

MSI H310-A PRO

MSI H310-A PRO ATX Motherboard User Manual

Model: H310-A PRO

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your MSI H310-A PRO ATX Motherboard. Designed for Intel Coffee Lake processors (LGA 1151 socket), this motherboard offers robust performance and stability for various computing needs, including specialized applications like cryptocurrency mining due to its multiple PCIe expansion slots.

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

2. SAFETY INFORMATION

Always observe the following safety precautions when handling your motherboard and other 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 components by their edges; avoid touching pins or circuitry.
- Keep the motherboard 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 H310-A PRO ATX Motherboard
- I/O Shield
- SATA Cables
- Driver CD/DVD (or USB drive)
- Quick Installation Guide
- User Manual (this document, or a printed version)

- Screws for M.2 SSD (if applicable)

4. MOTHERBOARD LAYOUT

Familiarize yourself with the various components and connectors on your MSI H310-A PRO motherboard.



Figure 4.1: MSI H310-A PRO Motherboard with its retail packaging. This image provides an overview of the product, including the motherboard itself and the design of its box.

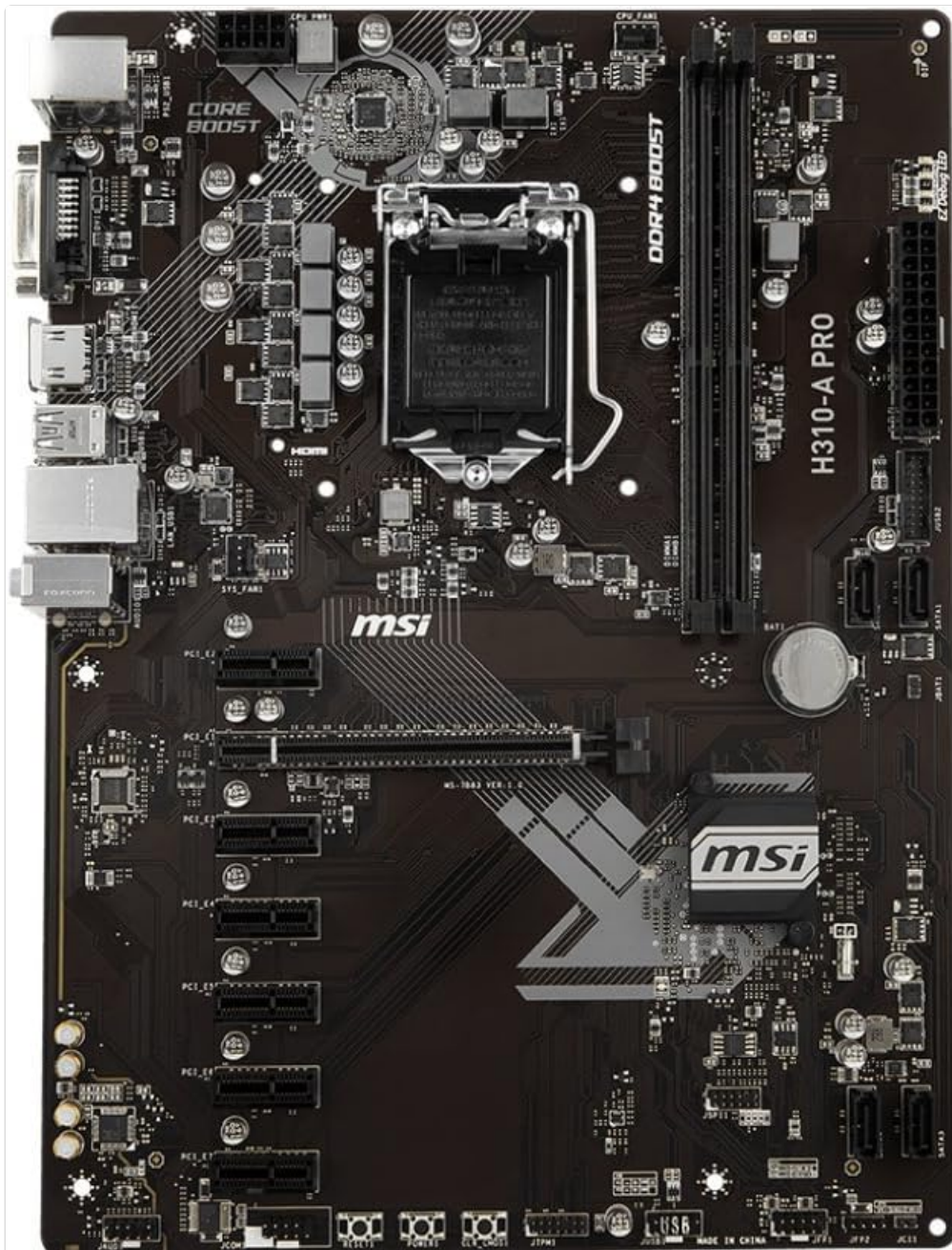


Figure 4.2: A top-down view of the MSI H310-A PRO motherboard, highlighting the LGA 1151 CPU socket, DDR4 memory slots, multiple PCIe slots, and various headers and connectors.



Figure 4.3: The rear I/O panel of the MSI H310-A PRO motherboard, showing ports such as PS/2, USB 2.0, DVI-D, HDMI, USB 3.1 Gen1, LAN, and audio jacks.

Key Components:

- **LGA 1151 CPU Socket:** Supports 8th Gen Intel Core, Pentium, and Celeron processors.
- **DDR4 DIMM Slots:** Two slots for DDR4 memory modules.
- **PCIe Slots:** Multiple PCIe slots (up to 13) for expansion cards, including graphics cards. Features Mining LED

indicators for each slot.

