X13 Server Solutions

Supporting 5th Gen Intel® Xeon® Processors

(Emerald Rapids)

December 2023

Introducing Supermicro X13 Generation

Accelerate Everything with 5th Gen Intel® Xeon® Processors

(Emerald Rapids)

The Supermicro X13 Advantage

Supermicro's tried-and-tested Building Block Solutions® approach and industry-leading first-to-market advantage deliver optimized systems for the most demanding AI, Cloud, Storage and 5G/Edge workloads.

X13 AI Inference

Up to **67%**

performance gain vs
Supermicro X13 with 4th Gen Intel Xeon[1]

Supermicro Total IT Solutions

- Industry's broadest portfolio of systems based on 5th Gen Intel Xeon processors
- Rack Scale plug-and-play service to deliver complete, validated solutions within weeks, not months
- Production capacity of up to 5,000 racks per month worldwide
- Made in the USA program with manufacturing in San Jose headquarters
- Industry standard compliance for hardware and silicon Root of Trust (RoT) and cryptographical attestation of components throughout the entire supply chain
- Supermicro liquid cooling including CPU/GPU cold plate, Cooling Distribution Unit and Cooling Distribution Manifolds for a complete integrated solution

Optimized, Open Architectures

- More than 15 families of systems optimized for AI, Cloud, 5G Edge and more
- Resource saving architecture to reduce materials and energy usage
- Enhanced thermal capacity to support next-gen CPUs, GPUs and other components
- Flexible networking with Advanced I/O Modules (AIOM) up to 400G per card
- High ambient temperature operation up to 40°C with liquid cooling options
- Support for open and industry standards including OCP 3.0, OAM, ORV2, OSF, Open BMC and EDSFF

5th/4th Gen Intel® Xeon® Scalable Processors

- Up to 64 cores and 385W TDP per CPU
- Support for Intel Xeon® Max Series CPUs with High Bandwidth Memory
- Support for PCIe 5.0, DDR5 and CXL 1.1
- Built in accelerators:
  - Intel AMX
  - Intel® Dynamic Load Balancer
  - Intel® QuickAssist
  - Technology (QAT)
  - Intel vRAN Boost
- Built on the Intel® 7 process

[1] *See www.supermicro.com/en/new/articles/5thGenBenchmarks for detailed information.*

Introducing New 5th Gen Intel® Xeon® Processors

Get impressive performance per watt gains across all workloads plus outsized performance and TCO in AI, database, networking, and HPC. 5th Gen Intel® Xeon® processors deliver more compute and faster memory at the same TDP as the previous generation. They're software- and platform compatible with the previous generation, minimizing testing and validation when deploying new systems.

Average Performance

Up to

87%

performance gain vs

3rd Gen Intel Xeon[1]

AI Speech Recognition

Up to

1.4x

higher throughput (rec/sec)[2]

AI Inference: NLP, Image/Speech Recognition

Up to

1.4x

performance increase[3]

AI Training: Speech Recognition

Up to

1.3x

performance increase (rec/sec)[3]

HPC: LAMMPS

Up to

1.3x

higher performance[4]

Web: Server-side Java

Up to

1.2x

higher throughput[5]

Media Transcode: FFMPEG

Up to

1.2x

aggregate FPS[6]

Cloud: DeathStarBench socialNetwork

Up to

36%

greater max RPS

Cloud: DeathStarBench hotelReservation

Up to

29%

greater max RPS[7]

1. Average performance gain as measured by the geomean of SPEC CPU rate, STREAM Triad, and LINPACK compared to 3rd Gen Intel* Xeon* processor. See G1 at intel.com/processorclaims: 5th Gen Intel Xeon Scalable processors. Results may vary.
2. Workload: SSD-ResNet34, Inference: bs=x [1 instance/numa node], bs: amx bf16=1, SPR=112, EMR=16; Framework: https://github.com/pytorch/pytorch/tree/8aa785fa2baa3280581c5fe0777e958821d07402 [github.com]
3. a.BERT-Large, Inference: bs=x [1 instance/numa node], bs: amx bf16=1, SPR=16, EMR=88; Framework: https://github.com/pytorch/pytorch/tree/8aa785fa2baa3280581c5fe0777e958821d07402 [github.com]
b.SSD-ResNet34, Inference: bs=x [1 instance/numa node], bs: amx bf16=1, SPR=112, EMR=16; Framework: https://github.com/pytorch/pytorch/tree/8aa785fa2baa3280581c5fe0777e958821d07402 [github.com]
c.ResNet50v-1.5, Inference: bs=x [1 instance/numa node], amx int8=1, SPR=116, EMR=128; Framework: https://github.com/pytorch/pytorch/tree/8aa785fa2baa3280581c5fe0777e958821d07402 [github.com]
d.RNN-T, Training bs=x [1 instance / numa node (1socket only)], amx bf16=1, SPR/EMR=64; Framework: https://github.com/pytorch/pytorch/tree/8aa785fa2baa3280581c5fe0777e958821d07402 [github.com]
e.DLRM, Training bs=x [1 instance / numa node (1socket only)], amx bf16=1, SPR=7168, EMR=8192; Framework: https://github.com/pytorch/pytorch/tree/8aa785fa2baa3280581c5fe0777e958821d07402 [github.com]
4. LAMMPS (Copper): Application version: LAMMPS v2021-09-29, compiler: Intel ICC 2021.6.0, runtime environment: Intel ICC 2021.6.0, Intel MPI 2021.6.0, Intel MKL 2022.1.0
5 Estimated performance. Workload: SPECjbb2015 1.03, Compiler: jdk-17
6. Workload: FMB2.0 24 use cases (x264, x265, SVT-HEVC, SVT-AV1)
7. DeathStarBench hotelReservation v1.0, score=289851 (req/s)

ACCELERATE EVERYTHING

Supermicro X13 workload-optimized systems with Intel® Accelerator Engines

Built-in Intel Accelerator Engines improve performance across AI, data analytics, networking, storage, and HPC. By making the best use of CPU core resources, built-in accelerators can result in more efficient utilization and power efficiency advantages, helping businesses achieve their sustainability goals.

Intel AMX

(Advanced Matrix Extensions)

Deep Learning Inference

Up to **10x higher** PyTorch real-time inference performance (Intel® AMX) (BF16) vs. 3rd Gen Intel Xeon[1]

Deep Learning Training

Up to **10x higher** PyTorch training performance (Intel® AMX) (BF16) vs. 3rd Gen Intel Xeon[2]

Hyper | GrandTwin® | SuperEdge | CloudDC

Intel QAT

(Quick Assist Technology)

Network Secure Gateway

Up to 2.45x 7K requests per second vs no QAT3

Up to 1.71x 77-78K requests per second vs no QAT[4]

BigTwin® | SuperBlade® | Petascale | WIO

Intel DSA

(Data Streaming Accelerator)

SPDK NVMe-oF (Large Transfer Size)

Up to 1.77x higher performance (IOPS) vs no DSA5

BigTwin® | Hyper | GrandTwin | WIO

Intel IAA

(In-Memory Analytics Accelerator)

Database

Up to 1.2x higher RocksDB performance with 80/20 read-write[6]

Up to 1.12x higher ClickHouse DB (SSB)performance[7]

Up to 1.25x higher ClickHouse DB (Ontime) performance and 62% better compression vs no IAA[8]

Up to 1.33x higher Cassandra performance with 80/20 read-write[9]

Multi-Processor | Petascale

1 See [A17] at intel.com/processorclaims: 5th/4th Gen Intel® Xeon® Scalable processors. Results may vary.
2 See [A16] at intel.com/processorclaims: 5th/4th Gen Intel® Xeon® Scalable processors. Results may vary.
3 NGINX TLS 1.3 ECDHE-X25519-RSA2K on 5thGen Xeon Platinum 8592+
4 NGINX TLS 1.3 ECDHE-X25519-RSA2K on 5th Gen Xeon Platinum 8592+
5 Offload CRC32 on 5th Gen Xeon Platinum 8592+ (w/1 DSA device)
6 5th Gen Xeon Platinum 8592+ (w/4 IAA devices) vs 4th Gen Xeon Platinum 8490H.
7 5th Gen Xeon Platinum 8592+ (w/4 IAA devices) vs 4th Gen Xeon Platinum 8490H (with LZ4)
8 5th Gen Xeon Platinum 8592+ (w/4 IAA devices) vs SW Compression (LZ4)
9 5th Gen Xeon Platinum 8592+ (w/4 IAA devices) vs SW Compression (ZStd)

X13 UNIVERSAL GPU

Optimized Integrated Performance for AI/ML and HPC Applications

- Most comprehensive AI building block platform
- Supercharged for the largest workloads with next-generation architecture
- All set to break through the barriers of AI at Scale
- Powered by Intel® Data Center GPU Max Series 1550 and NVIDIA HGX H100 8 SXM5 GPUs up to 700W TDP
- 9X more performance, 2X faster networking, and high-speed scalability
- AIOM Slot (OCP 3.0 compliant) support
- Optional Liquid Cooling support

8U Universal GPU

SYS-821GE-TNHR

AIOM Ready

SYS-821GE-TNHR (8U)
NVIDIA H100-8
8 PCIe 5.0 networking slots + optional AOC/AIOM
Up to 16x 2.5" U.2 NVMe drives

SYS-821GE-FTNHR (8U Front IO)
NVIDIA H100-8
8 PCIe 5.0 networking slots + optional AOC/AIOM
Up to 16x 2.5" U.2 NVMe drives

SYS-821GV-TNR (8U)
Intel Data Center GPU Max Series OAM, 24 hot-swap 2.5" NVMe/SATA

SYS-521GU-TNXR (5U)
NVIDIA H100-4
5U 10 PCIe 5.0 networking slots
10x 2.5" U.2 NVMe drives
Thermal capacity up 700W per GPU

SYS-421GU-TNXR (4U)
NVIDIA H100-4
4U 8 PCIe 5.0 networking slots
6x 2.5" U.2 NVMe drives
Thermal capacity up 700W per GPU

Open, Modular, Standards-Based Universal GPU System

Supermicro X13 Universal GPU systems feature an open, modular, standards-based architecture designed for maximum flexibility. Support for multiple industry-standard GPUs allows organizations to take advantage of different GPU configurations based on workload while only deploying a single server architecture, reducing infrastructure complexity and simplifying future upgrades.

Designed for serviceability with hot-swappable, tool-less components in a modular construction, the chassis are optimized for thermal capacity, supporting next-generation GPUs up to 700W TDP.

