

Hyper SuperServer SYS-220HE-FTNR-US (Complete System Only)



Key Applications

- 5G Core and Edge
- Telecom Micro Data Center
- AI Inference and Machine Learning
- Network Function Virtualization
- Cloud Computing

Key Features

1. Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable Processors
2. 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
3. 4 PCI-E 4.0 x16 slots with GPU/Accelerator support
4. Flexible networking options with 2 AIOM networking slots (OCP NIC 3.0 compatible)
5. Up to 6x 2.5" hot-swap drive bays with options to support NVMe/SATA drives
6. 6 heavy duty hot-swap fans with optimal fan speed control
Front I/O, tool-less design
7. 2000W or optional 1200W redundant AC power supplies

Specifications

Product SKUs

SYS-220HE-FTNR-US	<ul style="list-style-type: none"> SuperServer SYS-220HE-FTNR-US
--------------------------	---

Motherboard

Super X12DHM-6

Processor

CPU	<ul style="list-style-type: none"> Dual Socket P+ (LGA-4189) 3rd Gen Intel® Xeon® Scalable processors Support CPU TDP 270W
------------	---

Cores	<ul style="list-style-type: none"> Up to 40C/80T; Up to 60MB Cache
--------------	---

System Memory

Memory	<ul style="list-style-type: none"> Memory Capacity: 32 DIMM slots Up to 8TB: 32x 256 GB DRAM Up to 12TB: 16x 512 GB PMem and 16x 256 GB DRAM Memory Type: 3200MHz ECC DDR4 Intel® Optane™ persistent memory 200 series
---------------	---

Memory Voltage	<ul style="list-style-type: none"> 1.2 V
-----------------------	---

Error Detection	<ul style="list-style-type: none"> ECC
------------------------	---

On-Board Devices

SATA	<ul style="list-style-type: none"> SATA3 (6Gbps); RAID 0/1/5/10 support
-------------	--

NVMe	<ul style="list-style-type: none"> NVMe; RAID 0/1/5/10 support
-------------	---

Chipset	<ul style="list-style-type: none"> Intel® C621A
----------------	--

Network Connectivity	<ul style="list-style-type: none"> 2x 1GbE BaseT with Intel® i350-AM2 (optional) 4x 1GbE SFP or 2x 10GbE BaseT with Intel® X550-AT2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 4x 10GbE SFP+ with Intel® XL710-BM1 (optional) 4x 10GbE RJ45/SFP+ with Intel® X710-TM4 (optional) 2x 25GbE SFP28 with Broadcom® BCM57414 (optional) 4x 25GbE RJ45/SFP28 with Mellanox® CX-4 Lx EN Intel® X550-AT2 (optional) 2x 100GbE QSFP28 with Broadcom® BCM57508 (optional) 4x 1GbE BaseT with Intel® i350-AM4 (optional)
-----------------------------	--

IPMI	<ul style="list-style-type: none"> Support for Intelligent Platform Management Interface v.2.0 IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
-------------	--

Chassis

Form Factor	<ul style="list-style-type: none"> 2U Rackmount
--------------------	--

Model	<ul style="list-style-type: none"> CSE-HE211-R000NFP
--------------	---

Note	<ul style="list-style-type: none"> Standard sliding rail kit: Post to Post 19.1" ~ 26.4"
-------------	---

Dimensions and Weight

Height	<ul style="list-style-type: none"> 3.5" (88.9mm)
---------------	---

Width	<ul style="list-style-type: none"> 17.2" (436.88mm)
--------------	--

Depth	<ul style="list-style-type: none"> 22.6" (574mm)
--------------	---

Package	<ul style="list-style-type: none"> 9.7" (H) x 23.5" (W) x 36.9" (D)
----------------	--

Weight	<ul style="list-style-type: none"> Net Weight: 34.4 lbs (15.6 kg) Gross Weight: 47.4 lbs (21.5 kg)
---------------	--

Available Color	<ul style="list-style-type: none"> N/A
------------------------	---

Front Panel

Buttons	<ul style="list-style-type: none"> Power On/Off UID button
----------------	--

LEDs	<ul style="list-style-type: none"> HDD activity LAN1 activity Power status System information
-------------	---

