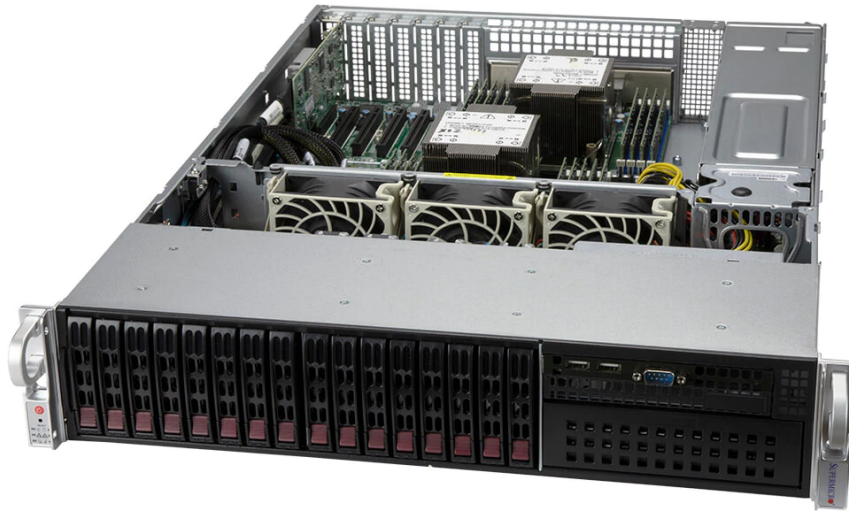


# Mainstream SuperServer SYS-220P-C9RT

**NEW**

## Key Applications

- High Performance Computing
- Enterprise Server
- Data Center Optimized
- Database Processing and High Density Storage
- Application-Optimized Solutions

## Key Features

1. Dual sockets P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable processors  
CPU TDP supports Up to 270W TDP  
3 UPI up to 11.2 GT/s
2. Intel® C621A Chipset
3. Up to 4TB 3DS ECC RDIMM, DDR4-3200MHz, Up to 4TB 3DS ECC LRDIMM, DDR4-3200MHz  
- Up to 4TB Intel® Optane™ Persistent Memory 200 Series, DDR4-3200MHz, in 18 DIMM slots (P1-DIMMB2 and P2-DIMMB2 are reserved for Intel® Optane Persistent Memory 200 Series only)
4. 4 PCI-E 4.0 x16 Low Profile (LP)  
1 PCI-E 4.0 x8 Low Profile (LP)  
\* PCI-E slot#1 is populated with 1x AOC-S3908L-H8IR-16DD-P to support 8x SAS drives
5. Dual 10GBase-T LAN with Intel® X550 Ethernet Controller

...

# Specifications

## Product SKUs

- |                      |   |
|----------------------|---|
| <b>SYS-220P-C9RT</b> | <ul style="list-style-type: none"> <li>SuperServer SYS-220P-C9RT (Black)</li> </ul> |
|----------------------|---|

## Motherboard

### Super X12DPi-NT6

## 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> |
|------------|---|

- |              |   |
|--------------|---|
| <b>Cores</b> | <ul style="list-style-type: none"> <li>Up to 36C/72T; Up to 60MB Cache</li> </ul> |
|--------------|---|

## System Memory

- |               |   |
|---------------|---|
| <b>Memory</b> | <ul style="list-style-type: none"> <li>Memory Capacity: 16 DIMM slots</li> <li>Up to 4TB: PMem and DRAM</li> <li>Memory Type: 3200MHz ECC LRDIMM/RDIMM DDR4</li> <li>Intel® Optane™ persistent memory 200 series</li> </ul> |
|---------------|---|

## On-Board Devices

- |                             |  |
|-----------------------------|--|
| <b>Chipset</b>              | <ul style="list-style-type: none"> <li>Intel® C621A</li> </ul>   |
| <b>Network Connectivity</b> | <ul style="list-style-type: none"> <li>2x 10GbE port(s)</li> </ul>   |
| <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> |

