SONY

MULTI PORT AV STORAGE UNIT

PWS-4500

INTERNAL MEMORY ARRAY (2TB)
PWSK-4401

INTERNAL MEMORY ARRAY (2TB)
PWSK-4501

SDI INTERFACE BOARD
PWSK-4504

BPU SHARE PLAY BOARD
PWSK-4505

NETWORKED MEDIA INTERFACE BOARD
PWSK-4506F

12G-SDI INTERFACE BOARD
PWSK-4508

SERVICE MANUAL

1st Edition (Revised 3)

⚠ 警告

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

⚠ WARNING

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

⚠ WARNUNG

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

⚠ AVERTISSEMENT

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

Model Name	Serial No.
PWS-4500(SY)	10001 and Higher
PWS-4500(CN)	50001 and Higher

安全のために，周辺機器を接続する際は，過大電圧を持つ可能性があるコネクターを以下のポートに接続しないでください。
: NETWORK 1 コネクター
: NETWORK 2 コネクター
上記のポートについては本書の指示に従ってください。

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to the following port(s).
: NETWORK 1 connector
: NETWORK 2 connector
Follow the instructions for the above port(s).

注意

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

CAUTION

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

ATTENTION

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

VORSICHT

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

FÖRSIKTIGHET!

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

PAS PÅ

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

HUOMIO

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

FORSIKTIG

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

注意

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

Table of Contents

Manual Structure

Purpose of this manual....5
Related manuals....5
Trademarks....5
MDC-21 and MDC-21A Boards....5

1. Service Overview

1-1. Location of Main Parts.... 1-1
1-1-1. Location of Boards and Circuit Configuration.... 1-1
1-1-2. Location of Main Mechanical Parts.... 1-2
1-2. Location of Sensors and Their Functions.... 1-3
1-3. Functions of Onboard Switches/LED Indicators....1-4
1-3-1. Functions of Onboard Switches.... 1-4
1-3-2. Description of Onboard LED Indicators....1-9
1-4. Circuit Description....1-22
1-4-1. SY-422 Board.... 1-22
1-4-2. CPU-453A Board.... 1-23
1-4-3. RC-107 Board....1-23
1-4-4. DIO-101 Board....1-23
1-4-5. HP-175 Board.... 1-24
1-4-6. DM-155 Board.... 1-24
1-4-7. CN-3837 Board....1-25
1-4-8. SW-1628 Board.... 1-25
1-4-9. LED-528 Board.... 1-25
1-4-10. MB-1217 Board....1-26
1-4-11. MEC-40 Board.... 1-26
1-4-12. HN-431 Board....1-26
1-4-13. RD-41 Board (PWSK-4505).... 1-26
1-4-14. NET-23 Board (PWSK-4506F).... 1-26
1-4-15. DIF-260/261 Board (PWSK-4508).... 1-26
1-5. Replacing EEPROMs and Backup Battery.... 1-27
1-5-1. EEPROMs....1-27
1-5-2. Replacing Backup Battery....1-27
1-6. Writing and Rewriting the PLD Internal Data....1-28
1-7. Circuit Protection Part List....1-29
1-7-1. Circuit Protection Element.... 1-29
1-7-2. Replacing Fuses and IC Links 1-29
1-8. Recommended Replacement Parts....1-30
1-9. To Initialize the IP Address (NETWORK 1/2).... 1-31
1-10. Extension Board and Fixtures List....1-32
1-10-1. How to Use the Card Board Insertion/Removal Tool....1-32
1-11. Disconnecting/Connecting Flexible Card Wire....1-33
1-12. Lead-free Solder.... 1-34

2. Error Message

2-1. Overview of Error Message....2-1

2-2. Error Code List....2-2
2-2-1. Main Code 14....2-2
2-2-2. Main Code 26....2-4
2-2-3. Main Code 96....2-4
2-2-4. Main Code B3....2-4
2-2-5. Main Code B8....2-9
2-2-6. Main Code B9....2-9
2-2-7. Main Code BB....2-9
2-2-8. Main Code D1....2-10
2-2-9. Main Code D2....2-10
2-2-10. Main Code D3....2-11
2-2-11. Main Code D4....2-11
2-2-12. Main Code D5....2-11
2-2-13. Main Code D6....2-12
2-2-14. Main Code D7....2-12
2-2-15. Main Code D8....2-13
2-2-16. Main Code E1....2-13
2-2-17. Main Code E4....2-13

3. MAINTENANCE Menu

3-1. Overview of Maintenance Menu....3-1
3-1-1. Hierarchy of Maintenance Menu....3-1
3-2. Displaying the Menu....3-2
3-3. Maintenance Tab....3-3
3-3-1. Version Menu....3-3
3-3-2. Upgrade Menu....3-3
3-3-3. Time Menu....3-3
3-3-4. Warning Menu....3-4
3-3-5. Log Menu....3-5
3-3-6. License Menu....3-6
3-3-7. Option Menu....3-6
3-3-8. Others Menu....3-6
3-4. SNMP Tab....3-8
3-4-1. SNMP Menu....3-8

4. Replacement of Main Parts

4-1. General Information for Parts Replacement....4-1
4-1-1. Basic Knowledge....4-1
4-1-2. Tightening Torque....4-2
4-2. Flow Chart....4-3
4-3. Removing/Assembling Cabinet....4-4
4-3-1. Top Cover....4-4
4-3-2. Side Panel....4-5
4-3-3. Front Panel Assembly....4-6
4-4. Switching Regulator....4-7
4-5. Cooling Fan....4-8
4-5-1. Front Fan Assembly....4-8
4-5-2. Front Fan....4-9
4-5-3. Rear Fan Assembly....4-11

4-5-4. Rear Fan. 4-12
4-5-5. DIO Fan. 4-14
4-5-6. DM Fan. 4-16
4-5-7. DIF Fan. 4-18
4-6. Plug-In Board. 4-24
4-6-1. DIO-101 Board/DM-155 Board/Remote Input/Output Board. 4-24
4-6-2. Network Card. 4-25
4-6-3. SY-422 Board. 4-26
4-6-4. CPU-453A Board/RC-107 Board. 4-28
4-7. Other Boards. 4-29
4-7-1. LED-528 Board. 4-29
4-7-2. SW-1628 Board. 4-30
4-7-3. CN-3837 Board. 4-31
4-7-4. MDC-21 Board. 4-32
4-7-5. MEC-40 Board. 4-33
4-7-6. HN-431 Board. 4-34
4-7-7. MB-1217 Board. 4-37
4-7-8. NET-23 Board. 4-39
4-7-9. DIF-260 Board, DIF-261 Board. 4-40
4-7-10. RD-41 Board. 4-41

5. Setting Check Sheet

6. Spare Parts

6-1. Note on Repair Parts. 6-1
6-2. Exploded Views. 6-2
Cover. 6-2
Main Block-1. 6-3
Main Block-2. 6-4
Main Block-3. 6-5
Main Block-4. 6-6
Main Block-5. 6-7
Main Block-6. 6-8
6-3. Supplied Accessories. 6-9

7. Diagrams

Block Diagrams. 7-1
Frame Wiring. 7-2

Manual Structure

Purpose of this manual

This manual describes the information items that premise the service based on the block-level such as service overview, error messages, maintenance menu, replacement of main parts, setting check sheet, etc. assuming use of system and service engineers.

Related manuals

The following manuals are provided for this unit in addition to this “Service Manual”.

- Operation Manual (PDF) (Supplied with this unit. (CD-ROM))
  This manual contains information required to operate and use the unit.
- Installation Manual (Supplied with this unit)
  This manual describes the information on installing the unit.
- Factory Service Manual (Available on request)
  Parts list, circuit diagram, and board layouts of the unit are included to provide information required for part-level service.
- Protocol Manual of Remote (9-pin) Connector (Available on request)
  This manual explains the protocol for controlling this unit via the RS-422A (9-pin serial remote).
- Interface Manual of GPIO (25-pin) Connector (Available on request)
  This manual explains the protocol for controlling this unit via the GPIO (25-pin).
- Protocol Manual (VIDEO DISK COMMUNICATION PROTOCOL) (Available on request)
  This manual explains the protocol for VDCP controlling this unit via the RS-422A (9-pin serial remote).
- Protocol Manual (Odetics PROTOCOL) (Available on request)
  This manual explains the protocol for Odetics controlling this unit via the RS-422A (9-pin serial remote).

Trademarks

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

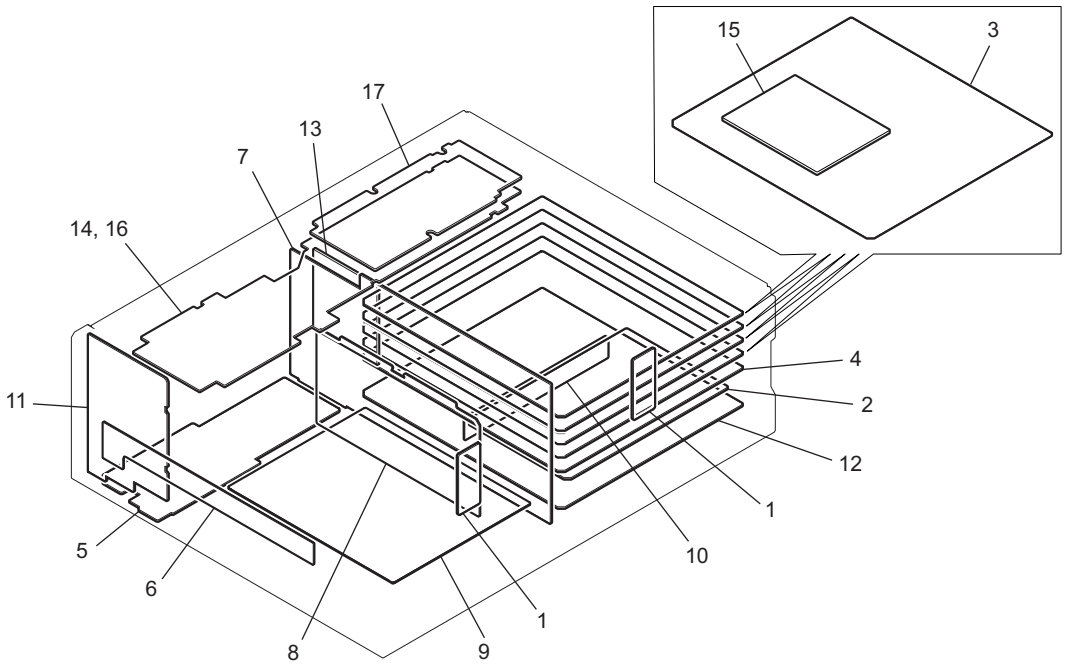
MDC-21 and MDC-21A Boards

This manual, unless otherwise specified, refers to MDC-21 board and MDC-21A board as MDC-21 board without distinguishing them.

Section 1
Service Overview

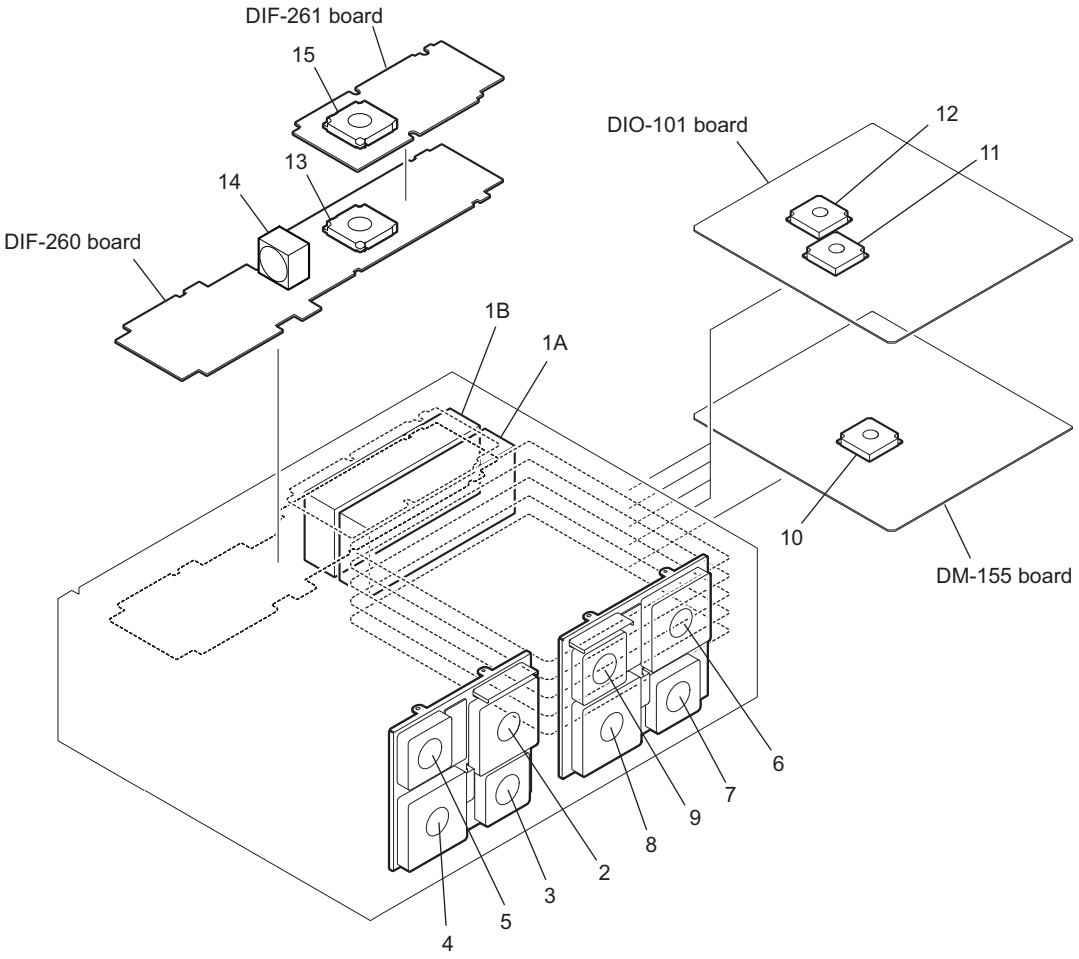
1-1. Location of Main Parts

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



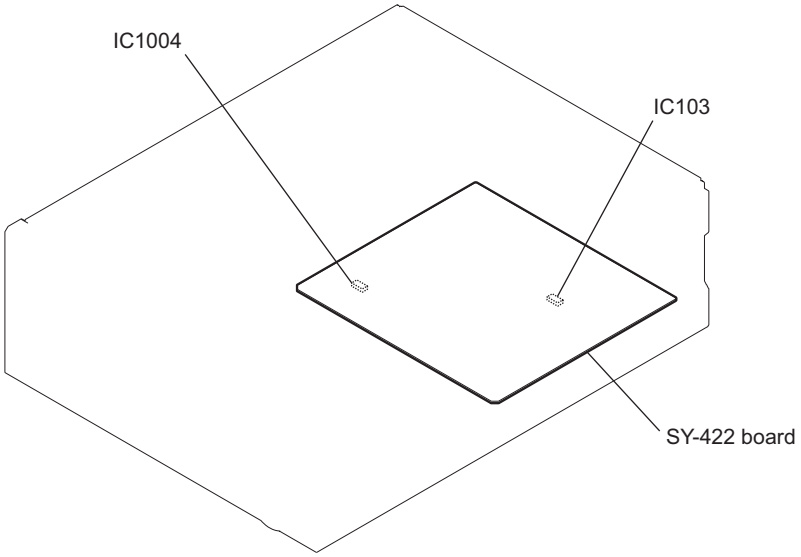
Location No.	Board Name	Circuit Function
1	CN-3837	Interconnection for the fans
2	CPU-453A	System control (2/2) & Network control
3	DIO-101 (PWSK-4504)	4K I/O & XAVC Codec Board
4	DM-155	BankMemory & NetMedia (File Sharing) & VideoMonitor Board
5	HP-175	Redundant power supply control
6	LED-528	LED
7	MB-1217	Mother board
8	MDC-21 (PWSK-4401) MDC-21A (PWSK-4501)	2T Memory Board
9	MEC-40	Host IF
10	RC-107	PCI Express card connection
11	SW-1628	Power switch & LED
12	SY-422	System control (1/2) & Network IF
13	HN-431	Redundant power relay board
14	NET-23 (PWSK-4506F)	NetMedia (SDI) Board
15	RD-41 (PWSK-4505)	BPU Share Play Board
16	DIF-260 (PWSK-4508)	12G-SDI Interface Board
17	DIF-261 (PWSK-4508)	12G-SDI Interface Board

1-1-2. Location of Main Mechanical Parts



Location No.	Part Name	Location	Identification Name
1A	Switching regulator	Power assembly	POWER SUPPLY A
1B	Switching regulator		POWER SUPPLY B
2	DC fan (80 square)	Front fan assembly	FRONT FAN 1
3	DC fan (60 square)		FRONT FAN 2
4	DC fan (80 square)		FRONT FAN 3
5	DC fan (60 square)		FRONT FAN 4
6	DC fan (80 square)	Rear fan assembly	REAR FAN 1
7	DC fan (60 square)		REAR FAN 2
8	DC fan (80 square)		REAR FAN 3
9	DC fan (60 square)		REAR FAN 4
10	DC fan (sirocco 50 square)	DM-155 board assembly	DM FAN
11	DC fan (sirocco 50 square)	DIO-101 board assembly	DIO FAN 1
12	DC fan (sirocco 50 square)		DIO FAN 2
13	DC fan (sirocco 50 square)	DIF-260 board, DIF-261 board assembly	DIF FAN 1
14	DC fan (40 square)		DIF FAN 2
15	DC fan (sirocco 50 square)		DIF FAN 3

1-2. Location of Sensors and Their Functions

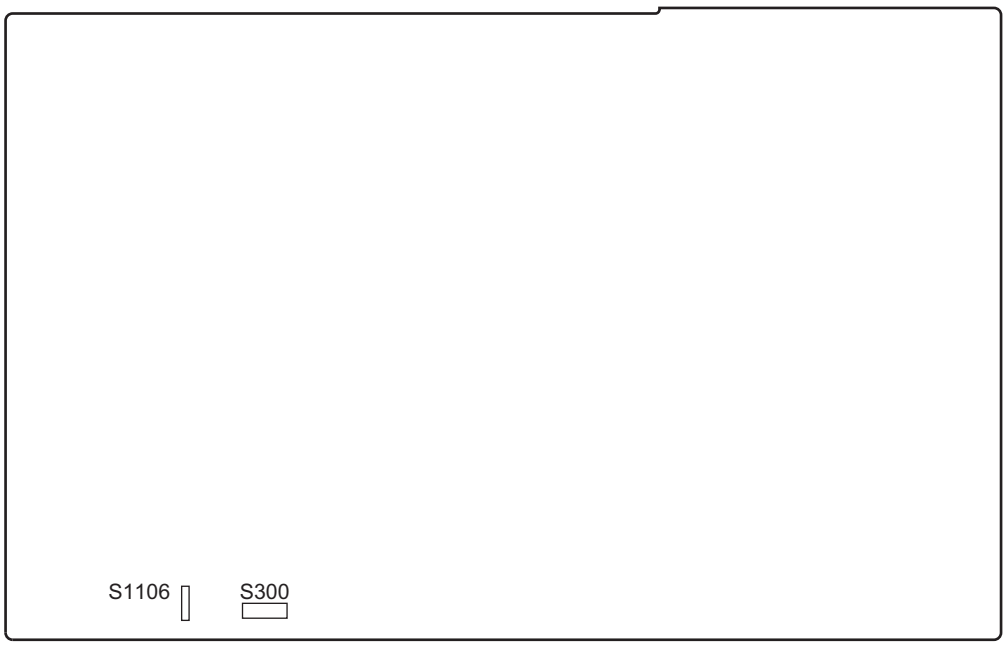


Board Name	Ref. No. (Address)	Function
SY-422	IC103 (D-8) (Side B)	Internal temperature monitoring
SY-422	IC1004 (K-2) (Side B)	Internal temperature monitoring

1-3. Functions of Onboard Switches/LED Indicators

1-3-1. Functions of Onboard Switches

CPU-453A Board



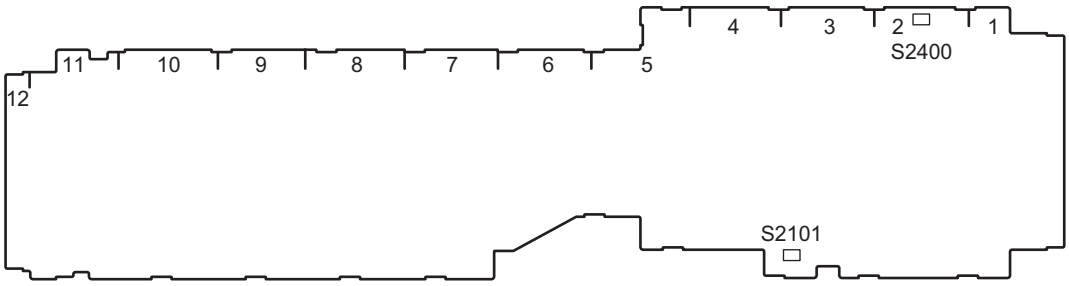
CPU-453A board (Side A)

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	-

DIF-260 Board



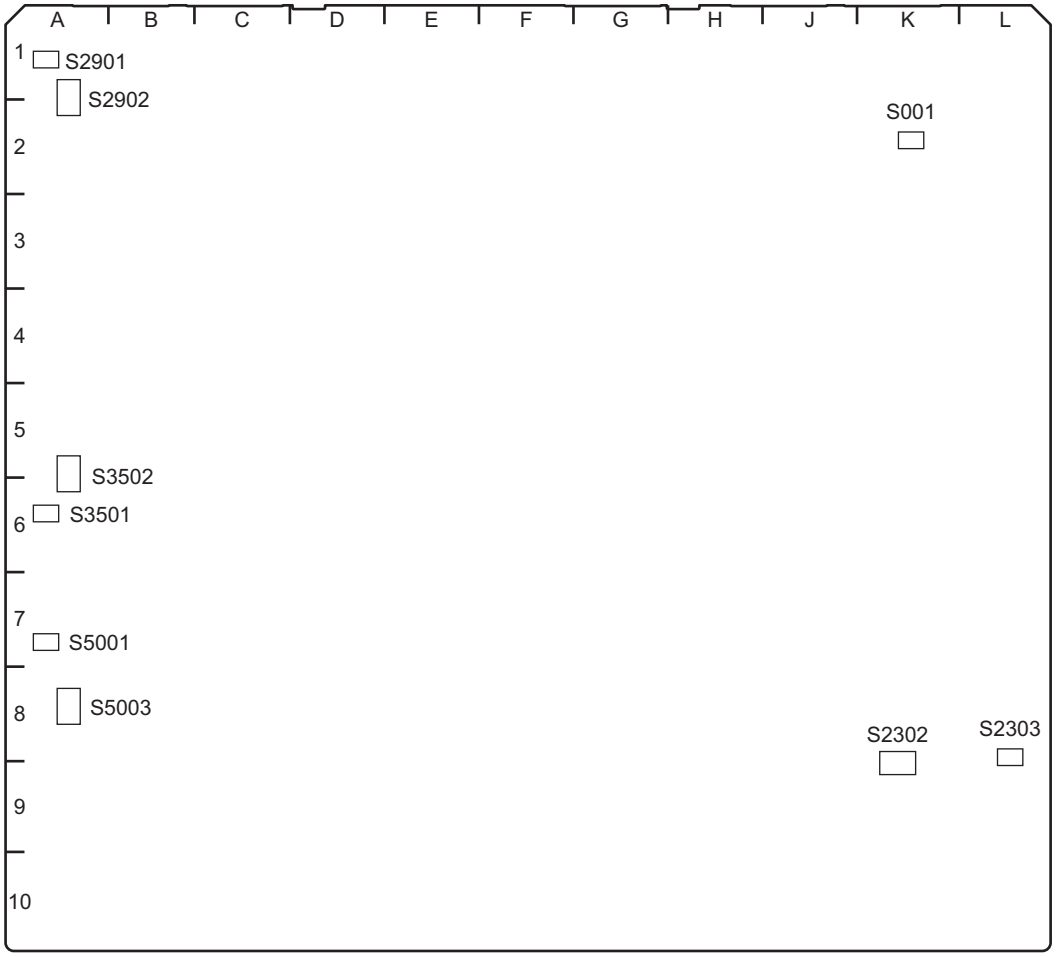
DIF-260 board (Side B)

Note

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

Ref. No. (Address)	Bit	Description	Factory Setting
S2101 (A-3)		Factory use	-
S2400 (A-2)		Factory use	-

DIO-101 Board



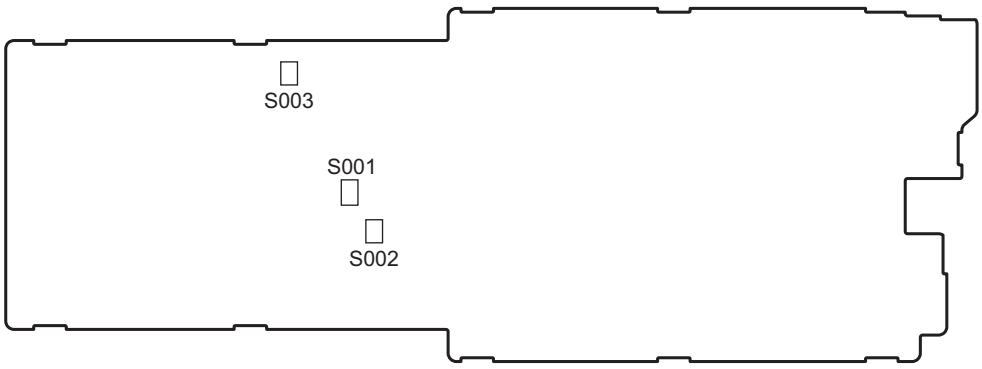
DIO-101 board (Side A)

Note

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

Ref. No. (Address)	Bit	Description	Factory Setting
S001 (K-2)		Factory use	-
S2302 (K-9)	1-8	Factory use	OFF (ALL)
S2303 (L-8)		Factory use	-
S2901 (A-1)		Factory use	-
S2902 (A-1)	1-8	Factory use	OFF (ALL)
S3501 (A-6)		Factory use	-
S3502 (A-5)	1-8	Factory use	OFF (ALL)
S5001 (A-7)		Factory use	-
S5003 (A-8)	1-8	Factory use	OFF (ALL)

HP-175 Board



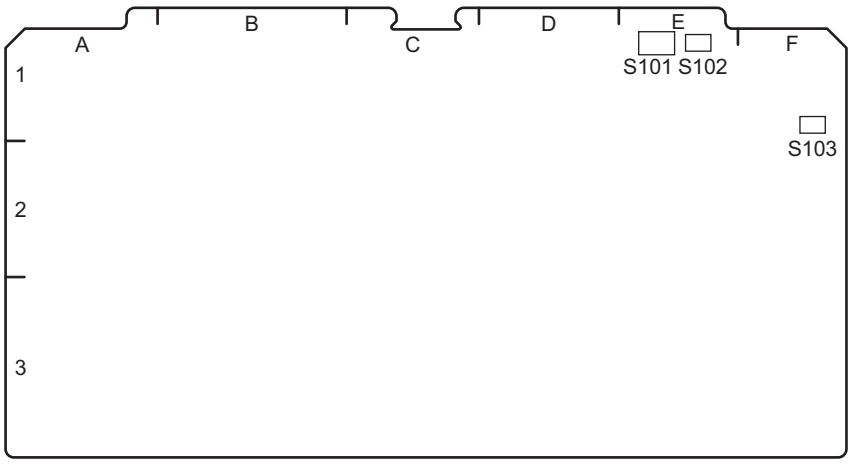
HP-175 board (Side A)

Note

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

Ref. No. (Address)	Bit	Description	Factory Setting
S001 (A-1)		Factory use	-
S002 (A-1)	1-4	Factory use	OFF (ALL)
S003 (A-1)	1-4	Factory use	OFF (ALL)

MDC-21 Board



MDC-21 board (Side A)

Note

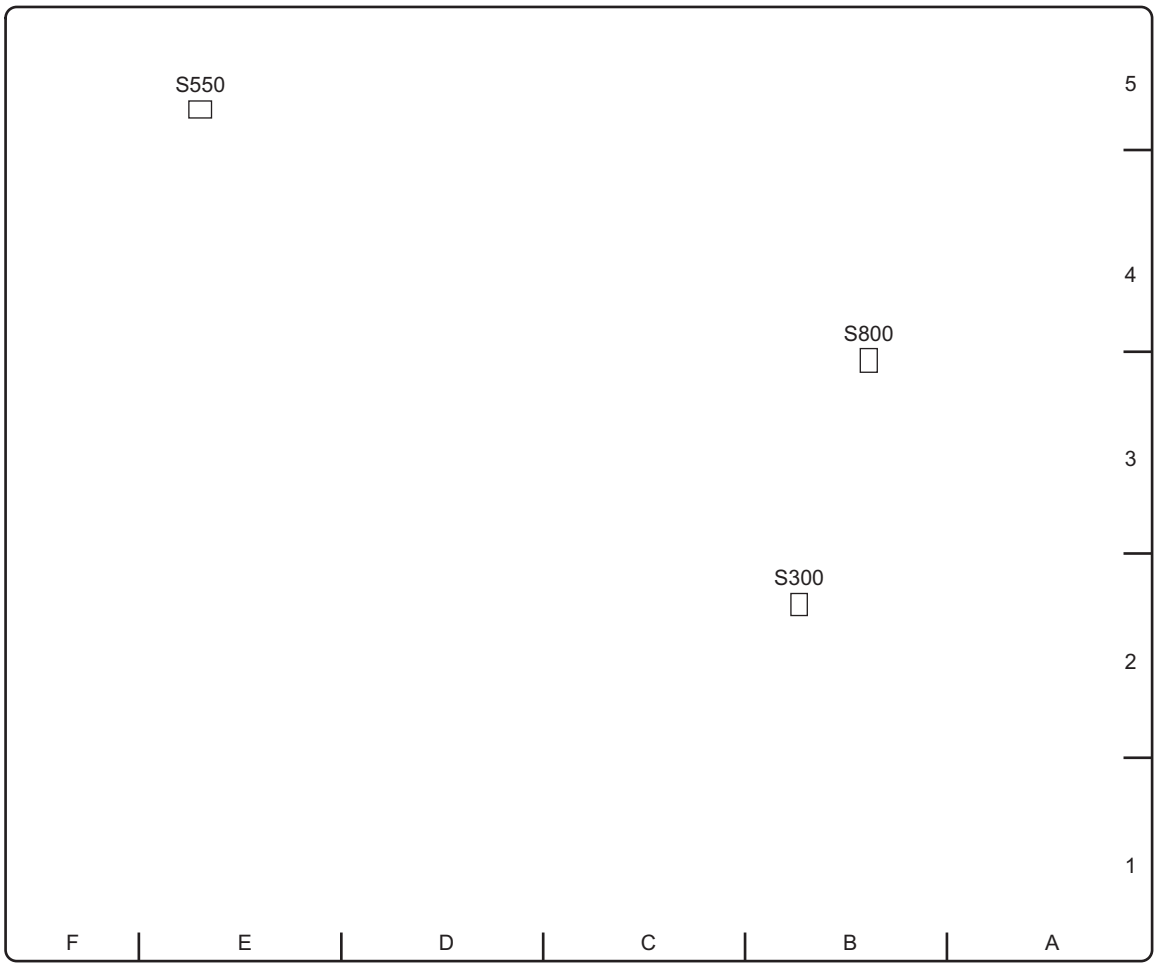
Do not change the settings of the switches described as “Factory use”.

