



LAND



SEA



AIR

THOR400-X5

EDGE AI INFERENCE XEON[®] SP GOLD
5416S & NVIDIA RTX 5000 ADA



- Ultra-High-Performance Intel[®] Xeon[®] SP Gold 5416S (4.0GHz, 16 cores, 32 threads)
- NVIDIA RTX 5000 Ada (12,800 CUDA, 32GB GDDR6)
- 2 x 100GbE Single-Port QSFP28 Nvidia ConnectX-6(Optional)
- Up to 2TB 3DS ECC RDIMM, DDR5-5600MHz (1DPC) in 8 DIMM slots
- 1 x NVMe M.2 SSD
- MIL-STD-810 Temperature, Shock, Vibration
- MIL-STD-461 EMI/EMC; MIL-STD-1275 electrical systems in military vehicles

Specifications

SYSTEM

Processor	Intel® Xeon® Processor Gold 5416S (Frequency 2.0GHz, Turbo Boost Frequency up to 4.0GHz), 16 Core, 32 Thread Support, 30MB Smart Cache ,TDP up to 150W
Memory type	Up to 2TB 3DS ECC RDIMM, DDR5-5600MHz (1DPC) in 8 DIMM slots
Chipset	SoC, integrated with CPU

GPU

NVIDIA	NVIDIA RTX 5000 Ada
Tensor Core	1,044
CUDA Cores	12,800
Memory	32GB GDDR6, 256-bit, 576 GB/s

STORAGE

SSD	1 x M.2 NVMe SSD
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100GbE

NVIDIA	Nvidia ConnectX-6 Dual Port QSFP28 LAN card (Option)
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FRONT AND SIDE I/O

X1	1x DC-IN, with D38999 connector
X2	1x MiniDP, with D38999 connector
X3	1x 10 GbE MPO SFP28, with D38999 connector (1 x 100GbE MPO QSFP28 , with D38999 connceor by option)
X4	1x USB3.0, with D38999 connector
Button	1x Power Switch with Dedicated LED
Dedicated LED	1 x Red/Green LEDs (SSD)

POWER REQUIREMENT

Power Input	DC-DC 18V~ 36V (300W max) MIL-STD 461
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APPLICATIONS, OPERATING SYSTEM

Applications	C4ISR, Commercial and Military Platforms Requiring Compliance to MIL-STD-810 Process Control, where Harsh Temperature, Shock, Vibration, Altitude, Dust and EMI Conditions
Operating System	Windows 10 64Bit, Windows Server 2019 64bit, Windows 2016 64bit, Hyper-V Server 2016 R2, Ubuntu16.04.3 LTS/17.10/18.04.1LTS, Fedora 25/26, RedHat Linux EL 6.8/6.9/7.3/7.4/7.6, VMware ESXi 6.5u1 ,Vmware ESXi 6.7U2

PHYSICAL

Dimension	220 x 450 x132 mm (W x D x H)
Weight	15Kg (33.06lbs)
Chassis	Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide
Cooling	Natural Passive Convection/Conduction Cooling. No Moving Parts Ingress Protection
Ingress Protection	IP65

ENVIRONMENTAL

Operating Test MIL-STD-810

Low air pressure	Method 500.5 Procedure 2	Operation/Air Carriage 4572m (15.000 ft)
Low Temperature	Method 502.5 Procedure 2	-20°C, 4 hours, ±3°C
High Temperature	Method 501.5 Procedure 2	+55°C, 4 hours, ±3°C
Humidity	Method 507.5	85%-95% RH without condensation, 24 hours/ cycle, conduct 10 cycle
Vibration	Method514.6 Category 24	5-500Hz, Vertical 7.7Grms, 40mins x 3axis
Shock	Method 516.6	20 Grms, 11ms, 3 axes

Non-Operating Test MIL-STD-810

Low Temperature	Method 502.5	-33°C, 4 hours, change rate: ≤ 20°C/ Hour -15°C, 72hours (By request)
High Temperature	Method 501.5	+71°C, 4 hours, change rate: ≤ 20°C/ Hour
	Procedure 1	+68°C, 240 hours (By request)
Vibration	Method514.6	5-500Hz, Vertical 7.7Grms, 40mins x 3axis

Shock	Method 516.6	20 Grms, 11ms, 3 axes
Salt Fog	Method 509.7	Salt Spray (50±5)g/L

