

SuperServer 2028U-TN24R4T+ (Complete System Only)



Integrated Board



Super X10DRU-i+

Views: | [Angled View](#) | [Top View](#) |
| [Front View](#) | [Rear View](#) |

Complete System Only: To maintain quality and integrity, this product is sold only as a completely-assembled system (with minimum 2 CPUs, 4 DIMMs and 6 U.2 NVMe).

▶ [Drivers & Utilities](#) ▶ [BIOS](#) ▶ [IPMI](#) ▶ [Tested Memory](#) ▶ [NVMe Options](#) ▶ [Manuals](#) ▶ [OS Certification Matrix](#) ▶ [Quick-References Guide](#) ▶ [Drive Options](#) ▶ [Network Card \(AOC\) Matrix](#)

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

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**

Specifications

Product SKUs

SYS-2028U-TN24R4T+	<ul style="list-style-type: none"> SuperServer 2028U-TN24R4T+ (Black)
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Motherboard

Super X10DRU-i+

Processor/Cache

CPU	<ul style="list-style-type: none"> Intel® Xeon® processor E5-2600 v4[†]/ v3 family (up to 160W TDP) * Dual Socket R3 (LGA 2011)
Cores / Cache	<ul style="list-style-type: none"> Up to 22 Cores[†] / Up to 55MB[†] Cache
System Bus	<ul style="list-style-type: none"> QPI up to 9.6 GT/s
Note	<ul style="list-style-type: none"> [†] BIOS version 2.0 or above is required
Note	<ul style="list-style-type: none"> * Please contact Supermicro Technical Support for additional information about frequency optimized CPUs and specialized system optimization.

System Memory

Memory Capacity	<ul style="list-style-type: none"> 24x 288-pin DDR4 DIMM slots Up to 3TB[†] ECC 3DS LRDIMM, 768GB ECC RDIMM
Memory Type	<ul style="list-style-type: none"> 2400[†]/2133/1866/1600MHz ECC DDR4 SDRAM 72-bit 2666/2400 ECC DDR4 NVDIMM
DIMM Sizes	<ul style="list-style-type: none"> RDIMM: 32GB, 16GB, 8GB, 4GB LRDIMM: 64GB, 32GB 3DS LRDIMM: 128GB NVDIMM: 16GB
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"> 4x 10GBase-T ports via AOC-2UR6N4-i4XT Intel® X540 10GBase-T 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"> 6x SATA3 (6Gbps) ports (4x SATA3 via optional cable)
SAS	<ul style="list-style-type: none"> 4x SAS3 ports support via optional AOC
NVMe	<ul style="list-style-type: none"> 24x NVMe ports

Chassis

Form Factor	<ul style="list-style-type: none"> 2U Rackmount
Model	<ul style="list-style-type: none"> CSE-219UBTS-R1K62P-TN24

Dimensions and Weight

Width	<ul style="list-style-type: none"> 17.2" (437mm)
Height	<ul style="list-style-type: none"> 3.5" (89mm)
Depth	<ul style="list-style-type: none"> 27.76" (705.3mm)
Weight	<ul style="list-style-type: none"> Net Weight: 36 lbs (16.4 kg) Gross Weight: 72 lbs (32.7 kg)
Available Colors	<ul style="list-style-type: none"> Black

Front Panel

Buttons	<ul style="list-style-type: none"> Power On/Off button System Reset button
LEDs	<ul style="list-style-type: none"> Power status LED HDD activity LED 2x Network activity LEDs System information (overheat/UID) LED

Expansion Slots

PCI-Express	<ul style="list-style-type: none"> 2x PCI-E 3.0 x16 (FH, 10.5" L) slots 1x PCI-E 3.0 x8 (LP) slot <p>(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.)</p>
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Drive Bays



Hot-swap	<ul style="list-style-type: none"> Total 26x Hot-swap 2.5" drive bays (Front: 24, Rear: 2): 4 x Hybrid (NVMe/SATA3) ports - Optional SAS3 support via AOC
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System Cooling

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

1600W Redundant Power Supplies with PMBus

Total Output Power	<ul style="list-style-type: none"> 1600W/1000W
Dimension (W x H x L)	<ul style="list-style-type: none"> 73.5 x 40 x 203 mm
Input	<ul style="list-style-type: none"> 100-127Vac / 13 - 9A / 50-60Hz 200-240Vac / 10 - 8A / 50-60Hz
+12V	<ul style="list-style-type: none"> Max: 83.3A / Min: 0A (100-127Vac) Max: 133A / Min: 0A (200-240Vac)
12Vsb	<ul style="list-style-type: none"> Max: 2.1A / Min: 0A
Output Type	<ul style="list-style-type: none"> 25 Pairs Gold Finger Connector
Certification	<ul style="list-style-type: none">   Titanium Level [Test Report]