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

Continued

Ref. No. (Address)	Bit	Description	Factory Setting
S103 (F-1)		Factory use	-

MEC-40 Board



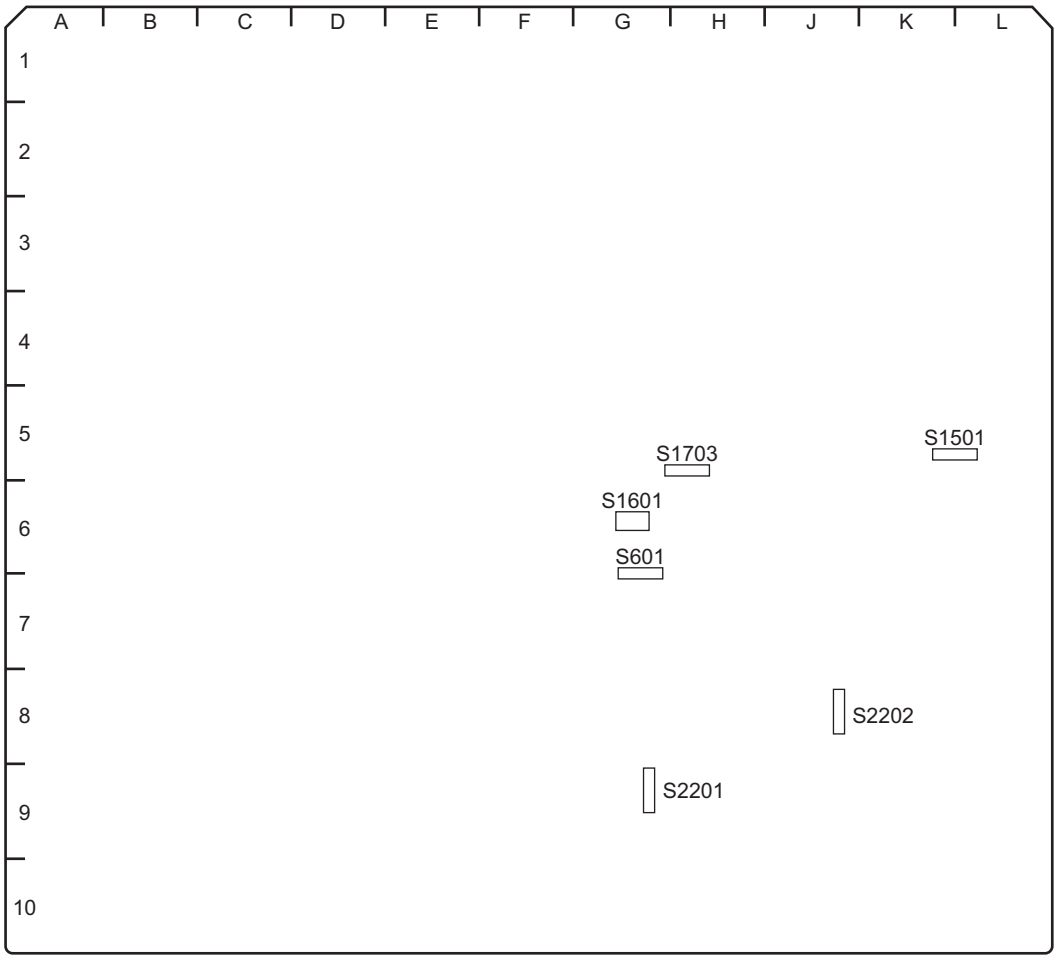
MEC-40 board (Side A)

Note

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

Ref. No. (Address)	Bit	Description	Factory Setting
S300 (B-2)	1-4	Factory use	OFF (ALL)
S550 (E-5)	1-4	Factory use	OFF (ALL)
S800 (B-4)	1-4	Factory use	OFF (ALL)

SY-422 Board



SY-422 board (Side A)

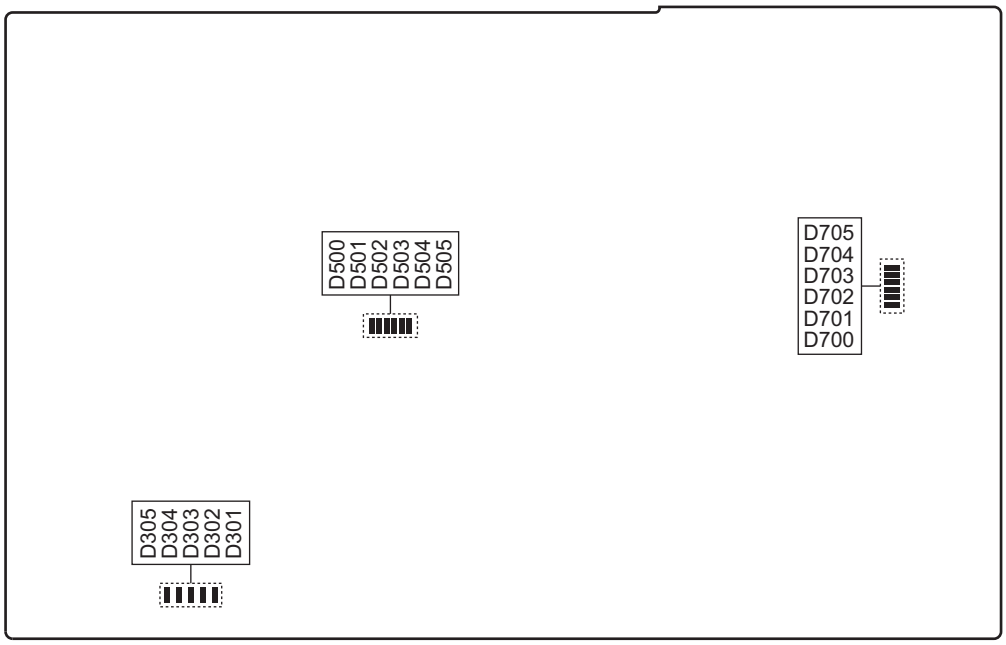
Note

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	-

1-3-2. Description of Onboard LED Indicators

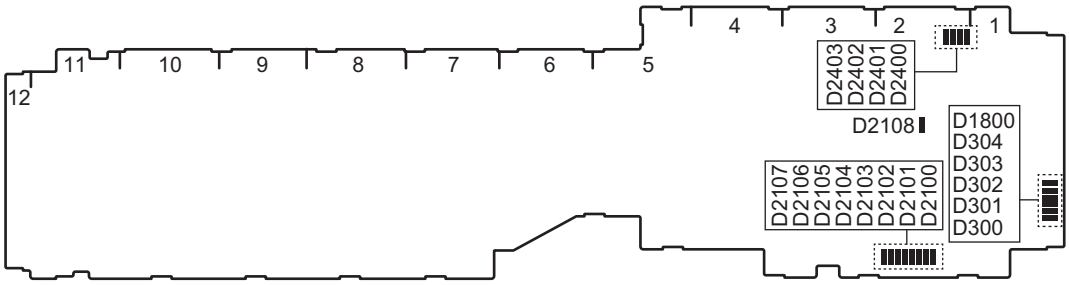
CPU-453A Board



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

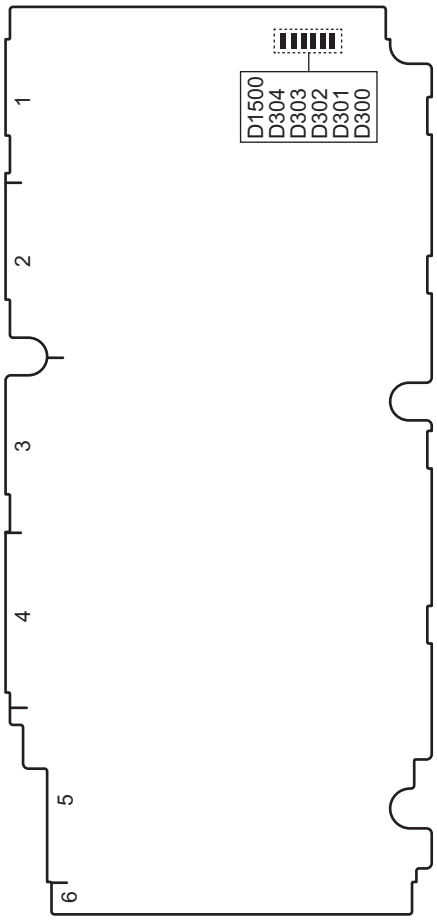
DIF-260 Board



DIF-260 board (Side B)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D300 (A-1)	-	Green	Factory use	Blinks
D301 (A-1)	-	Green	Factory use	Blinks
D302 (A-1)	-	Green	Factory use	On
D303 (A-1)	-	Green	Factory use	Off
D304 (A-1)	-	Green	Factory use	On
D1800 (A-1)	+12 V	Green	+12 V power is supplied.	On
D2100 (A-2)	-	Green	Factory use	On
D2101 (A-2)	-	Green	Factory use	On
D2102 (A-2)	-	Green	Factory use	On
D2103 (A-2)	-	Green	Factory use	On
D2104 (A-2)	-	Green	Factory use	On
D2105 (A-2)	-	Green	Factory use	Blinks
D2106 (A-2)	-	Green	Factory use	Blinks
D2107 (A-2)	-	Green	Successful startup of IC1900 on the DIF-260 board	On
D2400 (A-2)	CPLD	Green	Stop of Fan 2 on the DIF-260 board	Off
D2401 (A-2)	CPLD	Green	Stop of Fan 3 on the DIF-261 board	Off
D2402 (A-2)	CPLD	Green	Failure in startup of IC300 on the DIF-260 board	Off
D2403 (A-2)	CPLD	Green	Failure in startup of IC300 on the DIF-261 board	Off

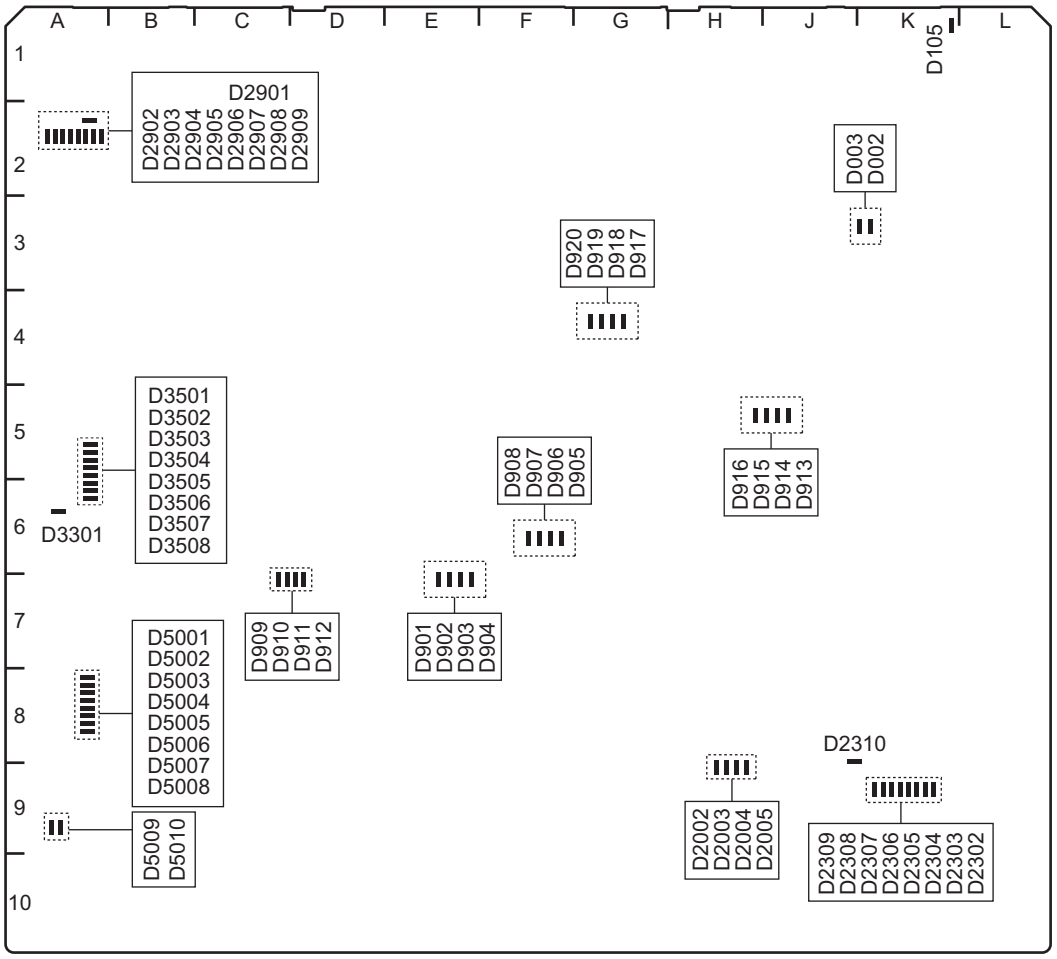
DIF-261 Board



DIF-261 board (Side B)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D300 (A-1)	-	Green	Factory use	Blinks
D301 (A-1)	-	Green	Factory use	Blinks
D302 (A-1)	-	Green	Factory use	On
D303 (A-1)	-	Green	Factory use	Off
D304 (A-1)	-	Green	Factory use	On
D1500 (A-1)	+12 V	Green	+12 V power is supplied.	On

DIO-101 Board



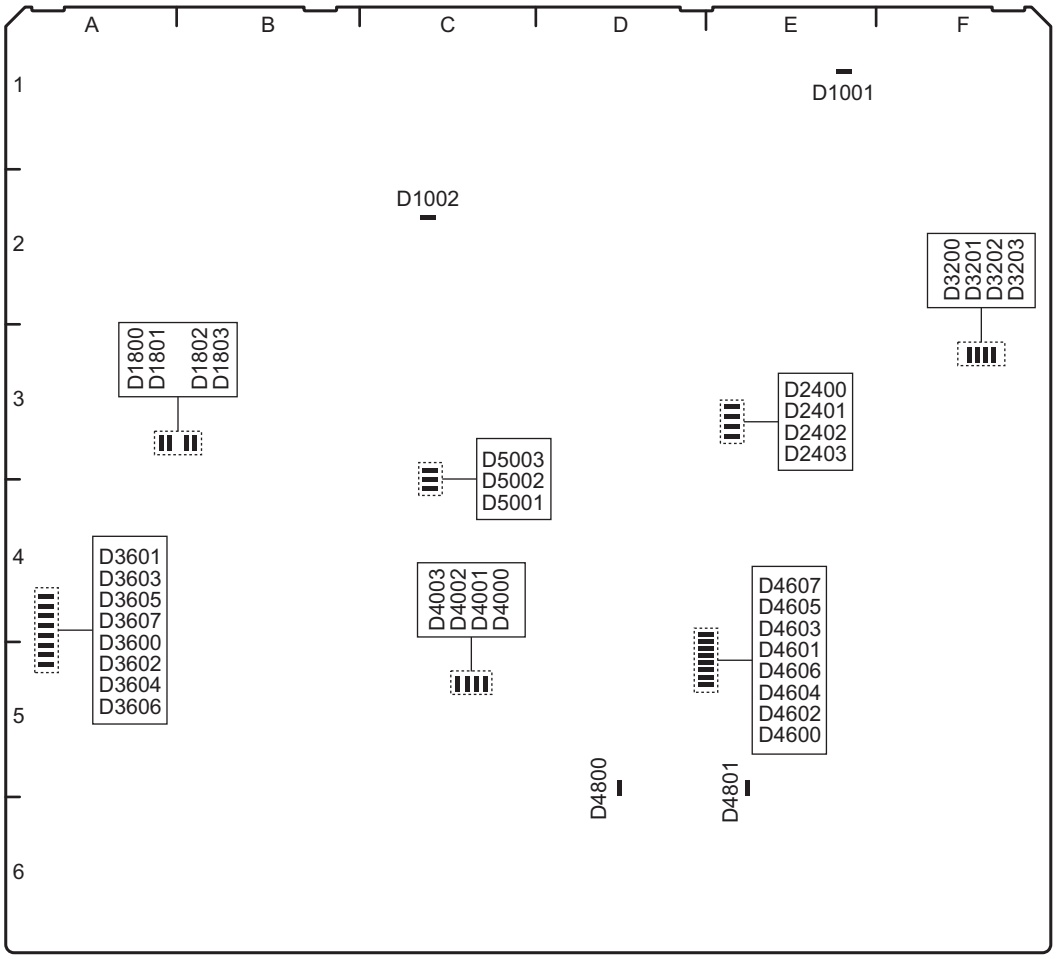
DIO-101 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D002 (K-3)	-	Red	+12 V power is supplied.	On
D003 (K-3)	-	Green	Factory use	Inconstant
D105 (K-1)	-	Green	Factory use	Inconstant
D901 (E-7)	-	Green	Factory use	Inconstant
D902 (E-7)	-	Green	Factory use	Inconstant
D903 (E-7)	-	Green	Factory use	Inconstant
D904 (E-7)	-	Green	Factory use	Inconstant
D905 (F-6)	-	Green	Factory use	Inconstant
D906 (F-6)	-	Green	Factory use	Inconstant
D907 (F-6)	-	Green	Factory use	Inconstant
D908 (F-6)	-	Green	Factory use	Inconstant
D909 (C-7)	-	Green	Factory use	Inconstant
D910 (C-7)	-	Green	Factory use	Inconstant
D911 (D-7)	-	Green	Factory use	Inconstant
D912 (D-7)	-	Green	Factory use	Inconstant
D913 (J-5)	-	Green	Factory use	Inconstant
D914 (J-5)	-	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D915 (J-5)	-	Green	Factory use	Inconstant
D916 (H-5)	-	Green	Factory use	Inconstant
D917 (G-4)	-	Green	Factory use	Inconstant
D918 (G-4)	-	Green	Factory use	Inconstant
D919 (G-4)	-	Green	Factory use	Inconstant
D920 (G-4)	-	Green	Factory use	Inconstant
D2002 (H-9)	-	Green	Factory use	Inconstant
D2003 (H-9)	-	Green	Factory use	Inconstant
D2004 (H-9)	-	Green	Factory use	Inconstant
D2005 (H-9)	-	Green	Factory use	Inconstant
D2302 (K-9)	-	Green	Factory use	Inconstant
D2303 (K-9)	-	Green	Factory use	Inconstant
D2304 (K-9)	-	Green	Factory use	Inconstant
D2305 (K-9)	-	Green	Factory use	Inconstant
D2306 (K-9)	-	Green	Factory use	Inconstant
D2307 (K-9)	-	Green	Factory use	Inconstant
D2308 (K-9)	-	Green	Factory use	Inconstant
D2309 (K-9)	-	Green	Factory use	Inconstant
D2310 (J-8)	-	Green	Factory use	Inconstant
D2901 (A-2)	-	Green	Factory use	Inconstant
D2902 (A-2)	-	Green	Factory use	Inconstant
D2903 (A-2)	-	Green	Factory use	Inconstant
D2904 (A-2)	-	Green	Factory use	Inconstant
D2905 (A-2)	-	Green	Factory use	Inconstant
D2906 (A-2)	-	Green	Factory use	Inconstant
D2907 (A-2)	-	Green	Factory use	Inconstant
D2908 (A-2)	-	Green	Factory use	Inconstant
D2909 (A-2)	-	Green	Factory use	Inconstant
D3301 (A-6)	-	Green	Factory use	Inconstant
D3501 (A-5)	-	Green	Factory use	Inconstant
D3502 (A-5)	-	Green	Factory use	Inconstant
D3503 (A-5)	-	Green	Factory use	Inconstant
D3504 (A-5)	-	Green	Factory use	Inconstant
D3505 (A-5)	-	Green	Factory use	Inconstant
D3506 (A-6)	-	Green	Factory use	Inconstant
D3507 (A-6)	-	Green	Factory use	Inconstant
D3508 (A-6)	-	Green	Factory use	Inconstant
D5001 (A-8)	-	Green	Factory use	Inconstant
D5002 (A-8)	-	Green	Factory use	Inconstant
D5003 (A-8)	-	Green	Factory use	Inconstant
D5004 (A-8)	-	Green	Factory use	Inconstant
D5005 (A-8)	-	Green	Factory use	Inconstant
D5006 (A-8)	-	Green	Factory use	Inconstant
D5007 (A-8)	-	Green	Factory use	Inconstant
D5008 (A-8)	-	Green	Factory use	Inconstant
D5009 (A-9)	-	Green	On when the board is set to the ENC mode.	On (ENC mode)
D5010 (A-9)	-	Orange	On when the board is set to the DEC mode.	On (DEC mode)

DM-155 Board



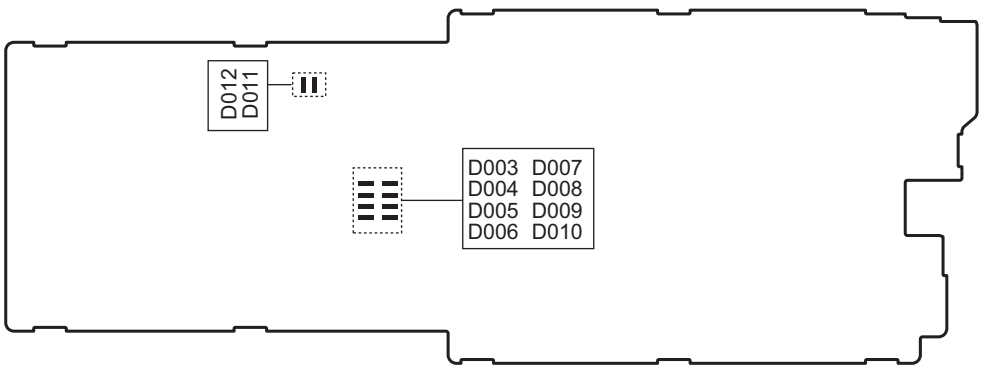
DM-155 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D1001 (E-1)	-	Green	+12 V power is supplied.	On
D1002 (C-2)	-	Red	Abnormality in the power supply system on the board.	Off
D1800 (A-3)	-	Green	Factory use	Inconstant
D1801 (A-3)	-	Green	Factory use	Inconstant
D1802 (B-3)	-	Green	Factory use	Inconstant
D1803 (B-3)	-	Green	Factory use	Inconstant
D2400 (E-3)	-	Green	Factory use	Inconstant
D2401 (E-3)	-	Green	Factory use	Inconstant
D2402 (E-3)	-	Green	Factory use	Inconstant
D2403 (E-3)	-	Green	Factory use	Inconstant
D3200 (F-3)	-	Green	Factory use	Inconstant
D3201 (F-3)	-	Green	Factory use	Inconstant
D3202 (F-3)	-	Green	Factory use	Inconstant
D3203 (F-3)	-	Green	Factory use	Inconstant
D3600 (A-4)	-	Green	Factory use	Inconstant
D3601 (A-4)	-	Green	Factory use	Inconstant
D3602 (A-5)	-	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D3603 (A-4)	-	Green	Factory use	Inconstant
D3604 (A-5)	-	Green	Factory use	Inconstant
D3605 (A-4)	-	Green	Factory use	Inconstant
D3606 (A-5)	-	Green	Factory use	Inconstant
D3607 (A-4)	-	Green	Factory use	Inconstant
D4000 (C-5)	-	Orange	Factory use	Inconstant
D4001 (C-5)	-	Yellow	Factory use	Inconstant
D4002 (C-5)	-	Orange	Factory use	Inconstant
D4003 (C-5)	-	Yellow	Factory use	Inconstant
D4600 (D-5)	-	Green	Factory use	Inconstant
D4601 (D-5)	-	Green	Factory use	Inconstant
D4602 (D-5)	-	Green	Factory use	Inconstant
D4603 (D-5)	-	Green	Factory use	Inconstant
D4604 (D-5)	-	Green	Factory use	Inconstant
D4605 (D-5)	-	Green	Factory use	Inconstant
D4606 (D-5)	-	Green	Factory use	Inconstant
D4607 (D-4)	-	Green	Factory use	Inconstant
D4800 (D-5)	-	Red	Factory use	Inconstant
D4801 (E-5)	-	Red	Factory use	Inconstant
D5001 (C-4)	-	Green	Factory use	Inconstant
D5002 (C-4)	-	Green	Factory use	Inconstant
D5003 (C-3)	-	Green	Factory use	Inconstant

HP-175 Board



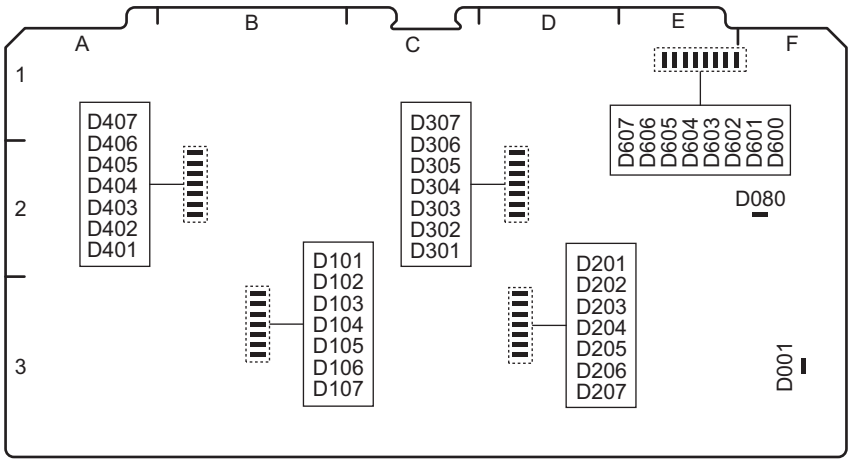
HP-175 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D003 (A-1)	-	Green	Factory use	Inconstant
D004 (A-1)	-	Green	Factory use	Inconstant
D005 (A-1)	-	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D006 (A-1)	-	Green	Factory use	Inconstant
D007 (A-1)	-	Green	Factory use	Inconstant
D008 (A-1)	-	Green	Factory use	Inconstant
D009 (A-1)	-	Green	Factory use	Inconstant
D010 (A-1)	-	Green	Factory use	Inconstant
D011 (A-1)	-	Green	Factory use	Inconstant
D012 (A-1)	-	Green	Factory use	Inconstant

MDC-21 Board



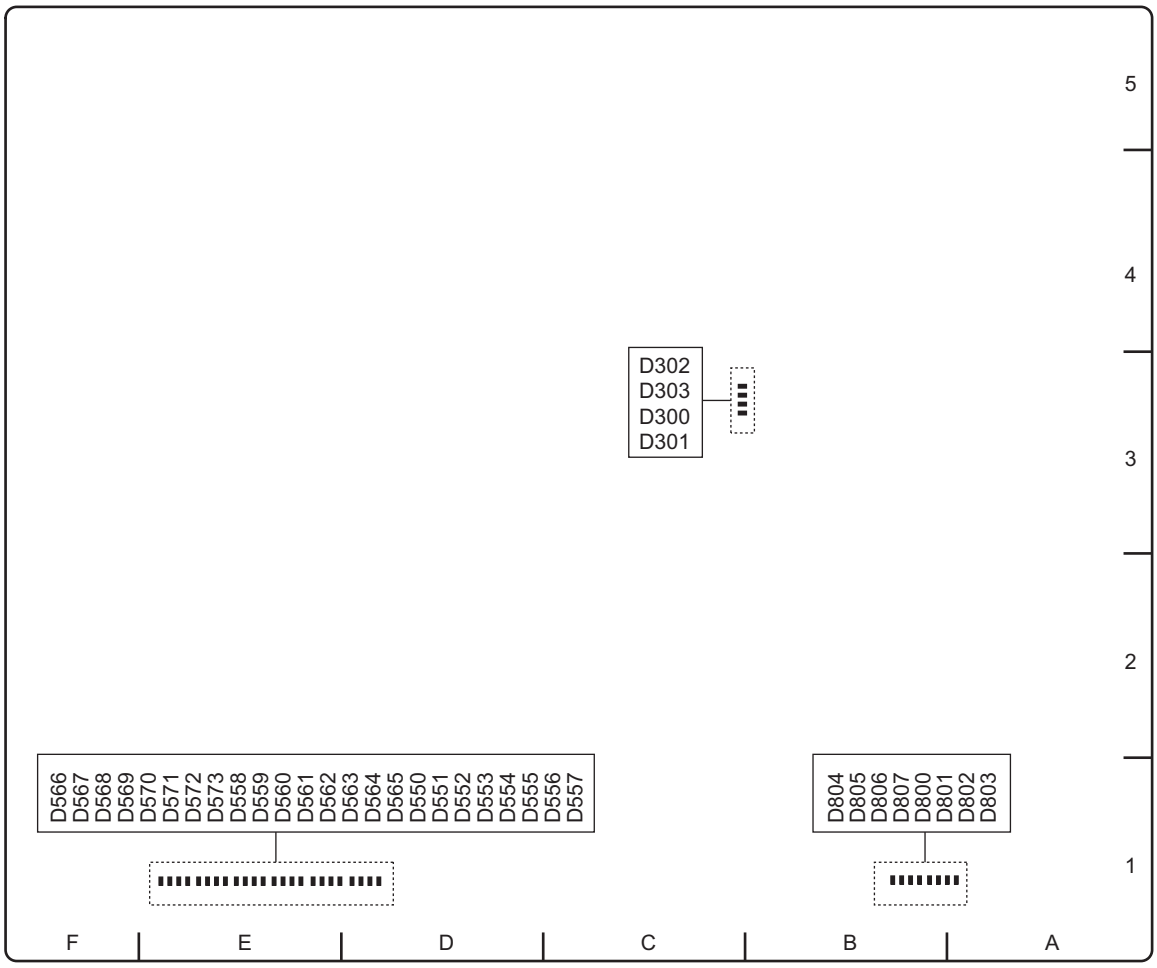
MDC-21 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D001 (F-3)	-	Green	+12 V power is supplied.	On
D080 (F-2)	-	Green	+3.3V has risen up.	On
D101 (B-3)	-	Green	Factory use	Inconstant
D102 (B-3)	-	Green	Factory use	Inconstant
D103 (B-3)	-	Green	Factory use	Inconstant
D104 (B-3)	-	Green	Factory use	Inconstant
D105 (B-3)	-	Green	Factory use	Inconstant
D106 (B-3)	-	Green	Factory use	Inconstant
D107 (B-3)	-	Green	Factory use	Inconstant
D201 (D-3)	-	Green	Factory use	Inconstant
D202 (D-3)	-	Green	Factory use	Inconstant
D203 (D-3)	-	Green	Factory use	Inconstant
D204 (D-3)	-	Green	Factory use	Inconstant
D205 (D-3)	-	Green	Factory use	Inconstant
D206 (D-3)	-	Green	Factory use	Inconstant
D207 (D-3)	-	Green	Factory use	Inconstant
D301 (D-2)	-	Green	Factory use	Inconstant
D302 (D-2)	-	Green	Factory use	Inconstant
D303 (D-2)	-	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D304 (D-2)	-	Green	Factory use	Inconstant
D305 (D-2)	-	Green	Factory use	Inconstant
D306 (D-2)	-	Green	Factory use	Inconstant
D307 (D-2)	-	Green	Factory use	Inconstant
D401 (B-2)	-	Green	Factory use	Inconstant
D402 (B-2)	-	Green	Factory use	Inconstant
D403 (B-2)	-	Green	Factory use	Inconstant
D404 (B-2)	-	Green	Factory use	Inconstant
D405 (B-2)	-	Green	Factory use	Inconstant
D406 (B-2)	-	Green	Factory use	Inconstant
D407 (B-2)	-	Green	Factory use	Inconstant
D600 (E-1)	-	Green	Factory use	Inconstant
D601 (E-1)	-	Green	Factory use	Inconstant
D602 (E-1)	-	Green	Factory use	Inconstant
D603 (E-1)	-	Green	Factory use	Inconstant
D604 (E-1)	-	Green	Factory use	Inconstant
D605 (E-1)	-	Green	Factory use	Inconstant
D606 (E-1)	-	Green	Factory use	Inconstant
D607 (E-1)	-	Green	Factory use	Inconstant

MEC-40 Board



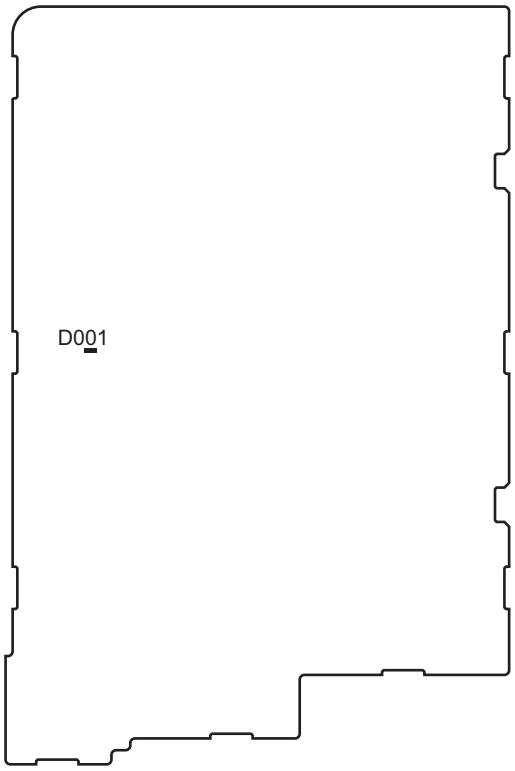
MEC-40 board (Side A)

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D300 (C-3)	-	Green	On when IC700 (FPGA) failed in normal startup.	Off
D301 (C-3)	-	Green	On when IC700 (FPGA) failed in recovery startup.	Off
D302 (C-3)	-	Green	On when IC400 (FPGA) failed in normal startup.	Off
D303 (C-3)	-	Green	On when IC400 (FPGA) failed in recovery startup.	Off
D550 (E-1)	-	Green	Factory use	Inconstant
D551 (E-1)	-	Green	Factory use	Inconstant
D552 (E-1)	-	Green	Factory use	Inconstant
D553 (E-1)	-	Green	Factory use	Inconstant
D554 (D-1)	-	Green	Factory use	Inconstant
D555 (D-1)	-	Green	Factory use	Inconstant
D556 (D-1)	-	Green	Factory use	Inconstant
D557 (D-1)	-	Green	Factory use	Inconstant
D558 (E-1)	-	Green	Factory use	Inconstant
D559 (E-1)	-	Green	Factory use	Inconstant
D560 (E-1)	-	Green	Factory use	Inconstant
D561 (E-1)	-	Green	Factory use	Inconstant
D562 (E-1)	-	Green	Factory use	Inconstant

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
D563 (E-1)	-	Green	Factory use	Inconstant
D564 (E-1)	-	Green	Factory use	Inconstant
D565 (E-1)	-	Green	Factory use	Inconstant
D566 (E-1)	-	Green	Factory use	Inconstant
D567 (E-1)	-	Green	Factory use	Inconstant
D568 (E-1)	-	Green	Factory use	Inconstant
D569 (E-1)	-	Green	Factory use	Inconstant
D570 (E-1)	-	Green	Factory use	Inconstant
D571 (E-1)	-	Green	Factory use	Inconstant
D572 (E-1)	-	Green	Factory use	Inconstant
D573 (E-1)	-	Green	Factory use	Inconstant
D800 (B-1)	-	Green	Factory use	Inconstant
D801 (B-1)	-	Green	Factory use	Inconstant
D802 (B-1)	-	Green	Factory use	Inconstant
D803 (A-1)	-	Green	Factory use	Inconstant
D804 (B-1)	-	Green	Factory use	Inconstant
D805 (B-1)	-	Green	Factory use	Inconstant
D806 (B-1)	-	Green	Factory use	Inconstant
D807 (B-1)	-	Green	Factory use	Inconstant

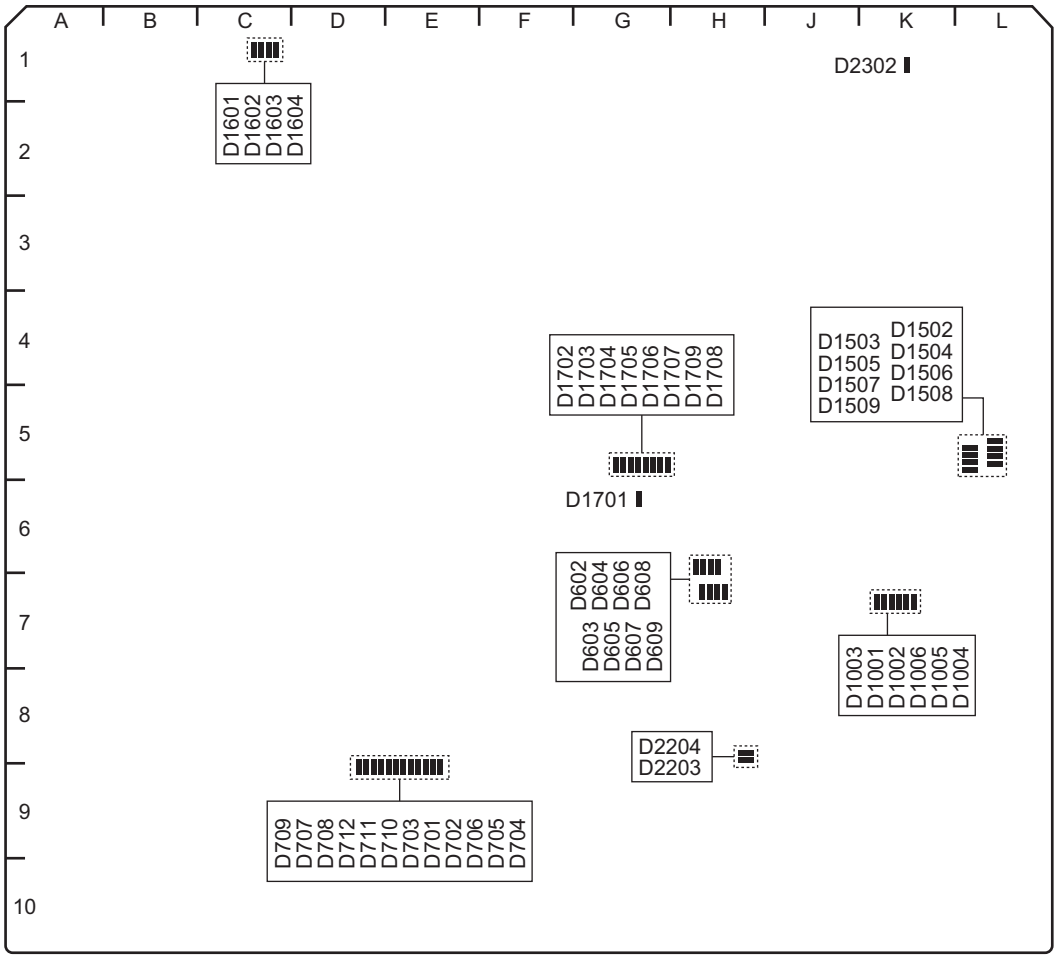
SW-1628 Board



SW-1628 board (Side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D001	-	Red/ Green	On in red: While the main (primary side) power is turned on and +5 V is supplied to the HP board (in standby mode) On in green: When the ON/Standby button (secondary side) is turned on (power-on mode)	On (Green)

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
D701 (E-8)	-	Green	On when SYS1 Ether1 is connecting in TX	Off

Continued

Ref. No. (Address)	Name	Color	Description	Normal State (Power On)
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

1-4. Circuit Description

This unit comprises the following boards. This circuit description describes functions of each board separately.