## Input / Output

- |                    |   |
|--------------------|---|
| <b>LAN</b>         | <ul style="list-style-type: none"> <li>1 dedicated IPMI LAN port</li> </ul>                                       |
| <b>USB</b>         | <ul style="list-style-type: none"> <li>2 USB 2.0 port(s) (2 front)</li> <li>4 USB 3.0 port(s) (4 rear)</li> </ul> |
| <b>Video</b>       | <ul style="list-style-type: none"> <li>1 VGA port(s)</li> </ul>   |
| <b>Serial Port</b> | <ul style="list-style-type: none"> <li>2 COM Port(s) (1 front; 1 rear)</li> </ul>                                 |
| <b>DOM</b>         | <ul style="list-style-type: none"> <li>2 SuperDOM (Disk on Module) port</li> </ul>                                |

## System BIOS

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

## Management

## Chassis

- |                    |   |
|--------------------|---|
| <b>Form Factor</b> | <ul style="list-style-type: none"> <li>2U Rackmount</li> </ul>            |
| <b>Model</b>       | <ul style="list-style-type: none"> <li>CSE-213BTS-R1K23LPBP3-1</li> </ul> |

## Dimensions and Weight

- |                        |  |
|------------------------|--|
| <b>Height</b>          | <ul style="list-style-type: none"> <li>3.5" (89mm)</li> </ul>  |
| <b>Width</b>           | <ul style="list-style-type: none"> <li>17.2" (437mm)</li> </ul>  |
| <b>Depth</b>           | <ul style="list-style-type: none"> <li>24.8" (630mm)</li> </ul>  |
| <b>Package</b>         | <ul style="list-style-type: none"> <li>11" (H) x 29" (W) x 38.7" (D)</li> </ul>  |
| <b>Weight</b>          | <ul style="list-style-type: none"> <li>Net Weight: 38 lbs (17.4 kg)</li> <li>Gross Weight: 63 lbs (28.8 kg)</li> </ul> |
| <b>Available Color</b> | <ul style="list-style-type: none"> <li>Black</li> </ul>  |

## Front Panel

- |                |   |
|----------------|---|
| <b>Buttons</b> | <ul style="list-style-type: none"> <li>Power On/Off</li> <li>System Reset</li> </ul>  |
| <b>LEDs</b>    | <ul style="list-style-type: none"> <li>HDD activity</li> <li>Network activity</li> <li>Power status</li> <li>System information (overheat/UID)</li> </ul> |

## Expansion Slots

- |                            |   |
|----------------------------|---|
| <b>PCI-Express (PCI-E)</b> | <ul style="list-style-type: none"> <li>Slot 2: PCI-E 4.0 x16 LP</li> <li>Slot 3: PCI-E 4.0 x16 LP</li> <li>Slot 4: PCI-E 4.0 x16 LP</li> <li>Slot 5: PCI-E 4.0 x16 LP</li> <li>Slot 6: PCI-E 4.0 x8 LP</li> </ul> |
|----------------------------|---|

## Drive Bays / Storage

- |                        |  |
|------------------------|--|
| <b>Hot-swap</b>        | <ul style="list-style-type: none"> <li>16x 2.5" hot-swap drive bays (8x SAS drive bays with Broadcom® 3908 HW RAID controller(backplane port# 0~7) and 8x SATA drive bays (backplane port# 8~15) with Intel® C621A (4x SATA drive bays (backplane port# 8~11) can be converted to NVMe drives with optional 2x CBL-SAST-0821-1)</li> </ul> |
| <b>M.2</b>             | <ul style="list-style-type: none"> <li>1 M.2 NVMe</li> </ul>   |
| <b>Peripheral Bays</b> | <ul style="list-style-type: none"> <li>1x (slim or 5.25") DVD drive bays (optional)</li> </ul>   |

## System Cooling

- |             |  |
|-------------|--|
| <b>Fans</b> | <ul style="list-style-type: none"> <li>3 heavy duty fans with optimal fan speed control</li> </ul> |
|-------------|--|

## Power Supply

- |  |
|--|
| <ul style="list-style-type: none"> <li>AC 1200W, Titanium Level, Redundancy,PMBUS 1.2, +12V/+5Vsb, 360x76x40 mm,HF,RoHS/REACH</li> </ul> |
|--|

