

PacStar 454

GPU-Accelerated Server Module



Key Features

- A wide variety of supported software options available including technologies from Aruba Networks, Cisco, NVIDIA, Red Hat, VMware, Microsoft, and more
- Intel Xeon D processing platform with up to 128 GB memory
- High-Performance NVIDIA RTX™ GPU with 5888 CUDA® cores
- (2) SFP+ 10 GigE ports
- TPM 2.0 security with IPMI management
- (3) removable high-speed NVMe® SSDs
- Compatible with existing PacStar 400-Series modules, chassis, and accessories
- Compact design for flexible packing and transport
- Small, but powerful: only 5.3 in x 7.4 in x 5.4 in and 6.4 lb
- Microsoft Azure Local-certified solution (for distributed edge cloud computing)

PacStar® 454 GPU-accelerated server provides a high-performance virtualization and compute platform for hosting intensive applications such as graphics, video processing, and artificial intelligence in a compact, quick setup, rugged form factor.

Optimized for demanding edge compute and AI deployments, PacStar 454 is ideal for applications that need high performance computation in remote or distributed locations. PacStar 454 meets size, weight, and power (SWaP) requirements unmatched by other COTS appliances. PacStar 454 is the optimal platform for tactical and distributed deployment of video and AI applications performing:

- Video: encoding, decoding, transcoding, analytics, object detection
- Natural language understanding and translation
- Cybersecurity: threat analytics, vulnerability detection, and defensive/adversarial ML
- Sensor fusion, health monitoring, EW signal processing, augmented reality
- Autonomous systems operations, navigation, predictive maintenance
- 360° degree situational awareness/understanding and decision support
- Virtual desktop infrastructure to GPU passthrough for desktop virtualization

PacStar 454 is based on the powerful and proven PacStar 451 platform that features Intel® Xeon® D processing, with 128 GB RAM, high-speed NVMe storage, and 10 GbE SFP+ ports, combining high-performance, general-purpose computing with a PCIe connected NVIDIA RTX GPU with 5888 CUDA cores.



Specifications

Performance Specifications

- 10-core Intel Xeon D (Ice Lake D-1700 Series)
- Up to 128 GB DDR4 RAM memory
- NVIDIA RTX A4500 GPU (256-bit 16 GB GDDR6, 512 GB/s memory bandwidth, 5888 CUDA Cores, 184 Tensor Cores, 46 RT Cores, 17.66 TFLOPS FP32 Peak Performance)
- Removable Flash Storage: three (3) removable E1.S NVMe SSDs (up to 8 TB each, total 24 TB); contact sales for higher capacities and FIPS 140/SED options

Physical Specifications

- Dimensions: (WxDxH): 5.4 in x 7.4 in x 5.4 in (fits in 3 slots of PacStar 400-Series chassis)
- Weight: approximately 6.4 lb
- Environmental: MIL-STD-810 (testing pending)
- EMI/EMC: MIL-STD-461 (testing pending)

Power Specifications

- Wide range DC input, 11-35 V
- World-wide AC power input (with adapter cable)
- Power draw: ~200 W typical, ~240 W peak

Connectors

- (2) 10 Gbps SFP+
- (2) 1 Gbps RJ45
- (1) RS-232 RJ45
- (2) USB 3.0 (Type-A)
- (1) USB 3.0 (Type C, locking connector)
- (1) DisplayPort (BMC video)
- (4) DisplayPort (GPU video)
- (1) IPMI management RJ45



Figure 1: PacStar 454 side view



Figure 2: PacStar 454 rear view

PacStar 454 is part of the PacStar 400-Series family of small form factor communications modules. It is designed for maximum compute and networking capabilities in the smallest rugged form factor on the market. PacStar 400-Series includes routing, switching, and advanced network services with built-in configuration flexibility and robust power options for austere environments. These solutions are driven by IQ-Core® Software to simplify setup and operation.



Figure 3: PacStar 454 is utilized in the industry-leading PacStar Modular Data Center (MDC)

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