LAN	<ul style="list-style-type: none"> 4x 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 SUM and SSM Optional IPMI 1.5 / 2.0
Power Configurations	<ul style="list-style-type: none"> ACPI Power Management Power-on mode for AC power recovery

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	<ul style="list-style-type: none"> RoHS Compliant
Environmental Spec.	<ul style="list-style-type: none"> Operating Temperature: 10°C to 35°C (50°F to 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-X10DRU-i+	1	Super X10DRU-i+ Motherboard
	CSE-219UBTS-R1K62P-TN24	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 2U SAS3 12Gbps backplane, support up to 2x 2.5-inch SAS3/SATA3 HDD/SSD
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-0333L-01	2	8 pin to 8 pin GPU power extension. 40cm. 18/20AWG
Cable 2	CBL-PWEX-0702	1	PWEX,2X4F/P4.2 TO 1X4F/P5.08/RA,32CM,18AWG,YEL,BLK*2,RED
Cable 3	CBL-0097L-03	1	MINI SAS-4 SATA,INT,51CM,51CM SB,30AWG
Cable 4	CBL-SAST-0819	4	OCuLink v 1.0,INT,PCIe NVMe SSD, 65CM,34AWG,RoHS/REACH
Cable 5	CBL-PWEX-0653	3	8 pin female to 4 pin female power, 37cm, 18AWG,RoHS/REACH
Cable 6	CBL-SAST-0820	4	OCuLink v. 1.0,INT,PCIe NVMe SSD, 85CM,34AWG,RoHS/REACH
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	1U RHS WIO Riser card with one PCI-E x8 slot
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-01	1	Auto-latch, inner/outer rail set, quick-release type, 26.9" to 36.4"
	MCP-290-00060-0N	1	Threaded rail adapter default for round hole rack

Optional Parts List

	Part Number	Qty	Description
2U Cable Management Arm	MCP-290-00128-0N & MCP-290-00127-0N-01	1	2U Supermicro Cable Management Arm 2nd Gen (Compatible for racks that are 42" in depth)
Storage Control Card and Cable(s)	AOC-S3008L-L8e & 1x CBL-SAST-0593	1	Std LP, 8 internal ports, 12Gb/s per port- Gen3, 122HDD, HBA; MINI SAS HD,12G,INT,60CM,30AWG
	AOC-S3008L-L8i & 1x CBL-SAST-0593		Std LP, 8 internal ports, 12Gb/s per port- Gen3, 63HDD, RAID 0,1,1E; MINI SAS HD,12G,INT,60CM,30AWG
	AOC-S3108L-H8iR & 1x CBL-SAST-0593		Std LP, 8 internal ports, 12Gb/s per port- Gen3, 240HDD, RAID 0, 1, 5, 6, 10, 50, 60; MINI SAS HD,12G,INT,60CM,30AWG
	AOC-S3108L-H8iR-16DD & 1x CBL-SAST-0593		Std LP, 8 internal ports, 12Gb/s per port- Gen3, 16HDD, RAID 0, 1, 5, 6, 10, 50, 60; MINI SAS HD,12G,INT,60CM,30AWG
Network Card(s)	AOC-SGP-i2/4	-	Standard LP, 2/4x GbE RJ45, PCI-E x4, Intel i350
	AOC-STGN-i1S/i2S	-	Standard LP, 1/2x 10GbE SFP+, PCI-E x8, Intel 82599EN
	AOC-STG-b4S	-	Standard LP, 4x 10GbE SFP+, PCI-E x8, Broadcom BCM57840S
	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
	AOC-S40G-i2Q	-	Standard LP 2-port 40GbE controller, based on Intel Fortville XL710
	More	-	AOC Compatibility Matrix
CacheVault(s)	BTR-CV3108-U1	-	CacheVault for Broadcom 3108 with Supercap mounting for 2U Ultra

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	<u>SFT-OOB-LIC</u> • <i>eStore</i>	1	OOB Management Package (per node license)
Software	<u>SFT-DCMS-Single</u>	1	DataCenter Management Package (per node license)