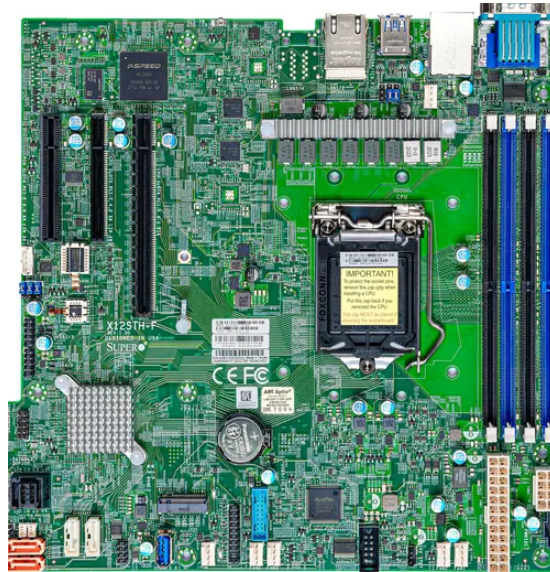


# X12STH-F

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## Dual 1GbE

### 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® C256

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

1 PCIe 4.0 x16

1 PCIe 4.0 x4 (in x8 slot)

1 PCIe 3.0 x4 (in x8 slot)

**M.2 Interface:** PCIe 3.0 x4

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

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

Dual LAN with Intel® Ethernet Controller I210

Intel® C256 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10

2 SuperDOM with built-in power

I/O: 1 VGA, 2 COM, 1 TPM header

5x USB 3.2 Gen1 (2 rear, 1 Type-A, 2 via header), 6x USB 2.0 (2 rear, 4 via headers)

Gen12 iGPU support

### Specifications

**Product SKUs****MBD-X12STH-F****Physical Stats****Form Factor**

Micro-ATX

**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, 16 threads

**System Memory****Memory Capacity**

4 DIMM slots

Up to 128GB Unbuffered ECC UDIMM, DDR4-3200MHz

**Memory Type**

3200/2933/2666 MT/s SDRAM

**DIMM Sizes**

4GB, 8GB, 16GB, 32GB

**Memory Voltage**

1.2V

**Error Detection**

Corrects single-bit errors

**On-Board Devices****Chipset**

Intel® C256

**SATA**

Intel® C256 controller for 8 SATA3 (6 Gbps) ports; RAID 0,1,5,10

**IPMI**

ASPEED AST2600 BMC

**Graphics**

1 ASPEED AST2600 BMC port(s)

**Network Controllers**

Dual LAN with Intel® Ethernet Controller I210

**Input / Output****SATA**

8 SATA3 (6Gbps) port(s)

**LAN**

2 RJ45 Gigabit Ethernet LAN ports

**USB**

6 USB 2.0 port(s) (4 via header; 2 rear)

5 USB 3.2 Gen1 port(s) (2 via header; 2 rear; 1 type A)

**Video Output**

1 VGA port(s)

**Serial Port**

2 COM Port(s) (1 header; 1 rear)

**DOM**2 SATA DOM (Disk on Module) power connector support**TPM**

1 TPM Header

**Expansion Slots****PCIe**

1 PCIe 3.0 x4 (in x8 slot),

1 PCIe 4.0 x16,

1 PCIe 4.0 x4 (in x8 slot)

**M.2**

M.2 Interface: 1 PCIe 3.0 x4

Form Factor: 2280/22110

Key: M-Key

**System BIOS****BIOS Type**

256MB UEFI

**BIOS Features**

ACPI 6.0

SMBIOS 2.7

Plug and Play (PnP)

RTC (Real Time Clock) Wakeup

UEFI 2.7

USB Keyboard support

PCI 3.0

**Management****Software**[Redfish API](#), [Supermicro Server Manager \(SSM\)](#),[Supermicro Update Manager \(SUM\)](#), [SuperDoctor® 5](#),[Super Diagnostics Offline](#), [KVM with dedicated LAN](#), [IPMI](#)[2.0](#)**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

**Security****Hardware**

Trusted Platform Module (TPM) 2.0

**PC Health Monitoring****Voltage**

VBAT, System level control, Supports system management utility, Monitors CPU voltages, Chipset Voltage, Chassis intrusion header, 6 -fan status, +5V standby, +5V, +3.3V, +12V, Memory Voltages

**LED**

UID/Remote UID

CPU / System Overheat 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, Node Manager Support, 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 header, Chassis intrusion detection, ACPI power management

**Operating Environment****Operating Temperature Range**

0°C - 50°C (32°F - 122°F)

**Non-Operating Temperature Range**

-40°C - 70°C (-40°F - 158°F)

**Operating Relative Humidity Range**

8% - 90% (non-condensing)

**Non Operating Relative Humidity Range**

5% - 95% (non-condensing)

## Parts List

### Standard Parts (Bulk Package)

**I/O Cables**

Part Number	CBL-0044L • <a href="#">eStore</a>
Qty	2
Description	57.5CM SATA FLAT S-S PBF

**I/O Shield**

Part Number	MCP-260-00164-0N
Qty	1
Description	STD I/O Shield for X12STH-F with EMI Gasket

### Standard Parts (Retail Package)

**I/O Cables**

Part Number	CBL-0044L • <a href="#">eStore</a>
Qty	4
Description	57.5CM SATA FLAT S-S PBF

**I/O Shield**

Part Number	MCP-260-00164-0N
Qty	1
Description	STD I/O Shield for X12STH-F with EMI Gasket

**QRG**

Part Number	MNL-2367-QRG
Qty	1
Description	Motherboard Quick Reference Guide

### Optional Parts

**1U I/O Shield**

Part Number	MCP-260-00165-0N
Qty	--
Description	Standard 1U I/O Shield with EMI Gasket

**TPM security module**

Part Number	AOM-TPM-9671H	AOM-TPM-9670H	AOM-TPM-9671V	AOM-TPM-9670V
Qty	--	--	--	--
Description	SPI capable TPM 1.2 with Infineon 9670 controller with horizontal form factor	SPI capable TPM 2.0 with Infineon 9670 controller with horizontal form factor	SPI capable TPM 1.2 with Infineon 9670 controller with vertical form factor	SPI capable TPM 2.0 with Infineon 9670 controller with vertical form factor