

SONY®

MEDIA GATEWAY STATION

PWS-100MG1

OPTIONAL POWER SUPPLY

PWSK-101

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

SERVICE MANUAL

1st Edition (Revised 3)

警告

このマニュアルは、サービス専用です。

お客様が、このマニュアルに記載された設置や保守、点検、修理などを行うと感電や火災、人身事故につながる可能性があります。

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-100MG1 (SY)	110001 and Higher
PWS-100MG1 (CN)	510001 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

: LAN (10GBASE-T) 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

: LAN (10GBASE-T) 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 hävittämisesssä 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.

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Manual Structure

Purpose of this manual

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

This manual is applied to Media Gateway Station PWS-100MG1. A product name of PWS-100MG1 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.

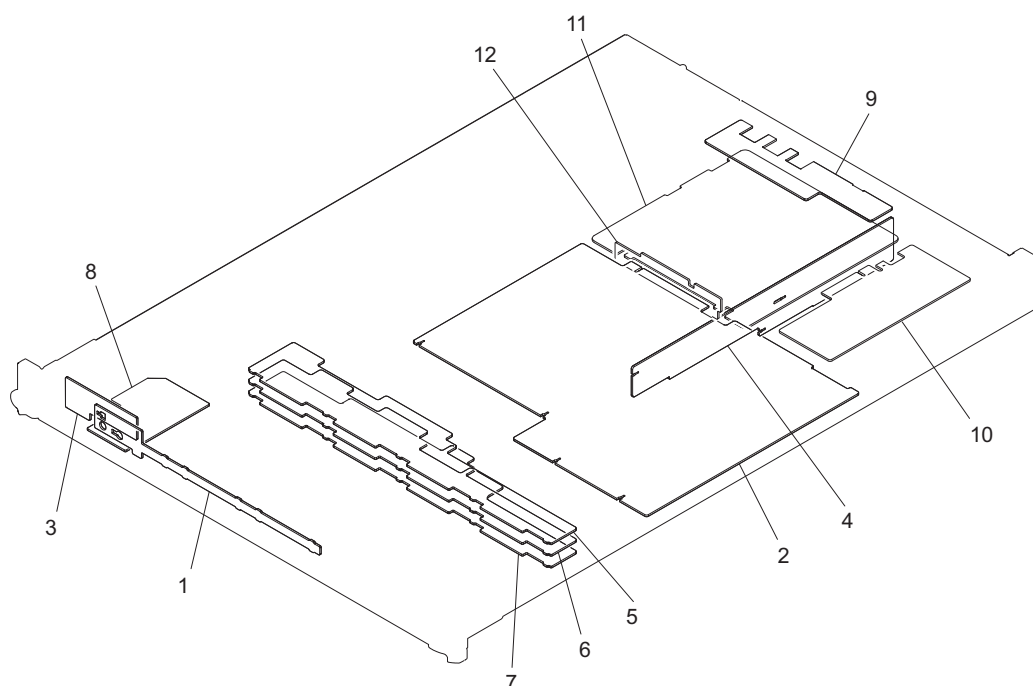
- Windows is a registered trademark or a trademark of Microsoft Corporation in the United States and other countries.
- Google Chrome™ is a trademark of Google Inc.
- The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing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

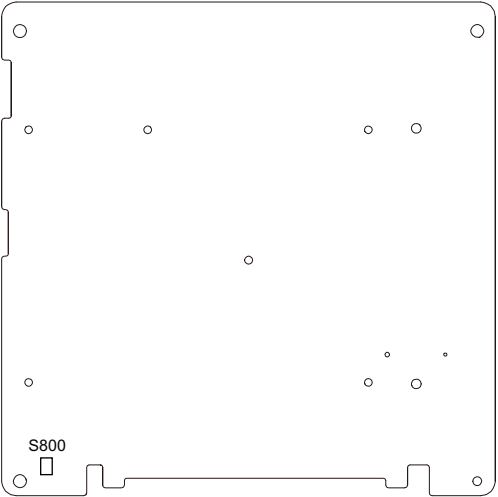


Location No.	Board Name	Circuit Function
1	LED-527	Front Panel LED
2	MB-1204	PCIe Switch, Storage Block
3	SW-1627	Power SW Panel
4	RC-110	PCI Express Riser Card
5	IF-1257	HDD (SATA) Interface
6	IF-1258	HDD (SATA) Interface
7	IF-1259	HDD (SATA) Interface
8	DIO-98	USB3.0 Output
9	CN-3698	Rear Connector
10	Network card	Network Interface Card
11	IF-1330 (iAP-005 board-equipped unit)	CPU Board Interface
12	CN-3934 (iAP-005 board-equipped unit)	Internal Connector

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

1-2-1. Onboard Switch Settings

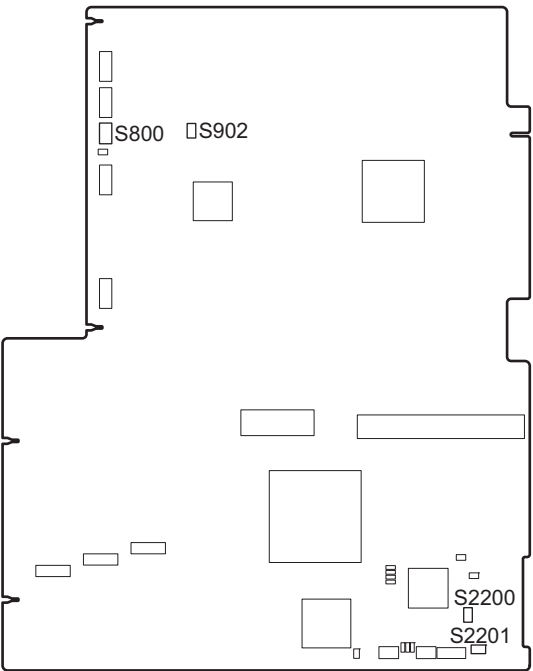
IF-1330 Board



IF-1330 board (side A)

Ref. No.	Bit	Name	Description	Factory Setting
S800	-	POWER	Factory use	-

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

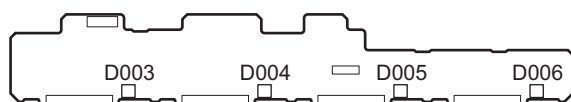
IF-1257 Board



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				

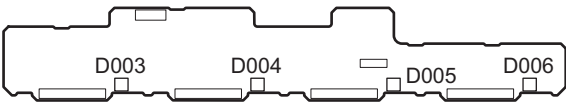
IF-1258 Board



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				

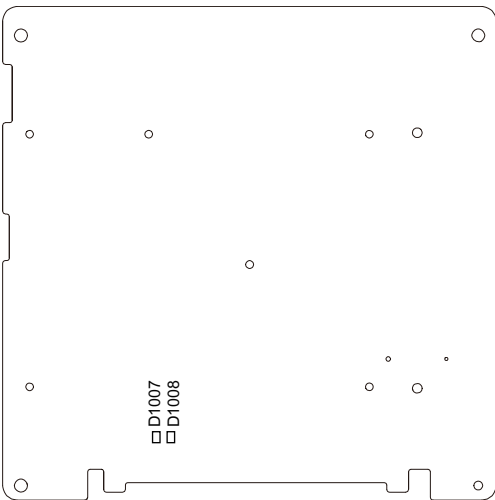
IF-1259 Board



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				

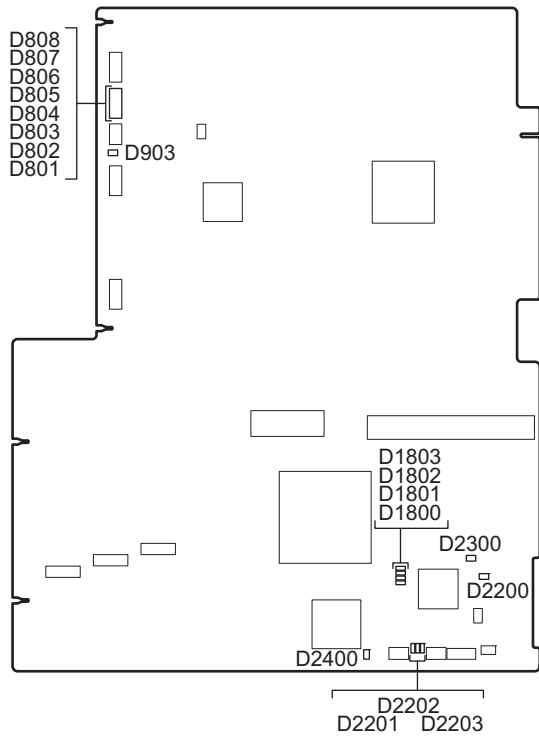
IF-1330 Board



IF-1330 board (side A)

Ref. No.	Name	Color	Description	Normal State (Power On)
D1006	3.3 V power supply indicator	Yellow green	Lights when the 3.3 V power is on.	Lit
D1007	3.3 VSB power supply indicator	Yellow green	Lights when the 3.3 VSB power is on.	Lit

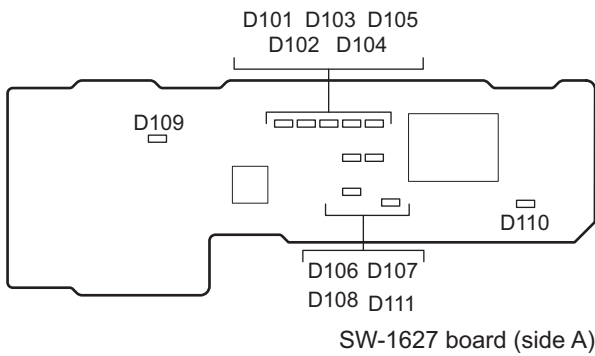
MB-1204 Board



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

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 right 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

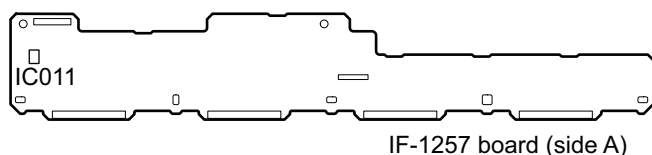
Continued

^{*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.

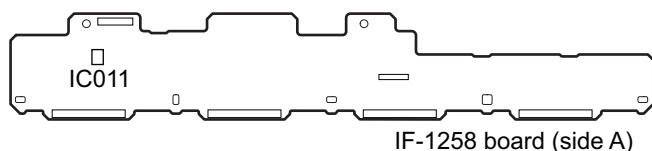
1-2-3. Functions of Onboard Sensors

IF-1257 Board



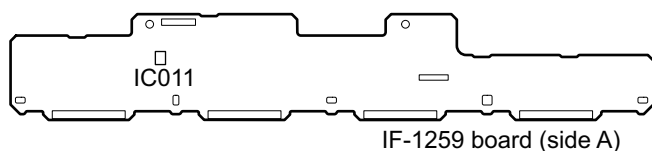
Board Name	Ref. No.	Function
IF-1257	IC011	Temperature sensor

IF-1258 Board



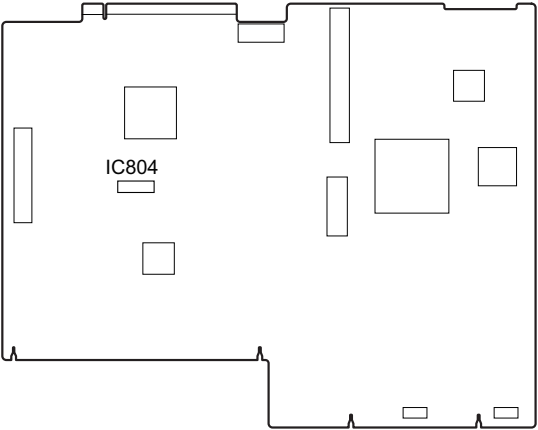
Board Name	Ref. No.	Function
IF-1258	IC011	Temperature sensor

IF-1259 Board

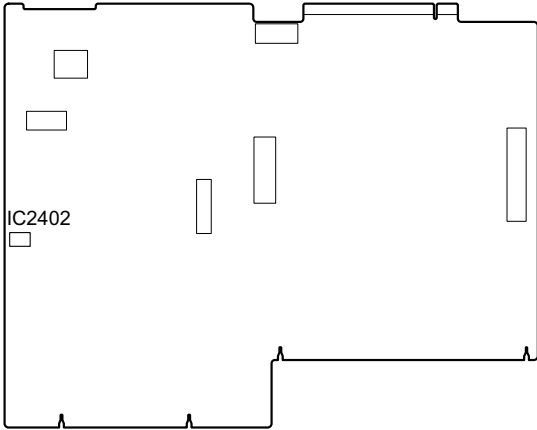


Board Name	Ref. No.	Function
IF-1259	IC011	Temperature sensor

MB-1204 Board



MB-1204 board (side A)



MB-1204 board (side B)

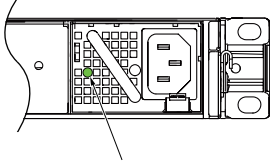
Board Name	Ref. No.	Function
MB-1204	IC804	Temperature sensor
	IC2402	Temperature sensor

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 and the built-in storage (RAID_PKG).

- Media Gateway Software PWA-MGW1
- 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, 1GB or more recommended)

Required file

- Data file for update (Installation package)
- PWA-MGW1 Installer package

Note

- To obtain the latest data file for update (Installation package), contact your local Sony Sales Office/Service Center.
- You may be asked for an install key during the installation of PWA-MGW1. The install key is stored in the following folder.

C:\ProgramData\Sony\Media Gateway\

InstallKey.txt: Install key required to activate the Media Gateway application

OptionKey.txt: Option key required to use an optional function such as PWA-MGW1A

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”](#).)

- When the PWA-MGW1A is used on this unit, you may need an option key to activate the PWA-MGW1A. If the option key is needed, 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 Display Port or the HDMI connector.
3. Copy the data file for update (Installation package) to the USB flash memory.

Note

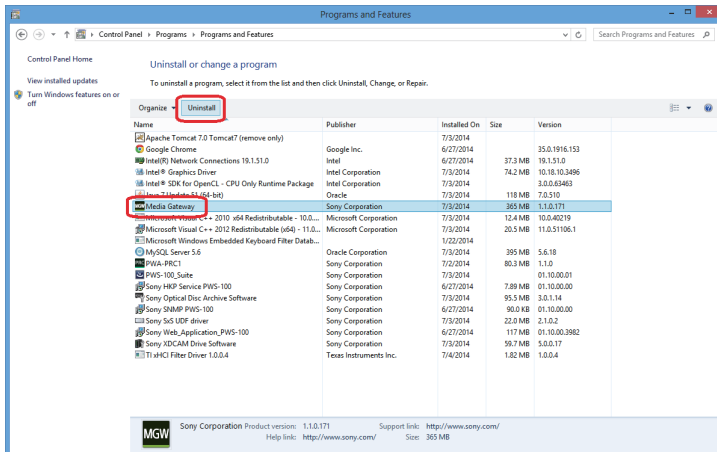
When updating an application software program, uninstall the previously installed software program and then install the new-version software program.

1-4-1. Uninstallation of Application Software Programs

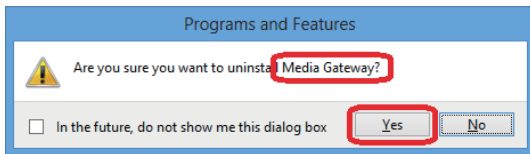
Uninstalling Media Gateway

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].

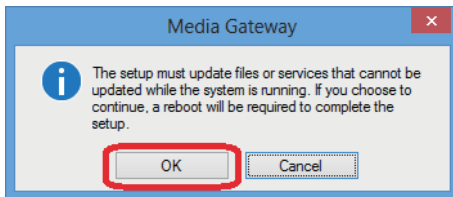
3. On the [Programs and Features] window, select the [Media Gateway] and then click [Uninstall].



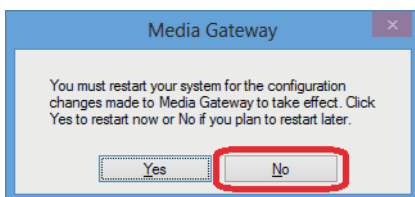
4. Check that [Media Gateway] is displayed and then click [Yes].



5. A confirmation window promoting Reboot is displayed. Click [OK].



6. Restart confirmation window is displayed. Click [No].

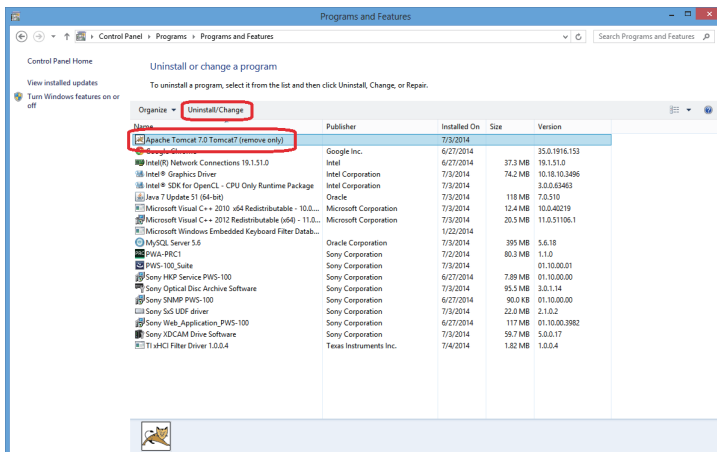


7. Move the mouse cursor to the bottom right corner of the screen to display the charm bar, and select the Settings > Power > Shutdown.

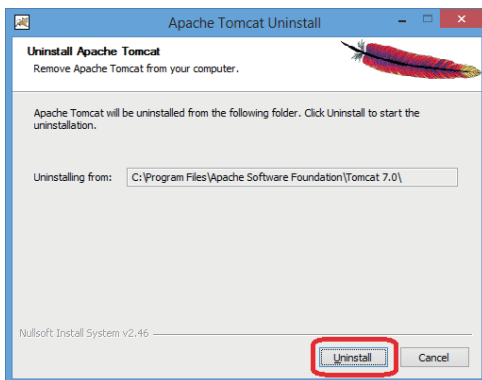
Uninstalling Tomcat

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].

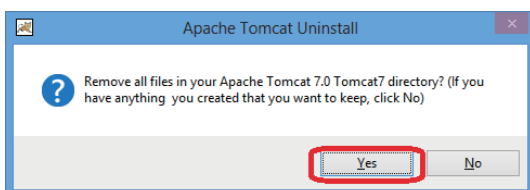
3. On the [Programs and Features] window, select [Apache Tomcat 7.0 Tomcat7 (remove only)] and then click [Uninstall/Change].



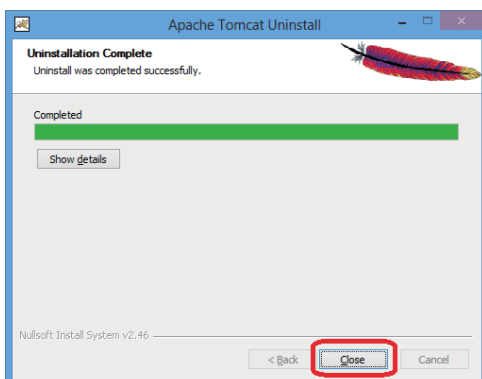
4. Apache Tomcat Uninstall window is displayed. Click [Uninstall].



5. A delete confirmation dialog box for tomcat directory is displayed. Click [Yes].

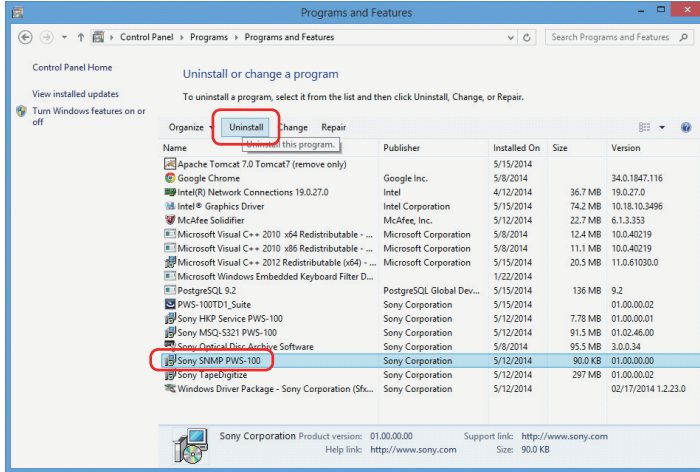


6. Uninstallation Complete window is displayed. Click [Close].

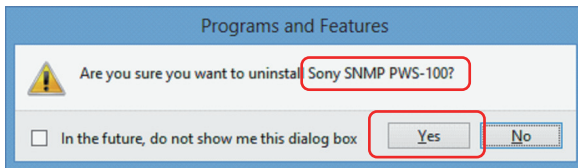


Uninstalling Sony SNMP PWS-100

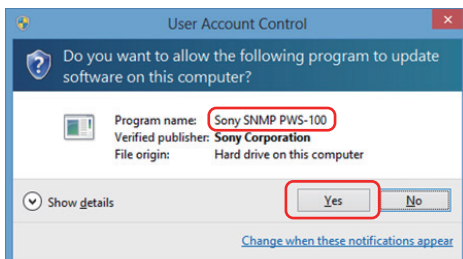
1. Hold down the [Windows] button and press the [X] key on the keyboard.
2. From the displayed Quick Access menu, select [Programs and Features].
3. On the [Programs and Features] screen, select [Sony SNMP PWS-100] and then click [Uninstall].



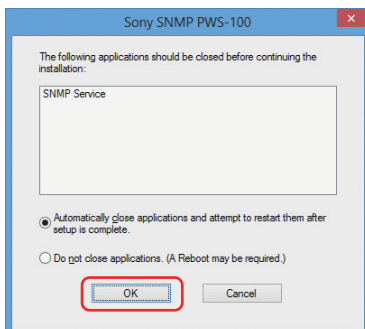
4. Check that [Sony SNMP PWS-100] is displayed and then click [Yes].



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

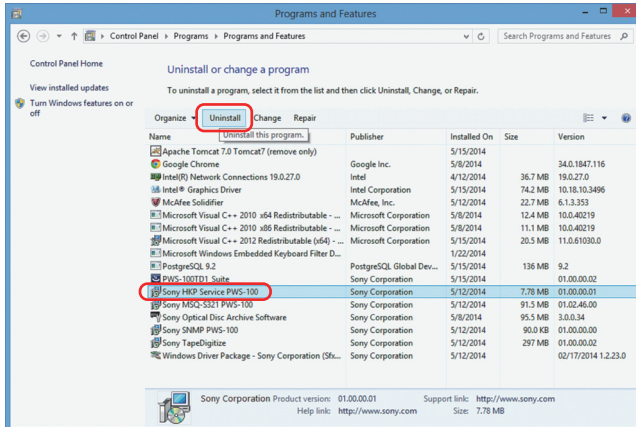


6. Pop Up window is displayed and then click [OK].

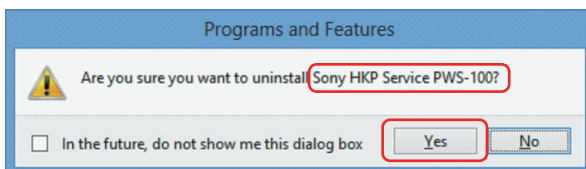


Uninstalling Sony HKP Service PWS-100

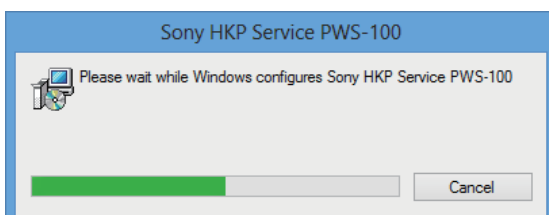
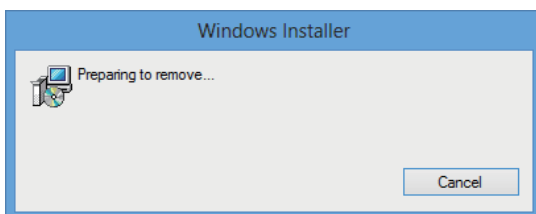
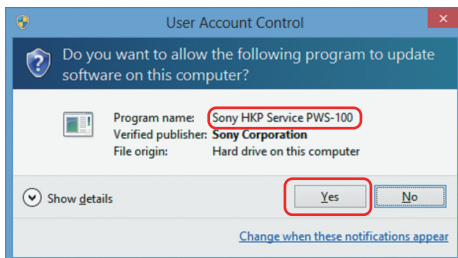
1. Hold down the [Windows] button and press the [X] key on the keyboard.
2. From the displayed Quick Access menu, select [Programs and Features].
3. On the [Programs and Features] screen, select [Sony HKP Service PWS-100] and then click [Uninstall].



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

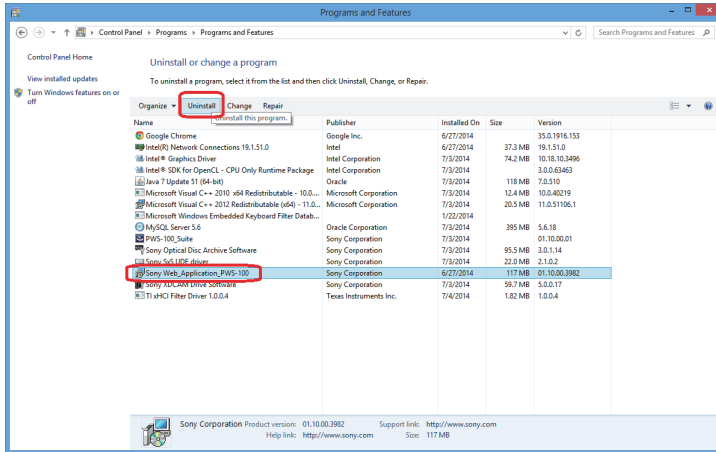


5. User Account Control dialog box is displayed.
Check that [Sony HKP Service PWS-100] is displayed.
Click [Yes] to start the uninstallation.

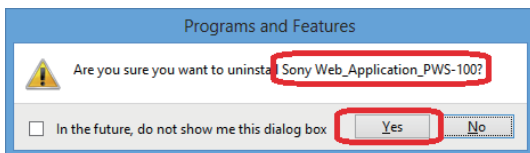


Uninstalling Sony Web_Application_PWS-100

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 [Sony Web_Application_PWS-100] and then click [Uninstall].



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



5. 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

Installing Media Gateway

Note

- Install the software with administrative privileges.

Things required

- PWA-MGW1 Installer package

Procedure

1. Copy MediaGatewayX.X.X.XXX.exe anywhere you like in this unit.

Tip

X.X.X.XXX means the version number.

2. Double-click the installer and follow the instructions displayed on the screen to install the application
If the authentication screen is displayed during the installation, input the install key.

Note

PWA-MGW1 installer packages differ depending on the version of Media Gateway, and may include application software other than MediaGatewayX.X.X.XXX.exe. To learn how to install any included software, refer to Installation Guide of PWA-MGW1.

Change of the User Account Control Setting

If the User Account Control dialog box is displayed, set the user account level by the following procedure.

1. Select “Change when these notifications appear”.
2. Set to the lowest level Never notify on the User Account Control Settings window and click [OK].
3. Click [Yes] on the User Account Control dialog box.

Changing cache drive

1. Open the Config Tool on the Start screen.
Welcome window is opened.

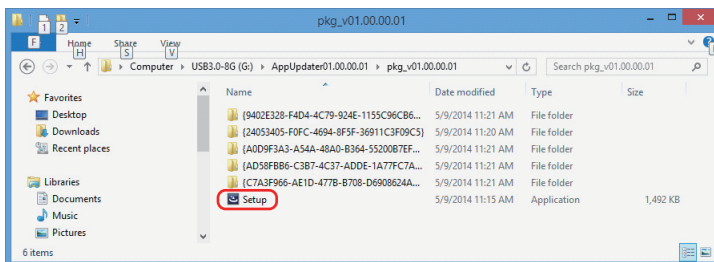
Tip

Config Tool is included in the installer of PWA-MGW1.

2. Click [Next].
Database Initialization window is displayed.
3. Click [Next].
Administrator Setup window is displayed.
4. Type the Login ID and the Password, and click [Next].
“Configuration Finished” is displayed.
5. Click [Finish].

Installing the other software

1. Connect the USB flash memory that contains the data file for update (Installation package) to the USB connector on the unit.
2. Open the Install package folder in the USB flash memory.
3. Execute a setup.exe.



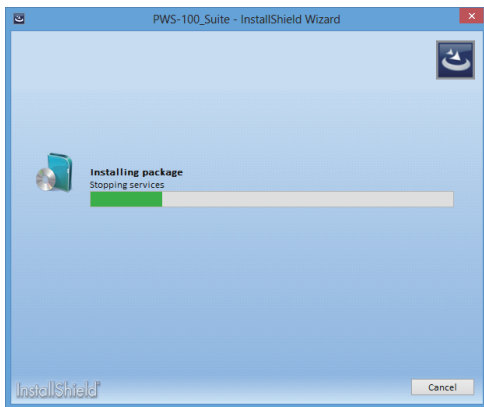
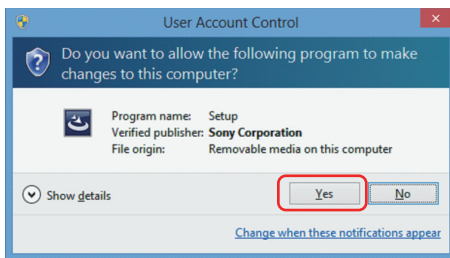
4. Click [Install].



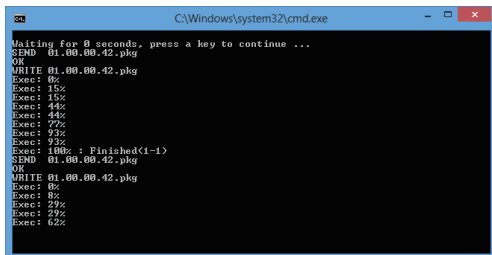
5. User Account Control dialog box is displayed.
Click [Yes] to start the installation.

Tip

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



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



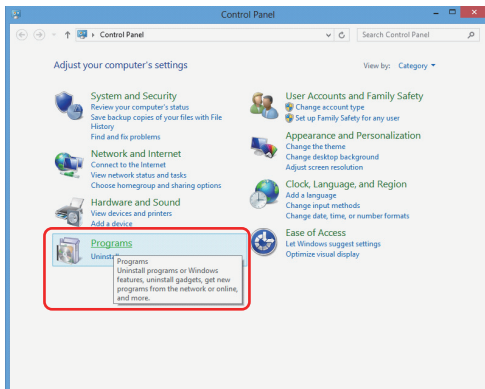
- After the installation is complete, make sure that there is no error, and then click [Finish].
If some error occurred, perform [Uninstall of Media Gateway] of “1-4-1. Uninstallation of Application Software Programs” again.



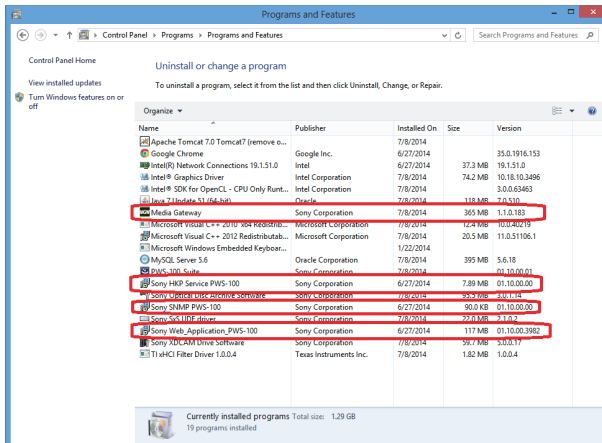
1-4-3. Software Version Check after Update

Checking versions of Media Gateway, 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].

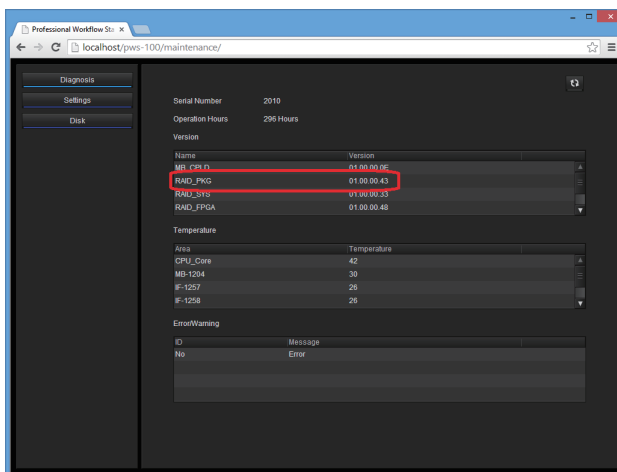


- On the displayed window, check the versions of Media Gateway, Sony HKP Service PWS-100, Sony SNMP PWS-100, Sony Web_Application_PWS-100.



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

- 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.
- Open the Google Chrome browser.
- Type “http://127.0.0.1/pws-100/maintenance/” in the address bar of the browser and press Enter key on the keyboard to display the Maintenance Web screen.
- On the displayed Maintenance Web screen, open [Diagnosis] and check the version of the built-in storage (RAID_PKG).



