HITACHI
Inspire the Next

Hitachi Advanced Server DS240 Hardware Guide

This guide provides the system overview and specifications for Hitachi Advanced Server DS240, including hardware component descriptions, ports, network interface cards, and LEDs.

MK-97HAS008-00
May 2018

About the DS240 System

Conventions

Several different typographic conventions are used throughout this manual. Refer to the following examples for common usage.

Bold type face denotes menu items, buttons and application names.

Italic type face denotes references to other sections, and the names of the folders, menus, programs, and files.

<Enter> type face denotes keyboard keys.

WARNING!

Warning information appears before the text it references and should not be ignored as the content may prevent damage to the device.

CAUTION!

CAUTIONS APPEAR BEFORE THE TEXT IT REFERENCES, SIMILAR TO NOTES AND WARNINGS. CAUTIONS, HOWEVER, APPEAR IN CAPITAL LETTERS AND CONTAIN VITAL HEALTH AND SAFETY INFORMATION.

Note:

Highlights general or useful information and tips.

Precautionary Measures

Read all caution and safety statements in this document before performing any of the instructions. To reduce the risk of bodily injury, electrical shock, fire, and equipment damage, read and observe all warnings and precautions in this chapter before installing or maintaining your system. To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all of the following instructions and information. The following symbols may be used throughout this guide and may be marked on the product and / or the product packaging.

Safety Instructions about your system

In the event of a conflict between the information in this guide and information provided with the product or on the website for a particular product, the product documentation takes precedence.

Your system should be integrated and serviced only by technically qualified persons.

You must adhere to the guidelines in this guide and the assembly instructions in related chapters to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products / components will void the UL Listing and other regulatory approvals of the product, and may result in noncompliance with product regulations in the region(s) in which the product is sold.

Table 1: Warning and Cautions

CAUTION	Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.
WARNING	Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.
	Indicates potential hazard if indicated information is ignored.
	Indicates shock hazards that result in serious injury or death if safety instructions are not followed.
	Indicates hot components or surfaces.
	Indicates do not touch fan blades, may result in injury.
	Remove the system from the rack to disconnect power system.

Table 1: Warning and Cautions (Continued)

	The enclosure is designed to carry only the weight of the system sled. Do not use this equipment as a workspace. Do not place additional load onto any equipment in this system.
	Indicates two people are required to safely handle the system.
	**Restricted Access Location:** The system is intended for installation only in a Server Room or Computer Room where both these conditions apply: • access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken; and • access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.

Intended Application Uses

This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations. The suitability of this product for other product categories and environments (such as medical, industrial, residential, alarm systems, and test equipment), other than an ITE application, may require further evaluation.

Site Selection

The system is designed to operate in a typical office environment. Choose a site that is:

- Clean, dry, and free of airborne particles (other than normal room dust).
- Well-ventilated and away from sources of heat including direct sunlight and radiators.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power system, because they serve as the product's main power disconnect.
- Provided with either two independent DC power system or two independent phases from a single power system.

Equipment Handling Practices

Reduce the risk of personal injury or equipment damage:

- Conform to local occupational health and safety requirements when moving and lifting equipment.
- Use mechanical assistance or other suitable assistance when moving and lifting equipment.
- To reduce the weight for easier handling, remove any easily detachable components.
- Never lift or move your system soley by the handle on the component.

Power and Electrical Warnings

CAUTION!

MAKE SURE THE SYSTEM IS REMOVED FROM THE RACK BEFORE SERVICING ANY NON-HOT PLUG COMPONENTS. THE BUS BAR CLIPS MUST BE DISCONNECTED FROM THE POWER SYSTEM IN ORDER TO FULLY SEPARATE THE SYSTEM FROM THE POWER SOURCE.

CAUTION!

TO AVOID RISK OF ELECTRIC SHOCK, DISCONNECT ALL CABLING FROM THE SYSTEM AND REMOVE THE SYSTEM FROM THE RACK.

System Access Warnings

CAUTION!

TO AVOID PERSONAL INJURY OR PROPERTY DAMAGE, THE FOLLOWING SAFETY INSTRUCTIONS APPLY WHENEVER ACCESSING THE INSIDE OF THE PRODUCT:

- Disconnect from the power source by removing the system from the rack.
- Disconnect all cabling running into the system.
- Retain all screws or other fasteners when servicing. Upon completion servicing, secure with original screws or fasteners.

CAUTION!

IF THE SERVER HAS BEEN RUNNING, ANY INSTALLED HDD MODULES MAY BE HOT.

CAUTION!

UNLESS YOU ARE ADDING OR REMOVING A HOT-PLUG COMPONENT, ALLOW THE SYSTEM TO COOL BEFORE SERVICING.

CAUTION!

TO AVOID INJURY DO NOT CONTACT MOVING FAN BLADES. IF YOUR SYSTEM IS SUPPLIED WITH A GUARD OVER THE FAN, DO NOT OPERATE THE SYSTEM WITHOUT THE FAN GUARD IN PLACE.

Rack Mount Warnings

The following installation guidelines are required by UL for maintaining safety compliance when installing your system into a rack.

The equipment rack must be anchored to an unmovable support to prevent it from tipping when your system or piece of equipment is extended from it. The equipment rack must be installed according to the rack manufacturer's instructions.

Install equipment in the rack from the bottom up, with the heaviest equipment at the bottom of the rack.

Extend only one piece of equipment from the rack at a time.

You are responsible for installing a main power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the system(s).

To avoid risk of potential electric shock, a proper safety ground must be implemented for the rack and each piece of equipment installed in it.

Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained.

Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Electrostatic Discharge (ESD)

CAUTION!

ESD CAN DAMAGE DRIVES, BOARDS, AND OTHER PARTS. WE RECOMMEND THAT YOU PERFORM ALL PROCEDURES AT AN ESD WORKSTATION. IF ONE IS NOT AVAILABLE, PROVIDE SOME ESD PROTECTION BY WEARING AN ANTI-STATIC WRIST STRAP ATTACHED TO CHASSIS GROUND -- ANY UNPAINTED METAL SURFACE -- ON YOUR SERVER WHEN HANDLING PARTS.

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges without any component and pin touching. After removing a board from its protective wrapper or from the system, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

Cooling and Airflow

CAUTION!

