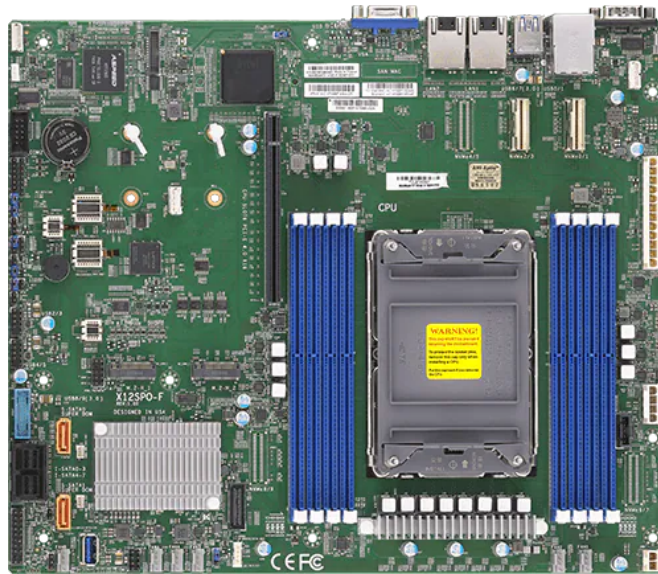# X12SPO-F

1U Optimized

Key Features

3rd Gen Intel® Xeon® Scalable processors, Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP

Intel® C621A

Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz

Up to 2TB Intel® Optane™ Persistent Memory, in 8 DIMM slots

1 PCIe 4.0 x16,

2 PCIe 4.0 NVMe x8 Internal Port(s)

M.2 Interface: 2 SATA/PCIe 3.0 x4

M.2 Form Factor: 2280/22110

M.2 Key: M-Key

Intel® C621A controller for 10 SATA3 (6 Gbps) ports; RAID 0,1,5,10

Dual LAN with Intel® i350 Gigabit Ethernet Controller

Supports 4x NVMe drives via SlimSAS connectors

Optimized Servers

SYS-510P-M

SYS-510P-MR

Specifications

Product SKUs
MBD-X12SPO-F

Physical Stats
Form Factor
ATX
Dimension
12" x 10" (30.48cm x 25.4cm)

Processor
CPU
3rd Gen Intel® Xeon® Scalable processors
Single Socket LGA-4189 (Socket P+) supported, CPU TDP supports Up to 270W TDP
Core
Up to 40 cores

System Memory
Memory Capacity
8 DIMM slots
Up to 2TB Intel® Optane™ Persistent Memory 200 Series
Up to 2TB 3DS ECC LRDIMM, DDR4-3200MHz; Up to 2TB 3DS ECC RDIMM, DDR4-3200MHz
Memory Type
3200/2933/2666 MT/s ECC , DDR4 LRDIMM (3DS), RDIMM (3DS)
DIMM Sizes
8GB, 16GB, 32GB, 64GB, 128GB, 256GB
Memory Voltage
1.2V
Error Detection
Corrects single-bit errors

On-Board Devices
Chipset
Intel® C621A
SATA
Intel® C621A controller for 10 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® i350 Gigabit Ethernet Controller

Input / Output
SATA
10 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 4.0 x16
M.2
M.2 Interface: 2 SATA/PCIe 3.0 x4
Form Factor: 2280/22110
Key: M-Key

System BIOS
BIOS Type
AMI UEFI
BIOS Features
ACPI 6.2
SMBIOS 3.0 or later
UEFI 2.7

Management
Software
Redfish API, Supermicro Server Manager (SSM), Supermicro Power Manager (SPM), Supermicro Update Manager (SUM), SuperDoctor® 5, Super Diagnostics Offline , KVM with dedicated LAN , IPMI 2.0
Power Configurations
Power-on mode for AC power recovery, ACPI Power Management, CPU thermal trip support for processor protection

Security
Hardware
Trusted Platform Module (TPM) 2.0

PC Health Monitoring
Voltage
VBAT, System temperature, Monitors CPU voltages, HT, Chassis intrusion header, 3.3V standby, +5V standby, +5V, +3.3V, +12V, +1.8V, 7-fan status
LED
UID/Remote UID
Suspend static indicator LED
CPU / System Overheat LED
Temperature
CPU thermal trip support
PECI
FAN
7x 4-pin fan headers (up to 7 fans)
System level control
PWM fan speed control
Fan speed control
Overheat LED indication
Other Features
WOL, UID, RoHS, Chassis intrusion header, Chassis intrusion detection, ATX Power connector, ACPI power management, RoT

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
10% - 85% (non-condensing)
Non Operating Relative Humidity Range
10% - 95% (non-condensing)

Parts List

Standard Parts (Bulk Package)

CPU carrier

Part Number	SKT-1205L-P4IC-FXC
Qty	1
Description	CPU carrier for 3rd Gen Intel Xeon Scalable Processors

I/O Cables

Part Number	CBL-0044L • *e*Store
Qty	2
Description	57.5CM SATA FLAT S-S PBF

I/O Shield

Part Number	MCP-260-00042-0N • *e*Store
Qty	1
Description	STD I/O Shield for X12SPO-F with EMI Gasket

Standard Parts (Retail Package)

CPU carrier

Part Number	SKT-1205L-P4IC-FXC
Qty	1
Description	CPU carrier for 3rd Gen Intel Xeon Scalable Processors

I/O Cables

Part Number	CBL-0044L • *e*Store
Qty	2
Description	57.5 cm SATA FLAT S-S PBF

I/O Shield

Part Number	MCP-260-00042-0N • *e*Store
Qty	1
Description	STD I/O Shield for X12SPO-F with EMI Gasket

QRG

Part Number	MNL-2226-QRG
Qty	1
Description	Motherboard Quick Reference Guide

Optional Parts

Power extension cable

Part Number	CBL-0042L
Qty	1
Description	24 pin power connector extension cable

TPM security module

Part Number	AOM-TPM-9671H	AOM-TPM-9670H
Qty	1	1
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