MSI Z490-A PRO

MSI Z490-A PRO Motherboard User Manual

Model: Z490-A PRO

Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the MSI Z490-A PRO ATX Motherboard. This motherboard is designed to support 10th Generation Intel Core, Pentium Gold, and Celeron Processors using the LGA 1200 socket. It features DDR4 memory support, dual M.2 slots, USB 3.2 Gen 2 connectivity, and 2.5G LAN.



Image: The MSI Z490-A PRO motherboard shown alongside its retail packaging.

Setup and Installation

Careful installation is crucial for optimal performance and system stability. Ensure your system is powered off and disconnected from the power source before beginning installation.

1. Processor Installation

The MSI Z490-A PRO motherboard utilizes the LGA 1200 socket. Gently lift the CPU socket lever, align the processor's notches with the socket's keys, and carefully place the CPU into the socket. Lower the lever to secure the processor. Do not force the processor into the socket.

2. Memory (RAM) Installation

This motherboard supports dual-channel DDR4 memory up to 128GB across four DIMM slots, with speeds up to 4800MHz. 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 on both ends until the clips snap into place.

3. M.2 SSD Installation

The motherboard includes Twin Turbo M.2 slots with M.2 Shield Frozr for high-speed SSDs, supporting transfer speeds up to 32 GB/s. Remove the M.2 Shield Frozr heatsink, insert the M.2 SSD into the slot, and secure it with the provided screw. Reattach the M.2 Shield Frozr heatsink for thermal management.

