

3PI Servers

TRS21-24 | Xeon® 6 CPUs

An ultra-rugged, SWaP-C optimized, and secure 2U rack mount server delivering unmatched processing and storage at the tactical edge alongside ever-evolving mission-critical applications.



PROCESSING POWERHOUSE WITH NEXT-GEN CPUs

Dual 350W Intel® Xeon® 6 CPUs with up to 48 P-Cores to 144 E-Cores per CPU process massive amounts of data in real-time at elevated ambient temperatures.



CERTIFIED & PROVEN RUGGEDIZATION

Extended thermal performance tested to -40°C to +55°C under full load and vibration performance from 5Hz to 200Hz, 2.96Grms, 0.045PSD (MIL-STD-810H).



COMPUTE DENSITY & SHORT DEPTH

2U rack unit height and 24" server depth reduce compute footprint, increasing server density and enhancing compute capabilities within the smallest of spaces.



Overview

Enhanced processing and storage, combined with out-of-the-box-ready ruggedization and rapid time to market, makes the TRS21-24 the ideal solution for applications demanding leading-edge speeds and feeds in challenging environments.

Whether detecting, tracking, or engaging targets or threats, or ingesting large data volumes, the TRS21-24 delivers high-performance computing to increase situational awareness, enhance decision-making, and ensure mission success.

SOLUTION HIGHLIGHTS



Intel® PFR, SGX, TME, and TDX provide chip-based protections of firmware, data, applications, hypervisors, and virtual machines.



Reduce time to market to take advantage of the latest technologies as they become available and maximize operational efficiency.



TAA-Compliant, as all parts are sourced from approved vendors. We utilize long-life & modular components to improve longevity and flexibility.

Available with a large quantity of E-Cores for background processing (low speed, high core count) or with P-Cores for high-performance processing (high clock speeds for complex workloads).

Our 3PI Servers are customizable per your most complex application or program requirements. Designed to support additional customer-specified option cards including high-end NVIDIA GPUs.

Technical Overview

SPECIFICATION	DETAILS
CPU	Dual Intel® Xeon® 6
Memory	32x DDR5 6400MT/s RDIMM and 8800 MT/s MRDIMM ECC slots (16x per CPU)
Storage	2x NVMe M.2 drives, 6x SATA/NVMe SSDs (FIPS 140-2/3 available)
Form Factor	2U rack server (19" x 3.5" x 24" 48.26cm x 8.9cm x 60.96cm)
Network Interface	1 GbE IPMI port, 3x 1/5/10/25/40/50/100/200GbE ports
PCIe Interconnect	1x OCP x16 slot, 4x PCIe 5.0 x16 slots (via risers), 4x PCIe 5.0 x8 NVMe MCIO ports
Power	2x 1000/2000W AC, removable, redundant

PROCESSORS (UP TO 144 E-CORES PER CPU)

Dual Intel® Xeon® 6 CPUs up to 350W TDP
6700 CPUs (E-Cores, Sierra Forest); 6900 CPUs (P-Cores, Granite Rapids)

**If an SKU higher than 350W is needed, contact a member of our team.*

MEMORY (UP TO 8TB)

32x DDR5 6400MT/s RDIMM and 8800 MT/s MRDIMM ECC slots (16x per CPU)

SLOTS

1x OCP x16 slot, 4x PCIe 5.0 x16 slots (via risers), 4x PCIe 5.0 x8 NVMe ports (MCIO)

I/O

- ▶ **SATA:** 8x SATA3 ports
- ▶ **USB:** 1x USB3 port via header
- ▶ **Video:** 1x VGA port
- ▶ **LAN:** 1/5/10/25/40/50/100/200GbE ports via Intel® x710/x810 connectors, NVIDIA® ConnectX-7 OCP connector
- ▶ **IPMI:** 1GbE port supporting IPMI

SECURITY

- ▶ TPM 2.0, Secure Boot, Runtime BMC Protection, Hardware RoT
- ▶ **Supply Chain Risk Management:** Remote attestation, secure firmware updates, crypto signed firmware, NIST 800-193 ROT, system lockdown

COOLING (BMC Controlled)

8x high speed, high volume chassis fans

SYSTEM BIOS

- ▶ AMI 64MB AMI UEFI
 - ACPI 6.5
 - SMBIOS 3.7
 - UEFI 2.9
 - Plug and Play (PnP)
 - PCI FW 3.2

SYSTEM MANAGEMENT (DC-SCM, OCP-M-FLW)

ASPEED AST2600 baseboard management controller: rKVM, system monitoring, out-of-band management

OS COMPATIBILITY

- ▶ Windows
 - Enterprise
 - Server
- ▶ Linux
 - RHEL

**Contact us for the full compatibilities list*

DIMENSIONS

Board: 17" x 11.5" (43.18cm x 29.2cm), Supermicro X14DBM-SP

Chassis: 19" x 3.5" x 24" (48.26cm x 8.9cm x 60.96cm)

Weight: 45-50lbs (configuration dependent)

ENVIRONMENTAL SPECIFICATIONS

- ▶ Operating Temperature: -40°C - +55°C
- ▶ Storage Temperature: -55°C - +85°C
- ▶ Operating Humidity: 27°C, 95% relative, non-condensing
- ▶ Non-Operating Humidity: 43°C, 95% relative, non-condensing
- ▶ Shock: 3 axis, 20g, 33ms
- ▶ Vibration: 2.96Grms, 5Hz to 200Hz, 0.045 PSD
- ▶ Altitude: 12.6psig - 15.7psig
- ▶ Non-Operating Altitude: 8.29psig

COMPLIANCE

Meets the following standards/certifications:

- ▶ MIL-STD-810H
- ▶ MIL-STD-167A

**Environmental specifications and compliance are configuration dependent.*

***Test reports and additional certifications available upon request.*

Contact us for pricing and availability.

770.287.3100 | info@trentonsystems.com