H13 GPU-OPTIMIZED SYSTEMS
Maximum Acceleration for AI/Deep Learning and HPC

High performance AI/Deep Learning and HPC-optimized systems

Dual AMD EPYC™ 9004 Series Processors

Double the CPU to GPU throughput with PCIe 5.0

Supports up to 10 FHFL double-width GPU units including AMD Instinct™ MI200 series and NVIDIA H100 GPUs

AS -4125GS-TNRT1

AS -4125GS-TNRT

4U dual processors, direct attached GPU system, supporting 8 PCIe 5.0 GPUs, AMD Instinct, NVIDIA Enterprise level GPUs

AS -4125GS-TNRT1

4U dual processors, single-root GPU system with PLX, supporting 10 PCIe 5.0 GPUs, AMD Instinct, NVIDIA Enterprise level GPUs

AS -4125GS-TNRT2

4U dual processors, dual-root GPU system with PLX, supporting 10 PCIe 5.0 GPUs, AMD Instinct, NVIDIA Enterprise level GPUs

AS -8125GS-TNHR (8U Universal GPU)

8U dual processors system with NVIDIA HGX H100 8-GPU, supports PCIe 5.0 with 1: 1 networking at 400G to the 8 GPUs and up to 16 NVMe and 2 SATA SSD drives

MAXIMUM ACCELERATION A+ GPU SYSTEM

Optimized for AI, Deep Learning, HPC, providing maximum acceleration, flexibility, high-performance and balanced solutions. Supermicro GPU-optimized systems support PCIe 5.0 and HGX accelerators and deliver a multitude of performance gains compared to previous generations.

The H13 GPU-optimized servers deliver unprecedented acceleration at every scale to power the worlds highest performing data centers for AI, data analytics, and HPC applications.

Key Applications

- AI/ML
- Deep Learning
- High Performance Computing (HPC)
- Research Laboratory/National Laboratory
- Molecular Dynamics Simulation
- Astrophysics Simulation
- Chemistry Simulation

H13 GPU-OPTIMIZED

(For Complete System Only)

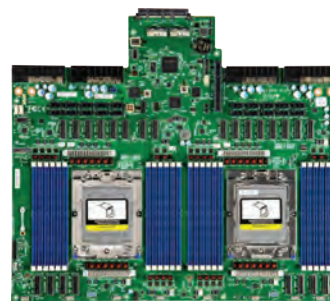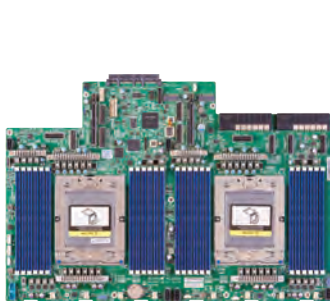| 4U 8-GPU with PCIe | 4U 10-GPU with PCIe | 4U 10-GPU with PCIe | 8U Universal GPU |

