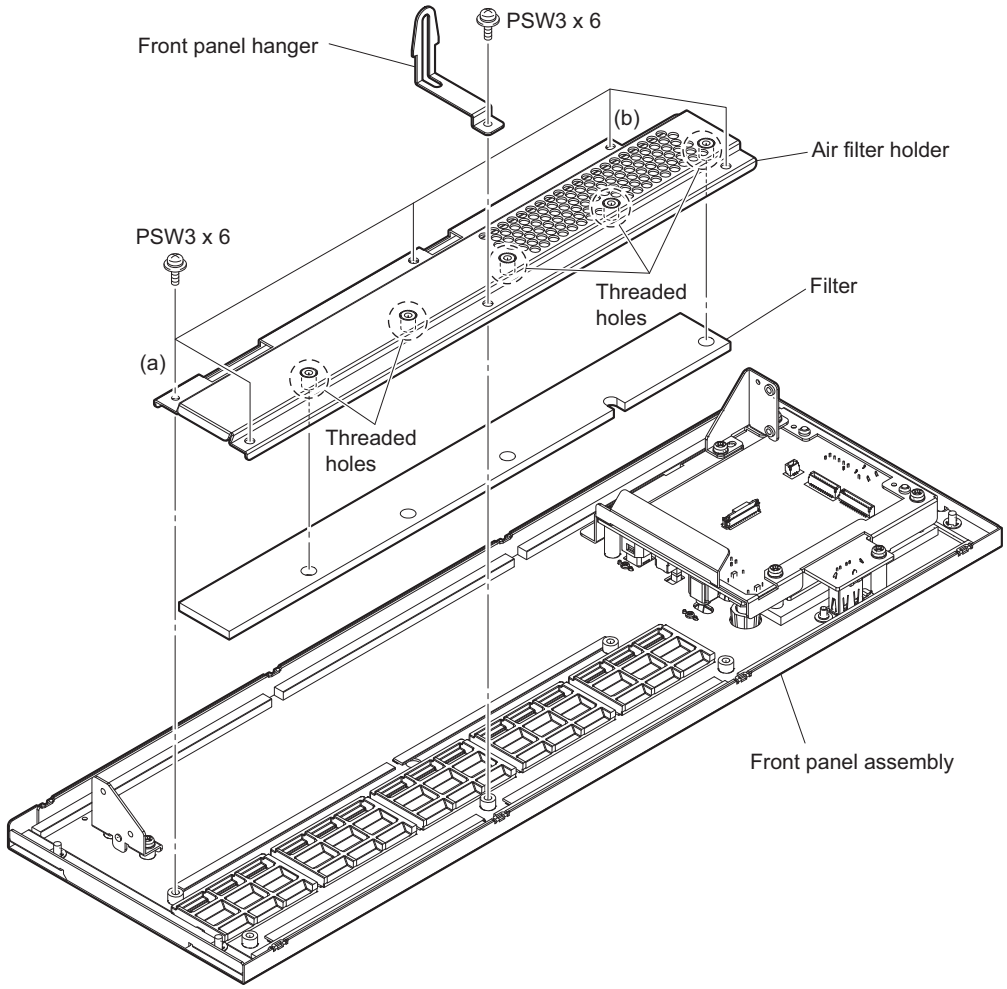
5-37. Filter

Preparation

1. Open the front panel assembly. (Refer to "5-3. Front Panel Assembly")

Procedure

1. Remove the screw, then remove the front panel hanger.
2. Remove the five screws, then remove the air filter holder.
3. Remove the filter.



Note

- Align it with the threaded holes when installing the filter.
- When installing the air filter holder, tighten the screws in the following sequence: (a), (b) and others.

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

Section 6
Upgrade

6-1. Upgrading Software Programs

Software programs stored in the ROM (IC401) on the AT-189 board is upgraded by using a USB drive.
The software programs include camera application, operating system (OS), update software programs, and NMI LSI firmware 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 lower side of the control knob on the front panel. Detach the USB connector cover to connect the USB drive.

6-1-1. Upgrading Camera 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 (bpu4800_app.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive
   \MSSONY\PRO\CAMERA\BPU4800
2. Copy the data file for update “bpu4800_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. Display the SOFTWARE PACKAGE page of the SERVICE menu.

   Tip

   For the SERVICE menu, refer to “8-2. SERVICE Menu”.

4. Select “CAMERA APP” 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 ROM VERSION page of the DIAGNOSIS menu.

6-1-2. 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 (bpu4800_os.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive
   \MSSONY\PRO\CAMERA\BPU4800
2. Copy the data file for update “bpu4800_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. Display the SOFTWARE PACKAGE page of the SERVICE menu.

   Tip

   For the SERVICE menu, refer to “8-2. 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 ROM VERSION page of the DIAGNOSIS menu.

6-1-3. 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.

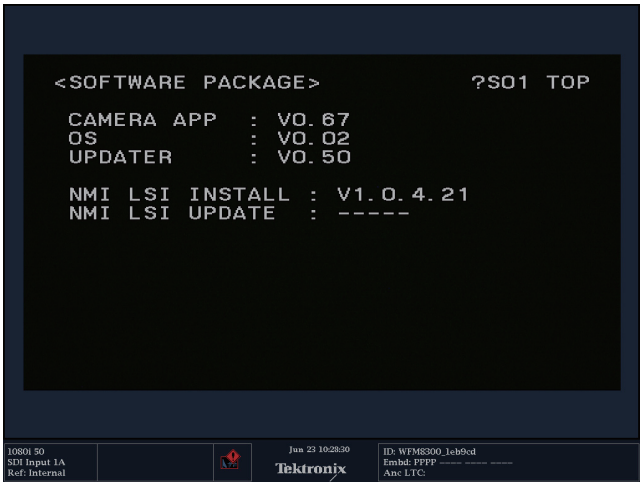
Note

For how to obtain the data file for update (bpu4800_updater.pkg), contact your local Sony Sales Office/Service Center.

1. Create the following directory in the USB drive
   \MSSONY\PRO\CAMERA\BPU4800
2. Copy the data file for update “bpu4800_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. Display the SOFTWARE PACKAGE page of the SERVICE menu.



Tip

For the SERVICE menu, refer to “8-2. SERVICE Menu”.

4. Display the SOFTWARE PACKAGE page of the SERVICE menu.

   Tip

   For the SERVICE menu, refer to “8-2. SERVICE Menu”.

5. Select “UPDATER” and then press the control knob.
6. 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.
7. Turn off and on the power of the unit and confirm that the version has been updated on the ROM VERSION page of the DIAGNOSIS menu.

6-1-4. Upgrading NMI LSI Firmware

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. Connect the PC to the same network as NMI-LAN connectors (SFP+) on this unit
2. Set TCP/IP of the LAN connector of the PC to the same segment as NMI-LAN connectors (SFP+) on this unit.
   Example)
   - For this unit

Network interface	IP address	Subnet mask
Slot1 Live NMI LAN1	192.168.000.021	255.255.255.000 (common setting in each slot)
Slot1 Replay NMI LAN1	192.168.000.022	
Slot2 NMI LAN1	192.168.000.023	

   - For the PC
     IP address: 192.168. 0 .10
     Subnet mask: 255.255.255. 0
3. Copy the data file for update to the USB drive.

Note

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

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 and typehttp://(IP address of the unit)/ in the address bar, and then press the Enter key.

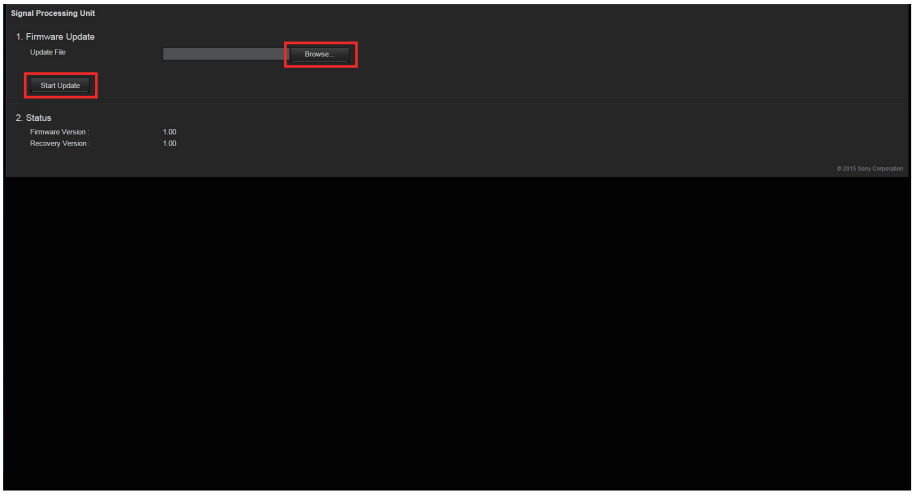
Note

Type the IP address that was set in the Slot1 Live NMI LAN1, Slot1 Replay NMI LAN1 and Slot2 NMI LAN1 in “IP address of the unit”.
For each IP address, perform steps 2 to 4.

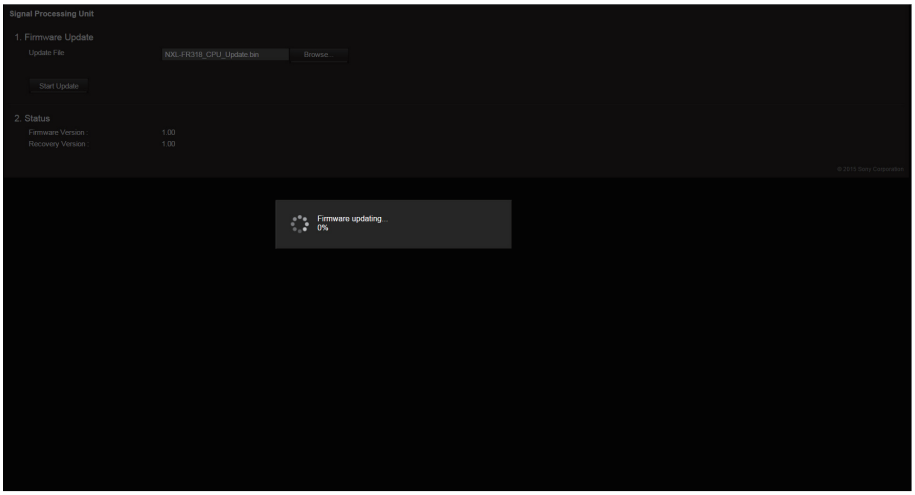
Tip

Account and password may be requested.
Initial account settings of the factory default is shown below.
- User: admin
- Password: nmidev123

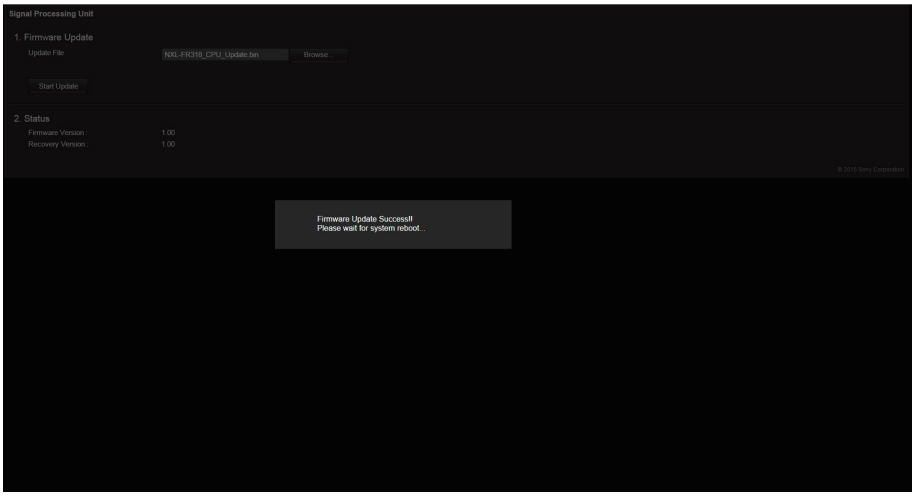
The Service menu of the unit appears.



