GIGABYTE B550 UD AC

GIGABYTE B550 UD AC Motherboard User Manual

Model: B550 UD AC (rev. 1.2)

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of the GIGABYTE B550 UD AC (rev. 1.2) Motherboard. Please read this manual thoroughly before beginning installation to ensure proper setup and optimal performance.

The GIGABYTE B550 UD AC motherboard supports AMD Ryzen 5000 Series/ Ryzen 5000 G-Series/ Ryzen 4000 G-Series and Ryzen 3000 Series Processors. It features Dual Channel ECC/ Non-ECC Unbuffered DDR4 memory support, a 10+3 Phases Digital Twin Power Design, PCIe 4.0 x16 slot, Dual Ultra-Fast NVMe PCIe 4.0/3.0 x4 M.2 Connectors, and Realtek GbE LAN.



Figure 1.1: GIGABYTE B550 UD AC Motherboard and Retail Packaging.

2. Key Features

- **AMD AM4 Socket:** Supports AMD Ryzen 5000 Series/ Ryzen 5000 G-Series/ Ryzen 4000 G-Series and Ryzen 3000 Series Processors.
- **DDR4 Compatible:** Dual Channel ECC/ Non-ECC Unbuffered DDR4, 4 DIMMs.
- **Sturdy Power Design:** 10+3 Phases Digital Twin Power Design with Low RDS(on) MOSFETs.
- **Connectivity:** PCIe 4.0 x16 Slot, Dual Ultra-Fast NVMe PCIe 4.0/3.0 x4 M.2 Connectors, Realtek GbE LAN chip.
- **Fine Tuning Features:** RGB FUSION 2.0, Supports Addressable LED & RGB LED Strips, Smart Fan 5, Q-Flash Plus Update BIOS without installing CPU, Memory, and GPU.

3. Setup and Installation

3.1. Before You Begin

Ensure you have all necessary components: CPU, CPU cooler, RAM, storage devices, power supply, and a compatible PC case. Always work in a static-free environment and use an anti-static wrist strap.

