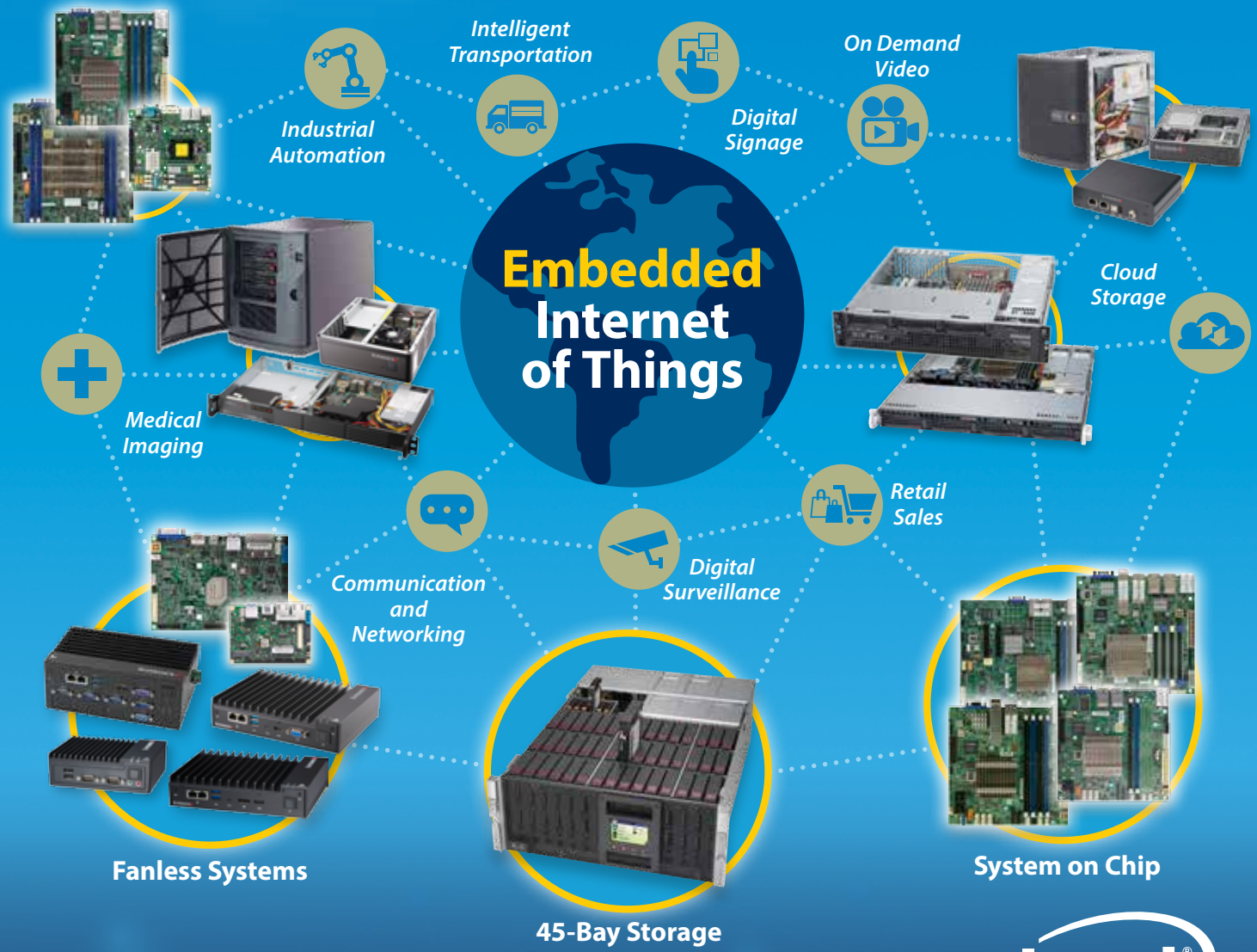
SUPERMICRO®

Embedded/IoT Solutions

Connecting the Intelligent World from Devices to the Cloud

Long Life Cycle · High-Efficiency · Compact Form Factor · High Performance · Global Services



Supermicro Building Block Solutions for Embedded Applications, The Internet Of Things and The Intelligent Edge

intel®

Supermicro Next Generation Solutions based on Intel® Processors

June 2018

X11 Intel® Xeon® Processor D-2100 NEW!

High Core, High Performance *(FCBGA 2518 SoC)*

Supermicro X11 Generation of Motherboards/Servers support Intel Xeon Processors D-2100 (Formerly Skylake-DE) series **system-on-chip (SoC)** Processors.

Based on new Intel® Xeon® D-2100 processors with a range of 4 to 18 cores and up-to 512 GB of addressable memory with error-correcting code (ECC), this system-on-a-chip (SoC) has an integrated Platform Controller Hub (PCH), integrated high-speed I/O, up-to four integrated 10 Gigabit Intel® Ethernet ports, and a thermal design point (TDP) of 60 watts to 110 watts.

Enhanced Intel® QuickAssist Technology (Intel® QAT), available as an integrated option, delivers up to 100Gbps of hardware acceleration, for growing cryptography, encryption, and decryption workloads offering greater efficiency while delivering enhanced transport and protection across server, storage, and network infrastructure.

New Intel® Advanced Vector Extensions 512 (Intel® AVX-512) delivers workload-optimized performance and throughput increases for advanced analytics, compute-intensive applications, cryptography, and data compression.

Built-In Hardware Virtualization using Intel® Virtualization Technology (Intel® VT) to enable dynamic provisioning of services as communication service providers extend network functions virtualization (NFV) to the network edge.

Supermicro solutions are the first offering of a line of processors that will address a broad range of lower-power, high-density edge computing needs. Design innovation delivers seamless solution scalability from the data center to the edge.

Mini-ITX Server & Motherboard Solutions

SYS-E300-9D Compact • 10" width

- Intel® Xeon® processor D-2123IT, 4-Core, 8 Threads, 60W
- System on Chip
- 1 Internal 2.5" drive bay
- Up to 512GB ECC LRDIMM, up to 256GB ECC RDIMM DDR4-2400MHz in 4 DIMM slots
- 1 onboard OCuLink port (for 1 PCI-E 3.0 x4 NVMe), 1 PCI-E 3.0 x8 (LP) open slot

Intel® Xeon D®-2123IT
4 cores | 60W

X11SDV-4C-TLN2F

D-2123IT | 4 Core | 60W

X11SDV-8C/8C+-TLN2F

D-2141I | 8 Core | 65W

X11SDV-12C-TLN2F

D-2166NT | 12 Core | 85W

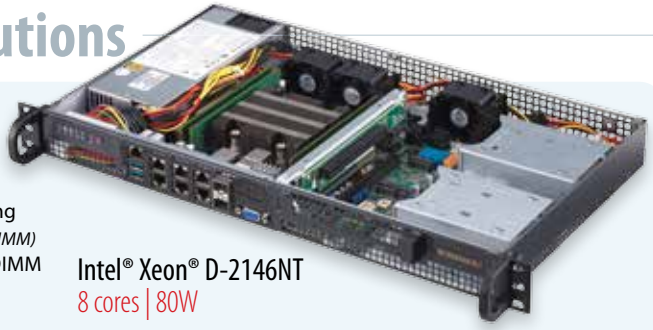
X11SDV-16C/16C+-TLN2F

D-2183IT | 16 Core | 100W

Flex-ATX Server & Motherboard Solutions

SYS-5019D-FN8TP 1U • 9.8" depth

- Built in Intel QAT up to 40Gbps Crypto/Compression
- Supports up to 8C high Density SKL-D SoC processor for edge network computing
- High Memory Bandwidth-Supports 4 DDR4 channel DIMMs *(ECC LRDIMM or ECC RDIMM)* with up to 2666 MHz memory speed , Max memory capacity up to 512GB on LRDIMM
- 8 LAN ports supported (2 x 10G SFP+, 2 x 10GBase-T, 4 x GbE)



Intel® Xeon® D-2146NT
8 cores | 80W

X11SDV-8C-TP8F

D-2146NT | 8 Core | 80W

X11SDV-12C-TP8F

D-2166NT | 12 Core | 85W

X11SDV-16C-TP8F

D-2183IT | 16 Core | 100W

X10 Intel® Xeon® Processor D-1500

High Core, High Performance, Low Power *(FCBGA 1667 SoC)*

Supermicro X10 Generation of Motherboards/Servers support Intel Xeon Processors D-1500 (Formerly Broadwell-DE) series **system-on-chip (SoC)** Processors.

Based on Intel's third-generation 64-bit system on a chip (SOC) and 14 nm silicon technology, the Supermicro product lineup offers processor scalability from two up to sixteen cores, making it the perfect choice for a broad range of high-density, high-performing, midrange-power solutions (TDP ~25W to 65W) that brings superior design solutions to the intelligent edge.

The Intel® Xeon® processor D-1500 product family is offered with a seven-year extended supply life and 10-year reliability for Internet of Things designs.

Mini-ITX Server & Motherboard Solutions

SYS-5018D-FN4T 1U • 9.8" depth

- Front I/O, Space-efficient, compact design
- Intel® Xeon® processor D-1541, Single socket FCBGA 1667; 8-Core, 45W
- 1 PCI-E 3.0 x 16, 1x M.2 PCI-E 3.0 x4 (Supports NVMe, AHCI) 2242/2280
- Up to 128GB ECC RDIMM DDR4 2400MHz or 64GB ECC/non-ECC UDIMM in 4 sockets
- Dual 10GbE LAN and Intel® i350-AM2 dual port GbE LAN

Intel® Xeon® D-1541
8 cores | 45W

X10SDV-16C+-TLN4F

D-1587 | 16 Core | 65W

X10SDV-12C-TLN4F

D-1557 | 12 Core | 45W

X10SDV-6C-TLN4F

D-1528 | 6 Core | 35W

X10SDV-12C+-TLN4F

D-1567 | 12 Core | 65W

X10SDV-4C+-TLN4F

D-1518 | 4 Core | 35W

X10SDV-TP8F

D-1518 | 4 Core | 35W

X10SDV-2C-TLN2F

D-1508 | 2 Core | 25W

X10SDV-TLN4F

D-1541 | 8 Core | 45W

X10SDV-8C-TLN4F

D-1541 | 8 Core | 45W

X10SDV-F

D-1541 | 8 Core | 45W

X10SDV-8C+-LN2F

D-1541 | 8 Core | 45W

X10SDV-4C-TLN4F

D-1518 | 4 Core | 35W

X10SDV-7TP8F

D-1587 | 16 Core | 65W

X10SDV-4C-TLN2F

D-1521 | 4 Core | 45W

Flex-ATX Server & Motherboard Solutions

SYS-1018D-FRN8T 1U • 16.9" depth

- Intel® Xeon® SoC 16 Core, 32 Threads, 65W, 1.7~2.3GHz
- VT-d/x, TXT, AES-NI, Xeon® RAS, Built-in 10GbE
- Up to 128GB 2133MHz DDR4 RDIMM or 64GB 2133MHz ECC/Non-ECC UDIMM
- IPMI 2.0 with KVM Dedicated port
- 6x GbE LAN and Dual 10G SFP+

Intel® Xeon® D-1587
16 cores | 65W

X10SDV-7TP8F

D-1587 | 16 Core | 65W

X10SDV-TP8F

D-1518 | 4 Core | 35W

X10SDV-7TP4F

D-1537 | 8 Core | 35W

X10SDV-4C-7TP4F

D-1518 | 4 Core | 35W

X10SDV-2C-7TP4F

D-1508 | 2 Core | 25W

X10SDV-2C-TP8F

D-1508 | 2 Core | 25W

X10SDV-4C+-TP4F

D-1518 | 4 Core | 35W

X10SDV-2C-TP4F

D-1508 | 2 Core | 25W

A2 Intel® Atom® C3000

High Density, Low Power Solutions *(Denverton, FCBGA 1310)*

Supermicro A2 Generation of Motherboards/Servers support Intel Atom Processors C3000 (Formerly Denverton) series **system-on-chip (SoC)** Processors.

Based on low-power Goldmont microarchitecture and 14-nanometer process technology, this product family extends the scalability of Supermicro Products into industry-leading performance per watt, low thermal design power (TDP), and unprecedented levels of **configurable** high-speed I/O for accelerated innovation across networking, storage, Internet of Things (IoT), and scalable solutions. It also offers hardware assist Intel® QuickAssist Technology (Intel® QAT) to accelerate storage compression and cryptographic workloads.

Server Solutions

SYS-5019A-12TN4 1U • 9.8" depth

- 4 DDR4 2400 MHz DIMM slots
- 1 PCI-E 3.0 x4; 1 miniPCI-E with mSATA supports (half card only)
- Quad GbE LAN with Intel® Ethernet Controller I350-AM4;
- Supports up to 4 x 2.5" HDD
- 200W Gold Level power supply

Intel® Atom® C3850
12 cores | 25W

SYS-E300-9A Mini-1U • 10" width

- System on Chip
- 2 fixed 2.5" drive bays (top drive bay area share with AOC)
- Up to 64GB Unbuffered ECC/non-ECC SO-DIMM, up to DDR4-2400MHz,in 4 DIMM slots
- 1 PCI-E 3.0 x4 AOC slot (LP)
- Optional Rack mount kit
- 2x 10Gbase-T, 2x 10G SFP+, and 4x GbE LAN ports

Intel® Atom® C3858
12 cores | 25W

Intel® Atom® C3558
4 cores | 16W

SYS-E200-9A

Intel® Atom® C3758
8 cores | 25W

SYS-E300-9A-8CN8

Intel® Atom® C3758
8 cores | 25W

SYS-5019A-FTN4

Intel® Atom® C3338
2 cores | 9W

SYS-5029A-2TN4

Motherboards Solutions

Mini-ITX

A2SDi-2C-HLN4F

C3338: 2 cores | 9W

A2SDi-4C-HLN4F

C3558: 4 cores | 16W

A2SDi-8C/8C+-HLN4F

C3758: 8 cores | 25W

A2SDi-12C-HLN4F

C3858: 12 cores | 25W

A2SDi-16C-HLN4F

C3958: 16 cores | 31W

A2SDi-H-TP4F

C3958: 16 cores | 31W

Mini-ITX

A2SDi-H-TF

C3758: 8 cores | 25W

A2SDi-TP8F/LN4F

C3858/C3850: 12 cores | 25W

Flex-ATX

A2SDV-8C-TLN5F

C3708: 8 cores | 17W

A2SDV-12C+-TLN5F

C3858: 12 cores | 25W

A2SDV-16C-TLN5F

C3958: 16 cores | 31W

A2SDV-4C-LN8F/LN10PF

C3558: 4 cores | 16W

A2SDV-8C-LN8F/LN10PF

C3758: 8 cores | 25W

A1 Intel® Atom® C2000

High Density, Low Power Solutions *(Rangley & Avoton, FCBGA 1283)*

Supermicro A1 Generation of Motherboards/Servers support Intel Atom Processors C2000 (Formerly Avoton, Rangeley) series **system-on-chip (SoC)** Processors.

Based on low-power Silvermont microarchitecture and 22-nanometer process technology, this product family extends the scalability of Supermicro Products into smaller footprints, low power, and hardware assisted encryption/compression engines for networking communications, storage and intelligent systems applications.

This product family offers multi-core processing capabilities (from two cores to eight cores), a range of thermal design power (TDP) from 7 to 20 watts, supports energy-efficient network designs with dual 1G to Dual 10G LAN Ports, Multiple Display capabilities, including fanless embedded designs.

Server Solutions

SYS-5018A-LTN4 1U • 9.8" depth

- Up to 2 DIMMs, 16GB of DDR3 ECC SODIMM 1666MHz
- 2x 3.5" or optional 4x 2.5" internal SATA2 and SATA3 Drive Bays
- 1x PCI-E 2.0 x8 Slot, 2x USB 3.0, 2x USB 2.0, VGA, COM,
- Quad GbE LAN ports, IPMI 2.0 on Dedicated LAN port
- 200W Gold Level Low-Noise Power Supply

Intel® Atom® C2358
2 cores | 7W

Intel® Atom® C2758
8 cores | 20W

SYS-5028A-TN4 Mini Tower

- 4 DIMMs / 64GB, 16GB of DDR3 ECC SODIMM 1333MHz
- 4x 3.5" hot-swap SATA trays: 2x 2.5" internal HDD Drive Bays
- 1 PCI-E 2.0 x8 Slot, 2 USB 3.0, 2 USB 2.0, VGA, COM,
- Quad GbE LAN ports, IPMI 2.0 on Dedicated LAN port
- 250W Bronze Level Low-Noise Power Supply

Intel® Atom® C2550
4 cores | 14W

SYS-5018A-MLTN4

Intel® Atom® C2758
8 cores | 20W

SYS-5018A-FTN4

Intel® Atom® C2750
8 cores | 20W

SYS-5018A-TN4

Intel® Atom® C2758
8 cores | 20W

SYS-5018A-TN7B

Motherboards Solutions

Mini-ITX			Proprietary	mATX
A1SAi-2550F/2750F	**A1SRi-2358F**	**A1SRi-2558F/2758F**	**A1SA7-2550F/2750F**	**A1SAM-2550F/2750F**
				
-2550F: C2550 | 4 cores | 14W **-2750F:** C2750 | 8 cores | 20W	C2358 | 2 cores | 7W	**-2558F:** C2558 | 4 cores | 15W **-2758F:** C2758 | 8 cores | 20W	**-2550F:** C2550 | 4 cores | 14W **-2750F:** C2750 | 8 cores | 20W	**-2550F:** C2550 | 4 cores | 14W **-2750F:** C2750 | 8 cores | 20W

X11 Intel® Xeon® E3-1200 v6/v5

(Kabylake)

Supermicro X11 Single Processor servers now support E3-1200 v6 (Kaby Lake) series processors. Server motherboards coupled with the long life C236 PCH Chipset provide up to 7 years of extended life for embedded applications. These systems deliver breakthrough performance, high performance graphics, stronger security and power efficiency over previous generation products. The systems are ideal for a wide range of IoT applications, including industrial control and automation, retail kiosks and medical devices.

Server Solutions

Up to 4 cores | 80W

SYS-5019S-MN4

Up to 4 cores | 80W

SYS-5019S-MT

Up to 4 cores | 80W

SYS-1019S-MC0T

Up to 4 cores | 80W

SYS-1019S-WR

Up to 4 cores | 80W

SYS-5019S-WR

Up to 4 cores | 80W

SYS-5019S-L

Up to 4 cores | 80W

SYS-5019S-ML

Up to 4 cores | 80W

SYS-5019S-M

Up to 4 cores | 80W

SYS-5019S-MR

Motherboard Solutions

X11SSH-F

4 cores | 80W

X11SSH-LN4F

4 cores | 80W

X11SSH-TF

4 cores | 80W

X11SSH-CTF

4 cores | 80W

X11SSM

4 cores | 80W

X11SSM-F

4 cores | 80W

X11SSL

4 cores | 80W

X11SSL-F

4 cores | 80W

X11SSL-CF

4 cores | 80W

X11SSL-nF

4 cores | 80W

X11SSW-F

4 cores | 80W

X11SSW-TF

4 cores | 80W

X11SSW-4TF

4 cores | 80W

X11SSi-LN4F

4 cores | 80W

X11SSA-F

4 cores | 80W

X11SAE

4 cores | 80W

X11SAE-F

4 cores | 80W

X11SAE-M

4 cores | 80W

X11SSZ-F

4 cores | 80W

X11SSZ-QF

4 cores | 80W

X11SSZ-TLN4F

4 cores | 80W

Intel® Xeon® E3-1500 v5

Pro Graphics P580 GTe4 *(FCBGA 1440)*

Supermicro X11 Single Processor servers with E3-1500 v5 (Skylake-H) series processors provide up to 26% more overall graphics performance than the previous-generation E3-1200 v4 processors. For dense and high-capacity media processing over the net, these systems can deliver up to 18 AVC streams or 8 HEVC streams at 1080p 30 frames per second (FPS), or 2 HEVC streams at 4K 30 FPS.