- CN-3837 board (Refer to "1-4-7. CN-3837 Board")
- CPU-453A board (Refer to "1-4-2. CPU-453A Board")
- DIO-101 board (Refer to "1-4-4. DIO-101 Board")
- DM-155 board (Refer to "1-4-6. DM-155 Board")
- HP-175 board (Refer to "1-4-5. HP-175 Board")
- LED-528 board (Refer to "1-4-9. LED-528 Board")
- MB-1217 board (Refer to "1-4-10. MB-1217 Board")
- MEC-40 board (Refer to "1-4-11. MEC-40 Board")
- RC-107 board (Refer to "1-4-3. RC-107 Board")
- SW-1628 board (Refer to "1-4-8. SW-1628 Board")
- SY-422 board (Refer to "1-4-1. SY-422 Board")
- HN-431 board (Refer to "1-4-12. HN-431 Board")
- RD-41 board (Refer to "1-4-13. RD-41 Board (PWSK-4505)")
- NET-23 board (Refer to "1-4-14. NET-23 Board (PWSK-4506F)")
- DIF-260/261 board (Refer to "1-4-15. DIF-260/261 Board (PWSK-4508)")

1-4-1. 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) contains DRAM (IC501 to IC504, and IC1401 to IC1404) and FRAM (IC610, IC1510, and IC2901 to IC2903) to save system settings.
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-155 board and relays network data to CPU1 (IC1) via the SRIO endpoint.

1-4-2. 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.

1-4-3. 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.

1-4-4. DIO-101 Board

The DIO-101 board inputs audio and video signals.

Video signal processing (input mode)

The DIO-101 board has 9-channel SDI inputs/outputs operating as 4-channel input, 4-channel monitor input, and 1-channel HD SDI input to enable 4K processing.
The 4K SDI signals from the connectors (J201 to J204) are input through the equalizer (IC201 to IC204) to the baseband FPGA (IC100). In the same way, the Networked Media Interface signal is received by the optional NET-23 board and is converted to SDI signals. Then the SDI signals are input through the MB-1217 board to the baseband FPGA on the DIO-101 board.
In the same way, HD SDI signals from the connector J301 are input through the equalizer IC302 to the baseband FPGA (IC100). Then the HD SDI signals are compressed to XAVC-Intra frame data by the video encoder (IC1000 to IC1800). The compressed signals are input to the backplane FPGA (IC200) and stored in the DRAM (IC3002, IC3003). Then the signals are multiplexed sequentially with audio data, video data, and uncompressed meta data, and the multiplexed signals are transferred through DMA (Direct Memory Access) to the BANK FPGA (IC0040) on the DM-155 board with 3.125 Gbps serial transmission. This DMA transfer includes 4K HD independently for each system.

Audio signal processing (input mode)

The DIO-101 board has four AES/EBU connectors (J3601 to J3602) allowing input for eight channels.
Furthermore, the HD SDI embedded audio signals for 16 channels can be input, and each channel is independently selectable.
AES/EBU-format digital audio signals and HD SDI embedded audio signals are input to the audio FPGA (IC300) in which processes (channel selection, gain control, etc.) are performed. The processed signals are input to the backplane FPGA (IC200) in the same way as video signals.
After the audio signals are stored in the DRAM (IC3002, IC3003), they are multiplexed with video signals and the multiplexed signals are DMA transferred to the BANK FPGA (IC0040) on the DM-155 board with 3.125 Gbps serial transmission.

Timecode signal processing (input mode)

The timecode signal that is input from the timecode input connector (J302) is input to the baseband FPGA (IC100) in which parallel processing is applied to the signal, and then the processed timecode signal is detected by the CPU. The same timecode signal is output from the timecode output connector (J302) for cascade processing.

Video signal processing (output mode)

Video signal processing is performed for each different system to enable 4K processing and HD processing at the same time.

Signals multiplexed sequentially with audio data, video data, and uncompressed meta data are transferred through DMA (Direct Memory Access) from the BANK FPGA (IC0040) on the DM-155 board with 3.125 Gbps serial transmission. This DMA transfer system is independent for 4K signal and HD signal.

Signals transferred from the DM-155 board through DMA are input to the backplane FPGA (IC200) and are stored in the DRAM (IC3002, IC3003).

The XAVC-I signal separated in the backplane FPGA (IC200) is processed by the video decoder (IC1000 to IC1800) and the processed signal is input to the baseband FPGA (IC100).

Parallel baseband signals are encoded into the SDI signals in IC100 and the encoded signals are output as SDI signals from the connectors J201 to J204 through the SDI drivers (IC201 to IC208).

SDI signals are sent through the MB-1217 board to the NET-23 board, and are then converted to the Networked Media Interface signal on the NET-23 board.

Audio signal processing (output mode)

The DIO-101 board has four AES/EBU connectors allowing output for eight channels. Furthermore, the HD SDI embedded audio signals for 16 channels can be output, and each channel is independently selectable.

Signals multiplexed in the same way as video signals are input to the backplane FPGA (IC200). After the signals are stored in the DRAM (IC3002, IC3003), only audio signals are separated and sent to the audio FPGA (IC300). IC300 performs processing such as channel selection and gain control. AES/EBU-format digital audio signals are output from the AES/EBU connectors (J3601 to J3602).

Timecode signal processing (output mode)

The timecode signal written to the baseband FPGA (IC100) by the CPU is processed for serialization, and is then output from the timecode output connector (J302).

1-4-5. HP-175 Board

The HP-175 board mounted at the front of the unit has the following functions.

- SW-1628 board and LED-528 board LED control
- SW-1628 board switch control
- Power shutdown processing
- Storing management data

1-4-6. DM-155 Board

The DM-155 board has the following main functions.

- BANK memory function (main cache for audio/video data)
- Audio/video reference circuit
- 9-pin remote connector
- SharePlay function
- Multi Monitor function
- MONITOR function of the Networked Media Interface

BANK memory function

The BANK FPGA (IC0040) has eight pieces of 1 Gbit DRAM chips configuring a 4 Gbyte memory space. The BANK FPGA functions as an audio/video data cache of the unit.
The DIO-101 board is connected to the SY-422 board with the 3.125 Gbps high-speed serial communication.

Audio/video reference circuit

This circuit has a function to send a reference signal to other boards, by locking to one of the reference signals that are input from the reference input connectors (J0001, J0002) or by locking to the signal extracted from one of the video signals that are input to the DIO-101 board.
IC1904 sends a 27 MHz clock signal for the video system and IC1905 sends a 24.576 MHz clock signal for the audio system to each board.

9-pin remote connectors

The DM-155 board contains four pieces of 9-pin remote connectors (J0010 to J0013).
Each signal is connected to the SYS1 CPU on the SY-422 board through the FPGA (IC0040) that has the serial input/output function.

SharePlay function

The SharePlay function allows you to connect two or more PWS-4500 and BPU4800 units and share files between the units.
Stream signals are input or output by using the RJ45 connectors (J0020, J0021). The stream signals are sent to or received from the BANK memory (IC0040) through IC1316 (10G PHY) and IC0130.

Multi Monitor function

The Multi Monitor function displays video signals from two or more DIO-101 boards on a single screen as a reduced image.
A reduced image is generated in IC0090 and is then output through IC3002 and IC3003 as SDI signals.

MONITOR function of the Networked Media Interface

This function outputs the MONITOR signal of the Networked Media Interface.
The MONITOR signal from the DIO-101 board is sent through IC0090 to IC1316, and is then output from J0030 and J0031.

1-4-7. CN-3837 Board

The CN-3837 board is a relay board to the fans.
This board is connected to the MB-1217 board with the connector CN1 and has an electrical connection with the SY-422 board.
This board supplies power to the fans and monitors fan revolution speed to detect failure through the connectors CN2 to CN5 connected to the fans.

1-4-8. SW-1628 Board

The SW-1628 board contains a power switch and indicator, a reset switch, and connector CN002 for connection to the LED-528 board.
This board is connected to the HP-175 board with a flexible flat cable from the connector CN001.

1-4-9. LED-528 Board

The LED-528 board contains an LED to light the illumination on the front panel in blue.

Lighting of this LED is controlled by the CPLD (IC11) on the HP-175 board through the SW-1628 board.

1-4-10. MB-1217 Board

This board is the motherboard of the unit, functioning as interface with each board.

1-4-11. MEC-40 Board

The MEC-40 board functions as the host of the memory board MDC-21, having the communication log function.
The FPGA (IC400) controls the MDC-21 board, enabling 3.0 Gbps high-speed serial communication by 4LANE.
The high-speed serial signal is connected to MDC-21 boards (up to four boards) through connectors CN101 to CN108.
IC700 writes log data of high-speed serial communication with the MDC-21 board to the flash memory (IC800, IC801).

1-4-12. HN-431 Board

The power supply units are connected to this board. The main and sub power lines and control lines are connected with a harness between HN-431 board and MB-1217 board.

1-4-13. RD-41 Board (PWSK-4505)

The RD-41 board is used to play back files recorded by BPU4800 to perform signal processing for baseband output from the unit.
This board is connected to the DIO-101 board through the connectors CN001 to CN003.

1-4-14. NET-23 Board (PWSK-4506F)

The NET-23 is an option board to convert the existing 4-channel 3G-SDI interface on the DIO-101 board to a network interface (SFP+: 10G).
Each port (A to D) of the interface on the NET-23 board corresponds to each port name of the DIO-101 board.

1-4-15. DIF-260/261 Board (PWSK-4508)

The DIF-260/DIF-261 board is an option board to convert the existing 4-channel 3G-SDI interface on the DIO-101 board to a 12G-SDI interface.
Each port (A to D) of the interface on the DIF-260/DIF-261 board corresponds to each port name of the DIO-101 board.

1-5. Replacing EEPROMs and Backup Battery

1-5-1. 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

1-5-2. Replacing Backup Battery

A lithium battery for backup of calendar and clock data is mounted on the SY-422 board.
If the battery runs out, the clock cannot keep accurate time and the calendar function does not work correctly. When these symptoms occurred, replace the lithium battery.
After the lithium battery has been replaced, turn off and on the power twice. Then, set the calendar and clock time referring to “3. MAINTENANCE Menu”.

WARNING

When replacing the part, be sure to use the specified one below.
Replacement with a part other than the specified part will result in fire hazards and electric hazards.

Part Name: Lithium battery (CR2032)
Part No.: ⚠ 1-528-174-73

1-6. Writing and Rewriting the PLD Internal Data

This unit 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.
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	EPR Connector Ref. No.	PLD Ref. No.
DIO-101	CN001	IC002
DM-155	CN1000	IC1002
SY-422	CN2207	IC2201
	CN1702	IC1701

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.

1-7. Circuit Protection Part List

1-7-1. 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.
SY-422	THP001	A-10/Side A	⚠ 1-804-458-21

1-7-2. Replacing Fuses and IC Links

WARNING

The fuse and IC link are essential parts for safe operation. Replace it with one whose part number is listed in the manual. If the components are replaced with any parts other than the specified ones, this may cause a fire or electric shock.

CAUTION

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

This unit is equipped with fuses and IC links.
The fuses blow if an excessive current flows due to abnormality inside the equipment. If fuses blow, turn off the main power of the equipment once, and inspect inside of the equipment and remove the cause of excessive current. After that, replace the fuses.

Board Name	Ref. No.	Address	Name	Part No.
DIF-260	F1800	A-5/Side A	Fuse (10 A/125 V)	⚠ 1-576-329-21
DIO-101	F101	K-1/Side B	Fuse (10 A/125 V)	⚠ 1-576-329-21
DM-155	F1000	E-1/Side A	Fuse (10 A/125 V)	⚠ 1-576-329-21
HP-175	F1	A-1/Side A	Fuse (5 A/125 V)	⚠ 1-533-627-21
	F2	A-1/Side A	Fuse (5 A/125 V)	⚠ 1-533-627-21
LED-528	PS100	Side B	IC link (0.4 A/72 V)	⚠ 1-576-122-21
MDC-21	F001	F-1/Side A	Fuse (4 A/125 V)	⚠ 1-576-270-21
MEC-40	F200	B-5/Side A	Fuse (5 A/125 V)	⚠ 1-533-627-21
SY-422	F2301	J-1/Side A	Fuse (10 A/125 V)	⚠ 1-576-329-21
NET-23	F3501	A-3/Side B	Fuse (10 A/125 V)	⚠ 1-576-329-21

1-8. 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 "4. Replacement of Main Parts" about the method of the replacing parts.

Part Name	Part No.	Replacement Cycle	Procedure
Front fan (4500) assembly	A-2092-928-A	Total power-on hours 40,000 h	"4-5-1. Front Fan Assembly"
Rear fan (4500) assembly	A-2092-929-A	Total power-on hours 40,000 h	"4-5-3. Rear Fan Assembly"
DC fan (sirocco 50 square)	⚠ 1-855-344-11	Total power-on hours 30,000 h	"4-5-5. DIO Fan", "4-5-6. DM Fan", "4-5-7. DIF Fan"
DC fan (40 square)	⚠ 1-855-165-11	Total power-on hours 60,000 h	"4-5-7. DIF Fan"

Tip

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

1-9. 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. 8.3 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.

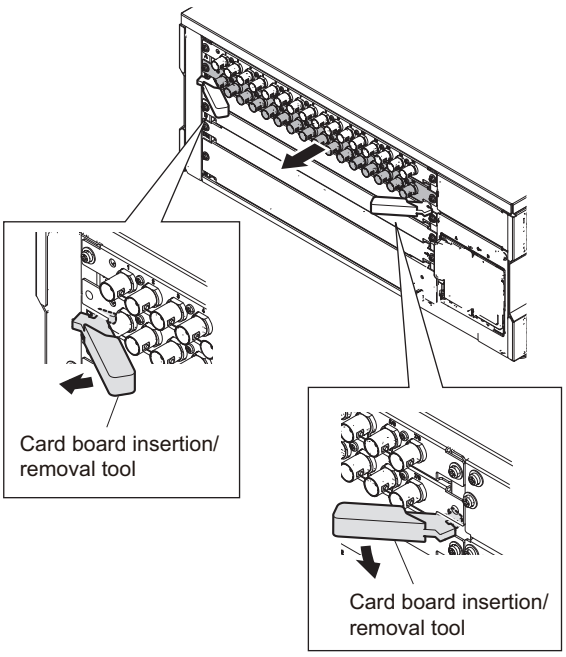
1-10. Extension Board and Fixtures List

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

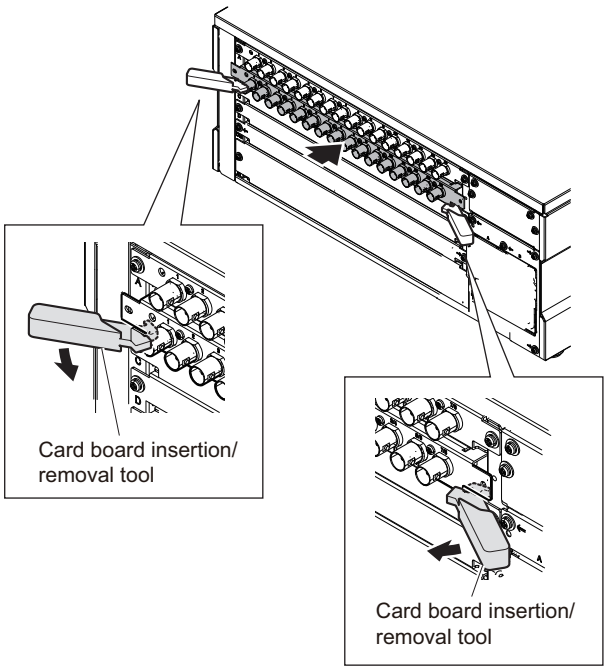
Name	Part No.	Usage
Torque screwdriver's bit (M1.4/M1.7)	J-6325-110-A	Screw tightening
Torque screwdriver's bit (M2)	J-6325-380-A	Screw tightening
Torque screwdriver's bit (M3)	J-6323-430-A	Screw tightening
Torque screwdriver (3 kg • cm) (0.3 N • m)	J-6325-400-A	Screw tightening
Torque screwdriver (6 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
Connector extraction tool (D.FL75-LP-N)	Commercially available (HIROSE ELECTRIC CO., LTD.)	Extracting coaxial plug for HIROSE D.FL series
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 "1-6. Writing and Rewriting the PLD Internal Data")
Extension board (EX-1145)	A-1837-202-A	Extension of plug-in board (DIO-101/DM-155/SY-422 board)
Card board insertion/removal tool (including two pieces)	J-7120-800-A	For installing/removing plug-in board (DIO-101/ DM-155/ SY-422 board)

1-10-1. How to Use the Card Board Insertion/Removal Tool

Removing the board



Installing the board



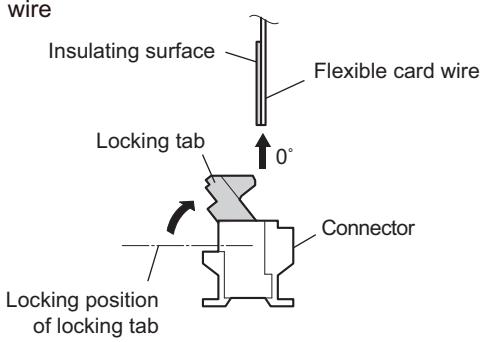
1-11. Disconnecting/Connecting Flexible Card Wire

Note

- Be very careful not to fold flexible card wires. Life of flexible card wire will be significantly shortened if it is folded.
- Each flexible card wire has conductive side and insulated side. If the flexible card wire is connected in the wrong orientation of the conductive side and the insulated side, the circuit will not function.
- Check that the conductive side of the flexible card wire is not contaminated.
- Do not open the locking tab excessively at an angle above the value shown in the figure to prevent the connector from being damaged.

Type A

Angle of connecting-disconnecting flexible card wire



Disconnecting

1. Turn off the power.
2. Lift up the locking tab in the direction of the arrow to unlock and pull out the flexible card wire.

Connecting

1. Lift up the locking tab in the direction of the arrow and securely insert the flexible card wire into the deep end of the connector.
2. Return the locking tab to its original position and lock the connector.

1-12. 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
Error Message

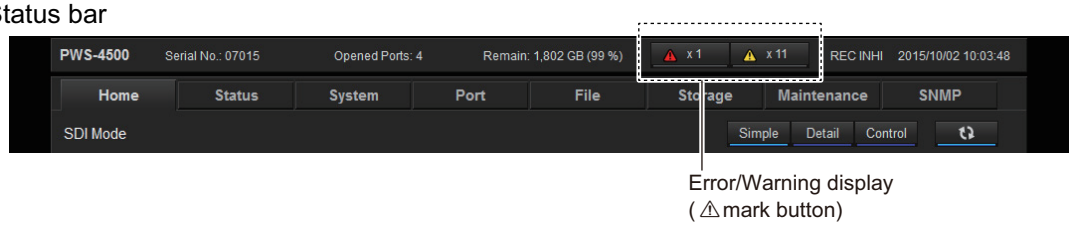
2-1. Overview of Error Message

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.

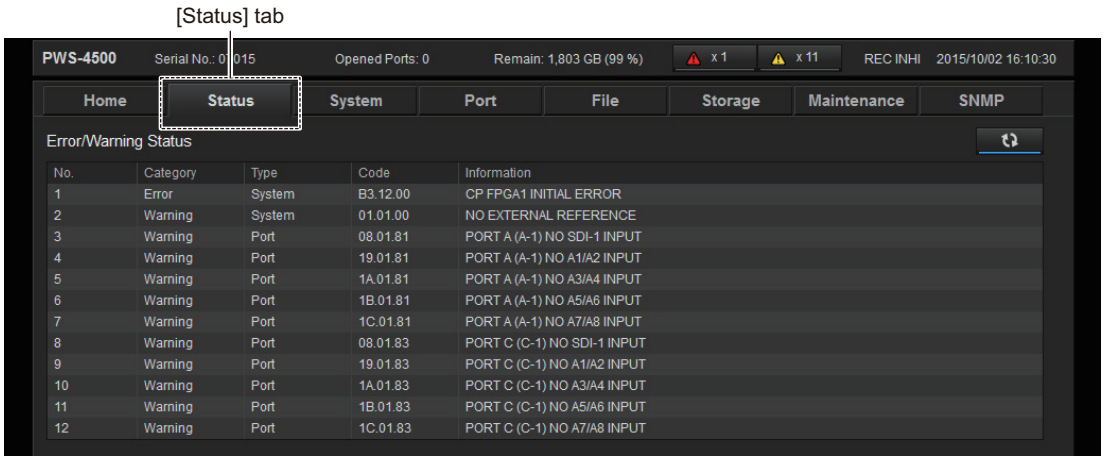
Tip

For how to display the Web menu, refer to "3-2. Displaying the Menu".

Status bar



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.



No.	Category	Type	Code	Information
1	Error	System	B3.12.00	CP FPGA1 INITIAL ERROR
2	Warning	System	01.01.00	NO EXTERNAL REFERENCE
3	Warning	Port	08.01.81	PORT A (A-1) NO SDI-1 INPUT
4	Warning	Port	19.01.81	PORT A (A-1) NO A1/A2 INPUT
5	Warning	Port	1A.01.81	PORT A (A-1) NO A3/A4 INPUT
6	Warning	Port	1B.01.81	PORT A (A-1) NO A5/A6 INPUT
7	Warning	Port	1C.01.81	PORT A (A-1) NO A7/A8 INPUT
8	Warning	Port	08.01.83	PORT C (C-1) NO SDI-1 INPUT
9	Warning	Port	19.01.83	PORT C (C-1) NO A1/A2 INPUT
10	Warning	Port	1A.01.83	PORT C (C-1) NO A3/A4 INPUT
11	Warning	Port	1B.01.83	PORT C (C-1) NO A5/A6 INPUT
12	Warning	Port	1C.01.83	PORT C (C-1) NO A7/A8 INPUT

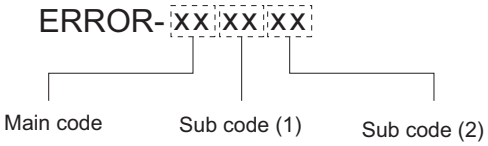
"Error/Warning Status" screen

Tip

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

2-2. Error Code List

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



Tip

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

- ss: The following numbers which identifies the internal memory slot
  - 01: Slot A
  - 02: Slot B
  - 03: Slot C
  - 04: Slot D
- pp: The following numbers which identifies the port
  - 81: Port A-1
  - 82: Port B-1
  - 83: Port C-1
  - 84: Port D-1
  - 85: Port A-2
  - 86: Port B-2
  - 87: Port C-2
  - 88: Port D-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

Tip

The internal memory means the MDC-21 board.

2-2-1. 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
14	01	00	POWER SUPPLY A FAN TROUBLE	• Probable cause: Fan of the switching regulator A • Protected operation: None
14	02	00	POWER SUPPLY B FAN TROUBLE	• Probable cause: Fan of the switching regulator B • Protected operation: None
14	03	00	FRONT FAN1 TROUBLE	• Probable cause 1: FRONT FAN 1 (in front fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
14	04	00	FRONT FAN2 TROUBLE	• Probable cause 1: FRONT FAN 2 (in front fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	05	00	FRONT FAN3 TROUBLE	• Probable cause 1: FRONT FAN 3 (in front fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	06	00	FRONT FAN4 TROUBLE	• Probable cause 1: FRONT FAN 4 (in front fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	07	00	REAR FAN1 TROUBLE	• Probable cause 1: REAR FAN 1 (in rear fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	08	00	REAR FAN2 TROUBLE	• Probable cause 1: REAR FAN 2 (in rear fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	09	00	REAR FAN3 TROUBLE	• Probable cause 1: REAR FAN 3 (in rear fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	0A	00	REAR FAN4 TROUBLE	• Probable cause 1: REAR FAN 4 (in rear fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	0B	00	SLOT FAN TROUBLE	• Probable cause 1: SLOT FAN (in slot fan assembly) • Probable cause 2: IC3 (FPGA) on SY-422 board • Protected operation: None
14	0C	00	DM FAN TROUBLE	• Probable cause 1: DM FAN (on DM-155 board) • Probable cause 2: IC0040 (FPGA) on DM-155 board • Protected operation: None
14	0E	pp	PORT x DIO FAN1 TROUBLE	• Probable cause 1: DIO FAN 1 (on DIO-101 board of port x) • Probable cause 2: IC200 (FPGA) on DIO-101 board • Protected operation: None
14	0F	pp	PORT x DIO FAN2 TROUBLE	• Probable cause 1: DIO FAN 2 (on DIO-101 board of port x) • Probable cause 2: IC200 (FPGA) on DIO-101 board • Protected operation: None
14	21	00	DIF FAN1 TROUBLE	• Probable cause 1: DIF FAN1 (Sirocco fan on the DIF-260 board stopped.) • Probable cause 2: IC2300 on the DIF-260 board • Protected operation: None
14	22	00	DIF FAN2 TROUBLE	• Probable cause 1: DIF FAN2 (Axial flow fan on the DIF-260 board stopped.) • Probable cause 2: IC2300 on the DIF-260 board • Protected operation: None
14	23	00	DIF FAN3 TROUBLE	• Probable cause 1: DIF FAN3 (Sirocco fan on the DIF-261 board stopped.) • Probable cause 2: IC2300 on the DIF-260 board • Protected operation: None

Note

For the location of each fan, refer to “1-1-2. Location of Main Mechanical Parts”.

2-2-2. 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
26	01	00	POWER SUPPLY A UNIT TROUBLE	Malfunction of power assembly was detected. • Probable cause: Switching regulator A • Protected operation: None
26	02	00	POWER SUPPLY B UNIT TROUBLE	Malfunction of power assembly was detected. • Probable cause: Switching regulator B • Protected operation: None

2-2-3. 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
96	01	00	CALENDAR CLOCK ERROR	An internal calendar clock error was detected. • Probable cause 1: IC110 or BT101 (lithium battery) on SY-422 board • Probable cause 2: IC1 (SYS1 CPU) on SY-422 board • Protected operation: None

2-2-4. 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
B3	01	00	SY CPLD2 INITIAL ERROR	Initialization error of CPLD2 on SY-422 board was detected. • Probable cause: IC1701 on SY-422 board • Protected operation: None
B3	02	00	SY FPGA1 INITIAL ERROR	Initialization error of FPGA1 on SY-422 board was detected. • Probable cause: IC3 on SY-422 board • Protected operation: None
B3	04	00	SY FPGA NOT LATEST	FPGA on the SY-422 board was not initialized by latest data, and it was initialized by backup data. • Probable cause: IC1705 on SY-422 board • Protected operation: None
B3	06	00	SERIAL NO. INFO ERROR	Serial number information is not written. • Probable cause: IC610 (FRAM) on SY-422 board • Protected operation: None
B3	07	00	INVALID SERIAL NO. INFO	Serial number information on the SY board is invalid. • Probable cause: IC610 (FRAM) on SY-422 board • Protected operation: None
B3	08	00	SERIAL NO. INFO MISMATCH	Serial number information of SY board and HP board does not match. • Probable cause: IC610 (FRAM) on SY-422 board • Protected operation: None

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
B3	28	00	HP CPLD1 INITIAL ERROR	Initialization error of CPLD1 on HP-175 board was detected. • Probable cause: IC005 on HP-175 board • Protected operation: None
B3	29	00	HP CPLD2 INITIAL ERROR	Initialization error of CPLD2 on HP-175 board was detected. • Probable cause: IC100 on HP-175 board • Protected operation: None
B3	31	00	DM CPLD2 INITIAL ERROR	Initialization error of CPLD2 on DM-155 board was detected. • Probable cause: IC0080 on DM-155 board • Protected operation: None
B3	32	00	DM FPGA1 INITIAL ERROR	Initialization error of FPGA1 on DM-155 board was detected. • Probable cause: IC0040 on DM-155 board • Protected operation: None
B3	33	00	DM FPGA2 INITIAL ERROR	Initialization error of FPGA2 on DM-155 board was detected. • Probable cause: IC0090 on DM-155 board • Protected operation: None
B3	35	00	DM FPGA1 BANK SERDES PLL INITIAL ERROR	Initialization error of BANK SERDES PLL block in FPGA1 on DM-155 board was detected. • Probable cause: IC0040 on DM-155 board • Protected operation: None
B3	36	00	DM FPGA1 BANK MEMORY INITIAL ERROR	Initialization error of BANK memory block in FPGA1 on DM-155 board was detected. • Probable cause: IC0040 on DM-155 board • Protected operation: None
B3	39	00	DM FPGA NOT LATEST	FPGA on the DM-155 board was not initialized by latest data, and it was initialized by backup data. • Probable cause: IC0040, IC0090 on DM-155 board • Protected operation: None
B3	3A	00	MEC CPLD3 INITIAL ERROR	Initialization error of CPLD3 on MEC-40 board was detected. • Probable cause: IC300 on MEC-40 board • Protected operation: None
B3	3B	00	MEC FPGA1 INITIAL ERROR	Initialization error of FPGA1 on MEC-40 board was detected. • Probable cause: IC700 on MEC-40 board • Protected operation: None
B3	3C	00	MEC FPGA2 INITIAL ERROR	Initialization error of FPGA2 on MEC-40 board was detected. • Probable cause: IC400 on MEC-40 board • Protected operation: None
B3	3D	00	MEC FPGA NOT LATEST	FPGA on the MEC-40 board was not initialized by latest data, and it was initialized by backup data. • Probable cause 1: IC400, IC700 on MEC-40 board • Probable cause 2: SYS1 • Protected operation: None
B3	3E	ss	SLOT Mx MDC CPLD INITIAL ERROR	Initialization error of CPLD on MDC-21 board that is installed to the internal memory slot “x” (slot A to D) was detected. • Probable cause: IC011 on MDC-21 board • Protected operation: None
B3	41	pp	PORT x DIO CPLD2 INITIAL ERROR	Initialization error of CPLD2 on DIO-101 board that is installed to the port “x” (Port A to D) was detected. • Probable cause: IC5001 on DIO-101 board • Protected operation: None

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
B3	42	pp	PORT x DIO FPGA1 INITIAL ERROR	Initialization error of FPGA1 on DIO-101 board that is installed to the port “x” (Port A to D) was detected. • Probable cause: IC100 on DIO-101 board • Protected operation: None
B3	43	pp	PORT x DIO FPGA2 INITIAL ERROR	Initialization error of FPGA2 on DIO-101 board that is installed to the port “x” (Port A to D) was detected. • Probable cause: IC200 on DIO-101 board • Protected operation: None
B3	44	pp	PORT x DIO FPGA3 INITIAL ERROR	Initialization error of FPGA3 on DIO-101 board that is installed to the port “x” (Port A to D) was detected. • Probable cause: IC300 on DIO-101 board • Protected operation: None
B3	45	pp	PORT x DIO FPGA4 INITIAL ERROR	Initialization error of FPGA4 on DIO-101 board that is installed to the port “x” (Port A to D) was detected. • Probable cause: IC500 on DIO-101 board • Protected operation: None
B3	46	pp	PORT x DIO FPGA5 INITIAL ERROR	Initialization error of FPGA5 on RD-41 board attached to the DIO-101 board that is installed to the port “x” (Port A to D) was detected. • Probable cause: IC900 on RD-41 board • Protected operation: None
B3	47	pp	PORT x DIO FPGA NOT LATEST	FPGA on the DIO-101 board that is installed to the port “x” (Port A to D) was not initialized by latest data, and it was initialized by backup data. • Probable cause: IC300 on DIO-101 board • Protected operation: None
B3	48	pp	PORT x ENC PROC1 INITIAL ERROR1	Initialization error of the encoder PROC1 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board • Protected operation: None
B3	49	pp	PORT x ENC PROC1 INITIAL ERROR2	Initialization error of the encoder PROC1 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board • Protected operation: None
B3	4A	pp	PORT x ENC PROC2 INITIAL ERROR1	Initialization error of the encoder PROC2 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board • Protected operation: None
B3	4B	pp	PORT x ENC PROC2 INITIAL ERROR2	Initialization error of the encoder PROC2 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board • Protected operation: None
B3	4C	pp	PORT x PROC INITIAL TIMEOUT	Initialization error of the PROC on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board • Protected operation: None
B3	51	pp	PORT x DIO PROC1 INITIAL ERROR1	PROC1 IC on DIO-101 board that is installed to the port “x” (Port A to D) was not initialized (first stage). • Probable cause: IC1000 on DIO-101 board • Protected operation: None
B3	52	pp	PORT x DIO PROC1 INITIAL ERROR2	PROC1 IC on DIO-101 board that is installed to the port “x” (Port A to D) was not initialized (second stage). • Probable cause: IC1000 on DIO-101 board • Protected operation: None

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
B3	53	pp	PORT x DIO PROC1 INITIAL ERROR3	PROC1 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (third stage). • Probable cause: IC1000 on DIO-101 board • Protected operation: None
B3	54	pp	PORT x DIO PROC2 INITIAL ERROR1	PROC2 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (first stage). • Probable cause: IC1200 on DIO-101 board • Protected operation: None
B3	55	pp	PORT x DIO PROC2 INITIAL ERROR2	PROC2 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (second stage). • Probable cause: IC1200 on DIO-101 board • Protected operation: None
B3	56	pp	PORT x DIO PROC2 INITIAL ERROR3	PROC2 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (third stage). • Probable cause: IC1200 on DIO-101 board • Protected operation: None
B3	57	pp	PORT x DIO PROC3 INITIAL ERROR1	PROC3 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (first stage). • Probable cause: IC1400 on DIO-101 board • Protected operation: None
B3	58	pp	PORT x DIO PROC3 INITIAL ERROR2	PROC3 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (second stage). • Probable cause: IC1400 on DIO-101 board • Protected operation: None
B3	59	pp	PORT x DIO PROC3 INITIAL ERROR3	PROC3 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (third stage). • Probable cause: IC1400 on DIO-101 board • Protected operation: None
B3	5A	pp	PORT x DIO PROC4 INITIAL ERROR1	PROC4 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (first stage). • Probable cause: IC1600 on DIO-101 board • Protected operation: None
B3	5B	pp	PORT x DIO PROC4 INITIAL ERROR2	PROC4 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (second stage). • Probable cause: IC1600 on DIO-101 board • Protected operation: None
B3	5C	pp	PORT x DIO PROC4 INITIAL ERROR3	PROC4 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (third stage). • Probable cause: IC1600 on DIO-101 board • Protected operation: None
B3	5D	pp	PORT x DIO PROC5 INITIAL ERROR1	PROC5 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (first stage). • Probable cause: IC1800 on DIO-101 board • Protected operation: None
B3	5E	pp	PORT x DIO PROC5 INITIAL ERROR2	PROC5 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (second stage). • Probable cause: IC1800 on DIO-101 board • Protected operation: None
B3	5F	pp	PORT x DIO PROC5 INITIAL ERROR3	PROC5 IC on DIO-101 board that is installed to the port "x" (Port A to D) was not initialized (third stage). • Probable cause: IC1800 on DIO-101 board • Protected operation: None
B3	68	pp	PORT x DEC PROC1 INITIAL ERROR1	Initialization error of the decoder PROC1 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board
B3	69	pp	PORT x DEC PROC1 INITIAL ERROR2	Initialization error of the decoder PROC1 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
B3	6A	pp	PORT x DEC PROC2 INITIAL ERROR1	Initialization error of the decoder PROC2 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board
B3	6B	pp	PORT x DEC PROC2 INITIAL ERROR2	Initialization error of the decoder PROC2 on the DIO-101 board was detected. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board
B3	71	pp	PORT x DIO PROC6 INITIAL ERROR1	Initialization error of the PROC6 IC on the RD-41 board mounted on the DIO-101 board was detected. • Probable cause: IC500 on RD-41 board
B3	81	00	NET FPGA1 INITIAL ERROR	Initialization error of the FPGA1 on the NET-23 board was detected. • Probable cause: IC500 on NET-23 board • Protected operation: None
B3	82	00	NET FPGA2 INITIAL ERROR	Initialization error of the FPGA2 on the NET-23 board was detected. • Probable cause: IC510 on NET-23 board • Protected operation: None
B3	83	00	NET FPGA3 INITIAL ERROR	Initialization error of the FPGA3 on the NET-23 board was detected. • Probable cause: IC520 on NET-23 board • Protected operation: None
B3	84	00	NET FPGA4 INITIAL ERROR	Initialization error of the FPGA4 on the NET-23 board was detected. • Probable cause: IC530 on NET-23 board • Protected operation: None
B3	85	00	NET FPGA5 INITIAL ERROR	Initialization error of the FPGA5 on the NET-23 board was detected. • Probable cause: IC600 on NET-23 board • Protected operation: None
B3	91	xx	NMI PROC INITIAL ERROR	Initialization error of the NMI was detected. • Probable cause1: Failure of DM-155 board (xx = 11, 12) • Probable cause2: Failure of NET-23 board (xx = 21, 22, 23, 24) • Protected operation: None
B3	92	xx	NMI MAC ADDRESS ERROR	Error of the MAC ADDRESS was detected. • Probable cause: Failure of SY-422 board • Protected operation: None **Tip** The letters xx are defined as follows. xx=91: Share Play1 xx=92: Share Play2 xx=93: NMI Monitor1 xx=94: NMI Monitor2 xx=A1: NMI LAN A1 xx=A2: NMI LAN A2 xx=A3: NMI LAN B1 xx=A4: NMI LAN B2 xx=A5: NMI LAN C1 xx=A6: NMI LAN C2 xx=A7: NMI LAN D1 xx=A8: NMI LAN D2
B3	93	xx	NMI PROC RECOVERY MODE ERROR	NMI started in Recovery Mode. • Probable cause 1: Failure of DM-155 board (xx = 11, 12) • Probable cause 2: Failure of NET-23 board (xx = 21, 22, 23, 24) • Protected operation: None

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
B3	B1	00	DIF CPLD1 INITIAL ERROR	Initialization error of the CPLD1 on the DIF-260 board was detected. • Probable cause: IC2300 on the DIF-260 board • Protected operation: None
B3	B2	00	DIF FPGA1 INITIAL ERROR	Initialization error of the FPGA1 on the DIF-260 board was detected. • Probable cause: IC300 on the DIF-260 board • Protected operation: None
B3	B3	00	DIF FPGA2 INITIAL ERROR	Initialization error of the FPGA2 on the DIF-260 board was detected. • Probable cause: IC1900 on the DIF-260 board • Protected operation: None
B3	B4	00	DIF FPGA3 INITIAL ERROR	Initialization error of the FPGA3 on the DIF-261 board was detected. • Probable cause: IC300 on the DIF-261 board • Protected operation: None
B3	B5	00	DIF FPGA NOT LATEST	The FPGA on the DIF-260/DIF-261 board was not initialized with the latest data, but was initialized with the backup data. • Probable cause: IC2302 on the DIF-260 board • Protected operation: None

2-2-5. Main Code B8

When SYS1 CPU detects the communication abnormality between CPU (SYS1 and other CPU), the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description
B8	03	00	SYS1-NW NO COMMUNICATION ERROR	SYS1 CPU cannot receive the data of NW CPU by the communication between CPU (SYS1-NW). • Probable cause 1: Improper connection between SY-422 board and CPU-453A board • Probable cause 2: An abnormality of IC100 (NW CPU) on CPU-453A board • Protected operation: None

2-2-6. Main Code B9

When CP CPU detects the communication abnormality between CPU, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description
B9	01	00	SYS1 INTERNAL ERROR	Software error occurred in the SY-422 board. • Probable cause: Software in the SY-422 board • Protected operation: None Restart the unit.

