DATASHEET

4U Professional Expansion System

Part Number: OSS-PCIe-4UP

FEATURES

- PCIe Gen 4 architecture
- Rugged frame design
- Dynamic fan speed control
- Configurable slot and host uplinks to optimize throughput
- Integrated IPMI based system monitoring
- AC and DC power inlet options

The 4U Pro provides optimized PCIe Gen 4 configurable expansion for edge HPC/AI applications at twice the performance of the previous generation PCIe Gen 3. The appliance supports up to 8 NVIDIA A100 PCIe GPUs which deliver 2.5x FP64 performance compared to the NVIDIA V100, with four PCIe Gen 4 x16 HBA/NIC slots for up to 256GB/s of sustained data throughput. Alternatively, the 4U Pro can be configured to provide 16 single-width PCIe Gen 4 x8 slots for FPGA data ingest or the latest storage add-in cards. Additional features including dynamic fan speed control, IPMI based system monitoring, solid and vented filler panel options (purchasable in quantities of 17 or 18), replaceable fan filters, and optional SmartNIC host configuration elevate the 4UP to the ideal expansion platform for the entire AI workflow.

The 4U Pro combines the power of the latest PCIe Gen 4 add-in cards with an optimized, feature-rich, and rugged design for the most demanding HPC edge applications

Application Examples

4U Pro as a GPU Compute Accelerator

- Dual OSS-538, 10-slot PCIe Gen4 x16, supporting 8 dual-width GPU
- 4x PCIe4 x16 Host-to-Target uplinks (128 GB/s)

4U Pro as a Flash Storage Array

- Dual OSS-521, 16-slot PCIe Gen4
- 16x OSS-PCIe4-SDPT-x8-M.2-2 for 32x hot-swappable PCIe Gen4 M.2/E1.S drives
- 2x PCIe4 x16 Host-to-Target uplinks (64 GB/s)

4U Pro as a FPGA Sensor Array

- Dual OSS-521, 16-slot PCIe Gen4, supporting 14 PCIe Gen4 x8 FPGA sensor add-in cards
- 4x PCIe x16 Host-to-Target uplinks (128 GB/s)

4U Pro as a Converged AI Compute, Storage Sensor, Network Scalable Platform

- Single OSS-521 and Single OSS-538
- 4x PCIe Gen4 dual-width compute accelerator GPUs
- 4x PCIe4-ADPT x8-M.2-2 for 8x hot-swappable PCIe Gen4 M.2/E1.S drives
- 3x single-width PCIe Gen4 x8 FPGA sensor add-in cards
- 2x Host-to-Target uplinks (64 GB/s)
- 2x 200Gbe Network Interface Cards (NICs)

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SPECIFICATIONS

System	
Enclosure	**Dimensions**: 17.2” x 7” x 18.5” (4U) Net weight 38 lbs
Host Options	1x PCIe x4 x16 Host-to-Target uplink (32GB/s) 2x PCIe x4 x16 Host-to-Target uplinks (64GB/s) 4x PCIex4 x16 Host-to-Target uplinks (128 GB/s) SmartNIC Host
Backplane Options	**Single OSS-538:** • 1x single-width PCIe 4.0 x 16 FHFL upstream slot • 4x dual-width PCIe 4.0 x16 FHFL downstream slots **Dual OSS-538:** • 2x single-width PCIe 4.0 x 16 FHFL upstream slots • 8x dual-width PCIe 4.0 x16 FHFL downstream slots **Single OSS-521:** • 1x single-width PCIe 4.0 x 16 FHFL upstream slot • 6x single-width PCIe 4.0 x16 FHFL downstream slots • 1x dual-width PCIe 4.0 x16 FHFL downstream slot **Dual OSS-521:** • 2x single-width PCIe 4.0 x 16 FHFL upstream slot • 12x single-width PCIe 4.0 x16 FHFL downstream slots (6x per upstream) • 2x dual-width PCIe 4.0 x16 FHFL downstream slot (1x per upstream)
Additional Slot Options	**Standard** • Modifies one dual-width PCIe 4.0 x16 FHFL downstream slot to two single-width PCIe 4.0 x16 FHFL downstream slots per backplane **Riser** • Adds and additional single-width PCIe 4.0 PCIe 4.0 FHFL downstream slot per backplane **Linked** • Links two backplanes together so all slots are downstream to a single upstream
Cooling	**Operational Temperature:** -10°C to 50°C* **Operational Humidity:** 10-90% relative humidity **Operational Altitude:** 0-10,000 feet above sea level **Storage Temperature:** -40°C to 85°C **Fans:** 3x 180CFM 120mm fans Default PWM controlled based on built-in temperature sensors Optional IPMI system monitoring and control
Power Options	Single/Dual AC 2600W Single/Dual AC 1600W Single/Dual DC 1600W
System Monitoring	**Default** - automatic dynamic temperature based fan speed control **Optional**—IPMI system monitoring with power, temperature, and fan speed control and monitoring
Fan Filters	Optional Quadrafoam 45 PPI Replaceable Fan Filters
PCIe 4.0 Cable Lengths	1m 2m 3m
Power Cords	6’ US 110V C19 6’ US 240V C19 6’ US 240V C14 6’ UK 2’ IEC 6’ IEC
Agency Compliance	**Agency Certifications:** TUV-GS (EN60950-1 /IEC60950-1,EK1-ITB2000) **Agency Certifications** (testing pending): FCC Class A, CE Safety & Emissions, UL, cUL, RoHS3

*These temperature ranges may require GPU/CPU throttling.