3. Click [Browse], and then select the data file for update in the connected USB drive.
4. Click the [Start Update] button.
   Firmware update starts.
   The firmware update progress is shows as percentage during update process.



   Upon completion of update, a message “Firmware Update Success!! Please wait system reboot...” appears.



   After that, the Service menu is automatically reloaded and the updated version information is shown.

   Note

   If an error occurs in the update process, an error message appears in red.
   When an error message is displayed, close the browser or reload it and then retry the update.

5. After the updates of all Slot1 Live NMI LAN1, Slot1 Replay NMI LAN1 and Slot2 NMI LAN1 are completed, turn OFF the power of the unit.

6-2. 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 lower side of the control knob on the front panel.
Detach the USB connector cover to connect the USB drive.

6-2-1. Corresponding PLD

Board	Ref. No.	File Name
DVP-65	IC601	bpu4800_hub.pkg
	IC901	bpu4800_dec2.pkg
	IC2051	bpu4800_4kpost.pkg
	IC2701	bpu4800_2kpost.pkg
	IC3401	bpu4800_sdp.pkg
DPR-348A	IC001	bpu4800_dpr.pkg bpu4800_dpr_hco.pkg
NET-30	IC100	bpu4800_6Knet.pkg
SY-442	IC705	bpu4800_sy.pkg
TX-155	IC004	bpu4800_hgr.pkg

6-2-2. 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\BPU4800
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 “8-2. SERVICE Menu”.

4. Confirm that the cursor “?” is displayed to the left of page number, and then press the control knob long.
5. Updatable items become selectable. Select the PLD to be upgraded and then press the control knob.
6. 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.
7. Turn off and on the power of the unit and confirm that the version has been updated on the ROM VERSION 1 page and ROM VERSION 2 page of the DIAGNOSIS menu.

6-3. 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 lower side of the control knob. Detach the USB connector lid to connect the USB drive.

6-3-1. 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\BPU4800
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.

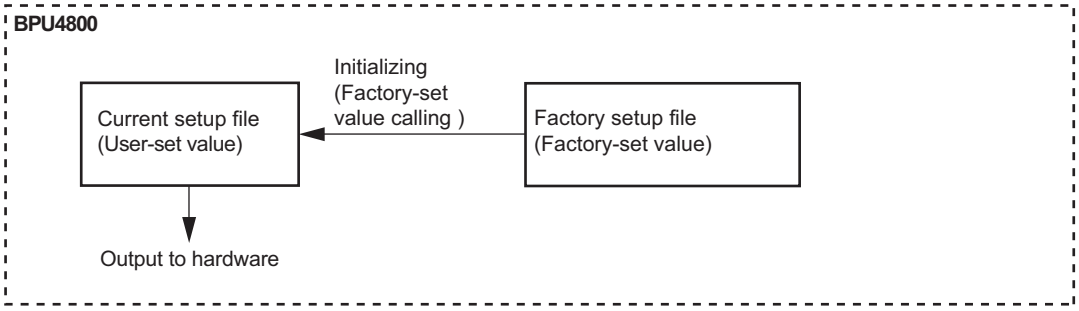
Section 7
File System

This unit is equipped with the file systems for managing data.

7-1. File Configuration

7-1-1. Setup File

Values to be set by users are stored in the unit using the menu of the unit.
The current setup file retains settings even during power-off.



Initialization

Settings can be initialized to the factory settings.
Execute CLEAR BPU SETTINGS on the OTHERS page of the CONFIGURATION menu referring to “Menu Settings” in the operation manual Operating Instructions.

Section 8
Menu Settings

This unit can display the unit status and entire system status on the monitor connected to the SDI output connectors (SLOT3, SLOT4) to check or change settings.

Note

Connector SLOT3 are available for displaying menu and others only when “M” is selected for the M/C setting of item SLOT3 on the OUTPUT FORMAT page of the CONFIGURATION menu.

8-1. Preparations

8-1-1. 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.

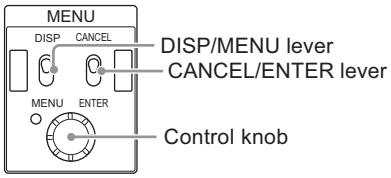
To exit the status screen display

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

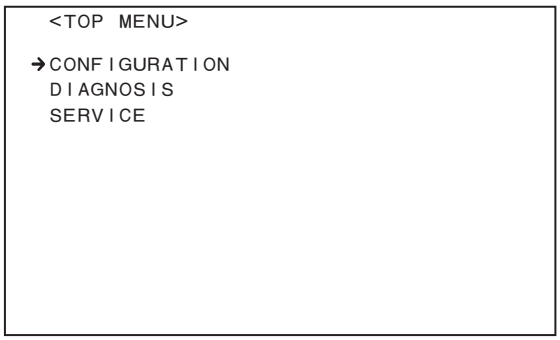
8-1-2. Starting and Exiting the SERVICE Menu

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.

8-1-3. 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.

8-2. SERVICE Menu

This unit is provided with the SERVICE menu useful for maintenance.
For how to display the SERVICE menu, refer to "8-1-2. Starting and Exiting the SERVICE Menu".

8-2-1. SERVICE Menu List

Menu Page No.	Menu Page Name	Remarks
S01	SERIAL NO. SELECT	Select the model information. （Only when replace the AT-189 board or DVP-65 board, screen will appear.)
S01	SOFTWARE PACKAGE	Software version displaying and upgrading
S02	PLD PACKAGE	PLD version displaying and upgrading

8-2-2. Description of SERVICE Menu

Tip

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

SERIAL NO. SELECT

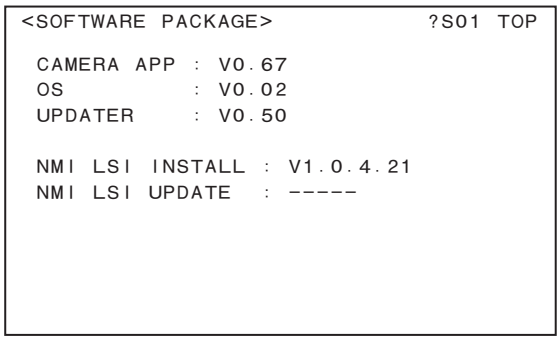
```
<SERIAL NO. SELECT>                S01 TOP

 BOARD : MB
  MODEL   : BPU4800
  NO.     : 0000000

 SELECT: EXEC
```

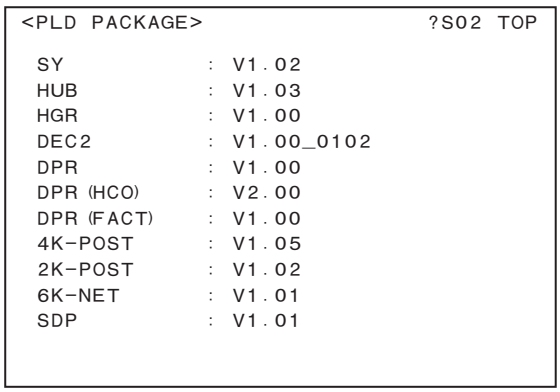
Select the model information.
Only when replace the AT-189 board or DVP-65 board, screen will appear.
Select the correct model name and serial number, and execute the SELECT item.

SOFTWARE PACKAGE



Display the current software version.
Place the cursor on the version to update the version.
For how to update the software version, refer to "6-1. Upgrading Software Programs".

PLD PACKAGE



Display the current PLD version.
Place the cursor on the version to update the version.
For how to update the software version, refer to "6-2. PLD".

Section 9
Circuit Description

9-1. Signal Processing/Transmission System

9-1-1. TX-155 Board

This board receives the return signal (multiplexed from the digital audio signal in the DVP-65 board) and the command signal sent through the DVP-65 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 Color Camera HDC4800. Furthermore, this board converts the serial optical signal sent from Color Camera HDC4800 to an electrical signal, and separates the main-line signals into a video signal and a command signal, and sends these signals to the DVP-65 board.

9-1-2. DVP-65 Board

When the DVP-65 board receives the RET signal from the CCU (camera control unit), this board extracts the synchronization signal and the command signal. Upon receiving the reference signal from the CCU and an external device, this board performs generator lock.
Furthermore, the DVP-65 board also performs the following processing.

- Generates an SD/HD synchronization signal for reference output.
- Convolutes commands to be sent to the CCU.
- Relays commands to the TX-155 board for communication with Color Camera HDC4800.
- Processes the RET signal received by the unit and converts the format of the RET signal from the CCU.
- Sends the RET signal and the VF-RET signal processed in the unit to the TX-155 board. Also sends the RET signal to Color Camera HDC4800.
- Generates voltages necessary for each board from the general power supply.
- Processes the RAW data from the TX-155 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 adjustments (including color, resolution, and level adjustments), 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 output SDI signals from the BNC-type SDI output connectors SLOT2 and SLOT4.
- Performs PsF conversion, Square Division (into four parts) conversion, and delay adjustment by using the DRAM (IC1201 to IC1204).
- Performs embedded audio processing to SDI output signals and CCU main-line signals.
- Relays data with the board on the front panel.
- Transmits the Audio visual data for IP output to the NET-30 board.

9-1-3. DPR-348A Board

This board receives 4K main-line video signals, adjusts picture quality (including color, resolution, and level adjustments), and outputs 4K main-line signals.
When the HD cutout function is used, an arbitrary position is extracted from the 4K video signal to output it as HD video.

9-1-4. NET-30 Board

The NET-30 board controls the network using the command sent through the SY-442 board and converts the video signal into the IP stream for transmission.
The NET-30 board also sends and receives the IP routing control signal of LSM (IP Live System Manager) and notifies the SY-442 board of information as required.

6K-NET (IC100) that receives the video signal converted into the format of the SDI signal which the DVP-65 board outputs replaces the received video signal by the sync signal sent through the network, rearranges the sync signal to the format which an NMI LSI (consisting of IC200, IC300, and IC400) requires, and outputs it.
The NMI LSI (consisting of IC200, IC300, and IC400) converts the supplied video signal into IP data and outputs it to the network as an IP stream through the SFP+ module.

