GIGABYTE B550M DS3H

GIGABYTE B550M DS3H Motherboard User Manual

Model: B550M DS3H | Brand: GIGABYTE

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your GIGABYTE B550M DS3H motherboard. Designed to support 3rd Gen AMD Ryzen Processors, this motherboard features Dual Channel ECC/Non-ECC Unbuffered DDR4 memory, a 5+3 Phases Pure Digital VRM Solution, Ultra Durable PCIe 4.0 Ready x16 Slot, and Dual Ultra-Fast NVMe PCIe 4.0/3.0 M.2 Connectors. Please read this manual thoroughly before beginning installation to ensure proper setup and optimal performance.



Image 1.1: The GIGABYTE B550M DS3H Motherboard alongside its retail packaging. This micro ATX motherboard is designed for AMD Ryzen processors.

2. Key Features

- **Processor Support:** Compatible with 3rd Gen AMD Ryzen Processors.
- **Memory:** Dual Channel ECC/Non-ECC Unbuffered DDR4, featuring 4 DIMM slots.
- **Power Design:** 5+3 Phases Pure Digital VRM Solution with Low RDS(on) MOSFETs for stable power delivery.
- **PCIe Connectivity:** Ultra Durable PCIe 4.0 Ready x16 Slot for high-performance graphics cards.
- **Storage:** Dual Ultra-Fast NVMe PCIe 4.0/3.0 M.2 Connectors for high-speed SSDs.
- **Audio:** High Quality Audio Capacitors and Audio Noise Guard for superior sound.
- **Networking:** GIGABYTE Exclusive 8118 Gaming GbE LAN with Bandwidth Management.
- **Display Outputs:** Rear HDMI and DVI support for integrated graphics.
- **RGB Lighting:** RGB FUSION 2.0 with Multi-Zone Addressable LED Light Show Design, supporting Addressable LED & RGB LED Strips.
- **Cooling:** Smart Fan 5 with Multiple Temperature Sensors and Hybrid Fan Headers with FAN STOP function.
- **BIOS Update:** Q-Flash Plus allows updating BIOS without installing the CPU, Memory, and GPU.
- **Durability:** Anti-Sulfur Resistors Design for enhanced longevity.

3. Package Contents

Before proceeding with installation, please verify that all items listed below are included in your motherboard package:

- GIGABYTE B550M DS3H Motherboard
- I/O Shield
- SATA Data Cables (x2)
- User Manual / Quick Installation Guide
- Driver CD/DVD (may vary by region/revision)
- M.2 SSD mounting screws (if not pre-installed)

If any items are missing or damaged, please contact your retailer or GIGABYTE customer support immediately.

4. Setup and Installation

Proper installation is crucial for the stability and performance of your system. Follow these steps carefully.

4.1 Pre-Installation Checklist

- Ensure you have a clean, well-lit workspace.
- Gather all necessary components: CPU, CPU cooler, RAM, storage devices, power supply, and PC case.
- Discharge static electricity by touching a grounded metal object or wearing an anti-static wrist strap.
- Refer to your PC case manual for specific mounting instructions.