2-2-7. Main Code BB

When an error was detected on network interface, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description
BB	02	pp	PORT x NMI BUFFER OVERFLOW	The buffer overflowed on NMI local side. • Probable cause 1: Disturbance of system synchronization • Probable cause 2: Failure of the NET-23 board • Protected operation: None

2-2-8. 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
D1	01	pp	PORT x ENC DMA1 ERROR	The memory data transfer error occurred on DIO-101 board that is installed to the port "x" (Port A to D). There is a possibility that the record is not normally done. • Probable cause: IC200 on DIO-101 board • Protected operation: None
D1	02	pp	PORT x ENC DMA2 ERROR	The memory data transfer error occurred on DIO-101 board that is installed to the port "x" (Port A to D). There is a possibility that the record is not normally done. • Probable cause: IC200 on DIO-101 board • Protected operation: None
D1	03	pp	PORT x ENC PROC ERROR	The encoding process error occurred on DIO-101 board that is installed to the port "x" (Port A to D). There is a possibility that the record is not normally done. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board • Protected operation: None

2-2-9. 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
D2	01	pp	PORT x DEC DMA1 ERROR	The memory data transfer error occurred on DIO-101 board that is installed to the port "x" (Port A to D). There is a possibility that the record is not normally done. • Probable cause: IC200 on DIO-101 board • Protected operation: None
D2	02	pp	PORT x DEC DMA2 ERROR	The memory data transfer error occurred on DIO-101 board that is installed to the port "x" (Port A to D). There is a possibility that the record is not normally done. • Probable cause: IC200 on DIO-101 board • Protected operation: None
D2	03	pp	PORT x DEC PROC ERROR	The decoding process error occurred on DIO-101 board that is installed to the port "x" (Port A to D). There is a possibility that the playback is not normally done. • Probable cause: IC1000, IC1200, IC1400, IC1600, IC1800 on DIO-101 board • Protected operation: None

2-2-10. 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
D3	01	ss	SLOT Mx AV WRITE ERROR1	A recording error of video and audio that originated in the interface was detected in the internal memory. • Probable cause: IC400 on MEC-40 board • Protected operation: None
D3	02	ss	SLOT Mx AV WRITE ERROR2	A recording error of video and audio that originated in the memory was detected in the internal memory. • Probable cause: MDC-21 board • Protected operation: None
D3	03	ss	SLOT Mx DATA WRITE ERROR1	A recording error of MetaData that originated in the interface was detected in the internal memory. • Probable cause: IC400 on MEC-40 board • Protected operation: None
D3	04	ss	SLOT Mx DATA WRITE ERROR2	A recording error of MetaData that originated in the memory was detected in the internal memory. • Probable cause: MDC-21 board • Protected operation: None

2-2-11. 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
D4	01	ss	SLOT Mx AV READ ERROR1	A playback error of video and audio that originated in the interface was detected in the internal memory. • Probable cause 1: IC400 on MEC-40 board • Probable cause 2: MDC-21 board • Protected operation: None
D4	03	ss	SLOT Mx DATA READ ERROR1	A playback error of MetaData that originated in the interface was detected in the internal memory. • Probable cause: IC400 on MEC-40 board • Protected operation: None
D4	04	ss	SLOT Mx DATA READ ERROR2	A playback error of MetaData that originated in the memory was detected in the internal memory. • Probable cause: MDC-21 board • Protected operation: None

2-2-12. 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
D5	01	ss	SLOT Mx INTERFACE ERROR1	Communication with the internal memory is impossible. This internal memory cannot be used as it is. When the error occurs each time the power is turned on and the same error recurs even after power is turned off and on, the unit or the internal memory may be defective. • Probable cause 1: IC400 on MEC-40 board • Probable cause 2: MDC-21 board • Protected operation: The unit does not take any new action.

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
D5	02	ss	SLOT Mx INTERFACE ERROR2	Communication with the internal memory is impossible. This internal memory cannot be used as it is. When the error occurs each time the power is turned on, the unit or the internal memory may be defective. • Probable cause 1: IC400 on MEC-40 board • Probable cause 2: MDC-21 board • Protected operation: The unit does not take any new action.

2-2-13. 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
D6	01	ss	SLOT Mx UNMOUNT ERROR1	An error occurred in the internal memory interface section at the power-off sequence. This internal memory may have been unusable. When “ERROR-D601ss” occurs each time the power is turned off, the internal memory must be salvaged. • Probable cause 1: IC400 on MEC-40 board • Probable cause 2: MDC-21 board • Protected operation: None (After the time-out, this unit shuts down.)
D6	02	ss	SLOT Mx UNMOUNT ERROR2	An error occurred in the internal memory interface section at the power-off sequence. This internal memory may have been unusable. When “ERROR-D602ss” occurs each time the power is turned off, the internal memory must be salvaged. • Probable cause 1: IC400 on MEC-40 board • Probable cause 2: MDC-21 board • Protected operation: None (After the time-out, this unit shuts down.)

2-2-14. Main Code D7

When abnormality of the internal memory (MDC-21 board) was detected at the power-on, the following error occurs.

Main code	Sub code (1)	Sub code (2)	Error message	Description
D7	01	ss	SLOT Mx MOUNT ERROR1	An error occurred in the interface section when the internal memory was connected to the system. When “ERROR-D701ss” occurs each time the power is turned on, the internal memory must be salvaged. • Probable cause 1: IC400 on MEC-40 board • Probable cause 2: MDC-21 board • Protected operation: The unit does not take any new action.
D7	02	ss	SLOT Mx MOUNT ERROR2	An error occurred in the interface section when the internal memory was connected to the system. When “ERROR-D702ss” occurs each time the power is turned on, the internal memory must be salvaged. • Probable cause 1: IC400 on MEC-40 board • Probable cause 2: MDC-21 board • Protected operation: The unit does not take any new action.

2-2-15. 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
D8	01	ss	SLOT Mx FILE SYSTEM ERROR	An error was detected in the internal memory file system. When the same error occurs each time the power is turned on, the file system must be formatted. • Probable cause: MDC-21 board • Protected operation: None

2-2-16. 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
E1	01	pp	PORT x COND3 BAD, STOP REC	Recording was suspended because the alternative sector of defective sector was fully used on the internal memory. • Probable cause: MDC-21 board
E1	06	pp	PORT x FS STUFFED, STOP REC	Recording was suspended because the file system of the internal memory reached the control limit. • Probable cause: MDC-21 board • Protected operation: Recording is no longer performed.
E1	08	pp	PORT x WRITE FAIL, STOP REC	Recording was suspended to protect data because overwriting data to the internal memory was attempted. • Probable cause: MDC-21 board • Protected operation: Recording is no longer performed. To make the internal memory recordable, it must be formatted.
E1	09	ss	SLOT Mx CANNOT REC	An error was detected in the unrecorded area of the internal memory. • Probable cause: MDC-21 board • Protected operation: Recording is no longer performed. To make the internal memory recordable, it must be formatted.
E1	0A	pp	PORT x MAX LENGTH, STOP REC	The recording time reached the maximum for the PORT and then recording stopped. • Probable cause: Specification of the unit • Protected operation: Recording is no longer performed.

2-2-17. 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
E4	31	00	INTERNAL MEMORY LACK	The internal memory is not accessible because a part of or all internal memory cards has/have been removed. • Probable cause: Condition of the installed MDC-21 boards • Protection: Prohibition of memory access

Continued

Main code	Sub code (1)	Sub code (2)	Error message	Description
E4	32	00	INTERNAL MEMORY WRONG POSITION	The internal memory is not accessible because it is installed in a wrong slot. • Probable cause 1: There is a blank slot between MDC-21 boards. • Probable cause 2: MDC-21 board was shifted to another slot during use. • Protection: Prohibition of memory access

Section 3
MAINTENANCE Menu

3-1. 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.

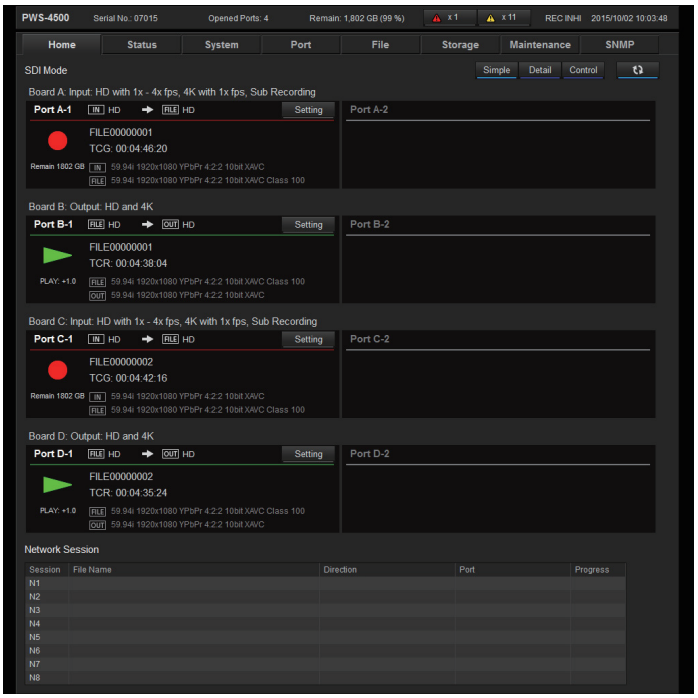
3-1-1. Hierarchy of Maintenance Menu

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"
	Setting Information	Output of setting information on network or boards	"Setting Information"
	Error/Warning Table	Error log/warning log display	"Error/Warning Table"
License	Optional Function	License install state display	"Optional Function"
	Register the Permanent License Key	Enter the license key	"Register the Permanent License Key"
Option	Hardware Option	Display the installation status of the option boards	"Hardware Option"
Others	Audio	Audio headroom setting	"Audio"
	Network	Disconnect the control session of the FTP	"Network"
	USB Memory	Display the mount state of the USB memory	"USB Memory"
	Preview Control Mode	Forcibly reset the Program/Preview control	"Preview Control Mode"
	Melt Mode	Forcibly reset the Melt control	"Melt Mode"
	SDI Input Watermarking	Selection of the deletion method of the marker superimposed in SDI input signals	"SDI Input Watermarking"

3-2. Displaying the Menu

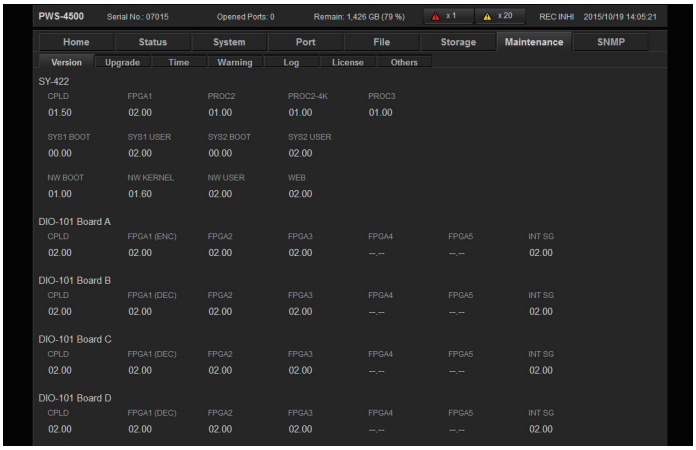
1. Connect a commercially available network cable between the NETWORK 1 connector on the rear of the unit and a personal computer (PC).
2. Change the TCP/IP setting for the LAN connector of the PC.
   Example of setting:
   IP Address (I): 192.168.0.100
   Subnet mask (U): 255.255.255.0
3. Turn on the main power switch (primary power) on the rear of the unit.
4. Press the ON/Standby button (secondary power) on the front of the unit.
5. 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.

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



3-3. Maintenance Tab

3-3-1. Version Menu

Version

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

3-3-2. 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.

3-3-3. 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.

3-3-4. 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 warning messages, refer to “Troubleshooting” > “Warning Messages” in the Operation Manual.

3-3-5. 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.

Setting Information

The setting information of the unit is stored in the PC as a text file.

- Network button
  Display the network settings.
- Board button
  Display the board settings.
- Get Text File button
  Output a text file for the setting information on the network or boards.

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 “2. Error Message”.
For details of warning messages, refer to “Troubleshooting” > “Warning Messages” in the Operation Manual.

3-3-6. License Menu

This menu allows you to install the software license key.

Optional Function

This item displays how the licenses are installed in the unit.

- Text box
  The conditions of the licenses installed in the unit are displayed.

Register the Permanent License Key

This item is used to enter the license key and execute installation.

- Pull-down menu (Select Product Name)
  This is used to select the product name to be installed.
- Text box (Software Install Key)
  Enter the purchased license key.
- Submit button
  This button is used to start installation.

3-3-7. Option Menu

Hardware Option

The installation status of the option boards is shown as display-only.

- Description of items in the table
  - Board Name: Board name
  - Option Name: Option product name
  - Position: Installation position
  - Installation: “Mounted” is displayed when the option board is mounted.

3-3-8. Others Menu

Audio

Set the audio headroom.

- Text box
  This text box shows the setting of the unit.
- Pull-down list
  Select a new setting from this pull-down list to change the setting of the unit.

Tip

Settable headroom
20, 18, 16, 15, 12, 9 dBFs

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.

Preview Control Mode

This menu item is used to forcibly reset the Program/Preview control when control from the PWS-100PR1 is interrupted for some reason after Program/Preview control from the PWS-100PR1.

- Submit button
  This button is used to forcibly reset the Program/Preview control.

Melt Mode

This menu item is used to forcibly reset the Melt control when control from the PWS-100PR1 is interrupted for some reason after Melt control from the PWS-100PR1.

- Submit button
  This button is used to forcibly reset the Melt control.

SDI Input Watermarking

This item is used to select whether to automatically detect the marker superimposed in SDI input signals and delete it or to forcibly delete it, in the HD HFR mode.

- Pull-down list (Port A-1 to Port D-1)
  Auto: Automatically detects the marker and deletes it.
  Forced: Forcibly deletes the marker.

3-4. SNMP Tab

3-4-1. 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 4
Replacement of Main Parts

4-1. General Information for Parts Replacement

4-1-1. Basic Knowledge

Flexible Card Wire

When connecting flexible card wires, connect them firmly referring to “1-11. Disconnecting/Connecting Flexible Card Wire”.

4-1-2. Tightening Torque

When tightening screws used in this unit, be sure to use a torque driver and tighten screws to the specified tightening torque.
If the specified tightening torque is described in the figure in this section, tighten screws to the specified tightening torque in the figure.

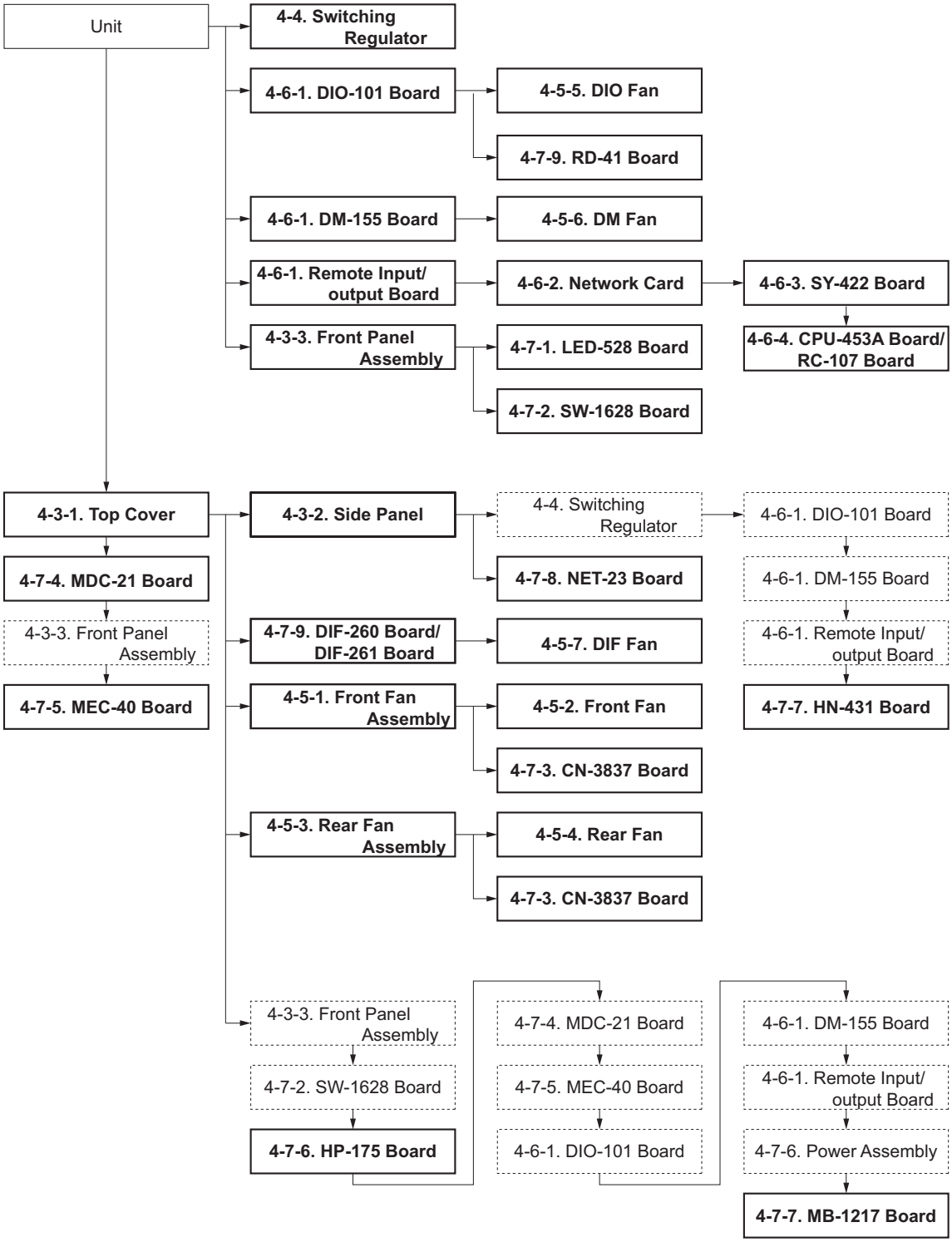
Tightening torque
M2: 0.20 ±0.02 N·m
M2.6: 0.53 ±0.07 N·m
M3: 0.80 ±0.12 N·m
M4: 1.4 ±0.2 N·m

Tip

When using the torque driver with the notation of cN·m, interpret it as follows.
Example: 0.8 N·m = 80 cN·m

4-2. Flow Chart

- Remove the parts in the following order.
- Select the target part from the items indicated by boldface.

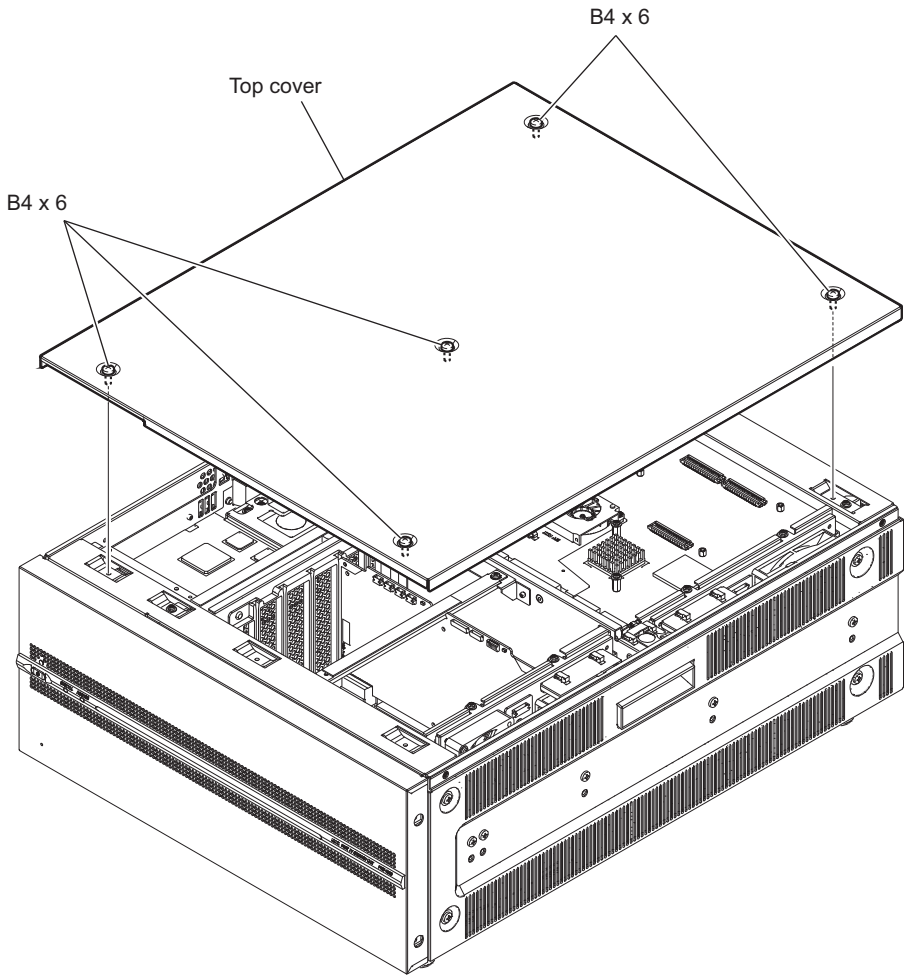


4-3. Removing/Assembling Cabinet

4-3-1. Top Cover

Procedure

1. Loosen the five screws and remove the top cover.



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

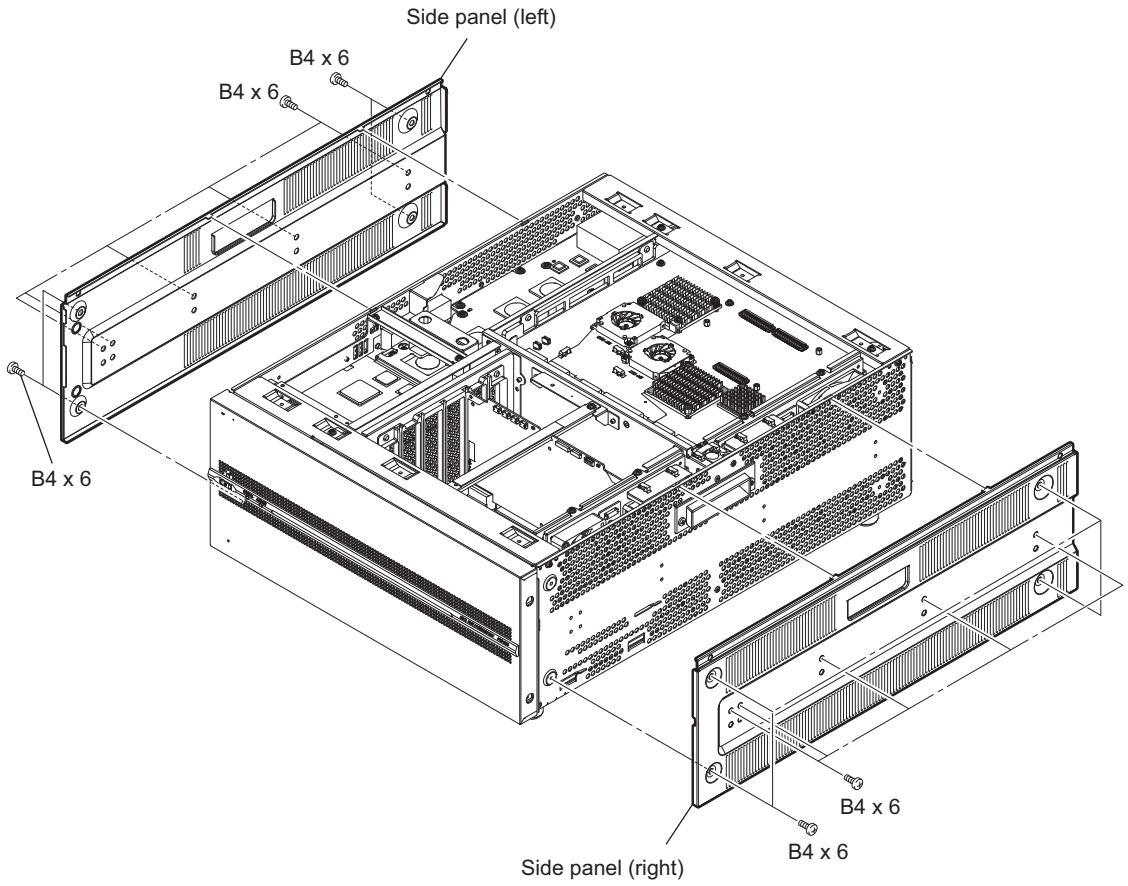
4-3-2. Side Panel

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Remove the nine screws to detach the side panel (left).
2. Remove the nine screws to detach the side panel (right).



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

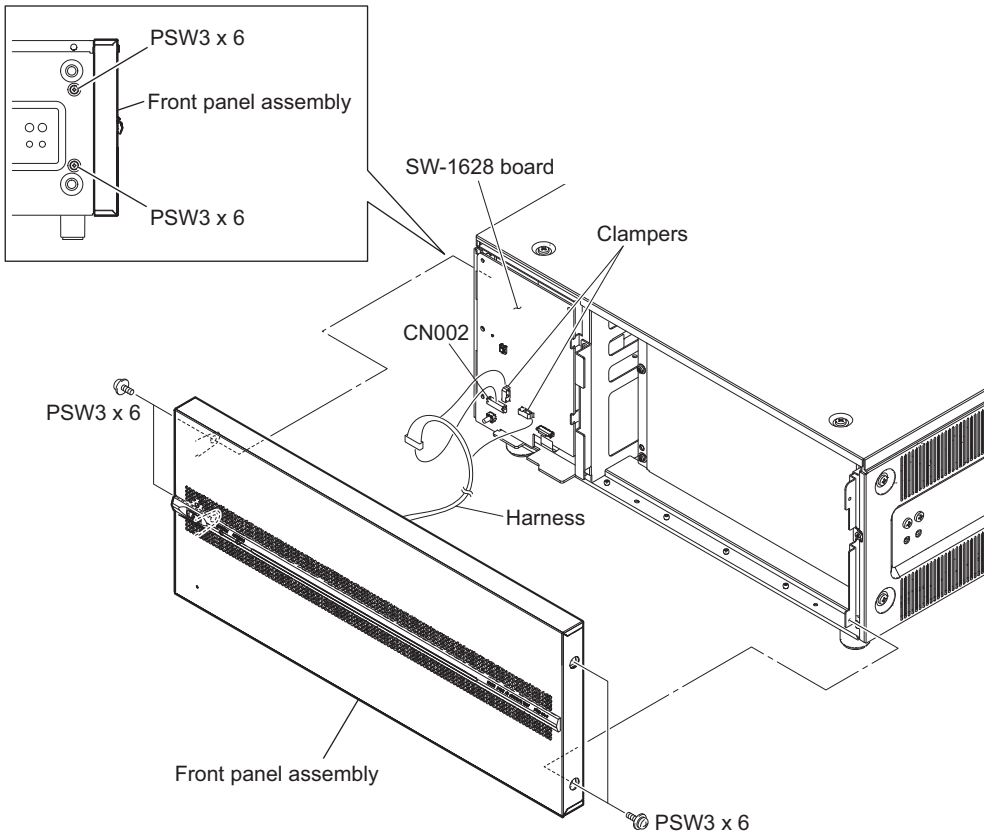
4-3-3. Front Panel Assembly

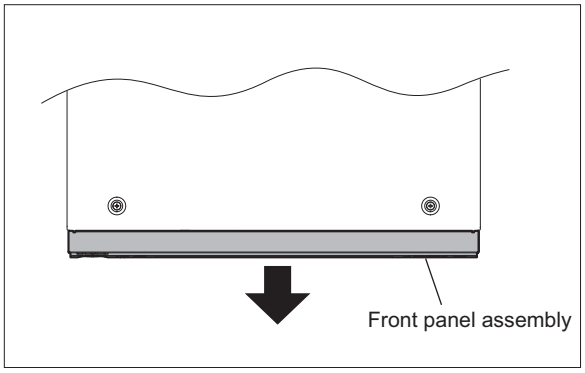
Preparation

1. Refer to “4-2. Flow Chart”.

Procedure

1. Remove the four screws from the sides of the unit.
2. Release the harness from the two clamps.
3. Disconnect the harness from the connector (CN002) on the SW-1628 board, and then remove the front panel assembly.





Note

When installing the front panel assembly, move the front panel assembly in the direction of the arrow and tighten the screws.

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

4-4. Switching Regulator

Tip

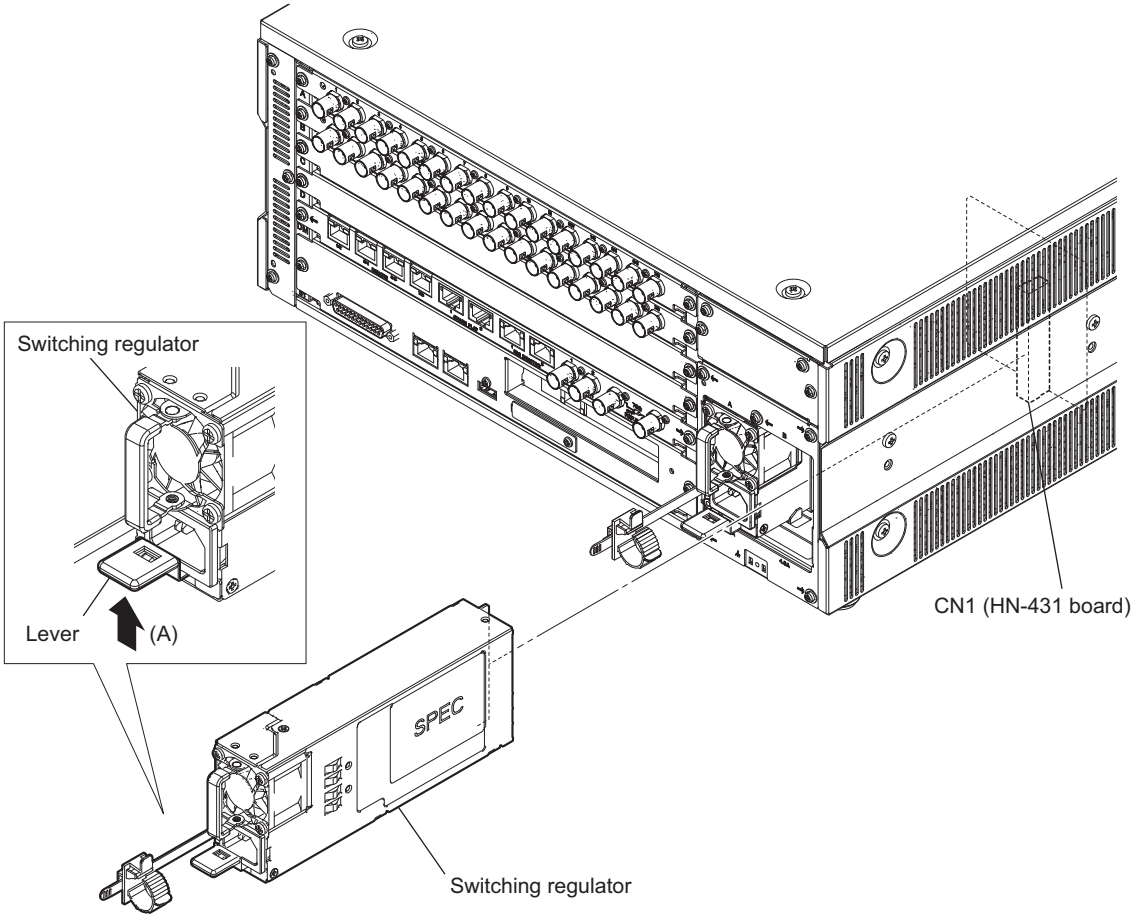
Two switching regulators are installed in the main unit. This section describes the procedure for one of them. The same replacement procedure can be used for two switching regulators.

