MSI Z170A GAMING PRO

MSI Z170A Gaming Pro Motherboard User Manual

Model: Z170A GAMING PRO

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your MSI Z170A Gaming Pro ATX Motherboard. Designed for performance gaming, this motherboard supports 6th Generation Intel Core processors and DDR4 memory, offering a robust platform for your computing needs. Please read this manual thoroughly before proceeding with installation to ensure proper setup and optimal performance.

2. Safety Information

Always observe the following safety precautions when handling computer components:

- Disconnect the power cord from the wall outlet before touching any component.
- Wear an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity.
- Handle the motherboard by its edges to avoid touching sensitive components.
- Keep components away from moisture and extreme temperatures.
- Ensure proper ventilation within your computer case to prevent overheating.

3. Package Contents

Verify that all items are present in your motherboard package:

- MSI Z170A Gaming Pro Motherboard
- I/O Shield
- SATA Cables
- User Manual and Quick Installation Guide
- Driver CD/DVD
- SLI Bridge (if included)
- Case Badge / Stickers

4. Product Overview

The MSI Z170A Gaming Pro motherboard features a black PCB with red accents, designed for high-performance computing. Key components include the LGA 1151 CPU socket, four DDR4 DIMM slots, multiple PCI-Express slots, and various storage and connectivity options.



Figure 4.1: The MSI Z170A Gaming Pro Motherboard shown alongside its retail packaging. This image highlights the motherboard's design and the branding on its box.



Figure 4.2: An angled view of the MSI Z170A Gaming Pro Motherboard, showcasing its various components and the integrated blue LED lighting along the right edge. This perspective emphasizes the layout of the CPU socket, RAM slots, and PCIe slots.

