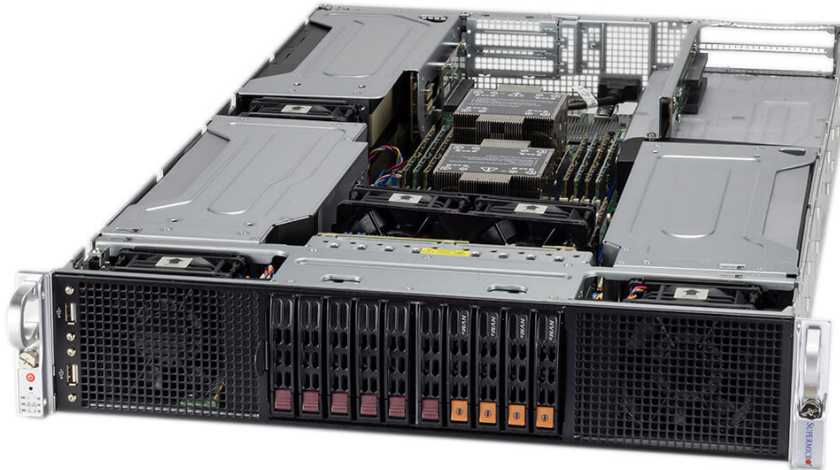


# GPU SuperServer SYS-220GP-TNR (Complete System Only )

NEW

## 2U Dual Processor (3rd Gen Intel® Xeon®) System with 6 PCIe GPUs



## Key Applications

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

## Key Features

1. Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors

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2. Intel® C621A Chipset

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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

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4. 6 PCI-E Gen 4.0 x16 FH, 10.5" L  
Up to 2 PCI-E Gen 4.0 x8 FH

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5. Flexible networking options

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6. 10x 2.5" Hot-swap drive bays, up to 6x 2.5" NVMe  
2 M.2 NVMe for boot drive only with expansion card AOC-SLG3-2M2  
Number of NVMe slots configurable with optional cable

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7. 5 counter rotating fans w/ Optimal Fan Speed Control

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8. 2x 2600W redundant Titanium level power supplies

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# Specifications

## Product SKUs

<b>SYS-220GP-TNR</b>	<ul style="list-style-type: none"> <li>SuperServer SYS-220GP-TNR (Black Front &amp; Silver Body)</li> </ul>
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## Motherboard

### Super X12DPG-AR

## Processor

<b>CPU</b>	<ul style="list-style-type: none"> <li>Dual Socket P+ (LGA-4189)</li> <li>3rd Gen Intel® Xeon® Scalable processors</li> <li>Support CPU TDP 270W</li> </ul>
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<b>Cores</b>	<ul style="list-style-type: none"> <li>Up to 40C/80T; Up to 60MB Cache</li> </ul>
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## GPU

<b>Supported GPU</b>	<ul style="list-style-type: none"> <li>NVIDIA A100,A40, and RTX A6000</li> </ul>
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<b>CPU-GPU Interconnect</b>	<ul style="list-style-type: none"> <li>PCI-E 4.0 x16 CPU-to-GPU Interconnect</li> </ul>
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<b>GPU-GPU Interconnect</b>	<ul style="list-style-type: none"> <li>PCI-E</li> </ul>
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## System Memory

<b>Memory</b>	<ul style="list-style-type: none"> <li>Memory Capacity: 16 DIMM slots</li> <li>Up to 4TB: 16x 256 GB DRAM</li> <li>Up to 6TB: 8x 512 GB PMem</li> <li>Memory Type: 3200/2933/2666MHz ECC DDR4 RDIMM/LRDIMM</li> <li>Intel® Optane™ persistent memory 200 series</li> </ul>
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<b>Memory Voltage</b>	<ul style="list-style-type: none"> <li>1.2 V</li> </ul>
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<b>Error Detection</b>	<ul style="list-style-type: none"> <li>ECC</li> </ul>
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## On-Board Devices

