

ASUS PRIME H610M-E D4

ASUS Prime H610M-E D4 Motherboard User Manual

Model: PRIME H610M-E D4

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the ASUS Prime H610M-E D4 motherboard. Please read this manual thoroughly before beginning installation to ensure proper setup and optimal performance.

The ASUS Prime H610M-E D4 is a micro-ATX motherboard designed to support 12th Gen Intel processors with an LGA 1700 socket. It features DDR4 memory support, PCIe 4.0, dual M.2 slots, Realtek 1Gb Ethernet, and multiple display outputs including DisplayPort, HDMI, and D-Sub.

2. KEY FEATURES

- **LGA 1700 Socket:** Supports 12th Gen Intel Core, Pentium Gold, and Celeron Processors.
- **DDR4 Memory:** Two DIMM slots supporting up to 64GB DDR4 3200MHz (OC).
- **PCIe 4.0 Ready:** Equipped with a PCIe 4.0 x16 slot for graphics cards.
- **Dual M.2 Slots:** Supports PCIe 4.0 M.2 SSDs for high-speed storage.
- **Comprehensive Cooling:** Features VRM heatsink, PCH heatsink, and hybrid fan headers configurable via Fan Xpert 4 or UEFI BIOS.
- **Robust Power Solution:** Enhanced power delivery for stable performance.
- **Networking:** Realtek 1Gb Ethernet for reliable network connectivity.
- **Connectivity:** Multiple USB 3.2 Gen 1 and USB 2.0 ports, four SATA 6Gb/s ports.
- **Video Outputs:** DisplayPort, HDMI, and D-Sub for versatile display options.
- **SafeSlot Core+:** Reinforced PCIe slot for enhanced retention force and shearing resistance.
- **Q-LED Core:** Visual POST (Power-On Self-Test) indicators for easy troubleshooting.

3. SETUP AND INSTALLATION

Before installing the motherboard, ensure your system components are compatible and that you have a static-free environment.

3.1. Package Contents

Verify that all items are present in the package:

- ASUS Prime H610M-E D4 Motherboard
- I/O Shield
- SATA 6Gb/s cables
- M.2 SSD screw package
- Support DVD
- User Manual



Image: Contents of the ASUS Prime H610M-E D4 Motherboard package, including the motherboard, cables, and documentation.

3.2. Motherboard Layout

Familiarize yourself with the key components and connectors on the motherboard.

