

A+ Server 4124GO-NART (Complete System Only)

4U Dual Processor (AMD) GPU System with NVIDIA HGX A100 8-GPU 40GB/80GB, NVLink, NVSwitch.



Integrated Board

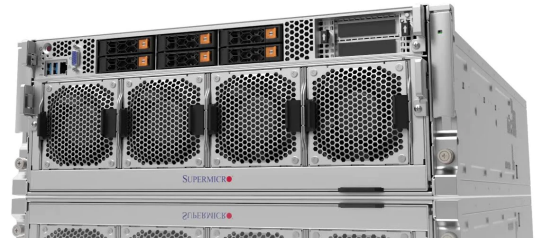


H12DGO-6

Views: | [Top View \(GPU\)](#) | [Top View \(CPU\)](#) | [Angled 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, minimum of 1.2TB Memory (2TB highly recommended) for 80G HGX-8 A100 OR minimum of 1TB Memory for 40G HGX-8 A100, 1 Storage device, and 1 NIC).
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

- High Performance Computing
- AI / Deep Learning

Key Features

1. Supports NVIDIA® HGX™ A100 8-GPU; Highest GPU communication using NVIDIA® NVLINK™ v3.0 + NVIDIA® NVSwitch™; NICs for GPUDirect RDMA (1:1 GPU Ratio)
2. Supports HGX A100 8-GPU 40GB (HBM2) or 80GB (HBM2e)
3. Dual AMD EPYC™ 7003/7002 Series Processors (7003 Series Processor drop-in support requires BIOS version 2.0 or newer)
4. 8TB Registered ECC DDR4 3200MHz SDRAM in 32 DIMMs
5. 8 PCI-E 4.0 x16 via PCI-E switch; 1 PCI-E 4.0 x 16 LP and 1 PCI-E 4.0 x8 LP via CPUs; AIOM Support
6. 6 Hot-swap U.2 NVMe 2.5" drive bays (4 via PCI-E switch, 2 via CPU)
7. Flexible Networking via AIOM, 1 dedicated IPMI LAN Port
8. 4 Hot-swap heavy-duty cooling fans
9. 2200W (3+1) Redundant Platinum Level Power Supplies (full redundancy based on configuration and application load); 3000W (2+2) Redundant Titanium Level (96%+) Power Supply option available for upgrade



