

A+ Server 2124GQ-NART (Complete System Only)

2U Dual Processor (AMD) GPU System with NVIDIA HGX A100 4-GPU 40GB/80GB, NVLink



Integrated Board



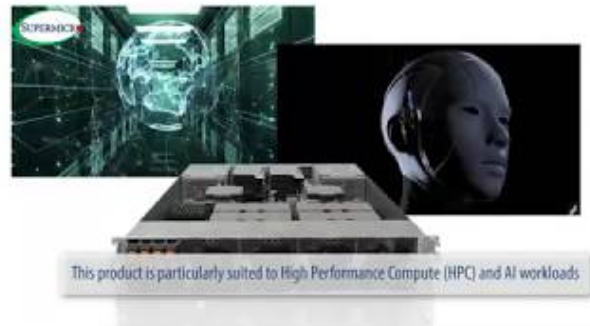
H12DSG-Q-CPU6

Views: | [Angled View](#) | [Top View](#) | [Front View](#) | [Rear View](#) |

Complete System Only: To maintain quality and integrity, this product is sold only as a completely-assembled system (with minimum 2 CPUs, Min of 1TB Memory for 80G HGX-4 A100 OR Min of 512GB Memory for 40G HGX-4 A100, 1 Storage device, and 1 NIC included in IO board).

Service: OSNBD3 is highly recommended.

▶ [Drivers & Utilities](#) ▶ [BIOS](#) ▶ [IPMI](#) ▶ [Tested Memory](#) ▶ [Tested M.2 List](#) ▶ [NVMe Options](#) ▶ [Manuals](#) ▶ [OS Certification Matrix](#) ▶ [Drive Options](#)



Key Applications

- AI/ML, Deep Learning Training and Inference
- High-performance Computing (HPC)
- Cloud Computing
- Research Laboratory/National Laboratory
- Autonomous Vehicle Technologies
- Molecular Dynamics Simulation

Key Features


1. High Density 2U System with NVIDIA® HGX™ A100 4-GPU; Highest GPU communication using NVIDIA® NVLINK™, 4 NICs for GPUDirect RDMA (1:1 GPU Ratio)
2. Supports HGX A100 4-GPU 40GB (HBM2) or 80GB (HBM2e)
3. Direct connect PCI-E Gen4 Platform with NVIDIA® NVLink™ v3.0 up to 600GB/s interconnect
4. On board BMC supports integrated IPMI 2.0 + KVM with dedicated 10G LAN
5. Dual AMD EPYC™ 7003/7002 Series Processors (7003 Series Processor drop-in support requires BIOS version 2.0 or newer)
6. 8TB Registered ECC DDR4 3200MHz SDRAM in 32 DIMMs
7. 4 PCI-E Gen 4 x16 (LP), 1 PCI-E Gen 4 x8 (LP)
8. 4 Hot-swap 2.5" drive bays (SAS/SATA/NVMe Hybrid)
9. 2x 2200W Platinum Level power supplies with Smart Power Redundancy



Note: Image above may show a varied configuration of optional parts. Please refer to parts list for standard parts included.

Specifications

Product SKUs	
AS -2124GQ-NART	<ul style="list-style-type: none"> A+ Server 2124GQ-NART (Black)
Motherboard	
Super H12DSG-Q-CPU6	
Processor/Cache	
CPU	<ul style="list-style-type: none"> Dual AMD EPYC™ 7003/7002 Series Processors (7003 Series Processor drop-in support requires BIOS version 2.0 or newer) Socket SP3 Supports CPU TDP up to 280W*
Cores	<ul style="list-style-type: none"> Up to 128 Cores (64 per CPU)
Note	* Certain CPUs with high TDP may be supported only under specific conditions. Please contact Supermicro Technical Support for additional information about specialized system optimization
GPU Support	<ul style="list-style-type: none"> Supports HGX A100 4-GPU 40GB (HBM2) or 80GB(HBM2e) with NVLink GPU interconnect and PCI-E Gen4 host CPUs
GPU	
Supported GPUs	<ul style="list-style-type: none"> SXM Multi-GPU Board 4-GPU NVIDIA A100 Compatible GPU list
CPU-GPU Interconnect	<ul style="list-style-type: none"> PCI-E Gen 4 x16 Direct Connect CPU-GPU Dual-Root
GPU-GPU Interconnect	<ul style="list-style-type: none"> NVIDIA® NVLink™ GPU-to-GPU Interconnect
System Memory	
Memory Capacity	<ul style="list-style-type: none"> 32 DIMM slots Up to 8TB 3DS ECC DDR4-3200MH SDRAM
Memory Type	<ul style="list-style-type: none"> 3200MHz ECC DDR4 SDRAM
On-Board Devices	
Chipset	<ul style="list-style-type: none"> System on Chip (SoC)
Network	<ul style="list-style-type: none"> Dual RJ45 10GbE-aggregate host LAN, RJ45 1GbE IPMI
IPMI	<ul style="list-style-type: none"> Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
Graphics & System Management	<ul style="list-style-type: none"> ASPEED AST2600 BMC
Input / Output	
SATA	<ul style="list-style-type: none"> 4 SATA3 (6Gbps) ports