4.2 Motherboard Layout Overview

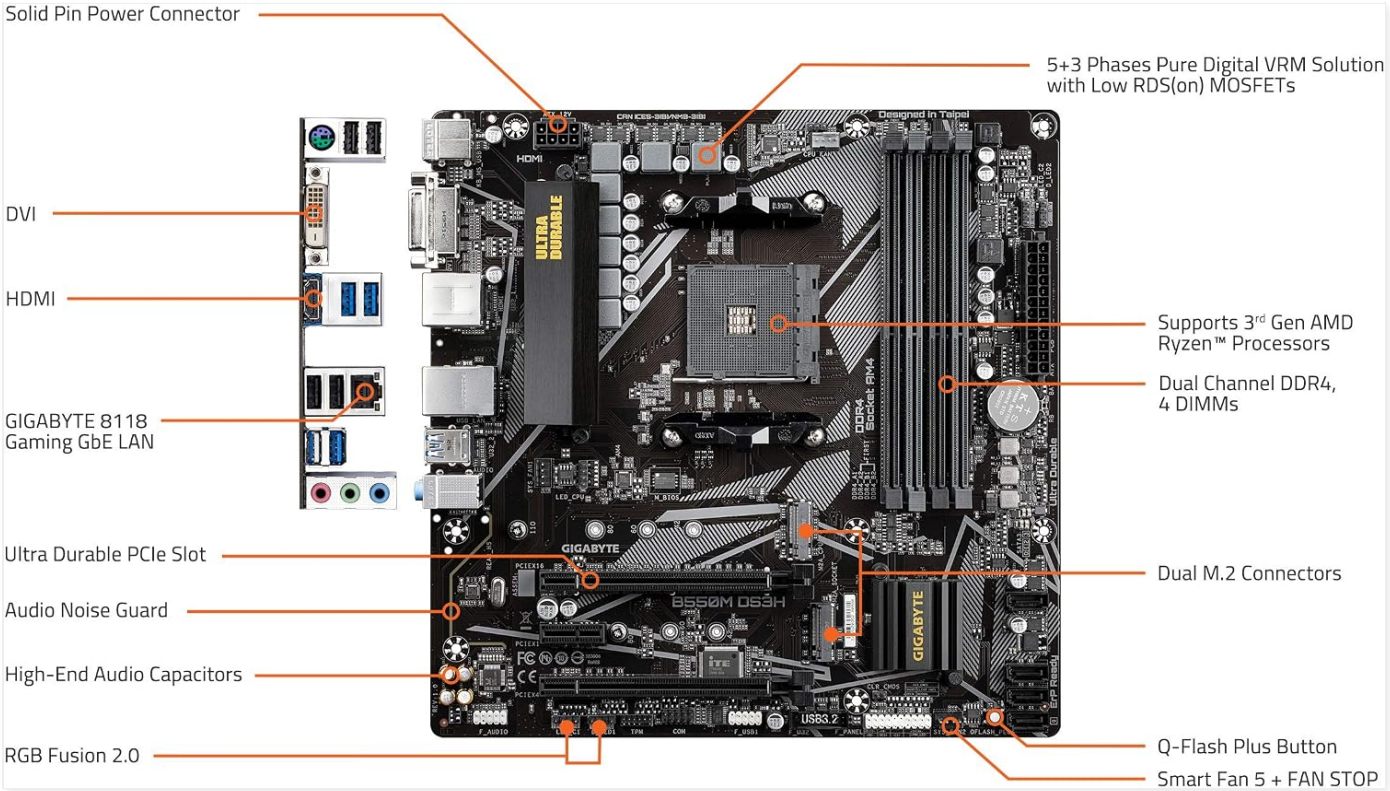


Image 4.1: Detailed view of the GIGABYTE B550M DS3H motherboard highlighting key components such as the CPU socket, DIMM slots, PCIe slots, M.2 connectors, and various headers.

Familiarize yourself with the various connectors and slots on the motherboard. Key areas include the AM4 CPU socket, four DDR4 DIMM slots, PCIe x16 and x1 slots, dual M.2 slots, SATA ports, and various headers for front panel connections, USB, and fans.

4.3 Component Installation

1. **CPU Installation:**

   Locate the AM4 CPU socket. Lift the load lever and open the socket cover. Align the triangular mark on the CPU with the mark on the socket, then gently place the CPU into the socket. Do not force it. Lower the load lever to secure the CPU. Install your CPU cooler according to its manufacturer's instructions.

2. **Memory (RAM) Installation:**

   Open the clips on both ends of the DIMM slots. Align the notch on the DDR4 memory module with the key in the DIMM slot. Insert the module firmly until the clips snap into place. For dual-channel operation, refer to the motherboard manual for recommended slot configurations (typically slots A2 and B2 first).

3. **M.2 SSD Installation:**

   Locate the M.2 slots. Remove the M.2 standoff screw. Insert the M.2 SSD into the slot at an angle, then gently push it down. Secure the SSD with the M.2 screw. This motherboard supports both PCIe 4.0/3.0 M.2 SSDs.

4. **SATA Storage Installation:**

   Connect your SATA SSDs or HDDs to the SATA 6Gb/s ports using SATA data cables. Ensure your power supply has SATA power connectors available for these drives.

5. **Graphics Card (PCIe) Installation:**

   Open the retention clip on the PCIe x16 slot. Align your graphics card with the slot and press down firmly until it clicks into place. Secure the card to your PC case with screws. Connect any necessary PCIe power cables from your power supply to the graphics card.

6. **Power Supply Connections:**

   Connect the 24-pin ATX main power connector and the 8-pin ATX 12V CPU power connector from your power supply to the corresponding ports on the motherboard. Ensure all connections are secure.

4.4 Motherboard Mounting and Case Connections

1. **Install I/O Shield:**

   Snap the I/O shield into the rear opening of your PC case from the inside.

2. **Mount Motherboard:**

   Carefully place the motherboard into the PC case, aligning the screw holes with the standoffs. Secure the motherboard with the appropriate screws. Ensure the I/O ports align correctly with the I/O shield.

3. **Connect Front Panel Headers:**

   Connect the front panel cables (Power SW, Reset SW, HDD LED, Power LED) to the corresponding pins on the motherboard's front panel header. Also connect front panel USB 2.0, USB 3.2 Gen 1, and audio headers.

4. **Connect Fans:**

   Connect your CPU fan and case fans to the appropriate fan headers on the motherboard (e.g., CPU_FAN, SYS_FAN).



Image 4.2: The rear input/output panel of the GIGABYTE B550M DS3H motherboard, showing various ports including USB, Ethernet, HDMI, DVI, and audio jacks.

5. Operating Your Motherboard

5.1 First Boot and BIOS Setup

After assembling your system, connect a monitor, keyboard, and mouse. Power on your PC. To enter the BIOS (Basic Input/Output System) setup, repeatedly press the **DEL** key during the Power-On Self-Test (POST) process. The BIOS allows you to configure system settings, boot order, and monitor hardware status.