Key Applications

- High Performance Computing
- AI/Deep Learning Training
- Industrial Automation
- Retail
- Healthcare
- Conversational AI
- Business Intelligence & Analytics
- Drug Discovery
- Climate and Weather Modeling
- Finance & Economics

X13 PCIe GPU
Tailored for Omniverse and Metaverse

- Dual socket 5th/4th Gen Intel® Xeon® Scalable processors
- 32 DIMM slots supporting DDR5-5600MT/s
- Supports NVIDIA H100, A100, Intel® Ponte Vecchio (PVC) and Intel® Data Center GPU Flex and Max Series GPUs
- Double the CPU to GPU throughput with PCIe 5.0
- Dual root and direct-connect GPU configurations available
- 5U option available for enhanced thermal capacity
- Flexible storage with U.2 NVMe direct to CPU and storage options
- NVIDIA-certified systems supporting NVIDIA GPUs
- Workstations with optional liquid cooling for ultra-quiet operation

5U 10-GPU

SYS-521GE-TNRT

AIOM Ready

SYS-521GE-TNRT (5U)
Up to 10 FHFL double-width PCIe GPUs
8x 2.5" SAS/SATA hybrid +
8x 2.5" U.2 NVMe direct to CPU +
8x 2.5" U.2 NVMe direct to storage (optional)
High Ambient Temperature: 38°C
Dual-root

SYS-421GE-TNRT (4U)
Up to 10 FHFL double-width PCIe GPUs
8x 2.5" SAS/SATA hybrid +
8x 2.5" U.2 NVMe direct to CPU +
8x 2.5" U.2 NVMe direct to storage (optional)
Dual-root

SYS-421GE-TNRT3 (4U)
Up to 8 FHFL double-width direct connect PCIe GPUs,
8x 2.5" SATA +
4x 2.5" U.2 NVMe direct to CPU
Direct-Connect

SYS-751GE-TNRT
Liquid Cooled DP GPU Workstation,
Closed-loop liquid cooling,
Up to 4 double-width liquid cooled GPUs

SYS-741GE-TNRT
GPU Workstation,
Up to 4 double-width PCIe GPUs

Flexible Platform

Optimized for the next generation of HPC, action-oriented AI, 3D simulation, and advanced graphic design and rendering, Supermicro X13 PCIe accelerated solutions empower the creation of 3D worlds, digital twins, 3D simulation models and the Metaverse.

These systems support next-generation accelerators based on the industry-standard PCIe form factor, with up to 10 double-width GPUs in a 4U or 5U chassis.

Support for the latest industry-standard PCIe 5.0 provides unprecedented throughput for graphics accelerators, supporting the most demanding workloads, with CPU-direct U.2 NVMe bays ensuring maximum data throughput. Additional networking slots provide connectivity of up to 400Gb/s to create high performance clusters of up to 32 nodes. Liquid Cooling options are available for delivering superior efficiency for the most demanding performance.

Key Applications

- AI model training
- Digital twins
- 3D simulation
- Real-time ray-tracing
- Animation and Modeling
- Cloud Gaming
- Design & Visualizatio
- 3D Rendering
- VDI
- Media/Video Streaming
- Diagnostic Imaging

X13 6U SuperBlade®

Memory-Optimized Multi-Node Architecture for EDA and Enterprise Applications

6U enclosure with 10 single-width or 5 double-width SuperBlade nodes, shared power, cooling and switches

Single or dual 5th/4th Gen Intel® Xeon® Scalable with air-cooled support for up to 350W TDP CPUs (optional liquid cooling available)

Up to 32 DIMM slots per node supporting DDR5-5600MT/s

Networking with up to 4 25G Ethernet switches per enclosure

Up to 4 double-width GPUs per double-width blade

High-performance NVMe support in E3.S, E1.S, U.2 and M.2 form factors

6U SuperBlade®

SBE-610J2-630/830/630 | SBE-610J2-422/622/822
Up to 10 hot-pluggable nodes in 6U, Performance and memory optimized architecture

Liquid-Cooled 6U SuperBlade

AIOM Ready

6U SuperBlade® - 10/5 UP/DP Nodes in 6U

SBI-621E-1T3N
3 SATA/NVMe DP/32 DIMM

SBI-621E-1C3N
2 SAS/NVMe DP/32 DIMM

SBI-621E-5T3N
2 SATA/NVMe DP/32 DIMM

SBI-611E-1C2N
2 SAS/NVMe 1 M.2 + 2 E1.S UP/16 DIMM

SBI-611E-1T2N
2 SAS/SATA/NVMe 3 M.2 + 2 E1.S UP/16 DIMM

SBI-611E-5T2N
2 SATA/NVMe 3 M.2 + 2 E1.S UP/16 DIMM

High Efficiency Resource Saving Architecture

Supermicro's X13 SuperBlade® features hot-swappable UP or DP nodes and utilizes shared, redundant components including cooling fans, switches or passthrough modules and power supplies to deliver the compute performance of a full server rack in a much smaller physical footprint.

Supermicro's X13 6U SuperBlade architecture is optimized for memory density, with up to 32 DDR5-5600 slots per node to support Enterprise Data Center and EDA applications. Up to 2 double-width GPUs can be installed in a double-width blade for acceleration and visualization and a range of storage options ensures flexibility for a wide range of applications.

Key Applications

- Enterprise Data Center
- EDA
- VDI
- Cloud
- CAE

X13 8U SuperBlade®

Ultra High-Density Multi-Node with High-Speed Networking for HPC Applications

8U enclosure with 20 single-width or 10 double-width SuperBlade nodes, shared power, cooling and switches

Single or dual 5th/4th Gen Intel Xeon Scalable with air-cooled support for up to 350W TDP CPUs (optional liquid cooling available)

Up to 16 DIMM slots per node supporting DDR5-5600MT/s

High performance networking with 400G NDR InfiniBand

Up to 4 GPUs per blade in a high-density, balanced architecture

High-performance NVMe support in E1.S, U.2 and M.2 form factors

8U SuperBlade®

SBE-820J2-630/830/622/822 | SBE-820H2-630/830/622/822

High-density configuration with 20 hot-pluggable nodes in 8U, Optimized for performance and advanced networking

Liquid-Cooled SuperBlade

AIOM Ready

8U SuperBlade® - 20/10 DP Nodes in 8U

SBI-421E-1T3N

3 SATA or 2 NVMe
1 M.2 + 4 M.2 via mezz card
DP/16 DIMM

SBI-421E-5T3N

3 SATA or 2 NVMe
1 M.2 + 4 M.2 via mezz card
DP/16 DIMM

8U SuperBlade® - 20/10 UP Nodes in 8U

SBI-411E-1G

2 M.2 + 2 E1.S
4 M.2 via mezz card
UP/8 DIMM

SBI-411E-5G

2 M.2 + 2 E1.S
4 M.2 via mezz card
UP/8 DIMM

High Efficiency Resource Saving Architecture

Supermicro's high performance, density-optimized, and energy-efficient SuperBlade® can significantly reduce initial capital and operational expenses for many organizations. SuperBlade® utilizes shared, redundant components including cooling fans, switches or passthru modules and power supplies to deliver the compute performance of a full server rack in a much smaller physical footprint.

Supermicro's X13 8U SuperBlade architecture maximizes rack density for HPC workloads, with up to 100 single or dual processor nodes in a 42U rack. Support for InfiniBand networking provides high-speed interconnect and optional direct-to-chip liquid cooling reduced TCO while also allowing the use of high-TDP CPUs in dense configurations.

Key Applications

- HPC
- AI
- Financial Services Industry
- HCI
- CDN

X13 GRANDTWIN®

Multi-Node Architecture Optimized for Single-Processor Performance

- 2U 4-Node single-socket architecture designed for maximum memory density
- Flexible front storage bays support E1.S drives, PCIe Gen5 and CXL
- Front-serviceable nodes reduce downtime for higher availability
- Optional front I/O configuration with integrated GrandTwin module reduces cable complexity for space-constrained edge data centers

2U 4-Node GrandTwin®

X13SET-G/-GC

SYS-211GT-HNTF *(Front View)*

AIOM Ready

2U 4-Node Front I/O GrandTwin®

SYS-211GT-HNTF

Up to 4 U.2 NVMe/SATA drives per node

SYS-211GT-HNC8F

Up to 4 U.2 NVMe/SAS/SATA drives per node

2U 4-Node Rear I/O GrandTwin®

SYS-211GT-HNTR

Up to 6 U.2 NVMe/SATA drives per node

SYS-211GT-HNC8R

Up to 6 U.2 NVMe/SAS/SATA drives per node

Highly Configurable Single Processor Systems with Front or Rear I/O

GrandTwin® is an all-new architecture purpose-built for single-processor performance. The design maximizes compute, memory and efficiency to deliver maximum density. Powered by 5th/4th Gen Intel® Xeon® Scalable processors, GrandTwin's flexible modular design can be easily adapted for a wide range of applications, with the ability to add or remove components as required, reducing cost.

For front configurations, all I/O and node trays are fully accessible from the cold aisle, simplifying installation and servicing in space-constrained environments. Flexible storage and networking options are available via front AIOM modules, allowing countless custom configurations.

Key Applications

- MEC (Multi-Access Edge Computing)
- HPC
- Cloud Gaming
- Multi-Purpose CDN
- High-Availability Cache Cluster
- Telco Edge Cloud
- EDA (Electronic Design Automation)
- Mission-Critical Web Applications

X13 BIGTWIN®

Industry-leading Multi-node Architectures

Highly configurable 2U 4-node and 2U 2-node systems optimized for density or storage

Optimized thermal design for dual socket 5th/4th Gen Intel® Xeon® Scalable processors

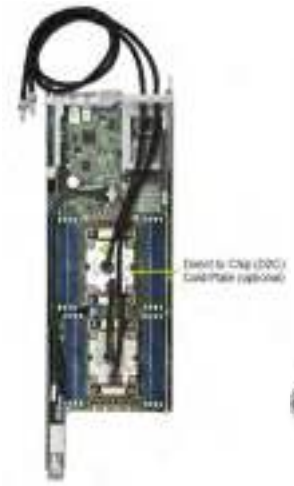
Optional direct-to-chip liquid cooling for increased thermal capacity

16 DIMM slots per node supporting DDR5-5600MT/s

All-hybrid hot-swappable NVMe/SAS/SATA drive bays - Up to 12 drives per node

Flexible networking with up to 400G Ethernet per node

2U 4-Node BigTwin®



Liquid Cooled Node

SYS-221BT-H Series

AIOM Ready

2U 4-Node BigTwin®

SYS-621BT-H Series
3x 3.5" NVMe/SAS/SATA drives (per node)

2U 4-Node BigTwin®
(Liquid cooling option)

SYS-221BT-H Series
6x 2.5" NVMe/SAS/SATA drives (per node)

2U 2-Node BigTwin®

SYS-621BT-D Series
6x 3.5" NVMe/SAS/SATA drives (per node)

2U 2-Node BigTwin®

SYS-221BT-D Series
12x 2.5" NVMe/SAS/SATA drives (per node)

Highly Modular Multi-Node Systems with Tool-Less Design

Supermicro X13 BigTwin® systems provide superior performance and serviceability with dual 5th/4th Gen Intel® Xeon® Scalable processors per node and hot-swappable tool-less design.