<b>SATA</b>	<ul style="list-style-type: none"> <li>SATA3 (6Gbps); RAID 0/1/5/10 support</li> </ul>
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<b>Chipset</b>	<ul style="list-style-type: none"> <li>Intel® C621A</li> </ul>
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<b>Network Connectivity</b>	<ul style="list-style-type: none"> <li>Via AIOM</li> </ul>
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<b>IPMI</b>	<ul style="list-style-type: none"> <li>Support for Intelligent Platform Management Interface v.2.0</li> <li>IPMI 2.0 with virtual media over LAN and KVM-over-LAN support</li> </ul>
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## Input / Output

<b>Video</b>	<ul style="list-style-type: none"> <li>1 VGA port(s)</li> </ul>
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## System BIOS

<b>BIOS Type</b>	<ul style="list-style-type: none"> <li>AMI 32MB SPI Flash EEPROM</li> </ul>
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## Chassis

<b>Form Factor</b>	<ul style="list-style-type: none"> <li>2U Rackmount</li> </ul>
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<b>Model</b>	<ul style="list-style-type: none"> <li>CSE-218GH2TS-R2K63BP</li> </ul>
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## Dimensions and Weight

<b>Height</b>	<ul style="list-style-type: none"> <li>3.46" (88mm)</li> </ul>
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<b>Width</b>	<ul style="list-style-type: none"> <li>17.35" (440.7mm)</li> </ul>
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<b>Depth</b>	<ul style="list-style-type: none"> <li>30.18" (766.8mm)</li> </ul>
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<b>Package</b>	<ul style="list-style-type: none"> <li>11" (H) x 26.5" (W) x 44.5" (D)</li> </ul>
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<b>Weight</b>	<ul style="list-style-type: none"> <li>Net Weight: 39.5 lbs (17.9 kg)</li> <li>Gross Weight: 54 lbs (24.5 kg)</li> </ul>
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<b>Available Color</b>	<ul style="list-style-type: none"> <li>Black Front &amp; Silver Body</li> </ul>
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## Front Panel

<b>Buttons</b>	<ul style="list-style-type: none"> <li>Power On/Off button</li> </ul>
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<b>LEDs</b>	<ul style="list-style-type: none"> <li>Hard drive activity LED</li> <li>Information LED</li> <li>Network activity LEDs</li> <li>Power status LED</li> <li>UID LED</li> </ul>
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## Expansion Slots

<b>PCI-Express (PCI-E)</b>	<ul style="list-style-type: none"> <li>Slot 1: PCI-E 4.0 x16 FH 10.5" L</li> <li>Slot 2: PCI-E 4.0 x16 FH 10.5" L</li> <li>Slot 3: PCI-E 4.0 x16 FH 10.5" L</li> <li>Slot 4: PCI-E 4.0 x16 FH 10.5" L</li> <li>Slot 5: PCI-E 4.0 x16 FH 10.5" L</li> <li>Slot 6: PCI-E 4.0 x16 FH 10.5" L</li> <li>Slot 7: PCI-E 4.0 x8 FHFL</li> <li>Slot 8: PCI-E 4.0 x8 FHFL</li> <li>Slot 9: PCI-E 3.0 x4x4 LP (for M.2 carrier AOC only)</li> </ul>
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## Drive Bays / Storage

<b>Hot-swap</b>	<ul style="list-style-type: none"> <li>10x 2.5" hot-swap NVMe/SATA/SAS drive bays (2x 2.5" NVMe dedicated)</li> </ul>
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## System Cooling

<b>Fans</b>	<ul style="list-style-type: none"> <li>5 heavy duty fans with optimal fan speed control</li> </ul>
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## Power Supply

