

SONY®

PRODUCTION CONTROL STATION

PWS-100PR1

OPTIONAL POWER SUPPLY

PWSK-101

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

SERVICE MANUAL

1st Edition (Revised 2)

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可能性があります。

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 angegebenen Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

AVERTISSEMENT

Ce manuel 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-100PR1 (SY)	120001 and Higher
PWS-100PR1 (CN)	520001 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を以下のポートに接続しないでください。

: LAN 1 コネクタ

: LAN 2 コネクタ

: REMOTE 1/2 コネクタ

: REMOTE 3/4 コネクタ

: REMOTE 5 コネクタ

上記のポートについては本書の指示に従ってください。

For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to the following port(s).

: LAN 1 connector

: LAN 2 connector

: REMOTE 1/2 connector

: REMOTE 3/4 connector

: REMOTE 5 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 PA

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

Räjähdyksvaara, jos akku vaihdetaan virheellisesti. Vaihda vain samanlaiseen tai vastaavatyypiseen, 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。

本機をラックに設置するとき

熱の適切な排気・発散を得るために、ラックと本機の間には、以下の空間を確保してください。

- ・ 左右両側面 4 cm 以上
- ・ 後面 10 cm 以上

Attention-when the product is installed in Rack:

1. Prevention against overloading of branch circuit

When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

2. Providing protective earth

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

3. Internal air ambient temperature of the rack

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

4. Prevention against achieving hazardous condition due to uneven mechanical loading

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

5. Install the equipment while taking the operating temperature of the equipment into consideration

For the operating temperature of the equipment, refer to the specifications of the Operation Manual.

6. When performing the installation, keep the following space away from walls in order to obtain proper exhaust and radiation of heat.

Right, Left: 4 cm (1.6 inches) or more
Rear: 10 cm (3.9 inches) or more

設置時には、通気やサービス性を考慮して設置スペースを確保してください。

- ・ ファンの排気部 (リアパネル面, 右側面後ろ側), トップパネル後ろ側) や通気孔 (フロントパネル面, 左側面フロント側) をふさがない。
- ・ 通気のために, セット周辺に空間をあける。
- ・ 作業エリアを確保するため, セットの左側面および右側面は 4 cm 以上, セット後方は 40 cm 以上の空間をあける。

机上などの平面に設置する場合は, 左側面および右側面は 4 cm 以上の空間をそれぞれ確保してください。ただし, セット上部はサービス性を考慮し 40 cm 以上の空間を確保することを推奨します。

When installing, the installation space must be secured in consideration of the ventilation and service operation.

- ・ Do not block the fan exhaust areas (rear panel and rear part of the right side panel and rear part of the top panel) and vents (front panel, front part of the left side panel) with objects.
- ・ Leave a space around the unit for ventilation.
- ・ Secure working spaces (at least 4 centimeters from the left panel and right panel and at least 40 centimeters from the rear panel of the unit).

When the unit is installed on the desk or the like, leave at least 4 centimeters of space in the left and right sides.

Leaving 40 centimeters or more of space above the unit is recommended for service operation.

Table of Contents

Manual Structure

Purpose of this manual.....	5
Related manuals.....	5
Trademarks.....	5

1. Service Overview

1-1. Location of Boards and Circuit Configuration.....	1-1
1-2. Onboard Switch Settings, LED Functions, and Sensor Functions.....	1-2
1-2-1. Onboard Switch Settings.....	1-2
1-2-2. Functions of Onboard LEDs.....	1-4
1-2-3. Functions of Onboard Sensors.....	1-8
1-3. LED Indicator of Power Unit.....	1-11
1-4. Software Update.....	1-12
1-4-1. Uninstallation of Application Software Programs.....	1-12
1-4-2. Installing Software Package.....	1-16
1-4-3. Software Version Check after Update.....	1-18
1-4-4. How to Find the MAC Address.....	1-20
1-5. Acquisition Method of the Log File.....	1-22
1-6. Recovery Methods.....	1-23
1-6-1. Windows Standard Recovery.....	1-23
1-6-2. Recovery by Using the Windows PE.....	1-25
1-6-3. Recovery by Replacing SSD Module.....	1-27
1-7. Tools and Fixtures.....	1-28
1-8. Circuit Protection Part List.....	1-29
1-8-1. Circuit Protection Element.....	1-29
1-8-2. Replacing Fuses.....	1-29
1-9. Coaxial Cable.....	1-31
1-9-1. Disconnecting/Connecting Fine-Wire Coaxial Cable.....	1-31

2. Error Message

2-1. Overview of Error Message.....	2-1
2-1-1. Error Codes.....	2-1
2-1-2. Warnings.....	2-3
2-2. SNMP Trap Messages.....	2-5
2-3. Error Message of Add-in Card.....	2-6

3. Maintenance Menu

3-1. Maintenance Web Screen.....	3-1
3-1-1. Displaying Maintenance Web Screen.....	3-1

4. Periodic Check and Maintenance

4-1. Periodic Maintenance.....	4-1
--------------------------------	-----

4-1-1.	Digital Hours Meter.....	4-1
4-1-2.	Periodic Replacement Parts.....	4-1

5. Replacement of Main Parts

5-1.	Precautions before Work.....	5-1
5-1-1.	Non-reusable Parts.....	5-1
5-1-2.	Tightening Torque.....	5-1
5-2.	Procedures after Replacement.....	5-2
5-2-1.	Lithium Battery.....	5-2
5-2-2.	SSD Module (mSATA Assembly).....	5-2
5-2-3.	After Replacing the HPR-48 Board.....	5-9
5-2-4.	After Replacing the MB-1204 Board.....	5-13
5-2-5.	After Replacing the iAP Board Assembly.....	5-13
5-2-6.	Example of Creating Bootable USB Memory.....	5-14
5-3.	Location of Main Parts.....	5-15
5-4.	Top Panel Assembly.....	5-17
5-5.	Front Panel Assembly.....	5-18
5-6.	LED-527 Board.....	5-19
5-7.	SW-1627 Board.....	5-20
5-8.	DIO-98 Board.....	5-21
5-9.	ST Blank Assembly.....	5-22
5-10.	Power Unit.....	5-23
5-11.	Hot-Swap Unit.....	5-24
5-12.	HPR-48A Board.....	5-25
5-13.	Fan Assembly.....	5-28
5-14.	Lithium Battery.....	5-29
5-15.	IF-1257 Board.....	5-30
5-16.	IF-1258 Board.....	5-31
5-17.	IF-1259 Board.....	5-32
5-18.	CN-3698 Board.....	5-33
5-19.	RC-110 Board.....	5-35
5-20.	Memory Module (204pin SO-DIMM).....	5-36
5-21.	SSD Module (mSATA Assembly).....	5-37
5-22.	iAP Board Assembly.....	5-38
5-23.	CPU.....	5-41
5-24.	MB-1204 Board.....	5-43

6. Spare Parts

6-1.	Note on Repair Parts.....	6-1
6-2.	Exploded Views.....	6-2
	Overall.....	6-2
	Main Block-1.....	6-3
	Main Block-2.....	6-4
	Main Block-3.....	6-5
6-3.	Supplied Accessories.....	6-6

7. Block Diagrams and Frame Wiring

Overall..... 7-1

Manual Structure

Purpose of this manual

This manual is intended for the use of the system engineers and the service engineers, and provides the limited information for block service and the information related to maintenance of the unit, such as service overview, error messages, maintenance menu, periodic maintenance and inspection, and replacement of main parts.

This manual is applied to Production Control Station PWS-100PR1. A product name of PWS-100PR1 is indicated at the right front of the top panel of the unit.

“PWS-100” indicated on the model number label means the model name of the base unit. The serial number on this label is the serial number of this unit.

Related manuals

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

- Operation Manual
(Supplied with this unit)
This manual contains information required to operate and use the unit.
- Installation Manual
(Supplied with this unit)
This manual provides information required for delivery and installation of this unit.

Trademarks

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

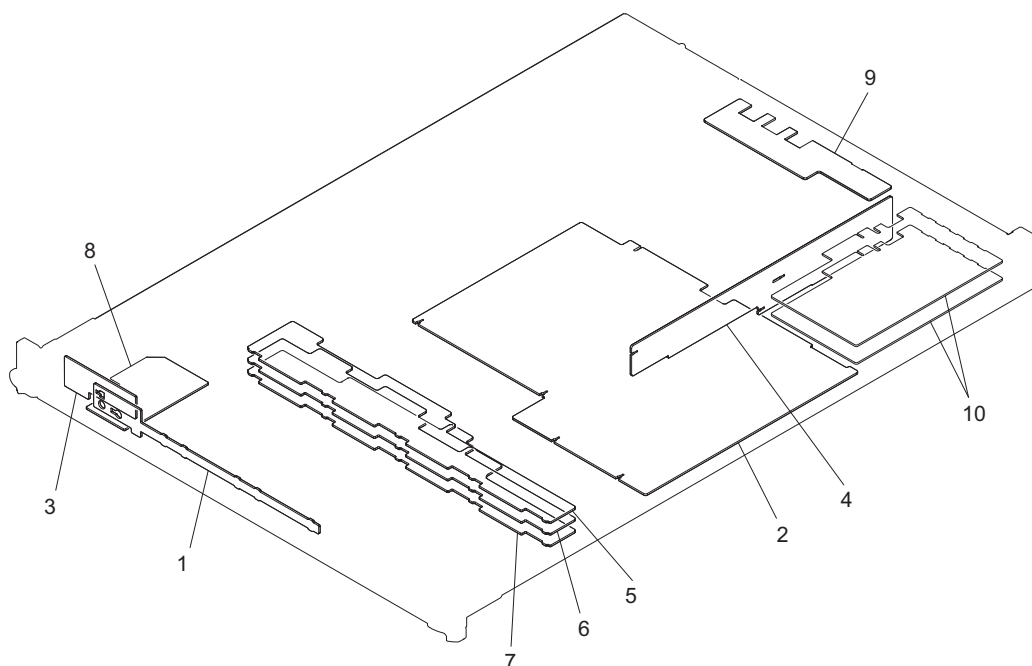
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- Google Chrome™ is a trademark of Google Inc.
- The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

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

Section 1

Service Overview

1-1. Location of Boards and Circuit Configuration

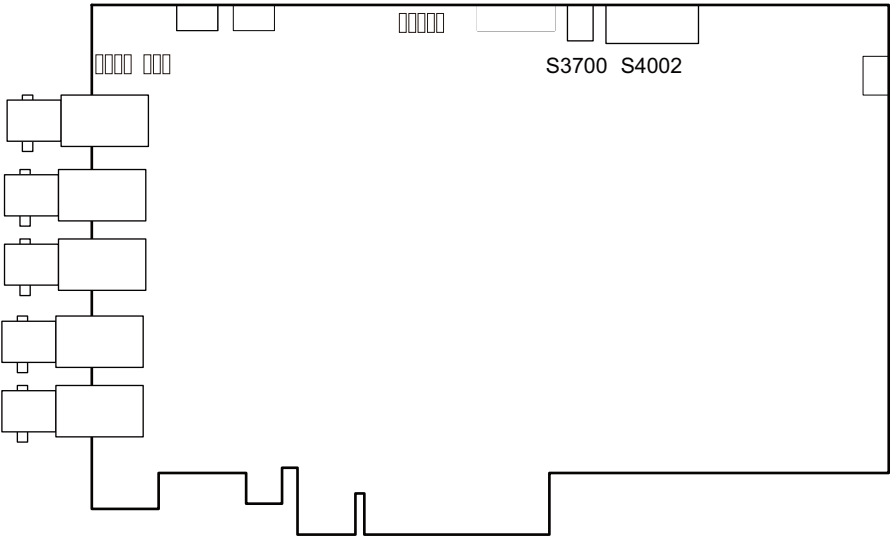


Location No.	Board Name	Circuit Function
1	LED-527	Front Panel LED
2	MB-1204	PCIe Switch, Storage Block
3	SW-1627	Power SW Panel
4	RC-110	PCI Express Riser Card
5	IF-1257	HDD (SATA) Interface
6	IF-1258	HDD (SATA) Interface
7	IF-1259	HDD (SATA) Interface
8	DIO-98	USB3.0 Output
9	CN-3698	Rear Connector
10	HPR-48A	XAVC 4K/HD Codec Card

1-2. Onboard Switch Settings, LED Functions, and Sensor Functions

1-2-1. Onboard Switch Settings

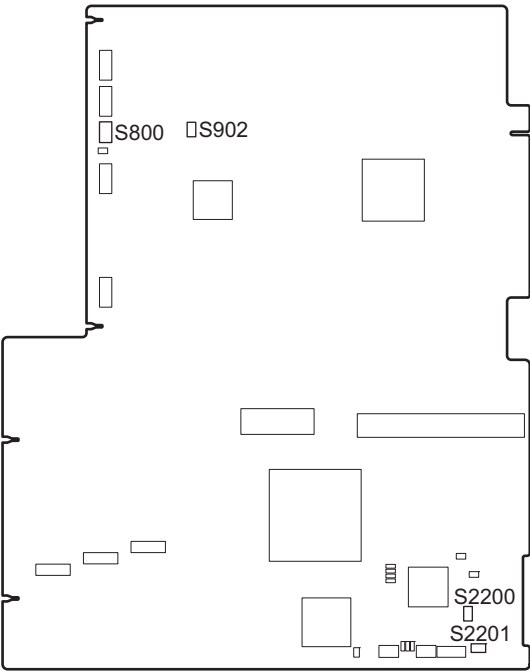
HPR-48A Board



HPR-48A board (side A)

Ref. No.	Bit	Name	Description	Factory Setting
S3700	-	RESET	Factory use	-
S4002	1	MAIN	BOARD ID	ON(For upper slot) OFF(For lower slot)
	2			OFF
	3			OFF
	4			OFF
	5		Factory use	OFF
	6		ON: Activated in the PEC4 Back Up Mode. OFF: Activated in the PEC4 Normal Mode.	OFF
	7		ON: Activated in the CPU Back Up Mode. OFF: Activated in the CPU Normal Mode.	OFF
	8		Factory use	OFF

MB-1204 Board

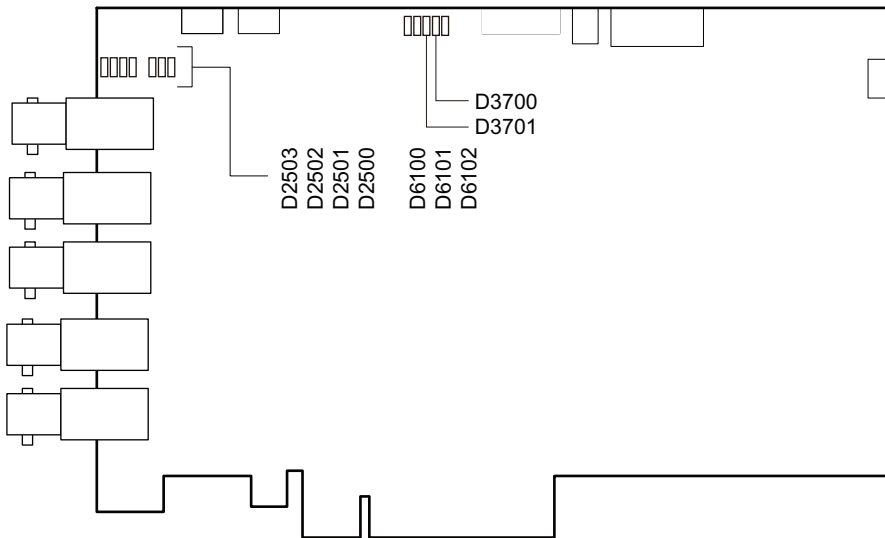


MB-1204 board (side A)

Ref. No.	Bit	Name	Description	Factory Setting
S800	1-8	-	Factory use	OFF (ALL)
S902	-	RESET	Factory use	-
S2200	-	RESET	Factory use	-
S2201	1	CFG	ON : RAID doesn't work OFF : RAID works	OFF (ALL)
	2		ON: Activates IC1000 in the Backup Mode. OFF: Activates IC1000 in the Normal Mode.	
	3		ON: Activates IC2400 in the Backup Mode. OFF: Activates IC2400 in the Normal Mode	
	4		Factory use	

1-2-2. Functions of Onboard LEDs

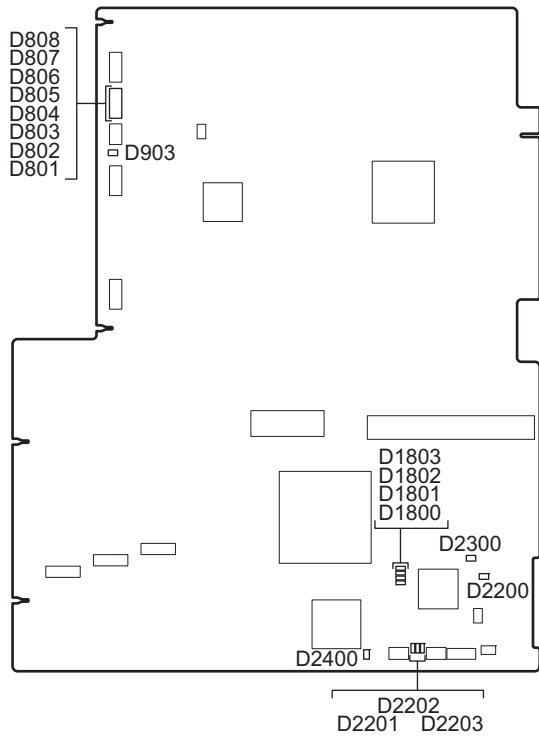
HPR-48A Board



HPR-48A board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D3700	CFG4	Green	Lights when the CFG4 configuration has been successfully completed.	Lit
D3701			Factory use	Blinks
D6102	LOCK	Green	Factory use	Lit
D6101				Lit
D6100				Lit
D2500	PEC4	Green	Factory use	Off
D2501				Off
D2502				Off
D2503			Lights when the CFG4 configuration has been successfully completed.	Lit

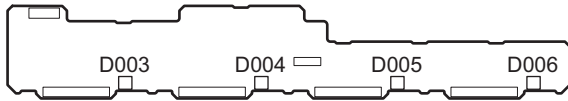
MB-1204 Board



MB-1204 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D801	-	Orange	Factory use	indeterminate
D802				
D803				
D804				
D805				
D806				
D807				
D808				
D903	-	Green	Lights when the IC900 configuration has been successfully completed.	Lit
D1800	-	Green	Factory use	Off
D1801				
D1802				
D1803				
D2200	CFG DONE	Green	Lights when the IC2200 configuration has been successfully completed.	Lit
D2201	CFG0	Green	Factory use	Blinks
D2202	CFG1	Green	Factory Use	Off
D2203	CFG2	Green	Factory Use	Lit
D2300	FLASH BUSY	Green	Factory Use	Off
D2400	IMX6	Green	Factory Use	Blinks

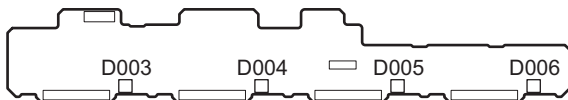
IF-1257 Board



IF-1257 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D003	Status LED	Green/Red	HDD Status LED Normal: Green Abnormal: Red	Lights green when the front panel is removed and the HDD is installed. Goes out when the front panel is installed or the HDD is removed.
D004				
D005				
D006				

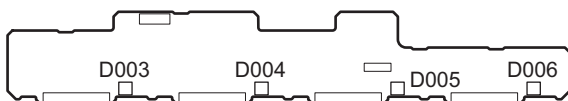
IF-1258 Board



IF-1258 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D003	Status LED	Green/Red	HDD Status LED Normal: Green Abnormal: Red	Lights green when the front panel is removed and the HDD is installed. Goes out when the front panel is installed or the HDD is removed.
D004				
D005				
D006				

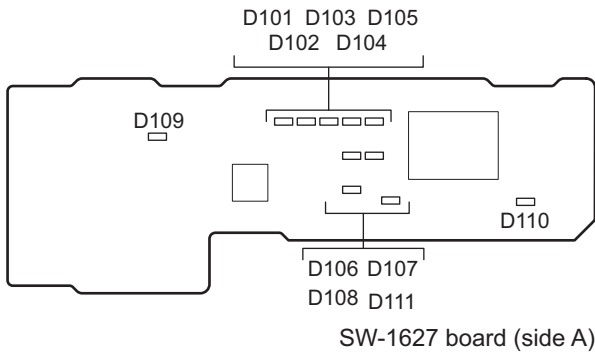
IF-1259 Board



IF-1259 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D003	Status LED	Green/Red	HDD Status LED Normal: Green Abnormal: Red	Lights green when the front panel is removed and the HDD is installed. Goes out when the front panel is installed or the HDD is removed.
D004				
D005				
D006				

SW-1627 Board



Ref. No.	Name	Color	Description	Normal State (Power On)
D101	ERROR LED	Red	Indicates an abnormality in fan assembly FAN1 ^{*1} . Normal: Off Abnormal: Red	Off
D102		Red	Indicates an abnormality in fan assembly FAN2 ^{*1} . Normal: Off Abnormal: Red	Off
D103		Red	Indicates an abnormality in fan assembly FAN3 ^{*1} . Normal: Off Abnormal: Red	Off
D104		Red	Indicates an abnormality in fan assembly FAN4 ^{*1} . Normal: Off Abnormal: Red	Off
D105		Red	Indicates an abnormality in fan assembly FAN5 ^{*1} . Normal: Off Abnormal: Red	Off
D106		Red	Indicates an abnormality in power supply A unit ^{*1} (in the right slot viewed from the rear) Normal: Off Abnormal: Red	Off
D107		Red	Indicates an abnormality in power supply B unit ^{*1} (in the left slot viewed from the rear) Normal: Off Abnormal: Red	Off
D108		Red	Indicates an abnormality in internal temperature Normal: Off Abnormal: Red	Off
D109	POWER	Green/Red	Power ON/standby indicator	Lit green : Operating Lit red: Standby Off: Power cable dis- connected
D110	ACCESS	Blue	Storage access indicator	Lit: Access in progress Off: No access

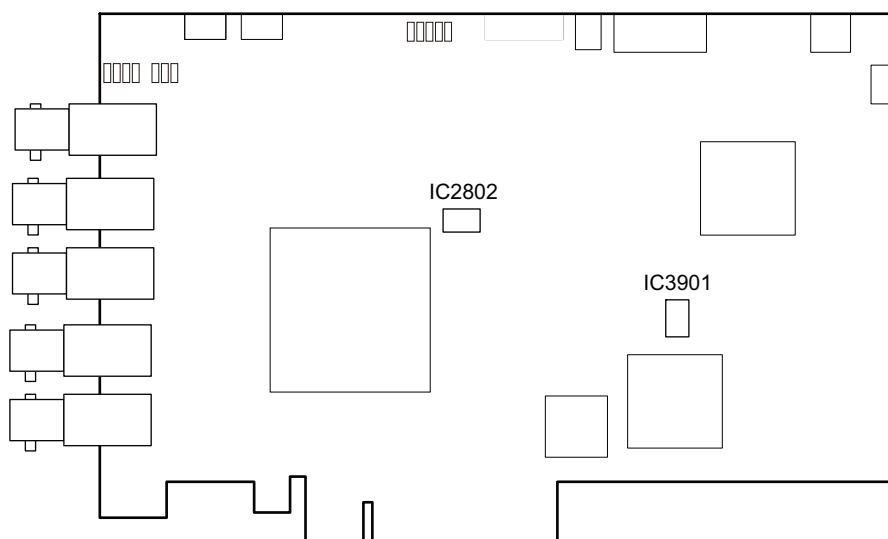
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*1: For location of Fan 1 to 5, Power unit A and B, refer to "5-3. Location of Main Parts"

Ref. No.	Name	Color	Description	Normal State (Power On)
D111	SYSTEM	Green/ Orange/ Red	System indicator Indicates the unit state.	Lit green : Working normally Blinking green (1 Hz): Startup or shutdown in progress Blinking orange (1 Hz): A warning occurred. Blinking red (4 Hz): An error occurred.

1-2-3. Functions of Onboard Sensors

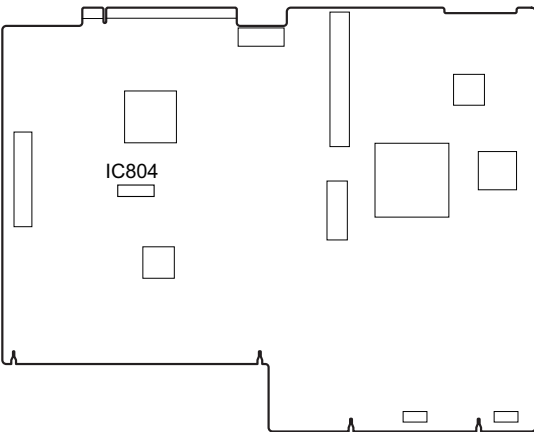
HPR-48A Board



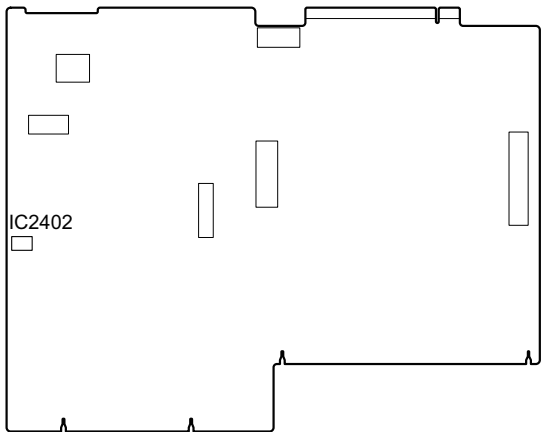
HPR-48A board (side A)

Board Name	Ref. No.	Function
HPR-48A	IC2802	Temperature sensor
	IC3901	Temperature sensor

MB-1204 Board



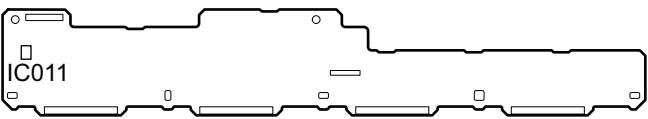
MB-1204 board (side A)



MB-1204 board (side B)

Board Name	Ref. No.	Function
MB-1204	IC804	Temperature sensor
	IC2402	Temperature sensor

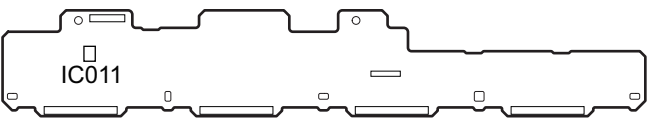
IF-1257 Board



IF-1257 board (side A)

Board Name	Ref. No.	Function
IF-1257	IC011	Temperature sensor

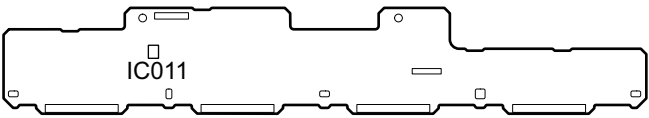
IF-1258 Board



IF-1258 board (side A)

Board Name	Ref. No.	Function
IF-1258	IC011	Temperature sensor

IF-1259 Board



IF-1259 board (side A)

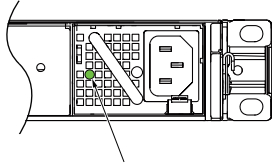
Board Name	Ref. No.	Function
IF-1259	IC011	Temperature sensor

1-3. LED Indicator of Power Unit

Power unit is equipped with one LED that indicates the state of power unit.

Lights in green: All outputs (+12V and +5Vsub) are normal.

Off: At least one of the outputs is abnormal.



LED indicator

1-4. Software Update

This section describes how to update the following application software programs.

- Production Control Software PWA-PRC1
- Sony SNMP PWS-100
- Sony HKP Service PWS-100
- Sony Web_Application_PWS-100

Equipment required

- A USB mouse
- A USB keyboard
- A monitor
- A USB flash memory (commercially available, 1 GB or more recommended)

Required file

- Data file for update (Installation package)
- PWA-PRC1 installer package

Note

- To obtain the latest data file for update (Installation package), contact your local Sony Sales Office/Service Center.
- You may need an install key at the first time you use PWA-PRC1. The install key is stored in the following folder.
C:\ProgramData\Sony\Production Control\
installed.txt: install key required to activate the Production Control application
Before upgrading the software, back up information of these keys. If the install key information is lost, contact your local Sony Sales Office/Service Center.
When you request the install key, the MAC address of the unit is needed. (To find the MAC address, refer to the [“1-4-4. How to Find the MAC Address”](#).)

Preparation

1. Connect the mouse and the keyboard to the USB connectors.
2. Connect the monitor to the Display Port or the HDMI connector.
3. Copy the data file for update (Installation package) to the USB memory.

