# Mainstream SuperServer SYS-220P-C9R

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 Gigabit LAN with Intel® i350  Ethernet Controller

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# Specifications

## Product SKUs

| **SYS-220P-C9R** | SuperServer SYS-220P-C9R (**Black**) |
|---|---|

## Motherboard

**Super X12DPi-N6**

## Processor

| **CPU** | • Dual Socket P+ (LGA-4189)<br>• 3rd Gen Intel® Xeon® Scalable processors<br>• Support CPU TDP 270W |
|---|---|
| **Cores** | • Up to 36C/72T; Up to 60MB Cache |

## System Memory

| **Memory** | • Memory Capacity: 16 DIMM slots<br>• Up to 4TB: PMem and DRAM<br>• Memory Type: 3200MHz ECC LRDIMM/RDIMM DDR4<br>• Intel® Optane™ persistent memory 200 series |
|---|---|

## On-Board Devices

| **Chipset** | • Intel® C621A |
|---|---|
| **Network Connectivity** | • 2x 1GbE port(s) |
| **IPMI** | • Support for Intelligent Platform Management Interface v.2.0<br>• IPMI 2.0 with virtual media over LAN and KVM-over-LAN support |

## Input / Output

| **LAN** | • 1 decicated IPMI LAN port |
|---|---|
| **USB** | • 2 USB 2.0 port(s) (2 front)<br>• 4 USB 3.0 port(s) (4 rear) |
| **Video** | • 1 VGA port(s) |
| **Serial Port** | • 2 COM Port(s) (1 front; 1 rear) |
| **DOM** | • 2 SuperDOM (Disk on Module) port |

## System BIOS

| **BIOS Type** | • AMI 32MB SPI Flash EEPROM |
|---|---|

## Management

## Chassis

| **Form Factor** | 2U Rackmount |
|---|---|
| **Model** | **CSE-213BTS-R1K23LPBP3-1** |

## Dimensions and Weight

| **Height** | • 3.5" (89mm) |
|---|---|
| **Width** | • 17.2" (437mm) |
| **Depth** | • 24.8" (630mm) |
| **Package** | • 11" (H) x 29" (W) x 38.7" (D) |
| **Weight** | • Net Weight: 38 lbs (17.4 kg)<br>• Gross Weight: 63 lbs (28.8 kg) |
| **Available Color** | • Black |

## Front Panel

| **Buttons** | • Power On/Off<br>• System Reset |
|---|---|
| **LEDs** | • HDD activity<br>• Network activity<br>• Power status<br>• System information (overheat/UID) |

## Expansion Slots

| **PCI-Express (PCI-E)** | • Slot 2: PCI-E 4.0 x16 LP<br>• Slot 3: PCI-E 4.0 x16 LP<br>• Slot 4: PCI-E 4.0 x16 LP<br>• Slot 5: PCI-E 4.0 x16 LP<br>• Slot 6: PCI-E 4.0 x8 LP |
|---|---|

## Drive Bays / Storage

| **Hot-swap** | • 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) |
|---|---|
| **M.2** | • 1 M.2 NVMe |
| **Peripheral Bays** | • 1x (slim or 5.25") DVD drive bays (optional) |

## System Cooling

| **Fans** | • 3 heavy duty fans with optimal fan speed control |
|---|---|

## Power Supply

AC 1200W, Titanium Level, Redundancy,PMBUS 1.2, +12V/+5Vsb, 360x76x40 mm,HF,RoHS/REACH

| **Software** | - Supermicro Out of Band (OOB) License (included in the unit)<br>- IPMI2.0<br>- Redfish API<br>- SSM<br>- Intel® Node Manager<br>- SPM<br>- KVM with dedicated LAN<br>- SUM<br>- NMI |
| --- | --- |
| **Power Configurations** | - ACPI/APM Power Management |

## PC Health Monitoring

| **CPU** | - 4+1 Phase-switching voltage regulator<br>- Monitors for CPU Cores, Chipset Voltages, Memory |
| --- | --- |
| **FAN** | - Fans with tachometer monitoring<br>- Pulse Width Modulated (PWM) fan connectors<br>- Status monitor for speed control |
| **Temperature** | - Monitoring for CPU and chassis environment<br>- Thermal Control for fan connectors |

| **Dimension (W x H x L)** | - 76 x 40 x 336 mm |
| --- | --- |
| **Output Type** | - Gold Finger |
| **Certification** | **Titanium Level**<br><br>**[ Test Report ]** |

## Operating Environment

| **RoHS** | - RoHS Compliant |
| --- | --- |
| **Environmental Spec.** | - Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F)<br>- Non-operating Temperature: -40°C to 60°C (-40°F to 140°F)<br>- Operating Relative Humidity: 8% to 90% (Non-Condensing)<br>- Non-operating Relative Humidity: 5% to 95% (Non-Condensing) |

