

MODEL:
GRAND-RE Series

**Storage Server with AMD Ryzen™ Embedded V1500B CPU,
Up to 32 GB DDR4 RAM, 3.5"/2.5" SATA 6Gb/s SSD Bays,
Two 2.5 GbE, USB 3.2, Rack Mount Chassis, RoHS**

User Manual



Revision



Date	Version	Changes
December 10, 2020	1.00	Initial release



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Manual Conventions



WARNING

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously.



CAUTION

Cautionary messages should be heeded to help reduce the chance of losing data or damaging the product.



NOTE

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes.

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Chapter

1

Introduction

1.1 Overview



Figure 1-1: GRAND-RE Series Storage Server

The GRAND-RE series is powered by a high-performance AMD Ryzen™ Embedded V1500B quad-core 2.2 GHz processor, with up to 32 GB of DDR4 memory. It is provisioned for expansion with two USB 3.2 Gen 2 Type-C ports, one USB 3.2 Gen 2 Type-A port, and one USB 3.2 Gen 1 Type-A port.

The GRAND-RE supports up to eight SATA drive bays, features two 2.5 Gigabit Ethernet ports, and one PCIe 3.0 x 8 slot for various applications and expansion options. Encrypted file transfer performance can be enhanced with AES- NI encryption acceleration.

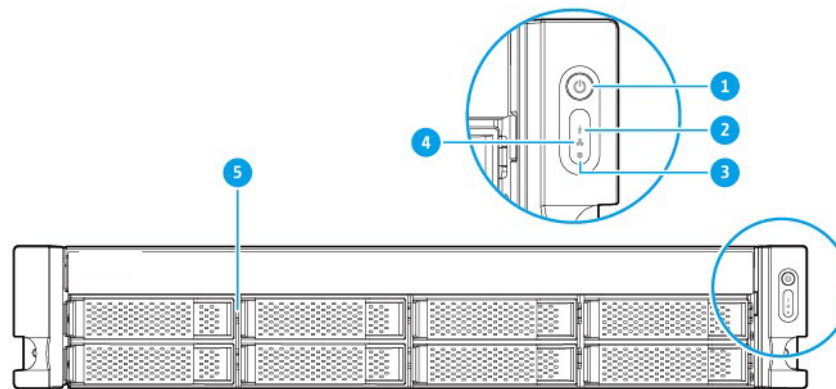
1.2 Features

The GRAND-RE has the following features

- Supports high-performance AMD Ryzen™ quad-core processor
- Supports two DDR4 DIMM modules with up to 32 GB DDR4 RAM
- Supports one PCIe 3.0 x8 slot for adding more functionality
- Two 2.5 Gigabit Ethernet ports
- Support up to eight 3.5"/2.5" SATA 6Gb/s HDDs/SSDs

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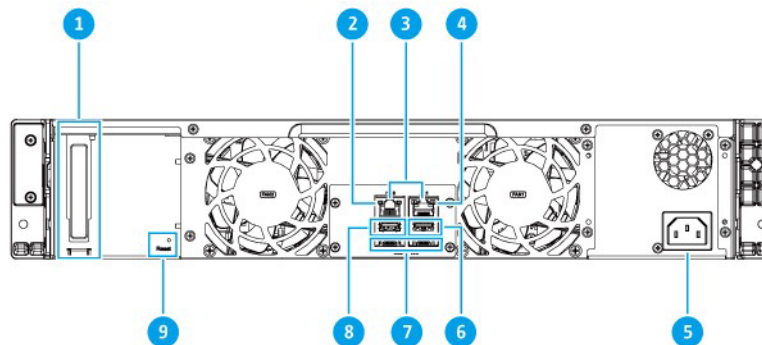
1.3 Front Panel



1	Power button	4	LAN LED
2	Status LED	5	Drive status LED
3	Expansion unit LED		

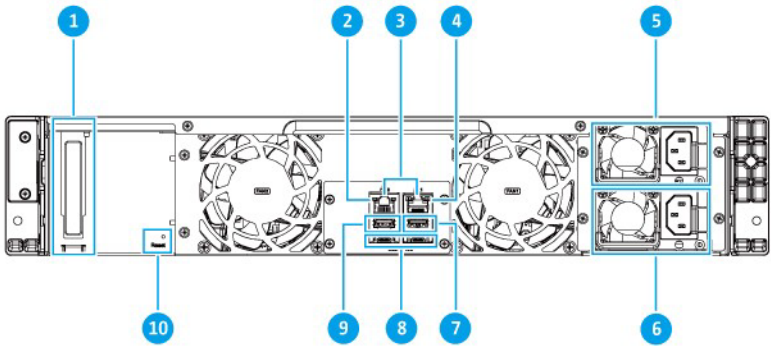
1.4 Rear Panel

GRAND-RE-08B:



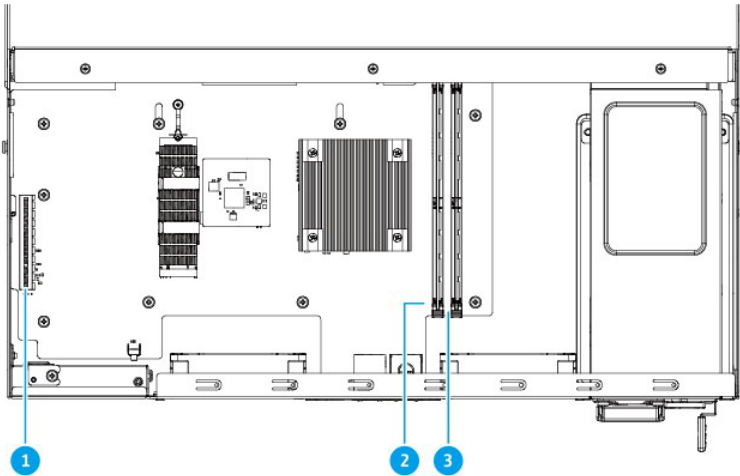
1	PCIe low-profile cover	6	USB 3.2 Gen 1 Type-A port
2	2.5 Gigabit Ethernet activity LED	7	USB 3.2 Gen 2 Type-C ports
3	2.5 Gigabit Ethernet ports	8	USB 3.2 Gen 2 Type-A port
4	2.5 Gigabit Ethernet speed LED	9	Reset button
5	Power input		

GRAND-RE-08B-RP:



1	PCIe low-profile cover	6	Power supply unit 2
2	2.5 Gigabit Ethernet activity LED	7	USB 3.2 Gen 1 Type-A port
3	2.5 Gigabit Ethernet ports	8	USB 3.2 Gen 2 Type-C ports
4	2.5 Gigabit Ethernet speed LED	9	USB 3.2 Gen 2 Type-A port
5	Power supply unit 1	10	Reset button

1.5 System Board



1	PCIe 3.0 x8 slot	3	Memory slot 1
2	Memory slot 2		

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1.6 Specifications

The specifications for the GRAND-RE are listed below.

	GRAND-RE-08B-RP	GRAND-RE-08B
CPU	AMD Ryzen™ Embedded V1500B quad-core 2.2 GHz processor	
Encryption Acceleration	AES-NI	
Memory	Maximum 32 GB (2 x 16GB)	
	2 x DDR4 DIMM slot <i>Note: For dual-DIMM configuration, you must use a pair of identical DDR4 modules.</i>	
Drive Types	8 x 3.5"/2.5" SATA 6Gb/s HDDs/SSDs	
Gigabit LAN Port	2 x 2.5GbE LAN port	
PCIe Slot	1 x PCIe Gen 3 x8	
USB Ports	1 x USB 3.2 Gen 1 Type-A port, 2 x USB 3.2 Gen 2 Type-C port, 1 x USB 3.2 Gen 2 Type-A port	
LED Indicator	Status/Power, LAN, Expansion unit, Drive 1 - 8	
Button	Power, Reset	
Form Factor	2U rackmount	
Dimension (H x W X D)	89 mm x 482 mm x 425 mm	
Net Weight	9.15 kg	8.04 kg
Operating Temperature	0 to 40° C (32° to 104° F)	
Relative Humidity	5 ~ 95% RH non-condensing, wet bulb: 27°C	
Power Supply	Two 300W, 100-240V	One 250W, 100-240V
	AC, 50/60 Hz	AC, 50/60 Hz
Fan	2 x 80 mm 12V DC	

Table 1-1: Specifications



1.7 LED Indicator Specifications

The LED indicators of the GRAND-RE indicate the system status and information. The following table lists the LED indicator behavior. Note that the following information is applicable only when users have properly installed the hard drive, and connected the system to the power supply.

LED	Status	Description
System Status	Red	<ul style="list-style-type: none">▪ The drive is invalid.▪ The disk volume has reached its full capacity.▪ The disk volume is about to reach its full capacity.▪ The system fan is not functioning.▪ An error occurred when accessing (read/write) the data.▪ A bad sector is detected on the hard drive.
	Green	The system is ready.
	Off	<ul style="list-style-type: none">▪ All drives are in standby mode.▪ The device is powered off.
LAN	Orange	A network connection has been established.
	Flashes orange	The device is being accessed from the network.
2.5 Gigabit Ethernet speed	Green	The network connection is operating at 2.5 Gbps.
	Orange	<ul style="list-style-type: none">▪ The network connection is operating at 1 Gbps.▪ The network connection is operating at 100 Mbps.
	Off	The network connection is operating at 10 Mbps.
2.5 Gigabit Ethernet activity	Orange	A network connection has been established.
	Flashes orange	The device is being accessed from the network.
	Off	There is no network connection.
Expansion Unit	Blue	An expansion unit is connected.
	Off	No USB or SATA external storage devices connected.



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Drive Status	Red	A hard disk drive read/write error occurs.
	Flashes green	The disk data is being accessed.
	Green	The hard disk drive can be accessed.
	Off	No drive was detected

Chapter

2

Unpacking

GRAND-RE Series

2.1 Packing List

**NOTE:**

If any of the components listed in the checklist below are missing, do not proceed with the installation. Contact the IEI reseller or vendor the GRAND-RE was purchased from or contact an IEI sales representative directly by sending an email to sales@ieiworld.com.