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Press the lever in the direction of the arrow A and pull out the switching regulator.



2. Install the switching regulator.

   Note

   Install the switching regulator surely until it is locked.

4-5. Cooling Fan

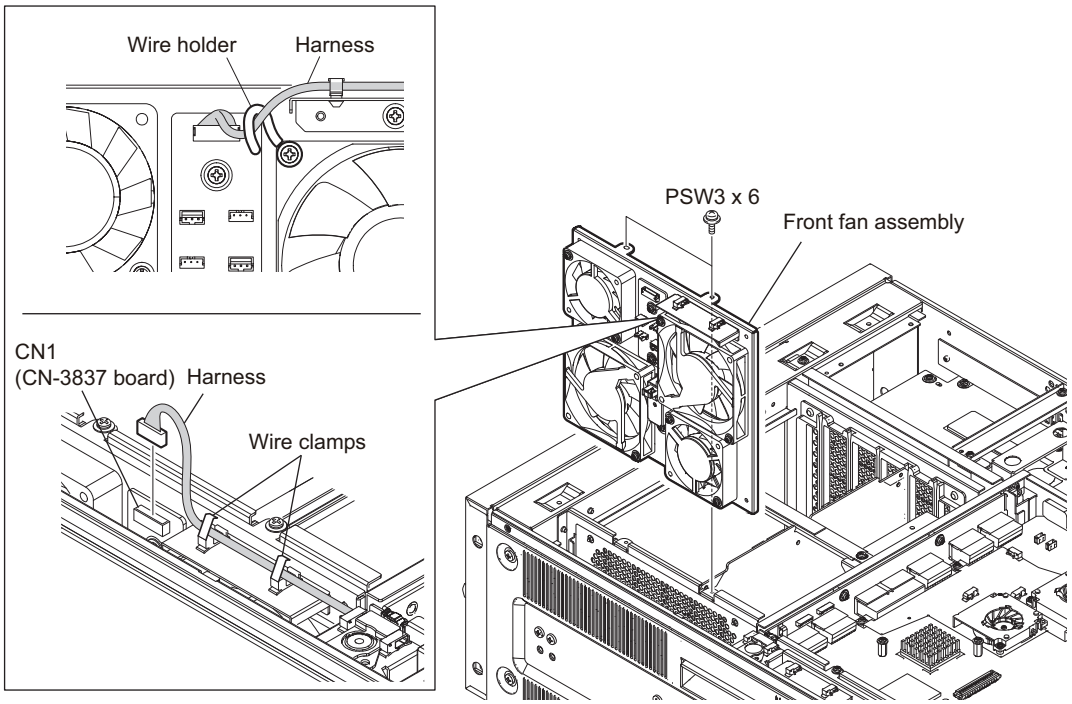
4-5-1. Front Fan Assembly

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Remove the wire holder.
2. Open the two wire clamps and release the harness.
3. Disconnect the harness from the connector (CN1) on the CN-3837 board.
4. Remove the two screws to detach the front fan assembly.



Note

- When installing the front fan assembly, do not put the harness between any parts.
- Avoid impact on the front fan assembly.

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

4-5-2. Front Fan

Tip

The four fans attached to the front fan assembly can be removed in a similar way.

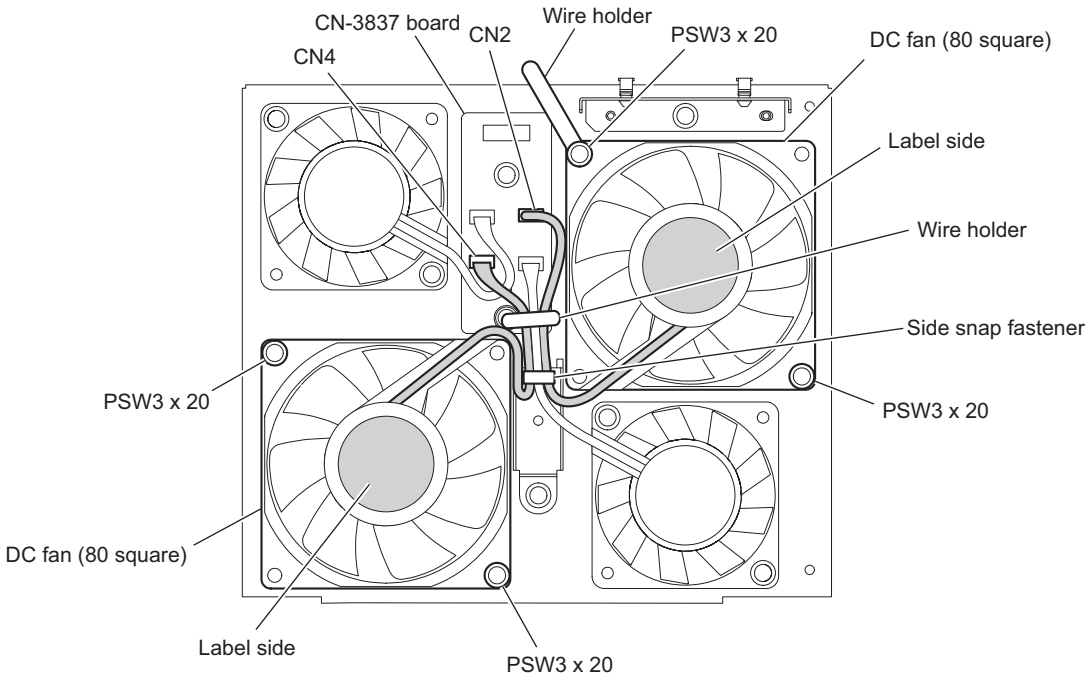
Preparation

1. Refer to “4-2. Flow Chart”.

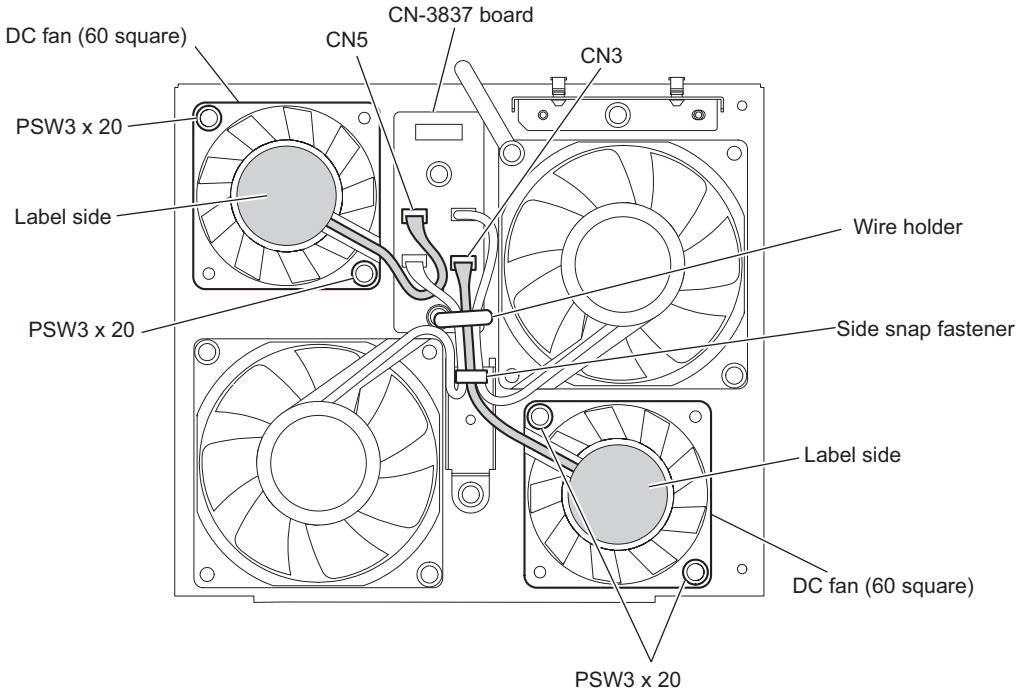
Procedure

1. Release the harnesses from the side snap fastener and the wire holder. (This step is not required when replacing the FRONT FAN 1)
2. Disconnect the harness from the connector on the CN-3837 board.

3. Remove the two screws to detach the DC fan.
   - DC fan (80 square)



   - DC fan (60 square)



Note

- When installing the fan, arrange the fan harness as shown in the figure.
- Install the DC fan carefully paying attention to the label side and the harness position.

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

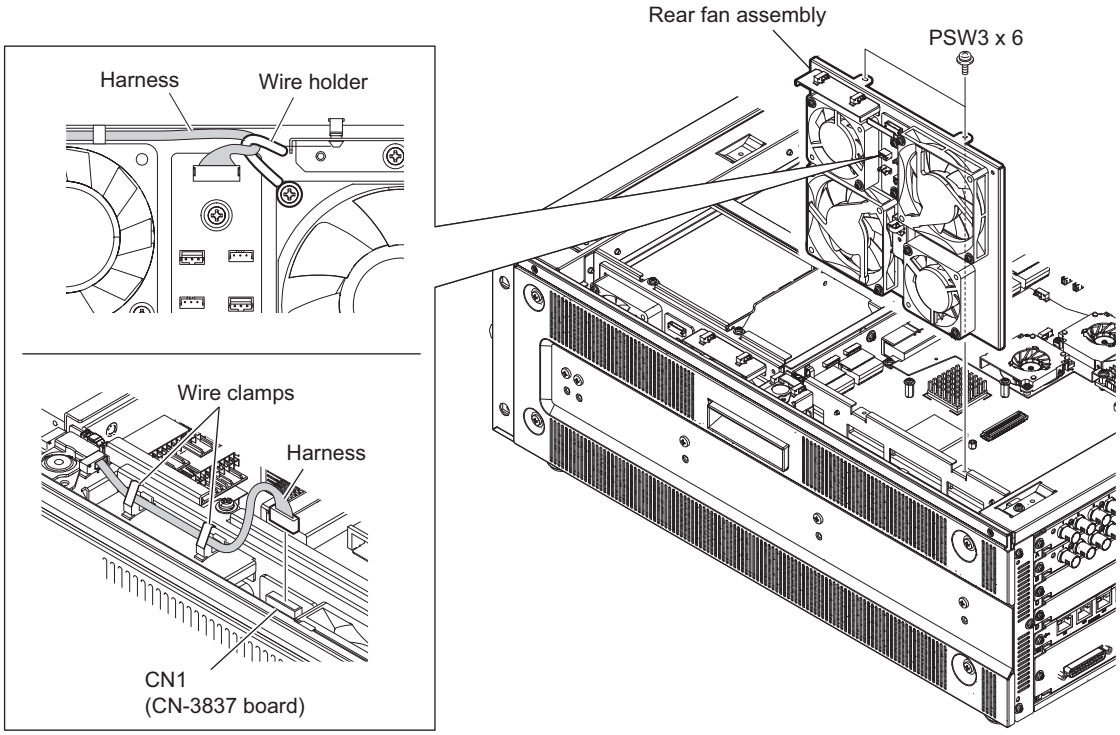
4-5-3. Rear Fan Assembly

Preparation

1. Refer to “4-2. Flow Chart”.

Procedure

1. Remove the wire holder.
2. Open the two wire clamps and remove the harness.
3. Disconnect the harness from the connector (CN1) on the CN-3837 board.
4. Remove the two screws to detach the rear fan assembly.



Note

- When installing the rear fan assembly, do not put the harness between any parts.
- Avoid impact on the rear fan assembly.

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

4-5-4. Rear Fan

Tip

The four fans attached to the rear fan assembly can be removed in a similar way.

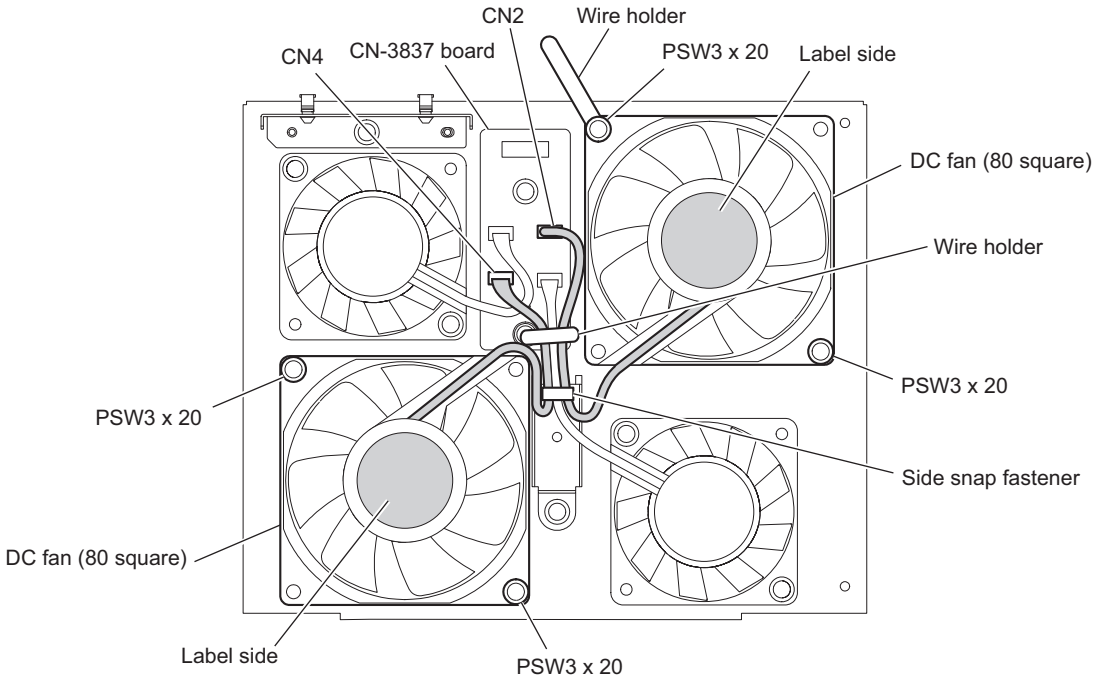
Preparation

1. Refer to "4-2. Flow Chart".

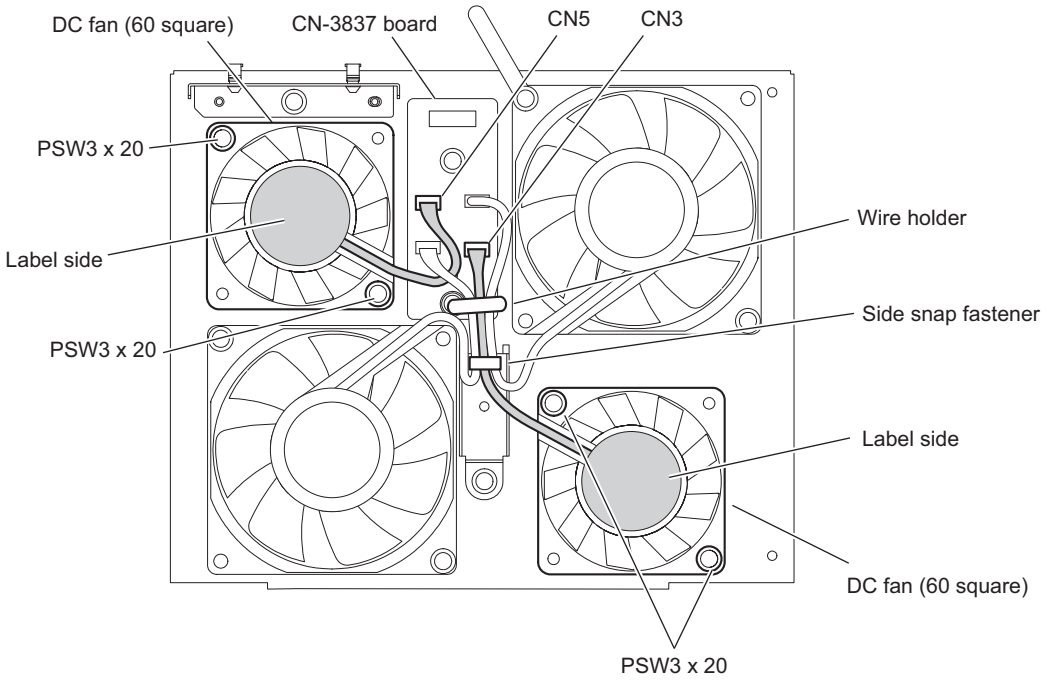
Procedure

1. Release the harnesses from the side snap fastener and the wire holder. (This step is not required when replacing the REAR FAN 1.)
2. Disconnect the fan harness from the connector on the CN-3837 board.

3. Remove the two screws to detach the DC fan.
   - DC fan (80 square)



   - DC fan (60 square)



Note

- When installing the fan, arrange the fan harness as shown in the figure.
- Install the DC fan carefully paying attention to the label side and the harness position.

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

4-5-5. DIO Fan

Note

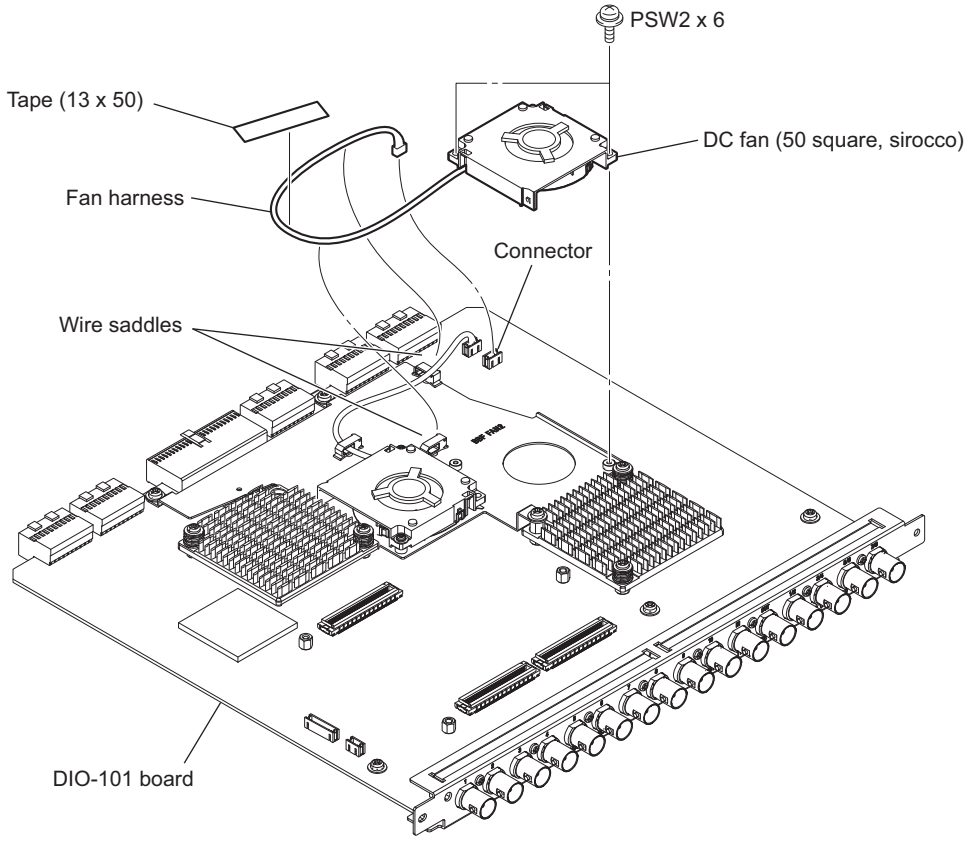
There are two DC fans (50 square, sirocco) on the DIO-101 board. They are attached in a similar way.

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

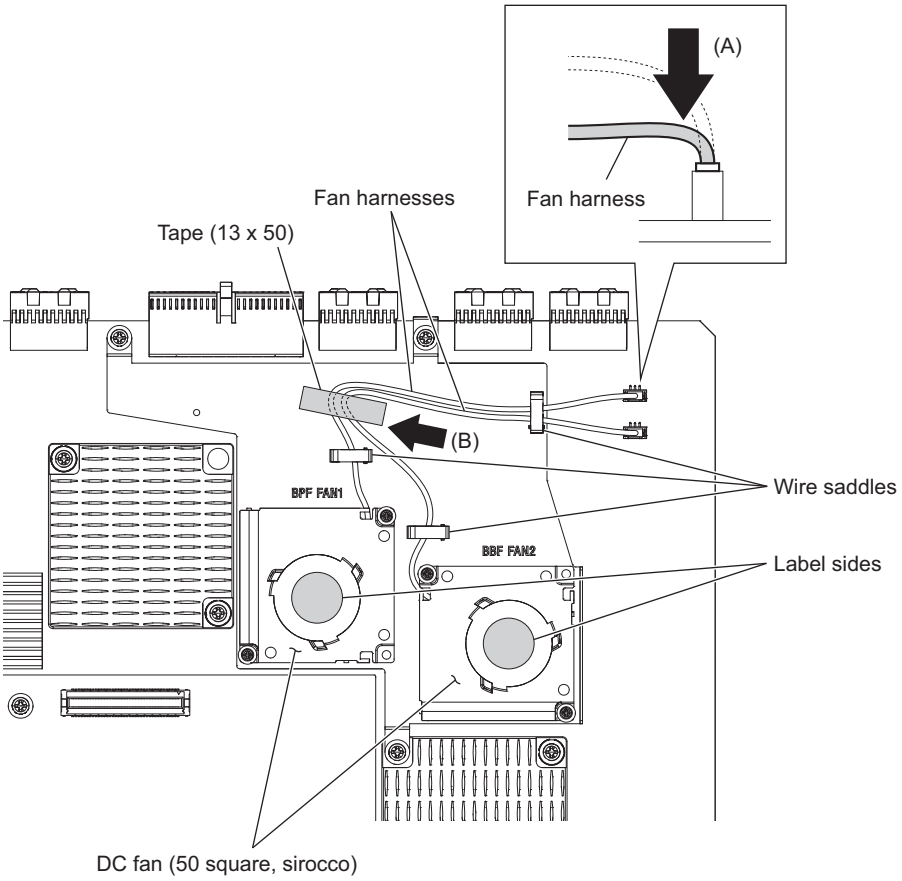
1. Remove the tape (13 x 50).
2. Open the two wire saddles.
3. Disconnect the fan harness from the connector on the DIO-101 board.
4. Remove the two screws to detach the DIO fan (DC fan (50 square, sirocco)).



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

Note

- Install the DIO fan (DC fan (50 square, sirocco)) carefully paying attention to the orientation.
- Arrange the fan harness as shown in the figure.
- Pull the fan harnesses to the direction of the arrow (B) while taking up the slack, and retain them by the tape (13x50).
- Hold down the fan harness at portion (A) so that the height of fan harness becomes lower than the DC fan (50 square, sirocco).



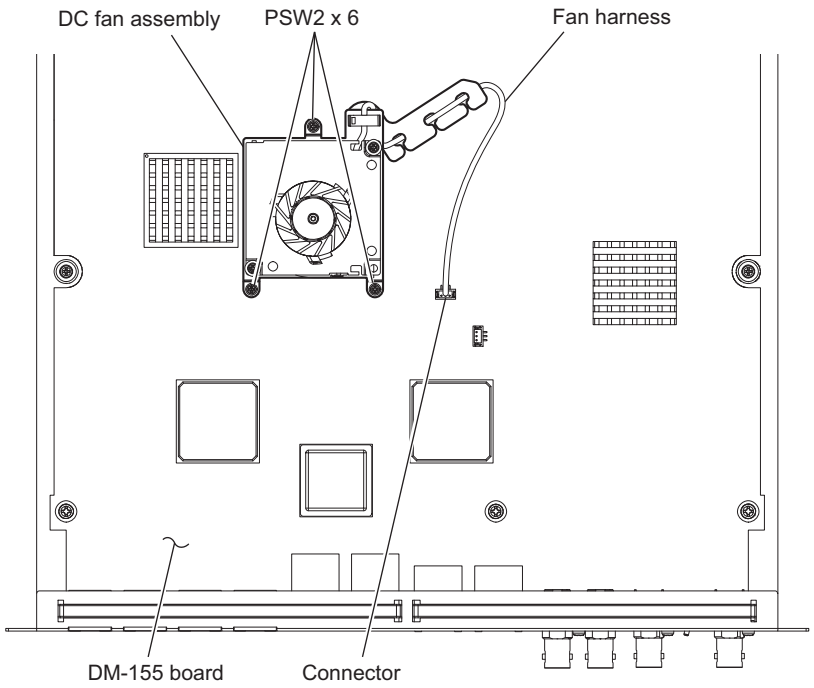
4-5-6. DM Fan

Preparation

1. Refer to “4-2. Flow Chart”.

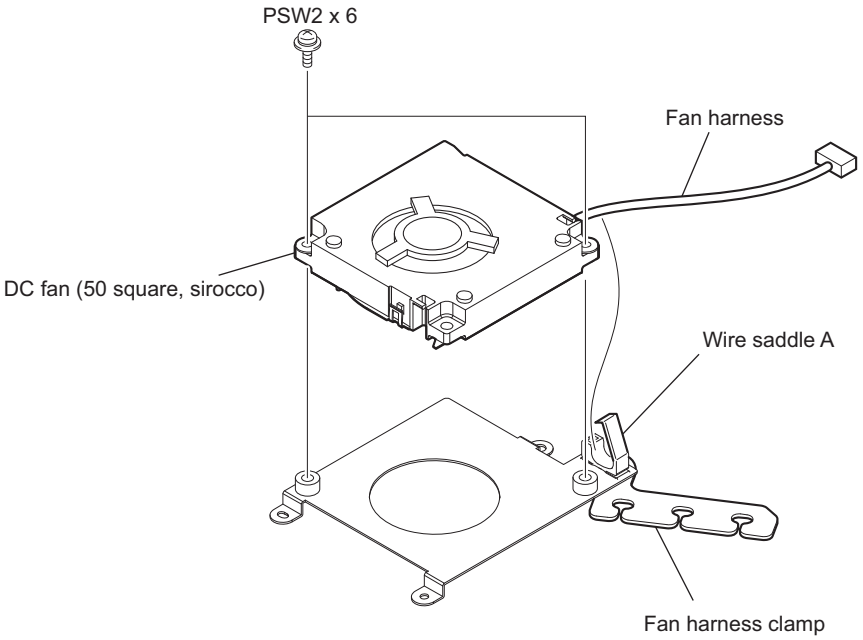
Procedure

1. Disconnect the fan harness from the connector.
2. Remove the three screws to detach the DC fan assembly.



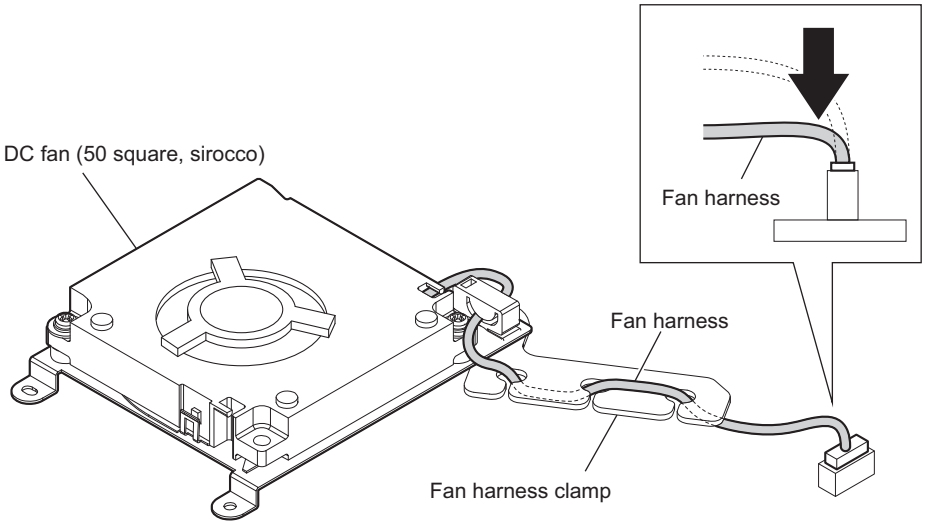
3. Release the fan harness from the wire saddle A and the fan harness clamp.

4. Remove the two screws to detach the DM fan (DC fan (50 square, sirocco)).



Note

- Install the DM fan (DC fan (50 square, sirocco)) carefully paying attention to the harness position.
- Arrange the fan harness as shown in the figure.
- Arrange the fan harness while pressing it in the arrow direction.



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

4-5-7. DIF Fan

Preparation

1. Refer to "4-2. Flow Chart".

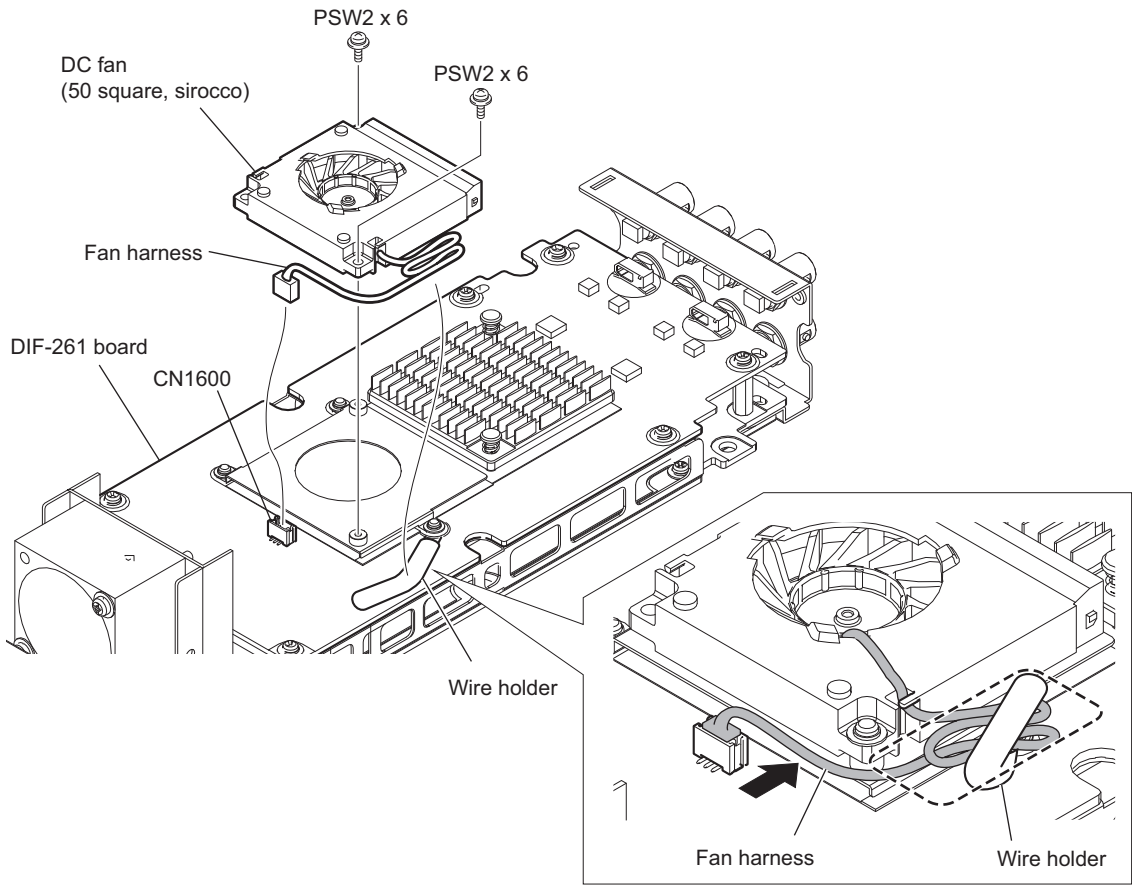
Note

- Do not push strong force to the coaxial cable. The coaxial cable may be damaged.
- When installing the DIF fans, confirm that coaxial cable connectors are firmly connected to BNC connectors and each board at 16 locations.

DC Fan (50 Square, Sirocco) for DIF-261 Board

Procedure

1. Release the four coaxial cables from the two wire saddles.
2. Disconnect the fan harness from the connector (CN1600) on the DIF-261 board.
3. Remove the two screws to detach the DC fan (50 square, sirocco).



Note

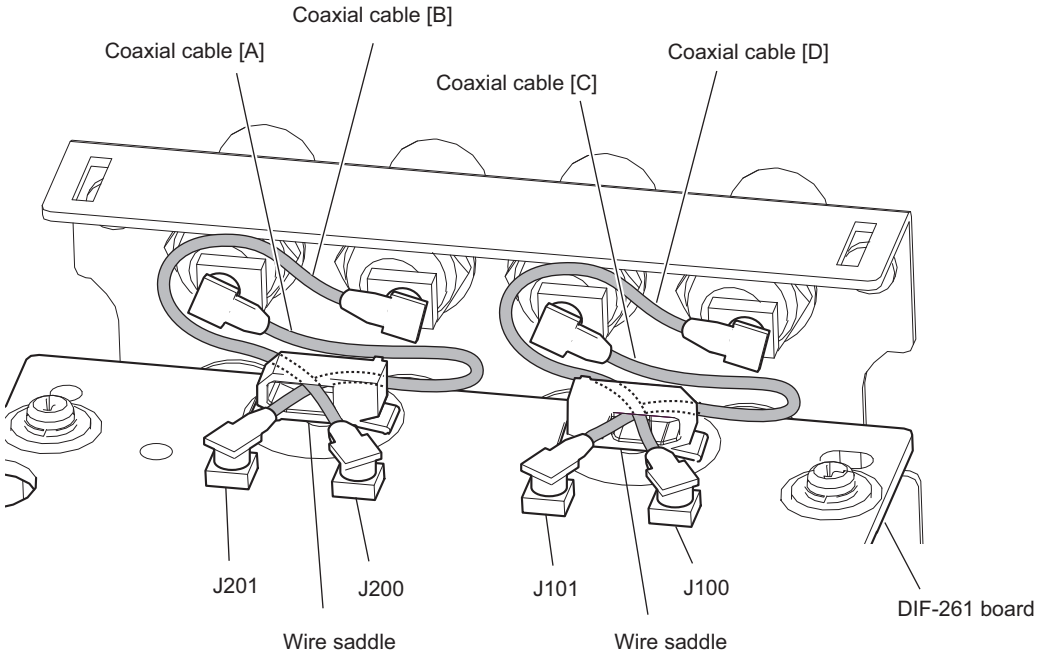
Install the DC fan (50 square, sirocco) as follows.

- Pay attention to the orientation of the DC fan (50 square, sirocco).
- Pull the excess length of the fan harness in the direction of the arrow.
- Clamp the fan harness with the wire holder so that the height of the fan harness surrounded by the broken line is lower than the upper surface of the DC fan (50 square, sirocco).

