

TECHNICAL DATASHEET

SUPERMICRO · EDGE & EMBEDDED

Supermicro 2U IoT Server SYS-210SE-31D

X12 SuperEdge 2U3-Node UP front I/O short-depth server

SKU SYS-210SE-31D

2U

LGA4189

Supermicro



FORM FACTOR

2U

MAX POWER (BASE)

333 W

HEAT OUTPUT

1,136 BTU/h

PRICE

On request

REQUEST A QUOTATION ONLINE

serverinvest.com/product/sys-210se-31d

01 Product overview

The Supermicro SYS-210SE-31D is a 2U IoT Server built on Intel Xeon Scalable 3rd Gen with up to 8 TB of memory in 8 DIMM slots.

X12 SuperEdge 2U3-Node UP front I/O short-depth server.

ServerInvest configures every SYS-210SE-31D 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

- Intel Xeon Scalable 3rd Gen
- Up to 8 TB memory · 8 DIMM slots
- 2 M.2 PCIe 4.0 x4 NVMe slots (M-key 2280/22110; VROC required for RAID)
- Power: 2x 2000W
- Networking: 1 RJ45 1GbE with Intel I210-AT

KEY SPECIFICATIONS

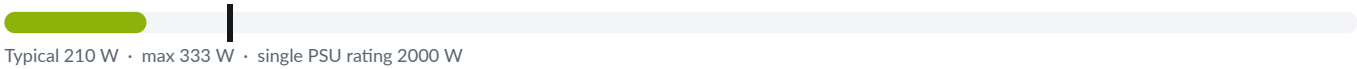
Form factor	2U
Processor	Intel Xeon Scalable 3rd Gen
Socket	LGA4189
Memory	8 DIMM slots, up to 8 TB
Power supply	2× 2000 W
Typical power draw	450 W
Networking	1 RJ45 1GbE with Intel I210-AT
Dimensions (W×H×D)	437 × 89 mm



02 Power & thermal

Calculated for the base configuration

IDLE	TYPICAL	MAXIMUM	HEAT (MAX)	COOLING	PSU LOAD
86 W	210 W	333 W	1,136 BTU/h	0.3 kW	17%



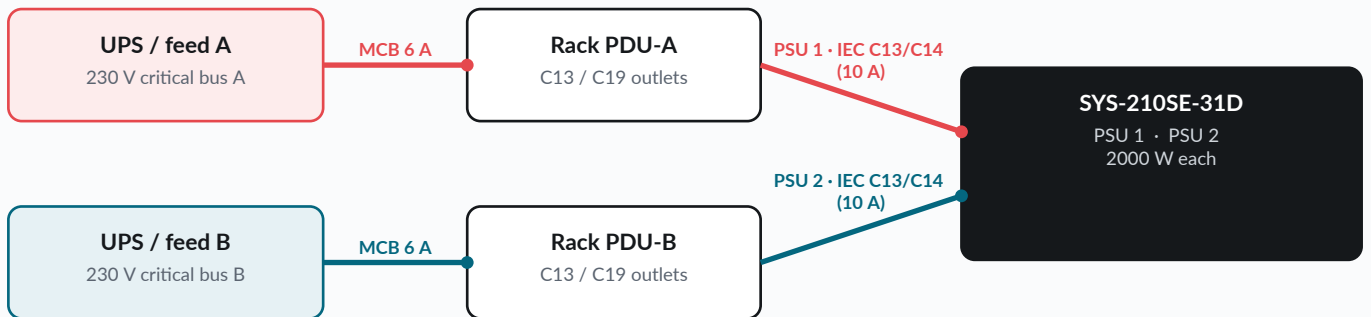
Annual IT energy (24/7)	1,514 kWh
Annual facility energy (PUE 1.5)	2,271 kWh
Annual energy cost	€303 IT · €454 incl. cooling (at 0.20 €/kWh)
CO ₂ emissions / year	0.59 t (grid factor 0.26 kg/kWh)
Power supplies	2× 2000 W redundant (N+1)

POWER BY COMPONENT	IDLE	TYPICAL	MAX
Chassis, motherboard, fans, BMC	50 W	77 W	110 W
CPU (base configuration)	25 W	110 W	185 W
2× Memory (base configuration)	6 W	10 W	18 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 C13/C14 (10 A) power cords.
- Maximum current per feed: 1.5 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: 333 W = 1,136 BTU/h (0.3 kW).