Version Check of each module

- 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

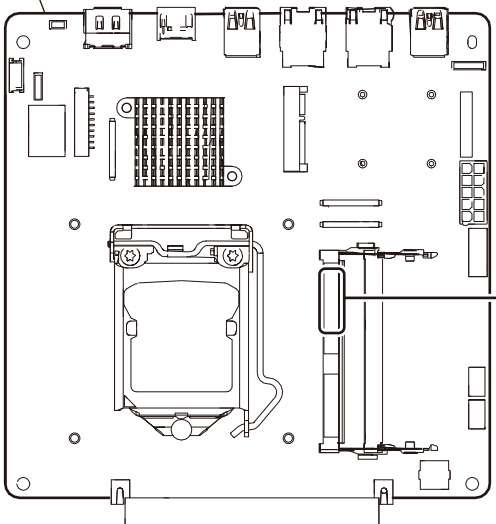
1. Open the command prompt of Windows.
2. Type “ipconfig /all” and press Enter key.
3. Find the Physical Address of the network adaptor whose Description starts with “Intel(R)”.
The Physical Address is the MAC address of this unit.

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.

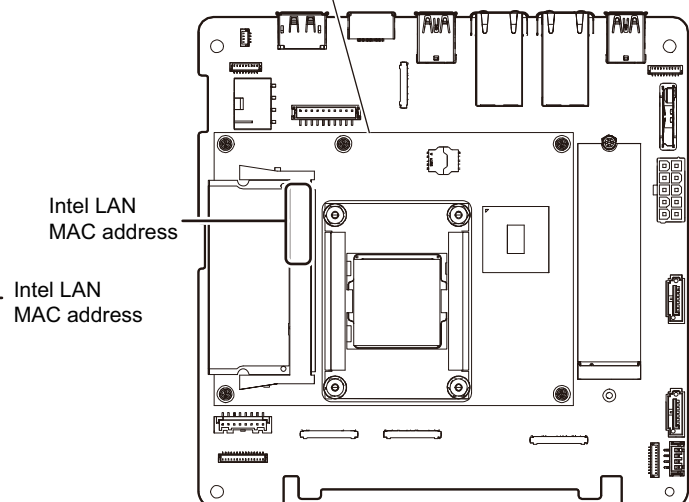
iAP-001 board-equipped unit

iAP-001 board



iAP-005 board-equipped unit

iAP-005 board



1-5. Acquisition Method of the Log File

About collection method of the log file, refer to Log Collection in the Maintenance page of PWA-MGW1 Help.

1-6. Recovery Methods

This section describes how to recover pre-installed OS.

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. Recovery Methods for Windows Embedded 8.1 Industry Pro

This section describes how to recover a system of the Windows Embedded 8.1 Industry Pro pre-installed model.

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

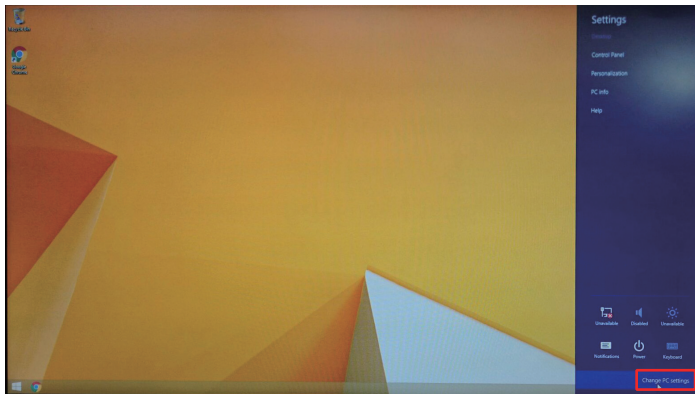
- Recovery by the standard feature of Windows
- Recovery by using the Windows PE
- Recovery by replacing SSD module

Recovery by the Standard Feature of Windows

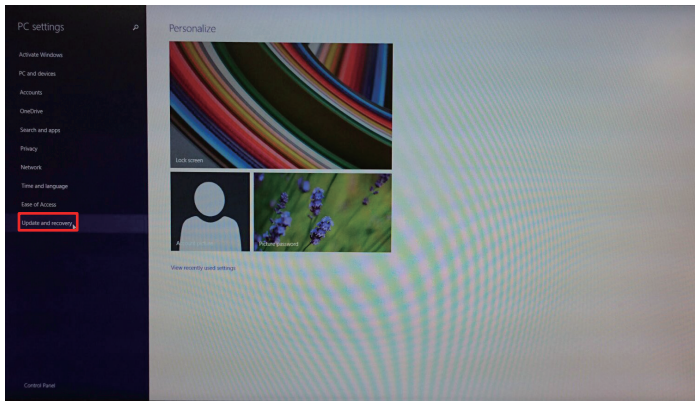
When Windows starts normally but the application program does not run stably, carry out the following procedure for recovery.

Procedure

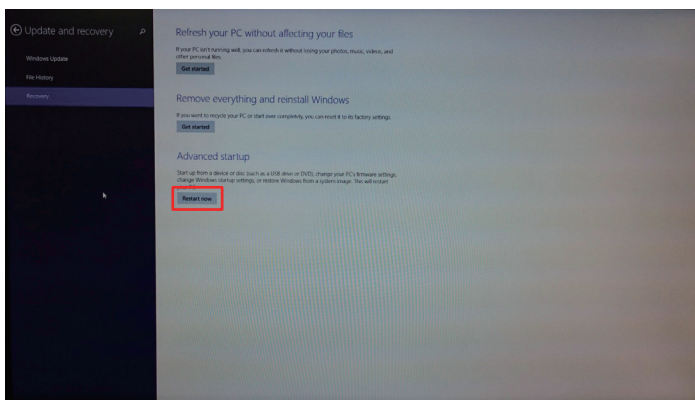
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Set Bit1 of the DIP switch (S2201) on the MB-1204 board to ON. (Refer to “MB-1204 Board” in “1-2-1. Onboard Switch Settings”.)
3. Install the top panel assembly.
4. Turn on the unit to start Windows.
5. Display a charm bar and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



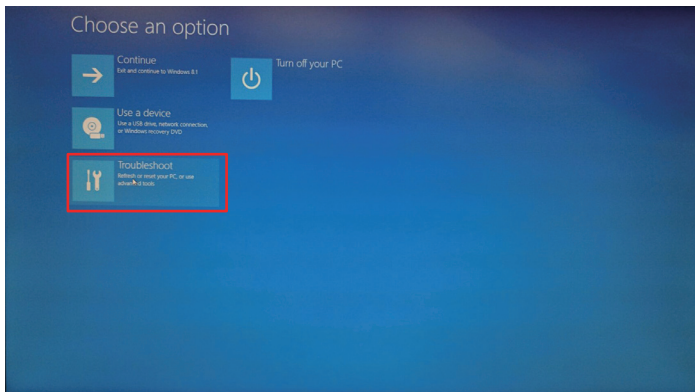
6. On the [PC settings] window, click [Update and recovery].



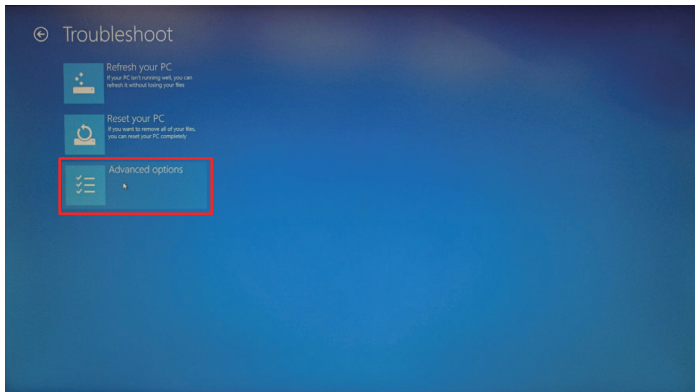
7. On the [Update and recovery] window, click [Recovery] - [Advanced startup] - [Restart now].



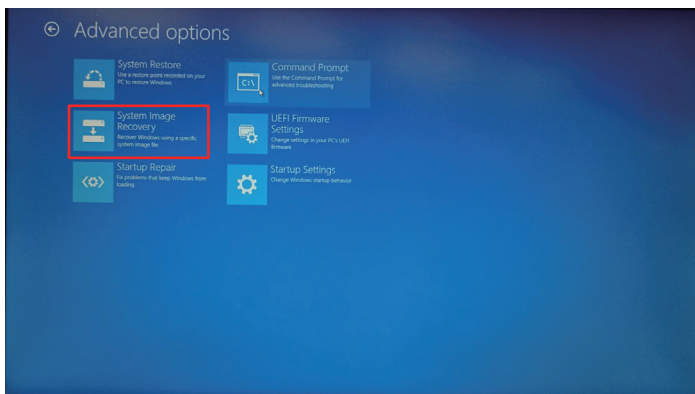
8. On the [Choose an option] window, click [Troubleshoot].



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



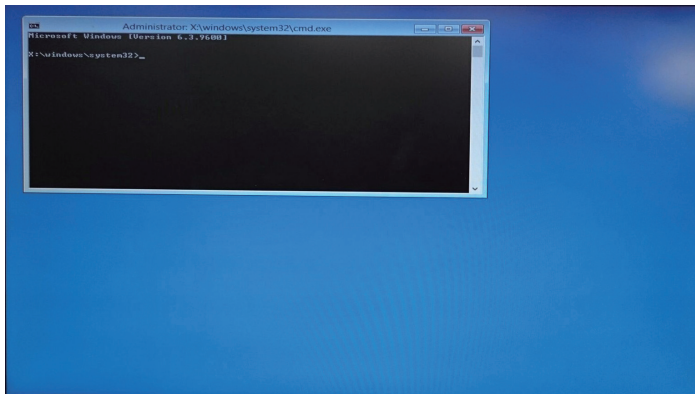
10. On the [Advanced options] window, click [System Image Recovery].



Windows PE starts running.

11. 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	Windows	NTFS	Partition	98 GB	Healthy	
Volume 1	D	Windows RE	NTFS	Partition	300 MB	Healthy	Hidden
Volume 2		SYSTEM	FAT32	Partition	100 MB	Healthy	Hidden
Volume 3	E	Recovery	NTFS	Partition	20 GB	Healthy	Hidden

Check the configuration of volumes.

- When the above information is shown, carry out steps from step 12.
- 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 [“Recovery by Using the Windows PE”](#).)

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

12. Execute the following command.

```
DISKPART>exit  
X:\windows\system32>E:  
E:>cd Recovery  
E:\Recovery>recovery_mgl.bat
```

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

```
E:\Recovery>wpeutil shutdown
```

The unit is shut down.

14. Turn on the unit.

15. Perform [“5-2-2. After Replacing the SSD Module \(mSATA Assembly / M.2 Assembly\)”](#).

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 “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 Windows 8.1.

Use version 5.0 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.
BIOS setup screen is displayed.
7. Move to the [Save & Exit] tab by pressing the arrow keys on the keyboard.
8. Select the USB memory from [Boot Override].

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	###	Ltr	Label	Fs	Type	Size	Status	Info
Volume 0		C	Windows					
Volume 1		E	Windows RE					
Volume 2			System					
Volume 3		F	Recovery					
Volume 4		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 [Recovery].
`X:\windows\system32>copy C:\Windows\System32\Recovery\ReAgent.xml
F:\Recovery\ReAgent.xml`
- (2) When the [Overwrite] confirmation message appears, type “Yes”.
- (3) Execute the diskpart command.
`X:\windows\system32>diskpart`
- (4) Select the label [Windows].
`DISKPART>select volume 1`
- (5) Format the volume of the label [Windows] in ntfs.
`DISKPART>format quick fs=ntfs label="Windows"`
- (6) Exit the diskpart command.
`DISKPART>exit`
- (7) 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:C:\ /Verify`
- (8) Copy ReAgent.xml in the label [System] to the label [Windows].
`X:\windows\system32>copy F:\Recovery\ReAgent.xml C:\Windows
System32\Recovery\ReAgent.xml`
- (9) When the [Overwrite] confirmation message appears, type “Yes”.
- (10) Exit Windows PE.
`X:\windows\system32>wpeutil shutdown`

12. Remove the USB memory from the unit.
13. Turn on the unit.
14. Perform “[5-2-2. After Replacing the SSD Module \(mSATA Assembly / M.2 Assembly\)](#)”.

Recovery by Replacing SSD Module

If recovery is not successful even after “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 “[5-21-1. SSD Module \(M.2\)](#)” and “[5-2-2. After Replacing the SSD Module \(mSATA Assembly / M.2 Assembly\)](#)”.)

1-6-2. Recovery Methods for Windows Embedded 8 Standard

This section describes how to recover a system of the Windows Embedded 8 Standard pre-installed model. There are three recovery methods depending on the symptoms of this unit.

- Recovery by the standard feature of Windows
- Recovery by using the Windows PE
- Recovery by replacing SSD module

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. Connect the keyboard, mouse, and monitor to the unit.

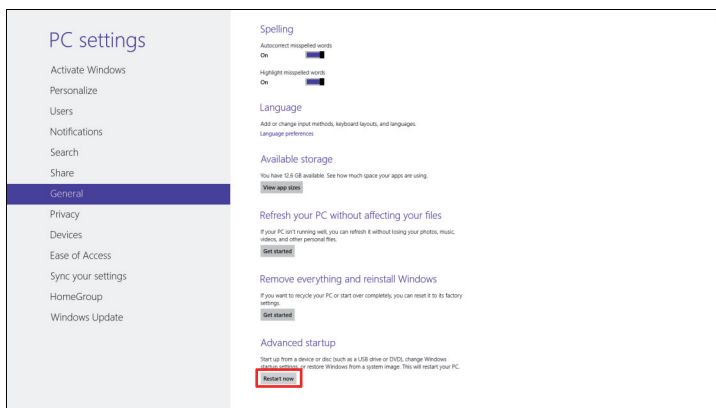
Note

Disconnect any devices other than the keyboard, mouse, and monitor.

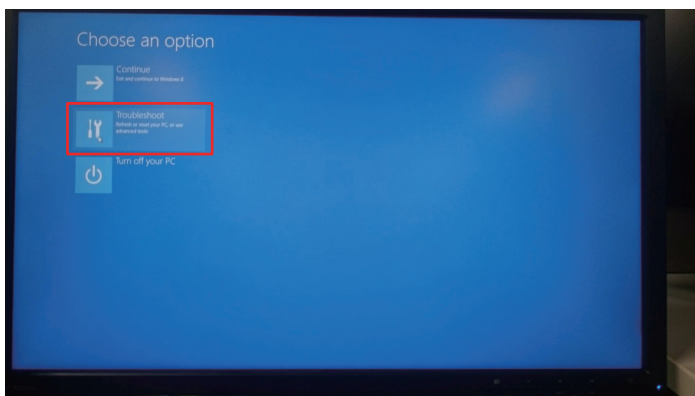
5. Turn on the unit to start Windows.
6. Display a charm bar and click [Settings] - [Change PC settings].



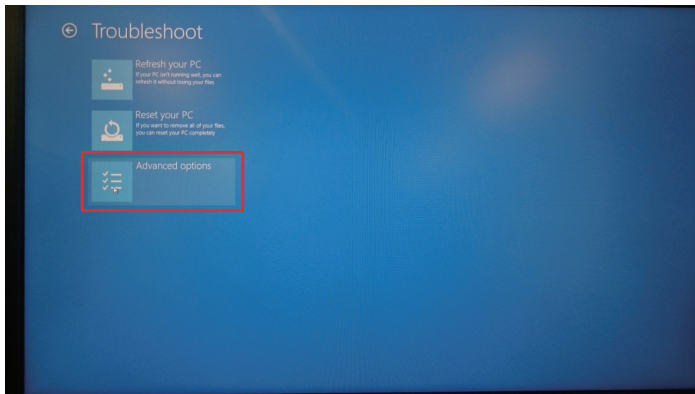
7. On the [PC Settings] window, click [General] - [Advanced startup] - [Restart now].



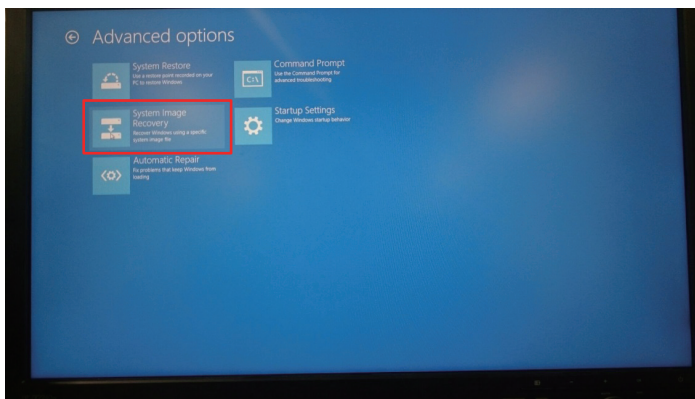
8. On the [Choose an option] window, click [Troubleshoot].



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



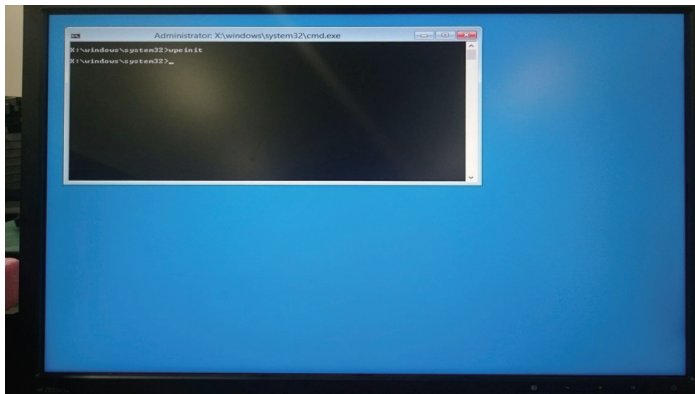
10. On the [Advanced options] window, click [System Image Recovery].



Windows PE starts running.

11. 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 12.
- 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 [“1-6-2-2. Recovery by Using the Windows PE”](#).)

```
DISKPART>exit
```

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

12. Execute the following command.

```
X:\windows\system32>c:  
C:>cd Recovery  
C:\Recovery>recovery_mg1.bat
```

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

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

The unit is shut down.

14. Turn on the unit.

15. Perform [“5-2-2. After Replacing the SSD Module \(mSATA Assembly / M.2 Assembly\)”](#).

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 “5-22. 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 Windows 8.

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.
BIOS setup screen is displayed.
7. Move to the [Boot] tab by pressing the arrow keys on the keyboard.
8. Select the USB memory in “Boot Option #1” of [Boot Option Priorities].
9. Press the F4 key to execute [Save & Reset].

The unit restarts.

Windows PE starts from the USB memory.

10. 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.

11. Execute the following command to exit diskpart.

```
DISKPART>exit
```

12. 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 InstallKey.txt in the label [Recovery] to the label [Windows].
`X:\windows\system32>copy F:\InstallKey.txt "E:\ProgramData\Sony
\Media Gateway"`
- (10) Copy OptionKey.txt in the label [Recovery] to the label [Windows].
`X:\windows\system32>copy F:\OptionKey.txt "E:\ProgramData\Sony
\Media Gateway"`
- (11) Exit Windows PE.
`X:\windows\system32>wpeutil shutdown`

13. Remove the USB memory from the unit.
14. Turn on the unit.
15. Perform “5-2-2. After Replacing the SSD Module (mSATA Assembly / M.2 Assembly)”.

Recovery by Replacing SSD Module

If recovery is not successful even after “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 “5-1-4. Solutions for Discontinued Parts”, “5-20-2. SSD Module (mSATA)” and “5-2-2. After Replacing the SSD Module (mSATA Assembly / M.2 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 (0.3 N • m)	J-6325-400-A	Screw tightening
Torque screwdriver (0.6 N • m)	J-6252-510-A	Screw tightening
Torque screwdriver (1.2 N • m)	J-6252-520-A	Screw tightening
Box driver (size 6 mm)	Commercially available	Hexagon support 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	△ 1-805-580-11	1.1 A/8.0 V
	TH201	△ 1-805-580-11	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
IF-1330	TH300	△ 1-802-607-11	2 A/6 V
	TH301	△ 1-802-607-11	2 A/6 V
	TH302	△ 1-802-607-11	2 A/6 V
	TH303	△ 1-802-607-11	2 A/6 V
	TH304	△ 1-802-106-11	1.5 A/24 V
	TH500	△ 1-771-075-21	0.75 A/ 13.2 V
	TH501	△ 1-771-075-21	0.75 A/ 13.2 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.

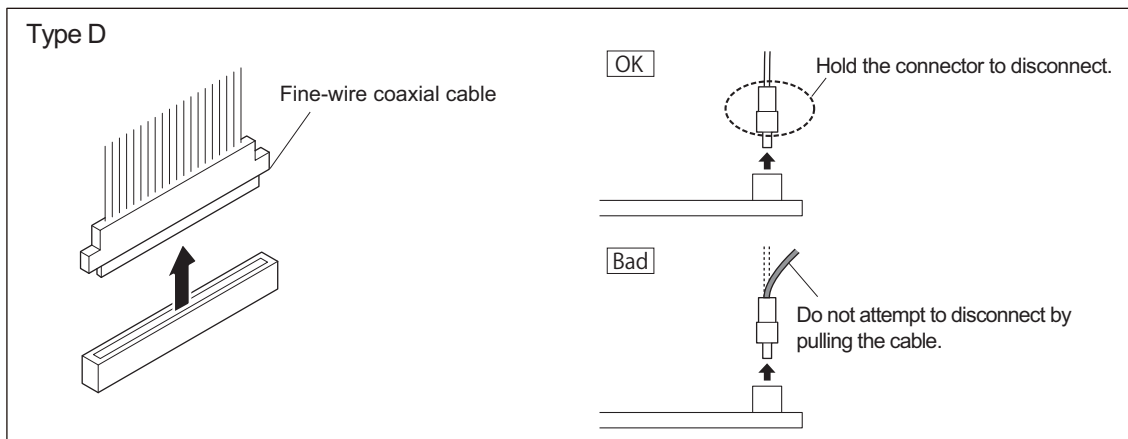
Board Name	Ref. No.	Name	Part No.
IF-1330	F100	FUSE 2 A/125 V	△1-533-999-21
	F101	FUSE 1.25 A/125 V	△1-533-626-21
	F200	FUSE 1.25 A/125 V	△1-533-626-21
	F201	FUSE 4 A/125 V	△1-576-270-21
	F202	FUSE 2.5 A/125 V	△1-533-804-21
	F800	FUSE 2.5 A/125 V	△1-533-804-21
	F801	FUSE 1.25 A/125 V	△1-533-626-21
	F802	FUSE 1.25 A/125 V	△1-533-626-21
	F803	FUSE 1.25 A/125 V	△1-533-626-21
	F1000	FUSE 4 A/125 V	△1-576-270-21
	F1001	FUSE 4 A/125 V	△1-576-270-21
	F1002	FUSE 4 A/125 V	△1-576-270-21
	F1003	FUSE 4 A/125 V	△1-576-270-21
	F1004	FUSE 4 A/125 V	△1-576-270-21
	F1005	FUSE 4 A/125 V	△1-576-270-21
	F1006	FUSE 2.5 A/125 V	△1-533-804-21
	F1007	FUSE 8 A/125 V	△1-576-328-21
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.	
0234	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.
0235	HIGH TEMPERATURE	The temperature of the HPR-48 board (upper side slot) has risen.	
0261	SSD LIFETIME	The SSD module (mSATA assembly or M.2 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.	It can be used continuously. We recommend that you replace parts as soon as possible.

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

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. We recommend that you replace parts as soon as possible.
FAN x WARNING	The rotating speed of FANx has decreased.	It can be used continuously. We recommend that you replace parts as soon as possible.
HDD x WARNING	Read/write errors of HDDx are increasing.	It can be used continuously. We recommend that you replace parts as soon as possible.
SSD LIFETIME	The SSD module (mSATA assembly and M.2 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.	It can be used continuously. We recommend that you replace parts as soon as possible.

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

2-3. Error Message of Add-in Card

An error message of add-in card is displayed on the desktop when the add-in card installed in this unit has some problem.

Displayed message	Meaning	Action
The 10G Ether Device is not found. Please turn off PC and reboot.	The system finds that the network card in the slot of the unit cannot be recognized.	Turn off this unit and turn it on again. If the same error still occurs, replace the network card. (Refer to “ 5-12. Network Card ”.)

2-4. Error Message of RAID HDD

An error message of RAID HDD is displayed when a RAID HDD that is installed behind the front panel of this unit cannot be recognized.

This message is displayed on the desktop when a failure is detected.

Displayed message	Meaning	Action
The internal drive is not found. Please turn off PC and reboot.	The system finds that a RAID HDD that is installed behind the front panel of this unit cannot be recognized.	Turn off this unit and turn it on again. If the same error still occurs, replace the RAID HDD. (Refer to “ 5-9. HDD Assembly (ST Assembly) ”.)

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

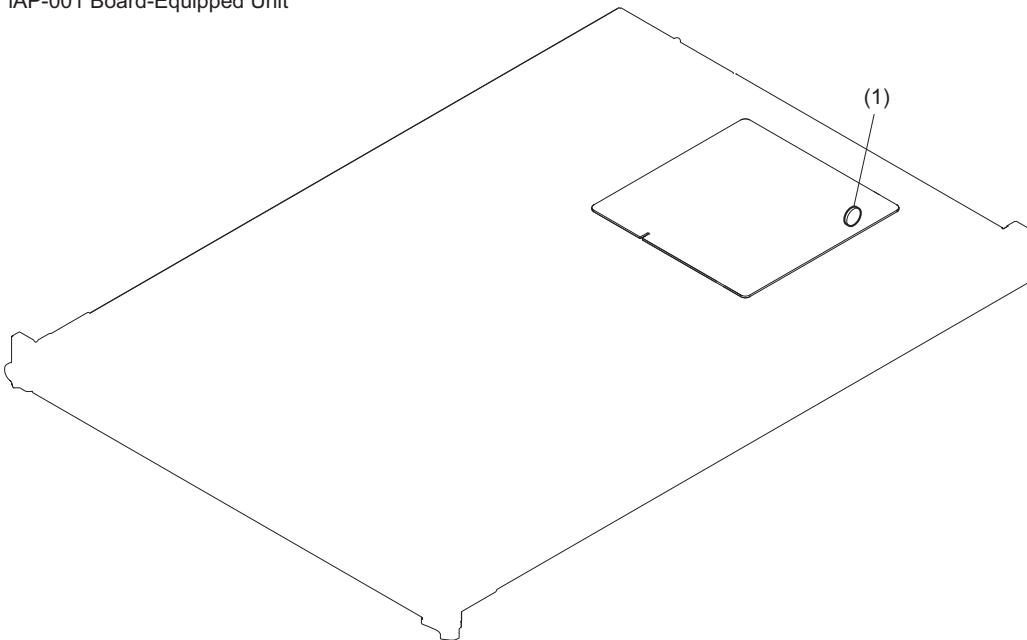
Operation Hours data is shown on the Diagnosis page of the Maintenance Web screen.

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

iAP-001 Board-Equipped Unit



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”

*1: This is applicable for iAP-001 board-equipped units. 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. Precautions when Handling the Hard Disc Drive

The Hard Disk Drives (HDD) are installed in this unit. The HDD is a precision part. The causes such as shock, vibration and static electricity to the unit, and the conditions of temperature and humidity may damage HDD or its data. Before work, read fully the following cautions, and work with extra care.

Cautions about shock and vibration

When transporting and moving;

- Pack the unit using the packaging materials specified by the manufacturer.
- Use a good platform truck.
- Avoid rough routes, and transport the unit carefully.

When placing on a floor or a table;

- Put a cushion on stable and horizontal place, and put the unit on it gently.
- Do not place the unit near vibrating equipments.

For the unit;

- Never hit the unit, and never drop the tool on the unit.

Take extra care;

- Never give vibration or shock to the unit while the power is turned on, or within about 30 seconds after turning off the power.
- Be extremely careful when removing and/or installing the HDD unit or power supply unit while the unit is in live state.

Caution about rack mounting

- Do not apply shock to any rack-mounted unit that has an HDD.

Cautions about static electricity

- Remove static generating plastics (such as air bubble cushioning) from the working area.
- When handling an HDD unit, wear an antistatic wrist strap to protect the HDD unit against static electricity.

Cautions about temperature and humidity

- Temperature and humidity of storage and operating condition must be kept within the correct specified range.
- Never turn on the power with the cabinet removed in consideration of the air-cooling effect.

Cautions when an HDD failed

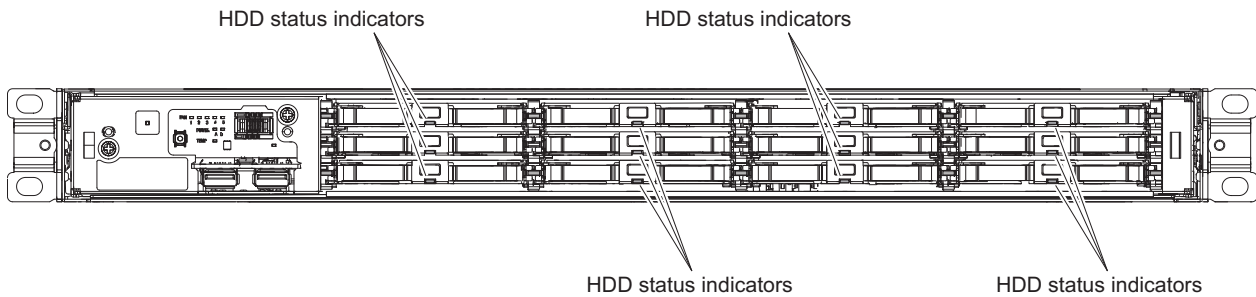
- Follow the instructions given above to treat the HDD, even when the HDD failed.

- Leave the HDD as it was when it failed, and write down the symptoms in detail.

5-1-2. Identifying Faulty HDD Assembly

When any of the following symptoms appeared, an HDD has some trouble. Replace the faulty HDD.

- When the front panel is detached, the HDD status indicator is lit red.
- The [Disk n] display area of the maintenance menu is shown in red.

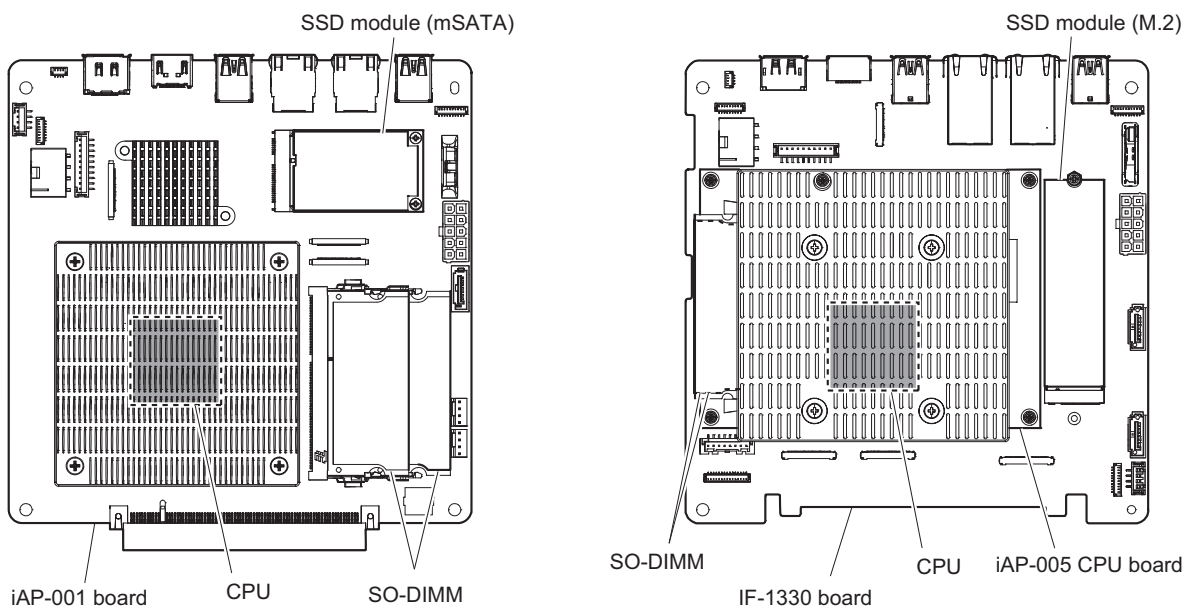


5-1-3. Difference of CPU Block

The iAP board assembly that contains the CPU has been changed from iAP-001 board assembly to iAP-005 assembly.

Before change: iAP-001 board assembly

After change: iAP-005 assembly



5-1-4. Solutions for Discontinued Parts

When the following parts are discontinued and they are no longer available, replace the iAP-001 board assembly with the iAP-005 assembly.