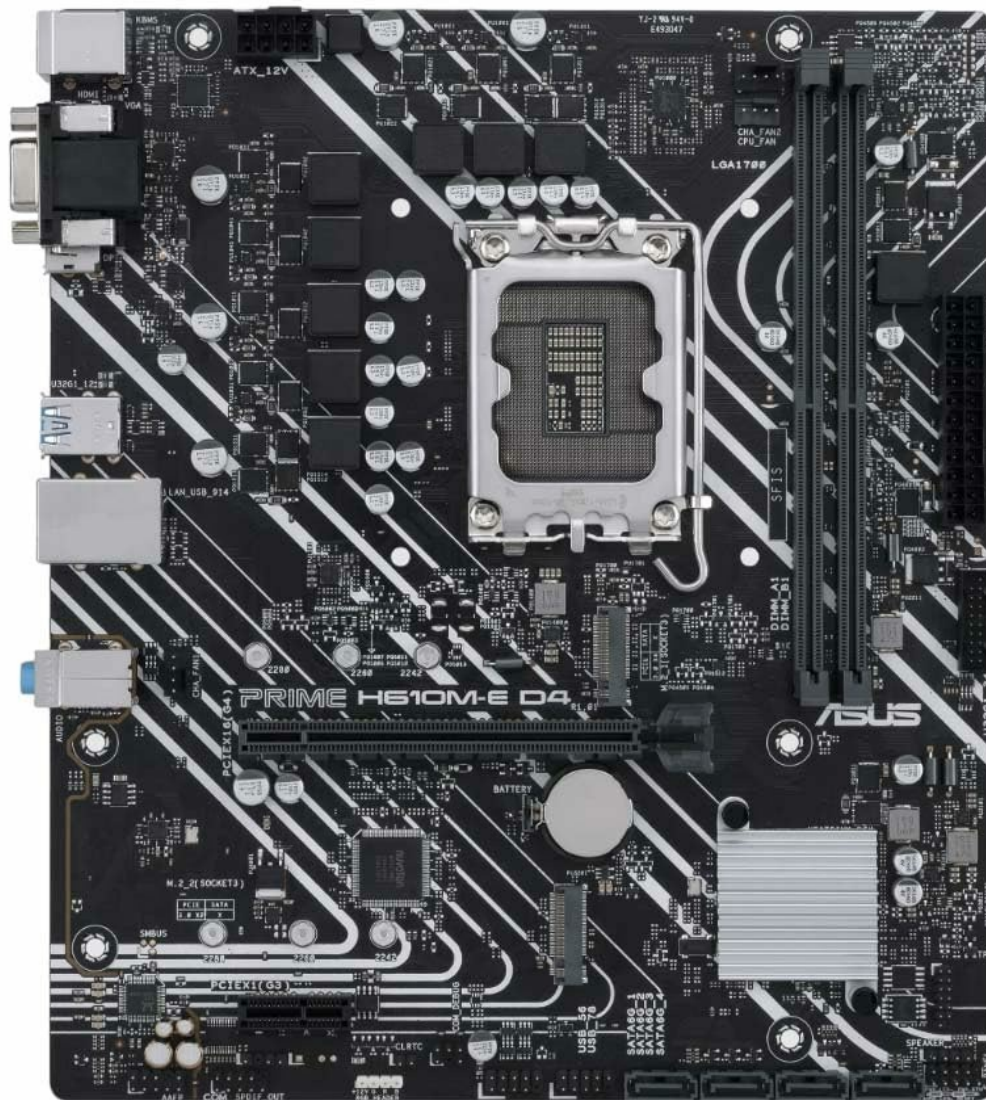


Image: Top-down view of the ASUS Prime H610M-E D4 Motherboard, showing the CPU socket, DIMM slots, PCIe slots, and various headers.



Image: Angled view of the ASUS Prime H610M-E D4 Motherboard, highlighting the various ports and connectors.



Image: Close-up of the rear I/O panel of the ASUS Prime H610M-E D4 Motherboard, showing the PS/2 ports, video outputs (VGA, HDMI, DisplayPort), USB ports, Ethernet port, and audio jacks.

3.3. Component Installation Steps

1. **Install the CPU:** Carefully align the CPU with the socket and lower it into place. Secure the retention arm.
2. **Install the CPU Cooler:** Attach the CPU cooler according to its manufacturer's instructions.
3. **Install Memory Modules (RAM):** Open the DIMM slot clips, align the RAM module with the notch, and press down firmly until the clips snap into place.



Image: Diagram illustrating the support for various M.2 SSD lengths (42mm, 60mm, 80mm) in the M.2 slots.

4. **Install M.2 SSDs:** Insert the M.2 SSD into the slot and secure it with the provided screw.
5. **Install Graphics Card (PCIe):** Insert the graphics card into the PCIe 4.0 x16 slot until it clicks into place. Secure it with a case screw.

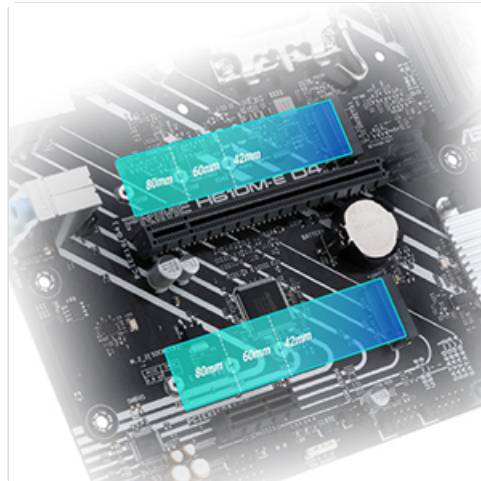


Image: Close-up illustration of the SafeSlot Core+ design, highlighting its reinforced metal sheath for improved retention force and shearing resistance.