Superior modular mid-plane design with NVMe Gen 5 storage controller options. Optimized for density (2U4N) or storage (2U2N), BigTwin® systems with shared components can be more cost effective than standard 1U servers.

Key Applications

- HCI
- HPC
- CDN
- Hybrid Cloud
- Container-as-a-Service
- Cloud Computing
- Big Data Analytics
- Back-up and Recovery
- Scale-Out Storage

X13 FatTwin®

Advanced Multi-Node Architecture for HPC

- Highly configurable 4U 8-node and 4-node systems
- Single socket 5th/4th Gen Intel® Xeon® Scalable processors per node
- 16 DIMM slots per node supporting 4TB DDR5-5600MT/s
- Front accessible service design for cold-aisle serviceability
- Hot-swappable drive bays – interchangeable NVMe, SAS or SATA
- Improved thermal management with new, optimized airflow designs

4U 8-Node FatTwin®

X13SEFR-A

SYS-F511E2-RT

AIOM Ready

4U 8-Node

SYS-F511E2-RT (4U8N)
6x 2.5" hot-swap drives per node

4U 4-Node

SYS-F521E3-RTB (4U4N)
8x 3.5" hot-swap drives per node

Innovative Twin Architecture to Maximize Serviceability and Reliability

Supermicro X13 FatTwin® systems offer an advanced multi-node 4U twin architecture with 8 or 4 nodes. Front-accessible service design allows cold-aisle serviceability, with highly configurable systems optimized for data center compute or storage density. Supports all-hybrid hot-swappable NVMe/SAS/SATA hybrid drive bays with up to 6 drives per node (8-node) and up to 8 drives per node (4-node).

Supermicro X13 FatTwin® systems provide superior density, performance and front serviceability with 5th/4th Gen Intel® Xeon® Scalable processors per node and hot-swappable, tool-less design.

Key Applications

- Hyperscale/Hyperconverged
- Cloud Optimized Servers
- Data Center Enterprise Applications
- Scale-out Storage Expansion
- Telcom Data Center
- Virtualization Server

X13 HYPER AND HYPER-E

Best-in-class Performance and Flexibility Rackmount Server

1U and 2U optimized thermal designs for dual socket 5th/4th Gen Intel® Xeon® Scalable processors with liquid cooling options

32 DIMM slots per node supporting DDR5-5600MT/s

NVMe SSD support with up to 24 drives in 2U

Optional 2.5"/E1.S SSD hybrid configuration

Up to 3 PCIe 5.0 slots in 1U or 8 PCIe 5.0 slots in 2U

PCIe 5.0 AIOM slots supporting up to 400G networking

Tool-less system for simplified maintenance

2U Hyper-E
Optimized for 5G and Telco

X13DEM

SYS-221H-TNR

AIOM Ready

2U Hyper-E
Optimized for 5G and Telco

SYS-221HE-FTNR

6x 2.5" NVMe/SAS/SATA drives, short depth, front I/O, AC power

2U Hyper-E
Optimized for 5G and Telco

SYS-221HE-FTNRD

6x 2.5" NVMe/SAS/SATA drives, short depth, front I/O, -48V DC power

2U Hyper
Optimized for Storage Capacity

SYS-621H-TN12R

12x 3.5" NVMe/SAS/SATA drives

2U Hyper
Optimized for Storage Performance
(Liquid Cooling options)

SYS-221H-TNR
SYS-221H-TN24R

Up to 24x 2.5" NVMe/SAS/SATA drives

1U Hyper
Compute & Storage Powerhouse
(Liquid Cooling options)

SYS-121H-TNR

12x 2.5" NVMe/SAS/SATA drives

Ultimate Configurability for Enterprise and Telco Applications

The new X13 Hyper series brings next-generation performance to Supermicro's range of rackmount servers, built to take on the most demanding workloads along with the storage & I/O flexibility that provide a custom fit for a wide range of application needs.

Telco-optimized configurations include short depth carrier grade (NEBS Level 3) and optional DC power options on selected models.

Maintenance-friendly design innovations eliminate the need for tools when servicing the system to simplify rollout and installation.

Key Applications

- 5G Core and Edge
- Telco Micro Data Center
- Enterprise Server
- Cloud Computing
- Big Data Analytics
- Hyperconverged Storage
- AI Inference and Machine Learning
- Network Function Virtualization

X13 CLOUDDC

All-in-one Rackmount Platform for Cloud Data Centers

- Single and dual socket 5th/4th Gen Intel® Xeon® Scalable processors
- 16 DIMM slots per node supporting DDR5-5600MT/s
- Up to 12 U.2 NVMe/SAS/SATA drives with all-hybrid options
- 2 PCIe 5.0 slots in 1U or 6 PCIe 5.0 slots in 2U
- Dual PCIe 5.0 AIOM slots supporting up to 400G networking

X13DDW-A (DP CloudDC)

X13SEDW-F (UP CloudDC)

SYS-121C-TN10R

SYS-111C-NR

AIOM Ready

High Density Cloud Storage

SYS-621C-TN12R

2U/DP with 12x 3.5" NVMe/SAS/SATA drives and 6x PCIe 5.0 slots

SYS-521C-NR

2U/UP with 12x 3.5" SAS/SATA drives, 2x hybrid NVMe drives and 6x PCIe 5.0 slots

Compact Cloud Compute

SYS-121C-TN10R

1U/DP with 10x 2.5" NVMe/SAS/SATA drives

SYS-111C-NR

1U/UP with 10x 2.5" NVMe/SAS/SATA drives

General Purpose Balanced

SYS-121C-TN2R

1U/DP with 8x 2.5" SATA/SAS and 2x hybrid NVMe drives

Compact Storage Optimized

SYS-611C-TN4R

1U/DP with 4x 3.5" NVMe/SAS/SATA drives

High-density, Tool-less Mechanical Design for Rapid Cloud Deployment and Easy Maintenance

Ultimate flexibility on I/O and storage with 2 or 6 PCIe 5.0 slots and dual AIOM slots (PCIe 5.0; OCP 3.0 compliant) for maximum data throughput. Supermicro X13 CloudDC systems are designed for convenient serviceability with tool-less brackets, hot-swap drive trays and redundant power supplies that ensure a rapid deployment and more efficient maintenance in data centers. High-efficiency Titanium Level redundant power supplies provide resiliency and lower carbon footprint.

Rich Security Features include Intel® SGX, TPM 2.0, signed firmware, Silicon Root of Trust, Secure Boot, System Erase, Runtime FW protection, FIPS Compliance and Trusted Execution Environment.

Key Applications

- Cloud Computing
- Web Servers
- Hyper-Converged Storage
- Virtualization
- File Servers
- Head-Node Computing
- 5G Telco AI Inferencing

X13 ALL-FLASH EDSFF

Revolutionary Petascale NVMe for Unprecedented Density and Capacity

- Dual socket 5th/4th Gen Intel® Xeon® Scalable processors
- 32 DIMM slots per node supporting DDR5-5600MT/s
- Dual PCIe 5.0 x16 AIOM slots and up to 2 PCIe 5.0 x16 expansion slots
- Up to 24 EDSFF E1.S or 16 EDSFF E3.S drives in 1U
- Up to 24 EDSFF E3.S drives in 2U

24 EDSFF (E3.S) NVMe SSD

X13DSF-A

SSG-221E-NE324R

AIOM Ready

1U High-density All-Flash

SSG-121E-NES24R
24 EDSFF (E1.S 15mm) NVMe SSD

1U High-capacity All-Flash

SSG-121E-NE316R
16 EDSFF (E3 7.5mm NVMe SSD)

2U TCO Optimized All-Flash

SSG-221E-NE324R
Up to 24 EDSFF (E3 7.5mm NVMe SSD)

High Throughput, Low Latency All-flash Servers

X13 Petascale storage systems are ideal for deployments where storage throughput and latency are paramount, including generative AI, mission-critical databases, virtualization, nextgen big data, HPC, media & entertainment and hot-tier caching. Supermicro's open architectures are designed to work with the widest range of software partners to create a solution to drive every application. The symmetrical dual-CPU architecture not only balances resources, it also reduces latency by minimizing the length of data paths and maximizes airflow over critical components for optimal thermal performance.

Get ahead of the competition with the latest industry-standard EDSFF E3.S and E1.S form factors designed specifically for high performance solid-state media, facilitating maximum performance from the X13 range's PCIe 5.0 interconnects and ensuring compatibility with future iterations of the PCIe protocol. These systems support the new Gen 5 drives from all major vendors, giving customers the freedom to choose the best components for their specific application. Embracing the future, Supermicro X13 Petascale systems also support the industry's first CXL expansion modules, which can add up to 1TB of DDR memory to the already powerful 32-DIMM solution. This emerging CXL technology is now available to add capacity and bandwidth for memory-bound applications.

Key Applications

- Data Intensive HPC/AI
- Private & Hybrid Cloud
- Software-Defined Storage
- NVMe Over Fabrics Solution
- In-Memory Computing
- Composable Infrastructure Platform

X13 Enterprise Storage

Cost-Effective Systems for Large-Scale Object Storage

Single/Dual 5th/4th Gen Intel® Xeon® Scalable processors

16 DIMM slots supporting DDR5-5600MT/s

Density-optimized architectures with up to 24 drives in 2U or 36 drives in 4U

Up to 5 PCIe 5.0 slots for expansion

Hardware RAID or IT Mode/HBA with JBOD expansion port

2U Simply Double

SSG-521E-E1CR24H

2U 24-Bay Simply Double	*2U 12-bay Front Loading*	*2U 16-Bay Front Loading/ Internal*	*3U 16-Bay Front Loading*	*4U 24-Bay Front Loading*	*4U 36-Bay Double Sided®*
					
SSG-521E-E1CR24H SSG-521E-E1CR24L	SSG-621E-ACR12L SSG-621E-ACR12H	SSG-621E-ACR16H SSG-621E-ACR16L	SSG-631E-E1CR16H SSG-631E-E1CR16L	SSG-641E-E1CR24H SSG-641E-E1CR24L	SSG-641E-E1CR36H SSG-641E-E1CR36L
Up to 24 hot-swap SAS/SATA	*Up to 12 hot-swap SATA/SAS (6 optional NVMe)*	*Up to 12 hot-swap SAS/SATA (6 optional NVMe), Up to 4 internal SAS/SATA*	*Up to 16 hot-swap SAS/SATA*	*Up to 24 hot-swap SAS/SATA (6 optional NVMe)*	*Up to 36 hot-swap SAS/SATA (6 optional NVMe)*

Large-Scale Storage Building Blocks

As the amount of data produced by today's AI, HPC and Cloud applications continues to increase, cost-effective scale-out storage is essential for any organization's storage strategy. Supermicro X13 designs maximize the efficiency and cost effectiveness of large-scale data storage with intelligent, highdensity, economically optimized designs. The Simply Double family features a dual-layer front-loading design which can fit up to 24 drives in a 2U form factor without the need to remove the chassis cover. For full drive access without sliding systems out of the rack, X13 Front-Loading storage servers offer front access and double-sided storage bays providing exceptional density.