Parts to be discontinued

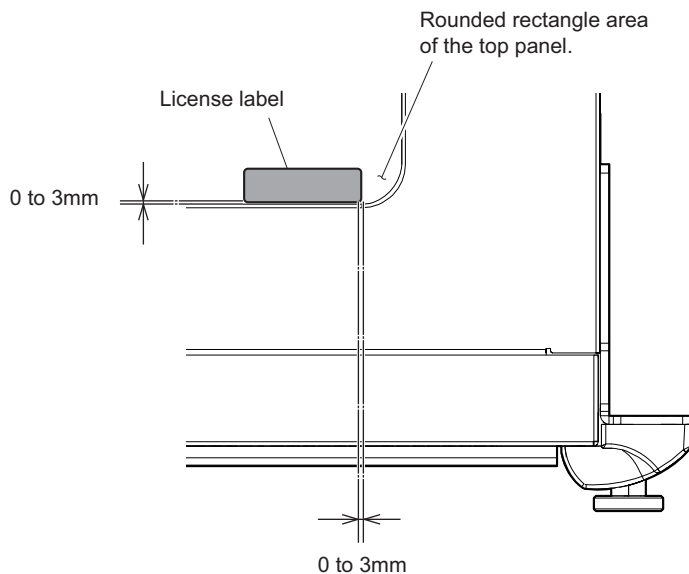
- iAP BOARD (PWS-100) RP ASSY (iAP-001 board assembly)
- IC CM8063701211600S-R0PK (CPU)
- IC HMT451S6BFR8A-PBN0 (memory module 204pin SO-DIMM)
- MSATA (MG1) ASSY(RP) (SSD module (mSATA))

Required parts

- iAP-005 assy
- SSD module (M.2)
- License (windows8.1 EMB)
- +PSW (small round) (2.6): 1 pc (For installing M.2)
- CN-3934 mount
- Coaxial cable with connector: 2 pcs

Procedure

1. Remove the iAP-001 board assembly. (Refer to “5-20-3. iAP-001 Board Assembly”.)
2. Install the iAP-005 board assembly. (Refer to “5-21-2. iAP-005 Board Assembly”.)
3. Install the SSD module. (Refer to “5-21-1. SSD Module (M.2)”.)
4. Replace the license label.



5. Perform the actions after the replacement. (Refer to “5-2-5. After Replacing the iAP Board Assembly”.)

5-1-5. Non-reusable Parts

The following parts are not reusable. Prepare new parts in advance.

- Radiation sheet 0.5 (30X30)
- Radiation sheet (CPU)

5-1-6. 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. After Replacing the SSD Module (mSATA Assembly / M.2 Assembly)

After the SSD module is replaced, perform the initial settings for Windows.
The setting method conforms to the standard operation of the installed OS.

Windows initial settings

For Windows Embedded 8.1 Industry Pro pre-installed model

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.

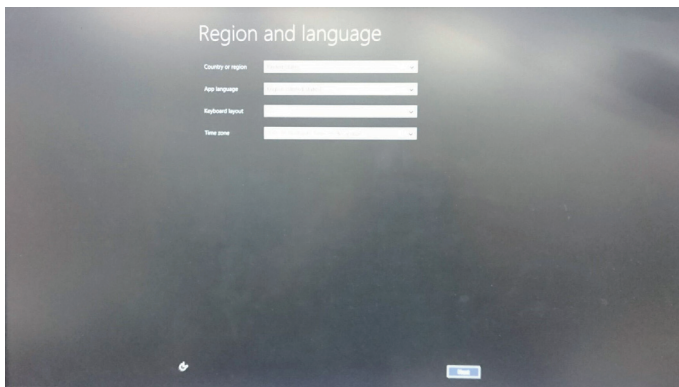
The group of the front panel accessible HDDs for RAID are disconnected when the DIP switch S2201-1 on the MB-1204 board is set to ON to stop the RAID controllers, so you don't need to disconnect the HDDs physically. On the other hand, the other kinds of storages like USB flash memories should be removed.

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

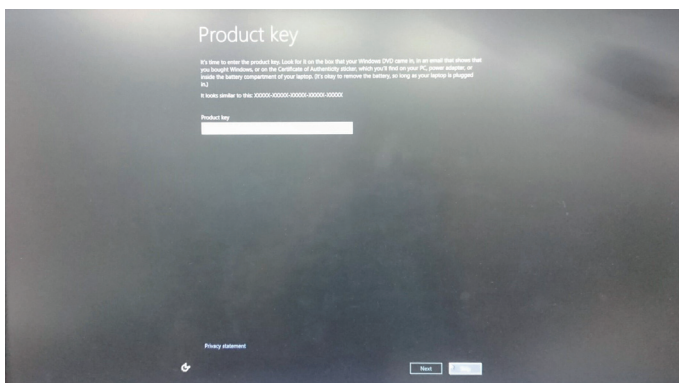
Procedure

1. Turn on the unit to start Windows.

2. Leave the each item on the [Region and language] blank, and click [Next].



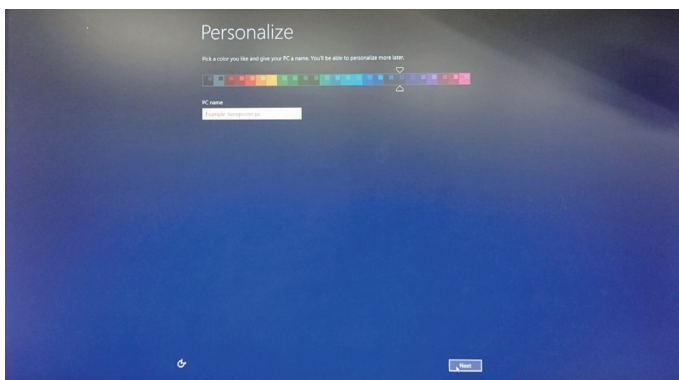
3. Leave the text box of [Product Key] blank, and click [Skip].



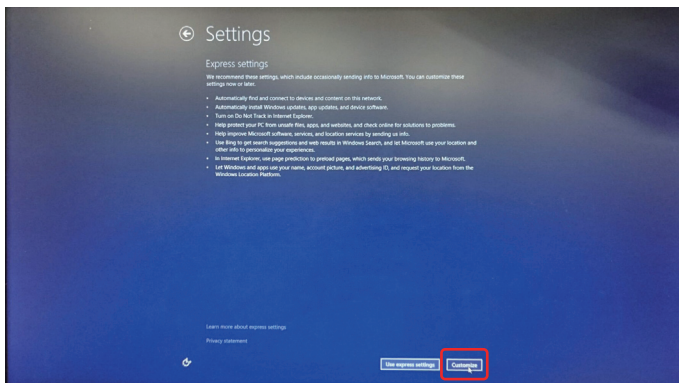
4. On the [Personalize] window, change the [PC name] “PWS-100” to “PWS-100-<serial number of the unit>”.

Tip

For example, type “PWS-100-101234” for the unit with a serial number of “101234”.
The serial number is written on the model name label.



5. Click [Customize] in “Express Settings” page of the [Settings].



6. On the “You've connected to a network. Do you want to find PCs, devices, and content on this network, and automatically connect to devices like printers and TVs?” window, make settings in accordance with the network environment.

Tip

This menu may not be displayed depending on the network environment.

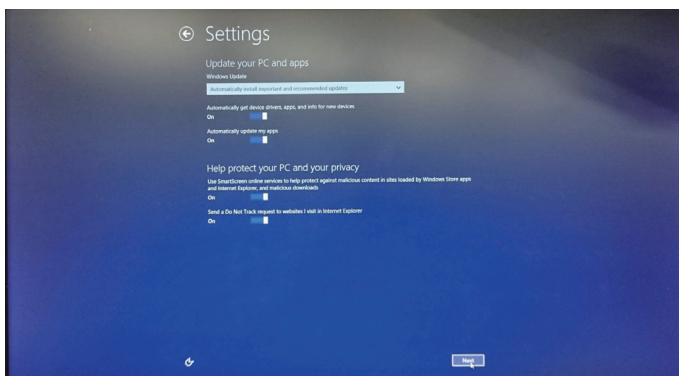
7. For item “Windows Update” in “Update your PC and apps”, select [Don't set up Windows Update].

Tip

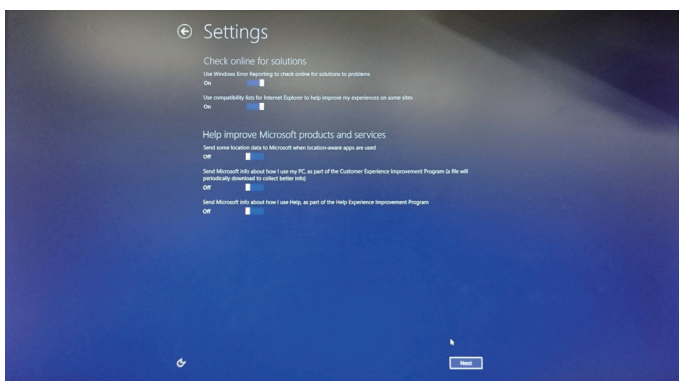
By this setting, automatic update and reboot that would disturb the work are not executed.

Set all other items to [Off].

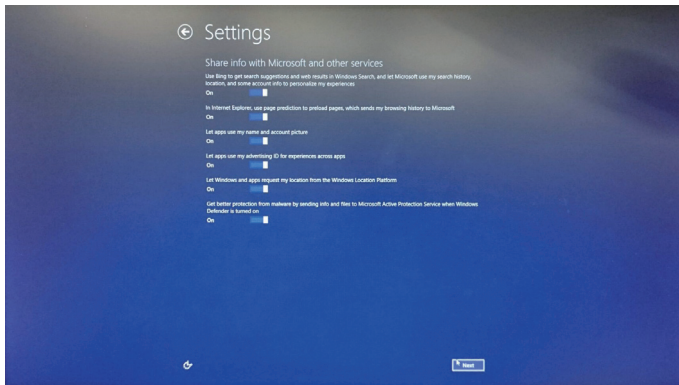
After these settings, click [Next].



8. Set all items in “Check online for solutions” and “Help improve Microsoft products and services” to [Off]. After these settings, click [Next].



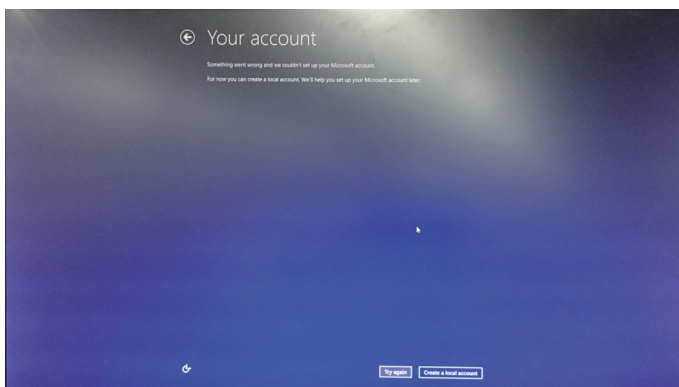
9. Set all items in “Share info with Microsoft and other services” to [Off].
After these settings, click [Next].



10. On the [Your account] window, click [Create a local account].

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.



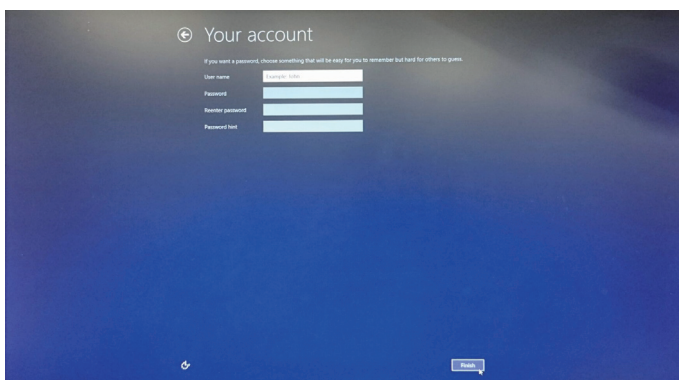
11. On the displayed window, enter as described below.

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

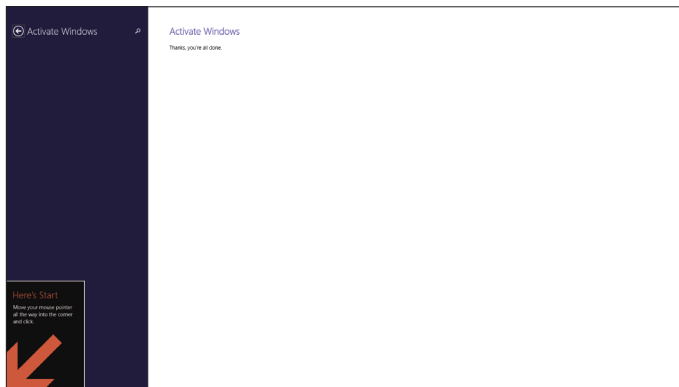
Tip

These are the factory default settings.

After typing these items, click [Finish].



12. After Windows starts, sign out of the system and confirm that sign-in is possible with the user registered in the previous step.
13. After the unit starts up, select [System] from [System and Security] in the [Control Panel] and confirm if the [Computer name] is "PWS-100-<serial number of the unit>".
14. Turn off the unit and perform the following work.
 - Set the DIP switch S2201-1 on the MB-1204 board to OFF.
15. Turn on the unit.
16. Activate Windows.
 - (1) Connect the unit to the network.
 - (2) Open [System] from [System and Security] in the [Control Panel].
 - (3) Open [Activation] in the Windows activation.
 - (4) Click [Activate].
 - (5) Check that "Thanks, you're all done" appears in [Activate Windows].



17. Update the application software.
To update the application software, refer to ["1-4. Software Update"](#).

Note

The application software installed in the SSD module is not the latest one. Therefore, install the latest version of application software.

For Windows Embedded 8 Standard pre-installed model

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 DisplayPort or the HDMI connector.

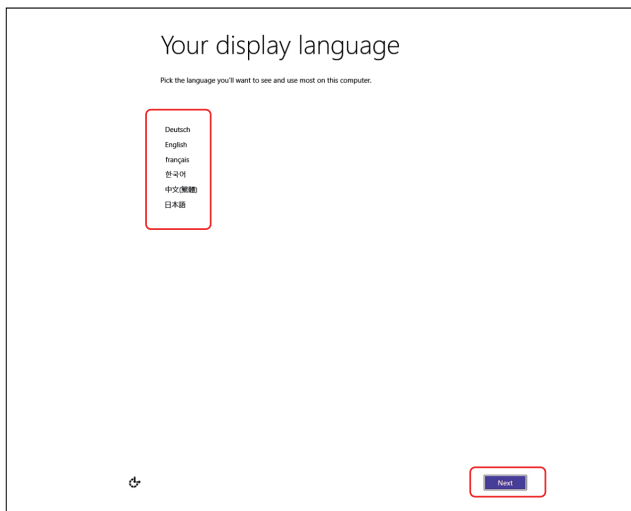
Procedure

1. Turn on the unit to start Windows.
2. On the [Your display language] window, select the language to be used.

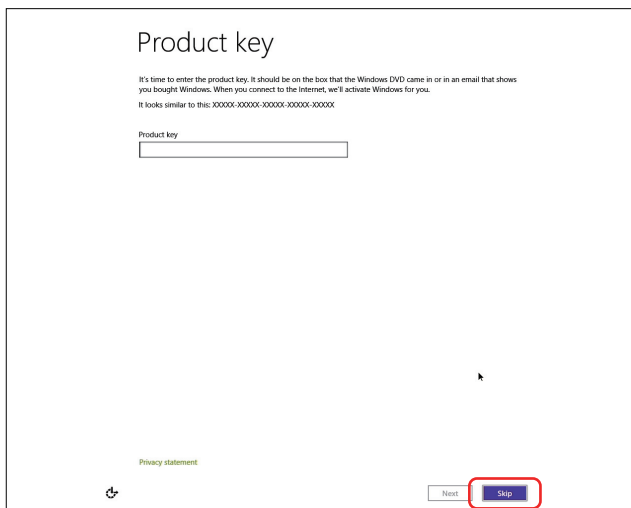
Tip

Factory setting: “English”

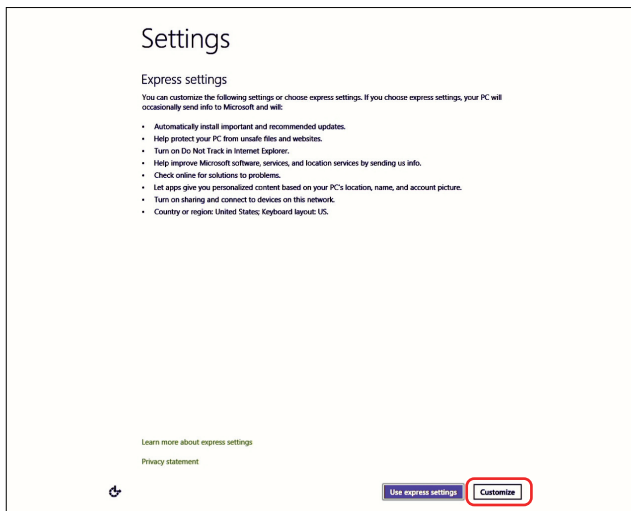
Then click [Next].



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



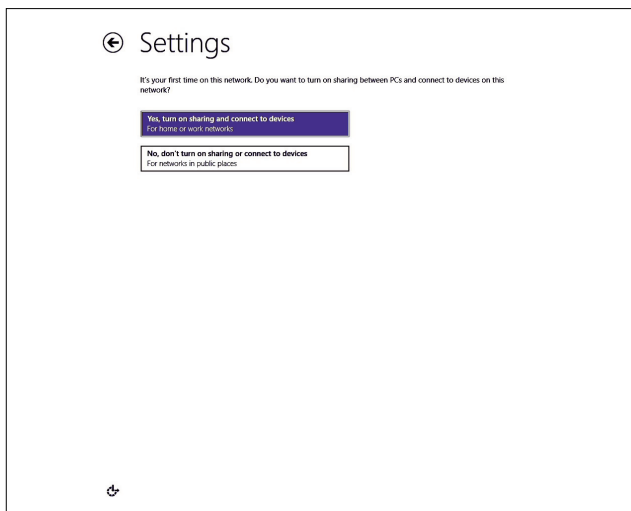
4. Click [Customize] in “Express Settings” page of the [Settings].



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.”



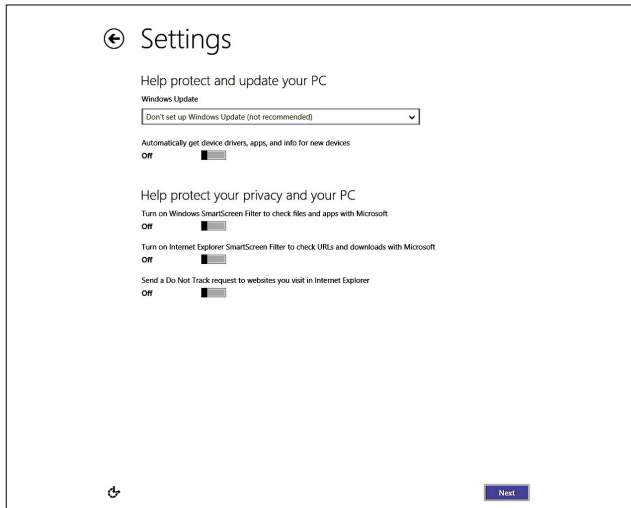
6. For item “Windows Update” in “Help protect and update your PC,” select [Don't set up Windows Update].

Tip

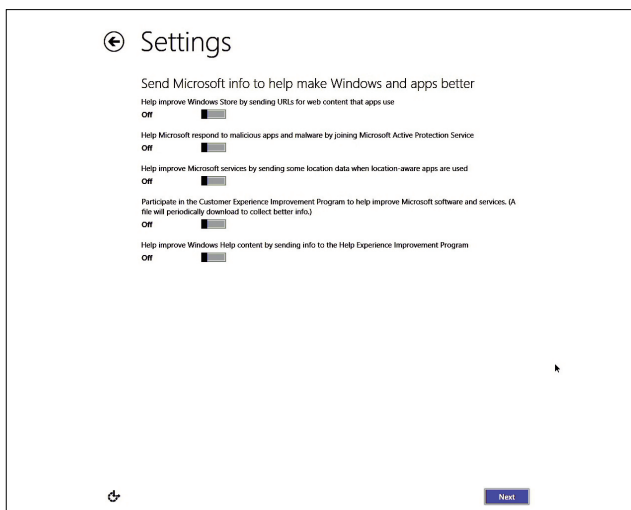
By this setting, automatic update and reboot that would disturb the work are not executed.

Set all other items to [Off].

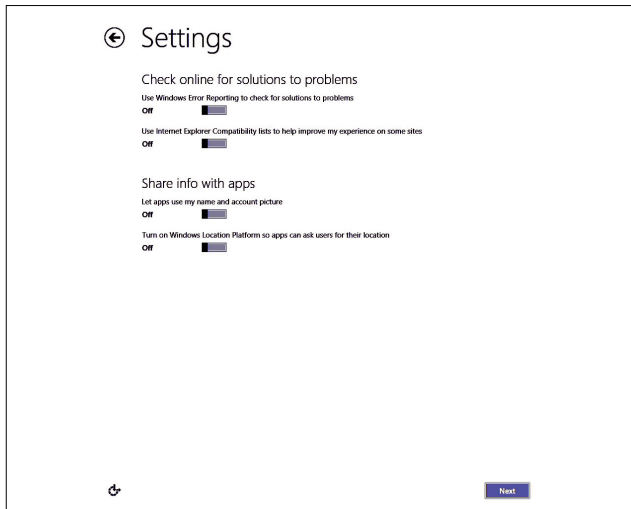
After these settings, click [Next].



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

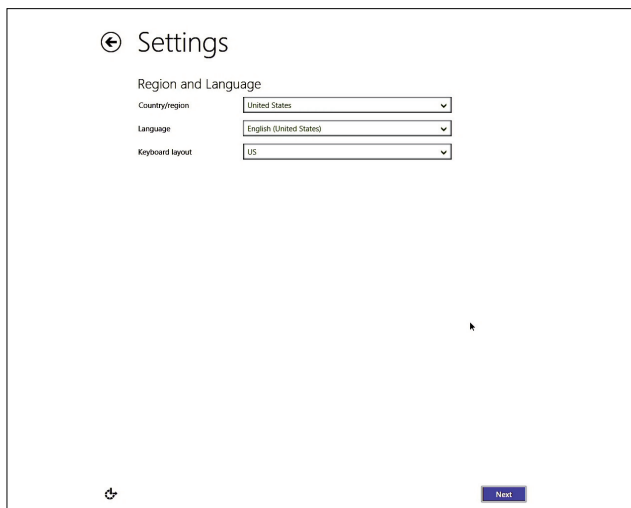
Factory settings

Country/Region : United States

Language : English (United States)

Keyboard Layout : US

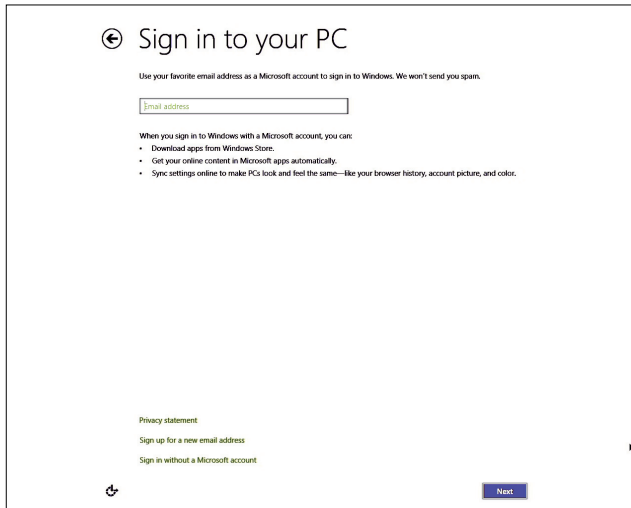
After selecting, click the “NEXT”.



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

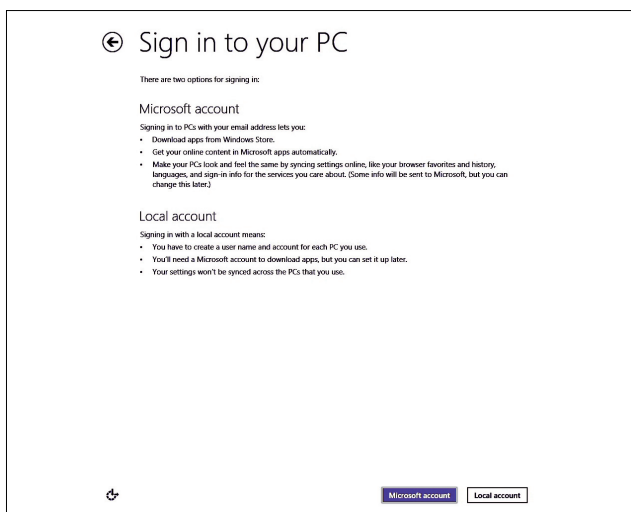
Tip

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.



The screenshot shows the 'Sign in to your PC' window. At the top, it says 'Sign in to your PC' with a circular arrow icon. Below that, it says 'Use your favorite email address as a Microsoft account to sign in to Windows. We won't send you spam.' There is an input field for 'Email address'. Below the input field, it says 'When you sign in to Windows with a Microsoft account, you can:' followed by a list of benefits: 'Download apps from Windows Store.', 'Get your online content in Microsoft apps automatically.', and 'Sync settings online to make PC's look and feel the same—like your browser history, account picture, and color.' At the bottom, there are links for 'Privacy statement', 'Sign up for a new email address', and 'Sign in without a Microsoft account'. A 'Next' button is at the bottom right.

11. Click [Local account].



The screenshot shows the 'Sign in to your PC' window. At the top, it says 'Sign in to your PC' with a circular arrow icon. Below that, it says 'There are two options for signing in:'. Under 'Microsoft account', it says 'Signing in to PCs with your email address lets you:' followed by a list of benefits: 'Download apps from Windows Store.', 'Get your online content in Microsoft apps automatically.', and 'Make your PC's look and feel the same by syncing settings online, like your browser favorites and history, languages, and sign-in info for the services you care about. (Some info will be sent to Microsoft, but you can change this later.)'. Under 'Local account', it says 'Signing in with a local account means:' followed by a list of drawbacks: 'You have to create a user name and account for each PC you use.', 'You'll need a Microsoft account to download apps, but you can set it up later.', and 'Your settings won't be synced across the PCs that you use.' At the bottom, there are two buttons: 'Microsoft account' and 'Local account'.

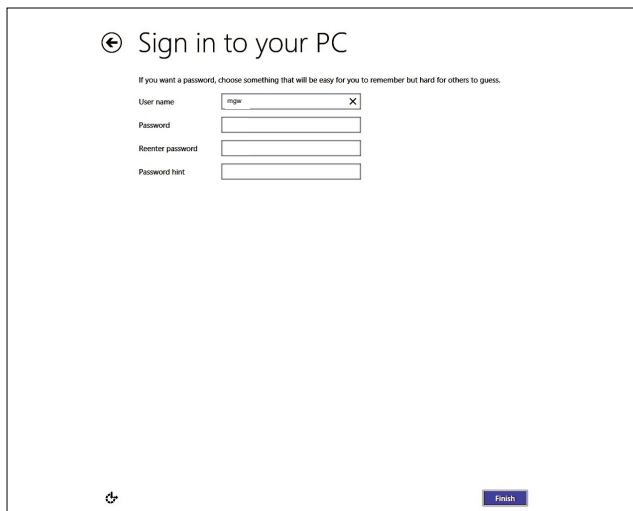
12. On the displayed window, enter as described below.

- User name: mgw
- Password: mgw
- Reenter password: mgw
- 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 “mgw.”

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

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

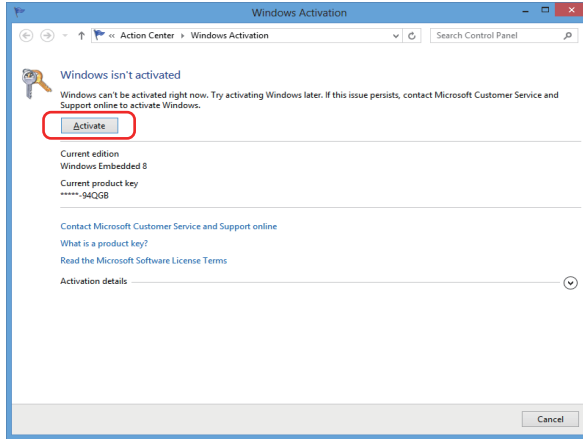
15. Turn on the unit and confirm that the HDD can be recognized as a D drive.

16. Configure the settings for the “services”.

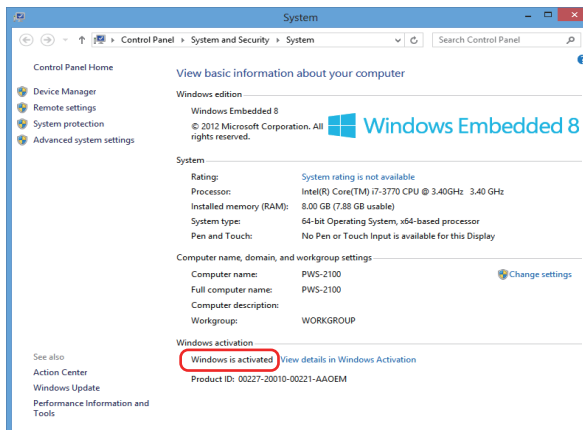
- (1) Press the [Windows] key and the [R] key on the keyboard to open [Run] dialog box.
- (2) Type “services.msc” and click [OK] to open the [Services] dialog box.
- (3) Right-click IIS Admin Service and open [Properties] dialog box.
- (4) Set the Startup type in the [General] tab to Disable and click [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].

17. 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.



18. Update the application software.

To update 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.

19. 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 M.2 Assembly

After replacing the M.2 board, restore the initial BIOS settings.

Required equipment

- A USB mouse
- A USB keyboard
- A monitor

Procedure

1. Connect the mouse and the keyboard to the USB connectors.
2. Connect the monitor to the DisplayPort or the HDMI connector.
3. Connect the power cord.
4. Press and hold the Delete key and turn on the unit.
BIOS setup screen appears.
5. Move to the [Save & Exit] tab by pressing the arrow keys on the keyboard.
6. Select "Restore Defaults" from [Default Options], and press the Enter key.
[Load Optimized Defaults?] dialog is displayed.
7. Select "Yes", and press the Enter key.
[Save configuration and reset?] dialog is displayed.
8. Select "Yes", and press the Enter key.
The unit restarts and the settings are stored.

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

Before replacing the MB-1204 board, back up the RAID management information. After the MB-1204 board has been replaced, write the RAID management information to the SRAM (IC2401) on the new MB-1204 board. (For how to back up RAID management information, refer to ["5-22. MB-1204 Board"](#))
Perform the following procedure to restore RAID management information.

Procedure

Note

Do not connect harness to any of the following connectors on the MB-1204 board until RAID management information has been written. Connect harnesses to the following connectors after the following work has been completed.

MB-1204 board: CN1100, CN1101, CN1102

1. Upgrade the software. (Refer to ["1-4. Software Update"](#))
2. Turn on the unit.
3. Select the following folder in the Explorer.
C: \Program Files\Sony\PWS-100\hkp\client
4. Select "hkpc.exe" and select "Run as an administrator" from the context (right-click) menu.
5. When you are asked whether to enable execution, select "Yes."
6. When the command prompt window opens, enter the following command and click [Enter].
strgrestore filename.srm
(Specify the file name used when it was stored.)
When the RAID management information stored in the C drive is written to the SRAM on the MB-1204 board, "OK" appears on the command prompt window.
7. Turn off the unit.
8. Connect harnesses to the connectors (CN1100, CN1101, and CN1102) on the MB-1204 board.
9. Turn on the power of the unit and confirm that the RAID configuration remains unchanged after the MB-1204 board is replaced.

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

When the iAP board was replaced, the MAC address of this unit is changed, then obtained install key is not usable. The authentication of PWA-MGW1 is completed in a process of the installation. Therefore, even if the MAC address of this unit changes, the install key is still usable.

On the other hand, if the iAP board is replaced, the MAC address changes. When you reinstall PWA-MGW1, the authentication by new install key is necessary.

When using an option PWA-MGW1A, obtain an install key. After iAP board is changed, set the option key again.

Required equipment

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

Note

To obtain 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)

iAP-001 board assembly

Preparation

1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#).)
2. Replace the lithium battery (CR2032) on the iAP board assembly for repair with a new one.
3. Connect the power cord to the power connector on the rear panel to supply AC power.
4. Connect the USB mouse and the USB keyboard to the USB connectors.
5. Connect the monitor to the DisplayPort or the HDMI connector.
6. Connect the bootable USB memory to the USB connector.

Tip

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 screen.

Tip

If the BIOS screen 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 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 Enter key.
 When "Enter new time:-" appears, press Enter key.
 A command prompt "c:\\" appears on the monitor.
9. Enter "update" following the command prompt "c:\\" and then press Enter key.
 The BIOS update 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 screen 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 screen, make sure that the version updated by the above procedure is shown.
15. Turn off the unit.
16. Install the top panel assembly. (Refer to "[5-4. Top Panel Assembly](#)".)
17. Set the clock time. (Refer to "Setting date and time" in "Setting Up" in the Operation Manual.)

iAP-005 board assembly

Preparation

1. Remove the top panel assembly. (Refer to "[5-4. Top Panel Assembly](#)".)
2. Replace the lithium battery (CR2032) on the iAP board assembly for repair with a new one.
3. Remove the M.2 assembly. (Refer to "[5-21-1. SSD Module \(M.2\)](#)".)
4. Connect the power cord.
5. Connect the USB mouse and the USB keyboard to the USB connectors.
6. Connect the monitor to the DisplayPort or the HDMI connector.
7. Connect the bootable USB memory to the USB connector.

Tip

Every USB connector is available.

Note

Disconnect expanded equipment other than keyboard, mouse, monitor, and USB memory.

