

# D50TNP-IR (Immersion Ready) High-Performance Computing (HPC) Systems



The UNICOM Engineering D50TNP-IR (Single-Phase Immersion Ready) Family offers density optimized performance for HPC and applications while expanding the breadth of solutions possible. Three distinct module types are available, each providing unique features for compute, storage, and accelerator functionality. Compute performance is delivered by 3rd Generation Intel Xeon Scalable processors—with 1.46x average performance improvement versus the previous generation. The new accelerator module supports up to four full-height, full-length, double-wide PCIe accelerator cards, along with four low-profile PCIe cards. The new storage module provides high-speed storage with up to 1 PB capacity in a single 2U chassis. These features and more allow the UNICOM Engineering Server System D50TNP-IR Family to deliver the highest performance and most comprehensive solution for HPC and AI needs. It sets a new standard in this segment and establishes a foundation for future platform growth.

## High-level features:

- High-performance compute: 3rd Generation Intel Xeon Scalable processors deliver outstanding per-core performance, with up to 40 cores per processor
- Accelerate AI workloads: Intel Deep Learning Boost greatly accelerates AI inferencing, enabling you to run workloads on versatile, general-purpose processors without compromise
- High memory bandwidth: Up to 3200 MT/s throughput, with up to 1 TB of DRAM capacity per processor.
- Breakthrough storage capacity and performance: Up to 1 PB of high-performance NVMe storage per 2U chassis with dual storage modules.
- High-speed networking and I/O: Accelerate network throughput between cluster nodes with high-throughput Intel® Omni-Path and InfiniBand support. PCIe 4.0 support delivers extraordinary data throughput for storage and networking

## Gain a Competitive Advantage

Many times, the best way to deliver a truly competitive solution is to leverage the products, skills, and resources of proven partners. Building on innovative Intel technology, UNICOM Engineering's design, integration, logistics and support expertise helps customers streamline software application deployment and shorten time to revenue. Our strong foundation of engineering expertise, process-driven manufacturing, technology partner relationships, and an unrelenting commitment to quality has made UNICOM Engineering one of the most trusted deployment partners in the industry.