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

Procedure

1. Release the four coaxial cables from the two wire saddles.
2. Disconnect the four coaxial cables from the four connectors (J100, J101, J200, J201) on the DIF-261 board.



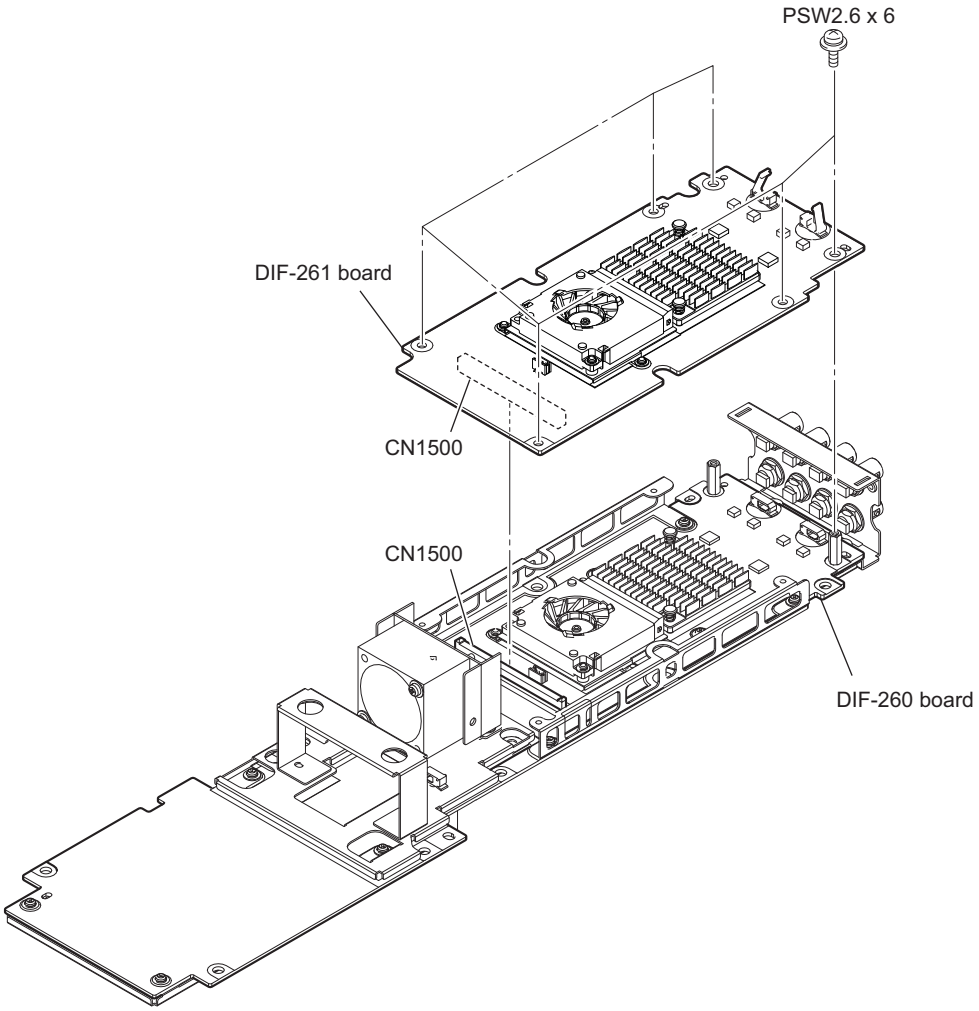
Note

Install the DC fan (50 square, sirocco) as follows.

- Connect the coaxial cables in the following sequence: [A], [B], [C], [D].
- Clamp the four coaxial cables with the two wire saddles.

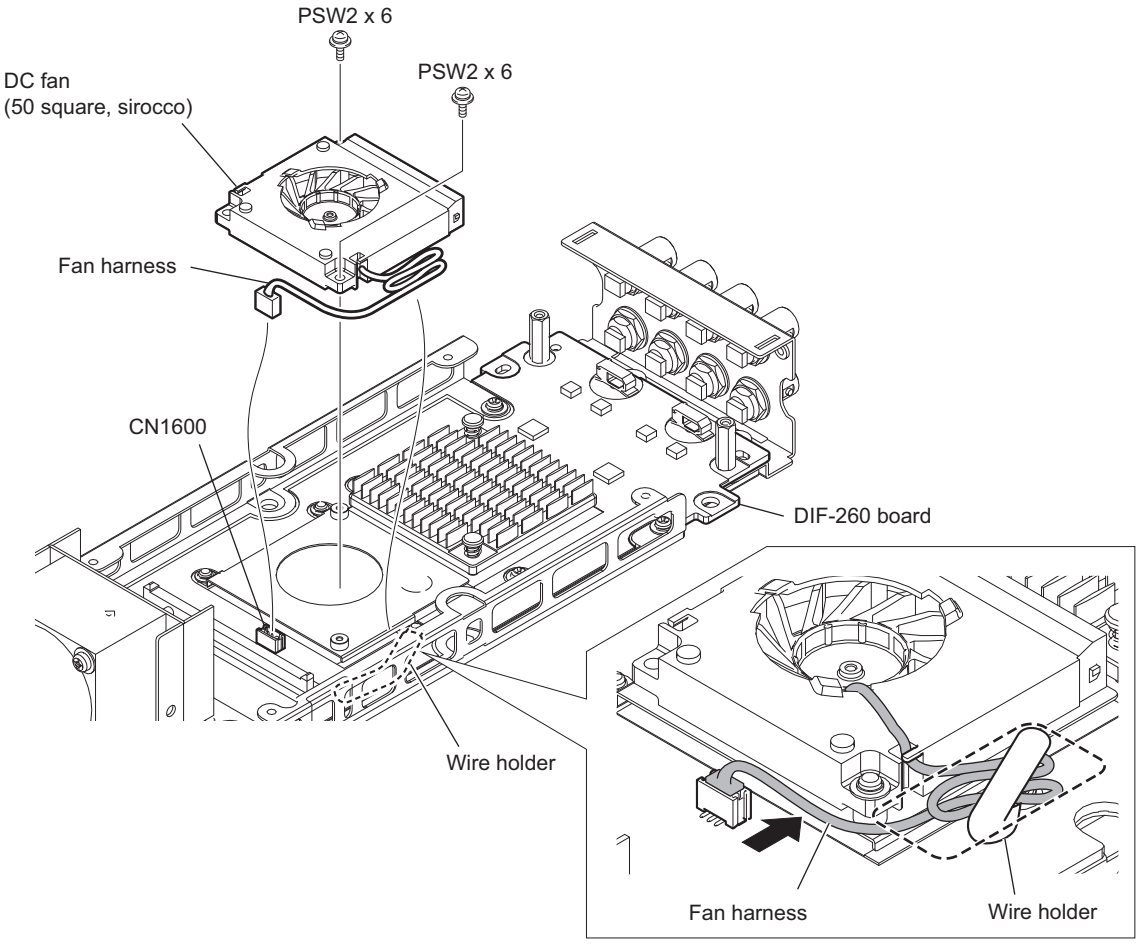
3. Remove the six screws.

4. Remove the DIF-261 board from the connector (CN1500) on the DIF-260 board.



5. Release the fan harness from the wire holder.
6. Disconnect the fan harness from the connector (CN1600) on the DIF-260 board.

7. Remove the two screws to detach the DC fan (50 square, sirocco).



Note

Install the DC fan (50 square, sirocco) as follows.

- Pay attention to the orientation of the DC fan (50 square, sirocco).
- Pull the excess length of the fan harness in the direction of the arrow.
- Clamp the fan harness with the wire holder so that the height of the fan harness surrounded by the broken line is lower than the upper surface of the DC fan (50 square, sirocco).

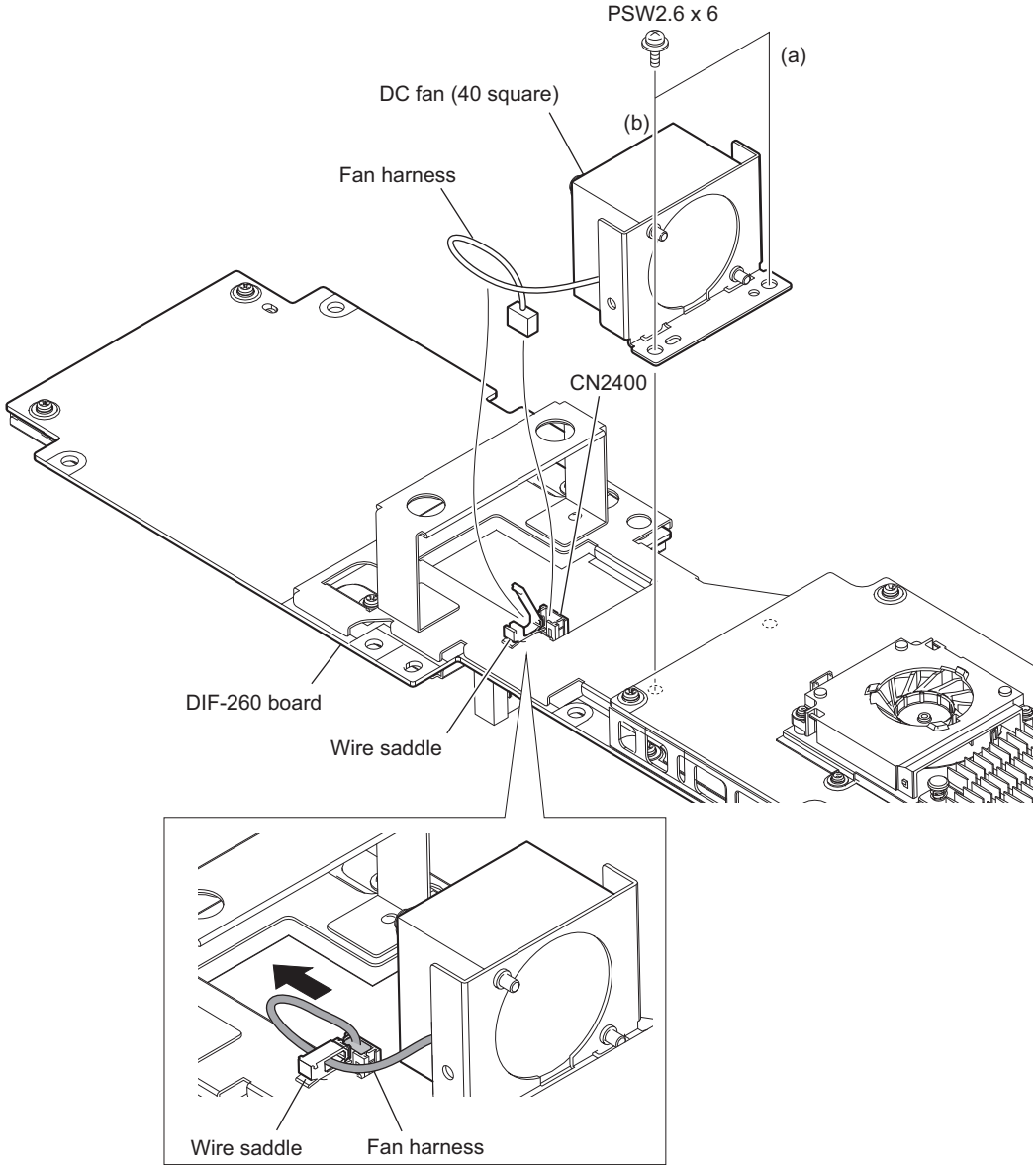
8. Install the removed parts by reversing the steps of removal.

DC Fan (40 Square)

Procedure

1. Release fan harness from the wire saddle.
2. Disconnect the fan harness from the connector (CN2400) on the DIF-260 board.

3. Remove the two screws to detach the DC fan (40 square).

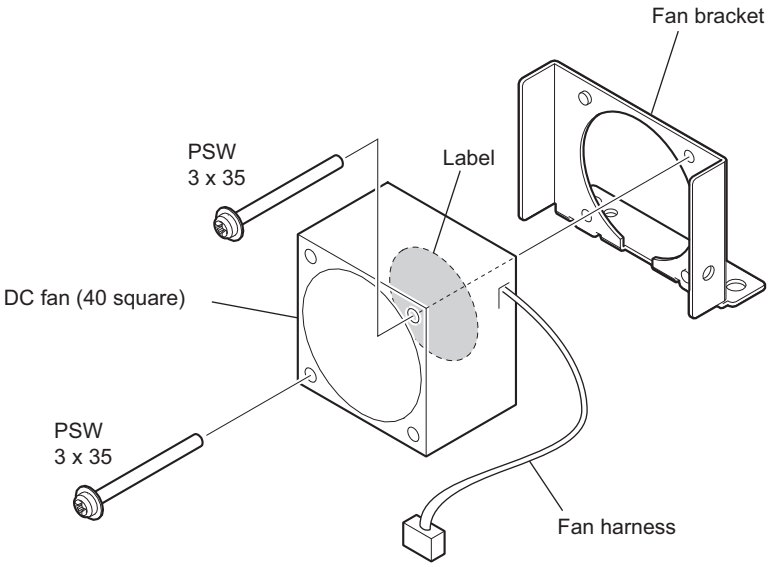


Note

Install the DC fan (40 square) as follows.

- Tighten the screws in the following sequence: (a), (b).
- Pull the excess length of the fan harness in the direction of the arrow.

4. Remove the two screws to detach the DC fan (40 square) from the fan bracket.



Note

Carefully paying attention to the label side and the harness position.

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

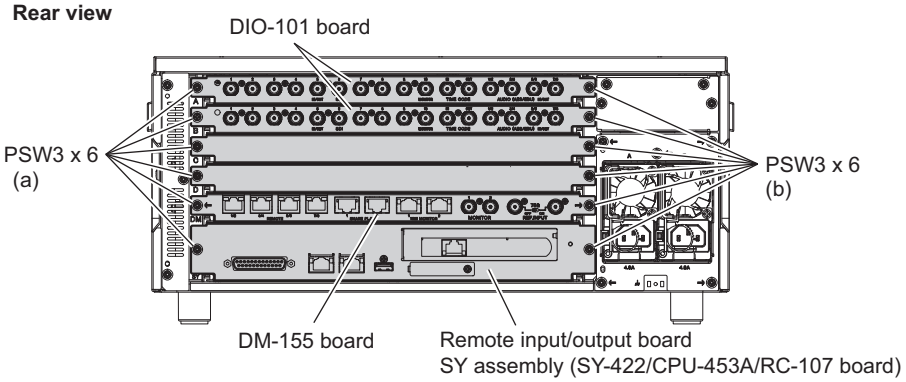
4-6. Plug-In Board

4-6-1. DIO-101 Board/DM-155 Board/Remote Input/Output Board

Procedure

1. Remove the two screws.
2. Insert the card board insertion/removal tools to the left and right holes of the plug-in board. (Refer to "1-10-1. How to Use the Card Board Insertion/Removal Tool" for the tools)
3. Pull out the plug-in board by using the card board insertion/removal tools.

Rear view



Note

- When installing the board, tighten the screws in the order of (a), (b).
- When connecting a plug-in board to the unit, push the plug-in board by using the card board insertion/removal tool without applying stress to external connectors.
- When installing the DIO-101 board and the DM-155 board, do not put the harnesses between any parts.
- Avoid impact on the fan assembly of the DIO-101 board and of the DM-155 board.

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

Note

If the DIO-101 board is not smoothly inserted, loosen the screws securing boards and blank panels mounted in other slots.

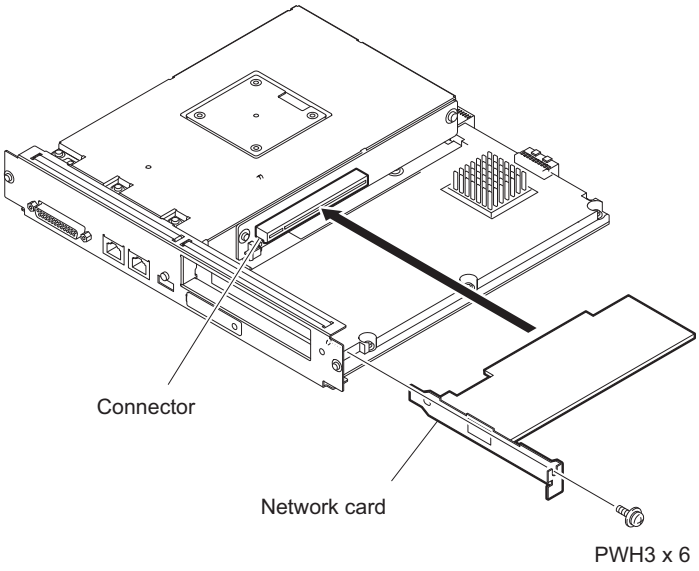
4-6-2. Network Card

Preparation

1. Refer to “4-2. Flow Chart”.

Procedure

1. Remove the screw.
2. Disconnect the network card from the connector.



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

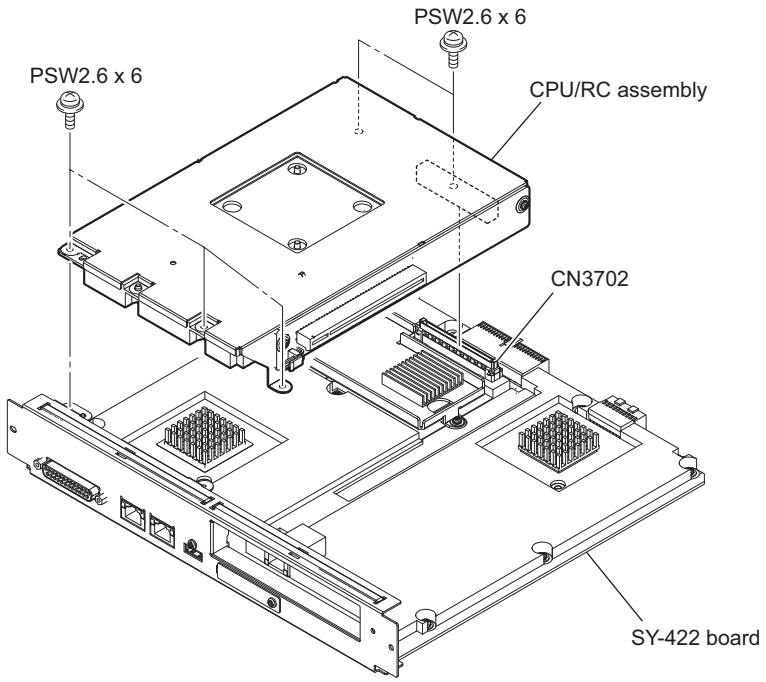
4-6-3. SY-422 Board

Preparation

1. Refer to “4-2. Flow Chart”.

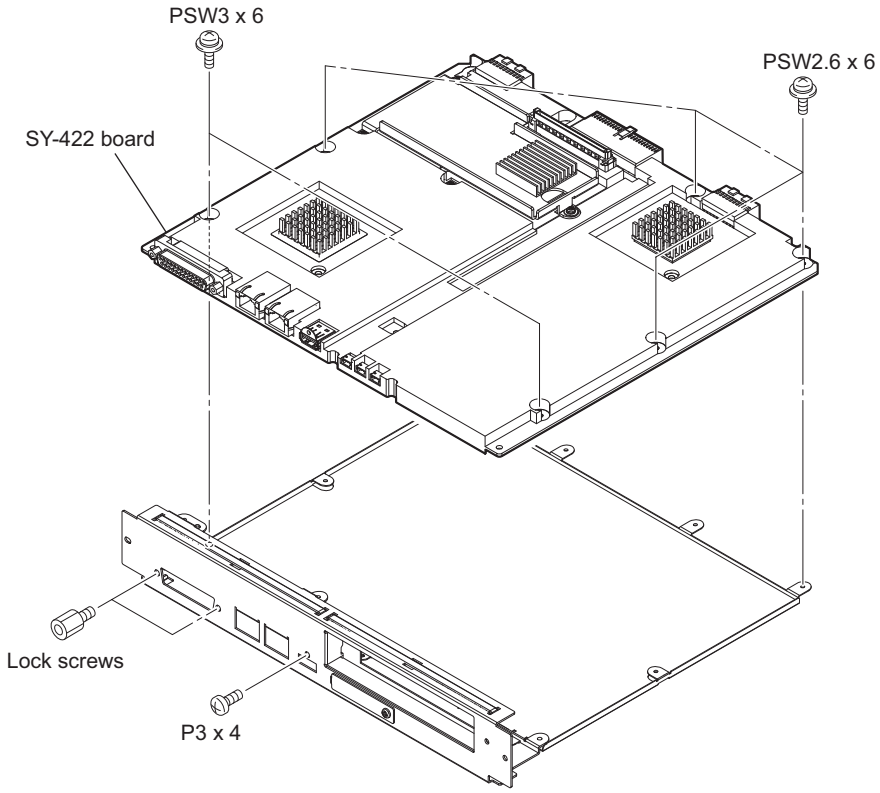
Procedure

1. Remove the five screws.
2. Remove the CPU/RC assembly from the connector (CN3702) on the SY-422 board.



3. Remove the screw (P3 x 4) and two lock screws.
4. Remove the two screws (PSW3 x 6).

5. Remove the four screws (PSW2.6 x 6) to detach the SY-422 board.



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

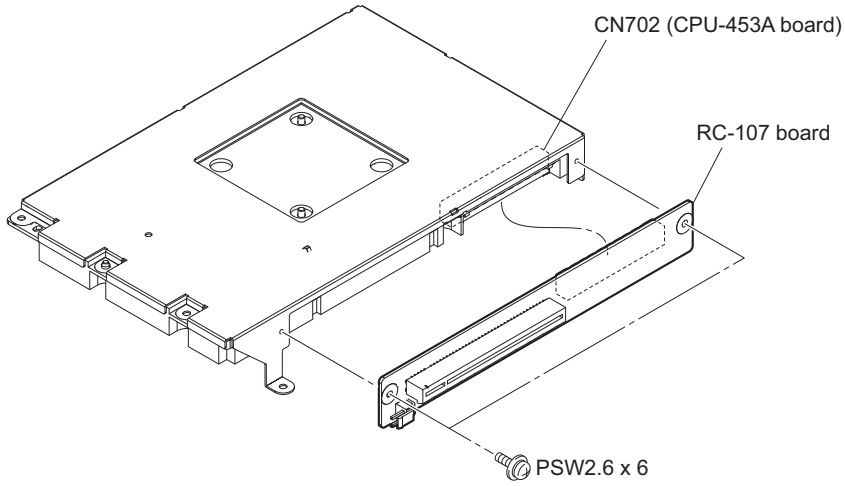
4-6-4. CPU-453A Board/RC-107 Board

Preparation

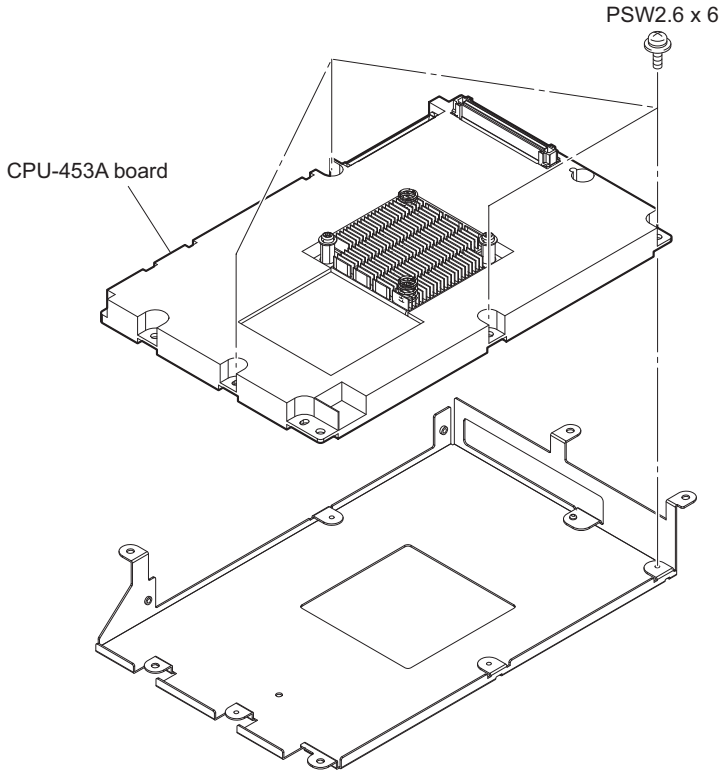
1. Refer to "4-2. Flow Chart".

Procedure

1. Remove the two screws.
2. Remove the RC-107 board from the connector (CN702) on the CPU-453A board.



3. Remove the four screws to detach the CPU-453A board.



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

4-7. Other Boards

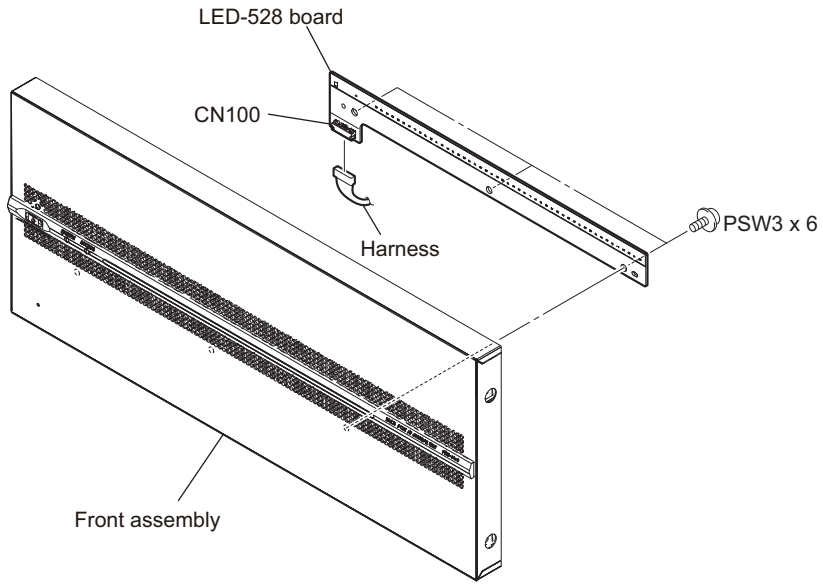
4-7-1. LED-528 Board

Preparation

1. Refer to “4-2. Flow Chart”.

Procedure

1. Remove the three screws to detach the LED-528 board.
2. Disconnect the harness from the connector (CN100) on the LED-528 board.



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

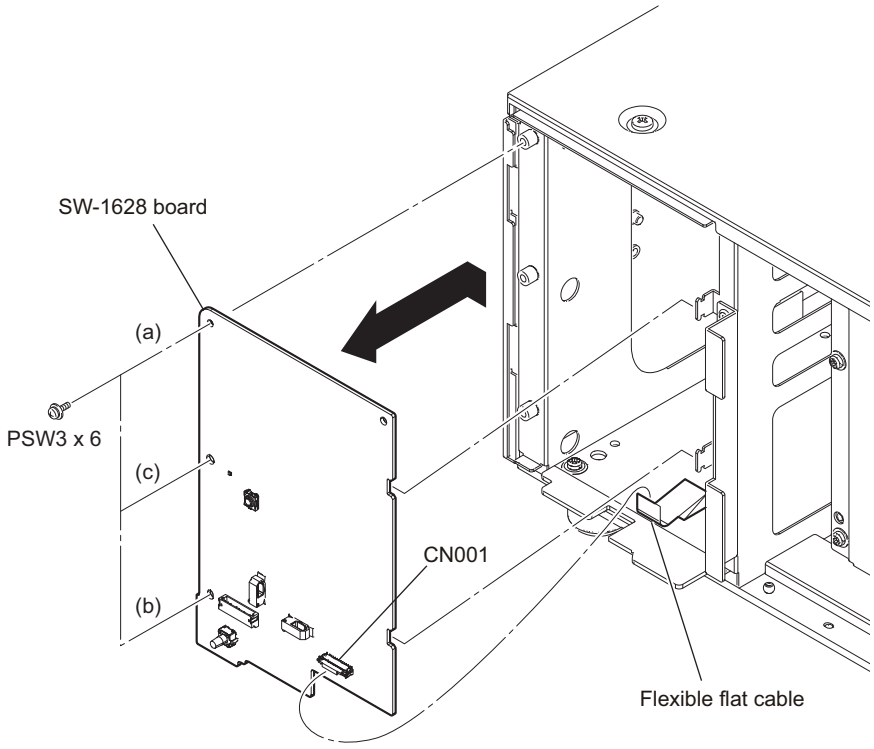
4-7-2. SW-1628 Board

Preparation

1. Refer to “4-2. Flow Chart”.

Procedure

1. Disconnect the flexible flat cable from the connector (CN001) on the SW-1628 board.
2. Remove the three screws to detach the SW-1628 board in the direction of the arrow.



Note

When installing the SW-1628 board, tighten the three screws in the order of (a), (b), (c).

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

4-7-3. CN-3837 Board

Note

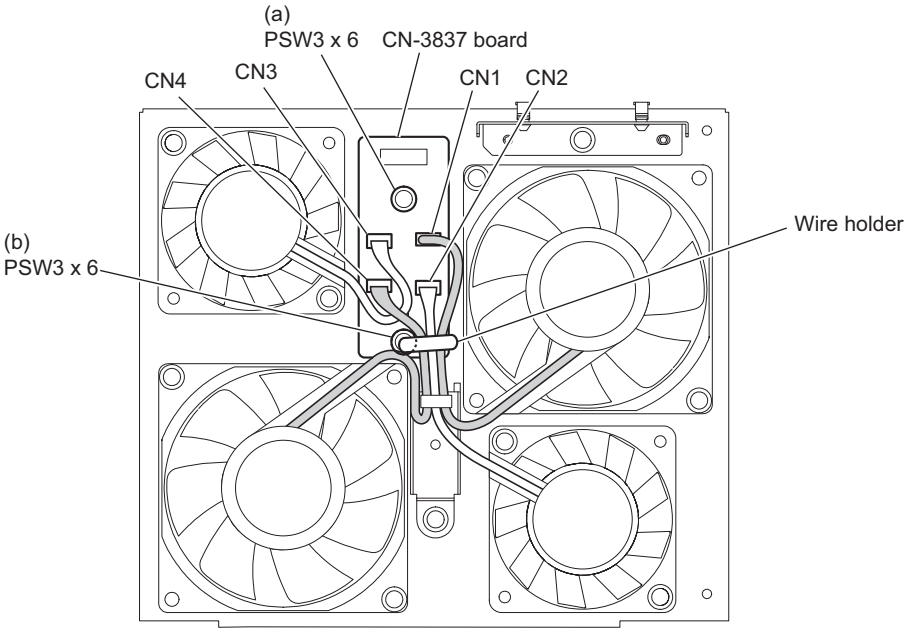
- The CN-3837 board is installed to the front fan assembly and the rear fan assembly. Remove the fan assembly that contains the CN-3837 board to be replaced.
- This figure shows the front fan assembly.

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Disconnect the four fan harnesses from the four connectors (CN1, CN2, CN3, and CN4) on the CN-3837 board.
2. Remove the two screws to detach the wire holder and CN-3837 board.



Note

- When installing , tighten the screws in the order of (a), (b).
- When installing, arrange the fan harness as shown in the figure.

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

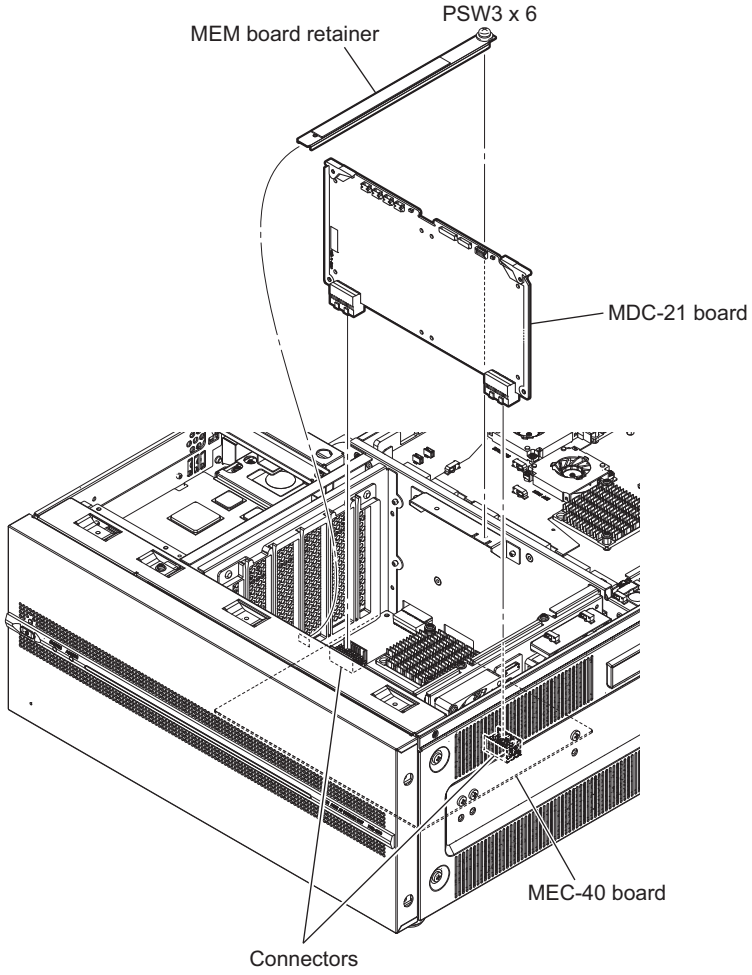
4-7-4. MDC-21 Board

Preparation

1. Refer to “4-2. Flow Chart”.

Procedure

1. Loosen the screw to detach the MEM PC board retainer.
2. Remove the MDC-21 board from the two connectors on the MEC-40 board.



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

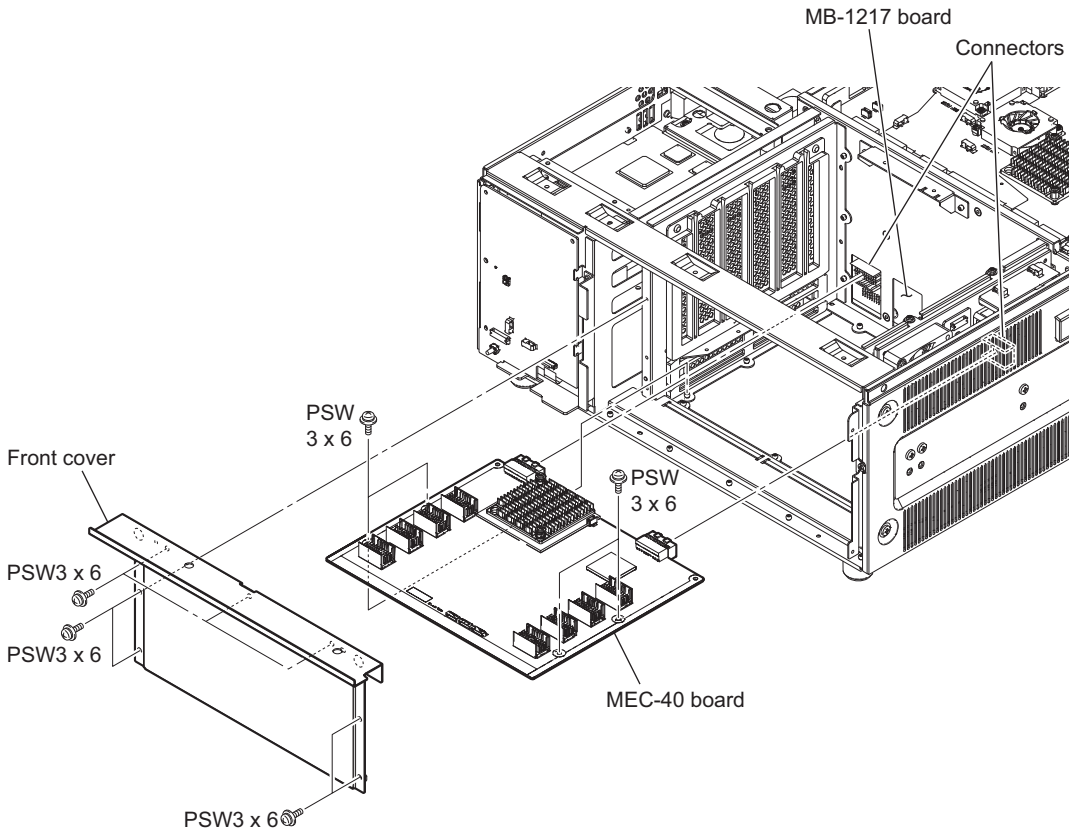
4-7-5. MEC-40 Board

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Remove the seven screws to detach the front cover.
2. Remove the MEC-40 board from the two connectors on the MB-1217 board.