SYS-5019S-TN4 1U • 9.8" depth

- Single socket FCBGA 1440 supports Intel® Xeon® processor E3-1585 v5, 8 Threads
- Intel® C236 chipset
- 1x 3.5" or 4x 2.5" HDD
- Up to 32GB Unbuffered ECC SO-DIMM DDR4 2133MHz; 2 DIMM slots
- 1 PCI-E 3.0 x16, 1 Mini-PCI-E with mSATA, 1 M.2 (M Key, 2242/2280)

Intel® Xeon® E3-1585
4 cores | 65W

X11SSH-GF-1585

4 cores | 65W

X11SSH-GF-1585L

4 cores | 45W

X11SSH-GTF-1585

4 cores | 65W

X11SSH-GTF-1585L

4 cores | 45W

X11SSV-M4

4 cores | 45W

X11SSV-M4F

4 cores | 65W

X11 Intel® Core™ i7, i5, i3, 8th Gen Single Processor

Up to 6 cores with Q370 Chip Set *(Coffee-Lake, FCBGA 1151)*

Supermicro single processor X11 designs feature the Intel® B360/Q370/H310 chipset which support the Intel® 8th Generation Core™ i7/i5/i3 processor family. With outstanding features that include up to 64GB non-ECC fast DDR4 DRAM in 4 DIMMS, USB 3.0/USB 3.1, PCI-E 3.0 M.2, and SATA 3.0 (6Gbps) HDD. With support for next generation graphics controller, 4K HD graphics resolution and multiple displays. Designed with performance, reliability, manageability and long life in mind, Supermicro's single processor motherboards are the perfect solution for a variety of multi-tasking, heavy workload applications.

SYS-E300-9C Mini-1U • 10" width

- 2 Internal 2.5" fixed drive bays with bracket
- 1 PCI-E 3.0 x16 AOC slot (LP) open slot (space share with top 2.5" drive bay)
- Up to 32GB unbuf. non-ECC SO-DIMM, DDR4-2666Mz; in 2 DIMM slots
- M.2 M key: SATA/PCI-E 3.0 x4, support 2242/2280 length
  M.2 E key: PCI-E 3.0 x1, support 2230 length
- 2x GbE LAN ports, 4 USB 3.1 (2 type A and 2 type C)

Intel® Q370
6 cores | 65W

X11SCV-L

Intel® H310: 6 cores | 65W

X11SCV-Q

Intel® Q370: 6 cores | 65W

X11SCQ

Intel® Q370: 8 cores | 95W

X11SCQ-L

Intel® H310: 8 cores | 95W

X11SCZ-Q

Intel® Q370: 8 cores | 95W

Intel® Core i7, i5, i3 Single Processor

Higher Performance with improved graphics and better power efficiency *(Skylake-S/Kabylake-S)*

The 7th/6th Gen Intel® Core processors deliver significant improvements in graphics performance that offers stunning visuals for gaming as well as compelling 4K content creation and media playback via AVX 2.0. Offers enhanced security through AES instructions for faster encryption as well as BIOS/FW protection, new I/O connectivity and multiple independent display capabilities.

Server Solutions

SYS-1019S-M2 Compact 1U • 16.9" depth

- Up to 64GB Unbuffered non-ECC, DDR4-2400MHz in 4 DIMM slots
- Intel® 7th/6th Generation Core i7/i5/i3 series, Intel® Celeron® Intel® Pentium®
- Remote management via IPMI or vPro | Q170
- 2 Gigabit LAN ports, 2x DP, DVI-I, 3 independent displays
- Full Height and Full Length add on card support
- Power redundancy or BBP® support

Intel® Q170
4 cores | 80W

SYS-5019S-M2 1U • 19.85" depth

Intel® C236
4 cores | 80W

- Up to 4 DIMMs, 64 GB of 2400MHz DDR4 UDIMM ECC/NON-ECC
- Intel® Xeon E3-1200 v6/v5 & 7th/6th Gen Intel® Core™ i7, i5, i3, Pentium®, Celeron® processor in LGA1151 | C236
- 2 DP, DVI-I, total 3x independent display
- 4x 3.5" SATA3 hot-swap drive bays
- Intel® vPro™ and AMT
- 2 Gigabit LAN with AMT
- 1 PCI-E 3.0 x16 FH, FL slot
- 7 year life cycle

SYS-5029S-TN2 Mini Tower

Intel® C236
4 cores | 65W

- Compact Mini Tower 7th/6th Gen. Intel i7/i5/i3 Core Server
- 32GB Unbuffered non-ECC SO-DIMM, DDR4-2400MHz, in 2 DIMM slots
- 7th/6th Generation Intel® Core i7/i5/i3, Pentium and Celeron Processor in LGA1151 Socket | Q170
- Up to 4 Hot-Swap 3.5" SATA3 HDD, 1 internal 2.5" fixed HDD and 1 M.2 (M key 2242/80 PCI-E 3.0 x4)
- 2 Gigabit LAN ports
- Embedded long life
- Quiet Operation
- 1 slim DVD-ROM drive bay (shared with 1 internal 2.5" drive bay)

Motherboard Solutions

X11SSQ/L

4 cores | 91W

X11SSZ-QF

4 cores | 91W

X11SSZ-TLN4F/F

4 cores | 91W

X11SSV-Q

4 cores | 91W

X11SSV-LVDS

4 cores | 91W

Intel® Atom® & Intel® Pentium

(Apollo Lake)

Supermicro X11 Generation of Motherboards/Servers support Intel Atom processor x5-E3900 and Pentium processor N4200 (Formerly Apollo Lake) series **system-on-chip (SoC)** Processors.

Based on Goldmont architecture and utilizing Intel's industry-leading 14 nm process technology, the Supermicro high density, low-power Motherboard/Server solutions provide great options for value-segment buyers who need basic functionality at an affordable price. The solutions are ideal for everyday computing like basic productivity, browsing visually stunning webpages, streaming 4K Ultra HD video, and editing photos. Empowers real-time computing in digital surveillance, new in-vehicle experiences, advancements in industrial and office automation, new solutions for retail and medical, and more.

Server Solutions

SYS-E50-9AP-WIFI Compact

- Built-in Wifi Antenna
- IP51 with plastic chassis design for water/dust proof
- Cable-less design for increased reliability and cost efficiency
- Fanless design with palm-size dimension

Intel® Atom x5-E3940
4 cores | 9.5W

Atom® x5-E3940
4 cores | 9.5W

SYS-E50-9AP

Atom® x5-E3930
2 cores | 6.5W

SYS-E102-9AP-L

Atom® x5-E3940
4 cores | 9.5W

SYS-E100-9AP

Atom® x5-E3940
4 cores | 9.5W

SYS-E100-9AP-IA

Atom® x5 3940
4 cores | 9.5W

SYS-E200-9AP

Atom® x5-E3940
4 cores | 9.5W

SYS-5029AP-TN2

Motherboard Solutions

A2SAP-E/H/L

A2SAP-H/-E: 4 cores | 9.5W
A2SAP-L: 2 cores | 6.5W

A2SAN-E/H/L

A2SAN-H/-E: 4 cores | 9.5W
A2SAN-L: 2 cores | 6.5W

A2SAN-E/H/L-WOHS

A2SAN-H/E-WOHS: 4 cores | 9.5W
A2SAN-L-WOHS: 2 cores | 6.5W

A2SAV

4 cores | 9.5W

A2SAV(-2C)-L

A2SAV-L: 4 cores | 9.5W
A2SAV-2C-L: 2 cores | 6.5W

X11 Intel® Pentium® Processor

High Density, Low Power Solutions *(N4200, FCBGA 1296 & N3700, FCBGA 1170)*

Supermicro X11 Generation of Motherboards/Servers support Intel Atom processor E3900 and Pentium processor N4200 (Formerly Apollo Lake) series **system-on-chip (SoC)** Processors.

Based on Goldmont architecture and utilizing Intel's industry-leading 14 nm process technology, the Supermicro high density, low-power Motherboard/Server solutions provide great options for value-segment buyers who need basic functionality at an affordable price. The solutions are ideal for everyday computing like basic productivity, browsing visually stunning webpages, streaming 4K Ultra HD video, and editing photos. Empowers real-time computing in digital surveillance, new in-vehicle experiences, advancements in industrial and office automation, new solutions for retail and medical, and more.

N4200 Server Solutions

SYS-E100-9APP 3.5" SBC

- Intel® Pentium™ processor N4200, Single Socket FCBGA 1296
- 1 M.2 2280 B-Key for SATA SSD
- 1 non-ECC DDR3L SODIMM up to 8GB
- 1 Full size Mini-PCI-E (USB 2.0, PCI-E 2.0 x 1)
- Dual GbE LAN ports via Intel I210-AT
- 1 HDMI, 1 VGA, Intel® HD Graphics

Intel® Pentium™ N4200
4 cores | 6W

N4200 Motherboard Solutions

X11SAN

with heatsink

4 cores | 6W

X11SAN-WOHS

without heatsink

4 cores | 6W

X11SAA

4 cores | 6W

N3700 Server Solutions

SYS-E200-9B Mini-ITX

- Intel® Pentium® Processor N3700, Quad-Core (6W, 4C); Socket FCBGA 1170
- System-on-Chip
- 1x 2.5" internal drive bay
- Up to 8GB 1600MHz DDR3 Non-ECC SO-DIMM in 2 socket
- 1 SuperDOM, 1 mSATA slot, 1 TPM 1.2 header
- I/O ports: 4 GbE, 1 HDMI, 1 Display Port, 1 VGA, 1x serial port

Intel® Pentium™ N3700
4 cores | 6W

N3700 Motherboard Solutions

X11SBA-F

4 cores | 6W

X11SBA-LN4F

4 cores | 6W

Intel® Xeon® Scalable Processors NEW!

Single/Dual Processor System Solutions (*Skylake-SP, LGA 3647*)

Supermicro's new generation X11 DP/UP Embedded Motherboards offer the highest levels of performance, efficiency, security and scalability in the industry with up to: 3TB DDR4 2666MHz in 24 DIMM slots per node, 7 PCI-E slots, SAS 3.0/SATA 3.0/NVMe hot-swap HDD/SSD support, 10GBase-T/10G SFP+/56Gbps FDR InfiniBand networking options, SATA Disk-on-Module (DOM), and IPMI 2.0 plus KVM with dedicated LAN. The embedded boards offer 7 year life cycle.

Intel® Xeon® Scalable Processor Servers

SP Server

Intel® C621
28 cores | 165W

SYS-5019P-M 1U • 17.2"

- Single socket P (LGA 3647) supports Intel® Xeon® Scalable Processors
- Intel® C621 chipset
- 4 Hot-swap 3.5" SATA3 bays w/ RAID
- Up to 768GB ECC 3DS LRDIMM, up to DDR4-2666MHz; 6 DIMM slots
- 1 PCI-E 3.0 x16 slot (FH, HL)

DP Server

Intel® C621
28 cores | 165W

SYS-6029P-TR 2U • 17.2"

- Dual socket P (LGA 3647) supports Intel® Xeon® Scalable Processors, Dual UPI up to 10.4GT/s
- Up to 2TB ECC 3DS LRDIMM, up to DDR4-2666MHz; 16 DIMM slots, Supports Intel Optane Memory NVDIMM
- 4 PCI-E 3.0 x16, 2 PCI-E 3.0 x8 slots

SP Motherboard Solutions

X11SPL-F

C621 | 28 cores | 165W

X11SPH-nCTF/nCTPF

C622 | 28 cores | 205W

X11SPW-TF/CTF

C622 | 28 cores | 205W

X11SPi-TF

C622 | 28 cores | 205W

X11SPM-F/TF/TPF

C622 | 28 cores | 165W

DP Motherboard Solutions

X11DPi-N/NT

-N: **C621** | 28 cores | 205W
-NT: **C622** | 28 cores | 205W

X11DPH-T

C624 | 28 cores | 165W

X11DAi-N

C621 | 28 cores | 205W

X11DPX-T

C621 | 28 cores | 205W

X10 Intel® Xeon® E5-2600 v4/v3 Processors

Dual Processor System Solutions *(Broadwell)*

Broadwell Support

All X10 Dual Processor motherboards now support Intel's latest E5-2600 v4 series (Broadwell) processor for even faster performance. Coupled with the long life C612 PCH that provides up to 7 years of extended availability, the E5-2600 v4 processor brings unparalleled performance, efficiency, scalability, and flexibility to handle the most demanding of embedded and embedded cloud workloads for years to come.

NVMe Capability

Many X10 models now support U.2 (NVMe) storage capabilities for unmatched performance (throughput and latency), true hot-swap capability, and cost-effectiveness that beats using traditional add-on card based flash storage solutions.

Server Solutions

Intel® Xeon® E5-2600
22 cores | 145W

SYS-6018R-MD Compact • 16.9"

- Short-Depth Chassis for X11/X10 DP Solutions
- 500W Platinum Level High-efficiency Power Supply
- 1x 3.5" or 4x 2.5" HDD
- 4x 40x56mm PWM fans
- 2 Full-Height I/O Expansion slot

Motherboard Solutions

X10DRD-i(N)T 22 cores | 145W

- Dual E5-2600 v4/v3 CPUs up to 145W
- 8 DIMM DDR4 2133MHz (Up to 1TB)
- 10 SATA 3.0 HDD/SSD ports
- 4 PCI-E 3.0 x16 + 3 PCI-E 3.0 x8 + 1 PCI-E 3.0 x4 in x8 + 1 PCI-E 2.0 x4 in x8
- 7 USB 3.0, 2 SuperDOM, TPM support
- 13.05" x 10.5" ATX Form Factor
- 10 SATA3 HDD/SDD ports, Optional dual NVMe Ports ***(-N Option)***

X10DRL-i

22 cores | 145W

X10DAi/C

22 cores | 145W

X10DAi/C

22 cores | 145W

X10DAi/C

22 cores | 145W

X10DRL-CT

22 cores | 145W

X10DDW-i

22 cores | 145W

X10DRD-iTP

22 cores | 145W

X10DRC-T4+/LN4+

22 cores | 145W

X10DRi(-T)

22 cores | 145W

X10DRi-T4+/LN4+

22 cores | 145W

X10DRW-i(T)

22 cores | 145W

X10DRX

22 cores | 145W

Supermicro Building Block Solutions for Embedded Applications, The Internet Of Things and The Intelligent Edge

Embedded Appliances

Connecting the Intelligent World from Devices to the Cloud

Intelligent Edge Servers

Expanding our Product Portfolio to address emerging Embedded/IoT Edge Market

Smart IoT Gateways

Offering a proven solution that delivers an application-ready platform

	Denverton 8-Core, 8 GbE RJ45, Dual GbE SFP, Intel® Quick Assist Technology	**Denverton** 8-Core, 8 GbE RJ45 Intel® Quick Assist Technology	**Denverton** 4-Core, 8 GbE RJ45, Dual GbE SFP, Intel® Quick Assist Technology	**Denverton** 4-Core, 8 GbE RJ45 Intel® Quick Assist Technology
				
MODEL	**A2SDV-8C-LN10PF**	**A2SDV-8C-LN8F**	**A2SDV-4C-LN10PF**	**A2SDV-4C-LN8F**
Processor	Intel® Atom® Processor C3758. Single Socket FCBGA1310 supported, CPU TDP support 25W		Intel® Atom® Processor C3558. Single Socket FCBGA1310 supported, CPU TDP support 16W	
Chipset/System Bus	System on Chip			
Form Factor	Flex ATX 9.0" x 7.25" (22.86cm x 18.42cm)			
Memory Capacity & Slots	Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots			
Expansion Slots	1 PCI-E 3.0 x4 Option for Slot 6 or Slot 7 1 M.2 M-Key SATA/PCI-E 3.0 x2, 2242/2280 1 M.2 B-Key SATA/PCI-E 3.0 x2/USB 3.0, 3042/2280		1 PCI-E 3.0 up to x2 (in x4 slot) **Number of PCI-E lane (option for Slot 6 or Slot 7) is configurable in BIOS: 0 or 2. PCI-E expansion slot is disabled when number of SATA ports is set to 3.* M.2 Interface: 1 SATA/PCI-E 3.0 x2/ USB 3.0 M.2 Form Factor: 3042, 2280 M.2 Key: B-Key	1 PCI-E 3.0 x2 (in x4 slot) Option for Slot 6 or Slot 7 M.2 Interface: 1 SATA/PCI-E 3.0 x2/ USB 3.0 M.2 Form Factor: 3042, 2280 M.2 Key: B-Key
Onboard RAID Controller	SoC controller for 5 SATA3 (6 Gbps) ports;	SoC controller for 5 SATA3 (6 Gbps) ports;	Up to 3 SATA3(6 Gbps) ports via SoC ** Number of SATA ports is configurable in BIOS: 1 or 3. One SATA port is available when PCI-E x2 expansion slot is enabled.*	SoC controller for 3 SATA3 (6 Gbps) ports;
Onboard LAN	Quad LAN with Intel® C3000 SoC Quad LAN with Intel® Ethernet Controller I350-AM4 Dual LAN with Intel® I210-IS 1G SFP	Quad LAN with Intel® C3000 SoC Quad LAN with Intel® Ethernet Controller I350-AM4	Quad LAN with Intel® C3000 SoC Quad LAN with Intel® Ethernet Controller I350-AM4 Dual LAN with Intel® I210-IS 1G SFP	Quad LAN with Intel® C3000 SoC Quad LAN with Intel® Ethernet Controller I350-AM4
Onboard VGA/ Display Ports	1 VGA port, 1 Aspeed AST2400 BMC			
USB Ports	2 USB 2.0 ports (2 headers), 3 USB 3.0 ports (2 rear + 1 Type A)			
Other Onboard I/O Devices	TPM Header, 1 COM Port (1 header),			
Manageability	IPMI2.0, NMI, SuperDoctor® 5, Watchdog			
Health Monitoring	+12V, +3.3V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 3.3V standby, 5 -fan status, Chassis intrusion header, VBAT			
Thermal Control	5x 4-pin fan headers (up to 5 fans), 5 fans with tachometer status monitoring, Dual Cooling Zone, Fan speed control			
Other Features	4-pin 12v DC power connector, ACPI power management, ATX Power connector, Chassis intrusion header, Dual Cooling Zones, Intel® QuickAssist Technology , M.2 NGFF connector, RoHS, UID			

	Denverton 2-Core, Quad GbE LAN, IPMI, Intel® Quick Assist Technology	**Denverton** 4-Core, Quad GbE LAN, IPMI, Intel® Quick Assist Technology	**Denverton** 8-Core, Quad GbE LAN, IPMI, Intel® Quick Assist Technology	**Denverton** 12-Core, Quad GbE LAN, IPMI, Intel® Quick Assist Technology	**Denverton** 16-Core, Quad GbE LAN, IPMI, Intel® Quick Assist Technology,
					
MODEL	**A2SDi-2C-HLN4F**	**A2SDi-4C-HLN4F**	**A2SDi-8C-HLN4F A2SDi-8C+-HLN4F**	**A2SDi-12C-HLN4F**	**A2SDi-16C-HLN4F A2SDi-16C+-HLN4F**
Processor	Intel® Atom™ Processor C3338. Single Socket FCBGA1310 supported, CPU TDP support 9W	Intel® Atom™ Processor C3558. Single Socket FCBGA1310 supported, CPU TDP support 16W	Intel® Atom™ Processor C3758. Single Socket FCBGA1310 supported, CPU TDP support 25W	Intel® Atom™ Processor C3858. Single Socket FCBGA1310 supported, CPU TDP support 25W	Intel® Atom™ Processor C3958. Single Socket FCBGA1310 supported, CPU TDP support 31W
Chipset/System Bus	System on Chip				
Form Factor	Mini-ITX, 6.7" x 6.7" (17.02cm x 17.02cm)				
Memory Capacity & Slots	Up to 128GB Register DIMM RDIMM, DDR4-1866MHz Or 32GB Unbuffered ECC/ non-ECC UDIMM, DDR4-1866MHz, in 2 DIMM slots	Up to 256GB Registered ECC RDIMM, DDR4-2133MHz Or 64GB Unbuffered ECC/ non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots	Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots		
Expansion Slots	1 PCI-E 3.0 up to x4 (in x4 slot) **Number of PCI-E lane is configurable via BIOS setup: 0, 2, or 4. Total combined PCI-E lanes and SATA ports is up to 8.*	1 PCI-E 3.0 up to x4 (in x4 slot) **Number of PCI-E lane is configurable via BIOS setup: 0, 2, or 4. Total combined PCI-E lanes and SATA ports is up to 8.* ***M.2 Interface:*** PCI-E 3.0 x2 and SATA ***M.2 Form Factor:*** 2242, 2280 ***M.2 Key:*** M-Key	1 PCI-E 3.0 x4 ***M.2 Interface:*** PCI-E 3.0 x2 and SATA ***M.2 Form Factor:*** 2242, 2280 ***M.2 Key:*** M-Key		
Onboard RAID Controller	Up to 8 SATA3(6 Gbps) ports via SoC. *Number of SATA ports is configurable via BIOS setup: 4, 6, or 8. Total combined PCI-E lanes and SATA ports is up to 8.	Up to 8 SATA3(6 Gbps) ports via SoC. *Number of SATA ports is configurable via BIOS setup: 4, 6, or 8. Total combined PCI-E lanes and SATA ports is up to 8.	SoC controller for 12 SATA3 (6 Gbps) ports;		
Onboard LAN	Quad LAN with Intel® C3000 SoC, GbE				
Onboard VGA/ Display Ports	1 VGA port(s), 1 Aspeed AST2400 BMC,				
USB Ports	4 USB 2.0 ports (2 rear + 2 via header(s)), 1 USB 3.0 ports (via header(s) + 1 Type A)				
Other Onboard I/O Devices	1 Port SuperDOM, TPM Header, 1 COM Ports (1 header),				
Manageability	IPMI2.0, KVM with dedicated LAN, NMI, SuperDoctor® 5, Watchdog				
Health Monitoring	+12V, +3.3V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 3.3V standby, 4 -fan status, 4 fans with tachometer monitoring, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, System temperature, VBAT				
Thermal Control	4x 4-pin fan headers (up to 4 fans), 4 fans with tachometer monitoring, Dual Cooling Zone, Fan speed control, Pulse Width Modulated (PWM) fan connectors, Status monitoring for speed control, Support 3-pin fans (w/o speed control), System level control, Thermal control tachometer fan connectors				
Other Features	12V DC or ATX Power Source, 4-pin 12v DC power connector, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, Innovation Engine, RoHS, SDDC, System level control, UID, WOL				