The NET-30 board mounts an SFP+ slot.
The NET-30 board detects the SFP+ module connected to NMI 1 and NMI 2 terminals and notifies the SY-442 board of information through the NET-30 board.
PHY (consisting of IC500, IC600, and IC700) converts the IP data output from the NMI LSI into serial data.
The converted serial data is output to the network as an IP stream through the SFP+ module connected to the NMI 1 and NMI 2 terminals.

9-1-5. DM-156 Board

The DM-156 board has the following main functions.

- Host function of MDC-20 board
- Bank memory function (Main cache of audio and video data)
- LLVC Codec function
- Audio/video reference signal distribution
- 9-pin remote terminal
- SharePlay function

Host function of MDC-20 board

The DM-156 board has the host function of the MDC-20 board that is the memory board and its communication log function.
BANK_FPGA (IC001) controls the MDC-20 board so as to perform a high-speed serial communication of 3.0 Gbps in 8LANE.
A high-speed serial signal is connected with the maximum of four MDC-20 boards through connectors (CN001 to CN003) and the MB-1216 board.
The log during high-speed serial communication with the MDC-20 boards is written in flash memory (IC1301 and IC1302) using IC001.

Bank memory function

BANK_FPGA (IC001) has four 4 G-bit DRAMs and constitutes a memory space of 2 G-byte. BANK_FPGA is used to cache the audio and video data of this unit.
BANK_FPGA is connected with ENC-168 and SY-422 boards via the high-speed serial communication of 3.125 Gbps.
BANK_FPGA is connected with the DVP-65 board in a BPU block via a high-speed serial communication of 6.0 Gbps.

LLVC Codec function

The LLVC-compressed stream data is supplied from the BPU block via a high-speed serial communication of 6.0 Gbps, compressed again using BANK_FPGA (IC001), and then written in the MDC-20.
In a PB mode, after the LLVC-compressed stream data is read from the MDC-20 board, it is decoded and sent to the BPU block via the high-speed serial communication of 6.0 Gbps.

Audio/video reference signal distribution

The audio/video reference signal is supplied from a BPU block and sent to SY-422 and ENC-168 boards through BANK_FPGA (IC001).

Audio signal processing (Input)

There are four AES/EBU input terminals (J403 and J404) in all that enable the input of the eight-channel signal.

The AES/EBU format-based digital audio signal and HD SDI embedded audio signal are input to BANK_FPGA (IC001) for channel selection and gain control.

Audio signal processing (Output)

There are four AES/EBU output terminals (J401 and J402) in all that enable the output of the eight-channel signal. Channel selection and gain control are performed using IC001, and the AES/EBU format-based digital audio signal is output from AES/EBU terminals (J3601and J3602).

Time code signal processing (Input mode)

The time code signal input from a time code input terminal (J005) is input to BANK_FPGA (IC001), parallel-processed, and detected by CPU. The identical time code signal is also output from the time code output terminal (J005) for cascade processing.

Time code signal processing (Output mode)

The time code signal written in BANK_FPGA (IC001) by CPU is serial-processed and output from the time code output terminal (J005).

9-pin remote terminal

There is one 9-pin remote terminal (J1501).
Each signal is connected to SYS1 CPU on the SY-422 board through BANK_FPGA (IC001) that has the serial input/output function.

SharePlay function

SharePlay is the function that connects multiple BPU-4800s or PWS-4500s and shares a file between cabinets.
A signal is input and output from the SFP+ module connected to SharePlay 1 (CN2302) or SharePlay 2 (CN2301).
SharePlay sends and receives a stream signal to and from BANK_FPGA (IC001) through IC003 (10G PHY) and IC002 (NeptuneII).

9-1-6. ENC-168 Board

The ENC-168 board encodes and decodes 4K XAVC.
The decoding block performs background processing and cutout processing by mode switching.

Video signal processing (Encoding block)

The 4K SDI signal input from a BPU block via a high-speed serial communication of 6.0 Gbps is input to XENC_FPGA (IC001).
The input signal is then compressed to an XAVC-Intra frame format using a video encoder (consisting of IC1000 to IC1600).
The compressed signal is input to XENC_FPGA (IC001) again, saved in DRAMs (IC701 and IC702) once, and DMA (Direct Memory Access)-transferred to BANK_FPGA (IC001) on a DM-156 board through serial transmission of 3.125 Gbps.
Another-channel 4K SDI signal is received from a BPU block for background processing and transferred to XDEC_FPGA (IC002).

Video signal processing (Decoding block)

The signal multiplexed with audio/video/non-compressed meta data in time sequence is transferred from BANK_FPGA (IC001) on the DM-156 board to DMA (Direct Memory Access) through serial transmission of 3.125 Gbps.
The signal that was DMA-transferred from the DM-156 board is input to XDEC_FPGA (IC002) and saved in DRAMs (IC2201, IC2202, IC2301, and IC2302) once.
The XAVC-I signal separated using XDEC_FPGA (IC002) is processed using a video decoder (consisting of IC2000 to IC2600) and input to XDEC_FPGA (IC002).

The decoded parallel baseband signal is sent to a BPU block through a high-speed serial communication of 6.0 Gbps with the SDI signal encoded using IC002.
In a background processing mode, this block performs encoding operation. A signal is DMA (Direct Memory Access)-transferred to BANK_FPGA (IC001) on the DM-156 board through serial transmission of 3.125 Gbps.
In a cutout mode, the decoded 4K SDI signal is cut out to HD and sent to the BPU block.

9-1-7. SY-422 Board

The SY-422 board contains CPUs, CPU's peripheral devices, and interfaces.
This board also has a function to relay network data with a PCI Express card (standard equipment) as an external interface.

CPUs and peripheral devices

This board has two main CPUs: CPU2 (IC2) mainly controls internal devices and CPU1 (IC1) handles external interfaces.
CPU1 (IC1) runs on the program stored in the flash memory (IC604, IC607) and CPU2 (IC2) runs on the program stored in the flash memory (IC1504, IC1507).
These programs can be upgraded using a USB memory through the USB controller (IC104).
CPU1 (IC1) and CPU2 (IC2) contains DRAM (IC501 to IC504, and IC1401 to IC1404) and FRAM (IC610, IC1510, and IC2901 to IC2903) to save system settings respectively.
This board has a real-time clock (RTC) for calendar function and BT101 is the power unit for backup of the RTC.

Protocol communication

There are three types of inter-board communication.

- Serial Rapid IO: Used for 3.125 Gbps communication with endpoints on each board through the Serial Rapid IO (SRIO) switch IC5 to control devices.
- RS232C: CPU1 (IC1) and CPU2 (IC2) have a communication port for debugging respectively.
- IIC: Used mainly for the configuration setup on each bard and for 400 kbps communication with the power supply unit.

The SRIO-FPGA (IC3) controls internal devices of the unit and also has the following functions.

- IIC communication with each board and the power supply unit
- CPU interrupt control
- Fan rotation detection
- External input and output (25-pin GPIO) control

The SRIO-FPGA also performs communication with the BANK memory on the DM-156 board and relays network data to CPU1 (IC1) via the SRIO endpoint.

9-1-8. CPU-453A Board

The CPU-453A board contains a high-speed CPU IC100 (1.2GHz 2-core processor) suited for network processing, and has the following main functions.

- Program working memory (IC101 - IC104): Four pieces of DDR2 (128 MB) accessible with 64-bit, 600MHz
- Memory to store the program (IC303): Flash ROM (32 MB)
- Communication between SY-422 board and PCI Express card: IC704 (PCI Express switch) switches four sets of 2-Gbps lanes to connect the SRIO FPGA IC3 on the SY-422 board to the PCI Express card.
- CPU communication: Communication with the SY-422 board through the connector CN703 is possible.
- PIO (Programmed I/O): LED, test pin, DIP switch
- Power supply: Voltage +12 V supplied from the SY-422 board is converted to other voltages that are supplied to the CPU, DDR2, PCI Express switch, Ethernet PHY, and other devices.
- Clocks:
  - X100: Generates 100MHz clock (for CPU).
  - X700: Generates 25MHz clock (for PCI Express).
- Reset circuit: IC1105 generates a reset signal and sends it to each block.

9-1-9. RC-107 Board

RC-107 board is a relay board that is connected to the connector CN702 on the CPU-453A board, and transmits signals to the PCI Express socket CN102 on the RC-107 board.

9-2. Control System

9-2-1. AT-189 Board

This board consists of a system control microcomputer (IC200) and a peripheral circuit necessary for the operation of IC200.
The main program is written in the flash memory (IC401) on the AT-189 board.

9-2-2. SY-442 Board

This board consists of a CPU bridge FPGA and peripheral devices with communication interfaces, LAN, and reference I/O. RCP interface.

9-3. Interface Boards

9-3-1. SW-1669 Board

The SW-1669 board interfaces with each CPU mounted on the SY-442 board of the BPU block and SY-422 board of the server block.
CPU on the SY-442 board controls the input/output operation of a BPU indicator, switches, and control knobs.
CPU on the SY-422 board controls the input/output operation of a server indicator and power switch.
The SW-1669 board interfaces with the HN-427 board connected with the power unit and controls power supply in cooperation with CPU.
PLD mounted on the SW-1669 board communicates through the power unit and PMBus and notifies CPU of the power unit's status group.
The program of PLD is updated through FPGA on the DM-156 board.

9-3-2. MB-1216 Board

The MB-1216 board is the mother board of the server block in this unit. It mainly performs an interface between the signal processing core of the server block, and memory and SYS boards.

9-3-3. LE-404 Board

The LE-404 board mounts an LED group that constitutes the indicators on the front panel. These LEDs are controlled through an SW-1669 board by each CPU on SY-442 and SY-422 boards.

9-3-4. HN-427 Board

The HN-427 board relays +12 V, output from a power block, to DVP-65, MB-1216, and NET-30 boards.

9-3-5. IF-1287 Board

The IF-1287 board collectively relays the (two) fans mounted on the side to an SY-422 board.
This board performs the interface between a fan driving power supply and fan rotating tachometer pulse signal, and the SY-422 board.

9-3-6. CN-3784 Board

The CN-3784 board mounts SLOT1 that is the SDI (BNC-type) output terminal.

9-3-7. CN-3834 Board

The CN-3834 board mounts the SDI (BNC-type) output terminals (SLOT2) and SDI (BNC-type) output terminals (SLOT3).

9-3-8. CN-3838 Board

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

9-3-9. CN-3839 Board

The CN-3839 board is the relay board that supplies power from the camera control unit to the color camera (HDC4800).

