Embedded/IoT Solutions
Connecting the Intelligent World from Devices to the Cloud

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

Medical Imaging
Industrial Automation
Intelligent Transportation
On Demand Video
Digital Signage
Cloud Storage
Retail Sales
Communication and Networking
Digital Surveillance
Fanless Systems
45 Bay Storage
Atom C3000

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

Supermicro Next Generation Solutions based on Intel® Processors

October 2017
### Supermicro Motherboards - Chassis - Server - Building Block Solutions

#### Embedded Building Block Solutions

<table>
<thead>
<tr>
<th>High-End Processor</th>
<th>Intel® Xeon® Scalable Processors (Skylake-SP)</th>
<th>Intel® Xeon® E5-2600 v4 (Broadwell)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28 Core, 70-205W</td>
<td>22 cores, 165W, 3.5GHz</td>
</tr>
<tr>
<td></td>
<td>X11 SPx Family</td>
<td>X10DRL-i</td>
</tr>
<tr>
<td></td>
<td>X11 DPx Family</td>
<td>X10DAi/C</td>
</tr>
</tbody>
</table>

#### High-End Processor

<table>
<thead>
<tr>
<th>Intel® Xeon® E3-1200 v6/v5 (Kaby Lake/SkyLake)</th>
<th>Intel® Xeon® E3-1500 v5 (Skylake-H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 cores, 80W, 3.7GHz</td>
<td>4 cores, 45-65W, 2.8-3.9GHz, GT4e</td>
</tr>
<tr>
<td>X11SSH-F</td>
<td>X11SSV-M4F</td>
</tr>
<tr>
<td>X11SSM/-F</td>
<td>X11SSV-M4</td>
</tr>
<tr>
<td>X11SSZ-F/TLN4F</td>
<td>X11SSH-GF-1585</td>
</tr>
<tr>
<td>X11SSZ-QF</td>
<td>X11SSH-GTF-1585</td>
</tr>
</tbody>
</table>

| Intel® Xeon® W (Skylake-W) W-2100 Series     | Intel® 7th Generation Core (Kaby  |
| with C422 PCH Chipsets                       | Lake-U) i7-7600U, i5-7300U and   |
| Socket R, 10 cores, 140W, 4.1GHz             | i3-7100U                           |
| X11SRM-F/VF                                   | BGA 1356, 2 cores, 15W            |
|                                              | X11SSN-H/E/L                       |

| Intel® Xeon® D-1500 (Broadwell-DE)           | Intel® Core i7 7th & 6th Gen (Kaby |
| 16 cores, 25-65W, 1.7-2.3GHz                 | Lake-S & Skylake-S)               |
| X10SDV-16C-TLN4F                             | X11SSQ/-L                          |
| X10SDV-16C-TLN4F+                            | X11SSV-Q                           |
| X10SD-16C+TNN4F                              | X11SSZ-Q/QF                        |
| X10SDV-7TP8F                                 |                                     |

| New!                                           | Intel® Atom® C3000 (Denverton/NS) |
| Intel® Atom® C2000 (Avoton/Rangeley) Series   | 2-16 Core 8.5w – 32w 2.2GHz       |
| FCBGA 1283                                     | (Quick Assist Technology)        |
| A2SDI-2C/4C/8C/B/12C/16C-4LN4F                 | A15Ai                              |
| A2SDI-H-TP4F/TF                                | A15AM                              |
| A2SDI-TP8F/12N4F                              | A15RI                              |
| A2SDV-8C/12C/16C-4LN4F                        | A15RM                              |

| Intel® Atom® E3900 (Apollo Lake-I)            | Intel® Atom® C2000 (Avoton/Rangeley) |
| 2-4 cores, 6.5-9.5W, HD Graphics, 1.3-1.8GHz  | Series FCBGA 1283                   |
| X2SAV-L                                      | 2-8 Core 2.6GHz                     |
| X2SAN-H/E/L                                  | (Quick Assist Technology)           |
| X2SAp/H/E/L                                  | A15A                                |

| Intel® Pentium N4200 (Apollo Lake)            | Intel® Atom® C2000 (Avoton/Rangeley) |
| 4 cores, 6W, HD Graphics, 1.1-2.5GHz          | Series FCBGA 1283                   |
| X11SAA                                       | 2-8 Core 2.6GHz                     |
| X11SAN                                       | (Quick Assist Technology)           |

<table>
<thead>
<tr>
<th>Single Processor (Low Power)</th>
<th>Intel® Atom® C3000 (Avoton/Rangeley)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A15AI</td>
<td></td>
</tr>
<tr>
<td>A15AM</td>
<td></td>
</tr>
<tr>
<td>A15RI</td>
<td></td>
</tr>
<tr>
<td>A15RM</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Single Processor (Low Power)</th>
<th>Intel® Atom® C2000 (Avoton/Rangeley)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A15AI</td>
<td></td>
</tr>
<tr>
<td>A15AM</td>
<td></td>
</tr>
<tr>
<td>A15RI</td>
<td></td>
</tr>
<tr>
<td>A15RM</td>
<td></td>
</tr>
</tbody>
</table>

**Pico-ITX**

**3.5" SBC**
Embedded/IoT & the Intelligent Edge
Connecting the Intelligent World from Devices to the Cloud

New Supermicro X11 and A2 Generation of Small Form Factor and Fanless Solutions. Expanding our Product Portfolio to address emerging Embedded/IoT Edge Market.

Atom® C3000


Processing Power At the Edge

Rack Mount Kits

SYS-E200-8D
Mini-ITX Dual System Tray

SYS-E300-9A
Mounting Kit for Single System

Fanless Embedded Systems

SYS-E100-9S  SYS-E100-9AP/9APP  SYS-E100-9AP-IA  SYS-E50-9AP

Operate in Extreme Environmental Conditions

No Fan

3.5” SBC & 2.5” Pico-ITX

X11SSN-H/E/L  A2SAN-H/E/L  A2SAP-H/E/L

Ultra Small Formfactor Single Board Computers

• Ultra small form factor
• Up to 15W
• Fanless with passive heat sink
• Scalable from Atom to Core i7
• Wide temperature
## Embedded Building Block Solutions

**Intel® Atom® C3000 (Denverton) - High Density, Low Power Solutions**

### A2SDi-2C/4C/8C/8C+/12C/16C-HLN4F

**2-16C | 8.5-32W**

### A2SDi-H-TP4F/TF

**8C/16C | 25W/31W**

### A2SDi-TP8F/LN4F

**12C | 25W**

### A2SDV-8C/12C+/16C-TLN5F

**8C/12C/16C | 17W-32W**

## A2 Intel Atom C3000 Motherboards

### SYS-E200-9A — Atom® C3558

**SD-WAN Control System  
Compact 1U Box**

<table>
<thead>
<tr>
<th>4C</th>
<th>16W</th>
<th>256G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 fixed 2.5” SSD bay (7mm SSD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4x GbE LAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x M Key M.2 in 2242/2280 for PCI-E 3.0 x2 or SATA3; 2x USB 2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support 1x TPM module + 1x SATA-DOM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support QAT &amp; VT-d/VT-x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60W Lockable Power Adapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.6” x 8.9” x 1.7” (193 x 226 x 43mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SYS-E300-9A — Atom® C3858

**SD-WAN Control System  
Compact 1U Box**

<table>
<thead>
<tr>
<th>12C</th>
<th>25W</th>
<th>64G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 fixed 2.5” drive bays (*Support up to 2x 2.5”HDD without installing AOC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4x GbE LAN + 2x 10GbE Based-T + 2x 10G SFP+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x M Key M.2 in 2242/2280 for PCI-E 3.0 x4 or SATA3; 2x USB 3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support 1x TPM module + 1x SATA-DOM; Mini PCI-E with mSATA Half Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 PCI-E 3.0 x4 AOC slot (LP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support QAT &amp; VT-d/VT-x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10” x 8.9” x 1.7” (254 x 226 x 43mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SYS-5019A-12TN4 — Atom® C3850

**Network Security Appliance  
Compact 1U Rack**

<table>
<thead>
<tr>
<th>12C</th>
<th>25W</th>
<th>64G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 fixed 2.5” drive bays (*Support up to 4x 2.5” HDD without installing AOC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4x GbE LAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x M Key M.2 in 2242/2280 for PCI-E 3.0 x4 or SATA3; 2x USB 3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support 1x TPM module + 1x SATA-DOM; Mini PCI-E with mSATA Half Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 PCI-E 3.0 x4 AOC slot (FH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.2” x 9.8” x 1.7” (437 x 249 x 43mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SYS-5029A-2TN4 — Atom® C3338

**SMB Server, Storage Appliance  
Compact Mini Tower**

<table>
<thead>
<tr>
<th>2C</th>
<th>9W</th>
<th>128G</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 3.5” hot-swap tray + 2 fixed 2.5” drive bay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4x GbE LAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x M Key M.2 in 2242/2280 for PCI-E 3.0 x2 or SATA3; 4x USB 2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support 1x TPM module + 1x SATA-DOM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support QAT &amp; VT-d/VT-x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.27” x 11” x 9.45” (210 x 280 x 240mm)</td>
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<td></td>
</tr>
</tbody>
</table>

### SYS-5019A-FTN4 — Atom® C3758

**Network Security Appliance  
Compact 1U Rack**

<table>
<thead>
<tr>
<th>8C</th>
<th>25W</th>
<th>256G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 fixed 2.5” drive bays (*Support up to 4x 2.5” HDD without installing AOC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4x GbE LAN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1x M Key M.2 in 2242/2280 for PCI-E 3.0 x2 or SATA3; 2x USB 2.0</td>
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<tr>
<td>Support 1x TPM module + 1x SATA-DOM; Mini PCI-E with mSATA Half Size</td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>17.2” x 9.8” x 1.7” (437 x 249 x 43mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## A2SDi-2C/4C/8C/8C+/12C/16C-HLN4F

**Mini ITX**

<table>
<thead>
<tr>
<th>A2SDi-2C/H/4C/8C/8C+/12C/16C-HLN4F</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-16C</td>
</tr>
</tbody>
</table>

## A2SDi-H-TP4F/TF

**Flex ATX**

<table>
<thead>
<tr>
<th>A2SDi-H-TP4F/TF</th>
</tr>
</thead>
<tbody>
<tr>
<td>8C/16C</td>
</tr>
</tbody>
</table>

## A2SDi-TP8F/LN4F

**A2SDV-8C/12C+/16C-TLN5F**

<table>
<thead>
<tr>
<th>A2SDV-8C/12C+/16C-TLN5F</th>
</tr>
</thead>
<tbody>
<tr>
<td>8C/12C/16C</td>
</tr>
</tbody>
</table>
High Core Atom® C3000 Denverton Networking and Security Server Appliances

SYS-5019A-12TN4 (1U - 9.8”)
- Intel® Atom™ Processor C3850
- 4x DDR4 2400 MHz DIMM slots
- 1 PCI-E x4; 1 miniPCI-E with mSATA supports (half card only)
- Quad LAN with Intel® Ethernet Controller I350-AM4;
- Supports up to 4 x 2.5” HDD
- 80 Gold Plus 240V PSU

SYS-5019A-FTN4 (1U - 9.8”)
- Intel® Atom™ Processor C3758, Single Socket FCBGA1310 supported, 8-Core, TDP 25W
- Up to 64/128GB DDR4-2400MHz UDIMM/RDIMM in 4 DIMM slots
- 1 PCI-E 3.0 x4, 1 x M.2 (M key for SSD, 2242/80, PCI-E3.0 x2 or SATA3)
- SoC controller for 4 SATA3 (6 Gbps) ports
- 4x 1Gbe LAN, 1x dedicated IPMI LAN, 2x USB 2.0
- 2x 3.5” internal drive bays or 4x 2.5” internal drive bays
- 200W Low Noise AC-DC power supply with PFC
- Intel QAT up to 20Gbps crypto + 20Gbps compression

High Performance Single Processor - Short-Depth WIO/GPU Server Solutions

SYS-1019R-WR (1U - 16.9”)
- Intel® Broadwell-EP LGA2011 Socket R3 E5-2600 v4/v3 family, C612 Express chipset
- Up to 8x ECC/Non-ECC DDR4-2400MHz UDIMM/RDIMM in 4 DIMM slots
- 1 PCI-E 3.0 x4, 1 x M.2 (M key for SSD, 2242/80, PCI-E3.0 x2 or SATA3)
- SoC controller for 4 SATA3 (6 Gbps) ports
- 1U Compact size less than 17” depth
- Double-width GPU + 1x low-profile card
- Optimized cooling design
- Redundant power supply w/ BBP® option

SYS-1019S-M2 (1U 16.9”)
- Single socket H4 (LGA 1151) supports Intel® 7th/6th Gen. Core i7/i5/i3 series,
- Intel® Q170 Express chipset, 2x 2.5” Fixed drive bays
- Up to 64GB Unbuffered Non-ECC, UDIMM DDR4 2400MHz; 4 DIMM slots
- 1x PCI-E 3.0 x16 slot for Full Height Full Length Card
- 1x GbE LAN w/ Intel® i210-AT, 1x GbE LAN w/ Intel® PHY I219LM
- Integrated IPMI 2.0 and KVM with Dedicated LAN, AMT/vPro supported
- 2x DP, 1 DVI-I, Intel® HD Graphics, with 3x independent displays, VGA from BMC AST2400
- 400W Platinum Level Power Supply
- WxDxH: 17.2” x 16.9” x 1.7” (437x429x43mm)
Fanless Embedded System

An Integrated, Pre-Validated, and Complete Solution

The Supermicro Gateway Solutions for IoT offers a proven solution that delivers an application-ready platform.

**SYS-E100-9APP**

- **Intel® Pentium™ Processor N4200**
- Fanless Compact Ruggedized Box PC
- 1 USB3.1, 2 USB 3.0, 4 USB 2.0
- 4 COM (2 RS-232/422/485, 2 RS-232), 1 x 8-bit GPIO via DB9
- 2 Gigabit Ethernet Ports
- 1 HDMI and 1 VGA
- 1 Line-out, 1 Mic-in
- 1 Full size Mini-PCI-E (USB2.0 or PCI-Ex1)
- 1 x M.2, B-key 2280 (SATA/PCI-Ex1/USB2.0)
- Support Wide temperature 0°-60°C
- TPM 2.0 onboard
- Operational Vibration, IEC 60068-2-64
- Operational Shock, IEC 60068-2-27

**SYS-E100-9AP-IA**

- **Intel® Atom™ Processor E3940**
- Low power Apollo Lake Atom E3940, 4C
- Din-rail Fanless Box PC
- 2 USB 3.0, 4 USB 2.0
- 4 COM (2 RS-232/422/485, 2 RS-232), 1 x 8-bit GPIO via DB9
- 2 Gigabit Ethernet Ports
- 1 HDMI and 1 VGA
- 1 Full size Mini-PCI-E (USB2.0 or PCI-Ex1)
- 1 x M.2, B-key 2280 (SATA/PCI-Ex1/USB2.0)
- Support Wide temperature 0°-60°C
- TPM 2.0 onboard
- Operational Vibration, IEC 60068-2-64
- Operational Shock, IEC 60068-2-27

**SYS-E100-9S**

- **Atom C3858 12 Core**
- Dual SFP+, Dual 10GBase-T and Quad GbE
- Short depth (less than 10 inches in depth)
- 7 year life cycle
- IPMI 2.0 management with dedicated LAN
- CPU Power 25W TDP
- 1U Rackmount Kit: MCP-290-30002-0B

**Box Server with 1U Rackmount**

**SYS-E200-9A**

- **Atom C3558 4 Core**
- Intel TXT, improved AES-NI, QuickAssist Technology
- Intel VT-x and VT-d for virtualization
- NEW flexible I/O model for peripheral connectivity
- TDP ranges lowered and increased from Avoton
- 1U Dual System Tray: MCP-290-10108-0B (15” Depth)
- Rail Set (inner and outer): MCP-290-00004-03

**SYS-E300-9A**

- **Atom C3858 12 Core**
- Dual SFP+, Dual 10GBase-T and Quad GbE
- Short depth (less than 10 inches in depth)
- 7 year life cycle
- IPMI 2.0 management with dedicated LAN
- CPU Power 25W TDP
- 1U Rackmount Kit: MCP-290-30002-0B
Intel® Xeon® Processor D mini-ITX Product Family

The high-density hyper-scale Supermicro X10SDV motherboards provide scalable performance when paired with the Intel® Xeon® processor D product family. Based on Intel's 14nm process technology, these processors couple lower power consumption with the performance of up to 16 cores. The processor family enables new options for infrastructure optimization, bringing the performance and advanced Intelligence of Intel® Xeon® processors into dense, lower-power SoCs. These powerful SoCs include improved cache sizes and support up to 128G DDR4 ECC Registered memory along with built-in 1Gbe and 10Gbe Network Controllers.