# Parts List

**Parts List - (Items Included)**

| | Part Number | Qty | Description |
|---|---|---|---|
| **Motherboard / Chassis** | MBD-X12DPi-N6 | 1 | Super X12DPi-N6 Motherboard |
| | CSE-213BTS-R1K23LPBP3-1 | 1 | 2U Chassis |
| **Add-on Card / Module** | AOC-S3908L-H8IR-16DD-P | 1 | 8 int 12Gb/s ports, x8 Gen4, ROC - LP, 16 HDD w/ exp,RoHS |
| **Backplane** | 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 |
| **Cable 1** | CBL-SAST-0508-01 | 2 | Internal Mini-SAS to Mini-SAS HD 50cm w/ SB, 30AWG |
| **Cable 2** | CBL-SAST-0508-02 | 2 | Internal Mini-SAS to Mini-SAS HD 50cm w/ SB, 30AWG |
| **Cable 3** | CBL-SAST-1264-100 | 1 | Slimline x8 (STR) to 2x MiniSAS HD x4,65CM,100 OHM,RoHS |
| **Drive Tray(s)** | MCP-220-00007-01 | 1 | Black USB/COM port tray for SC825, 836 |
| **Parts** | MCP-260-00042-0N | 1 | STD I/O shield for X9 socket R server MB with Gasket. |
| **Manual** | MNL-2243-QRG | 1 | SYS-220P-C9R(T) Quick Reference Guide |
| **Software** | SFT-OOB-LIC | 1 | License key for enabling OOB BIOS management |
| **Heatsink / Retention** | SNK-P0078P | 1 | 2U Passive CPU Heat Sink for X12 Generation Intel Whitley and Cedar Island Platforms |
| **Heatsink / Retention** | SNK-P0078PC | 1 | 2U Passive CPU Heat Sink w/ a Side Air Channel for X12 Generation Intel Whitley and Cedar Island Platforms |
| **\*Power Supply** | PWS-1K23A-1R | 2 | AC-DC 1200W, Titanium Level, Redundancy, 1U, PMBUS 1.2, +12V/+5Vsb, 336x76x40 mm,HF,RoHS/REACH |
| **\*Power Distributor** | PDB-PT829-S8824 | 1 | PDB with 23pairs input connectors for SC829B216B |
| **\*Cable 4** | CBL-0071L | 1 | ROUND 16 TO 16 PIN RIBBON FP CABLE 30"L, LF |
| **\*Cable 5** | CBL-0217L | 1 | 16PIN CNTL PANEL CONVERTER CBL FOR SC826,PBF |
| **\*Cable 6** | CBL-PWCD-0160-IS | 2 | PWCD,US,NEMA5-15P TO IEC60320 C13,6FT,16AWG,RoHS/REACH |
| **\*Cable 7** | CBL-PWEX-1069 | 3 | PWEX,FAN,1X4/P2.5 TO 1X4/P2.54,30CM,22AWG,5A/pin,RoHS |
| **\*FAN 1** | FAN-0206L4 | 3 | 80x80x38 mm, 13.5K RPM, Middle Cooling Fan for 2U and above Servers |
| **\*Front Panel** | FPB-FP826-D | 1 | Front control board Dual color LED(FP826-D)forSC826,213,216,219 |
| **\*Drive Tray(s)** | MCP-220-00009-01 | 1 | Black 5.25"; drive tray w/o rail (square pattern) |
| **\*Drive Tray(s)** | MCP-220-00023-01 | 1 | Black USB dummy tray support 1x 2.5" slim HDD for SC825, 836 |
| **\*Drive Tray(s)** | MCP-220-00047-0B | 16 | Black gen 3rd hot-swap 2.5inch HDD tray |
| **\*Rear Window** | MCP-240-82608-0N | 1 | 216B/826B LP rear window,RoHS/REACH,PBF |
| **\*Peripheral Drive1** | MCP-290-00007-01 | 1 | Black DVD dummy cover for SC825, 836 |
| **\*Rail Set** | MCP-290-00053-0N | 1 | Rail set, quick/quick, default for 2,3U 17.2";W |
| **\*Rail Set** | MCP-290-00060-0N | 1 | Threaded rail adapter default for round hole rack |
| **\*Air Shroud** | MCP-310-29001-0N | 1 | SC825/826/216/213 Intel DP X9,X8 air shroud 13.68x13/12x13 |
| **\*Front Panel** | 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 |
|---|---|---|---|
| **BTR kit for AOC-S3108L-H8IR or AOC-S3108L-H8IR-16DD with SYS-220P-C9R** | 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 |
| **BTR kit for AOC-S3908L-H8IR-16DD-P and AOC-S3916L-H16R-32DD with SYS-220P-C9R** | 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 |
| **BTR kit for Broadcom/LSI AOC-SAS3-9361-16I with SYS-220P-C9R** | 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 |
| **Optional Gen3 8-ports SAS Raid controller kit for SYS-220P-C9R** | 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 |
| **Optional Gen3 16-ports SAS Raid controller kit for SYS-220P-C9R** | 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 |
| **Optional Gen4 16-ports SAS Raid controller kit for SYS-220P-C9R** | 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 |
| **Optional parts needed to support 2x fixed NVMe drives** | 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 |
| **Optional parts needed to support 2x fixed SATA drives** | 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 |
| **Optional parts needed to support 4x hotswap NVMe drives** | 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 |