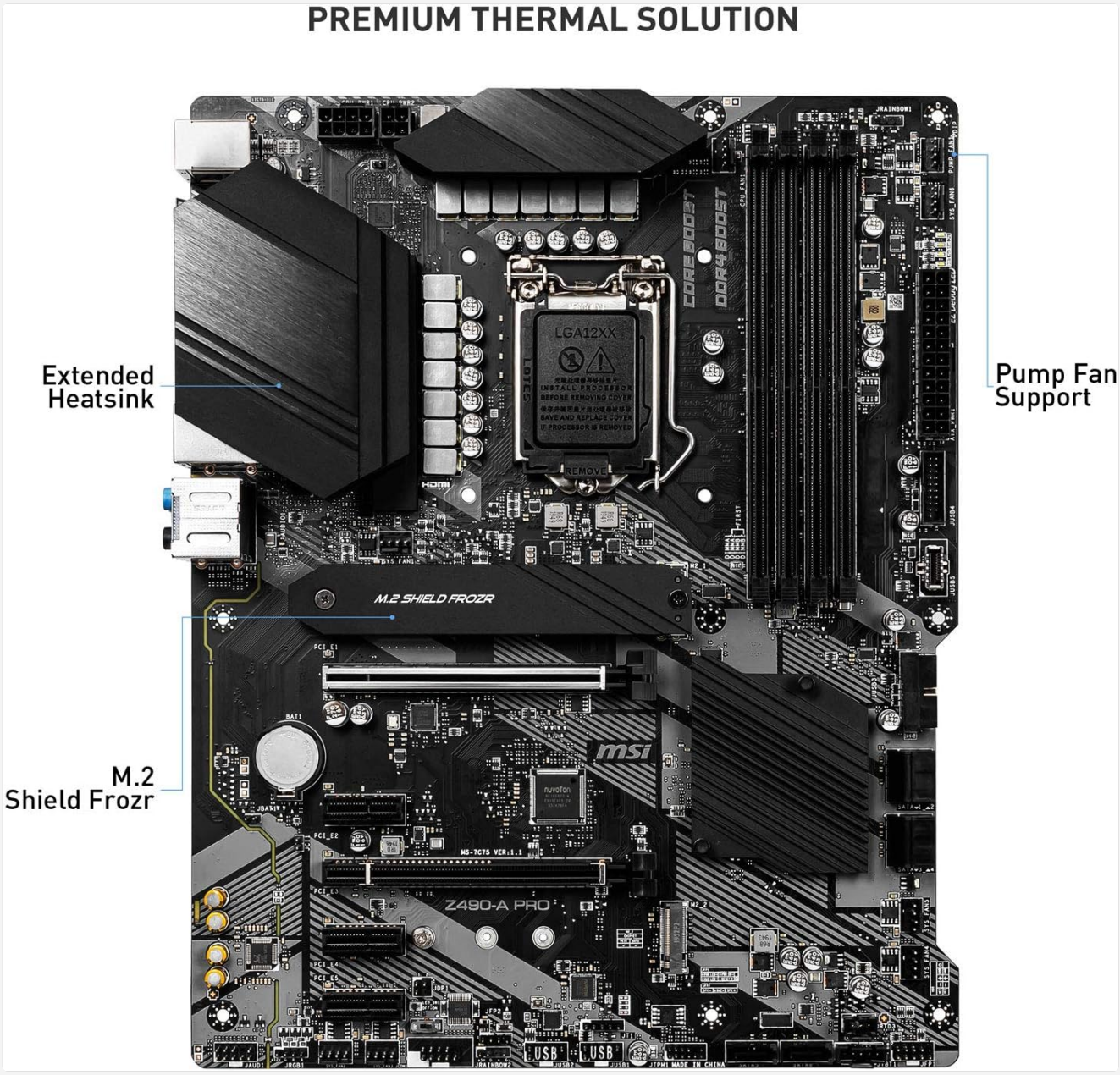


Image: Overview of the motherboard highlighting the Extended Heatsink, M.2 Shield Frozr, and Pump Fan Support areas.

4. Power Connections

Connect the 24-pin ATX power connector and the 8-pin (or 4+4-pin) CPU power connector from your power supply to the motherboard. The Core Boost technology utilizes optimized power circuit layouts and double CPU power connectors for stable current delivery.

5. Component Overview and Connectivity

Familiarize yourself with the various ports and connectors on the motherboard. The rear I/O panel includes:

- PS/2 Keyboard / Mouse Port
- USB 2.0 Ports (6 total)
- HDMI Port
- DisplayPort
- USB 3.2 Gen 2 Type-A/C Ports
- USB 3.2 Gen 1 Type-A Ports
- 2.5G LAN Port
- HD Audio Connectors