SYS-5018D-FN4T (8 cores/45W)
- Front I/O, Space-efficient, compact design
- Intel® Xeon® processor D-1541, Single socket FCBBGA 1667; 8-Core, 45W
- 1 PCI-E 3.0 x 16, 1x M.2 PCI-E 3.0x4 (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
- Less than 10" depth
- Best Performance per Watt
- Fast to build and deploy
- 2x 3.5" or 4x 2.5" SATA3 drive bays;
- 3.5" peripheral bay, 2.5" optional
- 200W Low-noise power supply w/ PFC

SYS-E200-8D (6 cores/35W)
- Intel® Xeon processor D-1528, 6-Core, 1.9-2.5GHz, 35W
- Embedded Networking Applications
- Network Security Appliance
- FireWall Applications
- Virtualization Server
- Smallest Xeon® Server BOX
- 2x 1G + 2x 10G RJ45 LAN ports
- Best Performance per Watt
- 7 year life cycle
- IPMI 2.0 management with dedicated LAN

SYS-5028D-TN4T (8 cores/45W)
- Compact Cloud Server
- High Performance NAS Servers
- Virtualization Server
- Business Critical Applications
- Web Server for Small and Medium Business
- Intel® Xeon® processor D-1541, Single socket FCBBGA 1667; 8-Core, 45W
- 2x Gigabit + 2x 10G LAN ports
- Up to 4 Hot-Swap 3.5" SATA3 HDD and 2 internal 2.5" fixed HDD
- Up to 128GB ECC RDIMM DDR4 2400MHz or 64GB ECC/non-ECC UDIMM in 4 sockets
- 1 Low Profile PCI-E 3.0 x16 and 1x M.2 PCI-E 3.0x4, M Key 2242/2280
- IPMI 2.0 + KVM with dedicated LAN
- 1x slim DVD-ROM drive bay (shared with 1x 2.5" internal drive bay)

X10 Intel® Xeon® D High Core, High Performance, Low Power Motherboards

<table>
<thead>
<tr>
<th>Model</th>
<th>CPU</th>
<th>Memory</th>
<th>Expansion Slots</th>
<th>Storage Options</th>
<th>Additional Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>X10SDV-16C-TLN4F</td>
<td>D-1587, 16 Core, 65W</td>
<td>Up to 128G DDR4 ECC Registered</td>
<td>1x Low Profile PCI-E 3.0x16, 1x M.2 PCI-E 3.0x4, M Key</td>
<td>IPMI 2.0 + KVM with dedicated LAN</td>
<td>1x slim DVD-ROM drive bay (shared with 1x 2.5&quot; internal drive bay)</td>
</tr>
<tr>
<td>X10SDV-12C-TLN4F</td>
<td>D-1557, 12 Core, 45W</td>
<td>Up to 64G DDR4 ECC Registered</td>
<td>1x Low Profile PCI-E 3.0x16, 1x M.2 PCI-E 3.0x4, M Key</td>
<td>IPMI 2.0 + KVM with dedicated LAN</td>
<td>1x slim DVD-ROM drive bay (shared with 1x 2.5&quot; internal drive bay)</td>
</tr>
<tr>
<td>X10SDV-6C-TLN4F</td>
<td>D-1528, 6 Core, 35W</td>
<td>Up to 32G DDR4 ECC Registered</td>
<td>1x Low Profile PCI-E 3.0x16, 1x M.2 PCI-E 3.0x4, M Key</td>
<td>IPMI 2.0 + KVM with dedicated LAN</td>
<td>1x slim DVD-ROM drive bay (shared with 1x 2.5&quot; internal drive bay)</td>
</tr>
<tr>
<td>X10SDV-4C-TLN4F</td>
<td>D-1518, 4 Core, 35W</td>
<td>Up to 16G DDR4 ECC Registered</td>
<td>1x Low Profile PCI-E 3.0x16, 1x M.2 PCI-E 3.0x4, M Key</td>
<td>IPMI 2.0 + KVM with dedicated LAN</td>
<td>1x slim DVD-ROM drive bay (shared with 1x 2.5&quot; internal drive bay)</td>
</tr>
<tr>
<td>X10SDV-TP8F</td>
<td>D-1508, 2 Core, 25W</td>
<td>Up to 8G DDR4 non-ECC Registered</td>
<td>1x Low Profile PCI-E 3.0x16, 1x M.2 PCI-E 3.0x4, M Key</td>
<td>IPMI 2.0 + KVM with dedicated LAN</td>
<td>1x slim DVD-ROM drive bay (shared with 1x 2.5&quot; internal drive bay)</td>
</tr>
<tr>
<td>X10SDV-2C-TLN2F</td>
<td>D-1541, 8 Core, 45W</td>
<td>Up to 16G DDR4 non-ECC Registered</td>
<td>1x Low Profile PCI-E 3.0x16, 1x M.2 PCI-E 3.0x4, M Key</td>
<td>IPMI 2.0 + KVM with dedicated LAN</td>
<td>1x slim DVD-ROM drive bay (shared with 1x 2.5&quot; internal drive bay)</td>
</tr>
</tbody>
</table>

Supermicro® Embedded Building Block Solutions - October 2017
Embedded Building Block Solutions

Intel® Xeon® Processor D Flex-ATX Product Family
2/4/8/16-Core, Dual SFP+ 10 GbE LAN, Quad 1GbE, 22 Storage ports

SY6-1018D-FRN8T (16 cores/65W)
Intel® Xeon® D-1587 SoC Compact 1U Networking Appliance
- 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
- IPMI2.0 with KVM Dedicated port
- 1GbE, 6 LAN ports with Dual 10 GbE SFP+
- Applications: Compact Network Appliance Firewall, Software Defined WAN, On-premises Server
- W17.2” x D16.9” x H1.7” (437x429x43mm)

SYS-5018D-MHR7N4P (8 cores/35W)
- Intel® Xeon® processor D-1537, Single socket FCGBA 1667; 8 core, 35W
- 4 Hot Swap SATA3/SAS2 Drive Bays
- Low Power Intel® Xeon® processor D-1537 SoC 8 Core with Dual 10GbE SFP+ and Dual GbE
- Remote management via dedicated IPMI BMC
- 400W high-efficiency redundant power supply
- 7 year life cycle

SYS-5018D-FN8T (4 cores/35W)
- Intel® Xeon® processor D-1518, Single socket FCGBA 1667; 4 core, 35W
- Front I/O, Space-efficient, compact design
- 4 x 1 GbE with I350-AM4, 2 x 1 GbE with O210-AT
- Up to 128GB ECC RDIMM DDR4 2133MHz or 64GB ECC/non-ECC UDIMM in 4 sockets
- 1x PCI-E 3.0 x8 (Full Height and Half Length)
- 1x M.2 PCI-E 3.0 x4, M Key 2242/2280/22110 or SATA3, 1x Mini PCI-E with mSATA
- 1x 3.5” internal drive bays or 4x 2.5” fixed drive bays

SYS-5018D-LN4T (2 cores/25W)
- Intel® Xeon® processor D-1508, Single socket FCGBA 1667; 2 core, 25W
- Cost effective, Space-efficient, compact design
- 2 x 10 GbE SFP+
- 2 x 1 GbE with O210-AT
- Up to 128GB ECC RDIMM DDR4 1866MHz or 64GB ECC/non-ECC UDIMM in 4 sockets
- 1x PCI-E 3.0 x8 (Full Height and Half Length)
- 1x M.2 PCI-E 3.0 x4, M Key 2242/2280/22110 or SATA3, 1x Mini PCI-E with mSATA
- 1x 3.5” internal drive bays or 4x 2.5” fixed drive bays

SYS-E300-8D (4 cores/35W)
- Intel® Xeon® processor D-1518, Single socket FCGBA 1667; 4 core, 35W
- Dual SFP+ and 6x GbE
- Short depth (less than 10 depth)
- Low Power Xeon D SoC 4 Core
- Best Performance per Watt
- 7 year life cycle
- IPMI 2.0 management with dedicated LAN

X10 Intel® Xeon® D High Core, High Performance, Low Power Motherboards

<table>
<thead>
<tr>
<th>Motherboard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X10SDV-7TP8F</td>
<td>D-1587, 16 Core, 65W</td>
</tr>
<tr>
<td>X10SDV-TP8F</td>
<td>D-1518, 4 Core, 35W</td>
</tr>
<tr>
<td>X10SDV-7TP4F</td>
<td>D-1537, 8 Core, 35W</td>
</tr>
<tr>
<td>X10SDV-4C-7TP4F</td>
<td>D-1518, 4 Core, 35W</td>
</tr>
<tr>
<td>X10SDV-2C-TP8F</td>
<td>D-1508, 2 Core, 25W</td>
</tr>
<tr>
<td>X10SDV-2C-TP4F</td>
<td>D-1518, 4 Core, 35W</td>
</tr>
<tr>
<td>X10SDV-4C-TP4F</td>
<td>D-1508, 2 Core, 25W</td>
</tr>
<tr>
<td>X10SDV-2C-TP4F</td>
<td>D-1518, 4 Core, 35W</td>
</tr>
</tbody>
</table>

Supermicro® Embedded Building Block Solutions - October 2017
Embedded Building Block Solutions

Intel® Xeon® E3-1200 v6/v5 (Kaby Lake/Skylake) Single Processor System Solutions

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.

X11 Intel® Xeon® E3-1200 v6/v5 Single Processor System Solutions

<table>
<thead>
<tr>
<th>SYS-1019S-WR</th>
<th>SYS-5019S-MN4</th>
<th>SYS-5019S-MT</th>
<th>SYS-1019S-MC0T</th>
<th>SYS-5019S-WR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC514-R407W</td>
<td>SC813MFTQC-350CB</td>
<td>SC813MFTQC-350CB</td>
<td>SC113MFAC2-341CB</td>
<td>SC815TQC-RS04WB</td>
</tr>
<tr>
<td>X11SSW-F</td>
<td>X11SSH-LN4F</td>
<td>X11SSH-TF</td>
<td>X11SSH-CTF</td>
<td>X11SSW-F</td>
</tr>
<tr>
<td>Short-Depth Multi-IO Server</td>
<td>Network-Centric</td>
<td>Entry Caching Appliance</td>
<td>Entry Level Storage</td>
<td>Flexible I/O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SYS-5019S-L</th>
<th>SYS-5019S-ML</th>
<th>SYS-5019S-M</th>
<th>SYS-5019S-MR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC510-203B</td>
<td>SC512F-350B1</td>
<td>SC813MFTQC-350CB</td>
<td>SC813MFTQC-R407CB</td>
</tr>
<tr>
<td>X11SSL-F</td>
<td>X11SSH-F</td>
<td>X11SSH-F</td>
<td>X11SSH-F</td>
</tr>
<tr>
<td>Entry Appliance</td>
<td>Entry Appliance</td>
<td>Cloud, Hosting</td>
<td>Cloud, Hosting</td>
</tr>
</tbody>
</table>

X11 Intel® Xeon® E3-1200 v6/v5 Motherboards (C236 Chipset)

<table>
<thead>
<tr>
<th>X11SSH-F</th>
<th>X11SSA-F</th>
<th>X11SSH-CTF</th>
<th>X11SSM</th>
<th>X11SSW-F</th>
</tr>
</thead>
<tbody>
<tr>
<td>X11SSH-LN4F</td>
<td>X11SSi-LN4F</td>
<td>X11SSH-TF</td>
<td>X11SSM-F</td>
<td>WIO Form Factor</td>
</tr>
<tr>
<td>VHD support</td>
<td>4 PCI 32-bit Slots</td>
<td>8 SAS3 + Dual 10G, SW RAID, Dual 10GBase-T</td>
<td>Cost Optimized</td>
<td>1U/3 AOC</td>
</tr>
<tr>
<td>8 SATA3, 4 GbE ports</td>
<td>1U Networking Appliance</td>
<td>4x PCI-E 3.0 Expansion Slots</td>
<td>4x PCI-E 3.0 Expansion Slots</td>
<td>WIO Form Factor</td>
</tr>
</tbody>
</table>

QuickSynch Video & VHD Solutions Appliance Solutions 10GbE and 10GbE+SAS3 Cost optimized 4x PCI-E 3.0 Expansion Slots WIO Form Factor 1U/3 AOC
Intel® Xeon® E3-1500 v5 (Skylake-H) Single Processor System Solutions for Media Processing and Data Center Graphics

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.

Workloads Enabling the Visual Experience
- High-performance & power efficient compute with integrated Intel® Iris™ Pro Graphics for graphics intensive applications
- Intel® Quick Sync video for hardware enhanced HD and UHD video transcoding
- Intel® Graphics Virtualization Technology for flexible, secure remote application delivery
- Real-time ultra high-definition (UHD/4K) video delivery

SYS-1019S-MP
Intel® Xeon® Processor E3-1515M v5, 4 Cores, 8 Threads, 45W
- Video Transcoding and Streaming
- Intel® Iris Pro Graphics P580 with 128MB of on-Package cache (eDRAM) for high performance graphics
- HDMI, Display Port, DVI-I, 3 independent displays
- 1x Mini-PCI-E, 1x M.2 PCI-E 3.0 x4, 4x 1GbE LAN and Intel® vPro AMT | CM236
- Up to 18 AVC streams or 8 HEVC streams at 1080p 30FPS, or 2 HEVC streams at 4K 30FPS

SYS-5019S-TN4
Intel® Xeon® Processor E3-1585 v5, 4 Cores, 8 Threads, 65W
- Faster Transcoding for Live/Web Streaming or On Demand Video Service
- Up to 18 AVC streams or 8 HEVC streams at 1080p 30FPS, or 2 HEVC streams at 4K 30FPS
- 2D/3D CAD Applications and Network Video Compression
- 1x Mini-PCI-E, 1x M.2 PCI-E 3.0 x4, 4x USB 3.0, 1x COM port, 1x DVI-A (VGA signal)
- 1x PCI-E x16 for LP AOC
- VHD, Media CODEC (HEVC, JPEG, VP8) and IPMI2.0 (Shared LAN) | C236

SYS-5019S-M-G1585L
Intel® Xeon® Processor E3-1585L v5, 4 Cores, 45W
- 2D/3D and CAD Applications
- Cloud and Virtualization needs
- Network Video Compression
- Network Security Appliance
- Support VHD & Quick Sync Video
- IRIS PRO GT4e Built-In

SYS-5019S-MR-G1585L
Intel® Xeon® Processor E3-1585L v5, 4 Cores, 45W
- Cloud and Virtualization needs
- 2D/3D and CAD Applications
- Network Video Compression
- Network Security Appliance
- Support VHD & Quick Sync Video
- IRIS PRO GT4e Built-In
- Redundant Power supply

X11 Intel® Xeon® E3-1500 v5 Motherboards (SoC) GT4e AMT vPro with Iris Pro Graphics

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X11SSV-M4</td>
<td>E3-1515M v5</td>
</tr>
<tr>
<td>X11SSV-M4F</td>
<td>E3-1585s v5</td>
</tr>
<tr>
<td>X11SSH-GF-1585(L)</td>
<td>E3-1585s v5/E3-1585L v5</td>
</tr>
<tr>
<td>X11SSH-GTF-1585(L)</td>
<td>E3-1585s v5/E3-1585L v5</td>
</tr>
</tbody>
</table>
**Embedded Building Block Solutions**

## Intel® Atom® C2000 Rangeley and Avoton Embedded Server Appliances

### 5018A-LTN4 (1U - 9.8")
- Intel® Atom® C2358 processor-based SoC, FCBGA 1283 2 cores, 1.7-2.0GHz, 7W (Rangeley)
- Up to 2 DIMMs, 16GB of DDR3 ECC SODIMM 1333MHz
- 2x 3.5" or optional 4x 2.5" internal SATA2 and SATA3 Drive Bays
- 1x PCI-E 2.0 x8 Slot, 2x USB3.0, 2x USB2.0, VGA, COM,
- Quad GbE LAN ports, IPMI 2.0 on Dedicated LAN port
- 200W Gold Level Low-Noise Power Supply

### SYS-5018A-MLTN4 (1U - 14")
- Intel® Atom® C2550 processor-based SoC FCBGA 1283, 4 cores, 2.4-2.6GHz, 14W (Avoton)
- Up to 4 DIMMs, 64 GB of DDR3 ECC or non ECC UDIMM up to 1600MHz
- 2x 3.5" or optional 2x 2.5" internal SATA2 and SATA3 Drive Bays
- 1x PCI-E 2.0 x8 Slot, 4x USB2.0, VGA, COM,
- Quad GbE LAN ports, IPMI 2.0 on Dedicated LAN port
- 200W Low-Noise Power Supply

### SYS-5018A-FTN4 (1U Front I/O - 9.8")
- Intel® Atom® C2758 processor-based SoC, FCBGA 1283 8 cores, 2.4GHz, 20W (Rangeley)
- Long Life Cycle Embedded Solution
- Support Intel® QuickAssist Technology
- Up to 4 DIMMs, 64 GB of DDR3 ECC SODIMM up to 1600MHz
- 2x 3.5" or optional 2x 2.5" internal SATA2 and SATA3 Drive Bays
- 1x PCI-E 2.0 x8 Slot, 4 x USB3.0, 2 x USB2.0, VGA, COM,
- Quad GbE LAN ports, IPMI 2.0 on Dedicated LAN port
- 200W Gold Level Low-Noise Power Supply

### SYS-5018A-TN4 (1U - 9.8")
- Intel® Atom® C2750 processor-based SoC, FCBGA 1283 8 cores, 2.4-2.6GHz, 20W (Avoton)
- Up to 4 DIMMs, 64GB of DDR3 ECC SODIMM up to 1600MHz
- 2x 3.5" or optional 4 x 2.5" internal SATA2 and SATA3 Drive Bays
- 1x PCI-E 2.0 x8 Slot, 2x USB3.0, 2x USB2.0, VGA, COM,
- Quad GbE LAN ports, IPMI 2.0 on Dedicated LAN port
- 200W Gold Level Low-Noise Power Supply

### SYS-5018A-TN7B (1U - 11.3")
- Intel® Atom® C2758 processor-based SoC, FCBGA 1283, 20W 8-Core, 2.4GHz
- 7x GbE LAN including 6 ports LAN bypass (SW programmable) ports w/ SoC I354, I350-AM2 and I210-AT
- 1x 3.5" Fixed drive bay or 4x 2.5" drive bays w/ optional bracket ,1x mSATA slot
- 1x PCI-E 2.0 x4 (in x8) slot / IPMI 2.0 with shared LAN
- Up to 64GB DDR3 1600MHz ECC or non-ECC UDIMM
- 200W Multi-output power supply
**Embedded Building Block Solutions**

**Intel® Core i7, i5, i3 (Skylake-S/Kabylake-S) Single Processor Media Processing Server Solutions**

**Higher Performance with improved graphics performance and better power efficiency**

The 7th/6th Gen Intel® Core processors deliver significant improvements in graphics performance and 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.