Chassis	
Form Factor	<ul style="list-style-type: none"> 2U Rackmountable
Model	<ul style="list-style-type: none"> CSE-228GTS-R2K21P
Dimensions	
Height	<ul style="list-style-type: none"> 3.5" (89mm)
Width	<ul style="list-style-type: none"> 17.2" (437mm)
Depth	<ul style="list-style-type: none"> 32.4" (823mm)
Weight	<ul style="list-style-type: none"> Net Weight: 78.5 lbs (35.6 kg) Gross Weight: 88.5 lbs (40.1 kg)
Package Dimensions	<ul style="list-style-type: none"> 45.5" L x 22.5" W x 11" H
Available Colors	<ul style="list-style-type: none"> Black
Drive Bays / Storage	
Hot-swap	<ul style="list-style-type: none"> 4 Hot-swap 2.5" drive bays (SATA/NVMe Hybrid or SAS with optional HBA)
Expansion Slots	
PCI-Express	<ul style="list-style-type: none"> 4 PCI-E Gen4 x16 (LP) slots - supporting HGX A100 4-GPU's 1:1 connection to 4 NICs 1 PCI-E Gen 4 x8 (LP) slot
System Cooling	
Fans	<ul style="list-style-type: none"> 4 Hot-swap heavy duty fans
Power Supply	
2200W Redundant Power Supplies with PMBus	
Total Output Power	<ul style="list-style-type: none"> 1000W: 100 – 127Vac 2200W: 220 – 240Vac
Dimension (W x H x L)	<ul style="list-style-type: none"> 107 x 82 x 204 mm
Input	<ul style="list-style-type: none"> 100-127Vac / 12-9.5A / 50-60Hz 220-240Vac / 11-10A / 50-60Hz
Output Type	<ul style="list-style-type: none"> Gold Finger Connector
Certification	
Operating Environment	
RoHS	<ul style="list-style-type: none"> RoHS Compliant
Environmental Spec.	<ul style="list-style-type: none"> Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F) Non-operating Temperature: -40°C to 60°C (-40°F to 140°F) Operating Relative Humidity: 8% to 90% (non-condensing) Non-operating Relative Humidity: 5% to 95% (non-condensing)

LAN	<ul style="list-style-type: none">■ 2 RJ45 10GbE-aggregate host LAN ports■ 1 RJ45 1GbE Dedicated IPMI management port
USB	<ul style="list-style-type: none">■ 2 USB 3.0 ports (rear)
Video	<ul style="list-style-type: none">■ 1 VGA Connector (rear)
Others	<ul style="list-style-type: none">■ 1 COM port (header)■ 1 TPM 2.0 (header)

System BIOS

BIOS Type	<ul style="list-style-type: none">■ AMI 256Mb SPI Flash ROM
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Management

Software	<ul style="list-style-type: none">■ <u>IPMI 2.0</u>■ KVM with dedicated LAN■ <u>SSM, SPM, SUM</u>■ <u>SuperDoctor@ 5</u>■ Watchdog
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PC Health Monitoring

CPU	<ul style="list-style-type: none">■ Monitors for CPU Cores, Chipset Voltages, Memory.■ 4+1 Phase-switching voltage regulator
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FAN	<ul style="list-style-type: none">■ Fans with tachometer monitoring■ Status monitor for speed control■ Pulse Width Modulated (PWM) fan connectors
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Temperature	<ul style="list-style-type: none">■ Monitoring for CPU and chassis environment■ Thermal Control for fan connectors
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Parts List

Parts List - (Items Included)

