MSI Z690-A

MSI PRO Z690-A ProSeries Motherboard User Manual

Model: Z690-A

1. Introduction

This user manual provides comprehensive instructions for the installation, operation, and maintenance of your MSI PRO Z690-A ProSeries Motherboard. The PRO series is designed to deliver an efficient and productive experience, featuring stable functionality and high-quality assembly for optimized professional workflows, reduced troubleshooting, and enhanced longevity.

Please read this manual thoroughly before beginning installation to ensure proper setup and to maximize the performance and lifespan of your motherboard.

2. Package Contents

Verify that all items listed below are included in your motherboard package. If any items are missing or damaged, please contact your retailer.

- MSI PRO Z690-A Motherboard
- M.2 Screw/Standoff Set
- 2 x M.2 Clips
- 2 x SATA Cables
- Quick Installation Guide
- Product Registration Card
- I/O Shield
- Driver DVD



Figure 2.1: Contents of the MSI PRO Z690-A Motherboard package, including the motherboard, cables, screws, and documentation.

3. Setup Guide

3.1. Before You Begin

Before installing any components, ensure you are working in a static-free environment. Use an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity. Disconnect the power cord from the wall outlet before touching any components.

3.2. Motherboard Layout

Familiarize yourself with the various connectors and slots on your motherboard. This will assist in proper component installation.