- **Boot Order:** Configure your primary boot device (e.g., M.2 SSD with OS).
- **XMP Profile:** Enable XMP (Extreme Memory Profile) for your RAM to run at its advertised speeds.
- **Fan Control:** Utilize Smart Fan 5 settings to customize fan curves for optimal cooling and noise levels.

5.2 Driver Installation

After installing your operating system, it is essential to install the latest drivers for your motherboard's components. You can find drivers on the included driver CD/DVD or, preferably, download the most up-to-date versions from the official GIGABYTE website. Installing drivers ensures proper functionality of LAN, audio, chipset, and other integrated devices. Visit the official GIGABYTE product page for the B550M DS3H:https://www.gigabyte.com/products/product-page.aspx?pid=9005

5.3 GIGABYTE Software

GIGABYTE provides various utility software to enhance your user experience, such as the App Center, EasyTune, and RGB Fusion 2.0. These tools allow for system monitoring, performance tuning, and customizable RGB lighting effects. Download and install these from the GIGABYTE website as needed.

6. Maintenance

6.1 Cleaning

Regular cleaning helps maintain optimal performance and extends the lifespan of your motherboard. Use compressed air to remove dust from components, especially heatsinks and fan blades. Ensure the system is powered off and unplugged before cleaning. Avoid using liquid cleaners directly on components.

6.2 BIOS Updates

GIGABYTE periodically releases BIOS updates to improve compatibility, stability, and add new features. It is recommended to keep your BIOS updated. The B550M DS3H features **Q-Flash Plus**, allowing you to update the BIOS without installing the CPU, memory, or graphics card. This feature requires only the 24-pin ATX power connector and the 8-pin CPU power connector to be connected. Download the latest BIOS file from the GIGABYTE website, rename it to GIGABYTE.bin, save it to a USB flash drive (FAT32 formatted), and insert it into the designated Q-Flash Plus USB port. Press the Q-Flash Plus button to initiate the update.

7. Troubleshooting

This section addresses common issues you might encounter. For more detailed troubleshooting, refer to the full user manual available on the GIGABYTE website.

- **No Power:**
  - Ensure the power supply is switched on and all power cables (24-pin ATX, 8-pin CPU, PCIe for GPU) are securely connected.
  - Check front panel power switch connection to the motherboard.
  - Test the power supply with another system or a PSU tester if possible.
- **No Display:**
  - Verify monitor cable connection to the graphics card or motherboard (if using integrated graphics).
  - Ensure the graphics card is properly seated in its PCIe slot and has adequate power.
  - If using a dedicated GPU, ensure your monitor is connected to the GPU's output, not the motherboard's.
  - Try reseating RAM modules.
- **System Fails to Boot / Blue Screens:**
  - Check all component connections (CPU, RAM, GPU, storage).
  - Ensure RAM is compatible and correctly installed.
  - Reset BIOS settings to default (clear CMOS).
  - Consider updating BIOS if you are using a newer CPU that might require a specific BIOS version.
- **Peripheral Issues (USB, Audio, LAN):**
  - Ensure all necessary drivers are installed from the GIGABYTE website.
  - Check physical connections of peripherals.
  - Verify settings in BIOS related to USB, audio, or LAN controllers.

8. Specifications

Below are the key technical specifications for the GIGABYTE B550M DS3H motherboard:



Image 8.1: The back of the GIGABYTE B550M DS3H retail box, displaying a summary of its technical specifications and features.

Category	Specification
CPU Socket	Socket AM4
Compatible Processors	AMD 3rd Generation Ryzen Processors
Chipset	AMD B550
Memory Type	DDR4 (Dual Channel, ECC/Non-ECC Unbuffered)
Memory Slots	4 x DIMM
Max Memory Speed	3600 MHz
PCIe Slots	1 x PCIe 4.0 x16, 2 x PCIe 3.0 x1

Category	Specification
M.2 Connectors	2 x NVMe PCIe 4.0/3.0 M.2
SATA Ports	4 x SATA 6Gb/s
USB Ports (Rear)	USB 3.2 Gen 1, USB 2.0
Video Outputs	HDMI, DVI-D
LAN	Realtek GbE LAN chip (1 Gbit/100 Mbit)
Audio	Realtek ALC887 codec, High Definition Audio
Form Factor	Micro ATX (24.4cm x 24.4cm)
Product Dimensions	10.43 x 10.43 x 2.12 inches
Item Weight	1.98 pounds

9. Warranty and Support

For warranty information, technical support, and additional resources, please visit the official GIGABYTE website. You can find drivers, BIOS updates, utility software, and detailed FAQs on their support pages.

- **Official GIGABYTE Website:** https://www.gigabyte.com/
- **Product Support Page:** https://www.gigabyte.com/products/product-page.aspx?pid=9005
- **User Manual (PDF):** Download PDF
- **Safety Information (PDF):** Download PDF

Always ensure you are downloading software and drivers from the official GIGABYTE website to prevent potential security risks.

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Example: How do I reset this device or fix this error?

Details

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