

TECHNICAL DATASHEET

SUPERMICRO · GPU & AI SERVERS

Supermicro 2U GPU Server SYS-220GQ-TNAR+

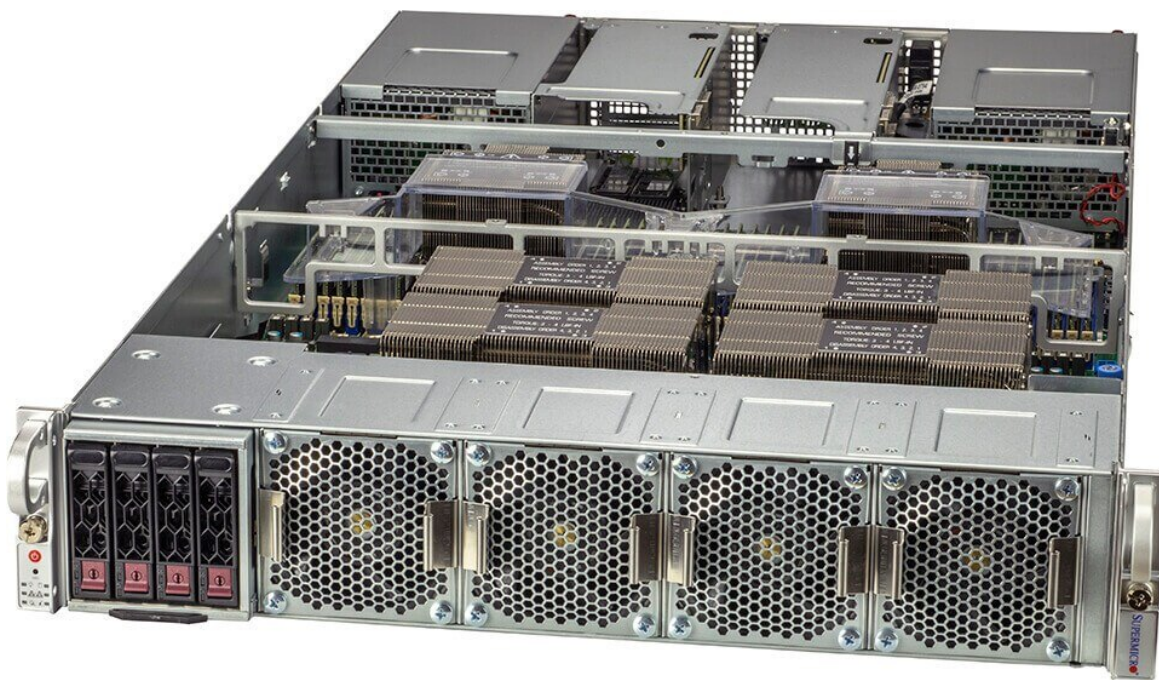
DP Intel System with NVIDIA HGX A100 4-GPU and 3000W Power Supplies

SKU SYS-220GQ-TNAR+

2U

LGA4189

Supermicro



FORM FACTOR

2U

MAX POWER (BASE)

549 W

HEAT OUTPUT

1,873 BTU/h

PRICE

On request**REQUEST A QUOTATION ONLINE**
serverinvest.com/product/sys-220gq-tnar

POWER BY COMPONENT

Chassis, motherboard, fans, BMC

2× CPU (base configuration)

