

# Specifications

## Product SKUs

- SYS-510P-MR** ■ SuperServer SYS-510P-MR (Black)

## Motherboard

- Super X12SPO-F**

## Processor

- CPU** ■ Single Socket P+ (LGA-4189)  
■ 3rd Gen Intel® Xeon® Scalable processors  
■ Support CPU TDP 220W
- Cores** ■ Up to 36C/72T; Up to 60MB Cache

## System Memory

- Memory** ■ Memory Capacity: 8 DIMM slots  
■ UP to 2TB: 8x 256 GB DRAM  
■ UP to 3TB: 4x 256 GB DRAM and 4x 512 GB PMem  
■ Memory Type: 3200/2933/2666MHz ECC DDR4 RDIMM;LRDIMM  
■ Intel® Optane™ persistent memory 200 series
- Memory Voltage** ■ 1.25 V
- Error Detection** ■ Yes

## On-Board Devices

- SATA** ■ SATA3 (6Gbps); RAID 0/1/5/10 support
- NVMe** ■ NVMe; RAID 0/1/5/10 support
- Chipset** ■ Intel® C621A
- Network Connectivity** ■ 2x 1GbE BaseT with Intel® i350
- 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

- SATA** ■ 10 SATA (6Gbps) port(s)
- LAN** ■ 1 RJ45 Dedicated IPMI LAN port  
■ 2 RJ45 1GbE LAN ports
- USB** ■ 5 USB 3.2 Gen 1 port(s) (2 headers; 2 rear; 1 Type A)  
■ 6 USB 2.0 port(s) (4 headers; 2 rear)
- Video** ■ 1 VGA port(s)
- Serial Port** ■ 2 COM Port(s) (1 header; 1 rear)
- DOM** ■ 2 SuperDOM (Disk on Module) port with built-in power

## System BIOS

- BIOS Type** ■ AMI 32MB SPI Flash EEPROM

## Chassis

- Form Factor** ■ 1U Rackmount
- Model** ■ CSE-813MF2TS-R407CBP2

## Dimensions and Weight

- Height** ■ 1.7" (43mm)
- Width** ■ 17.2" (437mm)
- Depth** ■ 19.98" (507mm)
- Package** ■ 8.5" (H) x 24" (W) x 29.5" (D)
- Weight** ■ Net Weight: 17.6 lbs (8 kg)  
■ Gross Weight: 30.4 lbs (13.8 kg)
- Available Color** ■ Black

## Front Panel

- Buttons** ■ Power On/Off  
■ System Reset
- LEDs** ■ Device Activity  
■ LAN 1 Activity  
■ LAN 2 Activity  
■ Power status  
■ System information

## Expansion Slots

- PCI-Express (PCI-E)** ■ Slot 1: PCI-E 4.0 x16 FHHL

## Drive Bays / Storage

- Drive Bays** ■ 4x 3.5" NVMe/SATA drive bays (4x 3.5" NVMe hybrid)
- M.2** ■ 2x PCI-E 3.0 x 4 and SATA  
■ M-key, 2280, 22110
- Peripheral Bays** ■ 2x 2.5" drive bays

## System Cooling

- Fans** ■ 2 AOC cooling Fan(s) (optional)  
■ 4 middle cooling PWM 40x40x28mm Fan(s)

## Power Supply

AC and DC 240V Input, 400W, Platinum Level, Redundancy power supply meet PMBus Revision 1.2 requirement, RoHS/REACH

- Total Output Power** ■ 400W
- Dimension (W x H x L)** ■ 54.5 x 40.25 x 220 mm
- AC Input** ■ 400W: 100-240Vac / 3A-6A / 50-60Hz
- +12V** ■ Max: 33A / Min: 0.5A
- 5V SB** ■ Max: 3A / Min: 0A
- Output Type** ■ Gold Finger Connector

## Management

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|-----------------|--|
| <b>Software</b> | <ul style="list-style-type: none"><li>■ <a href="#">IPMI2.0</a></li><li>■ <a href="#">Redfish API</a></li><li>■ <a href="#">SSM</a></li><li>■ <a href="#">SPM</a></li><li>■ KVM with dedicated LAN</li><li>■ <a href="#">SUM</a></li><li>■ NMI</li></ul> |
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|-----------------------------|---|
| <b>Power Configurations</b> | <ul style="list-style-type: none"><li>■ ACPI/APM Power Management</li></ul> |
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## PC Health Monitoring

