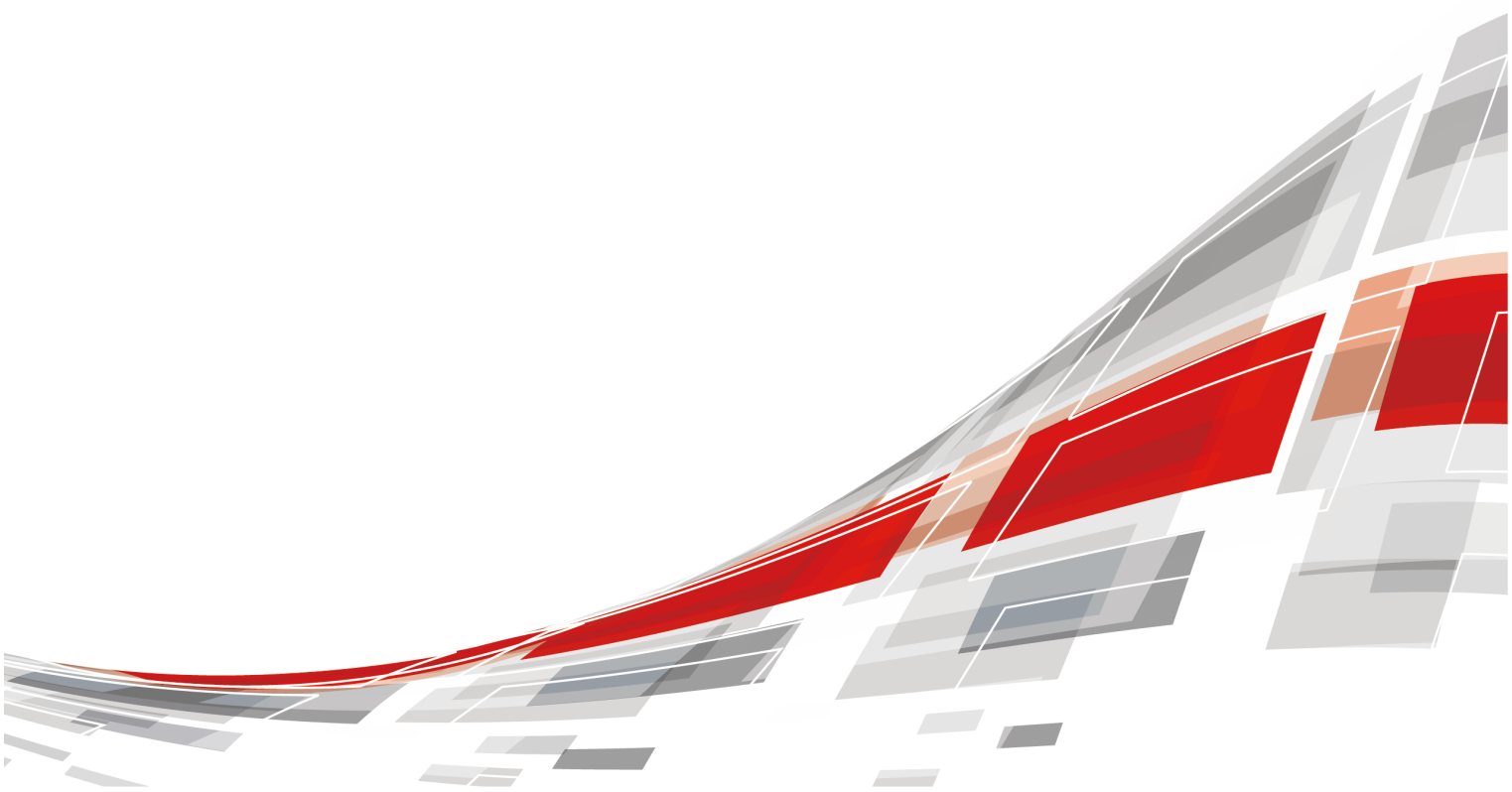
FusionXtation X3 8000 Workstation

Technical White Paper

Issue 01

Date 2026-05-20



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About This Document

Overview

This document describes the hardware, features, and software and hardware specifications of FusionXtation™ X3 8000 Gen2.

Intended Audience

This document is intended for pre-sales engineers.

Symbol Conventions

The following table lists the symbols that may be found in this document.

Symbol	Description
DANGER	Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazard with a low level of risk, which if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
NOTE	Supplements the important information in the main text. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

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Change History

Issue	Date	Description
01	2026-04-15	This issue is the first official release.

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1 Overview

FusionXtation™ X3 8000 Gen2 is a core productivity tool for professionals working in fields such as engineering design, content creation, scientific research, data analysis, super-resolution large screens, and AI development. It delivers high-level performance required to efficiently tackle complex and demanding tasks.

Optimal performance: The workstation is equipped with the latest multi-core processor, a professional-grade GPU cards, and large-capacity high-speed memory.

Professional graphics support: When equipped with a NVIDIA RTX series dedicated GPU card, this product offers certified driver support and delivers excellent performance with OpenGL/DirectX/Vulkan APIs. Special features are included to enhance stability and compatibility across a range of professional applications.

Compatible with game cards: The workstation is also compatible with NVIDIA GeForce series GPU cards to address media and entertainment needs.

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Figure 1-1 Appearance



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2 Features

Excellent Reliability and Stability

FusionXtation™ X3 8000 Gen2 is engineered for 24/7 high-intensity operation. Built with premium components, such as ECC memory modules, and featuring an optimized thermal design, it delivers robust reliability and stability, which have been validated by rigorous testing procedures and certifications standards.

Comprehensive Improvement in System Performance

The workstation incorporates Intel® Core™ Ultra Series 2 U5/U7/U9 processors that utilize Socket E (LGA-1851) and feature unlimited turbo boost duration.

Strong Scalability

- The spacious chassis accommodates multiple PCIe slots and hard drive carriers, making it easy to add high-performance GPU cards, high-speed storage, dedicated acceleration cards, professional I/O cards and more.
- This product offers up to 4 DDR5 UDIMM/CUDIMM ECC/NON-ECC memory slots, supporting up to 6400 MT/s memory speed (1DPC) and a maximum total capacity of 256 GB.
- It supports up to four 3.5-inch SATA hard drives, two 2.5-inch SATA hard drives, and two M.2 SSDs. The maximum number of SATA hard drives varies according to the actual model configuration.
- SATA hard drives support PCH RAID 0/1/5/10.
- M.2 SSDs support NVMe PCIe 4.0 x4 and RAID 0/1.

