

Supermicro MBD-X12DPI-N6-B

Supermicro MBD-X12DPI-N6-B E-ATX Server Motherboard User Manual

INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Supermicro MBD-X12DPI-N6-B E-ATX Server Motherboard. It is designed to assist users in setting up their server system correctly and efficiently. Please read this manual thoroughly before proceeding with any installation or configuration.

SAFETY INFORMATION

Observe the following safety precautions to prevent damage to the motherboard and ensure personal safety:

- Always disconnect the power cord from the power supply before installing or removing any components.
- Wear an anti-static wrist strap and work on an anti-static mat to prevent electrostatic discharge (ESD) damage to sensitive components.
- Handle the motherboard by its edges to avoid touching components directly.
- Ensure proper ventilation within the server chassis to prevent overheating.
- Refer to the power supply unit's manual for specific safety guidelines related to power connections.

PACKAGE CONTENTS

Verify that all items are present in the package:

- Supermicro MBD-X12DPI-N6-B E-ATX Server Motherboard
- I/O Shield
- SATA Cables (quantity may vary)
- Quick Reference Guide
- Driver and Utility DVD/USB (if included)

SETUP AND INSTALLATION

This section guides you through the physical installation of the motherboard and its primary components.



Figure 1: Top-down view of the Supermicro MBD-X12DPI-N6-B E-ATX Server Motherboard, showcasing its dual LGA 4189 CPU sockets, 18 DDR4 DIMM slots, multiple PCIe 4.0 expansion slots, and various connectors for storage and peripherals. The board features a green PCB with blue and black DIMM slots, and silver heatsinks for chipset and VRMs.

1. CPU Installation (LGA 4189)

1. Carefully open the CPU socket retention mechanism by releasing the levers.
2. Align the triangular mark on the CPU with the corresponding mark on the socket.
3. Gently place the CPU into the socket without forcing it.
4. Close the socket retention mechanism, ensuring the CPU is securely seated.
5. Apply thermal paste to the CPU and install the CPU cooler according to its manufacturer's instructions.

2. Memory (DIMM) Installation

The motherboard supports up to 4TB of 3DS ECC RDIMM/LRDIMM DDR4-3200MHz memory across 18 DIMM slots. Intel Optane Persistent Memory 200 Series is supported in specific slots (P1-DIMMB2 and P2-DIMMB2).

1. Open the retention clips at both ends of the DIMM slot.
2. Align the notch on the memory module with the key in the DIMM slot.
3. Insert the module firmly into the slot until the retention clips snap into place.
4. Ensure all modules are seated correctly and evenly.

3. PCIe Card Installation

The motherboard features 2 PCIe 4.0 x8 and 4 PCIe 4.0 x16 slots.

1. Select an appropriate PCIe slot for your expansion card.
2. Remove the corresponding metal bracket cover from the server chassis.
3. Align the card with the slot and press down firmly until it is fully seated.
4. Secure the card with a screw or retention clip to the chassis.

4. Storage Device Connection

The Intel C621A controller provides 14 SATA3 (6 Gbps) ports with RAID 0, 1, 5, 10 support. There is also 1 PCIe 4.0 x4 M.2 slot (2280/22110 form factor, M-Key).

- **SATA Devices:** Connect SATA data cables from your storage drives to the SATA ports on the motherboard. Connect power cables from the power supply to the drives.
- **M.2 Devices:** Insert the M.2 SSD into the M.2 slot, securing it with the provided screw.

5. Power Supply Connection

Connect the main 24-pin ATX power connector and the 8-pin (or 4+4 pin) CPU power connectors from your power supply unit to the corresponding ports on the motherboard. Ensure all power connections are secure.

OPERATING INSTRUCTIONS

1. Initial Boot-up

1. After all components are installed, connect the power cord to the power supply and turn on the system.
2. The system will perform a Power-On Self-Test (POST). Monitor for any error codes or beeps.

2. BIOS/UEFI Configuration

During POST, press the designated key (usually **DEL** or **F2**) to enter the BIOS/UEFI setup utility. Here you can configure boot order, system time, and various hardware settings.

3. Operating System Installation

Insert your operating system installation media (USB drive or DVD) and configure the BIOS/UEFI to boot from it. Follow the on-screen instructions to install your preferred operating system.

MAINTENANCE

1. Cleaning

Regularly clean the interior of your server chassis to prevent dust buildup, which can lead to overheating. Use compressed air to remove dust from heatsinks, fans, and other components. Ensure the system is powered off and unplugged before cleaning.

2. Firmware and Driver Updates

Periodically check the Supermicro official website for the latest BIOS/UEFI firmware and driver updates for your motherboard. Keeping your system updated ensures optimal performance, stability, and security.