The GRAND-RE is shipped with the following components:

Quantity	Item	Image
1	Ethernet cable	
1 or 2	Power cord (Non-RP SKUs: 1; RP SKUs: 2)	
1	Screw pack for 2.5" HDD installation	
1	Screw pack for 3.5" HDD installation	

Table 2-1: Package List

2.2 Optional Items

The following are optional components which may be separately purchased:

Item	P/N	Description
Network card	QXG-10G2SF-CX4	Dual-port SFP+ 10GbE network card, low-profile, PCIe 3.0 x8
	LAN-10G2T-X550	Dual-port 10GbE network card Dimension (LxWxH): 260 x 150 x 58 (mm) Weight: 0.42 (kg)
	QXG-10G1T	Single-port 10GbE network card, PCIe 3.0 x4 Dimension (LxWxH): 180 x 110 x 55 (mm) Weight: 1.00 (kg)
	QXG-2G1T-I225	Single-port 2.5GbE network card
	QXG-2G2T-I225	Dual-port 2.5GbE network card
	QXG-5G2T-111C	Dual-port, 4-speed 5GbE network card
USB card	QXP-10G2U3A	Dual-port USB 3.2 Gen 2 (10Gb/s) Type-A PCIe 3.0 x2 card, Asmedia ASM3142
SAS card	SAS-12G2E	Dual-port storage expansion, SAS 12Gb/s
Cable	CAB-SAS10M-8644	Mini-SAS cable (SFF-8644 to SFF-8644), 1.0m
	CAB-SAS05M-8644	Mini-SAS cable (SFF-8644 to SFF-8644), 0.5m
Rail kit	RAIL-B02	Sliding rails for rack mount
RAM	RAM-4GDR4A0-UD-2400	4GB DDR4 RAM, 2400MHz, U-DIMM, 288-pin
	RAM-8GDR4A0-UD-2400	8GB DDR4 RAM, 2400MHz, U-DIMM, 288-pin
	RAM-16GDR4A0-UD-2400	16GB DDR4 RAM, 2400MHz, U-DIMM, 288-pin

Table 2-2: Optional Items

Chapter

3

Installation

3.1 Anti-static Precautions

**WARNING:**

Failure to take ESD precautions during the maintenance of the GRAND-RE may result in permanent damage to the GRAND-RE and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the WAFER series motherboard and the power module. (Dry climates are especially susceptible to ESD.) It is therefore critical that whenever the GRAND-RE is opened and any electrical component handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- ***Self-grounding:*** Before handling the board, touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** When configuring the GRAND-RE, place it on an anti-static pad. This reduces the possibility of ESD damaging the GRAND-RE.

3.2 Installation Precautions



CAUTION!

The GRAND-RE-08B-RP has more than one power supply connection point.

To reduce the risk of electric shock, disconnect all power sources before installing or servicing the GRAND-RE-08B-RP.

During installation, be aware of the precautions below:

- **Read the user manual:** The user manual provides a complete description of the GRAND-RE, installation instructions and configuration options.
- **DANGER! Disconnect Power:** Power to the GRAND-RE must be disconnected during the installation process. Failing to disconnect the power may cause severe injury to the body and/or damage to the system.
- **Qualified Personnel:** The GRAND-RE must be installed and operated only by trained and qualified personnel. Maintenance, upgrades, or repairs may only be carried out by qualified personnel who are familiar with the associated dangers.
- **Air Circulation:** Make sure there is sufficient air circulation when installing the GRAND-RE. The GRAND-RE's cooling vents must not be obstructed by any objects. Blocking the vents can cause overheating of the GRAND-RE. Leave at least 5 cm of clearance around the GRAND-RE to prevent overheating.
- **Grounding:** The GRAND-RE should be properly grounded. The voltage feeds must not be overloaded. Adjust the cabling and provide external overcharge protection per the electrical values indicated on the label attached to the back of the GRAND-RE.

3.3 Removing the Case Cover

To access the GRAND-RE internally the case cover must be removed. To remove the case cover, please follow the steps below.

Step 1: Turn off the GRAND-RE. Disconnect the power adaptor, network cable(s), and any other connectors or cables from the GRAND-RE.

Step 2: Loosen the two captive screws on the rear panel.

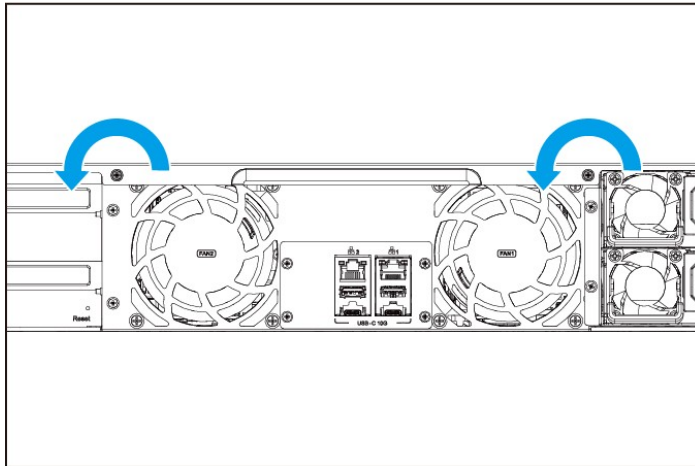


Figure 3-1: Case Cover Retention Screws

Step 3: Slide the back cover toward the I/O panel and lift the cover off the GRAND-RE.

See **Figure 3-2**.