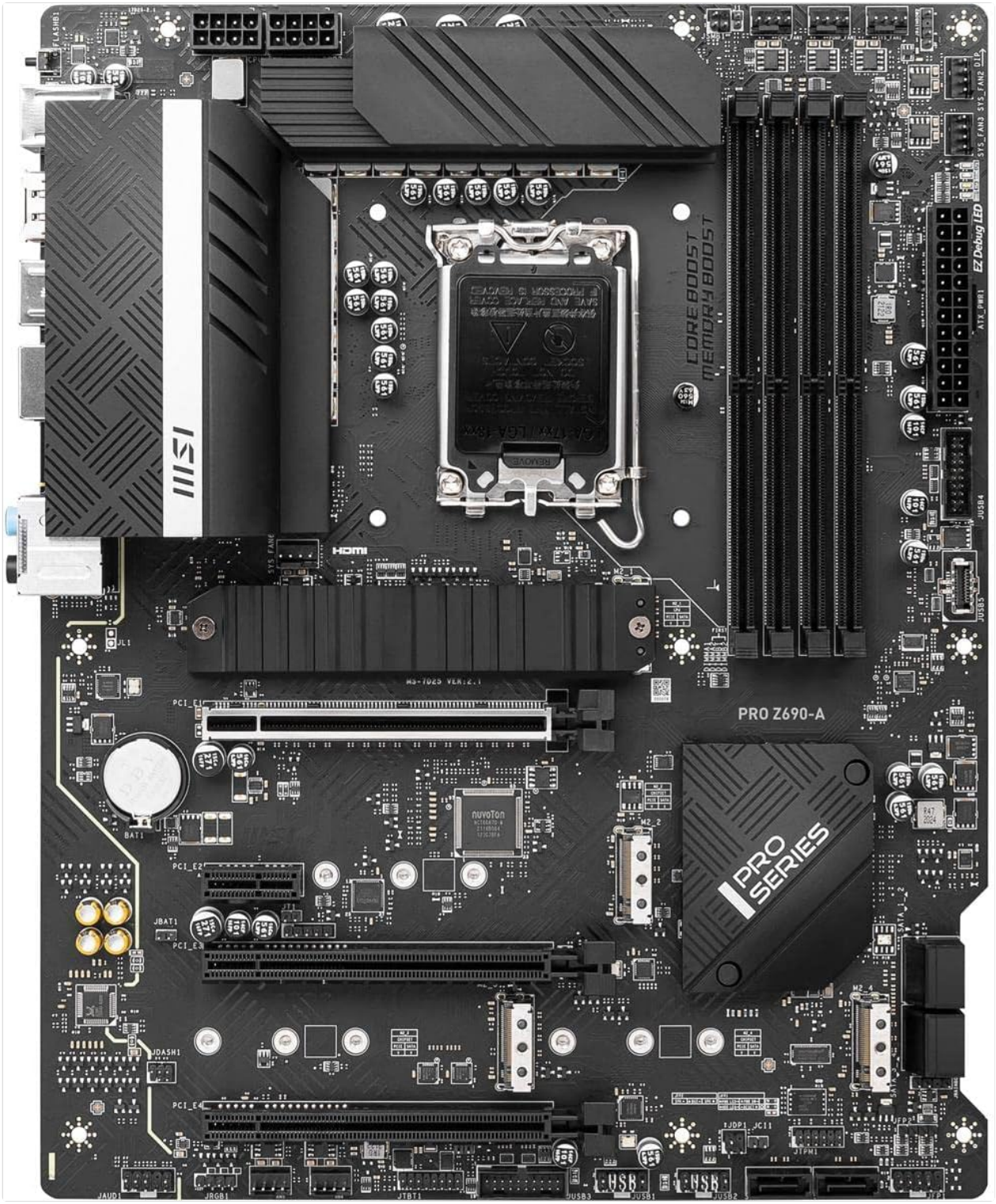


Figure 3.1: Overhead view of the MSI PRO Z690-A motherboard, showing the CPU socket, RAM slots, PCIe slots, and various headers.



Figure 3.2: Angled view of the MSI PRO Z690-A motherboard, highlighting the heatsinks and overall design.



Figure 3.3: Close-up of the rear input/output (I/O) panel, showing various ports including USB, Ethernet, and audio jacks.

3.3. Installing the CPU

The MSI PRO Z690-A supports 12th Gen Intel Core, Pentium, and Celeron processors for the LGA 1700 socket. Handle the CPU by its edges to avoid touching the gold contacts or the pins in the socket.

1. Locate the CPU socket on the motherboard.
2. Push down the load lever and pull it out to open the CPU socket cover.
3. Carefully align the CPU with the socket, ensuring the triangular mark on the CPU matches the mark on the socket. Gently place the CPU into the socket without forcing it.
4. Close the load plate and push the load lever back into place until it clicks.

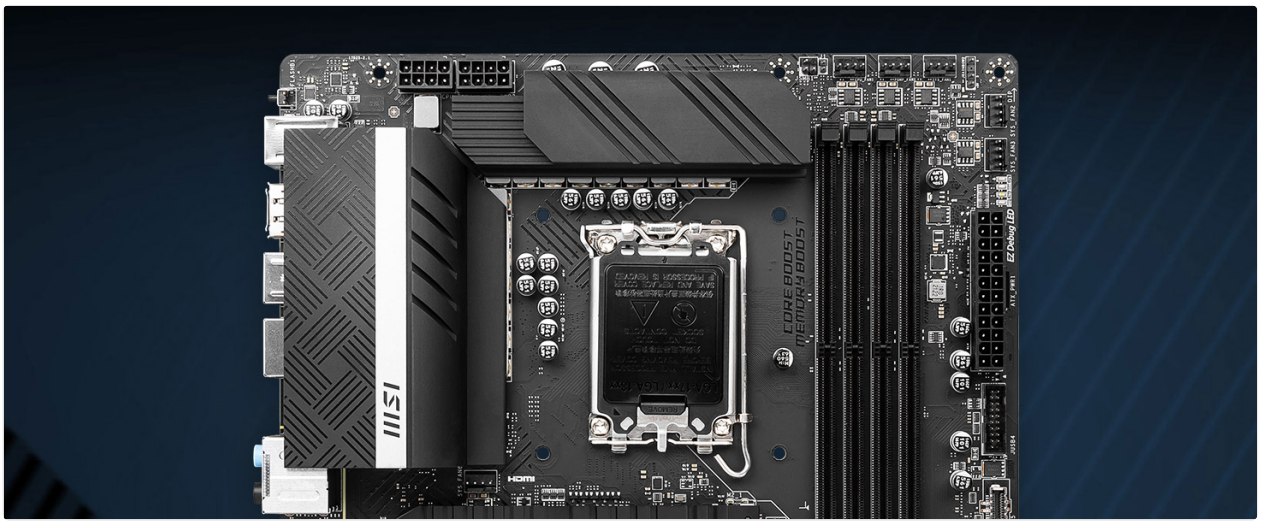


Figure 3.4: Detailed view of the LGA 1700 CPU socket, ready for processor installation.

3.4. Installing DDR5 Memory

The MSI PRO Z690-A supports DDR5 memory. For optimal performance, install memory modules in the designated slots as per the motherboard manual (usually A2 and B2 for dual channel). Ensure the memory modules are fully seated.

1. Open the 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 memory module firmly into the slot until the clips snap into place.

3.5. Installing Storage Devices

The motherboard features Lightning Gen4 x4 M.2 slots and SATA ports for storage. The M.2 slots support NVMe SSDs for high-speed storage.

