

SuperServer 2028U-TR4T+ (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), 6x PCI-E 3.0 x8 slots (4x FH, 10.5" L, 1x LP, 1x Internal LP)
4. 4x 10GBase-T 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

Due to the complexity of integration, this product is sold as completely assembled systems only (including but not limited to CPUs, memory, and HDDs). Please contact your Supermicro sales rep for special requirements.

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-TR4T+	▪ SuperServer 2028U-TR4T+ (Black)
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Motherboard

Super X10DRU-i+

Processor/Cache

CPU	▪ Intel® Xeon® processor E5-2600 v3 family (up to 160W TDP) * ▪ Dual Socket R3 (LGA 2011)
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Cores / Cache	▪ Up to 18 Cores / Up to 45MB Cache
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System Bus	▪ QPI up to 9.6 GT/s
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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	▪ 25.5" (647mm)
Gross Weight	▪ 36 lbs (16.4kg)
Available Colors	▪ Black

Front Panel

Buttons	▪ Power On/Off button ▪ System Reset 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, 768GB ECC 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"> RDIMM: 32GB, 16GB, 8GB, 4GB LRDIMM: 64GB, 32GB
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 Express 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"> 4x 10GBase-T ports via AOC-2UR6-i4XT
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"> 4x RJ45 10GBase-T LAN 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 SMCUBU 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

- 1x PCI-E 3.0 x16 slot (FH, 10.5" L)
- 6x PCI-E 3.0 x8 slots (4x FH, 10.5" L, 1x LP, 1x Internal LP)

PCI-Express

(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

- 24x Hot-swap 2.5" Drive Bays: 10x SATA3 ports by default
- Optional drive support: 24x SAS3

Hot-swap

Note: optional storage card is required to support more than 10 drives.

Backplane

2U SAS/SATA backplane

System Cooling

- Fans
- 4x 8cm heavy duty PWM fans

Power Supply with Digital Switching Control

1000W Titanium Level (96%) High-efficiency Redundant 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)
12V SB	<ul style="list-style-type: none"> Max: 2.1A

Certification	 Titanium Level [Test Report]
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PC Health Monitoring

- Voltage
- 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
- 8x 4-pin fan headers
 - Status monitor for speed control
 - Pulse Width Modulated (PWM) fan connectors

- Temperature
- 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
- Memory DIMM ECC error LEDs
 - CPU / System Overheat LED
 - Suspend static indicator LED
 - UID/Remote UID

- Other Features
- 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: 5°C to 40°C (41°F to 104°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
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-SAST-0657	2	Internal RA side exit (right) miniSAS to miniSAS HD 55cm w/ SB, 30AWG,RoHS/REACH
Cable 3	CBL-PWEX-0673	3	8 pin female to 2x big 4 pin female power, 65/70CM, 18AWG,RoHS/REACH
Riser Card	RSC-R2UW-4E8-O-P	1	RSC-R2UW-4E8-O-P
Riser Card	RSC-R1UW-E8R-O-P	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
Drive Tray(s)	MCP-220-00047-0B	24	Black gen 3rd hot-swap 2.5inch HDD tray
Add-on Card	AOC-2UR6-i4XT	1	AOC for 4x 10GBase-T ports

Optional Parts List

	Part Number	Qty	Description
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 60cm,30AWG,12Gb/s
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-TFM8G-LSICVM02	-	CacheVault for LSI 3108 (LSICVM02)
CacheVault Installation Kits	MCP-240-00127-0N	-	SuperCap installation kit for thick 2.5" HDD location
	BKT-BBU-BRACKET-05	-	SuperCap installation kit for PCI-E location
Onsite Service Program	QS4HR3/2/1	-	3/2/1-year onsite 24x7x4 service
Onsite Service Program	QSNBD3/2/1	-	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)