MSI PRO Z690-P DDR4

MSI PRO Z690-P DDR4 ProSeries Motherboard User Manual

Model: PRO Z690-P DDR4

Introduction

The MSI PRO Z690-P DDR4 ProSeries Motherboard is designed to provide an efficient and productive experience for professional workflows and general computing. This motherboard features stable functionality and high-quality assembly, ensuring longevity and minimizing troubleshooting. It supports 12th Gen Intel Core, Pentium, and Celeron processors with the LGA 1700 socket and DDR4 memory.

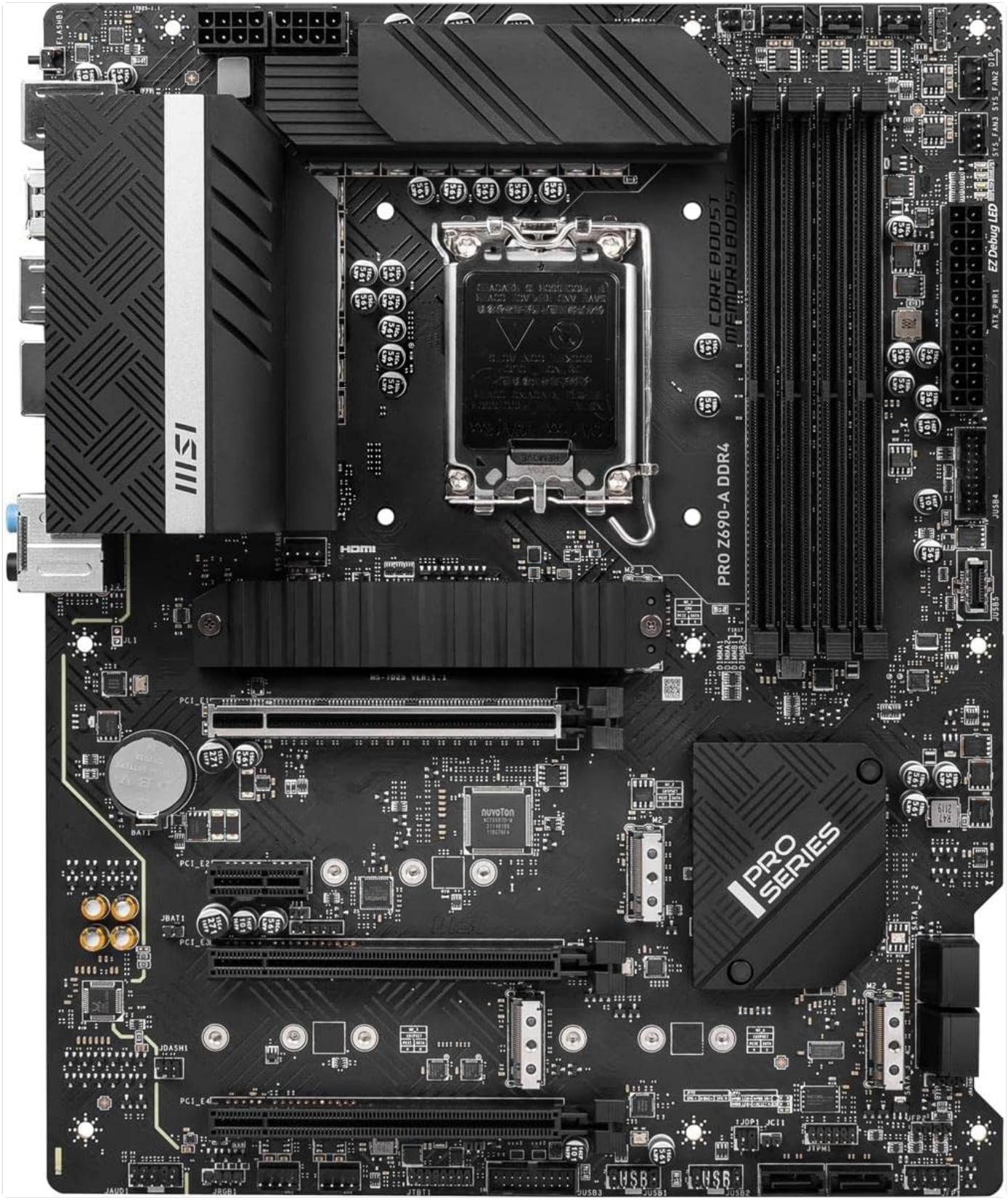


Figure 1: Overview of the MSI PRO Z690-P DDR4 Motherboard, showcasing its layout including the CPU socket, RAM slots, and various expansion slots.

Setup and Installation

Proper installation is crucial for the stability and performance of your system. Always ensure your system is powered off and unplugged before handling components. It is recommended to wear an anti-static wrist strap to prevent electrostatic discharge (ESD) damage.