MODEL	AS -4125GS-TNRT	AS -4125GS-TNRT1	AS -4125GS-TNRT2	AS -8125GS-TNHR
Processor Support	AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)	AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)	AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)	AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)
Key Applications	• AI/Deep Learning • High Performance Computing (HPC) • Rendering/VDI • Molecular Dynamics Simulation	• AI/Deep Learning • High Performance Computing (HPC) • Rendering/VDI • Molecular Dynamics Simulation	• AI/Deep Learning • High Performance Computing (HPC) • Rendering/VDI • Molecular Dynamics Simulation	• AI/Deep Learning Training • High Performance Computing
Outstanding Features	• Drive configurations for 2x 2.5" hot-swap SATA and up to 4x 2.5" hot-swap NVMe bays • Up to 10 PCIe 5.0 slots for up to 8 direct-attached double-width, full length, enterprise-level GPUs • Flexible GPU support: active and passive GPUs • Dual onboard 10GbE ports with up to 1 AIOM/OCP 3.0 slot • 1 M.2 slot onboard • 8 hot-swap cooling fans	• Drive configurations for 2x 2.5" hot-swap SATA and up to 8x 2.5" hot-swap NVMe bays • Single root architecture with PCIe switch for up to 10 double width, full length enterprise-level GPUs • Flexible GPU support: active and passive GPUs • Dual onboard 10GbE ports with up to 1 AIOM/OCP 3.0 slot • 1 M.2 slot onboard • 8 hot-swap cooling fans	• Drive configurations for 2x 2.5" hot-swap SATA and up to 8x 2.5" hot-swap NVMe bays • Dual root architecture with PCIe switch for up to 10 double width, full length enterprise-level GPUs • Flexible GPU support: active and passive GPUs • Dual onboard 10GbE ports with up to 1 AIOM/OCP 3.0 slot • 1 M.2 slot onboard • 8 hot-swap cooling fans	• High density 8U system with NVIDIA® HGX™ H100 8-GPU • Highest performance GPU communication using NVIDIA® NVLINK™ + NVIDIA® NVSwitch™ • 8 NIC for GPU direct RDMA (1:1 GPU Ratio) • 8 NVMe for GPU direct storage • 1 M.2 NVMe for boot drive
Serverboard	SUPER⬤® H13DSG-O-CPU	SUPER⬤® H13DSG-O-CPU	SUPER⬤® H13DSG-O-CPU	SUPER⬤® H13DSG-O-CPU-D
Chipset	System on Chip	System on Chip	System on Chip	System on Chip
System Memory (Max.)	Up to 6TB 3DS ECC RDIMM DDR5-4800 MHz in 24 DIMMs	Up to 6TB 3DS ECC RDIMM DDR5-4800 MHz in 24 DIMMs	Up to 6TB 3DS ECC RDIMM DDR5-4800 MHz in 24 DIMMs	Up to 6TB 3DS ECC RDIMM DDR5-4800 MHz in 24 DIMMs
Expansion Slots	9 PCIe 5.0 X16 Slots	12 PCIe 5.0 X16 Slots	12 PCIe 5.0 X16 Slots	8 PCIe 5.0 x16 LP, 2 FHFL PCIe 5.0 x16 Slots
Onboard Storage Controller	AMD SP5	AMD SP5	AMD SP5	2x2.5" SATA via onboard ASM1061
Connectivity	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710	2x 10GbE RJ45 port(s)with Intel® Ethernet Controller X710	Optional FHFL x16 NIC for node management
VGA/Audio	1 VGA port	1 VGA port	1 VGA port	1 VGA port
Management	IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
Drive Bays	24x 2.5" hot-swap drive bays (up to 4x 2.5" NVMe dedicated)	24x 2.5" hot-swap drive bays (up to 8x 2.5" NVMe dedicated)	24x 2.5" hot-swap drive bays (up to 8x 2.5" NVMe dedicated)	14x 2.5" hot-swap NVMe/SATA drive bays 12x 2.5" NVMe 2x 2.5" SATA
Peripheral Bays	N/A	N/A	N/A	N/A
Power Supply	Redundant 2000W Titanium level (96%)	Redundant 2000W Titanium level (96%)	Redundant 2000W Titanium level (96%)	Redundant 9000W Titanium level (96%) with option to increase to 12KW redundant power
Cooling System	8 heavy duty fan(s)	8 heavy duty fan(s)	8 heavy duty fan(s)	10 heavy duty fan(s)
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")	4U Rackmount Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: (27" x 26.57" x 41")	8U Rackmount Enclosure: 437 x 355.6 x 843.28mm (17.2" x 14" x 33.2") Package: 698 x 750 x 1300mm (27.5" x 29.5" x 51.2")

SUPERMICRO®

H13 MOTHERBOARDS

MODEL	H13DSH	H13DSG-O-CPU
Processor	AMD EPYC™ 9004 Series Processors	AMD EPYC™ 9004 Series Processors
Chipset	System on Chip	System on Chip
Form Factor	Proprietary, 17" x 11.5" (43.18cm x 29.21cm)	Proprietary, 17" x 14.7" (43.18cm x 37.34cm)
Memory Capacity & Slots	Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs	Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs
Expansion Slots	1 PCIe 5.0 x16 AIOM / OCP 3.0 2 PCIe 5.0 x16 (in x16 slot) M.2 Interface: 2 PCIe 3.0 x4 Form Factor: 2280/22110 M.2 Key: M-Key	1 PCIe 5.0 x16 AIOM / OCP 3.0 M.2 Interface: 1 PCIe 3.0 x4 Form Factor: 2280/22110 M.2 Key: M-Key
Onboard Storage Controller	N/A	Asmedia ASM1061
Onboard LAN	N/A	N/A
Onboard VGA	1 Aspeed AST2600 BMC port(s)	N/A
USB Ports	2 USB 3.1 Gen1 ports via header	1 USB 2.0 port via header
Other Onboard I/O Devices	TPM 2.0 header 4 MCIO (PCIe 5.0 x8/SATA3) ports 6 MCIO (PCIe 5.0 x8) ports	TPM 2.0 header 20 MCIO (PCIe 5.0 x8) ports
Manageability	SuperDoctorR 5, SPM, SUM, SSM, Watchdog, IPMICFG, IPMIView for Linux/Windows, SMCIPMITool, IPMI 2.0, KVM with dedicated LAN	SuperDoctorR 5, SPM, SUM, SSM, Watchdog, IPMICFG, IPMIView for Linux/Windows, SMCIPMITool, IPMI 2.0, KVM with dedicated LAN
PC Health Monitoring	VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +5V, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby	VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +5V, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby
Thermal Control	8x 6-pin fan headers (up to 8 fans)	10x 4-pin fan headers (up to 10 fans)
Other Features	RoT	RoT
BIOS	AMI 32MB SPI Flash EEPROM	AMI 32MB SPI Flash EEPROM