

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

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



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, 4 DIMMs, 4 GPUs installed). Add on Cards (AOC) are recommended to be installed by Supermicro due to optimized density of the 2U form factor.
Service: OSNBD3 is highly recommended.

▶ [Drivers & Utilities](#) ▶ [BIOS](#) ▶ [IPMI](#) ▶ [Tested Memory](#)

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



Coming Soon

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 (The latest AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 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



Specifications

Product SKUs

AS -2124GQ-NART-LCC	<ul style="list-style-type: none"> A+ Server 2124GQ-NART-LCC (Black)
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Motherboard

Super H12DSG-Q-CPU6

Processor/Cache

CPU	<ul style="list-style-type: none"> Dual AMD EPYC™ 7003/7002 Series Processors (The latest AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer) Socket SP3 Supports CPU TDP up to 280W*
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Cores	<ul style="list-style-type: none"> Up to 128 Cores (64 per CPU)
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Note	<ul style="list-style-type: none"> * Certain CPUs with high TDP may be supported only under specific conditions. Please contact Supermicro Technical Support for additional information about specialized system optimization
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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
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GPU

Supported GPUs	<ul style="list-style-type: none"> HGX A100 4-GPU 40GB/80GB SXM4 Multi-GPU Board
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CPU-GPU Interconnect	<ul style="list-style-type: none"> PCI-E Gen 4 x16 Direct Connect CPU-GPU Dual-Root
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GPU-GPU Interconnect	<ul style="list-style-type: none"> NVIDIA® NVLink™ GPU-to-GPU Interconnect
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System Memory

Memory Capacity	<ul style="list-style-type: none"> 32 DIMM slots Up to 8TB 3DS ECC DDR4-3200MH SDRAM
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Memory Type	<ul style="list-style-type: none"> 3200MHz ECC DDR4 SDRAM
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On-Board Devices

Chipset	<ul style="list-style-type: none"> System on Chip (SoC)
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Network	<ul style="list-style-type: none"> Dual RJ45 10GbE-aggregate host LAN, RJ45 1GbE IPMI
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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
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Graphics & System Management	<ul style="list-style-type: none"> ASPEED AST2600 BMC
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Input / Output

SATA	<ul style="list-style-type: none"> 4 SATA3 (6Gbps) ports
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LAN	<ul style="list-style-type: none"> 2 RJ45 10GbE-aggregate host LAN ports 1 RJ45 1GbE Dedicated IPMI management port
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USB	<ul style="list-style-type: none"> 2 USB 3.0 ports (rear)
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Chassis

Form Factor	<ul style="list-style-type: none"> 2U Rackmountable
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Model	<ul style="list-style-type: none"> CSE-228GTS-R2K21P
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Dimensions

Height	<ul style="list-style-type: none"> 3.5" (89mm)
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Width	<ul style="list-style-type: none"> 17.2" (437mm)
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Depth	<ul style="list-style-type: none"> 32.4" (823mm)
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Available Colors	<ul style="list-style-type: none"> Black
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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)
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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
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System Cooling

Liquid Cooling	<ul style="list-style-type: none"> Power-efficient liquid cooling for CPUs and GPUs
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Fans	<ul style="list-style-type: none"> 4 Hot-swap heavy duty fans
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Power Supply

2200W Redundant Power Supplies with PMBus

Total Output Power	<ul style="list-style-type: none"> 1000W: 100 – 127Vac 2200W: 220 – 240Vac
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Dimension (W x H x L)	<ul style="list-style-type: none"> 107 x 82 x 204 mm
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Input	<ul style="list-style-type: none"> 100-127Vac / 12-9.5A / 50-60Hz 220-240Vac / 11-10A / 50-60Hz
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Output Type	<ul style="list-style-type: none"> Gold Finger Connector
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Certification	 Platinum Level
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Operating Environment

RoHS	<ul style="list-style-type: none"> RoHS Compliant
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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)
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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
FAN	<ul style="list-style-type: none">■ Fans with tachometer monitoring■ Status monitor for speed control■ Pulse Width Modulated (PWM) fan connectors
Temperature	<ul style="list-style-type: none">■ Monitoring for CPU and chassis environment■ Thermal Control for fan connectors

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 Trays	MCP-220-00178-0B	4	Black Gen3 hot-swap 2.5" HDD tray with lock, orange tab
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
Liquid Cooling (CPU)	SNK-P3019A	1	Liquid Cooling Module of 2x AMD EPYC Rome/Milan CPU for RedStone GPU System
Liquid Cooling (GPU)	SNK-P3020A	2	Liquid Cooling Module for 2x NVIDIA SXM4 RedStone GPU
Liquid Cooling Thermal Kit	MCP-320-22801-0N	1	Liquid Cooling Thermal Kit for CSE-228g
Fan Module	FAN-0197L4-1	4	80x80x80 mm, 12K-11.3K RPM Counter-rotating Fan for CSE-228G
Power Supply	PWS-2K21G-2R	2	AC-DC 2200W at high and 1200W at low line multi-output
Software	SFT-OOB-LIC * 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			
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
TPM security module	AOM-TPM-9655V	-	TPM 1.2 module with Infineon 9655, RoHS/REACH,PBF;
Global Services & Support	OS4HR3/2/1	-	3/2/1-year onsite 24x7x4 service
	OSNBD3/2/1	-	3/2/1-year onsite NBD service

