

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

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



## New

### 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
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. 2 PCI-E Gen 4.0 x8 LP  
6 PCI-E Gen 4.0 x16 FHFL
5. Flexible networking options
6. 10x 2.5" Hot-swap drive bays  
2 M.2 NVMe for boot drive only  
Up to 6x 2.5" NVMe
7. 5 counter rotating fans w/ Optimal Fan Speed Control
8. 2x 2600W 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 , 1 Storage device, and 1 NIC)

▶ [Tested Memory](#) ▶ [NVMe Options](#) ▶ [Manuals](#) ▶ [OS Certification Matrix](#) ▶ [Compatible GPU List](#) ▶ [Drive Options](#) ▶ [Tested AIOM](#)

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

# Specifications

## Product SKUs

- SYS-220GP-TNR** ■ SuperServer SYS-220GP-TNR (Black Front & Silver Body)

## Motherboard

- Super X12DPG-AR**

## 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, and RTX A6000  
■ [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** ■ Via AIOM
- 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-218GH2TS-R2K63BP**

## Dimensions and Weight

- Height** ■ 3.46" (88mm)
- Width** ■ 17.35" (440.7mm)
- Depth** ■ 30.18" (766.8mm)
- Package** ■ 11" (H) x 26.5" (W) x 44.5" (D)
- Weight** ■ Net Weight: 39.5 lbs (17.9 kg)  
■ Gross Weight: 54 lbs (24.5 kg)
- Available Color** ■ Black Front & Silver Body

## 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 FHFL  
■ Slot 6: PCI-E 4.0 x16 FHFL  
■ Slot 7: PCI-E 4.0 x8 FH  
■ Slot 8: PCI-E 4.0 x8 FH

## Drive Bays / Storage

- Hot-swap** ■ 10x 2.5" hot-swap NVMe/SATA/SAS drive bays (4x 2.5" NVMe dedicated)

## System Cooling

- Fans** ■ 5 heavy duty fans with optimal fan speed control

## Power Supply

2x 2600W Titanium Redundant Power Supply

- Dimension (W x H x L)** ■ 73.5 x 40 x 265 mm
- AC Input** ■ 2600W: 200-240Vac / 15A Max / 50-60Hz
- DC Input** ■ 2600W: 240-240Vdc For CQC only / 15A Max
- +12V** ■ Max: 216A / Min: 0A (11.4Vdc-12.6Vdc) (12V output)
- Output Type** ■ Backplanes (gold finger)

## Certification



**Titanium Level**

[\[ Test Report \]](#)

## Operating Environment

- 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
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- Power Configurations**
- ACPI Power Management
  - Power-on mode for AC power recovery
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### PC Health Monitoring

- CPU**
- 7 +1 Phase-switching voltage regulator
  - Monitors for CPU Cores, Chipset Voltages, Memory
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- FAN**
- Fans with tachometer monitoring
  - Pulse Width Modulated (PWM) fan connectors
  - Status monitor for speed control
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- Temperature**
- Monitoring for CPU and chassis environment
  - Thermal Control for fan connectors
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**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)
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## 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,2x4, PH3.0 to Microfit,2x4, PH3.0,30CM,9A/pin,
<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 outpupowersupply 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>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>Network Cards</b>	MCX516A-CCAT	1	Mellanox MCX516A-CCAT PCIe 2-port 100GbE QSFP28 Gen3.0 x16 CX-5. HF, RoHS
<b>Network Cards (AIOM)</b>	AOC-ATG-I4SM	1	AIOM Quad-Port 10GbE SFP+, based on Intel XL710-BM1,RoHS
	AOC-STG-I2T	1	Intel X540 2-port RJ45 10GbE Gen3 x8 Standard Low profile
<b>Rear Fan Kit</b>	MCP-320-21809-0N	1	For supporting certain GPU configurations. Please consult compatible GPU list.
<b>Storage Controller Cards and Cables</b>	CBL-SAST-1264F-100 (for S3908L)	1	Slimline x8 (STR) to 2x Slimline x4 (STR),FFC,64/64CM,10
	<u>AOC-S3908L-H8IR-16DD</u>	1	8 int 12Gb/s ports, x8 Gen4, ROC - LP, 16 HDD w/ exp,RoHS
	CBL-SAST-1285-100 (for S3108L)	2	Slimline x4 (STR) to MiniSAS HD (STR) x4,85CM,100 OHM,R
	<u>AOC-S3108L-H8iR-16DD</u>	1	8 int 12Gb/s ports, 8xGen3, ROC - LP,16 HDD w/ exp

