



# HORUS440-M

INTEL 4/5TH XEON SP RUGGED



## FEATURES

- Intel® 4/5th XEON® SP Processor Sliver, Gold, Platinum CPUs
- Intel® Data Center GPU Flex 170(32 Xe-cores, 16GB GDDR6)
- Nvidia RTX 6000 ADA, 48GB GDDR6, 18176 CUDA® cores
- Up to 2TB DDR5- 5600MT/s RDIMM ECC
- 8 pins programmable GPIO
- 8x U.2 NVMe PCIe Gen 4 (Up to 128TB)
- 2x M.2 NVMe (OS)
- I/O: 1xIPMI , 2x10G , 4x1G
- 3 x HHHL Slot Available
- DC 16V-72V (1000W)
- MIL-STD: 810, 461

### OPTIONAL

- 6x GMSL 2.0 inputs
- RAID PCIe Gen 4.0 Tri-Mode Support RAID 0, 00, 1, 5, 6, 10, 50 and 60

# Product Highlight



Up to Intel Xeon Scalable processor with 48 cores  
Up to 2TB DDR4 ECC memory  
Up to 128TB of storage and 3 PCIe 5.0 cards  
MIL-STD 461, 810

## Technical Specification

1x Intel® Xeon® Scalable Silver, Gold, Platinum CPUs  
Up to 48 Cores per Processor  
Up to 2TB memory with 8 DIMM slots  
Nvidia RTX 6000 ADA, 18176 CUDA cores, 48GB GDDR6 or  
Intel® Data Center GPU Flex 170, 32 Xe-cores, 16GB GDDR6

## Management and Operating System

Windows®, Linux, VMWARE, SLES  
AMI UEFI BIOS type  
IPMI v2.0 Redfish option available  
TPM 2.0 support

## Expansion and Modular Maintainability

PCIe 5.0 Card Options:  
Up to 3 vertical HH card (2x PCIe 5.0 x16 +1x PCIe5.0 x8)  
Up to 4 Horizontal FH card (4x PCIe 5.0 x8 MCIO connector)  
3 removable fans  
2x M.2 NVMe slot  
8x 2.5" Swappable SSD, support U.2, NVMe, up to 128TB

## Input/Output Versatility

1x Power Button  
1x IPMI 2.0  
4x 1GBase T Ethernet ports  
2x 10GBase T Ethernet ports  
4x USB3.2  
1x VGA display port  
1x DC-IN jack

## Power Supply Options

Single or Redundant 16~72V DC  
Single or Redundant 100/240V VAC  
MIL-STD 461

## Environmental

### Operating

Temperature: 0°C to 50°C  
Extended Temperature: -20°C to 60°C  
Humidity: 5%to 95%, non-condensing  
Shock: 3 axis, 25g  
Vibration: 5Grms

### Non-Operating

Temperature: -40°C to 85°C  
Humidity: 5%to 95%, non-condensing

## Mechanical

Height: 2U or 88.9mm  
Width: 17.3 inches (440.0mm)  
Depth: 15.75 inches (400.0mm)  
Weight: 25 pounds (11.3kg)  
19" rackmountable

# Specifications

## SYSTEM

Processor	Intel® 4 <sup>th</sup> Xeon SP Platinum 8468, 2.1GHz, 105MB, 350W, 48 cores/96 Threads Intel® 4 <sup>th</sup> Xeon SP Gold 6421N, 1.8GHz, 60MB, 185W, 32 cores/64 Threads Intel® 4 <sup>th</sup> Xeon SP Silver 4410T, 2.7GHz, 26.25MB, 150W, 10 cores/20 Threads
Memory type	128GB DDR5-5600MT/s RDIMM ECC , Up to 2TB in 8 DIMM slot
Graphic	Nvidia RTX 6000 ADA Generation 18176 CUDA cores 48GB GDDR6 Intel® Data Center GPU Flex 170(32 Xe-cores, 16GB GDDR6)
TPM	Chipset: Infineon, Type: TPM 2.0
IPMI	ASPEED AST2500 IPMI 2.0
BIOS	AMI UEFI BIOS
USB	6 USB3.2 Gen1 ports: 4 rear Type-A, 2 via 19-pin header
Ethernet	2x 10G Ethernet Ports 4x 1G Ethernet Ports 1x RJ45 Dedicated IPMI
Power Type	16V ~ 72V DC IN 1000W MIL-STD 461 (option)
Storage	8x 2.5" Swappable SSD, support U.2 NVMe PCIe Gen4 x 4, up to 128TB (Data) 2x M.2 NVMe (OS)
COM Port	1x RS232
Operating Temp.	-20°C to +60°C
Dimension	440mm(W) x 400mm(D)x88mm(H)