	Part Number	Qty	Description
Motherboard / Chassis	MBD-H12DSG-Q-CPU6	1	Super H12DSG-Q-CPU6 Motherboard
	CSE-228GTS-R2K21P	1	2U 228G Chassis w/ Redundant 2200W PSU
Add-on Card / Module	AOM-228G-FAN	1	Fan board for SC228G
Add-on Card / Module	AOM-PCIE4-SXM4-Q	1	PCIe Transition board for nVidia Quad GPU module
Add-on Card / Module	AOM-PIO-I2XT-P	1	AOM-PIO-I2XT
Backplane	BPN-NVMe4-228N-S4	1	2U 4-Slot SFF BPN Supports 4xSAS3/SATA3/NVMe4 Storage Device
Drive Tray	MCP-220-00178-0B	4	NVMe Orange Drive Carrier, tool-less with lock feature
Cable 1	CBL-OTHR-0794	1	VGA cable to internal 2x8 header for IO card
Cable 2	CBL-PWEX-1028	4	GPU,2x4F/CPU to 2x4F/CPU,P4.2, 30CM,16AWG, 10A/pin, -40~105C
Cable 3	CBL-PWEX-1080	2	Mini-Fit 2x2 F, to Mini-Fit 2x2 F, 10A/pin,7cm,16AWG,RoH
Cable 4	CBL-PWEX-1092-23	1	2x2, P3.0 to 2x2, P3.0,23CM,10A/pin,16AWG
Cable 5	CBL-PWEX-1093-26	1	2x2, P3.0 to 2x2, P3.0,26CM,10A/pin,16AWG
Cable 6	CBL-PWEX-1094-43	4	2x4, P3.0 to 2x4, P3.0,43CM,9A/pin,16AWG
Cable 7	CBL-SAST-1224LP-85	3	SlimlineLP x8 (STR) to SlimlineLP x8 (STR),24CM,85 OHM
Cable 8	CBL-SAST-1228LP-85	1	SlimlineLP x8 (STR) to Slimline x8 (STR),28CM,85 OHM
Cable 9	CBL-SAST-1237LP-85	4	SlimlineLP x8 (STR) to SlimlineLP x8 (STR),37CM,85 OHM
Cable 10	CBL-SAST-1264LP-85	1	SlimlineLP x8 (STR) to Slimline x8 (STR),64CM,85 OHM
Cable 11	CBL-SAST-1266LP-85	10	SlimlineLP x8 (STR) to SlimlineLP x8 (STR),66CM,85 OHM
Cable 12	CBL-SAST-1272-100	1	Slimline x4 (STR) to Slimline x4 (STR),72CM,100 OHM
Riser Card	SC-G-66G4	3	1U LHS GPU Riser card with two PCI-E 4.0 x16 slots,RoHS
Heatsink / Retention	SNK-4006PV	2	2U Passive CPU Heat Sink for AMD Socket SP3 Processors
GPU Heatsink	SNK-P4006PV	4	2U Passive GPU Heat Sink for GPU Baseboard
Fan Module	FAN-0197L4-1	4	80x80x80 mm, 12K-11.3K RPM Counter-rotating Fan for CSE-228G
Rail Set	MCP-290-00144-1N	1	2U fixed rail set, quick release, default for 2,3U 17.6"W, 26.5-33.5
Power Supply	PWS-2K21G-2R	2	AC-DC 2200W at high and 1200W at low line multi-output
Software	<u>SFT-OOB-LIC</u> • eStore	1	OOB Management Package (per node license)

Optional Parts List

	Part Number	Qty	Description
GPU Baseboard *	GPU-NVTHGX-A100-SXM4-4	-	NVIDIA Redstone GPU Baseboard, 4 A100 40GB SXM4
	GPU-NVTHGX-A100-SXM4-48	-	NVIDIA Redstone GPU Baseboard, 4 A100 80GB SXM4
* Note: Required as Complete System			
Drive Tray	MCP-220-00187-0B	-	SATA or SAS Maroon Drive Carrier, tool-less with lock feature
Network Card(s)	MCX653106A-HDAT	-	Mellanox ConnectX-6 VPI 200Gb/s InfiniBand & Ethernet Adapter Card dual ports, QSFP56 PCIe 3.0/4.0 x16. HF, RoHS
	AOC-S25G-m2S	-	Standard low-profile 2-port 25GbE SFP28, based on Mellanox ConnectX-4 LX EN chipset.,RoHS
	AOC-STG-i4S	-	Intel XL710-BM1 4-port SFP+ (10Gb/port) Gen3 x8, Standard Low Profile
	AOC-MCX556A-ECAT	-	MCX556A-ECAT, CX-5 VPI,EDR IB,100GbE,2p,QSFP28,PCIe3x16
TPM security module	<u>AOM-TPM-9655V</u>	-	TPM 1.2 module with Infineon 9655, RoHS/REACH,PBF;

	<u>AOM-TPM-9655V-S</u>	-	TPM 1.2 module with Infineon 9655, RoHS/REACH,PBF; Provisioned for TXT
	<u>AOM-TPM-9665V</u>	-	TPM 2.0 module with Infineon 9665, RoHS/REACH,PBF;
	<u>AOM-TPM-9665V-S</u>	-	TPM 2.0 module with Infineon 9665, RoHS/REACH,PBF; Provisioned for TXT
Global Services & Support	<u>OS4HR3/2/1</u>	-	3/2/1-year onsite 24x7x4 service
	<u>OSNBD3/2/1</u>	-	3/2/1-year onsite NBD service