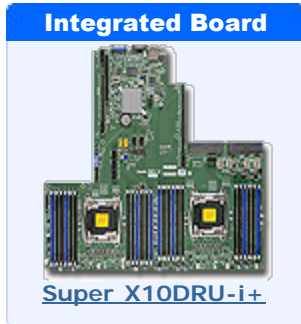


SuperServer 2028U-TRTP+ (Complete System Only)



Key Features

• Flexible Connectivity Options

1. Dual socket R3 (LGA 2011) supports Intel® Xeon® processor E5-2600 v3 family; QPI up to 9.6GT/s
2. Up to 1.5TB ECC, up to DDR4 2133MHz; 24x DIMM slots
3. 1x PCI-E 3.0 x16 slot (FH, 10.5" L), 7x PCI-E 3.0 x8 slots (5x FH, 10.5" L, 1x LP, 1x Internal LP)
4. 2x 10G SFP+ ports
5. 24x Hot-swap 2.5" Drive Bays: 10x SATA3 ports by default; Optional drive support: 24x SAS3
6. 4x heavy duty fans w/ optimal fan speed control
7. 1000W High efficiency (96%) Redundant PSU; **Titanium Level**

Note: Image above may show a varied configuration or optional parts, Please refer to parts list for standard parts included.

Specifications

Product SKUs

- SYS-2028U-TRTP+** ■ SuperServer 2028U-TRTP+ (**Black**)

Motherboard

Super X10DRU-i+

Processor/Cache

- CPU** ■ Intel® Xeon® processor E5-2600 v3 family (up to 160W TDP) *
■ Dual Socket R3 (LGA 2011)

- Cores / Cache** ■ Up to 18 Cores / Up to 45MB Cache

- System Bus** ■ QPI up to 9.6 GT/s

Note * Please contact Supermicro Technical Support for additional information about frequency optimized CPUs and specialized system optimization.

System Memory

Chassis

- Form Factor** ■ 2U Rackmount
- Model** ■ **CSE-219UAC-R1K02**

Dimensions and Weight

- Width** ■ 17.2" (437mm)
- Height** ■ 3.5" (89mm)
- Depth** ■ 27.76" (705.3mm)
- Weight** ■ Net Weight: 36 lbs (16.4 kg)
■ Gross Weight: 72 lbs (32.7 kg)
- Available Colors** ■ Black

Front Panel

- Buttons** ■ Power On/Off button
■ System Reset button
■ UID button
- LEDs** ■ Power status LED
■ HDD activity LED
■ 2x Network activity LEDs
■ System information (overheat/UID) LED

Memory Capacity	<ul style="list-style-type: none"> 24x 288-pin DDR4 DIMM slots Up to 1.5TB ECC LRDIMM, RDIMM
Memory Type	<ul style="list-style-type: none"> 2133/1866/1600MHz ECC DDR4 SDRAM 72-bit
DIMM Sizes	<ul style="list-style-type: none"> 64GB, 32GB, 16GB, 8GB, 4GB
Memory Voltage	<ul style="list-style-type: none"> 1.2 V
Error Detection	<ul style="list-style-type: none"> Corrects single-bit errors

On-Board Devices

Chipset	<ul style="list-style-type: none"> Intel® C612 chipset
SATA	<ul style="list-style-type: none"> SATA3 (6Gbps) with RAID 0, 1, 5, 10
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 ASPEED AST2400 BMC
Network Connectivity	<ul style="list-style-type: none"> 2x 10G SFP+ ports via AOC-2UR68-i2XS Intel® 82599ES 10G SFP+ 1x Realtek RTL8211E PHY (dedicated IPMI)
Graphics	<ul style="list-style-type: none"> ASPEED AST2400 BMC

Input / Output

SATA	<ul style="list-style-type: none"> 10x SATA3 (6Gbps) ports
SAS	<ul style="list-style-type: none"> 24x SAS3 ports support via optional Add-on Cards
LAN	<ul style="list-style-type: none"> 2x 10G SFP+ ports 1x RJ45 Dedicated IPMI LAN port
USB	<ul style="list-style-type: none"> 5x USB 3.0 ports (2 rear, 2 onboard header, 1 Type A)
Video	<ul style="list-style-type: none"> 1x VGA Connector
Serial Port / Header	<ul style="list-style-type: none"> 1x Serial header
DOM	<ul style="list-style-type: none"> 2x SuperDOM (Disk on Module) ports

