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MSI Z690-A DDR4

MSI PRO Z690-A DDR4 ProSeries Motherboard User Manual

Model: Z690-A DDR4

1. Introduction

This user manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of your MSI PRO Z690-A DDR4 ProSeries Motherboard. The PRO series is designed to deliver an efficient and productive experience with stable functionality and high-quality assembly, ensuring optimized professional workflows and longevity.



Figure 1.1: MSI PRO Z690-A DDR4 Motherboard and retail packaging.

2. Key Features

- **Processor Support:** Supports 12th Gen Intel Core / Pentium / Celeron processors for LGA 1700 socket.
- **Memory Support:** Supports DDR4 Memory, with speeds up to 5600(OC) MHz.
- **Thermal Solution:** Features an Extended Heatsink Design and M.2 Shield Frozr for high performance and sustained operation.
- **Network Connectivity:** Equipped with 2.5G LAN Solution for upgraded, secure, stable, and fast network connections.
- **Storage Performance:** Includes Lightning M.2 slots, running at PCIe Gen4 x4 to maximize performance for NVMe based SSDs.
- **Audio:** Realtek ALC897/ALC892 Codec for rear audio ports.

3. Package Contents

Verify that all items are present and in good condition upon opening the package. If any items are missing or damaged, contact your retailer.

- MSI PRO Z690-A DDR4 Motherboard
- I/O Shield
- SATA Cables (typically two)
- Quick Start Guide
- Driver CD (for legacy systems, drivers are also available online)
- M.2 Screw/Standoff Kit

4. Setup and Installation

Before beginning installation, ensure your system is powered off and unplugged from the wall outlet. Wear an anti-static wrist strap or frequently touch a grounded metal object to prevent electrostatic discharge (ESD) damage.

4.1. Motherboard Overview

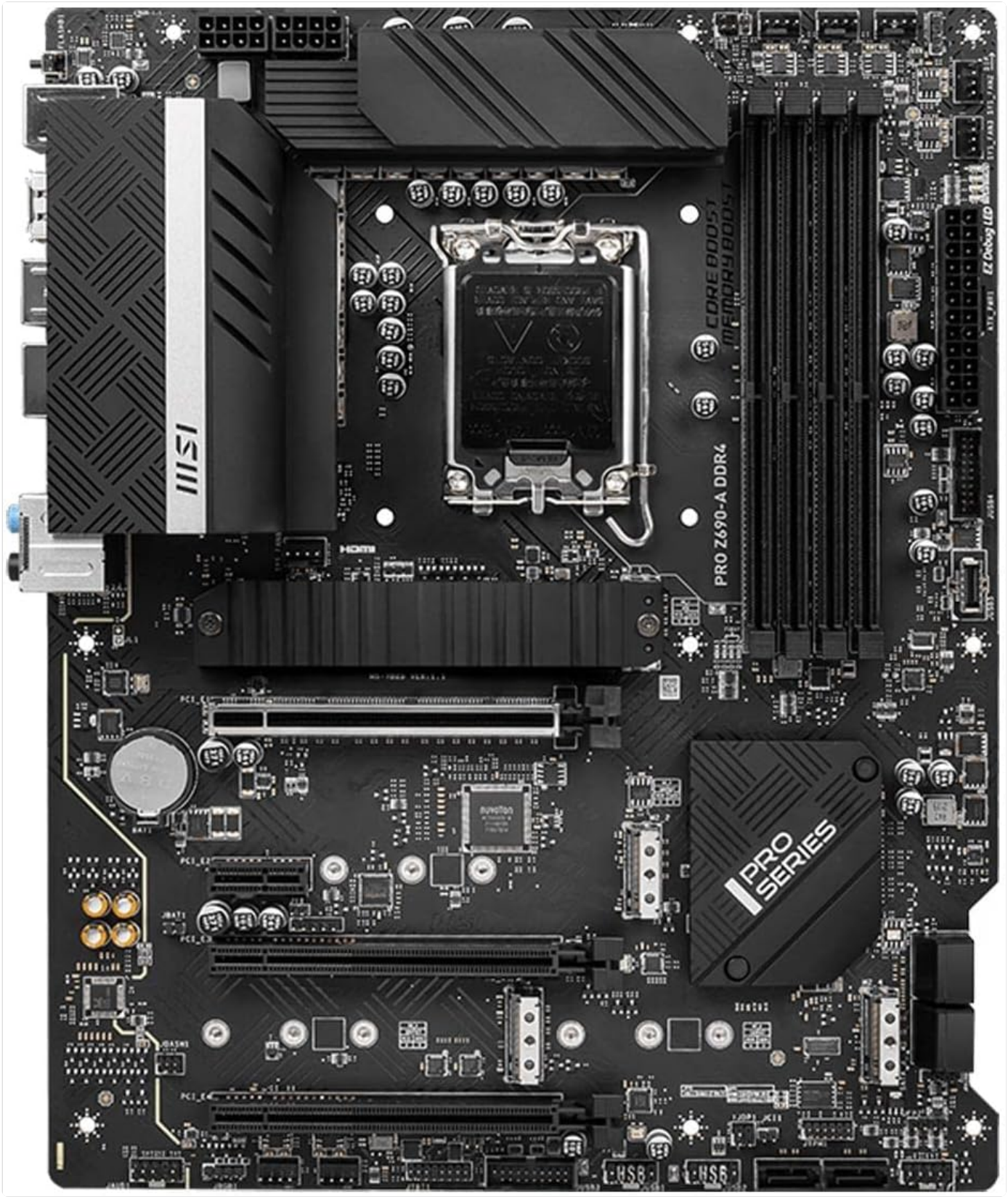


Figure 4.1: Top-down view of the MSI Z690-A DDR4 Motherboard, highlighting key component locations.