Note

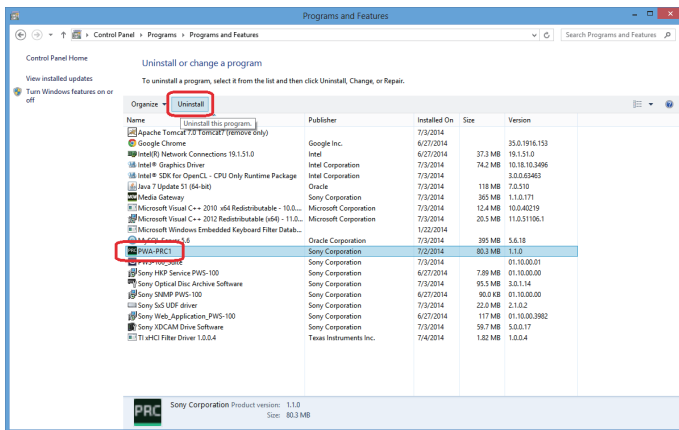
When updating an application software program, uninstall the previously installed software program and then install the new-version software program.

1-4-1. Uninstallation of Application Software Programs

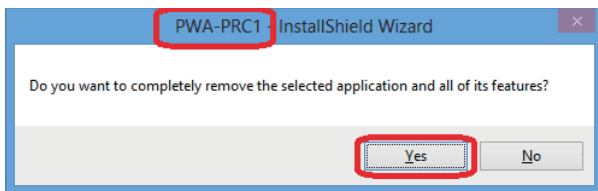
Uninstalling PWA-PRC1

1. Hold down the [Windows] button and press the [X] key on the keyboard.
2. From the displayed Quick Access menu, select [Programs and Features].

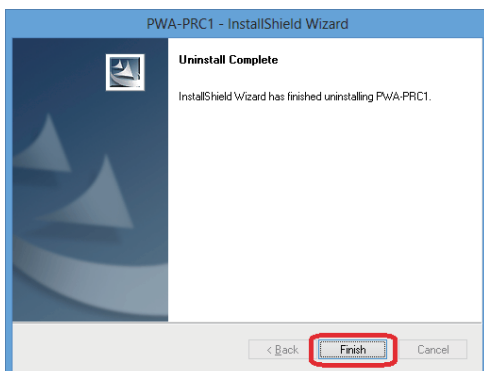
3. On the [Programs and Features] window, select the [PWA-PRC1] and then click [Uninstall].



4. Check that [PWA-PRC1] is displayed and then click [Yes].



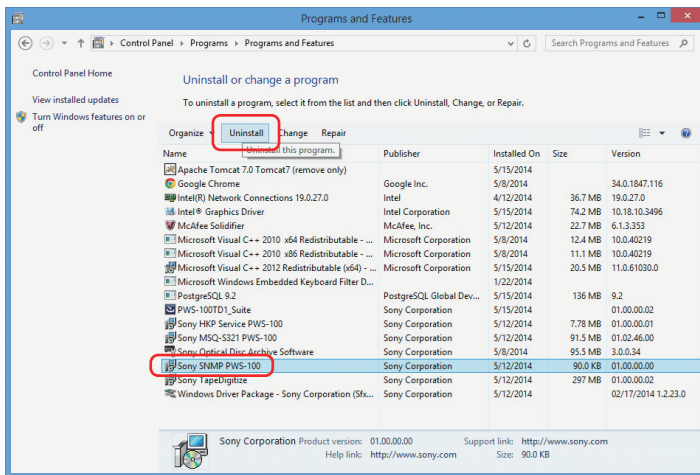
5. Uninstall Complete window is displayed. Click [Finish].



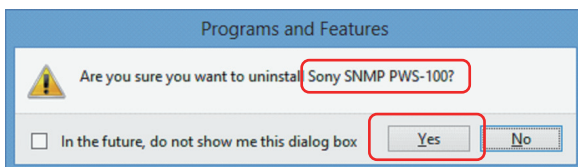
Uninstalling Sony SNMP PWS-100

1. Hold down the [Windows] button and press the [X] key on the keyboard.
2. From the displayed Quick Access menu, select [Programs and Features].

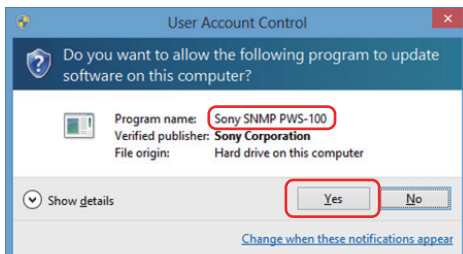
3. On the [Programs and Features] screen, select [Sony SNMP PWS-100] and then click [Uninstall].



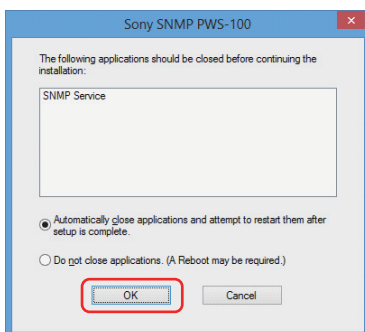
4. Check that [Sony SNMP PWS-100] is displayed and then click [Yes].



5. User Account Control dialog box is displayed. Check that [Sony SNMP PWS-100] is displayed. Click [Yes] to start the uninstallation.



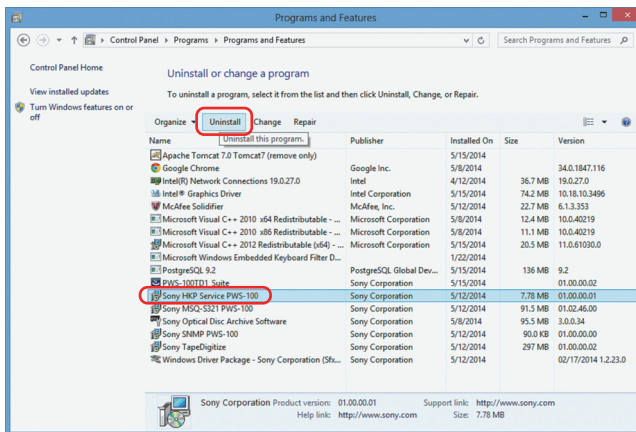
6. Pop Up window is displayed and then click [OK].



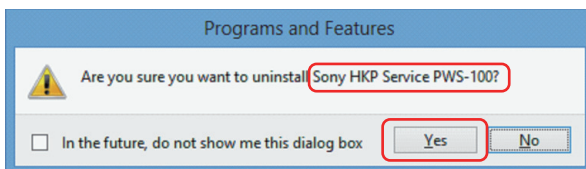
Uninstalling Sony HNP Service PWS-100

1. Hold down the [Windows] button and press the [X] key on the keyboard.
2. From the displayed Quick Access menu, select [Programs and Features].

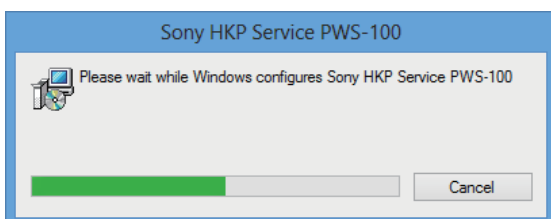
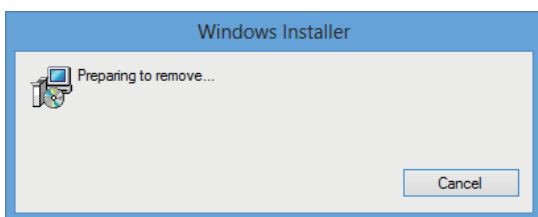
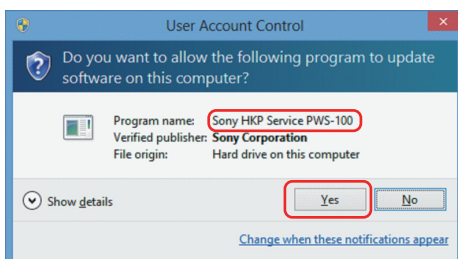
- On the [Programs and Features] screen, select [Sony HKP Service PWS-100] and then click [Uninstall].



- Check that [Sony HKP Service PWS-100] is displayed and then click [Yes].



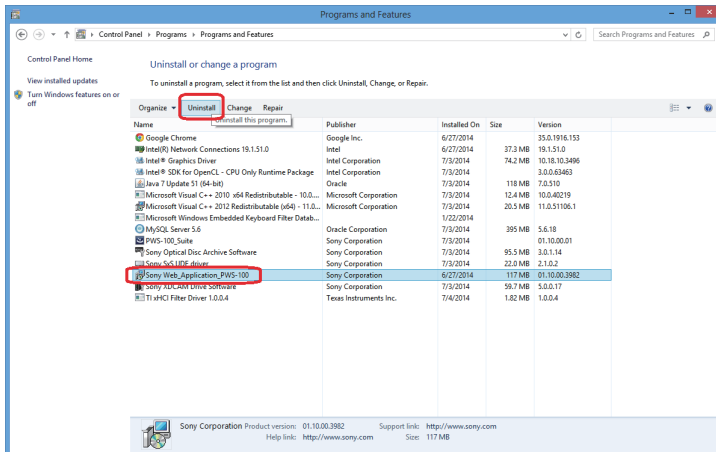
- User Account Control dialog box is displayed. Check that [Sony HKP Service PWS-100] is displayed. Click [Yes] to start the uninstallation.



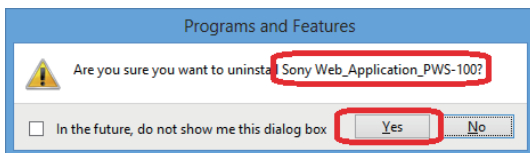
Uninstalling Sony Web_Application_PWS-100

- Hold down the [Windows] button and press the [X] key on the keyboard.

- From the displayed Quick Access menu, select [Programs and Features].
- On the [Programs and Features] window, select [Sony Web_Application_PWS-100] and then click [Uninstall].



- Check that [Sony Web_Application_PWS-100] is displayed and then click [Yes].



- User Account Control dialog box is displayed.
Check that [Sony Web_Application_PWS-100] is displayed.
Click [Yes] to start the uninstallation.

1-4-2. Installing Software Package

Installing application program

Installation of PWA-PRC1

Note

- Install the software with administrative privileges.

Things required

- PWA-PRC1 Installer package

Procedure

- Copy Sony_PWA-PRC1_vX_X_X.exe anywhere you like in this unit.

Tip

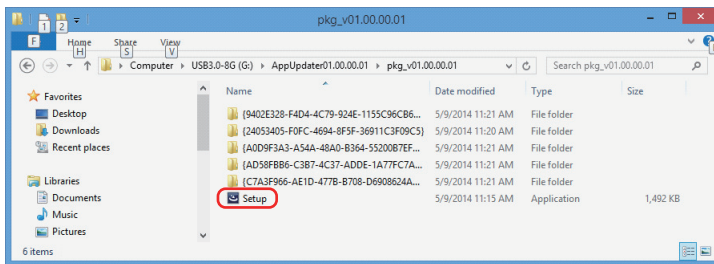
X.X.X means the version number.

- Double-click the installer and follow the instructions displayed on the screen to install the application.

Installing the other software

- Connect the USB flash memory that contains the data file for update (Installation package) to the USB connector on the unit.
- Open the Install package folder in the USB flash memory.

3. Execute a Setup.exe.



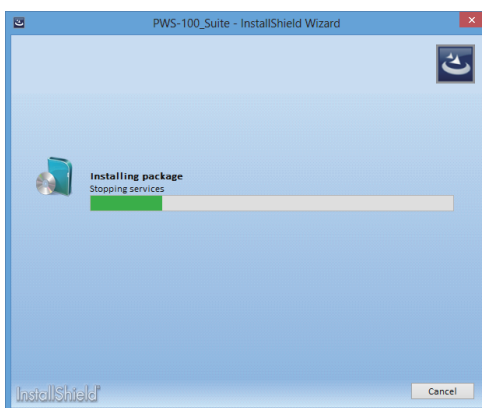
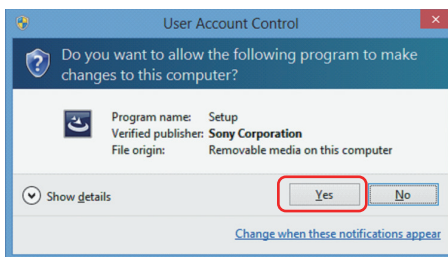
4. Click [Install].



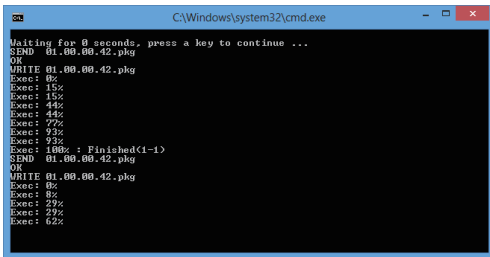
5. User Account Control dialog box is displayed.
Click [Yes] to start the installation.

Tip

Sony HKP Service, Sony SNMP, Sony Web_Application_PWS-100 are installed and the built-in storage (RAID_PKG) is updated.



- A command prompt opens and closes during the installation. Wait until the installation finishes.



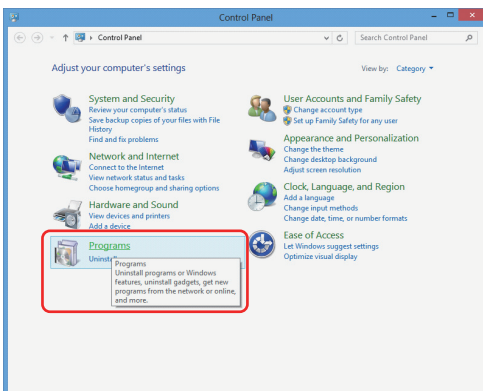
- After the installation is complete, make sure that there is no error, and then click [Finish].
If some error occurred, perform [Uninstall of PWA-PRC1] of “1-4-1. Uninstallation of Application Software Programs” again.



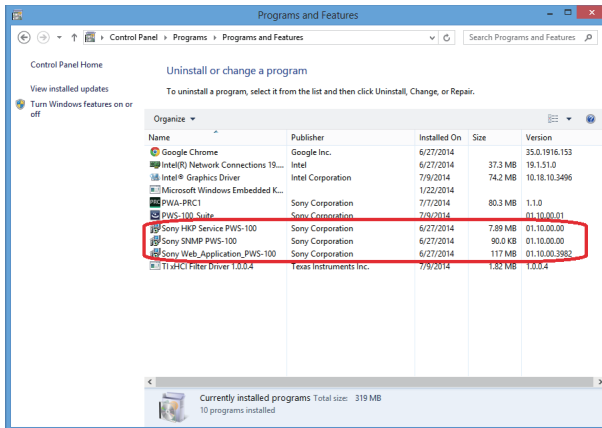
1-4-3. Software Version Check after Update

Version confirmation of Sony HKP Service, Sony SNMP, Sony Web_Application_PWS-100.

- Turn off the unit, and unplug the power cord.
- Wait for at least 10 seconds, connect the power cord, and then turn on the unit.
- On the Control Panel window, select “Uninstall” from “Programs”.



- Confirm the version of Sony HKP Service, Sony SNMP, Sony Web_Application_PWS-100 on the displayed window.

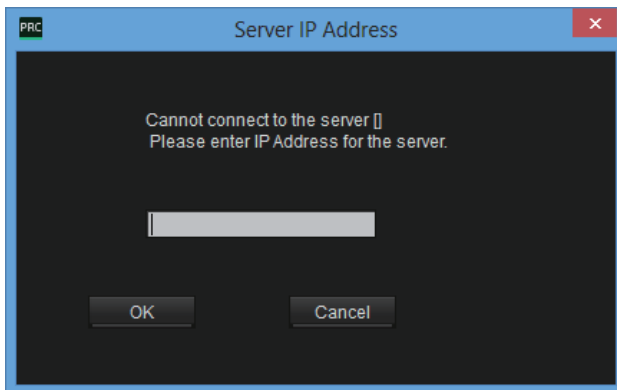


Version confirmation of the PWA-PRC1

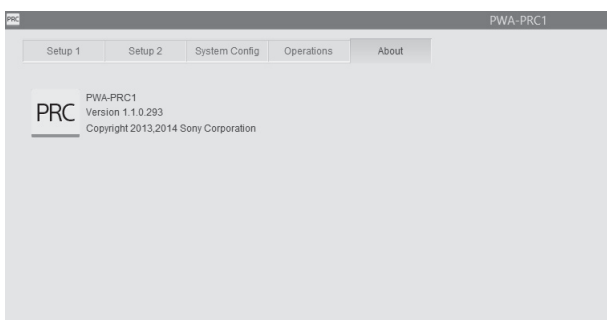
- Double-click the PRC icon on the desk top.



- The Server IP Address dialog box is displayed, Click [Cancel].

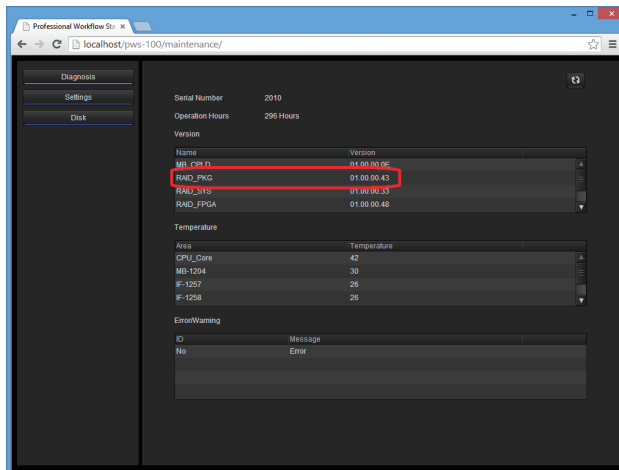


- After the startup process of the application, press the SHIFT key and the F2 key at the same time.
- Select the [About] tab, confirm the version of the PWA-PRC1.



Checking the version of the built-in storage (RAID_PKG)

1. Turn off the unit and unplug the power cord.
2. Wait for at least 10 seconds, connect the power cord, and then turn on the unit.
3. Open the Google Chrome browser.
4. The “http://127.0.0.1/pws-100/maintenance/” in the address bar of the browser and press the Enter key on the keyboard to display the Maintenance Web screen.
5. On the displayed Maintenance Web screen, open [Diagnosis] and check the version of the built-in storage (RAID_PKG).



Version Check of each module

1. Check that the version of each module is correct in the Maintenance Web screen.

Tip

Refer to “3-1-1. Displaying Maintenance Web Screen” about the Maintenance Web screen.

1-4-4. How to Find the MAC Address

For upgrade or new installation of the application program, an install key may be necessary. To generate an install key, the MAC address is needed.

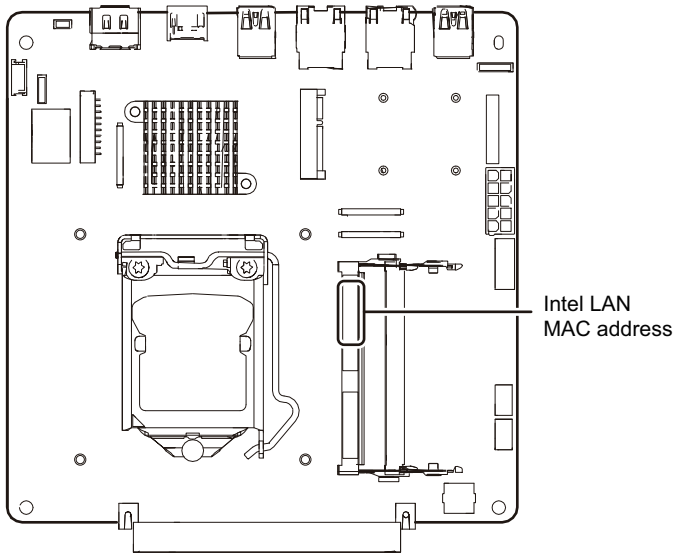
Method 1

1. Open the command prompt of Windows.
2. Type “ipconfig /all” and press Enter key.
3. Find the Physical Address of the network adaptor whose Description starts with “Intel(R) 82579LM”.
The Physical Address is the MAC address of this unit.

Method 2

1. Remove the top panel. (Refer to “5-4. Top Panel Assembly”.)

2. Confirm the MAC address indicated on the label which is attached on the iAP board.



1-5. Acquisition Method of the Log File

Acquisition method

1. Log in to Windows with administrative privileges.
2. Open the folder of [C:\ProgramData\Sony\PWA-PRC1\HWERRLOG\].
3. Obtain the data in the HWERRLOG folder.

1-6. Recovery Methods

This section describes how to recovery the system of this unit.

There are three recovery methods depending on the symptoms of the unit.

Executing recovery initializes the software and may make its version older than the version before recovery. After recovery has been completed, update the software according to “1-4. Software Update”.

1-6-1. Windows Standard Recovery

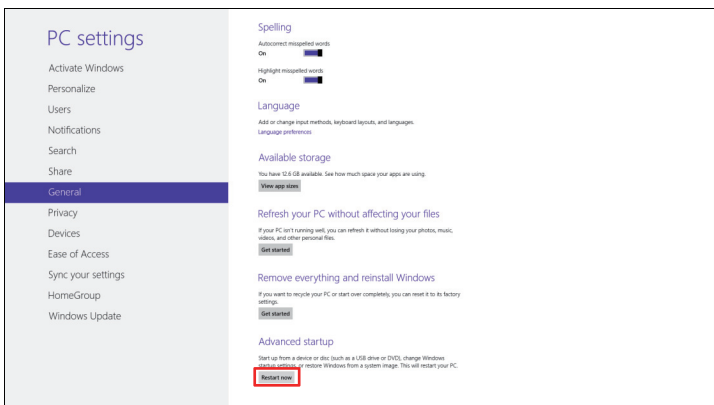
When Windows starts normally but the application program does not run stably, carry out the following procedure for recovery.

Procedure

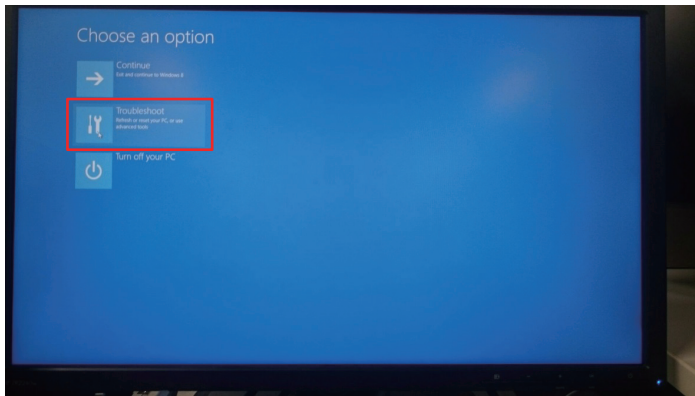
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Set Bit1 of the DIP switch (S2201) on the MB-1204 board to ON. (Refer to “MB-1204 Board” in “1-2-1. Onboard Switch Settings”.)
3. Install the top panel assembly.
4. Turn on the unit to start Windows.
5. Display a charm bar and click [Settings] - [Change PC settings].



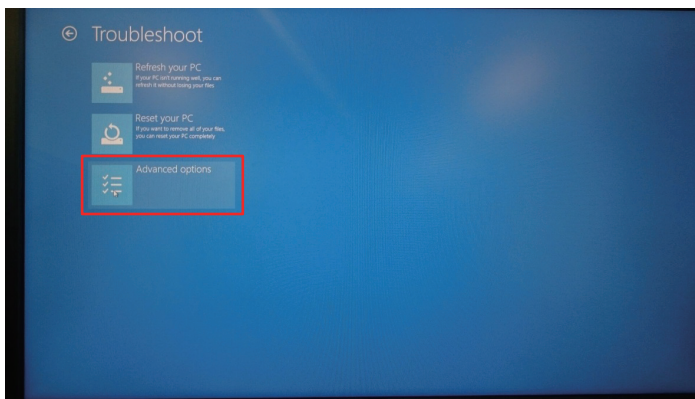
6. On the [PC Settings] window, click [General] - [Advanced startup] - [Restart now].



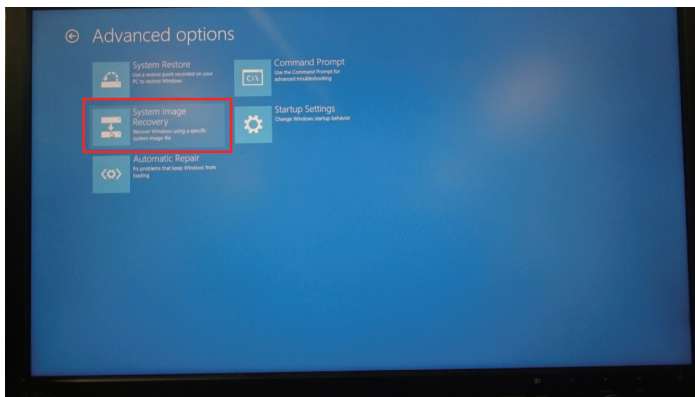
7. On the [Choose an option] window, click [Troubleshoot].



8. On the [Troubleshoot] window, click [Advanced options].



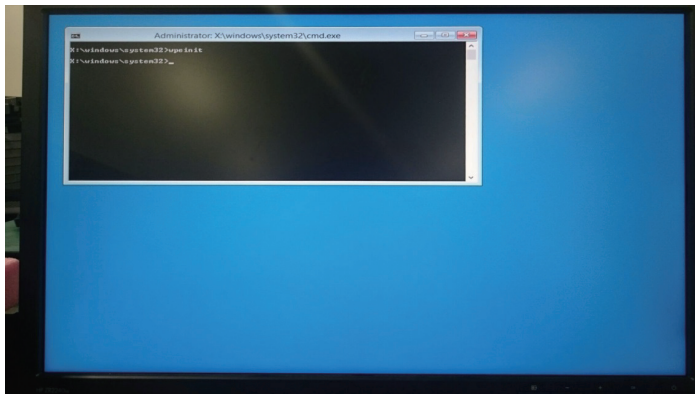
9. On the [Advanced options] window, click [System Image Recovery].



Windows PE starts running.

10. On the displayed window, execute the following command.

```
X:\windows\system32>diskpart  
DISKPART>list volume
```



The following information is shown.

Volume ###	Ltr	Label	Fs	Type	Size	Status	Info
Volume 0	C	System	NTFS	Partition	500 MB	Healthy	
Volume 1	D	Windows	NTFS	Partition	45 GB	Healthy	
Volume 2	E	Recovery	NTFS	Partition	10 GB	Healthy	Hidden

Check the configuration of volumes.

- When the above information is shown, carry out steps from step 11.
- When the above information is not shown, confirm that Bit1 of the DIP switch (S2201) on the MB-1204 board is set to ON.

When this DIP switch is correctly set but the above information is not shown, execute the following command to shut down the unit and recovery the system by using Windows PE. (Refer to [“1-6-2. Recovery by Using the Windows PE”](#).)

```
DISKPART>exit
```

```
X:\windows\system32>wpeutil shutdown
```

11. Execute the following command.

```
X:\windows\system32>c:  
C:>cd Recovery  
C:\Recovery>recovery_pr1.bat
```

12. After recovery has been completed, execute the following command.

```
C:\Recovery>wpeutil shutdown
```

The unit is shut down.

13. Turn on the unit.
14. Perform the initial settings for Windows according to [“5-2-2. SSD Module \(mSATA Assembly\)”](#).
15. After Windows starts and the desktop screen appears, shut down the unit.
16. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#).)
17. Set Bit1 of the DIP switch (S2201) on the MB-1204 board to OFF. (Refer to [“MB-1204 Board”](#) in [“1-2-1. Onboard Switch Settings”](#).)
18. Install the top panel assembly.
19. Upgrade the software. (Refer to [“1-4. Software Update”](#).)

1-6-2. Recovery by Using the Windows PE

If Windows does not start, carry out the following procedure for recovery.

Preparation

- USB memory (capacity: 1 GB or more, for Windows PE)
- Windows PC

Procedure

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Set Bit1 of the DIP switch (S2201) on the MB-1204 board to ON. (Refer to “1-2-1-2. MB-1204 Board” in “1-2-1. Onboard Switch Settings”.)
3. Install the top panel assembly.
4. Connect the USB memory to the Windows PC and create bootable USB memory for Windows PE.

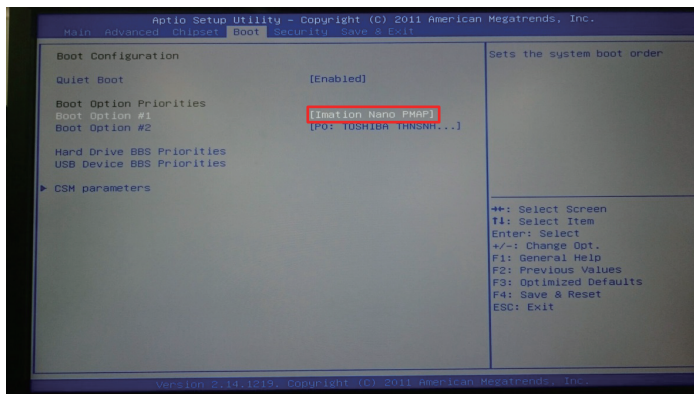
Note

Create Windows PE for 64-bit Windows8.

Use version 4.0 of Windows PE.

For details of creating bootable USB memory for Windows PE, contact your local Sony Sales Office/Service Center.

5. Connect the USB memory to the unit.
6. Press and hold the Delete key and turn on the unit.
7. On the BIOS setup window, make settings to boot from the USB memory.



8. Press the F4 key to execute [Save & Reset].
The unit restarts.
Windows PE starts from the USB memory.
9. On the displayed window, execute the following command.

```
X:\windows\system32>diskpart
```

```
DISKPART>list volume
```

The following information is shown.