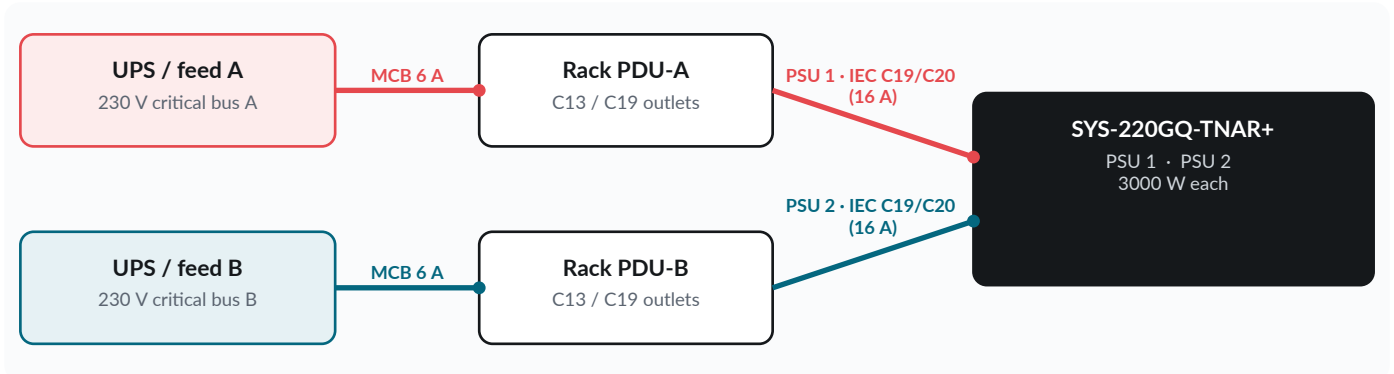
4× Memory (base configuration)

IDLE	TYPICAL	MAX
50 W	77 W	110 W
50 W	220 W	370 W
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.

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: 2.5 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: 549 W = 1,873 BTU/h (0.5 kW).

04 Full specifications

MOTHERBOARD

Super X12DPG-QR

PROCESSOR

CPU	Dual Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Core Count	Up to 40C/80T; Up to 60MB Cache per CPU
Note	Supports up to 270W TDP CPUs (Air Cooled)

GPU

Max GPU Count	Up to 4 onboard GPUs
Supported GPU	NVIDIA SXM: HGX A100 4-GPU (80GB)
CPU-GPU Interconnect	PCIe 4.0 x16 CPU-to-GPU Interconnect
GPU-GPU Interconnect	NVIDIA NVLink

SYSTEM MEMORY

Memory	Slot Count: 32 DIMM slots Max Memory (2DPC): Up to 8TB 3200MT/s ECC DDR4 RDIMM/LRDIMM Supports Intel Optane persistent memory 200 series View Memory Options
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Memory Voltage	1.2V
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ON-BOARD DEVICES

SATA	SATA (6Gbps) ; RAID 0/1/5/10 support
Network Connectivity	2 RJ45 10GbE with Intel X540-AT2 View AOC Options
BMC	ASPEED AST2600 BMC

INPUT / OUTPUT

Video	1 VGA port
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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 System Lockdown

CERTIFICATIONS

Operating Systems	ESXi 6.7 U3, ESXi 7.0 U2, ESXi 8.0, RHEL 7.9, RHEL 8.4, SLES 12 SP5, SLES 15 SP2, SLES 15 SP3, Windows Server 2019, Windows Server 2022 View all OS Compatibility and Certification Matrix
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CHASSIS

Form Factor	2U Rackmount
Model	CSE-228GTS-R3K02P

DIMENSIONS AND WEIGHT

Height	3.5" (89 mm)
Width	17.2" (437 mm)
Depth	32.7" (830.3 mm)
Package	11" (H) x 22.5" (W) x 45.5" (D)

Weight	Gross Weight: 86.5 lbs (39.2 kg) Net Weight: 67.5 lbs (30.6 kg)
Available Color	Silver Body

FRONT PANEL

Buttons	Power On/Off button System Reset button
LED	Hard drive activity LED Network activity LEDs Power status LED System Overheat & Power Fail LED

EXPANSION SLOTS

PCI-Express (PCIe) Configuration	Default 3 PCIe 4.0 x16 LP slots Option A* 4 PCIe 4.0 x16 LP slots (*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
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DRIVE BAYS / STORAGE

Drive Bays Configuration	Default: Total 4 bays 4 front hot-swap 2.5" NVMe/SAS/SATA drive bays View NVMe Options View Drive Options
M.2	2 M.2 NVMe/SATA slots (M-key) View M.2 Options

SYSTEM COOLING

Fans	Up to 4 heavy duty fans with optimal fan speed control
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POWER SUPPLY

	1x 3000W 1x 3000W Redundant Titanium Level (96%) power supply Dimension (WxHxL) 106.5 x 82.4 x 203.5 mm
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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)
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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/sys-220gq-tnar/datasheet/manufacturer

