ASUS 90MB1G20-M0EAYC

ASUS PRIME H610M-A-CSM Motherboard User Manual

Model: 90MB1G20-M0EAYC | Brand: ASUS

INTRODUCTION

This manual provides essential information for setting up, operating, maintaining, and troubleshooting your ASUS PRIME H610M-A-CSM motherboard. Please read this guide thoroughly before installation and use to ensure proper functionality and longevity of your system.

Image: The ASUS PRIME H610M-A-CSM motherboard alongside its retail packaging, showcasing the product's design and branding.

SETUP AND INSTALLATION

The ASUS PRIME H610M-A-CSM motherboard is designed for Intel LGA 1700 socket processors (14th, 13th, and 12th Gen Intel® Core™ CPUs). Follow these steps for proper installation:

1. Unboxing and Component Check

Before starting, ensure all components are present. The package typically includes the motherboard, SATA cables, M.2 screw package, rear I/O panel shield, and a user guide.
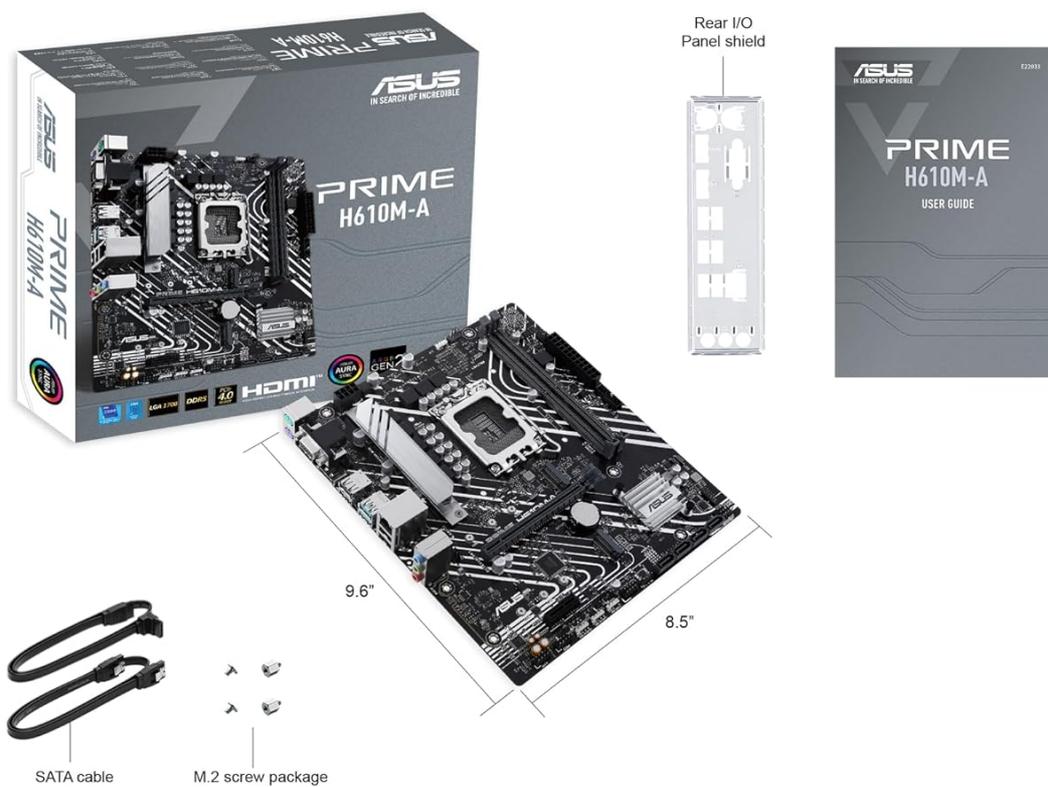
Image: Contents of the ASUS PRIME H610M-A-CSM retail box, including the motherboard, SATA cables, M.2 screws, I/O shield, and documentation.