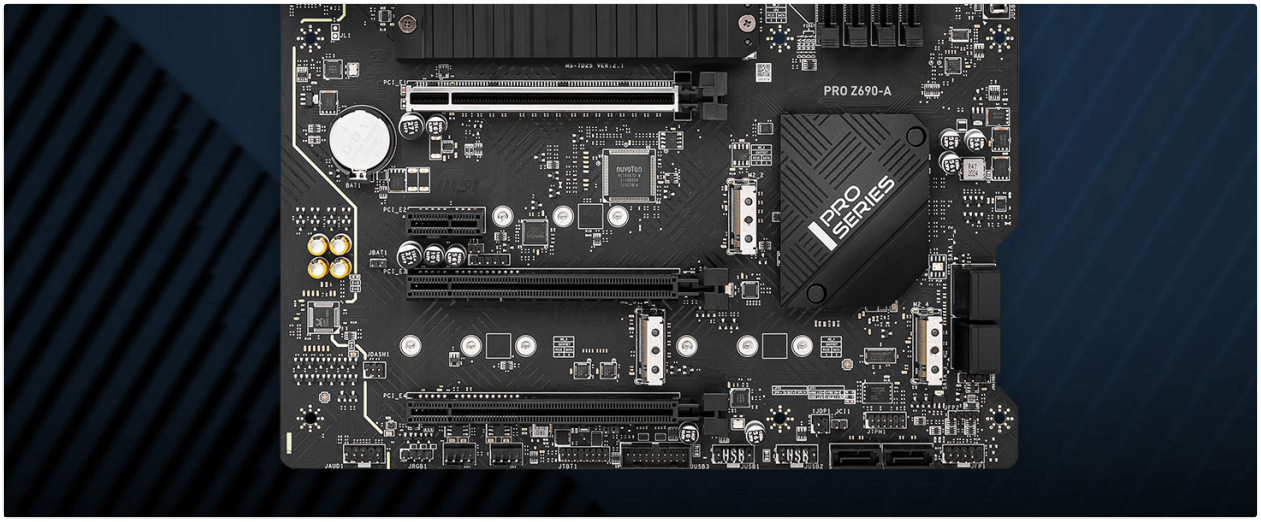


Figure 3.5: View of the M.2 slots and PCIe expansion slots, indicating areas for high-speed storage and graphics cards.

M.2 SSD Installation:

1. Locate an M.2 slot and remove the M.2 heatsink (if present).
2. Insert the M.2 SSD into the slot at a 30-degree angle.
3. Gently push down the SSD and secure it with the provided M.2 screw or clip.
4. Reinstall the M.2 heatsink if removed.

SATA Drive Installation:

- Connect one end of a SATA data cable to a SATA port on the motherboard.
- Connect the other end of the SATA data cable to your SATA hard drive or SSD.
- Connect a SATA power cable from your power supply to the drive.

3.6. Installing Expansion Cards

The motherboard features PCIe 5.0 slots for graphics cards and other expansion cards. Ensure your graphics card is properly seated in the primary PCIe x16 slot.

1. Align your expansion card with the desired PCIe slot.
2. Press down firmly until the card is fully seated and the retention clip locks into place.
3. Secure the card to your PC case with a screw.

3.7. Connecting Peripherals and Power

Connect the main 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard. Connect front panel headers (USB, audio, power/reset buttons, LED indicators) according to the labels on the motherboard and your case manual.

4. Operating the Motherboard

4.1. BIOS/UEFI Setup

The BIOS (Basic Input/Output System) or UEFI (Unified Extensible Firmware Interface) is the first software that runs when you power on your computer. It initializes hardware components and loads the operating system. To enter the BIOS setup, press the **Delete** key repeatedly during system startup.

Within the BIOS, you can configure various settings such as boot order, system time, and hardware parameters. For detailed information on specific BIOS settings, refer to the comprehensive user manual available for download from the MSI website.

Note: Some users have reported that updating the BIOS may be necessary for full compatibility with 13th Gen Intel CPUs or to optimize CPU voltage settings. Refer to MSI's official support page for the latest BIOS updates and instructions.

4.2. Driver Installation

After installing your operating system, it is crucial to install the necessary drivers for your motherboard's components to function correctly. Drivers can be found on the included Driver DVD or downloaded from the official MSI website. The MSI Center utility can also assist with driver updates.