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

4-7-6. HN-431 Board

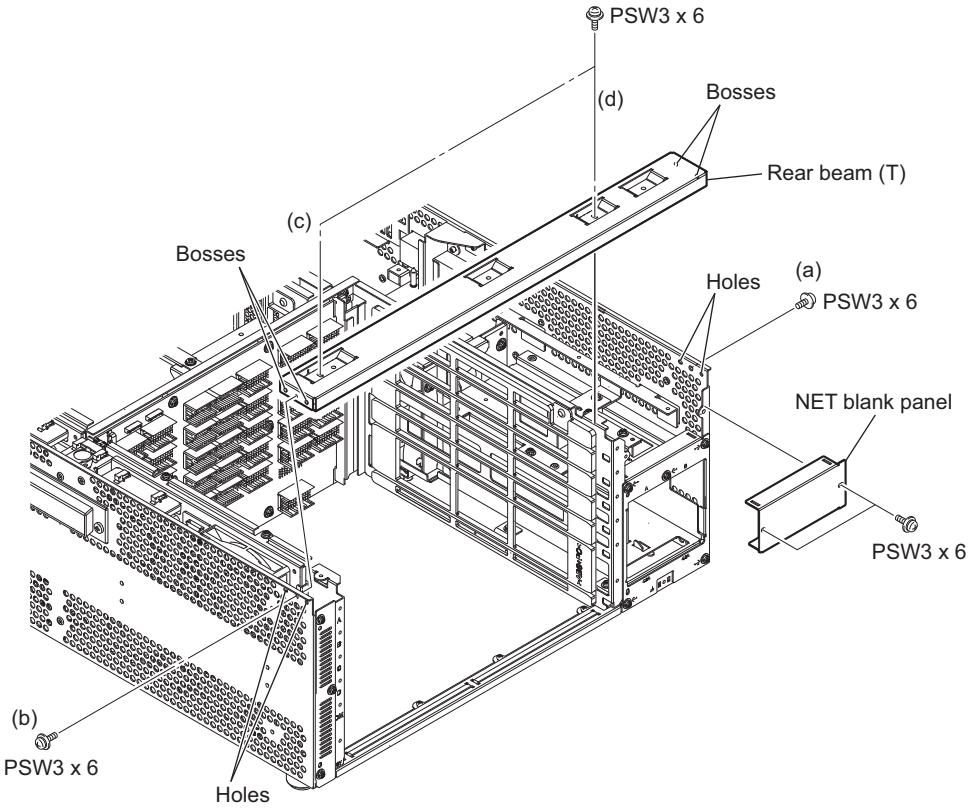
Preparation

1. Refer to “4-2. Flow Chart”.

Removal of the Power Assembly

Procedure

1. Remove the two screws to detach the NET blank panel.
2. Remove the four screws to detach the rear beam (T).

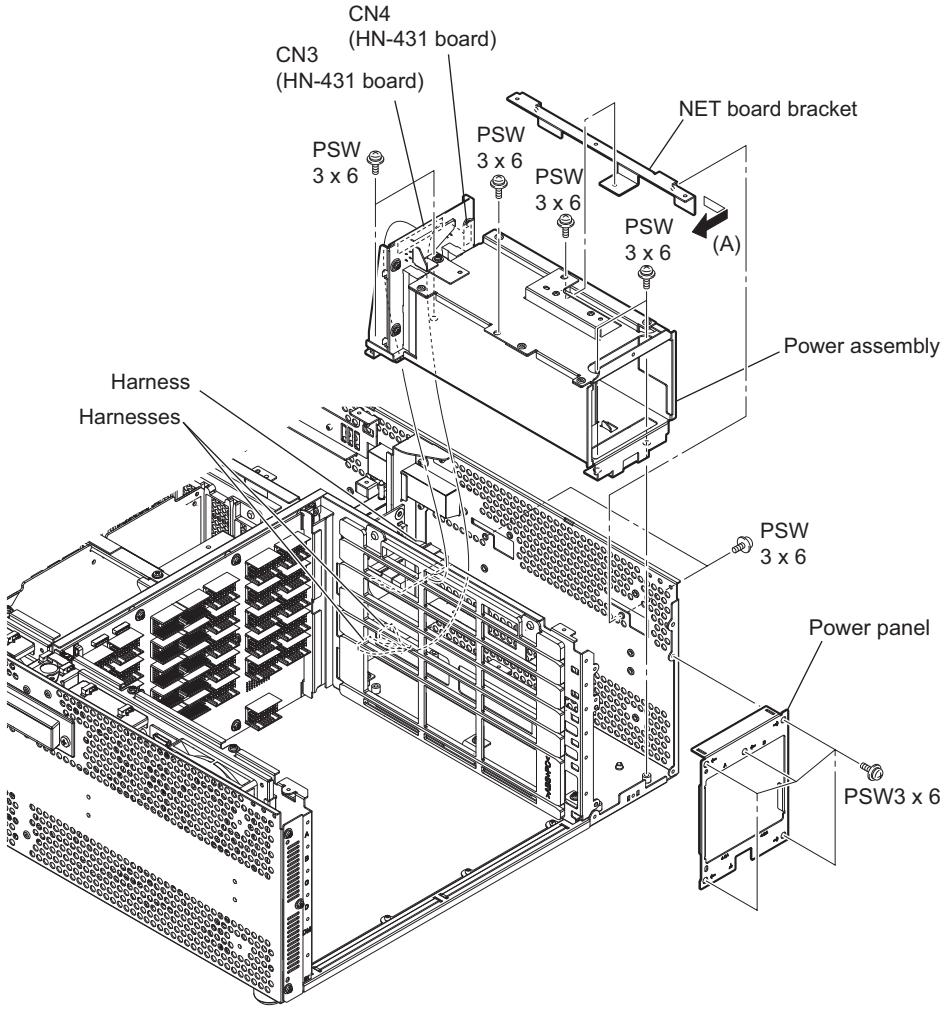


Note

- When installing the front beam (T), tighten the screws in the order of (a), (b), (c), (d).
- When installing the front beam (T), fit the four bosses with the four holes.

3. Disconnect the harness from the connector (CN3) on the HN-431 board.
4. Disconnect the harness from the connector (CN4) on the HN-431 board.
5. Remove the five screws to detach the power panel.
6. Remove the three screws to detach the NET board bracket in the arrow A direction.

7. Remove the five screws to detach the power assembly.

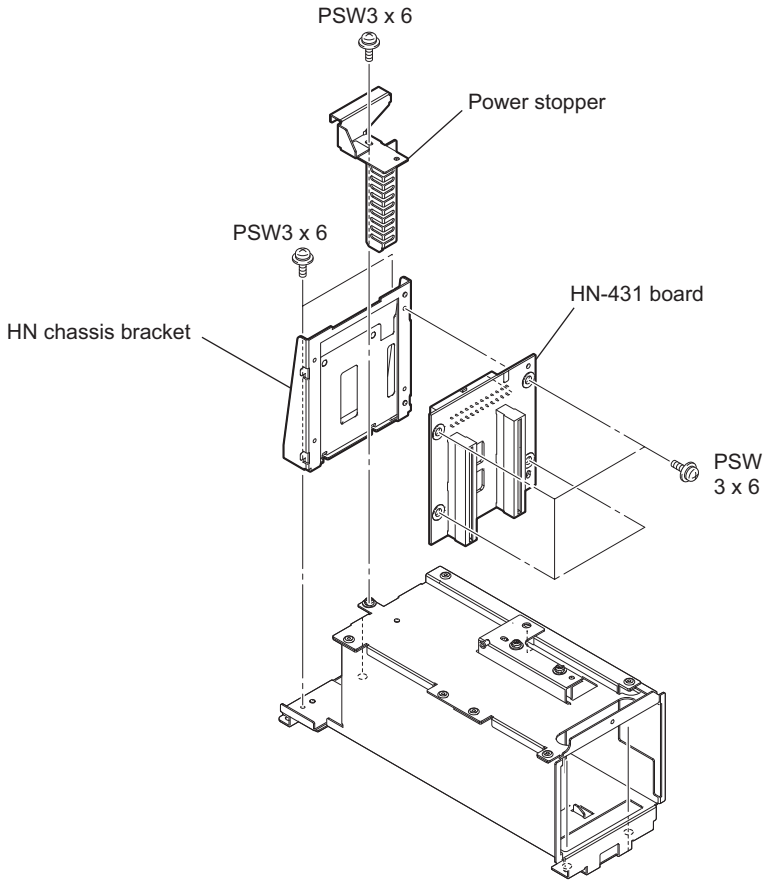


Removal of the HN-431 Board

Procedure

1. Remove the screw to detach the power stopper.
2. Remove the two screws to detach the HN chassis bracket.

3. Remove the four screws to detach the HN-431 board from the HN chassis bracket.



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

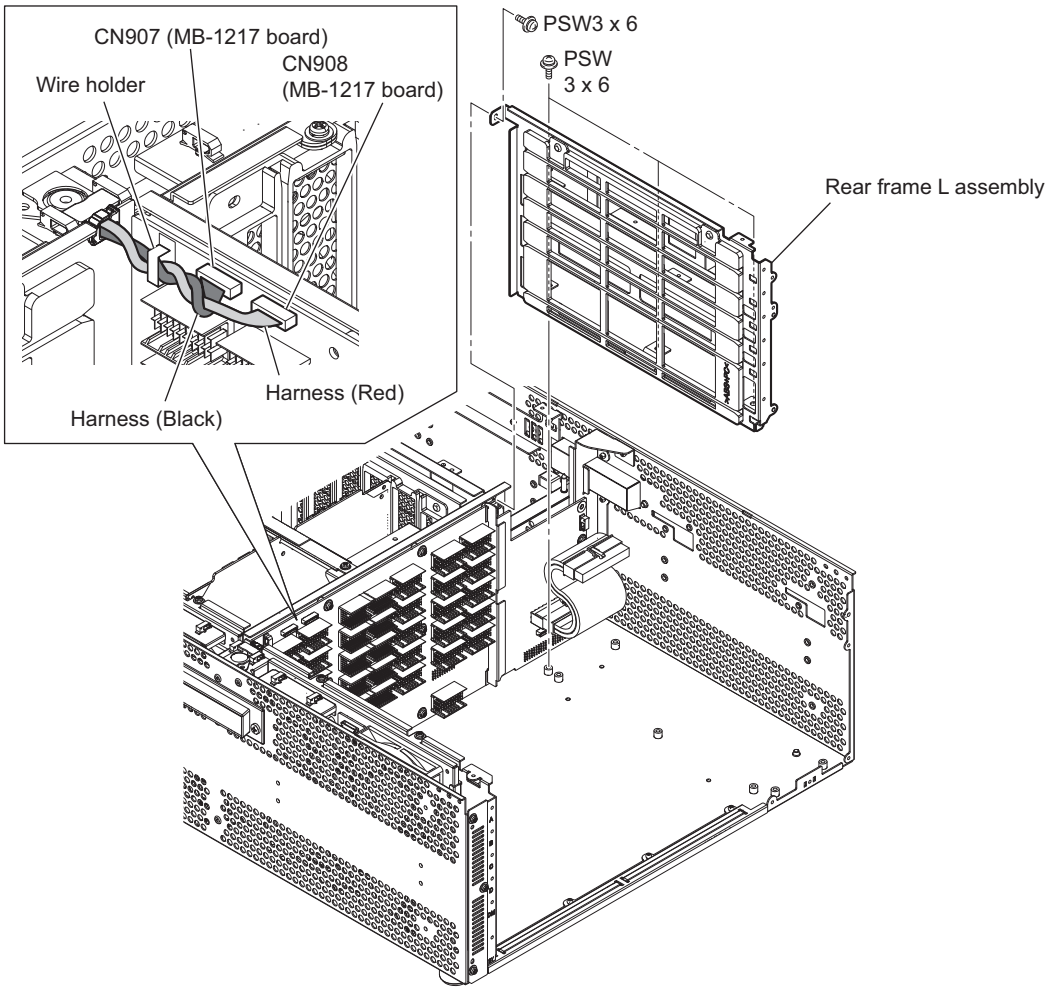
4-7-7. MB-1217 Board

Preparation

1. Refer to “4-2. Flow Chart”.

Procedure

1. Remove the four screws to detach the rear frame L assembly.
2. Disconnect the harnesses from the two connectors (CN907, CN908) on the MB-1217 board.

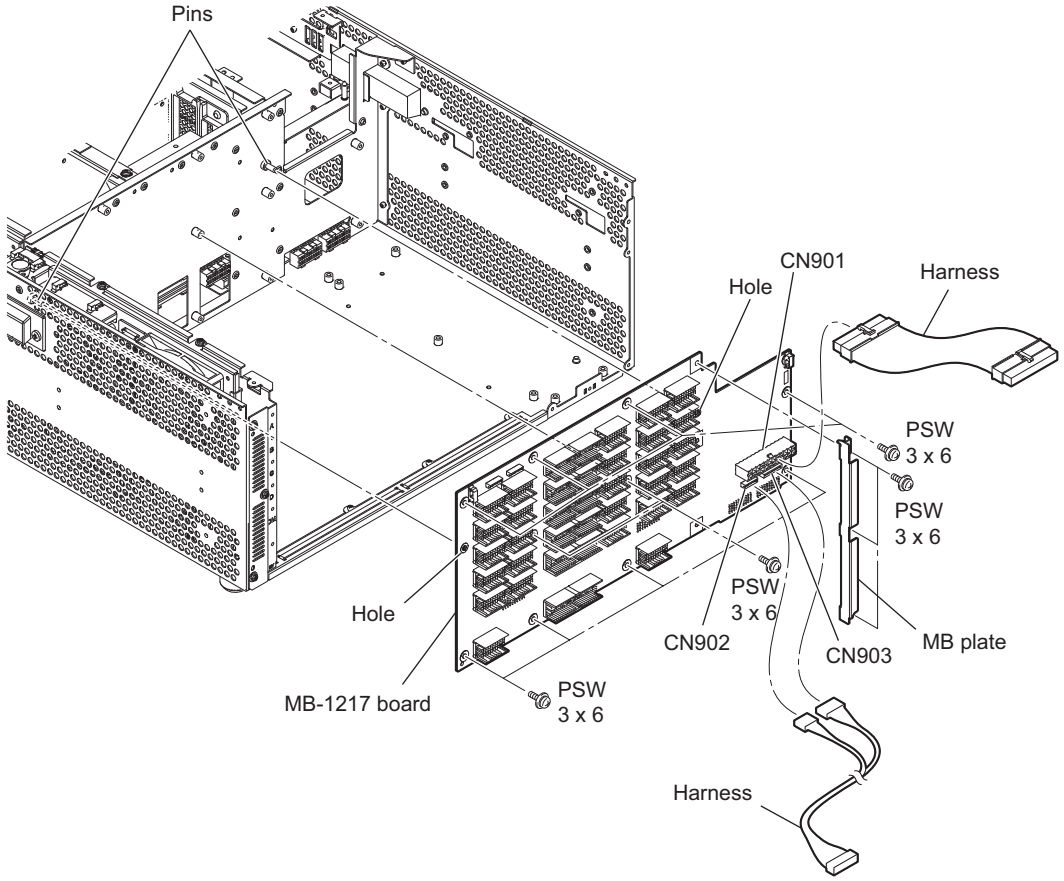


Note

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

3. Disconnect the harness from the connector (CN901) on the MB-1217 board.
4. Disconnect the harnesses from the two connectors (CN902, CN903) on the MB-1217 board.
5. Remove the three screws to detach the MB plate.

6. Remove the ten screws to detach the MB-1217 board.



Note

When installing the MB-1217 board, fit the two pins with the two holes.

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

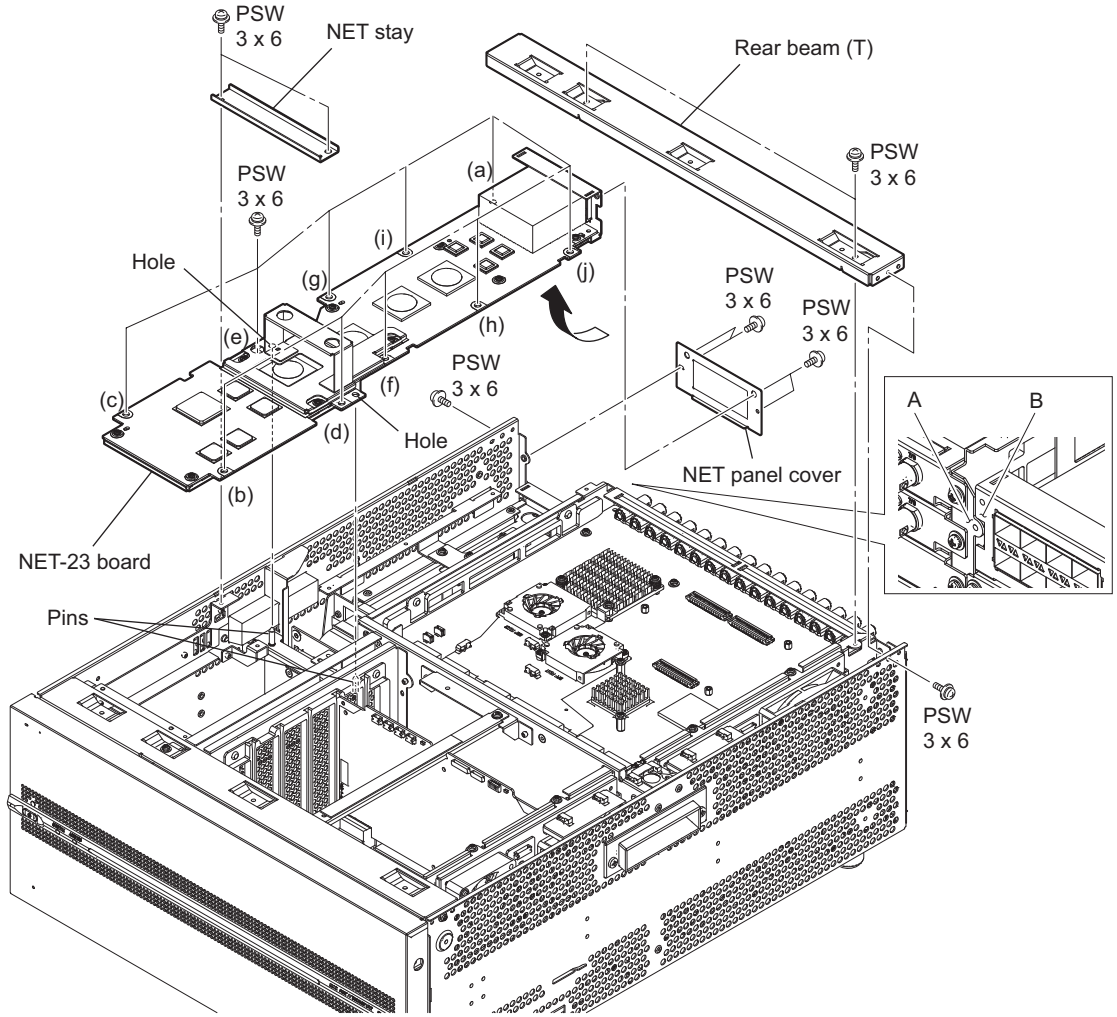
4-7-8. NET-23 Board

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Remove the two screws to detach the NET stay.
2. Remove the four screws to detach the NET panel cover.
3. Remove the ten screws to detach the NET-23 board in the arrow direction.



Note

- When installing the NET-23 board, fit the holes of the NET-23 board with the pins of the chassis.
- When installing the NET-23 board, tighten the ten screws in alphabetical order shown in the figure.

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

4-7-9. DIF-260 Board, DIF-261 Board

Note

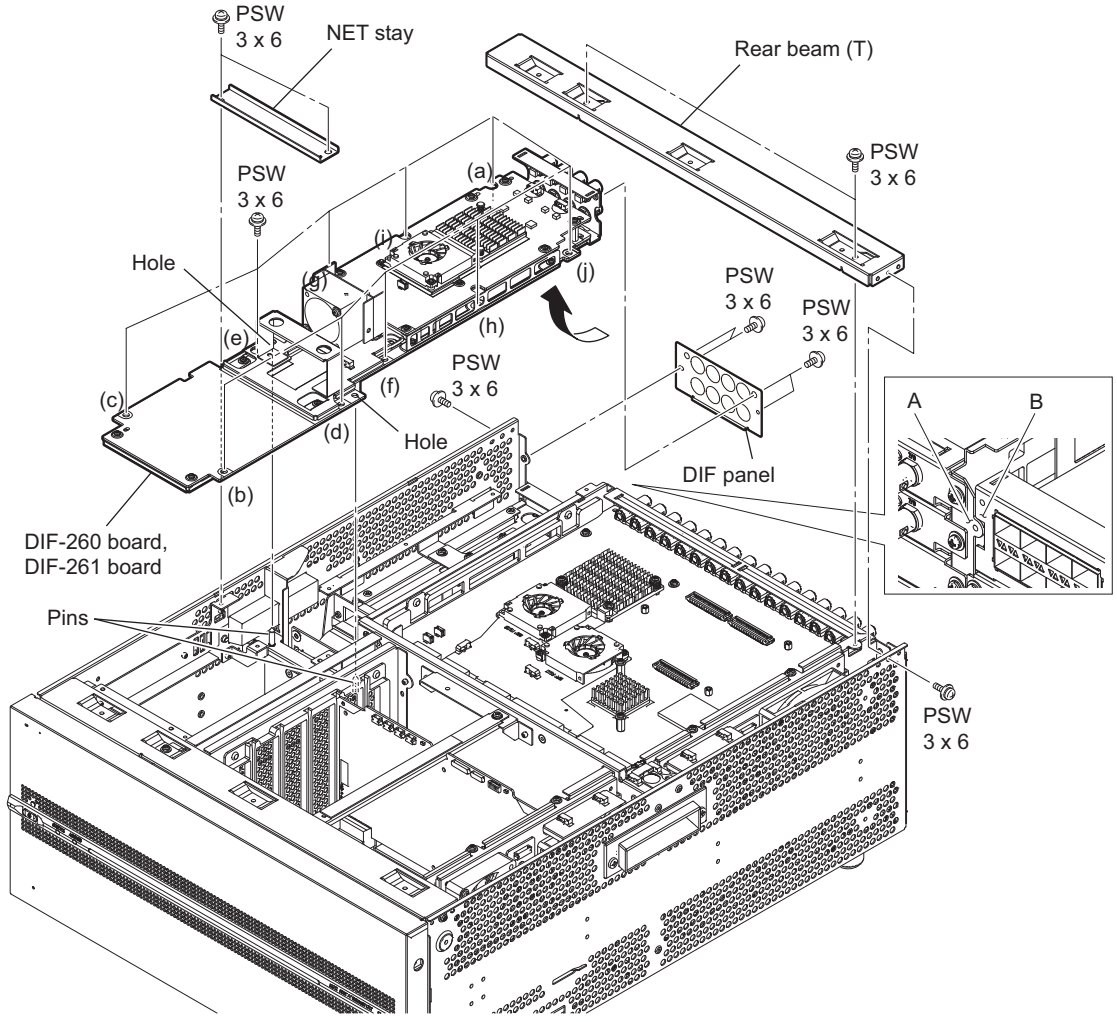
When installing the DIF-260 board, DIF-261 board, confirm that coaxial cable connectors are firmly connected to BNC connectors and each board at 16 locations.

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Remove the two screws to detach the NET stay.
2. Remove the four screws to detach the DIF panel.
3. Remove the ten screws to detach the DIF-260 board, DIF-261 board in the arrow direction.



Note

- When installing the DIF-260 board, DIF-261 board, fit the holes of the DIF-260 board, DIF-261 board with the pins of the chassis.
- When installing the DIF-260 board, DIF-261 board, tighten the ten screws in alphabetical order shown in the figure.

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

4-7-10. RD-41 Board

Preparation

1. Refer to "4-2. Flow Chart".

Procedure

1. Remove the tape (13 x 50), and then disconnect the harness from the connector (CN400) on the RD-41 board.

   Note

   On assembly, attach the tape over the harness so that the harness stays on the board. (Fig.1)

2. Remove the screw (PSW2.6 x 5) and the two screws (PSW2.6 x 6 (black)).
3. Remove the RD-41 board from the three connectors (CN2001, CN2002, CN2003) on the DIO-101 board.

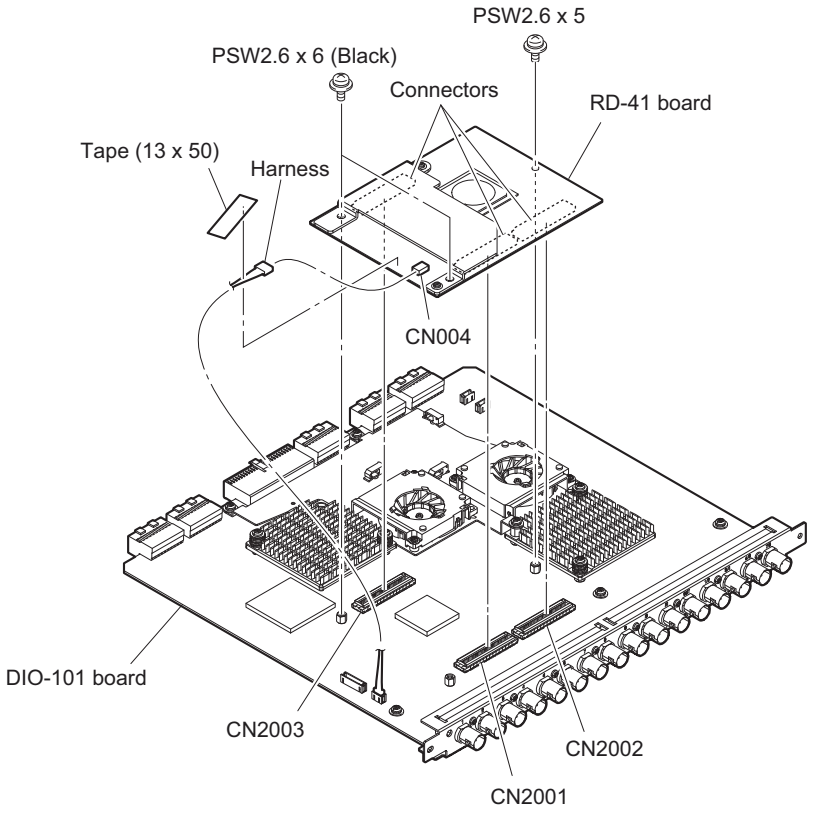
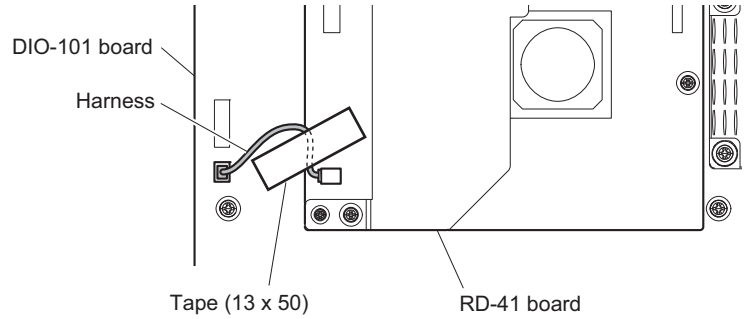


Fig.1



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

Section 5
Setting Check Sheet

It is recommended to write down information such as switch settings according to the operating environment of the unit on the copy of this check sheet.
This makes it easy to restore the previous settings after settings are changed due to temporary change of the operating environment, for example.
When inspecting, servicing, and repairing the unit, in particular, it is recommended to attach written check sheets to the unit.
For the SETUP menu, store the set values before starting inspection, service, and repair. (Refer to the Operation Manual)
Furthermore, if system combinations are frequently changed in the use of the unit, it is convenient to prepare check sheets for each system combination to prevent incorrect setting change.
Model Name: _____ Serial Number: _____

- Firmware
  SYS1 software version: _____
  SYS2 software version: _____
  NW software version: _____
- Hours Meter
  Write down hours meter values when inspecting, servicing, and repairing the unit.

ITEM	Date	Hours Meter Value
OPERATION HOURS		

Installation Information of Option Board

Write down MDC-21 board (PWSK-4401) or MDC-21A board (PWSK-4501) installed in the memory slot.

Memory Slot	Serial Number
Slot A	
Slot B	
Slot C	
Slot D	

Tip

The MDC-21 board or MDC-21A board was installed in the Slot A when the unit was shipped. This board has no serial number.

Installation Information of Input/Output Ports

Check the mode of each DIO-101 board (PWSK-4504) and check if the option is installed on the board.

Port	Mode		RD-41 board (PWSK-4505)	
PORT A (Standard equipment)	ENC mode □	DEC mode □	Installed □	Not installed □
PORT B (Standard equipment)	ENC mode □	DEC mode □	Installed □	Not installed □
PORT C (Option)	ENC mode □	DEC mode □	Installed □	Not installed □
PORT D (Option)	ENC mode □	DEC mode □	Installed □	Not installed □

Write down the mode set to the NET-23 board (PWSK-4506F).

Port	Mode	
PORT A1, A2	ENC mode □	DEC mode □
PORT B1, B2	ENC mode □	DEC mode □
PORT C1, C2	ENC mode □	DEC mode □
PORT D1, D2	ENC mode □	DEC mode □

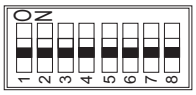
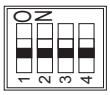
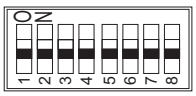
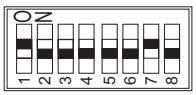
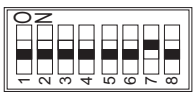
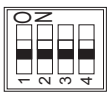
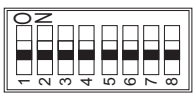
Connector Panel Setting

Switch	Factory Setting	Setting
Reference video input 75 Ω	ON	ON □ OFF □

Onboard Switch Settings

Note

Do not change the settings of the following onboard switches. Use them with factory settings.

