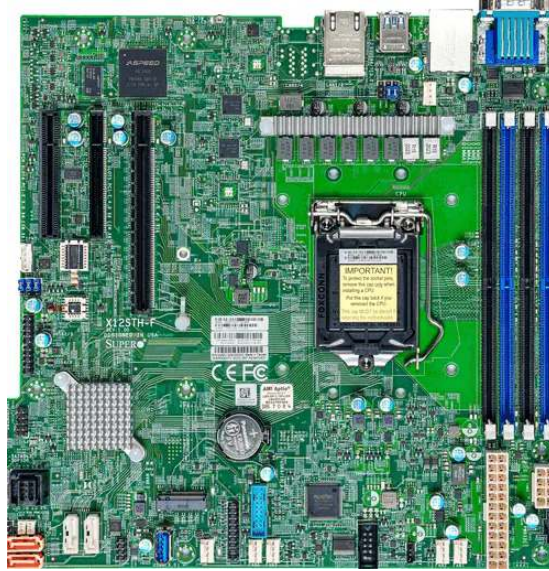# X12STH-F

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 (/SATADOM/) (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 (/manuals/other/RedfishRefGuide.pdf),
Supermicro Server Manager (SSM)
(/solutions/SMS_SSM.cfm), Supermicro Update Manager
(SUM) (/solutions/SMS_SUM.cfm), SuperDoctor® 5
(/en/solutions/management-software/superdoctor),
Super Diagnostics Offline (/en/solutions/management-software/super-diagnostics-offline), KVM with dedicated
LAN
(/manuals/other/BMC_IPMI_X13_H13.pdf#page=112),
IPMI 2.0 (/solutions/IPMI.cfm)
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 • eStore (https://store.supermicro.com/supermicro-sata-flat-straight-straight-57-5cm-cable-cbl-0044l.html)
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 • eStore (https://store.supermicro.com/supermicro-sata-flat-straight-straight-57-5cm-cable-cbl-0044l.html)
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

Global SKU (/en/products/SMC_global_skus)

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