## FRONT I/O

Power Button	1
SSD LED indicator	1
Swappable SSD Tray	8

## REAR I/O

IPMI LAN	1
1G LAN	4
10G LAN	2
VGA	1
USB 3.0	4
DC-IN	1

## ENVIRONMENTAL

MIL-STD-810 Test	<p>Method 500.5, Procedures I and II (Altitude, Operation): 12,192M, (40,000 ft) for the initial cabin altitude (18.8Kpa or 2.73 Psia)</p> <p>Method 500.5, Procedures III and IV (Altitude, Non-Operation): 15,240, (50,000 ft) for the initial cabin altitude (14.9Kpa or 2.16 Psia)</p> <p>Method 501.5, Procedure I (Storage/High Temperature)</p> <p>Method 501.5, Procedure II (Operation/High Temperature)</p> <p>Method 502.5, Procedure I (Storage/Low Temperature)</p> <p>Method 502.5, Procedure II (Operation/Low Temperature)</p> <p>Method 503.5, Procedure I (Temperature shock)</p> <p>Method 507.5, Procedure II (Temperature &amp; Humidity)</p> <p>Method 509.7 Salt Spray (50±5)g/L</p> <p>Method 514.6, Vibration Category 24/Non-Operating (Category 20 &amp; 24,Vibration)</p> <p>Method 514.6, Vibration Category 20/Operating (Category 20 &amp; 24,Vibration)</p> <p>Method 516.6, Shock-Procedure V Non-Operating (Mechanical Shock)</p> <p>Method 516.6, Shock-Procedure I Operating (Mechanical Shock)</p>
Reliability	<p>No Moving Parts; Passive Cooling.</p> <p>Designed &amp; Manufactured using ISO 9001 Certified Quality Program.</p>
MIL-STD-461	<p>CE102 basic curve, 10kHz - 30 MHz</p> <p>RE102-4, (1.5 MHz) -30 MHz - 5 GHz</p> <p>RS103, 200 MHz - 3.2 GHz, 50 V/m equal for all frequencies</p> <p>CE and FCC (option)</p>
MIL-STD-1275 (Option)	<p>Steady State –20V~33V, Surge Low – 18V/500ms, Surge High – 100V/500ms</p> <p>Emitted spikes</p> <p>Injected Voltage surges</p> <p>Emitted voltage surges</p> <p>Voltage ripple (2V)</p> <p>Voltage spikes</p> <p>Starting Operation</p> <p>Reverse polarity</p>
Operating Temp	-20°C to +60°C
Storage Temp.	-40°C to +85°C
Relative Humidity	5% to 95%, non-condensing.