---

**SYS-1019S-M2**

![SYS-1019S-M2 SC514](image)

**Compact 1U Core i7 Embedded Server**

- **Up to 64GB Unbuffered non-ECC, DDR4-2400MHz in 4 DIMM slots**
- 17.2” x 1.7” x 16.9” (437 x 43 x 429mm)
- Intel® 7th/6th Generation Core i7/i5/i3 series, Intel® Celeron® Intel® Pentium® Remote management via IPMI or vPro | Q170
- 2x Gigabit LAN ports, 2x DP, DVI-I, 3 independent displays
- Full Height and Full Length add on card support
- Power redundancy or BBP support

**SYS-5019S-M2**

![SYS-5019S-M2 SC813M](image)

**Security and Surveillance**

- **Up to 4 DIMMs, 64 GB of 2400MHz DDR4 UDIMM ECC/NON-ECC**
- 17.2” x 1.7” x 23.4” (437 x 43 x 503mm)
- Intel® Xeon E3-1200 v6/v5 & 7th/6th Gen Intel® Core™ i7, i5, i3, Pentium®, Celeron® processor in LGA1151 | C236
- 2x DP, DVI-I, total 3x independent display
- 4x 3.5” SATA3 hot-swap drive bays
- Intel® vPro™ and AMT
- 2x Gigabit LAN with AMT
- 1x PCI Express 3.0 x16 FH, FL slot
- 7 year life cycle

**SYS-5029S-TN2**

![SYS-5029S-TN2 SC721](image)

**Compact Mini Tower 7th/6th Gen Core Server**

- **32GB Unbuffered non-ECC, DDR4-2400MHz, in 2 DIMM slots**
- 8.27” x 9.45” x 11” (210.06 x 240.03 x 249.4mm)
- 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)
- 2x Gigabit LAN ports
- Embedded long life
- Quiet Operation
- 1x slim DVD-ROM drive bay (shared with 1 internal 2.5” drive bay)

---

**X11 Intel® Core Embedded Processor Family with Intel® C236, Q170, & H110 Chipset**

<table>
<thead>
<tr>
<th>X11SSQ/L</th>
<th>X11SSZ-QF</th>
<th>X11SSZ-TLN4F/F</th>
<th>X11SSV-Q</th>
<th>X11SSV-LVDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="vPro AMT Embedded Desktop" /></td>
<td><img src="image" alt="vPro AMT Embedded Skylake IPMI" /></td>
<td><img src="image" alt="vPro AMT IPMI 2400MHz DDR4 Embedded" /></td>
<td><img src="image" alt="vPro AMT Dual GbE Embedded" /></td>
<td><img src="image" alt="vPro AMT Embedded LVDS onboard" /></td>
</tr>
</tbody>
</table>

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_Supermicro® Embedded Building Block Solutions - October 2017_
Embedded Building Block Solutions

Intel® Xeon® Scalable Processors (Skylake-SP) - Single/Dual Processor System Solutions

**Skylake-SP**
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.

**SYS-5019P-WT**
- Single Socket
- Intel® Xeon® Scalable Processor
- 2 PCI-E 3.0 x16 (FHFL)
- 1 PCI-E 3.0 x8 (LP)
- 2 10 GBase-T
- 4x hot-swap 3.5" HDD

**SYS-6019P-MTR**
**Short depth 1U Server**
- 17.2" x 1.7" x 19.98"
- Dual Socket
- Intel® Xeon® Scalable Processors
- 1 PCI-E 3.0 x8 (FHHL)
- 2GbE LAN
- 600W

**SYS-5019P-WT**

**SYS-6019P-MTR**

**SP Motherboards — C621/622 PCH**

<table>
<thead>
<tr>
<th>X11SPL-F</th>
<th>X11SPH-nCTF</th>
<th>X11SPW-TF</th>
<th>X11SPI-TF</th>
<th>X11SPM-F</th>
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<tbody>
<tr>
<td>ATX</td>
<td>ATX</td>
<td>WIO</td>
<td>ATX</td>
<td>uATX</td>
</tr>
<tr>
<td>8DIMM</td>
<td>7 PCI-E Slots</td>
<td>2x 10 GbE</td>
<td>3x 10 GBase-T</td>
<td>2x 40GbE</td>
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</table>

**DP Motherboards — C621/628 PCH**

<table>
<thead>
<tr>
<th>X11DPI-N</th>
<th>X11DPH-T</th>
<th>X11DAi-N</th>
<th>X11DPX-T</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-ATX</td>
<td>E-ATX</td>
<td>E-ATX</td>
<td>E-ATX</td>
</tr>
<tr>
<td>6 PCI-E 3.0</td>
<td>2x 1GbE</td>
<td>7 PCI-E 3.0</td>
<td>2x 10GbE</td>
</tr>
</tbody>
</table>

New!
Embedded Building Block Solutions

Intel® Xeon® E5-2600 v4/v3 (Broadwell) Dual Processor System Solutions

**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.

---

**X10DRD-i(N)T**
- 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 USB3.0, 2 SuperDOM, TPM support
- 13.05” x 10.5” ATX Form Factor
- 10 SATA3 HDD/SSD ports, Optional dual NVMe Ports (-N Option)

---

**SC514-505**
16.9” Compact 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

---

**X10 Embedded and Industrial-Grade Intel® Xeon® E5-2600 v4/v3 Motherboards (C612 PCH)**

<table>
<thead>
<tr>
<th>X10DRL-i</th>
<th>X10DAi/C</th>
<th>X10DRH-C/i(T)</th>
<th>X10DRH-C/ILN4</th>
<th>X10DRL-CT</th>
<th>X10DDW-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainstream ATX Form Factor up to 145W</td>
<td>SAS3 SW RAID controller</td>
<td>LSI 3108 HW RAID with 8 port SAS3</td>
<td>Quad 1Gbe LAN LSI 3008 SAS3 SW RAID</td>
<td>Up to 1TB ECC DDR4 2133MHz; 8x DIMM slots</td>
<td>3x AOC in 1U, SAS3 AOM support, DCO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X10DRD-iTP</th>
<th>X10DRC-T4+/LN4+</th>
<th>X10DRI(-T)</th>
<th>X10DRI-T4+/LN4+</th>
<th>X10DRW-i(T)</th>
<th>X10DRX</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 PCI-E 3.0 10G SFP+</td>
<td>24 DIMM, 3TB Reg. ECC DDR4 up to 2133MHz</td>
<td>Intel® X540 Dual Port 10GBase-T LAN</td>
<td>Up to 3TB ECC DDR4 2133MHz; 24x DIMM slot</td>
<td>Integrated IPMI 2.0 and KVM with Dedicated LAN</td>
<td>Maximum 11 PCI-E expansion slots</td>
</tr>
</tbody>
</table>

---

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.
High Capacity Storage Solutions

4U 45-Bay SAS3 Single Expander Storage Enclosure

**CSE-946LE1C-R1K66JBOD**

- 4U High Capacity Short-Depth Storage Enclosure
- 45 x 3.5" SAS3 HDDs with 12Gb/s Hot-swappable HDD/SSD
- Single Expander with 4 x Mini-SAS HD ports for expansion and cascading
- SCSI Enclosure Services (SES 3.0) compliant
- 1 x IPMI port for Remote Power on/off and system monitoring
- Tool-less drive carrier with HDD LED indicators
- Hot-swappable cooling fan modules
- Slide Rail and Cable Management Arm Kit included
- Supports LCD panel for system status in field diagnose (Optional)

4U 45-Bay Dual Processor Storage Server

**SSG-6048R-E1CR45L/H**

- Dual Intel E5-2600 v3/v4 (Socket R) Server (Up to 160W)
- 24x DIMM Slots (DDR4)
- SIOM for flexible networking options
- 45x Hot-Swap 3.5" SAS3/SATA3 bays (12Gb/sec)
- IT mode LSI 3008 (L-series) / 3108 HW RAID (H-series)
- Dual JBOD expansion ports (optional)
- IPMI 2.0 (dedicated LAN) with Virtual Media/KVM over LAN
- Up to 6x NVMe bays available for option
- Built-in front 3.5" LCD display

Applications

- Software Defined Storage Applications
- Backup, Archive and Cold storage
- Data Replication & Business Continuity
- Virtual Tape Library
- High Capacity Storage Application
- Corp DB/File, Data Warehouse
- iSCSI solution, Media/Stream Server, Video-on-Demand, Security server
<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel® Pentium™ Processor N4200, Socket FCBA1296 supported</td>
<td>Intel® Pentium™ Processor N4200, Single Socket FCBA1296 supported, CPU TDP support 6W</td>
<td>A2SNAV-L: Intel® Atom™ Processor E3940, Single Socket FCBA1296 supported, CPU TDP support 9.5W</td>
<td>A2SNAV-L: Intel® Atom™ Processor E3940, Single Socket FCBA1296 supported, CPU TDP support 9.5W</td>
<td>A2SNAV-L: Intel® Atom™ Processor E3940, Single Socket FCBA1296 supported, CPU TDP support 9.5W</td>
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<tr>
<td>Chipset/System Bus</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>System on Chip</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Mini-ITX, 6.7” x 6.7” (17.02cm x 17.02cm)</td>
<td>3.5” SBC, 5.7” x 4.0” (14.6cm x 10.16cm)</td>
<td>Mini-ITX, 6.7” x 6.7” (17.02cm x 17.02cm)</td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>Pico-ITX 2.5” x 2.83” (10.16cm x 7.19cm)</td>
<td></td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots</td>
<td>Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots</td>
<td>Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots</td>
<td>Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots</td>
<td>Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots</td>
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</tr>
<tr>
<td>Expansion Slots</td>
<td>1 PCI-E 2.0 x2 (in x8 slot), 1x Mini-PCI-E with mSATA</td>
<td>1 Full size Mini-PCI-E (USB2.0 x 1, PCI-E Gen2 x 1), 1 M.2 2280 B Key for SATA or PCIe SSD (2242/3042 32-bit key B module is supported by extension bracket)</td>
<td>1 PCI-E 2.0 x2 (in x8 slot), M.2 Form Factor: 2242, 2280</td>
<td>1 Full size Mini-PCI-E (USB2.0 x 1, PCI-E Gen2 x 1)</td>
<td>1 Half size Mini-PCI-E (USB2.0 x 1, PCI-E Gen2 x 1)</td>
<td></td>
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</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>Marvel 88E9230 controller for 4 SATA3 (6 Gbps) ports; RAID 0, 1, 5, 6, 10, 50, 60</td>
<td>SoC controller for 1 SATA3 (6 Gbps) ports;</td>
<td>SoC controller for 2 SATA3 (6 Gbps) ports;</td>
<td>SoC controller for 2 SATA3 (6 Gbps) ports;</td>
<td>SoC controller for 2 SATA3 (6 Gbps) ports;</td>
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<td></td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>Dual LAN with Intel® Ethernet Controller I210-AT</td>
<td>Dual LAN with Intel® Ethernet Controller I210-AT</td>
<td>Dual LAN with Intel® Ethernet Controller I210-AT</td>
<td>Dual LAN with Intel® Ethernet Controller I210-AT</td>
<td>Dual LAN with Intel® Ethernet Controller I210-AT</td>
<td></td>
<td></td>
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<tr>
<td>USB Ports</td>
<td>8 USB 2.0 ports (2 rear + 5 via header(s) + 1 Type A), 2 USB 3.0 ports (2 rear via header(s))</td>
<td>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)</td>
<td>4 USB 2.0 ports (2 rear + 2 via header(s)), 2 USB 3.0 ports (2 rear via header(s))</td>
<td>4 USB 2.0 ports (2 rear + 2 via header(s)), 2 USB 3.0 ports (2 rear via header(s))</td>
<td>2 USB 3.0 ports (rear I/O)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>1 Port SuperDOM, ALC 8885 HD Audio, TPM Header, 3 COM Ports (1 rear, 2 headers), 1x COM in RJ45, 1X COM in RS232, and 1X COM in RS485</td>
<td>ALC 8885 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), 18-bit GPIO header, 1 SMBus header, 1 panel backlight power header, 1 speaker, 1 system Fan</td>
<td>1 Port SuperDOM, 3 COM Ports (1 rear, 2 headers), 1x COM in RJ45, 1X COM in RS232, and 1X COM in RS485,</td>
<td>1 Port SuperDOM, 3 COM Ports (1 rear, 2 headers), 1x COM in RJ45, 1X COM in RS232, and 1X COM in RS485</td>
<td>1 Port SuperDOM, 3 COM Ports (1 rear, 2 headers), 1x COM in RJ45, 1X COM in RS232, and 1X COM in RS485</td>
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</tr>
<tr>
<td>Manageability</td>
<td>SuperDoctor® 5, Watchdog</td>
<td>SuperDoctor® 5, Watchdog</td>
<td>SuperDoctor® 5, Watchdog</td>
<td>SuperDoctor® 5, Watchdog</td>
<td>SuperDoctor® 5, Watchdog</td>
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<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, Monitors CPU voltages, System level control</td>
<td>+1.35V, +12V, +3.3V, +5V, +5V standby, System level control, System temperature, VRAT, VCGI</td>
<td>A2SNAV-L: +1.8V, +12V, +3.3V, +5V, +5V standby, Monitors CPU voltages, System level control</td>
<td>A2SNAV-L: +1.8V, +12V, +3.3V, +5V, +5V standby, Monitors CPU voltages, System level control</td>
<td>A2SNAV-L: +1.8V, +12V, +3.3V, +5V, +5V standby, Monitors CPU voltages, System level control</td>
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<tr>
<td>Thermal Control</td>
<td>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</td>
<td>1x 4-pin fan header (up to 1 fan)</td>
<td>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</td>
<td>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</td>
<td>1x 4-pin fan header (up to 1 fan)</td>
<td></td>
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<tr>
<td>Other Features</td>
<td>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</td>
<td>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</td>
<td>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</td>
<td>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</td>
<td>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</td>
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</tbody>
</table>

**DIMM**
- Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots

**Memory**
- Up to 8GB Unbuffered non-ECC SO-DIMM, DDR3-1866MHz, in 1 DIMM slots

**Processor**
- Intel® Pentium™ Processor N4200, Single Socket FCBA1296 supported, CPU TDP support 6W

**Chipset/System Bus**
- System on Chip

**Form Factor**
- Mini-ITX, 6.7” x 6.7” (17.02cm x 17.02cm)

**Display Ports**
- 1 Full size Mini-PCI-E (USB2.0 x 1, PCI-E Gen2 x 1), 1 M.2 2280 B Key for SATA or PCIe SSD (2242/3042 32-bit key B module is supported by extension bracket)

**Expansion Slots**
- 1 PCI-E 2.0 x2 (in x8 slot), 1x Mini-PCI-E with mSATA

**Onboard RAID Controller**
- Marvel 88E9230 controller for 4 SATA3 (6 Gbps) ports; RAID 0, 1, 5, 6, 10, 50, 60

**Onboard LAN**
- Dual LAN with Intel® Ethernet Controller I210-AT

**Onboard VGA/Display Ports**
- 1 DP (DisplayPort) port(s), 1 HDMI port(s), 1 VGA port(s), 1 eDP (Embedded DisplayPort) port(s), 1 Intel® HD Graphics

**USB Ports**
- 8 USB 2.0 ports (2 rear + 5 via header(s) + 1 Type A), 2 USB 3.0 ports (2 rear via header(s))

**Other Onboard I/O Devices**
- 1 Port SuperDOM, ALC 8885 HD Audio, TPM Header, 3 COM Ports (1 rear, 2 headers), 1x COM in RJ45, 1X COM in RS232, and 1X COM in RS485

**Manageability**
- SuperDoctor® 5, Watchdog

**Health Monitoring**
- +1.8V, +12V, +3.3V, +5V, +5V standby, Monitors CPU voltages, System level control

**Thermal Control**
- 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

**Other Features**
- 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
## Motherboard Solutions

### 2-Core Denverton Quad 1GbE LAN IPMI

**Model**: A2SAN-H, A2SAN-E, A2SAN-L

- **Processor**:
  - -H/E: Intel® Atom™ Processor E3940, Single Socket FBGA1296 supported, CPU TDP support 9.5W
  - -L: Intel® Atom™ Processor E3930, Single Socket FBGA1296 supported, CPU TDP support 6.5W
  - Intel® Atom™ Processor C3338, Single Socket FBGA1310 supported, CPU TDP support 16W
  - Intel® Atom™ Processor C3558, Single Socket FBGA1310 supported, CPU TDP support 25W
  - Intel® Atom™ Processor C3758, Single Socket FBGA1310 supported, CPU TDP support 25W

- **Chipset/System Bus**:
  - System on Chip

- **Form Factor**:
  - Mini-ITX, 6.7" x 6.7" (17.02cm x 17.02cm)

- **Memory**:
  - Up to 8GB Unbuffered non-ECC DDR3-1866MHz, in 1 DIMM slots

- **Expansion Slots**:
  - 1x Full size Mini-PCI-E (USB2.0 x 1, PCI-E x Gen2 x 1, 1 x M.2 2280 B-Key for SATA or PCI-E SSD)
  - 1x 4-pin fan header (up to 4 fans), 4 fans with tachometer monitoring
  - 1x TPM2.0 chip on board (only for –H/-E)

- **Onboard RAID Controller**:
  - SoC controller for 1 SATA3 (6 Gbps) ports

- **Onboard LAN**:
  - Dual LAN with Intel® Ethernet Controller I210IT
  - Quad LAN with Intel® C3000 SoC 1GbE

- **Onboard VGA/Display Ports**:
  - 1 VGA port(s), 1 UVDs port(s), 1 HDMI port(s), 1 Intel® HD Graphics, 1 VGA port(s), 1 Aspeed AST2400 BMC

- **USB Ports**:
  - 4 USB 2.0 ports (+4 via header(s)), 4 USB 2.0 ports (+1 Type C)

- **Other Onboard I/O Devices**:
  - 1x ALC888 HD Audio/Mic-in/Line-Out
  - 1x 6 bit GPIO header
  - 1x SMBus header
  - 1x panel backlight power header
  - 1x Speaker
  - 1x TPM2.0 chip on board (only on -H/E)

- **Manageability**:
  - SuperDoctor® 5, Watchdog

- **Health Monitoring**:
  - +1.35V, +12V, +3.3V, +5V, 3.3V standby, System level control, System temperature, VBAT, VDDI

- **Thermal Control**:
  - 1x 4-pin fan header (up to 1 fan)

- **Other Features**:
  - 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

- **BIOS**:
  - AMI UEFI

### 4-Core Denverton Intel® Quick Assist Technology Quad 1GbE LAN IPMI

**Model**: A2SDi-2C-HLN4F, A2SDi-4C-HLN4F, A2SDi-8C-HLN4F, A2SDi-12C-HLN4F

- **Processor**:
  - Intel® Atom™ Processor C3558, Single Socket FBGA1310 supported, CPU TDP support 25W

- **Chipset/System Bus**:
  - System on Chip

- **Form Factor**:
  - Mini-ITX, 6.7" x 6.7" (17.02cm x 17.02cm)

- **Memory**:
  - Up to 8GB Unbuffered non-ECC DDR4-2400MHz, in 4 DIMM slots

- **Expansion Slots**:
  - 1x PCI-E 3.0 up to 4x (in 4x 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.

