



# THOR11-027

**MILITARY VIRTUALIZATION**

**SUPERCOMPUTER**



- **Intel® Xeon® ICELAKE-D HCC D-2796NT, 20Cores 2.0 GHz Processor**
- **MIL-STD 810, Vibration, Shock, Thermal**
- **NVidia MXM RTX A2000 Module or PEG RTX A4000**
- **4x NVMe Gen 4.0 U.2, 2xSATA SSD ( Total 6 Bays)**
- **6x Removable Anti-Drop Storages Tray**
- **Up to 512GB LRDIMM/256GB RDIMM**
- **MIL-STD-461 EMI 18-36V or IEC61000 AC100~240V PSU**
- **Dual 25GbE SFP, Dual 10Gbase-T, Quad 1Gbase-T**
- **Extreme Temperature Support -20°C to +60°C**
- **1U Rackmount Short Depth lightweight chassis**

# INDEX

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**1. INTRODUCTION**

**2. MIL-STD 810**

**3. Block Diagram**

**4. SYSTEM SPEC**

**5. Ordering Information**

**6. DIMENSION**

# 1. INTRODUCTION

The THOR11-D27 shipboard server packs high-performance multi-core processing into an ultra-low profile rack space. With 1 PCIe add-on expansion slot and NVidia MXM module the 1U server can support RAID, x16 graphics, or other technologies for specific workstation requirements. The THOR11-D27 shipboard server is the ideal powerhouse workstation for optimizing rack space and performance.



## NVIDIA Quadro RTXA2000 MXM or PEG RTXA4000

THOR11-D27 supports 1x NVIDIA Quadro RTXA2000 MXM Module or PEG RTX A4000; can power the planets most reliable mainstream workstations. Designed into a 140-watt package, RTX A2000 or RTX A4000 is powered by NVIDIA Ampere architecture, supplying innovative multi-precision performance to accelerate a vast range of modern applications. THOR11-D27 w/ Quadro RTX A2000 or RTX A4000 GPU accelerates diverse cloud workloads. These include high-performance computing, data analytics, deep learning training and inference, graphics and machine learning. RTX A2000 MXM or PEG RTX A4000 features multi-precision Turing Tensor Cores. It comes in a very compact MXM form factor, helping THOR11-D27 deliver ground-breaking performance at scale.



