

TECHNICAL DATASHEET

SUPERMICRO · TOWER SERVERS & WORKSTATIONS

Supermicro Full-Tower UP Workstation Server SYS-540A-TR

UP full-tower workstation for AI/DL/ML development

SKU SYS-540A-TR

Tower

LGA4189

Supermicro



FORM FACTOR

Tower

MAX POWER (BASE)

306 W

HEAT OUTPUT

1,044 BTU/h

PRICE

On request



REQUEST A QUOTATION ONLINE

serverinvest.com/product/sys-540a-tr



01 Product overview

The Supermicro SYS-540A-TR is a Full-Tower UP Workstation Server built on Intel Xeon Scalable 3rd Gen with up to 4 TB of memory in 16 DIMM slots.

UP full-tower workstation for AI/DL/ML development.

The chassis accepts up to 4 GPU accelerators for AI, rendering and HPC workloads.

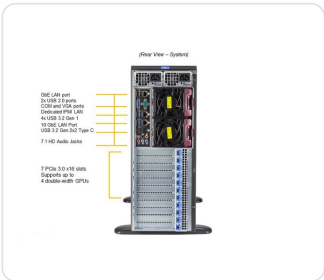
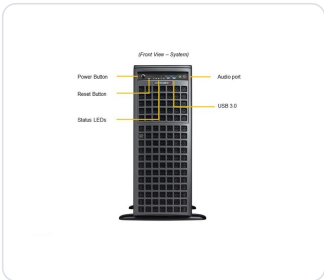
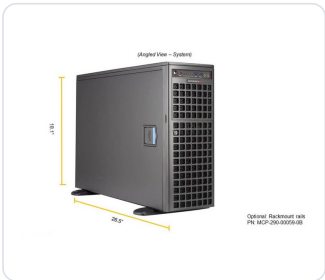
ServerInvest configures every SYS-540A-TR to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

HIGHLIGHTS

- Intel Xeon Scalable 3rd Gen
- Up to 4 TB memory · 16 DIMM slots
- Total 8 bays 8 front hot-swap 3.5" SATA drive bays
- Up to 4 GPUs
- Power: 1x 2200W
- Networking: 1 RJ45 1GbE with Intel I210-AT

KEY SPECIFICATIONS

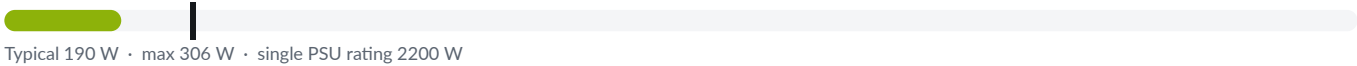
Form factor	Tower
Processor	Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	16 DIMM slots, up to 4 TB
Drive bays	8
GPU	Up to 4 GPUs
Power supply	1× 2200 W
Typical power draw	2250 W
Networking	1 RJ45 1GbE with Intel I210-AT



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
73 W	190 W	306 W	1,044 BTU/h	0.3 kW	14%



Typical 190 W · max 306 W · single PSU rating 2200 W

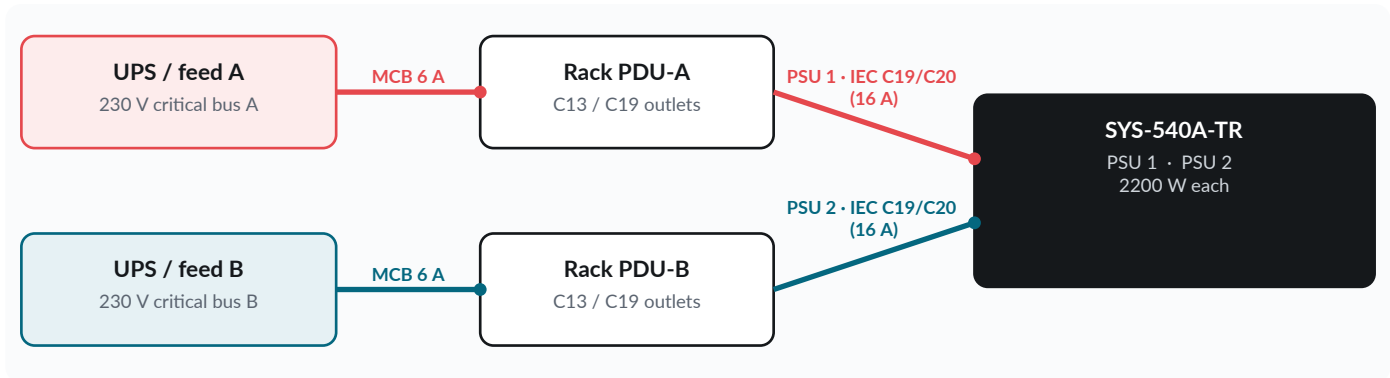
Annual IT energy (24/7)	1,357 kWh
Annual facility energy (PUE 1.5)	2,036 kWh
Annual energy cost	€271 IT · €407 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.53 t (grid factor 0.26 kg/kWh)
Power supplies	1× 2200 W

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	38 W	59 W	85 W
CPU (base configuration)	25 W	110 W	185 W
2× Memory (base configuration)	6 W	10 W	18 W

DC loads converted to wall power at 94% PSU efficiency; typical load assumed 70% of the time. Engineering estimates — confirm with the manufacturer's power calculator for critical designs.

