A+ Server Solutions
World’s Most Versatile Portfolio of AMD Processor-Based Systems
Supporting AMD EPYC™ 9004 Series Processors

SUPERCMIRO® H13 AND H12 GENERATION A+ SERVERS
The Most Comprehensive Portfolio of AMD Processor-Based Systems, now with AMD EPYC™ 9004 Series Processors, Including Servers, Storage, GPU-Optimized, Blade, and Multi-Node Solutions to Exactly Match System Requirements to Your Workload

November 2022
**Introducing**

**H13 Generation A+ Servers**

**AMD EPYC™ 9004 Series Processors**
- Up to 96 "Zen 4" Cores
- 12-channel DDR5 with ECC up to 4800MHz with Advanced Memory Device Correction (AMDC) and 1 DIMM per channel support
- 6TB maximum memory supported (based on 2 socket systems and 256GB 3DS RDIMMs with 1 DIMM per channel support)
- PCIe 5.0 up to 160 lanes (4U GPU system)
- Next Generation Reliability, Availability, and Serviceability (RAS)

**Workload Optimized Systems with Open Architectures**
- Vast I/O, storage, networking and expansion slot options for maximum versatility
- Flexible networking options with Advanced I/O Modules (AIOMs), up to 400Gbps throughput per card and OCP 3.0 support
- Market-leading GPU optimized servers for large scale AI/ML and HPC workloads
- Compute Express Link (CXL 1.1+) peripheral support including memory expansion through PCIe 5.0 lanes

**Increased Operational Efficiency**
- Tool-less chassis design
- Rear and Front I/O options
- Hot-swappable nodes with shared power for multi-node system
- Titanium level redundant power supplies
- Efficient resource-saving multi-node designs with shared power and cooling.

**H13 GPU Optimized System**
*Maximum Acceleration for AI/Deep Learning and HPC*

**H13 Grandtwin™ System**
*Leading Multi-Node Architecture with Front or Rear I/O*

**H13 Hyper System**
*Industry Leading IOPS Server with Energy Efficiency and Flexibility*

**H13 Clouddc System**
*All-in-One Servers with Flexible I/O Options for Cloud Scale Data Centers*
**H13 GPU-OPTIMIZED SYSTEMS**

Maximum Acceleration for AI/Deep Learning and HPC

High performance AI/Deep Learning and HPC-optimized systems

Dual AMD EPYC™ 9004 Series Processors

Double the CPU to GPU throughput with PCIe 5.0

Supports up to 10 FHFL double-width GPU units including AMD Instinct™ MI200 series and NVIDIA H100 GPUs

**AS -4125GS-TNRT1**

4U dual processors, direct attached GPU system, supporting 8 PCIe 5.0 GPUs, AMD Instinct, NVIDIA Enterprise level GPUs

4U dual processors, single-root GPU system with PLX, supporting 10 PCIe 5.0 GPUs, AMD Instinct, NVIDIA Enterprise level GPUs

4U dual processors, dual-root GPU system with PLX, supporting 10 PCIe 5.0 GPUs, AMD Instinct, NVIDIA Enterprise level GPUs

8U dual processors system with NVIDIA HGX H100 8-GPU, supports PCIe 5.0 with 1:1 networking at 400G to the 8 GPUs and up to 16 NVMe and 2 SATA SSD drives

**MAXIMUM ACCELERATION A+ GPU SYSTEM**

Optimized for AI, Deep Learning, HPC, providing maximum acceleration, flexibility, high-performance and balanced solutions. Supermicro GPU-optimized systems support PCIe 5.0 and HGX accelerators and deliver a multitude of performance gains compared to previous generations.

The H13 GPU-optimized servers deliver unprecedented acceleration at every scale to power the world’s highest performing data centers for AI, data analytics, and HPC applications.

**Key Applications**

- AI/ML
- Deep Learning
- High Performance Computing (HPC)
- Research Laboratory/National Laboratory
- Molecular Dynamics Simulation
- Astrophysics Simulation
- Chemistry Simulation
**H13 GRANDTWIN™ SYSTEMS**
Leading Multi-node Architecture with Front or Rear I/O

2U 4-node system optimized for single processor per node performance

Configurable up to six 2.5” drive bays supporting NVMe or SATA per node

Field serviceable from front/cold aisle to reduce downtime for higher availability

Flexible networking options with AIOM / OCP 3.0 support

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**GrandTwin™ SystemS**
Leading Multi-node Architecture with Front or Rear I/O

AS-2115GT-HNTR
2U system with up to 6 U.2 NVMe/ SATA drives per node

AS-2115GT-HNTF
2U system with up to 4 U.2 NVMe/ SATA drives per node

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**Highly Configurable Single Processor System with Front or Rear I/O**

GrandTwin™ is an all-new multi-node architecture purpose-build for single-processor performance. The design maximizes compute, memory and efficiency to deliver maximum density. Powered by AMD EPYC™ 9004 Series 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.

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**Key Applications**

- HCI
- HPC
- CDN
- Technical Computing (EDA, CFD, FEA)
- Cloud Computing
- Big Data Analytics
- Scale-Out Storage
H13 HYPER SYSTEMS
Industry Leading IOPS Rackmount Server with Energy Efficiency and Flexibility

Dual AMD EPYC™ 9004 Series Processors

3 PCIe 5.0 x16 slots (1U), or up to 4 PCIe 5.0 x16 slots/8 PCIe 5.0 x8 slots (2U) and CXL 1.1+ support

Up to 2 AIO M networking slots with OCP 3.0 support

Flexible NVMe and SATA hot-swap drive options

Tool-less design for easy deployment and maintenance

Key Applications
- Enterprise Server
- Hyperconverged Storage
- Virtualization
- AI Training/Inferencing
- Big Data Analytics
- Cloud Computing
- CDN
- In-Memory Database

Highest Performance A+ Hyper Servers

The new H13 Hyper series brings next-generation versatility and 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 customer fit for a wide range of application needs.

- Uncompromised performance design with 2 CPU sockets and 24 DIMMs optimized for supporting the highest processor TDP
- Best-in-class server features including all NVMe, hybrid storage and low latency optimizations
- Fast PCIe 5.0 expansion slots for accelerators, AIO M/OCP 3.0 networking, and CXL 1.1+ peripheral support including memory expansion.

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- Fast PCIe 5.0 expansion slots for accelerators, AIO M/OCP 3.0 networking, and CXL 1.1+ peripheral support including memory expansion.
H13 CloudDC Systems
All-in-One Servers with Flexible I/O Options for Cloud-Scale Data Centers

Single AMD EPYC™ 9004 Series Processor
Up to 12 hot-swap NVMe/SATA drives
2 PCIe 5.0 x16 slots (1U) or up to 4 PCIe 5.0 x16 slots (2U)
Flexible networking options with AIOM/OCP 3.0 support
Best-in-class serviceability features with tool-less chassis design

Key Applications
- Cloud Computing
- Web Server
- Hyper-converged Storage
- Virtualization, File Servers
- Head-node Computing
- Telcom Security Server
- CDN

Cost Optimized Versatile Solutions for Rapid Cloud Deployment and Easy Maintenance
Ultimate flexibility on I/O and storage with 2 to 4 PCIe 5.0 slots and dual AIOM slots (PCIe 5.0; OCP 3.0 compliant) for maximum data throughput. Supermicro H13 CloudDC systems offer 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.

The H13 CloudDC servers are designed for cost-effective service delivery in cloud computing environments, including Internet infrastructure such as web hosting, email services, public and private cloud computing, and content-delivery networks (CDNs).
H12 Universal GPU System

Modular Platform for HPC Applications and Advanced Data Center AI Infrastructure

Dual AMD EPYC™ 7003 series processors

Supports the new AMD Instinct MI250 OAM Accelerator

32 DIMM slots per node supporting DDR4-3200MHz

Flexible Storage configuration with 10 hot-swap 2.5” U.2 NVMe drives

4U with optional 1U extension for a 5U system providing PCIe slots expansion with Supermicro AIOM support.

Supports next-generation GPUs in a variety of form factors

Universal GPU server OCP standards-based design

Modular design for flexibility/future-proofing

Optimized thermal capability for 500W/700W GPUs

Key Applications

- AI/ML
- HPC
- Vertical Markets (thermal modeling and other parallel-processing intensive tasks)
- Big Data Analytics

Open, Modular, Standards Based Universal GPU System

Supermicro A+ Universal GPU systems are open, modular, standards-based servers which provide superior performance and serviceability with dual AMD EPYC™ 7003 series processors, supporting AMD Instinct™ MI250 OAM Accelerator and various GPU and accelerator form factors, and featuring a hot-swappable, tool-less design. The system’s “future proofed” design allows to standardize on one GPU platforms with multiple configurations for all data center needs with optimized thermal management.
H12 Twin Systems
Leading Multi-node Architectures

Highly configurable 2U 4-node systems

2-socket with 16 DIMMs or
1-socket with 8 DIMMs per node

Flexible storage and I/O options including NVMe/SATA3 and SIOM networking

NO-COMPROMISE 2U 4-NODE ARCHITECTURE

BigTwin is the 5th generation in the Supermicro® Twin Family with a multitude of innovations and engineering breakthroughs.

TwinPro systems are designed for simplified deployment and maintenance, and assembled with the highest quality to ensure continuous operation even at maximum capacity.

With AMD EPYC™ 7003 Series Processors with AMD 3D V-Cache™ Technology, customers in high-end enterprise, data center, HPC and Cloud Computing environments receive the greatest competitive advantage from data center resources with the Supermicro® TwinPro.

Key Applications
- HCI
- HPC
- CDN
- 5G UPF
- Technical Computing (EDA, CFD, FEA)
- Cloud Computing
- Big Data Analytics
- Back-up and Recovery
- Scale-Out Storage
HIGHEST PERFORMANCE A+ ULTRA SERVERS

Supermicro® A+ Ultra system are designed to deliver the highest performance, flexibility, scalability and serviceability to demanding IT environments, and to power mission-critical Enterprise workloads, including support for dual AMD EPYC™ 7003/7002 Series Processors* and 32 DIMMs of DDR4-3200MHz memory for up to 8TB of capacity.

- Uncompromised performance design with 2 CPU sockets and 32 DIMMs optimized for supporting the highest processor TDPs
- Best-in-class server features including all NVMe, hybrid storage and low latency optimizations
- Vast networking and expansion possibilities with Ultra Riser cards

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.

Key Applications

- Enterprise Server
- Hyperconverged Storage
- Virtualization
- AI Training/Inferencing
- Big Data Analytics
- Cloud Computing
- CDN
- In-Memory Database
H12 FatTwin®
Advanced 4U Twin Architecture with 8 and 4 Nodes

Highly modular multi-node (4U 8-Node or 4U 4-Node) systems with tool-less design and independent backplanes built-in per node to eliminate a single point of failure

Front or Rear I/O accessible service design depending on data center environments

All-hybrid drive bays - NVMe, SAS, or SATA

FRONT OR REAR I/O TWIN ARCHITECTURE TO MAXIMIZE SERVICABILITY AND RELIABILITY

The innovative FatTwin architecture provides flexibility and system accessibility for unique datacenter requirements with front or rear I/O, as well as electrically isolated, modularized left/right nodes with redundant power supplies for maximum reliability.

- Single AMD EPYC™ 7003/7002 Series Processor* (TDP up to 280W) per node
- Flexible AIOM networking
- Electrically isolated Redundant Titanium Level power supplies per side (2 left, 2 right)

Key Applications
- Hyperscale / Hyperconverged
- HPC and Big Data
- Data Center Enterprise Applications
- Scale Out Storage
- Telco Data Center & Virtualization Server
**H12 SuperBlade®**
Performance and Density Optimized Resource Saving Architecture

Up to 20 hot-pluggable nodes in 8U

Highest density GPU platform for AI and Deep Learning

Integrated HPC network fabrics for up to 200G HDR InfiniBand with 100% non-blocking switch

**RESOURCE SAVING ARCHITECTURE**

SuperBlade with AMD EPYC™ 7003 Series Processors with AMD 3D V-Cache is an ideal choice for modern technical computing workloads including EDA.