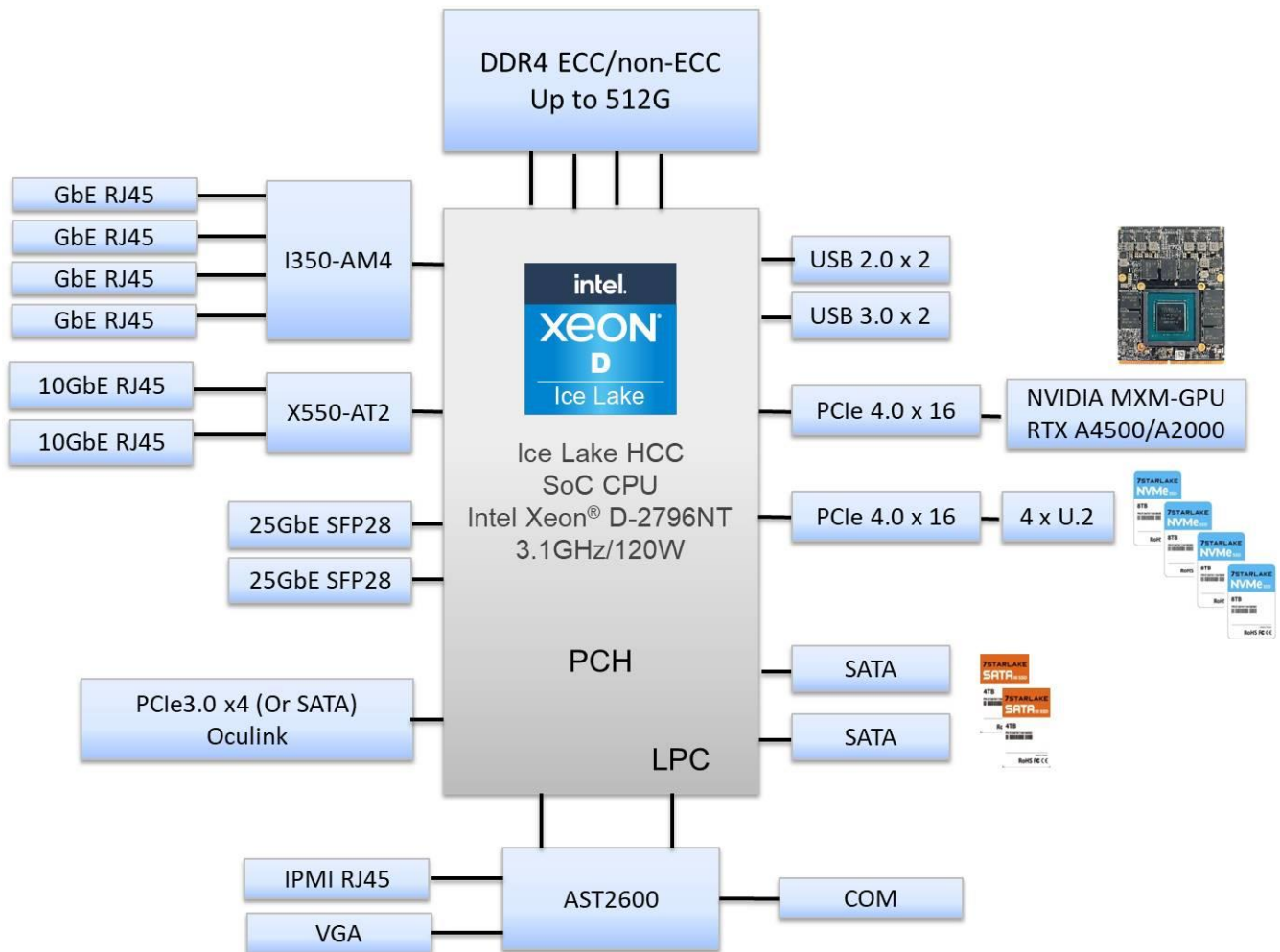
### SPECIFICATIONS

GPU memory	16 GB GDDR6
Memory interface	256-bit
Memory bandwidth	448 GB/s
Error-correcting code (ECC)	Yes
NVIDIA Ampere architecture-based CUDA Cores	6,144
NVIDIA third-generation Tensor Cores	192
NVIDIA second-generation RT Cores	48
Single-precision performance	19.2 TFLOPS <sup>3</sup>
RT Core performance	37.4 TFLOPS <sup>3</sup>
Tensor performance	153.4 TFLOPS <sup>4</sup>
System interface	PCI Express 4.0 x16
Power consumption	Total board power: 140 W
Thermal solution	Active

## 2. MIL-STD Environment

- **Operating Temperature High:** 50°C, MIL-STD-810G, Method 501.5, Procedure I
- **Operating Temp Low:** 0°C, MIL-STD-810G, Method 502.5, Procedure I
- **Non-Operating Temperature High:** 70°C, MIL-STD-810G, Method 501.5, Procedure II
- **Non-Operating Temperature Low:** -40°C, MIL-STD-810G, Method 502.5, Procedure II
- **Operating Altitude:** Up to 15,000 ft., MIL-STD-810G, Method 500.5
- **Non-Operating Altitude:** Up to 45,000 ft., MIL-STD-810G, Method 500.5
- **Humidity:** MIL-STD-810G, Method 507.5, Procedure Ib (Natural Cycle B3)
- **Shock:** MIL-STD-810G, Method 516.6, 30 g's, Saw-tooth, 11ms & MIL-DTL-901E, Grade A, Class II; Type B
- **Vibration:** MIL-STD-167, Type I, Deck Mounted Equipment
- **EMI/EMC:** MIL-STD-461F, RE101, RE102 (Shipboard Level 1), RS103, CE101, CE102, CS101, CS114, CS116
- **Airborne Noise:** MIL-STD-740-1 compliance: 43.7dBA (Idle), 52.5dBA (50%), 54.6dBA (80%).

