

Ultra SuperServer SYS-220U-TNR



Key Applications

Virtualization
HPC
Cloud Computing
High End Enterprise Server
Software Defined Storage
Application Tier Service Provider
5G/Telco

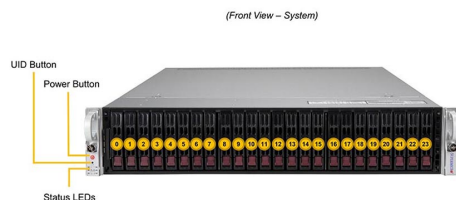
Key Features

- Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors;
- Intel® C621A Chipset;
- 32 DIMM Slots; Up to 8TB DRAM; Up to 8TB Intel® Optane™ Persistent Memory (up to 12TB with DRAM); 3200/2933/2666 ECC DDR4 LRDIMM; RDIMM; Intel® Optane™ Persistent Memory 200 series;
- 5 PCI-E 4.0 x8 (FH, 10.5"L); 1 internal PCI-E 4.0 x8 (in x16 slot, LP); 1 PCI-E 4.0 x16 (FH, 10.5"L); 1 PCI-E 4.0 x16 (LP);
- Flexible networking options;
- 22x 2.5" hot-swap hybrid NVMe/SATA/SAS drive bays + 2x2.5" hot-swap SATA/SAS drive bays;
- 4 heavy duty fans with optimal fan speed control;
- 1600W redundant Titanium level power supplies;

[More details here](#)

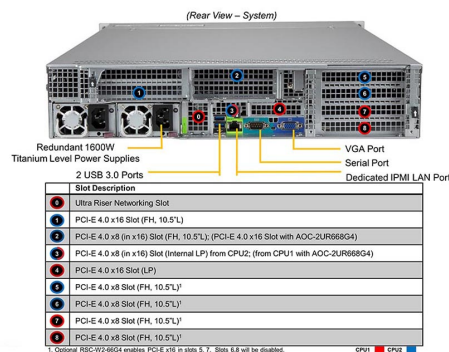


Form Factor	2U Rackmount Enclosure: 437 x 89 x 717.2mm (17.2" x 3.5" x 28.2") Package: 625 x 253 x 1154mm (24.6" x 9.96" x 45.43")
Processor	3rd Gen Intel® Xeon® Scalable processors Dual Socket LGA-4189 (Socket P+) supported TDP up to 270W; 3 UPI
Drive Bays	24x 2.5" hot-swap NVMe/SATA/SAS drive bays; 22x 2.5" NVMe hybrid; Optional RAID support via RAID controller AOC
Expansion Slots	Slot 1: PCI-E 4.0 x16 FH, 10.5"L Slot 2: PCI-E 4.0 x8 FH, 10.5"L Slot 3: PCI-E 4.0 x8 Internal LP Slot 4: PCI-E 4.0 x16 LP Slot 5: PCI-E 4.0 x8 FH, 10.5"L Slot 6: PCI-E 4.0 x8 FH, 10.5"L Slot 7: PCI-E 4.0 x8 FH, 10.5"L Slot 8: PCI-E 4.0 x8 FH, 10.5"L Note: Optional RSC-W2-66G4 enables PCI-E x16 in slots 5, 7. Slots 6,8 will be disabled.
On-Board Devices	SATA: SATA3 (6Gbps) via Intel® PCH 621A; RAID 0/1/5/10 support NVMe: NVMe (16GT/s); RAID 0/1/5/10 support NVMe (16GT/s); RAID 0/1/5/10 support Chipset: Intel® C621A Network Connectivity: 2x 10GbE BaseT with Intel® X710-AT2 (optional) OR 2x 10GbE BaseT and 2x 10GbE SFP+ with Intel® X710-TM4 (optional) No NIC option supported 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	LAN: 1 RJ45 Dedicated BMC LAN port USB: 2 USB 3.0 port(s) (2 rear) Video: 1 VGA port(s) Serial Port: 1 COM Port(s) (1 rear) DOM: 2 SuperDOM (Disk on Module) port