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

Specifications

Product SKUs		Chassis	
AS -4124GO-NART	<ul style="list-style-type: none"> A+ Server 4124GO-NART 	Form Factor	<ul style="list-style-type: none"> 4U Rackmountable Rackmount Kit (MCP-290-00180-0N)
Motherboard		Model	<ul style="list-style-type: none"> CSE-438G
Super H12DGO-6		Dimensions	
Processor/Cache		Height	<ul style="list-style-type: none"> 6.9" (174mm)
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* 	Width	<ul style="list-style-type: none"> 17.6" (446mm)
Cores	<ul style="list-style-type: none"> Up to 128 Cores (64 per CPU) 	Depth	<ul style="list-style-type: none"> 35.4" (900mm)
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	Package	<ul style="list-style-type: none"> 29.5" (750mm) H x 27.4" (695mm) W x 44.9" (1140mm) D
GPU		Weight	<ul style="list-style-type: none"> Net Weight: 166.0 lbs (75.3 kg) Gross Weight: 225.0 lbs (102.1 kg)
Supported GPUs	<ul style="list-style-type: none"> SXM Multi-GPU Board 8-GPU HGX A100 8-GPU 40GB (HBM2) or 80GB (HBM2e) 	Drive Bays / Storage	
CPU-GPU Interconnect	<ul style="list-style-type: none"> PCI-E Gen 4 x16 Switch CPU-to-GPU Interconnect 	Hot-swap	<ul style="list-style-type: none"> 6 hot-swap U.2 NVMe 2.5" drive bays (4 via PCI-E switch, 2 via CPU, SATA/NVMe Hybrid or SAS with optional HBA) (up to 10 hot-swap U.2 NVMe 2.5" available)
GPU-GPU Interconnect	<ul style="list-style-type: none"> NVIDIA® NVLink™ with NVSwitch™ GPU-GPU Interconnect 	Expansion Slots	
System Memory		PCI-Express	<ul style="list-style-type: none"> 8 PCI-E 4.0 x16 via PCI-E switch - supporting HGX A100 8-GPU's 1:1 connection to 8 NICs 1 PCI-E 4.0 x16 LP and 1 PCI-E 4.0 x8 LP via CPUs
Memory Capacity	<ul style="list-style-type: none"> 32 DIMM slots Up to 8TB 3DS ECC DDR4-3200MH RDIMM/LRDIMM 	System Cooling	
Memory Type	<ul style="list-style-type: none"> 3200MHz ECC DDR4 RDIMM/LRDIMM 	Fans	<ul style="list-style-type: none"> 4 x Hot-swap 11.5K RPM heavy duty fans
On-Board Devices		Power Supply	
Chipset	<ul style="list-style-type: none"> System on Chip (SoC) 	2200W Redundant Platinum Level Power Supplies	
SATA	<ul style="list-style-type: none"> SATA3 (6Gbps) 	Total Output Power	<ul style="list-style-type: none"> 1000W with Input 100 - 127Vac 2200W with Input 220 - 240Vac (for UL/cUL only) 2090W with Input 230 - 240Vdc (for CQC only)
Network Controllers	<ul style="list-style-type: none"> Provided via AIOM 	Dimension (W x H x L)	<ul style="list-style-type: none"> 106.5 x 82.4 x 203.5 mm
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 	Input	
Graphics	<ul style="list-style-type: none"> ASPEED AST2600 BMC 	<ul style="list-style-type: none"> 1000W: 100-127 Vac / 12-9.5 A / 50-60 Hz 1800W: 200-220 Vac / 10-9.5 A / 50-60 Hz 1980W: 220-230 Vac / 10-9.5 A / 50-60 Hz 2090W: 230-240 Vac / 10-9.8 A / 50-60 Hz 2200W: 220-240 Vac / 11.8-9.6 A / 50-60 Hz (for UL/cUL only) 2090W: 230-240 Vdc / 10-9.8 A / 50-60 Hz (for CQC only) 	
Input / Output		+12V	
SATA	<ul style="list-style-type: none"> 4 SATA3 (6Gbps) ports 	<ul style="list-style-type: none"> Max: 41.67A / Min: 0A (500W) 	
LAN	<ul style="list-style-type: none"> Provided by AIOM 1 RJ45 Dedicated IPMI LAN port 		
USB	<ul style="list-style-type: none"> 2 USB 3.0 ports (front) 		
Video	<ul style="list-style-type: none"> 1 VGA Connector (front) 		
COM Port	<ul style="list-style-type: none"> 1 COM port (header) 		

System BIOS

- BIOS Type**
- AMI 256Mb SPI Flash ROM

Management

- Software**
- [IPMI 2.0](#)
 - KVM with dedicated LAN
 - [SSM](#), [SPM](#), [SUM](#)
 - [SuperDoctor® 5](#)
 - Watchdog

PC Health Monitoring

- CPU**
- Monitors for CPU Cores, Chipset Voltages, Memory.
 - 4+1 Phase-switching voltage regulator

- FAN**
- Fans with tachometer monitoring
 - Status monitor for speed control
 - Pulse Width Modulated (PWM) fan connectors

- Temperature**
- Monitoring for CPU and chassis environment
 - Thermal Control for fan connectors

- +54V**
- Max: 18.5A / Min: 0A (1000W)
 - Max: 33.33A / Min: 0A (1800W)
 - Max: 36.6A / Min: 0A (1980W)
 - Max: 38.7A / Min: 0A (2090W)
 - Max: 40.74A / Min: 0A (2200W)

- 12Vsb**
- Max: 3A / Min: 0A

- Output Type**
- Gold Finger (connector on M/P)

- Certification**
-   **Platinum Certified**
[[Test Report](#)]

Operating Environment

- RoHS**
- RoHS Compliant

- Environmental Spec.**
- 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)

Parts List

Parts List - (Items Included)