- **Onboard RAID Controller**:
  - SoC controller for 12 SATA3 (6 Gbps) ports

- **Onboard LAN**:
  - Quad LAN with Intel® C3000 SoC 1GbE

- **Onboard VGA/Display Ports**:
  - 1 VGA port(s), 1 Aspeed AST2400 BMC

- **USB Ports**:
  - 4 USB 2.0 ports (+4 via header(s)), 4 USB 2.0 ports (+2 rear + 2 via header(s))

- **Other Onboard I/O Devices**:
  - 1 Port SuperDOM, TPM Header, 1 COM Ports (1 header), 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, VDDI

- **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, UD, WOL

- **BIOS**:
  - AMI UEFI
<table>
<thead>
<tr>
<th>MODEL</th>
<th>16-Core Denverton Intel® Quick Assist Technology Quad 10GbE LAN IPMI</th>
<th>12-Core Denverton Quad 10GbE LAN Quad GbE LAN Intel Quick Assist Technology IPMI</th>
<th>8C/16C-Core Denverton Dual/Quad 10GbE LAN Intel Quick Assist Technology IPMI</th>
<th>8-Core Denverton Quad 10GbE LAN Intel® Quick Assist Technology IPMI</th>
<th>12-Core Denverton Quad 10GbE LAN Intel® Quick Assist Technology IPMI</th>
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<tbody>
<tr>
<td>MODEL</td>
<td>A2SDi-16C-HLN4F</td>
<td>A2SDi-TP8F</td>
<td>A2SDi-H-TP4F</td>
<td>A2SDi-H-TF</td>
<td>A2SDV-8C-TLNSF</td>
</tr>
<tr>
<td>Chipset/System Bus</td>
<td>CPU Voltages, Supports system management utility, System level control, System temperature, VBAT</td>
<td>VBAT, +1.8V, +12V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 3.3V standby, 4-fan status</td>
<td>+1.8V, +12V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 4-fan status, 4-fan tachometer monitoring, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, System temperature, VBAT, VCGI</td>
<td>+1.8V, +12V, +5V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 4-fan status, 4-fan tachometer monitoring, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, System temperature, VBAT, VCGI</td>
<td>+1.8V, +12V, +5V, +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, VCGI</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Mini-ITX, 6.7 x 6.7 (17.02cm x 17.02cm)</td>
<td>Mini-ITX, 6.7 x 6.7 (17.02cm x 17.02cm)</td>
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<td>Mini-ITX, 6.7 x 6.7 (17.02cm x 17.02cm)</td>
</tr>
<tr>
<td>Memory</td>
<td>Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
<td>Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
<td>Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
<td>Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
<td>Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
</tr>
<tr>
<td>Capacity &amp; Slots</td>
<td>Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/ non-ECC UDIMM, DDR4-2400MHz, In 4 DMM slots</td>
<td>Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/ non-ECC UDIMM, DDR4-2400MHz, In 4 DMM slots</td>
<td>Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/ non-ECC UDIMM, DDR4-2400MHz, In 4 DMM slots</td>
<td>Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/ non-ECC UDIMM, DDR4-2400MHz, In 4 DMM slots</td>
<td>Up to 256GB Registered ECC RDIMM, DDR4-2400MHz Or 64GB Unbuffered ECC/ non-ECC UDIMM, DDR4-2400MHz, In 4 DMM slots</td>
</tr>
<tr>
<td>Other Features</td>
<td>Processor</td>
<td>8-Core Intel® Atom™ Processor C3958. Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
<td>8-Core Intel® Atom™ Processor C3958. Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
<td>8-Core Intel® Atom™ Processor C3958. Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
<td>8-Core Intel® Atom™ Processor C3958. Single Socket FCBGA1310 supported, CPU TDP support 31W</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
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</tbody>
</table>

**Thermal Control**
- Dual Cooling Zone, Fan speed control, Pulse Width Modulated (PWM) fan connectors.
- System level control, System temperature, VBAT.

**Health Monitoring**
- +12V, +3.3V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 3.3V standby, 4-fan status.
- +1.8V, +12V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDIMM), 4-fan status, 4-fan tachometer monitoring, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, System temperature, VBAT, VCGI.
- +1.8V, +12V, +5V, +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, 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.

**Other Features**
- 12VC or ATX Power Source, 4-pin 12V DC or 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, SDCC, System level control, UHD, WOL.
- 12VC or ATX Power Source, 4-pin 12V DC or 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, Intel® QuickAssist Technology, M.2 NGFF connector, RoHS, SDCC, System level control, UHD, WOL.
- 12VC or ATX Power Source, 4-pin 12V DC or 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, SDCC, System level control, UHD, WOL.
- 12VC or ATX Power Source, 4-pin 12V DC or 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, Intel® QuickAssist Technology, M.2 NGFF connector, RoHS, SDCC, System level control, UHD, WOL.

**Onboard RAID Controller**
- Quad LAN with Intel® C3000 SoC 1GBe.
- 1 COM Port in RJ45 Socket, 1 COM Port (1 header), 1 COM Port (1 header).
- 1 PCI-E 3.0 x4 M.2 Interface: PCI-E 3.0 x8 and SATA.
- 1 PCI-E 3.0 x4 M.2 Form Factor: 2242, 2280.
- 1 PCI-E 3.0 x4 M.2 Key: M-Key.

**Onboard LAN**
- Quad LAN with Intel® C3000 SoC 1GBe.
- Quad LAN with Intel® C3000 SoC 10GBase-T.
- 1 VGA port(s), 4 USB 2.0 ports (4 headers), 2 USB 2.0 ports (2 rear).
- 1 VGA port, 1 Aspeed AST2400 BMC.

**USB Ports**
- 4 USB 2.0 ports (2 rear + 2 via header(s)), 4 USB 2.0 ports (2 rear).
- 4 USB 2.0 ports (2 rear + 2 headers), 4 USB 2.0 ports (2 rear + 1 Type A).
- 6x 4-pin fan headers (up to 6 fans), 6 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.

**IPMI**
- IPMI2.0, KVM with dedicated LAN, NMI, SuperDoctor® 5, Watchdog.
- 6x 4-pin fan headers (up to 6 fans), 6 fans with tachometer monitoring, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, System temperature, VBAT.
**16-Core Denverton**

**Quad 10GBE LAN**

**Intel® Quick Assist Technology**

**IPMI**

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**Model**

<table>
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<tr>
<th>A2SDV-16C-TLN5F</th>
<th>X11SSN-H</th>
<th>X11SSN-E</th>
<th>X11SSN-L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor</strong></td>
<td>Intel® Atom™ Processor C3958, Single Socket FCGBA1310 supported, CPU TDP support 31W</td>
<td>Intel® Xeon® Processor Scalable Family, Single Socket P (LG3 3647) supported, CPU TDP support 15W</td>
<td>Intel® Xeon® Processor Scalable Family, Single Socket P (LG3 3647) supported, CPU TDP support 205W</td>
</tr>
<tr>
<td><strong>Chipset/System Bus</strong></td>
<td>System on Chip</td>
<td>System on Chip</td>
<td>Intel® C621</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>Flex ATX 9.0” x 7.25”, 9” x 7.25” (22.86cm x 18.42cm)</td>
<td>3.5” SBC, 5.7” x 4.0” (14.6cm x 10.16cm)</td>
<td>ATX, 12” x 9.6” (30.48cm x 24.38cm)</td>
</tr>
<tr>
<td><strong>Memory Capacity &amp; Slots</strong></td>
<td>Up to 256GB Registered ECC RDIMM, DDR4-2400MHz, Or 64GB Unbuffered ECC/non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots</td>
<td>Up to 32GB Unbuffered non-ECC SO-DIMM, DDR4-2133MHz, in 2 DIMM slots</td>
<td>8x 288-pin DDR4 DIMM slots Up to 17B ECC 3DS LRDIMM Up to 512GB ECC LRDIMM Up to 256GB ECC RDIMM</td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>1 PCI-E 3.0 x8 Option for Slot 6 or Slot 7</td>
<td>1 Full size Mini-Pcie with mSATA USB2.0 x 1, PCI-E Gen2 x 1, SATA Gen2 x 1</td>
<td>1 PCI-E 3.0 x16, 1 PCI-E 3.0 x16 (x16 or x8), 1 PCI-E 3.0 x8, 1 PCI-E 3.0 x4 (in x8 slot)</td>
</tr>
<tr>
<td><strong>Onboard RAID Controller</strong></td>
<td>Single LAN with Intel® PHY I219LM LAN controller</td>
<td>Single LAN with Intel® Ethernet Controller I210T</td>
<td>Intel® C621 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10 Dual LAN with 10GBase-T with Intel® X722 + X557</td>
</tr>
<tr>
<td><strong>Onboard LAN</strong></td>
<td>Quad LAN with 10GBase-T with Intel® X557 Single LAN with Intel®i210 Gigabit Ethernet Controller</td>
<td>Single LAN with Intel® PHY I219LM LAN controller</td>
<td>Dual LAN with 10GBase-T with Intel® X722 + X557</td>
</tr>
<tr>
<td><strong>Onboard VGA/Display Ports</strong></td>
<td>1 VGA port(s), 1 Aspeed AST2400 BM</td>
<td>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++</td>
<td>1 VGA port(s)</td>
</tr>
<tr>
<td><strong>USB Ports</strong></td>
<td>2 USB 2.0 ports (+ 2 via header(s)), 5 USB 3.0 ports (4 rear via header(s) + 1 Type A)</td>
<td>4 USB 2.0 ports (+ 4 via header(s)), 2 USB 3.0 ports (rear V0), 1 USB 3.1 ports (+ 1 Type C) +1 USB3.0 OTG Header</td>
<td>8 USB 2.0 ports (2 rear + 6 headers), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)</td>
</tr>
<tr>
<td><strong>Other Onboard I/O Devices</strong></td>
<td>Quad LAN with 10GBase-T with Intel® X557 Single LAN with Intel®i210 Gigabit Ethernet Controller</td>
<td>ALC888 HD Audio, TPM 2.0 Chip, 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</td>
<td>2 ports SuperDOM, TPM Header, 2 COM Ports (1 rear, 1 header), Intel® Nodes Manager, IPMI2.0, KVM with dedicated LAN, NMI, SMI, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td><strong>Manageability</strong></td>
<td>IPMI2.0, NMI, SuperDoctor® 5, Watchdog</td>
<td>SuperDoctor® 5, Watchdog</td>
<td>Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SMI, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td><strong>Health Monitoring</strong></td>
<td>+12V, +3.3V, +5V, +5V standby, 1.05 (PCH), 1.2V (VDDMM), 3.3V standby, 6 - fan status, Chassis intrusion header, Monitor CPU voltages, Supports system management utility, System level control, System temperature, VBAT</td>
<td>+12V, +3.3V, +5V, 1.2V (VDDMM), 3.3V standby, Monitors for CPU Cores, System level control, System temperature, VBAT</td>
<td>+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</td>
</tr>
<tr>
<td><strong>Thermal Control</strong></td>
<td>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 (x: speed control), System level control, Thermal control tachometer fan connectors</td>
<td>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</td>
<td>7x 4-pin fan headers (up to 7 fans), Fan speed control, Overheat LED indication, PWM fan speed control, System level control</td>
</tr>
<tr>
<td><strong>Other Features</strong></td>
<td>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® Quick Assist Technology, M.2 NGFF connector, ROHS, System level control, UEFI, WOL</td>
<td>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 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, UDO, WOL</td>
<td></td>
</tr>
<tr>
<td><strong>BIOS</strong></td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
</tr>
</tbody>
</table>

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**Motherboard Solutions**

**Kaby Lake U**

**Skylake-SP**

**High Performance Skylake-SP**

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20
## Motherboard Solutions

### X11SPH-nCTP, X11SPH-nCTPF
- **Processor**: Intel® Xeon® Processor Scalable Family
- **Chipset/System Bus**: Intel® C622
- **Form Factor**: ATX, 12" x 9.6" (30.48cm x 24.38cm)
- **Memory**: 8x 288-pin DDR4 DIMM slots
- **Onboard LAN**: Intel® C622 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10
- **Onboard RAID Controller**: Intel® C622 controller for 12 SATA3 (6 Gbps) ports; RAID 0,1,5,10
- **Onboard VGA/Display Ports**: 1 VGA port(s)
- **USB Ports**: 8 USB 2.0 ports (2 rear + 6 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), 2 ports SuperDOM, TPM Header, 2 COM Ports (1 rear, 1 header)
- **Manageability**: Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, NMI, SP, SUM, SuperDoctor® 5, Watchdog
- **Health Monitoring**: +1.8V, +12V, +3.3V, +5V, +3.3V standby, 3.3V standby, 8-pin status, Chassis intrusion header, 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
- **Other Features**: 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
- **BIOS**: AMI UEFI

### X11SMP-F, X11SMP-TF, X11SMP-TPF
- **Processor**: Intel® Xeon® Processor Scalable Family
- **Chipset/System Bus**: Intel® C622
- **Form Factor**: microATX, 9.6" x 9.6" (24.38cm x 24.38cm)
- **Memory**: 2x 4-pin fan headers (up to 2 fans), Fan speed control, Overheat LED indication, PWM fan speed control, System level control
- **Onboard LAN**: Dual LAN with Intel® i210 Gigabit Ethernet Controller
- **Onboard RAID Controller**: Dual LAN with Intel® X722 + X557
- **Onboard VGA/Display Ports**: 1 VGA port(s), 1 Aspeed AST2500 BMC
- **USB Ports**: 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 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, KVM with dedicated LAN, NMI, SP, SUM, SuperDoctor® 5, Watchdog
- **Health Monitoring**: +1.8V, +12V, +3.3V, +5V, +3.3V standby, 3.3V standby, 7-pin status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT
- **Thermal Control**: 7x 4-pin fan headers (up to 7 fans), Fan speed control, Overheat LED indication, PSM 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, M.2 NGFF connector, RoHS, UID, WOL
- **BIOS**: AMI UEFI

### X11SPW-TF, X11SPW-CTF
- **Processor**: Intel® Xeon® Processor Scalable Family
- **Chipset/System Bus**: Intel® C622
- **Form Factor**: Proprietary WIO, 8" x 13" (20.32cm x 33.02cm)
- **Memory**: 2x 4-pin fan headers (up to 2 fans), Fan speed control, Overheat LED indication, PSM fan speed control, System level control
- **Onboard LAN**: Dual LAN with 10GBase-T with Intel® X722 + X557
- **Onboard RAID Controller**: Dual LAN with Intel® X722 + X557
- **Onboard VGA/Display Ports**: 1 VGA port(s), 1 Aspeed AST2500 BMC
- **USB Ports**: 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 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, KVM with dedicated LAN, NMI, SP, SUM, SuperDoctor® 5, Watchdog
- **Health Monitoring**: +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 8-pin status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT
- **Thermal Control**: 6x 4-pin fan headers (up to 6 fans), Fan speed control, Overheat LED indication, PSM 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, M.2 NGFF connector, RoHS, UID, WOL
- **BIOS**: UEFI 256Mb

### X11SRM-F
- **Processor**: Intel® Xeon® Processor W Family
- **Chipset/System Bus**: Proprietary WIO, 8" x 13" (20.32cm x 33.02cm)
- **Form Factor**: Proprietary WIO, 8" x 13" (20.32cm x 33.02cm)
- **Memory**: 2x 4-pin fan headers (up to 2 fans), Fan speed control, Overheat LED indication, PSM fan speed control, System level control
- **Onboard LAN**: Dual LAN with Intel® X722 + X557
- **Onboard RAID Controller**: Dual LAN with Intel® X722 + X557
- **Onboard VGA/Display Ports**: 1 VGA port(s), 1 Aspeed AST2500 BMC
- **USB Ports**: 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 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, KVM with dedicated LAN, NMI, SP, SUM, SuperDoctor® 5, Watchdog
- **Health Monitoring**: +1.8V, +12V, +3.3V, +5V, +5V standby, 3.3V standby, 7-pin status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, VBAT
- **Thermal Control**: 6x 4-pin fan headers (up to 6 fans), Fan speed control, Overheat LED indication, PSM 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, M.2 NGFF connector, RoHS, UID, WOL
- **BIOS**: UEFI 256Mb
### Motherboard Solutions

#### Skylake-SP X11 DP

<table>
<thead>
<tr>
<th>MODEL</th>
<th>X11DPI-N</th>
<th>X11DPI-NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel® Xeon® Scalable Processors. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2, UPI up to 10.4 GT/s</td>
<td>Intel® Xeon® Scalable Processors. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 3, UPI up to 10.4 GT/s</td>
</tr>
<tr>
<td>Chipset/System Bus</td>
<td>-N: Intel® C621 -NT: Intel® C622</td>
<td>-NT: Intel® C621</td>
</tr>
<tr>
<td>Form Factor</td>
<td>E-ATX, 12” x 13” (30.48cm x 33.02cm)</td>
<td>E-ATX, 12” x 13” (30.48cm x 33.02cm)</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 32 DIMMs ECC DDR4, DDR4-2666MHz, in 16 DIMM slots</td>
<td>DDR4-2666MHz Up to , 2TB 3DS ECC LCDIMM, DDR4-2666MHz, in 16 DIMM slots</td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>-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</td>
<td>-NT: Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>-N: Dual LAN with 1GbE from C621 -NT: Dual LAN with 10GbE-T with Intel® X7272 + X5ST7</td>
<td>Dual LAN with 10GbE from Marvell® 88E1512 -NT: Dual LAN with 10GbE-T with Intel® X7272 + X5ST7</td>
</tr>
<tr>
<td>USB Ports</td>
<td>2 USB 2.0 ports (2 rear), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)</td>
<td>2 USB 2.0 ports (2 rear), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM, TPM 2.0 Header, 2 COM Ports (1 rear, 1 header)</td>
<td>2 ports SuperDOM, TPM 2.0 Header, 2 COM Ports (1 rear, 1 header)</td>
</tr>
<tr>
<td>Manageability</td>
<td>Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® *, Watchdog</td>
<td>Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® *, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, -N: Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, -NT: Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>8x 4-pin fan headers (up to 8 fans), PWM fan speed control, -NT: Pulse Width Modulated (PWM) fan connectors</td>
<td>8x 4-pin fan headers (up to 8 fans), Overheat LED indication, PWM fan speed control</td>
</tr>
<tr>
<td>Other Features</td>
<td>Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS</td>
<td>Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
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</table>