Volume ###	Letter	Label	File System	Type	Size	Status	Info
Volume 0	C	System					
Volume 1	E	Windows					
Volume 2	F	Recovery					
Volume 3	D	WINPE					

Check the configuration of volumes.

Note

Different information may be shown depending on the operating environment.

10. Execute the following command to exit diskpart.
DISKPART>**exit**

11. Execute the following command.

Note

The volume number and drive letter of the following command may differ depending on the operating environment.

- (1) Copy ReAgent.xml in the label [Windows] to the label [System].
`X:\windows\system32>copy E:\Windows\System32\Recovery\ReAgent.xml
C:\Recovery\ReAgent.xml`
- (2) Execute the diskpart command.
`X:\windows\system32>diskpart`
- (3) Select the label [Windows].
`DISKPART>select volume 1`
- (4) Format the volume of the label [Windows] in ntfs.
`DISKPART>format quick fs=ntfs label="Windows"`
- (5) Exit the diskpart command.
`DISKPART>exit`
- (6) Expand install.wim in the label [Recovery] to the label [Windows].
`X:\windows\system32>dism.exe /Apply-image /ImageFile:F:\recovery
\install.wim /Index:1 /ApplyDir:E:\ /Verify`
- (7) Copy ReAgent.xml in the label [System] to the label [Windows].
`X:\windows\system32>copy C:\Recovery\ReAgent.xml E:\Windows
\System32\Recovery\ReAgent.xml`
- (8) When the [Overwrite] confirmation message appears, type "Yes".
- (9) Copy installed.txt in the label [Recovery] to the label [Windows].
`X:\windows\system32>copy F:\installed.txt E:\ProgramData\Sony
\PWA-PRC1`
- (10) Exit Windows PE.
`X:\windows\system32>wpeutil shutdown`

12. Remove the USB memory from the unit.
13. Turn on the unit.
14. Make Windows settings according to ["5-2-2. SSD Module \(mSATA Assembly\)"](#).
15. After Windows starts and the desktop screen appears, shut down the unit.
16. Remove the top panel assembly. (Refer to ["5-4. Top Panel Assembly"](#).)
17. Set Bit1 of the DIP switch (S2201) on the MB-1204 board to OFF. (Refer to ["MB-1204 Board"](#) in ["1-2-1. Onboard Switch Settings"](#).)
18. Install the top panel assembly.
19. Upgrade the software. (Refer to ["1-4. Software Update"](#).)

1-6-3. Recovery by Replacing SSD Module

If recovery is not successful even after ["1-6-2. Recovery by Using the Windows PE"](#) is performed, the SSD module may be defective. In that case, replace the SSD module and make settings after replacement. (Refer to ["5-21. SSD Module \(mSATA Assembly\)"](#) and ["5-2-2. SSD Module \(mSATA Assembly\)"](#).)

1-7. Tools and Fixtures

It is recommended to use the equipment listed below or the equivalents.

Name	Part No.	Usage
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

1-8. Circuit Protection Part List

1-8-1. 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.	Part No.	Holding Current
DIO-98	TH200	△ 1-533-817-21	1.1 A/8.0 V
	TH201	△ 1-533-817-21	1.1 A/8.0 V
IF-1257	TH001	△ 1-802-108-11	1.5 A/24 V
	TH002	△ 1-802-108-11	1.5 A/24 V
	TH003	△ 1-802-108-11	1.5 A/24 V
	TH004	△ 1-802-108-11	1.5 A/24 V
IF-1258	TH001	△ 1-802-108-11	1.5 A/24 V
	TH002	△ 1-802-108-11	1.5 A/24 V
	TH003	△ 1-802-108-11	1.5 A/24 V
	TH004	△ 1-802-108-11	1.5 A/24 V
IF-1259	TH001	△ 1-802-108-11	1.5 A/24 V
	TH002	△ 1-802-108-11	1.5 A/24 V
	TH003	△ 1-802-108-11	1.5 A/24 V
	TH004	△ 1-802-108-11	1.5 A/24 V
MB-1204	TH101	△ 1-804-616-11	1.1 A/6.0 V
	TH102	△ 1-804-987-21	2.5 A/15 V
	TH103	△ 1-804-616-11	1.1 A/6.0 V
	TH600	△ 1-804-987-21	2.5 A/15 V
	TH601	△ 1-804-987-21	2.5 A/15 V
	TH602	△ 1-804-987-21	2.5 A/15 V

1-8-2. Replacing Fuses

WARNING

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

This unit is equipped with fuses.

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

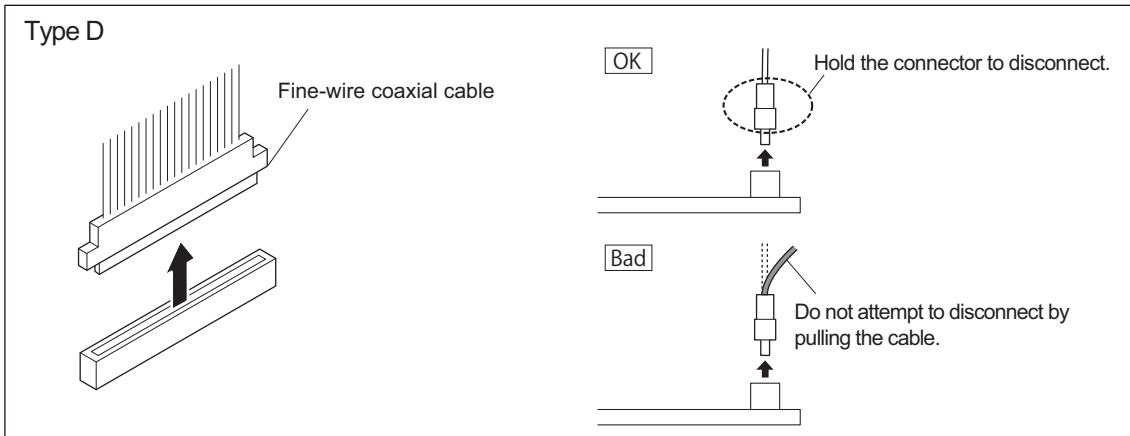
Board Name	Ref. No.	Name	Part No.
HPR-48A	F4200	FUSE 10 A/125 V	△1-576-329-21
	F4201	FUSE 10 A/125 V	△1-576-329-21
MB-1204	F200	FUSE 15 A/65 V	△1-576-566-21
	F201	FUSE 15 A/65 V	△1-576-566-21
	F202	FUSE 2.5 A/125 V	△1-533-804-21

1-9. Coaxial Cable

1-9-1. Disconnecting/Connecting Fine-Wire Coaxial Cable

Note

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



Disconnecting

1. Hold the connector between your finger tips and disconnect the fine-wire coaxial cable vertically.

Connecting

1. Hold the connector between your finger tips and connect the fine-wire coaxial cable vertically.

Section 2

Error Message

2-1. Overview of Error Message

Error codes and warnings are shown on the Diagnosis page of the Maintenance Web screen.

For opening the Diagnosis page, refer to the operation manual of PWS-100 Maintenance Web Application.

2-1-1. Error Codes

Error List

ID	Name	Description	Action
0101	POWER SUPPLY A ERROR	An abnormality was detected in the power supply unit A ^{*1}	Replace the problematic device.
0102	POWER SUPPLY B ERROR	An abnormality was detected in the power supply unit B ^{*1}	
0111	FAN 1 ERROR	An abnormality of the fan assembly FAN1 ^{*1} was detected.	
0112	FAN 2 ERROR	An abnormality of the fan assembly FAN2 ^{*1} was detected.	
0113	FAN 3 ERROR	An abnormality of the fan assembly FAN3 ^{*1} was detected.	
0114	FAN 4 ERROR	An abnormality of the fan assembly FAN4 ^{*1} was detected.	
0115	FAN 5 ERROR	An abnormality of the fan assembly FAN5 ^{*1} was detected.	
0121	HDD 1 ERROR	The HDD assembly HDD1 error was detected.	
0122	HDD 2 ERROR	The HDD assembly HDD2 error was detected.	
0123	HDD 3 ERROR	The HDD assembly HDD3 error was detected.	
0124	HDD 4 ERROR	The HDD assembly HDD4 error was detected.	
0125	HDD 5 ERROR	The HDD assembly HDD5 error was detected.	
0126	HDD 6 ERROR	The HDD assembly HDD6 error was detected.	
0127	HDD 7 ERROR	The HDD assembly HDD7 error was detected.	
0128	HDD 8 ERROR	The HDD assembly HDD8 error was detected.	
0129	HDD 9 ERROR	The HDD assembly HDD9 error was detected.	
012A	HDD 10 ERROR	The HDD assembly HDD10 error was detected.	
012B	HDD 11 ERROR	The HDD assembly HDD11 error was detected.	
012C	HDD 12 ERROR	The HDD assembly HDD12 error was detected.	

Continued

^{*1}: For location of Fan 1 to 5, Power unit A and B, refer to "5-3. Location of Main Parts" .

ID	Name	Description	Action
0131	HIGH TEMPERATURE	The internal temperature has risen (CPU).	1. Clean the front panel. 2. Lower the ambient temperature.
0132	HIGH TEMPERATURE	The internal temperature has risen (MB-1204 board).	
0133	HIGH TEMPERATURE	The internal temperature has risen (storage).	
0134	HIGH TEMPERATURE	The temperature of the HPR-48 board (lower side slot) has risen.	1. Clean the front panel. 2. Lower the ambient temperature. 3. Replace the fan on the HPR-48 board.
0135	HIGH TEMPERATURE	The temperature of the HPR-48 board (upper side slot) has risen.	
0141	LOW BATTERY	The backup battery voltage has dropped.	Replace the backup battery with a new one.
0151	DIO-98 INITIAL ERROR	Failed to initialize the DIO-98 board.	Turn off and on the unit. If the same error recurs, replace the DIO-98 board.
0152	SMBUS ERROR	An error occurred in the SMBUS interface of the MB-1204 board.	Turn off and on the unit. If the same error recurs, replace the MB-1204 board.
0153	EEPROM ERROR	An error occurred in the EEPROM interface of the MB-1204 board.	

About error related to Power supply unit

An error occurs in a power supply unit under any of the following conditions.

- Only one power supply unit is operating and an abnormality was detected in it.
- Two power supply units are operating and an abnormality was detected in one or two of them.

Note

While two power supply units are operating, when an error occurs after the AC cord of either one of the two power supply units is unplugged or the power switch of either one of the two power supply units is turned off, remove the power supply unit from the main unit and then insert again to clear the error.

2-1-2. Warnings

Warning List

ID	Name	Description	Action
0201	POWER SUPPLY A WARNING	The rotating speed of the fan in the power supply unit A ^{*1} has decreased to the predetermined value or less.	Early replacement is recommended for the problematic fan.
0202	POWER SUPPLY B WARNING	The rotating speed of the fan in the power supply unit B ^{*1} has decreased to the predetermined value or less.	
0211	FAN 1 WARNING	The rotating speed of the fan assembly FAN1 ^{*1} has decreased to the predetermined value or less.	
0212	FAN 2 WARNING	The rotating speed of the fan assembly FAN2 ^{*1} has decreased to the predetermined value or less.	
0213	FAN 3 WARNING	The rotating speed of the fan assembly FAN3 ^{*1} has decreased to the predetermined value or less.	
0214	FAN 4 WARNING	The rotating speed of the fan assembly FAN4 ^{*1} has decreased to the predetermined value or less.	
0215	FAN 5 WARNING	The rotating speed of the fan assembly FAN5 ^{*1} has decreased to the predetermined value or less.	
0221	HDD 1 WARNING	Read/Write errors of the HDD assembly HDD1 are increasing.	Early replacement is recommended for the problematic HDD.
0222	HDD 2 WARNING	Read/Write errors of the HDD assembly HDD2 are increasing.	
0223	HDD 3 WARNING	Read/Write errors of the HDD assembly HDD3 are increasing.	
0224	HDD 4 WARNING	Read/Write errors of the HDD assembly HDD4 are increasing.	
0225	HDD 5 WARNING	Read/Write errors of the HDD assembly HDD5 are increasing.	
0226	HDD 6 WARNING	Read/Write errors of the HDD assembly HDD6 are increasing.	
0227	HDD 7 WARNING	Read/Write errors of the HDD assembly HDD7 are increasing.	
0228	HDD 8 WARNING	Read/Write errors of the HDD assembly HDD8 are increasing.	
0229	HDD 9 WARNING	Read/Write errors of the HDD assembly HDD9 are increasing.	
022A	HDD 10 WARNING	Read/Write errors of the HDD assembly HDD10 are increasing.	
022B	HDD 11 WARNING	Read/Write errors of the HDD assembly HDD11 are increasing.	
022C	HDD 12 WARNING	Read/Write errors of the HDD assembly HDD12 are increasing.	
0234	HIGH TEMPERATURE	The temperature of the HPR-48 board (lower side slot) has risen.	- Clean the front panel. - Lower the ambient temperature. - Replace the fan on the HPR-48 board.
0235	HIGH TEMPERATURE	The temperature of the HPR-48 board (upper side slot) has risen.	

Continued

*1: For location of Fan 1 to 5, Power unit A and B, refer to "5-3. Location of Main Parts" .

ID	Name	Description	Action
0261	SSD LIFETIME	The SSD module (mSATA assembly) has reached the end of its life. Further use of the SSD module decreases the reliability of stored data and causes eventual failure of data writing.	Replace the SSD module.

2-2. SNMP Trap Messages

SNMP trap messages are output from the unit through the SNMP.

Message	Description	Action
POWER SUPPLY x ERROR	An abnormality was detected in the power supply unit x.	Replace the power supply unit x.
FAN x ERROR	An abnormality of the fan assembly FANx was detected.	Replace the faulty fan assembly.
HDD x ERROR	An HDD assembly HDDx error was detected.	Replace the faulty HDD assembly.
HIGH TEMPERATURE	The internal temperature has risen.	Clean the air filter and readjust the ambient temperature setting.
LOW BATTERY	The backup battery voltage has dropped.	Replace the backup battery with a new one.
DIO-98 INITIAL ERROR	Failed to initialize the DIO-98 board.	Turn off and on the unit. If the same error recurs, replace the DIO-98 board.
SMBUS ERROR	An error occurred in the SMBUS interface of the MB-1204 board.	Turn off and on the unit. If the same error recurs, replace the MB-1204 board.
EEPROM ERROR	An error occurred in the EEPROM I/F interface of the MB-1204 board.	Turn off and on the unit. If the same error recurs, replace the MB-1204 board.
POWER SUPPLY x WARNING	The rotating speed of the fan in the power supply unit x has decreased.	It can be used continuously.*1
FAN x WARNING	The rotating speed of FANx has decreased.	It can be used continuously.*1
HDD x WARNING	Read/write errors of HDDx are increasing.	It can be used continuously.*1

- HDD assembly No.: 1 to 12
- Power supply unit No.: A, B
- Fan assembly No.: 1 to 5

*1: We recommend that you replace parts as soon as possible.

2-3. Error Message of Add-in Card

Error messages of add-in card are displayed on the desktop when the add-in card installed in this unit has some problem.

Displayed message	Meaning	Action
MSQ-S321 configuration is not correct. Please confirm the number of MSQ-S321 board inserted in PC. When it is correct, please turn off PC and reboot.	The system finds incorrect number of HPR-48A board connected to this unit.	Restart this unit once. If the same error still occurs, replace the HPR-48A board. (Refer to “5-12. HPR-48A Board” .)
DipSW setting on MSQ-321 are not correct. Please check these DipSW setting.	The system finds incorrect setting of the DIP switch on the HPR-48A board installed in this unit.	Set the DIP switch correctly. If the same error occurs, replace the HPR-48A board. (Refer to “5-12. HPR-48A Board” .)

Section 3

Maintenance Menu

3-1. Maintenance Web Screen

The Maintenance Web screen shows maintenance information such as setting of this system, error/warning information, version information, and RAID status/settings.

3-1-1. Displaying Maintenance Web Screen

Launch Google Chrome browser after logging in to the unit, and enter the following as the URL in the address bar and press the Enter key to display the Maintenance Web screen.

<http://127.0.0.1/pws-100/maintenance/>

For more information on Maintenance Web screen, refer to the operation manual of the PWS-100 Maintenance Web Application.

Tip

To show the operation manual for the PWS-100 Maintenance Web Application, double-click the shortcut icon on the desktop of the unit.

Section 4

Periodic Check and Maintenance

4-1. Periodic Maintenance

Inspect and replace parts regularly to maximize and maintain the performance of the unit.

4-1-1. Digital Hours Meter

The elapsed operation time of the unit is displayed. Use this digital hours meter as a guide to periodic check/replacement.

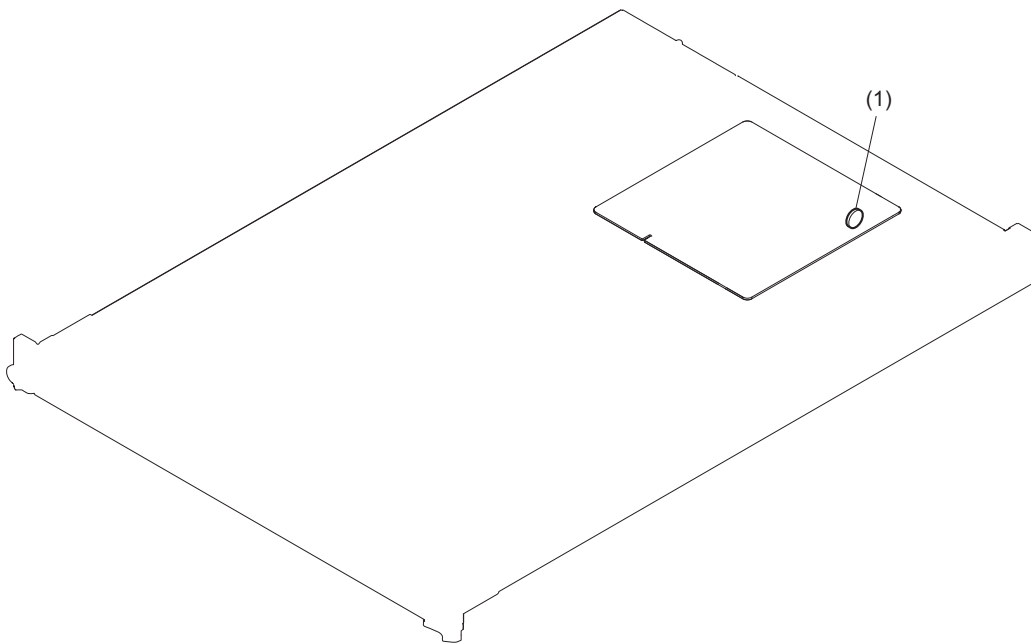
Displaying Digital Hours Meter

Operation Hours data is shown on the Diagnosis page of the Maintenance Web screen.

For details of the Maintenance Web screen, refer to Operation Manual for PWS-100 Maintenance Web Application.

Item	Description
Operation Hours	Total power-on hours (unit: hour, resettable)

4-1-2. Periodic Replacement Parts



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

This table does not describe the guarantee period of part.

The replacement period of each part is changed according to the environment and condition.

Location	Part name	Sony parts No.	Hour meter (Menu Item)	Check/replacement period	Reference section
(1)	BATTERY, LITHIUM (CR2032 TYPE)	△1-528-174-72	Total power-on hours (OPERATION HOURS)	Replace about every 4.5 years*1 (When used for 12 hours a day.)	“5-14. Lithium Battery” on page 5-29

*1: The battery drains when the AC power is not supplied to this unit.

Section 5

Replacement of Main Parts

5-1. Precautions before Work

5-1-1. Non-reusable Parts

- Radiation sheet (CPU)

Radiation sheet (CPU) is not reusable. Prepare new parts in advance.

5-1-2. Tightening Torque

Be sure to use a torque driver and tighten screws to the specified tightening torque.

Tightening torque

M2: $0.3 \pm 0.02 \text{ N}\cdot\text{m}$

M2.6: $0.53 \pm 0.07 \text{ N}\cdot\text{m}$

M3: $0.8 \pm 0.12 \text{ N}\cdot\text{m}$

M4: $1.4 \pm 0.2 \text{ N}\cdot\text{m}$

Tip

When using the torque driver with the notation of $\text{cN}\cdot\text{m}$, interpret it as follows.

Example: $0.8 \text{ N}\cdot\text{m} = 80 \text{ cN}\cdot\text{m}$

5-2. Procedures after Replacement

5-2-1. Lithium Battery

When the lithium battery is replaced, the date and time in the internal clock need to be set. Refer to "Setting the date and time" of the "Setting Up" in the Operation manual.

5-2-2. SSD Module (mSATA Assembly)

After the SSD module is replaced, perform the initial settings for Windows.

The setting method conforms to the standard operation of Windows 8.

Required equipment

- A USB mouse
- A USB keyboard
- A monitor

Preparation

The unit must be turned off during the preparation.

1. Set the DIP switch S2201-1 on the MB-1204 board to ON.

Tip

To set the switch, detach the top panel. (To know how to remove the top panel, refer to [“5-4. Top Panel Assembly”](#).)

Note

An error will occur and the unit will not start up, if the unit starts up for the first time while any storages, such as group of front panel accessible HDDs for RAID and USB flash memories, other than an SSD module are connected. In such cases, you need to replace the SSD module and perform the procedure in this section again, or start up Windows PE using USB flash memory and recover from recovery image, to restore the unit.

The group of the front panel accessible HDDs for RAID are disconnected when the DIP switch S2201-1 on the MB-1204 board is set to ON to stop the RAID controllers, so you don't need to disconnect the HDDs physically. On the other hand, the other kinds of storages like USB flash memories should be removed.

2. Connect the USB mouse and the USB keyboard to the USB connectors.
3. Connect the monitor to the Display Port or the HDMI connector.

Procedure

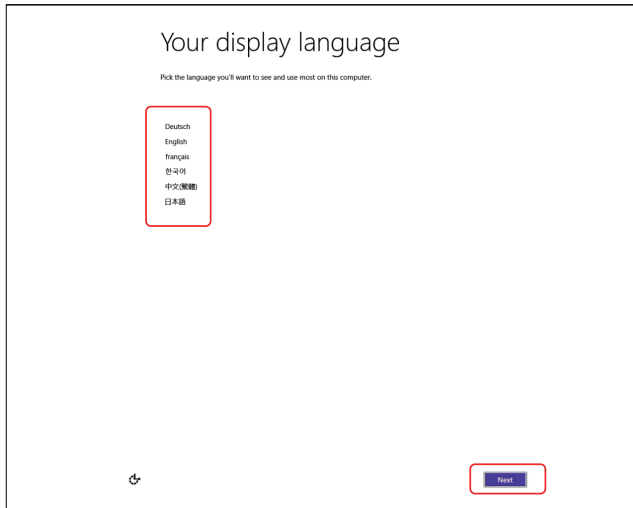
1. Turn on the unit to start Windows.

2. On the [Your display language] window, select the language to be used.

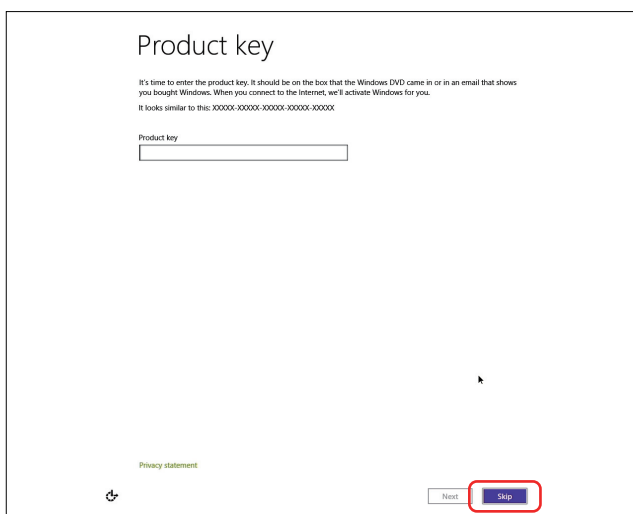
Tip

Factory setting: “English”

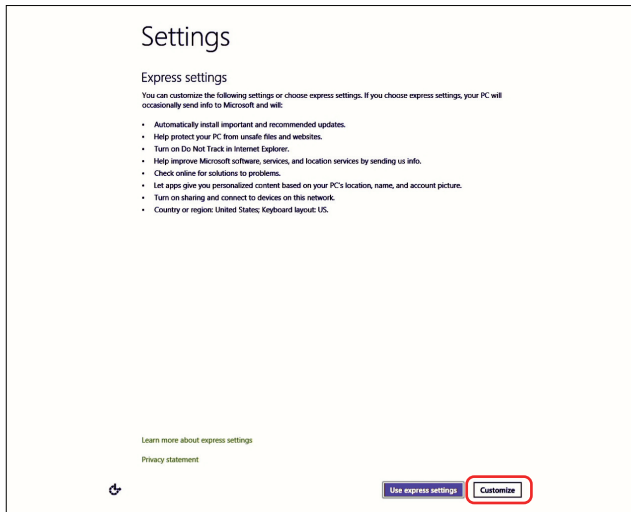
Then click [Next].



3. Leave the text box of [Product Key] blank, and click [Skip].



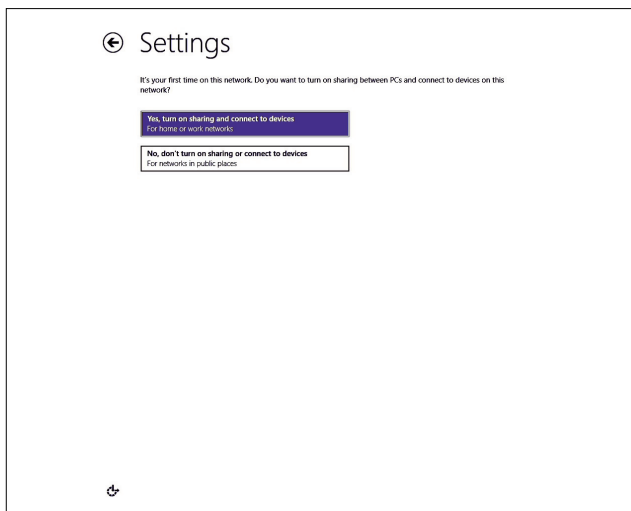
4. Click [Customize] in "Express Settings" page of the [Settings].



5. On the "It's your first time on this network. Do you want to turn on sharing between PCs and connect to devices on this network?" window, make settings in accordance with the network environment.

Tip

To share between PCs, select "Yes, turn on sharing and connect to devices."



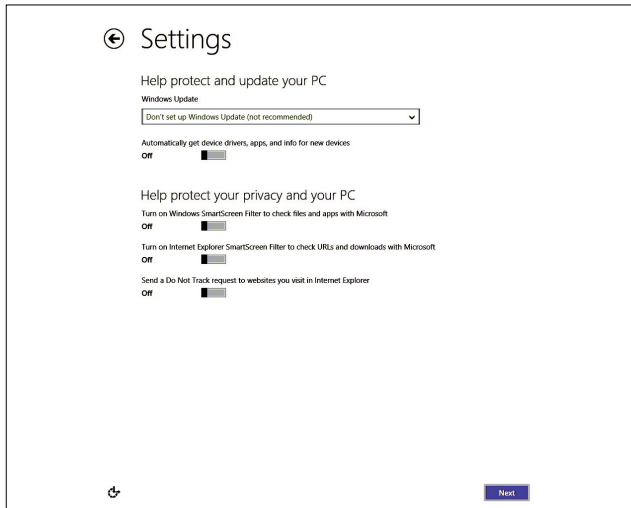
6. For item “Windows Update” in “Help protect and update your PC,” select [Don't set up Windows Update].

Tip

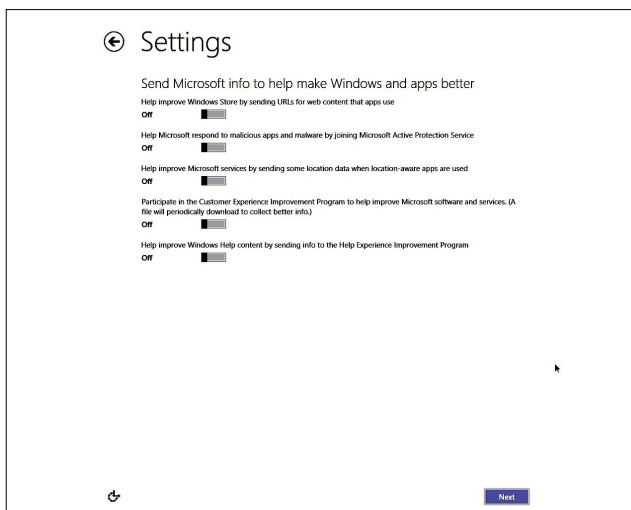
By this setting, automatic update and reboot that would disturb the work are not executed.

Set all other items to [Off].