6. **Connect Storage Drives (SATA):** Connect SATA data cables from your storage drives to the SATA 6Gb/s ports on the motherboard.
7. **Connect Power Supply:** Connect the 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard.
8. **Connect Front Panel Headers:** Connect the power button, reset button, HDD LED, power LED, and front panel USB/audio headers to their respective pins on the motherboard.

4. OPERATING INSTRUCTIONS

4.1. First Boot and BIOS Setup

After assembling your system, connect a monitor, keyboard, and mouse. Power on the system.

- Press the **DEL** key during POST (Power-On Self-Test) to enter the UEFI BIOS Utility.
- Configure boot order, enable XMP for memory, and set up other system parameters as needed.
- Save changes and exit the BIOS to boot into your operating system installer.

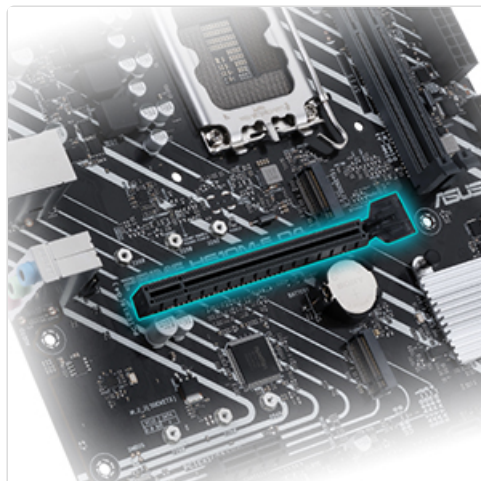


Image: Diagram showing the Q-LED Core display, which uses power LED light patterns during POST to help diagnose boot issues.

4.2. Driver Installation

After installing your operating system, install the necessary drivers for the motherboard components. These can be found on the included support DVD or downloaded from the ASUS official website.

- Chipset Drivers
- LAN Drivers
- Audio Drivers
- Graphics Drivers (if using integrated graphics)
- USB Drivers

5. MAINTENANCE

Proper maintenance ensures the longevity and stable operation of your motherboard.

- **Dust Removal:** Regularly clean dust from the motherboard and components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Periodically check the ASUS support website for BIOS updates. Update the BIOS only if necessary and follow the instructions carefully.
- **Driver Updates:** Keep your drivers updated to ensure compatibility and optimal performance.
- **Temperature Monitoring:** Utilize monitoring software to keep track of CPU and chipset temperatures to prevent overheating.



Image: Diagram indicating various cooling zones on the motherboard, including CPU, PCH, and M.2 areas, highlighting the comprehensive cooling design.

6. TROUBLESHOOTING

This section provides solutions to common issues you might encounter.

6.1. Common Issues and Solutions

Problem	Possible Cause	Solution
System does not power on.	Loose power connections, faulty power supply.	Check 24-pin ATX and 8-pin CPU power connectors. Ensure power supply is switched on.
No display on monitor.	Incorrect video cable connection, faulty RAM, no discrete GPU.	Ensure monitor cable is connected to the correct port. Reseat RAM modules. If using integrated graphics, ensure CPU supports it. Check Q-LED Core for POST errors.

Problem	Possible Cause	Solution
System reboots unexpectedly.	Overheating, unstable power, faulty components.	Check CPU and chipset temperatures. Ensure power supply is adequate. Test components individually.
Operating system not found.	Incorrect boot order, unformatted drive, loose SATA/M.2 connection.	Check boot order in BIOS. Ensure storage drives are properly connected and detected.