#### Skylake-SP X11 DP

<table>
<thead>
<tr>
<th>MODEL</th>
<th>X11DPI-N</th>
<th>X11DPI-NT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel® Xeon® Scalable Processors. Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2, UPI up to 10.4 GT/s</td>
<td>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</td>
</tr>
<tr>
<td>Chipset/System Bus</td>
<td>-N: Intel® C621 -NT: Intel® C622</td>
<td>-NT: Intel® C621</td>
</tr>
<tr>
<td>Form Factor</td>
<td>E-ATX, 12” x 13” (30.48cm x 33.02cm)</td>
<td>E-ATX, 12” x 13” (30.48cm x 33.02cm)</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>DDR4-2666MHz, in 8 DIMM slots</td>
<td>DDR4-2666MHz Up to , 1TB Registered ECC LCDIMM, DDR4-2666MHz, in 8 DIMM slots</td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>-N: Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>-NT: Intel® C622 controller for 14 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>-N: Dual LAN with 1GbE from Marvell® 88E1512</td>
<td>Dual LAN with 10GbE from Intel® X7272 + X5ST7</td>
</tr>
<tr>
<td>USB Ports</td>
<td>2 USB 2.0 ports (2 rear), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)</td>
<td>2 USB 2.0 ports (2 rear), 5 USB 3.0 ports (2 rear + 2 headers + 1 Type A)</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDUM, TPM 2.0 Header, 2 COM Ports (1 rear, 1 header)</td>
<td>2 ports SuperDUM, TPM 2.0 Header, 2 COM Ports (1 rear, 1 header)</td>
</tr>
<tr>
<td>Manageability</td>
<td>Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® *, Watchdog</td>
<td>Intel® Node Manager, IPMI2.0, KVM with dedicated LAN, SPM, SSM, SUM, SuperDoctor® *, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, -N: Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, -NT: Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>8x 4-pin fan headers (up to 8 fans), PWM fan speed control, -NT: Pulse Width Modulated (PWM) fan connectors</td>
<td>8x 4-pin fan headers (up to 8 fans), Overheat LED indication, PWM fan speed control</td>
</tr>
<tr>
<td>Other Features</td>
<td>Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS</td>
<td>Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
</tr>
<tr>
<td>MODEL</td>
<td>X11DAi-N</td>
<td>X11DPX-T</td>
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<tr>
<td>--------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel® Xeon® Scalable Processors, Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 2, UPI up to 10.4 GT/s</td>
<td>Intel® Xeon® Processor Scalable Family, Dual Socket P (LGA 3647) supported, CPU TDP support 205W, 3, UPI up to 10.4 GT/s</td>
</tr>
<tr>
<td>Chipset/System Bus</td>
<td>Intel® C621</td>
<td>Intel® C621</td>
</tr>
<tr>
<td>Form Factor</td>
<td>E-ATX, 12&quot; x 13&quot; (30.48cm x 33.02cm)</td>
<td>Up to 2TB 3DS ECC RDIMM, DDR4-2666MHz, in 16 DIMM slots</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>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 NVMeExpress x4 Internal Port(s)</td>
<td>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)</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>Onboard RAID Controller</td>
<td>Intel® Xeon® processor E3-1513 v5 Single Socket FCBG1440 supported; CPU up to 8.0GT/s; CPU TDP support 45W, 2.8-3.7GHz, BMB</td>
</tr>
<tr>
<td></td>
<td>Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>Intel® C621 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
</tr>
<tr>
<td></td>
<td>Onboard LAN</td>
<td>Dual LAN with Intel® X550 10GBase-T Ethernet Controller</td>
</tr>
<tr>
<td></td>
<td>Dual LAN with GBe from C621</td>
<td>Dual LAN with Intel® X550 10GBase-T Ethernet Controller</td>
</tr>
<tr>
<td></td>
<td>Onboard VGA/Display Ports</td>
<td>1 VGA port(s), 1 Aspeed AST2500 BMC</td>
</tr>
<tr>
<td></td>
<td>1 VGA port(s), 1 Aspeed AST2500 BMC</td>
<td>1 VGA D-Sub Connector port(s), 1 Aspeed AST2500 BMC</td>
</tr>
<tr>
<td></td>
<td>USB Ports</td>
<td>4 USB 3.0 ports (4 rear), 2 USB 3.1 ports (2 rear)</td>
</tr>
<tr>
<td></td>
<td>4 USB 3.0 ports (4 rear), 2 USB 3.1 ports (2 rear)</td>
<td>5 USB 2.0 ports (4 + 4 via headers + 1 Type A)</td>
</tr>
<tr>
<td></td>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM, 7.1 HD Audio, TPM 2.0 Header, 1 COM Ports (1 header), Thunderbolt header for Thunderbolt 3.0 AOC support</td>
</tr>
<tr>
<td></td>
<td>2 ports SuperDOM, 7.1 HD Audio, TPM 2.0 Header, 1 COM Ports (1 header), Thunderbolt header for Thunderbolt 3.0 AOC support</td>
<td>2 ports SuperDOM, ALC 8885 HD Audio TPM Header, 1 COM Port in RJ45 Socket</td>
</tr>
<tr>
<td>Manageability</td>
<td>Intel® Node Manager, IPMI2.0, SPM, SSM, SUM, SuperDoctor® 5, Watchdog</td>
<td>Intel® Node Manager, IPMI2.0, SPM, SSM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby</td>
<td>+12V, +3.3V, +5V, +5V standby, 1.05 (PCIE), 3-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control, VBAT</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>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)</td>
<td>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</td>
</tr>
<tr>
<td>Other Features</td>
<td>Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS</td>
<td>Chassis intrusion detection, CPU thermal trip support for processor protection, Node Manager Support, RoHS</td>
</tr>
<tr>
<td>BIOS</td>
<td>UEFI 128Mb</td>
<td>AMI 64Mb_spi Flash ROM</td>
</tr>
</tbody>
</table>
### Model Comparison

<table>
<thead>
<tr>
<th>Model</th>
<th>X11SSV-LVDS</th>
<th>X11SSQ-L</th>
<th>X11SSH-F X11SSH-LN4F</th>
<th>X11SSZ-QF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel® 7th/6th Generation Core™ i3 series</td>
<td>Intel® 7th/6th Generation Core™ i3 series</td>
<td>Intel® Xeon® processor E3-1200 v6/v5 product family, Intel® 7th/6th Generation Core™ i7 series, Intel® Celeron®, Intel® Pentium™</td>
<td>Intel® 7th/6th Generation Core™ i7/5/3 series, Intel® Celeron®, Intel® Pentium™, Socket H4 (LGA 1151) supported; CPU TDP support 80W</td>
</tr>
<tr>
<td>Memory</td>
<td>Intel® Celeron*</td>
<td>Intel® Celeron*</td>
<td>AMI UEFI</td>
<td>Intel® Celeron*</td>
</tr>
<tr>
<td>Processor</td>
<td>Socket H4 (LGA 1151) supported; CPU TDP support Up to 91W</td>
<td>Socket H4 (LGA 1151) supported; CPU TDP support Up to 91W</td>
<td>Socket H4 (LGA 1151) supported; CPU TDP support Up to 91W</td>
<td></td>
</tr>
<tr>
<td>Chipset/System Bus</td>
<td>Intel® Q170 Express</td>
<td>Intel® H110</td>
<td>Intel® C236</td>
<td>Intel® Q170</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Mini-ITX 6.7” x 6.7”</td>
<td>Micro-ATX 9.6” x 9.6”</td>
<td>MicroATX 9.6” x 9.6”</td>
<td>uATX 9.6” x 9.6”</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 32GB Unbuffered non-ECC</td>
<td>Up to 32GB Unbuffered non-ECC</td>
<td>64GB Unbuffered non-ECC</td>
<td>64GB Unbuffered non-ECC</td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>Intel® Q170 Express controller for 5 SATA3 (6 Gbps) ports; RAID 0,1,5,10, Intel® RST</td>
<td>Intel® H110 controller for 4 SATA3 (6 Gbps) ports; Intel® RST</td>
<td>Intel® C236 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>Intel® Q170 controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>Single LAN with Intel® PHY I219LM LAN controller</td>
<td>Single LAN with Intel® Ethernet Controller i210-AT</td>
<td>-F: Dual LAN with Intel® Ethernet Controller i210-AT</td>
<td>Dual 1GbE LAN with Intel® I219LM and I210AT</td>
</tr>
<tr>
<td>Onboard VGA/Display Ports</td>
<td>1 HDMI, 1 DP (DisplayPort), 1 LVDS, 3 Independent Displays</td>
<td>1 HDMI, 1 DP (DisplayPort), 1 DVI-D, 1 Intel® HD Graphics</td>
<td>20 Ports</td>
<td>1 HDMI, 1 DP (DisplayPort), 1 DVI-D</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>24 4-pin fan headers (4 fans), Fan speed control, Pulse Width Modulated (PWM) fan connectors, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
<td>1 KVMS with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog</td>
<td>1 KVMS with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog</td>
<td>1 KVMS with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>USB Ports</td>
<td>5 USB 2.0 ports (+4 via headers), 4-pin header +1 Type A, 4-pin header</td>
<td>6 USB 2.0 ports (2 rear +4 via headers)</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM ALC 8888 HD Audio</td>
<td>1 Port SuperDOM ALC 8888 HD Audio +1.8V, +12V, +3.3V, +5V, +5V standby, +12V +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
</tr>
<tr>
<td>Manageability</td>
<td>AMT, NMI, SuperDoctor® 5, vPro, Watchdog</td>
<td>NMI, SuperDoctor® 5, Watchdog</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, 4-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, 4-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, 4-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, 4-fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>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</td>
<td>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, RoHS, System level control, WOL</td>
<td>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, RoHS, System level control, WOL</td>
<td>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</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
<td>UEFI 128Mb</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
</tr>
</tbody>
</table>

[24] SUPERMICR® Embedded Building Block Solutions - October 2017
### BIOS Other Features

#### Thermal Control
- 6-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors

#### 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, VHD, WOL, RSTe

#### Health Monitoring
- +1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control

#### Manageability
- IPMI 2.0 + KVM with dedicated LAN, AMT/vPRO, NMI, SuperDoctor 5, Watchdog

### Workstation ATX PCI-32

**Model**
- X11SAE-F

**Processor**
- Intel® Xeon® processor E3-1200 v6 series family, Intel® 7th/6th Generation Core™ i7/i5/i3 series, Intel® Celeron®, Intel® Pentium®

**Chipset/System Bus**
- Embedded Building Block Solutions - October 2017

**Memory Capacity & Slots**
- 64GB Unbuffered ECC/Non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots

**Expansion Slots**
- 1 PCI-E 3.0 x16 (in x16 slot)

**Onboard LAN**
- 1DVI-I

**Onboard VGA/Display Ports**
- Dual 1GBE LAN with Intel® X550 (TLM4N Only)

**USB Ports**
- 4x USB 3.0 ports (2 rear + 2 via header)
- 6 USB 2.0 ports (4 rear + 4 via headers + 1 Type A)

**Other Onboard I/O Devices**
- 1 Port SuperDOM

**Manageability**
- IPMI 2.0 + KVM with dedicated LAN, AMT/vPRO, NMI, SuperDoctor 5, Watchdog

**Health Monitoring**
- +1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control

**Thermal Control**
- 6-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors

**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, M.2 NGFF connector, System level control, WOL, RSTe

**BIOS**
- AMI UEFI

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**Model**
- Single LAN with Intel® Ethernet Controller 210AT (Share with IPMI), Single LAN with Intel® PHY (B219LM LAN controller)

**Processor**
- Intel® C236

**Chipset/System Bus**
- ATX 9.6" x 9.6"

**Memory Capacity & Slots**
- 64GB Unbuffered ECC/Non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots

**Expansion Slots**
- 1 PCI-E 3.0 x16 (in x16 slot)
- 2 PCI-E 3.0 x4 (in x8 slot)

**Onboard RAID Controller**
- Intel® C236 controller for 5 SATA3 (6 Gbps) ports, RAID 0,1,5,10

**Onboard LAN**
- 1DVI-I

**Onboard VGA/Display Ports**
- Dual 1GBE LAN with Intel® X550 (TLM4N Only)

**USB Ports**
- 4x USB 3.0 ports (2 rear + 2 via header)
- 6 USB 2.0 ports (4 rear + 4 via headers + 1 Type A)

**Other Onboard I/O Devices**
- 1 Port SuperDOM

**Manageability**
- IPMI 2.0 + KVM with dedicated LAN, AMT/vPRO, NMI, SuperDoctor 5, Watchdog

**Health Monitoring**
- +1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility, System level control

**Thermal Control**
- 6-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors

**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, M.2 NGFF connector, System level control, WOL, RSTe

**BIOS**
- AMI UEFI
<table>
<thead>
<tr>
<th>MODEL</th>
<th>Processor</th>
<th>Chipset/System Bus</th>
<th>Form Factor</th>
<th>Memory</th>
<th>Capacity &amp; Slots</th>
<th>Expansion Slots</th>
<th>Onboard RAID Controller</th>
<th>Onboard LAN</th>
<th>Onboard VGA/Display Ports</th>
<th>USB Ports</th>
<th>Other Onboard I/O Devices</th>
<th>Manageability</th>
<th>Health Monitoring</th>
<th>Thermal Control</th>
<th>BIOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>X11SAE-M</td>
<td>Intel® Xeon® processor E3-1200 v6/v5 product family, Intel® 7th/6th Generation Core™ i7/i5/i3 series, Intel® Celeron®<em>, Intel® Pentium®</em>, Socket H4 (LGA 1151) supported; CPU TDP support 95W</td>
<td>Intel® C236</td>
<td>microATX 9.6&quot; x 9.6&quot;</td>
<td>64GB Unbuffered ECC/Non-ECC UDIMM, DDR4-2400MHz, in 4 DIMM slots</td>
<td>4-Core SoC 4-Core SoC 4-Core SoC 4-Core SoC</td>
<td>1 PCI-E x1, 1 PCI-E x1, 1 PCI-E x1, 1 PCI-E x1</td>
<td>Intel® C236 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10 + 1 PCI-E M.2 (PCI-E x4, 2242/2260/2280/22110) (No Raid Support)</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>1 DVI-D (DisplayPort)</td>
<td>6 USB 3.0 ports (2 rear + 4 via header)</td>
<td>Ext. Power Connector Only</td>
<td>AMT, SuperDoctor® 5, Watchdog, vPro</td>
<td>+12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Monitors CPU voltages, VBAT</td>
<td>5 4-pin, Fan speed control, Overheat LED indication</td>
<td>AMI UEFI</td>
</tr>
<tr>
<td>X11SBA-LN4F</td>
<td>Intel® Pentium® Processor N3700</td>
<td>SoC (System on Chip)</td>
<td>Mini-ITX 6.7&quot; x 6.7&quot;</td>
<td>8GB Unbuffered non-ECC SO-DIMM, DDR3-1600MHz, in 2 DIMM slots</td>
<td>Single Core SoC Single Core SoC Single Core SoC Single Core SoC</td>
<td>1 PCI-E x1 (m x8 slot)</td>
<td>Intel® C236 controller for 2 SATA3 (6 Gbps) ports</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>1 DP (DisplayPort)</td>
<td>2 USB 3.0 ports (2 rear)</td>
<td>ALC 888S HD Audio</td>
<td>AMT, SuperDoctor® 5, Watchdog, vPro</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Supports system management utility, System level control</td>
<td>8-pin 12V DC power connector, 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</td>
<td>5 4-pin, Fan speed control, Overheat LED indication</td>
</tr>
<tr>
<td>X11SBA-F</td>
<td>Intel® Celeron® Processor J1900</td>
<td>SoC (System on Chip)</td>
<td>Mini-ITX 6.7&quot; x 6.7&quot;</td>
<td>Single Core SoC Single Core SoC Single Core SoC Single Core SoC</td>
<td>Single Core SoC Single Core SoC Single Core SoC Single Core SoC</td>
<td>SoC controller for 2 SATA3 (6 Gbps) ports</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>1 DP (DisplayPort)</td>
<td>2 USB 3.0 ports (2 rear + 4 via headers + 1 Type A)</td>
<td>ALC 888S HD Audio</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Supports system management utility, System level control</td>
<td>5 4-pin, Fan speed control, Overheat LED indication</td>
<td>AMI UEFI</td>
<td></td>
</tr>
<tr>
<td>X10SBA-L</td>
<td>Intel® Celeron® Processor J1900</td>
<td>SoC (System on Chip)</td>
<td>Mini-ITX 6.7&quot; x 6.7&quot;</td>
<td>Single Core SoC Single Core SoC Single Core SoC Single Core SoC</td>
<td>Single Core SoC Single Core SoC Single Core SoC Single Core SoC</td>
<td>Single Core SoC</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>1 DP (DisplayPort)</td>
<td>2 USB 3.0 ports (2 rear + 4 via headers)</td>
<td>ALC 888S HD Audio</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Supports system management utility, System level control</td>
<td>5 4-pin, Fan speed control, Overheat LED indication</td>
<td>AMI UEFI</td>
<td></td>
</tr>
<tr>
<td>X10SBA</td>
<td>Intel® Celeron® Processor J1900</td>
<td>SoC (System on Chip)</td>
<td>Mini-ITX 6.7&quot; x 6.7&quot;</td>
<td>Single Core SoC Single Core SoC Single Core SoC Single Core SoC</td>
<td>Single Core SoC Single Core SoC Single Core SoC Single Core SoC</td>
<td>Single Core SoC</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>1 DP (DisplayPort)</td>
<td>2 USB 3.0 ports (2 rear + 4 via headers)</td>
<td>ALC 888S HD Audio</td>
<td>Single LAN with Intel® PHY (219LM LAN controller)</td>
<td>+1.8V, +12V, +3.3V, +5V, +5V standby, Chassis intrusion header, Supports system management utility, System level control</td>
<td>5 4-pin, Fan speed control, Overheat LED indication</td>
<td>AMI UEFI</td>
<td></td>
</tr>
</tbody>
</table>