Section 10
Spare Parts

10-1. 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

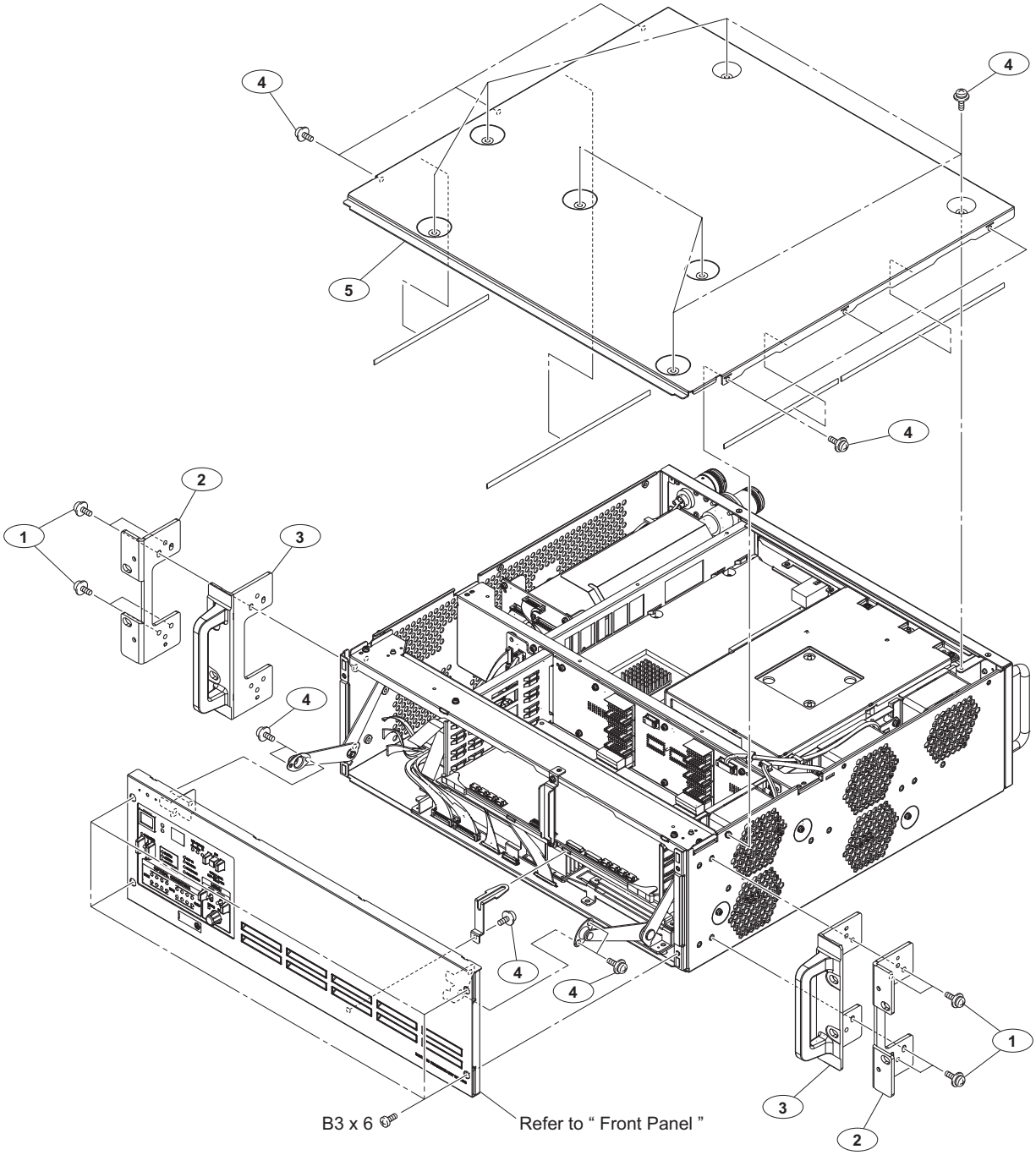
部品表の SP（Supply code）欄に "o" で示される部品は在庫していないことがあり，納期が長くなることがあります。

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。

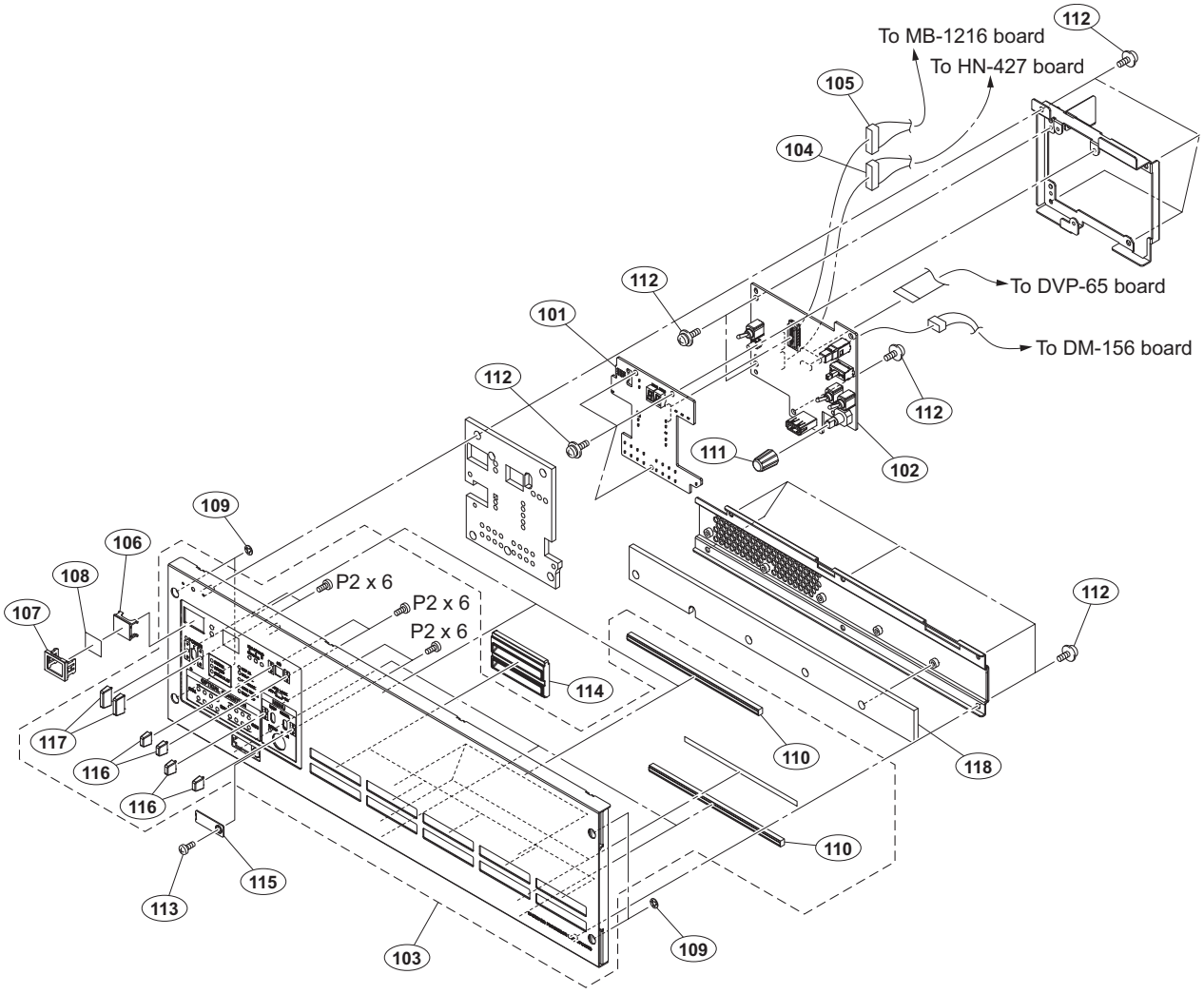
10-2. Exploded Views

Cover



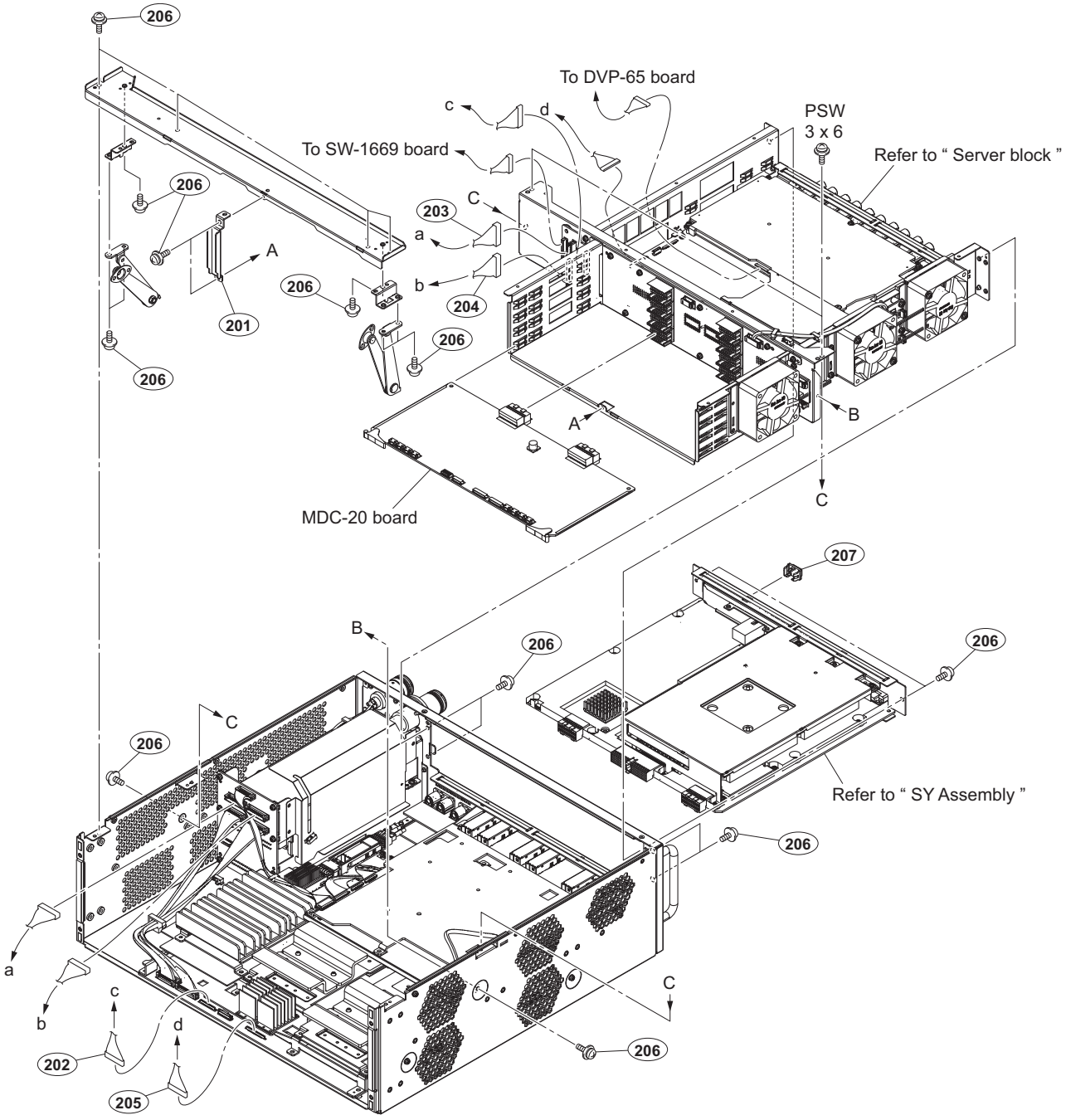
No.	Part No.	SP	Description
1	2-580-602-11	s	SCREW, +PSW M4X12
2	4-413-525-01	s	BRACKET, RACK (3U)
3	4-413-526-02	s	COVER, RACK BRACKET (3U)
4	4-382-854-51	s	SCREW (M3X6), P, SW (+)
5	4-595-061-01	s	COVER,TOP
	7-682-547-09	s	SCREW +B 3X6

