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ASUS PRIME H310M-A

ASUS Prime H310M-A Motherboard User Manual

Model: PRIME H310M-A

1. Product Overview

The ASUS Prime H310M-A is a Micro ATX motherboard designed to support 8th generation Intel Core processors. It features an LGA1151 socket, DDR4 memory support, and integrated display outputs including HDMI, VGA, and DVI. This motherboard incorporates ASUS 5X Protection III for hardware-level safeguards and FanXpert for advanced fan controls.

Key Features:

- Designed for 8th generation Intel Core processors.
- Integrated M.2 slot with Intel Optane Memory compatibility.
- ASUS 5X Protection III for enhanced component longevity and reliability.
- FanXpert for dynamic cooling control.
- ASUS OptiMem for improved memory stability and performance.
- Onboard 8-Channel HD Audio for clear sound.

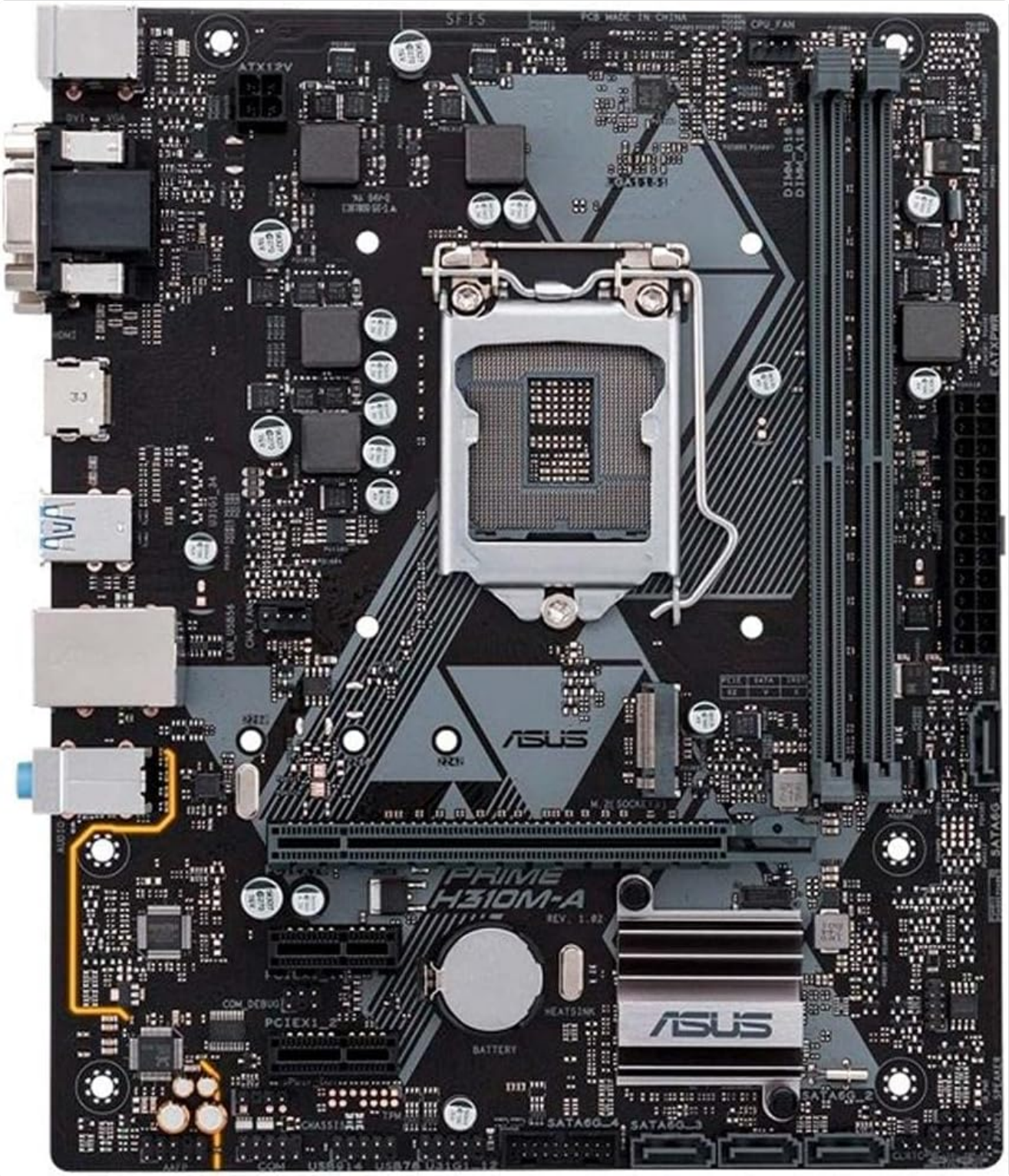


Figure 1: Top-down view of the ASUS Prime H310M-A motherboard, showing the CPU socket, RAM slots, PCIe slots, and various headers.

2. Installation and Setup

This section provides instructions for installing the motherboard and its components into a computer chassis.

2.1. Unpacking and Inspection

- Carefully remove the motherboard from its packaging.
- Inspect the motherboard for any visible damage during shipping.
- Ensure all accessories listed in the product documentation are present.

2.2. Component Installation

1. **CPU Installation:** Open the CPU socket lever, align the CPU with the socket's notch, gently place the CPU, and close the lever to secure it.
2. **CPU Cooler Installation:** Install the CPU cooler according to its manufacturer's instructions, ensuring proper thermal paste application and secure mounting.
3. **RAM Installation:** Open the clips on the DDR4 memory slots. Align the memory modules with the slots and press down firmly until the clips snap into place. Refer to the motherboard manual for preferred slot population order.
4. **Storage Device Installation:** Install M.2 SSDs into the M.2 slot and SATA drives to the SATA ports using SATA cables.
5. **Graphics Card Installation:** Insert the graphics card into the PCIe x16 slot, ensuring it is fully seated and secured with the retention clip and a case screw.

2.3. Connecting Peripherals

1. **Power Connections:** Connect the 24-pin ATX power connector and the 8-pin CPU power connector from the power supply to the motherboard.