Procedure

1. Turn on the unit.
 BIOS startup screen appears on the monitor.

2. When the BIOS startup screen is displayed, press the DEL key on the keyboard.
The BIOS screen is displayed.

Tip

If the BIOS screen is not displayed and normal startup or UEFI Shell is activated, hold down the Power button on the front panel to turn off the unit, and then retry this procedure from step 1.

3. Set [Boot option filter] in the BOOT menu to “Legacy Only”.
4. Execute the [Save Changes and Reset] in the Save & Exit menu.
The unit restarts.
5. When the BIOS startup screen is displayed, press the DEL key on the keyboard.
The BIOS screen is displayed.
6. Select USB memory from [Boot Override] in the Save & Exit menu.
The DOS in the bootable USB memory runs.
7. When “Enter new date (mm-dd-[cc]yy):-” appears on the monitor, press Enter key.
8. When “Enter new time:-” appears, press Enter key.
A command prompt (C:\) is displayed.
9. Enter “update” following the command prompt “C:\”, and then press Enter key.
BIOS update starts.
After the update is completed, “FPT Operation Successful” appears and then a command prompt “C:\” appears.
10. Turn off the unit.
11. Disconnect the bootable USB memory from the USB connector.
12. Disconnect the power cord.
13. Remove the lithium battery, and then reinstall it after 30 seconds. (Refer to “5-14. Lithium Battery”).)
14. Connect the power cord, and turn on the unit.
The BIOS screen is displayed on the monitor.

Note

The unit may be turned on only by connecting the power cord.

15. When the BIOS startup screen is displayed, press the DEL key on the keyboard to display the BIOS screen.

Tip

Restart operation may automatically repeat until the BIOS screen is displayed.

16. Check whether the written version is displayed in [BIOS Version & Build Date] in the Main menu.
17. Execute the [Restore Defaults] in the Save & Exit menu.
18. Execute the [Save Changes and Reset] in the Save & Exit menu.
The unit restarts.
19. Check that the screen changes to the UEFI Shell.

Tip

Restart operation automatically repeats until the UEFI Shell screen is displayed.

20. Turn off the unit and disconnect the power cord.
21. Attach the M.2 assembly to the unit. (“5-21-1. SSD Module (M.2)”.)
22. Connect the power cord.
23. Turn on the unit and check that the OS starts.
24. Turn off the unit.
25. Install the top panel assembly. (Refer to “5-4. Top Panel Assembly”).)

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

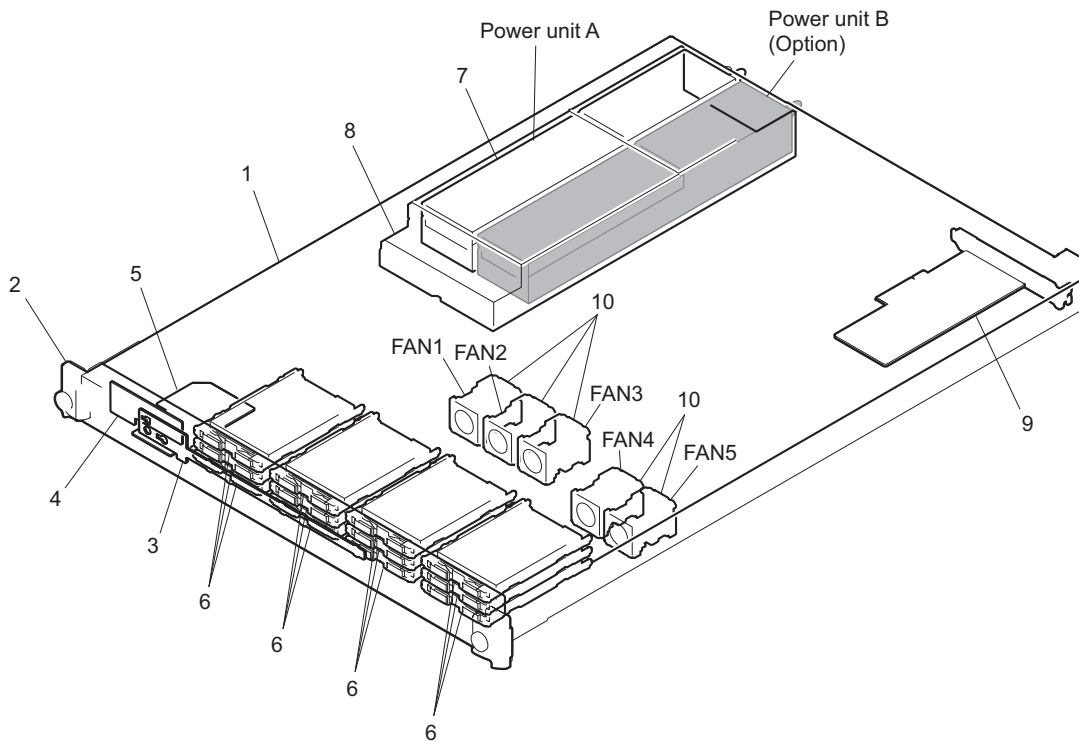
This section describes how to create general bootable USB memory that is available in a PC environment.
An example of creating such bootable USB memory by using software FreeDOS and Win32 Disk Imager on a Windows PC is shown below.

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

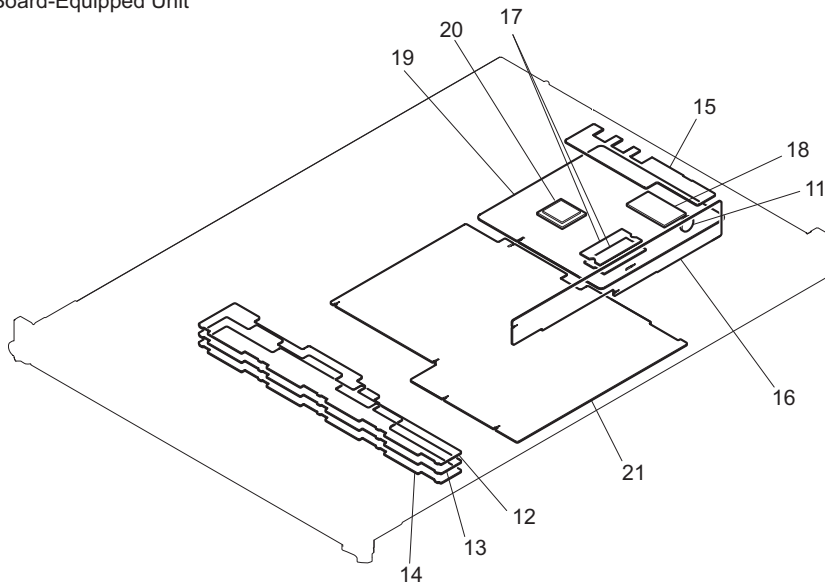
5-3. Location of Main Parts

This section describes replacement procedures of the parts listed below.

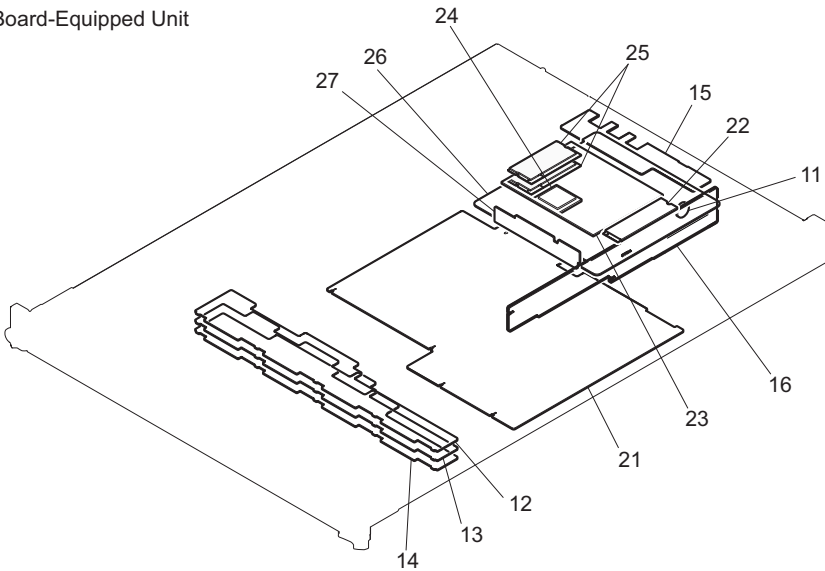


No.	Part Name	Procedure
1	Top Panel Assembly	“5-4. Top Panel Assembly”
2	Front Panel Assembly	“5-5. Front Panel Assembly”
3	LED-527 Board	“5-6. LED-527 Board”
4	SW-1627 Board	“5-7. SW-1627 Board”
5	DIO-98 Board	“5-8. DIO-98 Board”
6	HDD Assembly (ST Assembly)	“5-9. HDD Assembly (ST Assembly)”
7	Power Unit (Power Unit A, Power Unit B (Option))	“5-10. Power Unit”
8	Hot-Swap Unit	“5-11. Hot-Swap Unit”
9	Network card	“5-12. Network Card”
10	Fan Assembly (FAN1 to 5)	“5-13. Fan Assembly”

iAP-001 Board-Equipped Unit



iAP-005 Board-Equipped Unit



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)	“5-20-1. Memory Module (204pin SO-DIMM)”
18	SSD Module (mSATA)	“5-20-2. SSD Module (mSATA)”
19	iAP-001 Board Assembly	“5-20-3. iAP-001 Board Assembly”
20	CPU	“5-20-4. CPU”
21	MB-1204 Board	“5-22. MB-1204 Board”
22	SSD Module (M.2)	“5-21-1. SSD Module (M.2)”
23	iAP-005 Board Assembly	“5-21-2. iAP-005 Board Assembly”

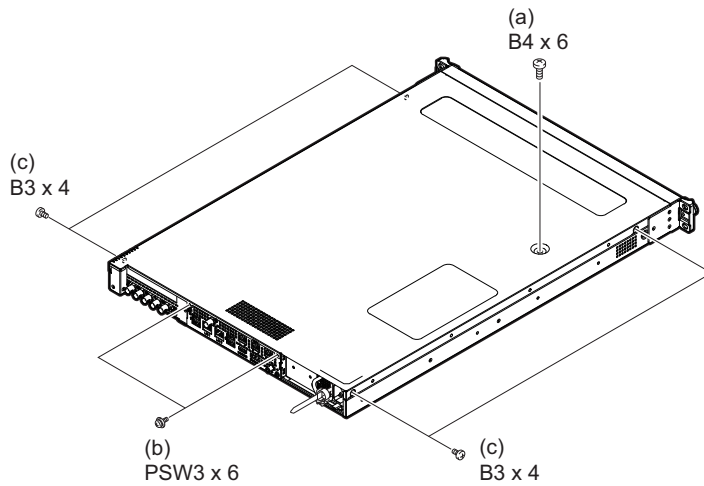
Continued

No.	Part Name	Procedure
24	CPU	“5-21-3. CPU”
25	Memory Module (260pin SO-DIMM)	“5-21-4. Memory Module (260pin SO-DIMM)”
26	IF-1330 Board	“5-21-5. IF-1330 Board”
27	CN-3934 Board	“5-21-6. CN-3934 Board”

5-4. Top Panel Assembly

Procedure

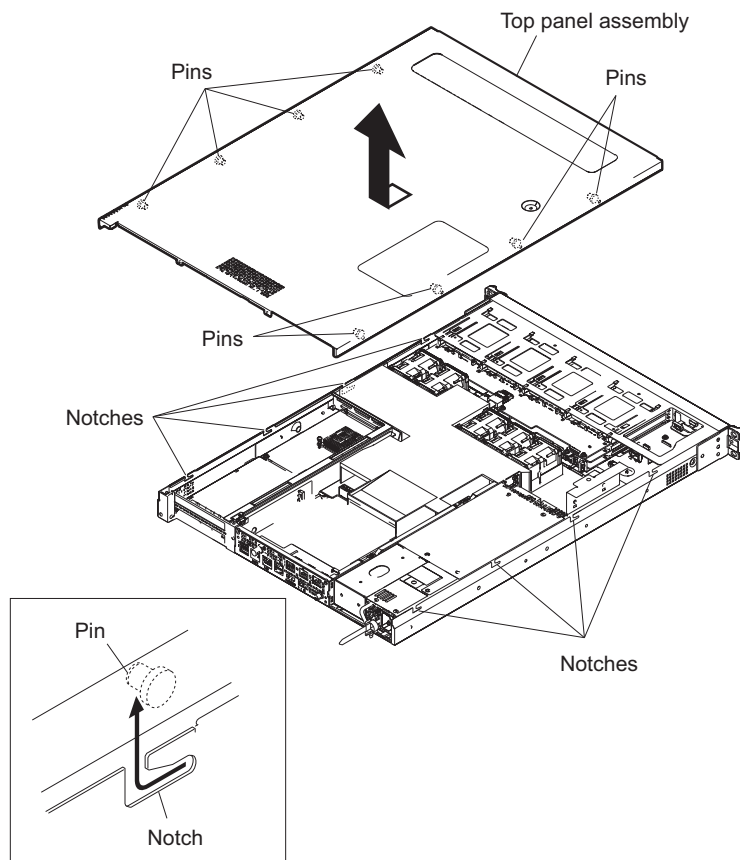
1. Remove the screw (B4 x 6), four screws (B3 x 4), and two screws (PSW3 x 6).



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.

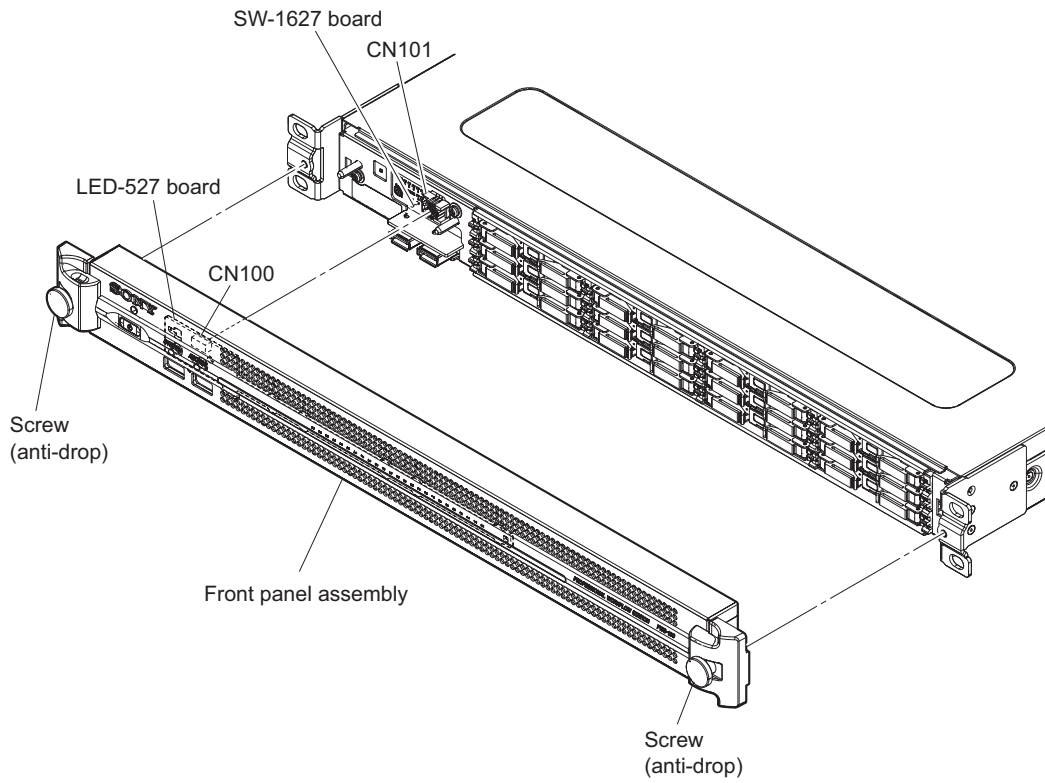


3. Install the removed parts by reversing the steps of removal.

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.

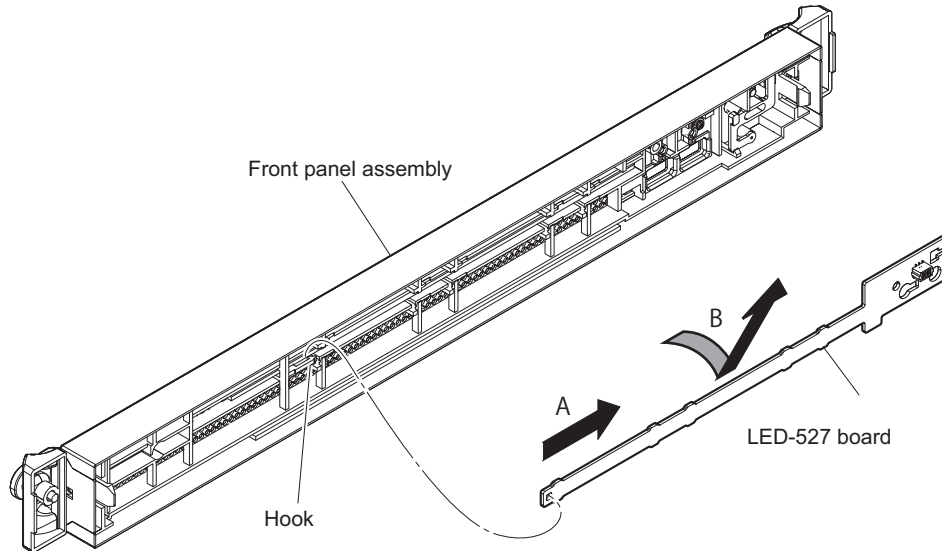
5-6. LED-527 Board

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 the arrow B and remove the LED-527 board.



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

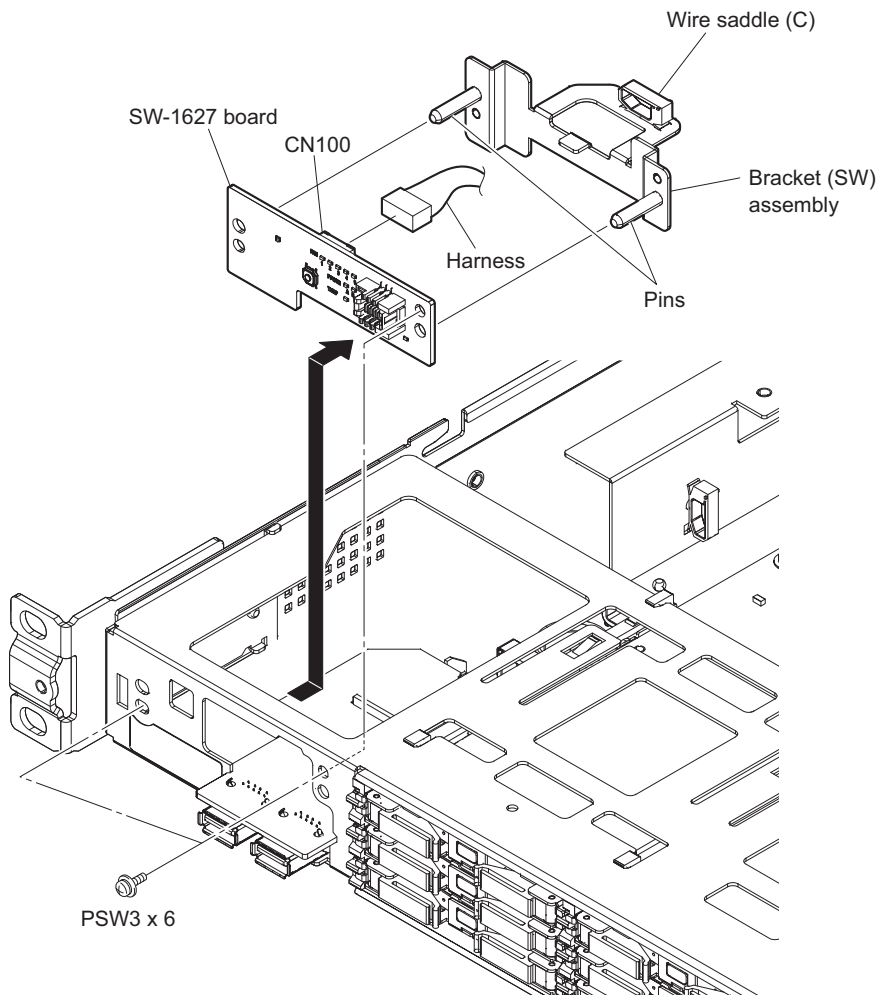
5-7. SW-1627 Board

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.

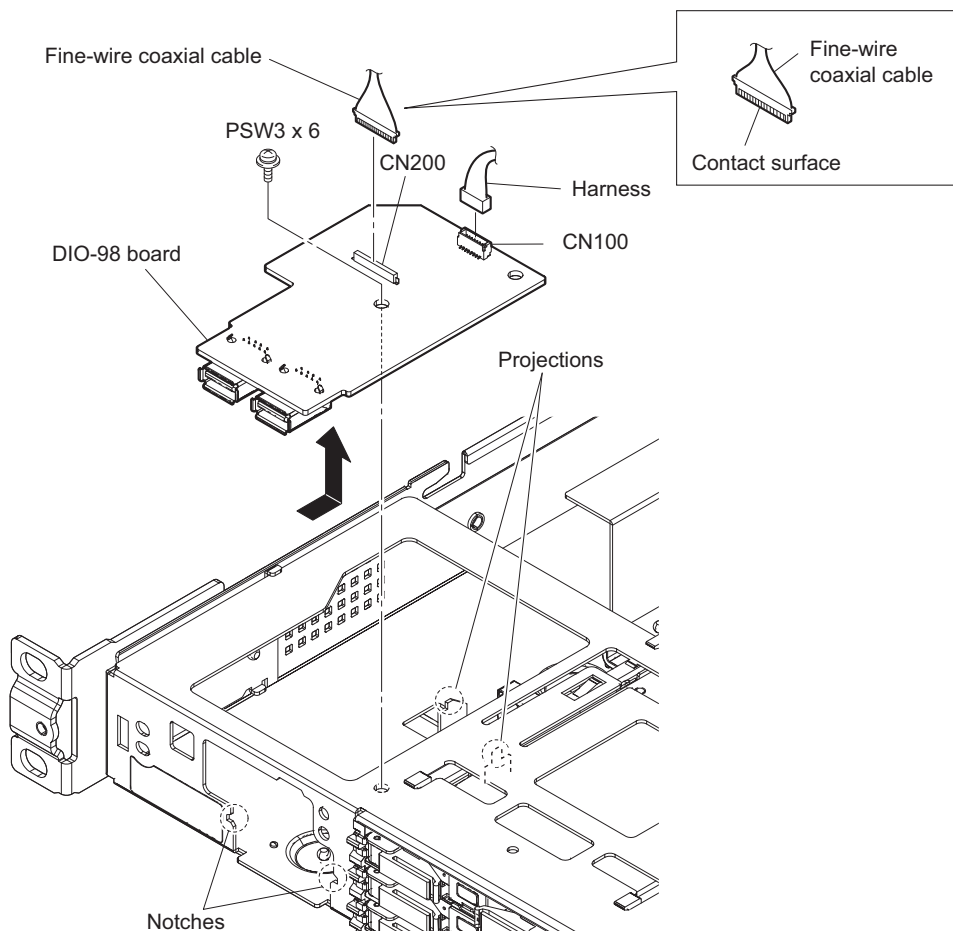
Note

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

- When installing the fine-wire coaxial cable, install it in the orientation shown in the figure.
- When installing the DIO-98 board, install it according to the two notches.

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

5-9. HDD Assembly (ST Assembly)

Note

The HDD of the unit can be swapped with the power turned on. In that case, spin down the faulty HDD by using the Maintenance menu. After confirming that the HDD has completely stopped, remove it. Immediately after a new HDD has been installed, it spins up. Do not apply vibration to the HDD.

Required part

- ST-No Sheet (1)

Tip

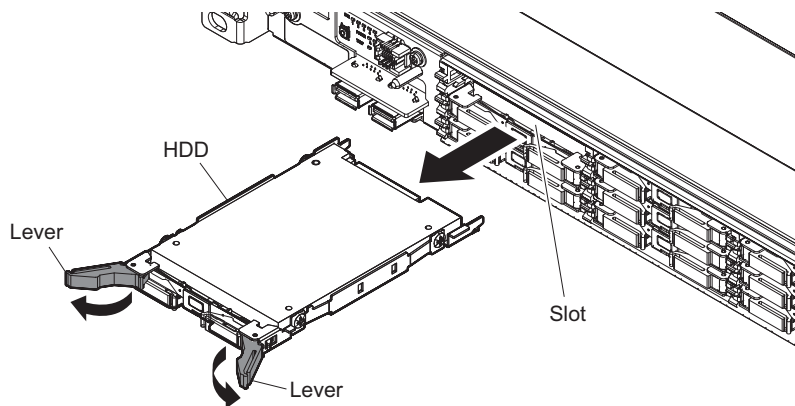
This part is supplied with a replacement HDD assembly (ST ASSY).

Preparation

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

Removal

1. Open the lever of the HDD in the direction of the arrow and remove the HDD from a slot carefully.



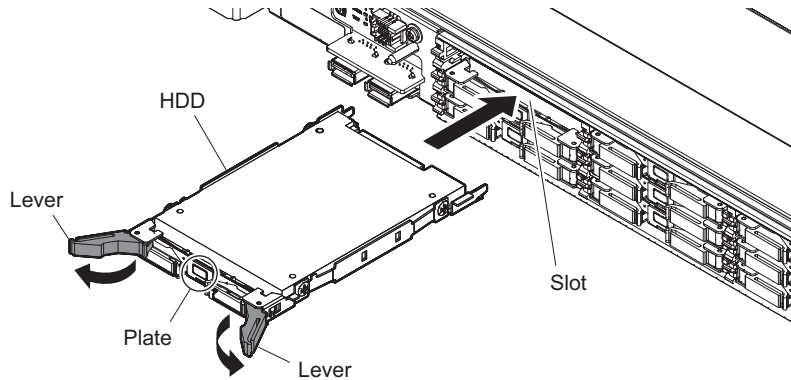
Installation

2. Open the lever of the HDD and insert the HDD slowly into the slot.

3. When the HDD hits the end of the slot, push its plate.

Note

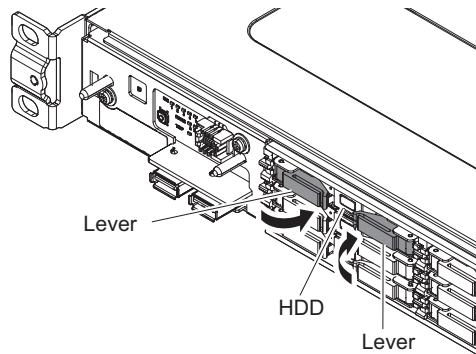
When the HDD is replaced with the power turned on, the power is supplied to the HDD in this step and the HDD spins up immediately. Be careful not to apply any vibration in this step and subsequent steps.



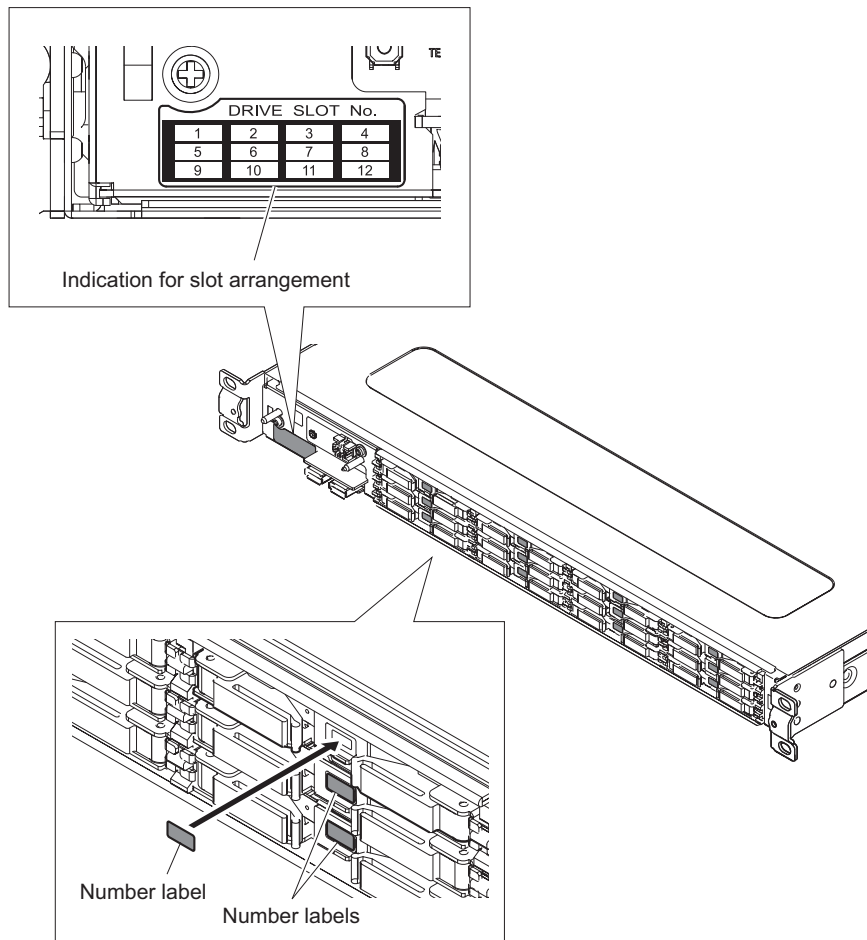
Tip

The unit will start rebuilding (restructuring RAID array), when the unit is turned on after replacing an HDD, or when an HDD is replaced without turning off the unit. In the case of an HDD with capacity of 500 GB, the estimated time required for rebuilding is six hours. Though the unit is usable during rebuilding, if the unit is used, rebuilding takes longer to finish than when the unit is not used. The progress of rebuilding can be checked in the Maintenance Web screen.

4. Turn the levers in the direction of the arrows.



5. Remove a piece of number label from the ST-No sheet and attach it to the front of the HDD assembly.



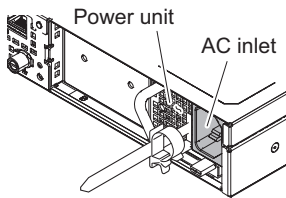
Note

Assign a number to the HDD assembly according to the slot number. The slot numbers are displayed at "Indication for slot arrangement" that is attached on the unit.

5-10. Power Unit

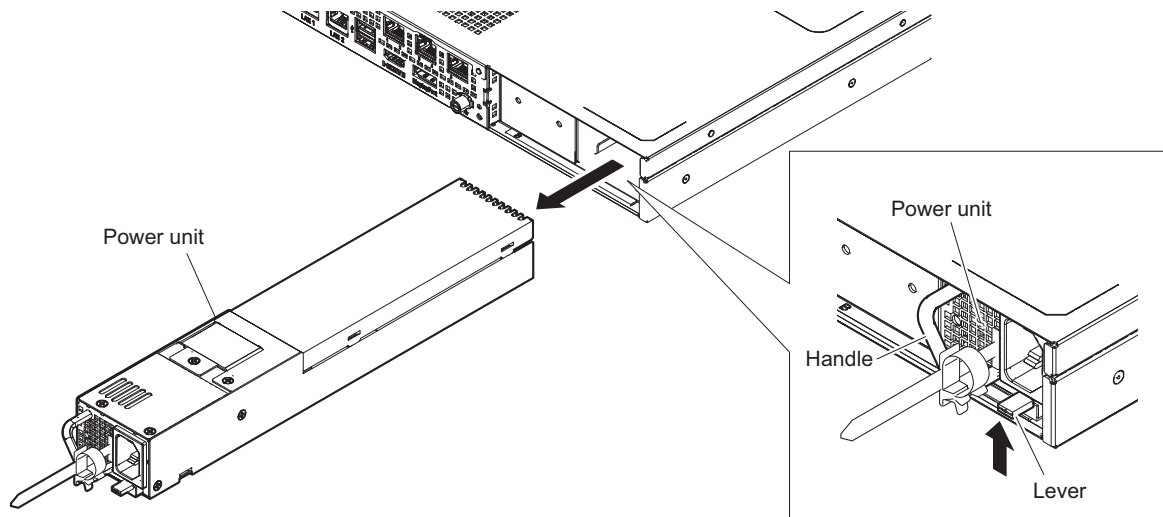
Note

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



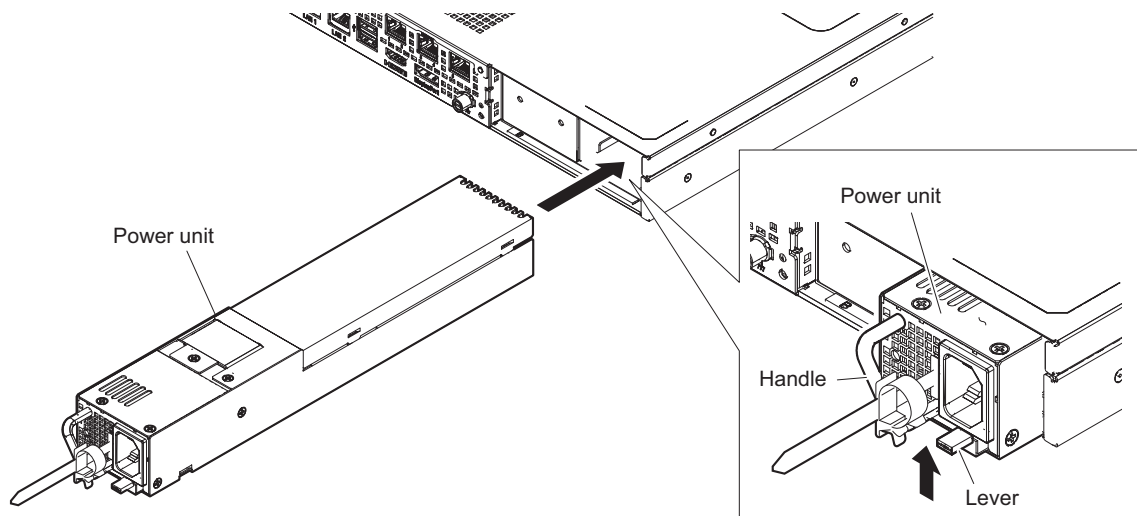
Removal

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.