CAREFULLY ROUTE CABLES AS DIRECTED TO MINIMIZE AIRFLOW BLOCKAGE AND COOLING PROBLEMS. FOR PROPER COOLING AND AIRFLOW, OPERATE THE SYSTEM ONLY WITH THE CHASSIS COVERS* / AIR DUCT INSTALLED. OPERATING THE SYSTEM WITHOUT THE COVERS / AIR DUCT IN PLACE CAN DAMAGE SYSTEM PARTS. TO INSTALL THE COVERS* / AIR DUCT:

- Check first to make sure you have not left loose tools or parts inside the system.
- Check that cables, add-in cards, and other components are properly installed.

Attach the covers* / air duct to the chassis according to the product instructions.

* May not apply to all systems.

Please be aware that slots and openings on the front and back side of the chassis are designed for ventilation; to make sure reliable operation of your system and to protect it from overheating, these openings must not be covered or blocked. The openings should never be covered or blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.

Laser Peripherals or Devices

CAUTION!

TO AVOID RISK OF RADIATION EXPOSURE AND / OR PERSONAL INJURY:

- Do not open the enclosure of any laser peripheral or device.
- Laser peripherals or devices are not serviceable.
- Return to manufacturer for servicing.

Use certified and rated Laser Class I for Optical Transceiver product.

Heed safety instructions: Before working with the system, whether using this manual or any other resource as a reference, pay close attention to the safety instructions. Adhere to the assembly instructions in this manual to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components spec-

ified in this manual. Use of other products / components will void the UL listing and other regulatory approvals of the product and will most likely result in non-compliance with product regulations in the region(s) in which the product is sold.

System power on/off: To remove power from system, you must remove the system from rack. Make sure the system is removed from the rack before opening the chassis, adding, or removing any non hot-plug components.

Hazardous conditions, devices and cables: Hazardous electrical conditions may be present on power, telephone, and communication cables. Turn off the system and disconnect the cables attached to the system before opening it. Otherwise, personal injury or equipment damage can result.

Electrostatic discharge (ESD) and ESD protection: ESD can damage drives, boards, and other parts. We recommend that you perform all procedures in this chapter only at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic wrist strap attached to chassis ground any unpainted metal surface on the server when handling parts.

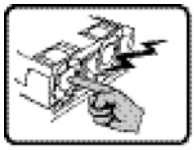
ESD and handling boards: Always handle boards carefully. They can be extremely sensitive to electrostatic discharge (ESD). Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide board over any surface.

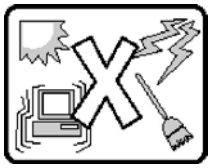
Installing or removing jumpers: A jumper is a small plastic encased conductor that slips over two jumper pins. Some jumpers have a small tab on top that can be gripped with fingertips or with a pair of fine needle nosed pliers. If the jumpers do not have such a tab, take care when using needle nosed pliers to remove or install a jumper; grip the narrow sides of the jumper with the pliers, never the wide sides. Gripping the wide sides can damage the contacts inside the jumper, causing intermittent problems with the function controlled by that jumper. Take care to grip with, but not squeeze, the pliers or other tool used to remove a jumper, or the pins on the board may bend or break.

General Information

Before servicing this system, it is recommened to read this guide completely to be aware of any safety issues or requirements involved in the servicing of this system.

Assembly Safety Guidelines

	The power system in this product contains no user-serviceable parts. Refer servicing only to qualified personnel.

	The system is designed to operate in a typical office environment. Choose a site that is: ● Clean and free of airborne particles (other than normal room dust). ● Well ventilated and away from sources of heat including direct sunlight. ● Away from sources of vibration or physical shock. ● Isolated from strong electromagnetic fields produced by electrical devices. ● In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm. ● Provided with a properly grounded wall outlet. ● Provided with sufficient space to access the power system, because they serve as the product's main power disconnect.
	**WARNING!** The system is safety certified as rack-mounted equipment for use in a server room or computer room, using an approved customer rack. The enclosure is designed to carry only the weight of the system sled. Do not place additional load onto any equipment.
	Heavy object. Indicates two people are required to safely handle the system.

About the DS240 System

This guide provides the system overview and specifications for Hitachi Advanced Server DS240, including hardware component descriptions, ports, network interface cards, and LEDs.

Introduction

This guide provides the system overview and specifications for Hitachi Advanced Server DS240, including hardware component descriptions, ports, network interface cards, and LEDs.

For the latest version of this manual, see support.HitachiVantara.com.

System Features

The system comprises a 2U/34.1" long chassis and one mainboard sled. Mainboard sled features include:

- **Chipset**: Intel® C621/C624/C628 series
- **Processors (x4)**: Intel® Xeon® Processor Scalable Family (codename Skylake-SP)
- **PCIe slots**:
  Riser Slot1 (x24) = 8 + 16 for General SKU or 16 for GPU SKU
  Riser Slot2 (x16) = 16 (reserved for SAS mezzanine installation)
  Riser Slot3 (x32) = 16 + 16
  Riser Slot4 (x24) = 8 + 16 for General SKU o16 for GPU SKU
  OCP Mezz Slot (x16) = 8 + 8 for OCP 2.0 mezzanine card installation or GbE/10GbE PHY board installation
- **Memory:** Up to 48 DIMM slots are available; ECC DDR4 2666 MT/s RDIMM memory
- **Network*:**
  - Dedicated GbE management NIC port from PHY RTL8211 to BMC
  - Intel® C621 as 2x or 4x GbE integrated network solution with PHY (optional)*
  - Intel® C624/C628 as 2x or 4x 10GbE integrated network solution with PHY (optional)*
  - *The dual port or quad port PHY card is installed in the OCP mezzanine slot*

*Visit support.HitachiVantara.com for the latest Network support listings.

Note:
The system supports: 2200W Platinum PSU.