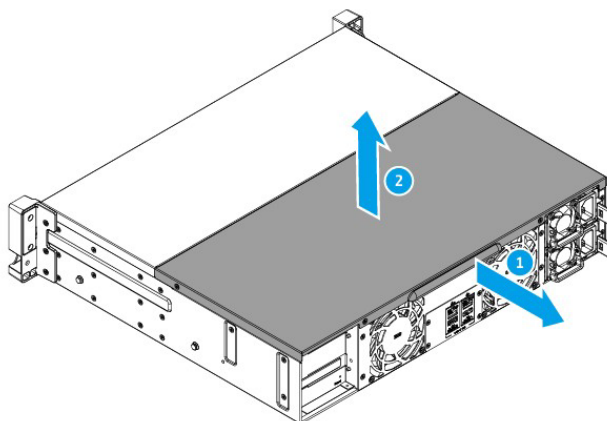


Figure 3-2: Remove the Case Cover

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3.3.1 Reinstalling the Case Cover

To re-install the case cover, follow the steps below.

Step 1: Place the cover on the GRAND-RE.

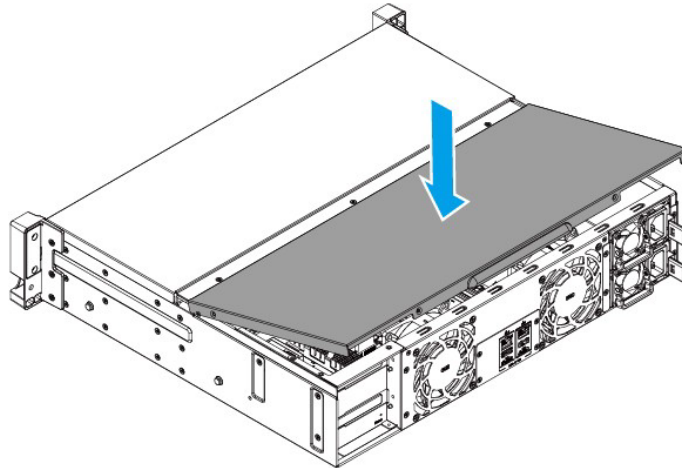


Figure 3-3: Place the Cover

Step 2: Slide the cover forward.

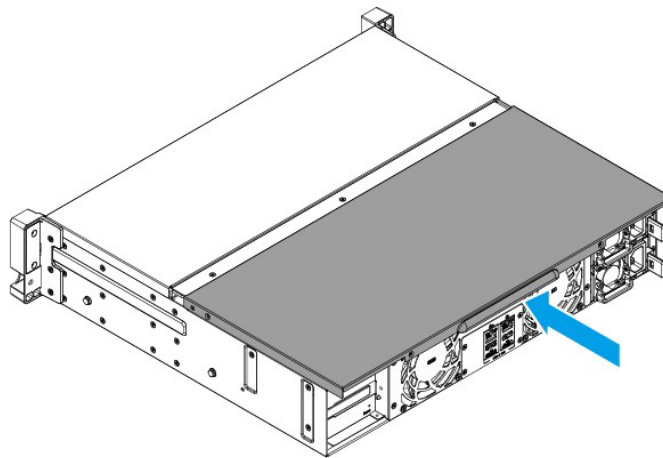


Figure 3-4: Slide the Cover

Step 3: Tighten the captive screws.

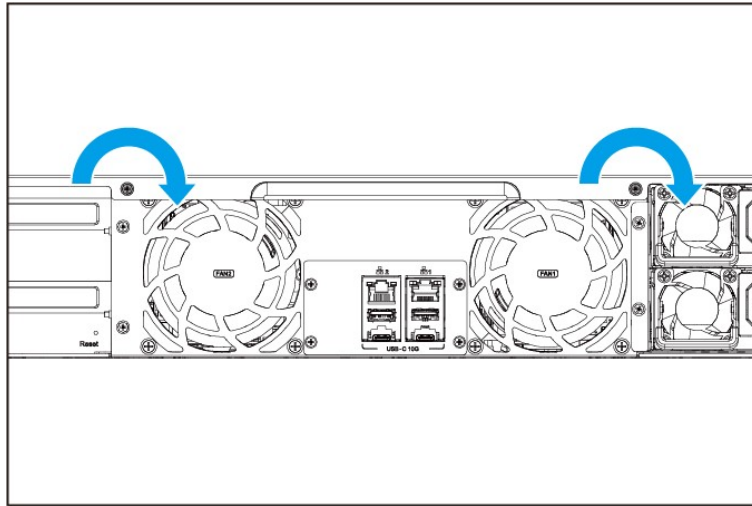


Figure 3-5: Tighten Captive Screws

Step 4: Connect the power adaptor, network cable(s), and any other connectors or cables to the GRAND-RE.

3.4 Memory Module Installation

The GRAND-RE has two memory slots and supports DDR4 DIMMs. To install a memory module, follow the steps below:



CAUTION:

For dual channel configurations, always install two identical memory modules that feature the same capacity, timings, voltage, number of ranks and the same brand.

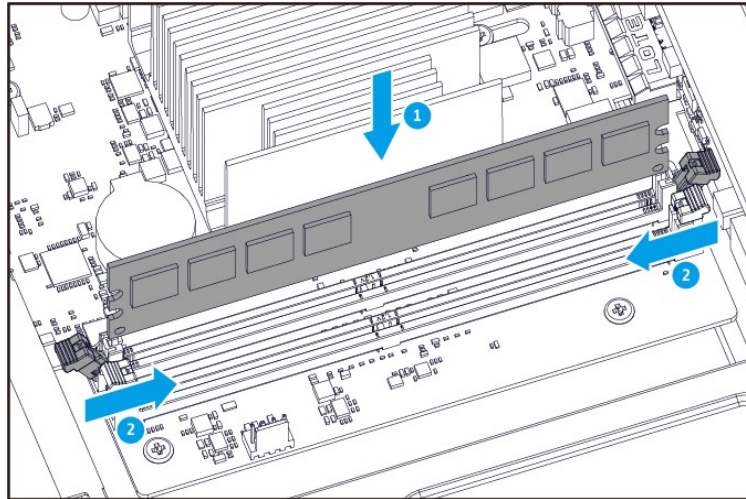
Step 1: Remove the case cover. See **Section 3.3** above.

