

GPU SuperServer SYS-120GQ-TNRT (Complete System Only)

1U Dual Processor (3rd Gen Intel® Xeon®) System with 4 PCIe GPUs



New

Key Applications

- Scientific Virtualization
- High Performance Computing
- Rendering
- AI/Deep Learning Training

Key Features

1. Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors
2. Intel® C621A Chipset
3. 16 DIMM Slots;
Up to 4TB DRAM;
Up to 4TB Intel® Optane™ Persistent Memory (up to 6TB with DRAM) ;
3200/2933/2666 ECC DDR4 LRDIMM;RDIMM;
Intel® Optane™ Persistent Memory 200 series
4. 6 PCI-E Gen 4.0 x16 (4 FHFL & 2 LP)
5. 1 M.2 NVMe for boot drive only
2x 2.5" NVMe Hot-swap drive bays
2x 2.5" SATA Internal Fixed drive bays
6. 9 counter rotating fans w/ Optimal Fan Speed Control
7. 2x 2000W redundant Titanium level power supplies

Complete System Only: To maintain quality and integrity, this system is sold only as a completely-assembled system (with minimum 2 CPUs, 4 DIMMs, 2 GPUs, and 1 Storage device)

- ▶ [Drivers & Utilities](#) ▶ [Tested Memory](#) ▶ [NVMe Options](#) ▶ [Manuals](#)
▶ [OS Certification Matrix](#) ▶ [Compatible GPU List](#) ▶ [Drive Options](#)

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

Specifications

Product SKUs

- SYS-120GQ-TNRT** ■ SuperServer SYS-120GQ-TNRT (Black Front & Silver Body)

Motherboard

- Super X12DGQ-R

Processor

- CPU** ■ Dual Socket P+ (LGA-4189)
■ 3rd Gen Intel® Xeon® Scalable processors
■ Support CPU TDP 270W
- Cores** ■ Up to 40C/80T; Up to 60MB Cache

GPU

- Supported GPU** ■ NVIDIA A100,A40
■ [Compatible GPU List](#)
- CPU-GPU Interconnect** ■ PCI-E 4.0 x16 CPU-to-GPU Interconnect
- GPU-GPU Interconnect** ■ PCI-E

System Memory

- Memory** ■ Memory Capacity: 16 DIMM slots
■ Up to 4TB: 16x 256 GB DRAM and 8x 512 GB PMem
■ Memory Type: 3200/2933/2666MHz ECC DDR4 RDIMM/LRDIMM
■ Intel® Optane™ persistent memory 200 series
- Memory Voltage** ■ 1.2 V
- Error Detection** ■ ECC

On-Board Devices

- SATA** ■ SATA3 (6Gbps); RAID 0/1/5/10 support
- Chipset** ■ Intel® C621A
- Network Connectivity** ■ 2x 10GbE BaseT port(s)
- IPMI** ■ Support for Intelligent Platform Management Interface v.2.0
■ IPMI 2.0 with virtual media over LAN and KVM-over-LAN support

Input / Output

- Video** ■ 1 VGA port(s)

System BIOS

- BIOS Type** ■ AMI 32MB SPI Flash EEPROM

Management

Chassis

- Form Factor** ■ 2U Rackmount
- Model** ■ CSE-118GQE2TS-R2K05P

Dimensions and Weight

- Height** ■ 1.7" (43mm)
- Width** ■ 17.2" (437mm)
- Depth** ■ 35.2" (894mm)
- Package** ■ 8" (H) x 24" (W) x 46" (D)
- Weight** ■ Net Weight: 45 lbs (20.4 kg)
■ Gross Weight: 58 lbs (26.31 kg)
- Available Color** ■ Black Front & Silver Body

Front Panel

- Buttons** ■ 2 USB 3.0
■ Power On/Off button
■ System Reset button
- LEDs** ■ Fan fail LED
■ Hard drive activity LED
■ Network activity LEDs
■ Power status LED
■ UID LED

Expansion Slots

- PCI-Express (PCI-E)** ■ Slot 1: PCI-E 4.0 x16 FHFL
■ Slot 2: PCI-E 4.0 x16 FHFL
■ Slot 3: PCI-E 4.0 x16 FHFL
■ Slot 4: PCI-E 4.0 x16 FHFL
■ Slot 5: PCI-E 4.0 x16 LP
■ Slot 6: PCI-E 4.0 x16 LP

Drive Bays / Storage

- Hot-swap** ■ 4x 2.5" hot-swap NVMe/SATA/SAS drive bays (2x 2.5" NVMe dedicated)
- M.2** ■ 1 M.2 NVMe OR 1 M.2 SATA3

System Cooling

- Fans** ■ 9 heavy duty fans with optimal fan speed control

Power Supply

2x 2000W Redundant Power Supplies, Titanium Level

- Dimension (W x H x L)** ■ 73.5 x 40 x 203 mm
- AC Input** ■ 2200W: 200-240Vdc / 11.8A-9.8A / 50-60Hz
- +12V** ■ Max: 150A / Min: 0A
■ Max: 165A / Min: 0A
■ Max: 166.7A / Min: 0A
■ Max: 83.3A / Min: 0A
- Output Type** ■ Backplanes (gold finger)