The system can contain up to 20 CPUs in an 8U chassis, including a network switch built into the chassis. A shared cooling, power and networking infrastructure is key to the high density and server efficiency offered by blade solutions. Supermicro’s high performance, density optimized, and energy-efficient SuperBlade® can significantly reduce initial capital and operational expenses for many organizations.

In particular, Supermicro’s new generation blade product portfolio has been designed to optimize the TCO of key components for today’s datacenters, such as free-air cooling, power efficiency, node density and networking management.

Key Applications
- EDA
- HPC
- AI/ML/DL
- Hybrid Cloud
- Virtualization
- Health
- Financial Services

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
Supermicro® A+ 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, A+ WIO servers also provide attractive cost advantages and investment protection.

**Key Applications**
- Enterprise Mission-critical Applications
- Data Center Cloud Computing
- Virtualization
- Big Data
- Financial Analysis

**Cost AND ENERGY EFFICIENCY FOR DATA CENTER ENVIRONMENTS**

Supermicro® A+ 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, A+ WIO servers also provide attractive cost advantages and investment protection.
H12 MAINSTREAM
Versatile Entry Level and Volume Servers for Enterprise Server Applications

Highly versatile servers to enable a wide variety of enterprise server applications

Choices of multiple form factors including rackmount, short-depth rackmount and tower

A rich selection of storage options, AOCs, CPU TDP and memory speed support

MAINSTREAM APPLICATION OPTIMIZED

The A+ H12 Mainstream Application Optimized product family from Supermicro® is a series of servers designed for entry level or volume selections. Enterprise IT managers can choose the exact model for their applications, with a precise set of integrated features needed for their applications.

These powerful yet cost-effective systems provide excellent flexibility and value at entry-level price points.

Key Applications

- SMB
- Virtualization
- Web Server
- AI – Inferencing
- Cloud Computing
- Head-node Computing
## Outstanding Features
- **Processor Support:** AMD EPYC™ 9004 Series Processors
- **Key Applications:**
  - AI/Deep Learning
  - High Performance Computing (HPC)
  - Molecular Dynamics Simulation
  - Drive configurations for up to 2x 2.5" hot-swap SATA and up to 8x 2.5" hot-swap NVMe bays
- **Peripheral Bays:** N/A
- **Drive Bays:**
  - 24x 2.5” hot-swap NVMe bays
  - 10 heavy duty fans
- **Serverboard:** A+ Server Solutions - November 2022
- **Management:**
  - IPMI 2.0; KVM with dedicated LAN; NM; OOB Management Package (SFT-OOB-LOC): Redfish API; SPM; SSM; SuperDoctor® 5; Watch Dog
  - NVMe for boot drive
- **Cooling System:** 8 heavy duty fans
- **Form Factor:**
  - 4U Rackmount: Enclosure: 437 x 178 x 737mm (17.2” x 7” x 29”)
  - Package: (27” x 26.57” x 41”)

### Serverboard
- **Model:** AS -4125GS-TNRT
  - Processor Support: AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)
  - Key Applications:
    - AI/Deep Learning
    - High Performance Computing (HPC)
    - Molecular Dynamics Simulation
    - Drive configurations for up to 2x 2.5" hot-swap SATA and up to 8x 2.5" hot-swap NVMe bays
  - Peripheral Bays: N/A
  - Drive Bays: 24x 2.5” hot-swap NVMe bays
  - 4U Rackmount: Enclosure: 437 x 178 x 737mm (17.2” x 7” x 29”)
  - Package: (27” x 26.57” x 41”)

### Chipset
- **Model:** H13DSG-O-CPU
  - Processor Support: AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)
  - Key Applications:
    - AI/Deep Learning
    - High Performance Computing (HPC)
    - Molecular Dynamics Simulation
    - Drive configurations for up to 2x 2.5" hot-swap SATA and up to 8x 2.5" hot-swap NVMe bays
  - Peripheral Bays: N/A
  - Drive Bays: 24x 2.5” hot-swap NVMe bays
  - 4U Rackmount: Enclosure: 437 x 178 x 737mm (17.2” x 7” x 29”)
  - Package: (27” x 26.57” x 41”)

### Power Supply
- **Model:**
  - Redundant 2000W Titanium level (96%)
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  - Redundant 9000W Titanium level (96%)
  - Redundant 9000W Titanium level (96%)
  - Redundant 9000W Titanium level (96%)

### Cooling System
- **Model:**
  - 8 heavy duty fans
  - 10 heavy duty fans
  - 8U Rackmount: Enclosure: 437 x 355.6 x 843.28mm (17.2” x 14” x 33.2”)
  - Package: (27.5” x 29.5” x 51.2”)

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### Table: Specifications of the System

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS -4125GS-TNRT</th>
<th>AS -4125GS-TNRT1</th>
<th>AS -4125GS-TNRT2</th>
<th>AS -8125GS-TNHR</th>
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## H12 GPU
(For Complete System Only)

### 4U 8-GPU with PCIe
- **AS-4124GS-TNR**
  - Processor Support: Dual AMD EPYC™ 7003/7002 Series Processors*
  - Key Applications:
    - HPC
    - AI/ML
    - Cloud Gaming
    - Research & Academia
  - Outstanding Features:
    - 160 PCIe lanes
    - 8 direct attached GPUs
    - PCIe 4.0
    - Flexible architecture
    - AIOM support
  - Serverboard: SUPER® H12DSG-O-CPU
  - System Memory (Max.):
    - Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs
  - Expansion Slots:
    - 9 PCIe 4.0 x16 (Option: 10 PCIe 4.0 x16 slots without NVMe devices)
  - Onboard Storage Controller:
    - 2x 2.5” SATA in RAID 1 via onboard Marvell 9230
  - Connectivity:
    - 2 GbE LAN ports (rear)
  - Management:
    - IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
  - Drive Bays:
    - Up to 24x 2.5” SAS/SATA drive bays
  - Peripheral Bays: N/A
  - Power Supply:
    - 2000W (2+2) Redundant Titanium Level (96%+) power supplies
  - Cooling System:
    - 8x hot-swap 11.5K RPM cooling fans
  - Form Factor: 4U Rackmount 178 x 437 x 737mm (7.0” x 17.2” x 29”)

### 2U 2-Node, 4-GPU with PCIe
- **AS-2114GT-DNR**
  - Processor Support: Single AMD EPYC™ 7003/7002 Series Processor*
  - Key Applications:
    - Cloud Gaming
    - Media/Video Streaming Gaming
    - AI Inference and Machine Learning
  - Outstanding Features:
    - 4 NVMe for GPUDirect Storage
    - Up to 8 DIMMs per node
    - M.2 Support
    - Supports 6 PCIe and 1 Mezzanine card
  - Serverboard: SUPER® H12SSG-AN6
  - System Memory (Max.):
    - Up to 2TB ECC DDR4 3200MHz SDRAM in 32 DIMMs
  - Expansion Slots:
    - 6 PCIe 4.0 x16 (4 Internal and 2 external);
    - 1 AIOM card support;
    - 2 M.2 PCIe 4.0 x4 slots 2280/22110; M-key
  - Onboard Storage Controller:
    - AMD SP3
  - Connectivity:
    - AIOM Network Card For Flexible Networking Options (not included)
  - Management:
    - IPMI2.0; KVM with dedicated LAN;
    - SPM; SSM; SUM; SuperDoctor® 5;
    - Watchdog
  - Drive Bays:
    - 2 Front Hot-swap U.2 NVMe Gen4 drive bays per node
  - Peripheral Bays: N/A
  - Power Supply:
    - Redundant 1 + 1 2600W Titanium Level (96%) (Full redundancy based on configuration and application load)
  - Cooling System:
    - 4x 80mm heavy duty PWM fans
  - Form Factor: 2U (2-node) Rackmount 447 x 88 x 760mm (17.6” x 3.47” x 29.9”)

### 4U 8-GPU with HGX
- **AS-4124GO-NART**
  - Processor Support: Dual AMD EPYC™ 7003/7002 Series Processors*
  - Key Applications:
    - AI Compute / Model Training / Deep Learning
    - HPC
    - System for All AI Workload
    - Highest 8 GPU communication using NVIDIA NVLink and NVSwitch
    - Up to 8 NICs for GPUDirect RDMA (1:1 GPU Ratio)
  - Outstanding Features:
    - Up to 8 NVMe for GPUDirect Storage with optional backplane
    - Highest 8 GPU communication using NVIDIA NVLink and NVSwitch
    - Up to 8 NICS for GPUDirect RDMA (1:1 GPU Ratio)
  - Serverboard: SUPER® H12DGO-6
  - System Memory (Max.):
    - Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs
  - Expansion Slots:
    - 8 PCIe 4.0 x16 (LP) slots from PCIe Switch;
    - 1 PCIe 4.0 x8 slot from CPUs
  - Onboard Storage Controller:
    - SATATA3, PCIe 4.0 U.2 NVMe and PCIe 4.0 M.2 NVMe
  - Connectivity:
    - OCP 3.0 / AIOM NIC
  - Management:
    - IPMI 2.0 with Virtual Media over LAN and KVM-over-LAN support.
    - Dedicated IPMI LAN port
  - Drive Bays:
    - 4x hot-swap 2.5” drive bays (SATA/ NVMe Hybrid or SAS with optional HBA)
  - Peripheral Bays: N/A
  - Power Supply:
    - Four 2200W high-efficiency Platinum Level power supplies
  - Cooling System:
    - 4x hot-swap heavy duty PWM fans
  - Form Factor: 4U Rackmount 446 x 174 x 900mm (17.6” x 6.9” x 35.4”)

### 2U 4-GPU with HGX
- **AS-2124GQ-NART**
  - Processor Support: Dual AMD EPYC™ 7003/7002 Series Processors*
  - Key Applications:
    - AI Compute / Model Training / Deep Learning
    - HPC
    - High-density 2U with 4 GPU peer-to-peer communication
    - Directly attached GPUs for low latency
    - 4 NICs for GPUDirect RDMA (1:1 GPU Ratio)
  - Outstanding Features:
    - Up to 8 NICS for GPUDirect RDMA (1:1 GPU Ratio)
  - Serverboard: SUPER® H12DSG-Q-CP6
  - System Memory (Max.):
    - Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs
  - Expansion Slots:
    - 4 PCIe 4.0 x16 (LP) slots;
    - 1 PCIe 4.0 x8 (LP) slot
  - Onboard Storage Controller:
    - SATA/NVMe Hybrid or SAS with optional HBA
  - Connectivity:
    - Dual RJ45 10GbE-aggregate host LAN, RJ45 1GbE IPMI
  - Management:
    - IPMI 2.0 with Virtual Media over LAN and KVM-over-LAN support.
    - Dedicated IPMI LAN port
  - Drive Bays:
    - 4x hot-swap 2.5” drive bays (SATA/ NVMe Hybrid or SAS with optional HBA)
  - Peripheral Bays: N/A
  - Power Supply:
    - Two 2200W high-efficiency Platinum Level power supplies
  - Cooling System:
    - 4x hot-swap heavy duty PWM fans
  - Form Factor: 2U Rackmount 437 x 89 x 823mm (17.2” x 3.5” x 32.4”)

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* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.