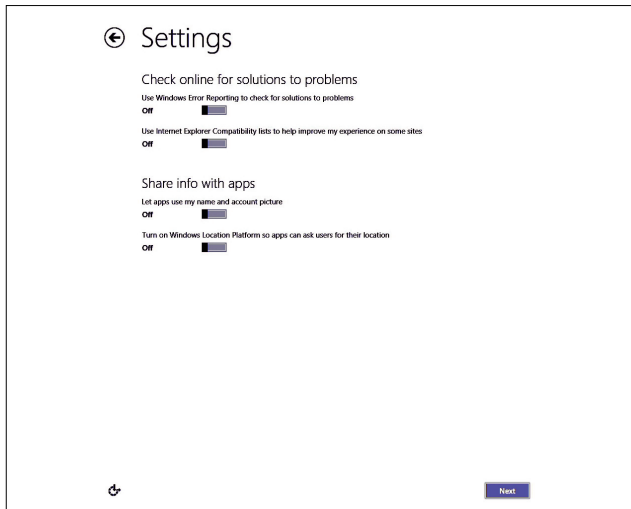
After these settings, click [Next].



7. Set all items in “Send Microsoft info to help make Windows and apps better” to [Off].
After these settings, click [Next].



8. Set all items in “Share info with apps” to [Off].
After these settings, click [Next].



9. Set the PC according to your environment on the "Region and Language screen".

Tip

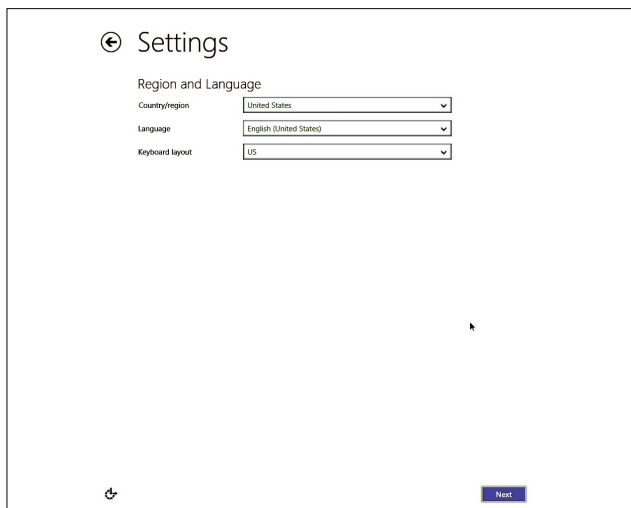
Factory settings

Country/Region : United States

Language : English (United States)

Keyboard Layout : US

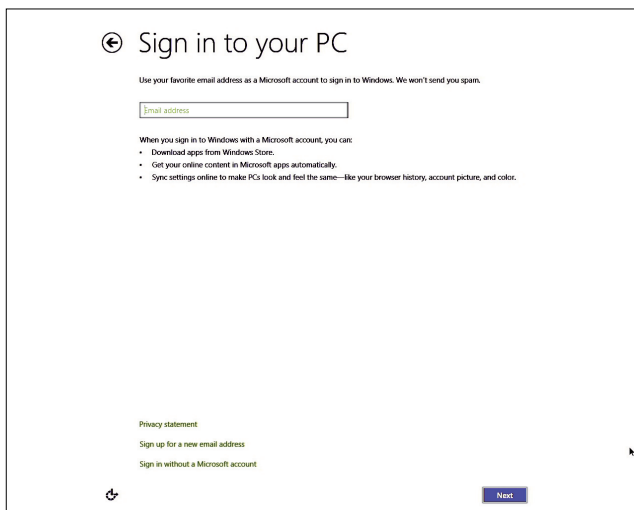
After selecting, click the "NEXT"



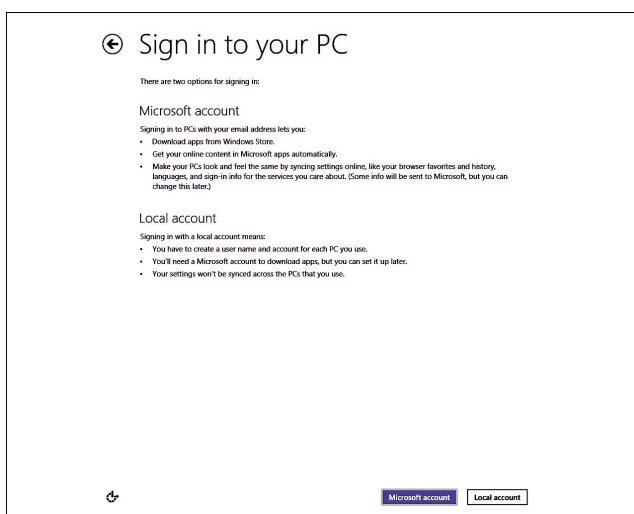
10. On the [Sign in to your PC] window, select [Sign in without a Microsoft accounts]. Then click [Next].

Tip

You are asked to sign in to your PC with Microsoft account when the unit is connected to the network. In this step, create a local account and sign in to your PC, without signing in with a Microsoft account.



11. Click [Local account].



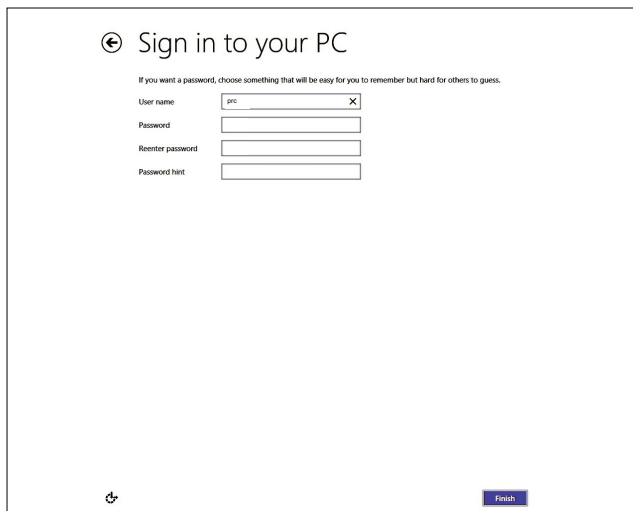
12. On the displayed window, enter as described below.

- User name: prc
- Password: prc
- Reenter password: prc
- Password hint: same

Tip

These are the factory default settings.

Type these items, and then click [Finish].



13. Confirm that Windows starts and it is possible to sign in to the PC with “prc”.

14. Turn off the unit and perform the following work.

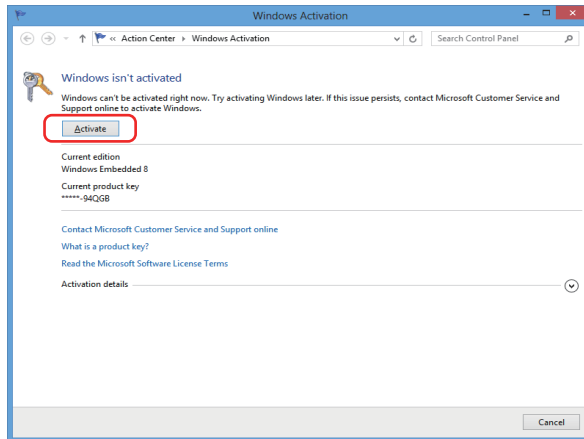
- Set the DIP switch S2201-1 on the MB-1204 board to OFF.

15. Configure the settings for the “services”.

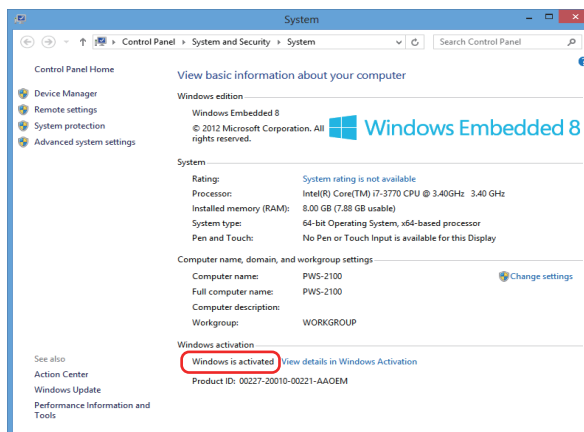
- (1) Press the [Windows] key and the [R] key on the keyboard to open [Run] dialog box.
- (2) Type “services.msc” and click [OK] to open the [Services] dialog box.
- (3) Right-click IIS Admin Service and open [Properties] dialog box.
- (4) Set the Startup type in the [General] tab to Disable and click [OK].
- (5) Right-click IIS Admin Service and select Stop.
- (6) Right-click World Wide Web Publishing Service and open [Properties] dialog box.
- (7) Set the Startup type in the [General] tab to Disable and click [OK].
- (8) Right-click World Wide Web Publishing Service and select Stop.
- (9) Execute “pws-webappw.exe” stored in C:\Program Files\Sony\PWS-100\pws-webapp\bin.
- (10) Display the [General] tab of the [Web Application PWS-100 Properties] dialog box, and set the Startup type to Automatic.
- (11) Click [Start] of Service Status.
- (12) Click [OK].

16. Activate Windows.

- (1) Connect the PC to the network.
- (2) Open "System" from System and Security in the Control Panel.
- (3) Open the "View details in Windows Activation" window.
- (4) Click [Activate].



- (5) On the System window, confirm that "Windows is activated" is indicated.



17. Upgrade the application software.

To upgrade the application software, refer to "1-4. Software Update".

Note

The application software installed in the SSD module is not the latest one. Also the software version may not be compatible with the MSQ-S321 board installed in the unit. Therefore, install the latest version of application software.

18. Set the Windows to open pdf files by using Chrome.

Start the command prompt with administrative privileges.

```
$> assoc.pdf=chromepdf
$> ftype chromepdf="%ProgramFiles(x86)%\Google\Chrome\Application
\chrome.exe" %1
$> exit
```

5-2-3. After Replacing the HPR-48 Board

Update the HPR-48 boards by the following procedure.

Equipment required

- A USB mouse
- A USB keyboard
- A monitor

Required file

- MSQ-S321 updater for PWS-100PR1 “PWS-100PR1_MSQ-S321.zip”

Note

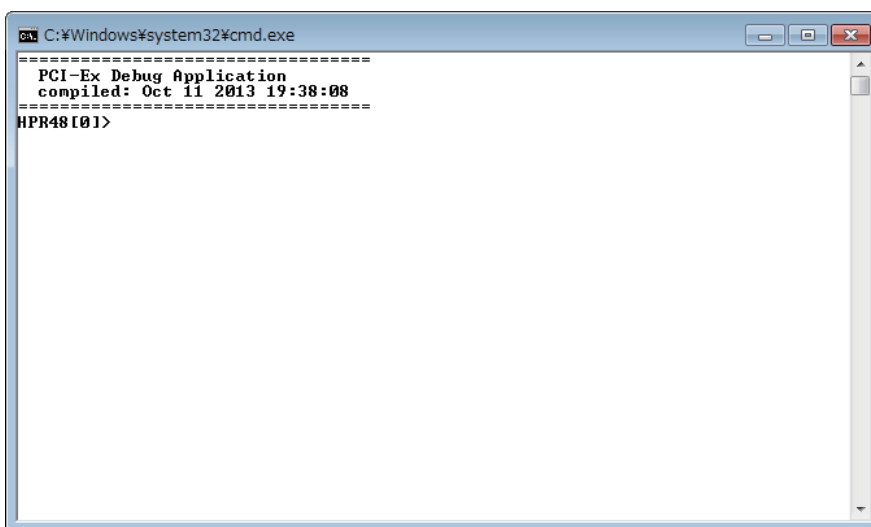
To obtain the file, contact your local Sony Sales Office/Service Center.

Preparation

1. Connect the mouse and the keyboard to the USB connectors.
2. Connect the monitor to the DisplayPort or the HDMI connector.
3. Exit the application programs of the unit.
4. Copy the updater file to the system drive of the unit, and unzip the updater file.

Checking Versions

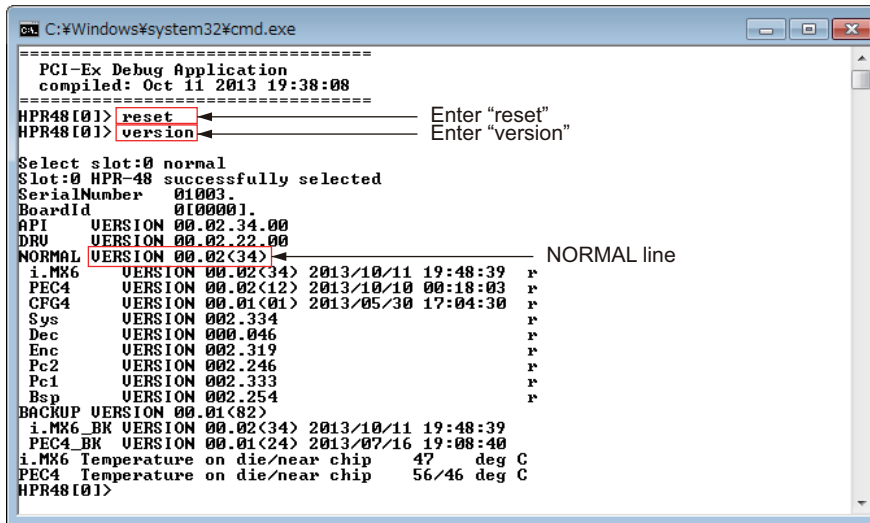
1. Double-click “\updater_XXXXXX\win_CmdApp.bat”.
The CmdApp.exe opens and “HPR48[0]>” prompt appears.



2. Enter “reset” and press the [Enter] key.

3. Enter "version" and press the [Enter] key.

Version of an HPR-48 board (the first board) is displayed in the NORMAL line.



```

C:\Windows\system32\cmd.exe
=====
PCI-Ex Debug Application
compiled: Oct 11 2013 19:38:08
=====
HPR48[0]> reset
HPR48[0]> version
Enter "reset"
Enter "version"

Select slot:0 normal
Slot:0 HPR-48 successfully selected
SerialNumber 01003.
BoardId 0100001.
API VERSION 00.02.34.00
DRU VERSION 00.02.22.00
NORMAL VERSION 00.02(34)
i.MX6 VERSION 00.02(34) 2013/10/11 19:48:39 r
PEC4 VERSION 00.02(12) 2013/10/10 00:18:03 r
CFG4 VERSION 00.01(01) 2013/05/30 17:04:30 r
Sys VERSION 002.334 r
Dec VERSION 000.046 r
Enc VERSION 002.319 r
Pc2 VERSION 002.246 r
Pc1 VERSION 002.333 r
Bsp VERSION 002.254 r
BACKUP VERSION 00.01(02)
i.MX6_BK VERSION 00.02(34) 2013/10/11 19:48:39
PEC4_BK VERSION 00.01(24) 2013/07/16 19:08:40
i.MX6 Temperature on die/near chip 47 deg C
PEC4 Temperature on die/near chip 56/46 deg C
HPR48[0]>
```

4. Enter "1:" and press the [Enter] key.

"HPR48[1]>" prompt appears.

5. Enter "reset" and press the [Enter] key.

6. Enter "version" and press the [Enter] key.

Version of another HPR-48 board (the second board) is displayed in the NORMAL line.

7. Close the window.

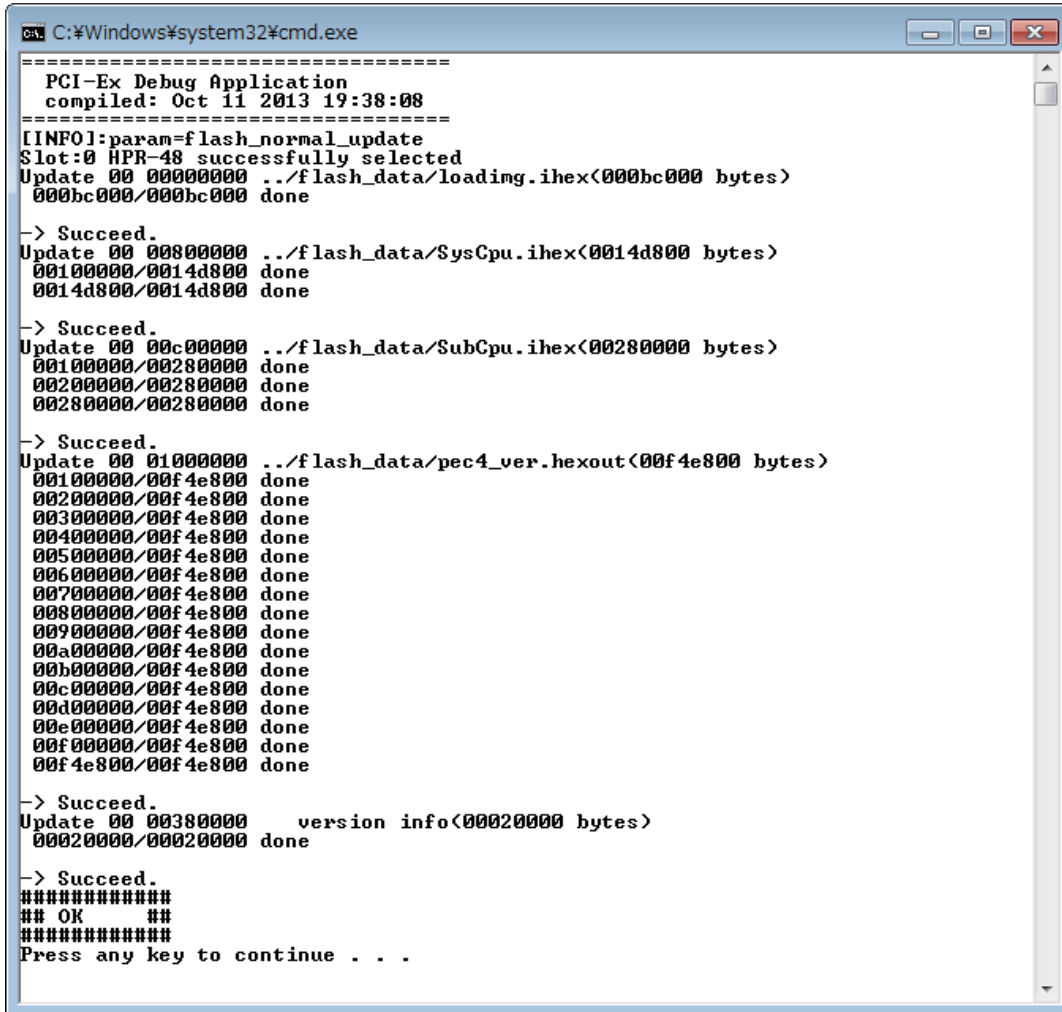
The "CmdApp.exe" is finished.

Updating Procedure

1. Double-click “\updater_xxxxx\win_08_Flash_Normal_Update.bat”.
The “CmdApp.exe” runs and one of the HPR-48 boards (the first board) is updated.
Upon completion of version update, a message “Press any key to continue...” appears.

Tip

If version update fails and any message does not appear, perform this procedure again.



```
=====  
PCI-Ex Debug Application  
compiled: Oct 11 2013 19:38:08  
=====  
[INFO]:param=flash_normal_update  
Slot:0 HPR-48 successfully selected  
Update 00 00000000 ../flash_data/loading.ihex<000bc000 bytes>  
000bc000/000bc000 done  
-> Succeed.  
Update 00 00800000 ../flash_data/SysCpu.ihex<0014d800 bytes>  
00100000/0014d800 done  
0014d800/0014d800 done  
-> Succeed.  
Update 00 00c00000 ../flash_data/SubCpu.ihex<00280000 bytes>  
00100000/00280000 done  
00200000/00280000 done  
00280000/00280000 done  
-> Succeed.  
Update 00 01000000 ../flash_data/pec4_ver.hexout<00f4e800 bytes>  
00100000/00f4e800 done  
00200000/00f4e800 done  
00300000/00f4e800 done  
00400000/00f4e800 done  
00500000/00f4e800 done  
00600000/00f4e800 done  
00700000/00f4e800 done  
00800000/00f4e800 done  
00900000/00f4e800 done  
00a00000/00f4e800 done  
00b00000/00f4e800 done  
00c00000/00f4e800 done  
00d00000/00f4e800 done  
00e00000/00f4e800 done  
00f00000/00f4e800 done  
00f4e800/00f4e800 done  
-> Succeed.  
Update 00 00380000 version info<00020000 bytes>  
00020000/00020000 done  
-> Succeed.  
#####  
## OK ##  
#####  
Press any key to continue . . .
```

2. Click Close button to exit “CmdApp.exe”
3. Double-click “\updater_xxxxx\win_08_Flash_Normal_Update1.bat”.
The “CmdApp.exe” runs and another HPR-48 board (the second board) is updated.
Upon completion of version update, a message “Press any key to continue...” appears.

Tip

If version update fails and any message does not appear, perform this procedure again.

4. Click Close button to exit “CmdApp.exe”
5. Shut down the unit and turn on again.
6. Check the version. (Refer to “Checking Versions” in “5-2-3. After Replacing the HPR-48 Board”.)
Confirm that the version shown in the NORMAL line is the same as the version of the updater file.

5-2-4. After Replacing the MB-1204 Board

Upgrade the software. (Refer to [“1-4. Software Update”](#))

5-2-5. After Replacing the iAP Board Assembly

When the iAP board assembly was replaced, the BIOS must be upgraded.

Before upgrading the BIOS, replace the battery with a new one because the battery on the iAP board assembly from parts center may have drained.

Note

An action when PWA-PRC1 asks for an install key

The PWA-PRC1 confirms the MAC address at the starting. As the MAC address changes with changing iAP board, the earlier authentication becomes invalid and the PWA-PRC1 won't launch. When the iAP board is changed, obtain the new install key and perform the authentication of PWA-PRC1.

Required equipment

- Bootable USB memory (Refer to [“5-2-6. Example of Creating Bootable USB Memory”](#))

Note

For obtaining the BIOS upgrade file required to create bootable USB memory, contact your local Sony Sales Office/Service Center.

- A USB mouse
- A USB keyboard
- A monitor

Required part

- Lithium battery (CR2032)

Preparation

1. Replace the lithium battery (CR2032) on the iAP board assembly for repair with a new one.
2. Connect the power cord to the power connector on the rear panel to supply AC power.
3. Connect the USB mouse and the USB keyboard to the USB connectors. *¹
4. Connect the monitor to the Display Port or the HDMI connector.
5. Connect the bootable USB memory to the USB connector *¹.

Tip

*¹: Every USB connector is available.

Procedure

1. Turn on the unit.

Note

If the iAP board assembly mounted in this unit has never been used before, go to step 8.

Since the highest priority is placed on the USB memory in the BIOS priority setting written in the iAP board, the USB memory is accessed on a priority basis after the unit is turned on.

2. Before a window appears on the monitor, press the [F2] key on the keyboard to open the BIOS window.

Tip

If the BIOS window does not open and the unit has started as usual, press the [Ctrl] key, [Alt] key, and [Delete] key at the same time to restart the unit, and then press the [F2] key on the keyboard again.

3. Move to the BOOT menu by using the arrow keys on the keyboard, then the following information is displayed on the monitor.
 Boot Option Priorities
 Boot Option #1 [SATA PM TOSHIBA...]
 Boot Option #2 [Sony Storage Media...]
 ...[SATA PM TOSHIBA...]
4. Change the arrangement of lines by using the arrow keys on the keyboard so that "...[SATA PM TOSHIBA...]" shown on the monitor comes to the top of the line.
5. Select "Save&Exit" shown on the monitor by using the arrow keys on the keyboard.
6. Select "Save Changes and Reset" on the monitor, then "Save configuration and reset?" appears. Select "Yes" by using the arrow keys on the keyboard, and then press the Enter key.
7. The unit restarts automatically.
8. The DOS in the bootable USB memory runs.
 When "Enter new date (mm-dd-[cc]yy):-" appears on the monitor, press the Enter key.
 When "Enter new time:-" appears after that, press the Enter key.
 A command prompt "c:\\" appears on the monitor.
9. Enter "update" following the command prompt "c:\\" and then press the Enter key.
 The BIOS upgrade starts. After the update is completed, a command prompt "c:\\" appears.
10. Turn off the unit.
11. Remove the bootable USB memory.
12. Turn on the unit.
13. Before a window appears on the monitor, press the [F2] key on the keyboard.

Tip

If the BIOS window does not open and the unit has started as usual, press the [Ctrl] key, [Alt] key, and [Delete] key at the same time to restart the unit, and then repress the [F2] key on the keyboard.

14. In the "Project Version" column of the Main menu on the BIOS setup window, make sure that the version updated by the above procedure is shown.
15. Turn off the unit.
16. Set the clock time. (Refer to "Setting date and time" in "Setting Up" in the Operation Manual.)
17. Open the PWA-PRC1. If the install key is requested, perform authentication by using install key.

5-2-6. Example of Creating Bootable USB Memory

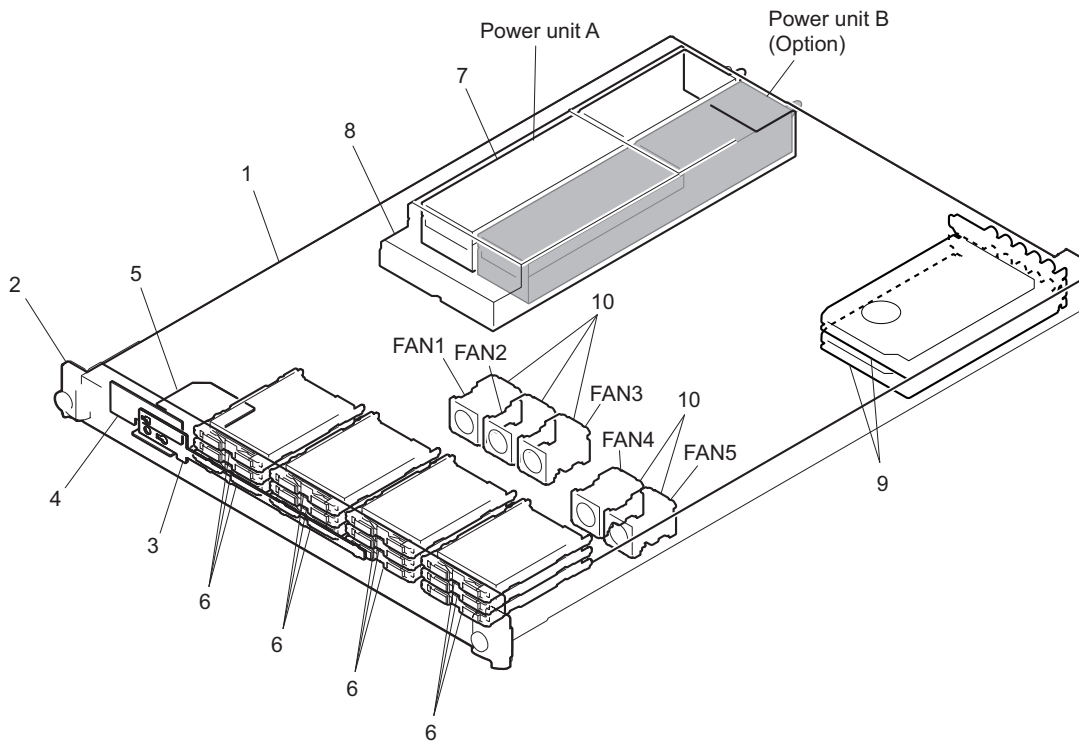
This section describes how to create general bootable USB memory that is available in a PC environment. An example of creating such bootable USB memory by using software FreeDOS and Win32 Disk Imager on a Windows PC is shown below.

Procedure

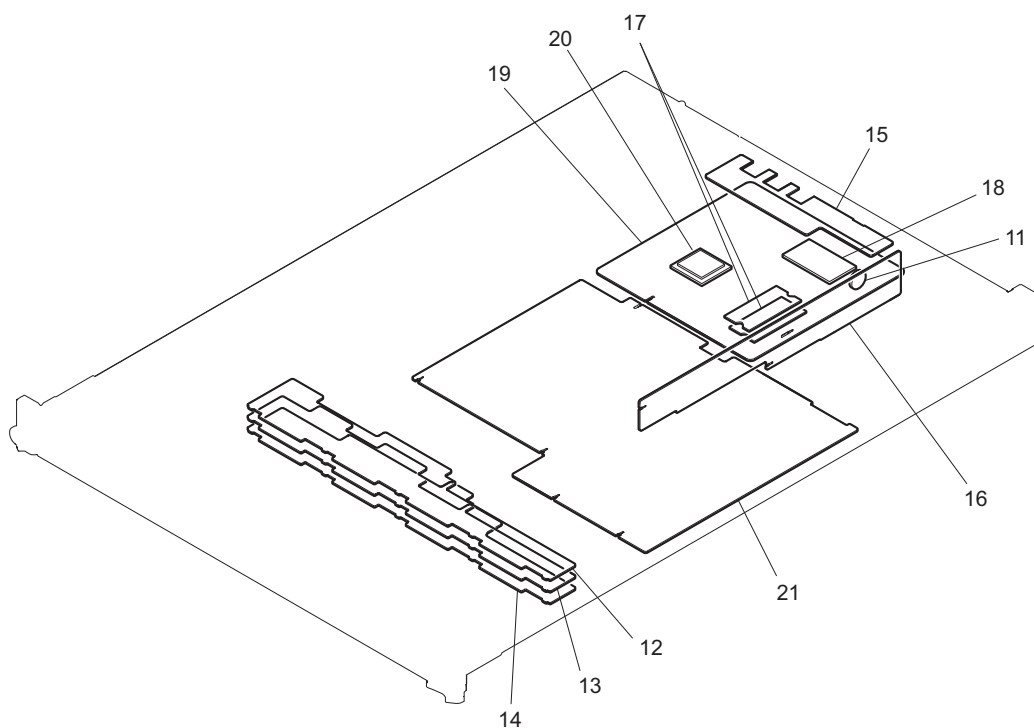
1. Run the Win32 Disk Imager.
2. On the Win32 Disk Imager window, configure the software as follows.
 Image File: FreeDOS-1.1-USB-Boot.img
 Device: USB memory to be written
3. Click the [Write] button to write the DOS image to the USB flash memory.
4. Click the [Exit] button to exit the application programs.
5. Copy necessary files to the USB flash memory.
 Example) The following three files are necessary for BIOS Update.
 - Update.bat
 - AFUDOS.exe
 - AxxxPxxx.ROM

5-3. Location of Main Parts

This section describes replacement procedures of the parts listed below.