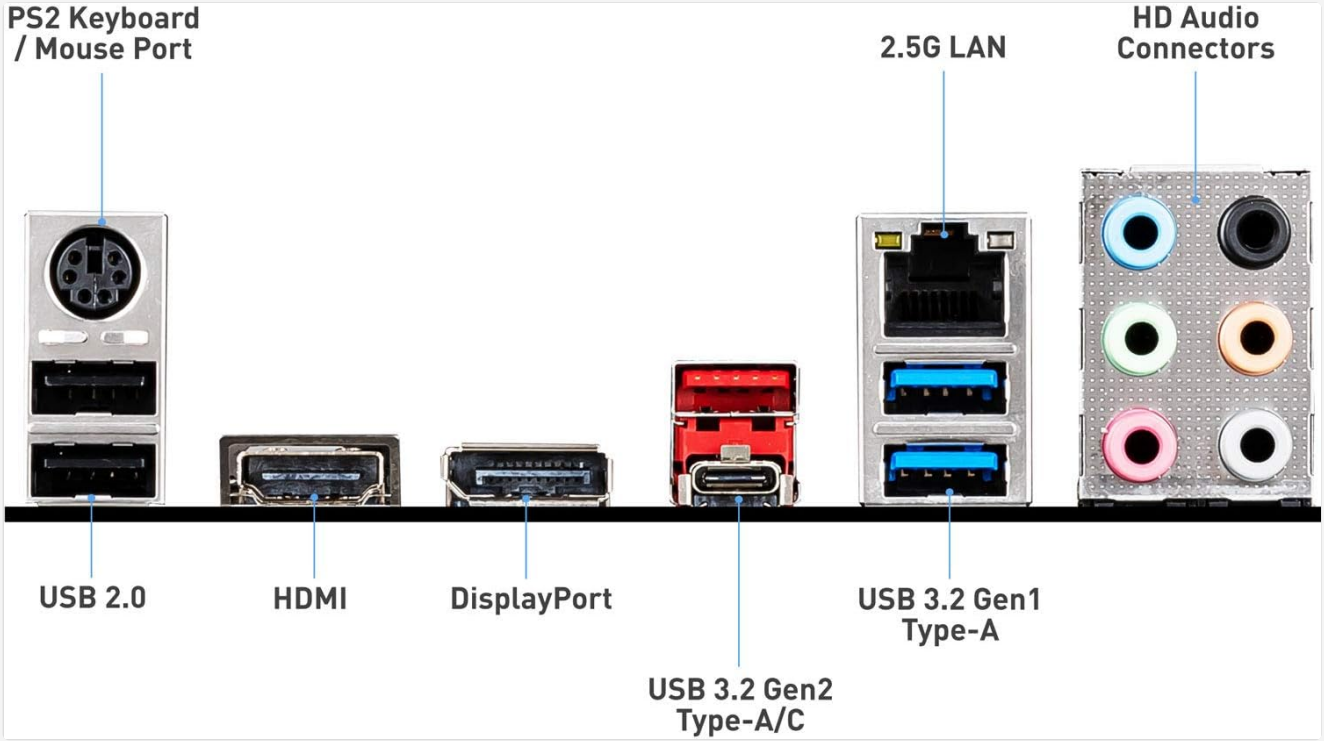


Image: Detailed view of the rear input/output panel, showing various connectivity options.

6. Included Accessories

The following accessories are typically included with your MSI Z490-A PRO motherboard:

- MSI Case Badge
- 2 x SATA Cables
- Driver DVD
- Product Registration Card
- I/O Shielding
- Case Screw Guide
- Quick Installation Guide