Slot	Description
1 - 11	2.5" Hot-swap SAS3/SATA3 Drive Bays
12 - 18	2.5" Hot-swap NVMe/SAS3/SATA3 Drive Bays (NVMe from CPU1)**
19 - 24	2.5" Hot-swap NVMe/SAS3/SATA3 Drive Bays (NVMe from CPU2)**

*SAS3 support requires additional parts in optional parts list
**NVMe support requires additional parts in optional parts list



Slot Description
1 Ultra Riser Networking Slot
2 PCI-E 4.0 x16 Slot (FH, 10.5" L)
3 PCI-E 4.0 x8 (in x16) Slot (FH, 10.5" L); (PCI-E 4.0 x16 Slot with AOC-2UR668G4)
4 PCI-E 4.0 x8 (in x16) Slot (Internal LP) from CPU2; (from CPU1 with AOC-2UR668G4)
5 PCI-E 4.0 x16 Slot (LP)
6 PCI-E 4.0 x8 Slot (FH, 10.5" L)†
7 PCI-E 4.0 x8 Slot (FH, 10.5" L)†
8 PCI-E 4.0 x8 Slot (FH, 10.5" L)†
9 PCI-E 4.0 x8 Slot (FH, 10.5" L)†

† Optional RES-W2-66G4 enables PCI-E x16 in slots 5, 7. Slots 6,8 will be disabled

CPU1 CPU2

Cooling System	4x 8cm heavy duty fan(s)
Power Supply	1600W Redundant Power Supplies with PMBus Dimension (W x H x L): 73.5 x 40 x 203 mm Output Type: AC-Input
System BIOS	BIOS Type: AMI 32MB SPI Flash EEPROM
Management	SuperDoctor® 5; Watch Dog; NMI; SUM; KVM with dedicated LAN; Intel® Node Manager; IPMI 2.0; Redfish API; Supermicro Out of Band (OOB) License (Included with Server)
PC Health Monitoring	CPU: Monitors for CPU Cores, Chipset Voltages, Memory 7 +1 Phase-switching voltage regulator FAN: Fans with tachometer monitoring Status monitor for speed control Pulse Width Modulated (PWM) fan connectors Temperature: Monitoring for CPU and chassis environment Thermal Control for fan connectors
Dimensions and Weight	Height: 3.5" (89 mm) Width: 17.2" (437 mm) Depth: 28.2" (717.2 mm) Gross Weight: 63 lbs (28.6 kg) Net Weight: 37 lbs (16.8 kg) Packaging: 9.96" (H) x 24.6" (W) x 45.43" (D) Available Color: Black Front & Silver Body
Operating Environment	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)
Motherboard	Super X12DPU-6
Chassis	CSE-219U3TS-R1K62P-T