	Denverton 8C/16C-Core, Dual/Quad 10GbE LAN, Intel® QAT, IPMI	Denverton 8-Core, Quad 10GbE LAN, Intel® QAT,IPMI	Denverton 8-Core, Quad 10GbE LAN, Intel® QAT,IPMI	Denverton 12-Core, Quad 10GbE LAN, Intel® QAT, IPMI	Denverton 16-Core Quad 10GbE LAN, Intel® QAT, IPMI
					

MODEL	A2SDi-TP8F A2SDi-LN4F	A2SDi-H-TP4F A2SDi-H-TF	A2SDV-8C-TLN5F	A2SDV-12C+-TLN5F	A2SDV-16C-TLN5F
Processor	Intel® Atom® Processor C3858/C3850 Single Socket FCBGA1310 supported, CPU TDP support 25W	Intel® Atom® Processor C3958/C3758, Single Socket FCBGA1310 supported, CPU TDP support 31W/25W	Intel Atom Processor C3708, Single Socket FCBGA1310 supported, CPU TDP support 17W	Intel® Atom™ Processor C3858. Single Socket FCBGA1310 supported, CPU TDP support 25W	Intel® Atom™ Processor C3958. Single Socket FCBGA1310 supported, CPU TDP support 31W
Chipset/System Bus	System on Chip				
Form Factor	Mini-ITX, 6.7" x 6.7" (17.02cm x 17.02cm)		Flex ATX 9.0" x 7.25" (22.86cm x 18.42cm)		
Memory Capacity & Slots	Up to 64GB Unbuffered ECC/ non-ECC SO-DIMM, DDR4-2400MHz, in 4 DIMM slots	Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/ non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots	Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots		
Expansion Slots	1 PCI-E 3.0 x4 1 miniPCI-E with mSATA supports (half card only) ***M.2 Interface:*** PCI-E 3.0 x4 and SATA ***M.2 Form Factor:*** 2242, 2280 ***M.2 Key:*** M-Key	1 PCI-E 3.0 x4 ***M.2 Interface:*** PCI-E 3.0 x2 and SATA ***M.2 Form Factor:*** 2242, 2280 ***M.2 Key:*** M-Key	1 PCI-E 3.0 x8 Option for Slot 6 or Slot 7 ***M.2 Interface:*** 1 PCI-E 3.0 x4 and 1 SATA/PCI-E 3.0 x2 and 1 SATA/USB 3.0 ***M.2 Form Factor:*** 2242/2280/3042 ***M.2 Key:*** M-Key, B-Key		
Onboard RAID Controller	SoC controller for 4 SATA3 (6 Gbps) ports;	SoC controller for 12 SATA3 (6 Gbps) ports; 4 SATA3 ports, 2 MiniSAS HD ports	SoC controller for 2 SATA3 (6 Gbps) ports;		
Onboard LAN	Quad LAN with Intel® C3000 SoC 2 10G BaseT, 2 10Gb SFP+ **LN4F:** Quad LAN with Intel® Ethernet Controller I350-AM4 GbE	Quad LAN with Intel® C3000 SoC 2 10G BaseT, 2 10Gb SFP+ **-TF:** 2 10Gb SFP+	Quad LAN with 10GBase-T with Intel® C3000 SoC Single LAN with Intel® i210 Gigabit Ethernet Controller		
Onboard VGA/ Display Ports	1 VGA port(s), 1 Aspeed AST2400 BMC				
USB Ports	4 USB 2.0 ports (4 headers), 2 USB 3.0 ports (2 rear)	4 USB 2.0 ports (2 rear + 2 headers), 1 USB 3.0 ports (+ 1 Type A)	2 USB 2.0 ports (+ 2 via header(s)), 5 USB 3.0 ports (4 rear via header(s) + 1 Type A)		
Other Onboard I/O Devices	1 Port SuperDOM, TPM Header, 1 COM Ports (1 header),		TPM Header, 1 COM Ports (1 header), 1 COM Port in RJ45 Socket,		
Manageability	IPMI2.0, KVM with dedicated LAN, NMI, SuperDoctor® 5, Watchdog		IPMI2.0, NMI, SuperDoctor® 5, Watchdog		
Health Monitoring	+1.8V, +12V, +5V, 1.05 (PCH), 1.2V (VDIMM), 4 -fan status, 4 fans with tachometer monitoring, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, System temperature, VBAT, VCGI		+12V, +3.3V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 3.3V standby, 6 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, System temperature, VBAT		
Thermal Control	4x 4-pin fan headers (up to 4 fans), 4 fans with tachometer monitoring, Dual Cooling Zone, Fan speed control, Overheat LED indication, Pulse Width Modulated (PWM) fan connectors, Status monitoring for speed control, Support 3-pin fans (w/o speed control), System level control, Thermal control tachometer fan connectors		6x 4-pin fan headers (up to 6 fans), 6 fans with tachometer status monitoring, Dual Cooling Zone, Fan speed control, Pulse Width Modulated (PWM) fan connectors, Status monitoring for speed control, Support 3-pin fans (w/o speed control), System level control, Thermal control tachometer fan connectors		
Other Features	12V DC or ATX Power Source, 4-pin 12v DC power connector, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Innovation Engine, RoHS, SDDC, System level control, UID, WOL		12V DC or ATX Power Source, 4-pin 12v DC power connector, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Dual Cooling Zones, Innovation Engine, Intel® QuickAssist Technology, M.2 NGFF connector, RoHS, SDDC, System level control, UID, WOL		

	Avoton™/Rangeley Low Power, mini ITX	Avoton™/Rangeley Low Power, mini ITX	Avoton™/Rangeley Low Power, uATX	Avoton™/Rangeley Low Power, uATX
				
MODEL	**A1SAi-2750F/2550F**	**A1SRi-2758F/2558F/2358F**	**A1SAM-2750F/2550F**	**A1SRM-2758F/2558F**
Processor	Intel® Avoton Atom® Processor C2750 (8C/20W) or C2550 (4C/14W)	Intel® Rangeley Atom® Processor C2758 (8C/20W), C2558 (4C/15W), or C2358 (2C/7W) Socket FCBGA1283 CPU	Intel® Avoton Atom® Processor C2750 (8C/20W) C2550 (4C/14W) Socket FCBGA1283 CPU	Intel® Avoton Atom® Processor C2758 (8C/20W) or C2558 (4C/15W) Socket FCBGA1283 CPU
Chipset/System Bus	System on Chip			
Form Factor	Mini-ITX 6.75" x 6.75"		MicroATX 9.6" x 7.5"	
Memory Capacity & Slots	Up to 64GB ECC SODIMM in 4 slots (Up to 16GB for A1SRi-2358F)		Up to 64GB ECC SODIMM in 4 slots (Up to 16GB for A1SRi-2358F in 2 slots)	
Expansion Slots	1 PCI-E 2.0 x8		1 PCI-E 2.0 x8 1 PCI-E 2.0 x4	
Onboard RAID Controller	SoC controller for 4 SATA2 (3 Gbps) ports; 2 SATA3 (6 Gbps); (A1SRi-2358F: 2 SATA2)		SoC controller for 4 SATA2 (3 Gbps) ports; 2 SATA3 (6 Gbps); (A1SRi-2358F: 2 SATA3 + 2 SATA2)	
Onboard LAN	Quad GbE LAN (Intel® i354)			
Onboard VGA/ Display Ports	1 VGA via Aspeed AST2400 BMC			
USB Ports	4 USB 3.0 ports (2 rear + 1 via header + 1 Type A). 2 USB 2.0 ports (2 rear)		7 USB 2.0 ports (4 rear + 2 via headers + 1 Type A)	
Other Onboard I/O Devices	1 SATA DOM power connector 2 fast UART 16550 serial (1 rear, 1 header) ; TPM 1.2 Header			
Manageability				
Health Monitoring	Monitors CPU voltages, +1.8V, +12V, +3.3V, +5V, +5V Standby, Chassis intrusion header, Supports system management utility, System level control			
Thermal Control	3 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors			
Other Features	4-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Turbo Boost Technology or Intel® QuickAssist Technology, System level control, UID, WOL , 0°C -60°C operating temperature			

Rangeley
3 pairs LAN bypass, Intel® QAT, uATX

Apollo Lake
E3940/E3930, Mini-ITX

Apollo Lake
Pentium N4200, Mini-ITX

Apollo Lake
Pentium N4200, 3.5" SBC

MODEL	A1SRM-LN7F-2758 A1SRM-LN7F-2358	A2SAV A2SAV-L A2SAV-2C-L	X11SAA	X11SAN X11SAN-WOHS
Processor	Intel® Atom® Processor C2758 (8C/20W) or C2358 (2C/7W) Socket FCBGA1283 CPU	**A2SAV(-L):** Intel® Atom™ Processor x5-E3940. Socket FCBGA1296 supported **A2SAV-2C-L:** Intel® Atom™ Processor x5-E3930, Single Socket FCBGA1296 supported, CPU TDP support 6.5W	Intel® Pentium™ Processor N4200. Socket FCBGA1296 supported	Intel® Pentium™ Processor N4200. Single Socket FCBGA1296 supported, CPU TDP support 6W
Chipset/System Bus	System on Chip			
Form Factor	MicroATX 8.0" x 9.6"	Mini-ITX, 6.7" x 6.7" (17.02cm x 17.02cm)		3.5" SBC, 5.7" x 4.0" (14.6cm x 10.16cm)
Memory Capacity & Slots	Up to 64GB ECC/Non ECC UDIMM in 4 slots (-2358 up to 16GB in 2 slots)	Up to 8GB 1866MHz DDR3L Non-ECC SO-DIMM in 1 socket	Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots	
Expansion Slots	1 PCI-E 2.0 x4 (in x8 slot)	1 PCI-E 2.0 x2 (in x8 slot), ***M.2 Interface:*** PCI-E 2.0 x2 ***M.2 Form Factor:*** 2242, 2280 **A2SAV:** 1x Mini-PCI-E with mSATA	1 PCI-E 2.0 x2 (in x8 slot), 1x Mini-PCI-E with mSATA ***M.2 Interface:*** PCI-E 2.0 x2 ***M.2 Form Factor:*** 2242, 2280	1 Full size Mini-PCI-E (USB 2.0 1,PCI-E Gen2 x 1), 1 M.2 2280 B-Key for SATA or PCI-E SSD (2242/3042 B-key M.2 module is supported by extender bracket) ***M.2 Interface:*** SATA and PCI-E 2.0 x1 and USB 2.0 ***M.2 Form Factor:*** 2280 ***M.2 Key:*** B-Key
Onboard RAID Controller	SoC controller for 4 SATA2 (3 Gbps) ports; 2 SATA3 (6 Gbps)	SoC controller for 2 SATA3 (6 Gbps) ports; **A2SAV:** Marvel 88SE9230 controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,5,10	SoC controller for 2 SATA3 (6 Gbps) ports; Marvel 88SE9230 controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,10	SoC controller for 1 SATA3 (6 Gbps) port
Onboard LAN	Quad GbE LAN (Intel® i354) Dual GbE LAN (Intel® i350-AM2), Single GbE LAN (Intel® i210-AT)	Dual LAN with Intel® Ethernet Controller I210-AT	Dual LAN with Intel® Ethernet Controller I210-AT	Dual LAN with Intel® Ethernet Controller I210-AT
Onboard VGA/ Display Ports	1 VGA via Aspeed AST2400 BMC	1 DP (DisplayPort) port(s), 1 HDMI port(s), 1 VGA port(s), 1 eDP (Embedded DisplayPort) port(s), 1 Intel® HD Graphics		1 VGA port(s), 1 LVDS port(s), 1 HDMI port(s), 1 Intel® HD Graphics,
USB Ports	7 USB 2.0 ports (4 rear + 2 via headers + 1 Type A)	4 USB 2.0 ports (2 rear + 2 via header(s)) **A2SAV:** + 1 Type A, 2 USB 3.0 ports (2 rear via header(s))	8 USB 2.0 ports (2 rear + 5 via header(s) + 1 Type A), 2 USB 3.0 ports (2 rear via header(s))	4 USB 2.0 ports (+ 4 via header(s)), 2 USB 3.0 ports (2 rear via header(s)), 1 USB 3.1 ports (+ 1 Type C)
Other Onboard I/O Devices	1 SATA DOM power connector 2 fast UART 16550 serial; TPM 1.2 Header, 1SuperDOM, 1 mSATA slot	1 Port SuperDOM, 3 COM Ports (1 rear, 2 headers), 1x COM in RJ45, 1X COM in RS232, and 1X COM in RS485. **A2SAV:** ALC 888S HD Audio,	1 Port SuperDOM, ALC 888S HD Audio, TPM Header, 3 COM Ports (1 rear, 2 headers), 1x COM in RJ45, 1X COM in RS232, and 1X COM in RS485.	ALC 888S HD Audio, TPM 2.0 Chip, 4 COM Ports (4 headers), (2 RS232, 2 RS232/422/485, RS-485 supports Auto flow control), 1 HD Audio header (Mic-in/Line-Out) ,1 8-bit GPIO header, 1 SMBus header ,1 panel backlight power header ,1 speaker ,1 system Fan
Manageability	IPMI2.0, SuperDoctor 5, Watchdog	SuperDoctor® 5, Watchdog	SuperDoctor® 5, Watchdog	SuperDoctor® 5, Watchdog
Health Monitoring	Monitors CPU voltages, +1.8V, +12V, +3.3V, +5V, +5V standby and total of three 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header	**A2SAV:** +1.8V, +12V, +3.3V, +5V, +5V standby, Monitors CPU voltages, System level control **A2SAV-L/A2SAV-2C-L/-L:** +12V, +5V, +5V standby	+1.8V, +12V, +3.3V, +5V, +5V standby, Monitors CPU voltages, System level control	+1.35V, +12V, +3.3V, +5V, 3.3V standby, System level control, System temperature, VBAT, VCGI
Thermal Control	3 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	2x 4-pin fan headers (up to 2 fans), Fan speed control, Low noise fan speed control, PWM fan speed control, System level control, Thermal control tachometer fan connectors		1x 4-pin fan header (up to 1 fan)
Other Features	4-pin 12v DC power connector, ACPI power management, ATX Poawer connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® QuickAssist Technology , System level control, UID, WOL ,0°C -60°C operating temperature	4-pin 12v DC power connector, ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, System level control, WOL	4-pin 12v DC power connector, ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, System level control, WOL	**X11SAN:** 0°C -60°C operating temperature, with heatsink **X11SAN-WOHS:** 0°C -60°C operating temperature, without heatsink 4-pin 12v DC power connector, ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, System level control, WOL, Force power on by jumper

	Apollo Lake x5-E3940/x5-E3930 2.5" Pico ITX	**Apollo Lake** x5-E3940/x5-E3930 3.5" SBC	**Braswell** SoC, Quad LAN, IPMI mini-ITX	**Braswell** Embedded Low Power
				

MODEL	A2SAP-H A2SAP-E A2SAP-L	A2SAN-H(-WOHS) A2SAN-E(-WOHS) A2SAN-L(-WOHS)	X11SBA-LN4F X11SBA-F	X9SCAA X9SCAA-L
Processor	**-H/-E:** Intel® Atom™ Processor x5-E3940, Single Socket FCBGA1296 supported, CPU TDP support 9.5W **-L:** Intel® Atom™ Processor x5-E3930, Single Socket FCBGA1296 supported, CPU TDP support 6.5W	**-H/-E:** Intel® Atom™ Processor x5-E3940, Single Socket FCBGA1296 supported, CPU TDP support 9.5W **-L:** Intel® Atom™ Processor x5-E3930, Single Socket FCBGA1296 supported, CPU TDP support 6.5W	Intel® Pentium® Processor N3700 Socket FCBGA1170 supported; CPU TDP support 6W 1.6-2.4GHz 2MB	Intel® Atom® Processor N2800. Socket FCBGA559 supported, CPU TDP support 6.5W
Chipset/System Bus	System on Chip			Intel® NM10 Express
Form Factor	Pico-ITX 2.5" SBC , 4" x 2.83" (10.16cm x 7.19cm)	3.5" SBC, 5.7" x 4.0" (14.6cm x 10.16cm)	Mini-ITX 6.7" x 6.7"	Mini-ITX
Memory Capacity & Slots	Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots		8GB Unbuffered non-ECC SO-DIMM, DDR3-1600MHz, in 2 DIMM slots	4GB Unbuffered non-ECC SO-DIMM, DDR3-1066MHz, in 2 DIMM slots
Expansion Slots	1 Half size Mini-PCI-E (USB 2.0 x 1, PCI-E Gen2 x 1) 1 SMCI EI/O (1 DP/HDMI, 2 PCI-E x1, 2 USB 2.0, LPC, SATA3, SMBus, Power) ***M.2 Interface:*** SATA and PCI-E 2.0 x1 and USB 2.0 ***M.2 Form Factor:*** 2242, 3042 ***M.2 Key:*** B-Key	1 x Full size Mini-PCI-E (USB 2.0 x 1,PCI-E Gen2 x 1), 1 x M.2 2280 B-Key for SATA or PCI-E SSD (2242/3042 B-key M.2 module is supported by extender bracket) ***M.2 Interface:*** SATA and PCI-E 2.0 x1 and USB 2.0 ***M.2 Form Factor:*** 2280 ***M.2 Key:*** B-Key	1 PCI-E 2.0 x1 (in x8 slot) 1 Mini-PCI-E with mSATA support	1 - 5V PCI 32bit **X9SCAA:** Mini-PCI-E with mSATA
Onboard RAID Controller	SoC controller for 1 SATA3 (6 Gbps) port **-H:** without SATA port **-E/L**: 1 SATA3 port	SoC controller for 1 SATA3 (6 Gbps) port	SoC controller for 2 SATA3 (6 Gbps) ports	Intel® NM10 Express controller for 2 SATA2 (3 Gbps) ports;
Onboard LAN	Dual LAN with Intel® Ethernet Controller I210IT	Dual LAN with Intel® Ethernet Controller I210IT	**-LN4F:** Quad GbE LAN with Intel® i210AT **-F:** Dual GbE LAN with Intel® i210AT	Dual LAN with Intel® 82574L Ethernet Controller
Onboard VGA/ Display Ports	1 Intel® HD Graphics, 1 Dual channel 48-bit LVDS(max. resolution up to 1920x1200@60Hz), HDMI(max. resolution up to 3840x2160@30Hz)	1 VGA port(s), 1 LVDS port(s), 1 HDMI port(s), 1 Intel® HD Graphics,	1 DP (DisplayPort) 1 HDMI Intel® HD Graphics 1 Aspeed AST2400 BMC VGA Port	1 port, 1 port, 1 port, 1 Intel® GMA 3650
USB Ports	2 USB 3.0 ports (rear I/O) **-E/-L:** 2 USB 2.0 ports (+ 2 via header(s))	4 USB 2.0 ports (+ 4 via header(s)), 2 USB 3.0 ports (rear I/O) **-H:** 1 USB 3.1 ports (+ 1 Type C)	2 USB 3.0 ports (2 rear) 7 USB 2.0 ports (2 rear + 4 via headers + 1 Type A)	6 USB 2.0 ports (2 rear + 4 headers), **X9SCAA:** 2 USB 3.0 ports (2 rear)
Other Onboard I/O Devices	**-H:** 1 x lockable DC Jack 1 x Stackable pin header A (34P): Power/ Reset button, HDD/ Power LED, 8-bit GPIO,2 USB 2.0 1 x Stackable pin header B (32P):2 RS232/422/485, HD AUDIO Mic-in /Line-out 1 x SMbus/SATA Power box header **-E/-L:** 1 x 2x4pin 12V power input (1 box header) 1 x HD Audio Mic-in/Line-Out (1 header) 1 x 8-bit GPIO header (1 header) 2 x RS232/422/485 (1 header) 2 x USB 2.0 (1 header) 1 x GPIO 8-bit (1 header) 1 x SMBus/SATA Power box header 1 x Front panel header (Power/Reset button,HDD/ Power LED)	1x ALC 888S HD Audio(Mic-in/Line-Out) 4x COM Ports (2 headers), (2 x RS232, 2 RS232/422/485, RS-485 supports Auto flow control) 1x 8-bit GPIO header 1x SMBus header 1x System Fan 1x panel backlight power header 1x Speaker 1x TPM2.0 chip on board ***(only on –H/-E)***	1 Port SuperDOM ALC 888S HD Audio TPM Header 2 COM Ports (2 headers)	1 SATA DOM power connectorYes, ALC 888S HD Audio, **X9SCAA:** 4 fast UART 16550 serialTPM Header4 COM Ports (4 headers), One COM port support RS422/485 **X9SCAA-L:** 2 fast UART 16550 serialTPM Header2 COM Ports (2 headers),
Manageability	SuperDoctor® 5, Watchdog	SuperDoctor® 5, Watchdog	IPMI2.0, KVM with dedicated LAN, NMI, SUM, SuperDoctor® 5, Watchdog	SuperDoctor® III, Watchdog
Health Monitoring	+1.35V, +12V, +3.3V, +5V, 3.3V standby, System level control, System temperature, VBAT, VCGI	+1.35V, +12V, +3.3V, +5V, 3.3V standby, System level control, System temperature, VBAT, VCGI	+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Supports system management utility, System level control	Supports system management utility, System level control
Thermal Control	N/A	1x 4-pin fan header (up to 1 fan)	2x 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	1x 4-pin fan header (up to 1 fan), Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors
Other Features	**-H/-E:** -30°C -75°C operating temperature **-L:** 0°C -60°C operating temperature ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, System level control, WOL, Force power on jumper	**-H/E/L:** With Heatsink **-WOHS:** Without Heatsink **-E/-L:** -30°C -75°C operating temperature **-H:** 0°C -60°C operating temperature ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, System level control, WOL, Force power on jumper	4-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, System level control, UID, WOL, 0°C -60°C operating temperature	4-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, System level control, WOL