All Supermicro X13 storage solutions are based on open industry standards and can be paired with the widest range of operating system and software-defined storage applications, allowing users to create scale-up and scale out storage solutions perfect for their own specific needs.

Key Applications

- Enterprise Server
- iSCSI SAN
- HPC, Data Center
- Database Processing & Storage
- Corporate Database
- Appliance Optimized Storage Building Blocks

X13 UP WIO

Industry's Widest Variety of I/O Optimized Servers

Cost-effective systems supporting up to 4 PCIe 5.0 devices

Single socket 5th/4th Gen Intel® Xeon® Scalable processor

8 DIMM slots supporting DDR5-5600MT/s

Hot-swappable 2.5" or 3.5" storage

Up to 10 NVMe hybrid storage supported (optional)

2U WIO with 4 PCIe Slots

X13SEW-F (WIO)

SYS-521E-WR

1U UP WIO

SYS-511E-WR
4x 3.5" SATA/SAS and 3 PCIe 5.0 slots

1U UP WIO

SYS-111E-WR
10x 2.5" SATA/SAS/NVMe with 3 PCIe 5.0 slots

2U UP WIO

SYS-521E-WR
8x 3.5" SATA/SAS/NVMe with 4 PCIe 5.0 slots

Wide-Ranging Flexibility for any Enterprise Workload

Supermicro WIO systems offer a wide range of I/O options to deliver truly optimized systems for specific requirements. Users can optimize the storage and networking alternatives to accelerate performance, increase efficiency and find the perfect fit for their applications.

In addition to enabling customizable configurations and optimization for multiple application requirements, Supermicro WIO SuperServers® also provide attractive cost advantages and investment protection.

Key Applications

- Enterprise Applications
- Networking Appliance
- Firewall/Security Appliances
- General Purpose Computing
- Cloud Computing
- Media Entertainment

X13 SuperEdge

High-Density Computing and Flexibility at the Intelligent Edge

- 2U form factor with short-depth (430mm) 3-node or full-depth 4-node configuration
- Single 5th/4th Gen Intel® Xeon® Scalable processor per node
- Front-access hot-swappable nodes or front-accessible storage
- Up to 8 DIMMs slots per node supporting DDR5-5600
- Up to 3 PCIe 5.0 slots per node
- 3-node architecture optimized for operating temperatures from -5ºC to 55ºC (CPU TDP-dependent)

2U 3-Node SuperEdge

X13SEED-F

SYS-211SE-31D

Short-depth 3-node with redundant AC power

SYS-211SE-31A
SYS-211SE-31AS
RJ45 or SFP management port options

Short-depth 3-node with redundant DC power

SYS-211SE-31D
SYS-211SE-31DS
RJ45 or SFP management port options

4-node with redundant AC power

SYS-211TP-HPTR
Storage-optimized 4-Node architecture

4-node with redundant DC power

SYS-211TP-HPTRD
Storage-optimized 4-Node architecture

Data Center-Class Performance and Expandability at the Edge

Supermicro's SuperEdge is designed to handle increasing compute and I/O density requirements of modern edge applications. With 3 or 4 customizable single-processor nodes, SuperEdge delivers data center-class performance in a 2U form factor.

Three front-access hot-swappable nodes provide front to access I/O, making the system ideal for remote IoT, edge, or telco deployments, while the 4-node configuration provides front access to storage for easy maintenance. Each node can accommodate two or three PCIe 5.0 slots, enabling a wide range of add-on cards such as FPGA, DPU, eASIC, and TimeSync cards that allow the SuperEdge to be outfitted for networking.

Key Applications

- 5G Open RAN/Flex-RAN
- C-RAN (vRAN)
- Telecom/Networking Appliance
- Multi-Access Edge Computing
- Edge Data Center
- Enterprise Edge Computing

X13 5G/EDGE

Compact and short-depth rackmount systems for telco Edge deployments

High-density processing power in compact form factors suitable for Edge deployments

Flexible I/O with up to 3 PCIe 5.0 slots in 1U or 4 slots in 2U

Both AC and DC power configurations available with redundant power supplies

Enhanced operating temperatures from -5°C to 55°C (CPU TDP-dependent)

X13SEM-TF

SYS-211E-FRDN2T

1U UP short-depth server with front I/O

SYS-111E-FWTR
SYS-111E-FDWTR
2x 2.5" internal SATA
AC/DC power supply options

2U UP compact OpenRAN server

SYS-211E-FRN2T
SYS-211E-FRDN2T
2x 2.5" hot-swap NVMe
AC/DC power supply options

2U UP compact Edge/IoT server

SYS-211E-FRN13P
SYS-211E-FRDN13P
2x 2.5" hot-swap SATA
AC/DC power supply options

IoT box server

SYS-E403-13E-FRN2T
2x 2.5" hot-swap NVMe
AC power supply

Expanding our Product Portfolio to address 5G, Edge Computing and Emerging IoT Systems

Supermicro provides innovative and first-to-market technologies that are the building blocks for today's embedded computing platforms. Rapid growth in embedded markets and open standards are driving the need for higher levels of product integration and optimization through virtualization, AI inferencing, network connectivity, remote management, mobile communication, expanded I/O, and device-to-device communications using space and power efficient configurations.

Supermicro's family of high-performance embedded products are optimized for a wide range of applications and solutions. Supermicro offers many flexible and customized solutions for critical OEM projects, as well as advanced designs for stringent environments, firmware customization, BOM enhancements, and a wide range of legacy IO support.

Key Applications

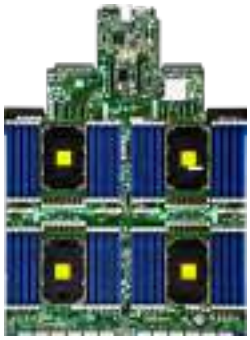
- Multi-Access Edge Computing
- Flex-RAN/Open RAN
- Edge AI Outdoor 5G

X13 Multi-Processor Systems

Highest Performance and Flexibility for Enterprise Applications

- 4- and 8-way systems with 4th Gen Intel® Xeon® Scalable processors
- Next-generation PCIe 5.0 for GPU/accelerator and high-speed network interface cards up to 12 double width GPU
- Compute and hybrid storage-optimized configurations up to 24 drives
- Large memory footprint with up to 64 DIMMs in 2U and 128 DIMMs in 6U supporting DDR5-4800MHz

Hyper 2U 4-Way Compute-Optimized



X13QEH+

SYS-241H-TNRTTP

AIOM Ready

Hyper 2U 4-way Compute-Optimized

SYS-241H-TNRTTP

64 DIMM / 8 SAS/SATA or NVMe
8 PCIe 5.0 (4 x16 + 4 x8) +
4 PCIe 4.0 (2 x16 + 2 x8)

Hyper 2U 4-way Storage-Optimized

SYS-241E-TNRTTP

64 DIMM / 24 NVMe hybrid
8 PCIe 5.0 (4 x16 + 4 x8)

6U 8-way GPU-Optimized

SYS-681E-TR

128 DIMM / 24 NVMe hybrid
26 PCIe 5.0 x16 (12 DW GPU)

Maximum Configurability and Scalability

X13 multi-processor systems bring new levels of compute performance and flexibility with support for 4th Gen Intel® Xeon® Scalable processors to support mission-critical enterprise workloads.

A large memory footprint is ideal for large database and in-memory compute applications, with support for 12 double width GPU to enable even the most AI-intensive applications. Dynamic storage options support direct-attached full-hybrid all NVMe for lower latency with higher throughput and IOPS and up to 24x 2.5" hybrid NVMe/SAS3/SATA3 drive bays in a 2U/6U chassis. Flexible networking is available via AIOM slots supporting OCP 3.0 NIC devices.

Key Applications

- Artificial Intelligence (AI)
- Business Intelligence
- ERP
- CRM
- Scientific Virtualization
- In-Memory Database
- HCI
- SAP HANA

X13 MAINSTREAM

Cost-effective Platforms for Enterprise Workloads

- Dual 5th/4th Gen Intel® Xeon® Scalable processors
- Flexible storage options with hot-swap support
- DDR5 memory support
- Onboard 1GbE or 10GbE LAN
- Up to 6 next-generation PCIe 5.0 slots for accelerators and expansion

X13DEI-T

SYS-621P-TR

2U Mainstream Rackmount

SYS-621P-TR
SYS-621P-TRT
8 hot-swap 3.5" SATA bays (optional 4 NVMe)

SYS-221P-C9R
SYS-221P-C9RT
16 hot-swap 2.5" drive bays (optional 4 NVMe)

Mainstream DP Tower

SYS-741P-TR
SYS-741P-TRT
8 hot-swap 3.5"/2.5" SATA bays (optional 4 NVMe)

Ideal for Small and Medium Businesses

Supermicro's X13 mainstream family has been specifically designed to deliver balanced compute power and storage flexibility in a cost-effect architecture. Rackmount systems with front-loading SATA bays allow for sufficient storage to handle most enterprise applications, while rear PCIe slots can provide ample networking for everyday workloads. For organizations that are not equipped for rackmount servers, the 4U tower form factor provides data center compute power in a compact and portable chassis that can be installed in offices, laboratories or field offices.

Supermicro Mainstream systems offer flexibility and value for everyday virtualization, enterprise and data serving workloads commonly required by small and medium organizations. Up to 6 rear PCIe 5.0 expansion slots offer flexibility for networking, acceleration or offload cards depending on workload. Up to 16 front-loading storage drives can support SAS or SATA RAID configurations, while optional NVMe drive support can be implemented for high-speed caching.