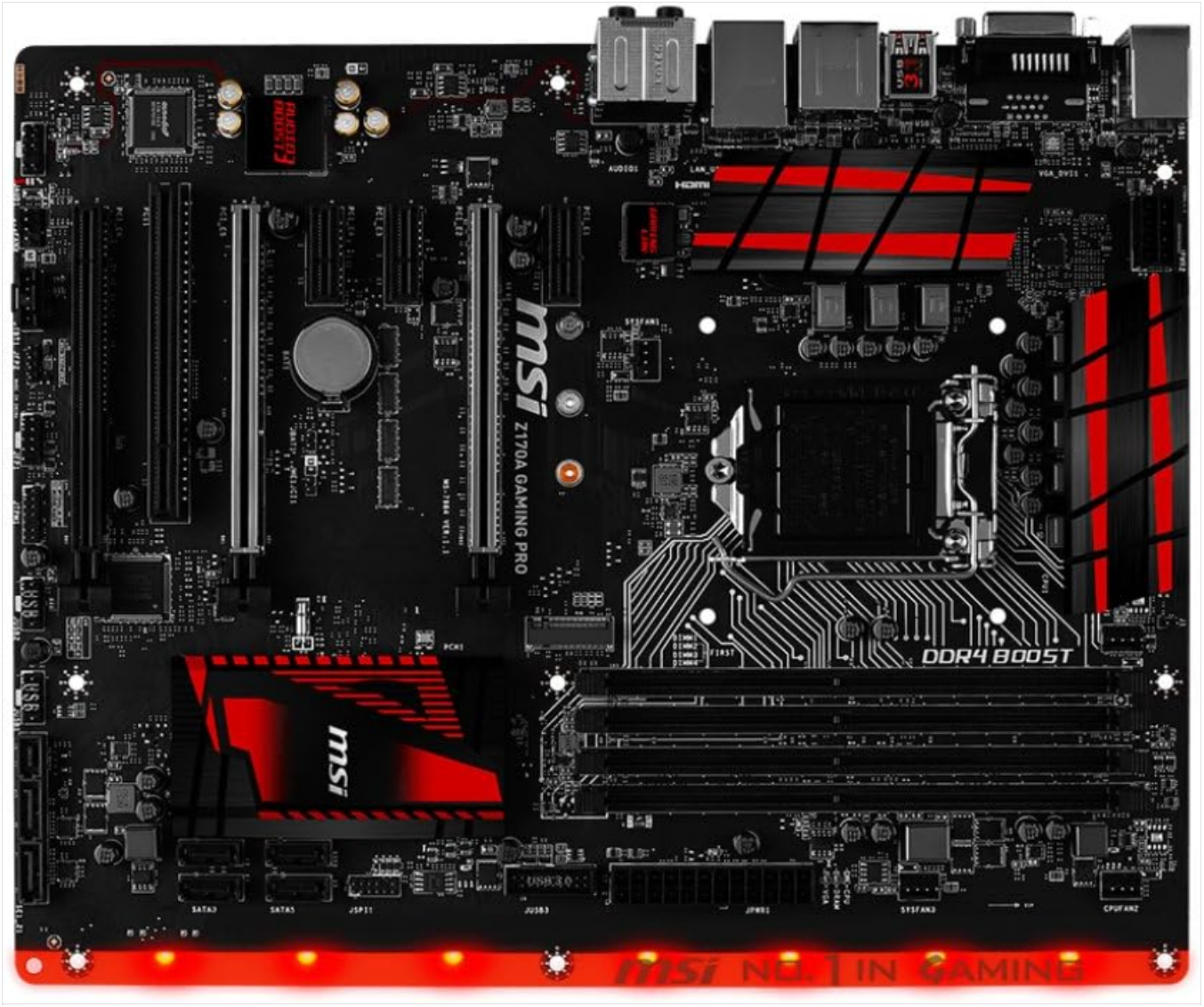


Figure 4.3: A top-down view of the MSI Z170A Gaming Pro Motherboard, displaying the full layout of the board. Red LED lighting is visible along the bottom edge, highlighting the aesthetic design and component placement.



Figure 4.4: Another angled view of the MSI Z170A Gaming Pro Motherboard, focusing on the red LED lighting and the heatsinks. This image provides a closer look at the power delivery components and the overall build quality.



Figure 4.5: A detailed view of the Input/Output (I/O) panel on the MSI Z170A Gaming Pro Motherboard. This shows the various ports available for connecting peripherals, including USB, Ethernet, audio, and video outputs.

5. Setup and Installation

Follow these steps to install your MSI Z170A Gaming Pro motherboard into your computer case.

1. **Prepare the Case:** Ensure your computer case is ready for motherboard installation. Install standoffs if necessary.
2. **Install the I/O Shield:** Snap the I/O shield into the corresponding opening at the rear of your computer case.
3. **Install the CPU:**
    - Carefully open the CPU socket lever.
    - Align the CPU (LGA 1151) with the socket, ensuring the gold triangle on the CPU matches the triangle on the socket.
    - Gently place the CPU into the socket without forcing it.
    - Close the socket lever to secure the CPU.
4. **Install the CPU Cooler:** Apply thermal paste (if not pre-applied) and install your CPU cooler according to its

manufacturer's instructions. Connect the CPU fan cable to the CPU_FAN header on the motherboard. For large coolers, consider installing RAM and M.2 SSDs before the cooler for easier access.

5. **Install Memory (RAM):**
    - Open the clips on both ends of the DDR4 DIMM slots.
    - Align the notch on the RAM module with the notch in the DIMM slot.
    - Press down firmly on both ends of the RAM module until the clips snap into place. Refer to the motherboard manual for recommended dual-channel configurations (typically slots 2 and 4).
6. **Install M.2 SSD (Optional):** If using an M.2 SSD, insert it into the M.2 slot and secure it with the provided screw.
7. **Mount the Motherboard:** Carefully place the motherboard into the case, aligning the screw holes with the standoffs. Secure the motherboard with screws.
8. **Connect Case Cables:** Connect the front panel connectors (power button, reset button, USB, audio), USB 2.0/3.0 headers, and fan headers to their respective pins on the motherboard. For wireless USB receivers, connecting to USB 2.0 ports, possibly with an extension cable, is recommended to avoid 2.4 GHz interference.
9. **Install Graphics Card (GPU):** Insert your graphics card into the primary PCI-Express 3.0 x16 slot (PCI_E2). Ensure it is seated firmly and secured with the case latch or screw. The reinforced PCIe slots provide enhanced support for heavy graphics cards.
10. **Connect Storage Devices:** Connect SATA data cables from your storage drives (HDDs, SSDs) to the SATA ports on the motherboard. Connect SATA power cables from your power supply to the drives. Note that SATA ports 5 and 6 may be deactivated when an M.2 SSD is in use.
11. **Connect Power Supply:** Connect the 24-pin ATX main power connector and the 8-pin CPU power connector from your power supply to the motherboard. Connect any additional PCIe power connectors to your graphics card.

6. Operating Instructions

6.1. BIOS/UEFI Configuration

Upon first boot, you may need to enter the BIOS/UEFI setup to configure system settings. Press the `DEL` key during startup to enter the UEFI BIOS. The MSI UEFI offers a user-friendly interface with mouse support.