** Can be sold as barebone system
**H13 GrandTwin™** *(For Complete System Only)*

### 2U 4-Node Rear I/O

### 2U 4-Node Front I/O

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-2115GT-HNTR</th>
<th>AS-2115GT-HNTF</th>
</tr>
</thead>
</table>
| **Processor Support** | AMD EPYC™ 9004 Series Processors  
Single Socket (Socket SP5) | AMD EPYC™ 9004 Series Processors  
Single Socket (Socket SP5) |
| **Key Applications** | • HPC  
• Mission Critical Web Applications  
• EDA (Electric Design Automation)  
• Telco Edge Cloud  
• High-availability Cache Cluster  
• Multi-Purpose CDN  
• MEC (Multi-Access Edge Computing)  
• Cloud Gaming | • HPC  
• Mission Critical Web Applications  
• EDA (Electric Design Automation)  
• Telco Edge Cloud  
• High-availability Cache Cluster  
• Multi-Purpose CDN  
• MEC (Multi-Access Edge Computing)  
• Cloud Gaming |
| **Outstanding Features** | • Up to 6 2.5” hot-swap NVMe/SATA drives per node  
• 2x AIOM / OCP 3.0 slots per node  
• 2x M.2 NVMe/SATA slots per node  
• Front access node trays for easy serviceability and maintenance | • Flexible front slots to configure storage or AIOM/OCP 3.0 cards  
• up to 4.25” hot-swap NVMe/SATA drives per node or  
• up to 2x AIOM / OCP 3.0 slots per node  
• 2x M.2 NVMe/SATA slots per node  
• GrandTwin I/O for flexible networking options  
• Front access node trays for easy serviceability and maintenance |
| **Serverboard** | SUPER® H13SST-G | SUPER® H13SST-G |
| **Chipset** | System on Chip | System on Chip |
| **System Memory (Max.)** | Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs | Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs |
| **Expansion Slots** | 2 AIOM/OCP 3.0 slots per node | 1 PCIe 4.0 x16 LP slot  
optional, internal only |
| **Onboard Storage Controller** | AMD SP5 | AMD SP5 |
| **Connectivity** | via AIOM and onboard dedicated BMC port | via AIOM or GrandTwin I/O Module and onboard dedicated BMC port |
| **VGA/Audio** | 1 VGA port | 1 VGA port |
| **Management** | SuperCloud Composer; SuperDoctor® 5 (SDS); Supermicro Diagnostics Offline (SDO); Supermicro Intelligent Mgmt (BMC Resources); Supermicro IPMI Utilities; Supermicro Power Manager (SPM); Supermicro Server Manager (SSM); Supermicro Server Mgmt (Redfish® API); Supermicro Thin-Agent Service (TAS); Supermicro Update Manager (SUM) | SuperCloud Composer; SuperDoctor® 5 (SDS); Supermicro Diagnostics Offline (SDO); Supermicro Intelligent Mgmt (BMC Resources); Supermicro IPMI Utilities; Supermicro Power Manager (SPM); Supermicro Server Manager (SSM); Supermicro Server Mgmt (Redfish® API); Supermicro Thin-Agent Service (TAS); Supermicro Update Manager (SUM) |
| **Drive Bays** | 6x 2.5” hot-swap NVMe/SATA drive bays | 4x 2.5” hot-swap NVMe/SATA drive bays |
| **Peripheral Bays** | N/A | N/A |
| **Power Supply** | Redundant 2200W Titanium level (96%) | Redundant 2200W Titanium level (96%) |
| **Cooling System** | 2x 8cm heavy duty fans | 2x 8cm heavy duty fans |
| **Form Factor** | 2U Rackmount  
Enclosure: 449 x 88 x 711.2mm (17.67” x 3.46” x 28”)
Package: 626 x 248 x 1150mm (24.65” x 9.76” x 45.28”) | 2U Rackmount  
Enclosure: 449 x 88 x 711.2mm (17.67” x 3.46” x 28”)
Package: 626 x 248 x 1150mm (24.65” x 9.76” x 45.28”) |

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## H12 Twin Systems

### TwinPro® - 2U 4 UP Nodes

- **Processor Support**: Single AMD EPYC™ 7003/7002 Series Processor
- **Key Applications**: Hyperscale and Hyperconverged Solutions, Compute Intensive Application, Data Center
- **Outstanding Features**: Up to 3.5" SATA drives per node, Up to 8 DIMMs per node, Flexible SIOM options, M.2 support, 2 PCIe add-on cards per node

### BigTwin® - 2U 4 DP Nodes

- **Processor Support**: Dual AMD EPYC™ 7003/7002 Series Processors
- **Key Applications**: Hyperscale and Hyperconverged Solutions, Compute Intensive Application, Data Center
- **Outstanding Features**: Up to 6.25" drives per node (4 NVMe + 2 SATA) or (6 SATA), Up to 16 DIMMs per node, Flexible SIOM options, M.2 support, 2 PCIe add-on cards per node

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-2014TP-HTR</th>
<th>AS-2124BT-HNTR**</th>
<th>AS-2124BT-HTR**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Support</strong></td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors</td>
</tr>
<tr>
<td><strong>Key Applications</strong></td>
<td>• Hyperscale and Hyperconverged Solutions</td>
<td>• Hyperscale and Hyperconverged Solutions</td>
<td>• Hyperscale and Hyperconverged Solutions</td>
</tr>
<tr>
<td></td>
<td>• Compute Intensive Application</td>
<td>• Compute Intensive Application</td>
<td>• Compute Intensive Application</td>
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<tr>
<td></td>
<td>• Enterprise Server</td>
<td>• Enterprise Server</td>
<td>• Enterprise Server</td>
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<tr>
<td></td>
<td>• Data Center</td>
<td>• Data Center</td>
<td>• Data Center</td>
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<tr>
<td></td>
<td>• HPC</td>
<td>• HPC</td>
<td>• HPC</td>
</tr>
<tr>
<td><strong>Outstanding Features</strong></td>
<td>• Up to 3.5&quot; SATA drives per node</td>
<td>• Up to 6.25&quot; drives per node (4 NVMe + 2 SATA) or (6 SATA)</td>
<td>• Up to 6.25&quot; SATA drives per node</td>
</tr>
<tr>
<td></td>
<td>• Up to 8 DIMMs per node</td>
<td>• Up to 16 DIMMs per node</td>
<td>• Up to 16 DIMMs per node</td>
</tr>
<tr>
<td></td>
<td>• Flexible SIOM options</td>
<td>• Flexible SIOM options</td>
<td>• Flexible SIOM options</td>
</tr>
<tr>
<td></td>
<td>• M.2 support</td>
<td>• M.2 support</td>
<td>• M.2 support</td>
</tr>
<tr>
<td></td>
<td>• 2 PCIe add-on cards per node</td>
<td>• 2 PCIe add-on cards per node</td>
<td>• 2 PCIe add-on cards per node</td>
</tr>
<tr>
<td><strong>Serverboard</strong></td>
<td>SUPER® H12SST-PS</td>
<td>SUPER® H12DST-B</td>
<td>SUPER® H12DST-B</td>
</tr>
<tr>
<td><strong>System Memory (Max.)</strong></td>
<td>Up to 2TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 8 DIMM slots</td>
<td>Up to 4TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 16 DIMM slots</td>
<td>Up to 4TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 16 DIMM slots</td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>2 PCIe 4.0 X16 (LP) 1 SIOM card support 4 M.2 SATA/PCIe slots 22110/2280/2260/2242 M-key</td>
<td>2 PCIe 4.0 X16 (LP) 1 SIOM card support 1 M.2 SATA/PCIe slot 2280/2210 M-key</td>
<td>2 PCIe 4.0 X16 (LP) 1 SIOM card support 1 M.2 SATA/PCIe slot 2280/2210 M-key</td>
</tr>
<tr>
<td><strong>Onboard Storage Controller</strong></td>
<td>SATA3</td>
<td>NVMe and SATA3</td>
<td>SATA3</td>
</tr>
<tr>
<td><strong>Connectivity</strong></td>
<td>SIOM Network Card For Flexible Networking Options (not included, must add 1 per node)</td>
<td>SIOM Network Card For Flexible Networking Options (not included, must add 1 per node)</td>
<td>SIOM Network Card For Flexible Networking Options (not included, must add 1 per node)</td>
</tr>
<tr>
<td><strong>VGA/Audio</strong></td>
<td>Aspeed AST2500 BMC</td>
<td>Aspeed AST2500 BMC</td>
<td>Aspeed AST2500 BMC</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>IPMI2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watchdog</td>
<td>IPMI2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watchdog</td>
<td>IPMI2.0; KVM with dedicated LAN; SPM; SSM; SUM; SuperDoctor® 5; Watchdog</td>
</tr>
<tr>
<td><strong>Drive Bays</strong></td>
<td>3 Hot-swap 3.5&quot; SATA drive bays per node</td>
<td>6 hot-swap 2.5&quot; drive bays per node (4 NVMe + 2 SATA) or (6 SATA)</td>
<td>6 hot-swap 2.5&quot; SATA drive bays per node</td>
</tr>
<tr>
<td><strong>Peripheral Bays</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Redundant 2000W Titanium Level (96%) (Full redundancy based on configuration and application load)</td>
<td>Redundant 2200W Titanium Level (96%) (Full redundancy based on configuration and application load)</td>
<td>Redundant 2200W Titanium Level (96%) (Full redundancy based on configuration and application load)</td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td>4x 80mm heavy duty PWM fans</td>
<td>4x 80mm heavy-duty PWM fans</td>
<td>4x 80mm heavy-duty PWM fans</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>2U (4-Node) Rackmount 438 x 88 x 724mm (17.25” x 3.47” x 28.5”)</td>
<td>2U (4-Node) Rackmount 447 x 88 x 730mm (17.6” x 3.47” x 28.75”)</td>
<td>2U (4-Node) Rackmount 447 x 88 x 730mm (17.6” x 3.47” x 28.75”)</td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
** For complete system only and AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache Technology requires liquid cooling.
### MODEL Specification Table