2600W Redundant Power Supplies with PMBus

<b>Dimension (W x H x L)</b>	<ul style="list-style-type: none"> <li>73.5 x 40 x 265 mm</li> </ul>
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<b>AC Input</b>	<ul style="list-style-type: none"> <li>2600W: 200-240Vac / 15A Max</li> </ul>
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<b>DC Input</b>	<ul style="list-style-type: none"> <li>2600W: 200-240Vdc For CQC Only/ 15A Max / 50-60Hz</li> </ul>
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<b>+12V</b>	<ul style="list-style-type: none"> <li>Max: 216A / Min: 0A (11.4Vdc-12.6Vdc) (12V output)</li> </ul>
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**Management**

- 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

**Output Type** ■ 25 Pairs Gold Finger Connector

**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
<b>Motherboard / Chassis</b>	MBD-X12DPG-AR	1	Super X12DPG-AR Motherboard
	CSE-218GH2TS-R2K63BP	1	2U Chassis
<b>Backplane</b>	BPN-SAS3-218GH2A-N6	1	2U 10-Slot SFF Backplane Support 8 x SAS3/SATA3 and 6 x NVMe4 Storage Devices,HF,RoHS
<b>Cable 1</b>	CBL-PWEX-1028	6	GPU,2x4F/CPU to 2x4F/CPU,P4.2, 30CM,16AWG, 10A/pin, -40~105C
<b>Cable 2</b>	CBL-PWEX-1114-30	3	Microfit,PH3.0,(2x4F to 2x4F),30CM,9A/pin,16AWG,RoHS
<b>Cable 3</b>	CBL-SAST-1216LP-85	2	SlimlineLP x8 (STR) to SlimlineLP x8 (RE),16CM,85 OHM,R
<b>Cable 4</b>	CBL-SAST-1224LP-85	2	SlimlineLP x8 (STR) to SlimlineLP x8 (RE),24CM,85 OHM
<b>Cable 5</b>	CBL-SAST-1229LP-85	1	SlimlineLP X8 (STR) to SlimlineLP x8 (STR),INT,28CM,85
<b>Cable 6</b>	CBL-SAST-1272-100	2	Slimline x4 (STR) to Slimline x4 (STR),72CM,100 OHM,RoH
<b>Riser Card</b>	RSC-G-88G4	1	1U LHS GPU Riser card with two PCI-E 4.0 x8 slots,HF,RoHS
<b>Riser Card</b>	RSC-G2B-66G4	1	2U Rear LHS GPU riser cards with two PCI-E 4.0 x16 slots
<b>Riser Card</b>	RSC-G2F-66G4	1	2U Front LHS GPU riser card with two PCI-E 4.0 x16 slots
<b>Riser Card</b>	RSC-G2FR-66G4	1	2U Front RHS GPU Riser card with two PCI-E 4.0 x16 slots
<b>Riser Card</b>	RSC-G2R-8G4	1	2U RHS GPU Riser card with one PCI-E 4.0 x8 slot,HF,RoHS
<b>Software</b>	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
<b>Heatsink / Retention</b>	SNK-P0078P	1	2U Passive CPU Heat Sink for X12 Generation Intel Whitley and Cedar Island Platforms
<b>Heatsink / Retention</b>	SNK-P0078PC	1	2U Passive CPU Heat Sink w/ a Side Air Channel for X12 Generation Intel Whitley and Cedar Island Platforms
<b>*Power Supply</b>	PWS-2K63A-1R	2	1U 2600Wredundant single outputpowersupply with wide range in
<b>*Power Distributor</b>	PDB-PT118-DGH	1	Power Distributor Board Support Redundancy1K65 forSC118