3.2. Motherboard Layout

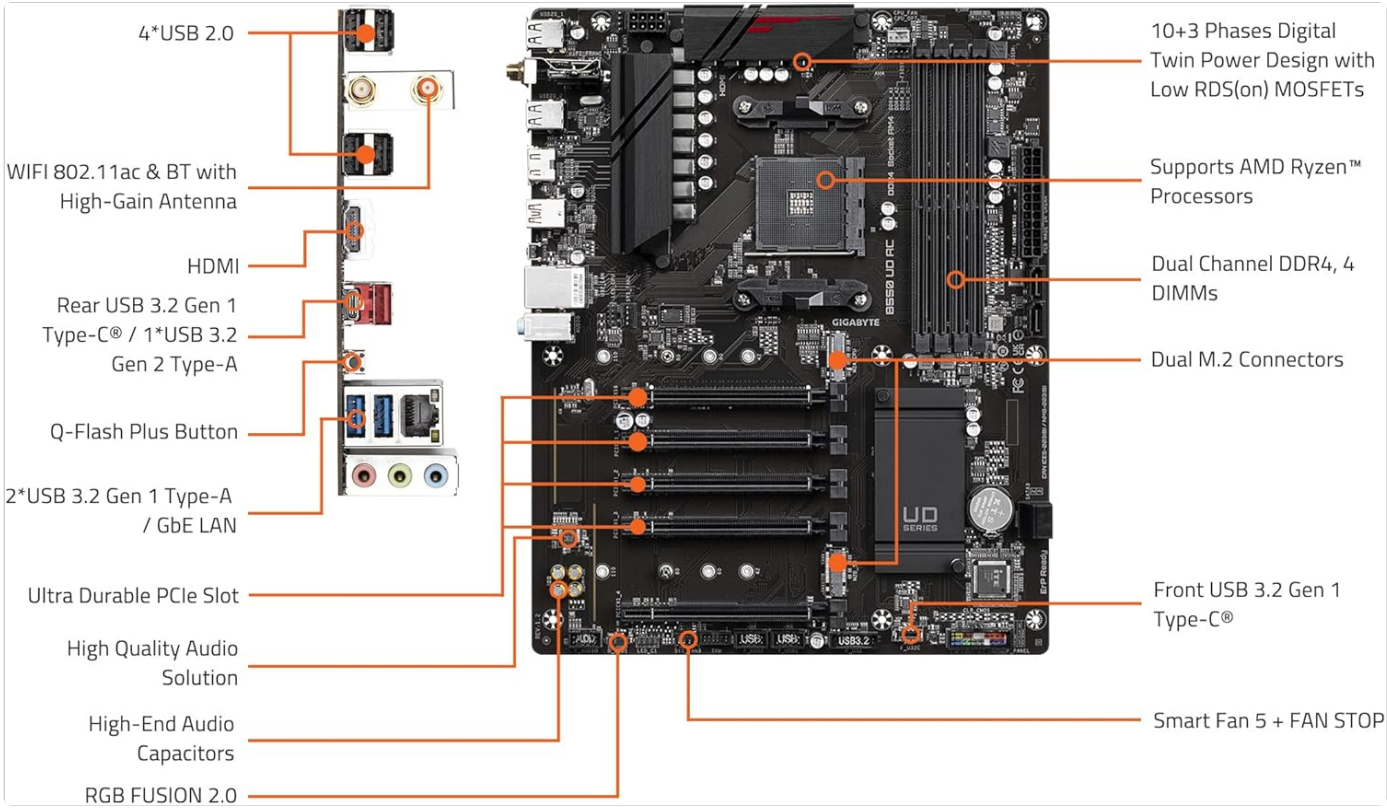


Figure 3.1: Motherboard Component Layout and Connectors.

This diagram illustrates the various ports, slots, and headers on the B550 UD AC motherboard, including the CPU socket, DIMM slots, PCIe slots, M.2 connectors, SATA ports, and front panel headers. Refer to this layout for component placement and cable connections.

3.3. CPU Installation

1. Open the CPU socket lever.
2. Carefully align the CPU with the socket, ensuring the golden triangle on the CPU matches the triangle on the socket.
3. Gently lower the CPU into the socket. Do not force it.
4. Close the CPU socket lever to secure the CPU.
5. Install the CPU cooler according to its manufacturer's instructions.

3.4. Memory (RAM) Installation

1. Open the clips at both ends of the 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.
4. For dual-channel operation, install memory modules in matching colored slots (e.g., DDR4_A2 and DDR4_B2).

3.5. Storage Device Installation (M.2 and SATA)

M.2 SSD Installation:

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

SATA Drive Installation:

1. Connect one end of the SATA data cable to a SATA port 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 to the drive.

3.6. Power Connections

- Connect the 24-pin ATX main power connector from the power supply to the motherboard.
- Connect the 8-pin ATX 12V CPU power connector to the motherboard.

3.7. Front Panel Connections

Connect the power button, reset button, HDD LED, power LED, and USB/audio headers from your PC case to the corresponding pins on the motherboard. Refer to the motherboard layout diagram (Figure 3.1) for precise pin locations.



Figure 3.2: Angled view of the motherboard highlighting connectivity options.

This image provides an angled perspective of the motherboard, showcasing the arrangement of PCIe slots, M.2 slots, and other onboard components, which is helpful during the installation process.

4. Operating the Motherboard

4.1. BIOS Setup

Upon first boot, or if issues arise, you may need to enter the BIOS (Basic Input/Output System) setup. To enter BIOS, 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.

4.2. Driver Installation

After installing your operating system, install the necessary drivers for the motherboard's components. These include chipset drivers, LAN drivers, audio drivers, and any other specific drivers for integrated peripherals. Drivers can typically be found on the GIGABYTE support website for your specific model.

4.3. Q-Flash Plus

The Q-Flash Plus feature allows you to update the BIOS without installing the CPU, memory, or graphics card. This is useful for supporting newer CPUs that may not be recognized by an older BIOS version. To use Q-Flash Plus:

1. Download the latest BIOS file from the GIGABYTE website.
2. Rename the downloaded BIOS file to GIGABYTE.bin and save it to the root directory of a USB flash drive (FAT32 format).
3. Insert the USB flash drive into the dedicated Q-Flash Plus USB port on the motherboard's rear I/O panel.
4. Connect the 24-pin ATX power connector and the 8-pin CPU power connector to the motherboard.
5. Press the Q-Flash Plus button. The QFLED will flash during the BIOS update process.
6. Wait for the QFLED to stop flashing, indicating the update is complete.