<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-F1114S-FT</th>
<th>AS-F1114S-RNTR</th>
<th>AS-F2014S-RNTR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Support</strong></td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
</tr>
</tbody>
</table>
| **Key Applications** | • Hyperscale and Hyperconverged Solutions  
  • Cloud Computing  
  • Cluster Node  
  • Data Center  
  • HPC cluster computer nodes | • Hyperscale / Hyperconverged  
  • HPC and Big Data  
  • Data Center Enterprise Applications  
  • Scale Out Storage  
  • Telco Data Center  
  • Virtualization Server | • Hyperscale / Hyperconverged  
  • HPC and Big Data  
  • Data Center Enterprise Applications  
  • Scale Out Storage  
  • Telco Data Center  
  • Virtualization Server |
| **Outstanding Features** | • 8 nodes in a 4U system  
  • 280W CPU support  
  • Supports up to 64 cores  
  • 2x LP PCIe x16 slots; 1x AIOM PCIe x16 slot per node  
  • Supports 2-4x 2.5" SATA drives per node  
  • Quad 2000W Titanium Level high-efficiency power supplies | • Up to 6 hot-swap optional SATA/NVMe drives per node  
  • 4 onboard M.2 SATA/NVMe support per node  
  • Flexible AIOM module per node  
  • 1 PCIe add-on card per node  
  • Up to 8 DIMMs per node | • Can support up to 8 SATA/NVMe drives per node  
  • Can support up to 10 2.5" SATA drives  
  • 4 onboard SATA/NVMe M.2 Support per node  
  • Flexible AIOM module per node  
  • 1 PCIe add-on cards per node  
  • Up to 8 DIMMs per node |
| **Serverboard** | SUPER® H12SSFF-AN6 | SUPER® H12SSFR-AN6 | SUPER® H12SSFR-AN6 |
| **System Memory (Max.)** | Up to 4TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 16 DIMM slots | Up to 2TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 8 DIMM slots | Up to 2TB ECC 3DS LRDIMM, up to DDR4-3200MHz; 8 DIMM slots |
| **Expansion Slots** | 1 PCIe 4.0 x16 (AIOM)  
  2 PCIe 4.0 x16 (LP) per node | FatTwin Rear IO: PCIe 4.0 x16 LP Riser and PCIe 4.0 x8 Internal RAID AOC | FatTwin Rear IO: PCIe 4.0 x16 LP Riser and PCIe 4.0 x8 Internal RAID AOC |
| **Onboard Storage Controller** | NVMe and SATA3 | NVMe and SATA3 | NVMe and SATA3 |
| **Connectivity** | AIOM Network Card For Flexible Networking Options (not included, must 1 per Node) | AIOM Network Card For Flexible Networking Options (not included, must add 1 per node) | AIOM Network Card For Flexible Networking Options (not included, must add 1 per node) |
| **VGA/Audio** | 1 VGA; Aspeed AST2600 BMC per node | 1 VGA, Aspeed AST2600 BMC per node | 1 VGA, Aspeed AST2600 BMC per node |
| **Management** | IPMI 2.0, KVM with dedicated LAN, SSM, SUM SuperDoctor® 5, Watch Dog | IPMI 2.0, KVM with dedicated LAN, SSM, SUM SuperDoctor® 5, Watch Dog | IPMI 2.0, KVM with dedicated LAN, SSM, SUM SuperDoctor® 5, Watch Dog |
| **Drive Bays** | 2-4x 2.5" SATA3/NVMe drive bays per node | 4 hot-swap 2.5" SATA with 2 hot-swap 2.5" SATA/NVMe drive bays per node | 8 Hot-swap 3.5" SATA drive bays per node |
| **Peripheral Bays** | N/A | N/A | N/A |
| **Power Supply** | 2000W or above Redundant Power Supplies with PMBus | Redundant 2200W Titanium Level (96%) power supplies (Full redundancy based on configuration and application load) | Redundant 2200W Titanium Level (96%) (Full redundancy based on configuration and application load) |
| **Cooling System** | 8x 8cm 13.5k RPM rear fans per enclosure | 3x 4cm 17.6K RPM | 2x 80mm heavy duty PWM fans |
| **Form Factor** | 4U (8-node) Rackmount  
  448 x 177 x 737mm (17.63" x 6.96" x 29") | 4U (8-node) Rackmount  
  447 x 177 x 730mm (17.6" x 7" x 28.75") | 4U (4-node) Rackmount  
  447 x 177 x 730mm (17.6" x 7" x 28.75") |

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-1125HS-TNR</th>
<th>AS-2025HS-TNR</th>
<th>AS-2125HS-TNR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
<td>AMD EPYC™ 9004 Series Processors Dual Socket (Socket SP5)</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Software-defined Storage • Virtualization • Enterprise Server • Cloud Computing • AI Inference and Machine Learning</td>
<td>• Software-defined Storage • Virtualization • Enterprise Server • Cloud Computing • AI Inference and Machine Learning</td>
<td>• Software-defined Storage • Virtualization • Enterprise Server • Cloud Computing • AI Inference and Machine Learning</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• Tool-less system design for easy maintenance</td>
<td>• Tool-less system design for easy maintenance</td>
<td>• Tool-less system design for easy maintenance</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H13DSH</td>
<td>SUPER® H13DSH</td>
<td>SUPER® H13DSH</td>
</tr>
<tr>
<td>Chipset</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCIe 5.0 x16 FH, 10.5”L 1 PCIe 5.0 x16, FH, 6.6”L</td>
<td>Configurable PCIe slot options up to 8 PCIe 5.0 x8 or 4 PCIe 5.0 x16 FH, 10.5”L</td>
<td>Configurable PCIe slot options up to 8 PCIe 5.0 x8 or 4 PCIe 5.0 x16 FH, 10.5”L</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>AMD SP5</td>
<td>AMD SP5</td>
<td>AMD SP5</td>
</tr>
<tr>
<td>Connectivity</td>
<td>AIOM / OCP 3.0</td>
<td>AIOM / OCP 3.0</td>
<td>AIOM / OCP 3.0</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA port</td>
<td>1 VGA port</td>
<td>1 VGA port</td>
</tr>
<tr>
<td>Management</td>
<td>IPMI; IPMIView for Linux/Windows; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
<td>IPMI; IPMIView for Linux/Windows; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
<td>IPMI; IPMIView for Linux/Windows; IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>8x 2.5” hot-swap NVMe/SAS/SATA drives bays (Option for up to 12 drives); Optional RAID support via RAID Controller AOC</td>
<td>12x 3.5” hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID Controller AOC</td>
<td>24x 2.5” hot-swap NVMe/SATA/SAS drive bays; Optional RAID support via RAID Controller AOC</td>
</tr>
<tr>
<td>Peripheral Bays</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Redundant 1200W Titanium level (96%)</td>
<td>Redundant 1600W Titanium level (96%)</td>
<td>Redundant 1600W Titanium level (96%)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>8x heavy-duty fans w/ Optimal Fan Speed Control</td>
<td>8x heavy-duty fans w/ optimal Fan Speed Control</td>
<td>4x heavy-duty fans w/ Optimal Fan Speed Control</td>
</tr>
<tr>
<td>Form Factor</td>
<td>1U Rackmount Enclosure: 437 x 43 x 747mm (17.2” x 1.7” x 29.4”) Package: 605 x 206 x 1032mm (23.8” x 8.1” x 40.6”)</td>
<td>2U Rackmount Enclosure: 437 x 88.9 x 803mm (17.2” x 3.5” x 31.6”) Package: 605 x 263 x 1107mm (23.8” x 10.4” x 43.6”)</td>
<td>2U Rackmount Enclosure: 457 x 88.9 x 760mm (17.2” x 3.5” x 29.9”) Package: 605 x 263 x 1107mm (23.8” x 10.4” x 43.6”)</td>
</tr>
<tr>
<td>-------</td>
<td>---------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Processor Support</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
<td></td>
</tr>
</tbody>
</table>
| Key Applications | • Virtualization  
• Cloud Computing  
• High End Enterprise Server  
• 32 DIMMs  
• 3+1 PCIe add-on cards  
• 4x 3.5” SATA/SAS/NVMe drive bays  
• 280W CPU support  
• Redundant Titanium Level (96%) power supplies  
• Maximum IO output in 1U platform | • Virtualization  
• Cloud Computing  
• High End Enterprise Server  
• 32 DIMMs  
• 3+1 PCIe add-on cards  
• 12-Port NVMe Gen 4.0/3.0 support  
• 280W CPU support  
• Redundant Titanium Level (96%) power supplies  
• Maximum IO output in 1U platform |
<table>
<thead>
<tr>
<th>Outstanding Features</th>
<th>Processor Support</th>
<th>AS-1024US-TRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs</td>
<td>Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs</td>
</tr>
</tbody>
</table>
| Expansion Slots | 2 PCIe x16 (FH/9.5”L) slots  
1 PCIe x16 slot (LP)  
1 PCIe x16 slot (internal LP) | 2 PCIe x16 (FH/9.5”L) slots  
1 PCIe x16 slot (LP)  
1 PCIe x16 slot (internal LP) |
| Onboard Storage Controller | 4 SATA3 (6 Gbps) ports; Optional 4 SAS drives support VS additional option parts or,  
Optional 4 NVMe drives support vs addition NVMe trays required. | 12 hot-Swappable U.2 drives support;  
Optional 12 SAS3 /12SATA support with additional SAS/SATA Kit |
| Connectivity | Dual 10GBase-T RJ45 LAN ports via Intel Carlsville X710-AT2; 3 USB 3.0 ports (2 rear, 1 Type A) | Dual port 10G RJ45 & dual port 10G SFP+, Intel Carlsville X710-TM4; 4 USB 3.0 ports (1 front, 2 rear, 1 Type A) |
| VGA/Audio | 1 VGA; 1 ASPEED AST2500 BMC | 1 VGA; 1 ASPEED AST2500 BMC |
| Management | Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port | Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port |
| Drive Bays | 4x hot-swap 3.5” drive bays support | 12x hot-swap 2.5” drives support |
| Peripheral Bays | N/A | N/A |
| Power Supply | 1000W Redundant Titanium Level (96%+) power supplies (Full redundancy based on configuration and application load) | 1200W Redundant Titanium Level (96%) power supplies (Full redundancy based on configuration and application load) |
| Cooling System | 8 heavy-duty fans w/ Optimal Fan Speed Control | 8 heavy-duty fans w/ optimal Fan Speed Control |
| Form Factor | 437 x 43 x 754mm (17.2” x 1.7” x 29.7”) | 1U Rackmount  
437 x 43 x 724mm (17.2” x 1.7” x 28.5”) |

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
## H12 Ultra

**(For Complete System Only)**

### 2U Ultra, 8TB DDR4

### 2U Ultra, 24 NVMe

<table>
<thead>
<tr>
<th>Processor Support</th>
<th>Dual AMD EPYC™ 7003/7002 Series Processors*</th>
<th>Dual AMD EPYC™ 7003/7002 Series Processors*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Applications</td>
<td>• Virtualization</td>
<td>• Virtualization</td>
</tr>
<tr>
<td></td>
<td>• Cloud Computing</td>
<td>• Cloud Computing</td>
</tr>
<tr>
<td></td>
<td>• High End Enterprise Server</td>
<td>• High End Enterprise Server</td>
</tr>
<tr>
<td></td>
<td>• Hyperconverge Storage</td>
<td>• Hyperconverge Storage</td>
</tr>
<tr>
<td></td>
<td>• 32 DIMMs</td>
<td>• 32 DIMMs</td>
</tr>
<tr>
<td></td>
<td>• 5+1 PCIe add-on cards</td>
<td>• 1 PCIe add-on cards</td>
</tr>
<tr>
<td></td>
<td>• 12x 3.5'' SATA/SAS (SAS via AOC)/support up to 4 NVMe</td>
<td>• 24x 2.5'' hot-swap NVMe drive bays</td>
</tr>
<tr>
<td></td>
<td>• 280W CPU support</td>
<td>• 280W CPU support</td>
</tr>
<tr>
<td></td>
<td>• 1600W redundant Titanium Level (96%) power supplies</td>
<td>• 1600W redundant Titanium Level (96%) power supplies</td>
</tr>
<tr>
<td></td>
<td>• Maximum IO output in 2U platform</td>
<td>• Maximum IO output in 2U platform</td>
</tr>
</tbody>
</table>

### Outstanding Features

- 32 DIMMs
- 5+1 PCIe add-on cards
- 12x 3.5'' SATA/SAS (SAS via AOC)/support up to 4 NVMe
- 280W CPU support
- 1600W redundant Titanium Level (96%) power supplies
- Maximum IO output in 2U platform

### Serverboard

| SUPERO® H12DSU-IN |

### System Memory (Max.)

- Up to 8TB ECC DDR4 3200MHz SDRAM in 32 DIMMs

### Expansion Slots

- 2 PCIe 4.0 x16 slots (FH, 10.5'' L)
- 1 PCIe 4.0 x16 slot (FH, 9.5'' L)
- 1 PCIe 4.0 x16 slot (LP)
- 1 PCIe 4.0 x8 slot (FH, 9.5'' L, in x16 slot)
- 1 PCIe 4.0 x8 slot (internal LP, in x16 slot)

### Onboard Storage Controller

- 8 SATA3 (6 Gbps) ports + 4 hybrid SATA/NVMe function ready for HDD slots 0-3 with additional NVMe HDD trays for NMVe drives; Optional 12 SAS3 drive support VS SAS card with cables