No.	Part Name	Procedure
1	Top Panel Assembly	“5-4. Top Panel Assembly”
2	Front Panel Assembly	“5-5. Front Panel Assembly”
3	LED-527 Board	“5-6. LED-527 Board”
4	SW-1627 Board	“5-7. SW-1627 Board”
5	DIO-98 Board	“5-8. DIO-98 Board”
6	ST Blank Assembly	“5-9. ST Blank Assembly”
7	Power Unit (Power Unit A, Power Unit B (Option))	“5-10. Power Unit”
8	Hot-Swap Unit	“5-11. Hot-Swap Unit”
9	HPR-48A Board	“5-12. HPR-48A Board” If you need to replace the fan mounted on the HPR-48A board, refer to the MSQ-S321 Service Manual.
10	Fan Assembly (FAN1 to 5)	“5-13. Fan Assembly”

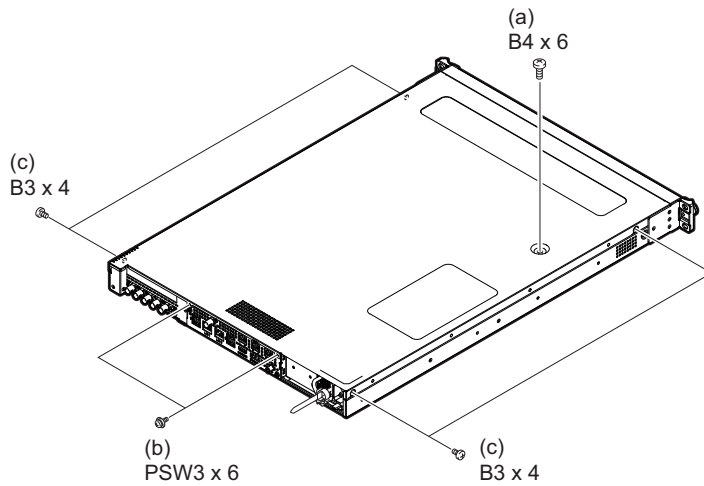


No.	Part Name	Procedure
11	Lithium Battery	“5-14. Lithium Battery”
12	IF-1257 Board	“5-15. IF-1257 Board”
13	IF-1258 Board	“5-16. IF-1258 Board”
14	IF-1259 Board	“5-17. IF-1259 Board”
15	CN-3698 Board	“5-18. CN-3698 Board”
16	RC-110 Board	“5-19. RC-110 Board”
17	Memory Module (204pin SO-DIMM)	“5-20. Memory Module (204pin SO-DIMM)”
18	SSD Module (mSATA Assembly)	“5-21. SSD Module (mSATA Assembly)”
19	iAP Board Assembly	“5-22. iAP Board Assembly”
20	CPU	“5-23. CPU”
21	MB-1204 Board	“5-24. MB-1204 Board”

5-4. Top Panel Assembly

Procedure

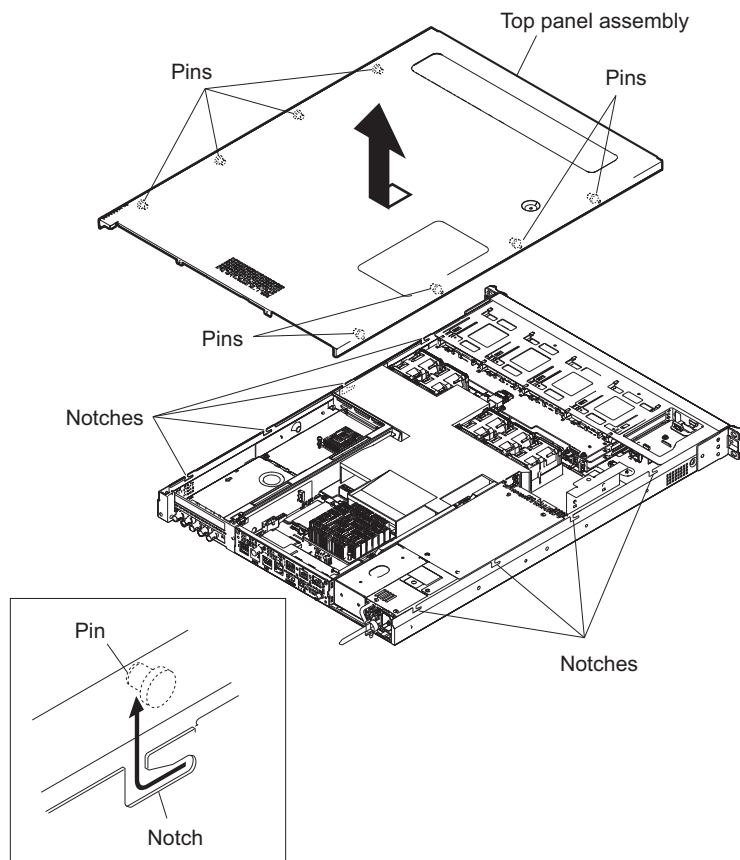
1. Remove the screw (B4 x 6), four screws (B3 x 4), and two screws (PSW3 x 6).



Note

When installing the top panel assembly, tighten the screws in the following sequence: (a), (b), (c).

2. Remove the eight pins of the top panel assembly from the eight notches of the main unit, and then remove the top panel assembly in the direction of the arrow.

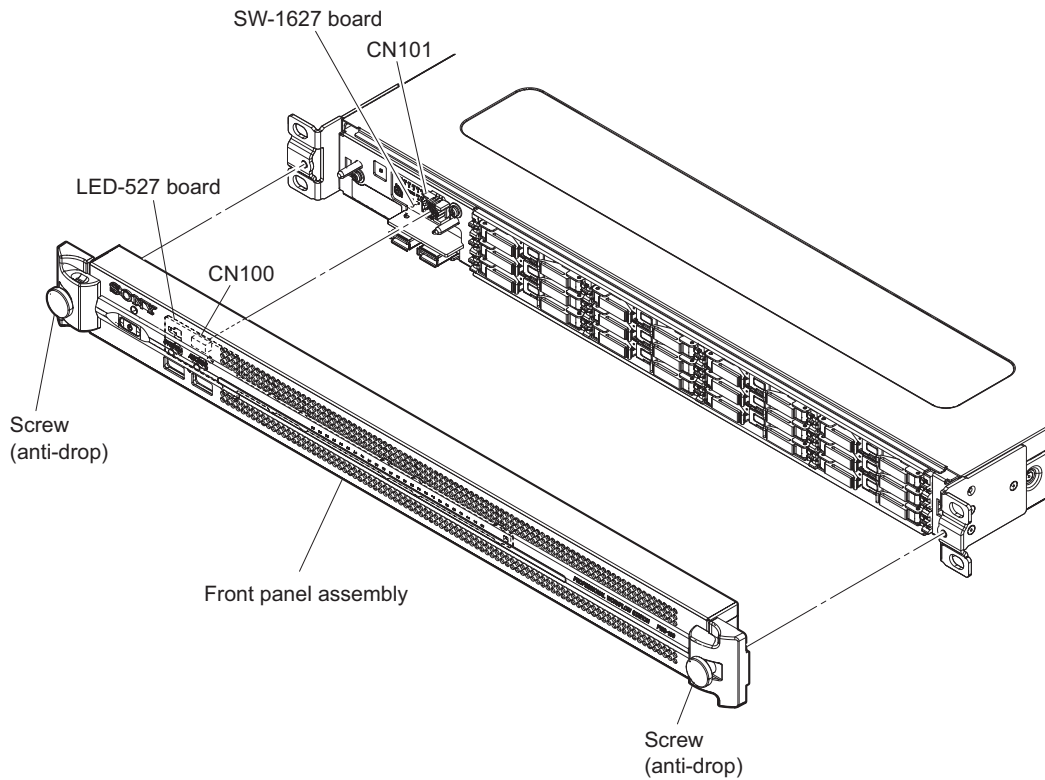


3. Install the removed parts by reversing the steps of removal.

5-5. Front Panel Assembly

Procedure

1. Loosen the two screws (anti-drop).
2. Disconnect the connector (CN100) on the LED-527 board from the connector (CN101) on the SW-1627 board and remove the front panel assembly.



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

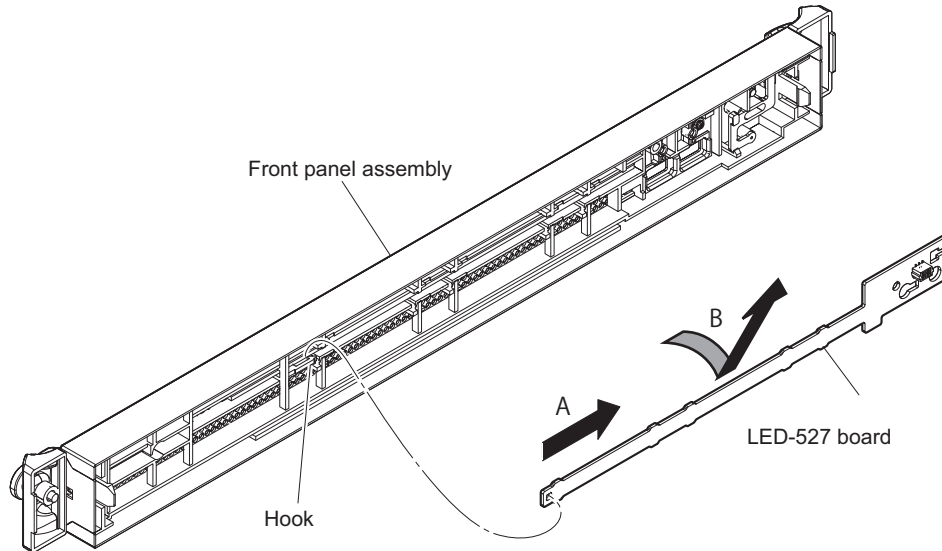
5-6. LED-527 Board

Preparation

1. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)

Procedure

1. Release the hook, then slide the LED-527 board in the direction of the arrow A.
2. Tilt the LED-527 board in the direction of arrow B and remove the LED-527 board.



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

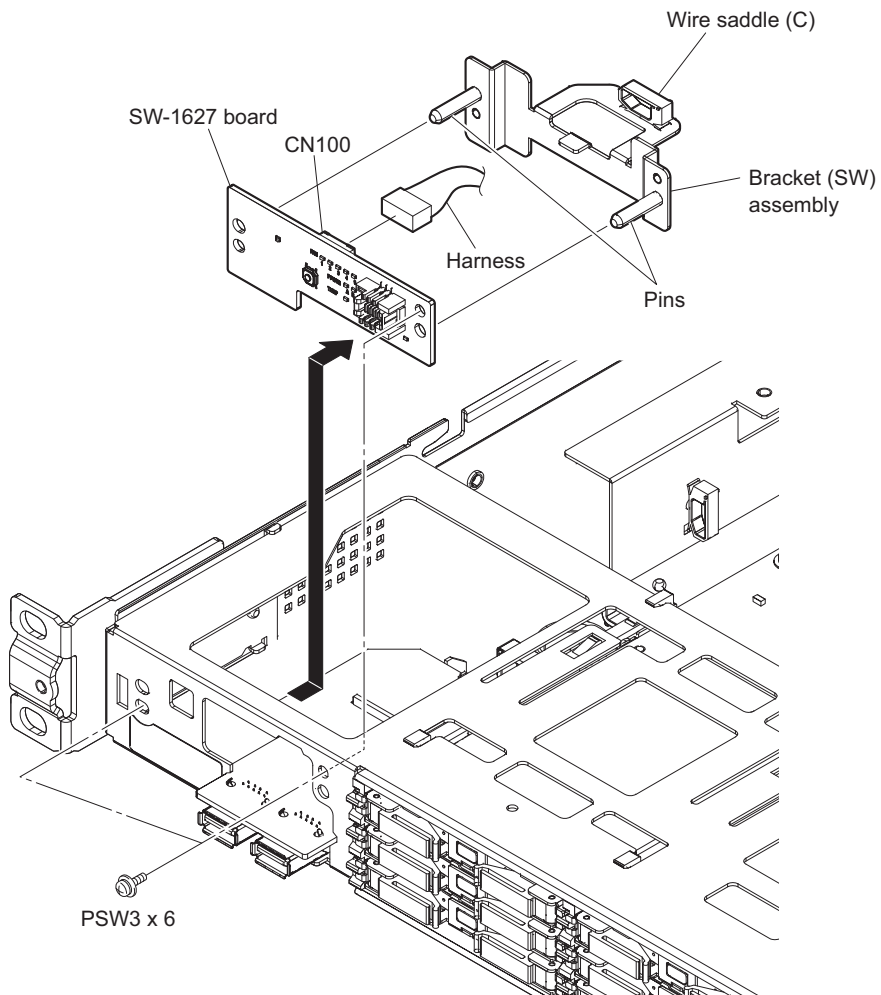
5-7. SW-1627 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)

Procedure

1. Open the wire saddle (C) and disconnect the harness from the connector (CN100) on the SW-1627 board.
2. Remove the two screws, then remove the bracket (SW) assembly in the direction of the arrow.
3. Remove the SW-1627 board from the two pins of the bracket (SW) assembly.



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

5-8. DIO-98 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)
3. Remove the bracket (SW) assembly. (Refer to “5-7. SW-1627 Board”.)

Procedure

1. Disconnect the fine-wire coaxial cable from the connector (CN200) on the DIO-98 board.

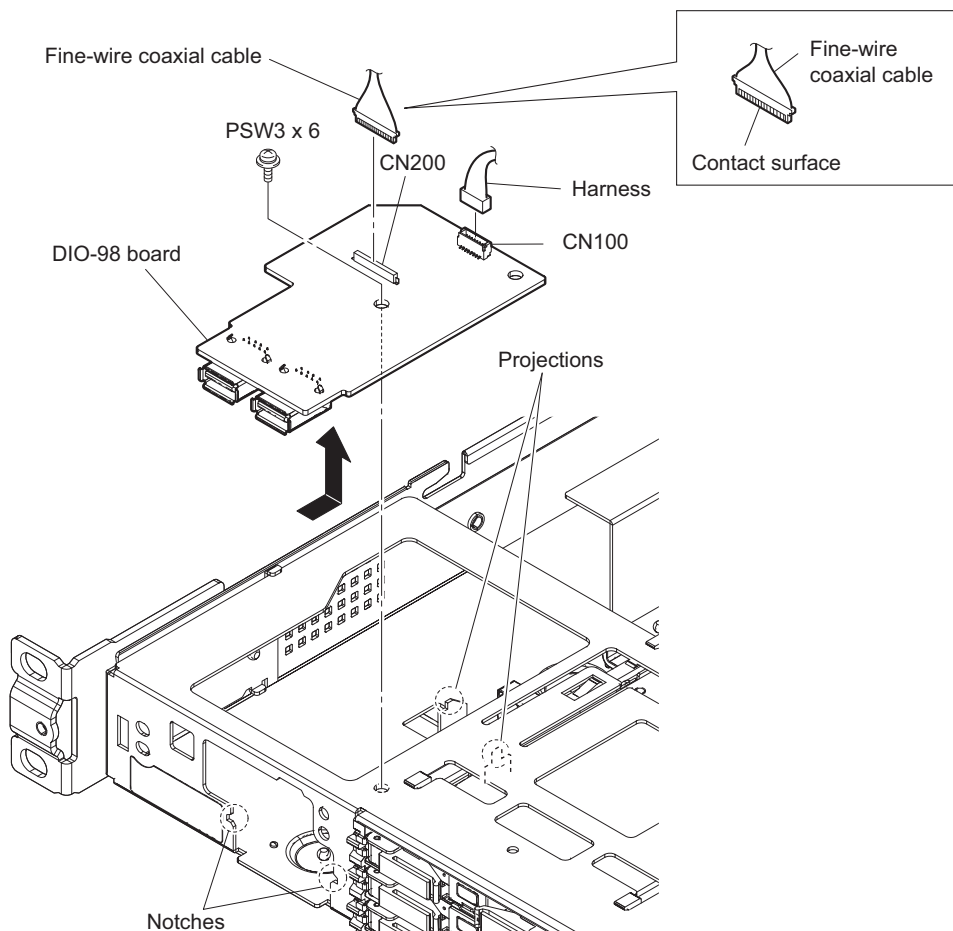
Note

When disconnecting the fine-wire coaxial cable, hold its connector between your fingers.

2. Disconnect the harness from the connector (CN100) on the DIO-98 board.
3. Remove the screw.
4. Lift the DIO-98 board off the two projections of the chassis.
5. Remove the DIO-98 board in the direction of the arrow.

Note

Be careful not to touch the bottom of the DIO-98 board to the chassis and not to break the board.



Note

- Install the fine-wire coaxial cable in the direction shown in the figure when installing the fine-wire coaxial cable.
- Install DIO-98 board according to the two notches when installing the DIO-98 board.

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

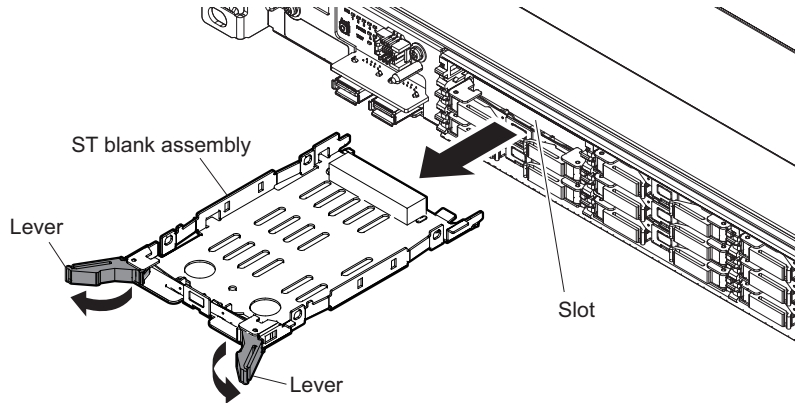
5-9. ST Blank Assembly

Preparation

1. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)

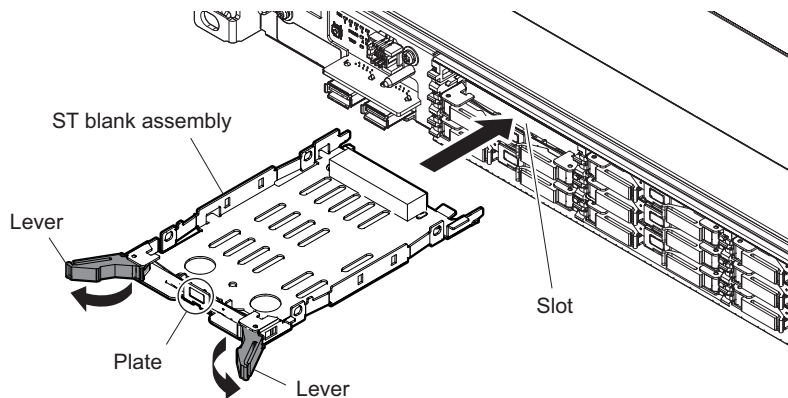
Procedure for removal

1. Open the lever of the ST blank assembly in the direction of the arrow and remove the ST blank assembly from a slot.

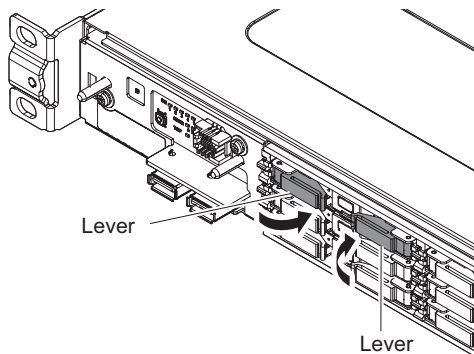


Procedure for installation

2. Open the lever of the ST blank assembly and insert the ST blank assembly into the slot.
3. When the ST blank assembly hits the end of the slot, push its plate.



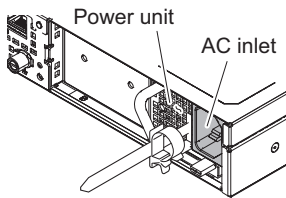
4. Turn the levers in the direction of arrows.



5-10. Power Unit

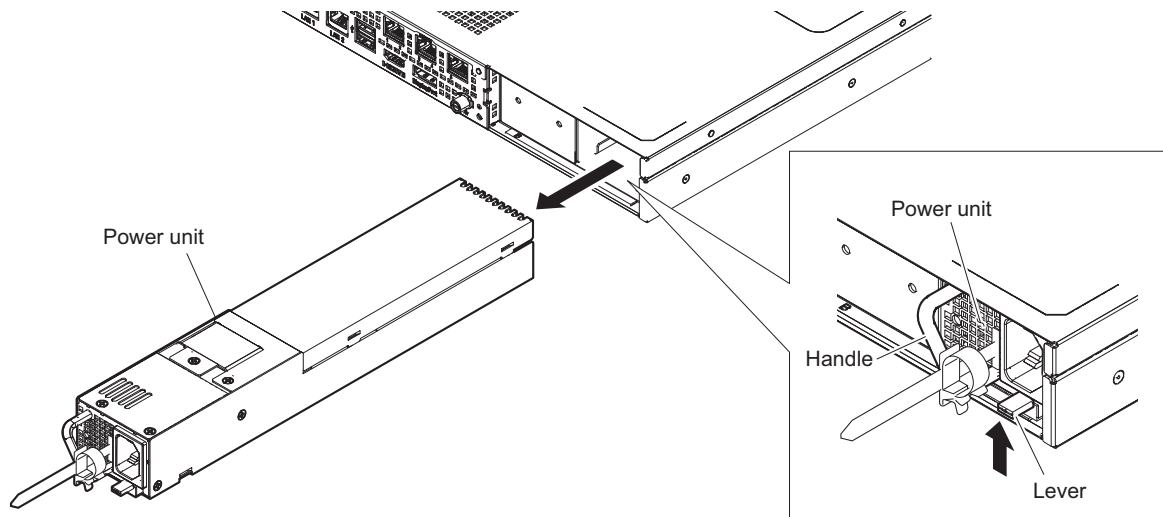
Note

Before removing or installing the power unit, be sure to unplug the power cord from the AC inlet.



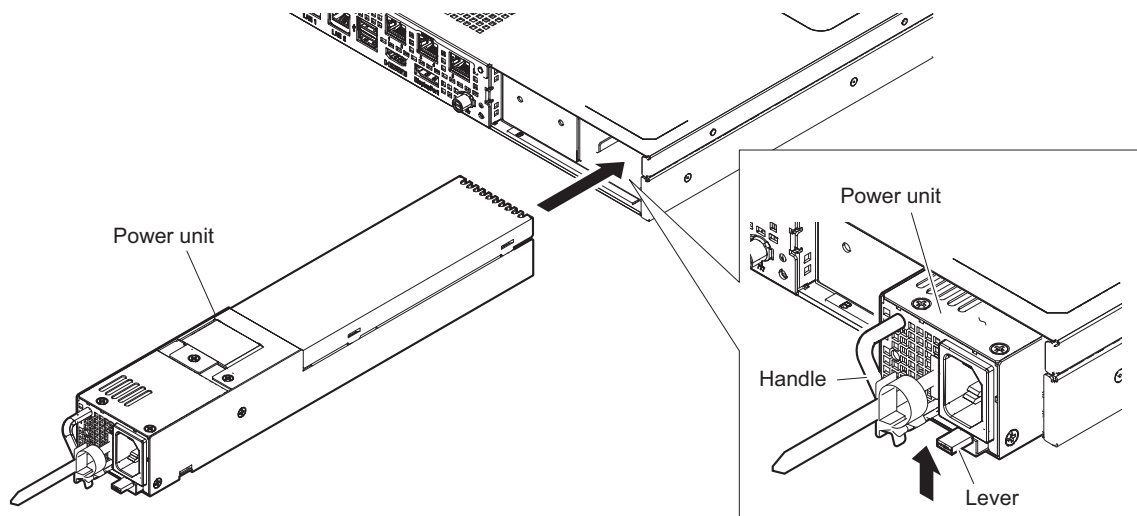
Removing Procedure

1. Pull up the lever in the direction of the arrow to unlock the power unit, and then pull the handle to draw out the power unit.



Installing Procedure

2. Pull up the lever in the direction of arrow, and then insert the power unit.
3. Confirm that the power unit has been locked. (The power unit cannot be drawn out by pulling the handle without pulling up the lever.)



5-11. Hot-Swap Unit

Preparation

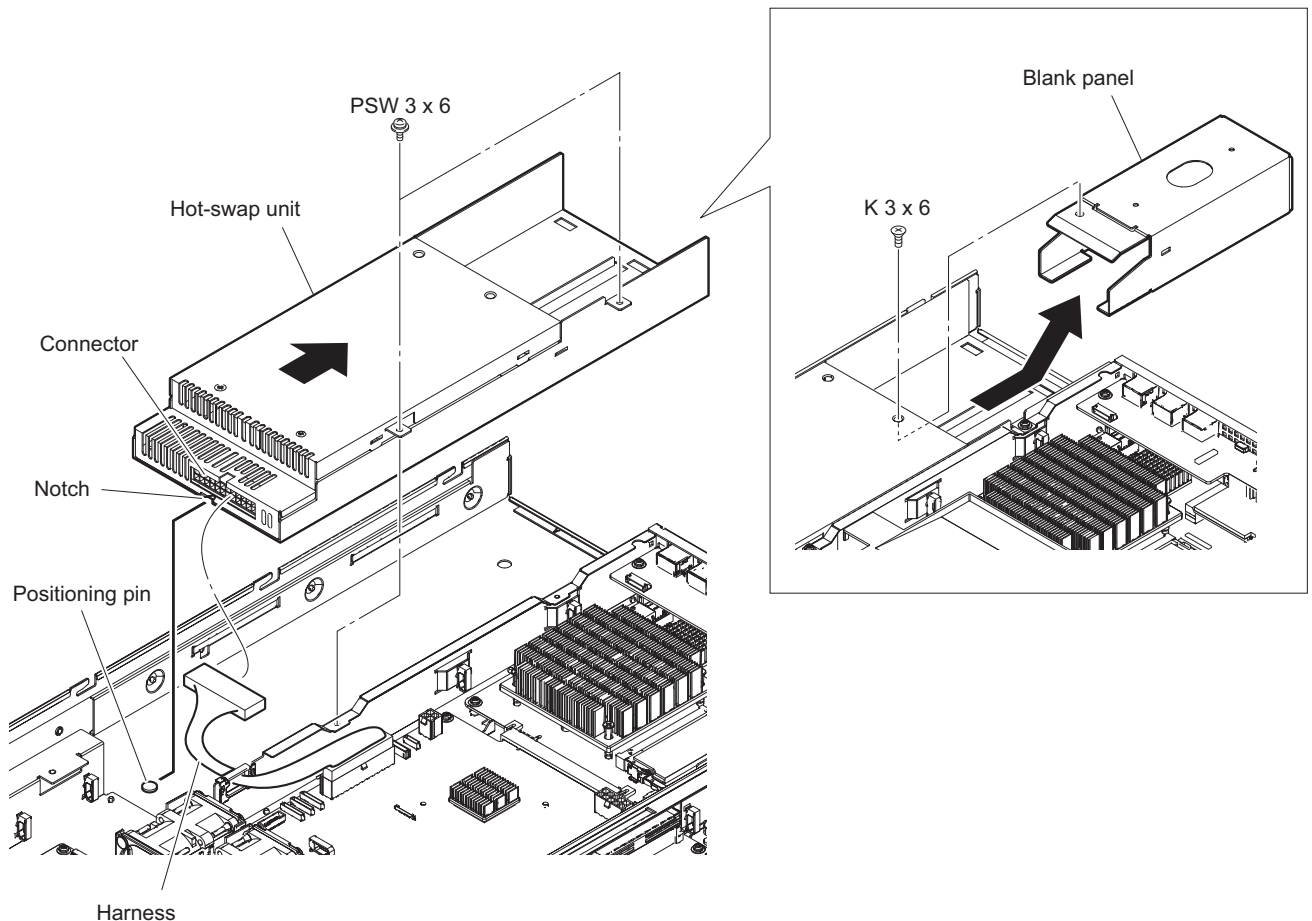
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the Power unit assembly. (Refer to “5-10. Power Unit”.)

Procedure

1. If a blank panel has been attached, remove the screw (K 3 x 6) and then pull out the blank panel in the direction of the arrow.
2. Disconnect the harness from the connector of the hot-swap unit.
3. Remove the two screws (PSW 3 x 6).
4. Slide the hot-swap unit in the direction of the arrow, then release the positioning pin from the notch of the hot-swap unit.