	Celeron® Low Power Bay Trail 4-Core, SoC, Mini-ITX	**i7/i5/i3/Pentium®/Celeron®** vPro AMT, 2666MHz DDR4, 6-Core	**i7/i5/i3/Pentium®/Celeron®** High Performance, 6-Core	**i7/i5/i3/Pentium®/Celeron®** High Performance, vPro AMT, 2666MHz DDR4
				

MODEL	X10SBA X10SBA-L	X11SCV-Q	X11SCV-L	X11SCQ
Processor	Intel® Celeron® Processor J1900 10W FCBGA1170 , 2.0-2.42GHz	8th Generation Intel® Core™ i7/i5/i3/Pentium®/Celeron® Processor. Single Socket H4 (LGA 1151) supported, CPU TDP support Up to 65W TDP		8th Generation Intel® Core™ i7/i5/i3/ Pentium®/Celeron® Processor. Single Socket H4 (LGA 1151) supported, CPU TDP support Up to 95W TDP
Chipset/System Bus	System on Chip	Intel® Q370	Intel® H310	Intel® Q370
Form Factor	Mini-ITX 6.7" x 6.7"	Mini-ITX6.7" x 6.7" (17.02cm x 17.02cm)	Mini-ITX6.7" x 6.7" (17.02cm x 17.02cm)	uATX9.6" x 9.6" (24.38cm x 24.38cm)
Memory Capacity & Slots	2 DIMM slots, 8GB with two 4GB SODIMM configuration, 1.35V only	Up to 32GB Unbuffered non-ECC SO-DIMM, DDR4-2666MHz, in 2 DIMM slots		Up to 64GB Unbuffered non-ECC UDIMM, DDR4-2666MHz, in 4 DIMM slots
Expansion Slots	1 PCI-E 2.0 x2 1 Mini-PCI-E slot, 1 mSATA slot	1 PCI-E 3.0 x16 ***M.2 Interface:*** 1 PCI-E 3.0 x2 and 1 CNVi/PCI-E 3.0 x1 ***M.2 Form Factor:*** 2242/2280 ***M.2 Key:*** M-Key, E-Key ***M.2 E key:*** CNVi/PCI-E 2.0 x1, support 2230 length		1 PCI-E 3.0 x16, 1 PCI-E 3.0 x1, 2 PCI-E 3.0 x4 ***M.2 Interface:*** 1 PCI-E 3.0 x4 ***M.2 Form Factor:*** 2242/2280/22110 ***M.2 Key:*** M-Key
Onboard RAID Controller	SoC controller for 2 SATA2 (3 Gbps) ports; Marvel 88SE9230 for 4X SATA3 (6 Gbps) with RAID 0,1,10 [non -L]	Intel® Q370 controller for 5 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® H310 controller for 4 SATA3 (6 Gbps) ports;	Intel® Q370 controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10
Onboard LAN	Dual LAN with Intel® Ethernet Controller I210-AT	Single LAN with Intel® Ethernet Controller I210-AT Single LAN with Intel® PHY I219LM		Single LAN with Intel® Ethernet Controller I210-AT Single LAN with Intel® PHY I219LM
Onboard VGA/ Display Ports	Intel® HD Graphic VGA + HDMI + DisplayPort + eDP	1 DVI - D port, 1 HDMI port, 1 DP (DisplayPort) port, 1 eDP (Embedded DisplayPort) port, 1 Intel® HD Graphics, 3 Independent Displays	1 DVI - D port, 1 HDMI port, 1 DP (DisplayPort) port, 1 eDP (Embedded DisplayPort) port, 2 Independent Displays	1 DVI - D port, 1 HDMI port, 1 DP (DisplayPort) port, 1 eDP (Embedded DisplayPort) port, 1 Intel® HD Graphics, 3 Independent Displays
USB Ports	1 USB 3.0 ports (1 rear) 6 USB 2.0 ports (1 rear, 4 via headers, 1 typa A)	4 USB 2.0 ports (4 headers), 6 USB 3.1 ports (4 rears (2 Type A + 2 Type C) + 2 headers)	4 USB 2.0 ports (4 headers), 4 USB 3.0 ports (4 rear)	6 USB 2.0 ports (2 rear + 4 headers), 6 USB 3.1 ports (4 rears (2 Type A + 2 Type C) + 2 headers)
Other Onboard I/O Devices	4 COM ports support RS-232 (4 headers), TPM header, Audio Header	ALC 888S HD Audio, TPM 2.0 Header & Chip both 6 COM Ports (2 rear, 4 headers); 4 COM port support RS-232 thru pin header; 2COM support RS-232/422/485 in rear		7.1 HD Audio, TPM Header & Chip both 6 COM Ports (6 headers), support RS-232
Manageability	Watchdog, SuperDoctor® 5	AMT, NMI, vPro, Watchdog	NMI, SuperDoctor® 5, Watchdog	AMT, NMI, SuperDoctor® 5, vPro, Watchdog
Health Monitoring	Monitors CPU voltages, +3.3V, +5V, +12V & +5V standby and total of two 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header	+1.8V, +3.3V, +5V, +5V standby, 3 -fan status, Chassis intrusion header, HT, VBAT		+12V, +3.3V, +5V, 1.2V (VDIMM), 4 fans with tachometer monitoring, Chassis intrusion header, Memory Voltages, Monitors CPU voltages, System temperature, VBAT
Thermal Control	Overheat LED indication, thermal control tachometer fan connectors	3x 4-pin fan headers (up to 3 fans), 3 fans with tachometer monitoring, Fan speed control, Low noise fan speed control, Overheat LED indication, PWM fan speed control, Thermal control tachometer fan connectors	3x 4-pin fan headers (up to 3 fans), 3 fans with tachometer monitoring, System level control, Thermal control tachometer fan connectors	4x 4-pin fan headers (up to 4 fans), 4 fans with tachometer monitoring
Other Features	ACPI power management, WOL, control of power-on for recovery from AC power loss, Adaptive Thermal Monitor & CPU thermal trip support for processor protection, 0°C – 60°C operating temperature	12V DC or ATX Power Source, 8-pin 12v DC power connector, ACPI power management, ATX Power connector, Chassis intrusion detection, RoHS, Halogen Free, WOL		ACPI power management, ATX Power connector, Chassis intrusion header, M.2 NGFF connector, RoHS

	i7/i5/i3/Pentium®/Celeron® High Performance, 2666MHz DDR4	i7/i5/i3/Pentium®/Celeron® vPro AMT, Workstation, 2666MHz DDR4	i7/i5/i3 High Performance, 15W, 3.5" SBC	i7/i5/i3/Pentium®/Celeron®
				
MODEL	**X11SCQ-L**	**X11SCZ-Q**	**X11SSN-H(-VDC/-WOHS) X11SSN-E(-VDC/-WOHS) X11SSN-L(-VDC/-WOHS)**	**X11SSV-LVDS**
Processor	8th Generation Intel® Core™ i7/i5/i3/ Pentium®/Celeron® Processor. Single Socket H4 (LGA 1151) supported, CPU TDP support Up to 95W TDP	8th Generation Intel® Core™ i7/i5/i3/ Pentium®/Celeron® Processor. Single Socket H4 (LGA 1151) supported, CPU TDP support Up to 95W TDP	Single Socket FCBGA1356 supported, CPU TDP support 15W **-H:** 7th Generation Intel® Core™ i7-7600U Processor **-E:** 7th Generation Intel® Core™ i5-7300U Processor. **-L:** 7th Generation Intel® Core™ i3-7100U Processor.	Intel® 7th/6th Generation Core™ i3 series Intel® 7th/6th Generation Core™ i5 series Intel® 7th/6th Generation Core™ i7 series Intel® Celeron® Intel® Pentium® Socket H4 (LGA 1151) supported; CPU TDP support Up to 91W
Chipset/System Bus	Intel® H310	Intel® Q370	System on Chip	Intel® Q170 Express
Form Factor	uATX9.6" x 9.6" (24.38cm x 24.38cm)	uATX9.6" x 9.6" (24.38cm x 24.38cm)	3.5" SBC, 5.7" x 4.0" (14.6cm x 10.16cm)	Mini-ITX 6.7" x 6.7"
Memory Capacity & Slots	Up to 32GB Unbuffered non-ECC UDIMM, DDR4-2666MHz, in 2 DIMM slots	Up to 64GB Unbuffered non-ECC UDIMM, DDR4-2666MHz, in 4 DIMM slots	Up to 32GB Unbuffered non-ECC SO-DIMM, DDR4-2133MHz, in 2 DIMM slots	Up to 32GB Unbuffered non-ECC SO-DIMM, DDR4-2400MHz, in 2 DIMM slots
Expansion Slots	1 PCI-E 3.0 x16 1 PCI-E 2.0 x4 1 PCI-E 2.0 x1	1 PCI-E 3.0 x16, 2 PCI-E 3.0 x4 (in x8 slot) ***M.2 Interface:*** 1 SATA/PCI-E 3.0 x4 ***M.2 Form Factor:*** 2280/22110 ***M.2 Key:*** M-Key	1 Full size Mini-PCI-E with mSATA (USB 2.0 x 1,PCI-E Gen2 x 1,SATA Gen3 x 1) 1 M.2 2242/3042/2280 B-Key (USB 2.0 x 1,PCI-E Gen2 x 1,SATA Gen3 x 1) ***M.2 Interface:*** SATA and PCI-E 3.0 x1 and USB 2.0 ***M.2 Form Factor:*** 2242, 2280, 3042 ***M.2 Key:*** B-Key	1 PCI-E 3.0 x16 Mini-PCI-E with mSATA support, M.2 PCI-E 3.0 x4 with SATA support, M Key ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 2242, 2280
Onboard RAID Controller	Intel® H310 controller for 4 SATA3 (6 Gbps) ports;	Intel® Q370 controller for 5 SATA3 (6 Gbps) ports; RAID 0,1,5,10		Intel® Q170 Express controller for 5 SATA3 (6 Gbps) ports; RAID 0,1,5,10; Intel® RST
Onboard LAN	Single LAN with Intel® Ethernet Controller I210-AT Single LAN with Intel® PHY I219LM	Single LAN with Intel® Ethernet Controller I210-AT Single LAN with Intel® PHY I219LM	Single LAN with Intel® PHY I219LM Single LAN with Intel® Ethernet Controller I210IT	Single LAN with Intel® PHY I219LM Single LAN with Intel® Ethernet Controller I210-AT
Onboard VGA/ Display Ports	1 DVI - D port, 1 HDMI port, 1 DP (DisplayPort) port, 1 eDP (Embedded DisplayPort) port, 1 Intel® HD Graphics, 2 Independent Displays	1 DVI - I port, 2 DP (DisplayPort) ports, 1 Intel® HD Graphics, 3 Independent Displays	1 DP (DisplayPort) port(s), 1 48-bit LVDS port(s), 1 HDMI port(s), 1 Intel® HD Graphics, Dual channel 48-bit LVDS , HDMI 2.0a, DP++	1 HDMI, 1 DP (DisplayPort), 1 LVDS 1 Intel® HD Graphics 3 Independent Displays
USB Ports	6 USB 2.0 ports (2 rear + 4 headers), 4 USB 3.1 ports (4 rears (2 Type A + 2 Type C))	7 USB 2.0 ports (6 headers + 1 Type A), 2 USB 3.0 ports (2 headers), 6 USB 3.1 ports (4 rears (3 Type A + 1 Type C) + 2 headers)	4 USB 2.0 ports (+ 4 via header(s)), 2 USB 3.0 ports (rear I/O), 1 USB 3.1 ports (+ 1 Type C) 1 USB 3.0 OTG Header	5 USB 2.0 ports (+ 4 via headers + 1 Type A) 6 USB 3.0 ports (4 rear + 2 via header)
Other Onboard I/O Devices	7.1 HD Audio, TPM Header, 6 COM Ports (6 headers), support RS-232	1 Port SuperDOM, ALC 888S HD Audio, TPM Header & Chip both 4 COM Ports (4 headers)	ALC 888S HD Audio, 4 COM Ports (4 headers), (2 x RS232, 2 RS232/422/485, RS-485 supports Auto flow control), 1 HD Audio header (Mic-in/Line-Out) 1 8-bit GPIO header 1 SMBus header 1 Speaker **-H/E:** TPM 2.0 Chip	2 ports SuperDOM ALC 888S HD Audio TPM 2.0 Header 1 COM Ports (1 header) SGPIO Header, SMbus header, GPIO
Manageability	NMI, SuperDoctor® 5, Watchdog	AMT, NMI, SuperDoctor® 5, vPro, Watchdog	SuperDoctor® 5, Watchdog **-H/E:** AMT, vPro	AMT, NMI, SuperDoctor® 5, vPro, Watchdog
Health Monitoring	+12V, +3.3V, +5V, 1.2V (VDIMM), 4 fans with tachometer monitoring, Chassis intrusion header, Memory Voltages, Monitors CPU voltages, System temperature, VBAT	+1.35V, +1.5V, +1.8V, +12V, +3.3V, +5V, +5V standby, 1.05 (PCH), 5 -fan status	+12V, +3.3V, +5V, 1.2V (VDIMM), 3.3V standby, Monitors for CPU Cores, System level control, System temperature, VBAT	+1.8V, +12V, +3.3V, +5V, +5V standby, 4 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control
Thermal Control	4x 4-pin fan headers (up to 4 fans), 4 fans with tachometer monitoring, Fan speed control	5x 4-pin fan headers, 5 fans with tachometer status monitoring, Dual Cooling Zone	1x 4-pin fan header (up to 1 fan), Fan speed control, Low noise fan speed control, PWM fan speed control, System level control, Thermal control tachometer fan connectors	4x 4-pin fan headers (up to 4 fans), Fan speed control, Pulse Width Modulated (PWM) fan connectors, PWM fan speed control, System level control, Thermal control tachometer fan connectors
Other Features	ACPI power management, ATX Power connector, Chassis intrusion header, RoHS, WOL	8-pin 12v DC power connector, ACPI power management, ATX Power connector, Chassis intrusion header, Dual Cooling Zones, M.2 NGFF connector, RoHS	**-H/E/L:** 4-pin 12V R/A Type DC Power Connector, **-VDC:** 4-pin 12V DC Power Input Vertical Type Connector, **-WOHS:**without heatsink **-H/E:** 0°C -70°C operating temperature **-L:**0°C -60°C operating temperature ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, WOL, Force Power On by Jumper	8-pin 12v DC power connector, ACPI power management, ATX Power connector, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, M.2 NGFF connector, RoHS, System level control, WOL

	i7/i5/i3/Pentium®/Celeron® vPro AMT IPMI Embedded 1U Optimized Core i7 uATX	i7/i5/i3/Pentium®/Celeron® vPro AMT IPMI, Dual 10GbE Embedded 1U Optimized uATX	i7/i5/i3/Pentium®/Celeron® vPro AMT, mini-ITX	i7/i5/i3/Pentium®/Celeron® vPro AMT, Embedded
				

MODEL	X11SSZ-QF	X11SSZ-F X11SSZ-TLN4F	X11SSV-Q	X11SSQ X11SSQ-L
Processor	Intel® 7th/6th Generation Core™ i7/i5/i3 series, Intel® Celeron®, Intel® Pentium®, Socket H4 (LGA 1151) supported; CPU TDP support 95W	Intel® Xeon® processor E3-1200 v6/v5 product family. Intel® 7th/6th Generation Core™ i7/i5/i3 series, Intel® Celeron®, Intel® Pentium®, Socket H4 (LGA 1151) supported; CPU TDP support 95W	Intel® 7th/6th Generation Core™ i7/i5/i3 series, Intel® Celeron®, Intel® Pentium®, Socket H4 (LGA 1151) supported; CPU TDP support 95W	Intel® 7th/6th Gen Core i7/i5/i3 series, Intel® Celeron®, Intel® Pentium® processors; CPU TDP support up to 95W TDP Single Socket H4 (LGA 1151)
Chipset/System Bus	Intel® Q170	Intel® C236	Intel® Q170	**X11SSQ:** Intel® Q170 (X11SSQ), **X11SSQ-L:** Intel® H110
Form Factor	uATX 9.6" x 9.6"		Mini-ITX 6.7" x 6.7"	microATX 9.6" x 9.6"
Memory Capacity & Slots	64GB Unbuffered Non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots		32GB Unbuffered non-ECC SO-DIMM, DDR4-2400MHz, in 2 DIMM slots	4x 288-pin DDR4 DIMM slots Up to 64GB DDR4 Non-ECC UDIMM X11SSQ-L: up to 32GB in 2 DIMM slots
Expansion Slots	1 PCI-E 3.0 x16 (in x16 slot) 2 PCI-E 3.0 x4 (in x8 slot)	1 PCI-E 3.0 x16 (in x16 slot) 2 PCI-E 3.0 x4 (in x8 slot)	1 PCI-E 3.0 x16 Mini-PCI-E with mSATA support, M.2 PCI-E 3.0 x4 with SATA support, 2242/2280	**X11SSQ:** 1 PCI-E 3.0 x16, 2 PCI-E 3.0 x4, 1 PCI-E 3.0 x1, M.2 PCI-E x2 2242/60/80 **X11SSQ-L:** 1 PCI-E 3.0 x16, 1 PCI-E 2.0 x1, 1 PCI-E 2.0 x1
Onboard RAID Controller	Intel® Q170 controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C236 controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® Q170 controller for 5 SATA3 (6 Gbps) ports; RAID 0,1,5,10	**X11SSQ:** Q170 controller for 6 SATA3 ports: RAID 0,1,5,10 **X11SSQ-L:** H110 controller for 4 SATA3 ports
Onboard LAN	Dual GbE LAN with Intel® i219LM and i210AT	Dual GbE LAN with Intel® i219LM and i210AT Dual 10GbE with Intel® X550 (**-TLN4F** Only)	Dual GbE LAN with Intel® i219LM and i210AT	**X11SSQ:** Dual GbE LAN with Intel® i219LM and i210AT **X11SSQ-L:** Single GbE LAN with Intel® i219LM
Onboard VGA/Display Ports	2 DP (DisplayPort) 1 DVI-I Intel® HD Graphics 3 Independent Displays 1 Aspeed AST2400 BMC VGA port		1 HDMI 1 DP (DisplayPort) 1 DVI - I Intel® HD Graphics 3 Independent Displays	1 HDMI, 1 DVI-D 1 DP (Display Port) 1 eDP (X11SSQ only) 3 Independent Displays **-L:** 2 Independent Displays
USB Ports	4 USB 3.0 ports (2 rear + 2 viaheader) 9 USB 2.0 ports (2 rear + 6 viaheaders + 1 Type A)	4 USB 3.0 ports (2 rear + 2 viaheader) 9 USB 2.0 ports (4 rear + 4 viaheaders + 1 Type A)	6 USB 3.0 ports (4 rear + 2 via header) 5 USB 2.0 ports (+ 4 via headers +1 Type A)	4x USB 3.0 ports (2 rear + 2 via header) 6x USB 2.0 ports (2 rear + 4 via headers) X11SSQ: 2x additional rear USB 2.0 ports
Other Onboard I/O Devices	1 Port SuperDOM 1 SATA DOM power connector ALC 888S HD Audio TPM Header 2 COM Ports (2 headers)		2 SuperDOM Ports ALC 888S HD Audio TPM Header 2 COM Ports (2 rears)	1x SuperDOM (Disk on Module) ports with built-in power SGPIO Header (X11SSQ only) SMbus header
Manageability	IPMI 2.0 + KVM with dedicated LAN, AMT/vPRO, NMI, SuperDoctor 5, Watchdog		AMT/vPRO, NMI, SuperDoctor 5, Watchdog	SuperDoctor 5, NMI, Watchdog AMT vPRO (X11SSQ only)
Health Monitoring	+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control			Monitors for CPU Cores, +1.8V, +3.3V, +5V, +12V, +5V Standby, VBAT, HT, Memory, Chipset Voltages.
Thermal Control	6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	4 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	Monitoring for CPU and chassis environment CPU thermal trip support I2C temperature sensing logic Thermal Monitor 2 (TM2) support PECI
Other Features	8-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, System level control, UID, WOL. RSTe		8-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processorprotection, Intel® Smart Response Technology, M.2 NGFF connector, System level control, WOL. RST	Chassis intrusion detection Chassis intrusion header RoHS, RST

