

TECHNICAL DATASHEET

SUPERMICRO · GPU & AI SERVERS

Supermicro 4U GPU Server AS-4145GH-TNMR

4U System with Quad AMD Instinct MI300A Accelerators (onsite service OSNBD is required)

SKU AS-4145GH-TNMR

4U

Supermicro



FORM FACTOR

4U

MAX POWER (BASE)

1,034 W

HEAT OUTPUT

3,528 BTU/h

PRICE

On request

REQUEST A QUOTATION ONLINE

serverinvest.com/product/as-4145gh-tnmr

01 Product overview

The Supermicro AS-4145GH-TNMR is a 4U GPU Server built on dual Quad Socket SH5 AMD Instinct MI300A Accelerated Processing U processors with up to 512 GB of memory.

4U System with Quad AMD Instinct MI300A Accelerators (onsite service OSNBD is required).

ServerInvest configures every AS -4145GH-TNMR 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 Quad Socket SH5 AMD Instinct MI300A Accelerated Processing U
- Up to 512 GB memory
- Total 8 bays 8 front fixed 2.5" NVMe drive bays
- Power: 4x 2700W
- Networking: Via AIOM

KEY SPECIFICATIONS

Form factor	4U
Processor	4× Quad Socket SH5 AMD Instinct MI300A Accelerated Processing U
Memory	up to 512 GB
Drive bays	48 (48 NVMe)
Power supply	4× 2700 W
Typical power draw	1350 W
Networking	Via AIOM
Dimensions (W×H×D)	437 × 178 mm



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
209 W	630 W	1034 W	3,528 BTU/h	1 kW	38%

Typical 630 W · max 1034 W · single PSU rating 2700 W

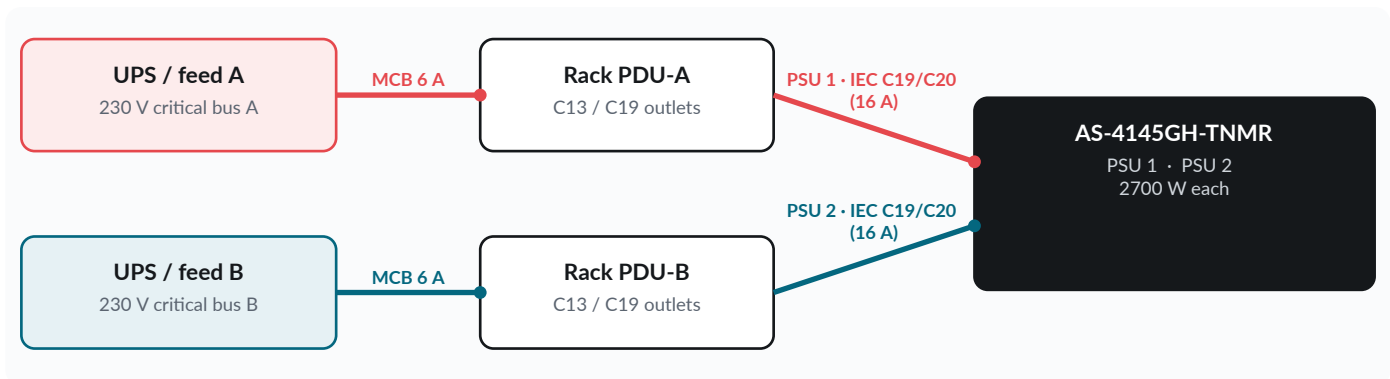
Annual IT energy (24/7)	4,412 kWh
Annual facility energy (PUE 1.5)	6,618 kWh
Annual energy cost	€882 IT · €1,324 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	1.72 t (grid factor 0.26 kg/kWh)
Power supplies	4× 2700 W redundant (N+1)

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	72 W	112 W	160 W
4× CPU (base configuration)	100 W	440 W	740 W
8× Memory (base configuration)	24 W	40 W	72 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: 4.7 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: 1034 W = 3,528 BTU/h (1 kW).

04 Full specifications

MOTHERBOARD

Super H13QSH

PROCESSOR

CPU	Quad Socket SH5 AMD Instinct MI300A Accelerated Processing Units (APUs)
Note	Supports up to 760W TDP CPUs (Air Cooled)

GPU

Max GPU Count	4 onboard GPUs
GPU-GPU Interconnect	AMD Infinity Fabric Link

SYSTEM MEMORY

Memory	Onboard Memory Up to 512GB ECC HBM3
--------	--

ON-BOARD DEVICES

Chipset	AMD SH5
Network Connectivity	Via AIOM View AIOM Options View AOC Options

INPUT / OUTPUT

LAN	1 RJ45 1 GbE Dedicated BMC LAN port
USB	2 USB 3.0 ports (rear) 2 USB 2.0 ports (front)

Video	1 DisplayPort port
Serial	1 COM port (rear)

SYSTEM BIOS

BIOS Type	AMI 32MB SPI Flash
-----------	--------------------

MANAGEMENT

Software	SuperCloud Composer (SCC) Supermicro Server Manager (SSM) Supermicro Update Manager (SUM) 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	4+1 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	RHEL 9.6 View all OS Compatibility and Certification Matrix
-------------------	--

CHASSIS

Form Factor	4U Rackmount
Model	CSE-418H2TS-R0AWNPD

DIMENSIONS AND WEIGHT

Height	7" (177 mm)
Width	17.3" (438.4 mm)
Depth	33.4" (848.7 mm)
Package	15.94" (H) x 27.32" (W) x 49.41" (D)

Weight	Gross Weight: 158.07 lbs (71.7 kg) Net Weight: 120.59 lbs (54.7 kg)
Available Color	No Paint

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 4 PCIe 5.0 x16 FHHL slots 2 PCIe 5.0 x8 FHHL slots Option A* 4 PCIe 5.0 x16 FHHL slots 6 PCIe 5.0 x8 FHHL slots 2 PCIe 5.0 x8 AIOM slots (OCP 3.0 compatible) Option B* 6 PCIe 5.0 x16 FHHL slots 2 PCIe 5.0 x16 AIOM slots (OCP 3.0 compatible) Option C* 14 PCIe 5.0 x8 FHHL slots 2 PCIe 5.0 x8 AIOM slots (OCP 3.0 compatible) Option D* 4 PCIe 5.0 x16 FHHL slots 2 PCIe 5.0 x8 FHHL slots 2 PCIe 5.0 x8 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
----------------------------------	---

DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 8 bays 8 front fixed 2.5" NVMe drive bays Option A: Total 16 bays 16 front fixed 2.5" NVMe drive bays Option B: Total 24 bays 24 front fixed 2.5" SAS*/SATA* drive bays (*SAS/SATA support may require additional storage controller and/or cables, please see the optional parts list for details) View NVMe Options
M.2	2 M.2 NVMe slots (M-key 2280/22110) View M.2 Options

SYSTEM COOLING

Fans	Up to 10 Heavy duty counter-rotating 8cm Fan(s)
Air Shroud	1 Air Shroud

POWER SUPPLY

4x 2700W
4x 2700W Redundant (3 + 1) Titanium Level (96%) power supplies
Dimension (WxHxL)
73.5 x 40 x 203 mm

OPERATING ENVIRONMENT

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)

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/as-4145gh-tnmr/datasheet/manufacturerr