### Connectivity

- Dual port 10G RJ45, Intel Carlsville X710-AT2; 3 USB 3.0 ports (2 rear + 1 Type A)

### VGA/Audio

- 1 VGA; 1 ASPEED AST2500 BMC

### Management

- Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port

### Drive Bays

- 12x hot-swap 3.5'' drive bays support

### Peripheral Bays

- 2x 2.5'' peripheral drive bays with additional rear drive bay kits + cable

### Power Supply

- 1600W redundant Titanium Level (96%) power supplies (Full redundancy based on configuration and application load)

### Cooling System

- 4x heavy-duty fans w/ optimal Fan Speed Control

### Form Factor

- 437 x 89 x 723mm (17.2'' x 3.5'' x 28.46'')

---

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
## Model Comparison Table

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<th>AS-1115CS-TNR</th>
<th>AS-2015CS-TNR</th>
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<td>AMD EPYC™ 9004 Series Processors</td>
<td>AMD EPYC™ 9004 Series Processors</td>
</tr>
<tr>
<td>Single Socket (Socket SP5)</td>
<td>CDN, Edge Nodes</td>
<td>CDN, Edge Nodes</td>
<td>CDN, Edge Nodes</td>
</tr>
<tr>
<td>DNS &amp; Gateway Servers, Firewall Application</td>
<td>DNS &amp; Gateway Servers, Firewall Application</td>
<td>DNS &amp; Gateway Servers, Firewall Application</td>
<td></td>
</tr>
<tr>
<td>Data Center Optimized, Value IaaS</td>
<td>Data Center Optimized, Value IaaS</td>
<td>Data Center Optimized, Value IaaS</td>
<td></td>
</tr>
<tr>
<td>Web Server, Firewall Application</td>
<td>Web Server, Firewall Application</td>
<td>Web Server, Firewall Application</td>
<td></td>
</tr>
<tr>
<td><strong>Key Applications</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• CDN, Edge Nodes</td>
<td>• CDN, Edge Nodes</td>
<td>• CDN, Edge Nodes</td>
<td></td>
</tr>
<tr>
<td>• DNS &amp; Gateway Servers, Firewall Application</td>
<td>• DNS &amp; Gateway Servers, Firewall Application</td>
<td>• DNS &amp; Gateway Servers, Firewall Application</td>
<td></td>
</tr>
<tr>
<td>• Cloud Computing, Compact Server</td>
<td>• Cloud Computing, Compact Server</td>
<td>• Cloud Computing, Compact Server</td>
<td></td>
</tr>
<tr>
<td>• Data Center Optimized, Value IaaS</td>
<td>• Data Center Optimized, Value IaaS</td>
<td>• Data Center Optimized, Value IaaS</td>
<td></td>
</tr>
<tr>
<td>• Web Server, Firewall Application</td>
<td>• Web Server, Firewall Application</td>
<td>• Web Server, Firewall Application</td>
<td></td>
</tr>
<tr>
<td><strong>Outstanding Features</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 4x SATA/SAS/NVMe tool-less drive bays</td>
<td>Up to 10x NVMe/SATA/SAS hybrid tool-less drive bays</td>
<td>Up to 12x NVMe/SATA/SAS hybrid tool-less drive bays</td>
<td></td>
</tr>
<tr>
<td>3.5&quot; tool-less drive trays also support 2.5&quot; drives</td>
<td>Dual AIOM slots for flexible networking (OCP3.0)</td>
<td>Flexible expansion with up to 2x PCIe x16 and 4x PCIe x8 (convertible to 2x PCIe x16) slots</td>
<td></td>
</tr>
<tr>
<td>Dual AIOM slots for flexible networking (OCP3.0)</td>
<td>Compact server with tool-less drive trays</td>
<td>Dual AIOM slots for flexible networking (OCP3.0)</td>
<td></td>
</tr>
<tr>
<td>Compact server with tool-less drive trays</td>
<td>Balanced architecture in compact chassis (23.5&quot;)</td>
<td>Compact server with tool-less drive trays</td>
<td></td>
</tr>
<tr>
<td>Balanced architecture in compact chassis (23.5&quot;)</td>
<td>2 On-board Gen 3 M.2 NVMe 80mm/110mm (Boot)</td>
<td>Balanced architecture in compact chassis (25.6&quot;)</td>
<td></td>
</tr>
<tr>
<td>2 On-board Gen 3 M.2 NVMe 80mm/110mm (Boot)</td>
<td></td>
<td>3.5&quot; tool-less drive trays also support 2.5&quot; drives</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 On-board Gen 3 M.2 NVMe 80mm/110mm (Boot)</td>
<td></td>
</tr>
<tr>
<td><strong>Serverboard</strong></td>
<td>SUPER® H13SSW</td>
<td>SUPER® H13SSW</td>
<td>SUPER® H13SSW</td>
</tr>
<tr>
<td><strong>Chipset</strong></td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td><strong>System Memory (Max.)</strong></td>
<td>Up to 3TB 3DS ECC RDIMM DRR4-4800MHz in 12 DIMMs</td>
<td>Up to 3TB 3DS ECC RDIMM DRR4-4800MHz in 12 DIMMs</td>
<td>Up to 3TB 3DS ECC RDIMM DRR4-4800MHz in 12 DIMMs</td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>2 Gen5 x16 FHHL slots</td>
<td>2 Gen5 x16 FHHL slots</td>
<td>2 Gen5 x16 FHHL slots</td>
</tr>
<tr>
<td><strong>Onboard Storage Controller</strong></td>
<td>AMD SP5</td>
<td>AMD SP5</td>
<td>AMD SP5</td>
</tr>
<tr>
<td><strong>Connectivity</strong></td>
<td>Dual AIOM/ OCP3.0, 2 USB 3.0 ports (2 rear)</td>
<td>Dual AIOM/ OCP3.0, 2 USB 3.0 ports (2 rear)</td>
<td>Dual AIOM/ OCP3.0, 2 USB 3.0 ports (2 rear)</td>
</tr>
<tr>
<td><strong>VGA/Audio</strong></td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
<td>IPMI 2.0; KVM with dedicated LAN; NMI; Redfish API; SPM; SSM; SUM; SuperDoctor® 5; Watch Dog</td>
</tr>
<tr>
<td><strong>Drive Bays</strong></td>
<td>4x 3.5&quot; hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC</td>
<td>10x 2.5&quot; hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC</td>
<td>12x 3.5&quot; hot-swap NVMe/SATA/SAS hybrid drive bays; Optional RAID support via RAID controller AOC</td>
</tr>
<tr>
<td><strong>Peripheral Bays</strong></td>
<td>2x 2.5&quot; (optional)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Redundant 860W Platinum level (94%)</td>
<td>Redundant 860W Platinum level (94%)</td>
<td>Redundant 1200W Titanium level (96%)</td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td>6x 4cm heavy duty fans</td>
<td>6x 4cm heavy duty fans</td>
<td>3x 8cm heavy duty fans</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>1U Rackmount Enclosure: 437 x 43 x 650mm (17.2&quot; x 1.7&quot; x 25.6&quot;) Package: 605 x 197 x 878mm (23.8&quot; x 7.8&quot; x 34.6&quot;)</td>
<td>1U Rackmount Enclosure: 437 x 43 x 597mm (17.2&quot; x 1.7&quot; x 23.5&quot;) Package: 605 x 197 x 822mm (23.8&quot; x 7.8&quot; x 32.4&quot;)</td>
<td>2U Rackmount Enclosure: 437 x 89 x 648mm (17.2&quot; x 3.5&quot; x 25.5&quot;) Package: 678 x 290 x 876mm (26.7&quot; x 11.4&quot; x 34.5&quot;)</td>
</tr>
</tbody>
</table>
### H12 CloudDC

**(For Complete System Only)**

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<table>
<thead>
<tr>
<th>MODEL</th>
<th>AS-1114CS-TNR</th>
<th>AS-2014CS-TR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Support</strong></td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
</tr>
<tr>
<td><strong>Key Applications</strong></td>
<td>• Financial Services&lt;br&gt;• Cloud Computing&lt;br&gt;• Network Appliance&lt;br&gt;• Private Cloud&lt;br&gt;• Content Delivery Network (CDN)&lt;br&gt;• Deep Learning Inferencing</td>
<td>• Financial Services&lt;br&gt;• Cloud Computing&lt;br&gt;• Network Appliance&lt;br&gt;• Private Cloud&lt;br&gt;• Content Delivery Network (CDN)&lt;br&gt;• Deep Learning Inferencing</td>
</tr>
<tr>
<td><strong>Outstanding Features</strong></td>
<td>• Dual AIOM slots for flexible networking&lt;br&gt;• 2x PCIe 4.0 x16 FH/HL slots&lt;br&gt;• 860W redundant Platinum Level power supplies&lt;br&gt;• Tool-less drive trays and tool-less brackets&lt;br&gt;• 280W CPU support&lt;br&gt;• 16 DIMMs</td>
<td>• Dual AIOM slots for flexible networking&lt;br&gt;• 4x PCIe 4.0 x16 (2 FH, 10.5&quot;L) or 2x PCIe 4.0 x16 FH/HL + 4x PCIe 4.0 x8 FH/HL slots&lt;br&gt;• 920W redundant Platinum Level high-efficiency power supplies&lt;br&gt;• Tool-less drive trays and tool-less brackets&lt;br&gt;• 280W CPU support&lt;br&gt;• 16 DIMMs</td>
</tr>
<tr>
<td><strong>Serverboard</strong></td>
<td>SUPER® H12SSW-AN6</td>
<td>SUPER® H12SSW-AN6</td>
</tr>
<tr>
<td><strong>System Memory (Max.)</strong></td>
<td>Up to 4TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM, in 16 DIMMs slot</td>
<td>Up to 4TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM, in 16 DIMMs slot</td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>2 PCIe 4.0 x16 (FH/HL)</td>
<td>4 PCIe 4.0 x16 (2 FH, 10.5&quot;L) or, 2 PCIe 4.0 x16 (FH/HL) + 4 PCIe 4.0 x8 (2 FH/HL, 2 FH/HL)</td>
</tr>
<tr>
<td><strong>Onboard Storage Controller</strong></td>
<td>10x hot-swappable SATA drives bays support; Optional 10x SAS3/ NVMe support with additional SAS/NVMe kit</td>
<td>12x 3.5&quot; SATA /SAS (SAS via AOC)/NVMe drive bays with optional kit + 2x 2.5&quot; (with optional kit)</td>
</tr>
<tr>
<td><strong>Connectivity</strong></td>
<td>Dual AIOM slots, 2 USB 3.0 ports (2 rear)</td>
<td>Dual AIOM slots, 2 USB 3.0 ports (2 rear)</td>
</tr>
<tr>
<td><strong>VGA/Audio</strong></td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
<td>1 VGA; 1 ASPEED AST2600 BMC</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
</tr>
<tr>
<td><strong>Drive Bays</strong></td>
<td>10x hot-swap 2.5&quot; drive bays support</td>
<td>12x hot-swap 3.5&quot; drive bays support</td>
</tr>
<tr>
<td><strong>Peripheral Bays</strong></td>
<td>N/A</td>
<td>2x 2.5&quot; Peripheral drive bays with additional rear drive bay kits + cable</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>860W redundant Platinum Level high-efficiency power supplies</td>
<td>920W redundant Platinum Level high-efficiency power supplies</td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td>6x 40x40x56mm counter-rotation PWM fans</td>
<td>3x 80x80x38mm middle cooling fans</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>1U Rackmount&lt;br&gt;437 x 43 x 597mm (17.2&quot; x 1.7&quot; x 23.5&quot;)</td>
<td>2U Rackmount&lt;br&gt;437 x 89 x 648mm (17.2&quot; x 3.5&quot; x 25.5&quot;)</td>
</tr>
</tbody>
</table>

