

TECHNICAL DATASHEET

SUPERMICRO · RACKMOUNT SERVERS

Supermicro 4U AI Training Server SYS-421GE-TNHR2-LCC

DP Intel 4U Liquid-Cooled System with NVIDIA HGX H100/H200 8-GPU (onsite service is required for liquid-cooling)

SKU SYS-421GE-TNHR2-LCC

4U

LGA4677

Supermicro



FORM FACTOR

4U

MAX POWER (BASE)

528 W

HEAT OUTPUT

1,802 BTU/h

PRICE

On request



CONFIGURE & QUOTE ONLINE

serverinvest.com/product/sys-421ge-tnhr2-lcc

01 Product overview

The Supermicro SYS-421GE-TNHR2-LCC is a 4U AI Training Server built on dual Intel Xeon Scalable 4th/5th Gen processors with up to 8 TB of memory in 32 DIMM slots.

DP Intel 4U Liquid-Cooled System with NVIDIA HGX H100/H200 8-GPU (onsite service is required for liquid-cooling).

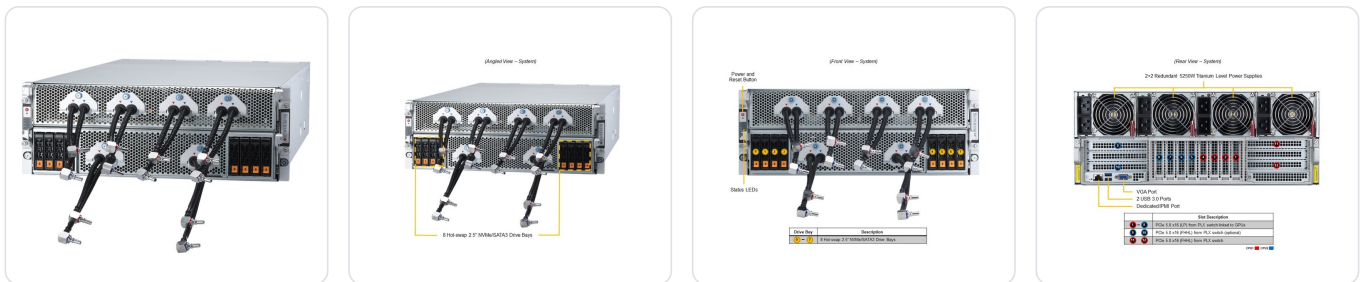
ServerInvest configures every SYS-421GE-TNHR2-LCC to order, updates BIOS and BMC firmware, installs your operating system on request and runs a 48-hour burn-in test before delivery. Every system includes a 3-year warranty.

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 drive bays
- Power: 4x 5250W
- Networking: 2 RJ45 10GbE with Intel X710-AT2

KEY SPECIFICATIONS

Form factor	4U
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 (8 NVMe)
Power supply	4× 5250 W
Typical power draw	750 W
Networking	2 RJ45 10GbE with Intel X710-AT2
Dimensions (W×H×D)	437 × 178 mm



02 Base configuration

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

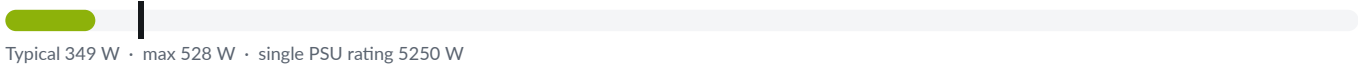
COMPONENT	DESCRIPTION	QTY
Base system	Supermicro 4U AI Training Server SYS-421GE-TNHR2-LCC	1
Processor	Intel Xeon Silver 4410Y Processor 12 Cores (30M Cache, 2.00/3.90 Ghz) 150W	2
Memory	16GB 5600MT/s DDR5 ECC Registered DIMM Module	4
Warranty & support	3-year return-to-base warranty (included)	1

Price on request — contact us for a tailored quotation

03 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
138 W	349 W	528 W	1,802 BTU/h	0.5 kW	10%