7. TECHNICAL SPECIFICATIONS

Feature	Detail
Model	ASUS Prime H610M-E D4
CPU Socket	LGA 1700
Chipset	Intel H610
Memory	2 x DIMM, Max. 64GB, DDR4 3200(OC)/3000/2933/2800/2666/2400/2133 Non-ECC, Unbuffered Memory
Expansion Slots	1 x PCIe 4.0 x16, 2 x PCIe 3.0 x1
Storage	2 x M.2 slots (PCIe 4.0 x4), 4 x SATA 6Gb/s ports
Ethernet	Realtek 1Gb Ethernet
USB Ports	Rear: 2 x USB 3.2 Gen 1 Type-A, 2 x USB 2.0 Type-A; Front: 2 x USB 3.2 Gen 1, 4 x USB 2.0
Video Outputs	1 x DisplayPort, 1 x HDMI, 1 x D-Sub (VGA)
Audio	Realtek 7.1 Surround Sound High Definition Audio CODEC
Form Factor	Micro-ATX (24.4 cm x 21.1 cm)
Dimensions	26 x 26 x 5 cm (Product Dimensions)
Item Weight	1 kg

8. WARRANTY AND SUPPORT

ASUS provides a limited warranty for this product. Please refer to the warranty card included in your package or visit the official ASUS support website for detailed warranty terms and conditions specific to your region.

For technical support, driver downloads, and BIOS updates, please visit the official ASUS support website:

<https://www.asus.com/support/>

You can also contact ASUS customer service for assistance.

Related Documents - PRIME H610M-E D4

<div>PRIME H610M-D D4</div> <div>ASUS</div> <div>Motherboard</div>	<p>ASUS PRIME H610M-D D4 Motherboard User Manual</p> <p>This manual provides detailed information on the ASUS PRIME H610M-D D4 motherboard, including safety precautions, component layout, specifications, BIOS information, and installation guides for CPU and system memory.</p>
<div>PRIME H510M-R</div> <div>ASUS</div> <div>Motherboard</div>	<p>ASUS PRIME H510M-R Motherboard Benutzerhandbuch: Installation, Spezifikationen und BIOS-Infos</p> <p>Umfassendes Benutzerhandbuch für das ASUS PRIME H510M-R Motherboard, das Installation, Sicherheitshinweise, Hardware-Übersicht, BIOS-Informationen, detaillierte Spezifikationen und Umwelt-Compliance abdeckt.</p>
<div>ProArt B760-CREATOR D4</div> <div>ASUS</div> <div>ProArt</div>	<p>ASUS ProArt B760-CREATOR D4 Motherboard User Manual and Specifications</p> <p>Detailed user manual and specifications for the ASUS ProArt B760-CREATOR D4 motherboard, covering package contents, system specifications, layout, connectors, installation guides for CPU, DIMM, and M.2, and rear panel I/O.</p>
<div>PRIME B660M-A D4</div> <div>ASUS</div> <div>Motherboard</div>	<p>ASUS PRIME B660M-A D4 Motherboard User Manual</p> <p>User manual for the ASUS PRIME B660M-A D4 motherboard, covering product overview, BIOS/RAID information, specifications, and support.</p>
<div>TUF GAMING Z790-PLUS D4</div> <div>ASUS</div> <div>Motherboard</div>	<p>ASUS TUF Gaming Z790-PLUS D4 Motherboard User Manual</p> <p>Comprehensive user guide for the ASUS TUF Gaming Z790-PLUS D4 motherboard, detailing specifications, installation, safety precautions, BIOS setup, and package contents. Essential information for PC builders and gamers.</p>

EX-H610M-V3 D4



[ASUS EX-H610M-V3 D4 Motherboard User Manual](#)

Comprehensive user manual for the ASUS EX-H610M-V3 D4 motherboard, covering product introduction, specifications, BIOS setup, safety information, and compliance details.