



**High Performance  
Embedded  
vPro AMT  
IPMI**

## Key Features

10th Generation Intel® Core™ i9/Core™ i7/Core™ i5/Core™ i3 Processor, Intel® Xeon® W-1200 Processors  
Single Socket LGA-1200 (Socket H5) supported, CPU TDP supports Up to 125W TDP

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Single LAN with Intel® PHY I219LM LAN controller  
Single LAN with Intel® Ethernet Controller I210-AT

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Intel® W480E

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Up to 128GB Unbuffered ECC/non-ECC UDIMM, DDR4-2933MHz, in 4 DIMM slots

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1 PCI-E 3.0 x16,  
1 PCI-E 3.0 x4 (in x8 slot),  
1 PCI-E 3.0 x4  
1 M.2 M-Key SATA/PCI-E 3.0 x4, 2280/22110  
1 M.2 E-Key CNV/PCI-E 3.0 x1, 2230

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Intel® W480E controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,5,10

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1 VGAD-Sub Connector port, 2 DP++(Dual-Mode DisplayPort) ports, 1 DVI - D port

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## Product SKUs

**MBD-X12SCZ-F** ■ X12SCZ-F

## Physical Stats

**Form Factor** ■ Micro-ATX

**Dimension** ■ 9.6" x 9.6" (24.38cm x 24.38cm)

## Processor

**CPU** ■ Intel® Xeon® W-1200 Processors, 10th Generation Intel® Core™ i9/Core™ i7/Core™ i5/Core™ i3 Processor  
■ Single Socket LGA-1200 (Socket H5) supported, CPU TDP supports Up to 125W TDP  
■ A graphic integrated CPU is required to have onboard video from the DVI and DP ports

**Core** ■ Up to 10 cores

**Note** ■ \*\* Motherboard supports this maximum TDP. Please verify your system can thermally support.  
\*\*The X12SCZ does not support the Intel 10th/11th generation processor 2M cache SKUs. These processors will not boot with the latest BIOS version.

## System Memory

**Memory Capacity** ■ 4 DIMM slots  
■ Up to 128GB ECC/non-ECC UDIMM, DDR4-2933MHz

**Memory Type** ■ 2933/2666/2400/2133MHz

**DIMM Sizes** ■ 4GB, 8GB, 16GB, 32GB

**Memory Voltage** ■ 1.2V

**Error Detection** ■ Corrects single-bit errors  
■ Detects double-bit errors (using ECC memory)

## On-Board Devices

**Chipset** ■ Intel® W480E

**SATA** ■ Intel® W480E controller for 4 SATA3 (6 Gbps) ports; RAID 0,1,5,10

**IPMI** ■ ASPEED AST2500

**Audio** ■ ALC 888S HD Audio

**Graphics** ■ Intel® HD Graphics  
■ ASPEED AST2500 BMC

**Network Controllers** ■ Single LAN with Intel® PHY I219LM LAN controller  
■ Single LAN with Intel® Ethernet Controller I210-AT

## Input / Output

**SATA** ■ 4 SATA3 (6Gbps) port(s)

**LAN** ■ 2 RJ45 Gigabit Ethernet LAN ports

**USB** ■ 6 USB 3.2 Gen2 port(s) (4 rear type A; 2 via header)  
■ 6 USB 2.0 port(s) (6 via header)

**Video Output** ■ 1 DVI - D port(s), 1 VGA D-Sub Connector port(s), 2 DP++(Dual-Mode DisplayPort) port(s)

**Serial Port** ■ 1 COM Port(s) (1 header)

**DOM** ■ 1 SATA DOM (Disk on Module) power connector support

**TPM** ■ 1 TPM Header & Chip both

## Expansion Slots

**PCI-E** ■ 1 PCI-E 3.0 x16,  
■ 1 PCI-E 3.0 x4,  
■ 1 PCI-E 3.0 x4 (in x8 slot)

**M.2** ■ M.2 Interface: 1 SATA/PCI-E 3.0 x4; 1 CNVI/PCI-E 3.0 x1  
■ Form Factor: 2280/22110, 2230  
■ Key: M-Key, E-Key

## System BIOS

**BIOS Type** ■ AMI UEFI

**BIOS Features** ■ ACPI 6.1  
■ SMBIOS 3.1  
■ PCI FW 3.0  
■ UEFI 2.6  
■ RTC (Real Time Clock) Wakeup

## Management

**Software** ■ SuperDoctor® 5, SUM, AMT, vPro, Watchdog, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support

**System Management Software** ■ IPMI (Intelligent Platform Management Interface) v1.5 / 2.0 with KVM support

**Power Configurations** ■ ACPI Power Management, ATX Power connector, +12V DC Power Input

## PC Health Monitoring

**Voltage** ■ VBAT, PCH temperature, Memory, CPU, Chassis intrusion header, 5 -fan status, 1.2V (VDIMM), 1.05 (PCH), +5V standby, +5V, +3.3V, +12V

**LED** ■ UID/Remote UID  
■ Power LED  
■ BMC/IPMI Heartbeat LED

**Temperature** ■ Thermal Control for 5 Fan Connectors

**FAN** ■ 5x 4-pin fan headers (up to 5 fans)  
■ Fan speed control  
■ Dual Cooling Zone  
■ 5 fans with tachometer status monitoring

**Other Features** ■ UID, RoHS, M.2 NGFF connector, Dual Cooling Zones, Chassis intrusion header, ATX Power connector, ACPI power management, 8-pin 12V DC power connector, 12V DC or ATX Power Source

## Operating Environment

**Operating Temperature Range** ■ 0°C - 60°C (32°F - 140°F)

**Non-Operating Temperature Range** ■ -40°C - 85°C (-40°F - 185°F)

**Operating Relative Humidity Range** ■ 10% - 85% (non-condensing)

**Non Operating Relative Humidity Range** ■ 5% - 95% (non-condensing)