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|------------|--|
| <b>CPU</b> | <ul style="list-style-type: none"><li>■ 7+1 Phase-switching voltage regulator</li><li>■ Monitors for CPU Cores, Chipset Voltages, Memory</li></ul> |
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|------------|---|
| <b>FAN</b> | <ul style="list-style-type: none"><li>■ Fans with tachometer monitoring</li><li>■ Pulse Width Modulated (PWM) fan connectors</li><li>■ Status monitor for speed control</li></ul> |
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- |                    |   |
|--------------------|---|
| <b>Temperature</b> | <ul style="list-style-type: none"><li>■ Monitoring for CPU and chassis environment</li><li>■ Thermal Control for fan connectors</li></ul> |
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## Certification



Platinum Level

[ [Test Report](#) ]

## Operating Environment

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|----------------------------|--|
| <b>Environmental Spec.</b> | <ul style="list-style-type: none"><li>■ Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F)</li><li>■ Non-operating Temperature: -40°C to 70°C (-40°F to 158°F)</li><li>■ Operating Relative Humidity: 8% to 90% (non-condensing)</li><li>■ Non-operating Relative Humidity: 5% to 95% (non-condensing)</li></ul> |
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## Parts List

Parts List - (Items Included)			
	Part Number	Qty	Description
<b>Motherboard / Chassis</b>	MBD-X12SPO-F	1	Super X12SPO-F Motherboard
	CSE-813MF2TS-R407CBP2	1	1U Chassis
<b>Backplane</b>	BPN-SAS3-815TQ-N4	1	4-port 1U SAS3 12Gbps Hybrid backplane, support up to 4x 3.5-inch SAS3/SATA3/NVMe Storage Devices
<b>Cable 1</b>	CBL-SAST-0811	1	MINI SAS HD-4 SATA (RA),12G,INT,50/50/60/70,70CM SB,30AWG
<b>Manual</b>	MNL-2267-QRG	1	510P-M/MR Quick Reference Guide
<b>Riser Card</b>	RSC-S-6G4	1	1U LHS Standard riser card with one PCI-E 4.0 x16 slot,HF,Ro
<b>Software</b>	SFT-OOB-LIC	1	License key for enabling OOB BIOS management
<b>Heatsink / Retention</b>	SNK-P0077P	1	1U Passive CPU Heat Sink for X12 Generation Intel Whitley and Cedar Island Platforms
<b>*Power Supply</b>	PWS-407P-1R	2	AC and DC 240V Input, 400W, Platinum Level, Redundancy power supply meet PMBus Revision 1.2 requirement,RoHS/REACH
<b>*Power Distributor</b>	PDB-PT813M-2424	1	Power Distributor With 24pin for SC813M
<b>*Cable 2</b>	CBL-0071L	1	ROUND 16 TO 16 PIN RIBBON FP CABLE 30"L, LF
<b>*Cable 3</b>	CBL-PWCD-0160-IS	2	PWCD,US,NEMA5-15P TO IEC60320 C13,6FT,16AWG,RoHS/REACH
<b>*Peripheral Drive1</b>	CSE-PT93L-B	1	Black DVD dummy cover for SC813, 813M, 815, PBF-RoHS
<b>*FAN 1</b>	FAN-0154L4	4	40x40x28 mm, 22.5K RPM, SC813MF Middle Cooling Fan,RoHS/REACH
<b>*Front Panel</b>	FPB-FP813-D	1	Front control board dual color for SC815,SC813M (C)
<b>*Drive Tray(s)</b>	MCP-220-00075-0B	4	Black gen 5.5 hot-swap 3.5" HDD tray
<b>*Rear Window</b>	MCP-240-00086-0N	1	STD rear window for SC113 redundant PWS
<b>*Power Supply</b>	MCP-250-00016-0V	1	Redundant Silver plastic PDB cover for SC813M,113M
<b>*Parts</b>	MCP-260-00078-0N	1	1U I/O shield for X10 and X9 Server MB with 5X5mm vent hole and EMI Gasket,RoHS/REACH,PBF
<b>*Rail Set</b>	MCP-290-00102-0N	1set	Outer rail, quick-release type, 25.6" to 33.05"
<b>*Rail Set</b>	MCP-290-00108-0N	1set	Inner rail, front, short, quick-release type
<b>*Rail Set</b>	MCP-290-00110-0N	1set	Inner rail, extension (quick) for 1U 17.2
<b>*Fan Holder</b>	MCP-320-00060-0N	1	Slim Fan tray for six 40x28 fans in SC813M (for X11DPL-i 12"x10.15")
<b>*Parts</b>	MCP-340-00001-01	2	Dummy fan 40x28mm