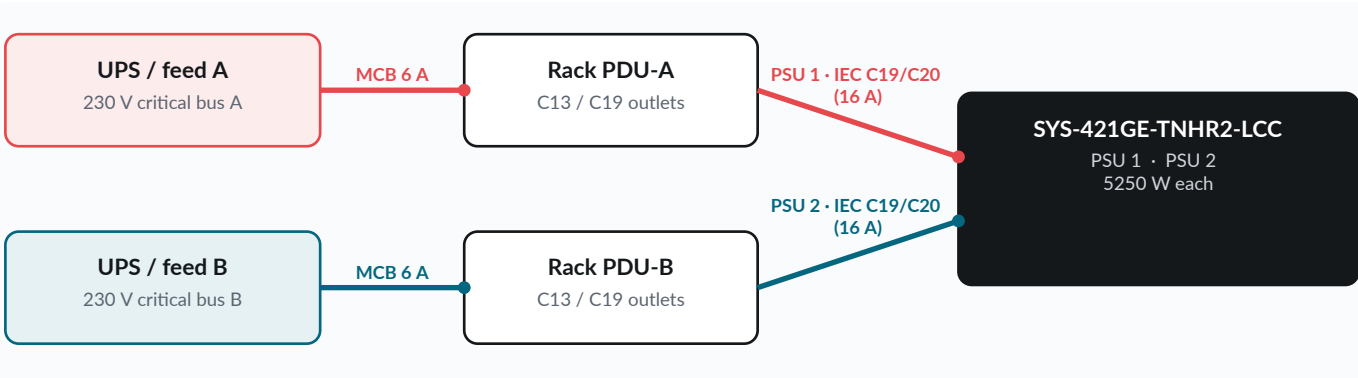
Annual IT energy (24/7)	2,503 kWh
Annual facility energy (PUE 1.5)	3,755 kWh
Annual energy cost	€501 IT · €751 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.98 t (grid factor 0.26 kg/kWh)
Power supplies	4× 5250 W redundant (N+1)

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	72 W	112 W	160 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 C19/C20 (16 A) power cords.
- Maximum current per feed: 2.4 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: 528 W = 1,802 BTU/h (0.5 kW).

05 Full specifications

MOTHERBOARD	
	Super X13DEG-M
PROCESSOR	
CPU	Dual Socket E (LGA-4677) 5th Gen Intel Xeon / 4th Gen Intel Xeon Scalable processors
Core Count	Up to 64C/128T; Up to 320MB Cache per CPU

Note Supports up to 385W TDP CPUs (Liquid Cooled)

GPU

Max GPU Count	8 onboard GPUs
Supported GPU	NVIDIA SXM: HGX H200 8-GPU (141GB) View GPU Options
CPU-GPU Interconnect	PCIe 5.0 x16 CPU-to-GPU Interconnect
GPU-GPU Interconnect	NVIDIA NVLink with NVSwitch

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

Chipset	Intel C741
Network Connectivity	2 RJ45 10GbE with Intel X710-AT2 View AOC Options

INPUT / OUTPUT

Video	1 VGA port
-------	------------

SYSTEM BIOS

BIOS Type	AMI 32MB UEFI
-----------	---------------

MANAGEMENT

Software	SuperCloud Composer (SCC) Supermicro Server Manager (SSM) 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	8+4 Phase-switching voltage regulator 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 8.0, Oracle Linux 9.3, RHEL 9.3 View all OS Compatibility and Certification Matrix
-------------------	--

CHASSIS

Form Factor	4U Rackmount
Model	CSE-GP403TS-R000NFP

DIMENSIONS AND WEIGHT

Height	6.85" (174 mm)
Width	17.6" (449 mm)
Depth	35.25" (895.35 mm)
Package	16.14" (H) x 28.7" (W) x 50.39" (D)
Weight	Gross Weight: 216 lbs (98 kg) Net Weight: 176 lbs (80 kg)
Available Color	Silver

FRONT PANEL

Buttons	Power On/Off UID/ Reset button
LED	Network activity LEDs System information (overheat/UID) UID

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 8 PCIe 5.0 x16 LP slots 2 PCIe 5.0 x16 FHHL slots Option A 8 PCIe 4.0 x16 LP slots 4 PCIe 5.0 x16 FHHL slots View AOC Options
----------------------------------	---

DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 8 bays 8 front hot-swap 2.5" NVMe drive bays View NVMe Options
M.2	2 M.2 NVMe slots (M-key) View M.2 Options

SYSTEM COOLING

Fans	Up to 4 Fan 8cm Fan(s)
Liquid Cooling	Direct to Chip (D2C) Cold Plate

POWER SUPPLY

4x 5250W
4x 5250W Redundant (2 + 2) Titanium Level (96%) power supplies
Dimension (WxHxL)
106.5 x 82.1 x 245.3 mm

OPERATING ENVIRONMENT

Environmental Spec.	Operating Temperature: 10°C to 35°C (50°F to 95°F) Non-operating Temperature: -5°C to 60°C (23°F to 140°F) Operating Relative Humidity: 8% to 80% (non-condensing) Non-operating Relative Humidity: 5% to 95% (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.



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-421ge-tnhr2-lcc/datasheet/manufacture