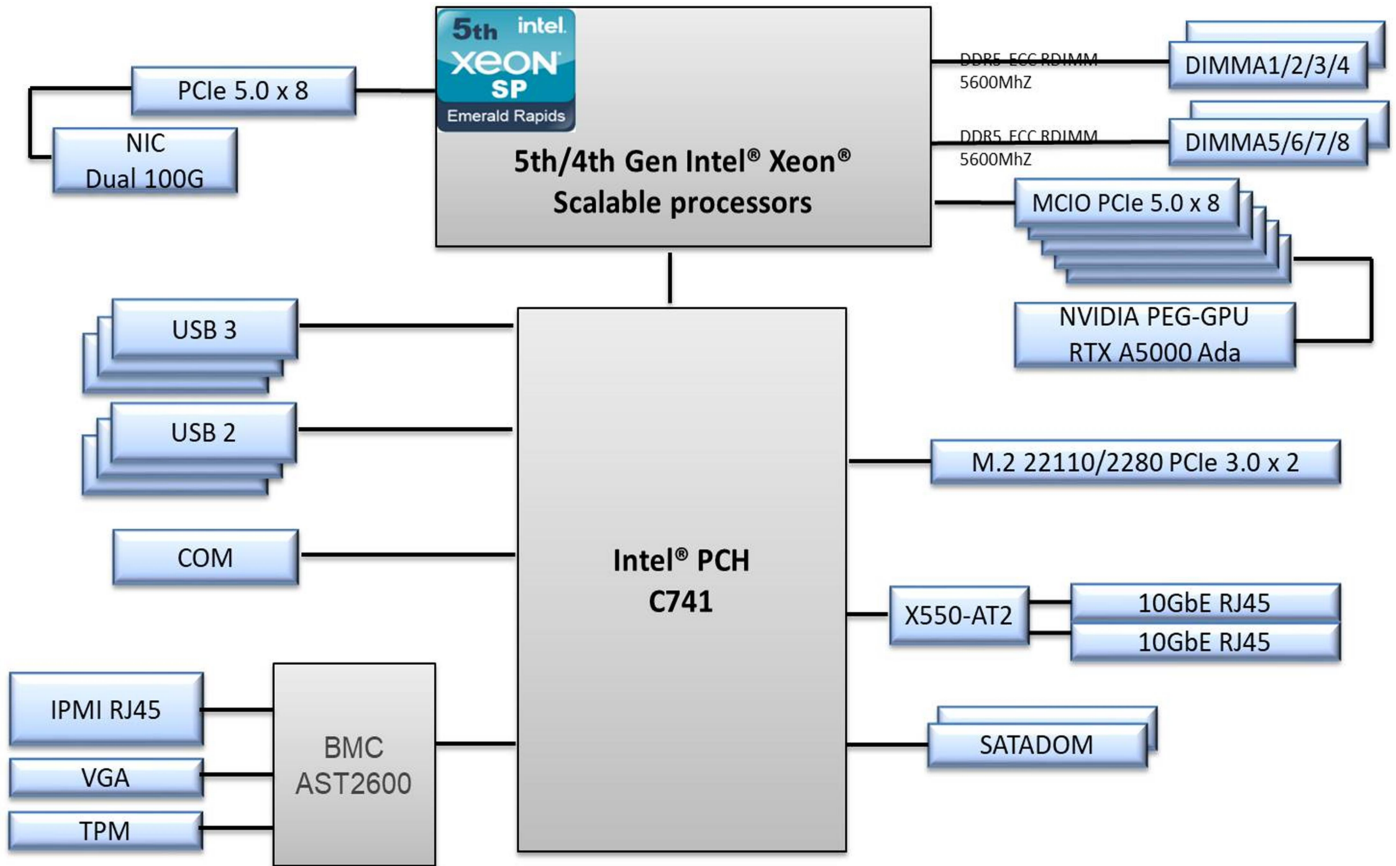
MIL-STD 461

Conducted Emissions Power Leads	CE102 curve	basic	10kHz – 30MHz
Conducted Emissions Electric Field	RE102-4		1.5MHz - 30MHz – 5GHz
Radiated Susceptibility Electric Field	RS103		1.5 MHz – 3GHz, 50 V/m equal for all frequencies
			2MHz – 80MHz, 50 V/m equal for all frequencies
			80MHz – 3GHz, 50 V/m equal for all frequencies
			3GHz – 5GHz, 50 V/m equal for all frequencies
Electrostatic Discharge	EN 61000-4-2		Air DISCHARGE: 8 Kv, Contact discharge : 6kV
Electromagnetic compatibility	EN61000-4-4		Signal and DC Net: 1 kV
Electromagnetic compatibility	EN61000-4-5		Lead vs. ground potential 1Kv, ignal und DC Net: 1 kV
Radio disturbance	EN55022		Class A
Electromagnetic compatibility	EN61000-4-3		10V/m
Electromagnetic compatibility	EN 61000-4-5		Lead vs. ground potential 1Kv, ignal und DC Net: 0.5 kV

MIL-STD-1275 SPECIFICATIONS

Steady State	20V~33V
Surge Low	20V~33V
Surge High	18V/500ms

Block Diagram



Ordering Information

THOR400-X5

Military GPU System GPGPU AI Inference Computer with Intel® Xeon SP Gold 5416S Processor, NVIDIA RTX 5000 Ada , Up to 2TB 3DS ECC RDIMM DDR5, 1 x M.2 NVMe SSD, 1 x 100GbE Nvidia ConnectX-6 LAN card(Optional) ,IP65 rating, MIL-STD-D38999 Connectors, 18~36V DC-IN, Extreme Rugged operating temperature -20~+60°C

Appearance