- Software**
- OOB Management Package (SFT-OOB-LIC)
 - Redfish API
 - IPMI 2.0
 - SSM
 - Intel® Node Manager
 - SPM
 - KVM with dedicated LAN
 - SUM
 - NMI
 - Watch Dog
 - SuperDoctor® 5

- Power Configurations**
- ACPI Power Management
 - Power-on mode for AC power recovery

PC Health Monitoring

- CPU**
- 7 +1 Phase-switching voltage regulator
 - Monitors for CPU Cores, Chipset Voltages, Memory

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

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

Certification



Titanium Level

[Test Report]

Operating Environment

- 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-X12DGQ-R	1	Super X12DGQ-R Motherboard
	CSE-118GQE2TS-R2K05P	1	2U Chassis
Add-on Card / Module	AOM-PIO-I2XT-P	1	AOM-PIO-I2XT
Backplane	BPN-NVMe4-118GQE	1	1U 2-Port PCIe Gen 4 U.2 NVMe Backplane for 1U GPU System
Cable 1	CBL-0484L	2	55CM 30AWG SATA S-S CBL
Cable 2	CBL-PWCD-0900	2	PWCD,US/EU/Canada/China/Australia,IEC60320 C14 TO C13,4FT,17
Cable 3	CBL-PWEX-1026	3	GPU,2x4F/RA/CPU to 2x4F/CPU,P4.2, 35CM, 17AWG, 8A/pin,RoHS
Cable 4	CBL-PWEX-1027	1	GPU,2x4F/RA/CPU to 2x4F/CPU,P4.2, 14CM, 17AWG, 8A/pin,RoHS
Cable 5	CBL-SAST-1245LP-85	1	[NR] SlimSASLP (x8 STR to x8 STR),43CM,85 OHM,RoHS
Riser Card	RSC-G-66G4+	1	1U LHS GPU Riser card with two PCI-E 4.0 x16slots,HFRoHS
Riser Card	RSC-G-6G4	1	1U LHS GPU Riser card with one PCI-E 4.0 x16slot,HF,RoHS
Riser Card	RSC-GR-6G4	3	1U RHS GPU Riser card with one PCI-E 4.0 x16slot,HF,RoHS
Software	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
Heatsink / Retention	SNK-P0077V	2	X12 ICX/CPX CPU Heatsink (78x113x25.5mm), VC Base, Cu Fin
*Power Supply	PWS-2K05A-1R	2	1U 2000W Redundant Titanium Power Supply W/PMbus 73.5x40x265mm,RoHS/REACH

Notes:

1. Parts with * are inside the chassis
2. Excessive parts might not be shipped, including but not limited to excessive drive trays, fans, riser brackets, air shrouds, IO shields, cables.....etc.

Optional Parts List			
	Part Number	Qty	Description
Component	<u>AOC-S3108L-H8iR-16DD</u> & 1x CBL-SAST-0699 • <i>eStore</i>	-	Std LP, 8 internal ports, 12Gb/s per port- Gen3, 16HDD, RAID 0, 1, 5, 6, 10, 50, 60; MINI SAS HD,12G,INT,30AWG
	AOC-S3108L-H8iR & 1x CBL-SAST-0699 • <i>eStore</i>	-	Std LP, 8 internal ports, 12Gb/s per port- Gen3, 16HDD, RAID 0, 1, 5, 6, 10, 50, 60; MINI SAS HD,12G,INT,30AWG
GPU Power Cables	3x CBL-PWEX-1059 and 1x CBL-PWEX-1060 • <i>eStore</i>	-	GPU,2x4F/RA/CPU to two (2x3F+2x1F)/PCIe, P4.2, 17/20AWG, 8A/pin(17AWG), 6A/pin(20AWG)
Intel VROC RAID Key	<u>AOC-VROCPREMOD</u>	1	Intel VROC Premium, RAID 0, 1, 5, 10
	<u>AOC-VROCSTNMOD</u>	1	Intel VROC Standard, RAID 0, 1, 10
	<u>AOC-VROCINTMOD</u>	1	Intel VROC, RAID 0, 1, 5, 10 (Intel SSD Only)
Software	<u>SFT-DCMS-Single</u>	1	DataCenter Management Package (per node license)
Storage Control Card and Cable(s)	AOC-S3008L-L8i & 1x CBL-SAST-0699 • <i>eStore</i>	-	Std LP, 8 internal ports, 12Gb/s per port- Gen3, 240HDD, RAID 0, 1, 5, 6, 10, 50, 60; MINI SAS HD,12G,INT,30AWG
Super Cap for LSI 3108	1x BTR-TFM8G-LSICVM02 & 1x BKT-BBU-BRACKET-05	-	Supercap mounting bracket for PCI-E location
TPM Security Module	<u>AOM-TPM-9670V</u>	1	SPI capable vertical TPM 2.0 provisioned for client,RoHS