TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro Hyper SuperServer SYS-221H-TNR

2U Hyper with 8 hot-swap 2.5" NVMe/SAS/SATA bays and 4 PCIe 5.0 x16 slots + up to 2 PCIe 5.0 x16 AIOM slots

SKU SYS-221H-TNR | 2U | LGA4677 | Supermicro

FORM FACTOR	MAX POWER (BASE)	HEAT OUTPUT	PRICE
2U	474 W	1,617 BTU/h	from €7,710

ISO 9001 · ISO 14001 · ISO 27001 · cisco · tp-link · Omada by tp-link

CONFIGURE & QUOTE ONLINE
serverinvest.com/product/sys-221h-tnr

01 Product overview

The Supermicro SYS-221H-TNR is a 2U Hyper Server built on dual Intel Xeon Scalable 4th/5th Gen processors with up to 8 TB of memory in 32 DIMM slots.

2U Hyper with 8 hot-swap 2.5" NVMe/SAS/SATA bays and 4 PCIe 5.0 x16 slots + up to 2 PCIe 5.0 x16 AIOM slots.

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

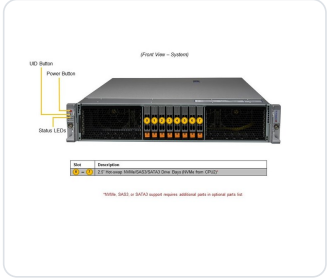
ServerInvest configures every SYS-221H-TNR to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

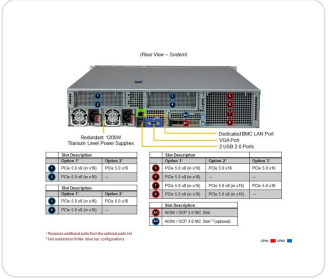
HIGHLIGHTS

- Dual Intel Xeon Scalable 4th/5th Gen
- Up to 8 TB memory · 32 DIMM slots
- Total 8 bays 8 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays
- Up to 4 GPUs
- Power: 2x 1200W
- Networking: Via AIOM

KEY SPECIFICATIONS

Form factor	**2U**
Processor	**2× Intel Xeon Scalable 4th/5th Gen**
Socket	**LGA4677**
Memory	**32 DIMM slots, up to 8 TB**
Memory type	**DDR5-5600 ECC RDIMM**
Drive bays	**8 (24 NVMe)**
GPU	**Up to 4 GPUs**
Power supply	**2× 1200 W**
Typical power draw	**830 W**
Networking	**Via AIOM**
Dimensions (W×H×D)	**437 × 89 mm**





02 Base configuration

Components included in the listed base price — every part can be changed in the online configurator

COMPONENT	DESCRIPTION	QTY
Base system	**Supermicro Hyper SuperServer SYS-221H-TNR**	1
Processor	Intel Xeon Silver 4410Y Processor 12 Cores (30M Cache, 2.00/3.90 Ghz) 150W	2
Memory	16GB 5600MT/s DDR5 ECC Registered DIMM Module	4
Warranty & support	3-year return-to-base warranty (included)	1

Base configuration from **€7,710** excl. VAT

03 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
115 W	312 W	474 W	1,617 BTU/h	0.5 kW	40%

Typical 312 W · max 474 W · single PSU rating 1200 W

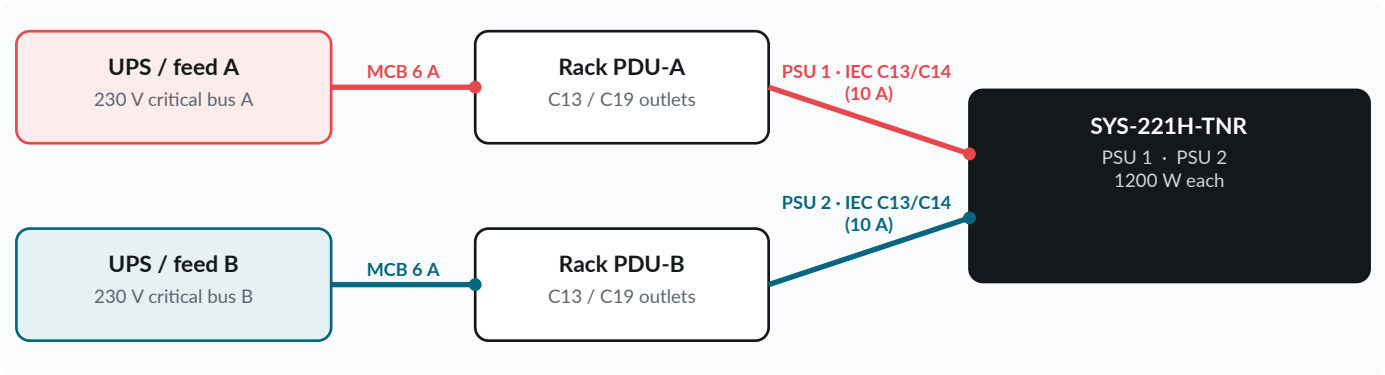
Annual IT energy (24/7)	2,215 kWh
Annual facility energy (PUE 1.5)	3,323 kWh
Annual energy cost	€443 IT · €665 incl. cooling (at 0.20 €/kWh)
CO_2 emissions / year	0.86 t (grid factor 0.26 kg/kWh)
Power supplies	2× 1200 W redundant (N+1)

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	50 W	77 W	**110 W**
2× CPU — Intel Xeon Silver 4410Y Processor 12 Cores	46 W	196 W	**300 W**
4× Memory 16 GB DIMM	12 W	20 W	**36 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.