Expansion Slots

PCI-Express (PCI-E)	<ul style="list-style-type: none"> Slot 1: (Optional) PCI-E 4.0 x16 or x8 FH, 10.5"L Slot 2: (Optional) PCI-E 4.0 x8 FH, 10.5"L Slot 3: (Optional) PCI-E 4.0 x16 or x8 FH, 10.5"L Slot 4: (Optional) PCI-E 4.0 x16 or x8 FH, 10.5"L Slot 5: (Optional) PCI-E 4.0 x16 or x8 FH, 10.5"L Slot 6: (Optional) PCI-E 4.0 x8 FH, 10.5"L Slot 7: PCI-E 4.0 x8 FH, 6.6"L Slot 8: PCI-E 4.0 x8 FH, 6.6"L
----------------------------	--

Note	<ul style="list-style-type: none"> If Slot 1 is configured as PCI-E x16, Slot 2 will be disabled; If Slot 3 is configured as PCI-E x16, Slot 4 will be disabled; If Slot 5 is configured as PCI-E x16, Slot 6 will be disabled; If Slot 7 is configured as PCI-E x16, Slot 8 will be disabled.
-------------	---

Drive Bays / Storage

Hot-swap	<ul style="list-style-type: none"> 6x 2.5" hot-swap NVMe/SATA drive bays (6x 2.5" NVMe hybrid)
-----------------	---

M.2	<ul style="list-style-type: none"> 2 M.2 NVMe OR 2 M.2 SATA3
------------	---

System Cooling

Input / Output

LAN	■ 1 RJ45 Dedicated BMC LAN port
USB	■ 2 USB 3.0 port(s) (2 front)
Video	■ 1 VGA port(s)

System BIOS

BIOS Type	■ AMI 256MB SPI Flash
------------------	-----------------------

Management

Software	<ul style="list-style-type: none"> ■ Redfish API ■ <u>IPMI 2.0</u> ■ <u>SSM</u> ■ Intel® Node Manager ■ <u>SPM</u> ■ KVM with dedicated LAN ■ <u>SUM</u> ■ NMI ■ Watch Dog ■ SuperDoctor® 5
-----------------	---

Power Configurations	<ul style="list-style-type: none"> ■ Power-on mode for AC power recovery ■ ACPI Power Management
-----------------------------	--

PC Health Monitoring

CPU	■ Monitors for CPU Cores, Chipset Voltages, Memory
FAN	<ul style="list-style-type: none"> ■ Fans with tachometer monitoring ■ Pulse Width Modulated (PWM) fan connectors ■ Status monitor for speed control
Temperature	<ul style="list-style-type: none"> ■ Monitoring for CPU and chassis environment ■ Thermal Control for fan connectors

Fans	■ 6x 6cm heavy duty fans with optimal fan speed control
-------------	---

Air Shroud	■ 4 Air Shroud(s)
-------------------	-------------------

Power Supply

2000W Redundant AC Power Supplies with PMBus

Dimension (W x H x L)	■ 73.5 x 40 x 203 mm
------------------------------	----------------------

AC Input	<ul style="list-style-type: none"> ■ 1000W: 100-127Vac / 50-60Hz ■ 1800W: 200-220Vac / 50-60Hz ■ 1980W: 220-230Vac / 50-60Hz ■ 2000W: 220-240Vac / 50-60Hz ■ 2000W: 230-240Vac / 50-60Hz
-----------------	---

+12V	<ul style="list-style-type: none"> ■ Max: 83A (100Vac-127Vac) ■ Max: 150A (200Vac-220Vac) ■ Max: 165A (220Vac-230Vac) ■ Max: 166A (220Vac-240Vac) ■ Max: 166A (230Vac-240Vac)
-------------	--

12V SB	■ Max: 3.5A / Min: 0A
---------------	-----------------------

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

Certification	  Titanium Level
----------------------	---

[[Test Report](#)]