High I/O and Network Throughput

- Two 2.5GE network ports and one GE port provide various network transmission and communication solutions for enterprise applications.
- Optional BMC functionality with IPMI remote management is available.

High Efficiency and Energy Saving

80 Plus Platinum certified PSUs (only 360 W PSUs are 80 Plus gold certified).

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Maintainability

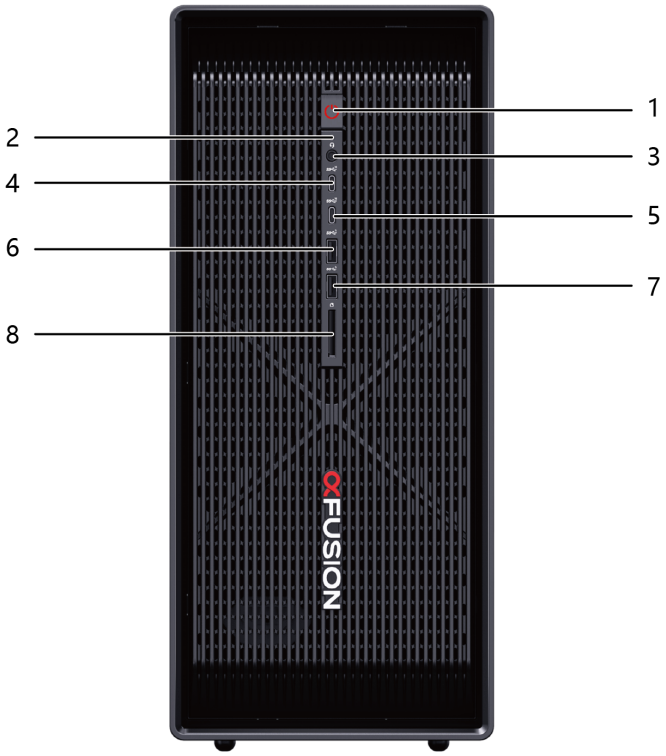
The modular design allows users to upgrade key components such as memory modules, storage devices, and GPU cards. Multiple versions of the Intelligent Platform Management Interface (IPMI), including standard IPMI 2.0, are available to meet customer requirements. IPMI provides comprehensive hardware monitoring capabilities, enabling remote observation of system parameters such as power status, voltage levels, temperature readings, and fan operation. In addition, IPMI supports remote system maintenance functions.

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3 Physical Structure

Front Panel

Figure 3-1 Front panel



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Table 3-1 Front panel

1	Power button and power indicator **NOTE** • Steady red: The device is powered on. • Off: The device is in sleep mode or powered off.	2	Hard drive indicator **NOTE** • Blinking green: Data is being read or written properly. • Off: The device is in sleep mode or powered off.
3	Universal 3.5 mm combo audio port	4	USB Type-C 3.2 Gen 2x1 10 Gbit/s port
5	USB Type-C 3.2 Gen 2x1 10 Gbit/s port	6	USB Type-A 3.2 Gen 1x1 5 Gbit/s port
7	USB Type-A 3.2 Gen 1x1 5 Gbit/s port	8	SD card slot

Rear Panel

Figure 3-2 Rear panel

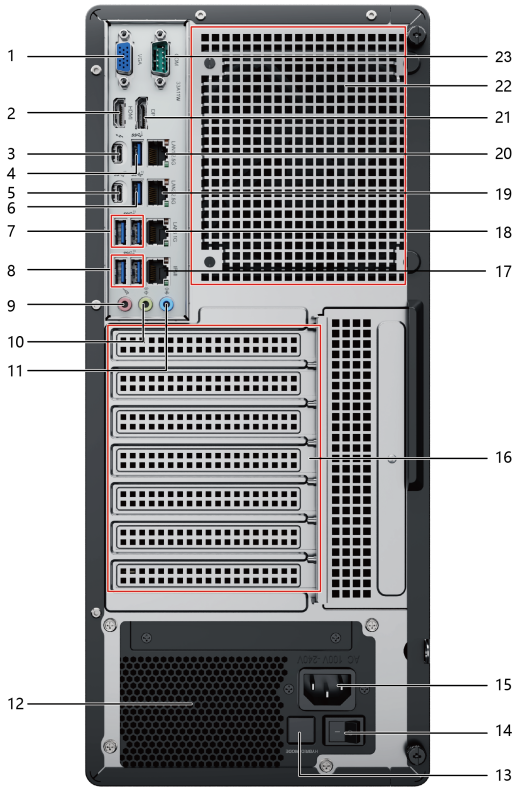


Table 3-2 Rear panel

1	VGA port	2	HDMI 2.0 output port

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3	USB 3.2 Gen 2x2 40 Gbit/s 3 A 5 V Type-C (Thunderbolt 4)	4	USB 3.2 Gen 1x1 5 Gbit/s 1 A Type-A
5	USB 3.2 Gen 2x1 10 Gbit/s 1.5 A Type-C	6	USB 3.2 Gen 2x1 10 Gbit/s 1 A Type-A
7	USB 3.2 Gen 2x1 10 Gbit/s 1 A Type-A	8	USB 3.2 Gen 2x1 10 Gbit/s 1 A Type-A
9	Microphone input	10	Audio output
11	Audio input	12	ATX PSU (AC input)
13	HYBRID MODE button **NOTE** Intelligent start/stop button for the internal fan of the PSU: ● When the button is released: When the PSU is working under low loads, the internal fan of the PSU stops rotating, providing improved silent operation. When the PSU is working under high power loads, the internal fan operates normally. ● When the button is pressed: The internal fan of the PSU keeps rotating and automatically adjusts the speed based on temperature. Depending on the PSU model selected, this workstation may not include a HYBRID MODE button. Refer to your actual unit for operation.	14	Power switch **NOTE** ● Enabled: The straight line "|" indicates that the circuit is connected. ● Disabled: The circle "O" indicates that the circuit is disconnected. ● Depending on the PSU model selected, this workstation may not include a power switch. Refer to your actual unit for operation.
15	Power plug	16	PCIe slot
17	RJ45 IPMI dedicated management port **NOTE** The BMC management network port is supported only when the BMC function is configured.	18	LAN3 1GE RJ45 port
19	LAN2 2.5GE RJ45 port	20	LAN1 2.5GE RJ45 port
21	DP1.4 output port	22	Cooling fan
23	COM port	-	-

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Figure 3-3 Physical structure