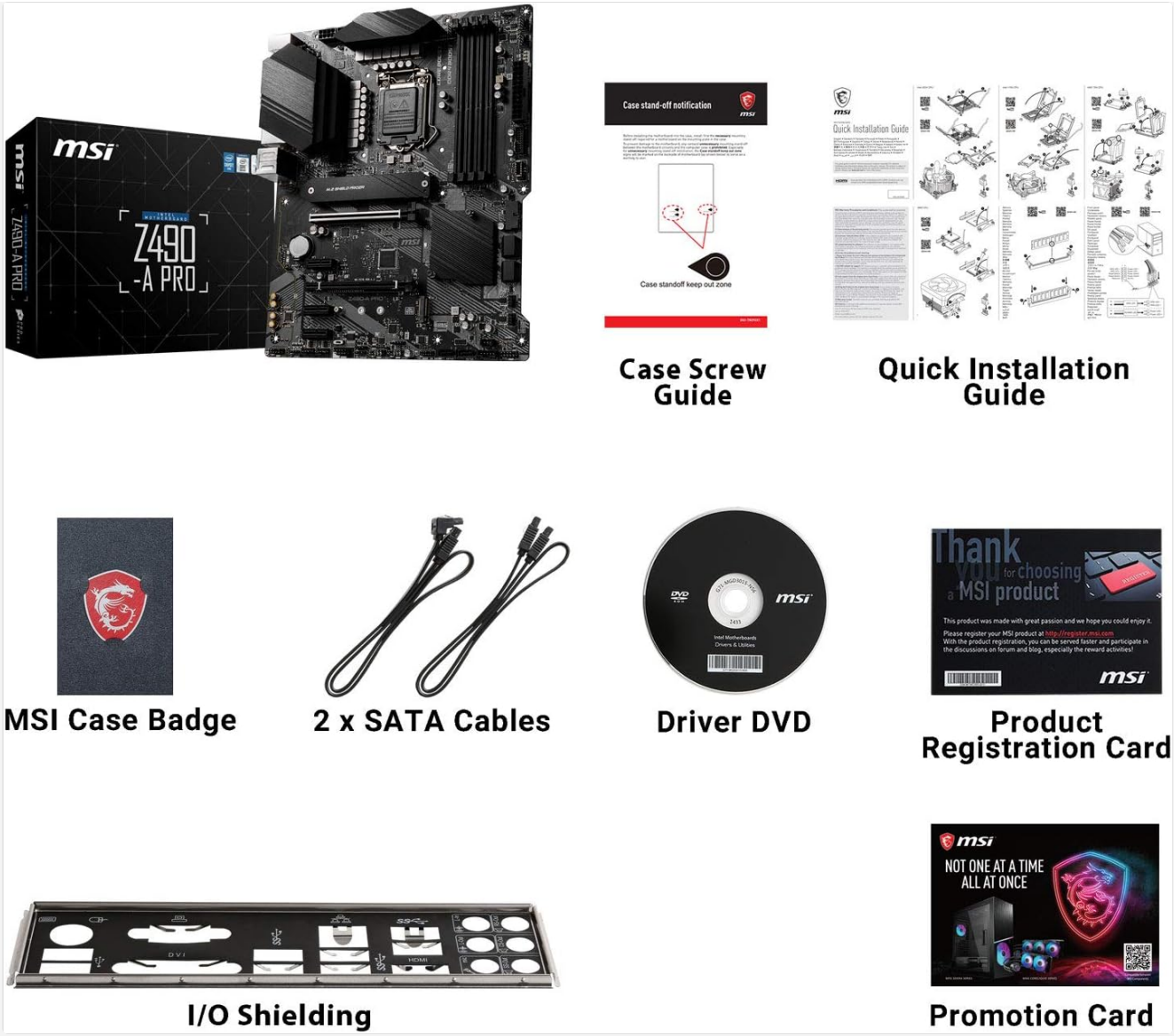


Image: A collection of accessories provided with the motherboard, including cables, documentation, and the I/O shield.

Operating Instructions

1. Initial Boot and BIOS Setup

Upon the first boot, access the BIOS/UEFI by pressing the designated key (usually DEL or F2) during startup. In the BIOS, you can configure system settings, boot order, and enable features like XMP for optimal memory performance. For detailed overclocking options, refer to the comprehensive manual available on the MSI website.

2. Driver Installation

After installing your operating system, install the necessary drivers from the included Driver DVD or download the latest versions from the official MSI website. This includes chipset drivers, LAN drivers, audio drivers, and any other peripheral drivers.

Maintenance

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

- **Dust Removal:** Periodically clean dust from the motherboard and components using compressed air. Ensure the system is powered off and unplugged before cleaning.

- **Thermal Management:** Ensure proper airflow within your PC case. The motherboard's Extended Heatsink Design and M.2 Shield Frozr assist in dissipating heat from critical components. Verify that all fans, including CPU and case fans, are functioning correctly.
- **BIOS/UEFI Updates:** Check the MSI website for BIOS/UEFI updates. Updates can improve compatibility, stability, and performance. Follow the update instructions carefully to avoid system damage.

Troubleshooting

If you encounter issues, consider the following common troubleshooting steps:

- **No Display:** Verify that your monitor is connected to the correct graphics output (either integrated graphics or a dedicated graphics card). Reseat RAM modules and the graphics card.
- **System Not Booting:** Check all power connections (24-pin ATX, 8-pin CPU). Ensure the CPU and RAM are correctly seated. Listen for POST (Power-On Self-Test) beeps, which can indicate specific hardware issues.
- **M.2 SSD Not Detected:** Note that some M.2 slots may share bandwidth with SATA ports. If an M.2 SSD is installed, a specific SATA port might be disabled. Consult the full manual for port sharing details.
- **Network Connectivity Issues:** Ensure LAN drivers are installed. If using a new Windows installation, network drivers may need to be installed manually from the provided DVD or a USB drive.
- **Unstable Overclock:** If you have overclocked your CPU or RAM and experience instability, reset BIOS settings to default. Gradually adjust overclocking parameters.

For persistent issues, refer to the comprehensive manual on the MSI support website or contact MSI technical support.

Specifications

Feature	Specification
Brand	MSI
Model Name	Z490-A PRO
CPU Socket	LGA 1200
Compatible Processors	10th Gen Intel Core, Pentium Gold, Celeron
RAM Memory Technology	DDR4
Max Memory Speed	4800 MHz
Max RAM Capacity	128GB
Chipset Type	Intel Z490
LAN	2.5G LAN
USB Ports	USB 3.2 Gen 2, USB 3.2 Gen 1, USB 2.0
Video Output	HDMI, DisplayPort
Form Factor	ATX
Dimensions (LxWxH)	12 x 9.6 x 2 inches

Warranty and Support

For detailed warranty information, please refer to the warranty card included with your product or visit the official MSI website. MSI provides technical support for its products. For assistance, visit the MSI support page at www.msi.com/support. You may also find comprehensive manuals, FAQs, and driver downloads there.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question