**Other Features**
- **Thermal Control**
  - ACPI power management, WOL, control of power-on for recovery from AC power loss, Control of power-on for recovery from AC power loss, CPU thermal trip support for processor protection, Intel® Smart Response Technology, WOL, 0°C–60°C operating temperature

**BIOS**
- AMI UEFI
## Motherboard Solutions

<table>
<thead>
<tr>
<th>Model</th>
<th>X10SDV-F</th>
<th>X10SDV-4C-TLN2F</th>
<th>X10SDV-16C-TLN4F</th>
<th>X10SDV-7TP8F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor</strong></td>
<td>Intel® Xeon® Processor D-1541, 8 Core; Socket FCBGA1667 supported; CPU TDP support 45W; -8C+: with Active Heatsink -F: with Passive Heatsink</td>
<td>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</td>
<td>Intel® Xeon® Processor D series, Socket FCBGA1667 supported; 16C: D-1587, 24MB, 16 Core, 65W; 12C: D-1557, 18MB, 12 Core, 45W; 8C: D-1541, 12MB, 8 Core, 45W; 6C: D-1538, 9MB, 6 Core, 35W; 4C: D-1518, 6MB, 4 Core, 35W; with Passive Heatsink</td>
<td>Intel® Xeon® Processor D-1587 product family; Socket FCBGA1667 supported; CPU TDP support 65W</td>
</tr>
<tr>
<td><strong>Chipset/System Bus</strong></td>
<td>SoC (System on Chip)</td>
<td>SoC (System on Chip)</td>
<td>SoC (System on Chip)</td>
<td>SoC (System on Chip)</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>Mini-ITX 6.7” x 6.7”</td>
<td>Mini-ITX 6.7” x 6.7”</td>
<td>Mini-ITX 6.7” x 6.7”</td>
<td>Flex ATX 9.0” x 7.25”</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>Capacity &amp; Slots</td>
<td>Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots</td>
<td>Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots</td>
<td>Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots</td>
</tr>
<tr>
<td><strong>Expansion Slots</strong></td>
<td>1 PCI-E 3.0 x16 M 2 PCI-E 3.0 x4, M Key 2242/2280</td>
<td>1 PCI-E 3.0 x16 M 2 PCI-E 3.0 x4, M Key 2242/2280</td>
<td>1 PCI-E 3.0 x8 M 2 PCI-E 3.0 x4, M Key 2242/2280</td>
<td>2 PCI-E 3.0 x8 M 2 PCI-E 3.0 x4, M Key 2242/2280/22110; Mini-Pcie-E with mSATA support</td>
</tr>
<tr>
<td><strong>Onboard RAID Controller</strong></td>
<td>SoC controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10 RSTe</td>
<td>SoC controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10 RSTe</td>
<td>SoC controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10 RSTe</td>
<td>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;</td>
</tr>
<tr>
<td><strong>Onboard LAN</strong></td>
<td>Dual 1GbE LAN with Intel® i350-AM2</td>
<td>Dual 10GBase-T with SoC</td>
<td>Dual 10GbE SFP+ from SoC; Dual 1GbE LAN with Intel® i210; Quad 1GbE LAN with Intel® i350-AM4</td>
<td>1 VGA via Aspeed AST2400 BMC</td>
</tr>
<tr>
<td><strong>USB Ports</strong></td>
<td>4 USB 2.0 ports (4 via headers) 2 USB 3.0 ports (2 rear)</td>
<td>4 USB 2.0 ports (4 via headers) 2 USB 3.0 ports (2 rear)</td>
<td>4 USB 2.0 ports (4 via headers) 2 USB 3.0 ports (2 rear)</td>
<td>2 USB 3.0 ports (2 rear); 5 USB 2.0 ports (+ 4 via headers + 1 Type A)</td>
</tr>
<tr>
<td><strong>Other Onboard I/O Devices</strong></td>
<td>1 Port SuperDOM, TPM Header, 1 COM Ports (1 header), GPIO and SMBus headers</td>
<td>1 Port SuperDOM, TPM 2.0 Header, 1 COM Ports (1 header), GPIO and SMBus headers</td>
<td>1 Port SuperDOM, TPM 2.0 Header, 1 COM Ports (1 header), GPIO and SMBus headers</td>
<td>2 ports SuperDOM, TPM 2.0 Header, 1 COM Ports (1 header), GPIO and SMBus headers</td>
</tr>
<tr>
<td><strong>Manageability</strong></td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td><strong>Health Monitoring</strong></td>
<td>+1.8V, +12V, +3.3V, +5V, 1.2V (VDDIMM), 4 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT</td>
<td>+1.8V, +12V, +3.3V, +5V, 1.2V (VDDIMM), 4 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT</td>
<td>+1.8V, +12V, +3.3V, +5V, 1.2V (VDDIMM), 4 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT</td>
<td>6 -fan, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
</tr>
<tr>
<td><strong>Thermal Control</strong></td>
<td>4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
<td>4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
<td>4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
<td>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</td>
</tr>
<tr>
<td><strong>Other Features</strong></td>
<td>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</td>
<td>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</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td><strong>BIOS</strong></td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
</tr>
</tbody>
</table>
## X10SDV-7TP4F X10SDV-4C-7TP4F X10SDV-2C-7TP4F

<table>
<thead>
<tr>
<th>Processor</th>
<th>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</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipset/System Bus</td>
<td>SoC (System on Chip)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Flex ATX 9.0” x 7.25”</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCI-E 3.0 x8, M.2 PCI-E 3.0 x4, M Key 2242/2280/22110, Mini-PCI-E with mSATA support</td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>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</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>Dual 10GbE SFP+ from SoC; Dual 1GbE LAN with Intel® i210</td>
</tr>
<tr>
<td>Onboard VGA/Display Ports</td>
<td>1 VGA via Aspeed AST2400 BMC</td>
</tr>
<tr>
<td>USB Ports</td>
<td>2 USB 3.0 ports (2 rear), 5 USB 2.0 ports (+ 4 via headers + 1 Type A)</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM TPM 2.0 Header 1 COM Ports (1 header) GPIO and SMBus headers</td>
</tr>
<tr>
<td>Manageability</td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, AMT, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 6 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
</tr>
<tr>
<td>Other Features</td>
<td>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</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
</tr>
</tbody>
</table>

## X10SDV-TP8F X10SDV-2C-TP8F

<table>
<thead>
<tr>
<th>Processor</th>
<th>Intel® Xeon® Processor D-1518, 4 Core; Socket FCBGA 1667 supported; CPU TDP support 35W 2C: D-1508, 3MB, 2 Core, 25W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipset/System Bus</td>
<td>SoC (System on Chip)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Flex ATX 9.0” x 7.25”</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCI-E 3.0 x8, M.2 PCI-E 3.0 x4, M Key 2242/2280/22110, Mini-PCI-E with mSATA support</td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>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</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>Dual 10GbE SFP+ from SoC; Dual 1GbE LAN with Intel® i210</td>
</tr>
<tr>
<td>Onboard VGA/Display Ports</td>
<td>1 VGA via Aspeed AST2400 BMC</td>
</tr>
<tr>
<td>USB Ports</td>
<td>2 USB 3.0 ports (2 rear), 5 USB 2.0 ports (+ 4 via headers + 1 Type A)</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM TPM 2.0 Header 1 COM Ports (1 header) GPIO and SMBus headers</td>
</tr>
<tr>
<td>Manageability</td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, AMT, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 6 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
</tr>
<tr>
<td>Other Features</td>
<td>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</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
</tr>
</tbody>
</table>

## X10SDV-4C-TP4F X10SDV-2C-TP4F

<table>
<thead>
<tr>
<th>Processor</th>
<th>Intel® Xeon® Processor D-1518, 4 Core; Socket FCBGA 1667 supported; CPU TDP support 35W 2C: D-1508, 3MB, 2 Core, 25W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipset/System Bus</td>
<td>SoC (System on Chip)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Flex ATX 9.0” x 7.25”</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM slots</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>2 PCI-E 3.0 x8, M.2 PCI-E 3.0 x4, M Key 2242/2280/22110, Mini-PCI-E with mSATA support</td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>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</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>Dual 10GbE SFP+ from SoC; Dual 1GbE LAN with Intel® i210</td>
</tr>
<tr>
<td>Onboard VGA/Display Ports</td>
<td>1 VGA via Aspeed AST2400 BMC</td>
</tr>
<tr>
<td>USB Ports</td>
<td>2 USB 3.0 ports (2 rear), 5 USB 2.0 ports (+ 4 via headers + 1 Type A)</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM TPM 2.0 Header 1 COM Ports (1 header) GPIO and SMBus headers</td>
</tr>
<tr>
<td>Manageability</td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, AMT, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 6 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>6 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
</tr>
<tr>
<td>Other Features</td>
<td>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</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
</tr>
</tbody>
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## X10SDV-8C-TLN4F+ X10SDV-12C-TLN4F+ X10SDV-16C-TLN4F+

<table>
<thead>
<tr>
<th>Processor</th>
<th>Intel® Xeon Processor D series, Socket FCBGA 1667 supported; 16C: D-1587, 12MB, 16 Core, 65W 12C: D-1557, 18MB, 12 Core, 45W 8C: D-1537, 12MB, 8 Core, 35W with Passive Heatsink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipset/System Bus</td>
<td>SoC (System on Chip)</td>
</tr>
<tr>
<td>Form Factor</td>
<td>Mini-ITX 6.7” x 6.7”</td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 128GB ECC RDIMM, or 64GB ECC/non-ECC UDIMM, DDR4-2133MHz, in 4 DIMM Slots</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1 PCI-E 3.0 x16 M.2 PCI-E 3.0 x4, M Key 2242/2280</td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>SoC controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10 RSTe</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>Dual 10GbE SFP+ from SoC; Dual 1GbE LAN with Intel® i350-AM2;</td>
</tr>
<tr>
<td>Onboard VGA/Display Ports</td>
<td>1 Port SuperDOM, TPM Header, 1 COM Port (1 header), GPIO and SMbus headers</td>
</tr>
<tr>
<td>USB Ports</td>
<td>2 USB 2.0 ports (2 via headers) 2 USB 3.0 ports (2 rear)</td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>1 Port SuperDOM, TPM Header, 1 COM Port (1 header) GPIO and SMBus headers</td>
</tr>
<tr>
<td>Manageability</td>
<td>Redfish 1.0 + IPMI 2.0 + KVM with dedicated LAN, AMT, NMI, SSM, SUM, SuperDoctor® 5, Watchdog</td>
</tr>
<tr>
<td>Health Monitoring</td>
<td>+1.8V, +12V, +3.3V, +5V, 1.2V (VDIMM), 6 -fan status, Chassis intrusion header, Supports system management utility, System level control, VBAT</td>
</tr>
<tr>
<td>Thermal Control</td>
<td>4 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
</tr>
<tr>
<td>Other Features</td>
<td>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</td>
</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
</tr>
</tbody>
</table>
### Other Features

- **A15Ai-2750F/2550F**
  - Processor: Intel® Atom® Processor C2750 (8C/20W) or C2550 (4C/14W)
  - Memory & Slots: 1 PCI-E 2.0 x8, 1 PCI-E 2.0 x8
  - Expansion Slots: 1 PCI-E 2.0 x8
  - Onboard RAID Controller: SoC controller for 4 SATA2 (3 Gbps) ports; 2 SATA3 (6 Gbps); (A15Si-2358F: 2 SATA2)
  - Onboard LAN: Quad 1GbE LAN (Intel® i354)
  - USB Ports: 4 USB 3.0 ports (2 rear + 1 via header + 1 Type A), 2 USB 2.0 ports (2 rear)
  - Other Onboard I/O Devices: 1 SATA DOM power connector 2 fast UART 16550 serial (1 rear, 1 header), TPM 1.2 Header
  - Manageability: IPMI2.0, SuperDoctor S, Watch Dog
  - Health Monitoring: Monitors CPU voltages, +1.18V, +1.2V, +3.3V, +5V, +5V Standby, Chassis intrusion header, Supports system management utility, System level control
  - Thermal Control: 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, UIDs, WOL, 0°C -60°C operating temperature
  - BIOS: AMI UEFI

- **A15AM-2750F**
  - Processor: Intel® Atom® Processor C2750 (8C/20W) or C2550 (4C/14W)
  - Memory & Slots: 1 PCI-E 2.0 x8, 1 PCI-E 2.0 x8
  - Expansion Slots: 1 PCI-E 2.0 x8
  - Onboard RAID Controller: SoC controller for 4 SATA2 (3 Gbps) ports; 2 SATA3 (6 Gbps); (A15Si-2358F: 2 SATA2)
  - Onboard LAN: Quad 1GbE LAN (Intel® i354)
  - USB Ports: 4 USB 3.0 ports (2 rear + 1 via header + 1 Type A), 2 USB 2.0 ports (2 rear)
  - Other Onboard I/O Devices: 1 SATA DOM power connector 2 fast UART 16550 serial (1 rear, 1 header), TPM 1.2 Header
  - Manageability: IPMI2.0, SuperDoctor S, Watch Dog
  - Health Monitoring: Monitors CPU voltages, +1.18V, +1.2V, +3.3V, +5V, +5V Standby, Chassis intrusion header, Supports system management utility, System level control
  - Thermal Control: 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, UIDs, WOL, 0°C -60°C operating temperature
  - BIOS: AMI UEFI

- **A15RM-LN7F-2750F**
  - Processor: Intel® Atom® Processor C2758 (8C/20W) or C2558 (4C/14W)
  - Memory & Slots: 1 PCI-E 2.0 x8, 1 PCI-E 2.0 x8
  - Expansion Slots: 1 PCI-E 2.0 x8
  - Onboard RAID Controller: SoC controller for 4 SATA2 (3 Gbps) ports; 2 SATA3 (6 Gbps); (A15Si-2358F: 2 SATA2)
  - Onboard LAN: Quad 1GbE LAN (Intel® i354)
  - USB Ports: 4 USB 3.0 ports (2 rear + 1 via header + 1 Type A), 2 USB 2.0 ports (2 rear)
  - Other Onboard I/O Devices: 1 SATA DOM power connector 2 fast UART 16550 serial (1 rear, 1 header), TPM 1.2 Header
  - Manageability: IPMI2.0, SuperDoctor S, Watch Dog
  - Health Monitoring: Monitors CPU voltages, +1.18V, +1.2V, +3.3V, +5V, +5V Standby, Chassis intrusion header, Supports system management utility, System level control
  - Thermal Control: 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, UIDs, WOL, 0°C -60°C operating temperature
  - BIOS: AMI UEFI
## Motherboard Solutions

### Model: X10SLH-F
- **Processor:** Intel® Xeon® processor E3-1200 v4/v3 series, Intel® 4th Generation Core™ i3/i5/i7 series, Intel® Pentium®, Celeron®; Socket LGA 1150 supported
- **Chipset/System Bus:** Intel® C226
- **Form Factor:** MicroATX 9.6” x 9.6”
- **Memory Capacity & Slots:** 2 DIMM slots, 8GB with two 4GB SODIMM configuration, 1.35V only
- **Expansion Slots:** 1 x PCI-E 3.0 x8 (in x16 slot), 1 x PCI-E 3.0 x8, 1 x PCI-E 2.0 x4 (in x8 slot)
- **Onboard RAID Controller:** Intel® C226 controller for 6 SATA3 (6Gbps) ports; RAID 0,1,5,10 ASM1061 controller for 2 SATA3 (6Gbps) ports
- **Onboard LAN:** Single LAN with Intel® Ethernet Controller I210
- **Onboard LAN ports:** with 3 Intel® 82574L Gigabit Ethernet Controllers
- **Onboard VGA/Display Ports:** VGA, Aspeed AS2400 BMC
- **USB Ports:** 4 USB 3.0 ports (2 rear + 1 via header + 1 Type A); 6 USB 2.0 ports (2 rear + 4 via headers)
- **Other Onboard I/O Devices:** 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
- **Manageability:** IPMI 2.0 + KVM with dedicated LAN, NMI, SuperDoctor 5, Watchdog
- **Health Monitoring:** 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
- **Thermal Control:** Overheat LED indication, fan speed control, 5x 4-pin fan headers with tachometer monitoring
- **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**
- **BIOS:** AMI UEFI

### Model: X10SAE
- **Processor:** Intel® 4th Generation Core™ i3/i5/i7 series
- **Chipset/System Bus:** Intel® C226
- **Form Factor:** ATX 12” x 9.6”
- **Memory Capacity & Slots:** Up to 16GB DDR3 1600/1333 MHz ECC SODIMM in 2 slots
- **Expansion Slots:** 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® C226 controller for 6 SATA3 (6Gbps) ports; RAID 0,1,5,10 ASM1061 controller for 2 SATA3 (6Gbps) ports
- **Onboard LAN:** Single LAN with Intel® Ethernet Controller I217
- **Onboard LAN ports:** with 3 Intel® 82574L Gigabit Ethernet Controllers
- **Onboard VGA/Display Ports:** 2 VGA, 1 DVI-I, 1 DP (DisplayPort), 1 HDMI
- **USB Ports:** 6 USB 3.0 ports (2 rear + 4 via header) 8 USB 2.0 ports (4 rear, 2 via headers)
- **Other Onboard I/O Devices:** 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
- **Manageability:** IPMI 2.0 + KVM with dedicated LAN, AMT, SuperDoctor 5, vPro, Watchdog
- **Health Monitoring:** Monitors CPU voltages, +3.3V, +5V, +12V & +5V standby and total of four 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header
- **Thermal Control:** Overheat LED indication, thermal control tachometer fan connectors
- **BIOS:** AMI UEFI