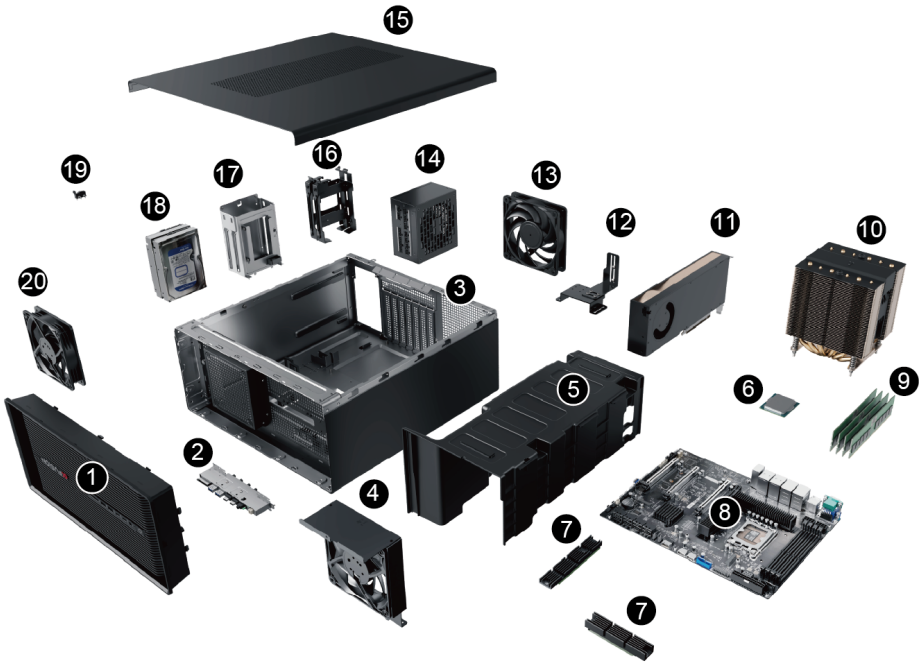


Table 3-3 Physical structure

1	Front panel	2	Front I/O component
3	Chassis body	4	Fan module
5	Air baffle	6	Processor
7	M.2 SSD	8	System board
9	Memory module	10	CPU cooling module
11	GPU	12	GPU card stiffener
13	Rear fan	14	ATX PSU
15	Side cover	16	Hard drive bracket
17	Hard drive carrier	18	3.5-inch hard drive
19	Intrusion sensor	20	Front fan

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4 Hardware Description

4.1 Processor
4.2 Chip
4.3 Operating System
4.4 Memory
4.5 External Ports and Slots
4.6 Internal PCIe Slots
4.7 Network
4.8 Audio
4.9 Storage
4.10 Power Supply Parameters
4.11 GPU

4.1 Processor

The workstation incorporates Intel® Core™ Ultra Series 2 U5/U7/U9 processors that utilize Socket E (LGA-1851).

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Table 4-1 Processor compatibility information

Processor	Number of Cores	Thread	Maximum Frequency	Fundamental Frequency	Cache	Base Power Consumption	Memory Frequency
U9-285K	24 (8 P-core +16 E-core)	24	Maximum turbo frequency: 5.7 GHz/P-core 5.5 GHz/E-core 4.6 GHz	P-core 3.7GHz/E-core 3.2GHz	36 MB	125 W	6400 MT/s
U9-285	24(8 P-core +16 E-core)	24	Maximum turbo frequency: 5.6 GHz/P-core 5.4 GHz/E-core 4.6 GHz	P-core 2.5 GHz/E-core 1.9 GHz	36 MB	65 W	6400 MT/s
U7-270K Plus	24(8 P-core +16 E-core)	24	Maximum turbo frequency: 5.5 GHz/P-core 5.4 GHz/E-core 4.7 GHz	P-core 3.7 GHz/E-core 3.2 GHz	36MB	125W	7200 MT/s
U7-265K	20 (8 P-core +12 E-core)	20	Maximum turbo frequency: 5.5 GHz/P-core 5.4 GHz/E-core 4.6 GHz	P-core 3.9 GHz/E-core 3.3 GHz	30 MB	125 W	6400 MT/s
U7-265	20 (8 P-core +12 E-core)	20	Maximum turbo frequency: 5.3 GHz/P-core 5.2 GHz/E-core 4.6 GHz	P-core 2.4 GHz/E-core 1.8 GHz	30 MB	65 W	6400 MT/s
U5-250K Plus	18(6 P-core +12 E-core)	18	Maximum turbo frequency: 5.3 GHz/P-core 5.3 GHz/E-core 4.6 GHz	P-core 4.2 GHz/E-core 3.3 GHz	30MB	125W	7200 MT/s

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Processor	Number of Cores	Thread	Maximum Frequency	Fundamental Frequency	Cache	Base Power Consumption	Memory Frequency
U5-245K	14 (6 P-core +8 E-core)	14	Maximum turbo frequency: 5.2 GHz/P-core 5.2 GHz/E-core 4.6 GHz	P-core 4.2 GHz/E-core 3.6 GHz	24 MB	125 W	6400 MT/s
U5-245	14 (6 P-core +8 E-core)	14	Maximum turbo frequency: 5.1 GHz/P-core 5.1 GHz/E-core 4.5 GHz	P-core 3.5 GHz/E-core 3 GHz	24 MB	65 W	6400 MT/s
U5-235	14 (6 P-core +8 E-core)	14	Maximum turbo frequency: 5 GHz/P-core 5 GHz/E-core 4.4 GHz	P-core 3.4 GHz/E-core 2.9 GHz	24 MB	65 W	6400 MT/s
U5-225	10 (6 P-core +4 E-core)	10	Maximum turbo frequency: 4.9 GHz/P-core 4.9 GHz/E-core 4.4 GHz	P-core 3.3 GHz/E-core 2.7 GHz	20 MB	65 W	6400 MT/s

4.2 Chip

FusionXtation™ X3 8000 Gen2 supports the Intel ® W880 chipset.

4.3 Operating System

The supported operating systems are as follows:

- Windows® 11 Pro
- Windows® 11 Home
- Windows® 11 Home Single Language
- Windows® 11 IoT Enterprise LTSC 2024[1]
- Ubuntu (24.04.3) Linux LTS
- Red Hat (10.1) Enterprise Linux 1

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4.4 Memory

This product offers up to four DDR5 UDIMM/CUDIMM ECC/NON-ECC memory slots (ECC not supported b y U-255), supporting up to 6400 MT/s memory speed (1DPC) and a maximum total capacity of 256 GB.