Note

Do not pull up the hot-swap unit without releasing the notch of the hot-swap unit from the positioning pin. Doing so may damage the positioning pin.



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

5-12. HPR-48A Board

Preparation

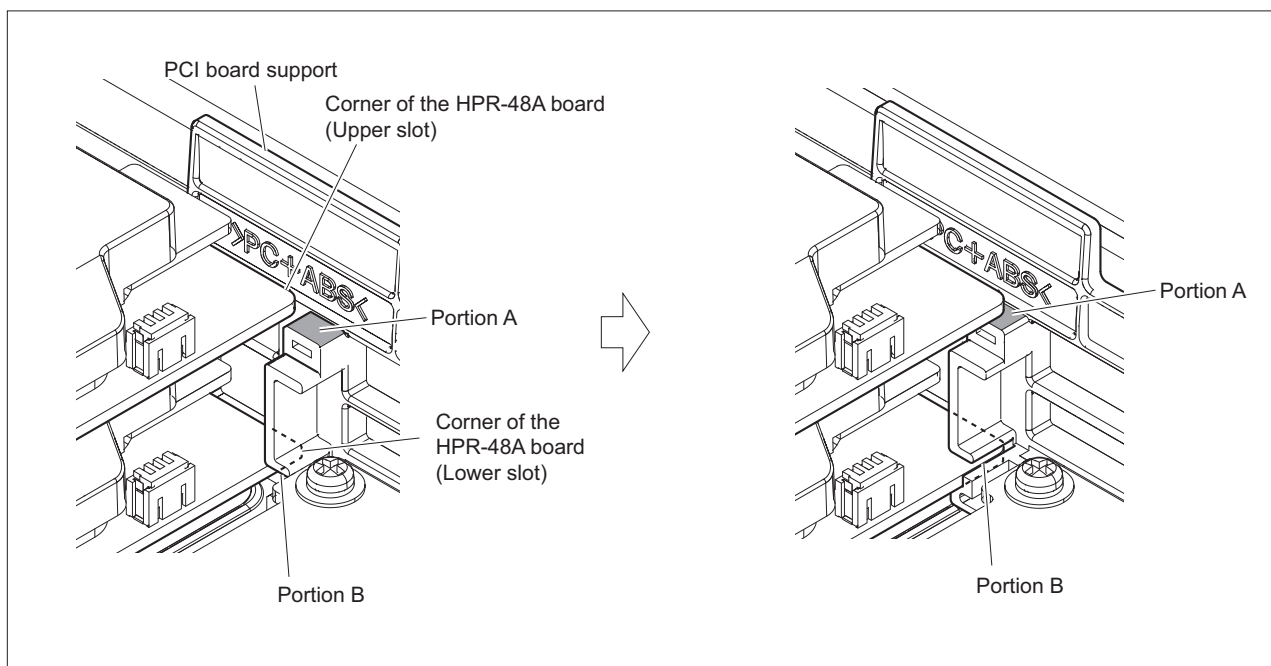
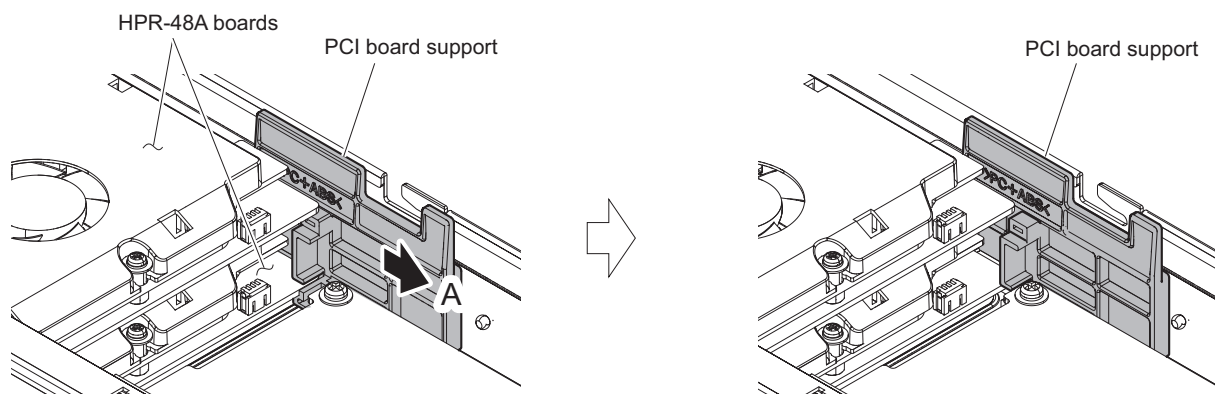
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)

Procedure

1. Slide the PCI board support in the direction of the arrow A.

Note

The PCI board support is not installed in the unit within the serial number range of 120001 to 120005.

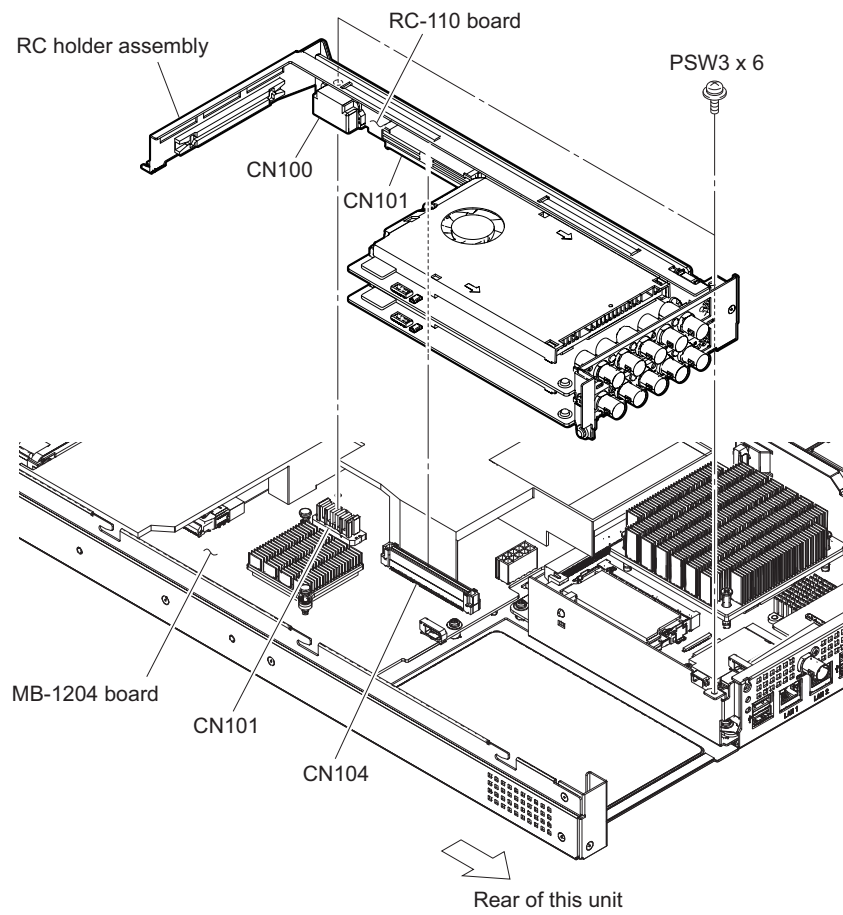


Note

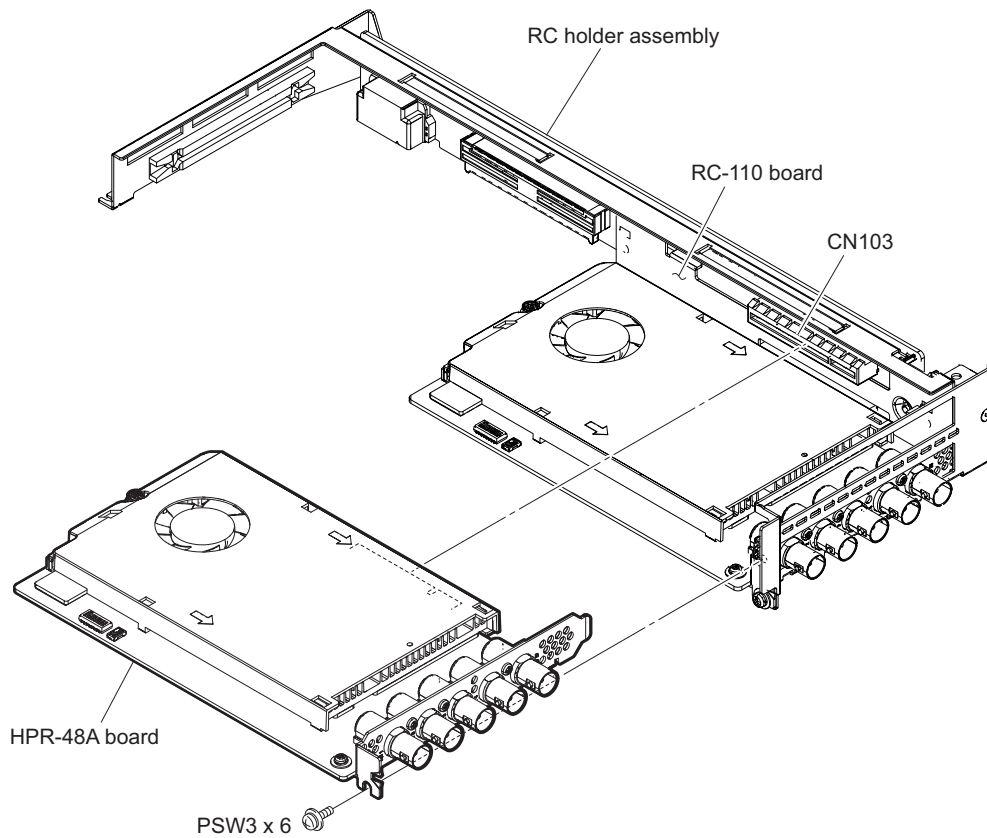
The PCI board support is hard to slide because it is locked tightly enough not to disengage by vibration. On installation, slide the PCI board support in a way that the corner of the upper HPR-48A board is placed on the portion A of the PCI board support, and the corner of the lower HPR-48A board is fitted to the groove of the portion B as shown in the illustration.

2. Remove the two screws.

3. Remove RC holder assembly from the connectors (CN101 and CN104) on the MB-1204 board.



4. Remove the screw, then remove the HPR-48A board from the connector (CN103) on the RC-110 board.



5. Remove the screw, then remove the lower HPR-48A board from the connector (CN102) on the RC-110 board in the same way as the upper slot.
6. Install the removed parts by reversing the steps of removal.

Note

Set the bit 1 of the DIP switch to ON on the HPR-48A board which is installed to the upper slot.

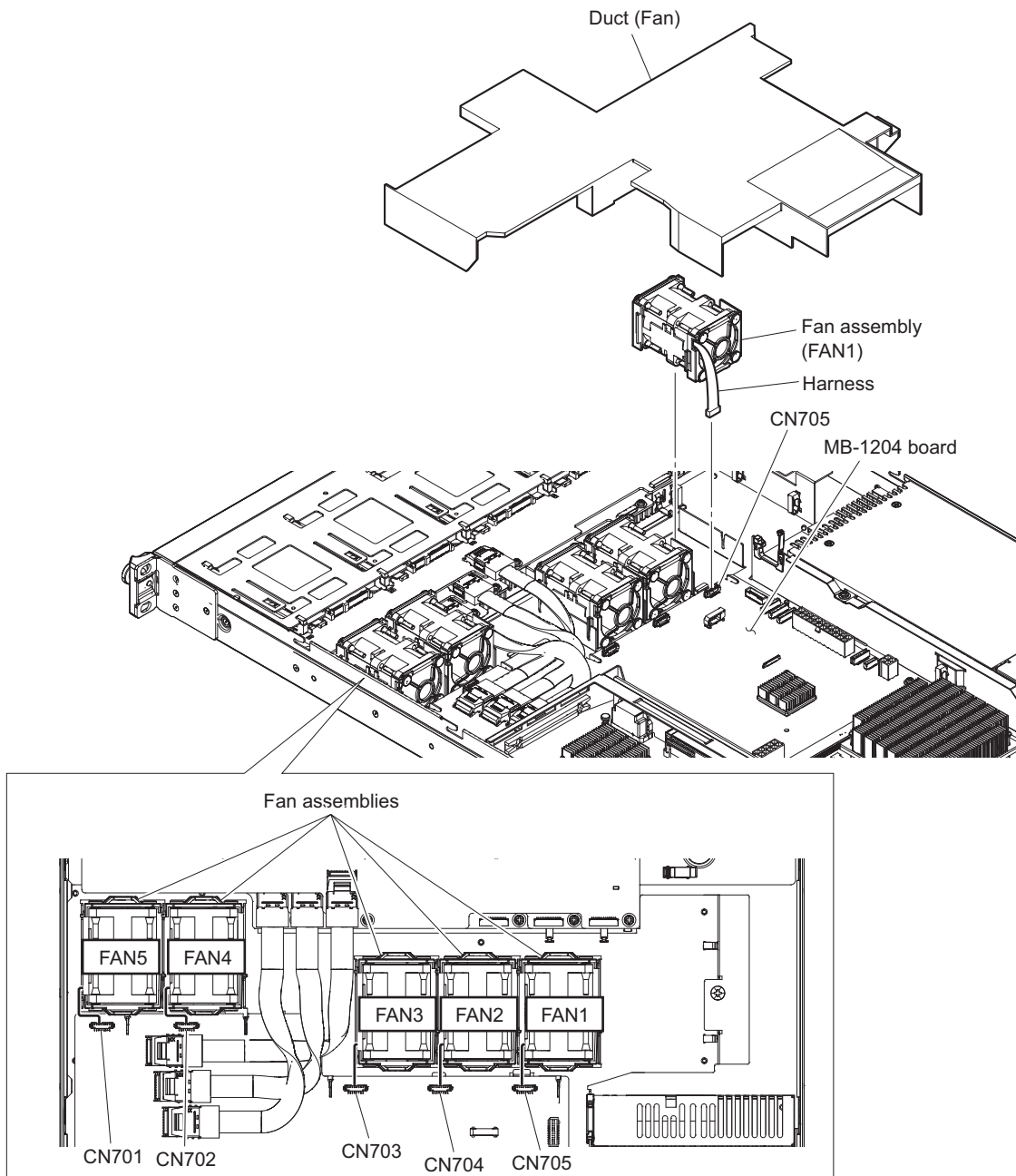
5-13. Fan Assembly

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)

Procedure

1. Remove the duct (fan).
2. Disconnect the harness from the connector (CN705) on the MB-1204 board and remove the fan assembly (FAN1).
3. Remove other fan assemblies (FAN2 to FAN5) in the same way as in step 2.



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

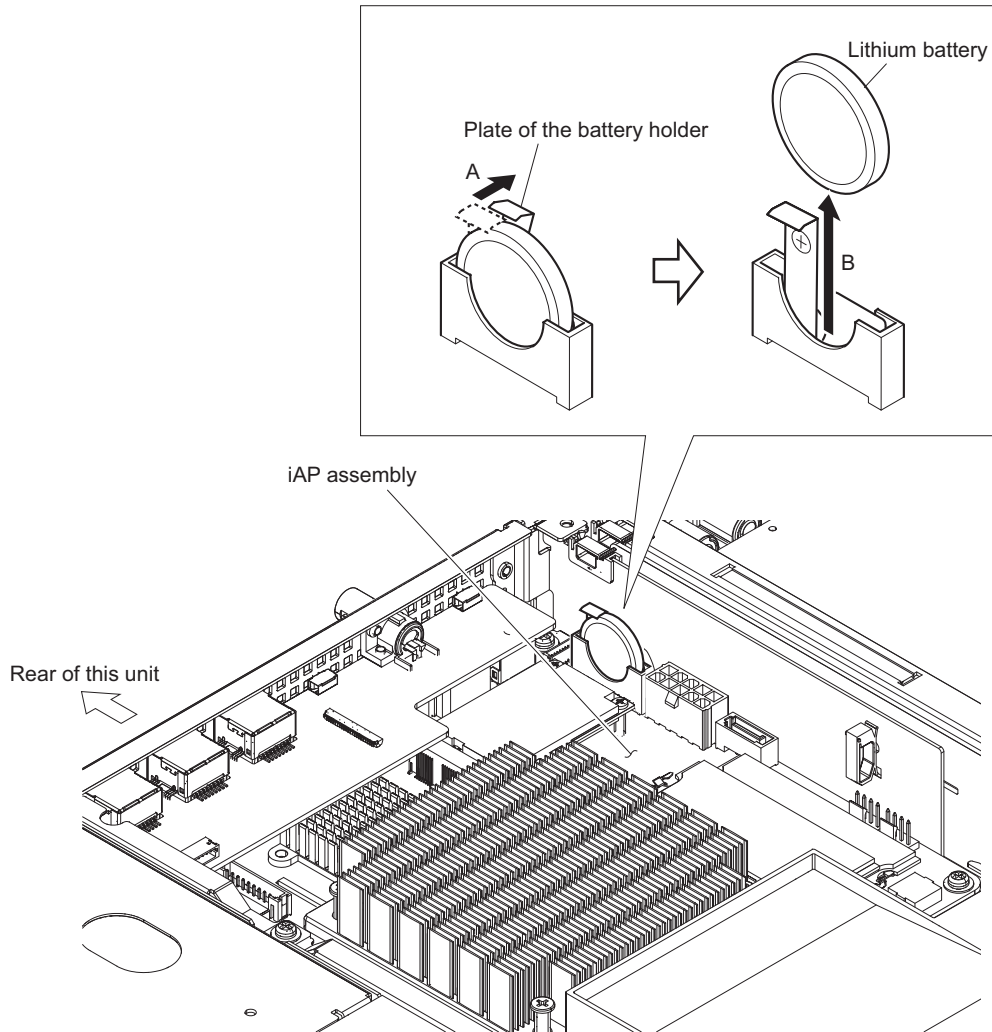
5-14. Lithium Battery

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)

Procedure

1. Pull back the plate of the battery holder in the direction of arrow A and remove the lithium battery in the direction of arrow B.



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

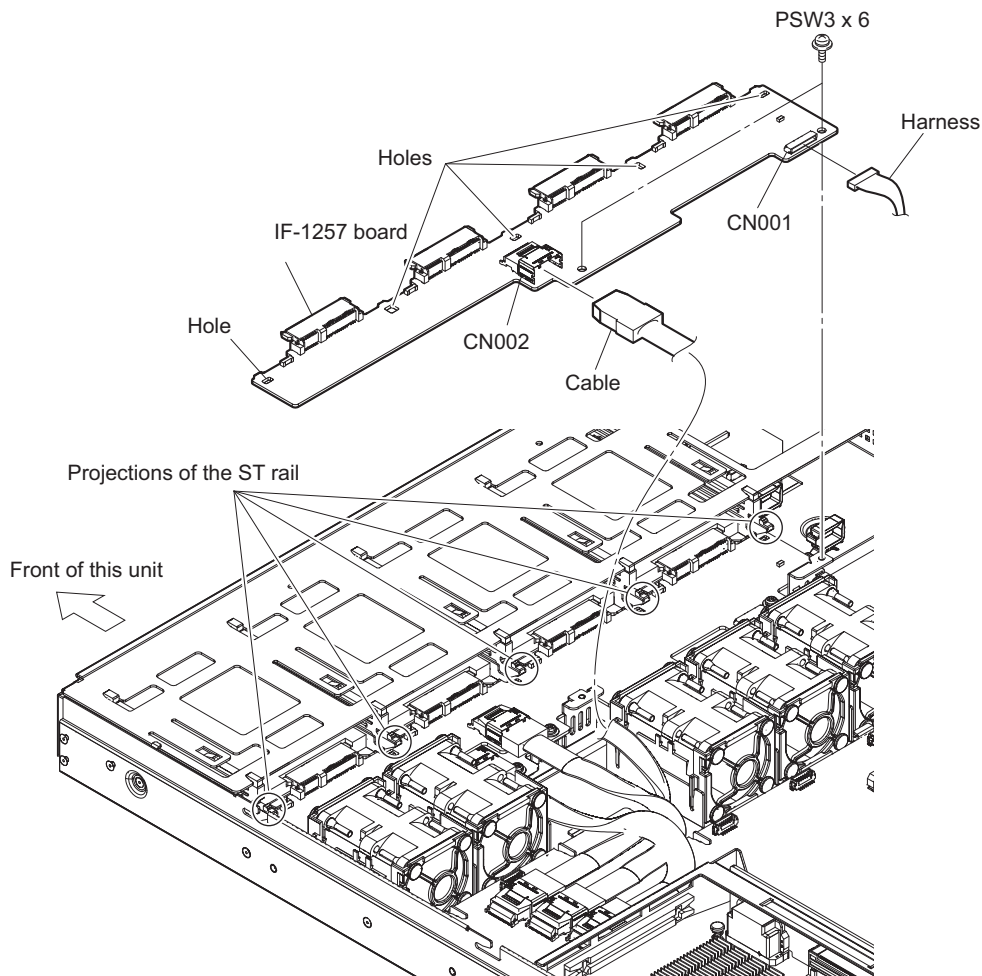
5-15. IF-1257 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)
3. Remove the duct (fan). (Refer to “5-13. Fan Assembly”.)
4. Remove the ST blank assemblies of slot No. 1 to 4. (Refer to “5-9. ST Blank Assembly”.)

Procedure

1. Disconnect the harness from the connector (CN001) on the IF-1257 board, then disconnect the cable from the connector (CN002) on the IF-1257 board.
2. Remove the two screws and detach the IF-1257 board.



Note

When attaching the IF-1257 board, align the five projections of the ST rail with the five holes of IF-1257 board.

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

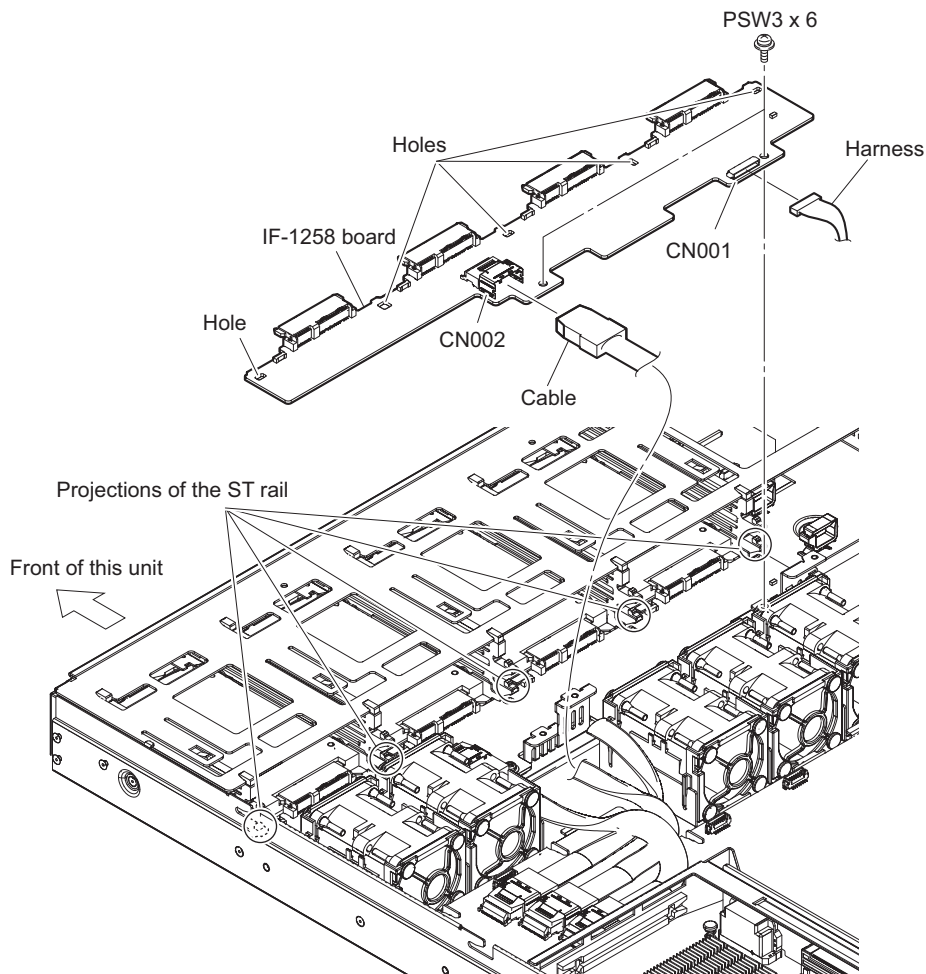
5-16. IF-1258 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)
3. Remove the duct (fan). (Refer to “5-13. Fan Assembly”.)
4. Remove the ST blank assemblies of slot No. 1 to 8. (Refer to “5-9. ST Blank Assembly”.)
5. Remove the IF-1257 board. (Refer to “5-15. IF-1257 Board”.)

Procedure

1. Disconnect the harness from the connector (CN001) on the IF-1258 board, then disconnect the cable from the connector (CN002) on the IF-1258 board.
2. Remove the two screws and detach the IF-1258 board.



Note

When attaching the IF-1258 board, align the five projections of the ST rail with the five holes of IF-1258 board.

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

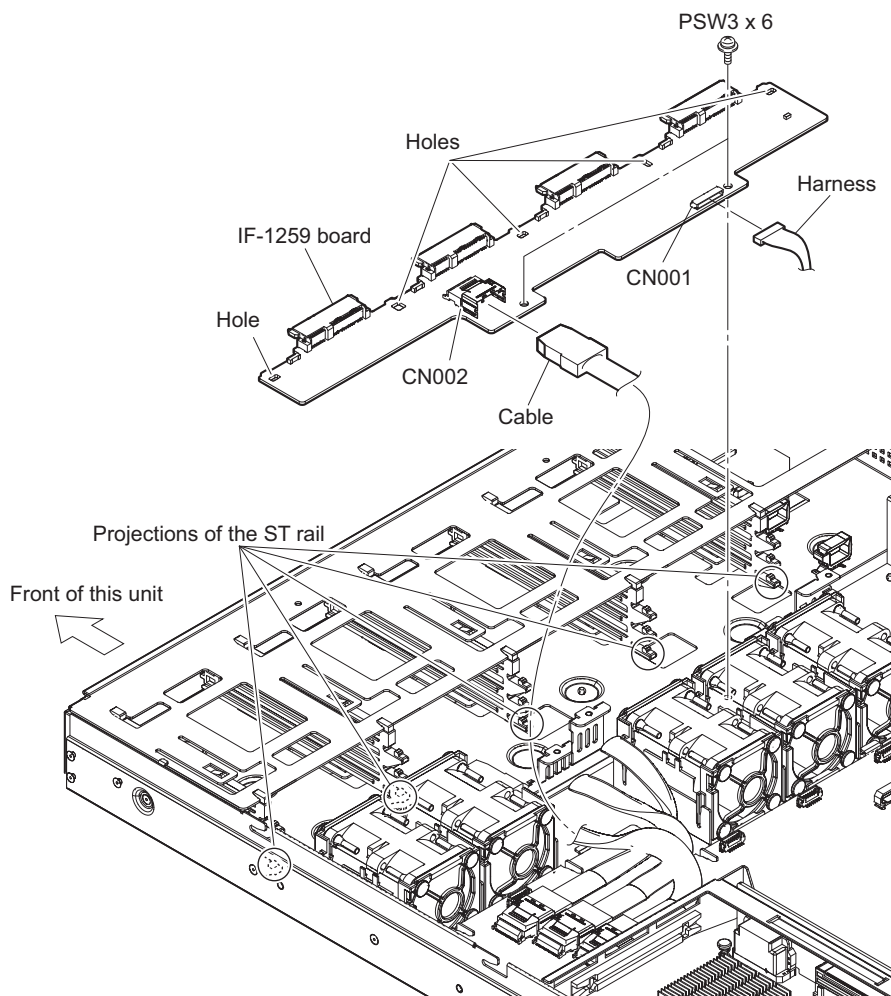
5-17. IF-1259 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the front panel assembly. (Refer to “5-5. Front Panel Assembly”.)
3. Remove the duct (fan). (Refer to “5-13. Fan Assembly”.)
4. Remove the ST blank assemblies of slot No. 1 to 12. (Refer to “5-9. ST Blank Assembly”.)
5. Remove the IF-1257 board. (Refer to “5-15. IF-1257 Board”.)
6. Remove the IF-1258 board. (Refer to “5-16. IF-1258 Board”.)

Procedure

1. Disconnect the harness from the connector (CN001) on the IF-1259 board, then disconnect the cable from the connector (CN002) on the IF-1259 board.
2. Remove the two screws and detach the IF-1259 board.



Note

When attaching the IF-1259 board, align the five projections of the ST rail with the five holes of IF-1259 board.

