THOR20

Rugged 2U GPU Server

- **Rugged 2U GPU Server**
- **4th / 5th Gen. Intel® Xeon® Scalable Processor**
- **Quadro RTX A6000 GPU Card**
- **MIL-STD-810 Vibration and Shock Resistance**
- **AC230V 600W/800W Redundant Power Supply**
- **MIL-STD-461 DC 18V~36V By Request**
- **I/O By Rugged Lockable DTL38999 & M20 Connector**
- **Extended Temperature -20~+55 Degree**

INDEX

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1. Introduction

7starlake's THOR20 rugged MIL server is ideal for use in high and low temperature environments that are subject to shock and vibration. 7starlake's rugged servers are designed for use in hostile environments including military COTS use where the performance of the latest Intel processors are required and full size expansion cards need to be fitted. Versions with drip proof water ingress protection are also available as special build options.

THOR30 server is part of 7starlake well established and field proven rugged computer family and is designed to comply with MIL-STD-810 for use in aircraft, mobile or fixed land-based systems, transportation and naval environments below decks as well as general use where a ruggedized system is required.

2. Main Features

- 1x 4th /5th Gen. Intel® Xeon® Scalable Processor
- Up to 4TB ECC L/RDIMM, DDR5-5600/5200/4800/4400/4000 MHz.
- 2x Quad 2.5" Drive Bays
- 230V AC 600W/800W Redundant Power Supply
- MIL-STD-810 Anti Vibration, Shock

3. MIL-STD Environment

The standard build of the THOR Series is designed to meet to the following typical requirements and is based on similar formally tested systems in the same range of field proven rugged servers.

3-1. MIL-STD-810

A) Random vibration test (Operating)

- Frequency ：10 Hz to 500 Hz
- Acceleration ： 1.04g rms
- Test Axis ：X, Y, Z axis
- Test Time ：10 mins (Each axis)
- Total Test Time ：0.5 hrs

B) Random Shock Test (Operating)

- Wave Form ：Half Sine Wave
- Acceleration ：20 g rms
- Duration ：11 mS
- Shock Direction ：±Z axis
- No. of Shock ：Each axis 1 time

C) Random vibration test (None-Operating)

- Frequency ：10 Hz to 500 Hz
- Acceleration ：3 g rms
- Test Axis ：X, Y, Z axis
- Test Time ：10 mins (Each axis)
- Total Test Time ：0.5 hrs

D) Shock Test (None-Operating)

- Wave Form ：Half Sine Wave
- Acceleration ：32 g rms
- Duration ：11 mS
- Shock Direction ：±Z axis
- No. of Shock ：Each axis 1 time

E) THOR30 Test (Operating)

Low Temperature	Method 502.4 Procedure II	-20°C
High Temperature	Method 501.4 Procedure II	55°C
Humidity	Method 507.4	5x 48 hour cycles
Vibration	Method 514.5 Category 4	10 Hz—500Hz 1.04g rms
Shock	Method 516.5	20G 11mSec TPS 3 axis

F) THOR30 Test (Non-Operating)

Shock	Method 516.5	32G 11ms TPS 3 axis
Low Temperature storage	Method 501.4	-30°C
High Temperature storage	Method 502.4 Procedure I	+70°C
Vibration	514.6 Category 4 fig 514.6C-VI	10Hz to 500Hz @ 3 Grms

3-2 Power

- **AC Redundant Power Supply 230V 600W/800W**
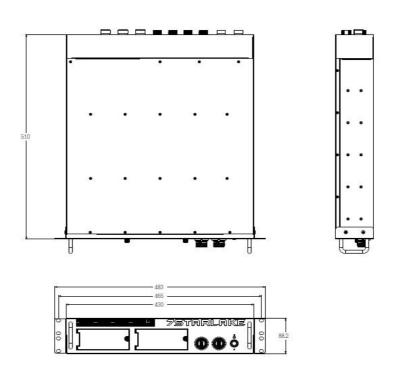- **Options : MIL-461 RE102/CE102 EMI Filter**

4. System Specs

System

CPU	4th /5th Gen. Intel® Xeon® Scalable Processor
4th Gen. CPU	Intel® Xeon® Platinum 8468 Processor, 48C, 105M Cache, 2.10 GHz, 350W Intel® Xeon® Gold 6443N Processor, 32C, 60M Cache, 1.90 GHz, 195W Intel® Xeon® Gold 6430 Processor, 32C, 60M Cache, 2.10 GHz, 270W Intel® Xeon® Silver 4416+ Processor, 20C, 37.5M Cache, 2.00 GHz, 165W
5th Gen. CPU	Intel® Xeon® Platinum 8580 Processor, 60C, 300M Cache, 2.00 GHz, 350W Intel® Xeon® Gold 6554S Processor, 36C, 180M Cache, 2.20 GHz, 270W Intel® Xeon® Gold 6538N Processor, 32C, 60M Cache, 2.10 GHz, 205W Intel® Xeon® Gold 5512U Processor, 28C, 52.5M Cache, 2.10 GHz, 185W Intel® Xeon® Silver 4516Y+ Processor, 24C, 45M Cache, 2.20 GHz, 185W
Memory type	4th Gen. Up to 4TB ECC L/RDIMM, DDR5-4400/4000MHz 5th Gen. Up to 4TB ECC L/RDIMM, DDR5-5600/5200/4800/4400MHz
GPU	NVIDIA Quadro RTX A6000 GPU Card NVIDIA A100 GPU Card (option)

Storage

HDD/SSD	8x 2.5" SATA SSD/HDD

Ethernet

Ethernet	4x 10GbE

Rear I/O

X1	1x DP
X2	1x DP
X3~X5	3x USB3.0
X6~X7	4x 10GbE
X8~12	By Request
Power connector	1x D38999 Power connector

OS Support List

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Windows	Windows 10 64bit, Windows Server 2016, Windows Server 2019, RedHat Linux EL 8.2,
Dimension	(W x D x H)
Weight	16 KG
Operating Temp.	-20 to 55°C
Storage Temp.	-40°C to 85°C
Relative Humidity	5% to 95%, non-condensing

5. Dimension

(Preliminary, the final enclosure and I/O will be changed)