04 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 C13/C14 (10 A) power cords.
- Maximum current per feed: 2.2 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: 474 W = 1,617 BTU/h (0.5 kW).

05 Full specifications

MOTHERBOARD

	Super X13DEM

PROCESSOR

CPU	Dual Socket E (LGA-4677) 5th Gen Intel Xeon / 4th Gen Intel Xeon Scalable processors Supports Intel Xeon CPU Max Series with high bandwidth memory (HBM)

Core Count	Up to 64C/128T; Up to 320MB Cache per CPU
Note	Supports up to 350W TDP CPUs (Air Cooled) Supports up to 350W TDP CPUs (Liquid Cooled)

GPU

Max GPU Count	Up to 4 double-width or 8 single-width GPUs
Supported GPU	NVIDIA PCIe: H100, H100 NVL, A100, A16, A40, L4, L40, L40S, RTX A4000, RTX A6000 View GPU Options

SYSTEM MEMORY

Memory	Slot Count: 32 DIMM slots Max Memory (1DPC): Up to 4TB 5600MT/s ECC DDR5 RDIMM Max Memory (2DPC): Up to 8TB 4400MT/s ECC DDR5 RDIMM View Memory Options
Memory Voltage	1.1V

ON-BOARD DEVICES

SATA	SATA (6Gbps) ; RAID 0/1/5/10 support
NVMe	NVMe; RAID 0/1/5/10 support(Intel VROC RAID key required) View NVMe Options
Network Connectivity	Via AIOM View AIOM Options View AOC Options

INPUT / OUTPUT

LAN	1 RJ45 1 GbE Dedicated BMC LAN port
USB	2 USB 2.0 ports (rear) 2 USB 3.0 ports (Header)
Video	1 VGA port

SYSTEM BIOS

BIOS Type	AMI 64MB SPI Flash

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	Power-on mode for AC power recovery ACPI 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 Supply Chain Security: Remote Attestation Runtime BMC Protections System Lockdown

PC HEALTH MONITORING

CPU	Monitors for CPU Cores, Chipset Voltages, Memory
Fan	Fans with tachometer monitoring Pulse Width Modulated (PWM) fan connectors Status monitor for speed control
Temperature	Monitoring for CPU and chassis environment Thermal Control for fan connectors

CERTIFICATIONS

Operating Systems	ESXi 7.0 U3, ESXi 8.0, Hypervisor 8.2.1, Oracle Linux 9.0, RHEL 8.7, RHEL 9.0, SAP HANA 2.0, SLES 15 SP4, SLES 15 SP5, Windows Server 2022, Windows Server 2025 View all OS Compatibility and Certification Matrix
Enterprise Solutions	VMWare vSAN SAP HANA SAP HCI Solution

CHASSIS

Form Factor	2U Rackmount
Model	CSE-HS219-R1K24P

DIMENSIONS AND WEIGHT

Height	3.5" (88.9 mm)
Width	17.2" (437 mm)
Depth	29.9" (760 mm)
Package	10.4" (H) x 23.8" (W) x 43.6" (D)
Weight	Gross Weight: 66 lbs (30 kg) Net Weight: 40 lbs (18.2 kg)
Available Color	N/A

FRONT PANEL

Buttons	Power On/Off Power On/Off UID button
LED	HDD activity LAN1 activity LAN2 activity Power Power Fail System information

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Option A* 4 PCIe 5.0 x16 FH/10.5"L double-width slots 2 PCIe 5.0 x16 AIOM slots (OCP 3.0 compatible) Option B* 8 PCIe 5.0 x8 (in x16) FH/10.5"L slots 2 PCIe 5.0 x16 AIOM slots (OCP 3.0 compatible) (*Requires additional parts, please see the optional parts list for details. For more details on PCIe slot configuration options, please refer to the system callout images above.) View AOC Options
CXL Support	Up to 4 CXL 1.1 x16/x8 devices
M.2	2 M.2 NVMe/SATA slots (B+M-key 2280/22110)

DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 8 bays 8 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays Option A: Total 16 bays 16 front hot-swap 2.5" NVMe*/SAS*/SATA* drive bays (*NVMe/SAS/SATA support may require additional storage controller and/or cables, please see the optional parts list for details) View NVMe Options View Drive Options
M.2	2 M.2 NVMe/SATA slots (M-key 2280/22110) View M.2 Options

SYSTEM COOLING

Fans	Up to 4x 8cm heavy duty fans with optimal fan speed control
Air Shroud	2 Air Shrouds
Liquid Cooling	Direct to Chip (D2C) Cold Plate (optional)

POWER SUPPLY

2x 1200W
2x 1200W Redundant Titanium Level (96%) Hot-plug power supplies
Dimension (WxHxL)
73.5 x 40 x 265 mm

OPERATING ENVIRONMENT

Environmental Spec.	Name: A2 Operating Temperature: 10°C to 35°C (50°F to 95°F) Non-operating Temperature: -30°C to 60°C (-40°F to 140°F) Operating Relative Humidity: 8% to 80% (max 21° DP; non-condensing) Non-operating Relative Humidity: 8% to 90% (max 38° DP; non-condensing)

06 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.

NATCERT ISO 9001 · NATCERT ISO 14001 · NATCERT ISO 27001 · cisco · tp-link · Omada by tp-link

Ready to order or need changes?

Configure this system online or talk to a solutions engineer — we reply within one business day.

office@serverinvest.com

Official manufacturer datasheet: serverinvest.com/product/sys-221h-tnr/datasheet/manufacturer