System BIOS

BIOS Type	<ul style="list-style-type: none"> 128Mb SPI Flash EEPROM with AMI BIOS
BIOS Features	<ul style="list-style-type: none"> Plug and Play (PnP) APM 1.2 PCI 2.3 ACPI 1.0 / 2.0 / 3.0 / 4.0 USB Keyboard support SMBIOS 2.7.1 UEFI 2.3.1

Management

Software	<ul style="list-style-type: none"> SuperDoctor® 5 Intel® Node Manager 3.0 Watch Dog NMI SMCBU and SMM Optional IPMI 1.5 / 2.0
Power Configurations	<ul style="list-style-type: none"> ACPI Power Management Power-on mode for AC power recovery

Expansion Slots

PCI-Express	<ul style="list-style-type: none"> 1x PCI-E 3.0 x16 slot (FH, 10.5" L) 7x PCI-E 3.0 x8 slots (5x FH, 10.5" L, 1x LP, 1x Internal LP)
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(Both CPUs need to be installed for full access to PCI-E slots and onboard controllers. See manual block diagram and [AOC Support for details.](#))

Drive Bays

Hot-swap	<ul style="list-style-type: none"> 24x Hot-swap 2.5" Drive Bays: 10x SATA3 ports by default Optional drive support: 24x SAS3
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Note: optional storage card is required to support more than 10 drives.

Backplane

2U SAS3 backplane

System Cooling

Fans	<ul style="list-style-type: none"> 4x 8cm heavy duty PWM fans
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Power Supply with Digital Switching Control

1000W Redundant Titanium Level (96%) Single Output Power Supplies	
AC Input	<ul style="list-style-type: none"> 100-127 V, 50-60 Hz 200-240 V, 50-60 Hz
+12V	<ul style="list-style-type: none"> Max: 62.5A & Min: 0A (100Vac-127Vac) Max: 83A (200Vac-240Vac) & Min: 0A
12V SB	<ul style="list-style-type: none"> Max: 2.1A Min: 0A

Certification	 
Titanium Level [Test Report]	

PC Health Monitoring

Voltage	<ul style="list-style-type: none"> Monitors for CPU Cores, +1.8V, +3.3V, +5V, +12V, +3.3V Standby, +5V Standby, VBAT, Memory Voltages. 5+1 Phase-switching voltage regulator
FAN	<ul style="list-style-type: none"> 8x 4-pin fan headers Status monitor for speed control Pulse Width Modulated (PWM) fan connectors
Temperature	<ul style="list-style-type: none"> Support to monitor Supermicro AOC temperatures from IPMI or SD 5 Monitoring for CPU and chassis environment CPU thermal trip support Thermal Control for 8x Fan Connectors Thermal Monitor 2 (TM2) support PECI
LED	<ul style="list-style-type: none"> Memory DIMM ECC error LEDs CPU / System Overheat LED Suspend static indicator LED UID/Remote UID
Other Features	<ul style="list-style-type: none"> 4x 8-pin GPU power connectors Chassis intrusion detection Chassis intrusion header SDDC Support RoHS

Operating Environment / Compliance**RoHS**

- RoHS Compliant

Environmental Spec.

- Operating Temperature: 10°C to 35°C (50°F to 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
Motherboard / Chassis	MBD-X10DRU-i+	1	Super X10DRU-i+ Motherboard
	CSE-219UAC-R1K02	1	2U Chassis
Add-on Card / Module	AOC-2UR68-I2XS	1	2U Ultra Riser based on Intel 82599ES controller with 2 10Gb SFP+ ports, 1 internal PCI-E x8 3.0 slot, 1 PCI-E x16 3.0, and 1 PCI-E x8 3.0 (in x16 slot)
Air Shroud	MCP-310-82912-0N	1	
Backplane	BPN-SAS3-216A	1	24x 2.5"HDD backplane, support SAS-3 12Gb/s,mini-SAS HD connector,new 29-pin SAS-3 receptacles,support power control stagger spin,pre-charge resistor,fuse protect and SGPIO encl mgmt,RoHS/REACH,PBF
Cable 1	CBL-SAST-0591	1	cross-over mini SAS HD to 4 SATA w/SB, S. 75cm. 30AWG,HF,RoHS/REACH,PBF
Cable 2	CBL-PWEX-0673	3	8 pin female to 2x big 4 pin female power, 65/70CM, 18AWG,RoHS/REACH
Cable 3	CBL-SAST-0657	2	Internal RA side exit (right) miniSAS to miniSAS HD 55cm w/ SB, 30AWG,RoHS/REACH
Parts	MCP-240-82910-0N	1	Ultra I/O bracket for SC829U, 219U (i2XS),HF,RoHS/REACH
Label	LBL-0108	1	CAUTION LABEL FOR REDUNDANT PWR SYSTEMS
Manual	MNL-1695-QRG	1	SYS-2028U-T(N)R(4/4T/T/TP)+, QRG,HF,RoHS/REACH
Riser Card	RSC-R2UW-4E8	1	RSC-R2UW-4E8-O-P
Riser Card	RSC-R1UW-E8R	1	RSC-R1UW-E8R-O-P
Heatsink / Retention	SNK-P0058PSU	2	2U Passive CPU Heat Sink for X10 2U 24-DIMM Ultra Series Servers,RoHS/REACH
Power Supply	PWS-1K02A-1R	2	1U 1000W Redundant Power Supply 73.5mm width Titanium Level,RoHS/REACH
Mounting Rails	MCP-290-00053-0N	1	Inner/outer rail set, quick-release type, 26.5" to 36.4"
	MCP-290-00060-0N	1	Threaded rail adapter default for round hole rack