Front Panel



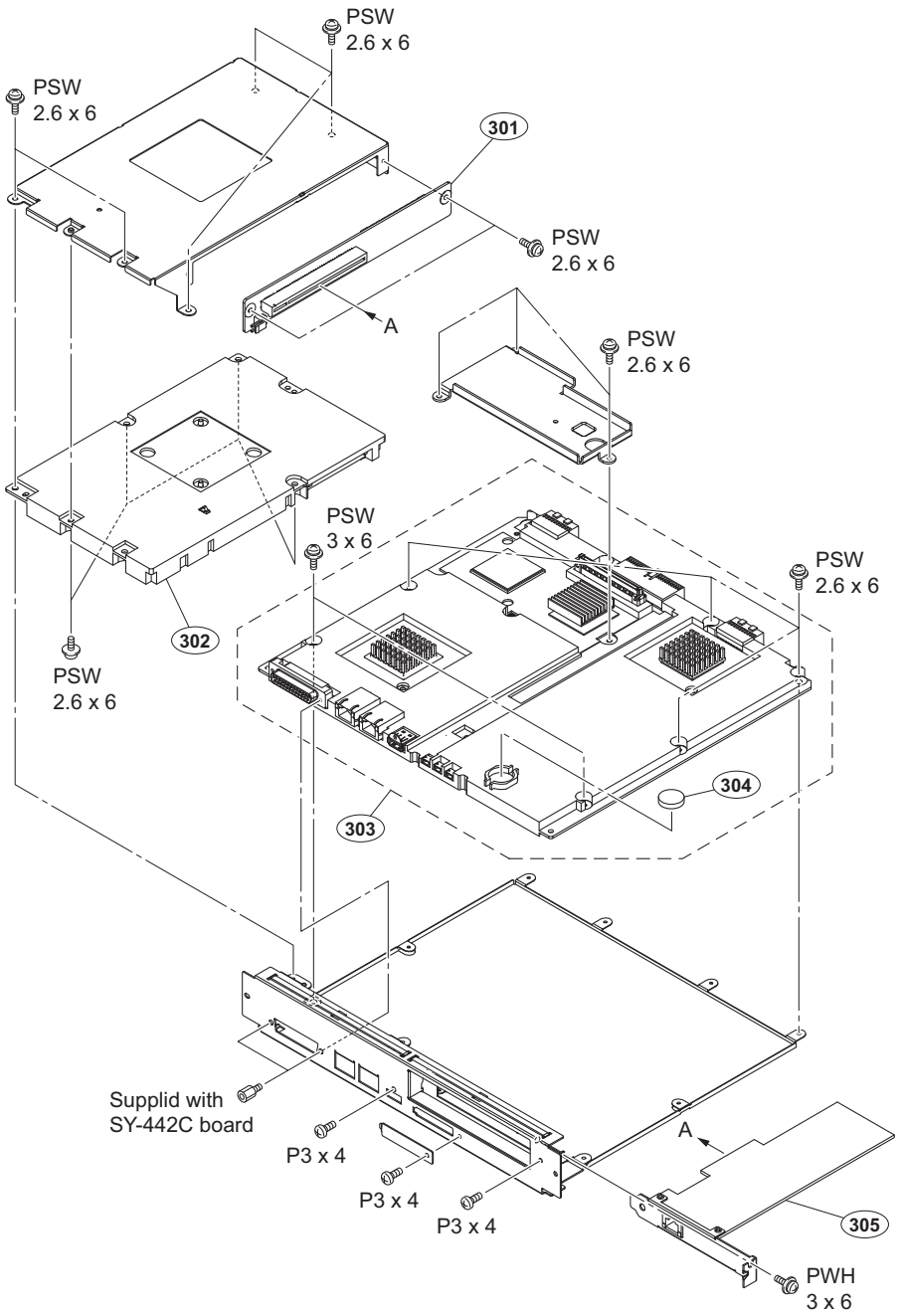
No.	Part No.	SP	Description
101	A-2121-725-A	s	LE-404 MOUNT
102	A-2121-735-A	s	SW-1669 COMPL
103	A-2125-709-A	s	ASSY, FRONT PANEL
104	1-971-298-11	s	HARNESS, SUB (SW-HN_CONT)
105	1-971-299-11	s	HARNESS, SUB (MB-SW_CONT)
106	2-139-192-01	s	FRAME, INDICATOR WINDOW
107	2-139-193-02	s	WINDOW, INDICATOR
108	2-249-353-01	s	COVER, LAMP
109	3-669-596-01	s	WASHER (2.3), STOPPER
110	4-111-825-02	s	SHIELD CUSION
111	4-139-232-01	s	KNOB, ROTARY ENCODER
112	4-382-854-51	s	SCREW (M3X6), P, SW (+)
113	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
114	4-585-772-11	s	LOUVER, FRONT
115	4-595-073-01	s	USB LID(L)
116	4-595-089-01	s	GUARD, SWITCH S
117	4-595-090-01	s	GUARD, SWITCH L
118	4-595-092-01	s	AIR FILTER
	7-685-104-11	s	SCREW +P 2X6 TYPE2 NON-SLIT

SY Assembly and Server Block



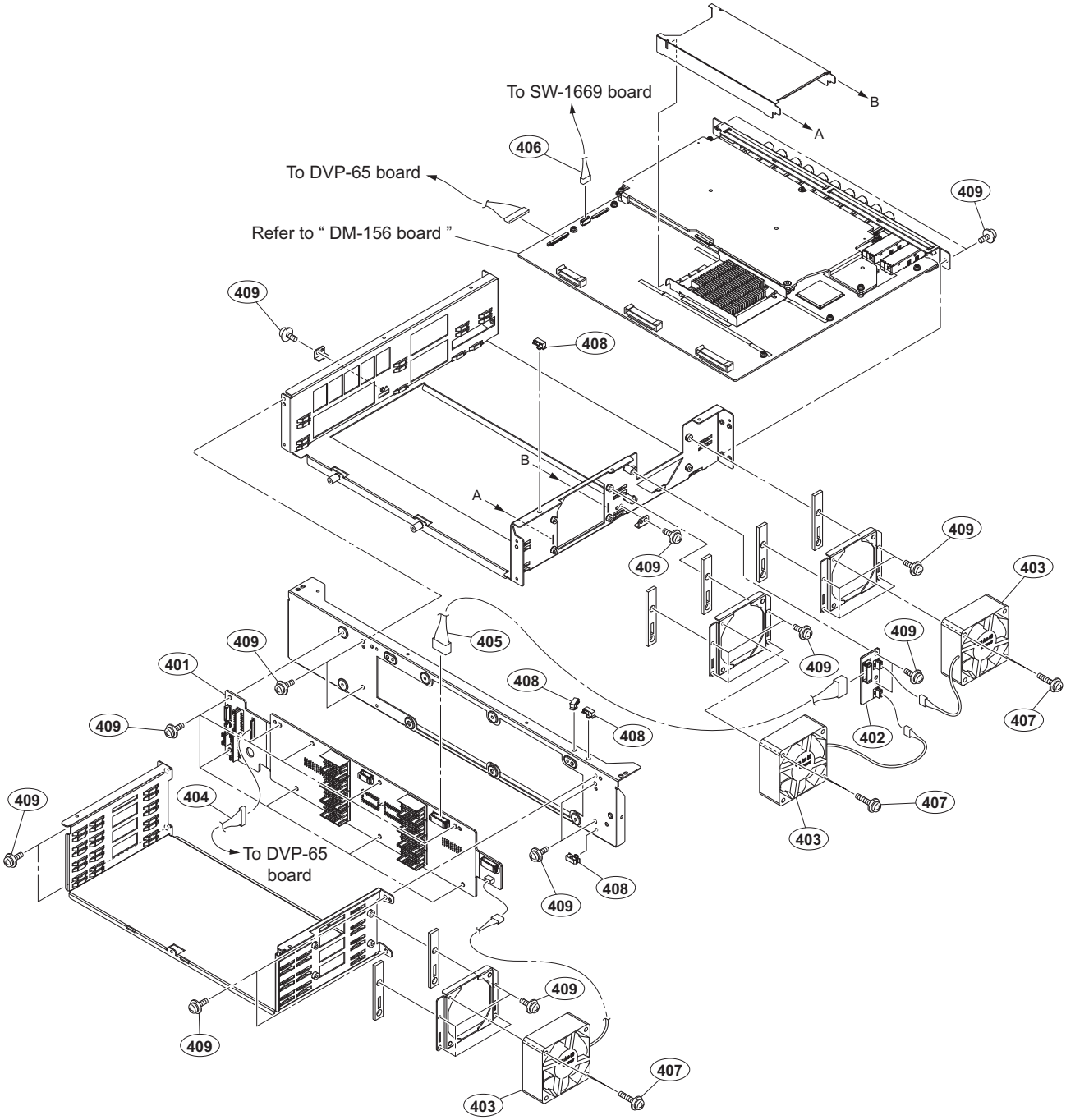
No.	Part No.	SP	Description
201	A-2128-444-A	s	ASSY, BOARD STOPPER
202	1-969-473-11	s	WIRE, CONNECTOR WITH LEAD (AVP
203	1-971-296-11	s	HARNESS, SUB (HN-MB_GND)
204	1-971-297-11	s	HARNESS, SUB (HN-MB_POWER)
205	1-971-304-11	s	HARNESS (DVP-DM_VIDEO)
206	4-382-854-51	s	SCREW (M3X6), P, SW (+)
207	4-589-348-01	s	COVER, SFP
	7-682-947-01	s	SCREW +PSW 3X6