Figure 4-1 Positions of memory module slots

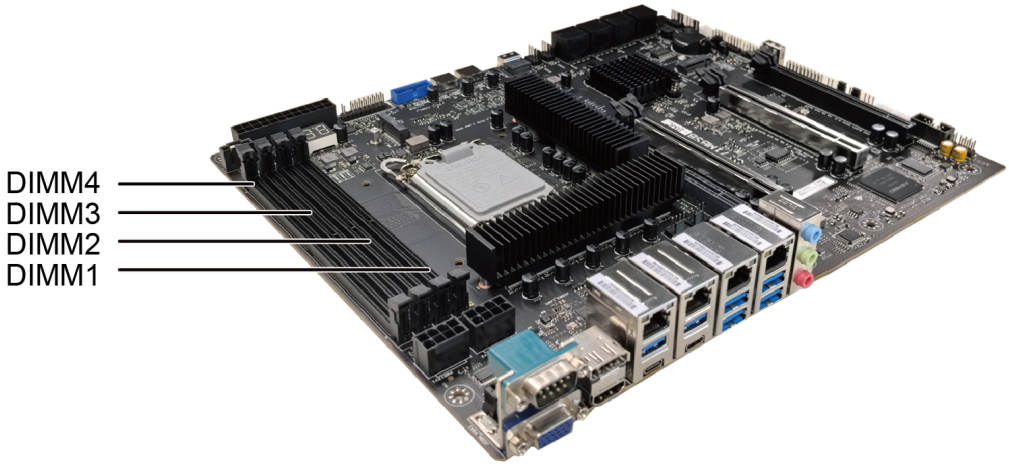


Table 4-2 DDR5 memory parameters

Item	Specifications		
Capacity of a DDR5 DIMM (GB)	16	32	64
Type	UDIMM	UDIMM	CUDIMM
Rated speed (MT/s)	5600	5600	6400
Maximum number of DDR5 DIMMs in a server[a]	4	4	4
Maximum DDR5 memory capacity of the server (GB)	64	128	256
Whether ECC is supported	NON-ECC	ECC/NON-ECC	NON-ECC

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Item	Specifications
Actual rate (MT/s)	The processor series features an integrated memory controller, enabling direct access to system memory. Therefore, system memory speed depends on the type, frequency, size (capacity), and number of installed memory modules, as well as the processor model. The actual memory operating speeds are as follows: ● 5600/6400 MT/s: 1DPC[a] ● 5600 MT/s: 2DPC-1DIMM ● 4800 MT/s: 2DPC-2DIMM 1R ● 4400 MT/s: 2DPC-2DIMM 2R
● a: DIMM per channel (DPC) indicates the number of memory modules per channel. ● The information listed in this table is for reference only. For details, consult the local sales representative.	

For details about the rules for installing DDR5 memory modules, see **Figure 4-2**.

Figure 4-2 DIMM installation rules

CPU	Channel	DIMM Slot	Number of DIMMs		
			1	2	4
CPU	A1	DIMM1	X	X	●
	A2	DIMM2	●	●	●
	B1	DIMM3	X	X	●
	B2	DIMM4	X	●	●

4.5 External Ports and Slots

Table 4-3 External port and slot parameters

Type	Parameter
Network port	Rear panel: ● Two 2.5GE ports and one GE RJ45 port. ● One 1GE RJ45 IPMI dedicated management port (supported only when the BMC function is configured).

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Type	Parameter
USB port	● Front panel: – Two USB Type-C 3.2 Gen 2x1 10 Gbit/s ports. – Two USB Type-A 3.2 Gen 1x1 5 Gbit/s port. ● Rear panel: – One rear USB 3.2 Gen 2x2 40 Gbit/s 3 A 5 V Type-C (Thunderbolt 4) port – One rear USB 3.2 Gen 2x1 10 Gbit/s 1.5 A Type-C port – Five rear USB 3.2 Gen 2x1 10 Gbit/s 1 A Type-A ports – One rear USB 3.2 Gen 1x1 5 Gbit/s 1 A Type-A port
Audio port	● Front panel: one universal 3.5 mm combo audio port ● Rear panel: one set of three-hole high definition audio port
Video port	Rear panel: ● One DP1.4 port ● One HDMI 2.0 port ● One VGA port **NOTE** If no icon is displayed on the Windows desktop or the display is abnormal, press **Windows+P+Enter** to switch the display mode.
Multimedia card reader	Front panel: 1 SD3.0 card slot (supporting SD/SDHC/SDXC cards).

4.6 Internal PCIe Slots

FusionXtation™ X3 8000 Gen2 supports a maximum of four PCIe expansion slots.

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Figure 4-3 PCIe slot positions

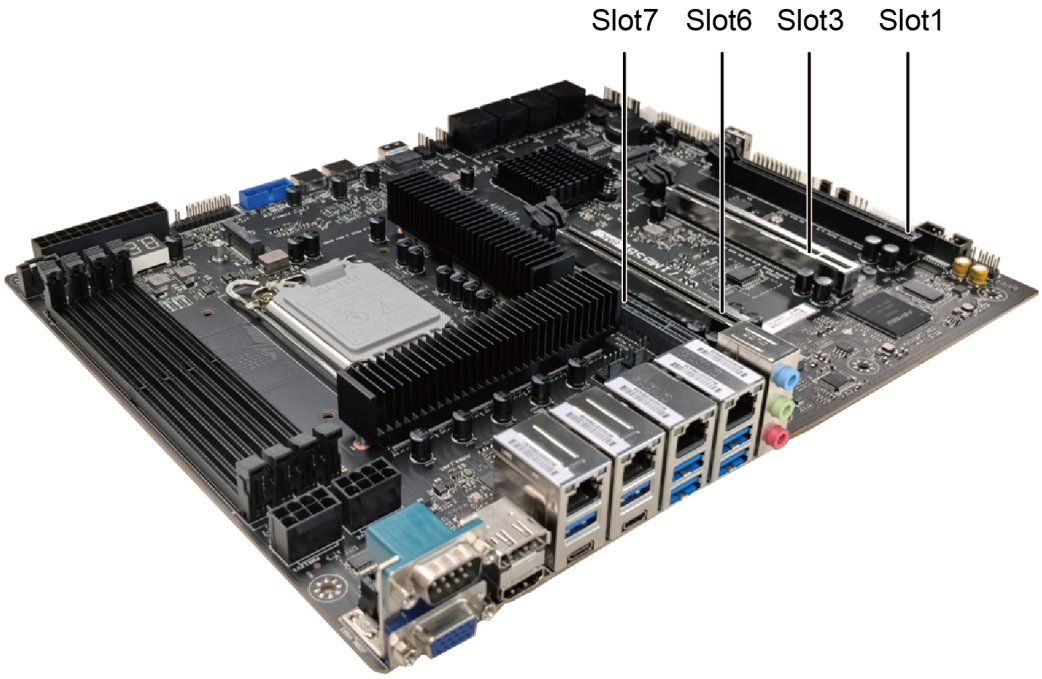


Table 4-4 describes the PCIe slot specifications:

Table 4-4 PCIe slot description

PCIe Slot	PCIe Slot Description	Maximum Power	Supported Device Type
SLOT7	PCIe 5.0 x4[a] (x4)[b]	75 W	Full-height, quarter-length, single-slot
SLOT6[c]	PCIe 5.0 x16 (x16/x8)	75 W	Full-height, full-length, quad-slot
SLOT3[c]	PCIe 4.0 x16 (x8/x0)	75 W	Full-height, full-length, dual-slot
SLOT1	PCIe 4.0 x16 (x4)	75 W	Full-height, full-length, single-slot
a: PCIe 5.0 represents the 5.0 signal rate, and x4 represents the physical slot width. b: The value in parentheses indicates the signal link bandwidth. For example, x4 indicates that the signal link bandwidth is x4. c: Slot 6 and slot 3 can respectively accommodate a 2.5-slot GPU card at the same time.			

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4.7 Network

Network interface cards (NICs) provide network expansion capabilities. There are multiple specifications of the PCIe NICs. **Table 4-5** lists the recommended chip models.

Table 4-5 NIC description

LOM Model	Chip Model	Network Port Type	Network port rate	Number of Network Ports	Remarks
LOM	Intel® i226-LM	RJ45	2.5GE	2	Support for Wake-on-LAN.
	Intel® i210-AT	RJ45	1GE	1	Support for Wake-on-LAN.
PCIe expansion NIC	Intel® i350-T4	RJ45	1GE	4	Support for Wake-on-LAN and PCIe 3.0 x4[a] (x4)[b].
	Intel® E610-T2	RJ45	10GE	2	Support for PCIe 4.0 x4 (x4) and no support for Wake-on-LAN.

a: PCIe 3.0 represents the 3.0 signal rate, and x4 represents the physical slot width.

b: The value in parentheses indicates the signal link bandwidth. For example, x4 indicates that the signal link bandwidth is x4.

4.8 Audio

The workstation is equipped with an ALC897-VA2-CG high-fidelity audio chip, with a general audio port on the front and one set of three-hole audio ports on the rear.

4.9 Storage

- The workstation supports up to four 3.5-inch SATA hard drives, two 2.5-inch SATA hard drives, and two M.2 SSDs.
- SATA hard drives support PCH RAID 0/1/5/10.

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- M.2 SSDs support NVMe PCIe 4.0 x4 and RAID 0/1. For details about the port information of the M.2 SSDs, see **Table 4-6**.
- For details about the port types and capacities supported by different types of drives, see **Table 4-7**. For details about component options, consult the local sales representatives.

Table 4-6 M.2 port information

M.2 Port Number/Silkscreen	Managed By
JM.2_1 CPU PCIE 4.0X4 2280	CPU
JM.2_2 PCH PCIE 4.0X4 22110/2280	PCH

Table 4-7 Drive specification

Hard Drive Type	Type	Maximum Capacity
3.5-inch 5400 RPM surveillance-grade hard drive	SATA 3.0	2TB
3.5-inch 7200 RPM enterprise hard drive	SATA 3.0	4TB/12TB
M.2 2280 SSD	PCIe 4.0 NVMe	256GB/512GB/1TB

4.10 Power Supply Parameters

Category	360 W PSU	600 W PSU	750 W PSU	1200 W PSU
Input voltage	100–240 V AC	100–240 V AC	100–240 V AC	100–240 V AC
Input frequency	50–60 Hz	47–63 Hz	47–63 Hz	47–63 Hz
Maximum input current	5 A	10 A	10 A	17 A

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Category	360 W PSU	600 W PSU	750 W PSU	1200 W PSU
Maximum output voltage and current	• Voltage: +12 V; current: 29.5 A • Voltage: +5 V; current: 10 A • Voltage: 3.3 V; current: 10 A • Voltage: –12 V; current: 0.4 A • Voltage: +5 Vsb; current 2.5 A	• Voltage: +12 V; current: 42 A • Voltage: +5 V; current: 10 A • Voltage: 3.3 V; current: 10 A • Voltage: –12 V; current: 0.25 A • Voltage: +5 Vsb, Current: 2.1 A	• Voltage: +12 V; current: 62.5 A • Voltage: +5 V; current: 18 A • Voltage: +3.3 V; current: 18 A • Voltage: –12 V; current: 0.3 A • Voltage: +5 Vsb, current 2.5 A	• Voltage: +12 V; current: 100 A • Voltage: +5 V; current: 25 A • Voltage: +3.3 V; current: 25 A • Voltage: –12 V; current: 0.5 A • Voltage: +5 Vsb; current: 4 A
Temperature	Operating temperature range: 0°C to 45°C (32°F to 113°F) Non-operating temperature range: –40°C to +70°C (–40°F to 158°F)	Operating temperature range: 0°C to 45°C (32°F to 113°F) Non-operating temperature range: –40°C to +70°C (–40°F to 158°F)	Operating temperature range: 0°C to 40°C (32°F to 104°F) Non-operating temperature range: –40°C to +85°C (–40°F to +185°F)	Operating temperature range: 0°C to 40°C (32°F to 104°F) Non-operating temperature range: –40°C to +85°C (–40°F to +185°F)
Humidity	Operating humidity range: 5% to 85% Non-operating humidity range: 5% to 95%	Operating humidity range: 5% to 85% Non-operating humidity range: 5% to 95%	Operating humidity range: 5%-85% Non-operating humidity range: 5% to 95%	Operating humidity range: 5%-85% Non-operating humidity range: 5% to 95%