Board	Switch No.	Factory Setting (■: Knob position)
CPU-453	S300	
DIO-101	S2302 S2902 S3502 S5003	
HP-175	S002 S003	
MEC-40	S300 S550 S800	
MDC-21	S101	
SY-422	S601	
	S1501	
	S1601	
	S1703	

Section 6
Spare Parts

6-1. Note on Repair Parts

1. Safety Related Components Warning

WARNING

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

2. Standardization of Parts

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

3. Stock of Parts

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

4. Harness

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

1. 安全重要部品

⚠警告

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

2. 部品の共通化

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

3. 部品の在庫

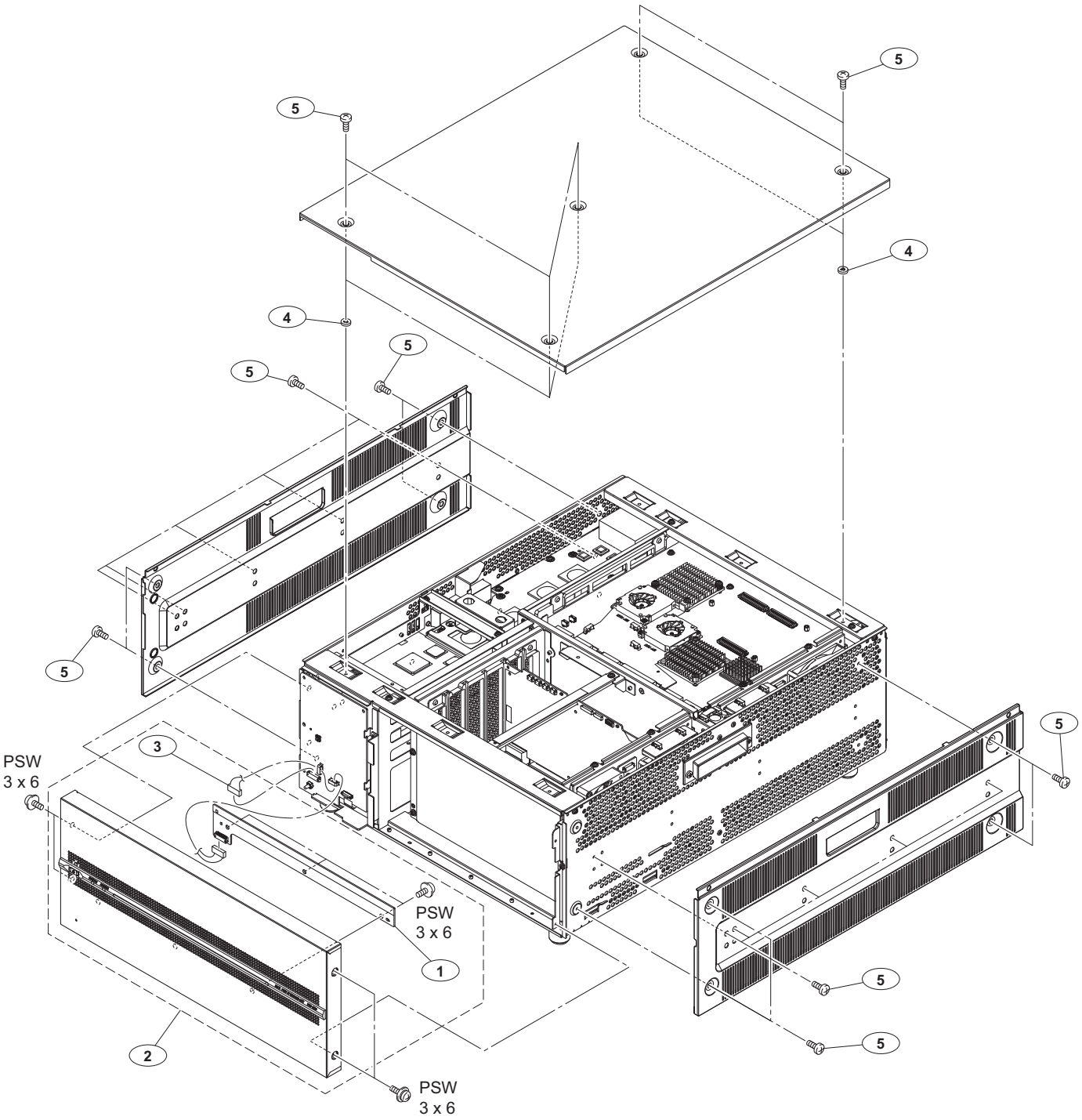
部品表の SP（Supply code）欄に “o” で示される部品は在庫していないことがあり，納期が長くなることがあります。

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。

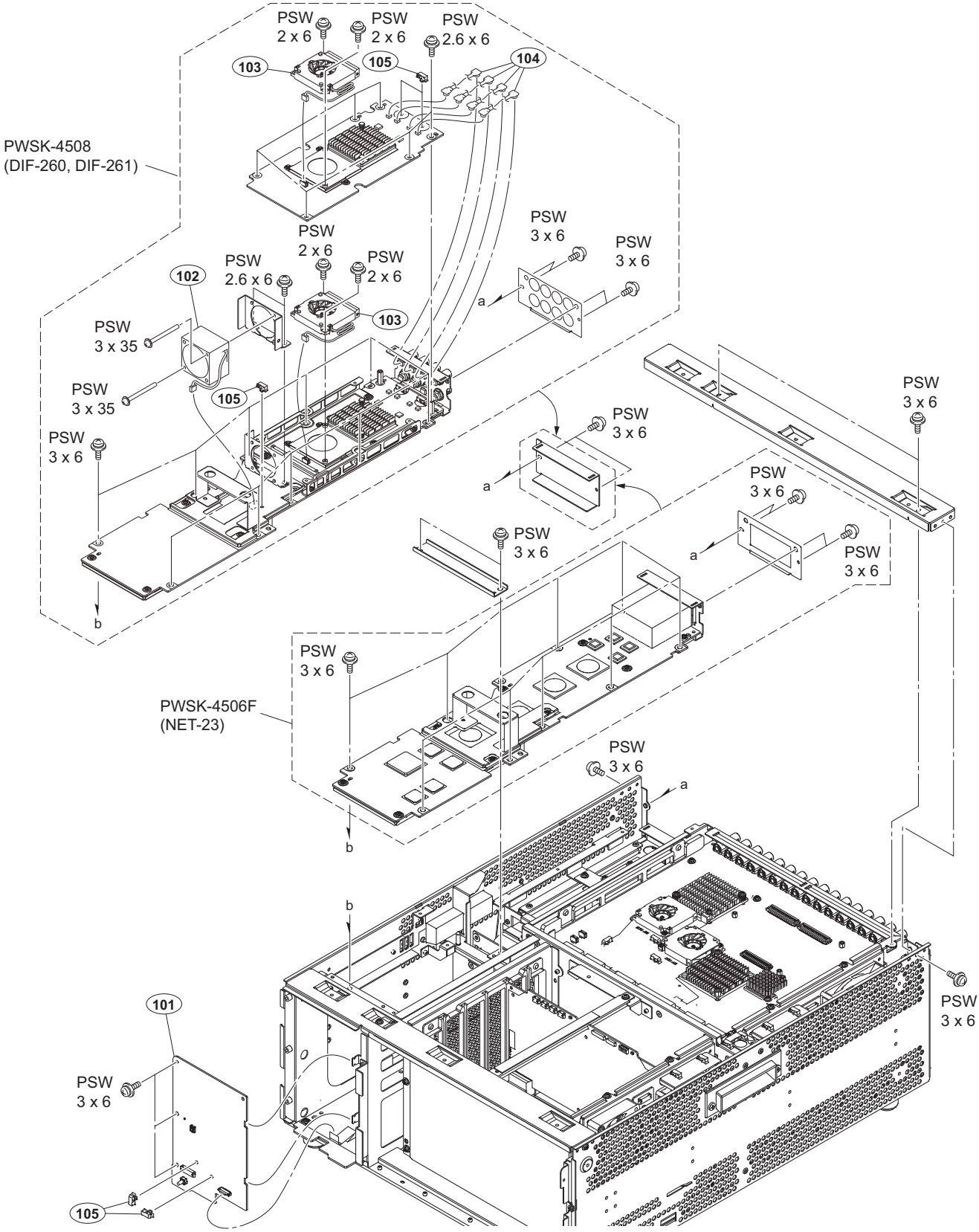
6-2. Exploded Views

Cover



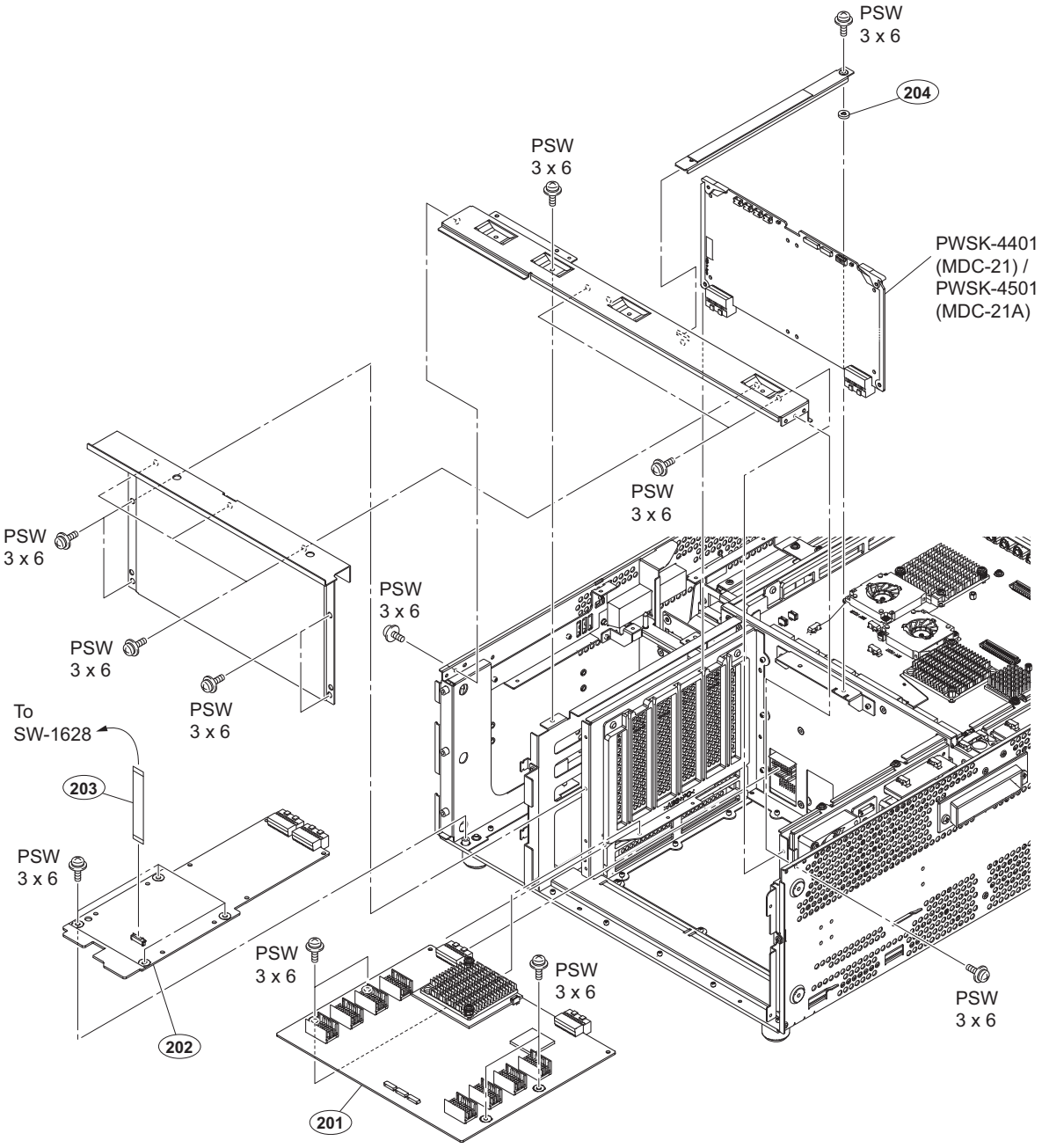
No.	Part No.	SP	Description
1	A-1981-498-A	s	MOUNTED CIRCUIT BOARD, LED-528
2	A-2115-129-A	s	FRONT ASSY (4500)
3	1-970-025-11	s	HARNESS, SUB (SW-LED)
4	3-688-102-01	o	SPACER, M4
5	3-733-690-01	s	+B 4X6 (CU,NI)
	7-682-947-01	s	SCREW +PSW 3X6

Main Block-1



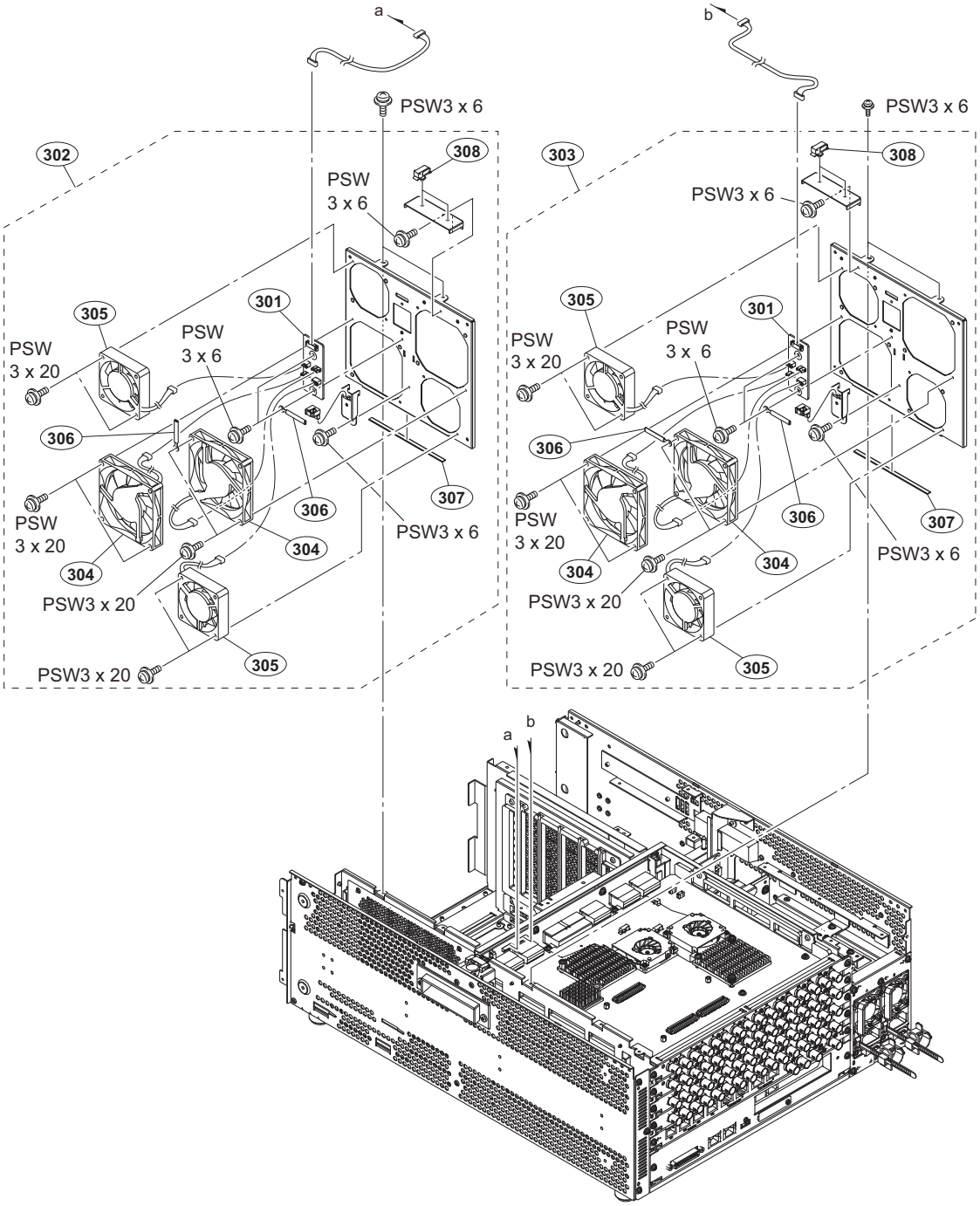
No.		Part No.	SP	Description
101		A-1981-497-A	s	MOUNTED CIRCUIT BOARD, SW-1628
102	⚠	1-855-165-11	s	FAN, DC (40 SQUARE)
103	⚠	1-855-344-11	s	FAN, DC (50 SQUARE, SIROCCO)
104		1-912-572-11	s	CABLE, COAXIAL(D.FL75)
105		4-098-036-01	s	SADDLE WIRE (A)
		7-682-947-01	s	SCREW +PSW 3X6

Main Block-2



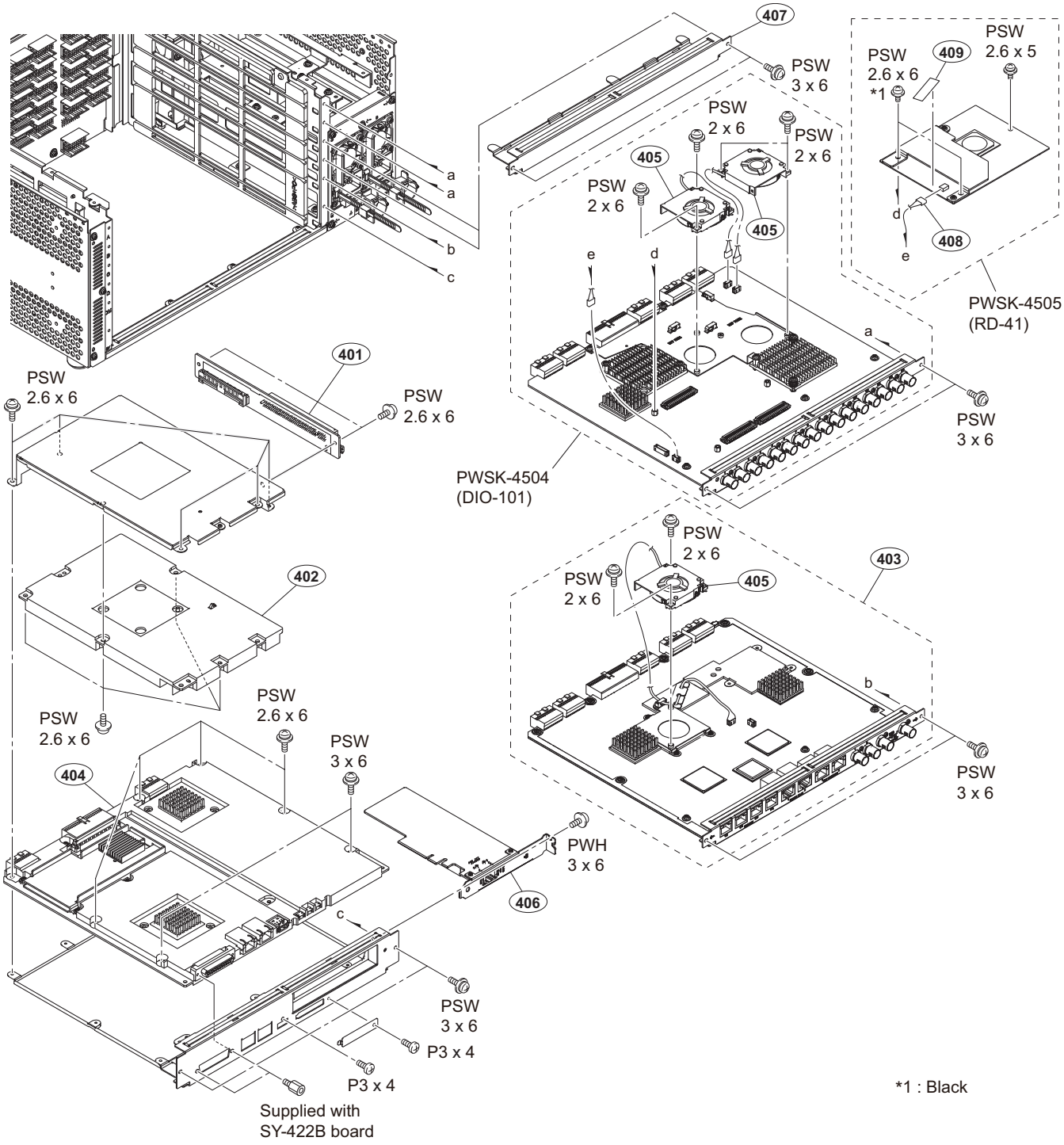
No.	Part No.	SP	Description
201	A-1978-011-A	s	MOUNTED CIRCUIT BOARD, MEC-40
202	A-2089-003-A	s	MOUNTED CIRCUIT BOARD, HP-175
203	1-831-112-11	s	CABLE, FLEXIBLE FLAT (24 CORE)
204	3-669-596-01	s	WASHER (2.3), STOPPER
	7-682-947-01	s	SCREW +PSW 3X6

Main Block-3



No.		Part No.	SP	Description
301		A-2087-935-A	s	MOUNTED CIRCUIT BOARD, CN-3837
302		A-2092-928-A	s	FAN ASSY,FRONT(4500)
303		A-2092-929-A	s	FAN ASSY,REAR (4500)
304	⚠	1-763-495-11	s	FAN (80 SQUARE), D. C.
305	⚠	1-787-268-21	s	FAN, DC (60 SQUARE)
306		3-701-822-01	s	HOLDER, WIRE
307		3-870-234-02	s	GASKET (CS)
308		4-098-036-01	s	SADDLE WIRE (A)
		7-682-947-01	s	SCREW +PSW 3X6
		7-682-953-01	s	SCREW +PSW 3X20

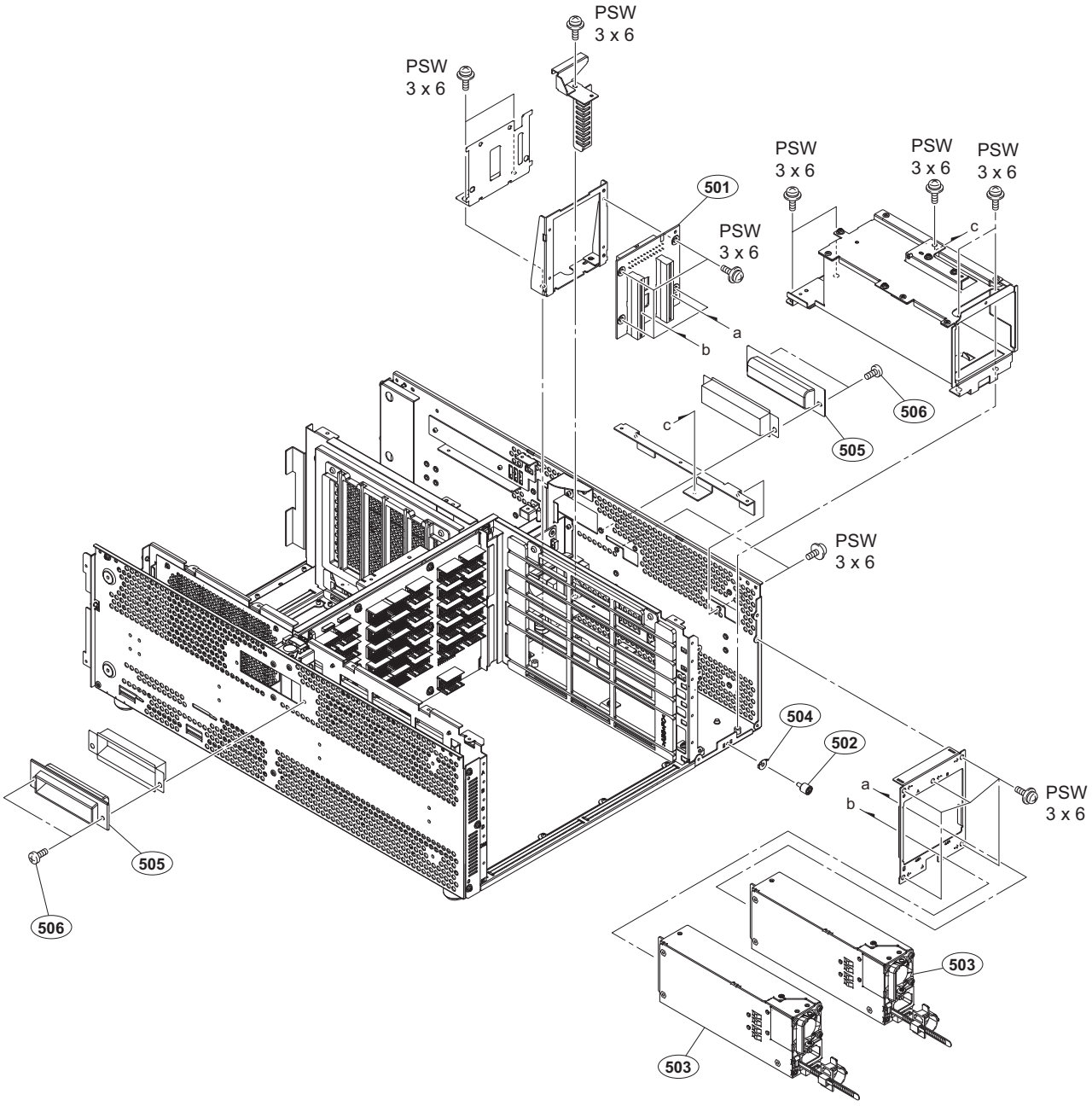
Main Block-4



No.	Part No.	SP	Description
401	A-1904-955-A	s	MOUNTED CIRCUIT BOARD, RC-107
402	A-1981-921-A	s	MOUNTED CIRCUIT BOARD, CPU-453A
403	A-2087-892-A	s	MOUNTED CIRCUIT BOARD, DM-155
404	A-2115-288-A	s	MOUNTED CIRCUIT BOARD, SY-422B
405	⚠ 1-855-344-11	s	FAN, DC (50 SQUARE, SIROCCO)
406	1-895-817-11	s	PCI-E 10G SFP DIRECT NIC BOARD
407	4-284-838-01	s	PANEL, BLANK
408	1-971-211-11	s	HARNESS, SUB (RD POWER)
409	4-119-886-01	s	TAPE (13X50)
	7-621-759-35	s	+PSW, 2.6X5
*1	7-621-759-40	s	+PSW, 2.6X6

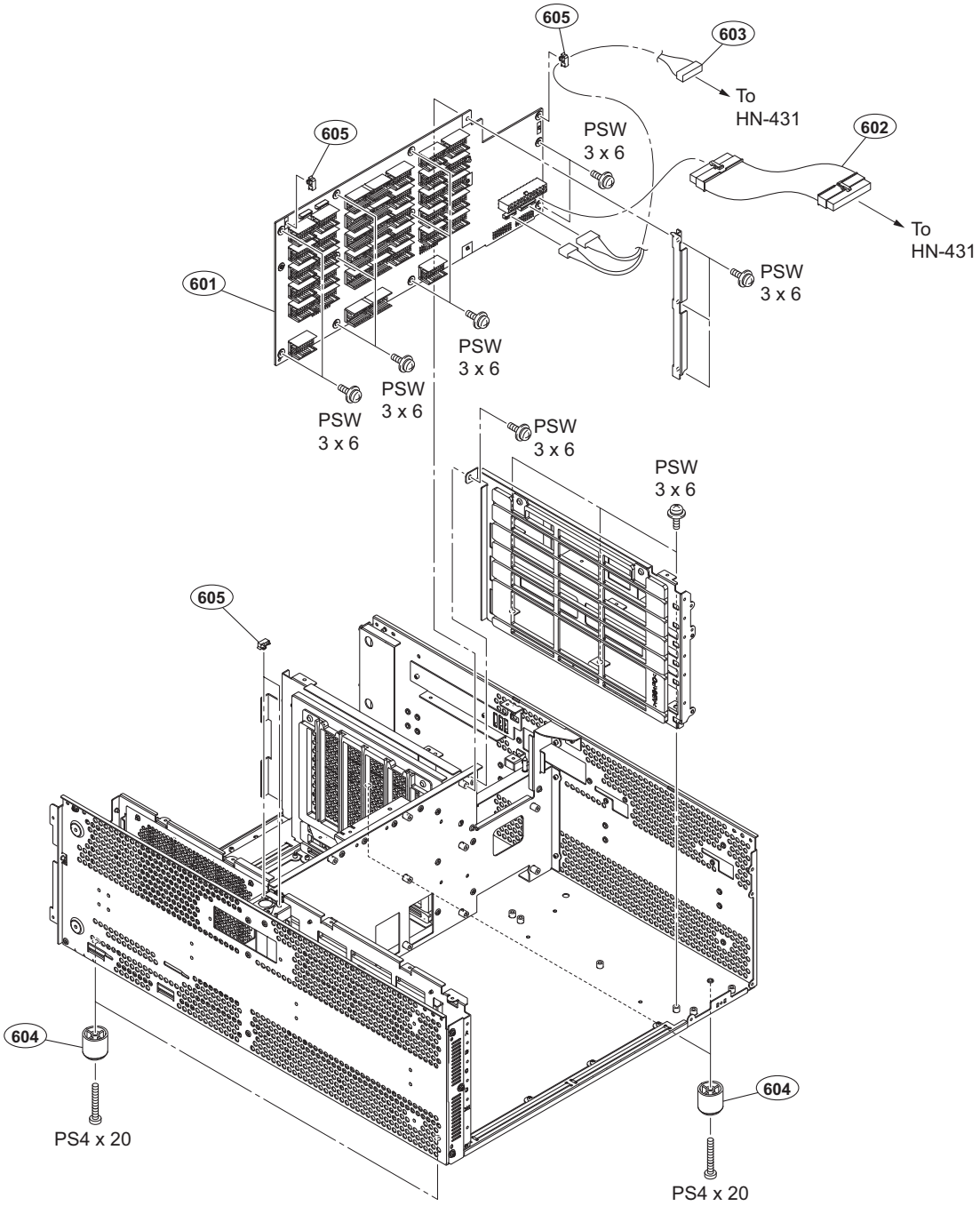
No.	Part No.	SP	Description
	7-621-759-45	s	+PSW, 2.6X6
	7-628-000-05	s	+PSW, 2X6
	7-682-145-01	s	SCREW +P 3X4
	7-682-903-11	s	SCREW +PWH 3X6
	7-682-947-01	s	SCREW +PSW 3X6

Main Block-5



No.	Part No.	SP	Description
501	A-2087-891-A	s	MOUNTED CIRCUIT BOARD, HN-431
502	X-2068-004-1	s	TERMINAL ASSY
503	⚠ 1-474-640-11	s	REGULATOR, SWITCHING
504	2-068-008-01	s	WASHER
505	3-660-050-11	s	HANDLE
506	3-733-690-01	s	+B 4X6 (CU,NI)
	7-682-947-01	s	SCREW +PSW 3X6

Main Block-6



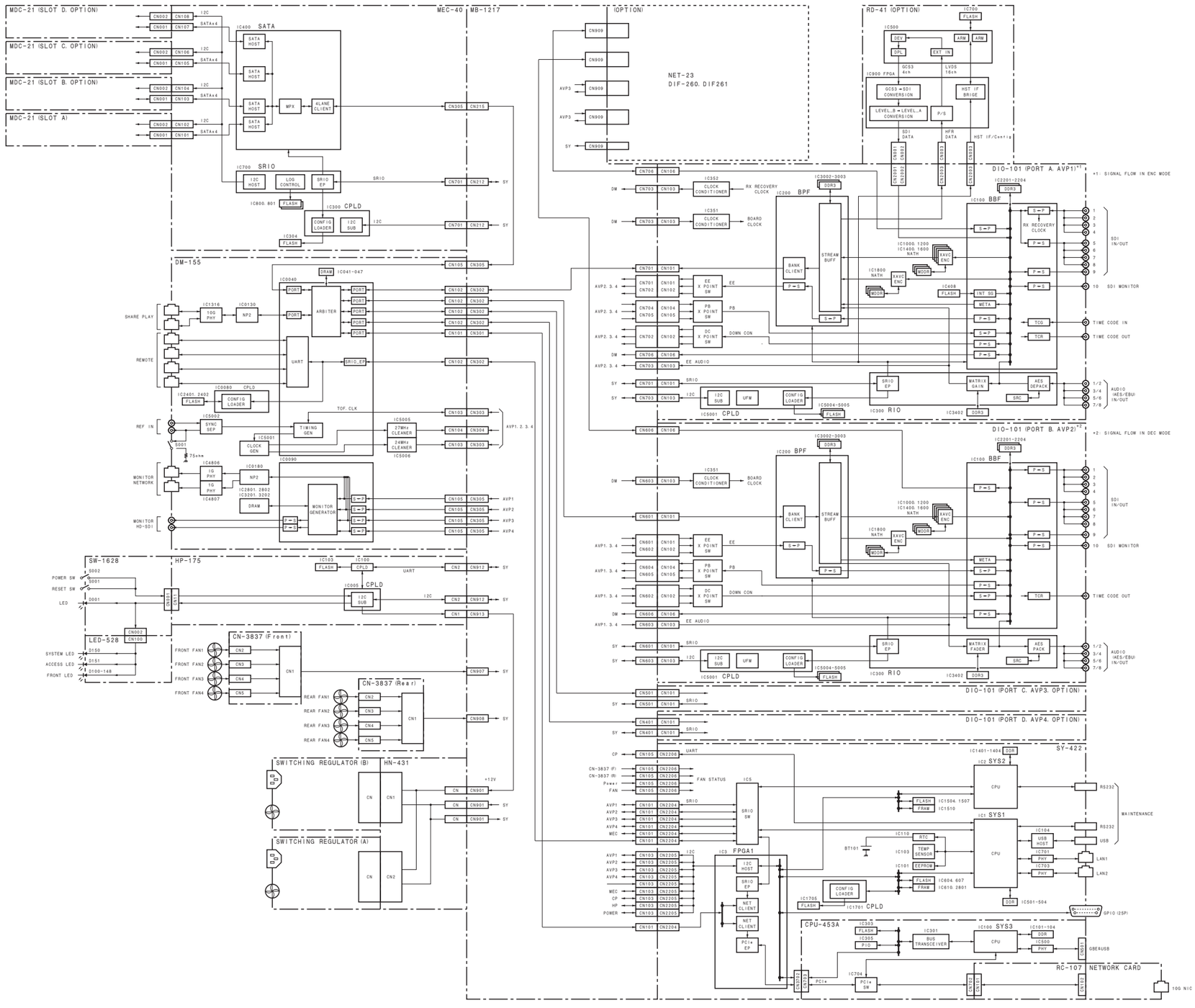
No.	Part No.	SP	Description
601	A-2087-888-A	s	MOUNTED CIRCUIT BOARD, MB-1217
602	1-971-209-11	s	HARNESS, SUB (MAIN POWER)
603	1-971-210-11	s	HARNESS, SUB (POWER CONTROL)
604	3-642-656-01	s	FOOT
605	4-098-036-01	s	SADDLE WIRE (A)
	7-682-666-01	s	SCREW +PS 4X20
	7-682-947-01	s	SCREW +PSW 3X6

6-3. Supplied Accessories

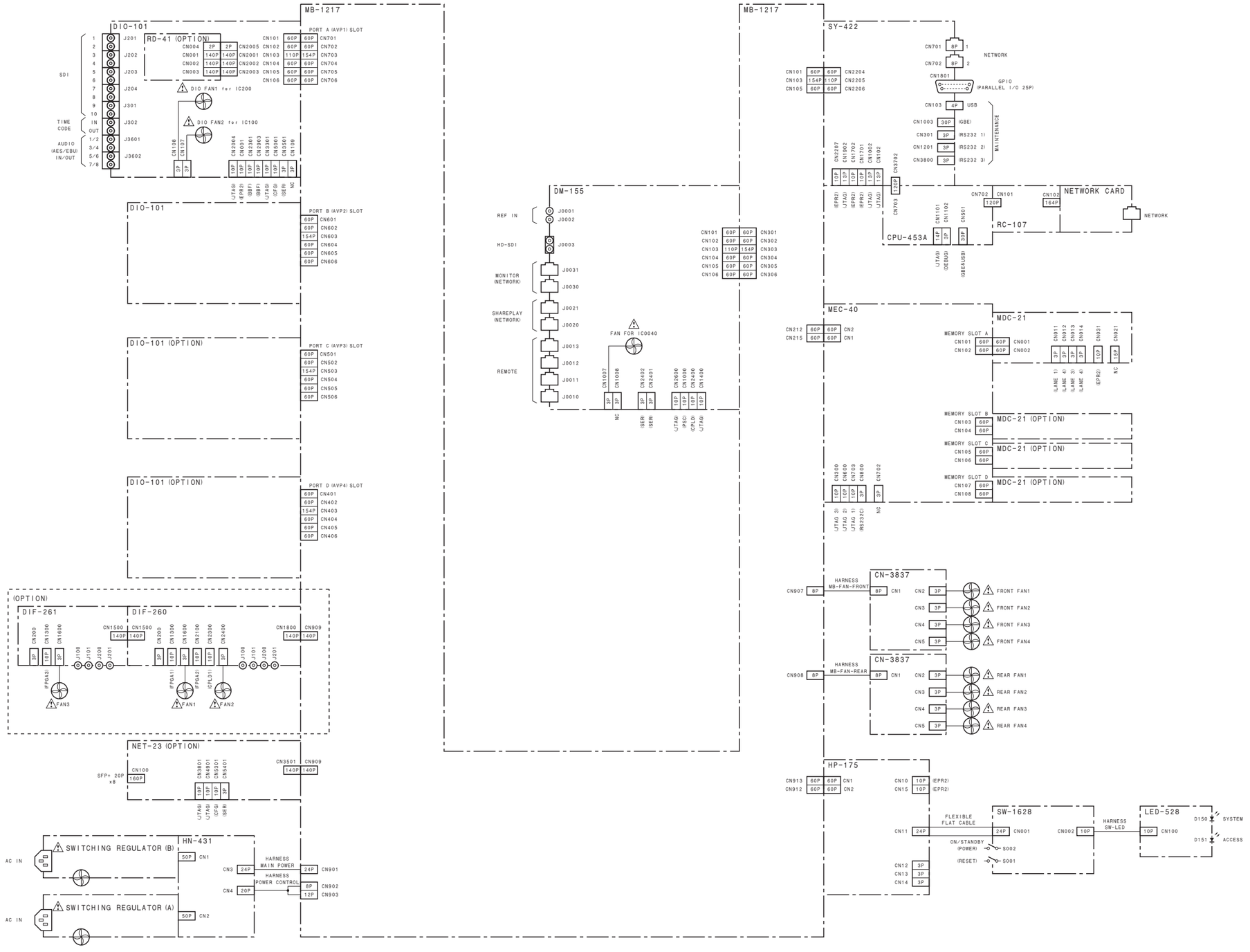
Q'ty	Part No.	SP	Description
2pcs	⚠ 1-830-860-12	s	AC POWER-SUPPLY CORD (Supplied for CN)
4pcs	1-482-017-11	s	CLAMP, FERRITE (Supplied for SY)
4pcs	⚠ 1-848-424-12	s	CABLE, RJ45-DSUB
1pc	⚠ 4-589-278-06	s	MANUAL (CD-ROM), OPERATION

Section 7
Diagrams

Overall



Frame Wiring



PWS-4500 (SY)
PWS-4500 (CN) J, E
9-878-687-04

Sony Corporation

Printed in Japan
2018. 9 08
© 2016