- **SATA Ports:** Connectors for SATA storage devices (HDDs/SSDs).
- **USB Headers:** Internal headers for front panel USB ports.
- **Front Panel Headers:** Connectors for power button, reset button, and indicator LEDs.
- **Power Connectors:** 24-pin ATX power connector and 8-pin CPU power connector.
- **Rear I/O Ports:** PS/2, USB 2.0, DVI-D, HDMI, USB 3.1 Gen1, LAN, Audio Jacks.

5. SETUP AND INSTALLATION

Follow these steps to install your motherboard and essential components into your computer case.

5.1. CPU Installation

1. Locate the LGA 1151 CPU socket on the motherboard.
2. Open the CPU socket lever and lift the metal load plate.
3. Carefully align the CPU with the socket, ensuring the golden triangle on the CPU matches the triangle on the socket. Do not force the CPU into the socket.
4. Lower the load plate and secure it by pushing down the lever until it clicks into place.
5. Install the CPU cooler according to its manufacturer's instructions.

5.2. Memory (RAM) Installation

1. Locate the two DDR4 DIMM slots.
2. Open the clips at both ends of the memory slot.
3. Align the notch on the DDR4 memory module with the notch in the DIMM slot.
4. Insert the memory module firmly into the slot until the clips snap into place. Ensure both clips are closed.

5.3. Storage Device Installation (SATA)

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

5.4. Expansion Card Installation (PCIe)

1. Identify the appropriate PCIe slot for your expansion card (e.g., graphics card, network card).
2. Remove the corresponding slot cover from your computer case.
3. Align the expansion card with the PCIe slot and press it firmly until it is fully seated.
4. Secure the card with a screw or retention clip to the case.
5. For graphics cards, connect any required PCIe power cables from your PSU.

5.5. Power Connections

1. Connect the 24-pin ATX main power connector from your PSU to the corresponding header on the motherboard.
2. Connect the 8-pin CPU power connector (EPS 12V) from your PSU to the header near the CPU socket.
3. Ensure all power cables are securely connected.

6. OPERATING INSTRUCTIONS

6.1. Initial Boot and BIOS Setup

- After assembling your system, connect a monitor, keyboard, and mouse.
- Power on your computer. During startup, repeatedly press the **DEL** key to enter the BIOS/UEFI setup utility.
- In the BIOS, you can configure boot order, system time, and various hardware settings. Refer to the detailed BIOS manual on the MSI website for advanced configurations.
- Save changes and exit the BIOS to continue booting into your operating system installation media.

6.2. Driver Installation

- After installing your operating system (e.g., Windows 10), install the necessary drivers for your motherboard.
- Use the provided driver CD/DVD or download the latest drivers from the official MSI website (www.msi.com) for your specific model (H310-A PRO).
- Essential drivers include Chipset, Audio, LAN, and Graphics (if using integrated graphics).

7. MAINTENANCE

- **Keep Clean:** Regularly clean dust from inside your computer case, especially around fans and heatsinks, using compressed air.
- **BIOS Updates:** Periodically check the MSI website for BIOS updates. BIOS updates can improve stability, compatibility, and performance. Follow MSI's instructions carefully when updating the BIOS.
- **Driver Updates:** Keep your drivers updated to ensure optimal performance and compatibility with new software and hardware.
- **Environmental Control:** Operate your system in a cool, dry, and well-ventilated environment.

8. TROUBLESHOOTING

This section addresses common issues you might encounter.

- **No Power/System Not Booting:**
 - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected to the motherboard and PSU.
 - Verify the PSU is switched on and the power cord is connected to a working outlet.
 - Check front panel connections (power button header) are correctly installed.
 - Try booting with only essential components (CPU, one RAM stick, graphics card if no integrated graphics) to isolate the issue.
- **No Display Output:**
 - Ensure your monitor is connected to the correct display output (either motherboard's integrated graphics port or dedicated graphics card).
 - Verify the graphics card is fully seated in its PCIe slot and any required power cables are connected.
 - If using integrated graphics, ensure your CPU supports it.
- **System Instability/Crashes:**
 - Check RAM modules are properly seated. Test with one RAM stick at a time.
 - Ensure CPU cooler is correctly installed and making good contact with the CPU. Monitor CPU temperatures.
 - Update BIOS and all drivers to the latest versions.
 - Run memory diagnostic tools to check for faulty RAM.

- **PCIe Slot Issues (e.g., for mining):**

- Utilize the **Mining LED** feature on the motherboard to identify non-functional PCIe slots. A lit LED indicates an active slot.
- Ensure all riser cards and graphics cards are securely connected and powered.
- Check BIOS settings for PCIe lane configuration and ensure "Above 4G Decoding" is enabled if using many GPUs.

9. SPECIFICATIONS

Brand	MSI
Model	H310-A PRO
CPU Socket	LGA 1151
Compatible Processors	8th Gen Intel Core, Pentium, Celeron
Chipset	Intel H310
RAM Memory Technology	DDR4
Memory Speed	2666 MHz
Max Memory Capacity	64 GB
Form Factor	ATX
Product Dimensions	6.86 x 28.19 x 34.8 inches (approx. 17.4 x 71.6 x 88.4 cm)
Item Weight	2.05 pounds (approx. 0.93 kg)
USB 2.0 Ports	4 (rear)
Onboard Graphics	Yes (requires compatible CPU)

10. WARRANTY AND SUPPORT

For detailed warranty information, technical support, driver downloads, and BIOS updates, please visit the official MSI website:

www.msi.com

You can also find FAQs and community forums on the MSI support pages, which may help resolve common issues or provide additional guidance.