

TECHNICAL DATASHEET

SUPERMICRO · GPU & AI SERVERS

Supermicro 8U GPU Server SYS-821GE-TNMR2

DP Intel 8U System with AMD MI300X 8-GPU and Rear I/O

SKU SYS-821GE-TNMR2

8U

LGA4677

Supermicro



FORM FACTOR

8U

MAX POWER (BASE)

634 W

HEAT OUTPUT

2,163 BTU/h

PRICE

On request

CONFIGURE & QUOTE ONLINE

serverinvest.com/product/sys-821ge-tnmr2

01 **Product overview**

The Supermicro SYS-821GE-TNMR2 is a 8U GPU Server built on dual Intel Xeon Scalable 4th/5th Gen processors with up to 8 TB of memory in 32 DIMM slots.

DP Intel 8U System with AMD MI300X 8-GPU and Rear I/O.

ServerInvest configures every SYS-821GE-TNMR2 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 20 bays 12 front hot-swap 2.5" NVMe drive bays
- Power: 6x 3000W
- Networking: 2 SFP28 25GbE with Broadcom BCM57414 (optional)

KEY SPECIFICATIONS

Form factor	8U
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	32 (32 NVMe)
Power supply	6× 3000 W
Typical power draw	750 W
Networking	2 SFP28 25GbE with Broadcom BCM57414 (optional)
Dimensions (W×H×D)	437 × 356 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 8U GPU Server SYS-821GE-TNMR2	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
186 W	423 W	634 W	2,163 BTU/h	0.6 kW	21%

Typical 423 W · max 634 W · single PSU rating 3000 W

Annual IT energy (24/7)	3,083 kWh
Annual facility energy (PUE 1.5)	4,625 kWh
Annual energy cost	€617 IT · €925 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	1.20 t (grid factor 0.26 kg/kWh)
Power supplies	6× 3000 W redundant (N+1)

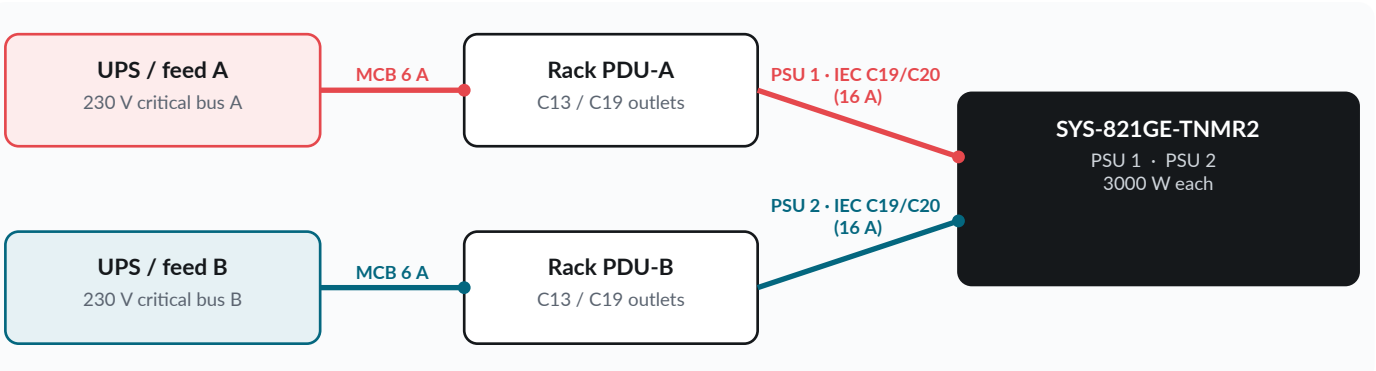
POWER BY COMPONENT

	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	117 W	182 W	260 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: 2.9 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: 634 W = 2,163 BTU/h (0.6 kW).

05 Full specifications

MOTHERBOARD

Super X13DEG-MA

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 350W TDP CPUs (Air Cooled)

GPU

Max GPU Count	8 onboard GPUs
Supported GPU	AMD: Instinct MI300X Accelerators View GPU Options
CPU-GPU Interconnect	PCIe 5.0 x16 CPU-to-GPU Interconnect
GPU-GPU Interconnect	AMD Infinity Fabric Link

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

Network Connectivity	2 SFP28 25GbE with Broadcom BCM57414 (optional) 2 RJ45 10GbE with Intel X710-AT2 (optional) View AOC Options
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INPUT / OUTPUT

USB	1 USB 3.0 Type-A port (Rear)
Video	1 VGA port

SYSTEM BIOS

BIOS Type	AMI 32MB SPI Flash EEPROM
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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	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	Oracle Linux 9.3, RHEL 9.3 View all OS Compatibility and Certification Matrix
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CHASSIS

Form Factor	8U Rackmount
Model	CSE-GP801TS-R000NPF-D2

DIMENSIONS AND WEIGHT

Height	13.8" (356 mm)
Width	17.7" (447 mm)
Depth	33.2" (843 mm)
Package	27.6" (H) x 29.5" (W) x 51" (D)
Weight	Gross Weight: 178.6 lbs (81 kg) Net Weight: 116.22 lbs (53 kg)
Available Color	Silver

FRONT PANEL

Buttons	UID button
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EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 8 PCIe 5.0 x16 LP slots 2 PCIe 5.0 x16 FHHL slots View AOC Options
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 20 bays 12 front hot-swap 2.5" NVMe drive bays 8 front hot-swap 2.5" SATA drive bays Option A: Total 4 bays 4 front hot-swap 2.5" NVMe drive bays View NVMe Options
M.2	2 M.2 PCIe 3.0 x2 NVMe slots (M-key) View M.2 Options

SYSTEM COOLING

Fans	Up to 10 heavy duty fans with optimal fan speed control
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POWER SUPPLY

6x 3000W
6x 3000W Redundant Titanium Level (96%) power supplies
Dimension (WxHxL)
106.5 x 82.1 x 245.5 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)

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-821ge-tnmr2/datasheet/manufacture