Installation

2. Pull up the lever in the direction of the 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

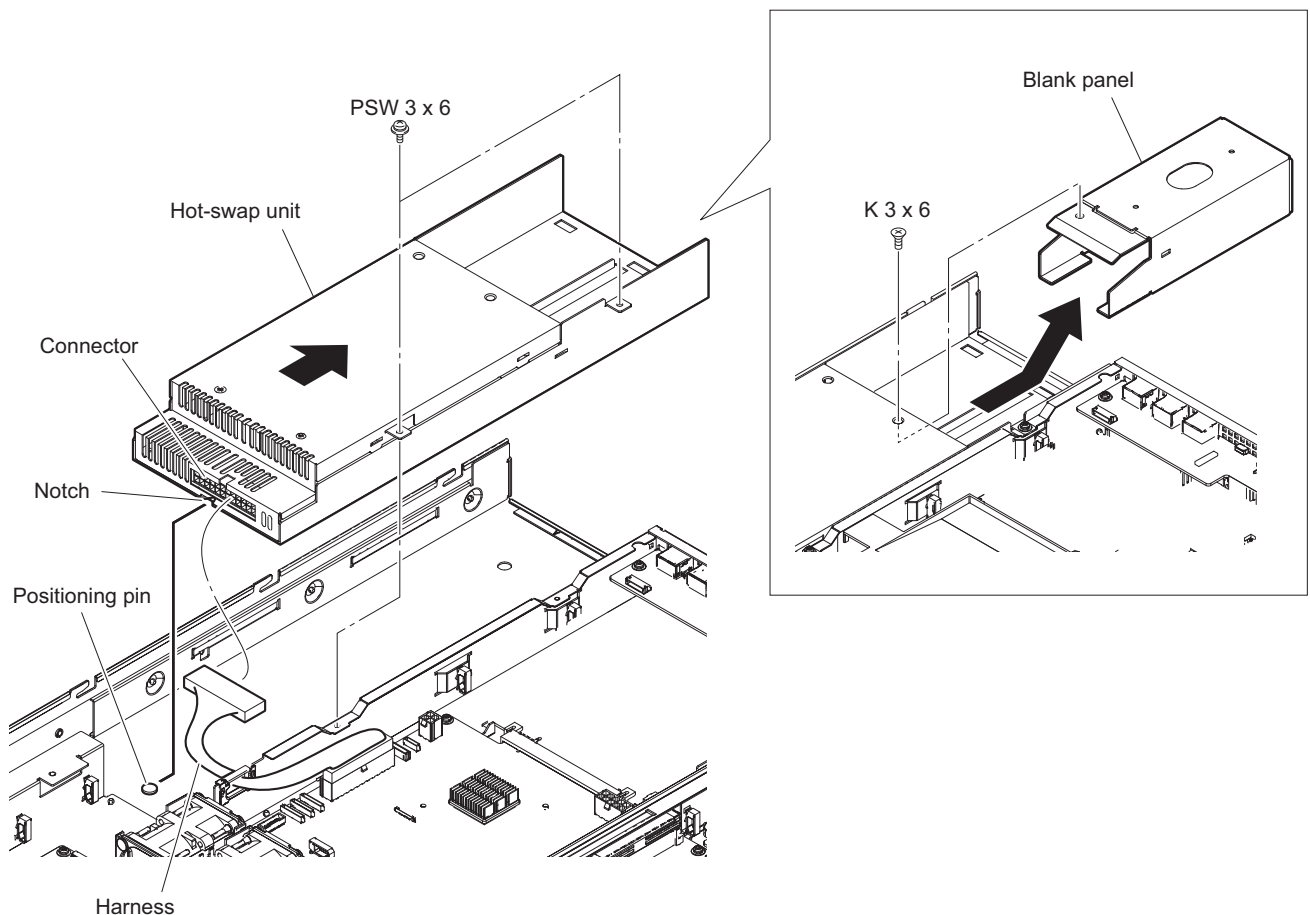
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”.)
2. Remove the Power unit assembly. (Refer to “5-10. Power Unit”.)

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.

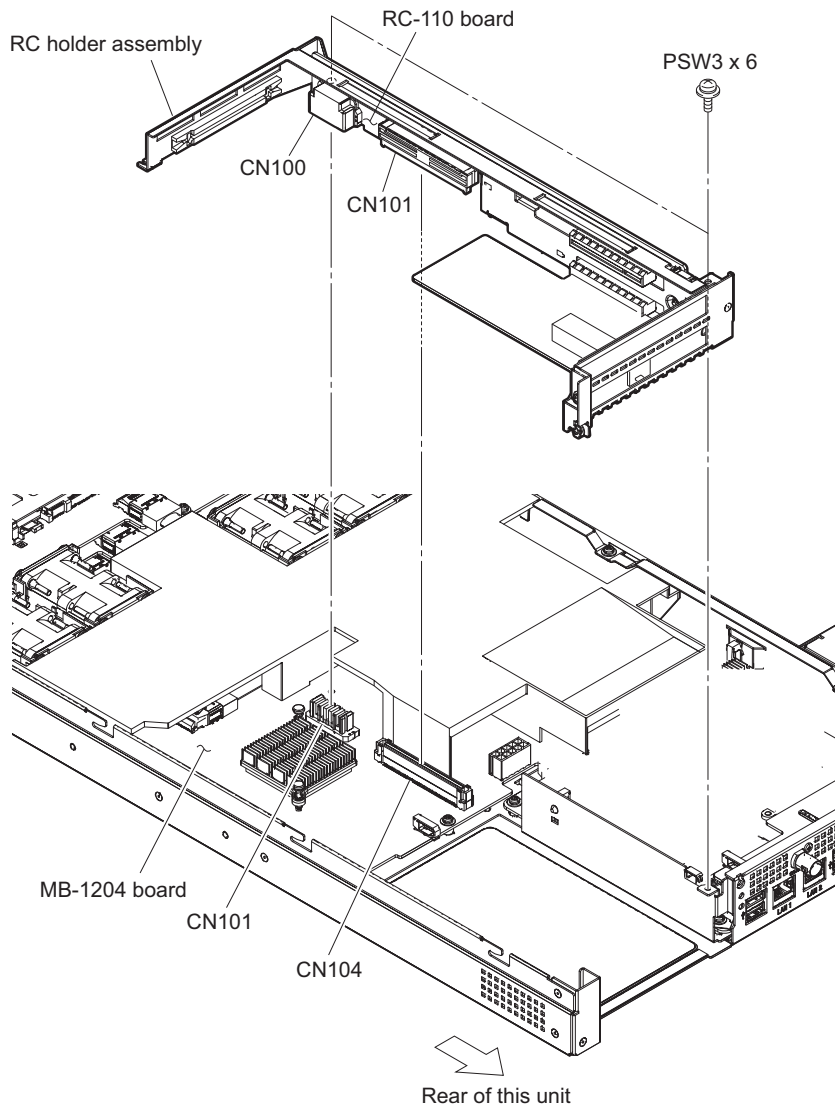
5-12. Network Card

Preparation

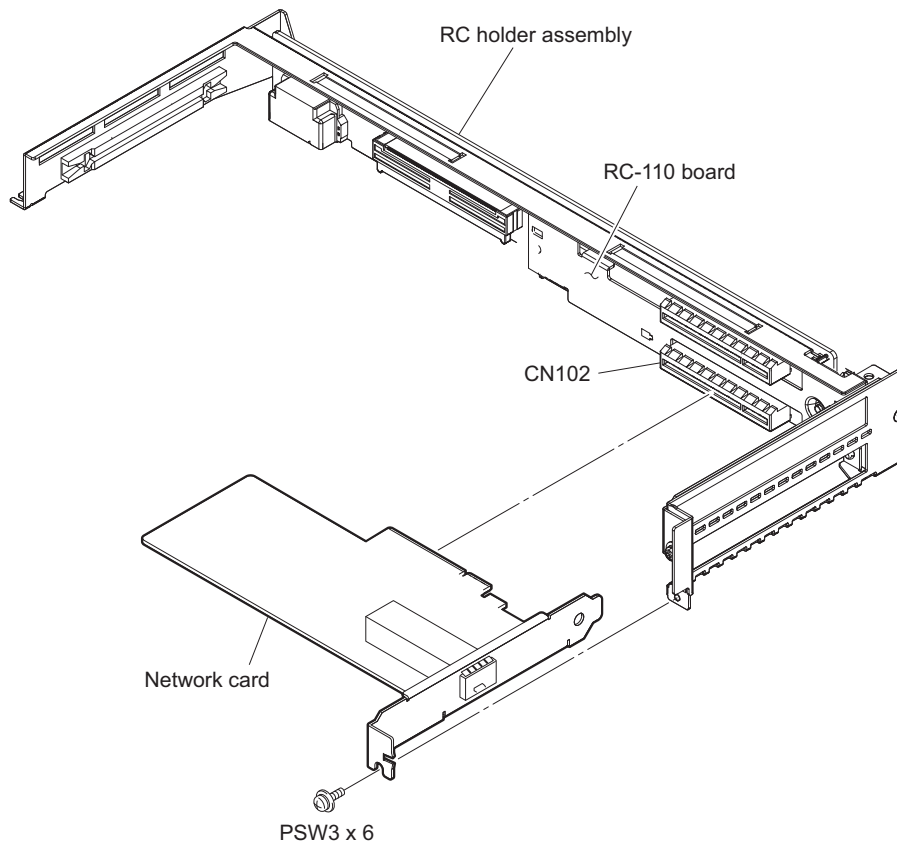
1. Remove the top panel assembly. (Refer to “5-4. Top Panel Assembly”)
2. Remove the SFP+ module.

Procedure

1. Remove the two screws.
2. Remove RC holder assembly from the connectors (CN101 and CN104) on the MB-1204 board.



3. Remove the screw, then remove the network card from the connector (CN102) on the RC-110 board.



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

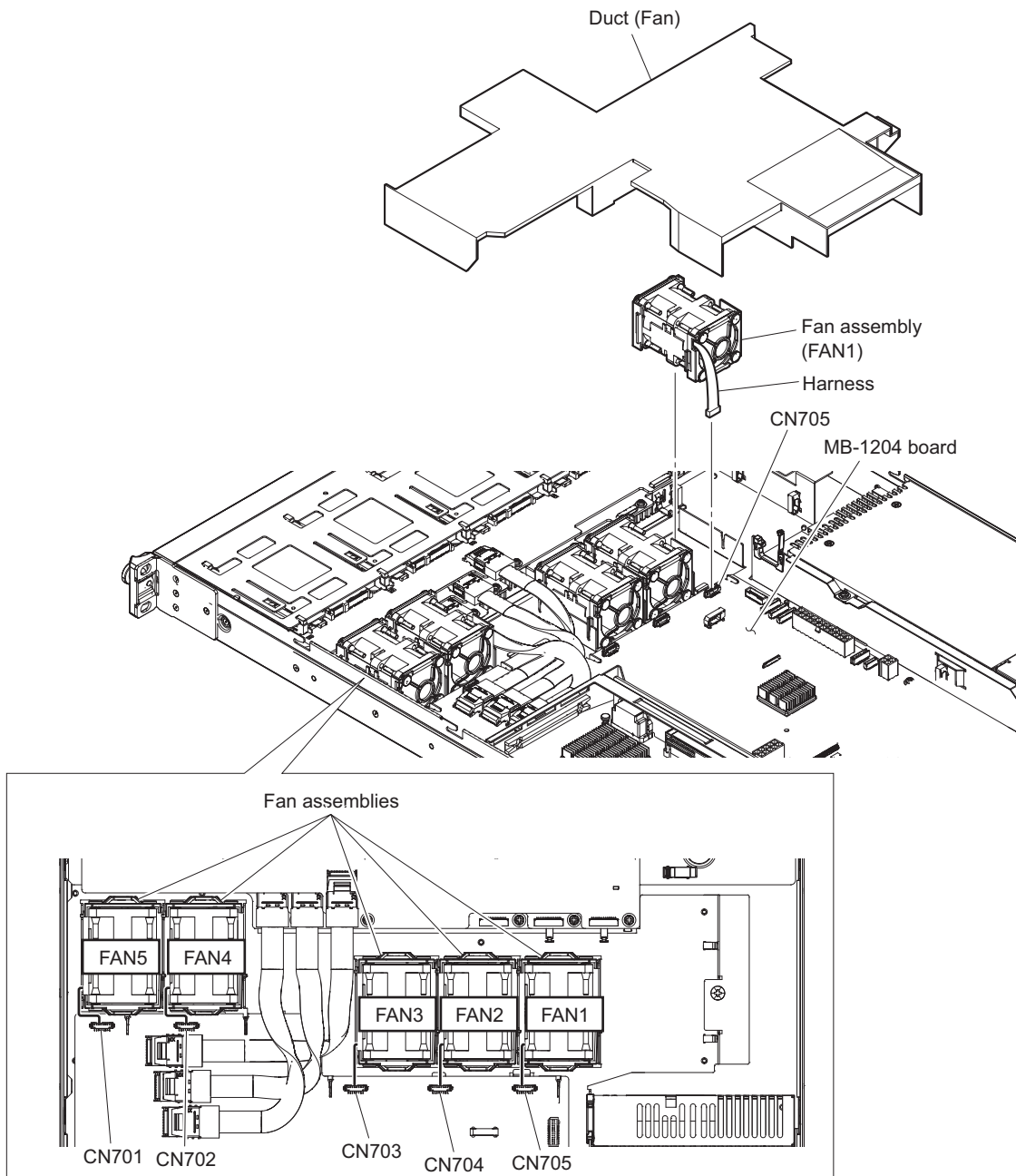
5-13. Fan Assembly

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.

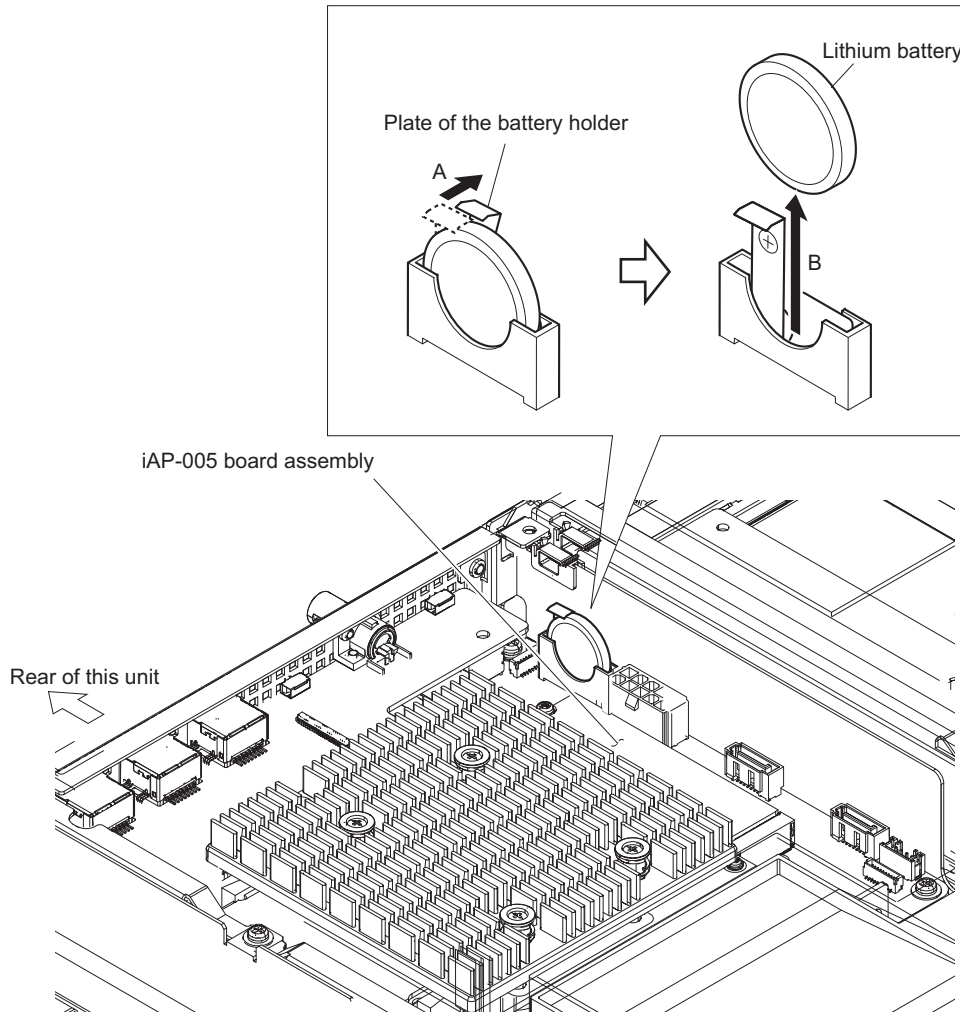
5-14. Lithium Battery

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 the arrow A and remove the lithium battery in the direction of the arrow B.



This illustration shows the unit containing the iAP-005 board.

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

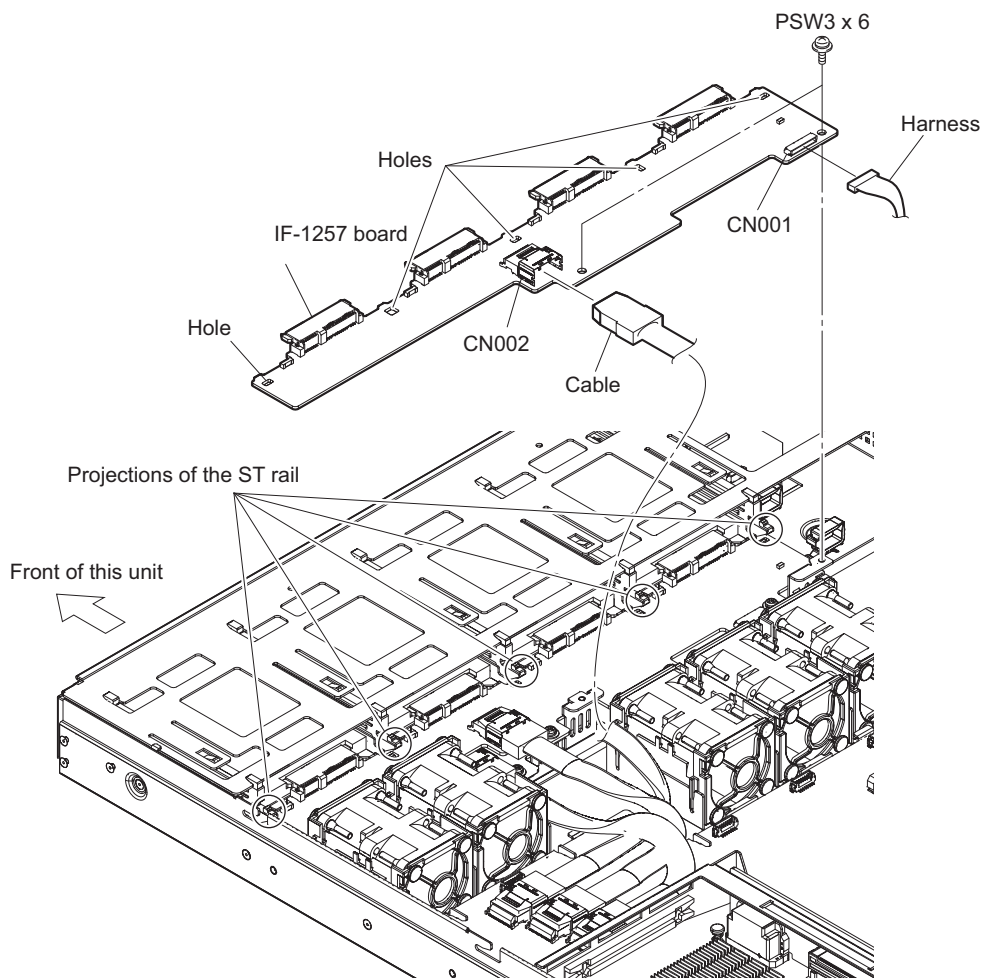
5-15. IF-1257 Board

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 HDD of slot No. 1 to 4. (Refer to “5-9. HDD Assembly (ST 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.

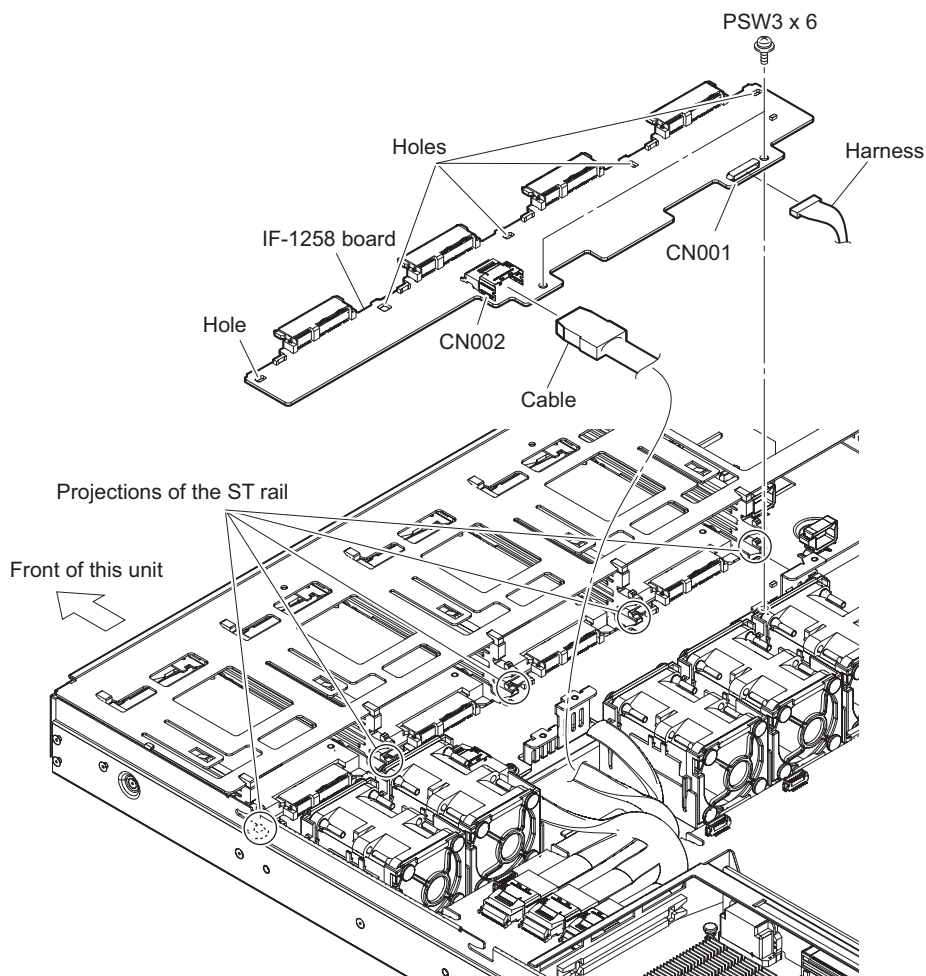
5-16. IF-1258 Board

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 HDD of slot No. 1 to 8. (Refer to “5-9. HDD Assembly (ST 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.

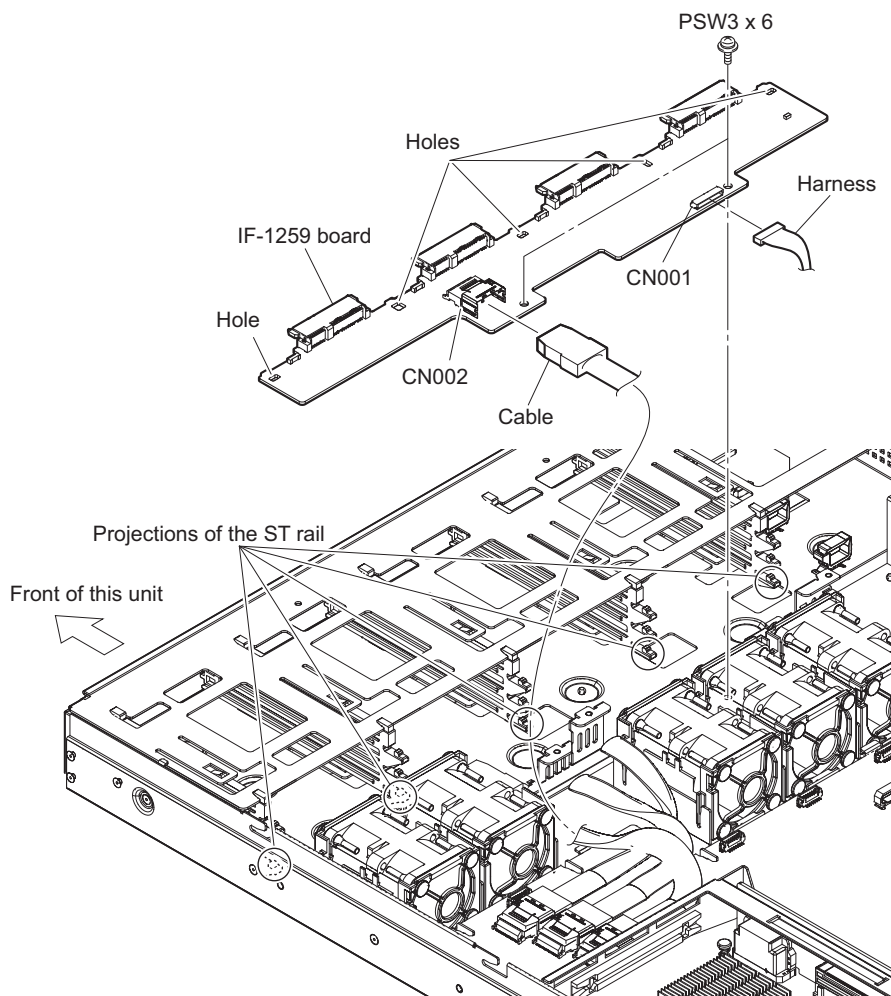
5-17. IF-1259 Board

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 HDD of slot No. 1 to 12. (Refer to “5-9. HDD Assembly (ST 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.

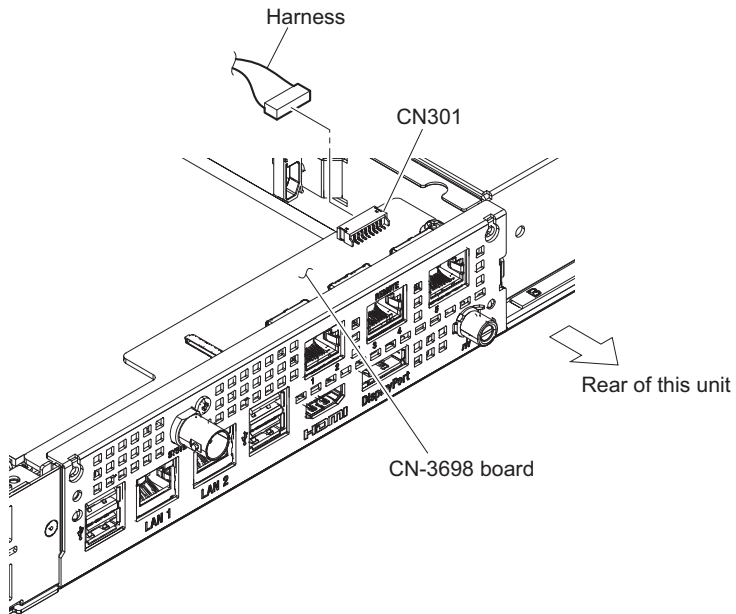
5-18. CN-3698 Board

Preparation

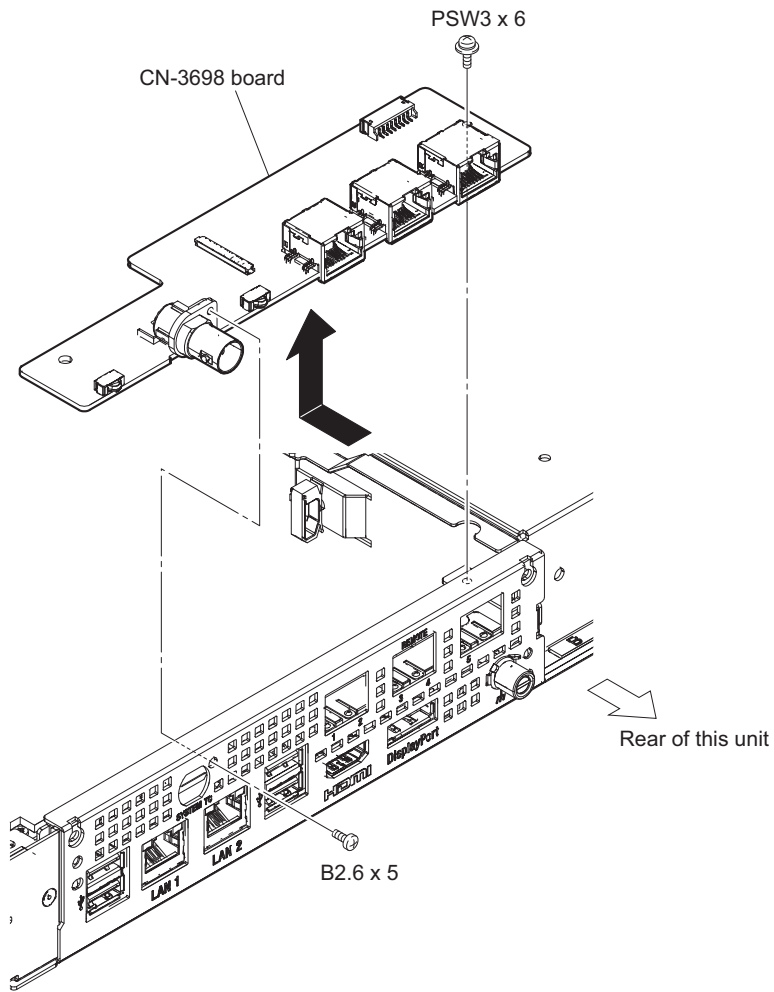
1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#).)

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.