Specifications

Table 1: System Specifications

SPECIFICATIONS	DESCRIPTION
Form factor	2U rack mount
Chassis dimensions (W x H x D)	444mm x 87.5 mm x 866 mm 17.5" x 3.4" x 34.1"
Mainboard form factor (Wx L), full-width	400mm x 559.8mm / 15.75" x 22.04"
Processor	**Processor type:** Intel® Xeon® Processor Scalable Family (codename Skylake-SP) **Max. TDP support:** 205W*, optimized power delivery for 85W, VRD 13 *165W for GPU SKU **Number of processors:** 4 **Internal Interconnect:** 10.4 GT/s
Chipset	Intel® C621/C624/C628
Memory	**Total slots:** 48 **Memory type:** DDR4 2666 MT/s RDIMM **Memory size:** 8GB, 16GB, 32 GB* *More options refer to the CCL
Storage controller	**Onboard (Intel® C621/C624/C628):** ● (8) SATA 6Gbps port with (1) x8 slimline connector ● (6) sSATA 6Gbps port with (1) x4 slimline connector (reserved) and (2) M.2 2280/22110 connectors
Networking	● Dedicated GbE management NIC port from PHY RTL8211 to BMC ● Intel® C621 as 2x or 4xGbE integrated network solution with PHY (optional) ● Intel® C624/C628 as 2x or 4x10GbE integrated network solution with PHY (optional)

Table 1: System Specifications (Continued)

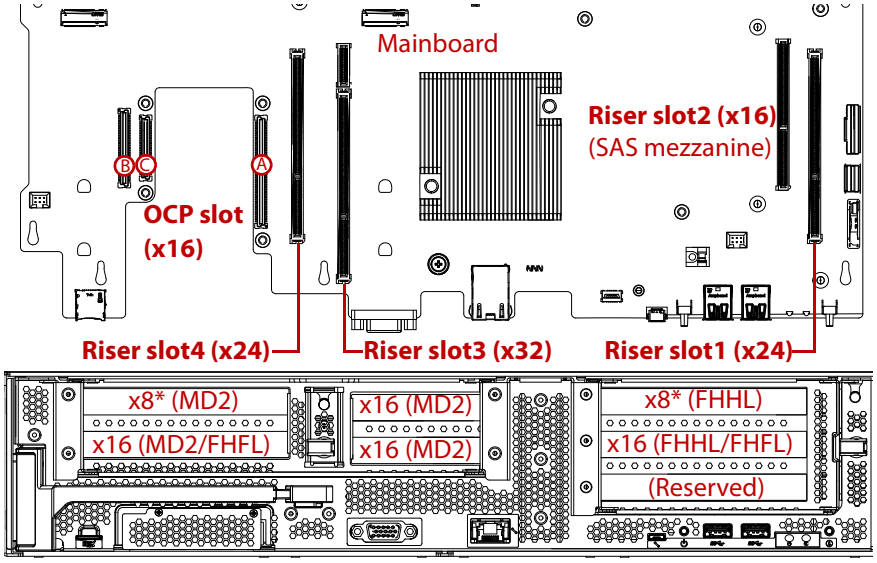
SPECIFICATIONS	DESCRIPTION
Expansion slots	**Riser Slot1 (x24):** Gen3, PCIe x 8, CPU1 (Full Height Half Length Card*) Gen3, PCIe x16, CPU0 (Full Height Half Length Card) **Riser Slot2 (x16):** Gen3, PCIe x16, CPU1 (reserved for SAS mezzanine card type B installation) **Riser Slot3 (x32):** Gen3, PCIe x16, CPU2 (MD2 Low-profile Card) Gen3, PCIe x16, CPU2 (MD2 Low-profile Card) **Riser Slot4 (x24):** Gen3, PCIe x 8, CPU3 (MD2 Low-profile Card*) Gen3, PCIe x16, CPU3 (MD2 Low-profile Card) *not available while FHFL card installed (only for GPU SKU) **OCP Mezz Slot (x16):** Gen3, PCIe x16, CPU0 (OCP 2.0) (This OCP mezzanine slot is available for GbE/10GbE PHY card installation.)  *not avaiable while x16 FHFL card is installed (only for GPU SKU)

Table 1: System Specifications (Continued)

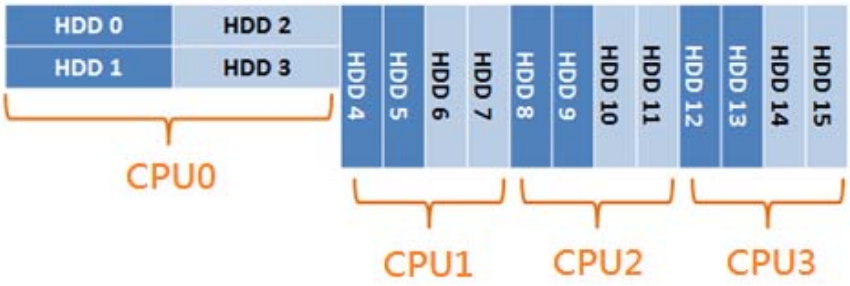
SPECIFICATIONS	DESCRIPTION
Storage	(16) 2.5" hot-plug SATA/SAS HDD/SSD or NVMe SSD for system: ● NVMe SSD 0~15 while four CPUs installed ● SATA SSD/HDD 0~11 only ● SAS/SATA SSD/HDD 0~15 while SAS HBA/RAID card installed 
Onboard storage	(2) PCIe x1 / SATA M.2 2280/22110 slot **Note:** The PCIe connectivity of M.2 slot is designed in PCIe Gen3 x1 lane and highly recommended to install your M.2 SSD as the boot drive.
HDD backplane	1 to 1
Video	Integrated Aspeed AST2500 with 8MB DDR4 video memory
HW RAID options	QS-3516B SAS 12Gb/s mezzanine RAID card, support RAID 0, 1, 5, 6, 10, 50, 60
Network options	● (1) GbE dual or quad port OCP mezzanine PHY card (Optional)* ● (1) 10GbE dual or quad port OCP mezzanine PHY card (Optional)* ● For more options refer to support.HitachiVantara.com **The dual or quad port PHY card is installed to OCP mezzanine slot*
Front I/O	(1) USB 2.0 port
Back I/O	● (2) USB 3.0 ports ● (1) VGA ● (1) Micro-USB port (for console) ● (1) MicroSD slot ● (1) GbE RJ45 management port
TPM	Yes (optional, SPI mode)
ACPI	ACPI compliance, S0, S5 support
Power supply	(2) 2200W high efficiency hot-plug redundant PSUs* ● 200~240VAC, 50/60HZ, 14A MAX ● 240VDC, 14A MAX **This is conditional support for 1+1 redundant PSU. Your system can fully run with no limitation when these two PSUs work normally. The system would initiate power management to decrease the power consumption under a one PSU limitation if one of the PSUs failed.*
System rating	200-240Vac, 11A, 50/60Hz
Fan	(5) Easy-service redundant rotors fan modules
System management	IPMI v2.0 Compliant, on board "KVM over IP" support

Table 1: System Specifications (Continued)

