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ASRock B660M-HDV

ASRock B660M-HDV MicroATX Motherboard Instruction Manual

Model: B660M-HDV

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your ASRock B660M-HDV MicroATX Motherboard. Designed for 12th Gen Intel Core Processors with an LGA1700 socket, this motherboard supports DDR4 memory and features PCIe 4.0 for high-speed components. Please read this manual thoroughly before proceeding with installation to ensure proper setup and functionality.

2. Package Contents

Verify that all items listed below are present in your motherboard package:

- ASRock B660M-HDV Motherboard
- Quick Installation Guide
- Support CD
- I/O Shield
- 2 x SATA Data Cables
- 3 x Screws for M.2 Sockets



Image: Contents of the ASRock B660M-HDV Motherboard retail box.

3. Key Features

- Supports 12th Gen Intel Core Processors (LGA1700)
- 6 Phase Power Design for stable power delivery
- Supports DDR4 5066MHz (OC) memory
- 1 PCIe 4.0 x16 slot for graphics cards
- 2 PCIe 3.0 x1 slots for expansion cards
- 1 M.2 Key-E slot for WiFi module (module not included)
- Intel Gigabit LAN for reliable network connectivity
- Multiple USB 2.0 ports

4. Setup and Installation

Follow these steps carefully to install your ASRock B660M-HDV motherboard and its components.

4.1 Motherboard Layout



Image: Overview of the ASRock B660M-HDV Motherboard layout.

Familiarize yourself with the motherboard's layout. Key components include the LGA1700 CPU socket, two DDR4 DIMM slots, one PCIe 4.0 x16 slot, two PCIe 3.0 x1 slots, and M.2 slots for storage and WiFi.

4.2 Rear I/O Panel



Image: Rear Input/Output panel of the ASRock B660M-HDV Motherboard.

The rear I/O panel provides connectivity for peripherals. It includes USB ports, display outputs (if using an integrated GPU), an Ethernet port, and audio jacks. Ensure the I/O shield is installed in your case before mounting the motherboard.

4.3 CPU Installation

1. Open the CPU socket lever.
2. Carefully align the CPU with the socket, ensuring the triangular mark on the CPU matches the mark on the socket.
3. Gently place the CPU into the socket without forcing it.
4. Close the CPU socket lever to secure the CPU.
5. Install the CPU cooler according to its manufacturer's instructions.

4.4 Memory (RAM) Installation

1. Open the clips on both ends of the DDR4 DIMM slots.
2. Align the memory module with the slot, ensuring the notch on the module matches the key in the slot.
3. Press down firmly on both ends of the memory module until the clips snap into place.

4.5 Storage Device Installation (M.2 SSD)

1. Locate the M.2 slot(s) on the motherboard.
2. Remove the M.2 screw and standoff from the motherboard.
3. Insert the M.2 SSD into the slot at an angle.
4. Gently push down the M.2 SSD and secure it with the screw.

4.6 Expansion Card Installation (PCIe)

1. Locate the desired PCIe slot (e.g., PCIe 4.0 x16 for a graphics card).
2. Remove the corresponding expansion slot cover from your PC case.
3. Align the expansion card with the slot and press down firmly until it is seated correctly.
4. Secure the card with a screw to the PC case.

4.7 Power Connections

- Connect the 24-pin ATX power connector from your power supply to the motherboard.
- Connect the 8-pin (or 4-pin) CPU power connector to the motherboard.
- Connect SATA power cables to your SATA storage devices.

4.8 Front Panel Connections

Connect the front panel headers (power button, reset button, USB ports, audio jacks) to the corresponding pins on the motherboard. Refer to the detailed motherboard diagram in the Quick Installation Guide for exact pin locations.

4.9 Product Overview Video



Video: An official product overview of the ASRock B660M-HDV Motherboard, demonstrating its physical features and layout.

5. Operating Instructions

5.1 Initial Boot and BIOS/UEFI Setup

Upon first power-on, the system will typically enter the BIOS/UEFI setup utility. Press the**DEL** or **F2** key during startup to access the BIOS/UEFI. Here you can configure system settings, boot order, and monitor hardware status.

5.2 Driver Installation

After installing your operating system (Microsoft Windows 10 64-bit / 11 64-bit), install the necessary drivers for optimal performance. You can find drivers on the included Support CD or download the latest versions from the official ASRock website for the B660M-HDV model.

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

6. Maintenance

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

- **Dust Removal:** Periodically clean dust from the motherboard and components using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS/UEFI Updates:** Check the ASRock website for BIOS/UEFI updates. Updates can improve compatibility, stability, and performance. Follow the update instructions carefully to avoid system damage.
- **Driver Updates:** Keep your drivers updated to ensure compatibility with new software and to benefit from performance improvements and bug fixes.

7. Troubleshooting

If you encounter issues, refer to these common troubleshooting steps.

- **No Power:**
  - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected.
  - Check if the power supply is switched on.
  - Verify the front panel power button connection to the motherboard.
- **No Display:**
  - Confirm the monitor is connected to the correct display output (graphics card or motherboard).
  - Reseat the graphics card and memory modules.

- If using a dedicated graphics card, ensure it is properly powered.

- **System Instability/Crashes:**
  - Check CPU and GPU temperatures.
  - Ensure RAM modules are correctly seated and compatible.
  - Update BIOS/UEFI and all drivers to the latest versions.

- **Peripheral Not Detected:**
  - Try connecting the peripheral to a different port.
  - Install or update relevant drivers for the peripheral.

For more detailed troubleshooting, consult the full user manual available on the ASRock support website or the included Support CD.

8. Specifications

Feature	Detail
Brand	ASRock
Model Name	B660M-HDV
CPU Socket	LGA 1700
Compatible Processors	Intel Core 12th Gen
Chipset Type	Intel B660
RAM Memory Technology	DDR4
Memory Clock Speed	5066 MHz (OC)
Memory Storage Capacity	Up to 128 GB
PCIe Slots	1 x PCIe 4.0 x16, 2 x PCIe 3.0 x1
M.2 Slots	1 x M.2 Key-E for WiFi
USB 2.0 Ports	4 (rear)
Operating System Support	Microsoft Windows 10 64-bit / 11 64-bit
Item Weight	1.7 pounds
Product Dimensions (LxWxH)	9.84 x 7.87 x 1.97 inches

9. Warranty and Support

For information regarding warranty coverage, technical support, and service, please refer to the warranty card included with your product or visit the official ASRock website. The ASRock website provides up-to-date support resources, FAQs, and contact information for customer service.

ASRock Official Website: www.asrock.com

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