

# RES AI XR6 3U

20" deep, 16 drive, rear I/O rugged High Performance Computing (HPC) rack mountable server

- Up to five NVIDIA® Tesla® or Quadro® GPGPUs
- Up to two Intel® Xeon® Scalable processors with 28 cores
- Up to 4TB DDR4 ECC memory
- Up to 240TB of storage and 11 PCIe cards
- MIL-STD: 810G, 901D, 167-1, 1474D, 740-2, 461F
- Manufactured in AS5553 compliant, AS9100D facilities



Engineered to handle massive workloads anywhere, Mercury's *EnterpriseSeries™* RES AI 3U server employs the latest NVIDIA® Tesla® GPUs and Intel® Xeon® Scalable processors to accelerate compute-heavy mission-critical applications such as Signal Intelligence (SIGINT), cryptography, deep learning, Artificial Intelligence (AI), surveillance, sensor fusion, visualization, image processing, tracking and big data analytics.

## Tackle Challenging Workloads at the Edge

Powered by the latest NVIDIA Volta, Pascal™ and Turing™ architecture GPUs, the RES AI 3U harnesses parallel processing to maximize throughput, boost productivity and push the boundaries of compute-heavy applications at the edge. To optimize performance in a small footprint, it densely packs multiple expansion slots, **two Intel® Xeon® Scalable processors**, 4TB DDR4 ECC memory and sixteen disk drives in a 381b, 20" deep rugged form-factor.

## Fully Configurable to Your HPC Application

Equipped with numerous PCIe 3.0 slots that accommodate a mix of GPUs, FPGA accelerators and other expansion cards, RES AI accelerates an array of High Performance Computing (HPC) workloads by tailoring to unique performance, speed and storage requirements.

## Supercomputing Designed for the Field

Built from the ground up to provide edge computing capability previously reserved for the datacenter, field-deployable RES AI servers incorporate innovative patented technologies and design features to withstand shock, vibration, dust, sand, and temperature extremes.

To ensure uptime, availability and sustained optimal performance in almost any environment, servers feature hot swappable AC and DC power supplies and are certified to multiple military (MIL-STD) and commercial (IEC) environmental specifications including **airborne and structural noise**. Compatible with multiple operating systems, applications and software, RES AI scales supercomputing from the Cloud to the Edge.

## Proven Performance from a Trusted Partner

Mercury's EnterpriseSeries RES Servers are trusted worldwide for their high-performance, **long life cycles**, thermal resiliency, compatibility with industry standards, and **SWaP optimization**. With over 30 years of technical expertise, Mercury Systems works closely with customers to design computing solutions that are easy to integrate, affordable and reliable for years to come.

Our AS5553 compliant, AS9100D and ISO9001 facilities maintain quality and compliance to meet customer expectations.

*Mercury Systems is a leading commercial provider of secure sensor and safety-critical processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.*





## Modified COTS Expertise

For customized space, environmental, and performance requirements email [tms@mrchy.com](mailto:tms@mrchy.com)

### Technical Specifications

- 2 Intel® Xeon® Scalable CPUs with up to 28 cores per processor  
Bronze, Silver, Gold, or Platinum
- Up to 5 double-wide NVIDIA Tesla or Quadro GPU accelerators
- Up to 4TB 2933MHz memory

### Patented Technologies

- Memory stabilization
- Aeroloc baffle system
- System control module for acoustic and remote management

### Management and Operating System

- Windows®, Linux®, VMWARE® and other hypervisors
- IPMI v2.0, Redfish option available
- TPM 1.2 or 2.0 support

### Expansion and Modular Maintainability

- Up to 6 PCIe 3.0 x16 or 11 PCIe 3.0 x8 cards
- 1 Internal M.2 PCIe drive

### Input/Output Versatility

#### Front Access

- Up to 16 removable, hot pluggable, 2.5" SATA/SAS3 drives, U.2 NVME option available  
can configure with up to (8) 15mm or (16) 7mm (SATA) high drives
- 1 Power/Reset Switch
- 1 Power on LED
- 1 Quick change CMOS battery
- 1 Blu-Ray or DVD/CD ROM drive (optional)
- 2 USB 3.0
- 1 RS-232

#### Rear Access

- 2 1GBaseT or 10GBaseT Ethernet Ports (RJ45)
- 1 IPMI 2.0 (RJ45)
- 1 CFM Switch (optional)
- 2 USB 3.0 (optional)
- 1 RS-232 (optional)

### Power Supply Options

- Single 100/240V VAC (47/63Hz, 400Hz)
- Single 10-36 VDC, 32 Amps
- Single 36-72 VDC, 18 Amps
- MIL-STD 461, 704F, 1399-300B

### Additional Options

- Front door filter
- Slide rails
- CAC card reader
- Read/Write switches to prevent accidental rewrite

### MIL-STD / Industrial Specifications

- MIL-STD 810G
- Shock: MIL-STD 901D Grade A, IEC 60068-2-27
- EMI/RFI: MIL-STD 461F, CE102 standard
- Vibration: MIL-STD 167-1, MIL-STD 810G, IEC 60068-2-64
- Airborne noise: MIL-STD 1474D
- Structure borne noise: MIL-STD 740-2
- Temperature: IEC 60068-2-2 test Bb, 60068-2-1 test Ab

### Environmental\*

#### Operating

- Temperature: 0°C to 50°C
- Extended Temperature: -15°C to 65°C
- Humidity: 5% to 95% (non-condensing)
- Shock: 3 axis, 35g, 25ms
- Vibration: 4.76Grms, 4Hz to 2000 Hz (SSD)
- Altitude: 10,000 ASL

#### Non-Operating

- Temperature: -40°C to 80°C
- Humidity: 5% to 95% (non-condensing)
- Altitude: 40,000 ASL
- Conformal Coating: IPC-CC 830 (optional)

### Mechanical

- Height: 3U or 5.25" inches (133.35mm)
- Width: 17 inches (431.8mm)
- Depth: 20 inches (208mm)
- Weight (Typical)\*:  
Steel Chassis: 38lbs (17.2kg)
- Cooling: Internal fan-cooled (rear vent) front to rear  
19" rackmountable

\* Mercury Systems designs all products to meet or exceed listed data sheet specifications. Some specifications including I/O profiles, weight, and thermal profiles are configuration dependent. Contact Mercury for information specific to your desired configuration requirements.

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6552.00E-0419-DS-RESAI3U16drRIOGRS3490

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