- **Chipset Drivers:** Essential for proper communication between the CPU and other components.
- **LAN Drivers:** Required for network connectivity (2.5G LAN).
- **Audio Drivers:** For sound functionality.
- **USB Drivers:** For optimal USB port performance (USB 3.2 Gen 2x2).
- **Graphics Drivers:** If using integrated graphics, or for your dedicated graphics card.

4.3. Key Features Overview

The MSI PRO Z690-A motherboard is equipped with advanced features to enhance your computing experience:

- **Lightning Fast Experience:** Features PCIe 5.0 slots for next-generation graphics cards and Lightning

Gen4 x4 M.2 slots for ultra-fast NVMe SSDs, alongside USB 3.2 Gen 2x2 for high-speed peripheral connectivity.

- **2.5G LAN:** An upgraded network solution providing a secure, stable, and fast network connection, ideal for professional and multimedia use.
- **High Quality PCB:** Constructed with a 6-layer PCB made from 2oz thickened copper and server-grade level material, ensuring durability and stable performance.

5. Maintenance

5.1. Cleaning

Regular cleaning helps maintain optimal performance and extends the lifespan of your motherboard. Ensure the system is powered off and unplugged before cleaning.

- Use compressed air to remove dust from heatsinks, fans, and other components.
- Gently wipe surfaces with a soft, lint-free cloth. Avoid using liquid cleaners directly on components.
- Periodically check fan blades for dust buildup and clean as necessary.

5.2. BIOS Updates

Keeping your BIOS updated can improve system stability, add support for new hardware, and resolve compatibility issues. Always download BIOS updates directly from the official MSI website for your specific motherboard model. Follow the instructions provided by MSI carefully to avoid damaging the motherboard during the update process.

6. Troubleshooting Common Issues

This section addresses common issues you might encounter with your motherboard. For more complex problems, refer to the full user manual or contact MSI support.

- **No Display/No Boot:**
  - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected.
  - Reseat RAM modules firmly in their slots. Try booting with only one stick of RAM.
  - Check that the graphics card is properly seated in its PCIe slot and has adequate power.
  - Verify that the CPU is correctly installed and the CPU cooler is making proper contact.
  - If using a 13th Gen Intel CPU, a BIOS update might be required for compatibility.
- **Driver Issues/Network Connectivity Problems:**
  - Install all necessary drivers from the included DVD or MSI's official website.
  - For network issues, ensure the LAN cable is properly connected and the LAN driver is installed. You may need to use a temporary internet connection (e.g., USB Wi-Fi adapter, phone tethering) to download drivers if Windows does not have built-in support.
- **High CPU Temperatures:**
  - Ensure your CPU cooler is correctly installed and making good contact with the CPU.
  - Verify that thermal paste has been applied correctly.
  - Check BIOS settings for CPU Lite Load or voltage settings. Some users have found that adjusting these (e.g., setting CPU Lite Load to Mode 9 instead of default Mode 12) can reduce temperatures without significant performance loss.
  - Ensure adequate airflow within your PC case.

- **RAID Configuration Issues:**
  - Some users have reported difficulties with RAID functionality. Ensure you are following the specific RAID setup instructions in the detailed user manual and that all necessary drivers are loaded during OS installation.

7. Technical Specifications

Feature	Specification
Brand	MSI
Series	PRO
Model Number	Z690-A
CPU Socket	LGA 1700
Compatible Processors	12th Gen Intel Core, Pentium, Celeron
RAM Memory Technology	DDR5
Memory Speed	2133 MHz (Base)
Chipset Type	Intel Z690
PCIe Slots	PCIe 5.0 (x16), other PCIe slots
M.2 Slots	Lightning Gen4 x4 M.2
USB Ports	USB 3.2 Gen 2x2, USB 2.0
LAN	2.5G LAN
PCB Quality	6-layer PCB, 2oz thickened copper, server grade material
Product Dimensions	12 x 9.6 x 2.5 inches (ATX Form Factor)
Item Weight	2 pounds

8. Warranty and Support

8.1. Warranty Information

MSI products are covered by a limited warranty. The specific terms and duration of your warranty may vary by region and product. Please refer to the warranty card included in your package or visit the official MSI website for detailed warranty information and registration.

8.2. Customer Support

For further assistance, technical support, or to download the complete user manual and latest drivers, please visit the official MSI support website:

MSI Official Support Website

You can also refer to the comprehensive User Manual (PDF) for your product:

Download User Manual (PDF)

When contacting support, please have your motherboard model (Z690-A) and serial number ready.