Parts List - (Items Included)			
	Part Number	Qty	Description
Motherboard / Chassis	MBD-X12DPU-6	1	Super X12DPU-6 Motherboard
	CSE-219U3TS-R1K62P-T	1	2U Chassis
Backplane	BPN-NVME4-216N-S24	1	2U 24-slot all-hybrid direct-attached backplane, support 24x2.5
Cable 1	CBL-CDAT-0674	2	4 Pin to 4 Pin I2C Cable, 30cm, 26AWG, 4 Wires, Pinout 1-1
Cable 2	CBL-PWEX-0924	1	2x4,P3.0 to 2x4,P4.2,YL/RED,9.5A,24cm,16AWG,RoHS
Cable 3	CBL-PWEX-0925	2	2x4,P3.0 to 2x4,P4.2,YL/RED,9.5A,55cm,16AWG,RoHS
Cable 4	CBL-SAST-1250F-100	2	Slimline x4 (STR) to Slimline x4 (STR),FFC,INT,50CM,100
Cable 5	CBL-SAST-1270F-100	1	Slimline x4 (STR) to Slimline x4 (STR),FFC,INT,70CM,100
Riser Card	RSC-W2-8888G4	1	2U LHS WIO Riser card with four PCI-E 4.0 x8 slots,HF,RoHS
Riser Card	RSC-WR-6	1	1U RHS WIO Riser card with one PCI-E 4.0 x16 slot,HF,RoHS
Software	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
Heatsink / Retention	SNK-P0078P	2	2U Passive CPU Heat Sink for X12 Generation Intel Whitley and Cedar Island Platforms
*Power Supply	PWS-1K62A-1R	2	AC-DC 1600W, Titanium Level, Redundancy, 1U, DC Output: +12V and +12Vs, 203 x 73.5 x 40 mm, AC Input: 90 - 264 VAC/47-63Hz, PMBus 1.2 with DSP controller,HF,RoHS/REACH
*Cable 6	CBL-0088L	4	10.5" 4PIN FAN POWER CORD FOR 743X-645,PBF
*Cable 7	CBL-0160L	2	US POWER CORD 16AWG, PB FREE
*FAN 1	FAN-0206L4	4	80x80x38 mm, 13.5K RPM, Middle Cooling Fan for 2U and above Servers
*FAN 2	FAN-0209L4	4	80x80x38 mm, 13.5K RPM, Middle Cooling Fan for 2U and above
*Drive Tray(s)	MCP-220-00047-0B	24	Black gen 3rd hot-swap 2.5inch HDD tray
*Rail Set	MCP-290-00057-0N	1	Rail set, quick/quick, default for 4U 17.2" W
*Rail Set	MCP-290-00060-0N	1	Threaded rail adapter default for round hole rack
*Air Shroud	MCP-310-81905-0B	1	Plastic air shroud for SC819U, 119U, 829U, 219U (PWS),RoHS/REACH
*Rail Set	MCP-290-00115-0N	1	Inner rail, quick-release type
*Rail Set	MCP-290-00117-0N	1	Outer rail, quick-release type