Key Applications

- Virtualization
- Enterprise Server
- Application and Data Serving
- Compute Intensive Applications

X13 UP WORKSTATION

Next-Gen Workstation for Creative Professionals

- Single Intel® Xeon® W Series processor
- Up to 4 double-width GPUs
- Feature-rich front and rear I/O ports
- Optional closed-loop liquid cooling and rack mount kits are available

X13SWA-TF

Full Tower UP Workstation

SYS-551A-T

Mid-Tower UP Workstation

SYS-531A-I

Intel® Xeon® W-2400 Processor
Up to 2 double-width GPUs

Full Tower UP Workstation

SYS-551A-T

Intel® Xeon® W-3400 Series Processor
Up to 4 double-width GPUs

Balanced Power and Efficiency for Intensive Visual Workloads

Supermicro X13 workstations bring data center CPU processing power and PCIe expandability to the desktop for AI, simulation, metaverse/Omniverse, and 3D media applications. Fuel your creative workflows and boost productivity with a single Intel® Xeon® W-3400 or W-2400 processor combined with lightning-fast M.2 NVMe PCIe 5.0 storage and up to 4TB of DDR5 RAM. The new Supermicro X13 SuperWorkstation offers configuration flexibility to meet your complex design and engineering demands.

Key Applications

- 2D/3D Content Creation
- VR Content Development
- Product Design
- Engineering Simulation

X13 DP WORKSTATION

Compact, High Performance Systems with GPU support

Full Tower DP Workstation

- Dual 5th/4th Gen Intel® Xeon® Scalable processors up to 350W
- Support for up to 2 double-width GPUs
- Up to 4 SATA/SAS drives with optional hot-swap 2.5" SSD bays
- Additional 5.25" peripheral bays for expansion
- Front USB and audio I/O access
- Rack-mountable 5U tower form factor
- Refer to PCIe GPU section for 4-GPU workstations

X13DAI-T

SYS-751A-I

Full Tower DP Workstation

SYS-751A-I
Up to 2 double-width GPUs

Deploy Data Center Power in a Range of Environments

Supermicro X13 workstations are designed to deliver high performance compute power in a compact form factor suitable for offices, schools, research laboratories and field offices, with efficient and quiet cooling reducing operating volume for convenient under-desk installation.

Designed for compute-intensive 3D design, content creation and engineering workloads, dual 5th Gen Intel Xeon processors deliver unrivaled compute power, complemented by support for the industry's latest double-width GPUs. Extensive connectivity is available for peripherals and accessories, with both front and rear mounted USB and audio ports as well as flexible storage options including front-accessible hot-swap 2.5" drive bays.

Key Applications

- Rendering
- CAD
- Multimedia/Digital Content Creation
- Engineering/Scientific Research

X13 UNIVERSAL GPU

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

8U

8U Front IO

MODEL	SYS-821GE-TNHR	SYS-821GE-FTNHR
Processor Support	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W (air cooled)/385W (liquid cooled)	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W
Key Applications	• Finance & Economics • Climate and Weather Modeling • Drug Discovery • Business Intelligence & Analytics • Conversational AI • Healthcare • Industrial Automation, Retail • AI/Deep Learning Training • High Performance Computing	• Finance & Economics • Climate and Weather Modeling • Drug Discovery • Business Intelligence & Analytics • Conversational AI • Healthcare • Industrial Automation, Retail • AI/Deep Learning Training • High Performance Computing
Outstanding Features	• Highest GPU communication using NVIDIA® NVLINK™ + NVIDIA® NVSwitch™ • High density 8U system with NVIDIA® HGX™ H100 8-GPU • 8 NVMe for GPU direct storage • 8 NIC for GPU direct RDMA (1:1 GPU Ratio) • 2 M.2 NVMe for boot drive only	• Highest GPU communication using NVIDIA® NVLINK™ + NVIDIA® NVSwitch™ • High density 8U system with NVIDIA® HGX™ H100 8-GPU • 8 NVMe for GPU direct storage • 8 NIC for GPU direct RDMA (1:1 GPU Ratio) • 2 M.2 NVMe for boot drive only
Serverboard	SUPER® X13DEG-OAD	SUPER® X13DEG-OAD
Chipset	Intel® C741	Intel® C741
System Memory (Max.)	32 DIMM slots up to 8TB DDR5 5600MT/s	32 DIMM slots up to 8TB DDR5 5600MT/s
Expansion Slots	8 PCIe 5.0 x16 LP, 2 FHFL PCIe 5.0 x16 Slots	8 PCIe 5.0 x16 LP, 2 FHFL PCIe 5.0 x16 Slots
Onboard Storage Controller	Intel® SATA	Intel® SATA
Connectivity	2x 10GbE RJ45 with Intel® X550-AT2 (optional) 2x 10GbE RJ45 with Intel® X710-AT2 (optional) 2x 25GbE SFP28 with Broadcom® BCM57414 (optional)	2x 10GbE RJ45 with Intel® X550-AT2 (optional) 2x 10GbE RJ45 with Intel® X710-AT2 (optional) 2x 25GbE SFP28 with Broadcom® BCM57414 (optional)
VGA/Audio	1 VGA port	1 VGA port
Management	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
Drive Bays	20x 2.5" hot-swap NVMe/SATA drive bays; 8x 2.5" NVMe dedicated	24 hot-swap 2.5" NVMe/SATA drive bays; 12 2.5" NVMe dedicated
Peripheral Bays	None	None
Power Supply	6x 3000W (4+2) Redundant power supplies, Titanium Level	6x 3000W (4+2) Redundant power supplies, Titanium Level
Cooling System	10 heavy duty fan(s)	10 heavy duty fan(s)
Form Factor	8U Rackmount Enclosure: 437 x 355.6 x 843.28mm (17.2" x 14" x 33.2") Package: 698 x 750 x 1300mm (27.5" x 29.5" x 51.2")	8U Rackmount Enclosure: 437 x 355.6 x 843.28mm (17.2" x 14" x 33.2") Package: 698 x 750 x 1300mm (27.5" x 29.5" x 51.2")

X13 UNIVERSAL GPU

4U

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

MODEL	SYS-821GV-TNR	SYS-421GU-TNXR
Processor Support	4th Gen Intel® Xeon® Scalable processors; Dual Socket LGA-4677 (Socket E) supported; TDP up to 350W	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W
Key Applications	• Finance Services and Fraud Detection • Generative AI • Biomedical • Climate and Weather Modeling • Business Intelligence & Analytics • Industrial Automation • AI/Deep Learning Training • High Performance Computing	• AI/Deep Learning Training • High Performance Computing
Outstanding Features	• Dual 4th Gen Intel® Xeon® Scalable processors With PCIE Gen 5 Platform • GPU Memory Bandwidth: 3276.8 GB/s • GPU Memory: 1TB HBM2 • GPU to GPU Interconnect: 742 GB/s XeLink Scale Up Bandwidth • High Density Computing: 8 x Intel® Data Center GPU Max 1550 (600W) OAM • Open Ecosystem with oneAPI	• Highest GPU communication using NVIDIA® NVLINK™ • High density 4U Universal GPU system with NVIDIA® HGX™ H100 4-GPU • 8 NIC for GPU direct RDMA (1:1 GPU Ratio)
Serverboard	SUPER® X13DEG-PVC	SUPER® X13DGU
Chipset	Intel® C741	Intel® C741
System Memory (Max.)	32 DIMM slots;up to 8TB DDR5 4800MT/s	32 DIMM slots;up to 8TB DDR5 5600MT/s
Expansion Slots	8 PCIe 5.0 x16 LP, 2 FHHL PCIe 5.0 x16 Slots, 2 FHHL PCIe 5.0 x16 Slots (optional)	8 PCIe 5.0 x16 LP Slots
Onboard Storage Controller		Intel® SATA
Connectivity	2x 10GbE RJ45 with Intel® X550-AT2 (optional)	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2
VGA/Audio	1 VGA port	1 VGA port
Management		Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
Drive Bays	19x 2.5" hot-swap NVMe/SATA drive bays; 16x 2.5" NVMe dedicated;	6x 2.5" hot-swap NVMe/SATA drive bays; 6x 2.5" NVMe hybrid;
Peripheral Bays	None	None
Power Supply	6x 3000W Redundant Titanium Level power supplies	4x 3000W Redundant power supplies, Titanium Level
Cooling System	10 heavy duty fan(s)	5 heavy duty fan(s)
Form Factor	8U Rackmount Enclosure: 447 x 356 x 843mm (17.7" x 13.8" x 33.2") Package: 1300 x 700 x 750mm (51" x 27.6" x 29.5")	4U Rackmount Enclosure: 449 x 175.6 x 833mm (17.67" x 7.0" x 32.79") Package: 700 x 370 x 1260mm (27.55" x 14.57" x 49.6")

X13 PCIe GPU

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

10 PCIe GPUs

8 PCIe GPUs

MODEL	SYS-421GE-TNRT	SYS-421GE-TNRT3
Processor Support	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W
Key Applications	• Diagnostic Imaging • 3D Rendering • Design & Visualization • Animation and Modeling • Cloud Gaming • Media/Video Streaming • AI/Deep Learning Training • VDI • High Performance Computing	• Diagnostic Imaging • 3D Rendering • Design & Visualization • Animation and Modeling • Cloud Gaming • Media/Video Streaming • AI/Deep Learning Training • VDI • High Performance Computing
Outstanding Features	• Flexible networking options • 8 NVMe for GPU direct storage • 2 M.2 NVMe for boot drive only	• Flexible networking options • 2 M.2 NVMe for boot drive only
Serverboard	SUPER® X13DEG-OA	SUPER® X13DEG-OA
Chipset	Intel® C741	Intel® C741
System Memory (Max.)	32 DIMM slots Up to 8TB DDR5-5600MT/s	32 DIMM slots Up to 8TB DDR5-5600MT/s
Expansion Slots	13 PCIe 5.0 x16 Slots	8 PCIe 5.0 x16 Slots
Onboard Storage Controller	Intel® SATA	Intel® SATA
Connectivity	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2
VGA/Audio	1 VGA port	1 VGA port
Management	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
Drive Bays	24 hot-swap 2.5" NVMe/SATA/SAS drive bays (8 NVMe dedicated + 8 SATA dedicated)	24 hot-swap 2.5" NVMe/SATA/SAS drive bays (4 NVMe dedicated + 8 SATA dedicated)
Peripheral Bays	None	None
Power Supply	4x 2700W (2+2) Redundant Power Supplies, Titanium Level	4x 2700W (2+2) Redundant Power Supplies, Titanium Level
Cooling System	8 heavy duty fan(s)	8 heavy duty fan(s)
Form Factor	4U Rackmount Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: (27" x 26.57" x 41")	4U Rackmount Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: (27" x 26.57" x 41")