SY Assembly



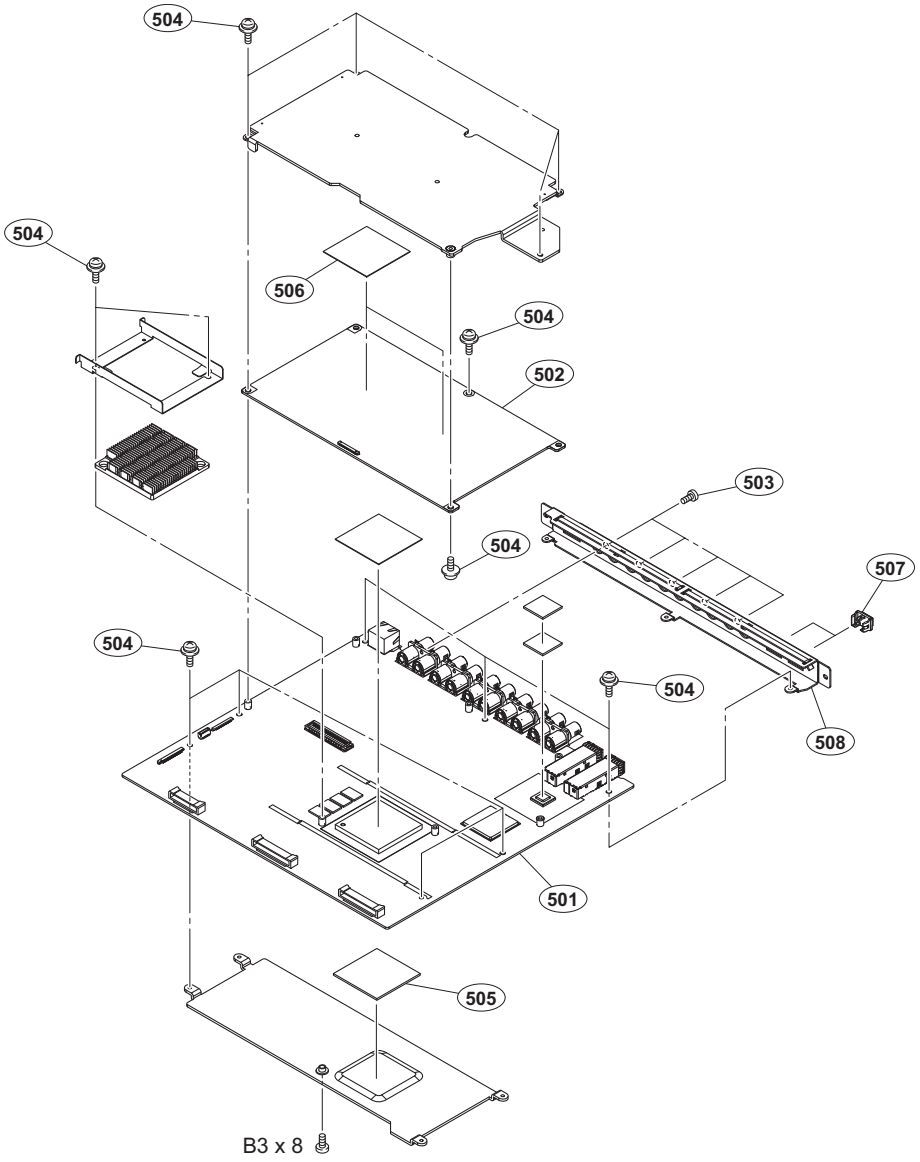
No.	Part No.	SP	Description
301	A-1904-955-A	s	RC-107 COMPL-NC
302	A-1981-921-A	s	CPU-453A COMPL
303	A-2126-050-A	s	SY-422C COMPL
304	⚠ 1-528-174-74	s	BATTERY, LITHIUM (CR2032 TYPE)
305	1-895-817-11	s	PCI-E 10G SFP DIRECT NIC BOARD
	7-621-759-45	s	+PSW, 2.6X6
	7-682-145-01	s	SCREW +P 3X4
	7-682-903-11	s	SCREW +PWH 3X6
	7-682-947-01	s	SCREW +PSW 3X6

Server Block



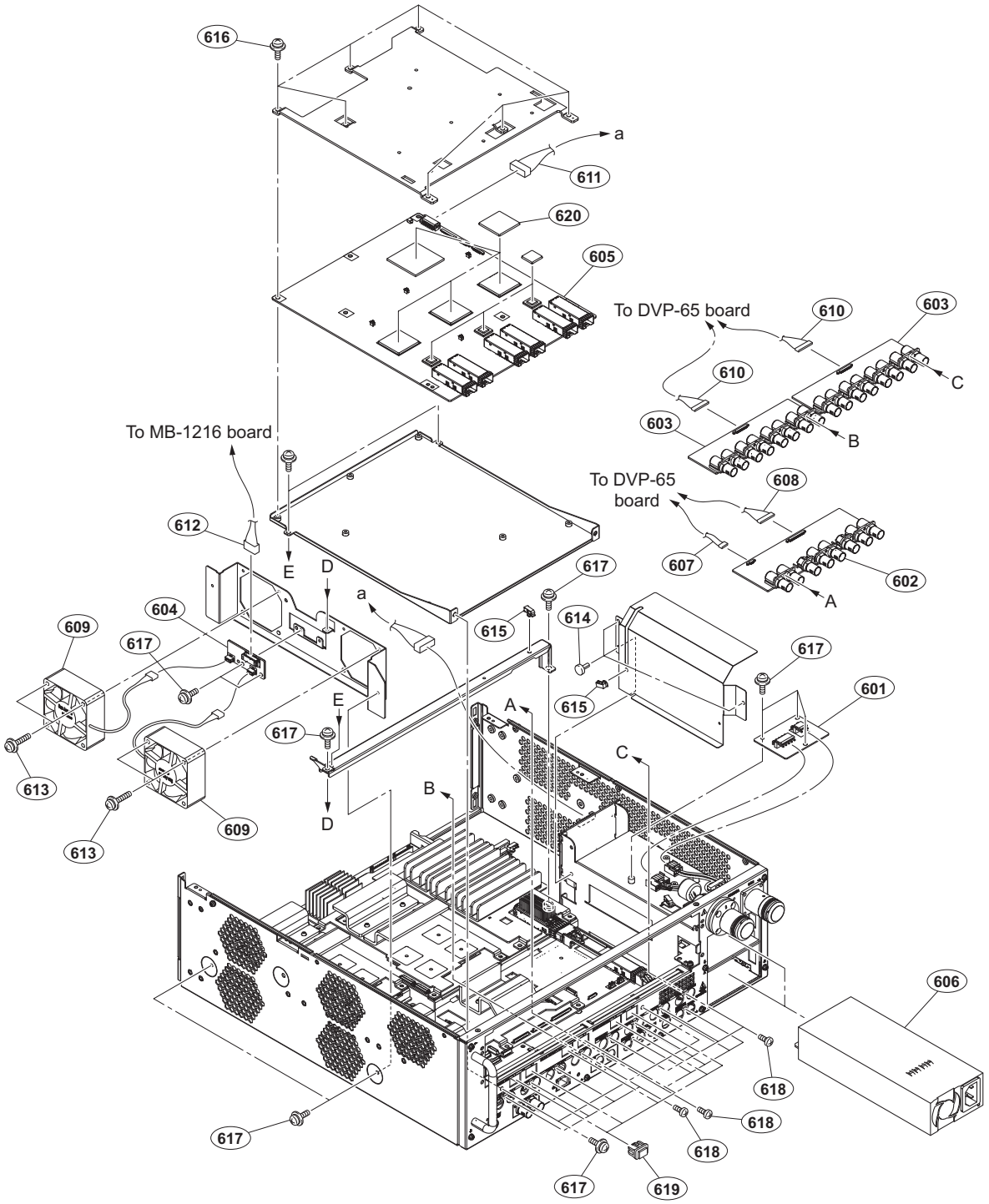
No.	Part No.	SP	Description
401	A-2121-727-A	s	MB-1216 MOUNT
402	A-2121-728-A	s	IF-1287 MOUNT
403	⚠ 1-855-064-11	s	FAN, DC (60 SQUARE)
404	1-968-193-11	s	HARNESS(COAXIAL CABLE)
405	1-971-300-11	s	HARNESS, SUB (MB-IF_FAN)
406	1-971-301-11	s	HARNESS, SUB (SW-DM_JTAG)
407	2-580-598-01	s	SCREW, +PSW M3X30
408	4-098-036-01	s	SADDLE WIRE (A)
409	4-382-854-51	s	SCREW (M3X6), P, SW (+)

DM-156 Board and ENC-168 Board



No.	Part No.	SP	Description
501	A-2121-737-A	s	DM-156 COMPL
502	A-2122-218-A	s	ENC-168 COMPL
503	3-637-901-02	s	SCREW M2.6X5
504	4-382-854-51	s	SCREW (M3X6), P, SW (+)
505	4-436-987-01	s	SHEET,RADIATION 45X45X1.5
506	4-546-224-01	s	SHEET (T1.5), RADIATION
507	4-589-348-01	s	COVER, SFP
508	4-595-072-01	s	BRACKET, DM156
	7-682-548-04	s	SCREW +B 3X8