	Skylake-D 8/12/16-Core, Dual 10GbE, Dual 10G SFP+, Quad GbE LANs	**Skylake-D** 4/8/12/16-Core, NVMe, Dual 10GbE	**Broadwell-DE** SoC, 4/6/8/16-Core, 128GB Memory, Dual 10GbE, Dual GbE	**Broadwell-DE** SoC, 8-Core, 128GB Memory Dual GbE
				

MODEL	X11SDV-8C-TP8F X11SDV-12C-TP8F X11SDV-16C-TP8F	X11SDV-4C-TLN2F X11SDV-8C(+)-TLN2F X11SDV-12C-TLN2F X11SDV-16C(+)-TLN2F	X10SDV-TLN4F X10SDV-16C+-TLN4F X10SDV-6C+-TLN4F X10SDV-4C+-TLN4F	X10SDV-F X10SDV-8C+-LN2F
Processor	**-8C:** Intel® Xeon® Processor D-2146NT, CPU TDP support 80W **-12C:** Intel® Xeon® Processor D-2166NT, CPU TDP support 85W **-16C:** Intel Xeon Processor D-2183IT, CPU TDP support 100W	**-4C:** Intel® Xeon® Processor D-2123IT **-8C(+):** Intel® Xeon® Processor D-2141I **-12C:** Intel® Xeon® Processor D-2166NT **-16C(+):** Intel® Xeon® Processor D-2183IT	Intel® Xeon® Processor D series; Socket FCBGA 1667 supported; D-1541, 12MB, 8 Core, 45W; **16C+:** D-1587, 24MB, 16 Core, 65W; **6C+:** D-1528, 9MB, 6 Core, 35W; **4C+:** D-1518, 6MB, 4 Core, 35W; with Active Heatsink	Intel® Xeon® Processor D-1541, 8 Core; Socket FCBGA1667 supported; CPU TDP support 45W; **-8C+:** with Active Heatsink **-F:** with Passive Heatsink
Chipset/System Bus	System on Chip			
Form Factor	Flex ATX9" x 7.25" (22.86cm x 18.42cm)	Mini-ITX6.75" x 6.75" (17.15cm x 17.15cm)		
Memory Capacity & Slots	Up to 256GB Registered ECC RDIMM, DDR4-2400MHz; Up to 512GB LRDIMM, in 4 DIMM slots	Up to 256GB Registered ECC RDIMM, DDR4-2400MHz; Up to 512GB ECC LRDIMM, DDR4-2400MHz, in 4 DIMM slots	Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots	
Expansion Slots	1 PCI-E 3.0 x8, 1 PCI-E 3.0 x16 ***M.2 Interface:*** 1 PCI-E 3.0 x4 and 1 SATA/PCI-E 3.0 x2 and 1 SATA/PCI-E 3.0 x2 ***M.2 Form Factor:*** 2242/2280 ***M.2 Key:*** M-Key, B-Key ***U.2 Interface:*** 2 PCI-E 3.0 x4, 2 PCI-E 3.0 NVMe x4 Internal Port(s)	1 PCI-E 3.0 x8 1 PCI-E 3.0 x4 NVMe Internal Port via OCuLink	1 PCI-E 3.0 x16 M.2 PCI-E 3.0 x4, M Key 2242/2280	
Onboard RAID Controller	SoC controller for 12 SATA3 (6 Gbps) ports; RAID 0,1,5,10	SoC controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10 4 SATA ports via OCuLink (or PCI-E3.0 x4 for NVMe)	SoC controller for 6 SATA3 (6 Gbps) ports; RSTe, Intel® Raid 0,1,5,10	
Onboard LAN	Quad LAN with Intel® Ethernet Controller I350-AM4 Dual LAN with 10G SFP+ LAN via SoC Dual LAN with 10 Base-T	Dual LAN with 10GBase-T with Intel® X557 via SoC	Dual 10GBase-T with SoC Dual GbE LAN with Intel® i350-AM2;	Dual GbE LAN with Intel® i350-AM2
Onboard VGA/ Display Ports	1 VGA D-Sub Connector port, 1 Aspeed AST2500 BMC	1 VGA port, 1 Aspeed AST2500 BMC	1 VGA via Aspeed AST2400 BMC	
USB Ports	2 USB 2.0 ports (2 headers), 2 USB 3.0 ports (2 rear) Type A		4 USB 2.0 ports (4 via headers) 2 USB 3.0 ports (2 rear)	
Other Onboard I/O Devices	TPM 2.0 Header, 1 COM Port (1 header),	TPM Header	1 Port SuperDOM, TPM Header, 1 COM Ports (1 header), GPIO and SMbus headers	
Manageability	IPMI2.0, KVM with dedicated LAN, Watchdog	Intel® Node Manager, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, SPM, SSM, SUM, SuperDoctor® 5, Watchdog	Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, NMI, SSM, SUM, SuperDoctor® 5, Watchdog	
Health Monitoring	+1.5V, +12V, +3.3V, +5V, +5V standby, 5 (4-pin), 5 -fan status, Monitors CPU voltages, System level control		+1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 4 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT	
Thermal Control	5x 4-pin fan headers (up to 5 fans), 5 fans with tachometer status monitoring, Dual Cooling Zone, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	3x 4-pin fan headers (up to 3 fans), 3 fans with tachometer monitoring, Dual Cooling Zone, Fan speed control, Pulse Width Modulated (PWM) fan connectors, Support 3-pin fans (w/o speed control)	4 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	
Other Features	12V DC or ATX Power Source, 8-pin 12v DC power connector, ACPI power management, ATX Power connector, Chassis intrusion header, CPU thermal trip support for processor protection, Dual Cooling Zones, M.2 NGFF connector, RoHS, Intel® QuickAssist Technology	12V DC or ATX Power Source, 8-pin 12v DC power connector, ACPI power management, ATX Power connector, Chassis intrusion header, Dual Cooling Zones, Node Manager Support, RoHS, UID	4-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, Node Manager Support, SDDC, System level control, UID, WOL	

	Xeon® D SoC, 2/4-Core, 128GB Memory, Dual 10GbE	Xeon® D SoC, 4/6/8/12/16-Core,128GB Memory, Dual 10GbE, Dual GbE	Xeon® D SoC, 16-Core, 128GB Memory, 22x SATA Storage Device, 2x 10GbE SFP+, 6x GbE	Xeon® D SoC, 2/4/8 Core, 128GB Memory, 22x SATA Storage Device, 2x 10GbE SFP+, 2x GbE
				
MODEL	**X10SDV-4C-TLN2F X10SDV-2C-TLN2F**	**X10SDV-16C-TLN4F X10SDV-12C-TLN4F X10SDV-8C-TLN4F X10SDV-6C-TLN4F X10SDV-4C-TLN4F**	**X10SDV-7TP8F**	**X10SDV-7TP4F X10SDV-4C-7TP4F X10SDV-2C-7TP4F**
Processor	Intel® Xeon® Processor D series, Socket FCBGA 1667 supported; **-4C:** D-1520/1521, 6MB, 4 Core, 45W; **-2C:** D-1508, 3MB, 2 Core, 25W; with Passive Heatsink	Intel® Xeon® Processor D series, Socket FCBGA 1667 supported; **-16C:** D-1587, 24MB, 16 Core, 65W; **-12C:** D-1557, 18MB, 12 Core, 45W; **-8C:** D-1541, 12MB, 8 Core, 45W; **-6C:** D-1528, 9MB, 6 Core, 35W; **-4C:** D-1518, 6MB, 4 Core, 35W; with Passive Heatsink	Intel® Xeon® Processor D-1587 product family; Socket FCBGA1667 supported; CPU TDP support 65W	Intel® Xeon® Processor D-1537, 8 Core; Socket FCBGA 1667 supported; CPU TDP support 35W **-4C:** D-1518, 6MB, 4 Core, 35W **-2C:** D-1508, 3MB, 2 Core, 25W
Chipset/System Bus	System on Chip	System on Chip	System on Chip	System on Chip
Form Factor	Mini-ITX 6.7" x 6.7"	Mini-ITX 6.7" x 6.7"	Flex ATX 9.0" x 7.25"	Flex ATX 9.0" x 7.25"
Memory Capacity & Slots	Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots			
Expansion Slots	1 PCI-E 3.0 x16 M.2 PCI-E 3.0 x4, M Key 2242/2280		2 PCI-E 3.0 x8 M.2 PCI-E 3.0 x4, M Key 2242/2280/22110; Mini-PCI-E with mSATA support	2 PCI-E 3.0 x8, M.2 PCI-E 3.0 x4, M Key 2242/2280/22110; Mini-PCI-E with mSATA support
Onboard RAID Controller	SoC controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10 RSTe		SoC controller for 4 SATA3 (6 Gbps) ports; RSTe, Intel® Raid 0,1,5,10; LSI® 2116 SW controller for 16 SATA3 (6 Gbps) ports; SAS2 and SATA3;	
Onboard LAN	Dual 10GBase-T with SoC	Dual 10GBase-T with SoC Dual GbE LAN with Intel® i350-AM2;	Dual 10GbE SFP+ from SoC; Dual GbE LAN with Intel® I210; Quad GbE LAN with Intel® i350-AM4	Dual 10GbE SFP+ from SoC; Dual GbE LAN with Intel® I210
Onboard VGA/ Display Ports	1 VGA via Aspeed AST2400 BMC			
USB Ports	4 USB 2.0 ports (4 via headers) 2 USB 3.0 ports (2 rear)		2 USB 3.0 ports (2 rear); 5 USB 2.0 ports (+ 4 via headers + 1 Type A)	2 USB 3.0 ports (2 rear), 5 USB 2.0 ports (+ 4 via headers + 1 Type A)
Other Onboard I/O Devices	1 Port SuperDOM, TPM Header, 1 COM Ports (1 header), GPIO and SMbus headers		2 ports SuperDOM, TPM 2.0 Header, 1 COM Ports (1 header), GPIO and SMbus headers	
Manageability	Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, NMI, SSM, SUM, SuperDoctor® 5, Watchdog			
Health Monitoring	+1.8V, +12V, +3.3V, +5V, Chassis intrusion header, Monitors for CPU Cores, System level control **-2C:** VBAT	**-16C/12C/4C:** +1.8V, +12V, +3.3V, +5V, Chassis intrusion header, Monitors for CPU Cores, System level control **-8C:** +12V, +3.3V, +5V, 1.2V (VDIMM), Chassis intrusion header, System level control **-6C:** +1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 4 -fan status, Chassis intrusion header, Monitors for CPU Cores, Supports system management utility, System level control	+1.8V, +12V, +3.3V, +5V, Chassis intrusion header, Monitors for CPU Cores, System level control, VBAT	
Thermal Control	**-4C:** 3x 4-pin fan headers (up to 3 fans), 3 fans with tachometer monitoring, Dual Cooling Zone, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors **-2C:** 4x 4-pin fan headers (up to 4 fans), 4 fans with tachometer monitoring, Dual Cooling Zone, Low noise fan speed control, Pulse Width Modulated (PWM) fan connectors, Status monitoring for on/off control, Status monitoring for speed control	4x 4-pin fan headers (up to 4 fans), Dual Cooling Zone, Low noise fan speed control, Pulse Width Modulated (PWM) fan connectors, Status monitoring for on/off control, Status monitoring for speed control **-12C/4C:** 4 fans with tachometer monitoring **-6C:** Overheat LED indication	6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	
Other Features	12V DC or ATX Power Source, Chassis intrusion detection, Chassis intrusion header, RoHS			

	Xeon® D SoC, 2/4 Core, 128GB Memory, 2x 10GbE SFP+, 6x GbE	Xeon® D SoC, 2/4 Core, 128GB Memory, 2x 10GbE SFP+, 2x GbE	Xeon® D SoC, 8/12/16 Core, 128GB Memory, 2x 10GbE SFP+, 2x GbE	Xeon-W
				

MODEL	X10SDV-TP8F X10SDV-2C-TP8F	X10SDV-4C+-TP4F X10SDV-2C-TP4F	X10SDV-8C-TLN4F+ X10SDV-12C-TLN4F+ X10SDV-16C-TLN4F+	X11SRM-F
Processor	Intel® Xeon® Processor D-1518, 4 Core; Socket FCBGA 1667 supported; CPU TDP support 35W; **2C:** D-1508, 3MB, 2 Core, 25W	Intel® Xeon® Processor D-1518, 4 Core; Socket FCBGA 1667 supported; CPU TDP support 35W **2C:** D-1508, 3MB, 2 Core, 25W	Intel® Xeon Processor D series, Socket FCBGA 1667 supported; **16C:** D-1587, 24MB, 16 Core, 65W; **12C:** D-1557, 18MB, 12 Core, 45W; **8C:** D-1537, 12MB, 8 Core, 35W; with Passive Heatsink	Intel® Xeon® Processor W Family. Single Socket R4 (LGA 2066) supported, CPU TDP support Up to 140W
Chipset/System Bus	System on Chip			Intel® C422
Form Factor	Flex ATX 9.0" x 7.25"	Flex ATX 9.0" x 7.25"	Mini-ITX 6.7" x 6.7"	microATX, 9.6" x 9.6" (24.38cm x 24.38cm)
Memory Capacity & Slots	Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots			Up to 128GB Registered ECC RDIMM, DDR4-2666MHzUp to , 256GB Load Reduced ECC LRDIMM, DDR4-2666MHz, in 4 DIMM slots
Expansion Slots	2 PCI-E 3.0 x8, M.2 PCI-E 3.0 x4, M Key 2242/2280/22110; Mini-PCI-E with mSATA support	2 PCI-E 3.0 x8 M.2 PCI-E 3.0 x4, M Key 2242/2280/22110; Mini-PCI-E with mSATA support	1 PCI-E 3.0 x16 M.2 PCI-E 3.0 x4, M Key 2242/2280	1 PCI-E 3.0 x16, 2 PCI-E 3.0 x8 ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 2280, 4 PCI-E 3.0 NVMExpress x4
Onboard RAID Controller	SoC controller for 4 SATA3 (6 Gbps) ports; RSTe, Intel® Raid 0,1,5,10			Intel® C422 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10
Onboard LAN	Dual 10GbE SFP+ from SoC; Dual GbE LAN with Intel® I210; Quad GbE LAN with Intel® i350-AM4	Dual 10GbE SFP+ from SoC; Dual GbE LAN with Intel® I210	Dual 10GbE SFP+ from SoC Dual GbE LAN with Intel® i350-AM2;	Dual LAN with Intel® i210 Gigabit Ethernet Controller
Onboard VGA/ Display Ports	1 VGA via Aspeed AST2400 BMC			1 VGA port(s), 1 Aspeed AST2500 BMC
USB Ports	2 USB 3.0 ports (2 rear), 5 USB 2.0 ports (+ 4 via headers + 1 Type A)	2 USB 3.0 ports (2 rear), 5 USB 2.0 ports (+ 4 via headers + 1 Type A)	2 USB 2.0 ports (2 via headers) 2 USB 3.0 ports (2 rear)	6 USB 2.0 ports (2 rear + 4 headers), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)
Other Onboard I/O Devices	2 ports SuperDOM TPM 2.0 Header 1 COM Ports (1 header) GPIO and SMbus headers		1 Port SuperDOM, TPM Header, 1 COM Port (1 header), GPIO and SMbus headers	TPM Header, 2 COM Ports (1 rear, 1 header)
Manageability	Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, AMT, NMI, SSM, SUM, SuperDoctor® 5, Watchdog			IPMI2.0, KVM with dedicated LAN, SUM, SuperDoctor® 5, Watchdog
Health Monitoring	+1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 6 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT	+1.V, +12V, +3.3V, +5V, 1.2V (VDIMM), 6 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT	+1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 6 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT	+1.8V, +12V, +3.3V, +5V, +5V standby, 6 -fan status, Chassis intrusion header, HT, Monitors CPU voltages, System temperature, VBAT
Thermal Control	6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors		4 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	6x 4-pin fan headers (up to 6 fans)
Other Features	8-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, Node Manager Support, SDDC, System level control, UID, WOL		4-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, Node Manager Support, SDDC, System level control, UID, WOL	ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, RoHS, UID

	Skylake-H Intel Iris Pro Graphics P580, Intel AMT vPro	Skylake-H Intel Iris Pro Graphics P580 (VHD), IPMI 2.0	Xeon® E3-1200 QSV and VHD Support	Xeon® E3-1200 Workstation ATX PCI-32
				

