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 PCI-E 4.0 x16

1 PCI-E 4.0 NVMe x8 SlimSAS Internal Port
1 PCI-E 4.0 NVMe x4 SlimSAS Internal Port

1 OCuLink Connector (4 SATA/PCI-E 3.0 x4)
1 M.2 M-Key 2242/2280 (SATA/PCI-E 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

Product SKUs

MBD-X12SPZ-LN4F	▪ 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	▪ 3200/2933/2666MHz 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 SuperDOM (Disk on Module) ports
TPM	▪ 1 TPM Header & Chip both

Expansion Slots

PCI-E	▪ 2 PCI-E 4.0 x16
M.2	▪ M.2 Interface: 1 SATA/PCI-E 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	▪ SuperDoctor® 5, NMI, SUM, KVM with dedicated LAN, SPM, Intel® Node Manager, SSM, Watchdog, IPMI (Intelligent Platform Management Interface) v2.0 with KVM support
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

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)