Figure 4.2: Rear I/O panel of the MSI Z690-A DDR4 Motherboard, showing various ports including PS/2, USB, HDMI, DisplayPort, LAN, and audio jacks.

4.2. CPU Installation

1. Locate the LGA 1700 CPU socket on the motherboard.
2. Gently push down the load lever and pull it away from the socket to open the CPU retention frame.
3. Carefully align the triangular mark on the CPU with the mark on the socket. Place the CPU into the socket without forcing it.
4. Close the retention frame and push the load lever back into place until it clicks.
5. Apply thermal paste and install your CPU cooler according to its manufacturer's instructions.

4.3. Memory (RAM) Installation

1. Open the clips on both ends of the DDR4 DIMM slots.
2. Align the notch on the DDR4 memory module with the key in the DIMM slot.
3. Insert the memory module firmly into the slot until the clips snap into place. For dual-channel operation, refer to the motherboard manual for recommended slot configurations (typically A2 and B2).

4.4. Storage Device Installation (M.2 SSDs & SATA Drives)

M.2 SSD Installation:

1. Locate the M.2 slots on the motherboard. The Z690-A DDR4 features multiple M.2 slots, with one supporting PCIe Gen4 x4.
2. Remove the M.2 Shield Frozr heatsink if present, and the M.2 standoff/screw.
3. Insert the M.2 SSD into the slot at a 30-degree angle.
4. Gently push down the SSD and secure it with the M.2 screw or the tool-less M.2 clip.
5. Reinstall the M.2 Shield Frozr heatsink if applicable.

SATA Drive Installation:

1. Connect one end of the SATA data cable to a SATA port on the motherboard.
2. Connect the other end of the SATA data cable to your SATA HDD/SSD.
3. Connect a SATA power cable from your power supply unit (PSU) to the SATA HDD/SSD.

4.5. Graphics Card (PCIe) Installation

1. Open the retention clip on the primary PCIe x16 slot (usually the top-most reinforced slot).
2. Align your graphics card with the slot and press down firmly until it is fully seated and the retention clip snaps into place.
3. Secure the graphics card to your PC case with screws.
4. Connect any necessary PCIe power cables from your PSU to the graphics card.

4.6. Power Connections

- Connect the 24-pin ATX main power connector from your PSU to the corresponding port on the motherboard.
- Connect the 8-pin (or 4+4 pin) CPU power connector(s) from your PSU to the CPU power port(s) near the CPU socket. This motherboard features dual 8-pin CPU power connectors for stable power delivery.

4.7. Front Panel Connections

Connect the cables from your PC case's front panel (USB, audio, power button, reset button, HDD LED, power LED) to the corresponding headers on the motherboard. Refer to the motherboard's detailed manual or the silkscreen labels on the board for correct pin assignments.

5. Operating Your Motherboard

5.1. Initial Boot and BIOS/UEFI Setup

After assembling your system, connect a monitor, keyboard, and mouse. Power on your system. During the boot process, repeatedly press the **DEL** key to enter the BIOS/UEFI setup utility. Here you can configure boot order, enable XMP for memory, adjust fan curves, and update firmware.

5.2. Driver Installation

Once the operating system is installed, install the necessary drivers for your motherboard components. Drivers can be found on the included driver CD or downloaded from the official MSI website. It is highly recommended to download the latest drivers from the MSI support page for optimal performance and stability, especially for the LAN driver which may not function out-of-the-box with some operating systems.

6. Maintenance

- **Dust Removal:** Regularly clean dust from your PC case and motherboard components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS/UEFI Updates:** Periodically check the MSI website for BIOS/UEFI updates. Updates can improve compatibility, stability, and performance. Follow MSI's instructions carefully when updating the BIOS/UEFI to avoid system damage.
- **Driver Updates:** Keep your drivers updated to the latest versions from the official MSI website or component manufacturers.

7. Troubleshooting

Problem	Possible Cause	Solution
System does not power on.	Loose power cables, faulty PSU, incorrect front panel connections.	Check 24-pin ATX and 8-pin CPU power connections. Verify front panel power switch connection. Test PSU if possible.
No display on monitor.	Graphics card not seated correctly, monitor cable issues, faulty RAM.	Reseat graphics card and RAM modules. Check monitor cable connections. Try integrated graphics (if CPU supports it).
System boots but no network connection.	Missing or incorrect LAN drivers.	Install the latest LAN drivers from the MSI website. You may need to use a USB drive or temporary Wi-Fi adapter for initial driver installation.
System unstable or crashes.	Overheating, unstable RAM settings (XMP), outdated BIOS/drivers.	Ensure proper cooling. Disable XMP in BIOS to test RAM stability. Update BIOS and all drivers. Check CPU voltage settings if manually adjusted.

8. Technical Specifications

Feature	Detail
Brand	MSI
Model Name	PRO Z690-A DDR4
CPU Socket	LGA 1700

Feature	Detail
Compatible Processors	12th Gen Intel Core / Pentium / Celeron
Chipset Type	Intel Z690
RAM Memory Technology	DDR4
Memory Clock Speed	Up to 5600(OC) MHz
Product Dimensions	12 x 9.6 x 2.5 inches (ATX Form Factor)
Item Weight	3.43 pounds
Number of USB 2.0 Ports	12 (total, including headers)
Platform	Windows 10/11 compatible

9. Warranty and Support

For warranty information, technical support, and the latest drivers and utilities, please visit the official MSI website. You can also refer to the full user manual available as a PDF document for more in-depth details and diagrams.
Official MSI Support Website: www.msi.com/support
Full User Manual (PDF): Download PDF

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