MODEL	X11SSV-M4	X11SSV-M4F	X11SSH-F X11SSH-LN4F	X11SAE X11SAE-F
Processor	Intel® Xeon® processor E3-1513 v5 Single Socket FCBGA1440 supported; QPI up to 8.0GT/s; CPU TDP support 45W, 2.8-3.7GHz, 8MB	Intel® Xeon® processor E3-1585 v5 Single Socket FCBGA1440 supported; QPI up to 8.0GT/s; CPU TDP support 65W, 3.5-3.9GHz, 8MB	Intel® Xeon® processor E3-1200 v6/v5 product family, Intel® 7th/6th Generation Core™ i3 series, Intel® Celeron®, Intel® Pentium®, Socket H4 (LGA 1151) supported; CPU TDP support 80W	Intel® Xeon® processor E3-1200 v6/v5 product family, Intel® 7th/6th Generation Core™ i7/i5/i3 series, Intel® Celeron®, Intel® Pentium®, Socket H4 (LGA 1151) supported; CPU TDP support 95W
Chipset/System Bus	Intel® CM236	Intel® C236		
Form Factor	Mini-ITX	Mini-ITX	micoATX 9.6" x 9.6"	ATX 12" x 9.6"
Memory Capacity & Slots	Up to 32GB Unbuffered ECC/non-ECC SO-DIMM, DDR4-2133MHz, in 2 DIMM slots	Up to 32GB Unbuffered ECC SO-DIMM, DDR4-2133MHz, in 2 DIMM slots	64GB Unbuffered ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots	64GB Unbuffered ECC/Non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots
Expansion Slots	1 PCI-E 3.0 x16 (Bifurcation support on PCI-E x16 slot) Mini PCI-E with mSATA support ***M.2 Interface:*** PCI-E 3.0 x4 and SATA ***M.2 Form Factor:*** 2242, 2280		1 PCI-E 3.0 x8 (in x16 slot) 1 PCI-E 3.0 x8 1 PCI-E 3.0 x4 (in x8 slot)	X11SAE: 2 PCI-E 3.0 x16*, 3 PCI-E 3.0 x1, 2 - 5VPCI 32bit; X11SAE-F: 2 PCI-E 3.0 x16*, 2 PCI-E 3.0 x1, 2 - 5V PCI 32bit; 2 PCI-E x16 slots are running at 16/NA or 8/8
Onboard RAID Controller	Intel® C236 controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,5,10; Intel® RSTe		Intel® C236 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C236 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10 + 1 PCI-E M.2 (PCI-E x4, 2242/2260/2280)(No Raid support)
Onboard LAN	Single LAN with Intel® PHY I219LM LAN controller Single LAN with Intel® Ethernet Controller I210-AT Dual LAN with Intel® Ethernet Controller I350-AM2	Single LAN with Intel® PHY I219LM LAN controller Single LAN with Intel® Ethernet Controller I210-AT Dual LAN with Intel® Ethernet Controller I350-AM2 IPMI Shared LAN with I210-AT	**-F:** Dual LAN with Intel® Ethernet Controller i210-AT **-LN4F:** Quad LAN with Intel® Ethernet Controller i210-AT	Single LAN with Intel® Ethernet Controller i210-AT (Share with IPMI); Single LAN with Intel® PHY i219LM LAN controller
Onboard VGA/ Display Ports	1 HDMI, 1 DP (DisplayPort), 1 DVI - I 1 Intel® Iris Pro Graphics P580	1 DVI - A 1 Aspeed AST2400 BMC *Intel® Iris Pro P580 for VHD*	1 VGA (from Aspeed AST2400 BMC)	1 DVI-I, 1 DP (DisplayPort), 1 HDMI, 1 VGA ***VGA is for IPMI only***
USB Ports	5 USB 2.0 ports (+ 4 via headers + 1 Type A) 4 USB 3.0 ports (4 rear)	5 USB 2.0 ports (+ 4 via headers + 1 Type A) 4 USB 3.0 ports (4 rear)	5 USB 3.0 ports (2 rear + 2 via header+ 1 Type A) 6 USB 2.0 ports (2 rear + 4 via headers)	6 USB 3.0 ports (2 rear + 4 via header) 2 USB 3.1 ports (2 rear) X11SAE: 8 USB 2.0 ports (2 rear + 6 via headers) X11SAE-F: 6 USB 2.0 ports (2 rear + 4 via headers)
Other Onboard I/O Devices	2 ports SuperDOM ALC 888S HD Audio TPM Header 1 COM Port in RJ45 Socket		2 ports SuperDOM TPM 1.2 onboard Header 2 COM Ports (1 rear, 1 header)	Ext. Power Connector Only ALC 888S HD Audio TPM 1.2 onboard Header 2 COM Ports (2 headers)
Manageability	AMT, SuperDoctor® 5, vPro, Watchdog	Intel® Node Manager. IPMI2.0, NMI, SPM, SSM, SUM, SuperDoctor® 5, Watchdog	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog	**-F:** IPMI 2.0 + KVM; Intel® Node Manager, NMI SPM, SUM, SuperDoctor® 5, Watchdog, AMT vPro (non-F)
Health Monitoring	+12V, +3.3V, +5V, +5V standby, 3 -fan status, Chassis intrusion header, Monitors CPU voltages	+12V, +3.3V, +5V, +5V standby, 1.05 (PCH), 3 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, VBAT	+12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, VBAT	+12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, VBAT
Thermal Control	3x 4-pin fan headers (up to 3 fans), Fan speed control, Pulse Width Modulated (PWM) fan connectors, PWM fan speed control, Thermal control tachometer fan connectors	3x 4-pin fan headers (up to 3 fans), Fan speed control, Pulse Width Modulated (PWM) fan connectors, PWM fan speed control, Status monitoring for speed control, Support 3-pin fans (w/o speed control), System level control, Thermal control tachometer fan connectors	5 4-pin, Fan speed control, Overheat LED indication, Thermal control tachometer fan connectors	5 4-pin, Fan speed control, Overheat LED indication
Other Features	12V DC or ATX Power Source, 8-pin 12v DC power connector, ACPI power management, ATX Power connector, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, M.2 NGFF connector, RoHS, System level control, WOL		Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, VHD, WOL, M.2 NGFF connector	8-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, WOL

	i7/i5/i3/Pentium®/Celeron® Triple Display, mini-ITX	i7/i5/i3/Pentium®/Celeron® vPro AMT, mSATA Slot, uATX	Xeon® E3-1200 VHD Support, uATX	i7/i5/i3/Pentium®/Celeron® Workstation and Desktop ATX PCI-32
				

MODEL	X10SLV(-Q)	X10SLQ	X10SLH-F	X10SAE
Processor	Intel® 4th Generation Core™ i7/i5/i3 series, Intel® Celeron®, Pentium® series; Socket LGA 1150 supported; CPU TDP support Up to 84W TDP	Intel® 4th Generation Core™ i7/i5/i3 series, Intel® Celeron®, Pentium® series; Socket LGA 1150 supported; CPU TDP support Up to 84W TDP	Intel® Xeon® processor E3-1200 v4/v3 series, Intel® 4th Generation Core™ i3 series, Intel® Pentium®, Celeron®; Socket LGA 1150 supported	Intel® 4th Generation Core™ i3 series Intel® 4th Generation Core™ i5 series Intel® 4th Generation Core™ i7 series Intel® Xeon® processor E3-1200 v4/v3 series. Socket LGA 1150 supported; CPU TDP support Up to 135W TDP
Chipset/System Bus	**X10SLV:** Intel® H81 **X10SLV-Q:** Intel® Q87	Intel® Q87 Express Chipset	Intel® C226	Intel® C226
Form Factor	Mini-ITX 6.7" x 6.7"	MicroATX 9.6" x 9.6"	MicroATX 9.6" x 9.6"	ATX 12" x 9.6"
Memory Capacity & Slots	Up to 16GB DDR3 1600MHz Non ECC SODIMM in 2 slots	Up to 32GB Unbuffered non-ECC, DDR3-1600MHz in 4 DIMM slots	2 DIMM slots, 8GB with two 4GB SODIMM configuration, 1.35V only	32GB Unbuffered ECC/non-ECC, DDR3-1600MHz in 4 DIMM slots
Expansion Slots	1 PCI-E 2.0 x16 (3.0 for -Q) Mini-PCI-E with mSATA support	1 PCI-E 3.0 x16 (in x16 slot), 1 PCI-E 2.0 x4, 1 PCI-E 2.0 x1, Mini-PCI-E with mSATA support	1 PCI-E 3.0 x8 (in x16 slot), 1 PCI-E 3.0 x8, 1 PCI-E 2.0 x4 (in x8 slot)	2 PCI-E 3.0 x16 slots (16/NA or 8/8) 3 PCI-E 2.0 x1 2 - 5V PCI 32bit
Onboard RAID Controller	Intel® H81/Q87 controller for 2 SATA3 (6 Gbps) ports; 2 SATA2 (3 Gbps)	Intel® Q87 controller for 5 SATA3 (6Gbps) ports; 0,1,5,10	Intel® C226 controller for 6 SATA3 (6Gbps) ports; 0,1,5,10	Intel® C226 controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10 ASM1061 controller for 2 SATA3 (6 Gbps) ports;
Onboard LAN	Dual LAN with Intel® i217V & i210AT	Dual LAN with Intel® i217LM & i210AT	Dual LAN with Intel® Ethernet Controller i210AT	Single LAN with Intel® Ethernet Controller I210 Single LAN with Intel® Ethernet Controller I217
Onboard VGA/ Display Ports	1 HDMI, 1 DP (DisplayPort), 1 DVI-I , 1 Intel® HD 4600 Graphics, 2 Independent Displays (3 for -Q)	HDMI, DP (DisplayPort), DVI-D, VGA Intel® HD 4600 Graphics, 3 Independent Displays	VGA, Aspeed AS2400 BMC	1 VGA, 1 DVI - I, 1 DP (DisplayPort), 1 HDMI
USB Ports	2 USB 3.0 ports (2 rear +) 5 USB 2.0 ports (2 rear + 2 via headers + 1 Type A)	4 USB 3.0 ports (2 rear + 2 via header + 8 USB 2.0 ports (4 rear + 4 via headers)	4 USB 3.0 ports (2 rear + 1 via header + 1 Type A); 6 USB 2.0 ports (2 rear + 4 via headers)	6 USB 3.0 ports (2 rear + 4 via header) 10 USB 2.0 ports (4 rear + 6 via headers)
Other Onboard I/O Devices	1 SATA DOM power connector, ALC 888S HD Audio Font panel header, 5 COM ports (1 with RS422/485), TPM 1.2 Header	1 SATA DOM power connector ALC 888S, 7.1 HD Audio 4 COM port headers (1 with RS422/485), PS/2 Combo mouse and keyboard; TPM 1.2 Header	1 SATA DOM power connector 1 fast UART 16550 serial COM port headers (1 rear 1 header); 2 Total COM Ports; TPM 1.2 Header	1 SATA DOM power connector 7.1 HD Audio PS/2 mouse and keyboard; Type B of 1394a TPM 1.2 onboard Header 2 COM Ports (2 headers)
Manageability	SuperDoctor 5, Watchdog	SuperDoctor 5, Watchdog, AMT 9.0, vPro	IPMI 2.0 + KVM with dedicated LAN, NMI, SuperDoctor 5, Watchdog	AMT, SuperDoctor 5, vPro, Watchdog
Health Monitoring	Monitors CPU voltages, +1.8V, +12V, +3.3V, +5V, +5V Standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control		Monitors CPU voltages, +12V, +3.3V, +5V, +5V Standby and total of 5 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header	+1.8V, +12V, +3.3V, +5V, +5V standby, 5 (4-pin), Chassis intrusion header, Monitors CPU voltages, Supports system management utility
Thermal Control	3 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	Overheat LED indication, fan speed control, Thermal control tachometer fan connectors	Overheat LED indication, fan speed control, 5x 4-pin fan headers with tachometer monitoring	5 4-pin, Fan speed control, Overheat LED indication
Other Features	4-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, Adaptive Thermal Monitor & CPU thermal trip support for processor protection, System level control, WOL, 0°C -60°C operating temperature	ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, Adaptive Thermal Monitor & CPU thermal trip support for processor protection, Intel® Smart Response Technology, System level control, WOL, 0°C -60°C operating temperature	ACPI power management, control of power-on mode for recovery from AC power loss, Adaptive Thermal Monitor & CPU thermal trip support for processor protection. Node Manager support	4-pin 12v DC power connector, ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, WOL

	Broadwell/Haswell 6 PCI-E 3.0 slot, Dual 10GBase-T	**Broadwell/Haswell** 7 PCI-E 3.0 slots HW SAS 3.0	**Broadwell/Haswell** Workstation , 12" x 13", 7.1 HD Audio Thunderbolt AOC Support Performance Optimized	**Broadwell/Haswell** LSI 3108 SAS3 HW RAID, Quad 10GbE LAN, 24 DIMMs
				
MODEL	**X10DRi X10DRi-T**	**X10DRH-C(T) X10DRH-i(T)**	**X10DAi**	**X10DRC-T4+/LN4+ X10DRi-T4+/LN4+**
Processor	Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W	Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W	Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 160W	Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W
Chipset/System Bus	Intel® C612 Chipset			
Form Factor	E. ATX 12" x 13"			E.E. ATX 13.68" x 13"
Memory Capacity & Slots	Up to 1TB Registered ECC RDIMM, DDR4-2133MHz; Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots; Up to 2TB† ECC 3DS LRDIMM, 1TB ECC RDIMM	Up to 1TB Registered ECC RDIMM, DDR4-2133MHz; Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots	1TB 3DS ECC/non-ECC RDIMM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-2400MHz, in 16 DIMM slots	Up to 768GB Registered ECC RDIMM, DDR4-2400MHz; Up to 3TB 3DS ECC LRDIMM, DDR4-2400MHz, in 24 DIMM slots
Expansion Slots	3 PCI-E 3.0 x16 3 PCI-E 3.0 x8	1 PCI-E 3.0 x16 6 PCI-E 3.0 x8	3 PCI-E 3.0 x16 2 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8 slot)	2 PCI-E 3.0 x16 3 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8 slot)
Onboard RAID Controller	Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C612 controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10; LSI® 3108 HW with 2G Cache controller for 8 SAS3 (12Gbs) ports; RAID 0,1,5,6,10,50,60 (-C SKU only)	Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10; LSI® 3108 HW with 2G Cache controller for 8 SAS3 (12Gbs) ports; RAID 0,1,5,6,10,50,60 SuperCap option support
Onboard LAN	Dual LAN with Intel® i350 Gigabit Ethernet Controllers **-T:** Dual LAN with Intel® X540 10GBase-T Ethernet Controller	Dual LAN with Intel® i350 Gigabit Ethernet Controllers; **-T:** Dual LAN with 10GBase-T with Intel® X540 10GbE Controller	Dual LAN with Intel® i210 Gigabit Ethernet Controller	**-T4+:** Quad LAN with Intel® X540 10GBase-T Ethernet Controller; **-LN4+:** Quad LAN with Intel® i350 Gigabit Ethernet Controllers
Onboard VGA/ Display Ports	AST2400 VGA		N/A	AST2400 VGA
USB Ports	5 USB 3.0 ports (2 rear + 2 via header + 1 Type A) 6 USB 2.0 ports (2 rear + 4 via headers)	5 USB 3.0 ports (2 rear + 2 via header + 1 Type A) 4 USB 2.0 ports (2 rear + 2 via headers)	6 USB 3.0 ports (4 rear + 2 via header) 5 USB 2.0 ports (2 rear + 2 via headers + 1 Type A)	5 USB 3.0 ports (2 rear + 2 header + 1 Type A)
Other Onboard I/O Devices	2 ports SuperDOM TPM module header 2 COM Ports (1 rear, 1 header)		2 ports SuperDOM 7.1 HD Audio TPM module header Thunderbolt AOC Header	2 ports SuperDOM TPM module header 2 COM Ports (1 rear, 1 header)
Manageability	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI SPM, SUM, SuperDoctor® 5, Watchdog		NMI SuperDoctor® 5 Watchdog	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI SPM, SUM, SuperDoctor® 5, Watchdog
Health Monitoring	+12V, +3.3V, +5V, +5V Standby, 3.3v standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility			
Thermal Control	8 4-pin, Overheat LED indication, PWM fan speed control, System level control			
Other Features	ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Node Manager Support, SDDC, WOL		ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, SDDC, WOL	ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Node Manager Support, SDDC, WOL, UID

	Broadwell/Haswell 12" x 10", Cost-Effective, SAS3 HW RAID, Dual 10GbE, Dual GbE	**Broadwell/Haswell** 12" x 10, Cost-Effective Dual GbE, SATA	**Broadwell/Haswell** 12" x 13", WIO, Dual 10GbE SAS3 AOM	**Broadwell/Haswell** 3 AOC in 1U, SAS3 AOM Support 4 Ports NVMe
				

MODEL	X10DRL-C(T)	X10DRL-I	X10DRW-i X10DRW-iT	X10DDW-i X10DDW-iN
Processor	Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W			
Chipset/System Bus	Intel® C612 Chipset			
Form Factor	ATX 12" x 10"		Proprietary 12.3" x 13"	Proprietary 12.8" x 13.4"
Memory Capacity & Slots	**-C:** 512GB ECC RDIMM, DDR4-2133MHz1TB 3DS ECC/non-ECC LRDIMM, DDR4-2133MHz, in 8 DIMM slots **-CT:** 512GB Registered ECC RDIMM, DDR4-2133MHz; Up to 1TB 3DS ECC LRDIMM, DDR4-2133MHz, in 8 DIMM slots	512GB Registered ECC RDIMM, DDR4-2133MHz; Up to 1TB 3DS ECC LRDIMM, in 8 DIMM slots	1TB Registered ECC RDIMM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-2400MHz, in 4 DIMM slots	**-i:** Up to 512GB ECC RDIMM Or 32GB Unbuffered ECC/non-ECC UDIMM, in 4 DIMM slots **-iN:** Up to 512GB ECC RDIMM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-2400MHz, in 16 DIMM slots
Expansion Slots	2 PCI-E 3.0 x8 1 PCI-E 3.0 x16	3 PCI-E 3.0 x8 1 PCI-E 3.0 x16 1 PCI-E 3.0 x4 (in x8 slot) 1 PCI-E 2.0 x4 (in x8 slot)	1 PCI-E 3.0 x32 Left Riser Slot 1 PCI-E 3.0 x16 Right Riser Slot 1 PCI-E 3.0 x16 for SAS3 AOM	1 PCI-E 3.0 x24 Left Riser Slot 1 PCI-E 3.0 x8 Right Riser Slot 1 PCI-E 3.0 x8 for SAS3 AOM
Onboard RAID Controller	**-CT:** Intel® C612 controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10; SAS3 LSI® 3108 HW with 2G Cache controller for 8 SAS3 (12Gbs) ports; RAID 0,1,5,6,10,50,60	Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10		
Onboard LAN	Dual LAN with Intel® i210 Gigabit Ethernet Controller Dual LAN with Intel® X540 10GBase-T Ethernet Controller	Dual LAN with Intel® i210 Gigabit Ethernet Controller	**-i:** Dual LAN with Intel® i350 Gigabit Ethernet Controllers **-iT:** Dual LAN with Intel® X540 10GBase-T Ethernet Controller	Dual LAN with Intel® i350 Gigabit Ethernet Controllers
Onboard VGA/ Display Ports	AST2400 VGA			
USB Ports	4 USB 3.0 ports (2 rear + 2 via header) 3 USB 2.0 ports (2 via headers + 1 Type A)	4 USB 3.0 ports (2 rear + 2 via header) 5 USB 2.0 ports (2 rear + 2 via headers + 1 Type A)	6 USB 3.0 ports (4 rear + 2 via header)	3 USB 3.0 ports (2 rear +1 Type A) 4 USB 2.0 ports (2 rear + 2 via headers)
Other Onboard I/O Devices	2 ports SuperDOM 1 SATA DOM power connector TPM onboard header 1 COM port (1 header) SuperCAP connector (-C SKU only)	2 ports SuperDOM 1 SATA DOM power connector TPM Module header 2 COM ports (1 rear, 1 header)	2 ports SuperDOM TPM module header 1 COM port (1 header)	2 ports SuperDOM TPM module header 1 COM port (1 header) **-iN:** 4 ports internal NVMe
Manageability	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog			
Health Monitoring	+12V, +3.3V, +5V, +5V standby, 8 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility	+12V, +3.3V, +5V, +5V Standby, 3.3v standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility		
Thermal Control	8 4-pin, Overheat LED indication, PWM fan speed control	8 4-pin, Overheat LED indication, PWM fan speed control, System level control	6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors	8 4-pin, Overheat LED indication, PWM fan speed control, System level control
Other Features	ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Node Manager Support, SDDC, WOL, UID			ACPI power management, ATX Power connector, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Node Manager Support, SDDC, WOL

Haswell
WIO for 1U/3-AOC Solution

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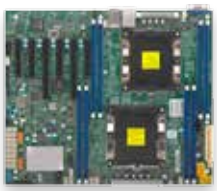
I/O Intensive Solution with 7x PCI-E Solts

Haswell
High-Performance Storage with SAS3 & Dual 10GbE

MODEL	X10SRW-F	X10SRi-F	X10SRL-F	X10SRH-CLN4F
Processor	Intel® Xeon® Processor E5-2600/1600 v4/v3 (Haswell) product families supported; CPU TDP support Up to 145W			
Chipset/System Bus	Intel® C612 Chipset			
Form Factor	Proprietary 8" x 13"	ATX 12" x 9.6"	ATX 12" x 9.6"	ATX 12" x 9.6"
Memory Capacity & Slots	DDR4-2133MHz in 8 DIMM slots Up to 512GB ECC LRDIMM Up to 256GB ECC RDIMM	Up to 512GB ECC LRDIMM, 256GB ECC RDIMM,DDR4-2133MHz in 8 DIMM slots		
Expansion Slots	2x PCI-E 3.0 x16(in WIO solt) 1x PCI-E 3.0 x 8 (in x 16 slot)	1 PCI-E 3.0 x16 1 PCI-E 3.0 x4 (in x8) 2 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8 slot) 1 PCI-E 2.0 x2 (in x8 slot)	2 PCI-E 3.0 x8 (in x16 slot) 2 PCI-E 3.0 x8 2 PCI-E 3.0 x4 (in x8) 1 PCI-E 2.0 x4 (in x8 slot)	1 PCI-E 3.0 x8 (in x16 slot) 1 PCI-E 3.0 x4 (in x8 slot) 2 PCI-E 3.0 x8 1 PCI-E 2.0 x2 (in x4 slot) 1 PCI-E 2.0 x4 (in x8 slot)
Onboard RAID Controller	Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10			Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,10 LSI® 3008 SW controller for 8 SAS3 (12Gbs) ports; RAID 0,1,10
Onboard LAN	Dual LAN with Intel® Ethernet Controller i350-AM2	Dual LAN with Intel® Ethernet Controller i350-AM2	Dual LAN with Intel® Ethernet Controller i210	Quad LAN with Intel® Ethernet Controller i350-AM4
Onboard VGA/ Display Ports	AST2400 VGA*	AST2400 VGA	AST2400 VGA	AST2400 VGA
USB Ports	4 USB 3.0 ports (2 rear + 1 via header + 1 Type A) 6 USB 2.0 ports (6 via headers)	4 USB 3.0 ports (2 rear + 1 via header + 1 Type A) 8 USB 2.0 ports (2 rear + 6 via headers)	4 USB 3.0 ports (2 rear + 1 via header + 1 Type A) 8 USB 2.0 ports (2 rear + 6 via headers)	4 USB 3.0 ports (2 rear + 1 via header + 1 Type A) 8 USB 2.0 ports (2 rear + 6 via headers)
Other Onboard I/O Devices	2 ports SuperDOM 2 fast UART 16550 serial TPM module header 2 COM Ports (1 rear, 1header) 1 eUSB header	2 ports SuperDOM 2 fast UART 16550 serial TPM module header 2 COM Ports (1 rear, 1 header)	2 ports SuperDOM 2 fast UART 16550 serial TPM module header 2 COM Ports (1 rear, 1 header)	2 ports SuperDOM 2 fast UART 16550 serial TPM module header 2 COM Ports (1 rear, 1 header)
Manageability	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog	IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog
Health Monitoring	+12V, +3.3V, +5V, +5V standby, 8 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility	+12V, +3.3V, +5V, +5V Standby, 6 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility		
Thermal Control	5 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, Thermal control tachometer fan connectors	6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control		
Other Features	ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Node Manager Support, SDDC, UID, WOL	ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, Node Manager Support, SDDC, UID, WOL		ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, Node Manager Support, SDDC, UID, WOL

