

# X14 PCIe GPU

Flexible configurations for AI training, Media, 3D Design, and Simulation



## Flexibility Meets Power

Optimized for the next generation of action-oriented AI, 3D simulation, and advanced graphic design & rendering, this Supermicro X14 PCIe accelerated solution empowers the creation of 3D worlds, digital twins, 3D simulation models and the Metaverse. With upgraded CPU, memory, and GPU support, this solutions serves as the ideal building block for a range of applications, capable of operating as a single server or part of a multi-rack cluster. GPUs are distributed among the CPUs in a dual-root configuration which is ideal for AI model training and Omniverse environments.

## Supports a Range of PCIe GPUs

Support for the industry standard PCIe 5.0 interconnect simplifies compatibility for a range of single and double-width accelerator cards from the industry's leading manufacturers, with significantly shorter lead times than dedicated SXM solutions. Capacity for up to 10 double-width accelerators gives organizations the freedom to choose the type and quantity of GPUs that meet their specific requirements. The symmetrical side-by-side slot configuration also facilitates compatibility with common GPU-to-GPU interconnects including NVIDIA's NVLink® bridge to further enhance GPU performance and intercommunication.

## Support for a wide range of GPUs based on industry standards

- Dual Intel® Xeon® 6900 series processors with P-cores
- Will also support Intel Xeon 6900 series with E-cores in 1Q'25
- Supports up to 10 double-width GPUs including NVIDIA H100/H200 NVL, L40S, and RTX 6000 Ada
- Up to 13 PCIe 5.0 slots
- Support for DDR5-6400 and 8800MT/s MRDIMMs
- Up to 24 NVMe drives
- Enhanced thermal design to support up to 10 GPUs with free-air cooling
- Direct-to-chip CPU and GPU liquid cooling options

## Create a Cluster

The Supermicro X14 PCIe GPU system is ready to scale, with high-speed networking via PCIe 5.0 x16 slots to create high performance clusters of up to 32 nodes. The 400Gb/s high-performance network fabric unifies the cluster's high-performance compute fabric and supports the capability of leveraging GPU resources across nodes for a combined pool of GPU memory, essential for AI training applications. Supermicro's validated rack solutions range in size from four GPU system nodes to a 256-GPU Scalable Unit, which can be further multiplied to fit enterprises of any size.

## Optional Direct-to-Chip Liquid Cooling

Although the 5U chassis has been thermally engineered to support dual top-bin CPUs and up to 10 GPUs with free-air cooling, optional direct-to-chip CPU and GPU liquid cooling is available to further enhance system performance and efficiency. Liquid cooling can be integrated at rack scale by Supermicro's engineers as a complete solution including cold plates, Cooling Distribution Modules, Cooling Distribution Manifolds, tubing, connectors, and even cooling towers.

## Powered by Intel Xeon 6 Processors

Supermicro X14 takes performance to the next level, with support for the new generation of Intel Xeon 6900 series processors with P-cores that deliver the highest performance per-core of any Intel Xeon processor ever. Designed for maximum performance and ideal for the most demanding AI, HPC, and cloud environments, Intel Xeon 6900 series processors with P-cores feature up to 128 cores per socket, include new FP16 instructions on the

built-in Intel AMX accelerator to further enhance AI workload performance, and bring new support for MRDIMMs up to 8800MT/s for up to 37% faster memory bandwidth than standard RDIMMs. P-cores are optimized for high performance per core and excel at the widest range of workloads, including better AI performance than any other general-purpose CPU. X14 PCIe GPU systems will also support Intel Xeon 6900 series processors with E-cores in 1Q'25.



| PCIe GPU                | SYS-522GE-NRT   |
|-------------------------|---|
| Processor Support       | Dual Intel® Xeon® 6900 series processors with P-cores<br>Up to 500W TDP (air cooled/liquid cooled) <sup>†</sup>   |
| GPU Support             | L4, L40S, H100, H200 NVL  |
| Memory Slots & Capacity | 24 DIMM slots<br>up to 6TB DDR5-6400MT/s<br>up to 6TB MRDIMM 8800 MT/s  |
| I/O Ports               | 2 RJ45 10GbE with Intel® X710-AT2<br>1 VGA port<br>2 USB 3.0 Type-A ports (Rear)  |
| Motherboard             | X14DBG-AP   |
| Form Factor             | 5U Rackmount<br>737mm/29" depth   |
| Expansion Slots         | 13 PCIe 5.0 x16 FHFL slots  |
| Drive Bays              | Default<br>16 front hot-swap 2.5" PCIe 5.0 NVMe drive bays<br>Option A<br>8 front hot-swap 2.5" NVMe drive bays<br>16 front hot-swap 2.5" NVMe drive bays |
| Cooling                 | 10 heavy duty fans with optimal fan speed control<br>Direct to Chip (D2C) Cold Plate (optional)   |
| Power                   | 4x 3200W Redundant Titanium Level (96%) power supplies  |

<sup>†</sup> CPUs with high TDP supported under specific conditions. Contact Technical Support for details.