	Part Number	Qty	Description
Motherboard / Chassis	MBD-H12DGO-6-P	1	Super H12DGO-6 Motherboard
	CSE-438G	1	CSE-438G Chassis
Add-on Card / Module	AOM-438G-AIOM-P	1	AIOM adapter card for CSE-438G,RoHS
Add-on Card / Module	AOM-438G-FAN-P	1	Fan adaptor for SC1018G,RoHS
Add-on Card / Module	AOM-DGO-IO-P	1	I/O riser card for 4U 8 SXM4 GPU system AS -4124GO-NART,RoHS
Add-on Card / Module	AOM-SXM4-IO-P	1	PCIe Gen4 switch board for 4U 8 SXM4 GPU system,RoHS
Air Shroud	MCP-310-43802-0B	1	Motherboard CPU Air Shroud for CSE-438g/AMD/H12DGO-6 Plastic
Backplane	BPN-GPU-438G	1	Midplane for 4U AMD/Intel Delta GPU system,RoHS
Backplane	BPN-NVME4-F418-B6S6	1	1U 6-Slot SFF Backplane Supports 6xSAS3/SATA3/NVMe4 Storage Devices,HF,RoHS
Cable 1	CBL-GNZ2-12105F-85	1	GENZ 2C x16 (STR) to 2x Slimline x4 (STR),FFC,FOLD,105.
Cable 2	CBL-GNZ2-1282FLP-85	1	2x SlimlineLP x8 (STR), 4x Slimline x4 to 3x SlimlineLP
Cable 3	CBL-PWCD-0900	4	PWCD,US/EU/Canada/China/Australia,IEC60320 C14 TO C13,4FT,17
Cable 4	CBL-PWEX-1114-30	1	Microfit,2x4, PH3.0 to Microfit,2x4, PH3.0,30CM,9A/pin,
Cable 5	CBL-PWEX-1117-40	2	MiniFit,2x2,PH4.2,F to MiniFit,2x2,PH4.2,F,40CM,8A/pin,
Cable 6	CBL-SAST-1265A-100	1	Slimline x4 (STR) to MiniSAS HD x4 (STR),65CM,100 OHM,R
FAN 1	FAN-0196L4-1	4	92x92x76 mm, 13.3K-12.2K RPM Counter-rotating Fan, w/ SMC Fa
Label	LBL-0108	1	CAUTION LABEL FOR REDUNDANT PWR SYSTEMS
Label	LBL-0938	1	Yellow Attention Observe Precautions for Handling Electrostatic Sensitive Devices 500 labels per roll,HF,RoHS/REACH,PBF
Power Supply	PWS-2K21G-2R	4	AC-DC 2200W at high and 1200W at low line multi-output
Riser Card	RSC-G-66G4	1	1U LHS GPU Riser card with two PCI-E 4.0 x16 slots,RoHS
Heatsink / Retention	SNK-P1043V	2	1U standard AMD vapor chamber Heat Sink (Standard H12 DELTA 1U heatsink)
Heatsink / Retention	SNK-P0062P	2	1U Passive CPU Heat Sink for AMD Socket SP3 Processors (Optional H12 Delta heatsink ***support up to 200W CPU ONLY***)
Software	<u>SFT-OOB-LIC</u> • <i>eStore</i>	1	OOB Management Package (per node license)

Optional Parts List

	Part Number	Qty	Description
GPU Baseboard(s) *	GPU-NVTHGX-A100-SXM4-8	-	NVIDIA DELTA (HGX-2 Next) GPU Baseboard, 8 A100 40GB SXM4
	GPU-NVTHGX-A100-SXM4-88	-	NVIDIA DELTA (HGX-2 Next) GPU Baseboard, 8 A100 80GB SXM4
* Note: Required as Complete System			
Backplane	BPN-NVME4-HS119N-S4R	-	1U 4-Slot SFF Backplane Supports 4 x SAS3/SATA3/NVMe4 Storage Devices,HF,RoHS
Cable(s)	CBL-PWEX-1231	-	MicroFit,2x2, PH3.0,F to MicroFit,2x2,PH3.0,F,36CM,10A
	CBL-SAST-1224LP-85	-	SlimlineLP x8 (STR) to SlimlineLP x8 (RE),24CM,85 OHM
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-ATG-I2TM-O	-	AIOM 2-port 10GBase-T, Intel X550,RoHS
	AOC-A100G-B2CM-O	-	AIOM Dual Port 100GbE QSFP28, based on Broadcom BCM57508 with 0.5U Bracket,RoHS

	AOC-AG-I2M-O	-	AIOM Dual-Port 1GbE RJ45, based on i350-AM2 with 0.5U Bracket, RoHS
	AOC-ATG-I2T2SM-O	-	AIOM Quad-Port 10GbE (2x RJ45 & 2x SFP+) based on Intel X710-TM4 with 0.5U Bracket, RoHS
	AOC-MCX555A-ECAT	-	CX-5 VPI EDR IB adapter & 100GbE, 1p, QSFP28, PCIe3x16
Thin Profile Drive	MCP-220-00178-0B	-	2.5" thin profile drive tray, Orange tab (for hotswap NVMe drive), for SC119UH
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
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
Software	<u>SFT-DCMS-Single</u>	1	DataCenter Management Package (per node license)