* Please check Tested Memory List on Supermicro website for compatibility

	Skylake-SP X11 DP	Skylake-SP X11 DP	Skylake-SP X11 DP	Skylake-SP X11 DP
				
MODEL	**X11DPi-N X11DPi-NT**	**X11DPH-i X11DPH-T X11DPH-Tq**	**X11DPL-i**	**X11DPi-N(T)**
Processor	Intel® Xeon® Scalable Processors. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2, UPI up to 10.4 GT/s CPU1: Skylake-F CPU supported	Intel® Xeon® Scalable Processors. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 3, UPI up to 10.4 GT/s **-i/T:** CPU1: Skylake-F CPU supported	Intel® Xeon® Processor Scalable Family. Dual Socket P (LGA 3647) supported, CPU TDP support Up to 140W, 2, UPI up to 10.4 GT/s	Intel® Xeon® Scalable Processors. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2, UPI up to 10.4 GT/s CPU1: Skylake-F CPU supported
Chipset/System Bus	Intel® C621 **-NT:** Intel® C622	**-i:** Intel® C622 **-T:** Intel® C624 **-Tq:** Intel® C628	Intel® C621	**-N:** Intel® C621 **-NT:** Intel® C622
Form Factor	E-ATX, 12" x 13" (30.48cm x 33.02cm)		ATX, 12.076" x 10.15" (30.67cm x 25.78cm)	E-ATX, 12" x 13" (30.48cm x 33.02cm)
Memory Capacity & Slots	Up to 2TB 3DS ECC RDIMM, DDR4-2666MHzUp to , 2TB 3DS ECC LRDIMM, DDR4-2666MHz, in 16 DIMM slots	DDR4-2666MHzUp to , 2TB 3DS ECC LRDIMM, DDR4-2666MHz, in 16 DIMM slots **-i:** Up to 1TB 3DS ECC RDIMM **-T/Tq:** Up to 2TB 3DS ECC RDIMM	Up to 512GB Registered ECC RDIMM, DDR4-2666MHzUp to , 1TB Registered ECC LRDIMM, DDR4-2666MHz, in 8 DIMM slots	Up to 2TB 3DS ECC RDIMM, DDR4-2666MHzUp to , 2TB 3DS ECC LRDIMM, DDR4-2666MHz, in 16 DIMM slots
Expansion Slots	4 PCI-E 3.0 x16, 2 PCI-E 3.0 x8 ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 2260, 2280, 22110, 2 PCI-E 3.0 NVMExpress x4 Internal Port(s)	3 PCI-E 3.0 x16, M.2 Interface: PCI-E 3.0 x4 and PCI-E 3.0 x4 ***M.2 Form Factor:*** 22110 ***M.2 Key:*** M-Key (RAID 0,1 support) **-i/T:** 4 PCI-E 3.0 x8 **-Tq:** 3 PCI-E 3.0 x8, Slot 1 can be used with optional SLM for 4 port 10G SFP+ or RJ45 QAT support	2 PCI-E 3.0 x16, 3 PCI-E 3.0 x8, 1 PCI-E 3.0 x4 (in x8 slot) ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 2260, 2280	4 PCI-E 3.0 x16, 2 PCI-E 3.0 x8 ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 2260, 2280, 22110 ***M.2 Key:*** M-Key, 2 PCI-E 3.0 NVMExpress x4 Internal Port(s)
Onboard RAID Controller	**-N:** Intel® C621 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10 **-NT:** Intel® C622 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10	**-i:** Intel® C622 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10 **-T:** Intel® C624 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10 **-Tq:** Intel® C628 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10	**-N:** Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10 **-NT:** Intel® C622 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10
Onboard LAN	**-N:** Dual LAN with GbE from C621 **-NT:** Dual LAN with 10GBase-T with Intel® X722 + X557	**-i:** Dual LAN with GbE with Marvell® 88E1512 **-T/Tq:** Dual LAN with 10GBase-T with Intel® X557	Dual LAN with Lewisburg Marvell 88E1512 PHY	**-N:** Dual LAN with GbE from C621 **-NT:** Dual LAN with 10GBase-T with Intel® X722 + X557
Onboard VGA/ Display Ports	1 VGA port(s), 1 Aspeed AST2500 BMC,	1 VGA port(s)	1 VGA port(s), 1 Aspeed AST2500 BMC	
USB Ports	2 USB 2.0 ports (2 rear), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)	7 USB 3.0 ports (4 rear + 2 headers + 1 Type A)	4 USB 2.0 ports (2 rear + 2 headers), 3 USB 3.0 ports (2 headers + 1 Type A)	2 USB 2.0 ports (2 rear), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)
Other Onboard I/O Devices	2 ports SuperDOM, TPM 2.0 Header, 2 COM Ports (1 rear, 1 header)		2 ports SuperDOM, TPM 2.0 Header, 1 COM Ports (1 header)	2 ports SuperDOM, TPM 2.0 Header, 2 COM Ports (1 rear, 1 header)
Manageability	Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® 5, Watchdog			
Health Monitoring	+1.8V, +12V, +3.3V, +5V, +5V standby, **-N:** Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control	+1.8V, +12V, +3.3V, +5V, +5V standby, 6+1 Phase-switching voltage regulator, 7-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System temperature, VBAT	+12V, +3.3V, +5V, +5V standby, 3.3V standby, 8 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility	**-N:** +1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control **-NT:** +1.8V, +12V, +3.3V, +5V, +5V standby
Thermal Control	8x 4-pin fan headers (up to 8 fans), PWM fan speed control **-N:** Pulse Width Modulated (PWM) fan connectors	7 fan headers (up to 7 fans), 7 fans with tachometer status monitoring, Dual Cooling Zone, Fan speed control, Overheat LED indication, PWM fan speed control	8x 4-pin fan headers (up to 8 fans), Overheat LED indication, PWM fan speed control	**-N:** 8x 4-pin fan headers (up to 8 fans), PWM fan speed control **-NT:** +1.8V, +12V, +3.3V, +5V, +5V standby
Other Features	Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS	ACPI power management, Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS, UID	ACPI power management, ATX Power connector, Chassis intrusion detection, Chassis intrusion header, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Node Manager Support, SDDC, UID, WOL	Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS

	Skylake-SP X11 DP	Skylake-SP 11 PCI-E Slots, 3 UPI	Skylake-SP	Skylake-SP High Performance
				

MODEL	X11DAi-N	X11DPX-T	X11SPL-F	X11SPi-TF
Processor	Intel® Xeon® Scalable Processors. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2, UPI up to 10.4 GT/s	Intel® Xeon® Processor Scalable Family. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 3, UPI up to 10.4 GT/s	Intel® Xeon® Processor Scalable Family. Single Socket P (LGA 3647) supported, CPU TDP support 165W	Intel® Xeon® Processor Scalable Family. Single Socket P (LGA 3647) supported, CPU TDP support 205W
Chipset/System Bus	Intel® C621	Intel® C621	Intel® C621	Intel® C622
Form Factor	E-ATX, 12" x 13" (30.48cm x 33.02cm)	Proprietary, 15.12" x 13.2" (38.4cm x 33.53cm)	ATX, 12" x 9.6" (30.48cm x 24.38cm)	
Memory Capacity & Slots	Up to 2TB 3DS ECC RDIMM, DDR4-2666MHzUp to , 2TB 3DS ECC LRDIMM, DDR4-2666MHz, in 16 DIMM slots	Up to 2TB 3DS ECC RDIMM, DDR4-2666MHzUp to , 2TB 3DS ECC LRDIMM, DDR4-2666MHz, in 16 DIMM slots	8x 288-pin DDR4 DIMM slots Up to 1TB ECC 3DS LRDIMM Up to 512GB ECC LRDIMM Up to 256GB ECC RDIMM	
Expansion Slots	4 PCI-E 3.0 x16, 2 PCI-E 3.0 x8 ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 2260, 2280, 22110 ***M.2 Key:*** M-Key, 2 PCI-E 3.0 NVMExpress x4 Internal Port(s)	2 PCI-E 3.0 x16, 8 PCI-E 3.0 x8, 1 PCI-E 3.0 x4 (in x8 slot) Or 4 PCI-E 3.0 x16 and 4 PCI-E 3.0 x8 and 1 PCI-E 3.0 x4 (in x8 slot) ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 22110	2 PCI-E 3.0 x8 (in x16 slot), 4 PCI-E 3.0 x8, 1 PCI-E 3.0 x4 (in x8 slot) ***M.2 Interface:*** PCI-E 3.0 x4 and SATA ***M.2 Form Factor:*** 2280, 22110	1 PCI-E 3.0 x16, 1 PCI-E 3.0 x16 (x16 or x8), 1 PCI-E 3.0 x8 (x0 or x8), 1 PCI-E 3.0 x8, 1 PCI-E 3.0 x4 (in x8 slot) ***M.2 Interface:*** PCI-E 3.0 x4 and SATA ***M.2 Form Factor:*** 2280, 22110
Onboard RAID Controller	Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C621 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C622 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10
Onboard LAN	Dual LAN with GbE from C621	Dual LAN with Intel® X550 10GBase-T Ethernet Controller	Dual LAN with GbE with Intel® I210	Dual LAN with 10GBase-T with Intel® X722 + X557
Onboard VGA/ Display Ports	1 VGA port(s), 1 Aspeed AST2500 BMC	1 VGA D-Sub Connector port(s), 1 Aspeed AST2500 BMC	1 VGA port(s)	
USB Ports	4 USB 3.0 ports (4 rear), 2 USB 3.1 ports (2 rear)	3 USB 2.0 ports (2 rear + 1 header), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)	8 USB 2.0 ports (2 rear + 6 headers), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)	6 USB 2.0 ports (2 rear + 4 headers), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)
Other Onboard I/O Devices	2 ports SuperDOM, 7.1 HD Audio, TPM 2.0 Header, 1 COM Ports (1 header), Thunderbolt header for Thunderbolt 3.0 AOC support	2 ports SuperDOM, TPM 2.0 Header, 2 COM Ports (1 rear, 1 header)	2 ports SuperDOM, TPM Header, 2 COM Ports (1 rear, 1 header)	
Manageability	Intel® Node Manager, IPMI2.0, SPM, SSM, SUM, SuperDoctor® 5, Watchdog	Intel® Node Manager, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support, KVM with dedicated LAN, NMI, SPM, SSM, SUM, SuperDoctor® 5, Watchdog	Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SUM, SuperDoctor® 5, Watchdog	
Health Monitoring	+1.8V, +12V, +3.3V, +5V, +5V standby	+1.8V, +12V, +3.3V, +5V, +5V standby, 10 -fan status, 5+1 Phase-switching voltage regulator, Chassis intrusion header, HT, Supports system management utility, VBAT	+1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, Supports system management utility, VBAT	
Thermal Control	8x 4-pin fan headers (up to 8 fans), 8x fans with tachometer monitoring, Fan speed control, Overheat LED indication, Pulse Width Modulated (PWM) fan connectors	10x 4-pin fan headers (up to 10 fans)	7x 4-pin fan headers (up to 7 fans), Fan speed control, Overheat LED indication, PWM fan speed control, System level control	
Other Features	Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS		ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, UID, WOL	

Skylake-SP
High Pe rformance

Skylake-SP
X11 UP

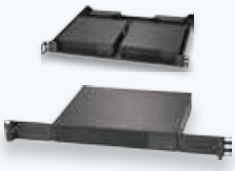
Skylake-SP
X11 UP

MODEL	X11SPH-nCTF X11SPH-nCTPF	X11SPM-F X11SPM-TF X11SPM-TPF	X11SPW-TF X11SPW-CTF
Processor	Intel® Xeon® Processor Scalable Family. Single Socket P (LGA 3647) supported, CPU TDP support 205W	Intel® Xeon® Processor Scalable Family. Single Socket P (LGA 3647) supported, CPU TDP support 165W	Intel® Xeon® Processor Scalable Family. Single Socket P (LGA 3647) supported, CPU TDP support 205W
Chipset/System Bus	Intel® C622	Intel® C621	Intel® C622
Form Factor	ATX, 12" x 9.6" (30.48cm x 24.38cm)	microATX, 9.6" x 9.6" (24.38cm x 24.38cm)	Proprietary WIO, 8" x 13" (20.32cm x 33.02cm)
Memory Capacity & Slots	8x 288-pin DDR4 DIMM slots Up to 1TB ECC 3DS LRDIMM Up to 512GB ECC LRDIMM Up to 256GB ECC RDIMM	6x 288-pin DDR4 DIMM slots Up to 768GB ECC 3DS LRDIMM Up to 384GB ECC LRDIMM Up to 192GB ECC RDIMM	
Expansion Slots	1 PCI-E 3.0 x16 (x16 or x8), 1 PCI-E 3.0 x8 (x0 or x8), 1 PCI-E 3.0 x8, 1 PCI-E 3.0 x4 (in x8 slot) ***M.2 Interface:*** PCI-E 3.0 x4 and SATA ***M.2 Form Factor:*** 2280, 2 PCI-E 3.0 NVMExpress x4	2 PCI-E 3.0 x16, 1 PCI-E 3.0 x8 ***M.2 Interface:*** PCI-E 3.0 x4 ***M.2 Form Factor:*** 2242, 2280	1 PCI-E 3.0 x8 (in x16 slot), 1 PCI-E 3.0 x32 Left Riser Slot ***M.2 Interface:*** PCI-E 3.0 x4 and SATA ***M.2 Form Factor:*** 2280, 22110
Onboard RAID Controller	Intel® C622 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10 Broadcom® 3008 SW controller for 8 SAS3 (12Gbs) ports; RAID 0,1,10	Intel® C621 controller for 12 SATA3 (6 Gbps) ports; RAID 0,1,5,10	Intel® C622 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10 **-CTF:** Broadcom® 3008 SW controller for 4 SAS3 (12Gbs) ports; RAID 0,1,10
Onboard LAN	**-nCTF:** Dual LAN with 10GBase-T with Intel® X722 + X557 **-nCTPF:** Dual LAN with 10G SFP+ with Intel® X722 + Inphi CS4227	**-F:** Dual LAN with GbE with Marvell® 88E1512 **-TF:** Dual LAN with 10GBase-T with Intel® X722 + X557 **-TPF:** Dual LAN with 10G SFP+ with Inphi CS4227	Dual LAN with 10GBase-T with Intel® X722 + X557
Onboard VGA/ Display Ports	1 VGA port(s)	1 VGA port(s)	1 VGA port(s), 1 Aspeed AST2500 BMC
USB Ports	8 USB 2.0 ports (2 rear + 6 headers), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)	6 USB 2.0 ports (2 rear + 4 headers), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)	7 USB 2.0 ports (2 rear + 5 headers), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)
Other Onboard I/O Devices	2 ports SuperDOM, TPM Header, 2 COM Ports (1 rear, 1 header),		
Manageability	Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SPM, SUM, SuperDoctor® 5, Watchdog		
Health Monitoring	+1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 8 -fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT		+1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-fan status, Chassis intrusion header, HT, Monitors CPU voltages, Supports system management utility, VBAT
Thermal Control	8x 4-pin fan headers (up to 8 fans), Fan speed control, Overheat LED indication, PWM fan speed control, System level control		7x 4-pin fan headers (up to 7 fans), Fan speed control, Overheat LED indication, PWM fan speed control, System level control
Other Features	ACPI power management, Control of power-on for recovery from AC power loss, RoHS, UID, WOL	ACPI power management, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, M.2 NGFF connector, RoHS, UID, WOL	ACPI power management, Control of power-on for recovery from AC power loss, RoHS, UID, WOL

Embedded Chassis Selection Guide

Fanless/IoT Gateway

- *Fanless & robust design*
- *Low power consumption*
- *Wide-range working temperature & voltage*



Compact Dual Node System Trays

- *Rackmount kit available for Xeon-D and Denverton Systems*
- *Mounting kits for Single Node*

Compact Mini Tower

- *Support up to 80W TDP processor*
- *Hot-swap 3.5" HDD for RAID*
- *Low profile expansion slot for diversified application*

Compact Box System

- *Building block design*
- *Commercial off-the-shelf with extended product life cycle*
- *Easy deployment*

IPC

- *Rackmount with expansion capabilities*
- *Flexible Front I/O*
- *Up to 11 PCI-E Expansion slots*

1U Rack System

- *1U Rackmount with advanced cooling design*
- *Flexible I/O at front and rear*
- *Remote Management & FW upgrade via IPMI 2.0*

Front Bezel/LCD

Model	MCP-220-00095-0B	MCP-220-00095-0B	MCP-210-00007-01	SCPTFB-813LB	MCP-210-82502-0B	MCP-210-84201-0B
Feature	LCD display kits	Full-color OLED kit	Front bezel with LCD display	Front bezel with lock	Front bezel with lock	Front bezel with lock
Form Factor/ Chassis	5.25" bay	3.5"HDD bay	SC813/813M series	SC813/813M series	SC825M series	SC842 series

Chassis

Model	SCE102	SCE300-LED	SCE300	SC101F	SC101S	SC101i	SC101iF	SC721TQ-250B
Form Factor	3.5" SBC/Pico-ITX Box PC	1U Server Box	1U Server Box	1U Server Box	1U Mini ITX Box PC	Mini-ITX Box PC	Mini-ITX Box PC	Mini Tower
Compatible Motherboard	3.5" SBC, PICO-ITX	Flex-ATX 9.0" x 7.25", Mini-ITX	Flex-ATX 9.0" x 7.25", Mini-ITX	Mini-ITX	Mini ITX	Mini-ITX	Mini-ITX	Mini ITX
CPU Support	Single processor	Single processor	Single processor	Single processor	Single processor	Single processor	Single processor	Single processor
Drive Bays	1x 2.5" fixed drive bay	1x fixed 2.5" SATA	1x 2.5" fixed drive bay	1x 2.5" fixed drive bay	1x Fixed 2.5" SATA	1x Fixed 2.5" SATA	1x Fixed 2.5" SATA	4 x 3.5" Hot-Swap SATA HDD 2x internal 2.5" SATA HDD
Expansion Slots	Onboard Mini PCI-E or M.2	1x low profile, half length	1x low profile, half length	Onboard Mini PCI-E or M.2	Onboard Mini PCI-E or M.2	Onboard Mini PCI-E or M.2	Onboard Mini PCI-E or M.2	1x low profile, half-length
Power Supply	40W Power Adapter	60W/80W/120W/150W DC Power Adapter	60W/80W/120W/150W DC Power Adapter	60W/80W/120W/150W DC Power Adapter	60W Power Adapter	60W / 80W Power Adapter	60W / 84W Power Adapter	250W Flex ATX Multi-output Bronze Power Supply
Dimensions (WxDxH)	7.48" x 1.72" x 4.72" 190 x 44 x 120mm	10" x 8.9" x 1.7" 254 x 226 x 43mm	10" x 8.9" x 1.7" 254 x 226 x 43mm	7.6" x 8.9" x 1.7" 381 x 226 x 43mm	7.68" x 7.68" x 1.7" 195 x 195 x 43mm	7.68" x 7.68" x 2.68" 195 x 195 x 68mm	7.68" x 7.68" x 2.68" 195 x 195 x 68mm	11" x 8.27" x 9.45" 280 x 210 x 240mm