2. Motherboard Overview

Familiarize yourself with the layout of the motherboard, including the CPU socket, DDR5 memory slots, M.2 slots, PCIe slots, and various headers.
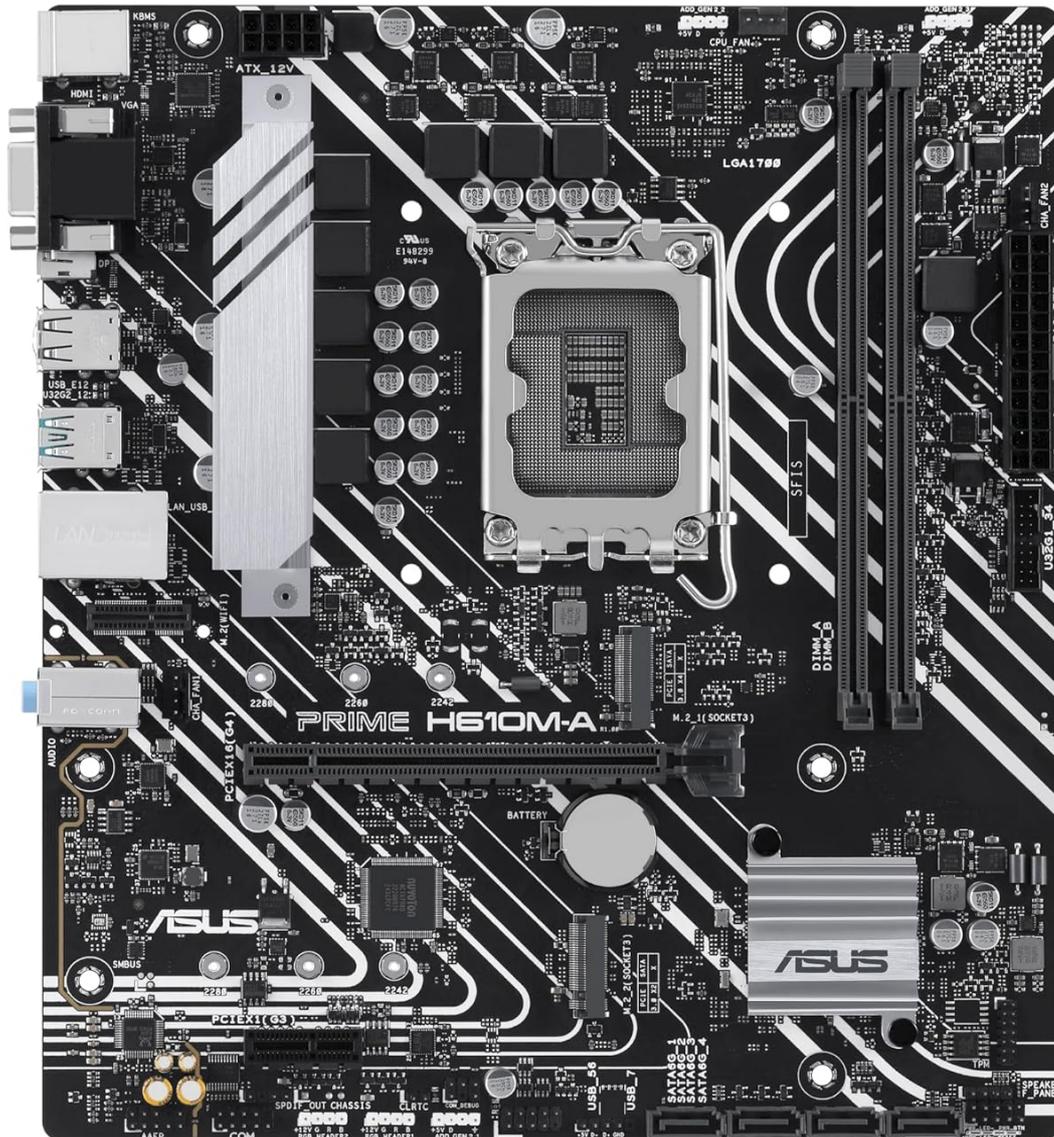
Image: A top-down view of the ASUS PRIME H610M-A-CSM motherboard, highlighting the LGA 1700 socket, DDR5 DIMM slots, and M.2 slots.

3. Component Installation

1. **CPU Installation:** Carefully align and install your Intel LGA 1700 processor into the CPU socket. Ensure the retention arm is securely locked.

2. **Memory (RAM) Installation:** Insert DDR5 memory modules into the DIMM slots. Ensure they are seated firmly until the clips on both ends snap into place.

3. **M.2 SSD Installation:** Install M.2 solid-state drives into the available M.2 slots. Secure them with the provided M.2 screws. The board supports speeds up to 32 Gbps via PCIe 3.0.

4. **Graphics Card (GPU) Installation:** Insert your PCIe 4.0 compatible graphics card into the primary PCIe x16 slot. The ASUS SafeSlot Core design provides enhanced retention and shearing resistance.

5. **Power Supply Connections:** Connect the 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard.

6. **Front Panel Connections:** Connect the case's front panel headers (power button, reset button, USB ports, audio

jacks) to the corresponding pins on the motherboard.

7. **Rear I/O Panel:** Install the I/O shield into your PC case before mounting the motherboard. Connect peripherals to the appropriate ports on the rear I/O panel.

Image: A detailed view of the rear input/output (I/O) panel of the ASUS PRIME H610M-A-CSM motherboard, showing various connectivity ports.

4. Initial Boot and UEFI BIOS Setup

Upon first boot, access the UEFI BIOS to configure system settings. The ASUS UEFI BIOS offers both an EZ Mode for quick setup and an Advanced Mode for detailed tuning. You can adjust boot order, enable XMP profiles for memory, and configure fan curves via Fan Xpert 2+.