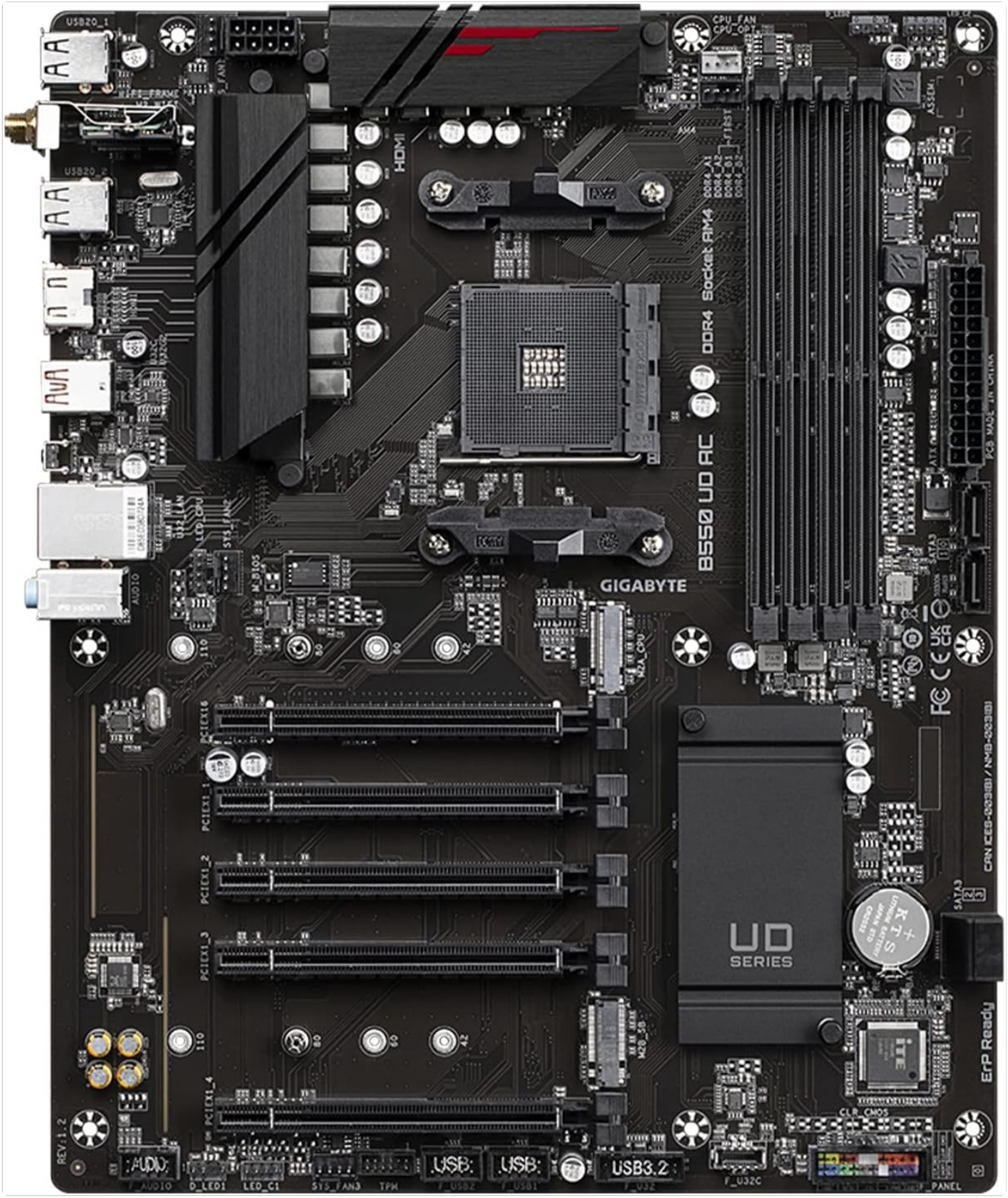


Figure 4.1: Top-down view of the motherboard, showing the CPU socket and DIMM slots.

This overhead view provides a clear perspective of the main components, including the CPU socket, RAM slots, and heatsinks, which are crucial for understanding the board's layout during operation and maintenance.

5. Maintenance

5.1. Cleaning

Regularly clean your PC to prevent dust buildup, which can lead to overheating and reduced performance. Use compressed air to remove dust from fans, heatsinks, and motherboard components. Ensure the system is powered off

and unplugged before cleaning.

5.2. BIOS Updates

Periodically check the GIGABYTE website for new BIOS versions. Updates can provide improved compatibility, stability, and performance. Always follow the recommended update procedure carefully.

5.3. Driver Updates

Keep your drivers updated to ensure optimal performance and compatibility with new software and hardware. Visit the GIGABYTE support page for the latest drivers for your motherboard.