1U Rackmount Short-Depth Solutions





Model	SC504-203B	SC505-203B	SC510T-203B	SC510-203B	SC512L-260B-LCD
Form Factor	1U Rackmount	1U Rackmount Front I/O	1U Rackmount	1U Rackmount	1U Rackmount
Compatible Motherboard	Flex ATX, Mini-ITX	Flex ATX, Mini-ITX	MicroATX	MicroATX	ATX, MicroATX
CPU Support	Single processor	Single processor	Single processor	Single processor	Single processor
Drive Bays	2 x Fixed 3.5" or 4 x Fixed 2.5" SATA	2 x Fixed 3.5" or 4 x Fixed 2.5" SATA	2x hot-swap 2.5"SATA	Up to 4x Fixed 2.5" SATA*	1x Fixed 2.5" or 3.5" SATA
Expansion Slots	1x full-height, half- length	1x full-height, half- length	1x low profile, half- length	1x full-height, half- length**	1x full-height, half- length
Power Supply	200W High-Efficiency	200W High-efficiency	200W High-efficiency	200W Power Supply	260W Power Supply
Dimensions (WxDxH)	17.2"x9.8"x1.7" 437 x 249 x 43 mm	17.2"x9.8"x1.7" 437 x 249 x 43 mm	17.2"x11.3"x1.7" 437 x 287 x 43 mm	17.2"x9.8"x1.7" 437 x 249 x 43 mm	16.8"x14"x1.7" 437 x 356 x 43 mm

* When AOC area not occupied
** When HDD area not occupied

Short-Depth DP/UP Solutions

Short-Depth Front I/O redundant power supply




Model	SC512F-350B	SC514-R400W SC-514-R400C	SC514-505	SC515-R407
Form Factor	1U Rackmount	1U Rackmount	1U Rackmount	1U Rackmount
Compatible Motherboard	ATX, MicroATX	WIO E-ATX 12.3"x13"	E-ATX, ATX, MicroATX/WIO	ATX, Micro ATX/WIO
CPU Support	Single processors	Dual and single processors	Dual and single processors	Single processors
Drive Bays	2x Fixed 2.5" or 3.5" SATA	2 x Fixed 2.5" HDD	Up to 2x 2.5" fixed with bracket • SAS or enterprise SATA HDD	2x Fixed 2.5" HDD***
Expansion Slots	1x full-height, half- length	2 x full-height, 1 low profile 1 full height expansion slot	Up to 2x full-height	Up to 2x full-height
Power Supply	350W High-efficiency Power Supply 80 PLUS® Gold Certified	400W (1+1) Redundant SuperCompact Gold-level power supply with PMBus and I2C	500W High-efficiency Power Supply 80 PLUS® Platinum Certified	400W (1+1) Redundant SuperCompact Platinum-level power supply with PMBus and I2C
Dimensions (WxDxH)	17.2"x14.5"x1.7" 437 x 369 x 43 mm	17.2"x16.9"x1.7" 437 x 429 x 43 mm	17.2"x16.9"x1.7" 437 x 429 x 43 mm	17.2"x16.9"x1.7" 437 x 429 x 43 mm

*** Extra 2x 2.5" Fixed HDD with ATX MB or Extra 1x 3.5" or 2x2.5 Fixed HDD with WIO and Half Length Add on Card.

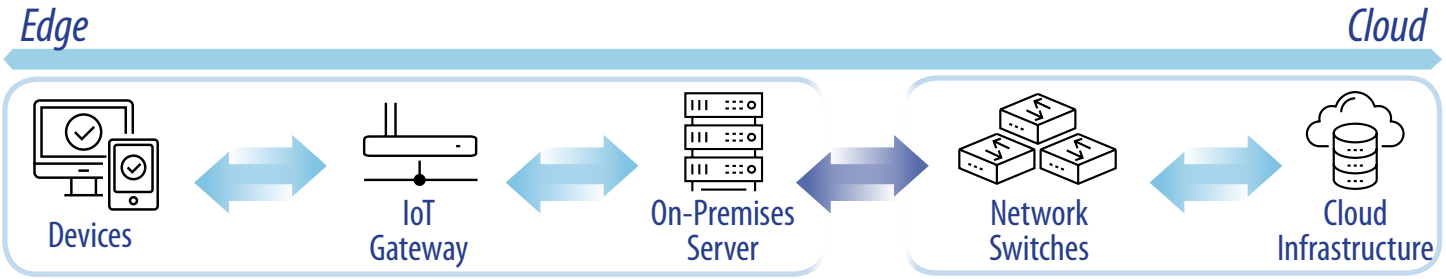
2U/3U IPC/Rack Solutions



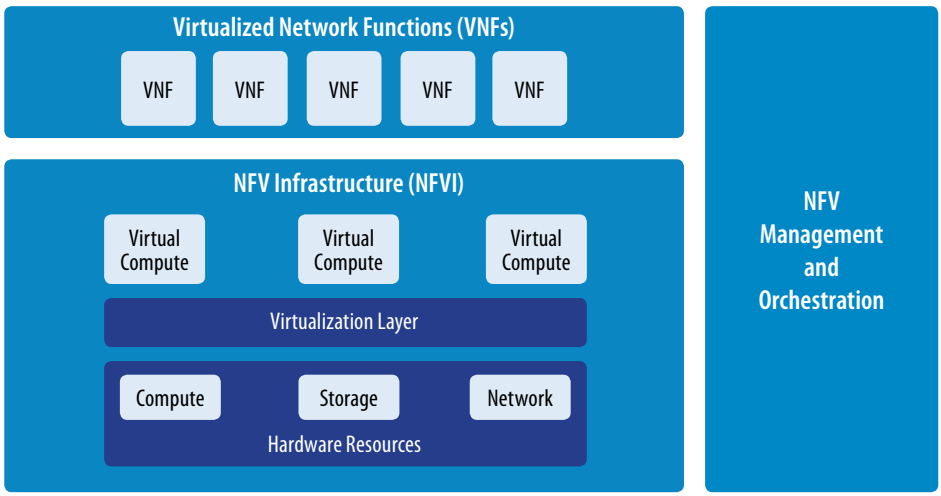


Model	SC825MTQ-R700LPB	SC835BTQ-R1K28	SC842XTQ-R606B	SC213XAC-R1K05	SC825XTQC-R1K05
Form Factor	2U Rackmount	3U Rackmount	4U Rackmount	2U Rackmount	2U Rackmount
Compatible Motherboard	E-ATX, ATX, MicroATX	E-ATX, ATX, MicroATX	E-ATX, ATX, MicroATX ; max. motherboard size 15.2" x 13.2	E-ATX, ATX, MicroATX	E-ATX 12"x13", ATX 12"x10"
CPU Support	Dual and single processors	Dual and single processors	Dual and single processors	Dual and single processors	Dual and single processors
Drive Bays	3x 3.5" Hot-swap SAS / SATA	8x Hot-swap 3.5" SAS / SATA	5x Hot-swap 3.5" SAS / SATA	16x 2.5" hot-swap SAS/SATA drive bay	8x 3.5" hot-swap SAS/SATA drive bay with SGPIO and 2x 3.5" fixed drive bay
Expansion Slots	7 low-profile expansion slots	7x full-height, full-length	7x full-height, full-length and 4x full-height, half-length	11 low-profile expansion slot(s)	7 low-profile expansion slot(s)
Power Supply	700W Redundant High-Efficiency Power Supply	1280W Redundant Platinum Level Power Supply	600W Redundant High-Efficiency Power Supply 80 PLUS® Platinum Certified	2x 1U 800/1000W Redundant Power Supply 38mm Width	2x 1U 740W Redundant Platinum Power Supply W/ PMbus
Dimensions (WxDxH)	17.2"x17.7" x 3.5" 437x 450 x 89 mm	17.2" x 20.5" x 7" 437 x 521 x 178mm	17.2" x 20.5" x 7" 437 x 521 x 178mm	17.2" x 25.6" x 3.5" 437 x 650 x 89mm	17.2" x 25.5" x 3.5" 437 x 647 x 89mm

Virtual Edge Networking Solutions



NFV Reference Architectural Framework



Software-Defined Network Hardware infrastructure Solutions

SD-WAN, NFV, VNF, uCPE, vCPE

SD-WAN: Software-Defined Wide Area Network and Customer Premise Equipment (CPE) (Virtual/Universal) technologies use a modular approach that can take advantage of open source software and commercial-of-the-shelf open hardware platforms. Network infrastructure developers can roll out vCPE and SD-WAN services using uCPE Hardware.

vCPE: Virtual CPE technology is used to allow proprietary hardware and software to be replaced with virtualized instantiations that may run at customer premises, central offices or co-location and in data centers.

uCPE: Universal CPE is essentially an open hardware platform that replaces the proprietary WAN appliances of today using the open hardware model. Companies can roll out general purpose appliance that can run VNF (open software) functions, replacing one or more proprietary boxes that play a role in traditional WANs.

VNF: Virtual Network Functions as used in this report primarily refer to the valued-added L4-7 services that can be layered on top of the SD-WAN once it is built.

NFV: Network function Virtualization provides the ability to optimize and speed up deployment of new network services, compared to SDN that offers a centralized view of the network.

Addressing Market needs with Products and Technology

Medical Imaging Scanners

Medical imaging is the ability to create visual representation of the interior organs and functions of the human body for clinical analysis. High performance image processing is critical for medical scanners and instrumentation such as CT, MRI, PET, OCT & Ultrasound.

Industrial Automation

Modern factories use several forms of control systems for operating mechanical sensors, switches, relays, conveyors, hydraulics, pneumatics and electrical devices. General purpose process control servers and IoT Gateways are increasingly being deployed to run industrial and business application software to help improve operations, simplify device management, and reduce maintenance costs.

Communication Infrastructure

Network security servers monitor and control incoming and outgoing network traffic based on predetermined security rules. Intel QAT provides cryptography engines for faster encryption and decryption of messages or information for authorized and intended use.

Software Defined Network (SDN), Network Functions Virtualization (NFV) (also known as Virtual Network Function (VNF)) offers new ways to design, deploy and manage data communication and networking services.

Smart Cities

Smart Cities are a vision of new urban development that integrate multiple city resources and services using information technology and Internet of Things (IoT) solutions. The goal is to build a highly efficient system that integrates all local services such as public transportation, schools, libraries, malls, utilities, law enforcement, hospitals, and other community services.

Information and communication technology (ICT) is used to enhance community resources and services, improve response time, provide better and more efficient utilization of resources, reduce cost, and improve communication between citizens and government.

Intelligent Transportation

Transport control systems provide innovative and advanced applications and services relating to different modes of transport and traffic management. These systems enable both transport authorities and commuters to be better informed, and make smarter and coordinated use of various public transport systems.

Digital Signage

Digital signage provides projection and display technologies such as digital images, video, streaming media, etc. found in public arenas such as stadiums, museums, hotels and restaurants, corporate buildings, airports, train and bus stations for marketing, advertising or informational purposes.

Sophisticated and advanced solutions provide streaming video or multimedia content over high-speed connection services including remote management, large multiple-displays and highly interactive displays in public places for informational or advertising purposes.

Retail Kiosk, Point-of Sale, Banking ATM

Retail Kiosk, Point-of Sale, and Banking ATM are interactive computer terminals that feature embedded low-power, small form factor hardware and software that is self-contained within the machine. They provide access to information and applications for commerce, retail transaction, entertainment, information and education.

Digital Security & Surveillance

Advanced video surveillance systems are used for monitoring and observing an area. These systems include Analog or Digital cameras and are often connected to recording and Storage Devices over IP networks.

Video Surveillance as a Service refers to hosted cloud-based video surveillance. The service typically includes video recording, storage, remote viewing, management alerts, cyber security and more. Cloud technology advances and greater bandwidth availability are making VSaaS – also called cloud video surveillance – increasingly attractive.

Cloud, Warm and Cold Storage

Cloud data storage is a service model in which information is remotely stored, managed, maintained and made accessible to users over the internet. Warm and cold data is data that is accessed less frequently and is usually stored on lower performing and less expensive storage environments either on premises or in the cloud.

Electronic Test Equipment

Test equipment is used to generate signals and capture responses from semiconductor devices and electrical circuits, with the ability to diagnose faults and/or guarantee the proper operation of the electronic devices. Electronic test equipment ranges from the very simple to extremely complex and sophisticated instrumentation that are used during semiconductor manufacturing, inspection, test and debug.

Embedded Motherboards

Supermicro offers a full range of standard form factor motherboards that include Mini-ITX, Micro-ATX, ATX, and E-ATX. These long life cycle motherboards support single and dual Intel® processors delivering the latest technology and the best performance. The proprietary form factor motherboard provides 11-slots with PCI-E 3.0 for extreme expansion.

SuperServer®

Supermicro combines 20+ years of advanced engineering experience with efficient production and integration expertise. Supermicro offers first-to-market Embedded computing SuperSever systems that are fully configured and provide one-stop solutions from design support to worldwide service.

IPC Rackmount Chassis

Supermicro offers a full range of short depth 1U to 4U Rackmount chassis in various configuration and expansion capabilities. These chassis are designed to support embedded motherboards, such as Mini-ITX, Micro-ATX, ATX, and E-ATX and proprietary form factors. Features include high-efficiency power supplies, redundant power supplies, hot-swap accessories, storage and cooling options.

Supermicro Ethernet Switch

The SSE-G2252 switches offer a full range of popular Ethernet features like Jumbo Frames, Link Aggregation, VLANs, Energy Efficient Ethernet, and a Power over Ethernet option. All of this is done in a compact 1U form factor for maximum flexibility in rack-mount installation.

Supermicro mSATA

Based on the JEDEC mini-mSATA (MO300B Variation B) form factor, this Supermicro storage device is engineered to deliver big performance in a small package.
With built-in Wear-Leveling and ECC to ensure reliability of data transfers over time, this compact device is the perfect solution for holding the essential boot files of the operating system and the most used applications.
Besides the Supemicro mini-mSATA's compact size, you also have the speed of SATA3 (Up to 530MB/s Read and 185MB/s Write) and backward compatibility with previous SATA generations.
The Supermicro mini-mSATA is currently available in 64GB capacity and supports all Supermicro SuperServer® products and solutions.

Supermicro Trusted Platform Module (TPM)

The Supermicro AOM-TPM9655V/H is a security hardware device on the system board that will hold computer generated keys for encryption. Supermicro's outstanding hardware base solution ensures that the information such as keys, passwords and digital certificates stored within are made more secure from external software attacks and physical theft. With the handful of keys it stores, all cryptographic functions are performed on the chip. AOM-TPM9655V/H is an ideal tool for customers who are looking for an additional layer of security to their SuperServers.

LCD Screen Module

The Supermicro LCD screen module features green LCD display screen. The module displays two backlighted lines of data with 16 characters per line, and includes 6 front access keys (4-way direction keys and Enter/Cancel buttons), and USB interface with pin header to support up to 100cm of cable connected to a communications terminal.

Accessories

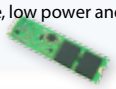
Supermicro offers a wide variety of tested and certified easy-to-use accessories that are optimized for our server solutions. Standard accessory offerings includes networking and storage Add-on cards, OLED and LCD system status display kits, AC and DC high-efficiency power supply, battery backup power modules and Hot-swap Mobile Racks.

Supermicro SATA DOM

Designed to be conveniently inserted into a server board SATA connector, this Supermicro SATA DOM (Disk on Module) is a small SATA3 (6Gb/s) flash memory module that provides high-performance solid-state-storage capacity that simulates a hard disk drive (HDD).
Supermicro SATA DOMs are extremely reliable as they do not use any moving parts like the standard HDDs and are smaller and lighter with greatly improved performance, latency and power consumption.
With its optimized design, the Supermicro SATA DOM does not require a 5V power cable as do other SATA DOM products on the market.
The Supermicro SATA DOM is available in 16GB, 32GB, 64GB, and 128GB capacities and supports all Supermicro SuperServer® products and solutions.

M.2 (Next Generation Form Factor, NGFF)

M.2 is a specification for internally mounted computer expansion cards and associated connectors. M.2's more flexible physical specification allows different module widths and lengths, and is paired with the availability of more advanced interfacing features such as PCI-E and NVMe protocols. Computer bus interfaces provided through the M.2 connector are PCI Express 3.0 (up to four lanes), and Serial ATA 3.0. The Supermicro M.2-NVMe-SSD is "M-Keyed" and is available in the (2280) & (22110) size form factor incorporating the PCI-E 3.0 interface and the high performance NVMe protocol. Architected for high performance, low power and high reliability in the smallest M.2 form factor foot print.



Enterprise SSD – U.2 Form Factor

U.2 (SFF-8639) form factor leverages both PCI-E 3.0 x4 bus interface and 2.5" SATA/SAS mechanical dimensions.
NVMe devices are available in both standard-sized PCI-E and as 2.5-inch form-factor devices that provide a four-lane PCI Express interface through the U.2 connector.
U.2 provides both ultra-high speed SSD performance and higher capacity SSD, while providing compatibility with standard SAS/SATA Drives that can be used in the same tray.

NVMe SSD Interface

NVM Express, NVMe, or Non-Volatile Memory Host Controller Interface Specification (NVMHCI), is a specification for accessing solid-state drives (SSDs) attached through the PCI Express (PCI-E) bus.

Riser Cards

A riser card plugs into the motherboard and provides addtional slots for adapter cards (AOC). AOC are oriented parallel to the motherboard and saves space within the system enclosure

OEM Design-in Services

Supermicro is a technology provider of embedded building blocks. We are the First to Market in embedded solutions for critical OEM applications and we provide a wide choice of off-the-shelf embedded building blocks - along with long product lifecycle, open standards, designed to high quality with world class support.
Supermicro adheres to rigorous design implementation, manufacturing standards and ISO standards to ensure that our products are produced with the highest quality and reliability.

ISO Certificates: ISO9001 / ISO14001 / ISO13485

About Supermicro

Supermicro Computer, Inc. or Supermicro® (NASDAQ: SMCI), a global leader in high-performance, high-efficiency server technology and innovation, is a premier provider of end-to-end green computing solutions for Enterprise IT, Data Center, Cloud Computing, Big Data, HPC and Embedded Systems worldwide. Founded in 1993 and headquartered in San Jose, California, Supermicro has been profitable every year since inception and has annual sales over $2 billion. Products are sold through major distribution channels including VARs, SIs and OEMs worldwide, as well as through its direct sales force. Operations centers are located in Silicon Valley, the Netherlands, with a new 1 million+ square foot Science & Technology Park and advanced integration facility in Taiwan, and Green Computing Park in San Jose.

Worldwide Headquarters Campus
Silicon Valley, U.S.A.

European Campus
The Netherlands

San Jose Green Computing Park
Silicon Valley, U.S.A.

Asia Science & Technology Park
New Taipei City, Taiwan

About Supermicro Embedded/IoT Solutions

Supermicro provides innovative and first-to-market technologies that are the building blocks for today's embedded computing platforms. Rapid growth in the embedded markets and open standards are driving the need for higher levels of product integration and optimization through network connectivity, remote management, mobile communication, expanded I/O, and device-to-device communications using space and power efficient configurations. We offer the widest choice of off-the-shelf building blocks to meet customer needs that are optimized to specific applications. Supermicro's high-performance embedded motherboards offer the most extensive selection in the industry, utilizing Intel® processors and chipsets that meet our customer's needs.

About Supermicro Global Services

As a leading provider of Building Block Solutions® for Data Centers, Supermicro is the premier choice for your professional support services- offering global coverage and highly efficient, on-time responsiveness to meet your hardware maintenance challenges. Supermicro's goals are to help you improve your service levels, reduce operating expenses through efficiency, while extending your overall infrastructure value through maximum uptime. With Supermicro Global Services, you can count on results through these areas below:

- *Flexible and customizable service level agreements (SLA)*
- *Highly efficient support systems and processes.*
- *Direct access to Level III services staff, field service engineers, and support operation management.*
- *Live, domestic call center responses, not an automated voice system*
- *Single point of contact for support in a complex environment*

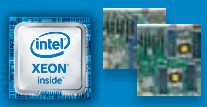
Supermicro's focus is to ensure that you protect your hardware investment by maintaining a high level of uptime. We promise each customer professional levels of responsiveness, accountability, collaboration and quality.

Embedded Building Block Solutions

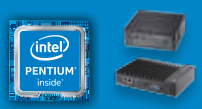
Connecting the Intelligent World from Devices to the Cloud

Supermicro focuses on application optimization, product quality, availability, world wide support and total customer satisfaction. We are a leading innovator in high-performance, high-efficiency server technology and a premier provider of end-to-end server solutions for Enterprise IT, HPC, Big Data and Cloud Computing worldwide. Our server technology proficiency, highly reliable design philosophy, long product life cycle and cost competitiveness, have all been integrated into our embedded products. With our extensive knowledge and expertise in high-end server design and manufacturing, Supermicro offers the embedded market the highest quality products and solutions that meet even the most challenging embedded design needs.

Medical Imaging



Retail Sales



Communication and Networking

On Demand Video

Storage

Edge Servers

Industrial Automation

SD-WAN (uCPE/vCPE)

Digital Surveillance

IoT Gateway

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