SPECIFICATIONS	DESCRIPTION
Operating environment	• Operating temperature: 5°C to 35°C (41°F to 95°F) • Non-operating temperature: -40°C to 65°C (-40°F to 149°F) • Operating relative humidity: 50% to 85%RH • Non-operating relative humidity: 20% to 90%RH

Thermal Limitation List

Project	S7D			
SKU	PCIe			GPGPU
Storage type ,Q'ty	16 pcs HDD / SSD	12 pcs + 4 pcs HDD + NVMe SSD	16 pcs NVMeSSD	16 pcs NVMeSSD / SSD
RVI limit	75% fan duty	75% fan duty	No RVI limit, 100% fan duty	No RVI limit, 100% fan duty
CPU support	[Max to 165W] 6146 (165W) 6144 (150W) 8176 (165W) 8170 (165W) 6150 (165W) 8164 (150W) 8160 (150W) 6148 (150W) 6142 (150W) 6136 (150W) 8158 (150W) 6132 (140W) 6128 (115W) 6134 (130W) 5122 (105W) 8156 (105W) 6152 (140W) 6140 (140W) 6138 (125W) 6130 (125W) 8153 (125W) 6126 (125W) 5120 (105W) 5118 (105W) 5115 (85W) 4116 (85W) 4114 (85W) 4110 (85W) 4108 (85W) 3106 (85W) 3104 (85W) 4112 (85W) 8160T (150W) 6138T (125W) 6130T (125W) 6126T125W 5120T (105W) 5119T (85W) 4117T (85W) 4115T (85W) 4109T (70W)	[Max to 165W] 6146 (165W) 6144 (150W) 8176 (165W) 8170 (165W) 6150 (165W) 8164 (150W) 8160 (150W) 6148 (150W) 6142 (150W) 6136 (150W) 8158 (150W) 6132 (140W) 6128 (115W) 6134 (130W) 5122 (105W) 8156 (105W) 6152 (140W) 6140 (140W) 6138 (125W) 6130 (125W) 8153 (125W) 6126 (125W) 5120 (105W) 5118 (105W) 5115 (85W) 4116 (85W) 4114 (85W) 4110 (85W) 4108 (85W) 3106 (85W) 3104 (85W) 4112 (85W) 8160T (150W) 6138T (125W) 6130T (125W) 6126T125W 5120T (105W) 5119T (85W) 4117T (85W) 4115T (85W) 4109T (70W)	[Max to 205W] 8180 (205W) 8168 (205W) 6154 (200W) 6146 (165W) 6144 (150W) 8176 (165W) 8170 (165W) 6150 (165W) 8164 (150W) 8160 (150W) 6148 (150W) 6142 (150W) 6136 (150W) 8158 (150W) 6132 (140W) 6128 (115W) 6134 (130W) 5122 (105W) 8156 (105W) 6152 (140W) 6140 (140W) 6138 (125W) 6130 (125W) 8153 (125W) 6126 (125W) 5120 (105W) 5118 (105W) 5115 (85W) 4116 (85W) 4114 (85W) 4110 (85W) 4108 (85W) 3106 (85W) 3104 (85W) 4112 (85W) 8160T (150W) 6138T (125W) 6130T (125W) 6126T125W 5120T (105W) 5119T (85W) 4117T (85W) 4115T (85W) 4109T (70W)	[Max to 165W] 6146 (165W) 6144 (150W) 8176 (165W) 8170 (165W) 6150 (165W) 8164 (150W) 8160 (150W) 6148 (150W) 6142 (150W) 6136 (150W) 8158 (150W) 6132 (140W) 6128 (115W) 6134 (130W) 5122 (105W) 8156 (105W) 6152 (140W) 6140 (140W) 6138 (125W) 6130 (125W) 8153 (125W) 6126 (125W) 5120 (105W) 5118 (105W) 5115 (85W) 4116 (85W) 4114 (85W) 4110 (85W) 4108 (85W) 3106 (85W) 3104 (85W) 4112 (85W) 8160T (150W) 6138T (125W) 6130T (125W) 6126T125W 5120T (105W) 5119T (85W) 4117T (85W) 4115T (85W) 4109T (70W)
CPU0/3 HS	2U HS x 2 pcs FBS7D005010 or FBS7D007010	2U HS x 2 pcs FBS7D005010 or FBS7D007010	2U HS x 2 pcs FBS7D005010 or FBS7D007010	1U HS x 2 pcs FBS7D033010 or FBS7D035010
CPU1/2 HS	2U HS x 2 pcs FBS7D008010 or FBS7D010010	2U HS x 2 pcs FBS7D008010 or FBS7D010010	2U HS x 2 pcs FBS7D008010 or FBS7D010010	1U HS x 2 pcs FBS7D034010 or FBS7D036010
Memory ,Q'ty	48 pcs DDR4 64G,2666 MHz	48 pcs DDR4 64G,2666 MHz	48 pcs DDR4 64G,2666 MHz	48 pcs DDR4 64G,2666 MHz
Super cap	1 pcs FBU345	1 pcs FBU345	1 pcs FBU345	No support
M.2 ,Q'ty	2 pcs >3.5W,boot device only	2 pcs >3.5W,boot device only	2 pcs >3.5W,boot device only	2 pcs >3.5W,boot device only
PCIe card	4 pcs Max to 13W	4 pcs Max to 13W	4 pcs Max to 13W	2 pcs Max to 13W
OCP card ,Q'ty	1 pcs card with type 2 heatsink	1 pcs card with type 2 heatsink	1 pcs card with type 2 heatsink	1 pcs card with type 2 heatsink
GPGPU ,Q'ty	2 pcs HHHL ,slot 31/32 only	2 pcs HHHL ,slot 31/32 only	2 pcs HHHL ,slot 31/32 only	2 pcs FHFL
Support one fan rotor fail (N+1)	Ta=35C	Ta=35C	Ta=35C	Ta=35C apply Nvidia P100,Ta=30C

Package Contents

- (1) Hitachi Advanced Server DS240 system
- (4) processor heat sinks
- (2) power supply units
- (2) power cords (optional)

Note:
For exact shipping contents, contact your Hitachi sales representative.

A Tour of the System

System Overview

The system is available in 16 x 2.5" SATA/SAS HDD/SSD or NVMe SSD models. The following illustrations describe the major components of these variants.