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* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
**MODEL** | **SBA-4114S-C2N** | **SBA-4114S-T2N** | **SBA-4119SG**
--- | --- | --- | ---
**Processor Support** | Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W | Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W | Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W
**Key Applications** | • Resource saving and high density | • Resource saving and high density | • Resource saving and high density | • Data center | • Data center | • Data center | • HPC | • HPC | • HPC | • Cloud Gaming, Inference | • Cloud Gaming, Inference
**Outstanding Features** | • 2x hot-plug 2.5” NVMe/SAS3/SATA3 drive bays | • 2x hot-plug 2.5” NVMe/SATA3 drive bays | 1 NVMe/SATA M.2 | 2x 25G on board | 2x 25G on board | 2x 25G on board | • Flexible AIOM module per node | • Flexible AIOM module per node
**Serverboard** | MBD-BH12SSI-M25 | MBD-BH12SSI-M25 | MBD-BH12SSI-M25
**System Memory (Max.)** | Up to 2TB DDR4-3200MHz RDIMM | Up to 2TB DDR4-3200MHz RDIMM | Up to 2TB DDR4-3200MHz RDIMM
**Expansion Slots** | N/A | N/A | 2 PCIe 4.0 x16
**Onboard Storage Controller** | Broadcom 3108 | AMD SP3 | AMD SP3
**Connectivity** | 25G Ethernet/100G EDR/200G HDR; Optional AIOM Network Card | 25G Ethernet/100G EDR/200G HDR; Optional AIOM Network Card | 25G Ethernet/100G EDR/200G HDR
**VGA/Audio** | N/A | N/A | N/A
**Management** | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN
**Drive Bays** | 2x hot-plug 2.5” NVMe/SAS3/SATA3 drive bays; 2x M.2 NVMe/SATA3 | 2x hot-plug 2.5” NVMe/SATA3 drive bays; 2x M.2 NVMe/SATA3 | 1x M.2 NVMe/SATA3
**Peripheral Bays** | N/A | N/A | N/A
**Power Supply** | N/A | N/A | N/A
**Cooling System** | Passive HS for CPU | Passive HS for CPU | Passive HS for CPU

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
# H12 SUPERBLADE®

(For Complete System Only)

Up to 20 hot-plug server blades

## MODEL

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<tr>
<th>Model</th>
<th>SBE-820C</th>
<th>SBE-820J</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Blade</td>
<td>Up to 20 hot-plug server blades</td>
<td>Up to 20 hot-plug server blades</td>
</tr>
</tbody>
</table>
| Module Support | Supports:  
  - SBA-4114S-C2N  
  - SBA-4114S-T2N  
  - SBA-41195G | Supports:  
  - SBA-4114S-C2N  
  - SBA-4114S-T2N  
  - SBA-41195G |
| LED          | • Fault LED  
  • Power LED | • Fault LED  
  • Power LED |
| InfiniBand Switch | 1x 100G EDR IB or OPA switch | N/A |
| Gigabit Ethernet Switch | Up to 2 hot-plug 25G Ethernet Switches | Up to 4 hot plug 25G Ethernet switch |
| Management Module | 1 hot-plug management module providing remote KVM and IPMI 2.0 functionalities | 2 hot-plug management modules providing remote KVM and IPMI 2.0 functionalities |
| Power Supply | 4/6/8 hot-swap 2200W power supplies, up to N+N redundancy, 4 pcs of 1200W BBP, 3 optional cooling fan modules(PWS-DF005-2F) | 4/6/8 hot-swap 2200W power supplies, up to N+N redundancy, 4 pcs of 1200W BBP, 3 optional cooling fan modules(PWS-DF005-2F) |
| Cooling Design | Front to back | Front to back |
| Dimensions (HxWxD) | 356 x 447 x 812.8mm (14” x 17.6” x 32”) | 356 x 447 x 812.8mm (14” x 17.6” x 32”) |

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
## H12 SuperBlade®

*(For Complete System Only)*

**Up to 20 hot-plug server blades**

![Rear View](image1)

**Up to 20 hot-plug server blades**

![Rear View](image2)

### MODEL

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SBE-820L</th>
<th>SBE-820H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Server Blade</strong></td>
<td>Up to 20 hot-plug server blades</td>
<td>Up to 20 hot-plug server blades</td>
</tr>
<tr>
<td><strong>Module Support</strong></td>
<td>Supports:</td>
<td>Supports:</td>
</tr>
<tr>
<td></td>
<td>• SBA-4114S-C2N</td>
<td>• SBA-4114S-C2N</td>
</tr>
<tr>
<td></td>
<td>• SBA-4114S-T2N</td>
<td>• SBA-4114S-T2N</td>
</tr>
<tr>
<td></td>
<td>• SBA-4119SG</td>
<td>• SBA-4119SG</td>
</tr>
<tr>
<td><strong>LED</strong></td>
<td>• Fault LED</td>
<td>• Fault LED</td>
</tr>
<tr>
<td></td>
<td>• Power LED</td>
<td>• Power LED</td>
</tr>
<tr>
<td><strong>InfiniBand Switch</strong></td>
<td>N/A</td>
<td>1x 200G HDR IB switch</td>
</tr>
<tr>
<td><strong>Gigabit Ethernet Switch</strong></td>
<td>Up to 2 hot-plug 10G Ethernet Switches</td>
<td>Up to 2 hot-plug 25G Ethernet Switches</td>
</tr>
<tr>
<td><strong>Management Module</strong></td>
<td>1 hot-plug CMM (Central Management Modules) providing remote KVM and IPMI 2.0 functionalities</td>
<td>1 hot-plug management modules providing remote KVM and IPMI 2.0 functionalities</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>4/6/8pcs hot-swap 2200W power supplies, up to N+N redundancy, 3 optional cooling fan modules (PWS-DF005-2F)</td>
<td>4/6/8 hot-swap 2200W power supplies, up to N+N redundancy, 4 pcs of 1200W BBP, 3 optional cooling fan modules(PWS-DF005-2F)</td>
</tr>
<tr>
<td><strong>Cooling Design</strong></td>
<td>Front to back</td>
<td>Front to back</td>
</tr>
<tr>
<td><strong>Dimensions (HxWxD)</strong></td>
<td>356 x 447 x 812.8mm (14” x 17.6” x 32”)</td>
<td>356 x 447 x 812.8mm (14” x 17.6” x 32”)</td>
</tr>
</tbody>
</table>

*AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.*
# H12 MAINSTREAM

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor; TDP up to 280W</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors</td>
<td>Single AMD EPYC™ 7003/7002 Series Processors*; TDP up to 280W</td>
<td>AMD Ryzen™ Threadripper™ PRO 3000WX Series Processor, up to 64 Cores</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Backup storage • Web or Database Servers • Compact Network Appliance</td>
<td>• Data processing &amp; Storage • Cloud Computing • Hosting &amp; Application delivery • Cloud and Virtualization needs • Content Delivery Network (CDN)</td>
<td>• Entry-Level Workstation • Video and Music Production • Office Applications</td>
<td>• Media and Entertainment Content Creation • Product Design and Engineering Simulation • AI and Deep Learning</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>• 12x 3.5&quot; hot-swap drive bays • 2x 2.5&quot; Hot Swap SATA3 Drive Bays, 2x 2.5&quot; Internal SATA3 Drive Bays (optional) • Up to 2TB DDR4 ECC RDIMM • 2x 1GbE LAN • 2x M.2 Support by default</td>
<td>• 6 PCIe Gen4 expansion slots for next generation AOC • Tool-less Drive Trays and Tool-less Brackets • 920W Redundant Platinum Level High-Efficiency Power Supplies • 12x 3.5/2.5&quot; Hot-swap drive bays with NVMe support</td>
<td>• 4x 3.5&quot; internal SATA HDD Bays • Up to 2TB DDR4 ECC RDIMM • 2x 1GbE LAN • 2x M.2 Support by default</td>
<td>• 5U Rackmountable / Tower • 6 PCIe 4.0 x16 slots • M.2 Support • 10GBase-T LAN port, 1x 1GbE LAN port</td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H12SSL-i</td>
<td>SUPER® H12DSi-N6</td>
<td>SUPER® H12SSL-i</td>
<td>SUPER® M12SWA-TF</td>
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<tr>
<td>Chipset</td>
<td>System on Chip (SoC)</td>
<td>System on Chip (SoC)</td>
<td>System on Chip (SoC)</td>
<td>AMD WRX80</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 2TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM in 8 DIMM slots</td>
<td>Up to 4TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM in 16 DIMM slots</td>
<td>Up to 2TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM, in 8 DIMM slots</td>
<td>Up to 2TB ECC DDR4 3200-MHz Memory, in 8 DIMM slots 6 PCIe 4.0 x16 slots</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>5 PCIe 4.0 x16 LP slots 2 PCIe 4.0 x8 LP slots</td>
<td>3 PCIe 4.0 x16 LP slots 3 PCIe 4.0 x8 LP slots</td>
<td>5 PCIe 4.0 x16 (FH) 2 PCIe 4.0 x8 (FH)</td>
<td>Up to 20W Redundant Platinum Level memory, in 8 DIMM slots M.2 Interface: 4 PCIe 4.0 x4, RAID 0, 1, 5 &amp; 10 M.2 Form Factor: 2280, 22110 M.2 Key: M-Key 4 SATA3 (6Gbps) ports; RAID 0, 1, 5, 10</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>SP3</td>
<td>SP3</td>
<td>SP3</td>
<td>10GBase-T LAN port, 1x 1GbE LAN port (shared with IPMI)</td>
</tr>
<tr>
<td>Connectivity</td>
<td>2 GBase-T Ethernet via Broadcom BCM5720 Controller; 5 USB 3.0 ports (4 rear, 2 via header) 2 USB 2.0 and 2 USB 3.0 ports in the rear</td>
<td>2 USB 2.0 and 2 USB 3.0 ports in the rear</td>
<td>2 GBase-T Ethernet via Broadcom BCM5720 Controller; 5 USB 3.0 ports (4 rear, 2 via header)</td>
<td>2x 1GbE LAN port, 1x 1GbE LAN port (shared with IPMI)</td>
</tr>
<tr>
<td>VG/Audio Management</td>
<td>1 VGA 1 Aspeed AST2500 BMC Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port 2x Hot-Swappable 3.5&quot;/2.5&quot; SATA/ NVMe drive bays; Optional 2x 2.5&quot; SATA/NVMe drive support with optional kits</td>
<td>1 VGA; 1 Aspeed AST2600 BMC Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port 12x hot-swap 3.5/2.5&quot; SATA/NVMe drive bays; 4 NVMe and 8 SATA default configuration*</td>
<td>1 VGA; 1 Aspeed AST2500 BMC Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port 4x internal 3.5&quot; SATA/NVMe drive bays; 4x 2.5&quot; SATA/NVMe drive bays</td>
<td>1 VGA port (dedicated for IPMI); 7.1 HD Audio Intel® Node Manager, IPMI 2.0, SSM, SPN, SUM, SuperDoctor® 5, Watchdog 4x internal fixed 3.5&quot;/2.5&quot; SATA/ NVMe drive bays; 2x front fixed 2.5&quot; SATA/NVMe drive bays</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>920W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)</td>
<td>920W redundant Platinum Level High-Efficiency power supplies</td>
<td>900W redundant Gold Level power supplies</td>
<td>920W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>Platinum Level (94%) (Full redundancy based on configuration and application load)</td>
<td>920W redundant Platinum Level High-Efficiency power supplies</td>
<td>Platinum Level (94%) (Full redundancy based on configuration and application load)</td>
<td>2000W Platinum Level power supply</td>
</tr>
<tr>
<td>Cooling System</td>
<td>3 heavy duty fans w/ Optimal Fan Speed Control</td>
<td>3 heavy duty fans w/ Optimal Fan Speed Control</td>
<td>2 system fans w/ Optimal Fan Speed Control</td>
<td>1x 12cm rear exhaust fan, 3x 12cm front cooling fans (optional), 3x 12cm top cooling fans (optional); Optional high-performance closed-loop water cooling for CPU</td>
</tr>
<tr>
<td>Form Factor</td>
<td>437 x 89 x 648mm (17.2&quot; x 3.5&quot; x 25.5&quot;)</td>
<td>437 x 89 x 648mm (17.2&quot; x 3.5&quot; x 25.5&quot;)</td>
<td>Mid-Tower</td>
<td>222 x 535 x 573 mm (21.06&quot; x 8.74&quot; x 22.56&quot;)</td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
### Processor Support
- Single AMD EPYC™ 7003/7002 Series Processor
- TDP up to 240W
- TDP up to 280W
- TDP up to 240W