TROUBLESHOOTING

If you encounter issues, refer to the following common troubleshooting steps:

- **No Power:** Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected. Check the power supply unit and wall outlet.
- **No Display:** Verify that the monitor is connected and powered on. Reseat the graphics card (if applicable) and memory modules. Try booting with minimal components.
- **System Beeps:** Consult the motherboard's beep code table (usually found in the full manual on the Supermicro website) to diagnose hardware issues indicated by specific beep patterns.
- **Operating System Not Booting:** Check the boot order in BIOS/UEFI. Ensure the storage drive with the OS is detected and functional.
- **Overheating:** Ensure CPU coolers and chassis fans are properly installed and functioning. Clean dust from heatsinks and vents.

SPECIFICATIONS

Feature	Detail
CPU Socket	Dual LGA 4189 (Socket P+)
Compatible Processors	3rd Gen Intel Xeon Scalable processors (up to 270W TDP)
Chipset	Intel C621A
Memory Type	DDR4 3DS ECC RDIMM/LRDIMM, Intel Optane Persistent Memory 200 Series
Memory Speed	3200MHz
Memory Slots	18 DIMM slots (up to 4TB total)
PCIe Expansion Slots	2 x PCIe 4.0 x8, 4 x PCIe 4.0 x16
NVMe Support	2 x PCIe 4.0 NVMe x8 Internal Port(s)


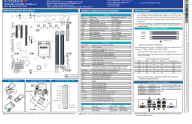

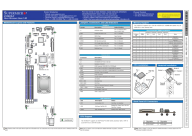
Feature	Detail
M.2 Interface	1 x PCIe 4.0 x4 (2280/22110, M-Key)
SATA Ports	14 x SATA3 (6 Gbps) with RAID 0, 1, 5, 10
LAN	Dual LAN with Intel i350 Gigabit Ethernet Controller
Video Output	2 x VGA (1 rear bezel, 1 front panel)
Form Factor	E-ATX
Dimensions	16 x 12 x 5 inches

SUPPORT AND WARRANTY

For technical support, driver downloads, and the latest BIOS updates, please visit the official Supermicro website. Information regarding product warranty terms and conditions can also be found on the Supermicro support portal or by contacting your point of purchase.

Always refer to the official Supermicro documentation for the most accurate and up-to-date information.

Related Documents - MBD-X12DPI-N6-B

 <p>X11SCM-F</p> <p>Key Features:</p> <ul style="list-style-type: none"> 8th/9th Gen Intel® Core™ and Xeon® E processors DDR4 memory 14 x SATA3 (6 Gbps) with RAID 0, 1, 5, 10 Dual LAN with Intel i350 Gigabit Ethernet Controller 2 x VGA (1 rear bezel, 1 front panel) E-ATX form factor 16 x 12 x 5 inches dimensions 	<p>Supermicro X11SCM-F Server Motherboard: Features, Specifications, and Parts</p> <p>Detailed technical specifications, key features, and parts list for the Supermicro X11SCM-F server motherboard. Supports 8th/9th Gen Intel® Core™ and Xeon® E processors, DDR4 memory, and offers extensive I/O connectivity.</p>
	<p>Supermicro X10SLM+/X10SLL+ Quick Reference Guide</p> <p>Quick reference guide for Supermicro X10SLM+(-F)(-LN4F) and X10SLL+-F motherboards, detailing layout, features, jumpers, connectors, LED indicators, memory support, and installation.</p>
 <p>X11DPT-B (For SuperServer Only)</p>	<p>Supermicro X11DPT-B Motherboard Technical Specifications</p> <p>Detailed technical specifications for the Supermicro X11DPT-B motherboard, including processor support, memory capacity, expansion slots, and management features.</p>
	<p>Supermicro X13SCD-F Quick Reference Guide - Motherboard Features and Installation</p> <p>A concise quick reference guide for the Supermicro X13SCD-F motherboard, detailing its layout, jumpers, connectors, LED indicators, memory support, CPU and heatsink installation procedures, and back panel I/O. Includes essential contact information and system support links.</p>



[Supermicro X13SCL-F Quick Reference Guide: Motherboard Layout, CPU, Memory, and I/O](#)
Concise guide for the Supermicro X13SCL-F motherboard, detailing layout, CPU and memory support, jumpers, connectors, front panel, and back panel I/O for system builders.



Redfish®
Reference Guide

Revision 1.2

[Supermicro Redfish Reference Guide: API Documentation for Server Management](#)
Comprehensive reference guide for Supermicro's Redfish API, detailing RESTful interface semantics for server management, firmware updates, system configuration, and more. Covers X12 and H12 platforms.