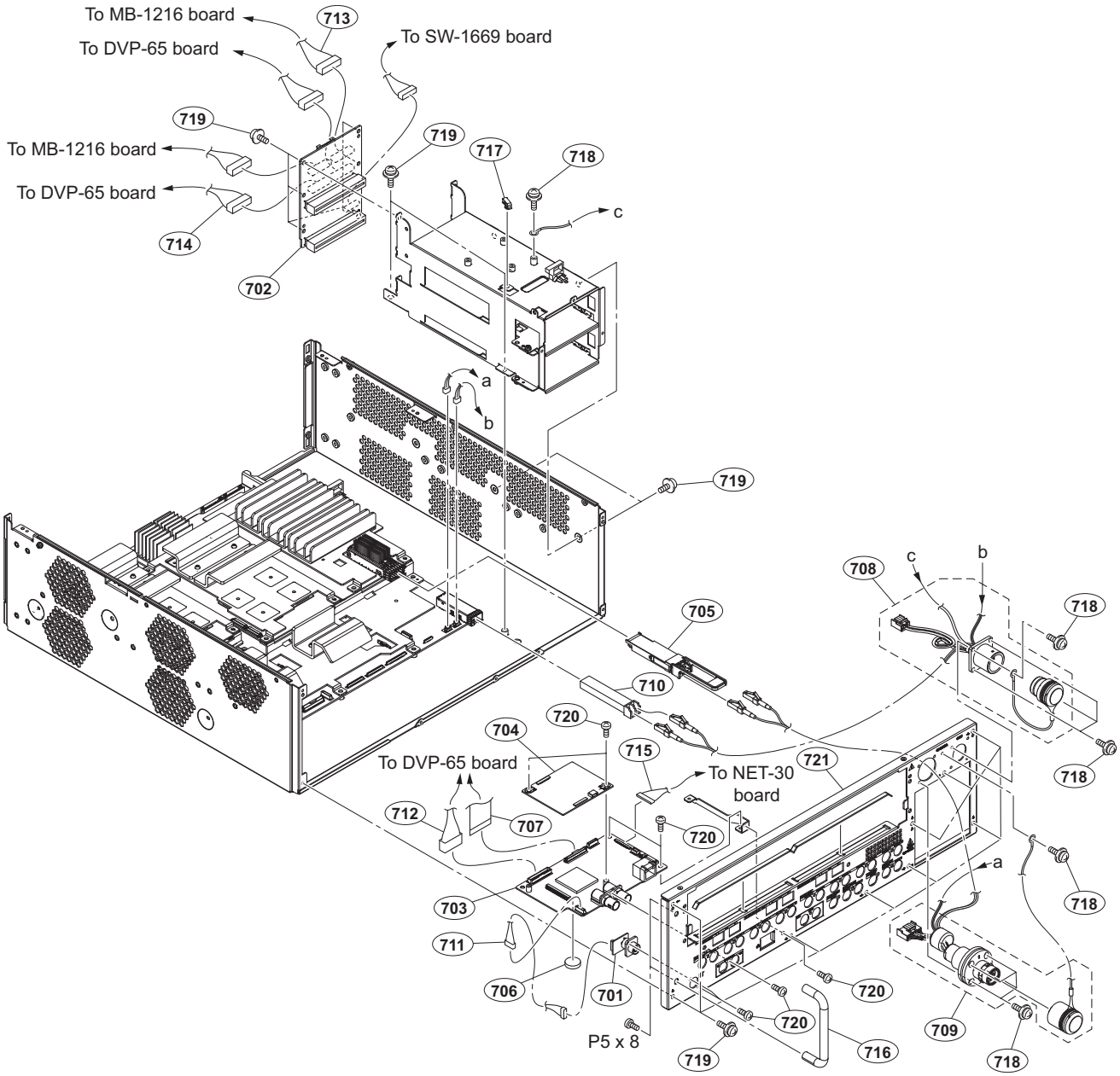
Rear-1



No.		Part No.	SP	Description
601		A-2121-716-A	s	CN-3839 MOUNT
602		A-2121-722-A	s	CN-3834 MOUNT
603		A-2121-723-A	s	CN-3784 MOUNT
604		A-2121-728-A	s	IF-1287 MOUNT
605		A-2121-731-A	s	NET-30 COMPL
606	⚠	1-474-640-11	s	REGULATOR, SWITCHING
607		1-846-132-11	s	CABLE, CONNECTOR WITH COAXIAL
608		1-849-036-11	s	COAXIAL CABLE WITH CONNECTOR
609	⚠	1-855-064-11	s	FAN, DC (60 SQUARE)
610		1-969-472-11	s	WIRE, CONNECTOR WITH LEAD (BI-
611		1-971-293-11	s	HARNESS, SUB (HN-NET_POWER)
612		1-971-300-11	s	HARNESS, SUB (MB-IF_FAN)

No.	Part No.	SP	Description
613	2-580-598-01	s	SCREW, +PSW M3X30
614	3-531-576-01	s	RIVET
615	4-098-036-01	s	SADDLE WIRE (A)
616	4-382-854-01	s	SCREW (M3X8), P, SW (+)
617	4-382-854-51	s	SCREW (M3X6), P, SW (+)
618	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
619	4-589-348-01	s	COVER, SFP
620	4-590-083-01	s	SHEET (2 (25X25)), RADIATION

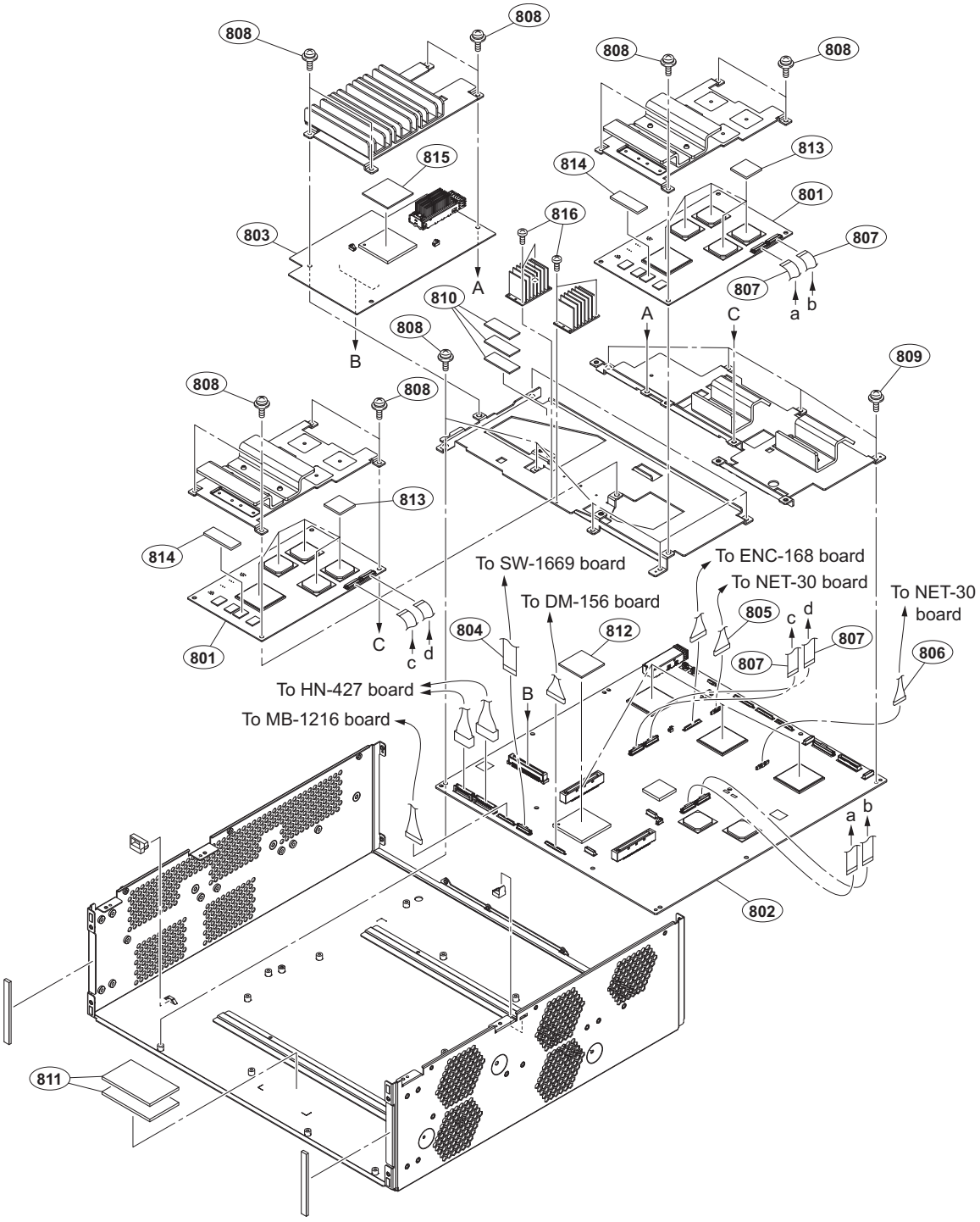
Rear-2



No.	Part No.	SP	Description
701	A-2121-715-A	s	CN-3838 MOUNT
702	A-2121-721-A	s	HN-427 MOUNT
703	A-2121-734-A	s	SY-442 COMPL
704	A-2121-736-A	s	AT-189L COMPL
705	⚠ 1-458-947-11	s	OPTICAL MODULE (QSFP28)
706	⚠ 1-756-134-17	s	BATTERY, LITHIUM (SECONDARY)
707	1-831-157-11	s	CABLE, FLEXIBLE FLAT (50 CORE)
708	⚠ 1-833-304-11	s	OPTICAL MULTI CABLE ASSEMBLY-M (Serial No.10001 and Higher)
	⚠ 1-833-439-12	s	OPTICAL MULTI CABLE ASSEMBLY (Serial No.30001 and Higher)
709	⚠ 1-838-240-13	s	OPTICAL MULTI CABLE ASSEMBLY-F (Serial No.10001 and Higher)
	⚠ 1-838-251-12	s	OPTICAL MULTI CABLE ASSEMBLY (Serial No.30001 and Higher)
710	⚠ 1-840-881-12	s	MODULE, OPTICAL (SFP)
711	1-970-090-11	s	HARNESS, SUB (SY CN(RM))
712	1-970-094-11	s	HARNESS, SUB (DVP SY(SHD))

No.	Part No.	SP	Description
713	1-971-294-11	s	HARNESS, SUB (HN-DVP_GND)
714	1-971-295-11	s	HARNESS, SUB (HN-DVP_POWER)
715	1-971-303-11	s	HARNESS (SY-NET)
716	2-378-801-01	s	HANDLE
717	4-098-036-01	s	SADDLE WIRE (A)
718	4-382-854-01	s	SCREW (M3X8), P, SW (+)
719	4-382-854-51	s	SCREW (M3X6), P, SW (+)
720	4-559-446-02	s	SCREW, +P2.6X5 NEW TRUSTER
721	⚠ 4-595-060-01	s	PANEL, REAR (For BPU4800/L)
	⚠ 4-595-060-12	s	PANEL, REAR (For BPU4800/T)
	7-682-174-01	s	SCREW +P 5X8