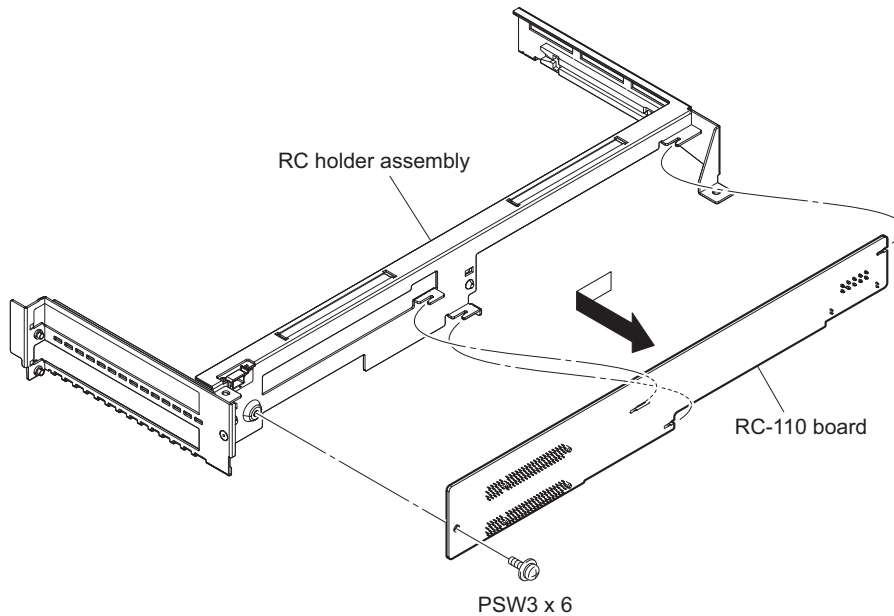
5-19. RC-110 Board

Preparation

1. Remove the top panel assembly.(Refer to“5-4. Top Panel Assembly”)
2. Remove the network card (Refer to “5-12. Network Card”)

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. iAP-001 Board-Equipped Unit

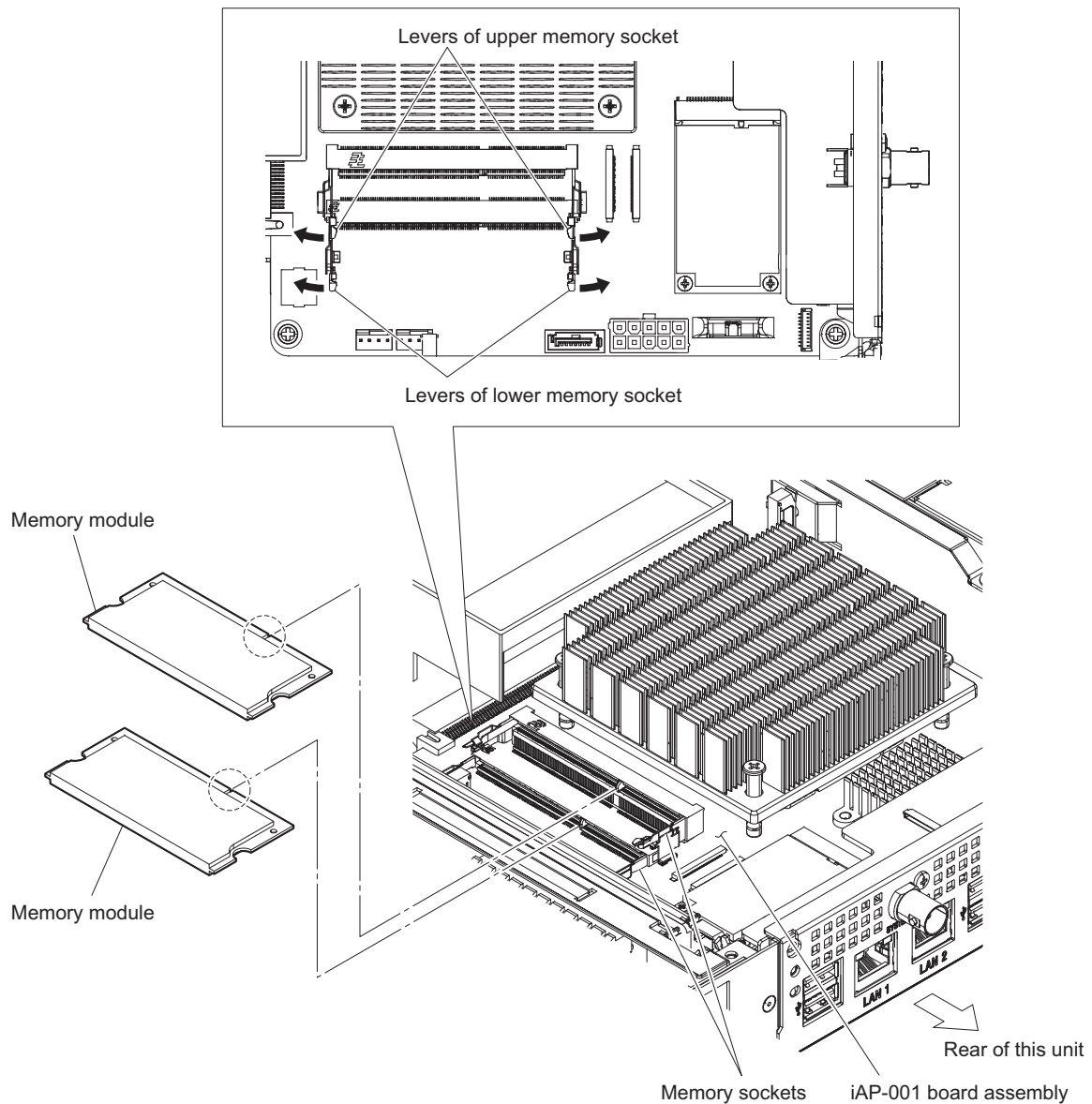
5-20-1. Memory Module (204pin SO-DIMM)

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

When installing the memory modules, install them securely into the memory sockets.

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

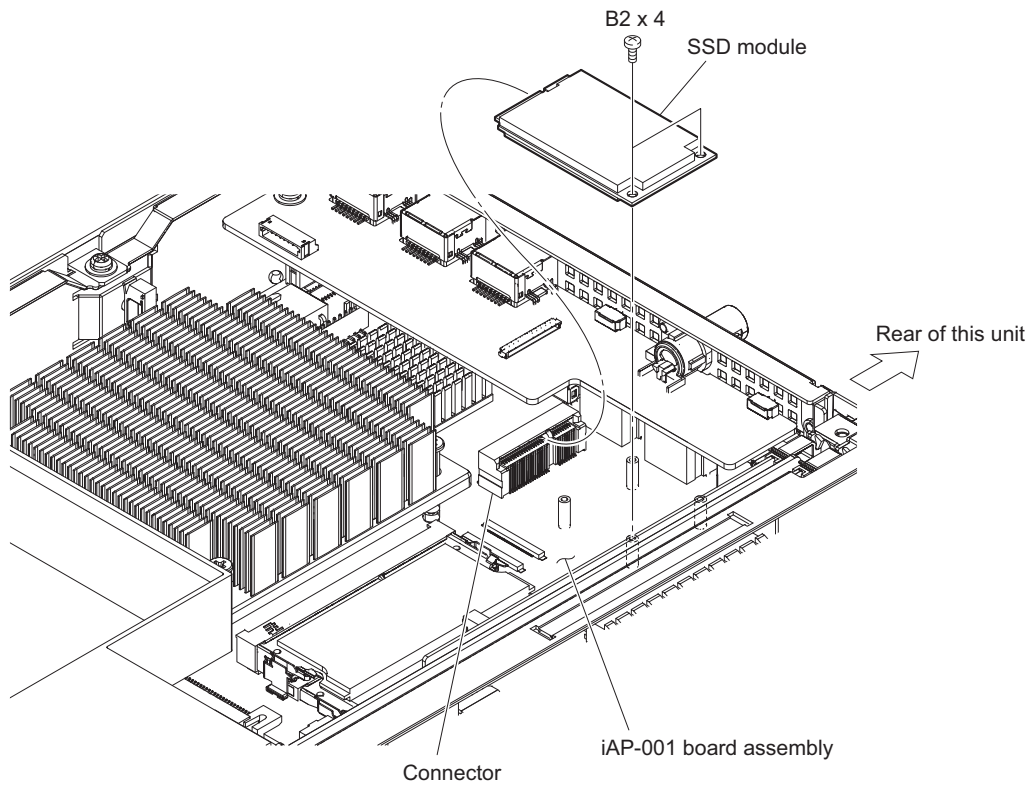
5-20-2. SSD Module (mSATA)

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.



Note

When installing the SSD module, insert it securely into the connector.

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

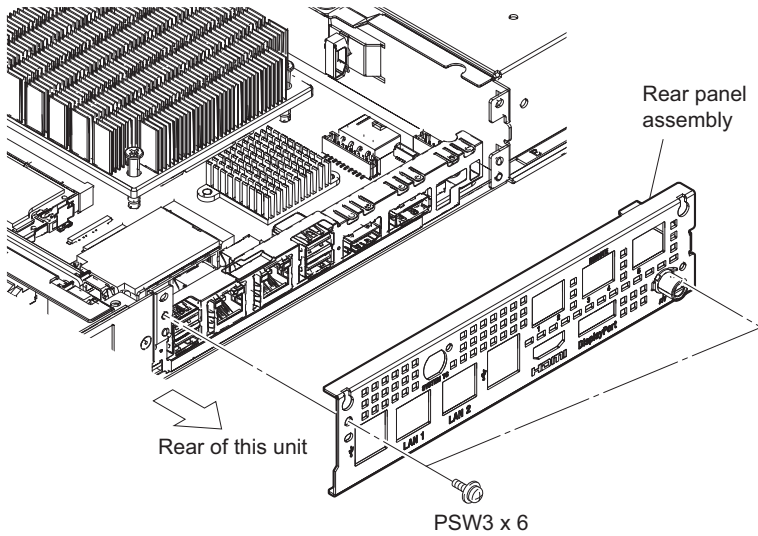
5-20-3. iAP-001 Board Assembly

Preparation

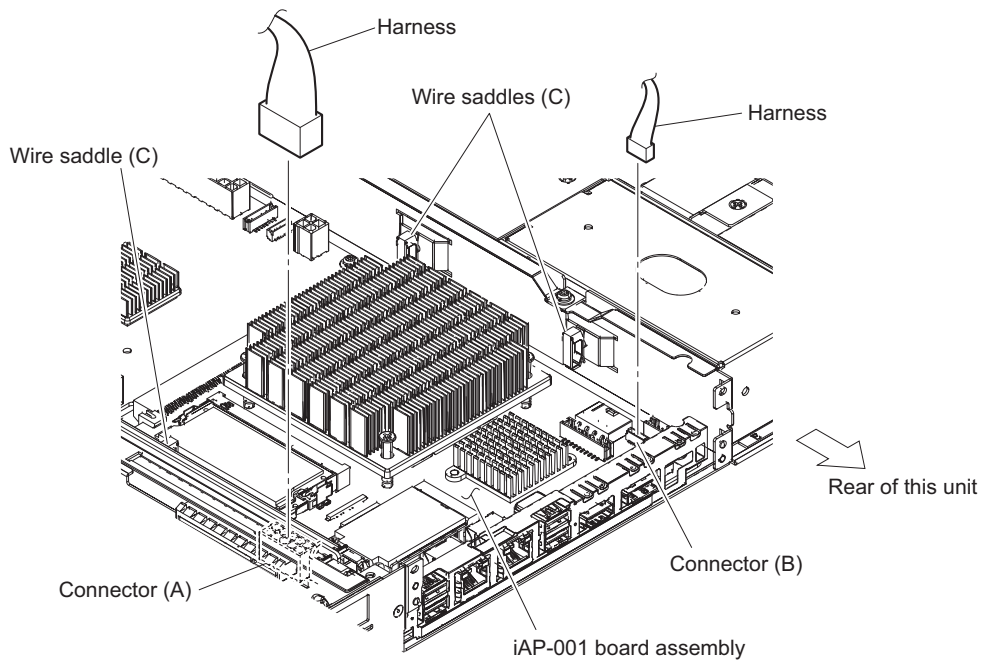
1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#).)
2. Remove the fan duct. (Refer to [“5-13. Fan Assembly”](#).)
3. Remove the CN-3698 board. (Refer to [“5-18. CN-3698 Board”](#).)

Procedure

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

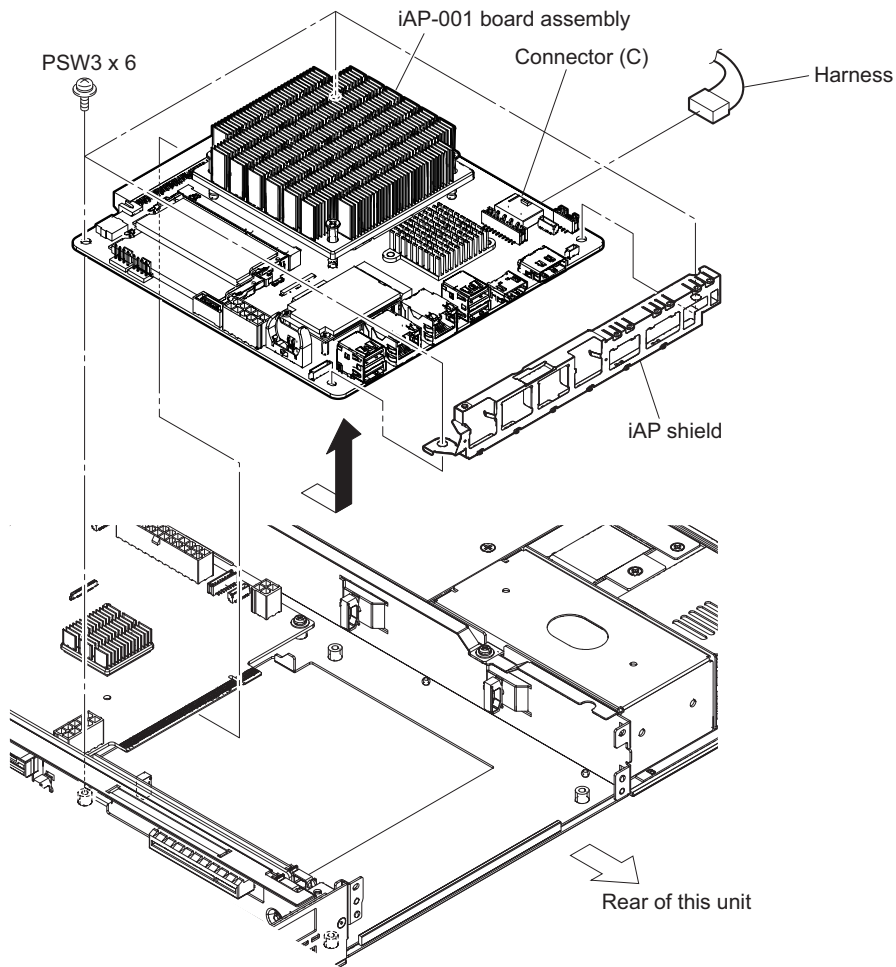


2. Open the three pieces of wire saddle (C) and disconnect the two harnesses from the connector (A) and the connector (B) of the iAP-001 board assembly.



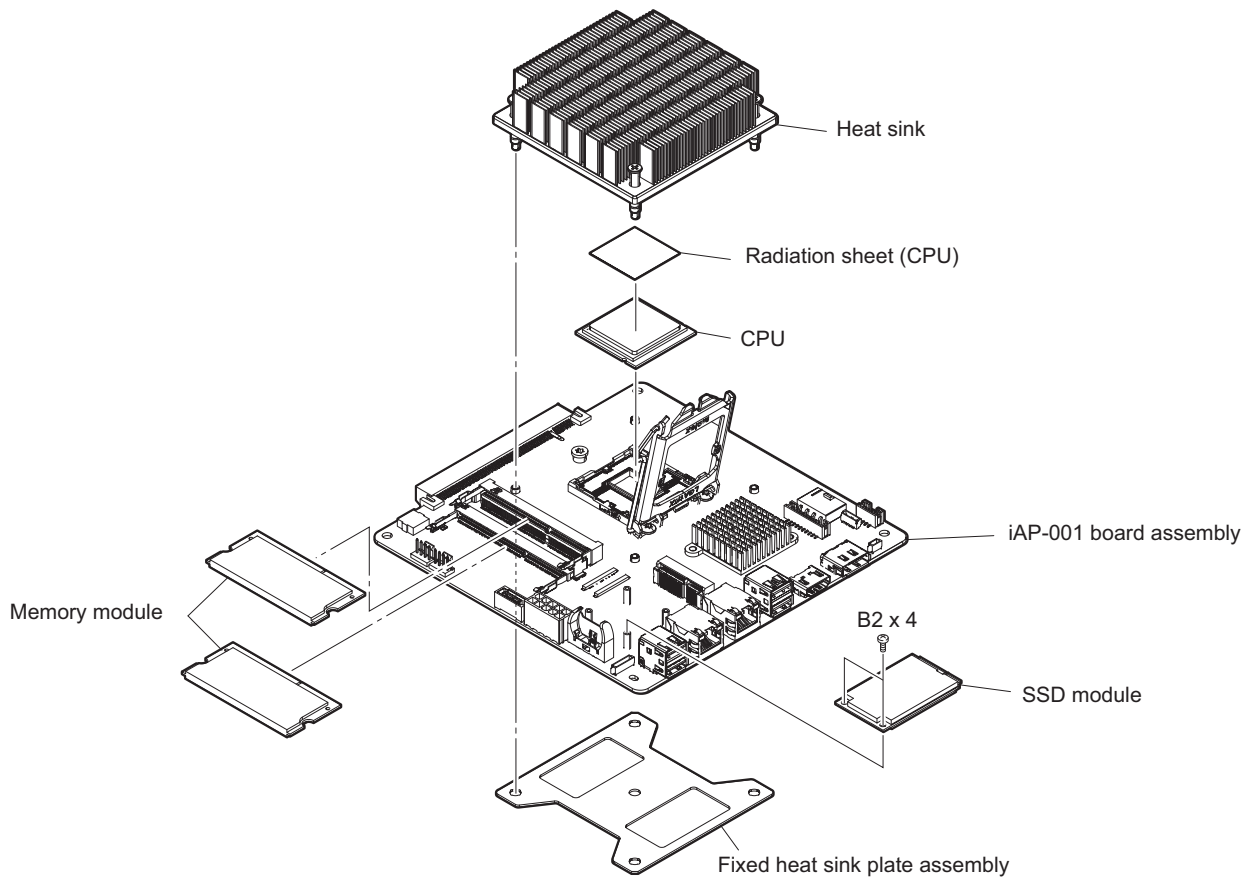
3. Remove the four screws and detach the iAP-001 board assembly in the direction of the arrow.
4. Disconnect the harness from the connector (C) of the iAP-001 board assembly.

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 [“5-20-4. CPU”](#).)
7. Remove the two memory modules. (Refer to [“5-20-1. Memory Module \(204pin SO-DIMM\)”](#).)

8. Remove the SSD module. (Refer to “[5-20-2. SSD Module \(mSATA\)](#)”.)



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

5-20-4. 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.

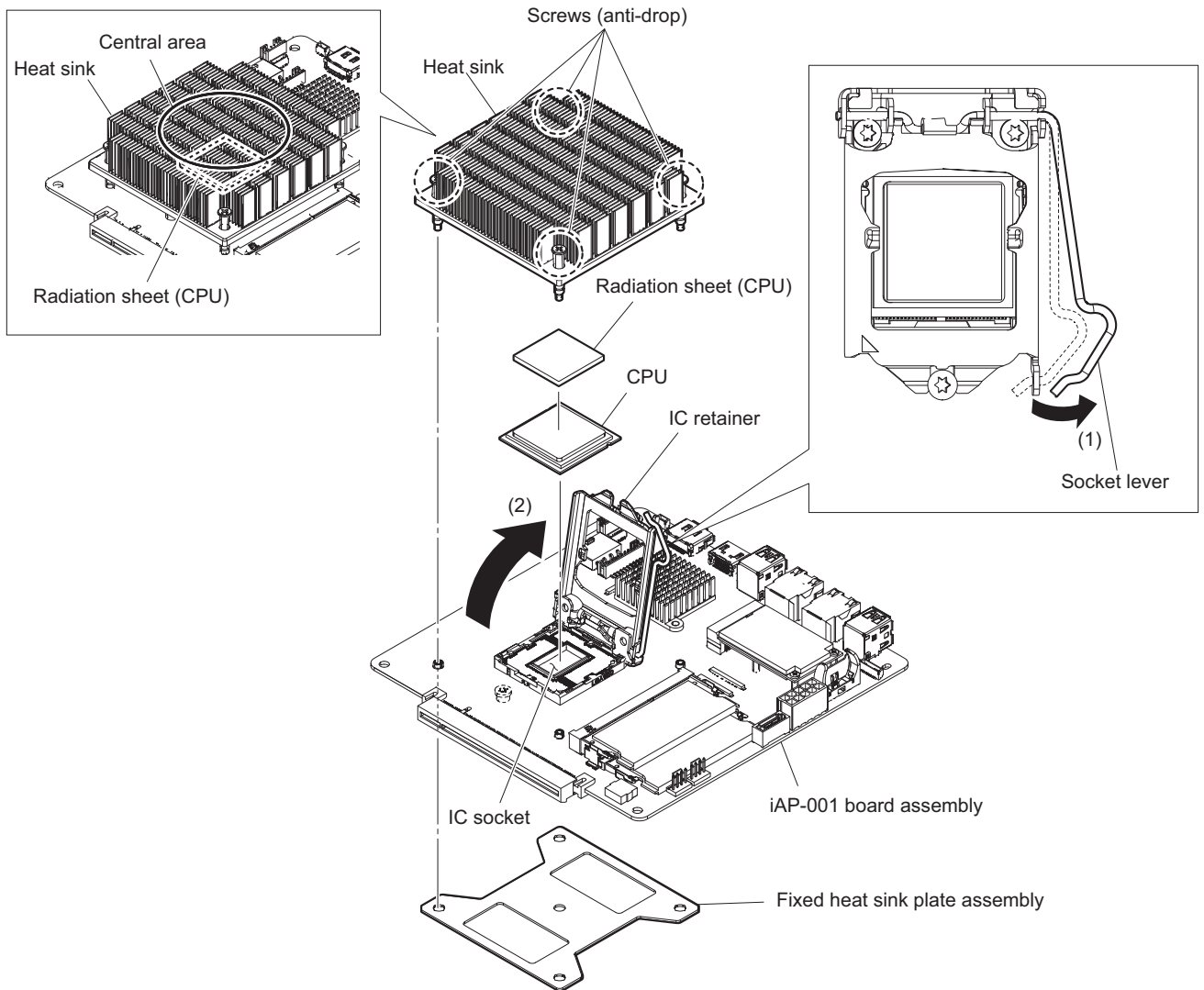
Preparation

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-001 board assembly. (Refer to “[5-20-3. iAP-001 Board Assembly](#)”.)

Removal

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.



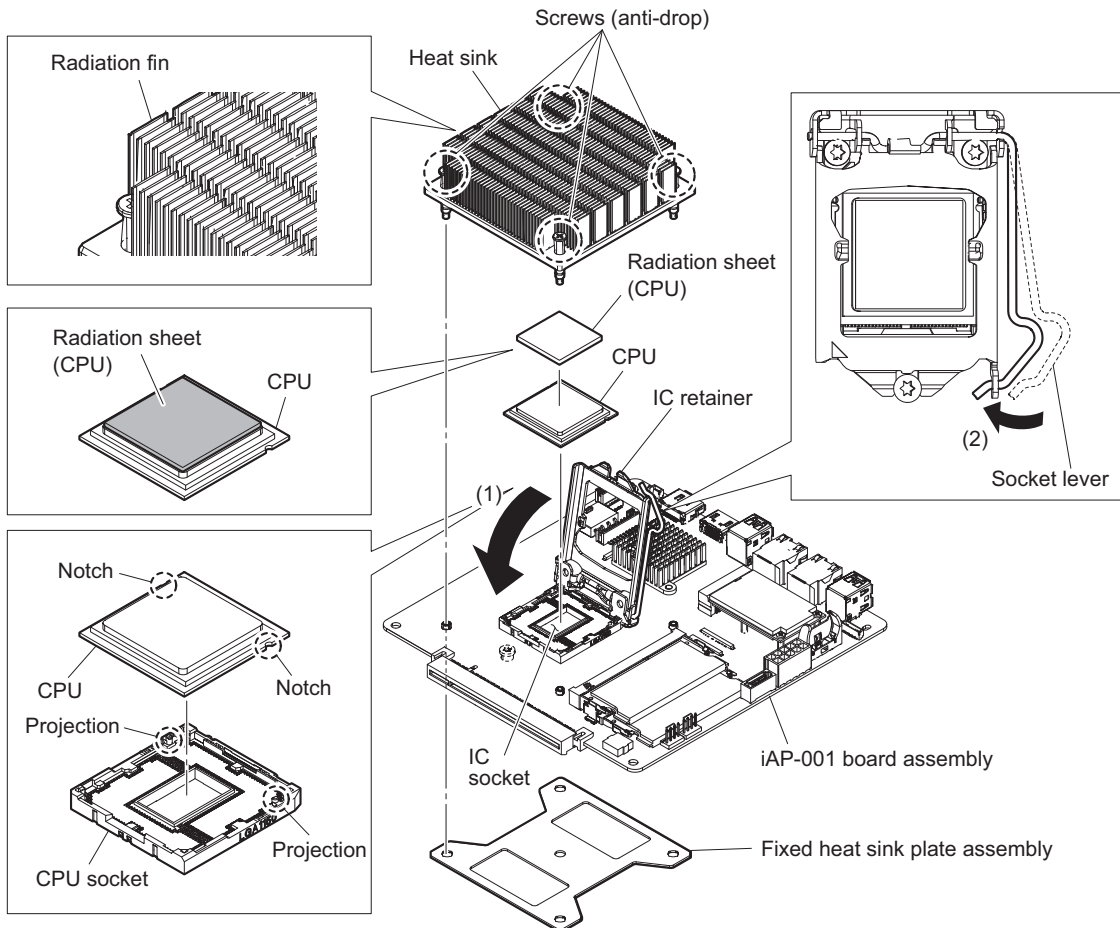
Installation

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 heat sink with its radiation fin directed as shown in the figure below.



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

5-21. iAP-005 Board-Equipped Unit

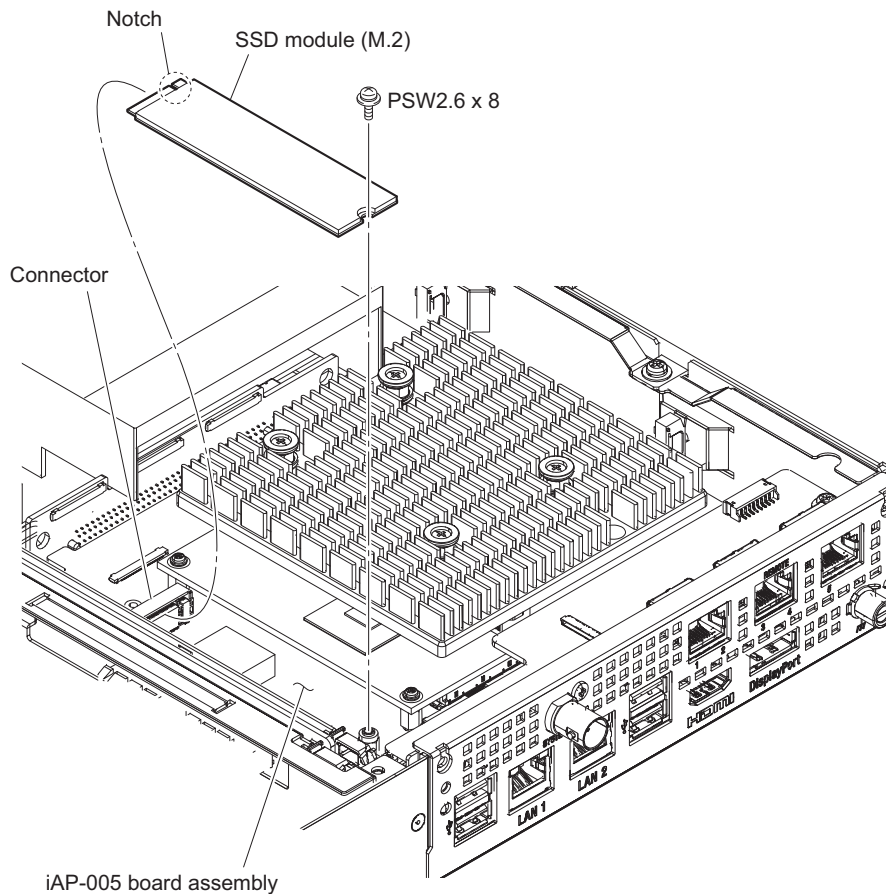
5-21-1. SSD Module (M.2)

Preparation

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

Procedure

1. Remove the screw and then remove the SSD module from the connector of the iAP-005 board assembly.



Note

When installing the SSD module, insert it securely into the connector of the iAP-005 board assembly.

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

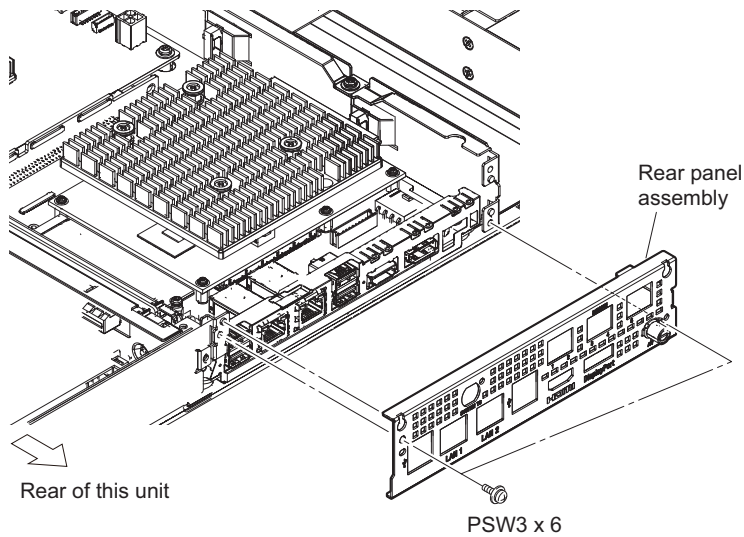
5-21-2. iAP-005 Board Assembly

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

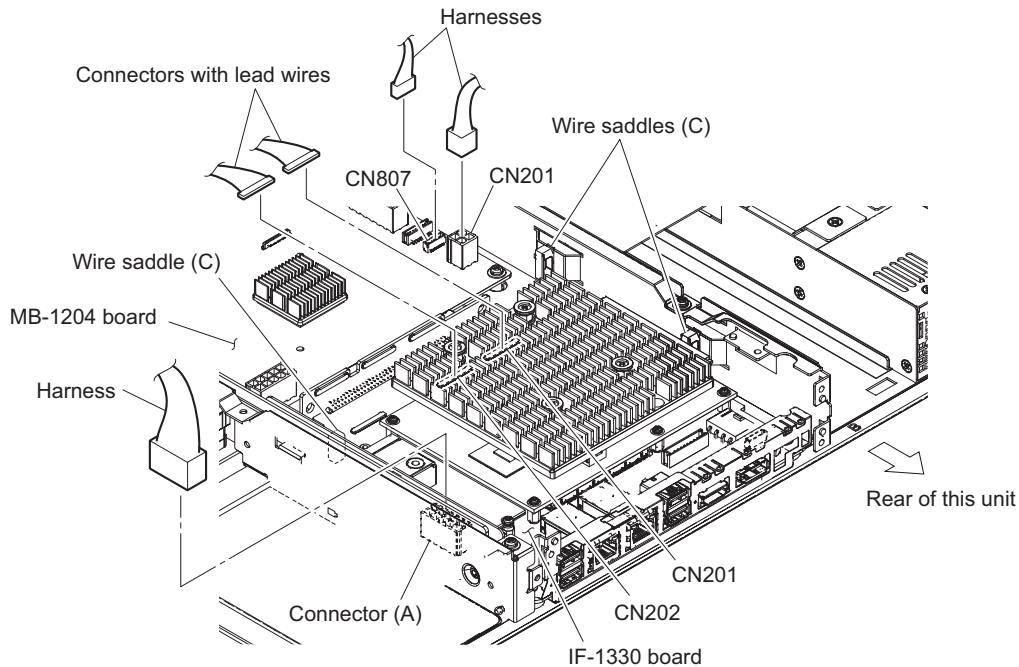
1. Remove the two screws and then detach the rear panel assembly.



2. Open the three pieces of wire saddle (C).
3. Disconnect the two harnesses from the connectors (CN201, CN807) on the MB-1204 board.
4. Disconnect the harness from the connector (A) of the iAP-005 board assembly.
5. Disconnect the two connectors with lead wires from the connectors (CN201, CN202) on the IF-1330 board.

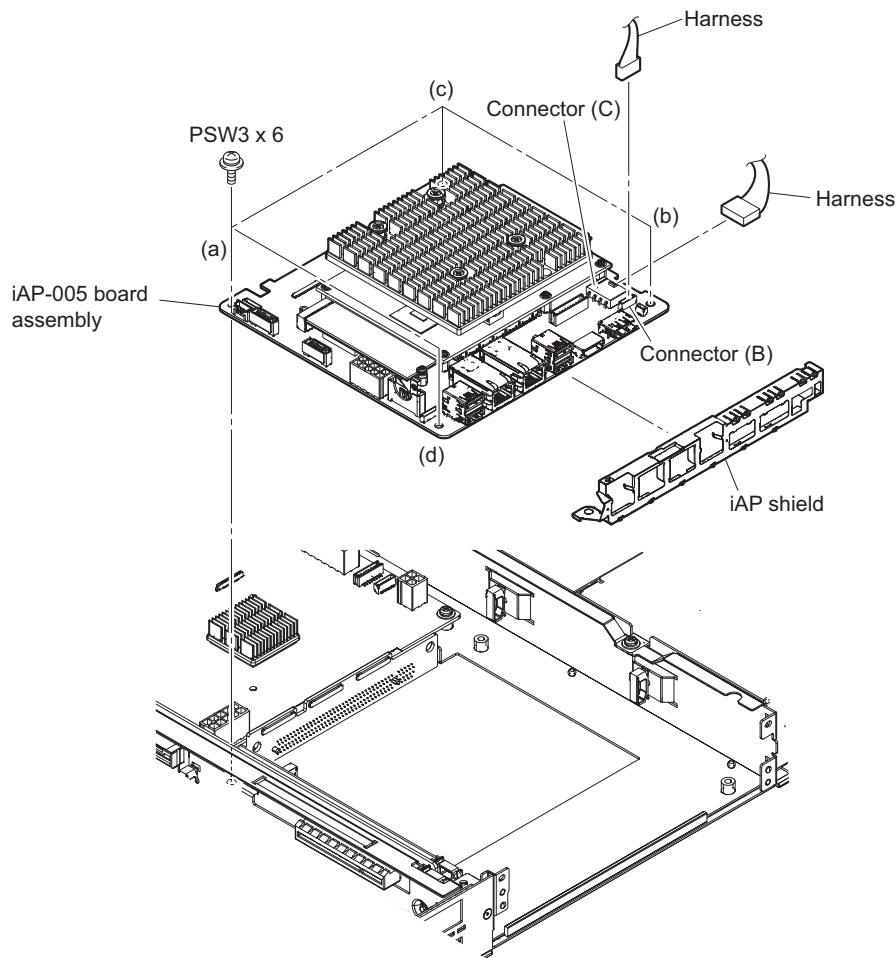
Note

When disconnecting the connector with lead wire, pull out the connector part with your fingers.



6. Remove the four screws and detach the iAP-005 board assembly.
7. Disconnect the two harnesses from the connector (B) and the connector (C) of the iAP-005 board assembly.