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

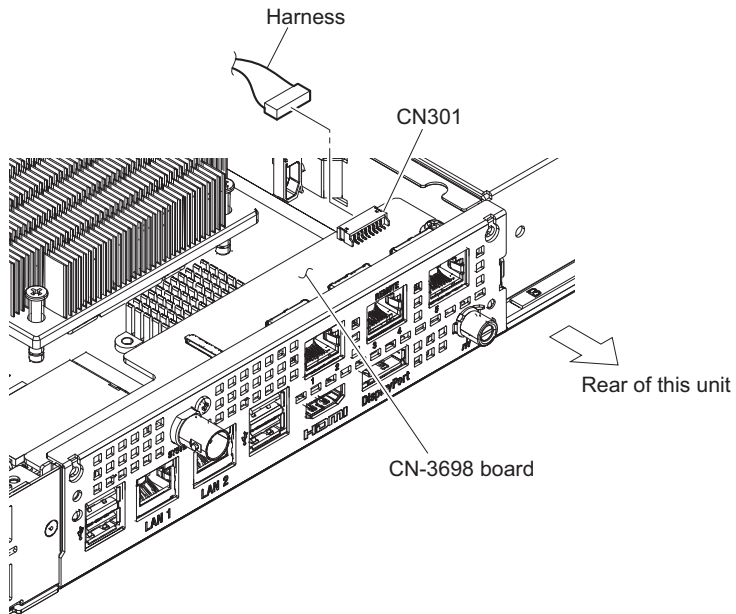
5-18. CN-3698 Board

Preparation

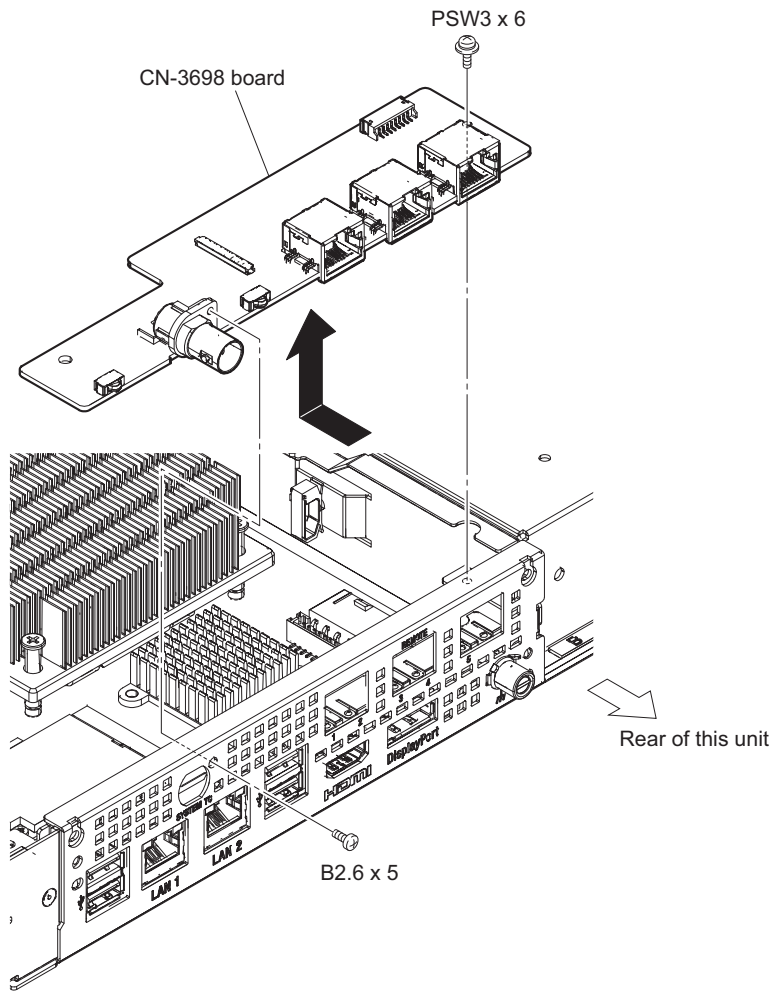
1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#).)

Procedure

1. Disconnect the harness from the connector (CN301) on the CN-3698 board.



2. Remove the screw (B2.6 x 5) and the screw (PSW3 x 6) to detach the CN-3698 board in the direction of the arrow.



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

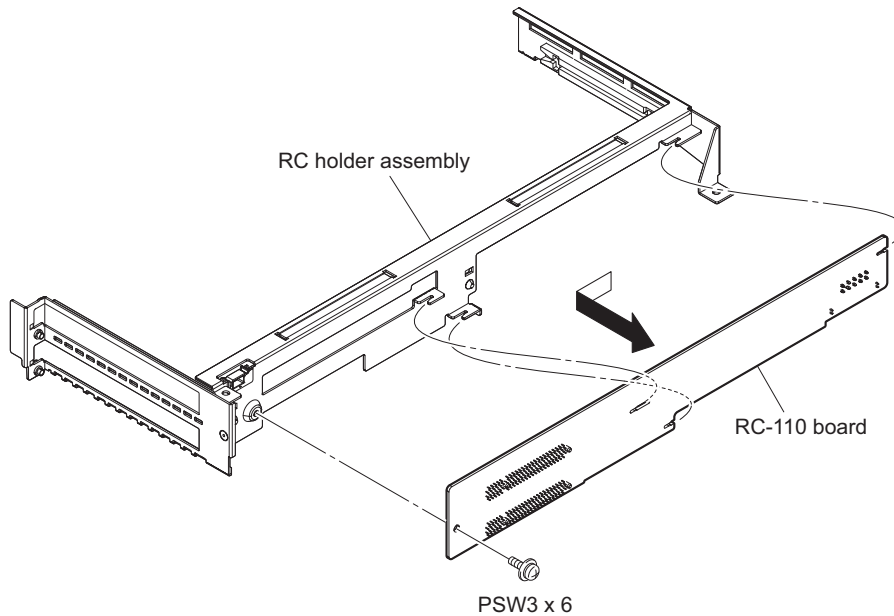
5-19. RC-110 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the HPR-48A board. (Refer to “5-12. HPR-48A Board”)

Procedure

1. Remove the screw to detach the RC-110 board in the direction of the arrow.



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

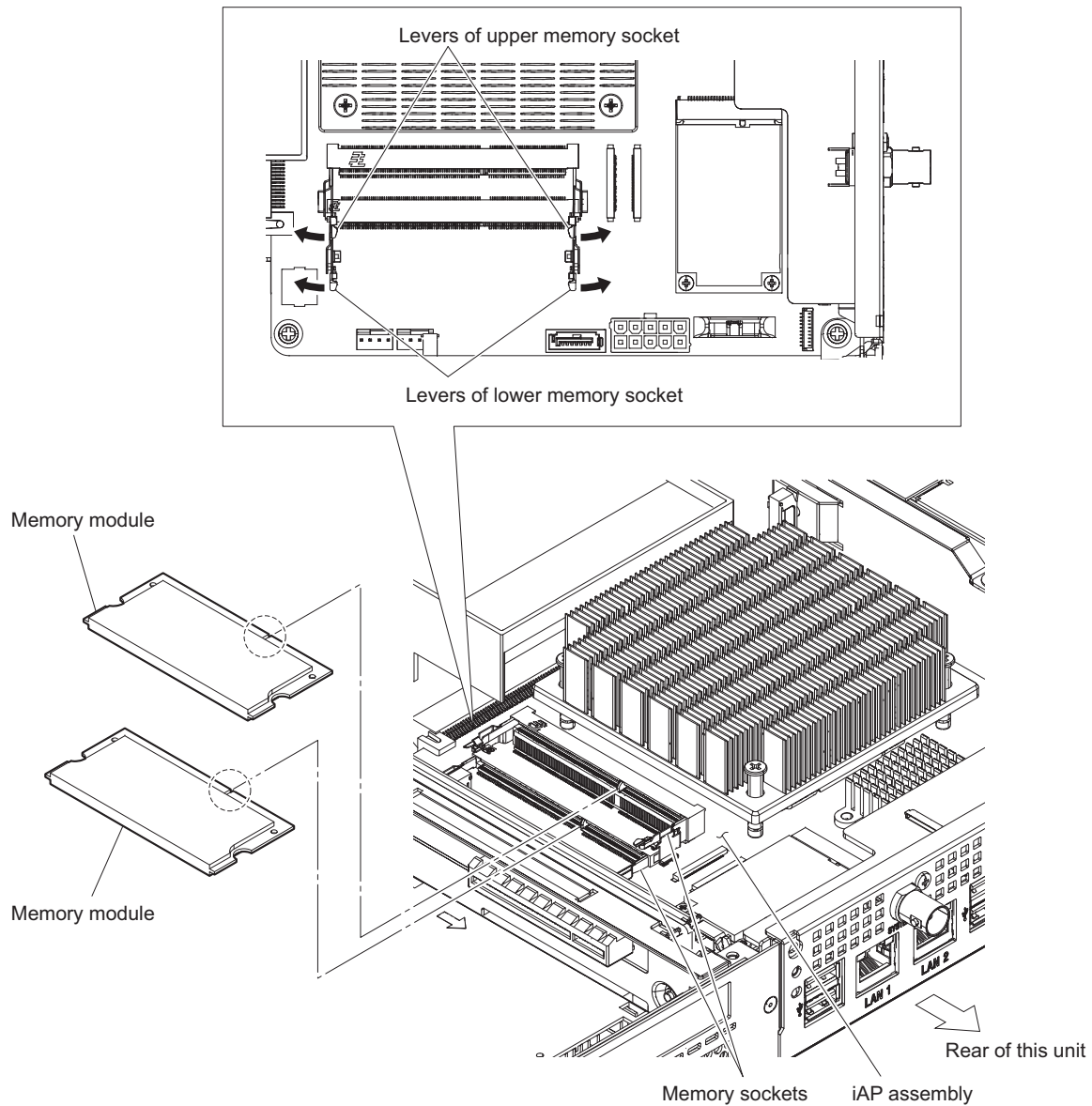
5-20. Memory Module (204pin SO-DIMM)

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)

Procedure

1. Pull the levers of the upper memory socket outward from the socket and remove the memory module.
2. Pull the levers of the lower memory socket outward from the socket and remove the memory module.



Note

Insert the memory modules securely into the memory sockets of the iAP assembly when installing them.

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

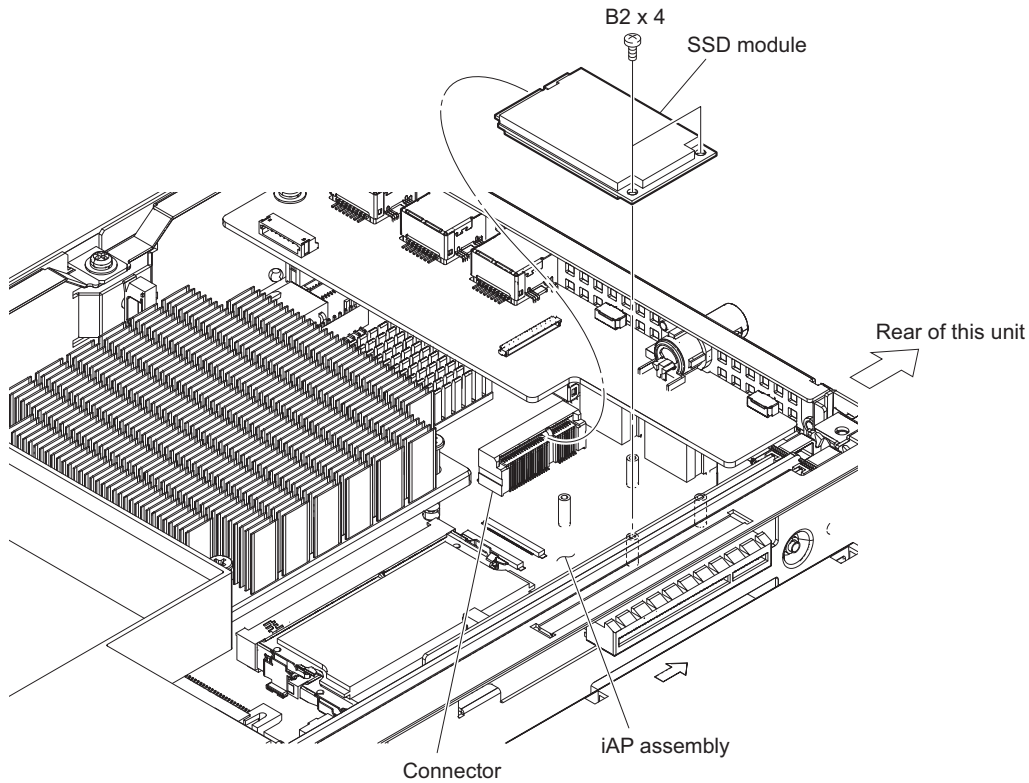
5-21. SSD Module (mSATA Assembly)

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)

Procedure

1. Remove two screws and then remove the SSD module from the connector of the iAP assembly.



Note

Insert the SSD module securely into the connector of the iAP assembly when installing it.

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

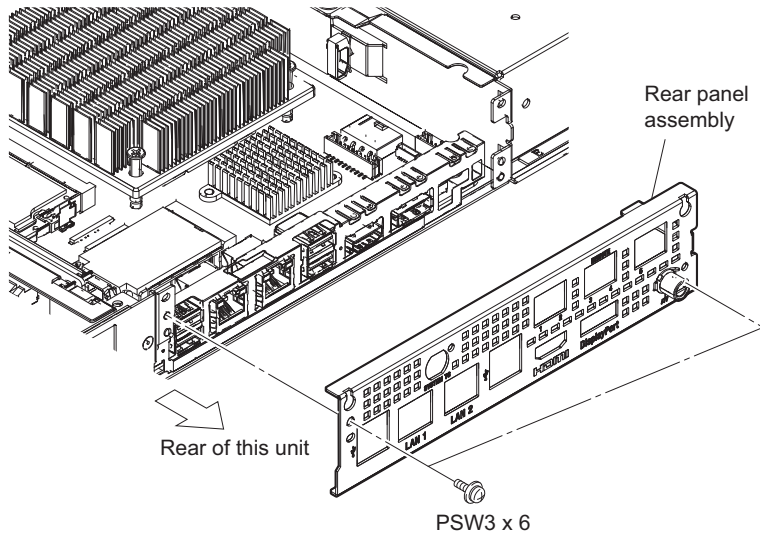
5-22. iAP Board Assembly

Preparation

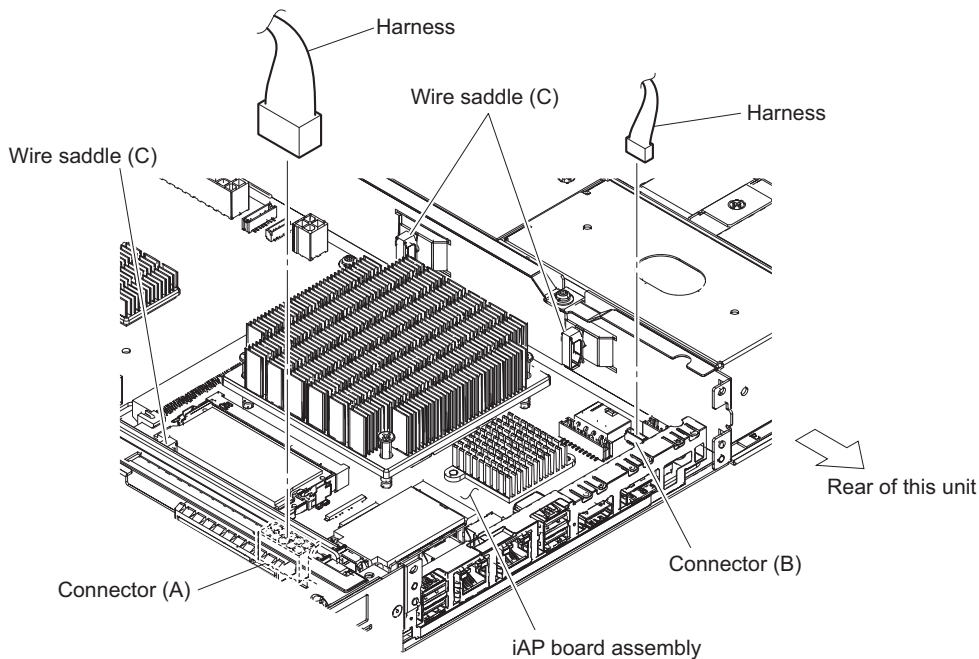
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the fan duct. (Refer to “5-13. Fan Assembly”.)
3. Remove the CN-3698 board. (Refer to “5-18. CN-3698 Board”.)

Procedure

1. Remove the two screws and then detach the rear panel assembly.

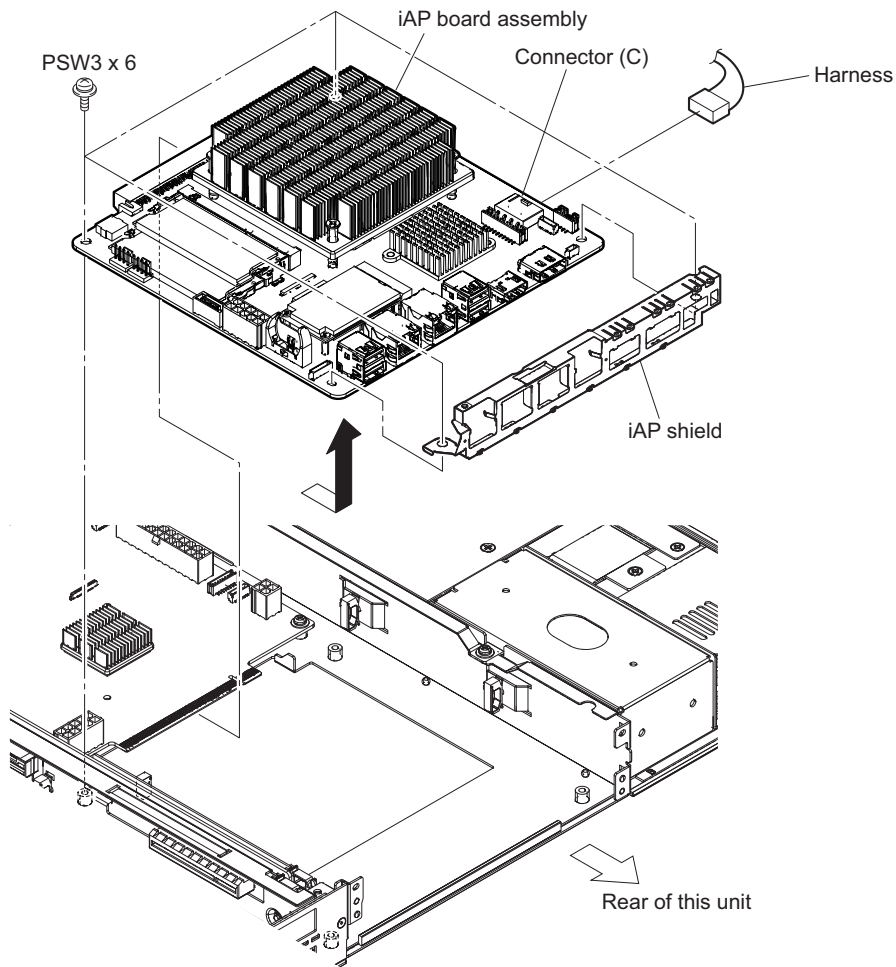


2. Open the three pieces of wire saddle (C) and disconnect the two harnesses from the connector (A) and the connector (B) of the iAP board assembly.



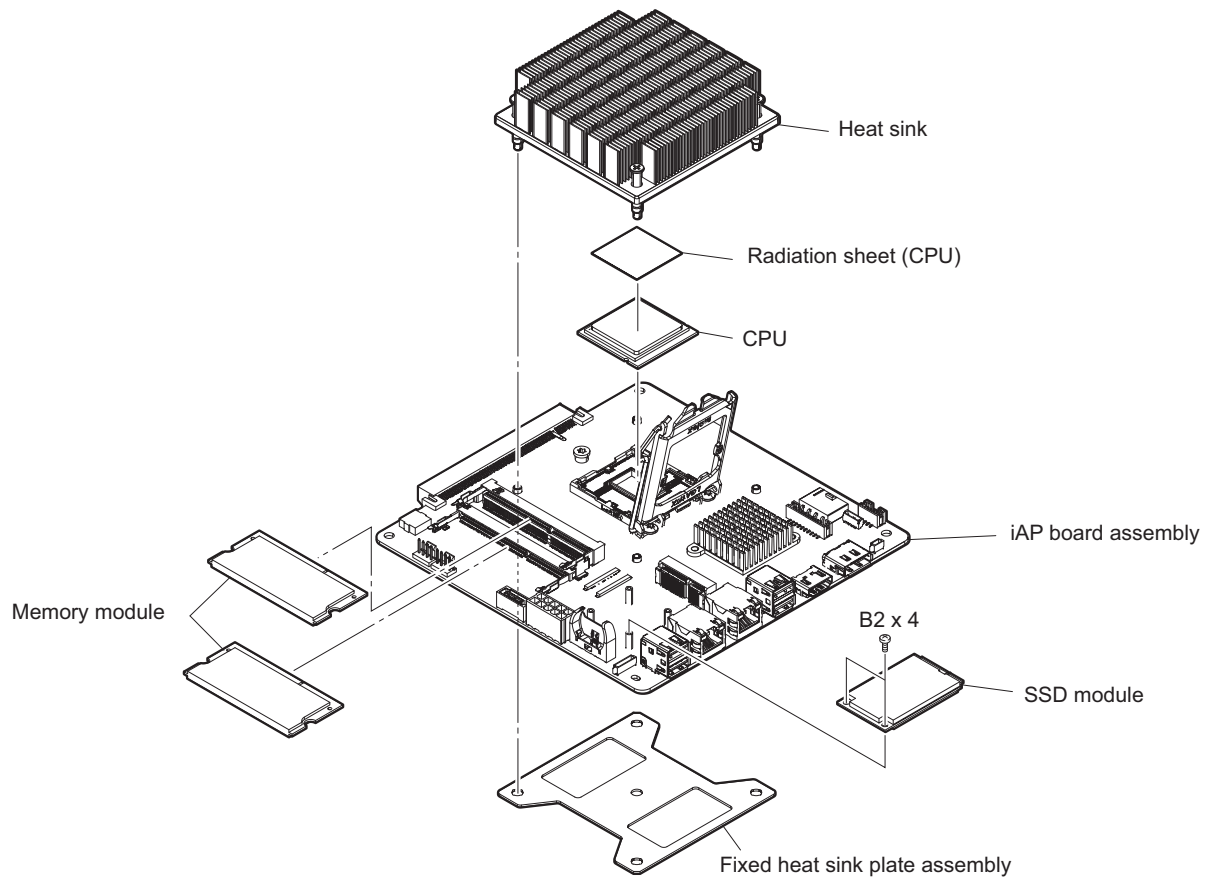
3. Remove the four screws and detach the iAP board assembly in the direction indicated of the arrow.
4. Disconnect the harness from the connector (C) of the iAP board assembly.

5. Remove the iAP shield.



6. Remove the heat sink, the fixed heat sink plate assembly, the radiation sheet (CPU), and the CPU. (Refer to [“5-23. CPU”](#).)
7. Remove the two memory modules. (Refer to [“5-20. Memory Module \(204pin SO-DIMM\)”](#).)

8. Remove the SSD module. (Refer to “5-21. SSD Module (mSATA Assembly)”.)



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

5-23. CPU

Note

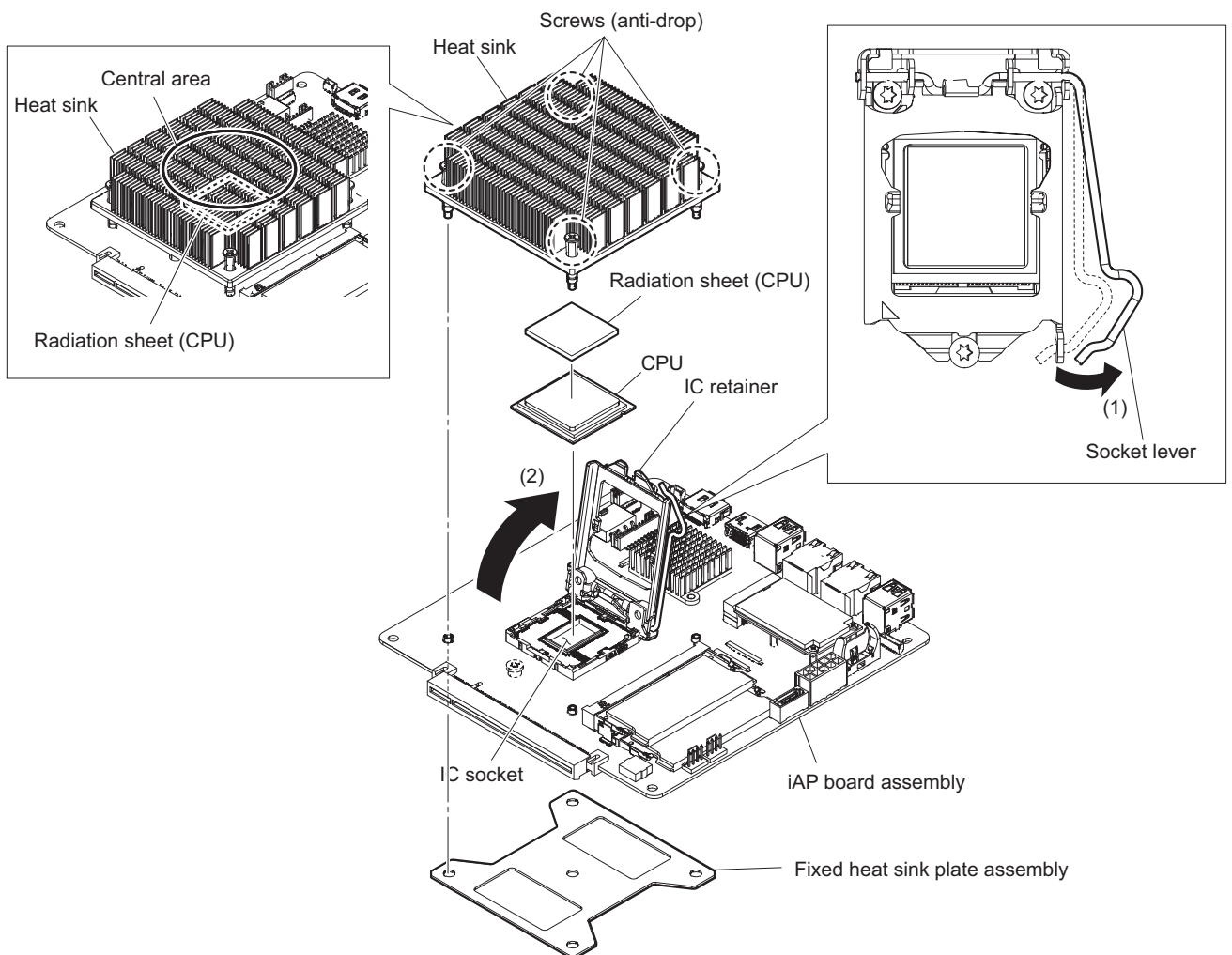
- The radiation sheet (CPU) may have cured and adhered to the heat sink. In that case, heat the central area of the heat sink to 50 to 60°C with a hair drier to soften the radiation sheet (CPU).
- The radiation sheet (CPU) is not reusable. Prepare new parts in advance.

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the fan duct. (Refer to “5-13. Fan Assembly”.)
3. Remove the CN-3698 board. (Refer to “5-18. CN-3698 Board”.)
4. Remove the iAP board assembly. (Refer to “5-22. iAP Board Assembly”.)

Removing CPU

1. Loosen the four screws (anti-drop).
2. Heat the central area of the heat sink to 50 to 60°C with a hair drier to soften the radiation sheet (CPU).
3. Remove the heat sink and the fixed heat sink plate assembly.
4. Remove the radiation sheet (CPU).
5. Release the lock of the socket lever in the direction of the arrow (1), then open the IC retainer in the direction of the arrow (2).
6. Remove the CPU from the IC socket.