- Software**
- [Supermicro Out of Band \(OOB\) License](#) (included in the unit)
  - [IPMI2.0](#)
  - Redfish API
  - [SSM](#)
  - Intel® Node Manager
  - [SPM](#)
  - KVM with dedicated LAN
  - [SUM](#)
  - NMI

- Power Configurations**
- ACPI/APM Power Management

PC Health Monitoring

- CPU**
- 4+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

- Dimension (W x H x L)**
- 76 x 40 x 336 mm

- Output Type**
- Gold Finger

**Certification**




**Titanium Level**

**[ [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
<b>Motherboard / Chassis</b>	MBD-X12DPi-NT6	1	Super X12DPi-NT6 Motherboard
	CSE-213BTS-R1K23LPBP3-1	1	2U Chassis
<b>Add-on Card / Module</b>	AOC-S3908L-H8IR-16DD-P	1	8 int 12Gb/s ports, x8 Gen4, ROC - LP, 16 HDD w/ exp,RoHS
<b>Backplane</b>	BPN-SAS3-213A-N8	1	16-port 2U SAS3 12Gbps hybrid backplane, support up to 8x 2.5-inch SAS3/SATA3 HDD/SSD and 8x SAS3/SATA3/NVMe Storage Devices
<b>Cable 1</b>	CBL-SAST-0508-01	2	Internal Mini-SAS to Mini-SAS HD 50cm w/ SB, 30AWG
<b>Cable 2</b>	CBL-SAST-0508-02	2	Internal Mini-SAS to Mini-SAS HD 50cm w/ SB, 30AWG
<b>Cable 3</b>	CBL-SAST-1264-100	1	Slimline x8 (STR) to 2x MiniSAS HD x4,65CM,100 OHM,RoHS
<b>Drive Tray(s)</b>	MCP-220-00007-01	1	Black USB/COM port tray for SC825, 836
<b>Parts</b>	MCP-260-00042-0N	1	STD I/O shield for X9 socket R server MB with Gasket.
<b>Manual</b>	MNL-2243-QRG	1	SYS-220P-C9R(T) Quick Reference Guide
<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-1K23A-1R	2	AC-DC 1200W, Titanium Level, Redundancy, 1U, PMBUS 1.2, +12V/+5Vsb, 336x76x40 mm,HF,RoHS/REACH
<b>*Power Distributor</b>	PDB-PT829-S8824	1	PDB with 23pairs input connectors for SC829B216B
<b>*Cable 4</b>	CBL-0071L	1	ROUND 16 TO 16 PIN RIBBON FP CABLE 30"L, LF
<b>*Cable 5</b>	CBL-0217L	1	16PIN CNTL PANEL CONVERTER CBL FOR SC826,PBF
<b>*Cable 6</b>	CBL-PWCD-0160-IS	2	PWCD,US,NEMA5-15P TO IEC60320 C13,6FT,16AWG,RoHS/REACH
<b>*Cable 7</b>	CBL-PWEX-1069	3	PWEX,FAN,1X4/P2.5 TO 1X4/P2.54,30CM,22AWG,5A/pin,RoHS
<b>*FAN 1</b>	FAN-0206L4	3	80x80x38 mm, 13.5K RPM, Middle Cooling Fan for 2U and above Servers
<b>*Front Panel</b>	FPB-FP826-D	1	Front control board Dual color LED(FP826-D)forSC826,213,216,219
<b>*Drive Tray(s)</b>	MCP-220-00009-01	1	Black 5.25"; drive tray w/o rail (square pattern)
<b>*Drive Tray(s)</b>	MCP-220-00023-01	1	Black USB dummy tray support 1x 2.5" slim HDD for SC825, 836
<b>*Drive Tray(s)</b>	MCP-220-00047-0B	16	Black gen 3rd hot-swap 2.5inch HDD tray
<b>*Rear Window</b>	MCP-240-82608-0N	1	216B/826B LP rear window,RoHS/REACH,PBF
<b>*Peripheral Drive1</b>	MCP-290-00007-01	1	Black DVD dummy cover for SC825, 836
<b>*Rail Set</b>	MCP-290-00053-0N	1	Rail set, quick/quick, default for 2,3U 17.2";W
<b>*Rail Set</b>	MCP-290-00060-0N	1	Threaded rail adapter default for round hole rack
<b>*Air Shroud</b>	MCP-310-29001-0N	1	SC825/826/216/213 Intel DP X9,X8 air shroud 13.68x13/12x13
<b>*Front Panel</b>	TB826	1	Front panel adaptor board (TB826) forSC826,213,216,219