#### 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
<b>2.5" NVMe Drive Trays</b>	MCP-220-00121-0B • <a href="#">eStore</a>	2	Black Gen-3 2.5" NVMe drive tray. Orange tab with lock.
<b>2.5" SATA Drive Trays</b>	MCP-220-00047-0B • <a href="#">eStore</a>	2	Black gen 3rd hot-swap 2.5inch HDD tray
<b>GPU Brackets</b>	MCP-120-21807-0N	1	NVidia Tesla T4 GPU Bracket Set
	MCP-240-21829-0N	1	NVidia A10 GPU Bracket Set
<b>Intel VROC RAID Key</b>	<a href="#">AOC-VROCPREMOD</a>	1	Intel VROC Premium, RAID 0, 1, 5, 10
<b>Network Cards</b>	AOC-653105A-HDAT	1	Mellanox ConnectX-6 VPI 200Gb/s InfiniBand & Ethernet Adapter Card single port, QSFP56, PCIe 3.0/4.0 x16, RoHS.
	AOC-STG-i4T	1	Std LP 4-port 10G RJ45, Intel XL710+ X557
	AOC-MCX556A-ECAT	1	MCX556A-ECAT, CX-5 VPI,EDR IB,100GbE,2p,QSFP28,PCIe3x16
	AOC-MCX516A-CCAT	1	Mellanox MCX516A-CCAT PCIe 2-port 100GbE QSFP28 Gen3.0 x16 CX-5. HF, RoHS

	AOC-S25G-i2S	1	Standard Low Profile 25G dual port SFP28, based on Intel XXV710+ Marvell Unionville,RoHS
	AOC-STGS-I2T	1	Intel X550-AT2 2 RJ45 (10Gb/port) Gen3 x4 Standard Low Profile
	AOC-653106A-ECAT	1	ConnectX-6 VPI Card. 100Gb/s InfiniBand & Ethernet Adapter Card, dual ports, QSFP56, PCIe 3.0/4.0 x16. HF, RoHS.
<b>Network Cards (AIOM)</b>	AOC-ATG-I4SM	1	AIOM Quad-Port 10GbE SFP+, based on Intel XL710-BM1,RoHS
	<u>AOC-ATG-i2TM</u>	1	AIOM 2-port 10GBase-T, Intel X550,RoHS
	<u>AOC-ATG-i2T2SM</u>	1	AIOM Quad-Port 10GbE (2x RJ45 & 2x SFP+) based on Intel X710-TM4,RoHS
	AOC-A100G-M2C-O	1	AIOM 2-Port 100GbE QSFP28, Mellanox CX-6 DX, w/ 1U bracket,RoHS
	AOC-ATG-i2SM	1	AIOM Dual-Port 10GbE SFP+, based on X710-BM2,RoHS
	AOC-ATGC-i2TM	1	AIOM 2-port 10GBase-T RJ45, based on Intel Carlsville X710-AT2, w/ 1U BKT,RoHS
<b>NVMe/AOC Cables</b>	CBL-SAST-1262LP-85	1	SlimlineLP x8 (STR) to SlimlineLP x8 (STR),60CM,85 OHM. For 2x NVMe and 6x NVMe configurations.
<b>Rear Fan Kit</b>	MCP-320-21809-0N	1	External rear fan mounted over slots 5 and 6 to increase operating ambient temperature with 6x A100, A40, A6000, etc.
<b>Storage Controller Cards and Cables</b>	<u>AOC-S3908L-H8iR-16DD</u>	1	8 int 12Gb/s ports, x8 Gen4, ROC - LP, 16 HDD w/ exp,RoHS
	<u>AOC-SLG3-2M2</u>	1	LP, PCIe3 x8, Dual port NVMe M.2 carrier
	CBL-SAST-1285-100 (for S3108L)	2	Slimline x4 (STR) to MiniSAS HD (STR) x4,85CM,100 OHM,R
	CBL-SAST-1264F-100 (for S3808L and S3908L)	1	Slimline x8 (STR) to 2x Slimline x4 (STR),FFC,64/64CM,10
	<u>AOC-S3108L-H8iR-16DD</u>	1	8 int 12Gb/s ports, 8xGen3, ROC - LP,16 HDD w/ exp
	<u>AOC-S3808L-L8iR</u>	1	8 int 12Gb/s SAS3 ports, x8 Gen4, HBA - LP, 122 HDD w/ exp,RoHS
<b>TPM Security Module</b>	<u>AOM-TPM-9670V</u>	1	SPI capable vertical TPM 2.0 provisioned for client,RoHS