# 3. Block Diagram



# 4. SYSTEM SPEC

## SYSTEM

CPU	Intel IceLake-D SoC, High Core Count 4/8/16/20 Cores, up to 120W
Memory type	Up to 512GB LRDIMM/256GB RDIMM, 4CH DDR4 3200MHz in 4 Slots
Chipset	SoC
GPU	Nvidia RTX A2000 MXM or PEG RTX A4000

## STORAGE

HDD/SSD	6x NVMe or SATA III SSD with Hot-swap tray
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## ETHERNET

Ethernet	Dual 25GbE SFP28 (SoC) Dual 10GBase-T (Intel X550-AT2) Quad 1GBase-T (Intel i350-AM4)
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## RAID

RAID	Support RAID 0,1,5,10
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## OS

OS	Windows 10 64bit
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## POWER

Power Requirement	AC 110/220V 500W Power Supply MIL-STD-461 EMI 18~36V 500W DC Power Supply
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Dimension	410 x 400 x 44 mm ( W x D x H )
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Weight	≤ 12kg
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## FRONT I/O

LED	1x HDD LED (Red) 1x Power on LED (Green)
SSD	6x Hot Swap SSD tray

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Switch	1x Power On switch
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#### REAR I/O

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Power Switch	1x AC Power switch (AC version)
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AC-IN	1x AC-IN (IEC socket) (AC version)
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DC-IN	1x 4P DC-IN Phoenix Jack (DC version)
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IPMI	1x IPMI
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USB	2x USB 3.0
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LAN1, 2	2x 25GbE SFP28
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LAN3, 4	2x 10G Base-T
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LAN5, 6, 7, 8	4x 1G Base-T
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Display	1x VGA
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#### ENVIRONMENT

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Operating Temp.	-20°C to 60°C
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Storage Temp.	-40°C to 85°C
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Relative Humidity	5% to 95%, non-condensing
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RoHS	RoHS Compliant
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## 5. Ordering Information

Model	CPU	MXM or PEG	SFP	10GbE	1GbE	U.2	SATA	PSU	Temp.
THOR11-D27-M-20C-12V	D-2796NT	RTXA2000	2 x 25G SFP28	2	4	4	2	12V DC-in	-20~+50 °C
THOR11-D27-M-20C-18V	D-2796NT	RTXA2000	2 x 25G SFP28	2	4	4	2	18~36V DC-in	-20~+50 °C
THOR11-D27-M-20C-AC	D-2796NT	RTXA2000	2 x 25G SFP28	2	4	4	2	100~240V AC-in	-20~+50 °C
THOR11-D27-M-16C-12V	D-2775TE	RTXA2000	2 x 25G SFP28	2	4	4	2	12V DC-in	-20~+50 °C
THOR11-D27-M-16C-18V	D-2775TE	RTXA2000	2 x 25G SFP28	2	4	4	2	18~36V DC-in	-20~+50 °C
THOR11-D27-M-16C-AC	D-2775TE	RTXA2000	2 x 25G SFP28	2	4	4	2	100~240V AC-in	-20~+50 °C
THOR11-D27-P-20C-12V	D-2796NT	RTXA4000	2 x 25G SFP28	2	4	4	2	12V DC-in	-20~+50 °C
THOR11-D27-P-20C-18V	D-2796NT	RTXA4000	2 x 25G SFP28	2	4	4	2	18~36V DC-in	-20~+50 °C
THOR11-D27-P-20C-AC	D-2796NT	RTXA4000	2 x 25G SFP28	2	4	4	2	100~240V AC-in	-20~+50 °C
THOR11-D27-P-16C-12V	D-2775TE	RTXA4000	2 x 25G SFP28	2	4	4	2	12V DC-in	-20~+50 °C
THOR11-D27-P-16C-18V	D-2775TE	RTXA4000	2 x 25G SFP28	2	4	4	2	18~36V DC-in	-20~+50 °C
THOR11-D27-P-16C-AC	D-2775TE	RTXA4000	2 x 25G SFP28	2	4	4	2	100~240V AC-in	-20~+50 °C

## 6. DIMENSION