### Model: X9SPV-M4
- **Processor:** Intel® Core™ i7-3555LE 25W, i7-3612QE(-3QE) 35W, i7-3517UE(-3UE) 17W
- **Chipset/System Bus:** Mobile Intel® QM77 Express Chipset
- **Form Factor:** ATX PCI-32
- **Memory Capacity & Slots:** 2x SATA 3.0 (6Gbps) ports w/ RAID 0, 1 4x SATA 2.0 (3Gbps) ports w/ RAID 0, 1, 5, 10
- **Expansion Slots:** 2 - 5V PCI 32bit
- **Onboard RAID Controller:** Intel® C226 controller for 6 SATA3 (6Gbps) ports; RAID 0,1,5,10 ASM1061 controller for 2 SATA3 (6Gbps) ports
- **Onboard LAN:** Single LAN with Intel® Ethernet Controller I217
- **Onboard LAN ports:** with 3 Intel® 82574L Gigabit Ethernet Controllers
- **Onboard VGA/Display Ports:** 1 VGA, 1 DVI-I, 1 DP (DisplayPort), 1 HDMI
- **USB Ports:** 4 USB 3.0 ports by headers 6 USB 2.0 ports (4 rear + 2 via headers)
- **Other Onboard I/O Devices:** 1 SATA DOM power connector 1 fast UART 16550 serial port PS/2 mouse & keyboard; Type B of 1394a TPM 1.2 header
- **Manageability:** IPMI 2.0 + KVM with dedicated LAN, AMT, SuperDoctor 5, vPro, Watchdog
- **Health Monitoring:** Monitors CPU voltages, +3.3V, +5V, +12V & +5V standby and total of four 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header
- **Thermal Control:** Overheat LED indication, thermal control tachometer fan connectors
- **BIOS:** AMI UEFI

### Model: X9SPV-M4-3QE
- **Processor:** Intel® Core™ i7-3555LE 25W
- **Chipset/System Bus:** Mobile Intel® QM77 Express Chipset
- **Form Factor:** ATX PCI-32
- **Memory Capacity & Slots:** 2x SATA 3.0 (6Gbps) ports w/ RAID 0, 1 4x SATA 2.0 (3Gbps) ports w/ RAID 0, 1, 5, 10
- **Expansion Slots:** 2 - 5V PCI 32bit
- **Onboard RAID Controller:** Intel® C226 controller for 6 SATA3 (6Gbps) ports; RAID 0,1,5,10 ASM1061 controller for 2 SATA3 (6Gbps) ports
- **Onboard LAN:** Single LAN with Intel® Ethernet Controller I217
- **Onboard LAN ports:** with 3 Intel® 82574L Gigabit Ethernet Controllers
- **Onboard VGA/Display Ports:** 1 VGA, 1 DVI-I, 1 DP (DisplayPort), 1 HDMI
- **USB Ports:** 4 USB 3.0 ports by headers 6 USB 2.0 ports (4 rear + 2 via headers)
- **Other Onboard I/O Devices:** 1 SATA DOM power connector 1 fast UART 16550 serial port PS/2 mouse & keyboard; Type B of 1394a TPM 1.2 header
- **Manageability:** IPMI 2.0 + KVM with dedicated LAN, AMT, SuperDoctor 5, vPro, Watchdog
- **Health Monitoring:** Monitors CPU voltages, +3.3V, +5V, +12V & +5V standby and total of four 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header
- **Thermal Control:** Overheat LED indication, thermal control tachometer fan connectors
- **BIOS:** AMI UEFI

### Model: X9SPV-LN4F-3QE
- **Processor:** Intel® Core™ i7-3555LE 25W
- **Chipset/System Bus:** Mobile Intel® QM77 Express Chipset
- **Form Factor:** ATX PCI-32
- **Memory Capacity & Slots:** 2x SATA 3.0 (6Gbps) ports w/ RAID 0, 1 4x SATA 2.0 (3Gbps) ports w/ RAID 0, 1, 5, 10
- **Expansion Slots:** 2 - 5V PCI 32bit
- **Onboard RAID Controller:** Intel® C226 controller for 6 SATA3 (6Gbps) ports; RAID 0,1,5,10 ASM1061 controller for 2 SATA3 (6Gbps) ports
- **Onboard LAN:** Single LAN with Intel® Ethernet Controller I217
- **Onboard LAN ports:** with 3 Intel® 82574L Gigabit Ethernet Controllers
- **Onboard VGA/Display Ports:** 1 VGA, 1 DVI-I, 1 DP (DisplayPort), 1 HDMI
- **USB Ports:** 4 USB 3.0 ports by headers 6 USB 2.0 ports (4 rear + 2 via headers)
- **Other Onboard I/O Devices:** 1 SATA DOM power connector 1 fast UART 16550 serial port PS/2 mouse & keyboard; Type B of 1394a TPM 1.2 header
- **Manageability:** IPMI 2.0 + KVM with dedicated LAN, AMT, SuperDoctor 5, vPro, Watchdog
- **Health Monitoring:** Monitors CPU voltages, +3.3V, +5V, +12V & +5V standby and total of four 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header
- **Thermal Control:** Overheat LED indication, thermal control tachometer fan connectors
- **BIOS:** AMI UEFI

### Model: X9SPV-LN4F-3LE
- **Processor:** Intel® Core™ i7-3555LE 25W
- **Chipset/System Bus:** Mobile Intel® QM77 Express Chipset
- **Form Factor:** ATX PCI-32
- **Memory Capacity & Slots:** 2x SATA 3.0 (6Gbps) ports w/ RAID 0, 1 4x SATA 2.0 (3Gbps) ports w/ RAID 0, 1, 5, 10
- **Expansion Slots:** 2 - 5V PCI 32bit
- **Onboard RAID Controller:** Intel® C226 controller for 6 SATA3 (6Gbps) ports; RAID 0,1,5,10 ASM1061 controller for 2 SATA3 (6Gbps) ports
- **Onboard LAN:** Single LAN with Intel® Ethernet Controller I217
- **Onboard LAN ports:** with 3 Intel® 82574L Gigabit Ethernet Controllers
- **Onboard VGA/Display Ports:** 1 VGA, 1 DVI-I, 1 DP (DisplayPort), 1 HDMI
- **USB Ports:** 4 USB 3.0 ports by headers 6 USB 2.0 ports (4 rear + 2 via headers)
- **Other Onboard I/O Devices:** 1 SATA DOM power connector 1 fast UART 16550 serial port PS/2 mouse & keyboard; Type B of 1394a TPM 1.2 header
- **Manageability:** IPMI 2.0 + KVM with dedicated LAN, AMT, SuperDoctor 5, vPro, Watchdog
- **Health Monitoring:** Monitors CPU voltages, +3.3V, +5V, +12V & +5V standby and total of four 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header
- **Thermal Control:** Overheat LED indication, thermal control tachometer fan connectors
- **BIOS:** AMI UEFI
<table>
<thead>
<tr>
<th>Model</th>
<th>X9SKV-1125</th>
<th>X9SKV-B915</th>
<th>X9SKV-1105</th>
<th>X9SCV-Q</th>
<th>X9SCV-QV4</th>
<th>C7B75</th>
<th>C7H61/-L</th>
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</thead>
<tbody>
<tr>
<td>Processor</td>
<td>B915C Pentium (2C/15W), E3-1125C Xeon(4C/40W) or E3-1105C/2C(25W) Gladen FCBGA1284 CPU on board</td>
<td>2nd and 3rd Generation Intel® Core™ i7/i5/i3 &amp; Celeron® processors in FCPGA988 socket</td>
<td>2nd and 3rd Generation Intel® Core™ i7/i5/i3 , Pentium® &amp; Celeron® processors in LGA 1155 Socket</td>
<td>Mobile Intel® QM67 Express Chipset</td>
<td>Intel® B75 Express Chipset</td>
<td>Intel® H61 Express Chipset</td>
<td></td>
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<tr>
<td>Chipset/System Bus</td>
<td>Intel® Communications Chipset 8903</td>
<td>Mini-ITX 6.75”W x 6.75”H</td>
<td>Micro-ATX 9.6”W x 9.6”H</td>
<td></td>
<td>Intel® RST Controller with RAID 0,1,5,10</td>
<td>Intel® H61 Express Chipset</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>Flex ATX 9.0” x 7.2”</td>
<td>Quad Port Programmable LAN Bypass</td>
<td>ATX 12”x 9.6”</td>
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</tr>
<tr>
<td>Memory</td>
<td>Up to 32GB ECC SODIMM in 4 slots</td>
<td>Up to 16GB DDR3 1333/1066 MHz Non-ECC SODIMM, in 4 slots</td>
<td>Up to 16GB of DDR3 1600/1333/1066 MHz Non-ECC UDIMM, in 2 slots</td>
<td>Up to 16GB of DDR3 1600/1333/1066 MHz Non-ECC UDIMM, in 2 slots</td>
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</tr>
<tr>
<td>Capacity &amp; Slots</td>
<td>1 PCI-E 2.0 x8 Slot 7 or Slot 6 option by jumper setting</td>
<td>1 PCI-E 2.0 x16</td>
<td>1x PCI-E 3.0 x16</td>
<td>1x PCI-E 3.0 x16</td>
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<tr>
<td>Expansion Slots</td>
<td>2 SATA 3.0 (6Gb/s) ports w/ RAID 0,1</td>
<td>4x SATA 2.0 (3Gb/s) ports w/ RAID 0,1,5,10</td>
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<tr>
<td>Onboard RAID Controller</td>
<td>Intel® AHCI controller for 2 SATA2 (3 Gbps) ports</td>
<td>Intel® RAID controller for 2 SATA2 (3 Gbps) ports</td>
<td>Intel® RST Controller with RAID 0,1,5,10</td>
<td>Intel® RST Controller with RAID 0,1,5,10</td>
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<tr>
<td>Onboard LAN</td>
<td>Quad LAN with Intel® Ethernet Controller</td>
<td>Dual LAN with Intel® 82579LM &amp; 82574L Gigabit Ethernet controller</td>
<td>Single LAN with Intel® 82579V Gigabit Ethernet controller</td>
<td>Dual LAN with Intel® 82579V &amp; 82574L Gigabit Ethernet controller</td>
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<tr>
<td>Onboard VGA/ Display Ports</td>
<td>N/A</td>
<td>Intel® HD Graphics 3000</td>
<td>Intel® HD Graphic 4000</td>
<td>Intel® HD Graphics 4000</td>
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<tr>
<td>USB Ports</td>
<td>5 USB 2.0 ports (2 rear + 2 via headers, 1 type A)</td>
<td>11x USB 2.0 ports(6 rear+4 via headers + 1 Type-A)</td>
<td>4x USB 3.0 ports (2 rear, 2 via headers)</td>
<td>2x USB 3.0 ports (header)</td>
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<tr>
<td>Other Onboard I/O Devices</td>
<td>1 SATA DOM power connector Quad Port Programmable LAN Bypass</td>
<td>1x SATA DOM power connector</td>
<td>1x SATA DOM power connector</td>
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<tr>
<td>Manageability</td>
<td>SuperDoctor III Watch Dog</td>
<td>Watch Dog Super Doctor III AMT 7.0, vPro</td>
<td>Watch Dog SuperDoctor® III</td>
<td>Watch Dog SuperDoctor® III</td>
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<tr>
<td>Health Monitoring</td>
<td>Monitors CPU voltages, +1.8V, +12V, -13.7V, +5V, +5V standby and total of four 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header</td>
<td>Monitors CPU voltages, +3.3V, +5V, +12V &amp; +5V standby and total of 3 4-pin fan headers with tachometer monitoring, supports system management utility, chassis intrusion header</td>
<td>Monitors CPU voltages, +3.3V, +5V, +12V &amp; +5V standby and total of 4 fan headers with tachometer monitoring, supports system management utility, chassis intrusion header</td>
<td>Monitors CPU voltages, +3.3V, +5V, +12V &amp; +5V standby and total of 4 fan headers with tachometer monitoring, supports system management utility, chassis intrusion header</td>
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<tr>
<td>Thermal Control</td>
<td>4x-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control, Thermal control tachometer fan connectors</td>
<td>Overheat LED indication, thermal control tachometer fan connectors</td>
<td>Overheat LED indication, thermal control tachometer fan connectors</td>
<td>Overheat LED indication, thermal control tachometer fan connectors</td>
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<tr>
<td>Other Features</td>
<td>ACPI power management, WOL, control of power-on for recovery from AC power loss, Adaptive Thermal Monitor &amp; CPU thermal trip support for processor protection Quad Port Programmable LAN Bypass 0°C-60°C operating temperature</td>
<td>ACPI power management, control of power-on mode for recovery from AC power loss, Adaptive thermal monitor &amp; CPU thermal trip support for processor protection, Intel® Rapid Storage Technology 4-pin 12V DC power connector (-0V4 only) to facilitate embedded system compact design and configuration 0°C = 35°C operating temperature</td>
<td>ACPI power management, WOL, control of power-on mode for recovery from AC power loss, Adaptive Thermal Monitor &amp; CPU thermal trip support for processor protection. 0°C – 60°C operating temperature</td>
<td>ACPI power management, WOL, control of power-on for recovery from AC power loss, Adaptive Thermal Monitor &amp; CPU thermal trip support for processor protection 0°C – 60°C operating temperature</td>
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<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
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</tbody>
</table>
### Motherboard Solutions

**Model**

- **X10SRW-F**
  - 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”
  - Memory Capacity & Slots: DDR4-2133MHz in 8 DIMM slots
  - Expansion Slots: 2x PCIe E3.0 x16 (in WIO slot), 1x PCIe E3.0 x8 (in x16 slot)
  - Onboard RAID Controller: Intel® C612 controller for 10 SATA3 (6GBps) ports; RAID 0,1,5,10
  - Onboard LAN: Dual LAN with Intel® Ethernet Controller i350-AM2
  - Other Onboard I/O Devices: 2 ports SuperDOM, 2 fast UART 16550 serial, TPM module header, 2 COM Ports (1 rear, 1 header), 1 eUSB header
  - 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
  - Thermal Control: 5 4-pin, Fan speed control, Overheat LED indication, PWM fan speed control, Thermal control tachometer fan connectors
  - BIOS: AMI UEFI

- **X10SRI-F**
  - 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: ATX 12” x 9.6”
  - Memory Capacity & Slots: Up to 512GB ECC RDIMM, 256GB ECC RDIMM, DDR4-2133MHz in 8 DIMM slots
  - Expansion Slots: 1 PCIe E3.0 x16, 1 PCIe E3.0 x4 (in x8)
  - Onboard RAID Controller: Intel® C612 controller for 10 SATA3 (6GBps) ports; RAID 0,1,5,10
  - Onboard LAN: Dual LAN with Intel® Ethernet Controller i350-AM2
  - Other Onboard I/O Devices: 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
  - Health Monitoring: +12V, +3.3V, +5V, +5V standby, 8-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
  - BIOS: AMI UEFI

- **X10SRL-F**
  - 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: ATX 12” x 9.6”
  - Memory Capacity & Slots: Up to 512GB ECC RDIMM, 256GB ECC RDIMM, DDR4-2133MHz in 8 DIMM slots
  - Expansion Slots: 1 PCIe E3.0 x16, 1 PCIe E3.0 x4 (in x8)
  - Onboard RAID Controller: Intel® C612 controller for 10 SATA3 (6GBps) ports; RAID 0,1,5,10
  - Onboard LAN: Dual LAN with Intel® Ethernet Controller i350-AM2
  - Other Onboard I/O Devices: 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
  - Health Monitoring: +12V, +3.3V, +5V, +5V standby, 8-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
  - BIOS: AMI UEFI

- **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: ATX 12” x 9.6”
  - Memory Capacity & Slots: Up to 512GB ECC RDIMM, 256GB ECC RDIMM, DDR4-2133MHz in 8 DIMM slots
  - Expansion Slots: 1 PCIe E3.0 x16, 1 PCIe E3.0 x4 (in x8)
  - Onboard RAID Controller: Intel® C612 controller for 10 SATA3 (6GBps) ports; RAID 0,1,5,10
  - Onboard LAN: Dual LAN with Intel® Ethernet Controller i350-AM2
  - Other Onboard I/O Devices: 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
  - Health Monitoring: +12V, +3.3V, +5V, +5V standby, 8-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
  - BIOS: AMI UEFI

