

## ASRock H470M-HDV

# ASRock H470M-HDV Motherboard User Manual

Model: H470M-HDV

## 1. INTRODUCTION

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This manual provides detailed instructions for the installation, configuration, and operation of your ASRock H470M-HDV motherboard. The ASRock H470M-HDV is a Micro ATX motherboard designed for Intel Socket 1200 processors, supporting DDR4 memory and featuring VGA, HDMI, DVI, and USB 3.2 Gen1 connectivity. Please read this manual thoroughly before beginning the installation process to ensure proper setup and functionality.

## 2. SAFETY INFORMATION

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- Always disconnect the power cord from the wall outlet before handling any components to prevent electric shock.
- Wear an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity before handling the motherboard or other components. Static discharge can damage sensitive electronic parts.
- Handle the motherboard by its edges to avoid touching sensitive components.
- Ensure all cables are connected correctly and securely before powering on the system.
- Keep the motherboard and components away from moisture and extreme temperatures.
- Refer to the safety guidelines provided with your power supply unit and other components.

## 3. PACKAGE CONTENTS

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Verify that your package contains the following items. If any item is damaged or missing, contact your retailer.

- ASRock H470M-HDV Motherboard
- Quick Installation Guide
- Support CD (Drivers and Utilities)
- I/O Panel Shield
- SATA Data Cables
- M.2 Screw Package (if applicable)

## 4. MOTHERBOARD LAYOUT AND FEATURES

Familiarize yourself with the key components and connectors on your ASRock H470M-HDV motherboard.



**Figure 4.1:** Top-down view of the ASRock H470M-HDV motherboard, showing the CPU socket, RAM slots, PCIe slots, and various headers.

- **CPU Socket (LGA 1200):** For 10th and 11th Generation Intel Core processors.
- **DDR4 DIMM Slots:** Two slots supporting dual-channel DDR4 memory.
- **PCI Express Slots:** One PCIe 3.0 x16 slot for graphics cards and two PCIe 3.0 x1 slots for expansion cards.
- **SATA 6Gb/s Connectors:** Multiple ports for connecting SATA storage devices.
- **M.2 Slot:** One Ultra M.2 slot for NVMe SSDs.
- **Front Panel Headers:** Connectors for power button, reset button, USB ports, and audio jacks on your PC case.
- **Power Connectors:** 24-pin ATX power connector and 8-pin 12V CPU power connector.



Figure 4.2: Rear I/O panel of the ASRock H470M-HDV motherboard, showing various external ports.

The rear I/O panel includes ports for display output (VGA, DVI, HDMI), USB 3.2 Gen1, USB 2.0, LAN, and audio jacks.

## 5. SYSTEM SETUP AND INSTALLATION

### 5.1. CPU Installation

1. Locate the LGA 1200 CPU socket on the motherboard.
2. Gently push down the load lever and pull it to the side to open the CPU socket cover.
3. Align the triangular mark on the CPU with the corresponding mark on the socket. Carefully place the CPU into the socket without forcing it.
4. Close the load plate and push the load lever back into place until it clicks.
5. Apply a thin, even layer of thermal paste to the top of the CPU.
6. Install the CPU cooler according to its manufacturer's instructions.

## 5.2. Memory (RAM) Installation

1. Open the clips at both ends of the DDR4 DIMM slots.
2. Align the notch on the DDR4 memory module with the key in the DIMM slot.
3. Insert the memory module firmly into the slot until the clips snap into place. Ensure both clips are closed.
4. For dual-channel operation, install memory modules in both available slots.

## 5.3. Storage Device Installation

### 5.3.1. SATA Devices

1. Connect one end of a SATA data cable to a SATA 6Gb/s connector on the motherboard.
2. Connect the other end of the SATA data cable to your SATA hard drive or SSD.
3. Connect a SATA power cable from your power supply unit to the storage device.

### 5.3.2. M.2 SSD

1. Locate the M.2 slot on the motherboard.
2. Remove the M.2 screw and standoff from the motherboard.
3. Insert the M.2 SSD into the slot at a 30-degree angle.
4. Gently push down the M.2 SSD and secure it with the screw and standoff.

