SuperServer 6028U-TNRT+ (Complete System Only)

Integrated Board

Super X10DRU-i+

Key Features

• **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. 7x PCI-E 3.0 x8 slots (5x FH, 10.5" L, 1x LP, 1x Internal LP)

4. 2x 10GBase-T ports

5. 12x Hot-swap 3.5" Drive Bays: Default 8x SATA3 ports, 4x NVMe ports; Optional 12x SAS3 ports via AOC

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 (with minimum 2 CPU and 4 DIMM). 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-6028U-TNRT+	• SuperServer 6028U-TNRT+ (**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-829UAC-R1K02**

Dimensions and Weight	
Width	• 17.2" (437mm)
Height	• 3.5" (89mm)
Depth	• 28.46" (723mm)
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	• 64GB, 32GB, 16GB, 8GB, 4GB
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	• 2x 10GBase-T ports via AOC-2UR8N4-i2XT • Intel® X540 10GBase-T • 1x Realtek RTL8211E PHY (dedicated IPMI)
Graphics	• ASPEED AST2400 BMC

Input / Output

SATA	• 8x SATA3 (6Gbps) ports
SAS	• 12x SAS3 ports support via optional Add-on Card
NVMe	• 4x NVMe ports
LAN	• 2x RJ45 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	• 7x PCI-E 3.0 x8 slots (5x FH, 10.5" L, 1x LP, 1x Internal LP) **(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

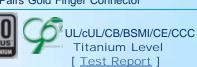|	
Hot-swap	• 12x 3.5" Hot-swap drive bays • Default 8x SATA3 ports, 4x NVMe ports • Optional 12x SAS3 ports via AOC **Note: optional storage card is required to support more than 10 drives.**

Backplane

2U SAS/SATA backplane

System Cooling

Fans	• 4x 8cm heavy duty PWM fans

Power Supply

1000W Redundant Power Supplies with PMBus

Total Output Power	• 800W/1000W
Dimension (W x H x L)	• 73.5 x 40 x 203 mm
Input	• 100-127Vac / 9.8 - 7A / 50-60Hz • 200-240Vac / 7 - 5A / 50-60Hz
+12V	• Max: 66.7A / Min: 0A (100-127Vac) • Max: 83A / Min: 0A (200-240Vac)
12Vsb	• Max: 2.1A / Min: 0A
Output Type	• 25 Pairs Gold Finger Connector
Certification	80 PLUS TITANIUM 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	

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-829UAC-R1K02	1	2U Chassis
Add-on Card / Module	AOC-2UR8N4-I2XT	1	2U Ultra Riser based on Intel X540 controller with 2 10Gbase-T ports, 4 NVMe ports, 1 internal PCI-E x8 3.0 slot, and 1 PCI-E x8 3.0 (in x16 slot)
Air Shroud	MCP-310-82912-0N	1	
Backplane	BPN-SAS3-826A-N4	1	2U Backplane for 3.5
Cable 1	CBL-SAST-0657	1	Internal RA side exit (right) miniSAS to miniSAS HD 55cm w/ SB, 30AWG,RoHS/REACH
Cable 2	CBL-SAST-0658	4	Internal Mini-SAS HD cable for PCIe SSD NVMe, 12Gb/s, 60cm,30AWG,RoHS/REACH
Cable 3	CBL-SAST-0655	1	Internal RA side exit (right) miniSAS to miniSAS HD 47cm w/ SB, 30AWG,RoHS/REACH
Cable 4	CBL-PWEX-0673	1	8 pin female to 2x big 4 pin female power, 65/70CM, 18AWG,RoHS/REACH
Cable 5	CBL-PWEX-0652	1	8 pin female to 2x RA(Right Angle) big 4 pin female power, 60/65CM, 18AWG,RoHS/REACH
Parts	MCP-240-82909-0N	1	Ultra I/O bracket for SC829U, 219U (i2XT),RoHS/REACH
Drive Tray(s)	MCP-220-00116-0B	4	Black gen-5 3.5-to-2.5 NVMe drive tray, Orange tab (for hotswap NVMe drive),RoHS/REACH
Label	LBL-0108	1	CAUTION LABEL FOR REDUNDANT PWR SYSTEMS
Manual	MNL-1641-QRG	1	SYS-6028U-TR(4/4T/T/TP)+, QRG,HF,RoHS/REACH
Riser Card	RSC-R1UW-E8R	1	RSC-R1UW-E8R-O-P
Riser Card	RSC-R2UW-4E8	1	RSC-R2UW-4E8-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
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
CachVault(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
Global Services & Support	OS4HR3/2/1	-	3/2/1-year onsite 24x7x4 service
	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)