Operating Environment

Environmental Spec.	<ul style="list-style-type: none"> ■ Operating Temperature: 5°C ~ 35°C (41°F ~ 95°F) ■ Non-operating Temperature: -40°C to 70°C (-40°F to 158°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
Motherboard / Chassis	MBD-X12DHM-6	1	Super X12DHM-6 Motherboard
	CSE-HE211-R000NFP	1	2U Chassis
Add-on Card / Module	AOM-AIOM-2X8-P	1	2nd AIOM board (cable solution) for Hyper-E 2U system,RoHS
Add-on Card / Module	AOM-HE211-AIOM-P	1	AIOM connection for Hyper-E 2U system,RoHS
Add-on Card / Module	AOM-HS119-IO-P	1	Hyper IO Board,RoHS
Backplane	BPN-NVME4-HE211N-S6	1	1U 6-Slot BPN Supports 6 x SAS3/SATA3/NVMe4 Storage Device,HF,RoHS
Cable 1	CBL-GNZ4-1221LP-85	1	Genz4C (STR) to 2x SlimlineLP x8 (STR),21/23CM,85 OHM,R
Cable 2	CBL-OTHR-1117	1	[NR] 2x15,PH1.0 to 2x15,PH1.0,28AWG,30CM,1A/pin,RoHS
Cable 3	CBL-PWEX-1088-26	3	2x4,PH4.2 + 2x2pin,PH3.0 to 2x4,PH3.0,26/54CM,16AWG,9A
Cable 4	CBL-PWEX-1226	1	Microfit,2x4,PH3.0 to Microfit,2x4,PH3.0,30CM,9A/P,16AW
Cable 5	CBL-SAST-1218LP-85	1	SlimlineLP X8 (STR) to SlimlineLP x8 (STR),INT,19CM,85
Cable 6	CBL-SAST-1222LP-85	1	SlimlineLP X8 (STR) to SlimlineLP x8 (STR),27CM,85 OHM,
Cable 7	CBL-SAST-1223LP-85	1	SlimlineLP X8 (STR) to SlimlineLP x8 (STR),INT,12CM,85
Cable 8	CBL-SAST-1226LP-85	1	SlimlineLP X8 (STR) to SlimlineLP x8 (STR),25CM,85 OHM,
Cable 9	CBL-SAST-1229LP-85	3	SlimlineLP X8 (STR) to SlimlineLP x8 (STR),INT,28CM,85
Cable 10	CBL-SAST-1230LP-85	1	SlimlineLP X8 (STR) to SlimlineLP x8 (RA),INT,29CM,85 O
Cable 11	CBL-SAST-1232LP-85	1	SlimlineLP X8 (STR) to SlimlineLP x8 (RA),INT,32CM,85 O
Cable 12	CBL-SAST-1243LP-85	1	SlimlineLP x8 (STR to STR),INT,30CM,85 OHM,RoHS
Cable 13	CBL-SAST-1249LP-85	1	SlimlineLP x8 (STR) tp 2x SlimlineLP x4 (STR),49/61CM,8
FAN 1	FAN-0215L4	6	60x60x56 mm, 17K-17K RPM, Counter-rotating Cooling Fan for 2U Hyper-E (CSE-HE211) Series Servers
Power Supply	PWS-2K08F-1R	2	1U 2000W 100-240VAC/50-60Hz, reverse airflow
Riser Card	RSC-H2-6888G4	1	2U LHS Hyper riser card with one PCI-E 4.0 x16 and three PCI
Riser Card	RSC-H2-68G4	2	2U LHS Hyper riser card with one PCI-E 4.0 x16 and one PCI-E
Software	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
Heatsink / Retention	SNK-P0078PR	2	2U Proprietary Passive CPU Heat Sink for X12 Generation Hype-E Series Servers
*Cable 14	CBL-CDAT-1290F	1	[NR] FRONT CNTL,20 TO 20 PIN, P0.5, FFC,FLAT, 90CM, STD
*Cable 15	CBL-PWCD-0160-IS	2	PWCD,US,NEMA5-15P TO IEC60320 C13,6FT,16AWG,RoHS/REACH
*Cable 16	CBL-PWEX-1104-8	1	[NR] 2x4,PH3.0,M to 2x3,PH2.0,F,3A/pin,22AWG,8CM
*Front Panel	FPB-FP826-T	1	Chassis front control board for SC826
*Drive Tray(s)	MCP-220-00178-0B	6	2.5 thin profile drive tray, Orange tab (for hotswap NVMe drive), for SC119UH

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
--	-------------	-----	-------------