Step 2: Grip a RAM on the edges to avoid touching contacts or circuitry on the module.

Step 3: Align the notch with the ridge in the slot. Insert the module into the slot. Verify that the metal connectors are completely inserted into the slot.

GRAND-RE Series

Step 4: Carefully press down on the module until the retention clips lock the module into place.



Step 5: Close the case cover and fasten the screws. Connect the power adaptor and cables back to the GRAND-RE.

3.5 Expansion Card Installation



WARNING!

The following instructions should only be performed by an authorized and trained technician.

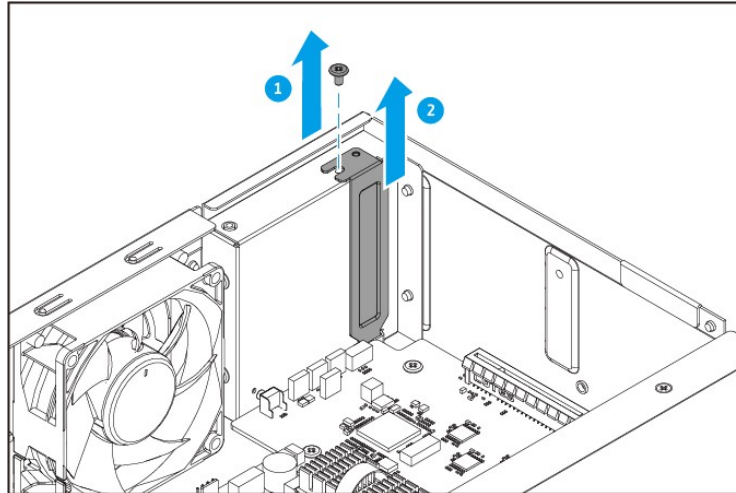
Strictly adhere to the instructions to install a network expansion card on the system. Failure to do so could result in injury to human body or death.

The GRAND-RE provides one PCIe x8 expansion slot so that users can add functionality to their system. To install expansion card, follow the steps below.

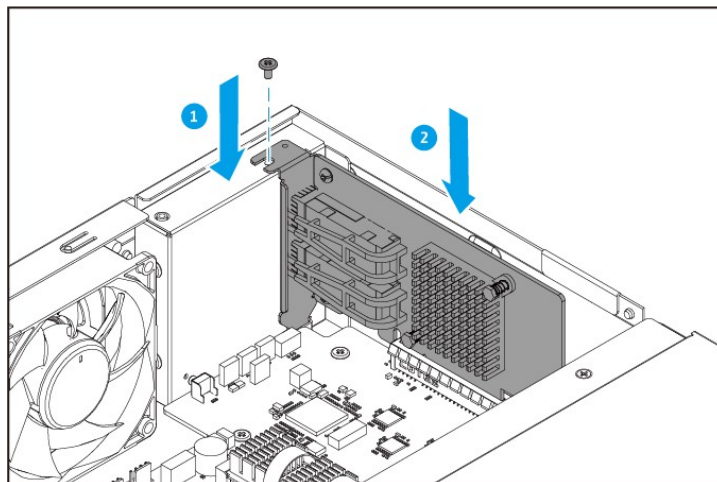
Step 1: Remove the case cover. See **Section 3.3** above.



Step 2: Remove the screw that secures the cover to the chassis. Pull the cover away from the slot.



Step 3: Install the expansion card.
Hold the card by the edges and insert the card into the slot. Attach the screw.



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3.6 Hard Drive Installation

The GRAND-RE series is compatible with 2.5-inch/3.5-inch SATA hard drives.



NOTE:

Before installing hard drives, ensure the disk drives (HDDs/SSDs) that you use are compatible with the GRAND-RE.

3.6.1 Hard Drive Bay Numbering

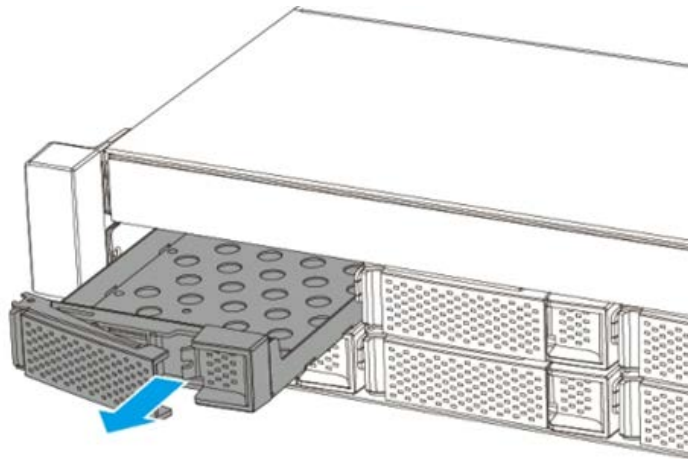


3.6.2 Installing Hard Drive

To install hard drives in GRAND-RE series, follow the steps below:

Step 1: Turn off the GRAND-RE.

