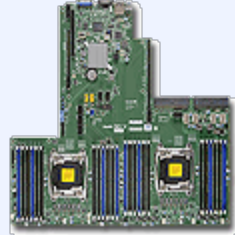


SuperServer 2028U-TN24R4T+ (Complete System Only)



Integrated Board



Super X10DRU-i+

Due to the complexity of integration, this product is sold as completely assembled systems only (with minimum 2 CPU, 4 DIMM and 6 NVMe). Please contact your Supermicro sales rep for special requirements.

Key Features

- **Up to 24x NVMe drives supported**
- **Flexible Connectivity Options**

1. Dual socket R3 (LGA 2011) supports Intel® Xeon® processor E5-2600 v4[†]/ v3 family; QPI up to 9.6GT/s
2. Up to **3TB[†]** ECC 3DS LRDIMM , up to DDR4- **2400[†]**MHz ; 24x DIMM slots
3. 2x PCI-E 3.0 x16 (2x FH, 10.5" L), 1x PCI-E 3.0 x8 (LP) slots
4. 4x 10GBase-T ports
5. 24x NVMe Hot-swap 2.5" drive bays (4 Hybrid ports - optional SAS3 supported via AOC); 2x rear SATA3 Hot-swap 2.5" drive bays
6. 4x heavy duty fans w/ optimal fan speed control
7. 1600W 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-TN24R4T+** ■ SuperServer 2028U-TN24R4T+ (**Black**)

Motherboard

Super X10DRU-i+

Processor/Cache

- CPU** ■ Intel® Xeon® processor E5-2600 v4[†]/ v3 family (up to 160W TDP) *
■ Dual Socket R3 (LGA 2011)

- Cores / Cache** ■ Up to **22 Cores[†]** / Up to **55MB[†]** Cache

- System Bus** ■ QPI up to 9.6 GT/s

- Note** [†] BIOS version 2.0 or above is required

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

Chassis

- Form Factor** ■ 2U Rackmount

- Model** ■ **CSE-219AC24-R1K62P-N24T**

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

- LEDs** ■ Power status LED
■ HDD activity LED
■ 2x Network activity LEDs
■ System information (overheat/UID) LED

System Memory

Memory Capacity

- 24x 288-pin DDR4 DIMM slots
- Up to 3TB[†] ECC 3DS LRDIMM, 768GB ECC RDIMM

Memory Type

- 2400[†]/2133/1866/1600MHz ECC DDR4 SDRAM 72-bit

DIMM Sizes

- RDIMM: 32GB, 16GB, 8GB, 4GB
- LRDIMM: 64GB, 32GB
- 3DS LRDIMM: 128GB

Memory Voltage

- 1.2 V

Error Detection

- Corrects single-bit errors

On-Board Devices

Chipset

- Intel® C612 chipset

SATA

- SATA3 (6Gbps) with RAID 0, 1, 5, 10

IPMI

- 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

- 4x 10GBase-T ports via [AOC-2UR6N4-i4XT](#)
- Intel® X540 10GBase-T
- 1x Realtek RTL8211E PHY (dedicated IPMI)

Graphics

- ASPEED AST2400 BMC

Input / Output

SATA

- 6x SATA3 (6Gbps) ports (4x SATA3 via optional cable)

SAS

- 4x SAS3 ports support via optional AOC

NVMe

- 24x NVMe ports

LAN

- 4x 10GBase-T LAN ports
- 1x RJ45 Dedicated IPMI LAN port

USB

- 5x USB 3.0 ports (2 rear, 2 onboard header, 1 Type A)

Video

- 1x VGA Connector

Serial Port / Header

- 1x Serial header

DOM

- 2x SuperDOM (Disk on Module) ports

System BIOS

BIOS Type

- 128Mb SPI Flash EEPROM with AMI BIOS

BIOS Features

- 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

- [SuperDoctor® 5](#)
- Intel® Node Manager 3.0
- Watch Dog
- NMI
- [SUM](#) and [SSM](#)
- Optional IPMI 1.5 / 2.0

Power Configurations

- ACPI Power Management
- Power-on mode for AC power recovery

Expansion Slots

PCI-Express

- 2x PCI-E 3.0 x16 (FH, 10.5" L) slots
- 1x PCI-E 3.0 x8 (LP) slot

Drive Bays

Hot-swap

- Total 26x Tool-less Hot-swap 2.5" drive bays (Front: 24, Rear: 2): 4 x Hybrid (NVMe/SATA3) ports - Optional SAS3 support via AOC

System Cooling

Fans

- 4x 8cm heavy duty PWM fans

Power Supply

1600W Redundant Power Supplies with PMBus

Total Output Power

- 1000W/1600W

Dimension (W x H x L)

- 73.5 x 40 x 203 mm

Input

- 100-127Vac / 13 - 9A / 50-60Hz
- 200-240Vac / 10 - 8A / 50-60Hz

+12V

- Max: 83.3A / Min: 0A (100-127Vac)
- Max: 133A / Min: 0A (200-240Vac)

12Vsb

- Max: 2.1A / Min: 0A

Output Type

- 25 Pairs Gold Finger Connector

Certification



UL/cUL/CB/BSMI/CE/CCC
Titanium Level
[Test Report]

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: 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)

Parts List

Parts List - (Items Included)

	Part Number	Qty	Description
Motherboard / Chassis	MBD-X10DRU-i+	1	Super X10DRU-i+ Motherboard
	CSE-219AC24-R1K62P-N24T	1	2U Chassis
Add-on Card / Module	AOC-2UR6N4-i4XT-P	1	2U Ultra Riser with 4-port 10GbE RJ45 (10GBase-T)
Air Shroud	MCP-310-82912-0N	1	
Backplane	BPN-SAS3-826TQ-B2B	1	2-Port 12Gbps Backplane for 2x2.5
Backplane	BPN-NVME3-216EB	1	BPN-NVMe3-216A-S4 Backplane Base Board
Backplane	BPN-NVME3-216EL	2	PCIe Gen3x16 input to PLX9765 to support 12x NVMe port
Cable 1	CBL-PWEX-0702	1	8 pin female to RA(Right Angle) big 4 pin female power, 32cm, 18AWG, pinout 5-1, 3-2, 4-3, 7-4,RoHS/REACH
Cable 2	CBL-0097L-03	1	lpass to 4 SATA, 51cm, W/51cm SB, S, 30AWG
Cable 3	CBL-0333L-01	2	8 pin to 8 pin GPU power extension. 40cm. 20AWG
Cable 4	CBL-PWEX-0653	3	8 pin female to 4 pin female power, 37cm, 18AWG,RoHS/REACH
Cable 5	CBL-SAST-0819	4	OCuLink v.91,INT,PCIe NVMe SSD, 65CM,34AWG
Cable 6	CBL-SAST-0820	4	OCuLink v.91,INT,PCIe NVMe SSD, 85CM,34AWG
Label	LBL-0108	1	CAUTION LABEL FOR REDUNDANT PWR SYSTEMS
Manual	MNL-1824-QRG	1	SYS-2028U-TN24R4T+ Reference Guide
Parts	MCP-110-00015-0N	8	Pan head screw, #6-32 x 6L
Riser Card	RSC-U2N4-6	1	2U Ultra Riser Card with 4 NVME and PCI-Ex16,RoHS/REACH
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-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
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
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-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	-	CacheVault for LSI 3108; Supercap mounting bracket for 2.5" HDD

	& MCP-240-00127-0N		location
Global Services & Support	<u>OS4HR3/2/1</u>	-	3/2/1-year onsite 24x7x4 service
	<u>OSNBD3/2/1</u>	-	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)