### Key Applications
- Database Processing & Storage
- Data Center
- FireWall Applications
- Virtualization
- Cloud Computing
- All Flash Storage
- Virtualization
- Cloud Computing
- All Flash Storage

### Outstanding Features
- Support up to 3 PCIe cards
- Up to 2TB DDR4 ECC RDIMM
- Dual 10GBaseT LAN ports
- 2x M.2 support by default
- 2 SATA DOMs support with embedded power
- 10-Port NVMe SSD support
- Up to 4TB DDR4 ECC RDIMM
- Dual 10GBaseT LAN ports
- 2x M.2 Support by default
- 2 SATA DOMs support with embedded power
- 10 Gen4/Gen3 U.2 NVMe SSD support

### Serverboard
- SUPER® H12SSW-NT
- SUPER® H12SSW-NTR
- SUPER® H12SSW-NT

### System Memory (Max.)
- Up to 2TB 3DS ECC DDR4-3200MHz RDIMM/LRDIMM, in 8 DIMM slots
- Up to 4TB 3DS ECC RDIMM/LRDIMM; DDR4 up to 3200MHz, in 16 DIMM slots
- Up to 2TB 3DS ECC RDIMM/LRDIMM; DDR4 up to 3200MHz, in 8 DIMM slots

### Expansion Slots
- 2 PCIe 4.0 x16 (FH/HL) slots
- 2 PCIe 4.0 x16 (FH/HL) slots
- 2 PCIe 4.0 x16 (FH/HL) slots
- 1 PCIe 4.0 x16 (LP) slot
- 1 PCIe 4.0 x16 (LP) slot
- 1 PCIe 4.0 x16 (LP) slot

### Onboard Storage Controller
- 4 Hot-Swappable 3.5" SATA drive support; Optional 4 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required
- 10 Hot-Swappable U.2 NVMe drive support; Optional 10 SATA3 drive support vs additional SATA cables required
- 10 Hot-Swappable U.2 NVMe drive support; Optional 2 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required
- 10 Hot-Swappable 2.5" SATA drive support; Optional 2 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required
- 10 Hot-Swappable 2.5" SATA drive support; Optional 2 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required

### Connectivity
- 2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 7 USB 3.0 ports (4 rear, 2 front, 1 Type A)
- 2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 7 USB 3.0 ports (4 rear, 2 front, 1 Type A)
- 2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 7 USB 3.0 ports (4 rear, 2 front, 1 Type A)

### Management
- Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port; Software Out of Band License key (SFT-OOB-LIC) included for OOB BIOS management
- Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port
- Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port

### Drive Bays
- 4 Hot-Swappable 3.5" SATA drive support; Optional 4 U.2 NVMe (PCIe Gen 3) drive support vs additional NVMe cables required
- 10 Hot-Swappable U.2 NVMe drive support; Optional 10 SATA3 drive support vs additional SATA cables required
- 10 Hot-Swappable U.2 NVMe drive support; Optional 10 SATA3 drive support vs additional SATA cables required

### Peripheral Bays
- Optional to support 1x Slim DVD-ROM Drive
- N/A
- N/A

### Power Supply
- 500W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)
- 750W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)
- 500W Redundant Power Supplies Platinum Level (94%) (Full redundancy based on configuration and application load)

### Cooling System
- 4 heavy duty fans w/ Optimal Fan Speed Control, Additional 1 heavy duty fan support w/ Optimal Fan Speed Control
- 6 heavy duty fans w/ Optimal Fan Speed Control
- 4 heavy duty fans w/ Optimal Fan Speed Control, Additional 1 heavy duty fan support w/ Optimal Fan Speed Control

### Form Factor
- 1U Rackmount
- Additional 1 heavy duty fan support w/ Optimal Fan Speed Control
- 437 x 43 x 597mm (17.2" x 1.7" x 23.5")

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**AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.**

**For complete system only**
## H12 WIO / Storage

(For Complete System Only)

### 2U UP WIO

![Image of 2U UP WIO]

### High Capacity Storage

![Image of High Capacity Storage]

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### MODEL

<table>
<thead>
<tr>
<th>Feature</th>
<th>AS -2114S-WN24RT</th>
<th>ASG-1014S-ACR12N4H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Support</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 280W</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*; TDP up to 240W</td>
</tr>
<tr>
<td>Key Applications</td>
<td>• Virtualization</td>
<td>• Object Storage</td>
</tr>
<tr>
<td></td>
<td>• Hyperconverge Storage</td>
<td>• Scale-Out Density</td>
</tr>
<tr>
<td></td>
<td>• Cloud Computing</td>
<td>• Database Applications</td>
</tr>
<tr>
<td></td>
<td>• All Flash Storage</td>
<td>• Hadoop &amp; Ceph storage solutions</td>
</tr>
<tr>
<td>Outstanding Features</td>
<td>24-Port NVMe SSD Support</td>
<td>Up to 4TB ECC DDR4</td>
</tr>
<tr>
<td></td>
<td>Up to 4TB DDR4 ECC RDIMM</td>
<td>4x 2.5” 7mm hot-swap NVMe drive bays</td>
</tr>
<tr>
<td></td>
<td>Dual 10GBaseT LAN Ports</td>
<td>3x PCIe 4.0 x16 slots (1x slot occupied by storage controller)</td>
</tr>
<tr>
<td></td>
<td>2x M.2 Support by default</td>
<td>Pull-out drawer storage bay w/internal cable arm design</td>
</tr>
<tr>
<td></td>
<td>2 SATA DOMs Support with Embedded Power</td>
<td></td>
</tr>
<tr>
<td>Serverboard</td>
<td>SUPER® H12SSW-NTR</td>
<td>SUPER® H12SSW-NTR</td>
</tr>
<tr>
<td>System Memory (Max.)</td>
<td>Up to 4TB 3DS ECC RDIMM/LRDIMM; DDR4 up to 3200MHz, in 16 DIMM slots</td>
<td>Up to 4TB 3DS ECC RDIMM/LRDIMM; DDR4 up to 3200MHz, in 16 DIMMs</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1 PCIe 4.0 x16 (FH/HL)</td>
<td>2 PCIe 4.0 x16 (FHHHL); 1 PCIe 4.0 x8 (LP)</td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>24 Hot-Swappable U.2 NVMe drive support</td>
<td>NVMe drive bays via CPU SAS3/SATA3 drive bays via Broadcom 3916 RAID controller</td>
</tr>
<tr>
<td>Connectivity</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 5 USB 3.0 ports (4 rear, 1 Type A)</td>
<td>2 10GBase-T Ethernet via Broadcom BCM57416 Controller; 2 USB 2.0 port(s) (2 Front, USB); 4 USB 3.0 port(s) (4 Rear, USB)</td>
</tr>
<tr>
<td>VGA/Audio</td>
<td>1 VGA; 1 Aspeed AST2500 BMC</td>
<td>1 VGA; 1 ASPEED AST2500 BMC</td>
</tr>
<tr>
<td>Management</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
<td>Built-in Server management tool (IPMI 2.0, KVM/media over LAN) with dedicated LAN port</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>24 Hot-Swappable U.2 NVMe drive support</td>
<td>12x 3.5” SAS/SATA drive bays; 4x 2.5” 7mm NVMe drive bays</td>
</tr>
<tr>
<td>Peripheral Bays</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Power Supply</td>
<td>1200W Redundant Power Supplies Titanium Level (96%) (Full redundancy based on configuration and application load)</td>
<td>800W redundant Platinum Level high-efficiency power supplies</td>
</tr>
<tr>
<td>Cooling System</td>
<td>3 heavy duty fans w/ Optimal Fan Speed Control</td>
<td>6x 40x40x56mm counter-rotation PWM fans</td>
</tr>
<tr>
<td>Form Factor</td>
<td>2U Rackmount</td>
<td>1U Rackmount</td>
</tr>
<tr>
<td></td>
<td>437 x 89 x 630mm (17.2&quot; x 3.5&quot; x 24.8&quot;)</td>
<td>447 x 43 x 940mm (17.6&quot; x 1.7&quot; x 37&quot;)</td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
### H13 Motherboards

<table>
<thead>
<tr>
<th>Model</th>
<th>H13DSH</th>
<th>H13DSG-O-CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor</strong></td>
<td>AMD EPYC™ 9004 Series Processors</td>
<td>AMD EPYC™ 9004 Series Processors</td>
</tr>
<tr>
<td><strong>Chipset</strong></td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td><strong>Form Factor &amp; Slots</strong></td>
<td>Proprietary, 17” x 11.5” (43.18cm x 29.21cm)</td>
<td>Proprietary, 17” x 14.7” (43.18cm x 37.34cm)</td>
</tr>
<tr>
<td><strong>Memory Capacity &amp; Slots</strong></td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs</td>
<td>Up to 6TB 3DS ECC RDIMM DDR5-4800MHz in 24 DIMMs</td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>1 PCIe 5.0 x16 AIOM / OCP 3.0 2 PCIe 5.0 x16 (in x16 slot) M.2 Interface: 2 PCIe 3.0 x4 Form Factor: 2280/22110 M.2 Key: M-Key</td>
<td>1 PCIe 5.0 x16 AIOM / OCP 3.0 M.2 Interface: 1 PCIe 3.0 x4 Form Factor: 2280/22110 M.2 Key: M-Key</td>
</tr>
<tr>
<td><strong>Onboard Storage Controller</strong></td>
<td>N/A</td>
<td>Asmedia ASM1061</td>
</tr>
<tr>
<td><strong>Onboard LAN</strong></td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Onboard VGA</strong></td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>USB Ports</strong></td>
<td>2 USB 3.1 Gen1 ports via header</td>
<td>1 USB 2.0 port via header</td>
</tr>
<tr>
<td><strong>Other Onboard I/O Devices</strong></td>
<td>TPM 2.0 header 4 MCIO (PCIe 5.0 x8/SATA3) ports 6 MCIO (PCIe 5.0 x8) ports</td>
<td>TPM 2.0 header 20 MCIO (PCIe 5.0 x8) ports</td>
</tr>
<tr>
<td><strong>Manageability</strong></td>
<td>SuperDoctor® 5, SPM, SUM, SMM, Watchdog, IPMCFG, IPMIView for Linux/Windows, SMCIIPMItool, IPMI 2.0, KVM with dedicated LAN</td>
<td>SuperDoctor® 5, SPM, SUM, SMM, Watchdog, IPMCFG, IPMIView for Linux/Windows, SMCIIPMItool, IPMI 2.0, KVM with dedicated LAN</td>
</tr>
<tr>
<td><strong>PC Health Monitoring</strong></td>
<td>VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +5V, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby</td>
<td>VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +5V, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby</td>
</tr>
<tr>
<td><strong>Thermal Control</strong></td>
<td>8x 6-pin fan headers (up to 8 fans)</td>
<td>10x 4-pin fan headers (up to 10 fans)</td>
</tr>
<tr>
<td><strong>Other Features</strong></td>
<td>RoT</td>
<td>RoT</td>
</tr>
<tr>
<td><strong>BIOS</strong></td>
<td>AMI 32MB SPI Flash EEPROM</td>
<td>AMI 32MB SPI Flash EEPROM</td>
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</table>
## H13 Motherboards