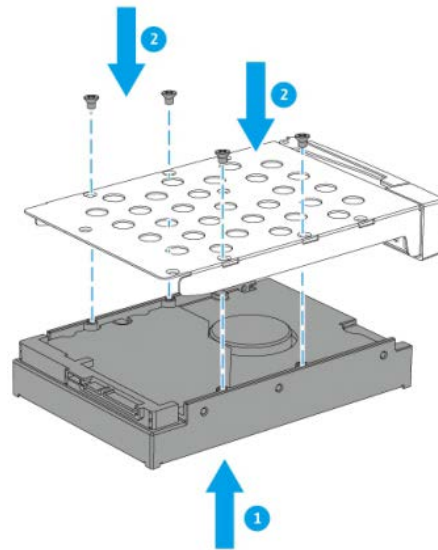
Step 2: Pull the handle to release the tray and pull the tray out.



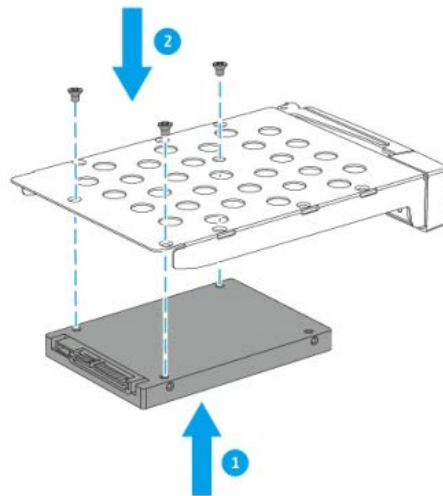


Step 3: Install a 3.5" or 2.5" disk drive on the drive tray.

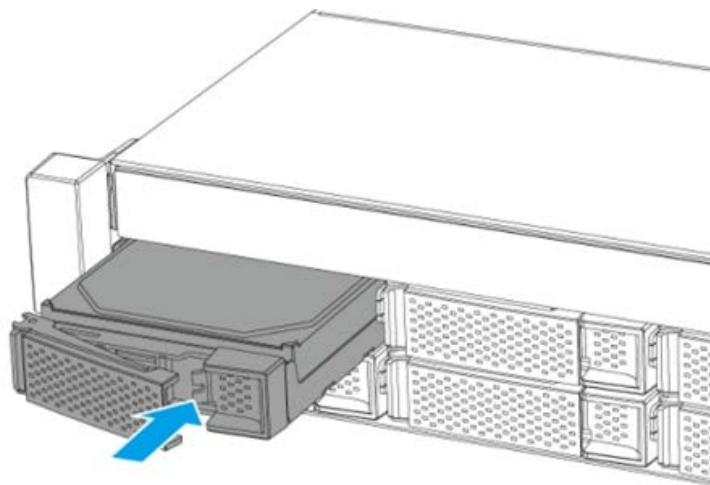
3.5" disk drive



2.5" disk drive



Step 4: Load the drive tray into the drive bay. Insert the tray into the bay. Push the handle.



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WARNING:

Users are strongly recommended to turn OFF the GRAND-RE before replacing the hard drive to reduce the risk of electric shock.



CAUTION:

IEI disclaims any responsibility for product damage/malfunction or data loss/recovery due to misuse or improper installation of hard disks in any occasions for any reasons.

3.7 Power-On Procedure

3.7.1 Installation Checklist



WARNING:

Make sure a power supply with the correct input voltage is being fed into the system. Incorrect voltages applied to the system may cause damage to the internal electronic components and may also cause injury to the user.

To power on the GRAND-RE, please make sure of the following:

- The HDD/SSD is installed
- The LAN cable is connected
- The power cables are plugged in
- The system is securely mounted

3.7.2 Power-on Procedure

**WARNING:**

1. Make sure a power supply with the correct input voltage is being fed into the system. Incorrect voltages applied to the system may cause damage to the internal electronic components and may also cause injury to the user.
2. Ensure to connect the power cord to a socket-outlet with earthing connection.

To power-on the GRAND-RE please follow the steps below:

Step 1: Connect the power source to the power input jack(s).

Step 2: Push the power button (**Figure 3-6**).

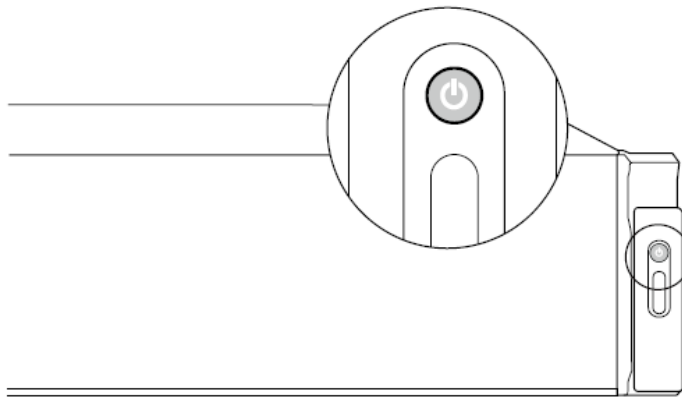


Figure 3-6: Power Button

Step 3: To turn off the GRAND-RE, press the power button for 3 seconds.

To force turn off, press the power button for 5 seconds.

Chapter

4

Maintenance

**WARNING:**

The following instructions should only be performed by an authorized and trained technician.

Before starting, please ensure that you turn off the GRAND-RE, disconnect the power adaptor, network cable(s), and also remove any other device/cable that is attached to the server.