### Notes:

- Parts with \* are inside the chassis
- 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>3.5" to 2.5" Converter Tray(s)</b>	MCP-220-00043-0N • <a href="#">eStore</a>	-	Hot-swap Gen-4 3.5" to 2.5" HDD tray, Black
<b>3.5" to 2.5" NVMe Drive Tray(s)</b>	MCP-220-00138-0B • <a href="#">eStore</a>	-	Tool-less Hot-swap Gen-5.5 NVMe 3.5" to 2.5" drive tray, Orange tab, Black
<b>Add-on Card for additional M.2</b>	<a href="#">AOC-SLG3-2H8M2</a>	-	Standard LP, PCI-E 3.0 x8, supports 2x NVMe/SATA M-Key M.2 Modules; RAID 0,1
<b>Cooling Fan(s)</b>	FAN-0154L4 • <a href="#">eStore</a>	-	40x40x28 mm, 22.5K RPM, Middle Cooling Fan
<b>DVD-ROM / DVD-RW</b>	DVM-PLDS-DVDRW-SBT5	1	PHILIPS slim DVD-RW SATA drive

	DVM-TEAC-DVD-SBT5	1	TEAC slim DVD-ROM SATA drive
<b>DVD-ROM Accessory</b>	MCP-220-81502-0N • <a href="#">eStore</a>	1	Slim SATA DVD mounting kit
<b>Front Bezel</b>	CSE-PTFB-813-02B	1	Black Front Bezel w/ Round Venting Holes
	CSE-PTFB-813LB	1	Black Front Bezel
<b>Hot-swap 2.5" kit (DVD slot)</b>	MCP-220-81506-0N • <a href="#">eStore</a>	1	Single 2.5" SAS3 (12Gb/s) hot swap in slim DVD form factor
<b>Hot-swap 2.5" kit (FDD slot)</b>	MCP-220-81504-0N • <a href="#">eStore</a>	1	Single 2.5" SAS3 (12Gb/s) hot swap in slim FDD form factor
<b>Inlet Thermal Sensor</b>	MCP-280-00034-0N	1	Universal Thermal sensor kit with 40cm I2C cable
<b>Intel VROC RAID Key for NVMe</b>	<a href="#">AOC-VROCPREMOD</a>	1	Premium Upgrade module (Intel + 3rd party Vendor SSD); RAID 0/1/10/5
	<a href="#">AOC-VROCSTNMOD</a>	1	Standard Upgrade module (Intel + 3rd party Vendor SSD); RAID 0/1/10
	<a href="#">AOC-VROCINTMOD</a>	1	Intel SSD Only Upgrade module; RAID 0/1/10/5
<b>NVMe Cable(s)</b>	CBL-SAST-1264-85	-	Slimline x8 (STR) to 2x Oculink x4 (STR),64CM,85 OHM,Ro
<b>Software</b>	<a href="#">SFT-DCMS-Single</a>	1	DataCenter Management Package (per node license)
<b>Storage Control Card and Cable(s)</b>	<a href="#">AOC-S3008L-L8I</a>	1	Standard LP, 8 internal ports (12Gb/s) PCI-E 3.0 x8, 63HDD; RAID 0, 1, 10
	AOC-S3908L-H8iR-16DD + 1x CBL-SAST-1275A-100	1	Standard LP, 8 internal ports (12Gb/s) PCI-E 4.0 x8, 16HDD; RAID 0, 1, 5, 6, 10, 50, 60
	<a href="#">AOC-S3108L-H8iR-16DD</a>	1	Standard LP, 8 Internal ports (12Gb/s) PCI-E 3.0 x8, 16HDD; RAID 0, 1, 5, 6, 10, 50, 60
<b>Storage Control Card and Cable(s) (HBA)</b>	<a href="#">AOC-S3808L-L8IT</a> + 1x CBL-SAST-1275A-100	1	Standard LP, 8 internal ports (12Gb/s) PCI-E 4.0 x8, 122HDD; HBA
	<a href="#">AOC-S3008L-L8E</a>	1	Standard LP, 8 internal ports (12Gb/s) PCI-E 3.0 x8, 122HDD; HBA
<b>TPM</b>	<a href="#">AOM-TPM-9671H-S</a>	1	TPM 1.2, horizontal form factor, provisioned for server
	<a href="#">AOM-TPM-9670H-S</a>	1	TPM 2.0, horizontal form factor, provisioned for server