X13 PCIe GPU

High Performance and Flexibility for AI, 3D Simulation and the Metaverse

Maximum Flexibility with up to 10 PCIe GPUs in 4U/5U

- **Dual 4th Gen Intel® Xeon® Scalable processors (formerly codenamed Sapphire Rapids)**
- **Support for the latest industry standards including PCIe 5.0, DDR5 and Compute Express Link (CXL) 1.1**
- **Supports NVIDIA H100, A100, Intel Data Center GPU Max Series and Intel Data Center GPU Flex Series PCIe GPUs**
- **Optional 1U expansion for enhanced thermal capacity**
- **Flexible storage with U.2 NVMe and optional direct-to-CPU storage configurations**
- **Dual root and direct-connect PCIe configurations available**

Highly Flexible Platform

Supermicro PCIe GPU systems support next-generation accelerators based on the industry-standard PCIe form factor, with up to 10 double-width GPUs in a 4U or 5U chassis. Support for the latest industry-standard PCIe 5.0 provides unprecedented throughput for graphics accelerators, supporting the most demanding workloads, with CPU-direct U.2 NVMe bays ensuring maximum data throughput.

Bring 3D Worlds to Life

Optimized for the next generation of HPC, action-oriented AI, 3D simulation, and advanced graphic design and rendering, Supermicro X13 PCIe accelerated solutions empower the creation of 3D worlds, digital twins, 3D simulation models and the Metaverse. Reduce AI model training times, test designs before deploying in the real world and render advanced 3D designs with real-time ray tracing with powerful PCIe GPU solutions which can be customized to suit the precise workload at hand.

Maximum GPU Acceleration with up to 10 PCIe Cards

This system supports up to 10 double-width PCIe GPU cards including NVIDIA H100 and Intel® Data Center GPU Max Series for the highest possible GPU density in a 4U or 5U chassis. All PCIe
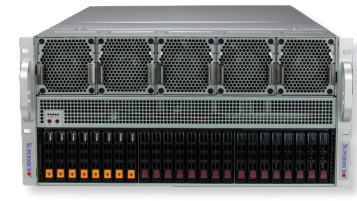
slots are PCIe 5.0 x16 and can also be used for PCIe DPUs or NIC cards, providing additional acceleration for networking and other functions.

4U or 5U Form Factor

In addition to the standard 4U rackmount form factor, an optional 5U chassis provides enhanced airflow for increased thermal capacity to support top-tier models of next-generation CPUs and GPUs and higher ambient temperatures for free-air cooling.

AI Accelerated with 4th Gen Intel Xeon Scalable Processors

The latest 4th Gen Intel Xeon Scalable processors include built-in accelerator engines optimized for AI and HPC workloads. The purpose-built Intel Advanced Matrix Extensions (Intel AMX) accelerator improves the performance of deep learning workloads to deliver robust AI capabilities for AI training and inference.

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PCIe GPU	SYS-421GE-TNRT	SYS-421GE-TNRT3	SYS-521GE-TNRT
Processor Support	Dual Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors†	Dual Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors†	Dual Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors†
Oustanding Features	Flexible networking options 8 NVMe for GPU direct storage 2 M.2 NVMe for boot drive only Dual root configuration	Flexible networking options 2 M.2 NVMe for boot drive only Direct connect configuration	Flexible networking options 8 NVMe for GPU direct storage 2 M.2 NVMe for boot drive only Dual root configuration
Memory Slots & Capacity	32 DIMM slots Up to 8TB: 32x 256 GB DRAM	32 DIMM slots Up to 8TB: 32x 256 GB DRAM	32 DIMM slots Up to 8TB: 32x 256 GB DRAM
GPU Compatibility	GPU-NVH100-80,GPU-NVA100-80-NC Intel Data Center GPU Max Series	GPU-NVH100-80,GPU-NVA100-80-NC Intel Data Center GPU Max Series	GPU-NVH100-80,GPU-NVA100-80-NC Intel Data Center GPU Max Series
I/O Ports	2x 10GbE BaseT with Intel® X710-AT2 1 VGA port(s)	2x 10GbE BaseT with Intel® X710-AT2 1 VGA port(s)	2x 10GbE BaseT with Intel® X710-AT2 1 VGA port(s)
Motherboard	X13DEG-OA	X13DEG-OA	X13DEG-OA
Form Factor	4U Rackmount Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: (27" x 26.57" x 41")	4U Rackmount Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: (27" x 26.57" x 41")	5U Rackmount Enclosure: 449 x 222.5 x 833mm (17.67" x 8.75" x 32.79") Package: 700 x 370 x 1260mm (27.55" x 14.57" x 49.6")
Expansion	13 PCIe 5.0 X16 Slots	8 PCIe 5.0 X16 Slots	13 PCIe 5.0 X16 Slots
Drive Bays	24x 2.5" hot-swap NVMe/SATA/SAS drive bays; 8x 2.5" NVMe hybrid; 8x 2.5" NVMe dedicated;	24x 2.5" hot-swap NVMe/SATA/SAS drive bays; 4x 2.5" NVMe hybrid; 4x 2.5" NVMe dedicated;	24x 2.5" hot-swap NVMe/SATA/SAS drive bays; 8x 2.5" NVMe hybrid; 8x 2.5" NVMe dedicated;
Shared Power & Cooling	Redundant 5400W Titanium level (96%) 8x heavy duty fan(s)	Redundant 5400W Titanium level (96%) 8 heavy duty fan(s)	Redundant 5400W Titanium level (96%) 8 heavy duty fan(s)

† Supports up to 350W TDP CPUs (Aircooled). CPUs with high TDP supported under specific conditions.
Contact Technical Support for details.

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