

TECHNICAL DATASHEET

SUPERMICRO · GPU & AI SERVERS

Supermicro GPU SuperServer SYS-751GE-TNRT-NV1

DP liquid cooled AI development platform

SKU SYS-751GE-TNRT-NV1

5U

LGA4677

Supermicro



FORM FACTOR

5U

MAX POWER (BASE)

634 W

HEAT OUTPUT

2,163 BTU/h

PRICE

from €116,630

CONFIGURE & QUOTE ONLINE

serverinvest.com/product/sys-751ge-tnrt-nv1

01 Product overview

The Supermicro SYS-751GE-TNRT-NV1 is a Tower or 5U GPU Server built on dual Intel Xeon Scalable 4th/5th Gen processors.

DP liquid cooled AI development platform.

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

ServerInvest configures every SYS-751GE-TNRT-NV1 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
- Total 8 bays 8 front hot-swap 2.5" NVMe/SAS*/SATA drive bays
- Up to 4 GPUs
- Power: 1x 2200W
- Networking: 2 RJ45 10GbE with Intel X550-AT2

KEY SPECIFICATIONS

Form factor	5U
Processor	2× Intel Xeon Scalable 4th/5th Gen
Socket	LGA4677
Memory	16 DIMM slots, up to 2 TB
Memory type	DDR5-5600 ECC RDIMM
Drive bays	8 (8 NVMe)
GPU	Up to 4 GPUs
Power supply	1× 2200 W
Typical power draw	45950 W
Networking	2 RJ45 10GbE with Intel X550-AT2
Dimensions (W×H×D)	437 × 222 mm



02 Base configuration

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

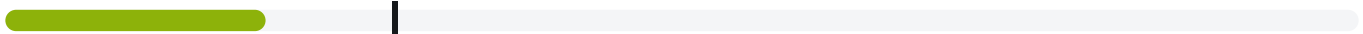
COMPONENT	DESCRIPTION	QTY
Base system	Supermicro GPU SuperServer SYS-751GE-TNRT-NV1	1
Processor	Intel Xeon Silver 4410Y Processor 12 Cores (30M Cache, 2.00/3.90 Ghz) 150W	2
Memory	16GB 5600MT/s DDR5 ECC Registered DIMM Module	4
Warranty & support	3-year return-to-base warranty (included)	1

Base configuration from **€116,630**
excl. VAT

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	29%



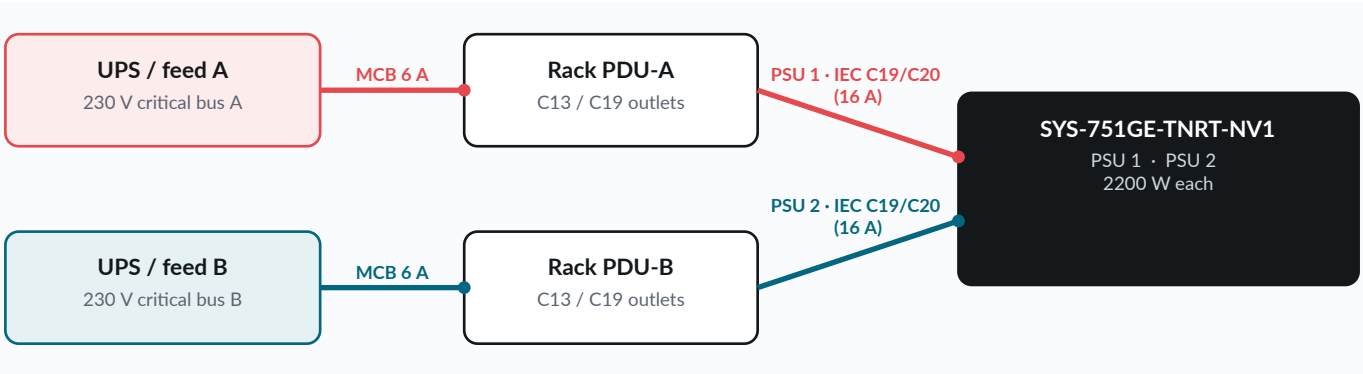
Annual IT energy (24/7)	3,083 kWh
Annual facility energy (PUE 1.5)	4,625 kWh
Annual energy cost	€617 IT · €925 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	1.20 t (grid factor 0.26 kg/kWh)
Power supplies	1× 2200 W

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-QT
PROCESSOR	
CPU	Dual Socket E (LGA-4677) 5th Gen Intel Xeon / 4th Gen Intel Xeon Scalable processors
Core Count	16C/32T; 30MB 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 GPUs
CPU-GPU Interconnect	PCIe 5.0 x16 CPU-to-GPU Interconnect
GPU-GPU Interconnect	NVIDIA NVLink Bridge (2+2)

SYSTEM MEMORY

Memory	Slot Count: 16 DIMM slots Max Memory (2DPC): 512GB 4800MT/s ECC DDR5 View Memory Options
Memory Voltage	1.1V

ON-BOARD DEVICES

SATA	SATA (6Gbps) ; RAID 0/1/5/10 support
Network Connectivity	2 RJ45 10GbE with Intel X550-AT2 1 RJ45 1GbE with ASPEED AST2600 1 SFP28 25GbE View AOC Options
BMC	ASPEED AST2600 BMC

INPUT / OUTPUT

LAN	1 RJ45 1 GbE Dedicated BMC LAN port 2 RJ45 10 GbE LAN ports 1 SFP28 25 GbE LAN port
USB	2 USB 3.2 Gen1 ports (front) 3 USB 3.2 Gen1 ports (rear) 1 USB 3.2 Gen2 port (rear)
Video	1 VGA port
DOM	2 SATA DOM (Disk on Module) ports
Audio	7.1 HD Audio Line Out Mic in

SYSTEM BIOS

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

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 9.0, RHEL 9.0, Windows 2022 View all OS Compatibility and Certification Matrix
-------------------	--

CHASSIS

Form Factor	Tower or 5U Rackmount
Model	CSE-759TS-R2K21BP

DIMENSIONS AND WEIGHT

Height	8.6" (218.4 mm)
Width	17.9" (454.7 mm)
Depth	27.6" (701 mm)
Package	25.8" (H) x 15.3" (W) x 37.6" (D)
Weight	Gross Weight: 121 lbs (55 kg) Net Weight: 97 lbs (44 kg)
Available Color	Black Front & Black Body

FRONT PANEL

Buttons	Power On/Off button Reset button
LED	HDD activity LED Information LED Network 1 activity LED Network 2 activity LED Power status LED

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 7 PCIe 5.0 x16 FHFL slots View AOC Options
----------------------------------	--

DRIVE BAYS / STORAGE

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

SYSTEM COOLING

Fans	Up to 1 fan 8cm Fan(s) Up to 2 fan 12cm Fan(s)
Liquid Cooling	Direct to Chip (D2C) Cold Plate (optional)

POWER SUPPLY

1x 2200W
1x 2200W Redundant Titanium Level (96%) power supply
Dimension (WxHxL)
106.5 x 82.1 x 203.5 mm

OPERATING ENVIRONMENT

Environmental Spec.	Operating Temperature: 10°C to 25°C (50°F to 77°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-751ge-tnrt-nv1/datasheet/manufacture