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Category	360 W PSU	600 W PSU	750 W PSU	1200 W PSU
Port	• One 24-pin system board power supply connector • Two 8-pin (4 + 4) CPU power supply connectors • Six 15-pin drives power supply connectors	• One 24-pin system board power supply connector • Two 8-pin (4 + 4) CPU power supply connectors • Six 15-pin drives power supply connectors • Two 8-pin (6 + 2) GPU card power supply connectors	• One 24-pin system board power supply connector • Two 8-pin (4 + 4) CPU power supply connectors • Six 15-pin drives power supply connectors • Four 8-pin (6 + 2) GPU card power supply connectors	• One 24-pin system board power supply connector • Two 8-pin (4 + 4) CPU power supply connectors • Six 15-pin drives power supply connectors • Four 8-pin (6 + 2) GPU card power supply connectors
Certification	80 Plus Gold	80 Plus Platinum	80 Plus Platinum	80 Plus Platinum

4.11 GPU

4.11.1 Integrated GPU

Table 4-8 Integrated GPU parameter

Controller	Video Memory Size	Processor
Intel® Graphics	Shared system memory	U5-225, U5-235, U5-245, U5-245K, U5-250K Plus, U7-265, U7-265K, U7-270K Plus, U9-285, and U9-285K

Table 4-9 Multi-monitor capability

Port	Specifications
DP port	DP1.4 4096 x 2304 @ 60Hz
HDMI port	HDMI2.0 4096 x 2160 @ 60 Hz
VGA port	1920 x 1080 @ 60 Hz

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4.11.2 Independent GPU

Model	Video Memory (GB)	Memory Type	Power Consumption (W)	Port	Required Slot Width	Compatible PSUs (W)
NVIDIA RTX PRO 2000	16	GDDR7	70	PCIe 5.0 x16 (x8)	Dual-slot	360/600 / 750/1200
NVIDIA RTX PRO 4000	24	GDDR7	140	PCIe 5.0 x16 (x16)	Single-slot	360/600 / 750/1200
NVIDIA RTX PRO 4500	32	GDDR7	200	PCIe 5.0 x16 (x16)	Dual-slot	600/750 /1200
NVIDIA RTX 5880 Ada	48	GDDR6	285	PCIe 4.0 x16[a] (x16)[b]	Dual-slot	600/750 /1200
NVIDIA RTX PRO 5000	48	GDDR7	300	PCIe 5.0 x16 (x16)	Dual-slot	600/750 /1200
NVIDIA GeForce RTX 5090D V2	32	GDDR7	575	PCIe 5.0 x16 (x16)	3.5-slot or quad-slot	1200

Note: The workstation supports professional GPU cards with a maximum power consumption of 600 W.

a: **PCIe 4.0** refers to the PCIe of the fourth generation, and **x16** refers to the physical slot width.

b: The **x16** in brackets indicates that the link bandwidth is x16.

4.11.3 Video Port

GPU card	Video Port
NVIDIA RTX PRO 2000	4 mini DP2.1b ports
NVIDIA RTX PRO 4000	4 DP2.1b ports
NVIDIA RTX PRO 4500	4 DP2.1b ports
NVIDIA RTX 5880 Ada	Four DP 1.4a ports
NVIDIA RTX PRO 5000	4 DP 2.1b ports

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GPU card	Video Port
NVIDIA GeFroce RTX 5090D V2	Three DP 2.1b ports + One HDMI 2.1b port

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5 Product Specifications

5.1 Technical Specifications
5.2 Environmental Specifications
5.3 Physical Specifications

5.1 Technical Specifications

Category	Specification
Processor	The workstation is equipped with one processor. ● Intel® Core™ Ultra Series 2 U5/U7/U9 processor. ● Up to 24 cores
System board chipset	Intel® W880 chipset.
Memory	The workstation supports four DIMM slots. ● It supports four DDR5 UDIMM/CUDIMM modules (ECC or non-ECC). ● The maximum transmission rate is 6400 MT/s (1DPC). ● The maximum memory capacity is 256 GB.
Storage	● It supports up to four 3.5-inch SATA hard drives, two 2.5-inch SATA hard drives, and two M.2 SSDs. ● SATA hard drives support PCH RAID 0/1/5/10. ● M.2 SSDs support NVMe PCIe 4.0 x4 and RAID 0/1.

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Category	Specification
Network	● LOM The system board supports the integration of the ®i226-LM chip and the ®i210-AT chip, providing two 2.5GE RJ45 ports and one GE RJ45 port. ● PCIe expansion NIC – Intel® E610-T2 NIC that provides two 10GE RJ45 ports. – Intel® I350-T4 NIC that provides four 1GE RJ45 ports.
PCIe slots	● A full-height, full-length, single-slot wide PCIe 5.0 x4[a] (x4)[b] slot. ● A full-height, full-length, quad-slot wide PCIe 5.0 x16 (x16/x8) slot. ● A full-height, full-length, dual-slot wide PCIe 4.0 x16 (x8/x0) slot. ● A full-height, full-length, and single-slot wide PCIe 4.0 x16 (x4) slot. **NOTE** a: PCIe 5.0 represents the 5.0 signal rate, and x4 represents the physical slot width. b: The value in parentheses indicates the signal link bandwidth. For example, x4 indicates that the signal link bandwidth is x4.
GPU	Supports 1 PCIe 5.0 x16 GPU card with a maximum width of four slots. Two 2.5-slot GPU cards can be installed at the same time.
BMC	Supports the optional BMC function.
Front panel	● Ports on the front panel: – Two USB Type-C 3.2 Gen 2x1 10 Gbit/s ports. – Two USB Type-A 3.0 3.2 Gen 1x1 5 Gbit/s ports. – One universal 3.5 mm combo audio port. – One SD 3.0 card slot. ● Front panel buttons and indicators: – One power button and indicator. – One drive indicator.

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Category	Specification
Rear panel	Ports on the rear panel: ● One USB 3.2 Gen 2x2 40 Gbit/s 3 A 5 V Type-C (Thunderbolt 4) port ● One rear USB 3.2 Gen 2x1 10 Gbit/s 1.5 A Type-C port ● Five rear USB 3.2 Gen 2x1 10 Gbit/s 1 A Type-A ports ● One rear USB 3.2 Gen 1x1 5 Gbit/s 1 A Type-A port ● One DP 1.4 port ● 1 x HDMI 2.0 port ● 1 x VGA port ● 1 x 1GE RJ45 IPMI dedicated management port **NOTE** The IPMI management network port is supported only when the BMC function is configured. ● Two onboard 2.5GE RJ45 network ports and one onboard GE RJ45 network port, supporting Wake-on-LAN. ● One set of three-hole high definition audio ports – One audio input port (3.5 mm) – One audio output port (3.5 mm) – One microphone input port (3.5 mm).
Security features	● Administrator password ● TPM 2.0 supported ● Secure boot ● Chassis cover opening detection
Buzzer	Built-in buzzer for hardware alarm notification. ● The workstation supports chassis intrusion detection. If the chassis has been opened, the buzzer emits a continuous alarm during the BIOS self-test phase after restart, and the message "The case has been opened" is displayed. ● The continuous alarm can be disabled by turning off the alarm function in the BIOS settings.
PSU	● 360 W, 600 W, 750 W, and 1200 W PSUs supported. ● 80 Plus Platinum certified PSUs (only 360 W PSUs are 80 Plus gold certified).