## 5.4. Expansion Card Installation (Graphics Card)

1. Locate the PCIe 3.0 x16 slot.
2. Remove the corresponding expansion slot cover from your PC case.
3. Align your graphics card with the PCIe slot and press down firmly until it is seated correctly and the retention clip snaps into place.
4. Secure the graphics card to the case with a screw.
5. If your graphics card requires additional power, connect the appropriate PCIe power cables from your power supply.

## 5.5. Power Supply Connections

1. Connect the 24-pin ATX power cable from your power supply to the 24-pin connector on the motherboard.
2. Connect the 8-pin 12V CPU power cable (EPS12V) from your power supply to the 8-pin connector near the CPU socket.

## 5.6. Front Panel and Peripheral Connections

- Connect the front panel headers (Power SW, Reset SW, HDD LED, Power LED) to their respective pins on the motherboard. Refer to the motherboard diagram for correct pin assignments.
- Connect front panel USB 2.0 and USB 3.2 Gen1 headers.
- Connect the front panel audio header (HD Audio).
- Install the I/O shield into your PC case.
- Mount the motherboard into the PC case using standoffs and screws.

## 6. OPERATING YOUR SYSTEM

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### 6.1. First Boot

1. After all components are installed and connected, connect your monitor, keyboard, and mouse to the rear I/O ports.

2. Connect the power cord to the power supply and turn on the power supply switch.
3. Press the power button on your PC case.
4. The system should power on, and you should see the ASRock logo or BIOS screen on your monitor.

## 6.2. BIOS/UEFI Setup

The BIOS (Basic Input/Output System) or UEFI (Unified Extensible Firmware Interface) is a firmware that initializes hardware during the booting process and provides runtime services for the operating system. To enter the BIOS/UEFI setup utility:

- During system startup, repeatedly press the **Del** or **F2** key to enter the BIOS setup utility.
- Navigate through the menus using the arrow keys and make changes as needed.
- Save changes and exit to restart the system.

Common BIOS settings include boot order, date/time, fan control, and system information. Refer to the ASRock website for a detailed BIOS manual specific to your motherboard model.

## 7. MAINTENANCE

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### 7.1. Cleaning

- Regularly clean dust from inside your PC case, especially around fans and heatsinks, to maintain optimal cooling and performance.
- Use compressed air to remove dust. Ensure the system is powered off and unplugged before cleaning.
- Avoid using liquid cleaners directly on components.

### 7.2. BIOS Updates

BIOS updates can provide improved compatibility, stability, and new features. Always download BIOS updates directly from the official ASRock website for your specific motherboard model. Follow the instructions provided by ASRock carefully when performing a BIOS update to avoid system damage.

## 8. TROUBLESHOOTING

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- **No Power:** Ensure all power cables (24-pin ATX, 8-pin CPU, PCIe for GPU) are securely connected. Check the power supply switch and wall outlet.
- **No Display:** Verify that the monitor is connected to the correct display output on the graphics card or motherboard. Reseat the graphics card and RAM modules. Try booting with only one RAM stick.
- **System Instability/Crashes:** Check CPU and GPU temperatures. Ensure RAM is properly seated and compatible. Update drivers and BIOS.
- **Operating System Not Booting:** Check boot order in BIOS. Ensure the storage drive with the OS is detected. Reinstall the operating system if necessary.
- **Peripheral Issues:** Ensure USB devices are connected to functional ports. Install necessary drivers for peripherals.

For more advanced troubleshooting, consult the ASRock support website or contact their technical support.

## 9. SPECIFICATIONS

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Feature	Detail
Brand	ASRock

Feature	Detail
Model Name	H470M-HDV
CPU Socket	LGA 1200
Chipset Type	Intel H470
Compatible Devices	Personal Computer
RAM Memory Technology	DDR4
RAM Memory Maximum Size	64 GB
Memory Clock Speed	2933 MHz
Product Dimensions	11.81 x 7.87 x 1.18 inches
Item Weight	1.5 pounds
Platform	Windows
Date First Available	February 27, 2021

## 10. WARRANTY AND SUPPORT

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For detailed warranty information, please refer to the warranty card included with your product or visit the official ASRock website. ASRock provides technical support and driver downloads for their products.

- **Official ASRock Website:** [www.asrock.com](http://www.asrock.com)
- **Support Page:** Check the ASRock website for specific support pages, FAQs, and contact information.

Keep your proof of purchase for warranty claims.