### Table

<table>
<thead>
<tr>
<th>Model</th>
<th>H13SST-G</th>
<th>H13SST-GC</th>
<th>H13SSW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor</strong></td>
<td>AMD EPYC™ 9004 Series Processors</td>
<td>AMD EPYC™ 9004 Series Processors</td>
<td></td>
</tr>
<tr>
<td><strong>Chipset</strong></td>
<td>System on Chip</td>
<td>System on Chip</td>
<td></td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>Proprietary GrandTwin, 8.53” x 12.42” (21.67cm x 31.55cm)</td>
<td>Proprietary, 12.29” x 13.4” (31.22cm x 34.04cm)</td>
<td></td>
</tr>
<tr>
<td><strong>Memory Capacity &amp; Slots</strong></td>
<td>Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs</td>
<td>Up to 3TB 3DS ECC RDIMM DDR5-4800MHz in 12 DIMMs</td>
<td></td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>M.2 Interface: 2 SATA/PCIe 5.0 x4&lt;br&gt;Form Factor: 2280&lt;br&gt;M.2 Key: M-Key</td>
<td>1 PCIe 5.0 x16 Right Riser Slot&lt;br&gt;1 PCIe 5.0 x16 Left Riser Slot&lt;br&gt;2 PCIe 5.0 x16 AIOM / OCP 3.0&lt;br&gt;M.2 Interface: 2 PCIe 3.0 x2&lt;br&gt;Form Factor: 22B0/22110&lt;br&gt;M.2 Key: M-Key</td>
<td>1 PCIe 5.0 x16 Right Riser Slot&lt;br&gt;1 PCIe 5.0 x16 Left Riser Slot&lt;br&gt;2 PCIe 5.0 x16 AIOM / OCP 3.0&lt;br&gt;M.2 Interface: 2 PCIe 3.0 x2&lt;br&gt;Form Factor: 22B0/22110&lt;br&gt;M.2 Key: M-Key</td>
</tr>
<tr>
<td><strong>Onboard Storage Controller</strong></td>
<td>-GC: Broadcom 3808 SAS3 (12 Gbps) controller for 8 SAS3 (12 Gbps) ports</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Onboard LAN</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Onboard VGA</strong></td>
<td>N/A</td>
<td>1 VGA port(s)</td>
<td>1 VGA port(s) via header&lt;br&gt;1 Aspeed AST2600 BMC</td>
</tr>
<tr>
<td><strong>USB Ports</strong></td>
<td>N/A</td>
<td>2 USB 2.0 port(s) via header&lt;br&gt;2 USB 3.1 Gen1 ports</td>
<td>2 USB 2.0 port(s) via header&lt;br&gt;2 USB 3.1 Gen1 ports</td>
</tr>
<tr>
<td><strong>Other Onboard I/O Devices</strong></td>
<td>1 MCIO (PCIe 5.0 x8/SATA3) ports&lt;br&gt;4 MCIO (PCIe 5.0 x8) ports&lt;br&gt;-GC: 8 SAS3 ports via SlimSAS</td>
<td>1 COM Port (1 Serial Port)&lt;br&gt;TPM 2.0 header&lt;br&gt;2 MCIO (PCIe 5.0 x8/SATA3) ports&lt;br&gt;6 MCIO (PCIe 5.0 x8) ports</td>
<td>1 COM Port (1 Serial Port)&lt;br&gt;TPM 2.0 header&lt;br&gt;2 MCIO (PCIe 5.0 x8/SATA3) ports&lt;br&gt;6 MCIO (PCIe 5.0 x8) ports</td>
</tr>
<tr>
<td><strong>Manageability</strong></td>
<td>SuperDoctor® 5, SPM, SUM, SSM, Watchdog, IPMI_CFG, IPMIView for Linux/Windows, SMCIPTM Tool, IPMI 2.0, KVM with dedicated LAN</td>
<td>SuperDoctor® 5, SPM, SUM, SSM, Watchdog, IPMI_CFG, IPMIView for Linux/Windows, SMCIPTM Tool, IPMI 2.0, KVM with dedicated LAN</td>
<td></td>
</tr>
<tr>
<td><strong>PC Health Monitoring</strong></td>
<td>VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby</td>
<td>VBAT, Memory temperature, CPU temperature, 3.3V standby, +5V standby, +3.3V, +12V, VRM temperature, CPU thermal trip support, 1.8V standby</td>
<td></td>
</tr>
<tr>
<td><strong>Thermal Control</strong></td>
<td>1x 4-pin fan header (up to 1 fan)</td>
<td>6x 4-pin fan headers (up to 6 fans)</td>
<td></td>
</tr>
<tr>
<td><strong>Other Features</strong></td>
<td>RoT</td>
<td>RoT</td>
<td>RoT</td>
</tr>
<tr>
<td><strong>BIOS</strong></td>
<td>AMI 32MB SPI Flash EEPROM</td>
<td>AMI 32MB SPI Flash EEPROM</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>H12SSL-i</td>
<td>H12SSL-C</td>
<td>H12SSL-CT</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Processor</td>
<td>Single AMD EPYC™ 7003/7002 Series Processor*</td>
<td>Dual AMD EPYC™ 7003/7002 Series Processors*</td>
<td></td>
</tr>
<tr>
<td>Chipset</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>ATX 12&quot; x 9.6&quot;</td>
<td>EATX 12&quot; x 13.05&quot;</td>
<td></td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>2TB ECC Registered, DDR4-3200MHz SDRAM in 8 DIMMs</td>
<td>4TB ECC Registered, DDR4-3200MHz SDRAM in 16 DIMMs</td>
<td></td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>5 PCIe 4.0 x16, 2 PCIe 4.0 x8, M.2 Interface: 2 PCIe 4.0 x4, M.2 Form Factor: 22110, 2280, M.2 Key: M-Key</td>
<td>5 PCIe 4.0 x16, 2 PCIe 4.0 x8, M.2 Interface: 2 PCIe 4.0 x4, M.2 Form Factor: 22110, 2280, M.2 Key: M-Key</td>
<td></td>
</tr>
<tr>
<td>Onboard Storage Controller</td>
<td>-C: Broadcom 3008 SAS3 (12 Gbps) controller for 8 SAS3 (12 Gbps) ports; RAID 0,1,10</td>
<td>-C: Broadcom 3008 SAS3 (12 Gbps) controller for 8 SAS3 (12 Gbps) ports; RAID 0,1,10</td>
<td></td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>-i: Dual LAN with Broadcom BCM5720L Gigabit Ethernet Controller</td>
<td>-i: Dual LAN with Broadcom BCM5720L Gigabit Ethernet Controller</td>
<td></td>
</tr>
<tr>
<td>Onboard VGA</td>
<td>1 VGA; Aspeed AST2500 BMC</td>
<td>1 VGA; Aspeed AST2600 BMC</td>
<td></td>
</tr>
<tr>
<td>USB Ports</td>
<td>6 USB 3.0 ports (4 rear + 2 headers)</td>
<td>2 USB 2.0 ports (2 rear)</td>
<td></td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>1 COM Ports, SATA DOM power connector, TPM 1.2/2.0 header, -i: 1 PCIe 4.0 NVMe x4 Internal Port</td>
<td>1 COM Ports, SATA DOM power connector, TPM 1.2/2.0 header, -i: 1 PCIe 4.0 NVMe x4 Internal Ports</td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
<td>IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor* 5, Watchdog</td>
<td>IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor* 5</td>
<td></td>
</tr>
<tr>
<td>PC Health Monitoring</td>
<td>+3.3V, +5V, +5V standby, 3.3V standby, Monitors CPU voltages, Supports system management utility, VBAT</td>
<td>+12V, +3.3V, +5V, +5V standby, Chassis intrusion header, CPU temperature, LAN temperature, Memory temperature, Memory Voltages, Monitors CPU voltages</td>
<td></td>
</tr>
<tr>
<td>Thermal Control</td>
<td>7x fan header, 4-pin type of fan header, 7 fans with tachometer status monitoring, Dual Cooling Zone, Pulse Width Modulated (PWM) fan connectors, Status monitoring for speed control</td>
<td>8x fan header, 4-pin type of fan header, Dual Cooling Zone, Fan speed control, Overheat LED indication, PWM fan speed control</td>
<td></td>
</tr>
<tr>
<td>Other Features</td>
<td>ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, UID</td>
<td>ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, UID, WOL</td>
<td></td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI 256Mb Flash EEPROM</td>
<td>AMI 256Mb Flash EEPROM</td>
<td></td>
</tr>
</tbody>
</table>

* AMD EPYC™ 7003 Series Processor with AMD 3D V-Cache™ Technology requires BIOS version 2.3 or newer.
**System Management Software**
Leverage Supermicro’s Management Software Suite to Meet Your IT Infrastructure Challenges

With a comprehensive range of high-end software solutions, Supermicro gives IT administrators the tools to optimize the management of IT systems and increase the utilization of computing and storage infrastructure. Whether you are looking to manage individual systems, optimize server lifecycle processes, or streamline operations for an entire data center, Supermicro has the right software to help you accomplish your goals.

### System Management Software Suite Bundles
Supermicro’s System Management Software Suite consists of a set of specialized applications. These are available in the following bundles.

<table>
<thead>
<tr>
<th>Suite Bundle</th>
<th>Standard</th>
<th>Basic</th>
<th>Advanced</th>
<th>Enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Covers all core functionality to effectively set up, manage, and monitor your Supermicro systems. These features are available to all Supermicro users.</td>
<td>Extends the core functionality and makes system management easier with additional features, such as remote BIOS management and system updates.</td>
<td>Delivers a broad set of tools to help administrators improve the performance, up-time, and monitoring of Supermicro systems.</td>
<td>Offers an extensive platform to manage large data centers and coordinate automated lifecycle management, software-defined infrastructure, and more in a single pane of glass.</td>
</tr>
<tr>
<td>License</td>
<td>• No license required</td>
<td>• SFT-OOB-LIC</td>
<td>• SFT-DCMS-SINGLE</td>
<td>• SFT-DCMS-SINGLE + SFT-SDDC-SINGLE</td>
</tr>
<tr>
<td>Key Features*</td>
<td>• Secure remote console (KVM/HTML5) • System temperature monitoring • System power thresholds &amp; alerts • Component monitoring • Email alerting • Remote configuration • Offline diagnostics • Crash dump • License management</td>
<td>• Remote BMC management • Remote BIOS management • Out-of-Band systems checks • TPM Provisioning • Mount/Unmount ISO images from Samba/HTTP • Basic Redfish APIs • CIM management • SysLog</td>
<td>• Remote OS deployment • Auto-discovery • Power capping • RAID monitoring and configuration • HDD monitoring • Advanced Redfish APIs • FW update policy • System lock down • Crash screen/video capture</td>
<td>• 3rd Party vendor support • POD &amp; Rack-level management • SDI Lifecycle management • Manage Composable Dissagregated Infrastructure • Zero-touch provisioning for network configuration • Single pane of glass for data center deployment • Rich analytics &amp; telemetry • User defined role-based access control</td>
</tr>
</tbody>
</table>

*For detailed information, please check with your Supermicro sales representative or refer to Supermicro website: https://www.supermicro.com/en/solutions/management-software
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- One of the largest high-tech R&D, manufacturing, and business hubs in Silicon Valley
- East Coast Sales and Service Office

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EMEA
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