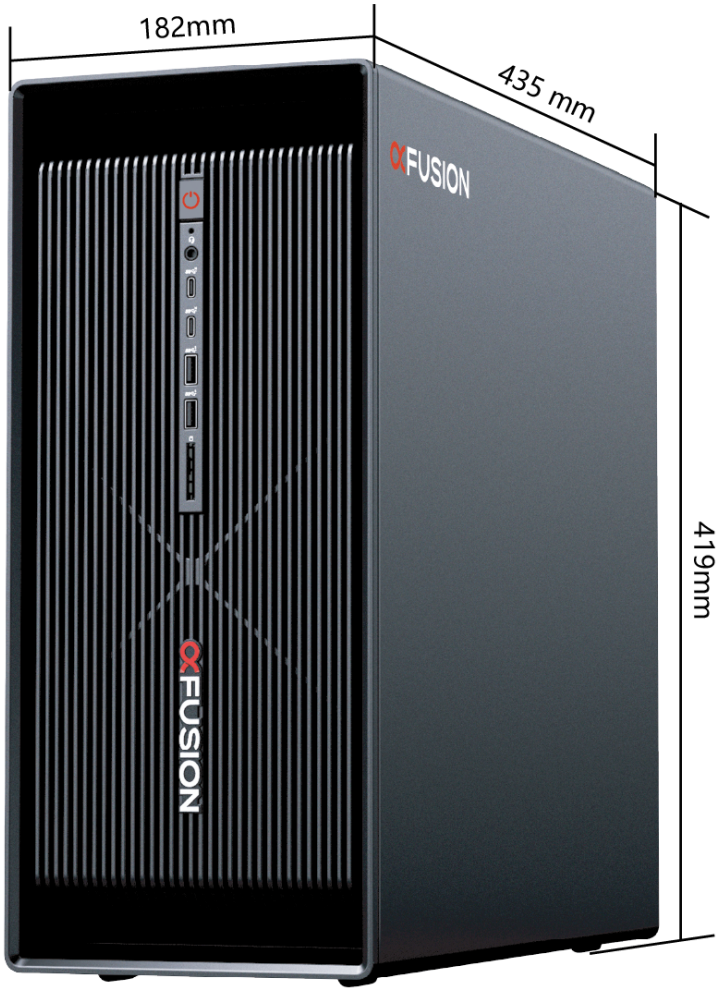
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5.2 Environmental Specifications

Indicator	Specification
Temperature	● Operating temperature: 10°C to 35°C (50°F to 95°F) ● Storage temperature – In the original package: –40°C to +60°C (–40°F to +140°F) – Without package: –10°C to +60°C (14°F to 140°F)
Humidity (RH, non-condensing)	● Operating humidity: 20% to 80% ● Storage humidity: 10% to 90%
Working altitude	≤ 5000 m (16,404 ft)

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5.3 Physical Specifications

Indicator	Specification
Dimensions (H x W x D)	• Equipment size (foot pads included): 419 mm x 182 mm x 435 mm (16.50 in. x 7.17 in. x 17.13 in.) • Equipment size (foot pads excluded): 413 mm x 182 mm x 435 mm (16.26 in. x 7.17 in. x 17.13 in.) **Figure 5-1** Physical dimensions  • Package size (H x W x D): – Vertical: 525 mm × 323 mm × 575 mm (20.67 in. × 12.72 in. × 22.64 in.) – Horizontal: 323 mm × 525 mm × 575 mm (12.72 in. × 20.67 in. × 22.64 in.)

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Indicator	Specification
Weight	Net weight: 11 kg to 15 kg (22.25 lb to 33.07 lb) Packaging materials: 5 kg (11.02 lb) **NOTE** The weight may vary according to the configuration.

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6 Software and Hardware Compatibility

For details about the OS and hardware, contact the local sales representatives.

NOTICE

- If incompatible components are used, the device may be abnormal. Such a fault is beyond the scope of technical support and warranty.
- The performance of servers is closely related to application software, basic middleware software, and hardware. Slight differences in application software, basic middleware software, and hardware may cause performance inconsistency at the application layer and test software layer.
  - If the customer has requirements on the performance of specific application software, contact technical support to apply for proof of concept (POC) tests in the pre-sales phase to determine detailed software and hardware configurations.
  - If the customer has requirements on hardware performance consistency, specify the specific configuration requirements (for example, specific drive models, RAID controller cards, or firmware versions) in the pre-sales phase.

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7 System Management Function

This product can be equipped with a BMC intelligent management system, which is compatible with the IPMI 2.0 specification and has highly reliable hardware monitoring and management functions.

The BMC intelligent management system has the following features:

- Various management interfaces.

  The following standard interfaces meet system integration requirements in multiple modes.

  – Intelligent Platform Management Interface (IPMI) 1.5 and 2.0

  – Command-line interface (CLI)

  – Hypertext Transfer Protocol Secure (HTTPS)

  – Simple Network Management Protocol (SNMP)
- Fault monitoring and diagnostics

  Faults can be detected and rectified in advance to ensure 24/7 stable running of the device.

  – System breakdown screenshots and video playback help identify the cause of system breakdown.

  – Screen snapshots and videos simplify routine preventive maintenance, recording, and auditing.

  – The BMC supports precise fault diagnosis based on components, facilitating component fault location and replacement.

  – The BMC supports the reporting of alarms through syslog packets, trap packets, and emails, helping the upper-layer NMS platform to collect the fault information about the server.
- Security management methods

  – Various user security control interfaces ensure user login security.

  – Multiple certificates can be imported and replaced to ensure data transmission security.
- System maintenance interfaces

  – The BMC supports keyboard, video, and mouse (KVM) and virtual media to facilitate remote maintenance.