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
2 Rear 2.5" Hot-swap SATA Drive Bays (Complete System Only)	MCP-240-82922-0N-OEM • eStore	1	Rear 2x 2.5" HDDs riser bracket kit for SC829U/219U, tool-less
2U Cable Management Arm	MCP-290-00128-0N & MCP-290-00127-0N	1	2U Supermicro Cable Management Arm 2nd Gen (Compatible for racks that are 42" in depth)
2U Front Bezel	MCP-210-82601-0B • eStore	1	Black Front Bezel Suitable for 829U and 219U chassis with standard thumbscrew handle.
Add-on card for M.2 support	AOC-SLG3-2H8M2-O	-	2x Hybrid NVMe/SATA M.2 RAID Carrier, Standard LP,RoHS
CacheVaults	BTR-CVPM05 + BKT-BBU-BRACKET-05	-	CacheVault for Broadcom 3908/3916 with Supercap
	BTR-CV3108-U1	-	CacheVault for Broadcom 3108 with Supercap mounting for 2U Ultra
Drive Tray	MCP-220-00167-0B • eStore	1 ~ 22	2.5 drive tray, Orange tab (for hotswap NVMe drive)
Global Services & Support	OS4HR3/2/1	-	3/2/1-year onsite 24x7x4 service
	OSNBD3/2/1	-	3/2/1-year onsite NBD service
Intel® VROC RAID Key Options	AOC-VROCINTMOD	1	Intel VROC, RAID 0, 1, 5, 10 (Intel SSD Only)
	AOC-VROCPREMOD	1	Intel VROC Premium, RAID 0, 1, 5, 10
	AOC-VROCSTNMOD	1	Intel VROC Standard, RAID 0, 1, 10
Network Card(s)	AOC Compatibility Matrix	-	Standard Networking AOC Matrix
NVMe Support Kit	CBL-KIT-220U-TNR-22N + 3 AOC-SLG4-4E4T-O	1	22 NVMe Support Kit for X12 Ultra 220U-TNR without NIC UIO
	CBL-KIT-220U-TNR-22 + 2 AOC-SLG4-2E4T-O + 2 AOC-SLG4-4E4T-O	1	22 NVMe Support Kit for X12 Ultra 220U-TNR with NIC UIO
	CBL-KIT-220U-TNR-8	1	8 NVMe Support Kit for X12 Ultra SYS-220U-TNR
Optional Storage Controller Card + Cable(s)	AOC-S3908L-H8iR-16DD-O + 1x CBL-SAST-1276F-100 or + 1x CBL-SAST-1264F-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 8 internal ports (12Gb/s) Gen-4; RAID 0, 1, 5, 6, 10, 50, 60
	AOC-S3008L-L8i + 1x CBL-SAST-1260-100 or + 2x CBL-SAST-1285-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 8 internal ports (12Gb/s) Gen-3; RAID 0,1,1E
	AOC-S3916L-H16iR-32DD-O + 1x CBL-SAST-1264F-100, 1x CBL-SAST-1276F-100 or + 2x CBL-SAST-1264F-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 16 internal ports (12Gb/s) Gen-4; RAID 0, 1, 5, 6, 10, 50, 60
	AOC-S3008L-L8E+-O + 1x CBL-SAST-1260-100 or + 2x CBL-SAST-1285-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 8 internal ports (12Gb/s) Gen-3; HBA + I2C
	AOC-S3008L-L8E + 1x CBL-SAST-1260-100 or AOC-S3008L-L8E + 2x CBL-SAST-1285-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 8 internal ports (12Gb/s) Gen-3; HBA
	AOC-S3808L-L8iT-O + 1x CBL-SAST-1264F-100 or + 1x CBL-SAST-1264F-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 8 internal ports (12Gb/s) Gen-4; HBA
	AOC-S3816L-L16iT-O + 2x CBL-SAST-1264F-100 or + 2x CBL-SAST-1264F-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 16 internal ports (12Gb/s) Gen-4; HBA
	AOC-S3108L-H8iR-16DD + 1x CBL-SAST-1260-100 or + 2x CBL-SAST-1285-100 (For system has 22 NVMe Support Kit with NIC UIO)	-	Standard LP, 8 internal ports (12Gb/s) Gen-3; RAID 0, 1, 5, 6, 10, 50, 60
Power Supply	PWS-1K30D-1R • eStore	2	1U 1300W, Redundancy, DC Input: -48Vdc
	PWS-2K08A-1R • eStore	2	1U 2000W, Titanium Level, Redundancy, AC Input: 90-264VAC/47-63Hz, and wide DC input 180Vdc~300Vdc
Riser Card	RSC-W2-688G4	1	2U LHS WIO Riser card with one PCI-E 4.0 x16 and two PCI-E 4.0 x8
	RSC-W2-66G4	1	2U LHS WIO Riser card with two PCI-E 4.0 x16 slots,HF,RoHS
Software	SFT-DCMS-Single	1	DataCenter Management Package (per node license)
Trusted Platform Module Options	AOM-TPM-9670V-S-FIPS-P	1	AOM-TPM-9670V-S-FIPS TPM 2.0 support TAA and FIPS,RoHS
	AOM-TPM-9671V-O	1	SPI Capable Vertical TPM 1.2 Module
	AOM-TPM-9670V-O	1	SPI TPM 2.0 using SLB9670
Ultra Riser Card Options + Rear Window	AOC-2UR668G4-O	1	2U Ultra Riser with 2x PCI-E 4.0 x16 and 1x PCI-E 4.0 x8 (internal, in x16),RoHS
	AOC-2UR68G4-I2XT-O + MCP-240-82909-0N	1	2U Ultra Riser with 2-port 10G RJ45, Intel Carlsville X710-AT2, 1 PCI-E 4.0 x8 (in x16), 1 PCI-E 4.0 x16 and 1 PCI-E 4.0x8 (internal, in x16),RoHS

AOC-2UR68G4-I4XTS-O + MCP-240-82930-0N	1	2U Ultra Riser with 2-port 10G RJ45 & 2-port 10G SFP+, Intel Carlsville X710-TM4, with 1 PCI-E 4.0 x8 (in x16), 1 PCI-E 4.0 x16 and 1 PCI-E 4.0x8 (internal, in x16),RoHS
AOC-2UR68G4-M2TS + MCP-240-82914-0N	1	2U Ultra Riser 2-port 25GbE SFP28, Mellanox CX-6 LX, 1 PCIe 4.0 x8 (in x16), 1 PCIe 4.0 x16 and 1 PCIe 4.0x8 (internal, in x16),RoHS