8. Remove the iAP shield.



Note

When installing the iAP-005 board assembly, tighten the screws in the following sequence: (a), (b), (c), (d).

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

5-21-3. CPU

Note

The radiation sheet 0.5 (30X30) is not reusable. Prepare new parts in advance.

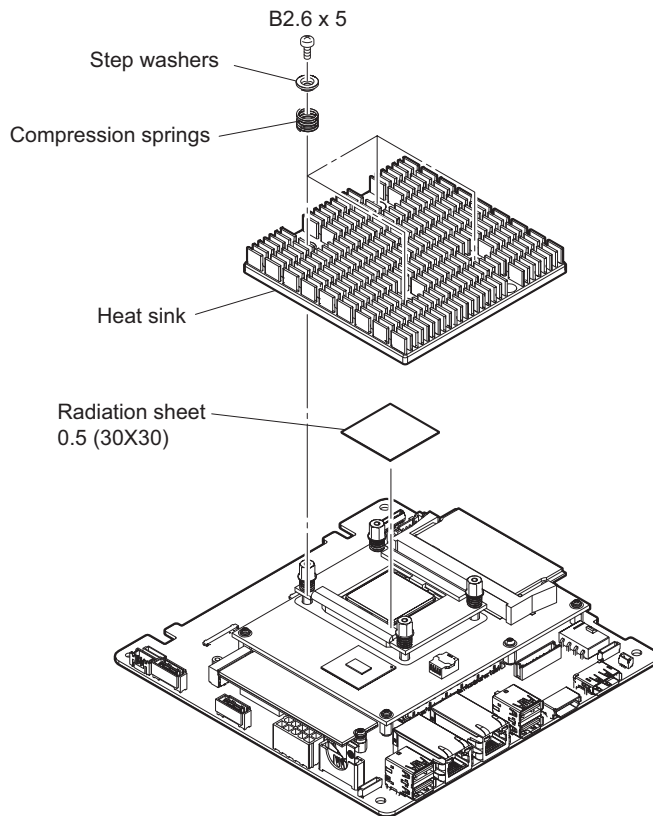
Preparation

1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#).)
2. Remove the iAP-005 board assembly. (Refer to [“5-21-2. iAP-005 Board Assembly”](#).)

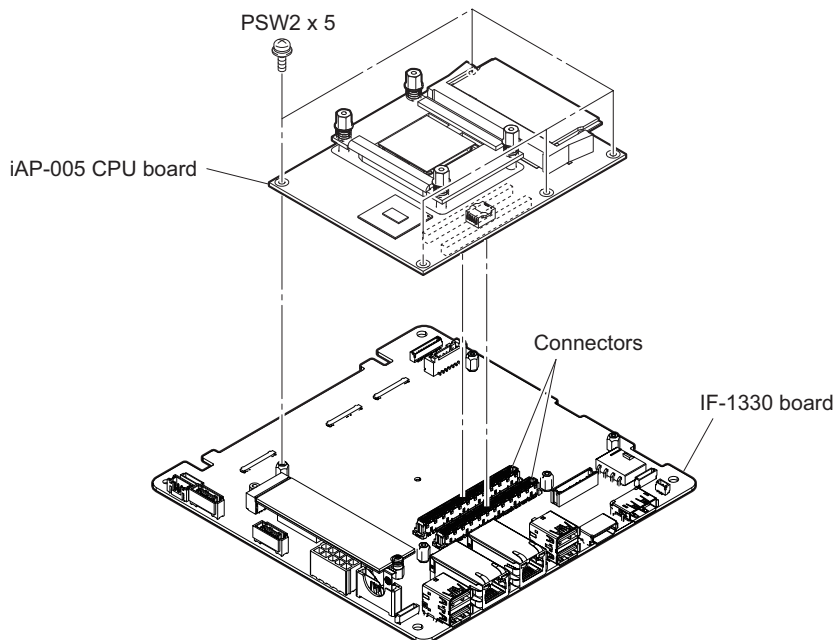
Removal

1. Remove the four screws, the four step washers and the four compression springs and detach the heat sink.

2. Remove the radiation sheet 0.5 (30X30).

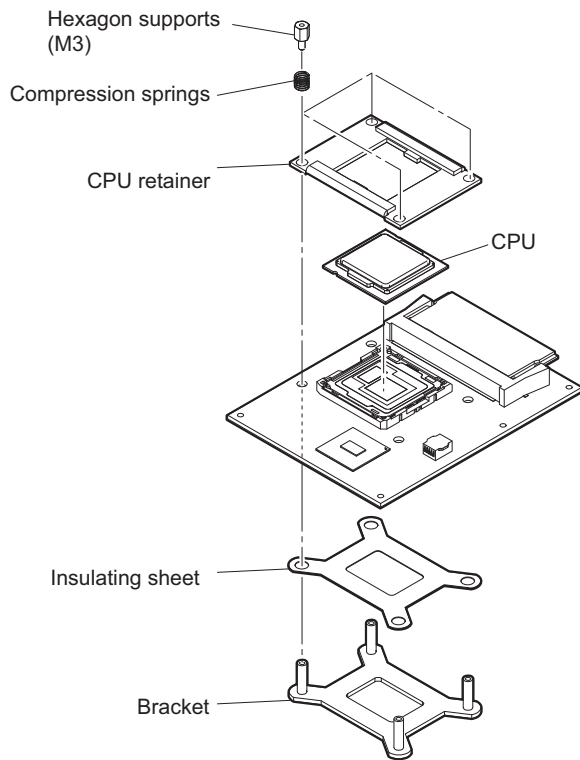


3. Remove the five screws, and then remove the iAP-005 CPU board from the connectors on the IF-1330 board.



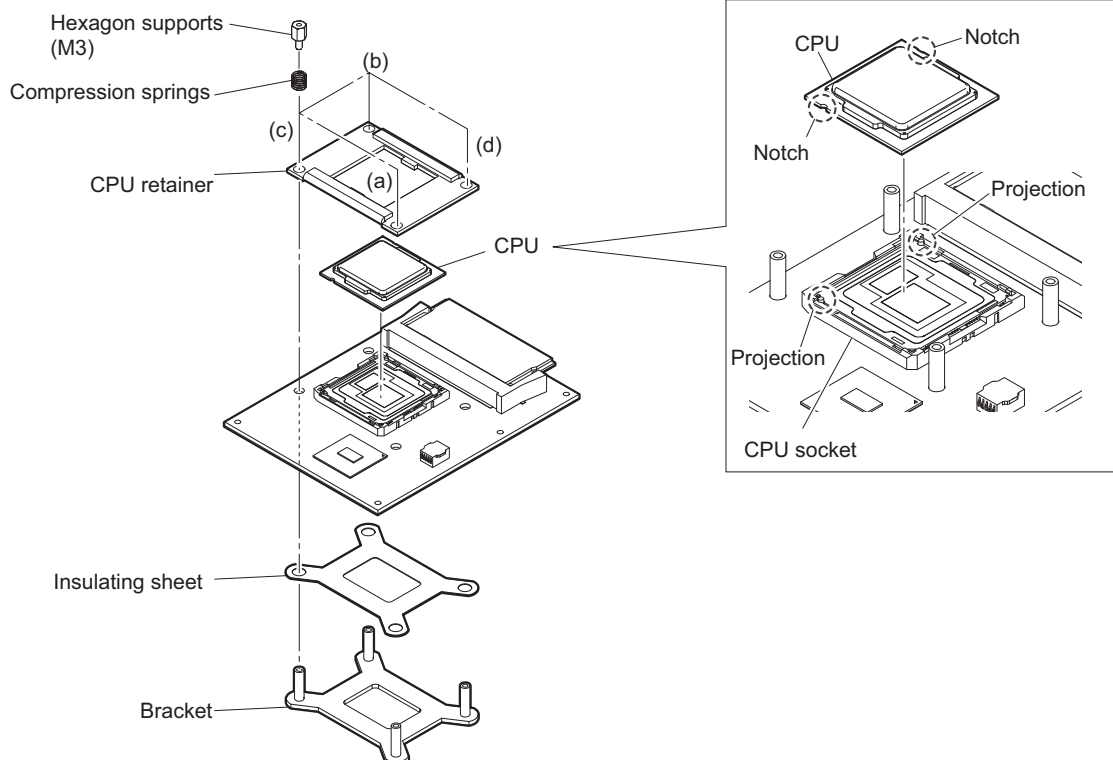
4. Remove the four hexagon supports and detach the four compression springs.
5. Remove the CPU retainer, the bracket and the insulating sheet.

6. Remove the CPU.



Installation

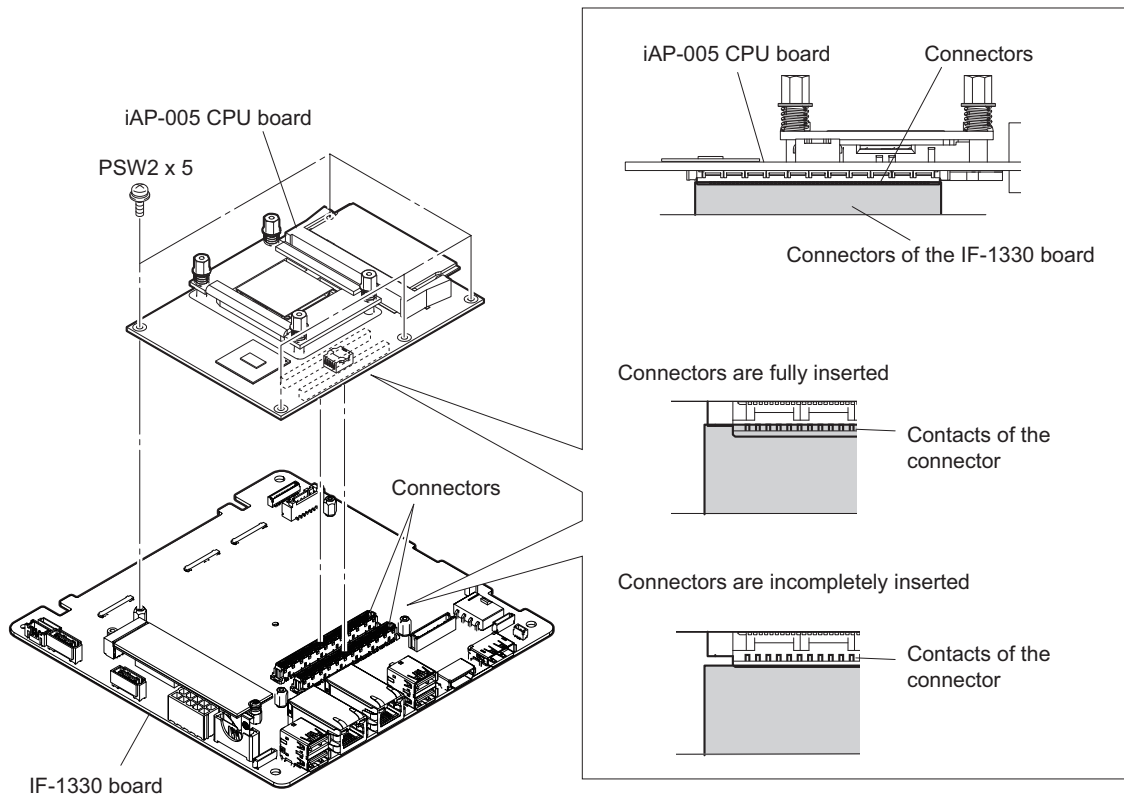
7. Align the two notches of the CPU with the two projections on the CPU socket, and then seat the CPU.
8. Attach the insulating sheet, the bracket and the CPU retainer.
9. Put four compression springs and four hexagon supports on the CPU retainer.
10. Press the CPU retainer and tighten the hexagon supports temporarily in diagonal sequence.
11. Tighten the hexagon supports to the specified torque in the following sequence: (a), (b), (c), (d).



12. Install the iAP-005 CPU board to the connectors on the IF-1330 board, and then tighten the five screws.

Note

When installing the iAP-005 CPU board, confirm that the connectors of the IF-1330 board are fully inserted.



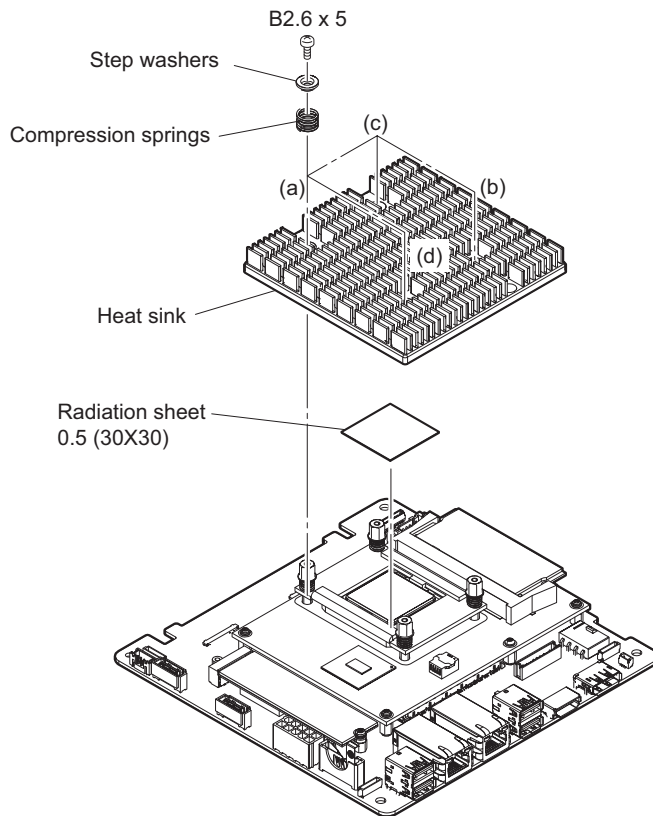
13. Attach the radiation sheet 0.5 (30X30).

Note

Check that the radiation sheet 0.5 (30X30) covers the CPU completely.

14. Put four compression springs and four step washers on the heat sink.
15. Press the center of the heat sink and tighten the screws temporarily in diagonal sequence.

16. Tighten the screws to the specified torque in the following sequence: (a), (b), (c), (d).



17. Assemble the unit by reversing the steps of "Preparation".

5-21-4. Memory Module (260pin SO-DIMM)

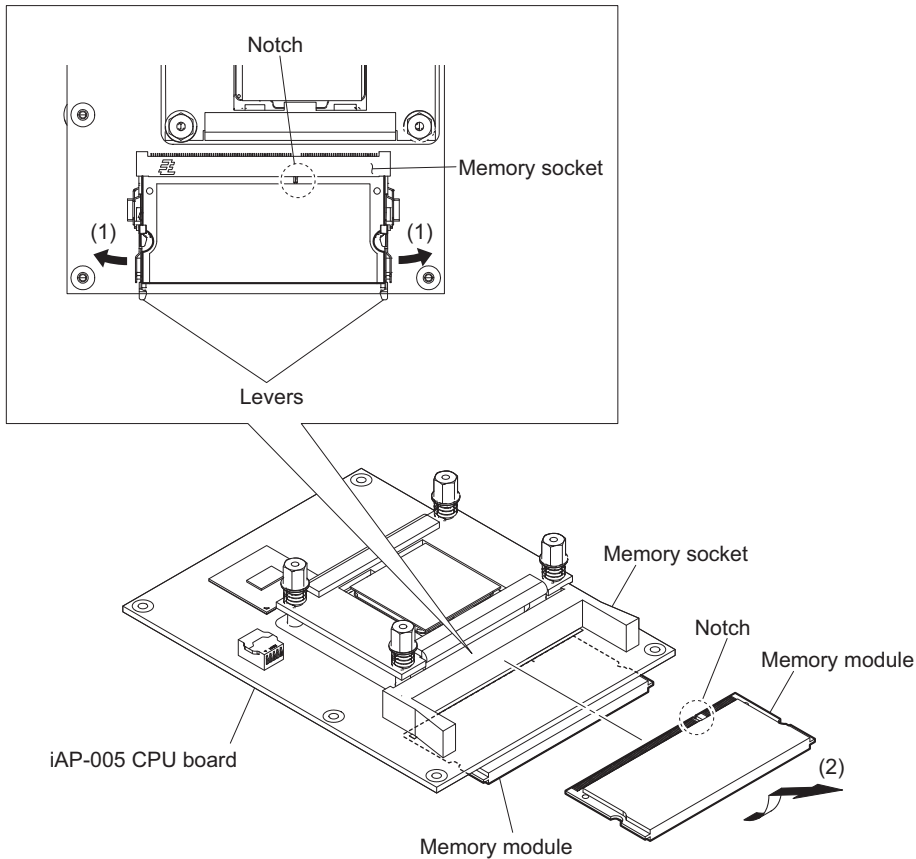
Preparation

1. Remove the top panel assembly. (Refer to [“5-4. Top Panel Assembly”](#).)
2. Remove the iAP-005 board assembly. (Refer to [“5-21-2. iAP-005 Board Assembly”](#).)
3. Remove the iAP-005 CPU board. (Refer to [“5-21-3. CPU”](#).)

Procedure

1. Open the levers of the memory socket in the direction of the arrow (1).

2. Remove the memory module in the direction of the arrow (2).



Note

When installing the memory modules, insert them securely into the memory socket.

3. Remove another memory module in the same way as in steps 1, 2.
4. Install the removed parts by reversing the steps of removal.

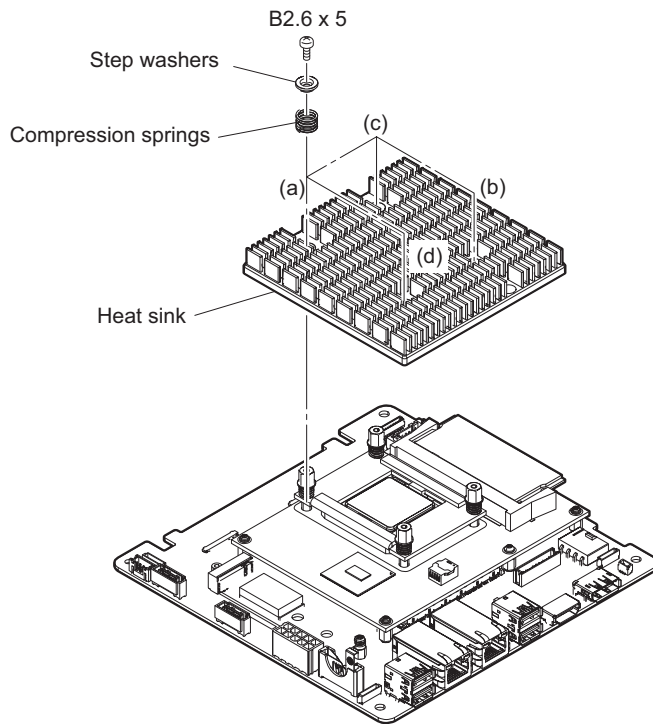
5-21-5. IF-1330 Board

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 RC holder assembly. (Refer to [“5-12. Network Card”](#).)
5. Remove the SSD module. (Refer to [“5-21-1. SSD Module \(M.2\)”](#).)
6. Remove the iAP-005 board assembly. (Refer to [“5-21-2. iAP-005 Board Assembly”](#).)

Procedure

1. Remove the four screws, the four step washers and the four compression springs and detach the heat sink.

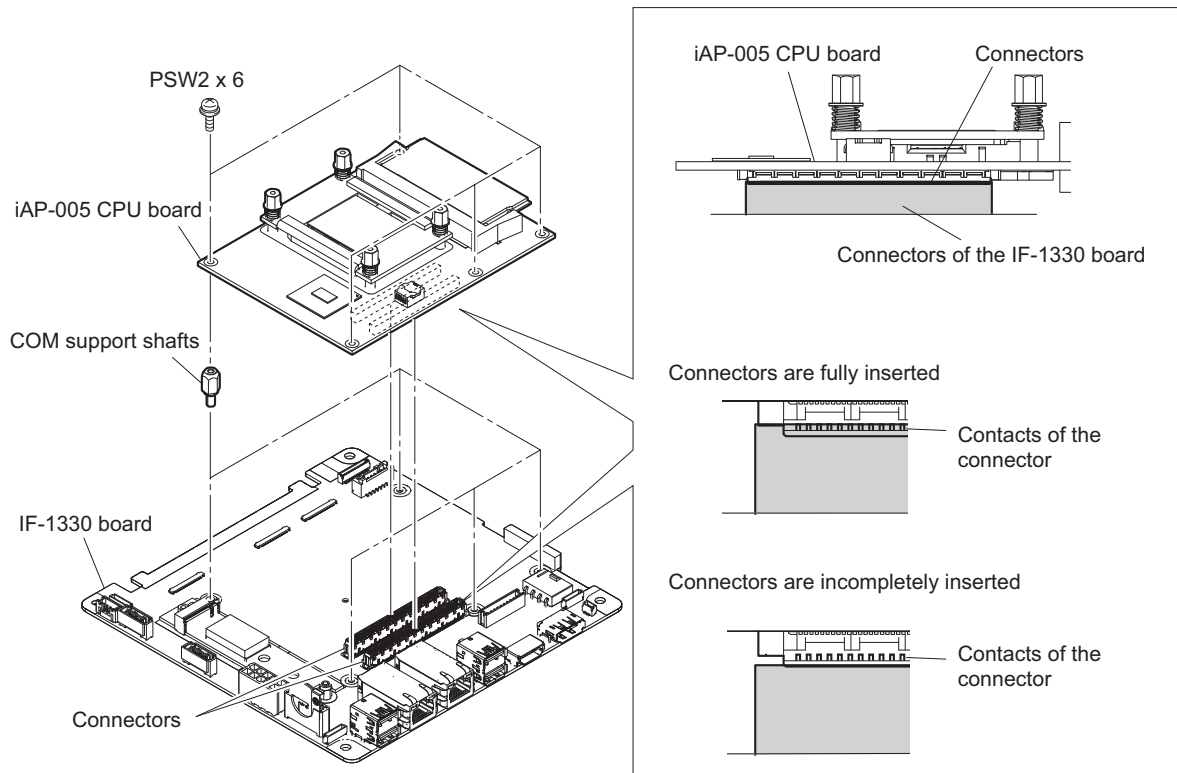


Note

At the time of the installation, tighten the screws to the specified torque in the following sequence: (a), (b), (c), (d).

2. Remove the five screws, and then remove iAP-005 CPU board from the connectors on the IF-1330 board.

3. Remove the five COM support shafts.



Note

When installing the iAP-005 CPU board, confirm that the connectors of the IF-1330 board are fully inserted.

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

5-21-6. CN-3934 Board

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 RC holder assembly. (Refer to “5-12. Network Card”.)
5. Remove the iAP-005 board assembly. (Refer to “5-21-2. iAP-005 Board Assembly”.)

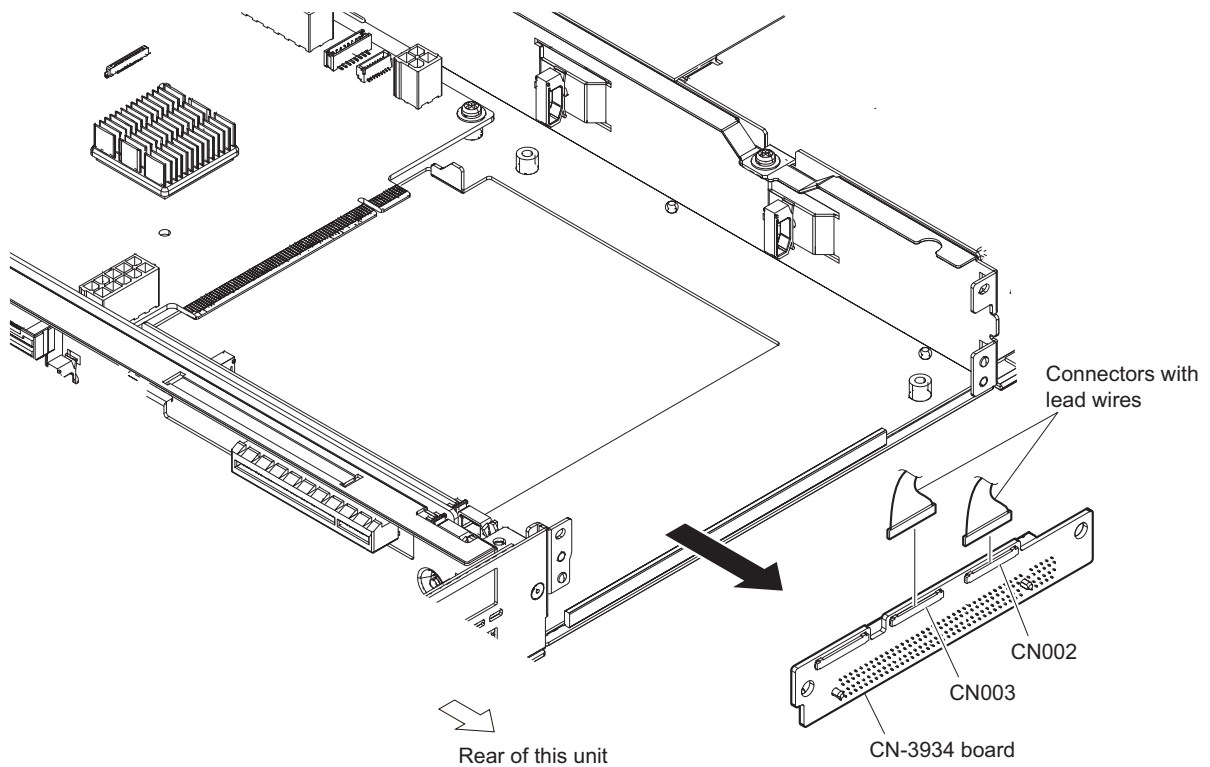
Procedure

1. Disconnect the two connectors with lead wires from the connectors (CN002, CN003) on the CN-3934 board.

Note

When disconnecting the connector with lead wire, pull out the connector part with your fingers.

2. Remove the CN-3934 board in the direction of the arrow.



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

5-22. MB-1204 Board

Backing up RAID management information

RAID management information is stored in the SRAM (IC2401) on the MB-1204 board. Before replacing the MB-1204 board, back up the RAID management information from the SRAM (IC2401) to the C drive. Perform the following procedure to back up RAID management information.

Note

If the MB-1204 board is replaced without backing up the RAID management information to the C drive, the previous RAID configuration cannot be restored after the MB-1204 board is replaced.

1. Select the following folder in the Explorer.
C:\Program Files\Sony\PWS-100\hkp\client
2. Select "hkpc.exe" and select "Run as an administrator" from the context (right-click) menu.
3. When you are asked whether to enable execution, select "Yes."
4. When the command prompt window opens, enter the following command and click [Enter].

strgbackup filename.srm

A desired character string can be used for "filename." This file name is required later, when writing back the RAID management information.

Note

If the RAID management information is backed up with the same file name, it is overwritten.

5. After the RAID management information is backed up to the C drive, "OK" appears on the command prompt window.
6. Turn off the power of the unit.

Preparation

1. Remove the top panel assembly. (Refer to "5-4. Top Panel Assembly")
2. Remove the network card (Refer to "5-12. Network Card")
3. Remove the CN-3698 board. (Refer to "5-18. CN-3698 Board")
4. Remove the iAP board assembly.
For iAP-001 board-equipped unit, refer to "5-20-3. iAP-001 Board Assembly".
For iAP-005 board-equipped unit, refer to "5-21-2. iAP-005 Board Assembly".

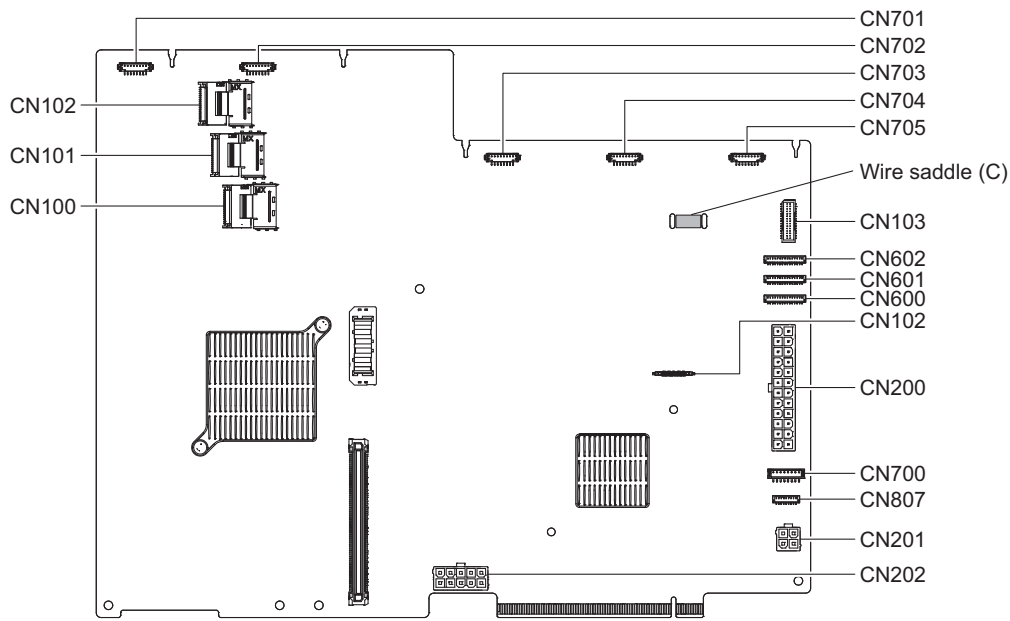
Procedure

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

Note

When pulling out the fine-wire coaxial cable, pull out the connector part with your fingers.

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



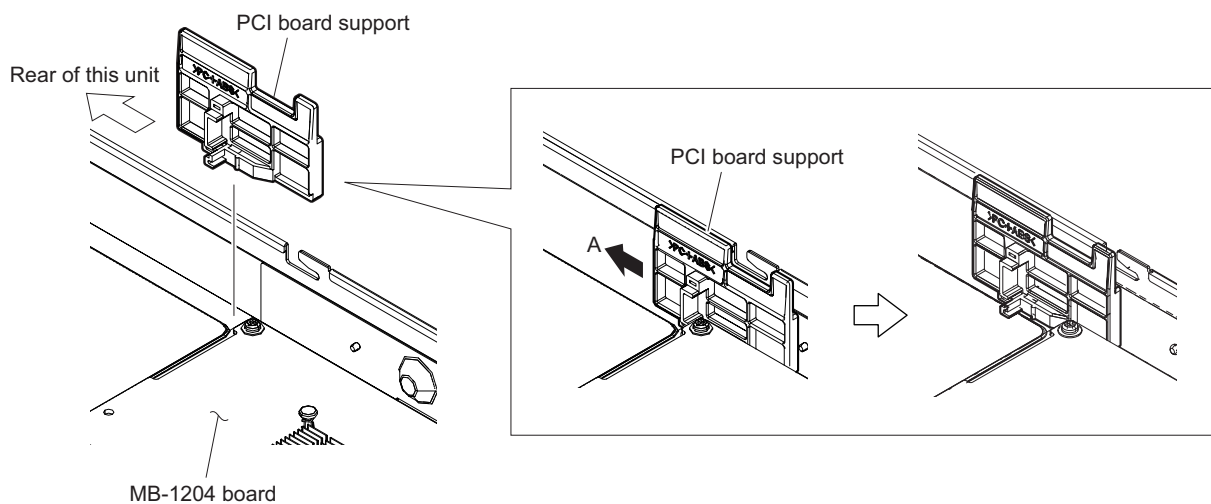
Note

When assembling the MB-1204 board, do not connect harnesses to the three connectors (CN1100, CN1101, and CN1102) on the MB-1204 board until RAID management information has been written back. (Refer to [“5-2-4. After Replacing the MB-1204 Board”](#))

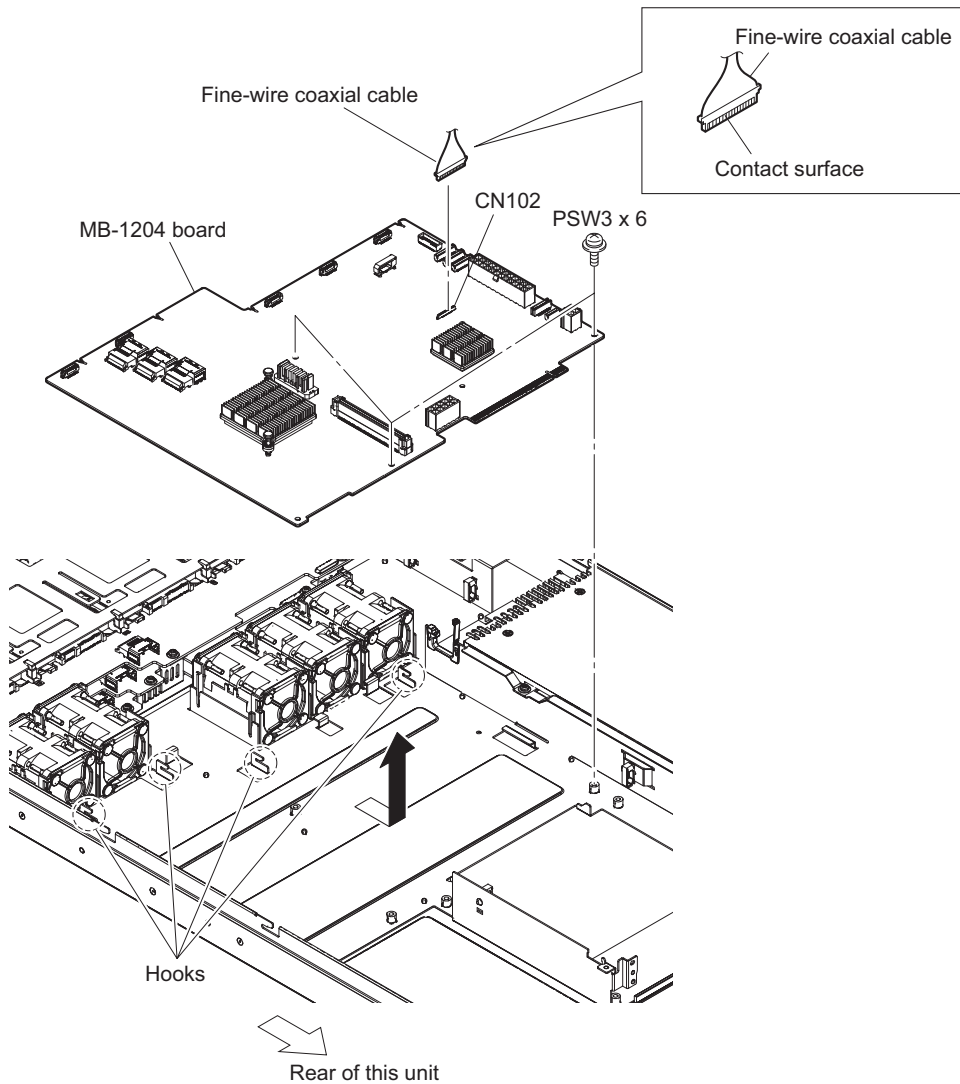
3. Slide the PCI board support in the direction of the arrow A, and then remove the PCI board support.