2.5" Storage Drive System

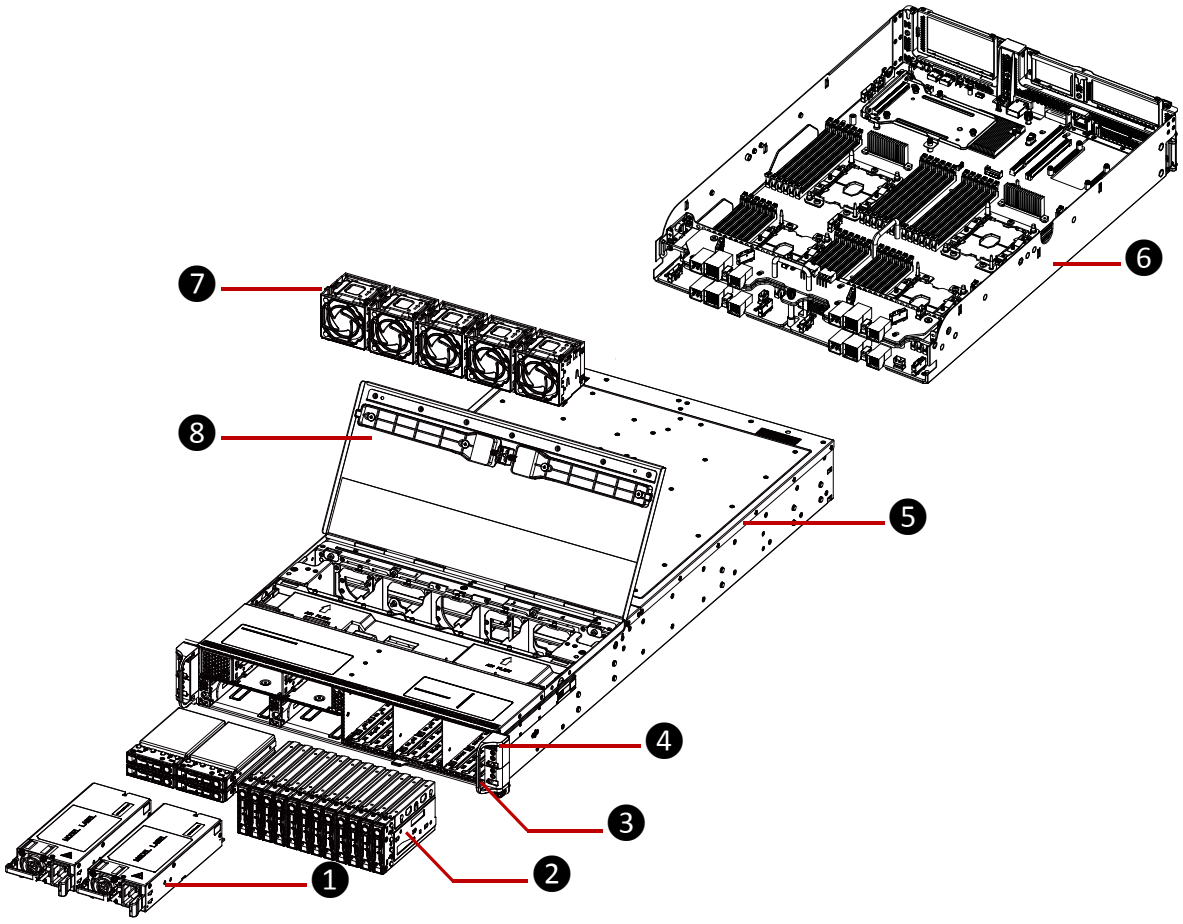


Figure 1. System Component Overview

Table 2: System Component Overview

NO.	ITEM	DESCRIPTION
1	Power supply unit (PSU)	Two 2200W high efficiency redundant PSUs
2	2.5" storage drive bay	Housing 2.5" storage drive (x16)

Table 2: System Component Overview (Continued)

NO.	ITEM	DESCRIPTION
3	Server handle	Two server handles used for pulling the system out of the rack **CAUTION!** THE HANDLES ARE DESIGNED FOR THE EXTENSION OF THE SYSTEM FROM THE RACK. THE HANDLES ARE NOT DESIGNED TO CARRY THE WEIGHT OF THE SYSTEM. DO NOT USE THE HANDLES TO MOVE OR LIFT THE SYSTEM.
4	Front control panel	Features power button with LED, ID button with LED and USB port. See *Front Control Panel and LEDs* on page 11 for further information
5	Chassis	2U System chassis 444mm/17.5"(W)x 87.5mm/3.4"(H)x 866mm/34.1"(D)
6	MB sled	There are two types for MB sled: General SKU GPU SKU
7	Fan modules	Five 60 mm (2.36”) x 56 mm (2.20”) variable-speed dual-rotor fans
8	Fan assembly cover	Open to service fan modules

System Front View

2.5” Storage Drive System

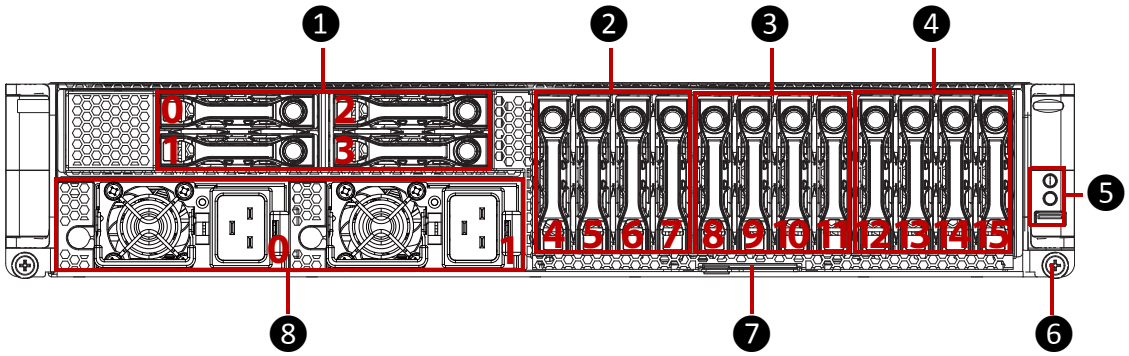


Figure 2. Front View

Table 3: System Front View

NO	FEATURE	DESCRIPTION
1	2.5” Storage Drive	SATA/SAS HDD/SSD 0~3* or NVMe SSD 0~3 (CPU0) storage drive bay
2		SATA/SAS HDD/SSD 4~7* or NVMe SSD 4~7 (CPU1) storage drive bay
3		SATA/SAS HDD/SSD 8~11* or NVMe SSD 8~11 (CPU2) storage drive bay
4		SATA/SAS HDD/SSD 12~15** or NVMe SSD 12~15 (CPU3) storage drive bay
5	Front control panel	Includes power/ID button, power/ID/status LED, and USB port

Table 3: System Front View (Continued)

NO	FEATURE	DESCRIPTION
6	Thumb screw	Secure the system to the rack frame
7	Asset Tag	Record serial number or other important information
8	Power sub-system	Main power supply unit (PSU). See *Power Sub-System* on page 11.