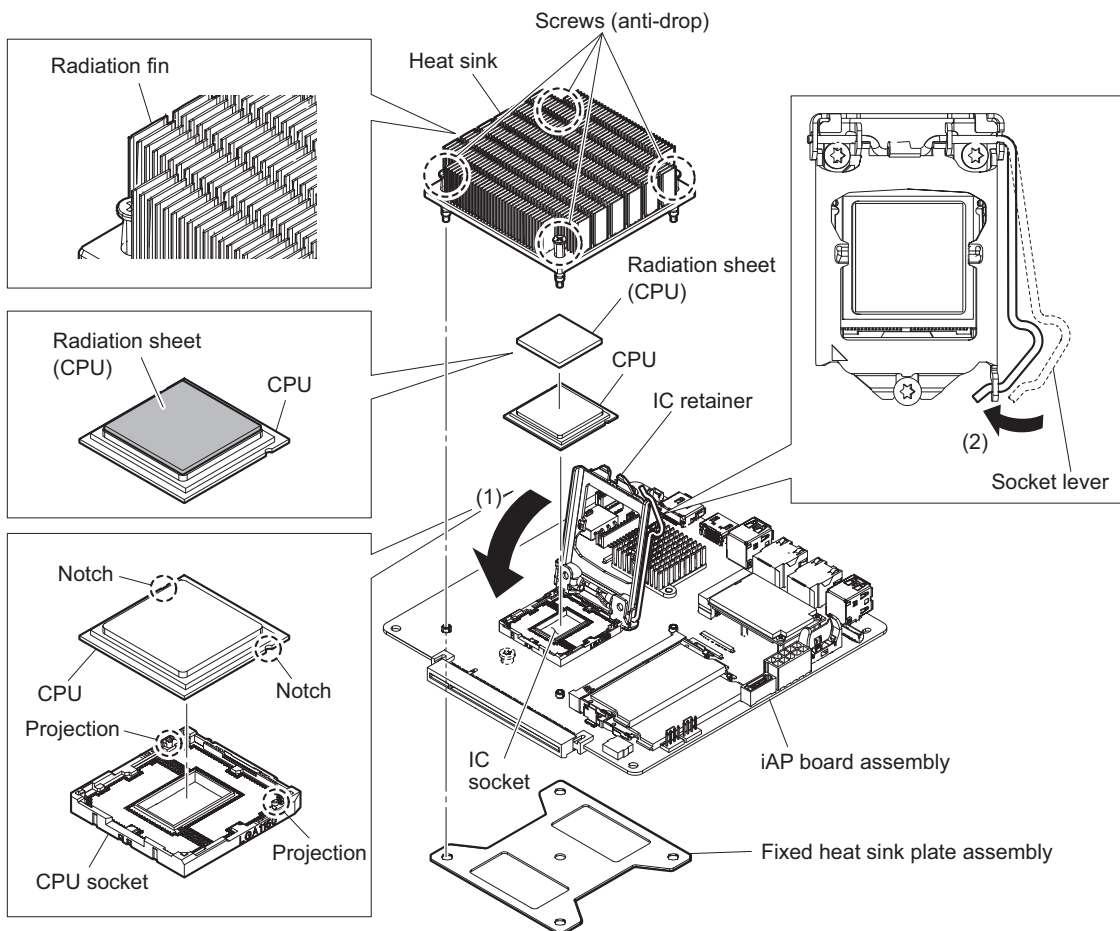


Installing CPU

7. Install the CPU to the IC socket.
8. Close the IC retainer in the direction of the arrow (1), then lock the socket lever in the direction of the arrow (2).
9. Attach the radiation sheet (CPU) to the CPU.
10. Install the heat sink and the fixed heat sink plate assembly with four screws (anti-drop).

Note

- When installing the CPU, align the projections of the CPU socket with the notches of CPU.
- When attaching the radiation sheet (CPU), note that the radiation sheet (CPU) stays within the CPU.
- Install the heatsink with its radiation fin directed as shown in the figure below.



11. Assemble this unit by reversing the steps of "Preparation".

5-24. MB-1204 Board

Preparation

1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the HPR-48A board. (Refer to “5-12. HPR-48A Board”)
3. Remove the CN-3698 board. (Refer to “5-18. CN-3698 Board”)
4. Remove the iAP board assembly. (Refer to “5-22. iAP Board Assembly”)

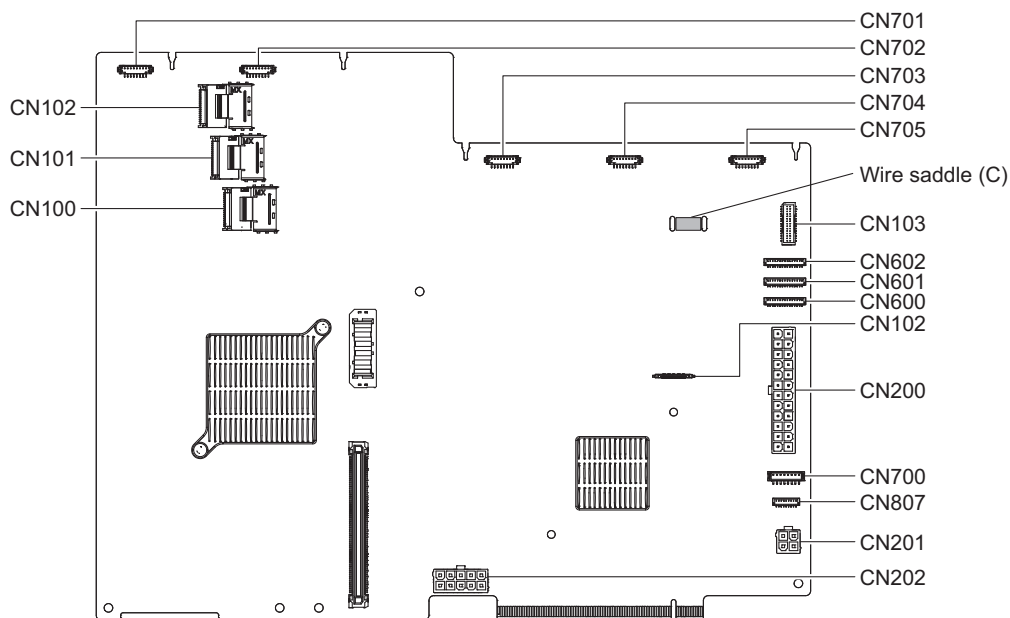
Procedure

1. Open the wire saddle (C) and disconnect the fine-wire coaxial cable from the connector (CN102) on the MB-1204 board.

Note

Hold the connector block between your fingers when pulling out the fine-wire coaxial cable.

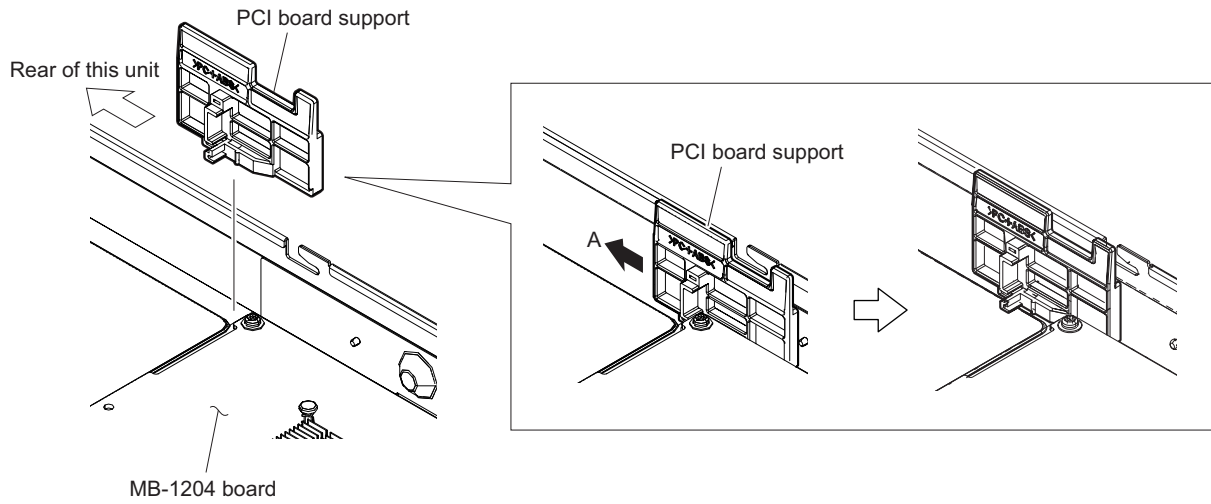
2. Disconnect all harnesses connected to the MB-1204 board.



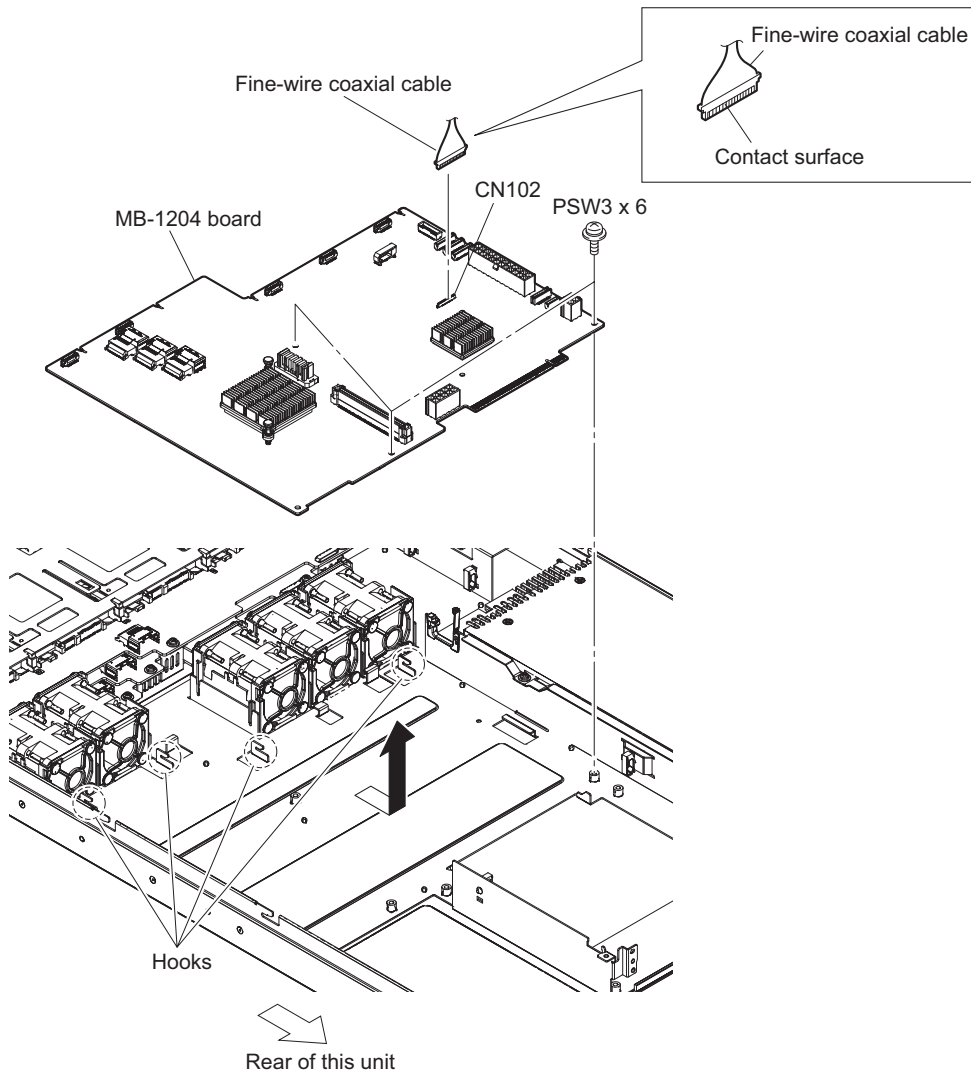
3. Slide the PCI board support in the direction of the arrow A, and then remove the PCI board support.

Note

- The PCI board support is not installed in the unit within the serial number range of 120001 to 120005.
- The PCI board support is hard to slide because it is locked tightly enough not to disengage by vibration.



4. Remove the three screws and release the four hooks, then remove the MB-1204 board in the direction of the arrow.



Note

Install the fine-wire coaxial cable in the direction shown in the figure when installing the cable.

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

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

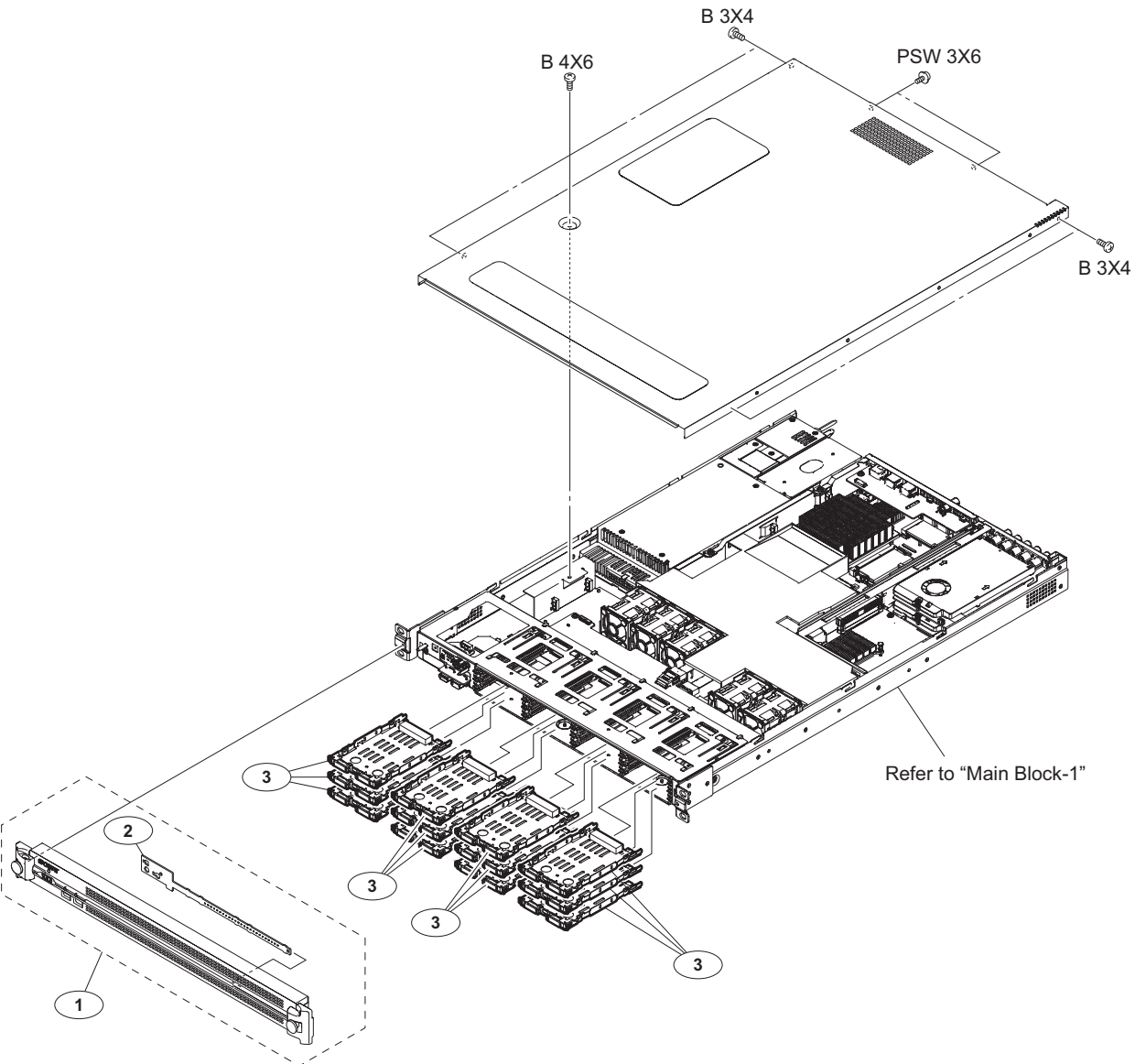
部品表の SP (Supply code) 欄に “o” で示される部品は在庫していないことがあります。納期が長くなる場合があります。

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。

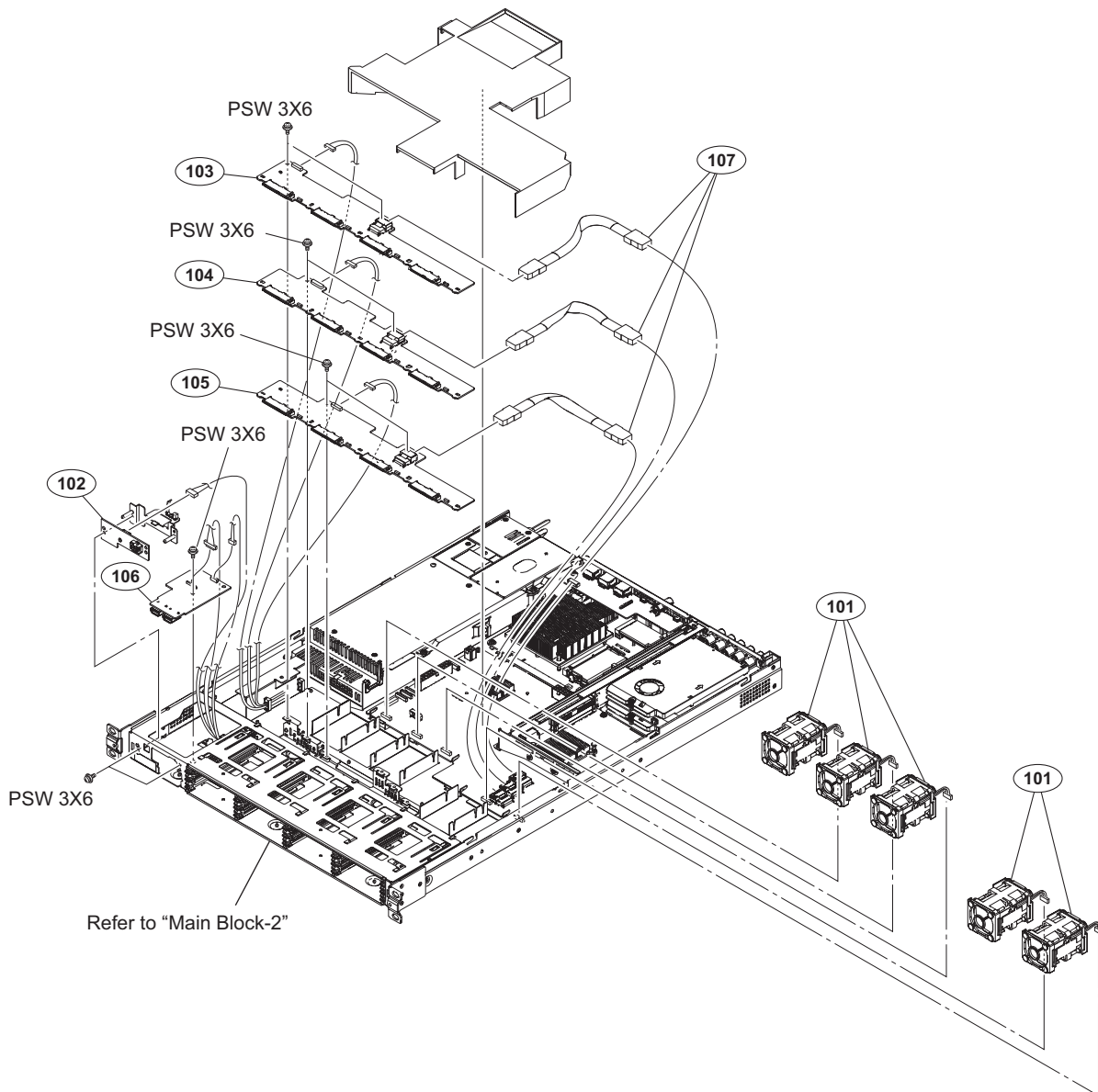
6-2. Exploded Views

Overall



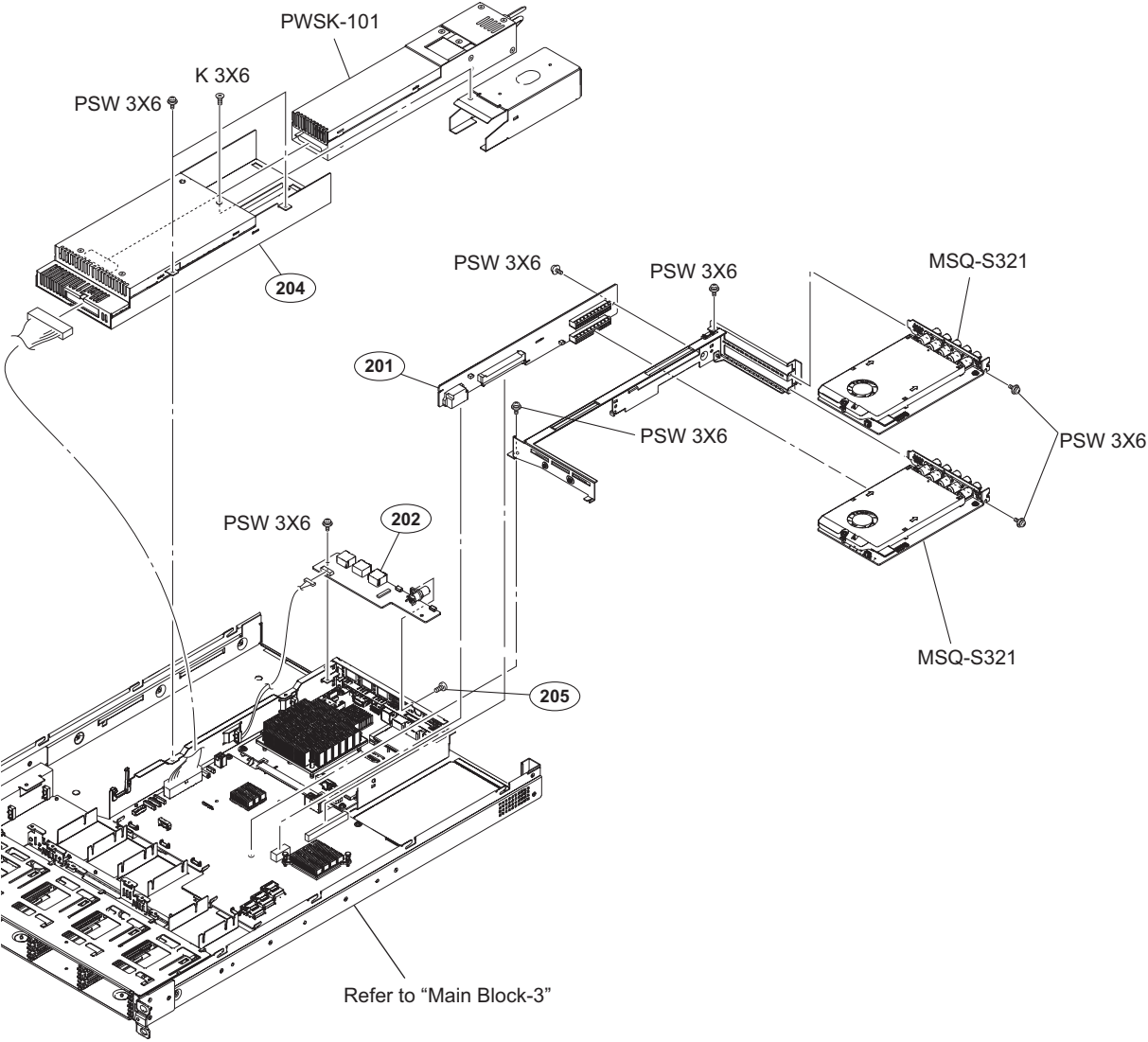
No.	Part No.	SP Description
1	A-1990-555-A s	FRONT PANEL ASSY (for SY)
	A-2064-210-A s	PANEL ASSY (CN), FRONT (for CN)
2	A-2040-582-A s	MOUNTED CIRCUIT BOARD, LED-527
3	A-2061-305-A s	ST BLANK ASSY
	7-682-545-09 s	SCREW +B 3X4
	7-682-560-09 s	SCREW +B 4X6
	7-682-947-09 s	SCREW +PSW 3X6

Main Block-1



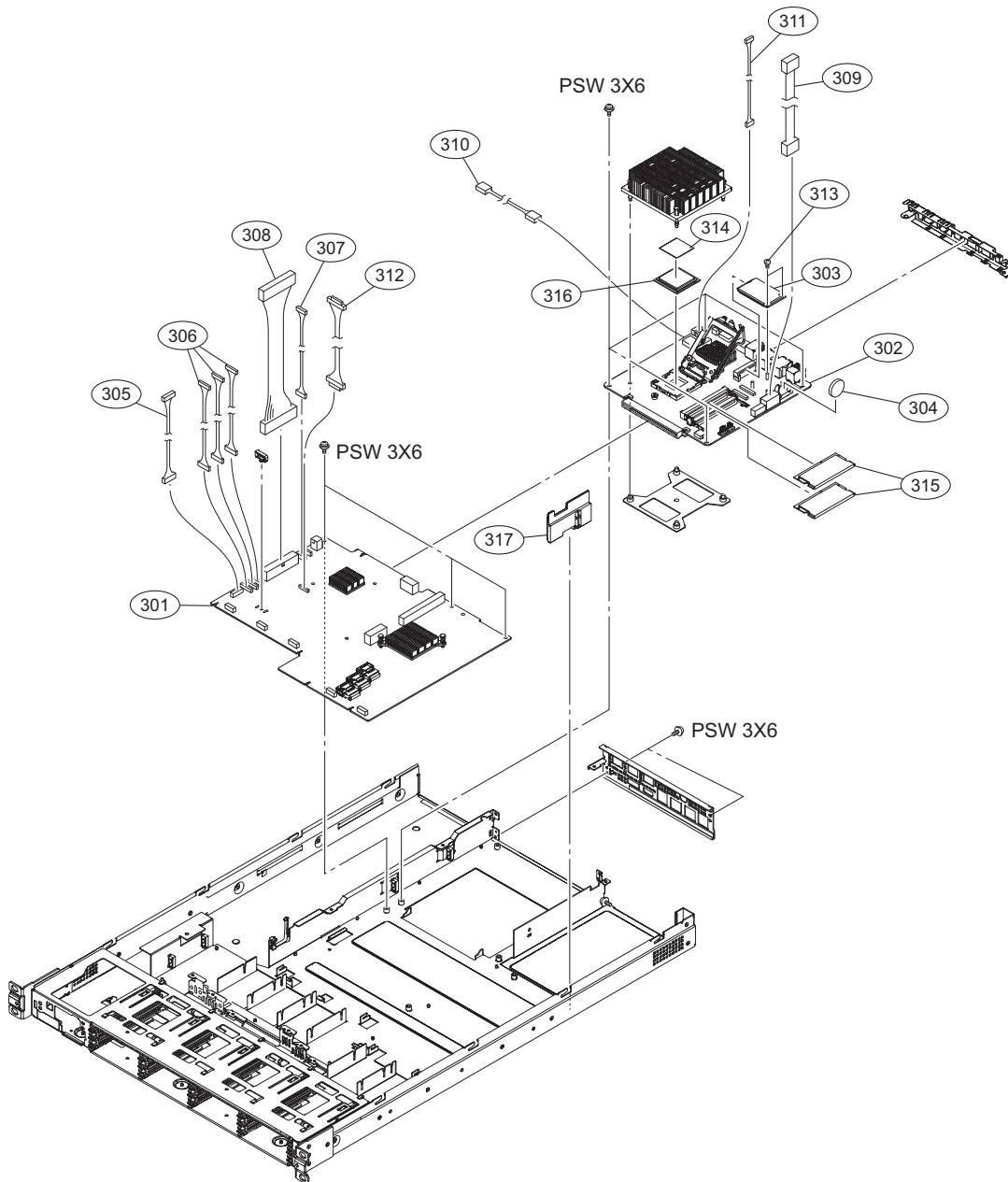
No.	Part No.	SP Description
101	A-1998-530-A s	FAN ASSY
102	A-2040-583-A s	MOUNTED CIRCUIT BOARD, SW-1627
103	A-2040-585-A s	MOUNTED CIRCUIT BOARD, IF-1257
104	A-2040-586-A s	MOUNTED CIRCUIT BOARD, IF-1258
105	A-2040-587-A s	MOUNTED CIRCUIT BOARD, IF-1259
106	A-2040-588-A s	MOUNTED CIRCUIT BOARD, DIO-98
107	1-848-266-11 s	CABLE, MINI SAS
	7-682-947-01 s	SCREW +PSW 3X6

Main Block-2



No.	Part No.	SP Description
201	A-2040-584-A s	MOUNTED CIRCUIT BOARD, RC-110
202	A-2040-589-A s	MOUNTED CIRCUIT BOARD, CN-3698
204	 1-474-591-12 s	OPTION
205	2-655-586-01 s	SCREW +B M2.6 EG
	7-682-247-04 s	SCREW +K 3X6
	7-682-947-01 s	SCREW +PSW 3X6

Main Block-3



No.	Part No.	SP Description	No.	Part No.	SP Description
301	A-2040-590-A s	MOUNTED CIRCUIT BOARD, MB-1204	317	4-546-058-02 s	SUPPORT, PCI BOARD
302	A-2047-105-A s	IAP BOARD (PWS-100) RP ASSY			
303	A-2054-926-A s	MSATA (PR1) ASSY (RP)			
304	1-528-174-33 s	BATTERY, LITHIUM (CR2032 TYPE)		7-682-947-01 s	SCREW +PSW 3X6
305	1-970-059-11 s	HARNESS, SUB (MB-SW/DIO)			
306	1-970-061-11 s	HARNESS, SUB (MB-IF)			
307	1-970-063-11 s	HARNESS, SUB (MB-CN)			
308	⚠ 1-970-064-11 s	HARNESS, SUB (MB-POWER)			
309	1-970-065-11 s	HARNESS, SUB (MB-IAP PW)			
310	1-970-066-11 s	HARNESS, SUB (MB-IAP CPU PW)			
311	1-970-067-11 s	HARNESS, SUB (MB-IAP CTL)			
312	1-970-161-11 s	WIRE, CONNECTOR WITH LEAD			
313	3-729-076-11 s	SCREW (+B) (2X4)			
314	4-473-456-01 s	SHEET (CPU), RADIATION			
315	6-720-473-01 s	IC HMT451S6AFR8A-PBNO			
316	6-721-446-01 s	IC CM8063701211600S-R0PK			

6-3. Supplied Accessories

Q'ty	Part No.	SP Description
1pc	△ 1-833-005-31	s AC POWER-SUPPLY CORD (Supplied for CN)
1pc	△ 4-540-892-01	s MANUAL, OPERATION

Overall