2. **Front Panel Connections:** Connect the power button, reset button, HDD LED, power LED, and front panel audio/USB headers to their respective pins on the motherboard. Consult the motherboard's silkscreen labels for correct orientation.
3. **External Peripherals:** Connect your monitor to the graphics card or the motherboard's integrated display outputs (VGA, DVI, HDMI). Connect USB devices, keyboard, mouse, and network cable to the rear I/O panel.



Figure 2: Angled view of the ASUS Prime H310M-A motherboard, highlighting the CPU socket, DDR4 memory slots, M.2 slot, and the chipset heatsink, indicating areas for component installation.

3. Operation Guide

This section covers initial boot-up procedures and basic system configuration.

3.1. First Boot and BIOS Setup

- After assembling all components and connecting power, press the power button.
- During startup, repeatedly press the `DEL` key to enter the BIOS/UEFI setup utility.

- Configure boot order to prioritize your operating system installation media (USB drive or DVD).
- Save changes and exit BIOS to proceed with operating system installation.

3.2. Driver Installation

- After installing your operating system, install the necessary drivers for the motherboard's chipset, audio, LAN, and any other integrated components.
- Drivers can be found on the ASUS support website for the Prime H310M-A model.

3.3. System Configuration

- Utilize the ASUS AI Suite 3 software (available from the ASUS website) for system monitoring, fan control, and performance tuning within the operating system.
- Ensure your operating system is up to date for optimal performance and security.

4. Maintenance

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

4.1. Cleaning

- Periodically clean dust from the motherboard and CPU cooler using compressed air.
- Ensure the system is powered off and unplugged before cleaning.
- Avoid using liquid cleaners directly on components.

4.2. BIOS Updates

- Check the ASUS support website for the latest BIOS updates.
- BIOS updates can improve compatibility, stability, and performance.
- Follow the specific instructions provided by ASUS for updating the BIOS to prevent system damage.

4.3. Driver Updates

- Regularly check the ASUS support website for updated drivers for your motherboard's components.
- Keeping drivers current can resolve issues and enhance system performance.

5. Troubleshooting

This section addresses common issues you might encounter with your motherboard.