Optional Parts List			
	Part Number	Qty	Description
Mounting Rails	MCP-290-00053-0N	-	Inner/outer rail set, quick-release type, 26.5" to 36.4"
	MCP-290-00060-0N	-	Threaded rail adapter default for round hole rack
10GbE SFP+ Direct Attach Cable (DAC, copper wire)	CBL-0347L	-	1M 10G SFP+ to SFP+ Passive Copper M-M Pull type 30AWG
	CBL-0348L	-	3M 10G SFP+ to SFP+ Passive Copper M-M Pull type 24AWG
	CBL-0349L	-	5M 10G SFP+ to SFP+ Passive Copper M-M Pull type 24AWG
	CBL-NTWK-0347	-	1M 10G SFP+ to SFP+ Passive Copper M-M Push type 30AWG
	CBL-NTWK-0456	-	2M 10G SFP+ to SFP+ Passive Copper M-M Push type 30AWG
Storage Control Card and Cable(s)	AOC-S3008L-L8e & 2x CBL-SAST-0593	-	Std LP, 8 internal ports, 12Gb/s per port- Gen3, 122HDD, HBA; Internal Mini-SAS HD to Mini-SAS HD 60cm,30AWG,12Gb/s
	AOC-S3008L-L8i & 2x CBL-SAST-0593	-	Std LP, 8 internal ports, 12Gb/s per port- Gen3, 63HDD, RAID 0,1,1E; Internal Mini-SAS HD to Mini-SAS HD 60cm,30AWG,12Gb/s
	AOC-S3108L-H8iR & 2x CBL-SAST-0593	-	Std LP, 8 internal ports, 12Gb/s per port- Gen3, 240HDD, RAID 0, 1, 5, 6, 10, 50, 60; Internal Mini-SAS HD to Mini-SAS HD
Network Card(s)	AOC-S40G-i2Q	-	Standard LP 2-port 40GbE controller, based on Intel Fortville XL710
	AOC-SGP-i2	-	Standard LP, 2x GbE RJ45, PCI-E x4, Intel i350AM2
	AOC-SGP-i4	-	Standard LP, 4x GbE RJ45, PCI-E x4, Intel i350
	AOC-STG-b4S	-	Standard LP, 4x 10GbE SFP+, PCI-E x8, Broadcom BCM57840S
	AOC-STGN-i2S	-	Standard LP, 2x 10GbE SFP+, PCI-E x8, Intel 82599ES
	AOC-STGN-i1S	-	Standard LP, 1x 10GbE SFP+, PCI-E x8, Intel 82599EN
	AOC-STG-i2T	-	Standard LP, 2x 10GbE RJ45, PCI-E x8, Intel X540
	AOC-STG-i2	-	Standard LP, 2x 10GbE CX4, PCI-E x8, Intel 82598EB
CacheVault(s)	BTR-CV3108-U1	-	CacheVault for LSI 3108 with Supercap mounting for 2U Ultra
	BTR-TFM8G-LSICVM02 & BKT-BBU-BRACKET-05	-	CacheVault for LSI 3108; Supercap mounting bracket for PCI-E location
	BTR-TFM8G-LSICVM02 & MCP-240-00127-0N	-	CacheVault for LSI 3108; Supercap mounting bracket for 2.5" HDD location
Onsite Service Program	OS4HR3/2/1	-	3/2/1-year onsite 24x7x4 service
Onsite Service Program	OSNBD3/2/1	-	3/2/1-year onsite NBD service
Software	SFT-OOB-LIC	1	OOB Management Package (per node license)
Software	SFT-DCMS-Single	1	DataCenter Management Package (per node license)