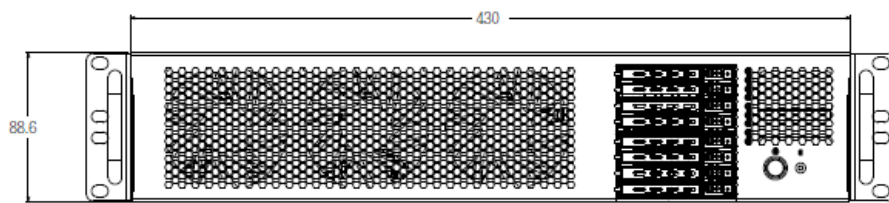
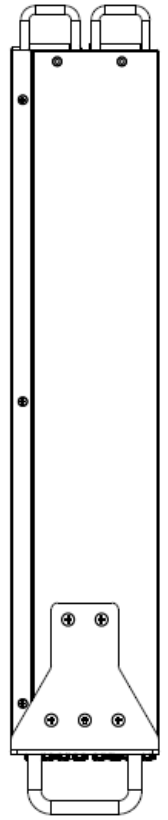
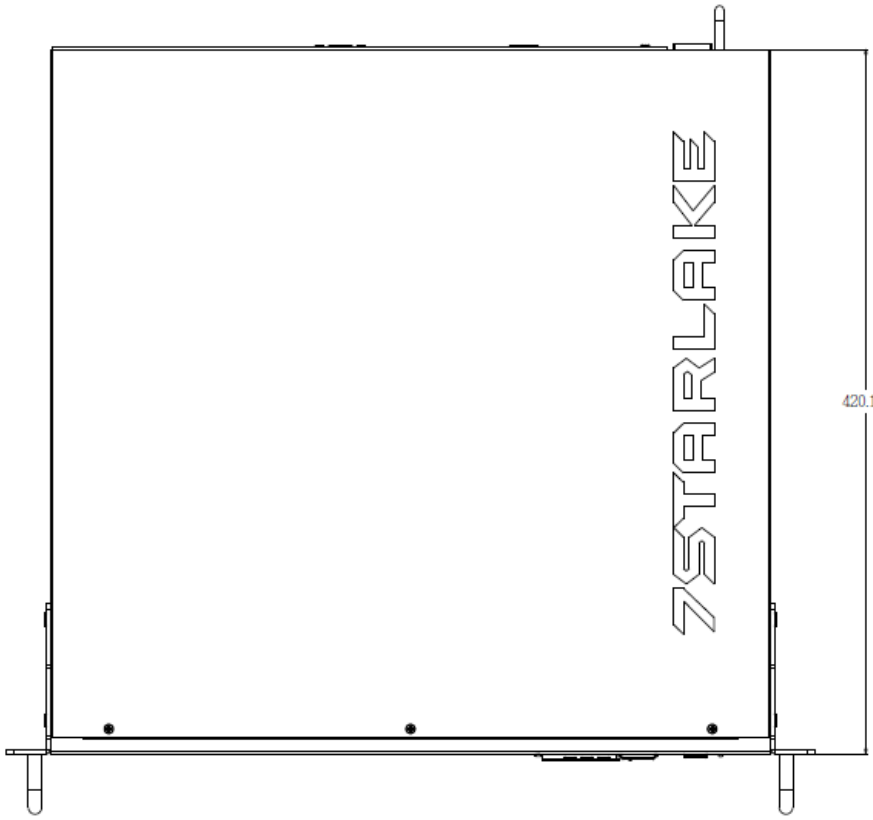
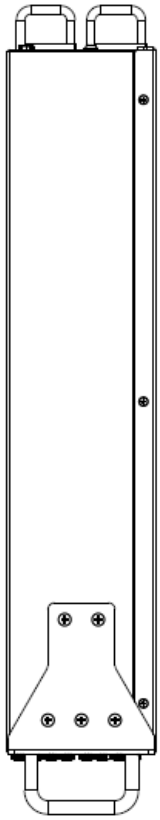
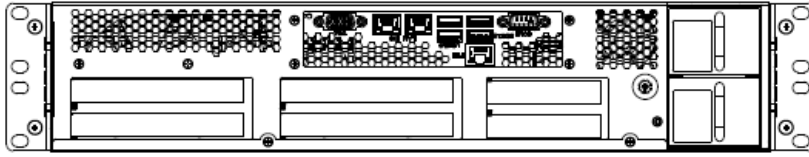
## Appearance



#	Expansion Slot Location
<b>1</b>	Default: PCIe5.0 x16(HHHL) Option1: PCIe5.0 x16(HHHL) Option2: PCIe5.0 x8(HHHL)
<b>2</b>	Default: PCIe5.0 x16(HHHL) Option1: Disable Option2: PCIe5.0 x8(HHHL)
<b>3</b>	Default: Disable Option1: PCIe5.0 x16(FHHL) Option2: PCIe5.0 x16(FHHL)
<b>4</b>	Default: Disable Option1: PCIe5.0 x8(FHHL) Option2: PCIe5.0 x8(FHHL)
<b>5</b>	PCIe5.0 x16(FHHL)
<b>6</b>	PCIe5.0 x16(FHHL)

## Dimension

7STARLAKE



## Revision history 轉 Pdf 格式時不要包含此頁

<b>Date</b>	<b>Description</b>	<b>Remark</b>
2023/12/28	初版	HORUS440-M/R
2023/12/29-	正名為 HORUS440-M，更新圖面資料	
2024/1/02	更新插圖和 Dimension 圖	
2024/03/21	更新拉線圖、外觀圖	
2024/04/01	更新拉線圖 PCIe slot 的 option	