Take Anti-Static precautions whenever maintenance is being carried out on the system components. Failure to take anti-static precautions can cause permanent system damage. For more details on anti-static precautions, please refer to **Section 3.1**.

4.1 Component Replacement Procedure

**WARNING!**

Users are not advised to attempt to repair or replace any internal or external components of the GRAND-RE storage server other than those listed below. If any other components fail or need replacement, contact the IEI reseller or vendor you purchased the GRAND-RE from or contact an IEI sales representative directly. To contact an IEI sales representative, please send an email to sales@ieiworld.com.

The industrial server components listed below can all be replaced if they fail:

- DIMM modules (see **Section 3.4**)
- Power supply unit

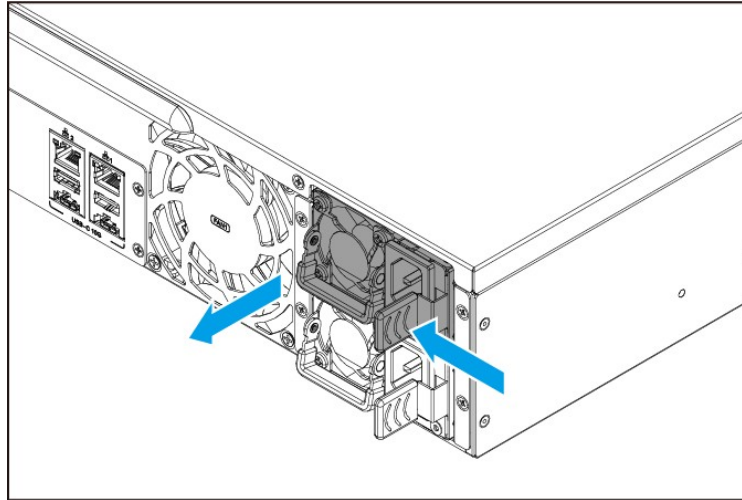
GRAND-RE Series

4.2 Power Supply Unit Replacement

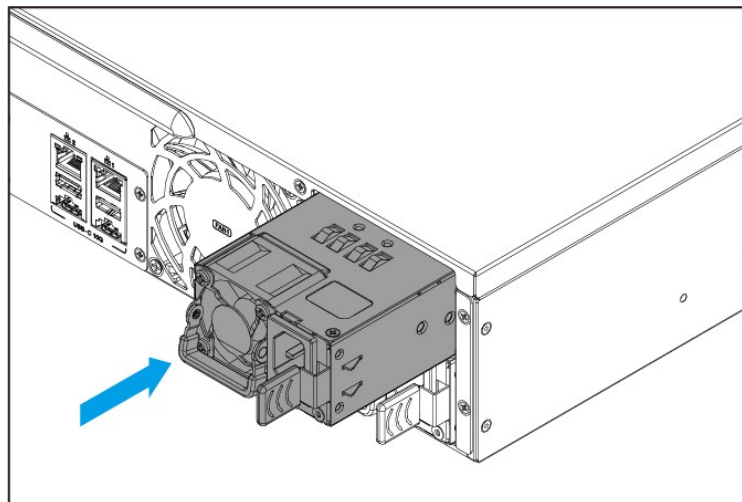
To replace a failed power supply unit, please follow the steps below.

Step 1: Remove the case cover. See **Section 3.3** above.

Step 2: Press the latch toward the handle and then pull the PSU out.



Step 3: Insert new power supply into the GRAND-RE.



Step 4: Connect the power adaptor and cables to the GRAND-RE.

Step 5: Power on the system.

Appendix

A

Regulatory Compliance

DECLARATION OF CONFORMITY

This equipment is in conformity with the following EU directives:

- EMC Directive 2014/30/EU
- Low-Voltage Directive 2014/35/EU
- RoHS II Directive 2015/863/EU

If the user modifies and/or install other devices in the equipment, the CE conformity declaration may no longer apply.

If this equipment has telecommunications functionality, it also complies with the requirements of the R&TTE Directive 1999/5/EC.

English

IEI Integration Corp declares that this equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Български [Bulgarian]

IEI Integration Corp. декларира, че този оборудване е в съответствие със съществените изисквания и другите приложими правила на Директива 1999/5/EC.

Česky [Czech]

IEI Integration Corp tímto prohlašuje, že tento zařízení je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.

Dansk [Danish]

IEI Integration Corp erklærer herved, at følgende udstyr overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.

Deutsch [German]

IEI Integration Corp, erklärt dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.

Eesti [Estonian]

IEI Integration Corp deklareerib seadme vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.

Español [Spanish]

IEI Integration Corp declara que el equipo cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.

Ελληνική [Greek]

IEI Integration Corp ΔΗΛΩΝΕΙ ΟΤΙ ΕΞΟΠΛΙΣΜΟΣ ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK.

Français [French]

IEI Integration Corp déclare que l'appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.

Italiano [Italian]

IEI Integration Corp dichiara che questo apparecchio è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Latviski [Latvian]

IEI Integration Corp deklarē, ka iekārta atbilst būtiskajām prasībām un citiem ar to saistītajiem noteikumiem Direktīvas 1999/5/EK.

Lietuvių [Lithuanian]

IEI Integration Corp deklaruoja, kad šis įranga atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.

Nederlands [Dutch]

IEI Integration Corp dat het toestel toestel in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.