5.1. No Power / No POST (Power-On Self-Test)

- **Check Power Connections:** Ensure the 24-pin ATX and 8-pin CPU power cables are securely connected to the motherboard and power supply.
- **Verify Components:** Reseat the CPU, RAM modules, and graphics card. Ensure they are correctly installed.
- **Clear CMOS:** Refer to the motherboard manual for instructions on how to clear the CMOS (Complementary Metal-Oxide-Semiconductor) settings, which can resolve boot issues.
- **Test with Minimal Components:** Remove all non-essential components (e.g., extra RAM sticks, storage drives, expansion cards) and attempt to boot with only the CPU, one RAM stick, and the graphics card (if no integrated graphics).

5.2. Display Issues

- **Cable Connection:** Ensure the display cable (HDMI, DVI, VGA) is securely connected to both the monitor and the graphics output on the motherboard or dedicated graphics card.
- **Input Source:** Verify the monitor's input source is set correctly.
- **Driver Issues:** If using a dedicated graphics card, ensure its drivers are installed and up to date.

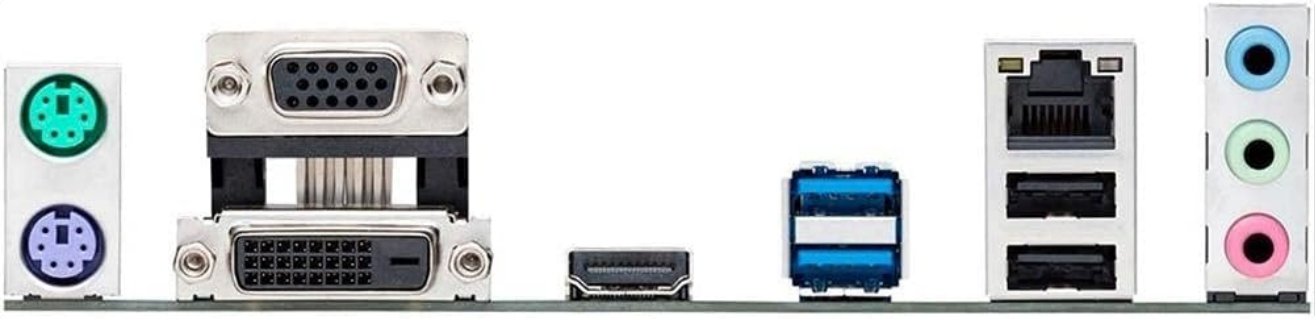


Figure 3: Close-up view of the rear I/O panel of the ASUS Prime H310M-A motherboard, displaying the PS/2 ports, VGA, DVI, HDMI, USB 3.0, USB 2.0, LAN, and audio jacks, which are critical for connecting external devices.

5.3. Component Not Detected

- **Reseat Component:** For RAM, graphics cards, or M.2 drives, try reseating them in their respective slots.
- **Check BIOS:** Ensure the component is enabled in the BIOS settings.
- **Compatibility:** Verify that the component is compatible with the motherboard (e.g., correct RAM type, CPU generation).

6. Technical Specifications

Feature	Specification
Brand	ASUS
Model Name	PRIME H310M-A
CPU Socket	LGA 1151
Compatible Processors	8th Generation Intel Core
Chipset Type	Intel H310
RAM Memory Technology	DDR4
Memory Clock Speed	2400 MHz
Memory Slots Available	2
Memory Storage Capacity (Max)	32 GB
Graphics Card Interface	Integrated, PCI Express
Total Number of HDMI Ports	1
Total PCIe Ports	1
Total SATA Ports	4
Total USB Ports	10 (various types)

Feature	Specification
Main Power Connector Type	24-Pin
Platform	Windows 10
Item Weight	16 ounces

7. Warranty Information

The ASUS Prime H310M-A Motherboard comes with a **3-year warranty**. For detailed terms and conditions, please refer to the warranty card included with your product or visit the official ASUS support website.

8. Support and Resources

For further assistance, driver downloads, BIOS updates, and additional product information, please visit the official ASUS support channels:

- **ASUS Official Website:** https://www.asus.com/support/
- **ASUS Store on Amazon:** Visit the ASUS Store

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