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  - The BMC supports out-of-band monitoring and configuration of RAID, improving RAID configuration efficiency and management.
  - The virtual optical drive enables the installation of the operating system, RAID configuration, and upgrades without a CD, providing users with a more convenient operation interface.
- Various network protocols

  The BMC supports the Network Time Protocol (NTP) to facilitate time settings and ensure time synchronization.

  The BMC supports domain management and directory services to simplify network management.

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8 Waste Product Recycling

Do not dispose of the device as normal household waste. To ensure that pollution is minimized and to make the greatest contribution to global environmental protection, please dispose of waste in a resource recycling manner. To obtain the product recycling service or more information about Waste Electrical and Electronic Equipment (WEEE) from xFusion after products are scrapped, call the local service hotline. For the local service hotline, see **Global Service Hotline**.

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9 Safety Instructions

9.1 Safety

9.2 Maintenance and Warranty

9.1 Safety

WARNING

Before opening the chassis cover or panel, turn off all power to the computer. After removing the internal components of the computer, replace all the covers, panels, and screws before connecting the computer to the power outlet.

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⚠ CAUTION

- Make sure that the workbench surface is flat, dry, and tidy to prevent damage to the computer.
- When holding components and cards, hold their edges and do not touch the pins and contacts to avoid damage.
- You should perform troubleshooting and repair under the authorization and guidance of our technical support team. Any damage caused by services not authorized by us is not covered by the warranty. Please read the safety instructions of the product.
- Before touching any component inside the computer, touch an unpainted metal surface of the computer (such as the metal on the rear of the computer) to remove static electricity from your body. During operation, touch the unpainted metal surface from time to time to discharge static electricity, otherwise internal components may be damaged.
- When removing a cable, hold the cable connector or its push-pull tab to pull it out. Do not pull directly on the cable. For a cable with connectors featuring locking tabs or captive screws, disengage these mechanisms before removing the cable. When removing the cable, pull out both sides of the connector at the same time to avoid bending the connector pin. When connecting a cable, ensure that the connectors on the cables are oriented correctly and aligned with the ports.
- Press and eject all installed cards from the media card reader.
- Be careful when handling rechargeable lithium-ion batteries in the computer. Inflated batteries should not be used again and should be replaced and disposed of properly.

9.2 Maintenance and Warranty

Workstation warranty:

- Three-year basic warranty.
- Upgradable to advanced warranty service (on-demand purchase).

For more information about the maintenance, visit the technical support website, and choose **Technical Support** > **Service Support** > **Customer Support Service**.

For more information about the warranty, visit the technical support website, and choose **Technical Support** > **Service Support** > **Warranty**.

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A Appendixes

A.1 Terms

Term	Definition
baseboard management controller	The baseboard management controller (BMC) complies with the Intelligent Platform Management Interface (IPMI). It collects, processes, and stores sensor signals, and monitors the operating status of components. The BMC provides the hardware status and alarm information about the managed objects to the chassis management module so that the management system can implement unified management of the devices.
Ethernet	A baseband local area network (LAN) architecture developed by Xerox Corporation by partnering with Intel and DEC. Ethernet uses the Carrier Sense Multiple Access/Collision Detection (CSMA/CD) access method and allows data transfer over various cables at 10 Mbit/s. The Ethernet specification is the basis for the IEEE 802.3 standard.
Gigabit Ethernet	An extension and enhancement of traditional shared media Ethernet standards. It is compatible with 10 Mbit/s and 100 Mbit/s Ethernet and complies with IEEE 802.3z standards.
keyboard, video and mouse	Keyboard, video, and mouse
panel	An external component (including but not limited to ejector levers, indicators, and ports) on the front or rear of the server. It seals the front and rear of the chassis to ensure optimal ventilation and electromagnetic compatibility (EMC).

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Term	Definition
Peripheral Component Interconnect Express	A type of computer bus PCI, which uses the existing PCI programming concepts and communication standards, but builds a faster serial communication system. Intel is the main sponsor for PCIe. PCIe is used only for internal interconnection. A PCI system can be transformed to a PCIe system by modifying the physical layer instead of software. PCIe delivers a faster speed and can replace almost all existing bus standards including AGP and PCI.
redundancy	A mechanism that allows a backup device to automatically take over services from a faulty device to ensure uninterrupted running of the system.
redundant array of independent disks	A storage technology that combines multiple physical drives into a logical unit for the purposes of data redundancy and performance improvement.
workstation	A workstation is a high-performance computer designed and developed for professional applications.
system event log	Event records stored in the system used for subsequent fault diagnosis and system recovery.

A.2 Acronyms and Abbreviations

Acronym and Abbreviation	Full Name
AC	Alternating Current
BIOS	Basic Input Output System
BMC	baseboard management controller
CCC	China Compulsory Certification
CE	Conformite Europeenne
DDR5	Double Data Rate 5
DIMM	dual in-line memory module
DRAM	Dynamic Random-Access Memory
ECC	Error Checking and Correcting
GE	Gigabit Ethernet (GE)
GPIO	General Purpose Input/Output

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Acronym and Abbreviation	Full Name
GPU	Graphics Processing Unit
HDD	Hard Disk Drive
IPMB	Intelligent Platform Management Bus
IPMI	Intelligent Platform Management Interface
KVM	Keyboard, Video and Mouse
LED	Light Emitting Diode
LOM	LAN on Motherboard
MAC	Media Access Control
PCIe	Peripheral Component Interconnect Express
PDU	Power Distribution Unit
PHY	Physical Layer
PMBUS	power management bus
PWM	Pulse-width Modulation
PXE	Preboot Execution Environment
RAID	Redundant Array of Independent Disks
RAS	Reliability, Availability and Serviceability
REACH	Registration Evaluation and Authorization of Chemicals
RJ45	Registered Jack 45
RoHS	Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment
SAS	Serial Attached Small Computer System Interface
SATA	Serial Advanced Technology Attachment
SERDES	Serializer/Deserializer
SGMII	Serial Gigabit Media Independent Interface
SMI	Serial Management Interface
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SOL	Serial Over LAN
SSD	solid-state drive

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Acronym and Abbreviation	Full Name
TCO	Total Cost of Ownership
TDP	Thermal Design Power
TPM	Trusted Platform Module
UDIMM	Unbuffered Dual In-line Memory Module
UEFI	Unified Extensible Firmware Interface
UID	Unit Identification Light
UL	Underwriter Laboratories Inc.
USB	Universal Serial Bus
WEEE	waste electrical and electronic equipment

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