1. CPU Installation

Carefully open the CPU socket lever. Align the triangular mark on the Intel 12th Gen Core processor with the mark on the LGA 1700 socket. Gently place the CPU into the socket without forcing it. Close the lever to secure the CPU.

Figure 2: The LGA 1700 CPU socket, designed for 12th Gen Intel Core processors, highlighting the precise alignment required for installation.

2. RAM (DDR4 Memory) Installation

The motherboard supports DDR4 memory. For optimal performance, install memory modules into the correct DIMM slots as indicated in the motherboard manual (typically A2 and B2 first for dual-channel). Open the clips on both ends of the DIMM slot, align the memory module's notch with the slot's key, and press down firmly until the clips snap into place.



Figure 3: DDR4 memory slots on the motherboard, capable of supporting high-speed memory modules up to 5600(OC) MHz.

3. M.2 SSD Installation

The MSI PRO Z690-P DDR4 features Lightning M.2 slots, supporting PCIe Gen4 x4 NVMe SSDs for maximum performance. Locate the M.2 slots, remove the M.2 Shield Frozr heatsink if present, insert the M.2 SSD at an angle, and then secure it with the provided screw or M.2 clip. Reattach the M.2 Shield Frozr for optimal thermal management.



Figure 4: The Lightning Gen4 x4 M.2 slots, designed to maximize performance for NVMe-based SSDs.

4. Expansion Card Installation (PCIe)

Install your graphics card and other expansion cards into the appropriate PCIe slots. The motherboard includes PCIe 5.0 x16 and PCIe 3.0 x1 slots. Ensure the card is fully seated in the slot and secured with the case's retention mechanism.



Figure 5: Overview of the motherboard's PCIe expansion slots, including the high-speed PCIe 5.0 x16 slot for graphics cards.

5. Power Connections

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

Operating Instructions

First Boot and BIOS Setup

After assembling your system, connect a monitor, keyboard, and mouse. Power on the system. Press the **DEL** key during startup to enter the BIOS/UEFI setup utility. Here you can configure boot order, enable XMP profiles for memory, and adjust other system settings. Save changes and exit to proceed with operating system installation.

Driver Installation

Once the operating system is installed, install the necessary drivers for the motherboard's components, including chipset, LAN, audio, and any other integrated peripherals. Drivers can be found on the MSI official website for your specific motherboard model.

Maintenance

Cleaning

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

BIOS Updates

Periodically check the MSI website for BIOS updates. BIOS updates can improve system stability, add support for new hardware, or fix bugs. Follow the instructions provided by MSI carefully when performing a BIOS update to avoid system damage.



Figure 6: The motherboard's premium thermal solution, featuring an extended heatsink design for efficient heat dissipation.

Troubleshooting

- **No Display/No Boot:**

  Check all power connections (24-pin ATX, 8-pin CPU). Ensure RAM modules are properly seated in their slots. Verify the graphics card is fully inserted and connected to power. The motherboard may have EZ Debug LEDs that indicate the component causing the boot failure (CPU, DRAM, VGA, BOOT).

- **Component Not Detected:**

  If an SSD, hard drive, or other peripheral is not detected, ensure it is correctly connected to the motherboard (SATA cables, M.2 slot). Check BIOS settings to confirm the component is enabled and detected there.

- **System Instability/Crashes:**

  Ensure all drivers are up to date. Check CPU and GPU temperatures to rule out overheating. Verify RAM stability using memory diagnostic tools. A BIOS update might resolve stability issues.

- **Network Connectivity Issues:**

  Ensure the Ethernet cable is securely connected to the 2.5G LAN port. Install or update the LAN drivers. Check network settings in your operating system.



Figure 7: The rear I/O panel, featuring the 2.5G LAN solution and Audio Boost technology for enhanced connectivity and sound.

Specifications

Feature	Detail

Feature	Detail
Brand	MSI
Model Name	PRO Z690-P DDR4
CPU Socket	LGA 1700
Compatible Processors	12th Gen Intel Core / Pentium / Celeron
Chipset Type	Intel Z690
RAM Memory Technology	DDR4
Memory Clock Speed	Up to 5600(OC) MHz
PCIe Slots	PCIe 5.0 x16, PCIe 3.0 x1
M.2 Slots	Lightning Gen4 x4
LAN Solution	2.5G LAN
Dimensions (LxWxH)	12 x 9.6 x 2.5 inches
Item Weight	2.88 pounds

Warranty and Support

For detailed warranty information, technical support, and the most up-to-date drivers and utilities, please visit the official MSI website. You can also refer to the comprehensive user guide for your motherboard model.
Official User Guide (PDF): Download User Guide
For further assistance, contact MSI customer support through their official channels.

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