6 Drive Bay Configuration (6 SAS/SATA)	AOC-S3808L-L8IT-O + CBL-SAST-1273LP-100	1	6 SAS/SATA (HBA/IT Mode) via Broadcom 3808 for drive bays 0-5
	AOC-S3908L-H8IR-16DD-O + CBL-SAST-1273LP-100	1	6 SAS/SATA (HW RAID) via Broadcom 3908 (RAID 0, 1, 5, 6, 10, 50, 60) for drive bays 0-5
Cable Management Arm for Hyper-E	MCP-290-00168-0N	1	Cable Management Arm for Hyper-E
CacheVault SuperCap	BTR-CVPM05	1	CacheVault Flash Cache Protection Module for Broadcom 3916/3908 RAID controller (CVPM05)
CacheVault SuperCap to PCIe Card Bracket	BKT-BBU-BRACKET-05	1	CacheVault Flash Cache Protection Module for Broadcom 3916/3908 RAID controller (CVPM05)
Drive Tray Label	LBL-0968	-	Pack of 4 "NVMe" labels for hot-swap drive tray
Global Services & Support	SMSAD3/2/1	-	Bronze Level, 3/2/1-year 3BD SLA
	<u>OSNBD3/2/1</u>	-	Silver Level, 3/2/1-year onsite NBD SLA
	<u>OS4HR3/2/1</u>	-	Gold Level, 3/2/1-year onsite 24x7x4 SLA
Intel® VROC RAID Key Options	<u>AOC-VROCINTMOD</u>	1	Intel VROC, RAID 0, 1, 5, 10 (Intel SSD Only)
	<u>AOC-VROCPREMOD</u>	1	Intel VROC Premium, RAID 0, 1, 5, 10
	<u>AOC-VROCSTNMOD</u>	1	Intel VROC Standard, RAID 0, 1, 10
Optional Hyper-E RSC for slot 5 & 7 for 2 PCI-E 4.0 x16	RSC-H2-668G4S	1	Hyper-E RSC for slot 5 & 7 for 2 PCI-E 4.0 x16
Optional RSC and GPU AUX power cable: PCI-E Auxiliary 6 pin or 8 pin for RTX GPU, Intel N3000, Xilinx U200	CBL-PWEX-1086-26	1,2,3	RSC and GPU AUX power cable: PCI-E Auxiliary 6 pin or 8 pin for RTX GPU, Intel N3000, Xilinx U200
Optional sliding rail kit	MCP-290-11902-0N	1	Optional sliding rail kit for Post to Post: 24" ~ 35.3"
	MCP-290-11901-0N	1	Optional sliding rail kit for Post to Post: 26.5" ~ 41.2"
Slim AIOM module	AOC-ATG-i2SM	1	AIOM Dual-Port 10GbE SFP+, based on X710-BM2 with 0.5U Bracket,RoHS
	<u>AOC-ATG-i2TM</u>	1	AIOM 2-port 10GBase-T, Intel X550,RoHS
	<u>AOC-AG-i4M</u>	1	AIOM Quad-Port 1GbE RJ45, based on i350-AM4 with 0.5U Bracket, RoHS
	AOC-A100G-m2CM	1	AIOM 2-port 100GbE QSFP28, Mellanox CX-6 DX w/ 0.5U bracket,RoHS
	<u>AOC-AG-i2M</u>	1	AIOM Dual-Port 1GbE RJ45, based on i350-AM2 with 0.5U Bracket, RoHS
	<u>AOC-AH25G-m2S2TM</u>	1	AIOM Dual-Port 25GbE SFP28 based on Mellanox CX-4 Lx EN, and Dual-Port 10GbE RJ45 based on Intel X550-AT2 with 0.5U Bracket, RoHS
	<u>AOC-AG-i4SM</u>	1	AIOM 4-port GbE SFP, Intel i350-AM4 with 0.5U bracket,RoHS
	<u>AOC-A25G-b2SM</u>	1	AIOM 2-port 25GbE SFP28, Broadcom BCM57414 with 0.5U bracket,RoHS
	AOC-ATG-i4SM	1	AIOM Quad-Port 10GbE SFP+, based on Intel XL710-BM1 with 0.5U Bracket,RoHS
	Software	<u>SFT-DCMS-Single</u>	1
TPM security module	AOM-TPM-9671V-O	-	SPI capable TPM 1.2 with Infineon 9671 controller with vertical form factor
	AOM-TPM-9670V-O	-	SPI capable TPM 2.0 with Infineon 9670 controller with vertical form factor
Trusted Platform Module Options	AOM-TPM-9671V-O	1	SPI capable vertical TPM 1.2
	AOM-TPM-9670V-O	1	SPI capable vertical TPM 2.0
	AOM-TPM-9670V-S-FIPS-O	1	AOM-TPM-9670V-S-FIPS TPM 2.0 support TAA and FIPS