X13 PCIe GPU

5U, 10 PCIe GPUs

4U Tower, 4 PCIe GPUs

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

MODEL	SYS-521GE-TNRT	SYS-741GE-TNRT	SYS-751GE-TNRT
Processor Support	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W	5th/4th Gen Intel® Xeon® Scalable processors Dual Socket LGA-4677 (Socket E) supported TDP up to 350W; 4 UPI
Key Applications	• Diagnostic Imaging • 3D Rendering • Design & Visualization • Animation and Modeling • Cloud Gaming • Media/Video Streaming • AI/Deep Learning Training • VDI • High Performance Computing	• AI Training • Diagnostic Imaging • 3D Rendering • Design & Visualization • Animation and Modeling • Cloud Gaming • Media/Video Streaming • AI/Deep Learning Training • VDI • High Performance Computing	• AI Training • AI/Deep Learning Training • AI/ML Researchers • Product Data Management (CAD Design) • High Performance Computing • Architecture, Engineering, and Construction (AEC) • Scientific Research Labs • Diagnostic Imaging • 3D Rendering • Design & Visualization • Animation and Modeling • M&E
Outstanding Features	• Flexible networking options • 8 NVMe for GPU direct storage • 2 M.2 NVMe for boot drive only	• Workstation or 4U Rackmountable System • Performance Anywhere • Innovate Faster • Flexible Solution	• Close-loop liquid cooled CPUs, GPUs, and memory • Low Acoustic Level "Idle" under 32dBA & "100% Load" under 50dBA • Flexible Solution: Workstation Tower or 5U Rackmountable System
Serverboard	SUPER® X13DEG-OA	SUPER® X13DEG-QT	SUPER® X13DEG-QT
Chipset	Intel® C741	Intel® C741	Intel® C741
System Memory (Max.)	32 DIMM slots Up to 8TB DDR5-5600MT/s	16 DIMM slots UP to 4TB: 16x 256GB DRAM	16 DIMM slots Up to 1TB: 16x 128GB DRAM
Expansion Slots	13 PCIe 5.0 x16 Slots	7 PCIe 5.0 x16 FHFL Slots	6 PCIe 5.0 x16 FHFL Slots - 4 PCIe 5.0 x16 for double-width GPU cards, support up to 4 liquid-cooled A100 GPUs - 2PCIe 5.0 x16 for single-width High-Speed Network or RAID card
Onboard Storage Controller	Intel® SATA	Intel® SATA	Intel® SATA
Connectivity	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X710-AT2	2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550-AT2	1x 1GbE RJ45 port(s) with ASPEED AST2600 2x 10GbE RJ45 port(s) with Intel® Ethernet Controller X550-AT2
VGA/Audio	1 VGA port	1 VGA port	1 VGA port
Management	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; OOB Management Package (SFT-OOB-LIC); Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
Drive Bays	24 hot-swap 2.5" NVMe/SATA/SAS drive bays (8 NVMe dedicated + 8 SATA dedicated)	8 hot-swap 2.5" NVMe/SATA/SAS drive bays 2 M.2 NVMe slots	8 hot-swap 2.5" NVMe/SATA/SAS drive bays 2 M.2 NVMe slots
Peripheral Bays	None	None	None
Power Supply	4x 2700W (2+2) Redundant Power Supplies, Titanium Level	2x 2000W (1+1) Redundant Power Supplies, Titanium Level	1200W/2200W (1+1) Redundant Power Supplies, Titanium Level
Cooling System	8 heavy duty fan(s)	4 heavy duty fan(s)	3x 8, 12cm heavy duty fan(s)
Form Factor	5U Rackmount Enclosure: 437 x 222.5 x 737mm (17.2" x 8.75" x 29") Package: (27" x 26.57" x 41")	Tower Enclosure: 437 x 178 x 737mm (17.2" x 7" x 29") Package: 330.2 x 685.8 x 965.2mm (13" x 27" x 38")	Tower or 5U Rackmount Enclosure: 454.7 x 218.4 x 701mm (17.9" x 8.6" x 27.6") Package: 388 x 655 x 956mm (15.3" x 25.8" x 37.6")

X13 SUPEREDGE

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

	Redundant AC power, RJ45 or SFP management port options	*Redundant AC power, RJ45 or SFP management port options*	*Redundant DC power, RJ45 or SFP management port options*	*Redundant DC power, RJ45 or SFP management port options*
				
MODEL	**SYS-211SE-31A**	**SYS-211SE-31AS**	**SYS-211SE-31D**	**SYS-211SE-31DS**
Processor Support	5th/4th Gen Intel® Xeon® Scalable processors Single Socket LGA-4677 (Socket E) supported TDP up to 300W	5th/4th Gen Intel® Xeon® Scalable processors Single Socket LGA-4677 (Socket E) supported TDP up to 300W	5th/4th Gen Intel® Xeon® Scalable processors Single Socket LGA-4677 (Socket E) supported TDP up to 300W	5th/4th Gen Intel® Xeon® Scalable processors Single Socket LGA-4677 (Socket E) supported TDP up to 300W
Key Applications	• Enterprise Edge Computing • Telecom DRAN, CRAN, and Edge Core Application • Flex-RAN, Open-RAN vBBU • Multi-Access Edge Computing	• Enterprise Edge Computing • Telecom DRAN, CRAN, and Edge Core Application • Flex-RAN, Open-RAN vBBU • Multi-Access Edge Computing	• Enterprise Edge Computing • Telecom DRAN, CRAN, and Edge Core Application • Flex-RAN, Open-RAN vBBU • Multi-Access Edge Computing	• Enterprise Edge Computing • Telecom DRAN, CRAN, and Edge Core Application • Flex-RAN, Open-RAN vBBU • Multi-Access Edge Computing
Outstanding Features	• Three front hot-swappable nodes with single CPU socket and 8 DIMM design • Front access IO design, and tool less serviceability • 16.9" (430mm) chassis depth	• Three front hot-swappable nodes with single CPU socket and 8 DIMM design • Front access IO design, and tool less serviceability • 16.9" (430mm) chassis depth	• Three front hot-swappable nodes with single CPU socket and 8 DIMM design • Front access IO design, and tool less serviceability • 16.9" (430mm) chassis depth	• Three front hot-swappable nodes with single CPU socket and 8 DIMM design • Front access IO design, and tool less serviceability • 16.9" (430mm) chassis depth
Serverboard	SUPER® X13SEED-F	SUPER® X13SEED-SF	SUPER® X13SEED-F	SUPER® X13SEED-SF
Chipset	Intel® C741	Intel® C741	Intel® C741	Intel® C741
System Memory (Max.)	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s
Expansion Slots	2 PCIe 5.0 x16 FHHL 1 PCIe 5.0 x16 LP	2 PCIe 5.0 x16 FHHL 1 PCIe 5.0 x16 LP	2 PCIe 5.0 x16 FHHL 1 PCIe 5.0 x16 LP	2 PCIe 5.0 x16 FHHL 1 PCIe 5.0 x16 LP
Onboard Storage Controller	Intel® SATA	Intel® SATA	Intel® SATA	Intel® SATA
Connectivity	1x 1GbE RJ45 port(s)	1x 1GbE SFP port(s)	1x 1GbE RJ45 port(s)	1x 1GbE SFP port(s)
VGA/Audio	1 KVM dongle (output VGA x1, COM x1, USB 2.0 x2 through KVM cable)	1 KVM dongle (output VGA x1, COM x1, USB 2.0 x2 through KVM cable)	1 KVM dongle (output VGA x1, COM x1, USB 2.0 x2 through KVM cable)	1 KVM dongle (output VGA x1, COM x1, USB 2.0 x2 through KVM cable)
Management	IPMI 2.0; SuperDoctor® 5	IPMI 2.0; SuperDoctor® 5	IPMI 2.0; SuperDoctor® 5	IPMI 2.0; SuperDoctor® 5
Drive Bays	N/A	N/A	N/A	N/A
Peripheral Bays	None	None	None	None
Power Supply	2000W AC Redundant PSU	2000W AC Redundant PSU	2000W DC Redundant PSU	2000W DC Redundant PSU
Cooling System	4 heavy duty fan(s)	4 heavy duty fan(s)	4 heavy duty fan(s)	4 heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 449 x 88 x 430mm (17.7" x 3.5" x 16.9") Package: 750 x 240 x 590mm (29.5" x 9.5" x 23.2")	2U Rackmount Enclosure: 449 x 88 x 430mm (17.7" x 3.5" x 16.9") Package: 750 x 240 x 590mm (29.5" x 9.5" x 23.2")	2U Rackmount Enclosure: 449 x 88 x 430mm (17.7" x 3.5" x 16.9") Package: 750 x 240 x 590mm (29.5" x 9.5" x 23.2")	2U Rackmount Enclosure: 449 x 88 x 430mm (17.7" x 3.5" x 16.9") Package: 750 x 240 x 590mm (29.5" x 9.5" x 23.2")

X13 SuperEdge

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

Redundant AC power, Storage-optimized 4-Node architecture

Redundant DC power, Storage-optimized 4-Node architecture

MODEL	SYS-211TP-HPTR	SYS-211TP-HPTRD
Processor Support	5th/4th Gen Intel® Xeon® Scalable processors Single Socket supported TDP up to 270W	5th/4th Gen Intel® Xeon® Scalable processors Single Socket supported TDP up to 270W
Key Applications	• Enterprise Edge Computing • Telecom DRAN, CRAN, and Edge Core Application • Flex-RAN, Open-RAN vBBU • Multi-Access Edge Computing	• Enterprise Edge Computing • Telecom DRAN, CRAN, and Edge Core Application • Flex-RAN, Open-RAN vBBU • Multi-Access Edge Computing
Outstanding Features	Four 24 front-access 2.5" hot-swap SATA drives (6 per node) • Up to 8 DIMMs slots per node supporting DDR5-5600Mhz • Up to 2 PCIe 5.0 HHHL slots per node • Operating temperatures from 0°C - 35°C (32°F - 95°F) (CPU TPD-dependent)	24 front-access 2.5" hot-swap SATA drives (6 per node) • Up to 8 DIMMs slots per node supporting DDR5-5600Mhz • Up to 2 PCIe 5.0 HHHL slots per node • Operating temperatures from 0°C - 35°C (32°F - 95°F) (CPU TPD-dependent)
Serverboard	SUPER® X13SET-PT	SUPER® X13SET-PT
Chipset	Intel® C741	Intel® C741
System Memory (Max.)	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s
Expansion Slots	2x PCIe 5.0 x16 HHHL	2x PCIe 5.0 x16 HHHL
Onboard Storage Controller		
Connectivity	2x 10GbE SFP+ port(s) with Intel® Ethernet Controller X710-BM2	2x 10GbE SFP+ port(s) with Intel® Ethernet Controller X710-BM2
VGA/Audio	1 onboard VGA port	1 onboard VGA port
Management		
Drive Bays	6 hot-swap 2.5" drive bays	6 hot-swap 2.5" drive bays
Peripheral Bays	None	None
Power Supply	2000W AC Redundant power supplies (per enclosure)	2000W DC Redundant power supplies (per enclosure)
Cooling System	4 heavy duty 8cm fans (per enclosure)	4 heavy duty 8cm fans (per enclosure)
Form Factor	2U Rackmount Enclosure: 438 x 88 x 730mm (17.25" x 3.5" x 28.75") Package: 526 x 250 x 965mm (20.7" x 9.8" x 38")	2U Rackmount Enclosure: 438 x 88 x 730mm (17.25" x 3.5" x 28.75") Package: 526 x 250 x 965mm (20.7" x 9.8" x 38")

