



# THOR400-S14

EDGE AI INFERENCE CORE<sup>®</sup> I9-13900 &  
NVIDIA RTX A2000



- **Ultra-High-Performance Intel<sup>®</sup> Core<sup>®</sup>13900 (2.0GHz, 24 cores, 32 threads)**
- **NVIDIA RTX A2000(3,328 CUDA, 6/12GB GDDR6)**
- **1 x 100GbE Dual-Port QSFP28 Nvidia ConnectX-6(OPTION)**
- **Up to 128GB Unbuffered ECC/non-ECC UDIMM, DDR5-4400MHz**
- **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® Core® Processor i9-13900 (Frequency 2.0GHz, Turbo Boost Frequency up to 5.6GHz), 24 Core, 32 Thread Support, 36MB Smart Cache ,TDP up to 65W
Memory type	Up to 128GB Unbuffered ECC/non-ECC UDIMM, DDR5-4400MHz
Chipset	Intel® R680E

## GPU

NVIDIA	NVIDIA RTX A2000
Tensor Core	104
CUDA Cores	3,328
Memory	6/12GB GDDR6, 192-bit, 288 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 10GbE MPO SFP28, with D38999 connector (1 x 100GbE MPO QSFP28 , with D38999 conncector 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

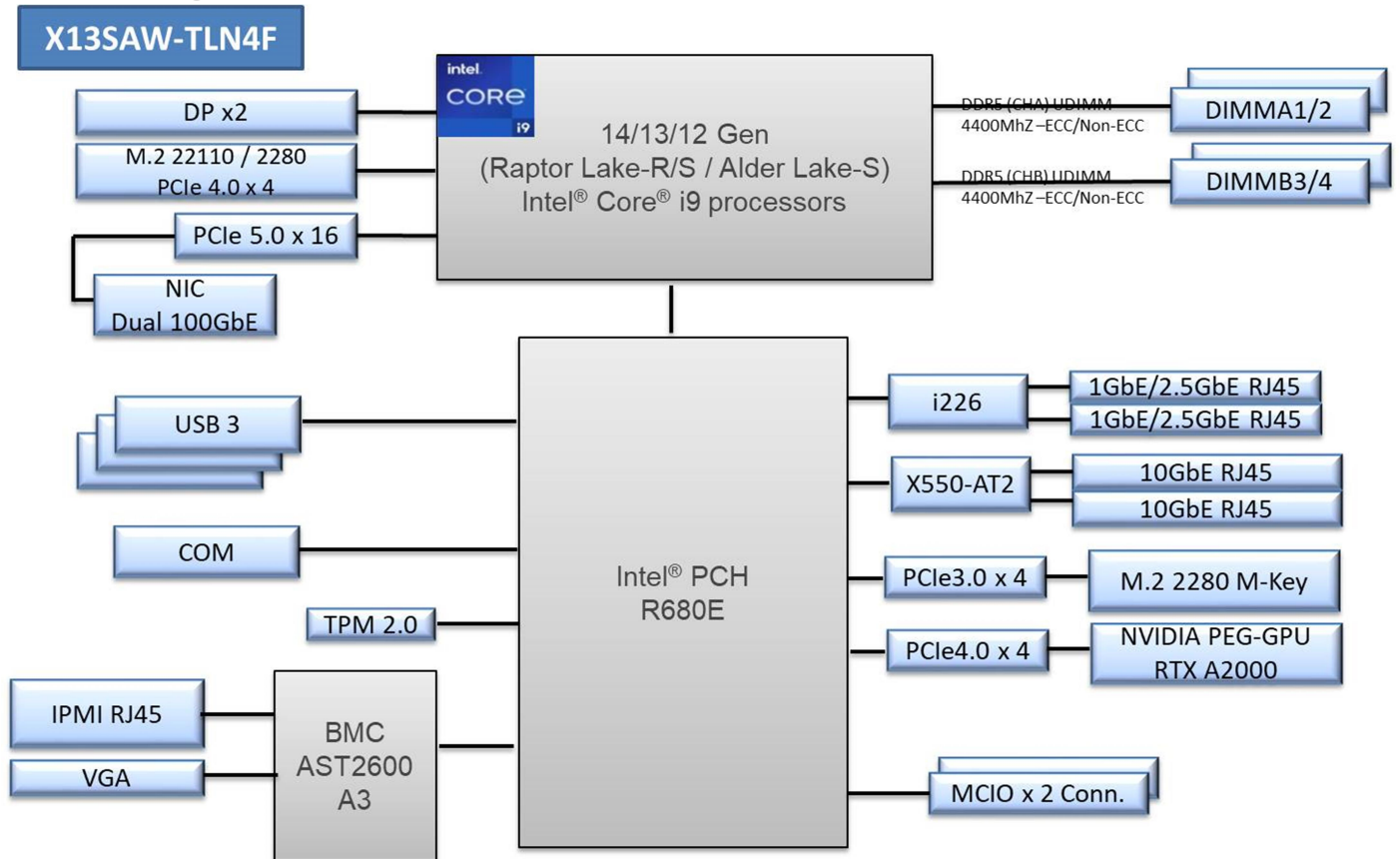
### MIL-STD 461

Conducted Emissions Power Leads	CE102 curve	basic	10kHz – 30MHz
Conducted Emissions Electric Field	RE102-4		1.5MHz - 30MHz – 5GHz
Radiated Susceptibility	RS103		1.5 MHz – 3GHz, 50 V/m equal for all frequencies
			2MHz – 80MHz, 50 V/m equal for all frequencies
Electric Field			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-S14

Military GPU System GPGPU AI Inference Computer with Intel® Core i9-13900 Processor, NVIDIA RTX A2000 , Up to 128GB Unbuffered ECC/non-ECC UDIMM, DDR5-4400MHz, 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