Bottom Case



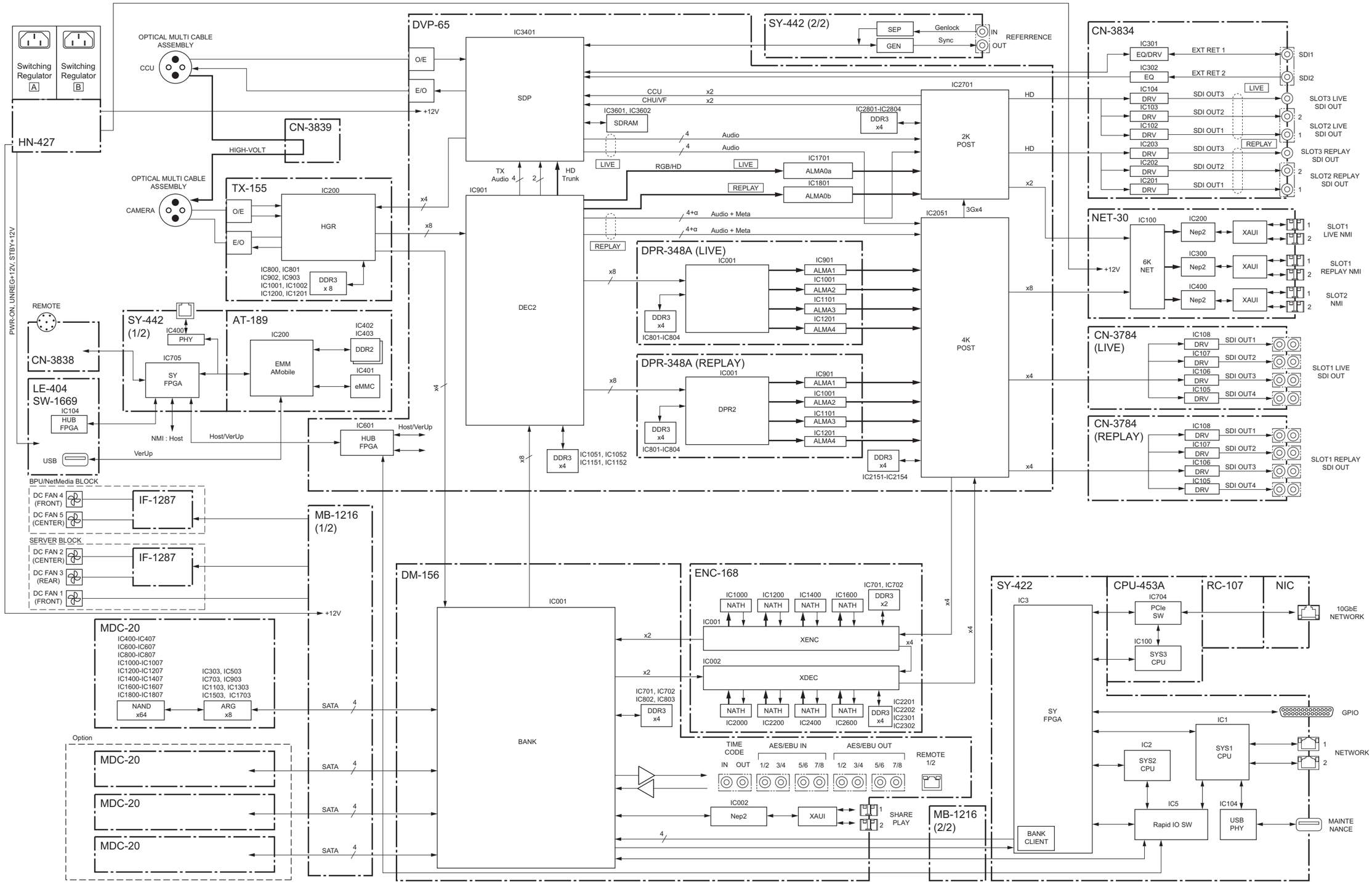
No.	Part No.	SP	Description
801	A-2091-260-A	s	DPR-348A COMPL
802	A-2121-733-A	s	DVP-65 COMPL
803	A-2125-750-A	s	TX-155 COMPL
804	1-849-555-11	s	CABLE, FLEXIBLE FLAT (30 CORE)
805	1-970-791-11	s	WIRE,CONNECTORWITHLEAD
806	1-971-302-11	s	HARNESS (DVP-NET1)
807	1-981-797-11	s	PWB, HN-435 FLEXIBLE
808	4-382-854-01	s	SCREW (M3X8), P, SW (+)
809	4-382-854-51	s	SCREW (M3X6), P, SW (+)
810	4-409-534-01	s	SHEET, PS CASE THERMAL
811	4-544-395-01	s	SHEET3(40X66), RADIATION
812	4-587-426-01	s	SHEET (2 (35X35)), RADIATION
813	4-590-083-01	s	SHEET (2 (25X25)), RADIATION
814	4-590-083-11	s	SHEET (2 (15X60)), RADIATION
815	4-599-746-01	s	RUBBER PT-V(35X1.5),COOLING
816	4-654-273-03	s	SCREW, NEW TRUSTER(M2)

10-3. Supplied Accessories

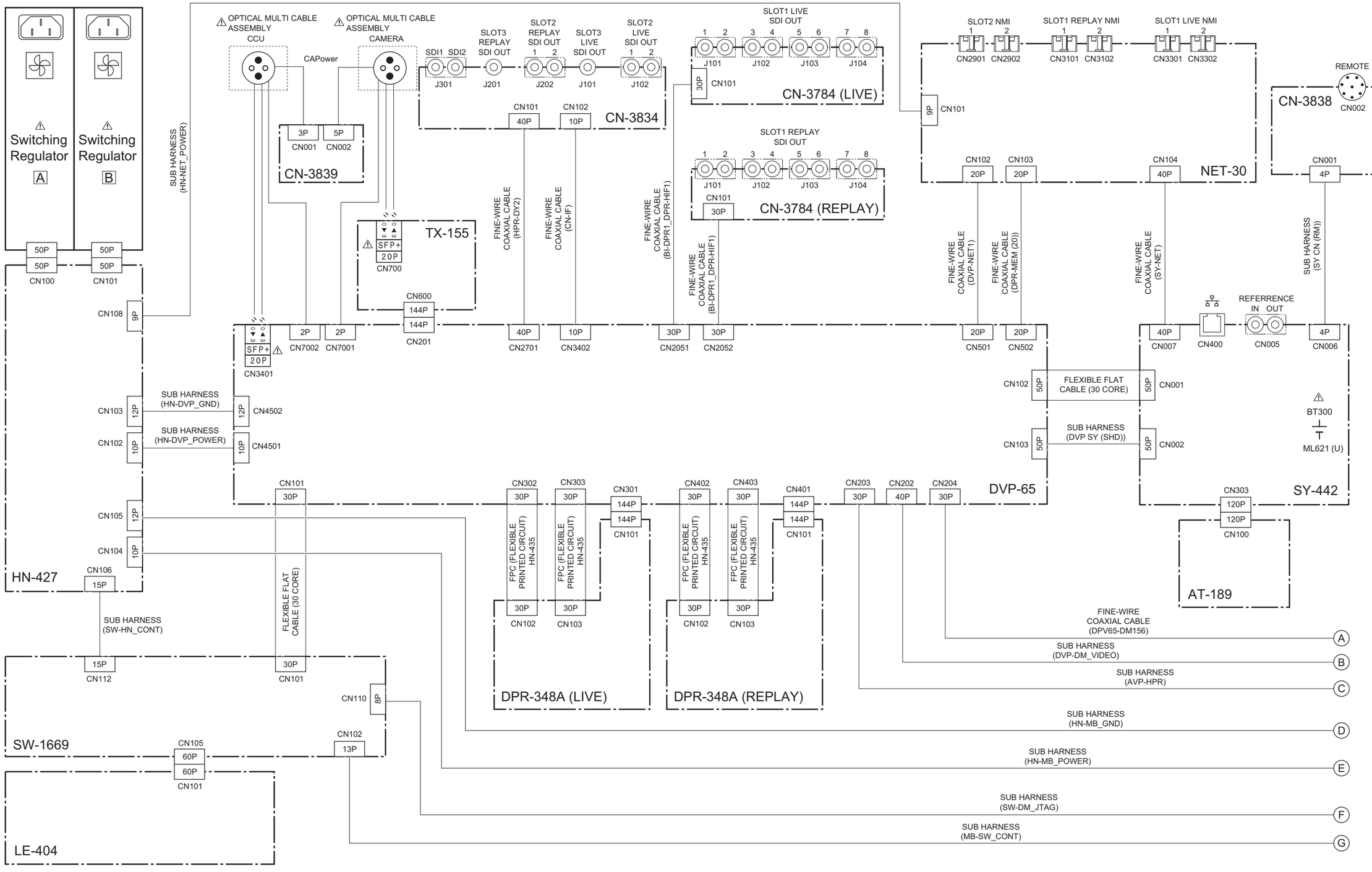
Q'ty	Part No.	SP	Description
1pc	A-8278-054-B	s	REMOTE INDICATOR ASSY
1pc	1-848-424-12	s	CABLE, RJ45-DSUB
1pc	4-599-595-01	s	CD-ROM PACK

Section 11
Diagrams

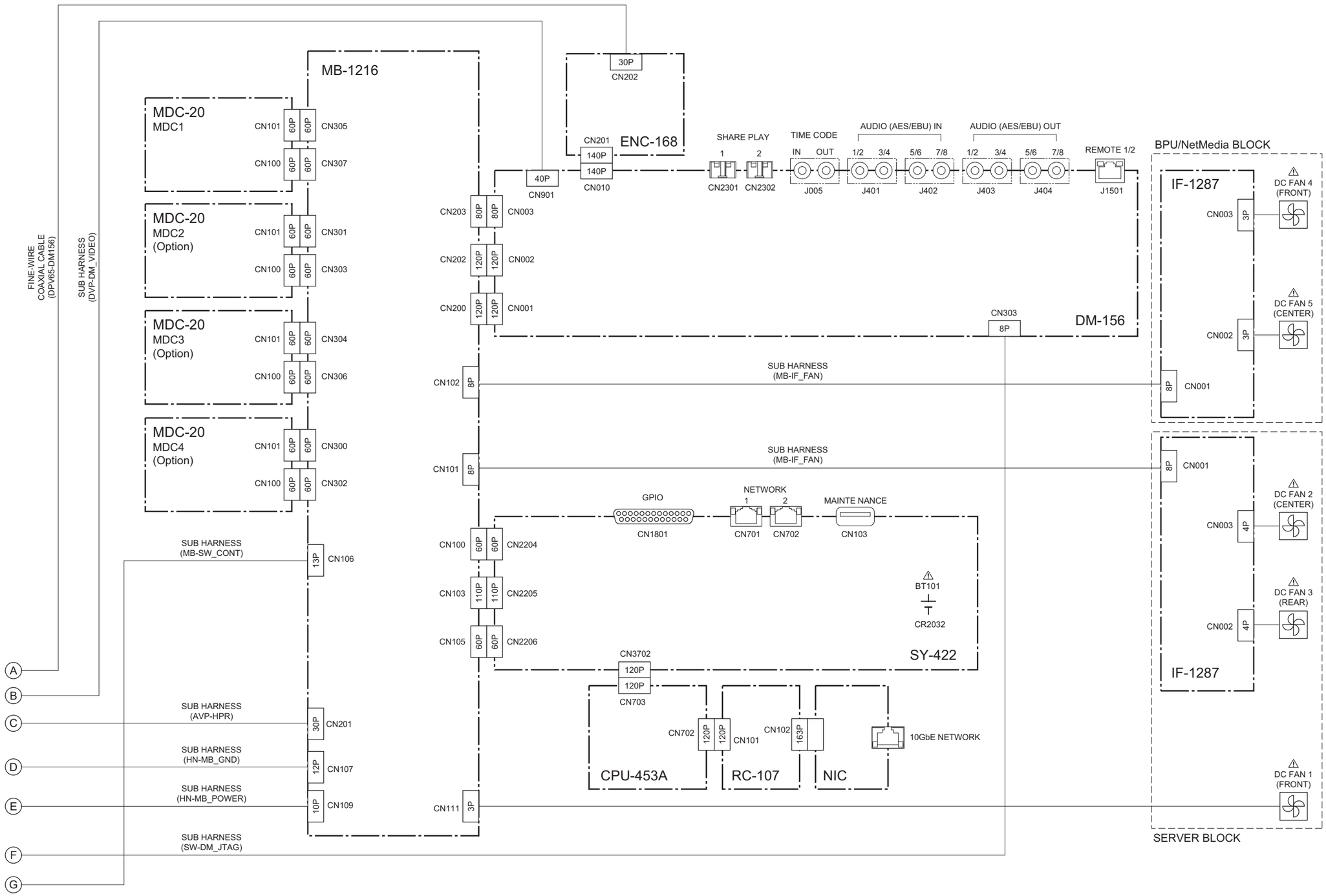
Overall



Frame Wiring
Frame Wiring (1/2)



Frame Wiring (2/2)



Revision History

Date	History	Contents
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