* Please check Tested Memory List on Supermicro website for compatibility.
<table>
<thead>
<tr>
<th>MODEL</th>
<th>X10DRI</th>
<th>X10DRI-T</th>
<th>X10DRH-C(T)</th>
<th>X10DRH-i(T)</th>
<th>X10DAi</th>
<th>X10DRC-T4+/LN4+</th>
<th>X10DRAi-T4+/LN4+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 160W</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
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<td>Chipset/System Bus</td>
<td>Intel® C612 Chipset</td>
<td>Intel® C612 Chipset</td>
<td>Intel® C612 Chipset</td>
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<tr>
<td>Form Factor</td>
<td>E. ATX 12” x 13”</td>
<td>E. ATX 12” x 13”</td>
<td>E. ATX 12” x 13”</td>
<td>E.E. ATX 13.68” x 13”</td>
<td>E.E. ATX 13.68” x 13”</td>
<td>E.E. ATX 13.68” x 13”</td>
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<tr>
<td>Memory Capacity &amp; Slots</td>
<td>Up to 1TB Registered ECC RDIMM, DDR4-2133MHz; Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots; Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots</td>
<td>Up to 1TB Registered ECC RDIMM, DDR4-2133MHz; Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots</td>
<td>1TB 3DS ECC/non-ECC RDIMM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, in 16 DIMM slots</td>
<td>Up to 768GB Registered ECC RDIMM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-2400MHz, in 24 DIMM slots</td>
<td>Up to 768GB Registered ECC RDIMM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-2400MHz, in 24 DIMM slots</td>
<td>Up to 768GB Registered ECC RDIMM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-2400MHz, in 24 DIMM slots</td>
<td></td>
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<tr>
<td>Expansion Slots</td>
<td>3 PCIe 3.0 x16 3 PCIe 3.0 x8</td>
<td>1 PCI-E 3.0 x16 6 PCIe 3.0 x8</td>
<td>3 PCI-E 3.0 x16 2 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8 slot)</td>
<td>3 PCI-E 3.0 x16 2 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8 slot)</td>
<td>3 PCI-E 3.0 x16 2 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8 slot)</td>
<td>3 PCI-E 3.0 x16 2 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8 slot)</td>
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<tr>
<td>Onboard RAID Controller</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>Intel® C612 controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10,10</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10,10</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10,10</td>
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<tr>
<td>Onboard VGA/Display Ports</td>
<td>AST2400 VGA</td>
<td>AST2400 VGA</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>USB Ports</td>
<td>5 USB 3.0 ports (2 rear + 2 via header + 1 Type A) 6 USB 2.0 ports (2 rear + 4 via headers)</td>
<td>5 USB 3.0 ports (2 rear + 2 via header + 1 Type A) 4 USB 2.0 ports (2 rear + 2 via headers)</td>
<td>6 USB 3.0 ports (4 rear + 2 via header) 5 USB 2.0 ports (2 rear + 2 via headers + 1 Type A)</td>
<td>2 ports SuperDOM 7.1 HD Audio TPM module header Thunderbolt AOC Header</td>
<td>2 ports SuperDOM 7.1 HD Audio TPM module header</td>
<td>2 ports SuperDOM</td>
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<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM TPM module header 2 COM Ports (1 rear, 1 header)</td>
<td>2 ports SuperDOM TPM module header 2 COM Ports (1 rear, 1 header)</td>
<td>N/A</td>
<td>NMI</td>
<td>NMI</td>
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<tr>
<td>Manageability</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI SPM, SUM, SuperDoctor® 5, Watchdog</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI SPM, SUM, SuperDoctor® 5, Watchdog</td>
<td>SuperDoctor® 5 Watchdog</td>
<td>SuperDoctor® 5 Watchdog</td>
<td>SuperDoctor® 5 Watchdog</td>
<td>SuperDoctor® 5 Watchdog</td>
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<tr>
<td>Health Monitoring</td>
<td>+12V, +3.3V, +5V, +5V Standby, 3.3V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td>+12V, +3.3V, +5V, +5V Standby, 3.3V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td>+12V, +3.3V, +5V, +5V Standby, 3.3V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td>+12V, +3.3V, +5V, +5V Standby, 3.3V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td>+12V, +3.3V, +5V, +5V Standby, 3.3V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
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<tr>
<td>Thermal Control</td>
<td>8-pin, Overheat LED indication, PWM fan speed control, System level control</td>
<td>8-pin, Overheat LED indication, PWM fan speed control, System level control</td>
<td>8-pin, Overheat LED indication, PWM fan speed control, System level control</td>
<td>8-pin, Overheat LED indication, PWM fan speed control, System level control</td>
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<td>8-pin, Overheat LED indication, PWM fan speed control, System level control</td>
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<tr>
<td>Other Features</td>
<td>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</td>
<td>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</td>
<td>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</td>
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<td>BIOS</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
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<td>MODEL</td>
<td>X10DRL-C(T)</td>
<td>X10DRL-I</td>
<td>X10DRW-i X10DRW-IT</td>
<td>X10DDW-i X10DDW-IN</td>
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<tr>
<td>Processor</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
<td>Intel® Xeon® Processor E5-2600 v4 (Broadwell)/v3 (Haswell) product family supported; QPI up to 9.6GT/s; CPU TDP support up to 145W</td>
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<tr>
<td>Chipset/System Bus</td>
<td>Intel® C612 Chipset</td>
<td>Intel® C612 Chipset</td>
<td>Intel® C612 Chipset</td>
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</tr>
<tr>
<td>Form Factor</td>
<td>ATX 12” x 10”</td>
<td>ATX 12” x 10”</td>
<td>Proprietary 12.3” x 13”</td>
<td>Proprietary 12.8” x 13.4”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory Capacity &amp; Slots</td>
<td>-C: 512GB ECC RMDIM, DDR4-2133MHz; 1TB 3DS ECC/non-ECC LRDIMM, DDR4-2133MHz, in 8 DIMM slots</td>
<td>512GB Registered ECC RMDIM, DDR4-2133MHz; Up to 1TB 3DS ECC LRDIMM, in 8 DIMM slots</td>
<td>1TB Registered ECC RMDIM, DDR4-2400MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-2400MHz, in 4 DIMM slots</td>
<td>-C: Up to 512GB ECC RMDIM, Or 32GB Unbuffered ECC/non-ECC LRDIMM, in 4 DIMM slots</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboard RAID Controller</td>
<td>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 (12Gbps) ports; RAID 0,1,5,6,10,50,60 (for -CT only)</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td>Intel® C612 controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10</td>
<td></td>
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<tr>
<td>Onboard LAN</td>
<td>Dual LAN with Intel® i210 Gigabit Ethernet Controller</td>
<td>Dual LAN with Intel® X540 10GBase-T Ethernet Controller</td>
<td>Dual LAN with Intel® i350 Gigabit Ethernet Controllers</td>
<td>Dual LAN with Intel® i350 Gigabit Ethernet Controllers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onboard VGA/ Display Ports</td>
<td>AST2400 VGA</td>
<td>AST2400 VGA</td>
<td>AST2400 VGA</td>
<td>AST2400 VGA</td>
<td></td>
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</tr>
<tr>
<td>USB Ports</td>
<td>4 USB 3.0 ports (2 rear + 2 via header) 3 USB 2.0 ports (2 via headers + 1 Type A)</td>
<td>4 USB 3.0 ports (2 rear + 2 via header) 5 USB 2.0 ports (2 rear + 2 via headers + 1 Type A)</td>
<td>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)</td>
<td>2 ports SuperDOM 1 SATA DOM power connector TPM onboard header 1 COM port (1 header) SuperCAP connector (&lt;5KU only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Onboard I/O Devices</td>
<td>2 ports SuperDOM 1 SATA DOM power connector TPM onboard header 1 COM port (1 header) SuperCAP connector (&lt;5KU only)</td>
<td>2 ports SuperDOM 1 SATA DOM power connector TPM Module header 2 COM ports (1 rear, 1 header)</td>
<td>2 ports SuperDOM TFM module header 1 COM port (1 header)</td>
<td>2 ports SuperDOM TFM module header 1 COM port (1 header)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manageability</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor®, Watchdog</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor®, Watchdog</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor®, Watchdog</td>
<td>IPMI 2.0 + KVM with dedicated LAN, Intel® Node Manager, NMI, SPM, SUM, SuperDoctor®, Watchdog</td>
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<tr>
<td>Health Monitoring</td>
<td>+12V, +3.3V, +5V, +5V standby, 8-pin fan status, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td>+12V, +3.3V, +5V, +5V standby, 3.3V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td>+12V, +3.3V, +5V, +5V standby, 3.3V standby, Chassis intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td>+12V, +3.3V, +5V, +5V standby, 3.3V standby, intrusion header, Monitors CPU voltages, Supports system management utility</td>
<td></td>
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<tr>
<td>Thermal Control</td>
<td>8-pin, Overheat LED indication, PWM fan speed control</td>
<td>8-pin, Overheat LED indication, PWM fan speed control, System level control</td>
<td>6-pin, Fan speed control, Overheat LED indication, PWM fan speed control, System level control</td>
<td>8-pin, Overheat LED indication, PWM fan speed control, System level control</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other Features</td>
<td>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, UIDs</td>
<td>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, UIDs</td>
<td>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, UIDs</td>
<td>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, UIDs</td>
<td></td>
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</tr>
<tr>
<td>BIOS</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
<td>AMI UEFI</td>
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</tr>
</tbody>
</table>
Embedded Chassis Selection Guide

Fanless/IoT Gateway
- Fanless & robust design
- Low power consumption
- Wide-range working temperature & voltage

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

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

Compact Dual Node System Trays
- Rackmount kit available for Xeon-D and Denventon Systems
- Mounting kits for Single Node

Compact Box System
- Building block design
- Commercial off-the-shelf with extended product life cycle
- Easy deployment

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

<table>
<thead>
<tr>
<th>Model</th>
<th>MCP-220-00095-OB</th>
<th>MCP-220-00095-0B</th>
<th>MCP-210-00007-01</th>
<th>SCPTFB-813LB</th>
<th>MCP-210-82502-0B</th>
<th>MCP-210-84201-0B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
<td>LCD display kits</td>
<td>Full-color OLED kit</td>
<td>Front bezel with LCD display</td>
<td>Front bezel with lock</td>
<td>Front bezel with lock</td>
<td>Front bezel with lock</td>
</tr>
<tr>
<td>Form Factor/Chassis</td>
<td>5.25&quot; bay</td>
<td>3.5&quot;HDD bay</td>
<td>SC813/813M series</td>
<td>SC813/813M series</td>
<td>SC823M series</td>
<td>SC842 series</td>
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</table>

Box PC Compact Enclosures

<table>
<thead>
<tr>
<th>Model</th>
<th>SCE300</th>
<th>SC101F</th>
<th>SC101S</th>
<th>SC101i</th>
<th>SC101iF</th>
<th>SC721TQ-250B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>Flex-ATX 9.0” x 7.25”, Mini-ITX chassis</td>
<td>Mini-ITX 6.75” x 6.75”</td>
<td>1U Mini ITX Box PC</td>
<td>Mini-ITX Box PC</td>
<td>Mini-ITX Box PC</td>
<td>Mini Tower</td>
</tr>
<tr>
<td>Compatible Motherboard</td>
<td>Mini ITX</td>
<td>Mini-ITX</td>
<td>Mini ITX</td>
<td>Mini-ITX</td>
<td>Mini-ITX</td>
<td>Mini ITX</td>
</tr>
<tr>
<td>CPU Support</td>
<td>Single Intel® and AMD processors</td>
<td>Single Intel® and AMD processors</td>
<td>Single processor</td>
<td>Single processor</td>
<td>Single processor</td>
<td>Single processor</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>2x 2.5” fixed drive bay</td>
<td>1x 2.5” fixed drive bay</td>
<td>1x Fixed 2.5” SATA</td>
<td>1x Fixed 2.5” SATA</td>
<td>1x Fixed 2.5” SATA</td>
<td>4 x 3.5” Hot-Swap SATA HDD 2x internal 2.5&quot; SATA HDD</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1x low profile, half-length</td>
<td>1x Mini-PCI-E (optional)</td>
<td>2x Mini PCI-E</td>
<td>1x Mini-PCI-E (optional)</td>
<td>1x Mini-PCI-E (optional)</td>
<td>1x low profile, half-length</td>
</tr>
<tr>
<td>Power Supply</td>
<td>60W / 84W Power Adapter</td>
<td>60W / 84W Power Adapter</td>
<td>60W Power Adapter</td>
<td>60W / 80W Power Adapter</td>
<td>60W / 84W Power Adapter</td>
<td>250W Flex ATX Multi-output Bronze Power Supply</td>
</tr>
<tr>
<td>Dimensions (WaDxDH)</td>
<td>10” x 8.9” x 1.7” 254 x 226 x 43mm</td>
<td>7.6” x 8.9” x 1.7” 381 x 226 x 43mm</td>
<td>7.6” x 7.6” x 1.7” 195 x 195 x 43mm</td>
<td>7.6” x 7.6” x 2.68” 195 x 195 x 68mm</td>
<td>7.6” x 7.6” x 2.68” 195 x 195 x 68mm</td>
<td>11” x 8.27” x 9.45” 280 x 210 x 240mm</td>
</tr>
</tbody>
</table>
### 1U Rackmount Short-Depth Solutions

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
</tr>
<tr>
<td>Compatible Motherboard</td>
<td>Flex ATX, Mini-ITX</td>
<td>Flex ATX, Mini-ITX</td>
<td>MicroATX</td>
<td>MicroATX</td>
<td>ATX, MicroATX</td>
</tr>
<tr>
<td>CPU Support</td>
<td>Single processor</td>
<td>Single processor</td>
<td>Single processor</td>
<td>Single processor</td>
<td>Single processor</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>2 x Fixed 3.5&quot; or 4 x Fixed 2.5&quot; SATA</td>
<td>2 x Fixed 3.5&quot; or 4 x Fixed 2.5&quot; SATA</td>
<td>2x hot-swap 2.5&quot; SATA</td>
<td>Up to 4x Fixed 2.5&quot; SATA*</td>
<td>1x Fixed 2.5&quot; or 3.5&quot; SATA</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1x full-height, half-length</td>
<td>1x full-height, half-length</td>
<td>1x low profile, half-length</td>
<td>1x full-height, half-length**</td>
<td>1x full-height, half-length</td>
</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>17.2&quot;x9.8&quot;x1.7&quot; 437 x 249 x 43 mm</td>
<td>17.2&quot;x9.8&quot;x1.7&quot; 437 x 249 x 43 mm</td>
<td>17.2&quot;x11.3&quot;x1.7&quot; 437 x 287 x 43 mm</td>
<td>17.2&quot;x9.8&quot;x1.7&quot; 437 x 249 x 43 mm</td>
<td>16.8&quot;x14&quot;x1.7&quot; 437 x 356 x 43 mm</td>
</tr>
</tbody>
</table>

* When ADC area not occupied  ** When HDD area not occupied

### Short-Depth DP/UP Solutions

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
<td>1U Rackmount</td>
</tr>
<tr>
<td>Compatible Motherboard</td>
<td>ATX, MicroATX</td>
<td>ATX, MicroATX</td>
<td>ATX, MicroATX</td>
<td>ATX, MicroATX/WIO</td>
</tr>
<tr>
<td>CPU Support</td>
<td>Single processors</td>
<td>Dual and single processors</td>
<td>Dual and single processors</td>
<td>Single processors</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>2x Fixed 2.5&quot; or 3.5&quot; SATA</td>
<td>2x Fixed 2.5&quot; HDD</td>
<td>Up to 2x 2.5&quot; fixed with bracket - SAS or enterprise SATA HDD</td>
<td>2x Fixed 2.5&quot; HDD***</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>1x full-height, half-length</td>
<td>2x full-height, 1 low profile 1 full height expansion slot</td>
<td>Up to 2x full-height</td>
<td>Up to 2x full-height</td>
</tr>
<tr>
<td>Power Supply</td>
<td>350W High-efficiency Power Supply 80 PLUS® Gold Certified</td>
<td>400W (1+1) Redundant SuperCompact Gold-level power supply with PMBus and I2C</td>
<td>500W High-efficiency Power Supply 80 PLUS® Platinum Certified</td>
<td>400W (1+1) Redundant SuperCompact Platinum-level power supply with PMBus and I2C</td>
</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>17.2&quot;x14.5&quot;x1.7&quot; 437 x 369 x 43 mm</td>
<td>17.2&quot;x16.9&quot;x1.7&quot; 437 x 429 x 43 mm</td>
<td>17.2&quot;x16.9&quot;x1.7&quot; 437 x 429 x 43 mm</td>
<td>17.2&quot;x16.9&quot;x1.7&quot; 437 x 429 x 43 mm</td>
</tr>
</tbody>
</table>

*** 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.

### Short-Depth Front I/O redundant power supply

### 2U/3U IPC/Rack Solutions

<table>
<thead>
<tr>
<th>Model</th>
<th>SC825MTQ-R700LPB</th>
<th>SC835BTQ-R1K28</th>
<th>SC842XTQ-R606B</th>
<th>SC213XAC-R1K05</th>
<th>SC825XTQC-R1K05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>2U Rackmount</td>
<td>3U Rackmount</td>
<td>4U Rackmount</td>
<td>2U Rackmount</td>
<td>2U Rackmount</td>
</tr>
<tr>
<td>Compatible Motherboard</td>
<td>E-ATX, ATX, MicroATX</td>
<td>E-ATX, ATX, MicroATX</td>
<td>E-ATX, ATX, MicroATX</td>
<td>E-ATX, ATX, MicroATX</td>
<td>E-ATX 12&quot;x13&quot;, ATX 12&quot;x10&quot;</td>
</tr>
<tr>
<td>CPU Support</td>
<td>Dual and single processors</td>
<td>Dual and single processors</td>
<td>Dual and single processors</td>
<td>Dual and single processors</td>
<td>Dual and single processors</td>
</tr>
<tr>
<td>Drive Bays</td>
<td>3x 3.5&quot; Hot-swap SAS / SATA</td>
<td>8x Hot-swap 3.5&quot; SAS / SATA</td>
<td>5x Hot-swap 3.5&quot; SAS / SATA</td>
<td>16x 2.5&quot; hot-swap SAS/SATA drive bay</td>
<td>8x 3.5&quot; hot-swap SAS/SATA drive bay w/ SGPIO and 2x 3.5&quot; fixed drive bay</td>
</tr>
<tr>
<td>Expansion Slots</td>
<td>7 low-profile expansion slots</td>
<td>7x full-height, full-length</td>
<td>7x full-height, full-length and 4x full-height, half-length</td>
<td>11 low-profile expansion slot(s)</td>
<td>7 low-profile expansion slot(s)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>700W Redundant High-Efficiency Power Supply</td>
<td>1280W Redundant Platinum Level Power Supply</td>
<td>600W Redundant High-Efficiency Power Supply 80 PLUS® Platinum Certified</td>
<td>2x 1U 800/1000W Redundant Power Supply 38mm Width</td>
<td>2x 1U 740W Redundant Platinum Power Supply w/ PMBus</td>
</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>17.2&quot;x17.7&quot;x3.5&quot; 437x 450 x 89 mm</td>
<td>17.2&quot;x20.5&quot;x7&quot; 437 x 521 x 178mm</td>
<td>17.2&quot;x20.5&quot;x7&quot; 437 x 521 x 178mm</td>
<td>17.2&quot;x25.6&quot;x3.5&quot; 437 x 650 x 89mm</td>
<td>17.2&quot;x25.5&quot;x3.5&quot; 437 x 647 x 89mm</td>
</tr>
</tbody>
</table>
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 Driven Networks (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.

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.

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.

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.
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 SuperServer 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 (M0300B 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 Supermicro 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.

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

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 (6Gbps) 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.

Riser Cards
A riser card plugs into the motherboard and provides additional 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.

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

Intel® Atom® Processor C3000 Solutions
3rd Generation Atom® SoC with new levels of integration, Performance/Watt leadership targeting Embedded/IoT workloads and applications that require very low power, high density and Quick Assist Technology.

Mounting Brackets
Flexible solutions with mounting brackets for standard 19" rack, single tray dual node, VESA, DIN rails and wall mount brackets.

Small Form Factor and Fanless Solutions
Small form factor fanless solutions with compact single board computers (SBC) consuming sub 15W, scaling from Atom® to Core i7® and support for a wide temperature range.

45 Bay Top Loading Storage Solutions
Top-loading, capacity-maximized storage solutions ideal for use cases such as data replication, data backup, archive and cold storage, video streaming and surveillance, providing customers with more choices to deploy software-defined data centers.