OPERATING YOUR SYSTEM

Once your system is assembled and the operating system is installed, you can leverage the various features of the ASUS PRIME H610M-A-CSM motherboard.

Connectivity

- **Intel® 1Gb Ethernet:** Provides stable and fast network connectivity with reduced CPU overhead.
- **USB 3.2 Gen 2 Ports:** Offers high-speed data transfer up to 10 Gbps for compatible peripherals.
- **Display Outputs:** Supports DisplayPort, HDMI™, and VGA for versatile display connections.

Audio Features

The motherboard incorporates advanced audio features for an immersive experience:

- **Audio Shielding:** Ensures precision analog/digital separation and reduces multi-lateral interference.
- **Dedicated Audio PCB Layers:** Separate layers for left and right tracks maintain consistent audio quality.
- **Premium Audio Capacitors:** Deliver warm, natural, and clear sound.
- **Two-Way AI Noise Cancelation:** Reduces background noise from both microphone input and incoming audio, enhancing clarity during communication.

Personalization and Control

- **Aura Sync RGB Lighting:** Control onboard RGB LEDs and connected strips via Addressable Gen 2 headers for synchronized lighting effects across compatible hardware.
- **Armoury Crate:** A centralized software utility for customizing RGB lighting, managing device settings, and staying updated with ASUS news.
- **ASUS Control Center Express:** For corporate users, this software provides real-time IT monitoring and management, simplifying operations and enhancing data protection.

MAINTENANCE

Regular maintenance helps ensure the stability and longevity of your motherboard and system.

- **Dust Management:** Periodically clean your PC case and motherboard to prevent dust buildup, which can impede cooling.
- **Fan Control:** Utilize the Fan Xpert 2+ software or UEFI BIOS to monitor and adjust fan speeds for optimal cooling and noise levels.
- **BIOS and Driver Updates:** Keep your motherboard's BIOS and drivers updated to the latest versions available from the ASUS support website. This can improve performance, stability, and compatibility. ASUS Control Center Express can assist with automated updates in corporate environments.
- **Thermal Management:** Ensure proper airflow within your PC case. The VRM heatsink and thermal pad on the motherboard are designed to improve heat transfer from critical components.

TROUBLESHOOTING

If you encounter issues with your system, consider the following troubleshooting steps:

- **Q-LED Core:** The Q-LED Core display on the motherboard produces light patterns during the Power-On Self-Test (POST). Refer to the user manual for specific light patterns and their corresponding troubleshooting guidance (e.g., CPU, DRAM, VGA, Boot device issues).
- **Check Connections:** Ensure all power cables (24-pin ATX, 8-pin CPU), data cables (SATA, M.2), and component

- **Clear CMOS:** If your system fails to boot or behaves erratically after a configuration change, try clearing the CMOS (Complementary Metal-Oxide-Semiconductor) settings. Refer to the motherboard manual for the exact procedure (usually involves a jumper or button).
- **Component Isolation:** If possible, test components (RAM, GPU) individually or with known working parts to identify a faulty component.
- **BIOS Settings:** Reset BIOS settings to default if you suspect an incorrect configuration is causing issues.
- **PCIe Slot Issues:** The SafeSlot Core design helps prevent damage to the PCIe slot. If a graphics card is not detected, ensure it is fully seated and try another slot if available.

SPECIFICATIONS

Key technical specifications for the ASUS PRIME H610M-A-CSM motherboard:

Feature	Specification
CPU Socket	Intel® LGA 1700 (14th, 13th, 12th Gen Intel® Core™ Processors)
Chipset	Intel® H610
Memory	2 x DDR5 DIMM slots
Expansion Slots	1 x PCIe 4.0 x16, 2 x PCIe 3.0 x1
Storage	2 x M.2 slots (PCIe 3.0 x4, up to 32 Gbps), 4 x SATA 6Gb/s ports
Ethernet	Intel® 1Gb Ethernet
USB Ports	USB 3.2 Gen 2 (rear), USB 3.2 Gen 1, USB 2.0
Video Outputs	DisplayPort, HDMI™, VGA
Audio	High Definition Audio CODEC, Audio Shielding, Premium Audio Capacitors, Two-Way AI Noise Cancelation
Form Factor	Micro ATX
Model Number	90MB1G20-M0EAYC
Item Weight	1.23 pounds

WARRANTY AND SUPPORT

The ASUS PRIME H610M-A-CSM is part of the ASUS Corporate Stable Model (CSM) program, designed for stability and reliability. This program offers:

- Up to 36-month product lifecycle support.
- 6-month end-of-life notice for product transitions.

Each purchase of an ASUS CSM motherboard includes ASUS Control Center Express, a server-grade IT management software for enhanced data protection and simplified IT operations.
For further assistance, driver downloads, BIOS updates, and detailed product information, please visit the official ASUS support website. Keep your proof of purchase for warranty claims.