*SAS HDD/SSD will be available while SAS HBA / RAID card installed

** SATA/SAS HDD/SSD will be available while SAS HBA / RAID card installed

2.5″ Storage Drive Tray Overview

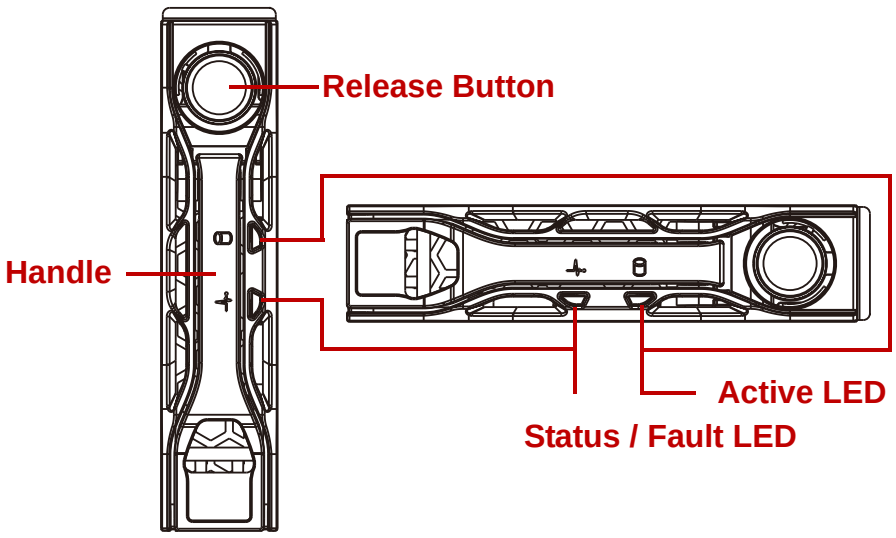


Figure 3. 2.5″ Storage Drive Tray Overview

The following LED behavior table represents LED conditions.

Table 5: 2.5″ Storage Drive Tray LED Status Behavior

NAME	COLOR	CONDITION	DESCRIPTION
Drive Status / Fault	Blue	On	Drive is online
		Blinking	Twice per second: Identification Once per second: Rebuilding
	Amber	On	Drive failure
	Off		Slot is empty
Drive Active	Blue	Blinking	Drive access is active

Front Control Panel and LEDs

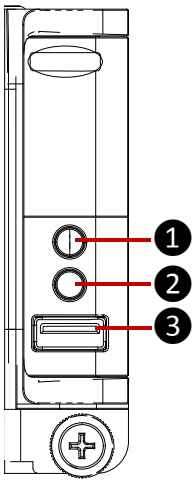


Figure 4. Front Control Panel

Table 6: Front Control Panel

NO	FEATURE	DESCRIPTION
1	Power button with LED	Button: ● Press more than four seconds to power off the system LED: ● Off: DC off (System power off) ● Blue On: DC on (System power on) ● Amber Blinking: DC off and fault ● Amber and Blue Blinking: DC on and fault
2	ID button with LED	Button: ● Press to toggle the identification LED: ● Off: No indicator ● Blue Blinking: ID indicator
3	USB port	Connect to USB device

Power Sub-System

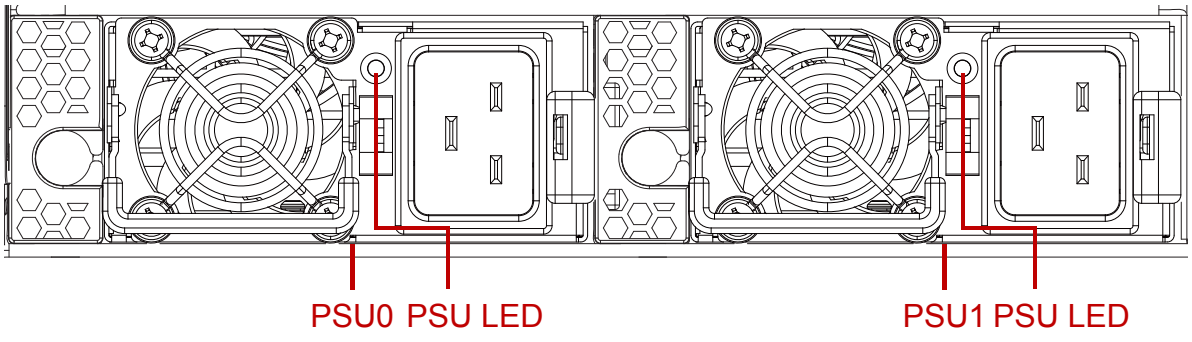


Figure 5. PSU to Mainboard Sled Description

WARNING!
Mainboard combinations other than the system are not supported.

A system has two modular Power Supply Units (PSU). Both PSUs are directly connected to the Power Distribution Boards (PDBs), the HDD backplane, and middle plane allowing each PSU to individually provide power for mainboard.

The power supply units supported: 2x 2200W redundant PSU.

Table 7: PSU LED Description

STATUS	DESCRIPTION
Off	No AC power to all power supplies / standby power failed, OCP, SC, OVP/ UVP, OTP, fan lock, auto-recover while the abnormal was removed
Amber On	12V fault causing a shutdown; failure (OCP, SC, OVP/UVP, OTP), fan failed, input OVP
Green On	Output on and OK
Green Blinking@0.5Hz	AC present /only 12VSB on (PS off)
Green Blinking@2Hz	Sleep PS in smart redundant state / off line mode

Back View

The system back consists of one mainboard sled and two power sockets.