#### 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>BTR kit for AOC-S3108L-H8IR or AOC-S3108L-H8IR-16DD with SYS-220P-C9RT</b>	1x BTR-TFM8G-LSICVM02 and 1x BKT-BBU-BRACKET-05 with AOC-S3108L-H8IR or AOC-S3108L-H8IR-16DD	1	SuperCap and mounting bracket used for SAS raid controllers
<b>BTR kit for AOC-S3908L-H8IR-16DD-P and AOC-S3916L-H16R-32DD with SYS-220P-C9RT</b>	1x BTR-CVPM05 and 1x BKT-BBU-BRACKET-05 with AOC-S3908L-H8IR-16DD-P and AOC-S3916L-H16R-32DD	1	SuperCap and mounting bracket used for SAS raid controllers
<b>BTR kit for Broadcom/LSI AOC-SAS3-9361-16I with SYS-220P-C9RT</b>	1x BTR-TFM4G-LSI00418 and 1x BKT-BBU-BRACKET-05 used with Broadcom/LSI AOC-SAS3-9361-16I	1	SuperCap and mounting bracket used for SAS raid controllers
<b>Optional Gen3 16-ports SAS Raid controller kit for SYS-220P-C9RT</b>	AOC-SAS3-9361-16I and 4x CBL-SAST-0593-01 or 4x CBL-SAST-0531-01	1	to use one raid controller to support all 16 drives bays, the default AOC-S3908L-H8IR-16DD-P raid controller is not used
<b>Optional Gen4 16-ports SAS Raid controller kit for SYS-220P-C9RT</b>	1x AOC-S3916L-H16R-32DD and 2x CBL-SAST-1264-100	1	to use one raid controller to support all 16 drives bays, the default AOC-S3908L-H8IR-16DD-P raid controller is not used
<b>Optional Gen3 8-ports SAS Raid controller kit for SYS-220P-C9RT</b>	AOC-S3108L-H8IR or AOC-S3108L-H8IR-16DD + 2x CBL-SAST-0531-01	1	to convert system SATA ports# 8~15 to SAS drive support; There are two raid controllers in the system and each raid controller supports 8x SAS drives
<b>Optional parts needed to support 2x fixed NVMe drives</b>	1x MCP-220-00160-0N (Dual 2.5" Drive BKT) and 1x CBL-SAST-0953 (Slimline x8 to PCIe 2x SFF-8639 Power)	1	1x MCP-220-00160-0N can support 2x NVMe fixed drives in 1x 5.25 inch drive bay and 1x CBL-SAST-0953 can support 2x 2.5 inch NMVe drives
<b>Optional parts needed to support 2x fixed SATA drives</b>	1x MCP-220-00160-0N (Dual 2.5" Drive BKT), 2x CBL-0044L(SATA CABLE 61CM FLAT S-S PBF.26AWG flat) and 1x CBL-0082L (Y split , big 4 pin to two RA SATA power extension 15cm, 18AWG)	1	1x MCP-220-00160-0N can support 2x 2.5 inch fixed drives in 1x 5.25 inch drive bay, 1x CBL-0044L can support 1x 2.5 inch SATA drives and 1x CBL-0082L can support 2x 2.5 inch SATA drives
<b>Optional parts needed to support 4x hotswap NVMe drives</b>	2x CBL-SAST-0821-1 (SLIMLINE x8 (LE) to 2x Oculink x4, 46/50CM,85 OHM,RoHS)	1	1x CBL-SAST-0821-1 can support can support 2x 2.5 inch hotswap NMVe drives, system can support Max. 4x NMVe drives (hotswap and fixed combined) only