# D50TNP-IR (Immersion Ready)

## technical specifications

<p><b>D50TNP-IR Base Chassis</b></p> <p><b>Chassis</b></p> <ul style="list-style-type: none"> <li>2U rack mount,</li> <li>Multi-Module Chassis – supports half-width modules: Compute, Storage</li> <li>Single-Module Chassis – supports full-width module: Accelerator</li> </ul> <p><b>Chassis Dimensions (HxWxD)</b></p> <ul style="list-style-type: none"> <li>3.41" (86.8mm) x 17.39" (441.8mm) x 34.05" (865mm)</li> </ul> <p><b>Supported Modules</b></p> <ul style="list-style-type: none"> <li>D50TNP-CMIR - Compute Module (1U, half-width)</li> <li>D50TNP-SMIR - Storage Module (2U, half-width)</li> <li>D50TNP-AMIR - Accelerator Module (2U, full-width)</li> </ul>	<p><b>Server Management</b></p> <ul style="list-style-type: none"> <li>Optional Emergency Management Port (EMP) to remotely manage the D50TNP-IR Modules</li> <li>Advanced System Management</li> </ul> <p><b>Chassis Power</b></p> <ul style="list-style-type: none"> <li>Three 1600-watt AC power supplies (80-Plus Titanium) with power redundancy support</li> <li>Hot-swap PSUs</li> </ul> <p><b>Regulatory Approval</b></p> <p>Planned Regulatory Certifications:</p> <ul style="list-style-type: none"> <li>National Recognized Testing Laboratory (NRTL), Conforming European (CE) Mark / Safety, Certification Body (CB)</li> <li>Federal Communications Commission (FCC) Parts 15 Class A, Voluntary Control Council for Interference (VCCI), Australia &amp; New Zealand Regulatory Compliance Mark (RCM)</li> <li>Restriction of the use of certain Hazardous Substances (RoHS) Compliant</li> </ul>	<p><b>Warranty</b></p> <ul style="list-style-type: none"> <li>Standard two-year limited warranty, return to factory</li> <li>Optional extended warranty and advance replacement services</li> </ul>
<p><b>Compute Module</b></p> <p><b>Processor Support</b></p> <ul style="list-style-type: none"> <li>Support two Intel Xeon Ice Lake-SP CPUs</li> <li>Dual SocketP-4 LGA4189</li> <li>Maximum supported Thermal Design Power (TDP) of up to 270W</li> </ul> <p><b>Chipset</b></p> <ul style="list-style-type: none"> <li>Intel C621A chipset</li> </ul> <p><b>Memory</b></p> <ul style="list-style-type: none"> <li>16 DIMMs slots, 8 DIMM slots per processor</li> <li>8 memory channels per processor, 2 DIMMs per channel per processor</li> <li>DDR4-3200 MT/s ECC Registered</li> <li>Intel Optane Persistence Memory Series 200</li> </ul> <p><b>Storage Support</b></p> <ul style="list-style-type: none"> <li>Two M.2 SATA/PCIe NVMe SSDs</li> </ul>	<p><b>RAID Support</b></p> <ul style="list-style-type: none"> <li>Intel VROC 7.5 (VMD NVMe RAID) support using optional Intel VROC key</li> </ul> <p><b>Networking</b></p> <ul style="list-style-type: none"> <li>One external 10GBASE-T Ethernet port (RJ45)</li> <li>One external 1000BASE-T Ethernet management port (RJ45)</li> </ul> <p><b>I/O Ports</b></p> <ul style="list-style-type: none"> <li>One USB 3.0 port</li> <li>One I/O breakout cable connector supporting the following: 2 USB 3.0 ports, one VGA connector, one serial port connector</li> </ul> <p><b>Riser Slots / Cards</b></p> <ul style="list-style-type: none"> <li>Two riser card slots</li> <li>Riser Slot 1 supports 1U single PCIe slot riser card assembly (one PCIe slot, one M.2 slot)</li> <li>Riser Slot 2 supports 1U single PCIe slot riser card assembly (one PCIe slot, one M.2 slot)</li> </ul>	<p><b>PCIe Cards and Add-in Options</b></p> <ul style="list-style-type: none"> <li>1GbE, 10GbE, 25GbE 50GbE, 100GbE NICs, Copper, Fiber</li> <li>M.2 SSD SATA/PCIe</li> <li>RAID Controller</li> <li>16Gb Fibre Channel</li> </ul> <p><b>Security Support</b></p> <ul style="list-style-type: none"> <li>Optional Trusted Platform Module (TPM) 2.0</li> </ul>
<p><b>Storage Module</b></p> <p><b>Processor Support</b></p> <ul style="list-style-type: none"> <li>Support two Intel Xeon Ice Lake-SP CPUs</li> <li>Dual SocketP-4 LGA4189</li> <li>Maximum supported Thermal Design Power (TDP) of up to 270W</li> </ul> <p><b>Chipset</b></p> <ul style="list-style-type: none"> <li>Intel C621A chipset</li> </ul>	<p><b>Memory</b></p> <ul style="list-style-type: none"> <li>16 DIMMs slots, 8 DIMM slots per processor</li> <li>8 memory channels per processor, 2 DIMMs per channel per processor</li> <li>DDR4-3200 MT/s ECC Registered</li> <li>Intel Optane Persistence Memory Series 200</li> </ul> <p><b>Storage Support</b></p> <ul style="list-style-type: none"> <li>Two M.2 SATA/PCIe NVMe SSDs</li> <li>Sixteen full-length PCIe NVMe EDSFF SSDs</li> </ul>	<p><b>RAID Support</b></p> <ul style="list-style-type: none"> <li>Intel VROC 7.5 (VMD NVMe RAID) support using optional Intel VROC key</li> </ul> <p><b>Networking</b></p> <ul style="list-style-type: none"> <li>One external 10GBASE-T Ethernet port (RJ45)</li> <li>One external 1000BASE-T Ethernet management port (RJ45)</li> </ul>