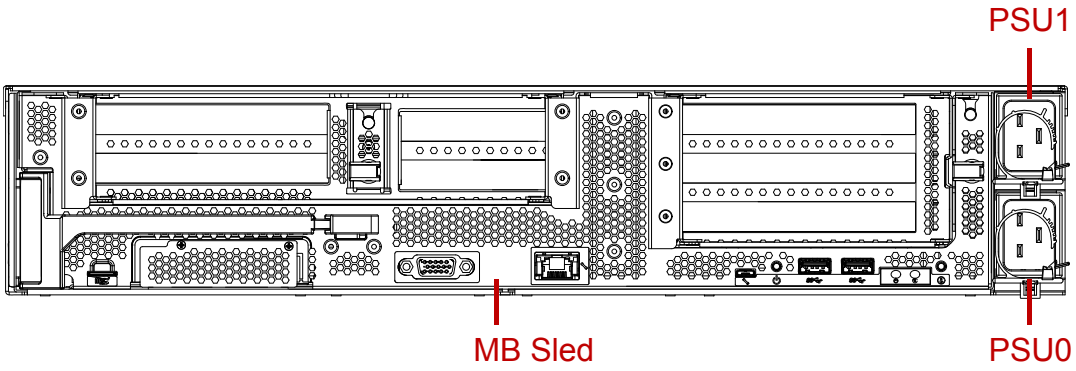
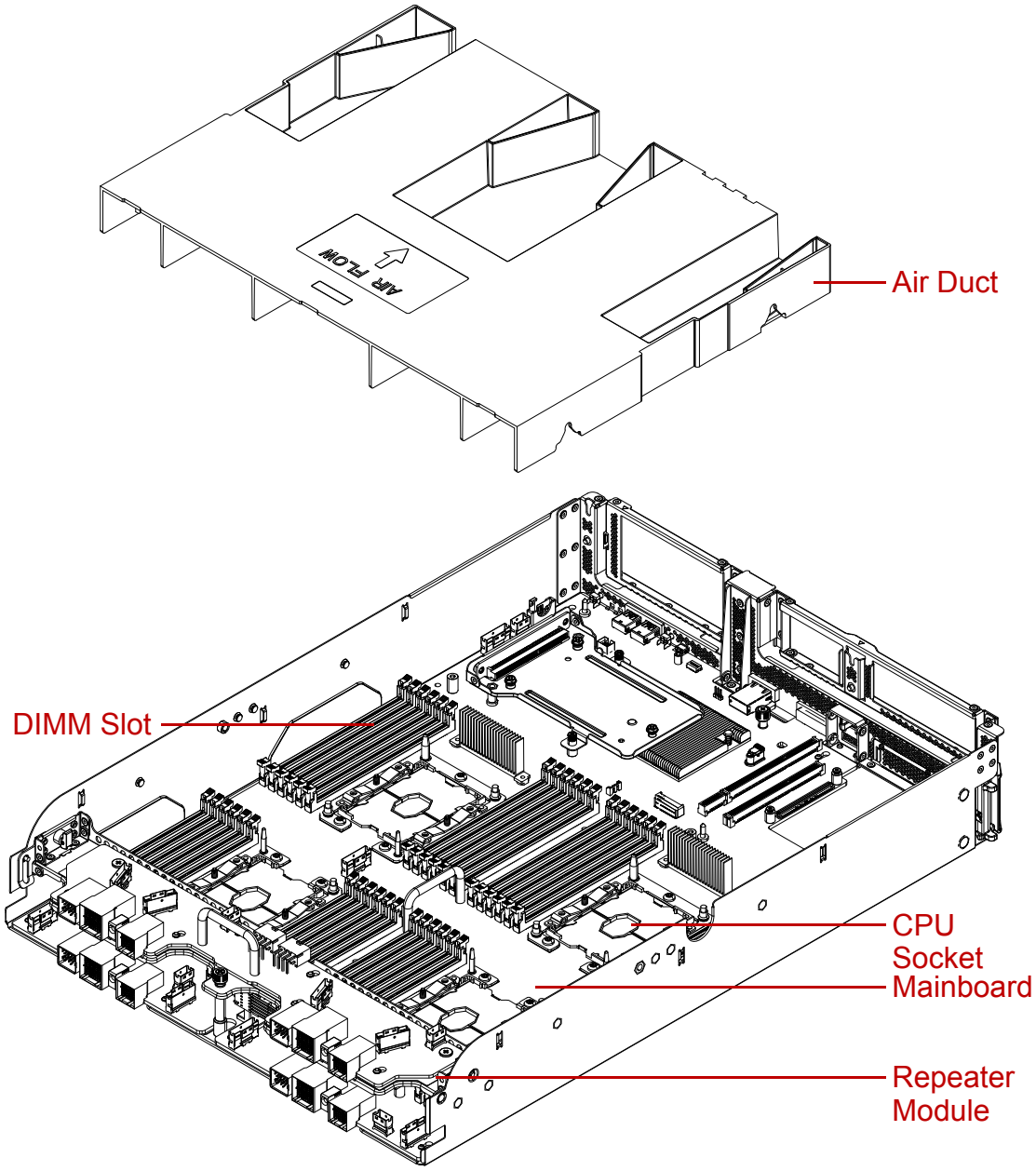