X13 5G/Edge

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

	1U UP short-depth server with front I/O	*1U UP short-depth server with front I/O*	*2U UP compact OpenRAN server*	*2U UP compact OpenRAN server*
				

MODEL	SYS-111E-FWTR	SYS-111E-FDWTR	SYS-211E-FRN2T	SYS-211E-FRDN2T
Processor Support	Single 5th/4th Gen Intel® Xeon® Scalable processor up to 350W	Single 5th/4th Gen Intel® Xeon® Scalable processor up to 350W	Single 5th/4th Gen Intel® Xeon® Scalable processor up to 270W	Single 5th/4th Gen Intel® Xeon® Scalable processor up to 270W
Key Applications	• Machine Learning (ML) • Artificial Intelligence (AI) on Edge • Flex-RAN, Open-RAN vBBU • Outdoor DU of 5G Application • Multi-Access Edge Computing	• Machine Learning (ML) • Artificial Intelligence (AI) on Edge • Flex-RAN, Open-RAN vBBU • Outdoor DU of 5G Application • Multi-Access Edge Computing	• Cloud Computing • Network Function Virtualization • AI Inference and Machine Learning • 5G Core and Edge	• Cloud Computing • Network Function Virtualization • AI Inference and Machine Learning • 5G Core and Edge
Outstanding Features	• Redundant Power Supplies Design • Front access IO design, 16.9" (430mm) chassis depth • 5G Telecom, Flex-RAN, Open-RAN OptimizedRedundant Power Supplies Design • Front access IO design, 16.9" (430mm) chassis depth • 5G Telecom, Flex-RAN, Open-RAN Optimized	• Redundant Power Supplies Design • Front access IO design, 16.9" (430mm) chassis depth • 5G Telecom, Flex-RAN, Open-RAN Optimized	• Designed with compliance to NEBS-Level 3	• Designed with compliance to NEBS-Level 3
Serverboard	SUPER® X13SEW-TF	SUPER® X13SEW-TF	SUPER® X13SEM-TF	SUPER® X13SEM-TF
Chipset	Intel® C741	Intel® C741	Intel® C741	Intel® C741
System Memory (Max.)	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s
Expansion Slots	2 PCIe 5.0 x16 FHFL slots 1 PCIe 5.0 x16 LP slot	2 PCIe 5.0 x16 FHFL slots 1 PCIe 5.0 x16 LP slot	1 PCIe 5.0 x16 HHHL slot 1 PCIe 5.0 x8 HHHL slot 2 PCIe 5.0 x16 FHHL slots	1 PCIe 5.0 x16 HHHL slot 1 PCIe 5.0 x8 HHHL slot 2 PCIe 5.0 x16 FHHL slots
Onboard Storage Controller	Intel® SATA	Intel® SATA	Intel® SATA	Intel® SATA
Connectivity	2 10GbE ports	2 10GbE ports	2x 100GbE QSFP28 with Intel® E810-CAM2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 2x 200GbE QSFP56 with Mellanox® MT28908A0-XCCF-HVM (optional) 2x 25GbE QSFP28 with Intel® E810-CAM1 (optional) 2x 25GbE QSFP28 with Intel® XXV710 (optional) 2x 40GbE QSFP+ with Intel® XL710-BM2 (optional) 4x 1GbE RJ45 with Intel® i350 (optional)	2x 100GbE QSFP28 with Intel® E810-CAM2 (optional) 2x 10GbE SFP+ with Intel® X710-BM2 (optional) 2x 200GbE QSFP56 with Mellanox® MT28908A0-XCCF-HVM (optional) 2x 25GbE QSFP28 with Intel® E810-CAM1 (optional) 2x 25GbE QSFP28 with Intel® XXV710 (optional) 2x 40GbE QSFP+ with Intel® XL710-BM2 (optional) 4x 1GbE RJ45 with Intel® i350 (optional)
VGA/Audio	1 VGA port	1 VGA port	1 VGA port	1 VGA port
Management	IPMI 2.0	IPMI 2.0	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog	Intel® Node Manager; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog
Drive Bays	2 fixed internal 2.5" SATA drive bays	2 fixed internal 2.5" SATA drive bays	2 hot-swap 2.5" NVMe drive bays	2 hot-swap 2.5" NVMe drive bays
Peripheral Bays	None	None	None	None
Power Supply	800W AC Redundant PSU	600W DC Redundant PSU	Redundant 800W AC 100-240Vac input, Platinum level	2x 600W -48Vdc single output
Cooling System	4 heavy duty fans	4 heavy duty fans	4 heavy duty fans	4 heavy duty fans
Form Factor	1U Rackmount Enclosure: 436.88 x 44.5 x 429.3mm (17.2" x 1.7" x 16.9") Package: 685 x 203 x 609mm (27" x 8" x 24")	1U Rackmount Enclosure: 437 x 43 x 429mm (17.2" x 1.7" x 16.9") Package: 686 x 203 x 610mm (27" x 8" x 24")	2U Rackmount Enclosure: 436.88 x 88.9 x 298.8mm (17.2" x 3.5" x 11.8") Package: 490 x 188 x 590mm (19.3" x 7.4" x 23.3")	2U Rackmount Enclosure: 436.88 x 88.9 x 298.8mm (17.2" x 3.5" x 11.8") Package: 490 x 188 x 590mm (19.3" x 7.4" x 23.3")

X13 5G/Edge

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

2U UP compact Edge/IoT server

2U UP compact Edge/IoT server

MODEL	SYS-211E-FRN13P	SYS-211E-FRDN13P	SYS-E403-13E-FRN2T
Processor Support	Single 5th/4th Gen Intel® Xeon® Scalable processor up to 270W	Single 5th/4th Gen Intel® Xeon® Scalable processor up to 270W	5th Gen Intel® Xeon®/4th Gen Intel® Xeon® Scalable processors Single Socket LGA-4677 (Socket E) supported TDP up to 350W
Key Applications	• GNSS & IEEE1588 Sync-E Support • 5G CU/DU Edge Server • Cloud Computing • Network Function Virtualization	• GNSS & IEEE1588 Sync-E Support • 5G CU/DU Edge Server • Cloud Computing • Network Function Virtualization	• Smart Retail/Medical Expert Systems • Machine Learning (ML) • Artificial Intelligence (AI) on Edge • Industrial Automation • Universal Customer Premise Equipment (uCPE) • Multi-Access Edge Computing (MEC)
Outstanding Features	• Design with compliance to NEBS-Level 3 • Single Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors • 8 DIMM slots; Up to 2TB 3DS ECC DDR5-4800: RDIMM/LRDIMM • 2x PCIe 5.0 x8 FHHL expansion slots for Accelerator Add-On-Cards • Onboard 12x 25GbE SFP28 ports • 2x 2.5" drive bays for SSD drives • Redundant 800W AC Power Supplies • 1 x RJ45 for dry contact • Ultra short depth, 2U Front I/O Edge Server	• Design with compliance to NEBS-Level 3 • Single Socket E (LGA-4677) 4th Gen Intel® Xeon® Scalable processors • 8 DIMM slots; Up to 2TB 3DS ECC DDR5-4800: RDIMM/LRDIMM • 2x PCIe 5.0 x8 FHHL expansion slots for Accelerator Add-On-Cards • Onboard 12x 25GbE SFP28 ports • 2x 2.5" drive bays for SSD drives • 2x 600W DC -48V Power Supplies • 1 x RJ45 for dry contact • Ultra short depth, 2U Front I/O Edge Server	• 4th Gen Intel® Xeon® Scalable Processors(Sapphire Rapids) • Up to 8 DIMMs and total 2TB 3DS ECC DDR5-4800: RDIMM • 3x PCIe5.0 x16 slot • 2x 10 Gigabit Ethernet Ports • Up to 4x 2.5" U.2 NVMe drive(2 Hot-swap, Optional 2 fixed)
Serverboard	SUPER● X13SEVR-SP13F	SUPER● X13SEVR-SP13F	SUPER● X13SEW-TF
Chipset	Intel® C741	Intel® C741	Intel® C741
System Memory (Max.)	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots; Up to 2TB DDR5-5600MT/s	8 DIMM slots Max Memory (2DPC): Up to 2TB 4800MT/s ECC DDR5 RDIMM
Expansion Slots	2 PCIe 5.0 x8 FHHL slots	2 PCIe 5.0 x8 FHHL slots	3x PCIe5.0 x16 FHFL
Connectivity	12 25GbE QSFP28 ports with Intel® Ethernet Controller E810-CAM1 1 1GbE RJ45 ports with Intel® Ethernet Controller i210-AT	12 25GbE QSFP28 ports with Intel® Ethernet Controller E810-CAM1 1 1GbE RJ45 ports with Intel® Ethernet Controller i210-AT	2x 10GbE RJ45 port(s)
VGA/Audio	1 VGA port	1 VGA port	1 1 VGA port
Management	Shared BMC LAN port	Shared BMC LAN port	IPMI 2.0; KVM with dedicated LAN ; Redfish API; Super Diagnostics Offline ; SuperDoctor® 5; Supermicro Power Manager (SPM); Supermicro Server Manager (SSM); Supermicro Update Manager (SUM)
Drive Bays	2 fixed internal 2.5" SATA drive bays	2 fixed internal 2.5" SATA drive bays	2x 2.5" hot-swap NVMe drive bays;
Peripheral Bays	None	None	None
Power Supply	800W Redundant AC power supply	600W redundant short depth DC48V input power supply	800W Redundant Platinum Level power supplies
Cooling System	4 heavy duty fans	4 heavy duty fans	3 heavy duty fan(s)
Form Factor	2U Rackmount Enclosure: 436.88 x 88.9 x 298.8mm (17.2" x 3.5" x 11.8") Package: 490 x 188 x 590mm (19.3" x 7.4" x 23.3")	2U Rackmount Enclosure: 436.88 x 88.9 x 298.8mm (17.2" x 3.5" x 11.8") Package: 490 x 188 x 590mm (19.3" x 7.4" x 23.3")	Fan-based Embedded Rackmount Enclosure: 266.7 x 117.348 x 406.4mm (10.5" x 4.62" x 16") Package: 416 x 264 x 660mm (16.4" x 10.4" x 26")

