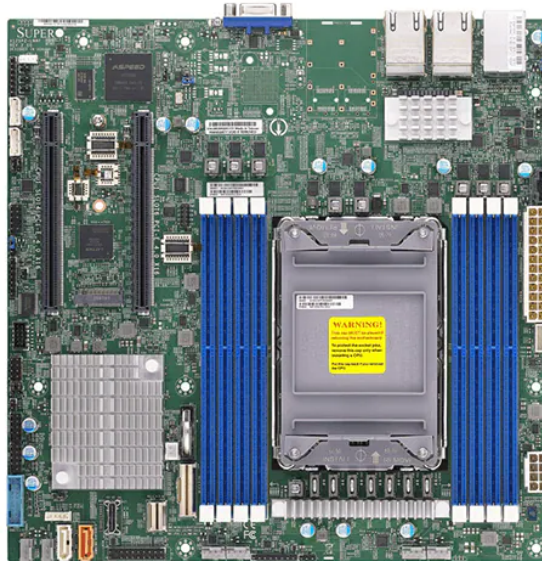


# X12SPZ-LN4F

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**Embedded  
Quad 1GbE LAN  
High Performance**

## 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 200 Series, in 8 DIMM slots

2 PCIe 4.0 x16

1 PCIe 4.0 NVMe x8 SlimSAS Internal Port

1 PCIe 4.0 NVMe x4 SlimSAS Internal Port

1 OCuLink Connector (4 SATA/PCIe 3.0 x4)

1 M.2 M-Key 2242/2280 (SATA/PCIe 3.0 x4)

Quad 1G RJ45 with Intel® I350-AM4

4 USB 3.2 Gen 1 (2 Rear, 2 via Header),

4 USB 2.0 (Headers)

Supports 12V DC power input

## Specifications

**Product SKUs****MBD-X12SPZ-LN4F****Physical Stats****Form Factor**

Micro-ATX

**Dimension**

9.6" x 9.6" (24.38cm x 24.38cm)

**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

Detects double-bit errors (using ECC memory)

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

Intel® C621A

**SATA**

Intel® C621A controller for 6 SATA3 (6 Gbps) ports

4 SATA ports via OCuLink; RAID 0,1,5,10

**IPMI**

ASPEED AST2600 BMC

**Network Controllers**

Quad LAN with 1GbE with Intel® I350-AM4

**Input / Output****LAN**

4 RJ45 Gigabit Ethernet LAN ports

**USB**

4 USB 2.0 port(s) (4 via header)

4 USB 3.2 Gen1 port(s) (2 via header; 2 rear)

**Video Output**

1 VGA port(s)

**Serial Port**

1 COM Port(s) (1 header)

**DOM**1 Super**DOM** (Disk on Module) ports**TPM**

1 TPM Header &amp; Chip both

**Expansion Slots****PCIe**

2 PCIe 4.0 x16

**M.2**

M.2 Interface: 1 SATA/PCIe 3.0 x4

Form Factor: 2242/2280

Key: M-Key

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

256MB SPI Flash with AMI BIOS

**BIOS Features**

ACPI 6.2

UEFI 2.8

SMBIOS 2.8

SMBIOS 3.3 or later

Plug and Play (PnP)

PCI FW 3.0

**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](#)**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, M.2 NGFF connector, Node Manager Support, SDDC, System level control, UID, WOL

**Security****Hardware**

Trusted Platform Module (TPM) 2.0

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

VBAT, Supports system management utility, Monitors CPU voltages, Chassis intrusion header, 6 -fan status, 3.3V standby, +5V standby, +5V, +3.3V, +12V, +1.8V

**LED**

UID/Remote UID

Power LED

**Temperature**

CPU thermal trip support

**FAN**

6x 4-pin fan headers (up to 6 fans)

System level control

PWM fan speed control

Dual Cooling Zone

6 fans with tachometer status monitoring

**Other Features**

RoHS, 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, ACPI power management, 12V DC or ATX Power Source

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

0°C - 50°C (32°F - 122°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**

10% - 95% (non-condensing)

## Parts List

### Standard Parts (Bulk Package)

**CPU Retention Module**

Part Number	SKT-1205L-P4IC-FXC
Qty	1
Description	Socket P4 LGA4189 Carrier

**I/O Shield**

Part Number	MCP-260-00154-0N
Qty	1
Description	Standard I/O Shield for X12SPZ

**SATA Cables**

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

### Standard Parts (Retail Package)

**CPU Retention Module**

Part Number	SKT-1205L-P4IC-FXC
Qty	1
Description	Socket P4 LGA4189 Carrier

**I/O Shield**

Part Number	MCP-260-00154-0N
Qty	1
Description	Standard I/O Shield for X12SPZ

**QRG**

Part Number	MNL-2291-QRG
Qty	1
Description	Motherboard Quick Reference Guide

**SATA Cables**

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

### Optional Parts

**1U I/O Shield**

Part Number	MCP-260-00155-0N
Qty	--
Description	Standard 1U I/O Shield with EMI Gasket

**Active heatsink**

Part Number	SNK-P0080AP4 • <a href="#">eStore</a>	SNK-P0078AP4 • <a href="#">eStore</a>
Qty	--	--
Description	4U Active CPU heatsink for X12 Generation Intel Whitley Platform (LGA4189 Socket P4)	2U Active CPU Heatsink for X12 Generation Intel Whitley Platform (LGA4189 Socket P4)

**OCuLink to 4x SATA Cable**

Part Number	CBL-SAST-0933 • <a href="#">eStore</a>
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Qty --  
 Description 50CM OCuLink to 4x SATA  
 Cable

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**OCuLink to U.2 Cable**

Part Number CBL-SAST-0956 • [eStore](#)

Qty --  
 Description 55CM OCuLink to U.2  
 Cable with Molex Power  
 Header

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**Passive heatsink**

Part Number SNK-P0077P • [eStore](#)

Qty --  
 Description 1U Passive CPU Heatsink  
 for X12 Generation Intel  
 Whitley Platform (LGA4189  
 Socket P4)

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**TPM security module**

Part Number	AOM-TPM-9671V	AOM-TPM-9670V
Qty	--	--
Description	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

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**x4 SlimSAS to U.2 Cable**

Part Number CBL-SAST-1240A-85  
 Qty --  
 Description 40CM Slimline x4 to PCIe  
 SFF-8639

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**x8 SlimSAS to 2x U.2 Cable**

Part Number CBL-SAST-0953-1  
 Qty --  
 Description 55CM Slimline x8 to PCIe  
 2x SFF-8639

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