Figure 6. System Back View

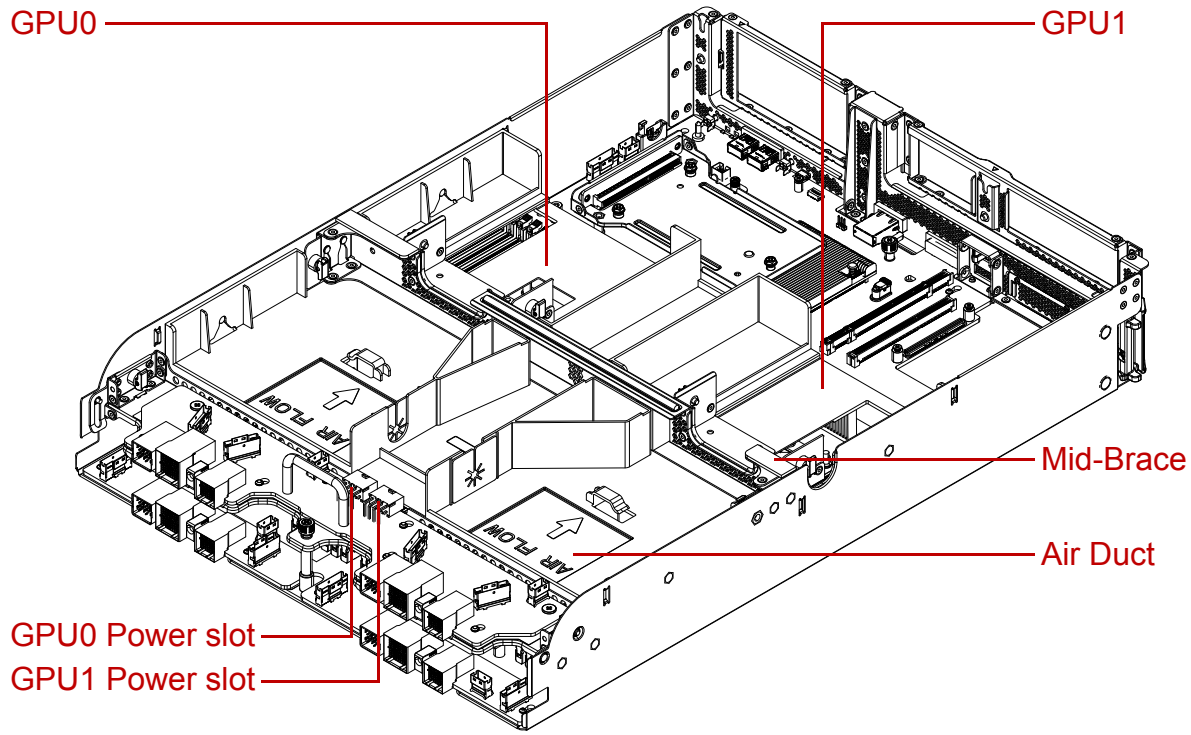
Mainboard Sled

The sled is available in general SKU or GPU SKU. The following illustrations describe the major components of these variants.

General SKU


AIR FLOW
Air Duct
DIMM Slot
CPU Socket
Mainboard
Repeater Module

GPU SKU



Back I/O Ports

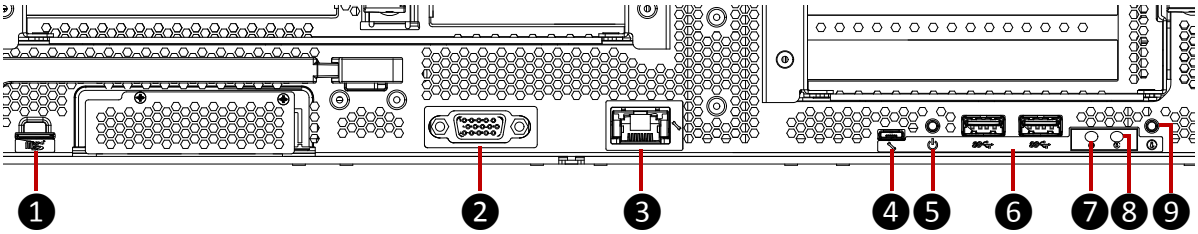


Figure 7. Back I/O Ports

Table 8: Back I/O Ports

NO	FEATURE	DESCRIPTION
1	MicroSD slot	Backup BMC System Event Log (SEL)
2	VGA port	Standard VGA compatible, 15-pin connector supporting up to 1920 x 1200 32bpp@60Hz resolution. Connect to display device.
3	Management port	Dedicated BMC LAN port (RJ45) for remote control / management.
4	Micro-USB port	Connect serial signal for redirecting your serial console to connected device. Make sure the console redirection is enabled in BIOS settings.
5	Power button	Press and hold more than four seconds to turn off the motherboard.
6	USB 3.0 ports	Connect to USB device; Left: USB1 / Right: USB0

Table 8: Back I/O Ports (Continued)

NO	FEATURE	DESCRIPTION
7	Power / Status LED	Power LED (Blue): On / Off: S0/S5 System Power On / Off Status LED (Amber): Blinking / Off: Critical Event / SEL Cleared
8	ID LED	Off: No indicator Blue Blinking: ID indicator
9	ID button with LED	Press to toggle the identification

Note:

The USB connector must be:

No bigger than 17mm/ 0.67" (W) x 8 mm / 0.31" (H) to avoid interference with the other ports.

Cooling Sub-System

Fans may spin for some time after the system has been powered off. Allow time for the fans to stop rotating before handling system components.

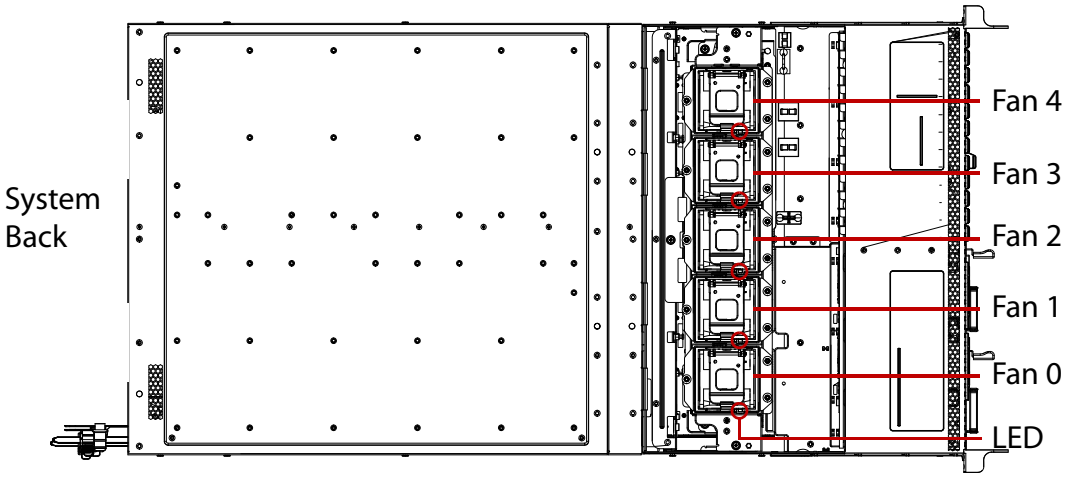


Figure 8. Cooling Sub System

Table 9: Fan Module LED Description

STATUS	DESCRIPTION
Off	Fan module is removed
Amber On	Fan module is failed
Blue On	Fan module is present

Hitachi Vantara

Corporate Headquarters
2845 Lafayette Street
Santa Clara, CA 95050-2639 USA
www.HitachiVantara.com
community.HitachiVantara.com

Regional Contact Information
Americas: +1 866 374 5822 or info@hitachivantara.com
Europe, Middle East and Africa: +44 (0) 1753 618000 or info.emea@hitachivantara.com
Asia Pacific: +852 3189 7900 or info.marketing.apac@hitachivantara.com