X13 8U SuperBlade®

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

Enclosure	SBE-820 Series
Processor Blade	• Up to 20 hot-swappable, half-height, single-width blade servers • Up to 10 hot-swappable, full-height, single-width blade servers • Mixed configuration supported
LED Indicator	• Power LED, Fault LED
Infiniband Switch	• SBE-820H/H2 only: Single 200G HDR InfiniBand switch • SBE-820C only: Single 100G EDR InfiniBand switch
Ethernet Switch / Pass-Thru Module	• SBE-820C/H/H2 only: Up to 2 hot-swap 25G Ethernet switches or pass-thru modules • SBE-820J/J2 only: Up to 4 hot-swappable 25G Ethernet switches or pass-thru modules • SBE-820L only: Up to 2 hot-swappable 10G Ethernet switches or pass-thru modules
Chassis Management Module (CMM)	• Single/Redundant CMM for remote system management with software • SBE-820J/J2 only: Up to 2 hot-swappable CMMs for remote system management with software
Models	• SBE-820C/J/J2/L/H-822: Up to 8 hot-swappable 2200W Titanium (96% efficiency) power supplies • SBE-820H2/J2-830: Up to 8 hot-swap 3000W Titanium (96% efficiency) power supplies
Rack Unit	8 RU
Form Factor	356 x 447 x 813mm (14" x 17.6" x 32")

X13 8U SuperBlade®

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

	3 SATA or 2 NVMe, DP/16 DIMM	*3 SATA or 2 NVMe, DP/16 DIMM*	*2 NVMe, UP/8 DIMM*	*2 NVMe, UP/8 DIMM*
				
MODEL	**SBI-421E-1T3N**	**SBI-421E-5T3N**	**SBI-411E-1G**	**SBI-411E-5G**
Server Nodes/ Enclosure	20	10	*20*	*10*
Processor Support	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 205W TDP (air cooled) Up to 350W TDP(liquid cooled)	Dual 5th/4th Gen Intel® Xeon® Scalable processors Up to 350W TDP (air cooled)	Single 5th/4th Gen Intel® Xeon® Scalable processors Up to 250W TDP (air cooled) Up to 350W TDP (liquid cooled)	Single 5th/4th Gen Intel® Xeon® Scalable processors Up to 350W TDP (air cooled)†
Chipset	Intel® C741 chipset	Intel® C741 chipset	Intel® C741 chipset	Intel® C741 chipset
System Memory (Max.)	Up to 4TB; 16 DDR5 DIMM slots, 1DPC speeds up to 5600 MT/s	Up to 4TB; 16 DDR5 DIMM slots, 1DPC speeds up to 5600 MT/s	Up to 2TB; 8 DDR5 DIMM slots, 1DPC speeds up to 5600 MT/s	Up to 2TB; 8 DDR5 DIMM slots, 1DPC speeds up to 5600 MT/s
PCIe Expansion	OCP 3.0 (PCIe 5.0 x16)	OCP 3.0 (PCIe 5.0 x16)	2 PCIe 5.0 slots	4 PCIe 5.0 slots
Storage & RAID	4 M.2 NVMe with optional mezzanine card 1 M.2 NVMe drive 2 hot-swap U.2 NVMe/SATA3 drive bays & 1 hot-swap SATA3 drive bay; RAID 0, 1 (VROC) Intel® PCH 3.0 SATA Controller	4 M.2 NVMe with optional mezzanine card 1 M.2 NVMe drive 2 hot-swap U.2 NVMe/SATA3 drive bays & 1 hot-swap SATA3 drive bay; RAID 0, 1 (VROC) Intel® PCH 3.0 SATA Controller	4 M.2 NVMe with optional mezzanine card 2 E1.s drives 2 M.2 NVMe drives	4 M.2 NVMe with optional mezzanine card 2 E1.s drives 2 M.2 NVMe drives
Networking	OCP 3.0 network card with 400G NDR IB and other options Mezzanine options for 200G HDR / 100G EDR IB or dual 25GbE Dual 25GbE LOM	OCP 3.0 network card with 400G NDR IB and other options Mezzanine options for 200G HDR / 100G EDR IB or dual 25GbE Dual 25GbE LOM	Dual 25GbE LOM Mezzanine options for 200G HDR / 100G EDR IB or dual 25GbE	Dual 25GbE LOM Mezzanine options for 200G HDR / 100G EDR IB or dual 25GbE
Management	Open Industry Standard IPMI 2.0 / KVM over IP / Redfish API / TPM 2.0 / Signed Firmware / HW Root of Trust	Open Industry Standard IPMI 2.0 / KVM over IP / Redfish API / TPM 2.0 / Signed Firmware / HW Root of Trust	Open Industry Standard IPMI 2.0 / KVM over IP / Redfish API / TPM 2.0 / Signed Firmware / HW Root of Trust	Open Industry Standard IPMI 2.0 / KVM over IP / Redfish API / TPM 2.0 / Signed Firmware / HW Root of Trust
LED Indicators	Fault LED, network activity LED, power LED, UID	Fault LED, Network Activity LED, Power LED, UID	Fault LED, network LED Power, button, KVM/UID LED	Fault LED, network LED Power, button, KVM/UID LED
Form Factor	165 x 44.4 x 597mm (6.5" x 1.75" x 23.5")	165 x 88.9 x 597mm (6.5" x 3.5" x 23.5")	166 x 43 x 580 mm (6.55" x 1.69" x 22.84")	166 x 86 x 580 mm (6.55" x 3.4" x 22.84")
Enclosure	SBE-820C/J/L-422 SBE-820H/C/H2/J/J2/L-622/822 SBE-820H2/J2-630/830	SBE-820H2/J2-630/830 SBE-820H2/J2-622/822	SBE-820C/J/L-422 SBE-820H/C/H2/J/J2/L-622/822 SBE-820H2/J2-630/830	SBE-820H2/J2-630/830 SBE-820H2/J2-622/822

† CPUs with high TDP supported under specific conditions. Contact Technical Support for details.

X13 6U SuperBlade®

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

Enclosure	SBE-610 Series
Processor Blade	• Up to 10 hot-swap, single-width blade servers • Up to 5 hot-swap, double-width blade servers • Mixed configuration supported
LED Indicator	• Power LED, Fault LED
Infiniband Switch	N/A
Ethernet Switch / Pass-Thru Module	• Up to 4 hot-swap 25G Ethernet switches, 10G Ethernet switches or pass-thru modules
Chassis Management Module (CMM)	• Up to 2 hot-swap CMMs for remote system management with software
Models	• SBE-610J/610J2-822: Up to 8 hot-swap 2200W Titanium (96% efficiency) power supplies • SBE-610J2-830: Up to 8 hot-swap 3000W Titanium (96% efficiency)
Rack Unit	6 RU
Form Factor	267 x 447 x 813mm (10.5" x 17.6" x 32")

X13 6U SuperBlade®

NEW!

5th/4th Gen Intel® Xeon® Scalable processors Supported

2 SATA/NVMe UP/16 DIMM

2 SAS/NVMe UP/16 DIMM

2 SATA/NVMe UP/16 DIMM

MODEL	SBI-611E-1T2N	SBI-611E-1C2N	SBI-611E-5T2N
Server Nodes/ Enclosure	10	10	5
Processor Support	Single 5th/4th Gen Intel® Xeon® Scalable processor Up to 250W TDP (air cooled) Up to 350W TDP (liquid cooled)	Single 5th/4th Gen Intel® Xeon® Scalable processor Up to 250W TDP (air cooled) Up to 350W TDP (liquid cooled)	Single 5th/4th Gen Intel® Xeon® Scalable processor Up to 350W TDP (air cooled)
Chipset	Intel® C741 chipset	Intel® C741 chipset	Intel® C741 chipset
System Memory (Max.)	Up to 4TB; 16 DDR5 DIMM slots, 1DPC speeds up to 5600 MT/s or 2DPC speeds up to 4400 MT/s	Up to 4TB; 16 DDR5 DIMM slots, 1DPC speeds up to 5600 MT/s	Up to 4TB; 16 DDR5 DIMM slots, 1DPC speeds up to 5600 MT/s or 2DPC speeds up to 4400 MT/s
PCIe Expansion	1 PCIe Gen5 x16 slot, 1 PCIe Gen5 x8 slot, support 1 FHFL DW GPU or 2 SW PCIe cards	1 PCIe Gen5 x16 slot, 1 PCIe Gen5 x8 slot, support 1 FHFL DW GPU or 2 SW PCIe cards	2 PCIe Gen5 x16 slot, 2 PCIe Gen5 x8 slot, support 2 FHFL DW GPU or 4 SW PCIe cards
Storage & RAID	2 hot-swap U.2 NVMe/SATA drive bays 2 E1.S drives 1 M.2 NVMe drive	2 hot-swap U.2 NVMe/SAS drive bays 2 E1.S drives 1 M.2 NVMe drive Broadcom 3108 HW RAID	2 hot-swap U.2 NVMe/SATA3 drive bays 3 M.2 NVMe drives 2 E1.S drives Intel® PCH 3.0 SATA controller
Networking	Standard IB or GbE PCIe cards Mezzanine option for dual 25GbE dual 25GbE LOM	Standard IB or GbE PCIe cards Mezzanine option for dual 25GbE dual 25GbE LOM	Standard IB or GbE PCIe cards Mezzanine option for dual 25GbE dual 25GbE LOM
Management	Open Industry Standard IPMI 2.0 / KVM over IP / Redfish API / TPM 2.0 / Signed Firmware / HW Root of Trust	Redundant Chassis Management Modules, Open Industry Standard IPMI 2.0 / KVM over IP / Redfish API / TPM 2.0 / Signed Firmware / HW Root of Trust	Open Industry Standard IPMI 2.0 / KVM over IP / Redfish API / TPM 2.0 / Signed Firmware / HW Root of Trust
LED Indicators	Fault LED, network activity LED, power LED, UID	Fault LED, Network Activity LED, Power LED, UID	Fault LED, network activity LED, power LED, UID
Form Factor	248 x 44.4 x 597mm (9.75" x 1.75" x 23.5")	248 x 44.4 x 597mm (9.75" x 1.75" x 23.5")	248 x 44.4 597mm (9.75" x 1.75" x 23.5")
Enclosure	SBE-610J/J2-422/622/822 SBE-610J2-430/630/830	SBE-610J/J2-422/622/822 SBE-610J2-430/630/830	SBE-610J/J2-422/622/822 SBE-610J2-430/630/830