# D50TNP-IR (Immersion Ready)

## technical specifications (continued)

<p><b>Storage Module (continued)</b></p> <p><b>I/O Ports</b></p> <ul style="list-style-type: none"> <li>One USB 3.0 port</li> <li>One I/O breakout cable connector supporting the following: 2 USB 3.0 ports, one VGA connector, one serial port connector</li> </ul>	<p><b>Riser Slots / Cards</b></p> <ul style="list-style-type: none"> <li>Two riser card slots</li> <li>Riser Slot 1 supports 1U single PCIe slot riser card assembly (one PCIe slot, one M.2 slot)</li> <li>Riser Slot 2 supports 1U single PCIe slot riser card assembly (one PCIe slot, one M.2 slot)</li> </ul>	<p><b>PCIe Cards and Add-in Options</b></p> <ul style="list-style-type: none"> <li>1GbE, 10GbE, 25GbE 50GbE, 100GbE NICs, Copper, Fiber</li> <li>M.2 SSD SATA/PCIe</li> <li>RAID Controller</li> <li>16Gb Fibre Channel</li> </ul> <p><b>Security Support</b></p> <ul style="list-style-type: none"> <li>Optional Trusted Platform Module (TPM) 2.0</li> </ul>
<p><b>Accelerator Module</b></p> <p><b>Processor Support</b></p> <ul style="list-style-type: none"> <li>Support two Intel Xeon Ice Lake-SP CPUs</li> <li>Dual SocketP-4 LGA4189</li> <li>Maximum supported Thermal Design Power (TDP) of up to 270W</li> </ul> <p><b>Chipset</b></p> <ul style="list-style-type: none"> <li>Intel C621A chipset</li> </ul> <p><b>Memory</b></p> <ul style="list-style-type: none"> <li>16 DIMMs slots, 8 DIMM slots per processor</li> <li>8 memory channels per processor, 2 DIMMs per channel per processor</li> <li>DDR4-3200 MT/s ECC Registered</li> <li>Intel Optane Persistence Memory Series 200</li> </ul> <p><b>Storage Support</b></p> <ul style="list-style-type: none"> <li>Two M.2 SATA/PCIe NVMe SSDs</li> <li>Two hot-swap 2.5" U.2 PCIe NVMe SSDs</li> </ul>	<p><b>RAID Support</b></p> <ul style="list-style-type: none"> <li>Intel VROC 7.5 (VMD NVMe RAID) support using optional Intel VROC key</li> </ul> <p><b>Networking</b></p> <ul style="list-style-type: none"> <li>One external 10GBASE-T Ethernet port (RJ45)</li> <li>One external 1000BASE-T Ethernet management port (RJ45)</li> </ul> <p><b>I/O Ports</b></p> <ul style="list-style-type: none"> <li>One USB 3.0 port</li> <li>One I/O breakout cable connector supporting the following: 2 USB 3.0 ports, one VGA connector, one serial port connector</li> </ul> <p><b>Riser Slots / Cards</b></p> <ul style="list-style-type: none"> <li>Two riser card slots</li> <li>Riser Slot 1 supports 1U single PCIe slot riser card assembly (two PCIe slot, one M.2 slot, NVMe U.2 SSD slot)</li> <li>Riser Slot 2 supports 1U single PCIe slot riser card assembly (two PCIe slot, one M.2 slot, one NVMe U.2 SSD slot)</li> </ul>	<p><b>PCIe Cards and Add-in Options</b></p> <ul style="list-style-type: none"> <li>1GbE, 10GbE, 25GbE 50GbE, 100GbE NICs, Copper, Fiber</li> <li>M.2 SSD SATA/PCIe</li> <li>2.5" PCIe NVMe SSD</li> <li>16Gb Fibre Channel</li> <li>Accelerator PCIe Card</li> </ul> <p><b>Security Support</b></p> <ul style="list-style-type: none"> <li>Optional Trusted Platform Module (TPM) 2.0</li> </ul>

**Note:** These specifications should be viewed as preliminary and final specifications may vary.

### Support and Maintenance Services

UNICOM Engineering offers a variety of support and maintenance service programs to ensure high availability, rapid response, effective troubleshooting, fast parts replacement and 24-hour support.


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