- **XMP Profile:** Enable XMP (Extreme Memory Profile) for your DDR4 RAM to run at its advertised speeds. This can often be done with a single click.
- **Overclocking:** The UEFI provides extensive options for CPU and memory overclocking. MSI also offers one-click overclocking presets for stable performance boosts. If overclocking leads to instability, a CMOS reset can restore default settings.
- **Boot Order:** Configure your boot device priority (e.g., SSD, HDD, USB drive).
- **Mystic Lighting:** Adjust the integrated LED lighting effects and colors through the UEFI or MSI's dedicated software. The red "gaming LED" can be disabled if desired.

6.2. Driver Installation

After installing your operating system, install the necessary drivers for optimal performance. You can find drivers on the included CD/DVD or download the latest versions from the official MSI website. Ensure you download drivers compatible with your operating system (e.g., Windows 10).
Visit MSI Support for the latest drivers and utilities.

7. Maintenance

Regular maintenance helps ensure the longevity and stable operation of your motherboard:

- **Dust Removal:** Periodically clean dust from inside your computer case, especially from fans and heatsinks, using compressed air.
- **BIOS Updates:** Check the MSI website for BIOS updates. Updating the BIOS can improve compatibility, stability, and performance. The MSI UEFI includes a tool for flashing the BIOS from a USB drive.
- **Driver Updates:** Keep your drivers updated to ensure compatibility and optimal performance with new software and hardware.

8. Troubleshooting

This section addresses common issues you might encounter:

- **No Display/Graphics Card Not Detected:**
  - Ensure the graphics card is fully seated in the PCIe slot and all necessary power cables are connected.
  - Perform a CMOS reset. Refer to your motherboard manual for the exact procedure (usually involves shorting two pins or removing the CMOS battery).
  - Check the diagnostic LEDs on the motherboard; they can indicate issues with CPU, RAM, or GPU.
- **System Instability/Crashes:**
  - If overclocking, revert to default BIOS settings or use MSI's stable OC presets.
  - Ensure RAM modules are correctly installed and compatible. Test with one RAM stick at a time.
  - Check CPU and GPU temperatures to rule out overheating.
  - Verify all power connections are secure.
- **USB Ports Not Functioning:**
  - Ensure front panel USB headers are correctly connected to the motherboard.
  - For wireless USB devices, try connecting to a USB 2.0 port or using a USB extension cable to minimize interference.
  - Install the latest USB drivers from the MSI website.
- **SATA Drives Not Detected:**
  - Verify SATA data and power cables are securely connected.
  - If using an M.2 SSD, note that some SATA ports (e.g., 5 and 6) may be disabled. Try connecting to different SATA ports.
  - Check BIOS settings to ensure SATA controllers are enabled.
- **Power Button Issues:**
  - Ensure the front panel power button connector is correctly attached to the motherboard's JFP1 header.
  - Test the power button by momentarily shorting the power pins on the JFP1 header with a screwdriver (with power supply disconnected first).

9. Specifications

Key technical specifications for the MSI Z170A Gaming Pro Motherboard:

Feature	Detail
CPU Socket	LGA 1151
Supported CPUs	6th Generation Intel Core i7/i5/i3/Pentium/Celeron Processors

Feature	Detail
Chipset	Intel Z170 Express
Memory	4x DDR4 DIMM Slots, Dual Channel, Max 64GB, Supports up to 3600(OC) MHz
Expansion Slots	3x PCI-Express 3.0 x16 (x16/x0/x4 or x8/x8/x4), 3x PCI-Express 3.0 x1, 1x PCI Slot
Multi-GPU Support	AMD 3-Way CrossFireX, NVIDIA 2-Way SLI Technology
Storage	6x SATA3 Ports (2 reserved for SATA Express), 1x SATA Express Port, 1x M.2 Port (PCI-Express 3.0 x4)
RAID Support	RAID 0, 1, 5, 10 (for SATA storage)
Audio	Realtek ALC1150 7.1-Channel High Definition Audio CODEC, S/PDIF Output
LAN	Intel I219-V Gigabit Ethernet Controller
USB Ports	USB 3.1 Gen2 (Type-A, Type-C), USB 3.1 Gen1, USB 2.0
Form Factor	ATX
Dimensions	12 x 9.6 inches (30.4 cm x 24.4 cm)

10. Warranty and Support

MSI provides a limited warranty for its products. For detailed warranty terms and conditions, please refer to the warranty card included with your product or visit the official MSI website. Technical support is available through the MSI support portal, where you can find FAQs, driver downloads, and contact information for assistance.
For further assistance, please visit: MSI Support Website

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