6. Troubleshooting

6.1. No Power / No Boot

- Check all power connections (24-pin ATX, 8-pin CPU, GPU).
- Ensure the power supply is switched on and connected to a working outlet.
- Verify the front panel power button connection to the motherboard.
- Try booting with minimal components (CPU, one RAM stick, GPU if no integrated graphics) to isolate the issue.

6.2. No Display

- Ensure the monitor is connected to the graphics card (or motherboard if using integrated graphics) and powered on.
- Reseat the graphics card and RAM modules.
- Test with a different display cable or monitor if possible.

6.3. System Instability / Crashes

- Check CPU and GPU temperatures. Overheating can cause instability.
- Run memory diagnostic tools to check for faulty RAM.
- Ensure all drivers are up to date.
- Reset BIOS settings to default.

6.4. Wi-Fi/LAN Connectivity Issues

- Ensure Wi-Fi antennas are securely connected.
- Verify LAN cable connection.
- Reinstall network drivers from the GIGABYTE website.
- Check network adapter settings in the operating system.

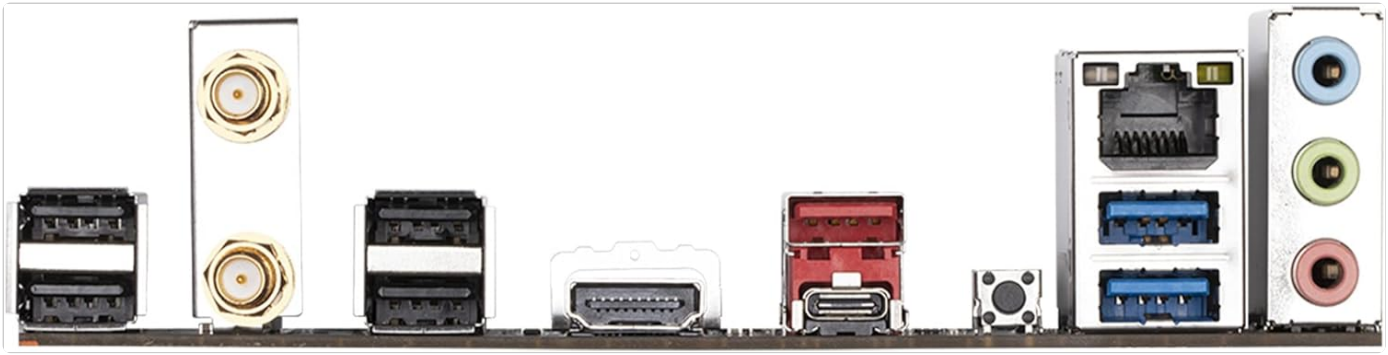


Figure 6.1: Rear I/O Panel of the Motherboard.

This image displays the various ports available on the rear I/O panel, including USB ports, LAN port, audio jacks, and antenna connectors, which are critical for external device connectivity and troubleshooting network issues.

7. Specifications

Feature	Detail
Brand	GIGABYTE
Model Name	B550 UD AC
CPU Socket	Socket AM4
Compatible Processors	AMD Ryzen 5000 Series/ Ryzen 5000 G-Series/ Ryzen 4000 G-Series and Ryzen 3000 Series Processors
Chipset Type	AMD B550
RAM Memory Technology	DDR4
Memory Clock Speed	2133 MHz (Supports higher via OC)
Memory Storage Capacity	Up to 128 GB
Wireless Type	802.11a/b/g/n/ac (Wi-Fi 5)
LAN	Realtek GbE LAN chip
PCIe Slots	1 x PCIe 4.0 x16, Multiple PCIe 3.0 x1/x16 slots
M.2 Connectors	Dual Ultra-Fast NVMe PCIe 4.0/3.0 x4 M.2 Connectors
SATA Ports	6Gb/s
USB Ports	USB 3.2 Gen1, USB 2.0 (various headers and rear I/O)
Product Dimensions	13.18 x 10.62 x 3.14 inches (ATX Form Factor)
Item Weight	2.71 pounds

8. Warranty Information

GIGABYTE motherboards typically come with a limited manufacturer's warranty. The duration and terms of the warranty may vary by region and retailer. Please retain your proof of purchase for warranty claims. For detailed warranty information, refer to the official GIGABYTE website or the warranty card included with your product.

9. Support and Resources

For further assistance, technical support, driver downloads, and BIOS updates, please visit the official GIGABYTE support website:
www.gigabyte.com/Support
You can also refer to the official PDF user manual for more in-depth information:
GIGABYTE B550 UD AC User Manual (PDF)

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

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

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question