Note

- The PCI board support is not installed in the unit within the serial number range of 110001 to 110005.
- 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

When installing the fine-wire coaxial cable, install it in the direction shown in the figure.

5. Disconnect the harnesses from the three connectors (CN1100, CN1101, and CN1102) on the MB-1204 board. To install the removed parts, reverse the steps of removal.
6. Take necessary actions after the MB-1204 board has been replaced. (Refer to [“5-2-4. After Replacing the MB-1204 Board”](#))

Section 6

Spare Parts

6-1. Note on Repair Parts

1. Safety Related Components Warning

WARNING

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

2. Standardization of Parts

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

3. Stock of Parts

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

4. Harness

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

1. 安全重要部品

△警告

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

2. 部品の共通化

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

3. 部品の在庫

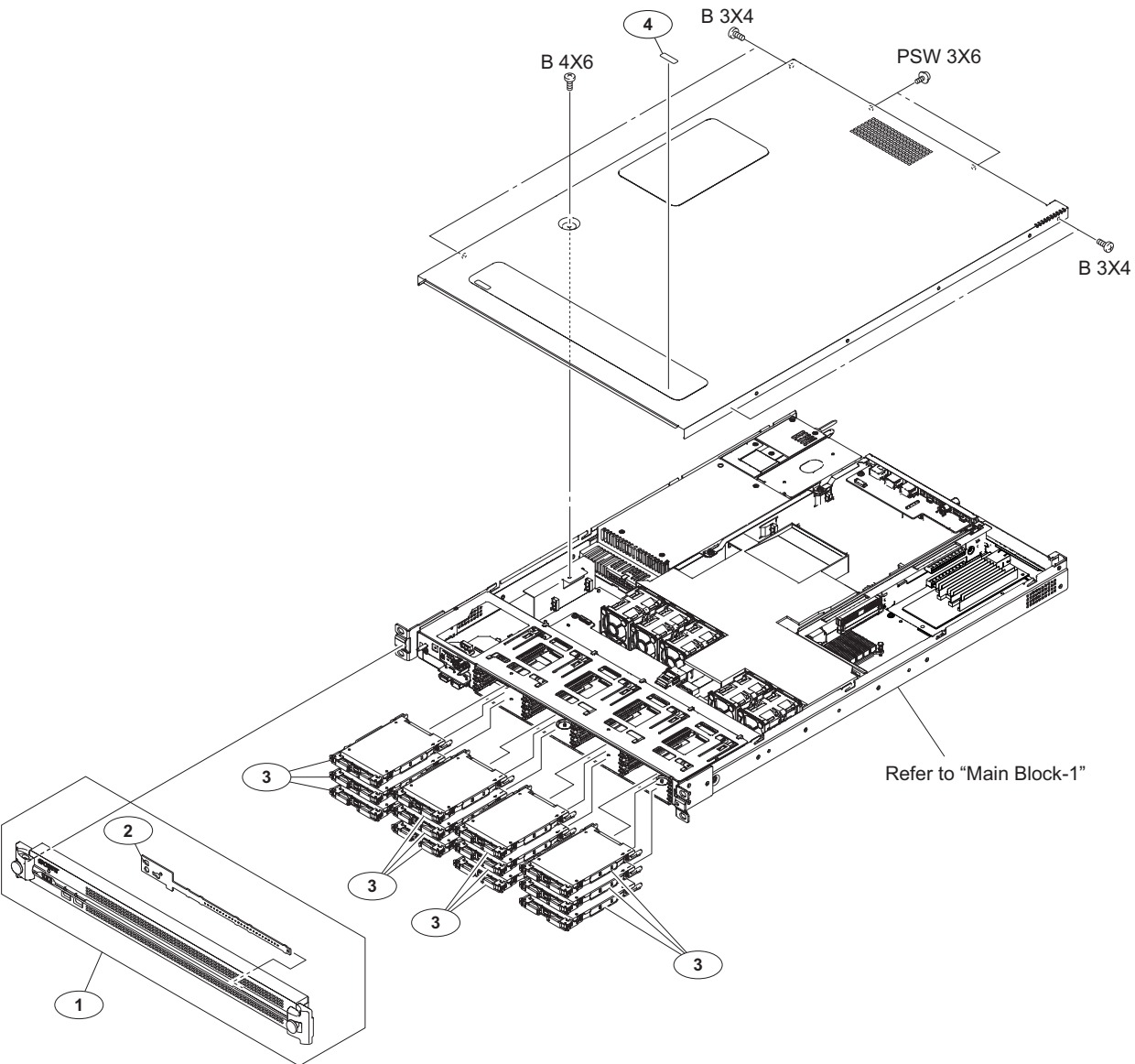
部品表の SP (Supply code) 欄に “o” で示される部品は在庫していないことがあり、納期が長くなる場合があります。

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。

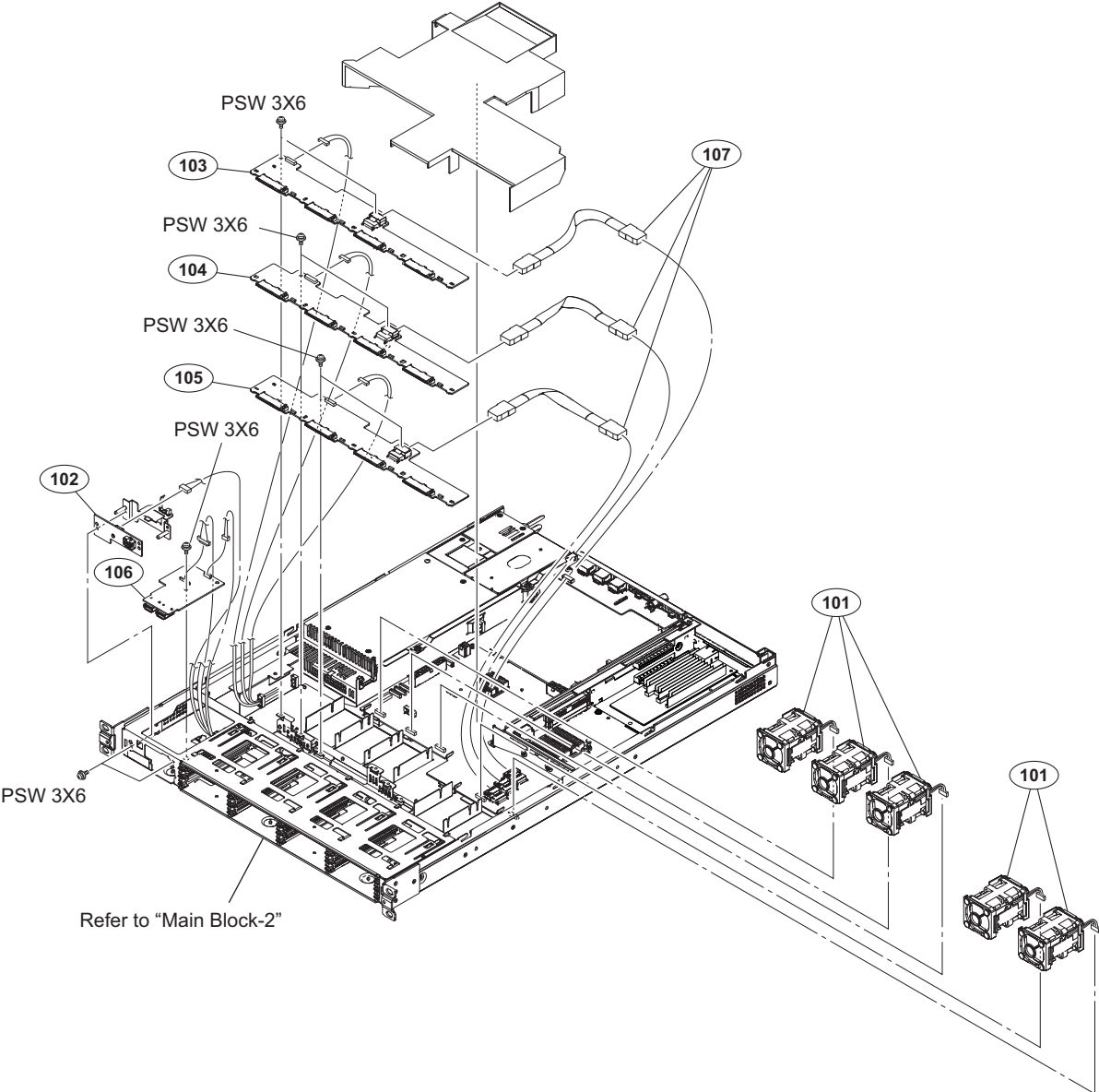
6-2. Exploded Views

Overall



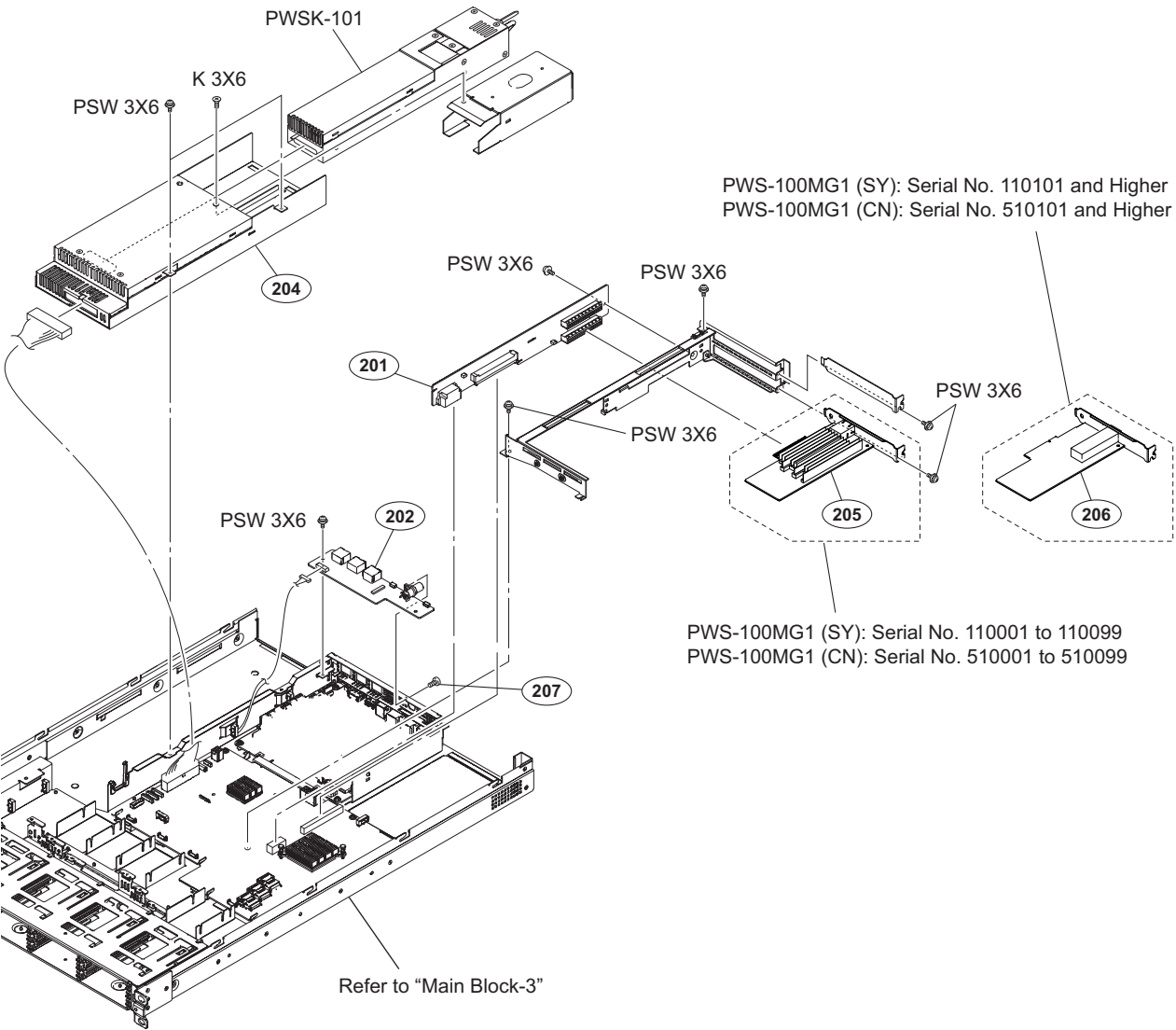
No.	Part No.	SP Description
1	A-1990-555-A s	FRONT PANEL ASSY (for SY)
	A-2064-209-A s	PANEL ASSY (CN), FRONT (for CN)
2	A-2040-582-A s	MOUNTED CIRCUIT BOARD, LED-527
3	A-2049-941-A s	ST ASSY (RP)
4	4-696-117-01 s	LICENSE (WINDOWS8.1 EMB)
	7-682-545-09 s	SCREW +B 3X4
	7-682-560-09 s	SCREW +B 4X6
	7-682-947-09 s	SCREW +PSW 3X6

Main Block-1



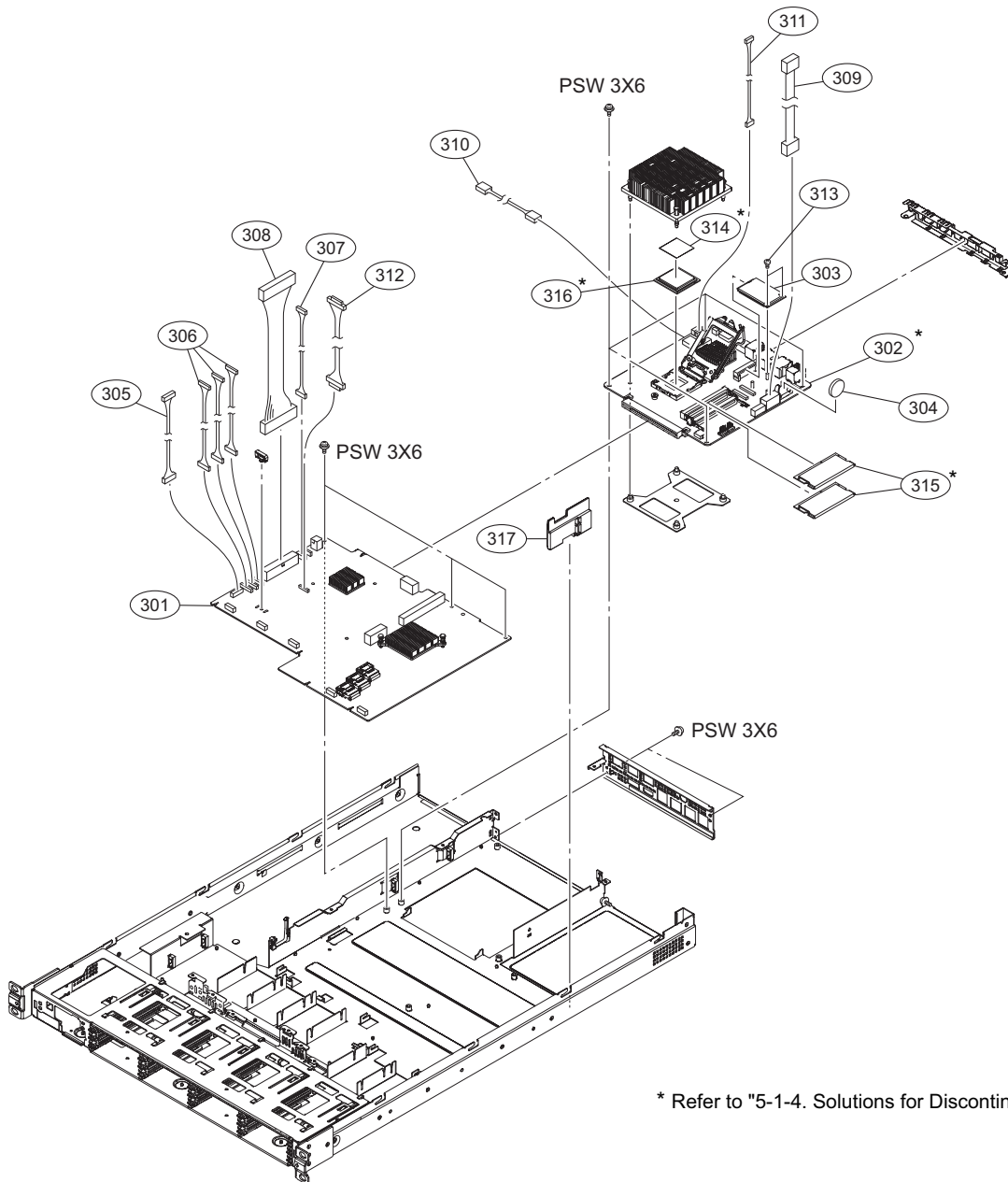
No.	Part No.	SP Description
101	A-1998-530-A s	FAN ASSY
102	A-2040-583-A s	MOUNTED CIRCUIT BOARD, SW-1627
103	A-2040-585-A s	MOUNTED CIRCUIT BOARD, IF-1257
104	A-2040-586-A s	MOUNTED CIRCUIT BOARD, IF-1258
105	A-2040-587-A s	MOUNTED CIRCUIT BOARD, IF-1259
106	A-2040-588-A s	MOUNTED CIRCUIT BOARD, DIO-98
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	1-895-659-11 s	PCI-E 10GB ETHERNET CARD
206	⚠ 1-895-817-11 s	PCI-E 10G SFP DIRECT NIC BOARD
207	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

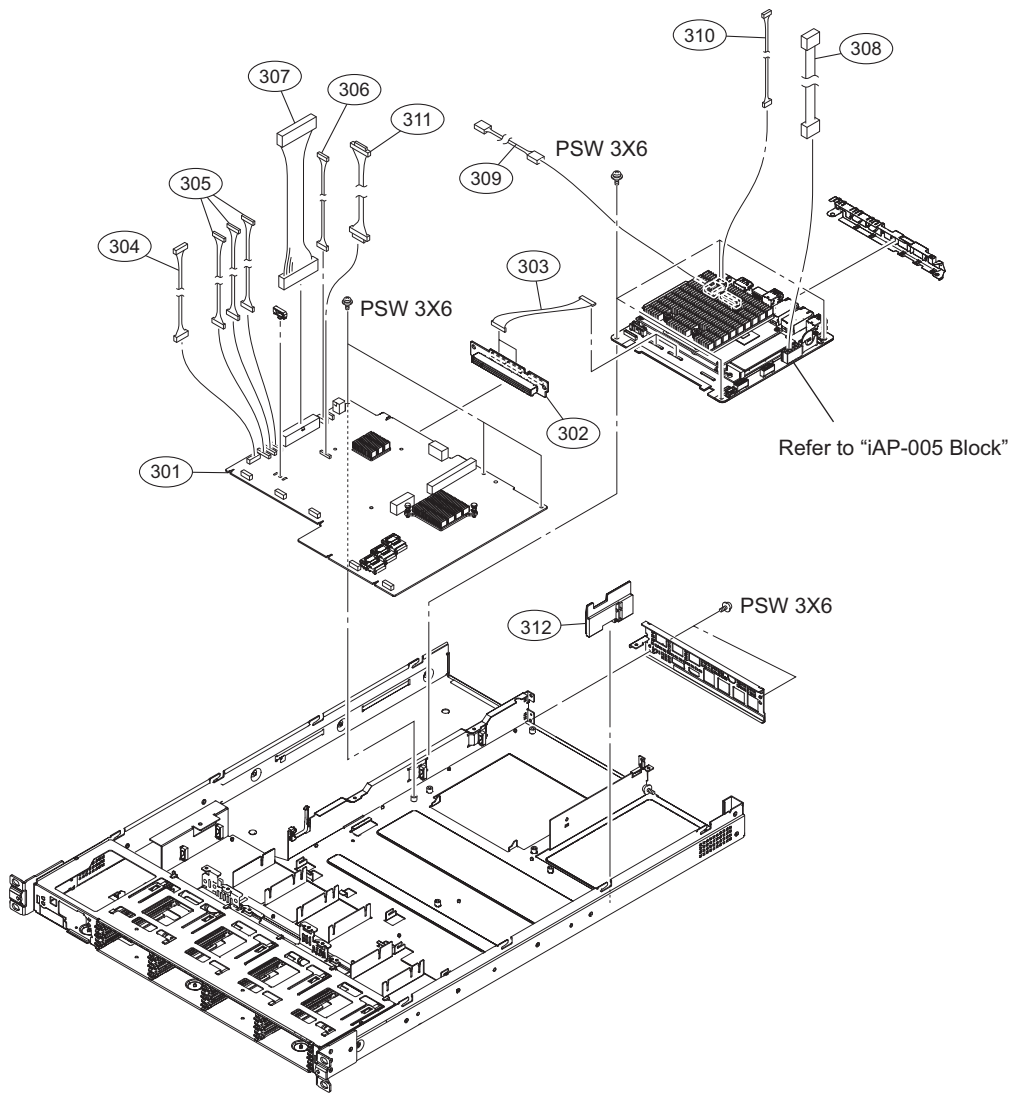
Main Block-3 (iAP-001 Board-Equipped Unit)



* Refer to "5-1-4. Solutions for Discontinued Parts".

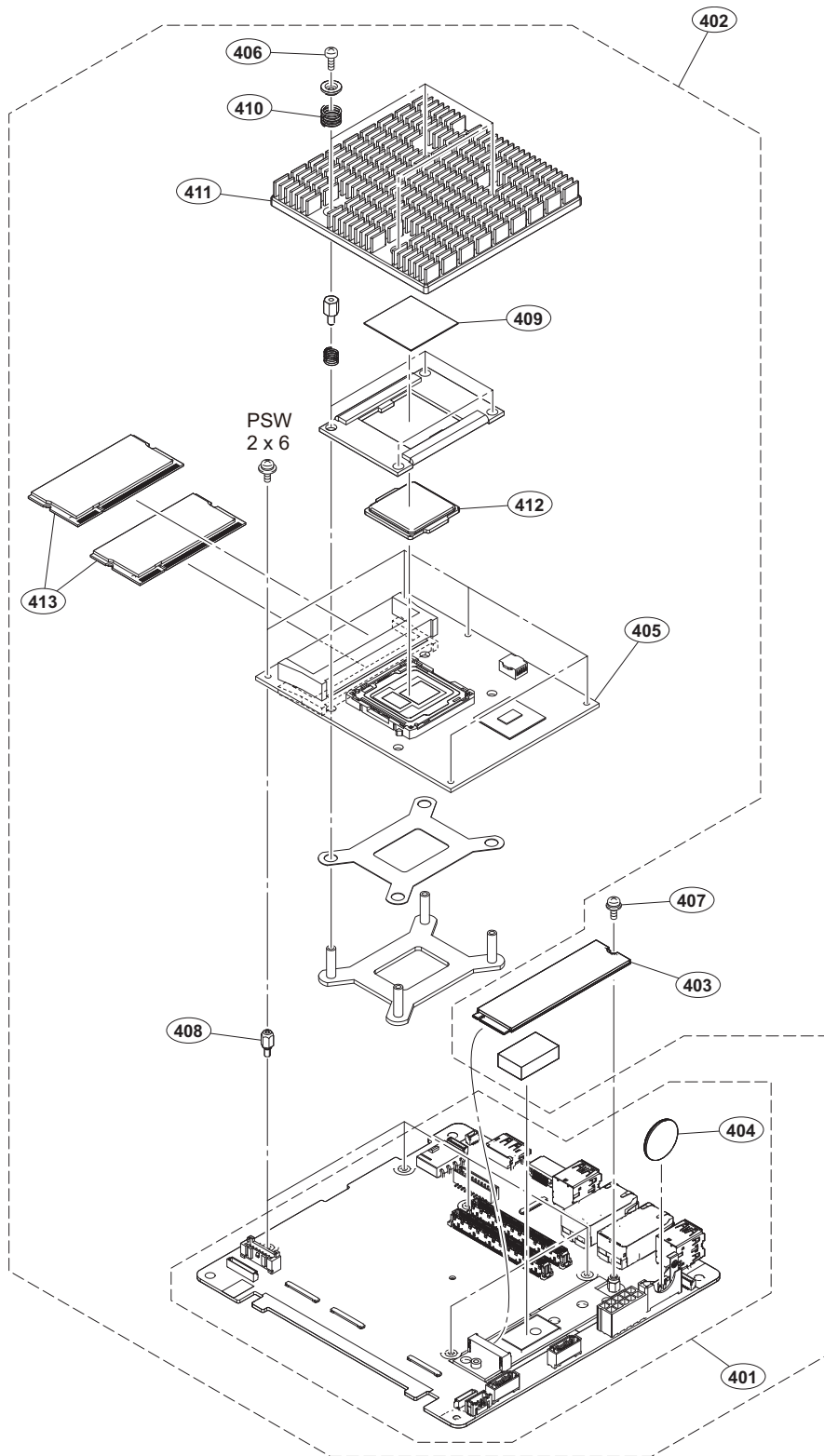
No.	Part No.	SP Description	No.	Part No.	SP Description
301	A-2040-590-A s	MOUNTED CIRCUIT BOARD, MB-1204	317	4-546-058-02 s	SUPPORT, PCI BOARD
302	A-2047-105-A s	IAP BOARD (PWS-100) RP ASSY			
303	A-2054-925-A s	MSATA (MG1) ASSY(RP)			
304	1-528-174-33 s	BATTERY, LITHIUM (CR2032 TYPE)		7-682-947-01 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-PBN0			
316	6-721-446-01 s	IC CM8063701211600S-R0PK			

Main Block-3 (iAP-005 Board-Equipped Unit)



No.	Part No.	SP Description
301	A-2040-590-A s	MOUNTED CIRCUIT BOARD, MB-1204
302	A-2179-677-A s	CN-3934 MOUNT
303	1-849-031-11 s	COAXIAL CABLE WITH CONNECTOR
304	1-970-059-11 s	HARNESS, SUB (MB-SW/DIO)
305	1-970-061-11 s	HARNESS, SUB (MB-IF)
306	1-970-063-11 s	HARNESS, SUB (MB-CN)
307	1-970-064-11 s	HARNESS, SUB (MB-POWER)
308	1-970-065-11 s	HARNESS, SUB (MB-IAP PW)
309	1-970-066-11 s	HARNESS, SUB (MB-IAP CPU PW)
310	1-970-067-11 s	HARNESS, SUB (MB-IAP CTL)
311	1-970-161-11 s	WIRE, CONNECTOR WITH LEAD
312	4-546-058-02 s	SUPPORT, PCI BOARD
	7-682-947-01 s	SCREW +PSW 3X6

iAP-005 Block (iAP-005 Board-Equipped Unit)



No.	Part No.	SP Description
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401	A-2179-678-A	s IF-1330 COMPL-NC
402	A-2195-574-A	s IAP-005 ASSY (RP)
403	A-2189-264-A	s M2 (100MG1) ASSY (RP)
404	⚠ 1-528-174-74	s BATTERY, LITHIUM (CR2032 TYPE)
405	1-897-138-11	s MOUNTED CPU BOARD, IAP-005
406	2-655-586-01	s SCREW +B M2.6 EG
407	3-669-607-22	s +PSW (SMALL ROUND) (2.6)
408	4-273-810-01	s SHAFT, COM SUPPORT

No.	Part No.	SP Description
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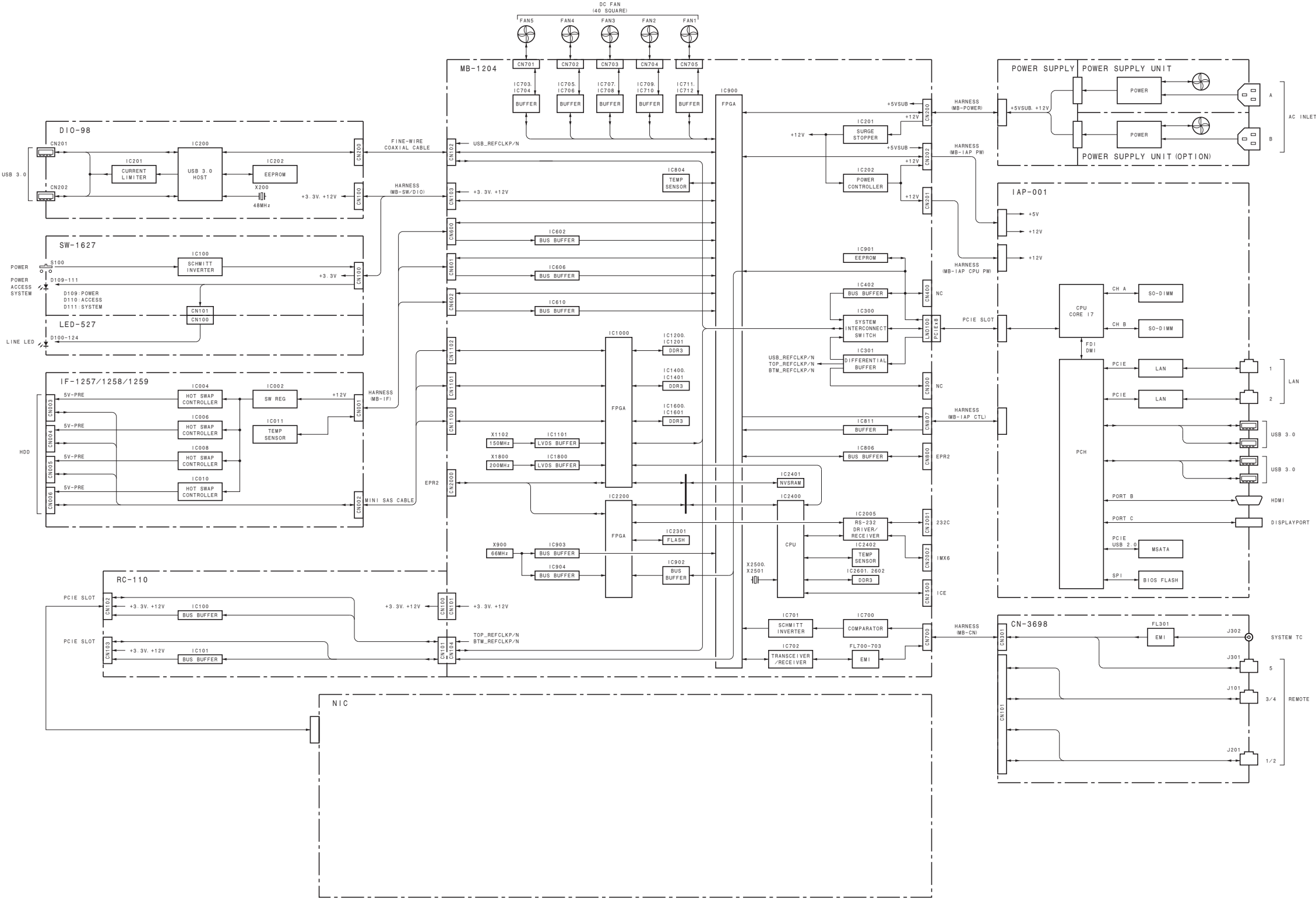
409	4-726-504-01	s SHEET (0.5 (30X30)), RADIATION
410	4-726-506-01	s SPRING, COMPRESSION
411	4-726-507-01	s SQUARE, HEAT SINK (100)
412	6-723-527-01	s IC CM8066201937801S-R2LP
413	6-724-230-01	s IC HMA851S6CJR6N-VKN0
	7-628-000-05	s +PSW 2X6

6-3. Supplied Accessories

Q'ty	Part No.	SP Description
1pc	△ 1-833-005-12	s AC POWER-SUPPLY CORD (Supplied for CN)
1pc	△ 4-540-891-06	s MANUAL, OPERATION

Section 7
Block Diagrams and Frame Wiring

Overall (iAP-001)



Overall (iAP-005)

