



## Key Features

Intel® Xeon® E-2300 Processor, 10th Generation Intel® Pentium® Processor, Single Socket LGA-1200 (Socket H5) supported, CPU supports Up to 95W TDP

Intel® C252

Up to 128GB Unbuffered ECC UDIMM, DDR4-3200MHz, in 4 DIMM slots

1 PCI-E 4.0 x8,  
1 PCI-E 4.0 x8 (in x16 slot),  
1 PCI-E 4.0 x4 (in x8 slot) 1 PCI-E 3.0 x2 (in x4 slot)

**M.2 Interface:** 1 PCI-E 3.0 x4

**M.2 Form Factor:** 2280/22110

**M.2 Key:** M-Key

Dual LAN with 1GbE with Intel® I210

Intel® C252 controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10

1 VGAD-Sub Connector port

2 SuperDOM with built-in power

5x USB 3.2 Gen1 (2 rear, 1 Type-A, 2 via header), 4x USB 2.0 (2 rear, 2 via headers)

## Product SKUs

- MBD-X12STL-F ■ X12STL-F

## Physical Stats

- **Form Factor** ■ microATX
- **Dimension** ■ 9.6" x 9.6" (24.38cm x 24.38cm)

## Processor

- **CPU** ■ 10th Generation Intel® Pentium® Processor, Intel® Xeon® E-2300 Processor
- Single Socket LGA-1200 (Socket H5) supported, CPU TDP supports Up to 95W TDP
- **Core** ■ Up to 8 cores

## System Memory

- **Memory Capacity** ■ 4 DIMM slots
- Up to 128GB ECC UDIMM, DDR4-3200MHz
- **Memory Type** ■ 3200/2933/2666MHz SDRAM
- **DIMM Sizes** ■ 4GB, 8GB, 16GB, 32GB
- **Memory Voltage** ■ 1.2V
- **Error Detection** ■ Corrects single-bit errors

## On-Board Devices

- **Chipset** ■ Intel® C252
- **SATA** ■ Intel® C252 controller for 6 SATA3 (6 Gbps) ports; RAID 0,1,5,10
- **IPMI** ■ ASPEED AST2600 BMC
- **Graphics** ■ ASPEED AST2600 BMC
- **Network Controllers** ■ Dual LAN with 1GbE with Intel® I210

## Input / Output

- **SATA** ■ 6 SATA3 (6Gbps) port(s)
- **LAN** ■ 2 1GbE LAN ports
- **USB** ■ 4 USB 2.0 port(s) (2 rear; 2 via header)
- 5 USB 3.2 Gen1 port(s) (2 via header; 2 rear; 1 type A)
- **Video Output** ■ 1 VGA D-Sub Connector port(s)
- **Serial Port** ■ 2 COM Port(s) (1 header; 1 rear)
- **DOM** ■ 2 SuperDOM (Disk on Module) power connector
- **TPM** ■ 1 TPM Header

## Expansion Slots

- **PCI-E** ■ 1 PCI-E 4.0 x8 (in x16 slot),
- 1 PCI-E 4.0 x8,
- 1 PCI-E 4.0 x4 (in x8 slot),
- 1 PCI-E 3.0 x2 (in x4 slot)
- **M.2** ■ M.2 Interface: 1 PCI-E 3.0 x4
- Form Factor: 2280/22110
- Key: M-Key

## System BIOS

- **BIOS Type** ■ 256MB UEFI
- **BIOS Features** ■ ACPI 6.0
- SMBIOS 3.3
- Plug and Play (PnP)
- RTC (Real Time Clock) Wakeup
- UEFI 2.7
- USB Keyboard support
- PCI 3.0

## Management

- **Software** ■ SuperDoctor® 5, SUM, SPM, SSM, IPMI2.0, Watchdog
- **System Management Software** ■ IPMI (Intelligent Platform Management Interface) v1.5 / 2.0 with KVM support
- **Power Configurations** ■ Power-on mode for AC power recovery, ACPI Power Management

## PC Health Monitoring

- **Voltage** ■ VBAT, System level control, Supports system management utility, Monitors CPU voltages, Chipset Voltage, Chassis intrusion header, 6 -fan status, 3.3V standby, +5V standby, +5V, +3.3V, +12V, +1.8V, Memory Voltages
- **LED** ■ UID/Remote UID
- BMC/IPMI Heartbeat LED
- **Temperature** ■ Monitoring for CPU and chassis environment
- CPU thermal trip support
- Thermal Monitor 2 (TM2) support
- PECI
- **FAN** ■ 6x 4-pin fan headers (up to 6 fans)
- Thermal control tachometer fan connectors
- Fan speed control
- 6 fans with tachometer status monitoring
- Overheat LED indication
- **Other Features** ■ WOL, UID, M.2 NGFF connector, Dual Cooling Zones, CPU thermal trip support for processor protection, Control of power-on for recovery from AC power loss, Chassis intrusion detection, ACPI power management

## Operating Environment

- **Operating Temperature Range** ■ 0°C - 50°C (32°F - 122°F)
- **Non-Operating Temperature Range** ■ -20°C - 60°C (-4°F - 140°F)
- **Operating Relative Humidity Range** ■ 10% - 85% (non-condensing)
- **Non Operating Relative Humidity Range** ■ 10% - 95% (non-condensing)