03 Power connection diagram

Dual-feed (A/B) connection for redundant power supplies



- Connect PSU 1 to PDU-A and PSU 2 to PDU-B (independent feeds) using IEC C19/C20 (16 A) power cords.
- Maximum current per feed: 1.4 A at 230 V — each feed must be able to carry the full load if the other fails.
- Recommended protection per PDU circuit: MCB 6 A, curve C; RCD according to local regulations.
- Heat to remove at full load: 306 W = 1,044 BTU/h (0.3 kW).

04 Full specifications

MOTHERBOARD

Super X12SPA-TF

PROCESSOR

CPU	Single Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Core Count	Up to 40C/80T; Up to 60MB Cache
Note	Supports up to 270W TDP CPUs (Air Cooled)

GPU

Max GPU Count	Up to 4 double-width or 4 single-width GPUs
Supported GPU	NVIDIA PCIe: RTX A4000, RTX A5000, RTX A6000

SYSTEM MEMORY

Memory	Slot Count: 16 DIMM slots Max Memory (2DPC): Up to 4TB 3200MT/s ECC DDR4 RDIMM/LRDIMM View Memory Options
Memory Voltage	1.2V

ON-BOARD DEVICES

SATA	SATA (6Gbps)
Network Connectivity	1 RJ45 1GbE with Intel I210-AT 1 RJ45 1GbE with Realtek RTL8211F PHY (dedicated IPMI) 1 RJ45 10GbE with Marvell AQC113 View AOC Options

INPUT / OUTPUT

USB	2 USB 2.0 ports (header)
	2 USB 2.0 ports (rear)
	2 ports (header)
	4 ports (rear)
Video	1 VGA port
TPM	1 TPM header

SYSTEM BIOS

BIOS Type	AMI 256MB SPI Flash
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MANAGEMENT

Software	SuperCloud Composer (SCC)
	Supermicro Server Manager (SSM)
	Supermicro Update Manager (SUM)
	Supermicro SuperDoctor 5 (SD5)
	Super Diagnostics Offline (SDO)
	Supermicro Thin-Agent Service (TAS)
	SuperServer Automation Assistant (SAA) New!
Power configurations	ACPI 6.0 Power Management

SECURITY

Hardware	Trusted Platform Module (TPM) 2.0 Silicon Root of Trust (RoT) – NIST 800-193 Compliant
Features	Cryptographically Signed Firmware Secure Boot Secure Firmware Updates Automatic Firmware Recovery System Lockdown

PC HEALTH MONITORING

Voltage	+1.8V, +12V, +3.3V, +5V, +5V standby, 10 -fan status, 3.3V standby, HT, Memory, VBAT
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CERTIFICATIONS

Operating Systems	RHEL 8.4 View all OS Compatibility and Certification Matrix
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CHASSIS

Form Factor	Full-Tower Rackmount
Model	CSE-747BTS-R2K20BP

DIMENSIONS AND WEIGHT

Height	18.32" (465.4 mm)
Width	6.96" (177 mm)
Depth	26.71" (678.5 mm)
Package	12.95" (H) x 27.12" (W) x 38.22" (D)
Weight	Gross Weight: 57 lbs (25.85 kg) Net Weight: 52.9 lbs (24 kg)

Available Color	black
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FRONT PANEL

Buttons	Power On/Off System Reset
LED	HDD activity Network activity Power On System Overheat / Fan Fail LED

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 7 PCIe 4.0 x16 FHFL slots View AOC Options
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 8 bays 8 front hot-swap 3.5" SATA drive bays View Drive Options
M.2	4 M.2 PCIe 4.0 x4 NVMe slots (M-key 2280/22110) View M.2 Options
Peripheral Bays	3 5.25" bays

SYSTEM COOLING

Fans	Up to 4x 92mm Fan(s) Up to 2x 80mm Fan(s)
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POWER SUPPLY

1x 2200W
1x 2200W Redundant Titanium Level (96%) power supply
Dimension (WxHxL)
76 x 40 x 336 mm

OPERATING ENVIRONMENT

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)
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05 Built, tested & supported by ServerInvest

Engineered configuration

Every option validated for socket, memory channels, PCIe lanes, power and cooling.

48-hour burn-in

Assembled, firmware-updated and stress-tested before it leaves our workshop.

3-year warranty

Standard on every system, with on-site next-business-day upgrades available.

Rack-ready delivery

Rails, cable management and labelling included — delivered across Europe.



Interested in this solution?

Request a quotation online or talk to a solutions engineer — we reply within one business day.
office@serverinvest.com

Official manufacturer datasheet: serverinvest.com/product/sys-540a-tr/datasheet/manufacture