04 Full specifications

MOTHERBOARD

Super X12SPED-F

PROCESSOR (PER NODE)

CPU	Single Socket P+ (LGA-4189) 3rd Gen Intel Xeon Scalable processors
Core Count	Up to 32C/64T; Up to 48MB Cache
Note	Supports 85W - 270W TDP CPUs (Air Cooled)

SYSTEM MEMORY (PER NODE)

Memory	Slot Count: 8 DIMM slots Max Memory (2DPC): Up to 8TB 3200MT/s ECC DDR4 RDIMM/LRDIMM View Memory Options
Memory Voltage	1.2V

ON-BOARD DEVICES (PER NODE)

Network Connectivity	1 RJ45 1GbE with Intel I210-AT View AOC Options
----------------------	--

INPUT / OUTPUT (PER NODE)

LAN	1 RJ45 1 GbE LAN port (Intel I210-AT) (IPMI shared on LAN port 1)
TPM	1 TPM header
Others	1 KVM dongle (output 1x VGA/1x COM/2x USB 2.0 via KVM cable) port

SYSTEM BIOS

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

BIOS Features	SMBIOS 2.8 Plug and Play (PnP) PCI FW 3.2 ACPI 6.4 UEFI 2.8A SMBIOS 2.8/3.5
---------------	--

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
----------	---

PC HEALTH MONITORING

CPU	Monitors for CPU Cores, Chipset Voltages, Memory
-----	--

Fan	Fans with tachometer monitoring Pulse Width Modulated (PWM) fan connectors Status monitor for speed control
-----	---

Temperature	CPU thermal trip support, PEPI Monitoring for CPU and chassis environment
-------------	--

CERTIFICATIONS

Operating Systems	Oracle Linux 8.3, RHEL 8.3, Windows Server 2019, Windows Server 2022 View all OS Compatibility and Certification Matrix
-------------------	--

CHASSIS

Form Factor	2U Rackmount
-------------	--------------

Model	CSE-SE201-R2K06P
-------	------------------

DIMENSIONS AND WEIGHT

Height	3.5" (88 mm)
Width	17.7" (449 mm)
Depth	16.9" (430 mm)
Package	9.5" (H) x 29.5" (W) x 23.2" (D)
Weight	Gross Weight: 70.6 lbs (32 kg) Net Weight: 55.1 lbs (25 kg)

Available Color	Silver
-----------------	--------

FRONT PANEL

Buttons	Power On/Off UID button
LED	LAN1 activity Power status System information

EXPANSION SLOTS (PER NODE)

PCI-Express (PCIe) Configuration	Default 1 PCIe 4.0 x16 HHHL slot 2 PCIe 4.0 x16 FHHL slots View AOC Options
----------------------------------	--

DRIVE BAYS / STORAGE (PER NODE)

M.2	2 M.2 PCIe 4.0 x4 NVMe slots (M-key 2280/22110; VROC required for RAID) View M.2 Options
-----	---

SYSTEM COOLING

Fans	Up to 12x 4cm heavy duty fans with optimal fan speed control 40x40x56mm Fan(s)
Air Shroud	3 Air Shrouds

POWER SUPPLY

2x 2000W
2x 2000W Redundant (1 + 1) power supplies
Dimension (WxHxL)
73.5 x 40 x 265 mm

OPERATING ENVIRONMENT

RoHS	RoHS Compliant
Environmental Spec.	Operating Temperature: 0°C to 35°C (32°F to 95°F) Non-operating Temperature: -40°C to 70°C (-40°F to 158°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/sys-210se-31d/datasheet/manufactur