Malti [Maltese]

IEI Integration Corp jiddikjara li dan prodott jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Direttiva 1999/5/EC.

Magyar [Hungarian]

IEI Integration Corp nyilatkozom, hogy a berendezés megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyeb előírásainak.

Polski [Polish]

IEI Integration Corp oświadcza, że wyrobu jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.

Português [Portuguese]

IEI Integration Corp declara que este equipamento está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

GRAND-RE Series

Româna [Romanian]

IEI Integration Corp declară că acest echipament este în conformitate cu cerințele esențiale și cu celelalte prevederi relevante ale Directivei 1999/5/CE.

Slovensko [Slovenian]

IEI Integration Corp izjavlja, da je ta opreme v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.

Slovensky [Slovak]

IEI Integration Corp týmto vyhlasuje, že zariadenia spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.

Suomi [Finnish]

IEI Integration Corp vakuuttaa täten että Iiitteet on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Svenska [Swedish]

IEI Integration Corp förklarar att denna utrustningstyp står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

ROHS STATEMENT

The label on the product indicates this product conforms to European (EU) Restriction of Hazardous Substances (RoHS) that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

FCC WARNING

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body.

CHINA ROHS

The label on the product indicates the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/ components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Appendix

B

Safety Precautions

**WARNING:**

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the GRAND-RE.

B.1 Safety Precautions

Please follow the safety precautions outlined in the sections that follow:

B.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Follow the electrostatic precautions*** outlined below whenever the GRAND-RE is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the GRAND-RE is being installed, moved or modified.
- ***Do not apply voltage levels that exceed the specified voltage range.*** Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if the GRAND-RE chassis is opened when the GRAND-RE is running.
- ***If considerable amounts of dust, water, or fluids enter the GRAND-RE,*** turn off the power supply immediately, unplug the power cord, and contact the GRAND-RE vendor.
- ***This equipment is not suitable for use in locations where children are likely to be present.***
- **DO NOT:**
 - Drop the GRAND-RE against a hard surface.
 - In a site where the ambient temperature exceeds the rated temperature

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B.1.2 Anti-static Precautions



WARNING:

Failure to take ESD precautions during the installation of the GRAND-RE may result in permanent damage to the GRAND-RE and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the GRAND-RE. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the GRAND-RE is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding:*** Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component:*** When handling the electrical component, hold the electrical component by its edges.

B.1.3 Product Disposal

**CAUTION:**

Risk of explosion if the battery is replaced by an incorrect type;

Replacement of a battery with an incorrect type that can defeat a safeguard (for example, in the case of some lithium battery types);

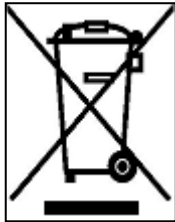
Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion;

Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas;

A battery subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas;

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union:



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

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B.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the GRAND-RE, please follow the guidelines below.

B.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the GRAND-RE, please read the details below.

- The interior of the GRAND-RE does not require cleaning. Keep fluids away from the GRAND-RE interior.
- Be cautious of all small removable components when vacuuming the GRAND-RE.
- Turn the GRAND-RE off before cleaning the GRAND-RE.
- Never drop any objects or liquids through the openings of the GRAND-RE.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the GRAND-RE.
- Avoid eating, drinking and smoking within vicinity of the GRAND-RE.

B.2.2 Cleaning Tools

Some components in the GRAND-RE may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the GRAND-RE.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the GRAND-RE.
- **Water or rubbing alcohol** – A cloth moistened with water or rubbing alcohol can be used to clean the GRAND-RE.
- **Using solvents** – The use of solvents is not recommended when cleaning the GRAND-RE as they may damage the plastic parts.
- **Vacuum cleaner** – Using a vacuum specifically designed for computers is one of the best methods of cleaning the GRAND-RE. Dust and dirt can restrict the airflow in the GRAND-RE and cause its circuitry to corrode.
- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- **Foam swabs** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

C

Hazardous Materials Disclosure

GRAND-RE Series

C.1 RoHS II Directive (2015/863/EU)

The details provided in this appendix are to ensure that the product is compliant with the RoHS II Directive (2015/863/EU). The table below acknowledges the presences of small quantities of certain substances in the product, and is applicable to RoHS II Directive (2015/863/EU).

Please refer to the following table.

Part Name	Toxic or Hazardous Substances and Elements									
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)	Bis(2-ethylhexyl) phthalate (DEHP)	Butyl benzyl phthalate (BBP)	Dibutyl phthalate (DBP)	Diisobutyl phthalate (DIBP)
Housing	O	O	O	O	O	O	O	O	O	O
Display	O	O	O	O	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O	O	O	O	O
Battery	O	O	O	O	O	O	O	O	O	O
<p>O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in Directive (EU) 2015/863.</p> <p>X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in Directive (EU) 2015/863.</p>										



C.2 China RoHS

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有“环境友好使用期限”的标签，此期限是估算这些物质“不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	O	O	O	O	O	O
显示	O	O	O	O	O	O
印刷电路板	O	O	O	O	O	O
金属螺帽	O	O	O	O	O	O
电缆组装	O	O	O	O	O	O
风扇组装	O	O	O	O	O	O
电力供应组装	O	O	O	O	O	O
电池	O	O	O	O	O	O
O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11364-2014 與 GB/T26572-2011 标准规定的限量要求以下。 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11364-2014 與 GB/T26572-2011 标准规定的限量要求。						

