GIGABYTE H310M A

GIGABYTE H310M A Motherboard User Manual

Model: H310M A | Brand: GIGABYTE

1. Introduction

This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of your GIGABYTE H310M A motherboard. The GIGABYTE H310M A is a Micro ATX motherboard designed to support 8th Generation Intel Core processors. It features Dual Channel Non-ECC Unbuffered DDR4 memory, 8-channel HD Audio, an ultra-fast M.2 slot, and Intel GbE LAN. Please read this manual thoroughly before beginning installation to ensure proper setup and optimal performance.



Figure 1.1: GIGABYTE H310M A Motherboard and its retail packaging. This image shows the motherboard alongside its box, highlighting the product's branding and form factor.

2. Safety Information

Always observe the following safety precautions to prevent damage to the motherboard or injury to yourself:

- Ensure your hands are dry and free of static electricity before handling the motherboard. Use an anti-static wrist strap if available.
- Disconnect the power cord from the wall outlet before installing or removing any components.
- Avoid touching the components or circuits on the motherboard directly. Hold the board by its edges.
- Do not expose the motherboard to moisture or extreme temperatures.
- Keep the motherboard away from children and pets.

3. Setup and Installation

This section guides you through the physical installation of the motherboard and its essential components.

3.1. Preparing Your System

1. **Case Preparation:** Ensure your computer case is compatible with the Micro ATX form factor. Install the I/O shield provided with the motherboard into the case's rear opening.
2. **Standoffs:** Install the necessary standoffs in your case according to the Micro ATX mounting holes.

3.2. Motherboard Installation

1. **Mounting the Motherboard:** Carefully align the motherboard with the standoffs and the I/O shield. Gently lower the motherboard into place. Secure it with screws.
2. **CPU Installation:** Open the CPU socket lever. Align the triangular mark on the CPU with the mark on the socket. Gently place the CPU into the socket. Close the lever to secure the CPU.
3. **CPU Cooler Installation:** Install your CPU cooler according to its manufacturer's instructions. Ensure proper thermal paste application.
4. **Memory (RAM) Installation:** Open the clips on the DDR4 DIMM slots. Align the notch on the RAM module with the key in the slot. Press firmly on both ends of the module until the clips snap into place. This motherboard supports Dual Channel Non-ECC Unbuffered DDR4 memory.
5. **M.2 SSD Installation:** Locate the M.2 slot. Insert the M.2 SSD at an angle into the slot. Push down gently and secure it with the provided screw.

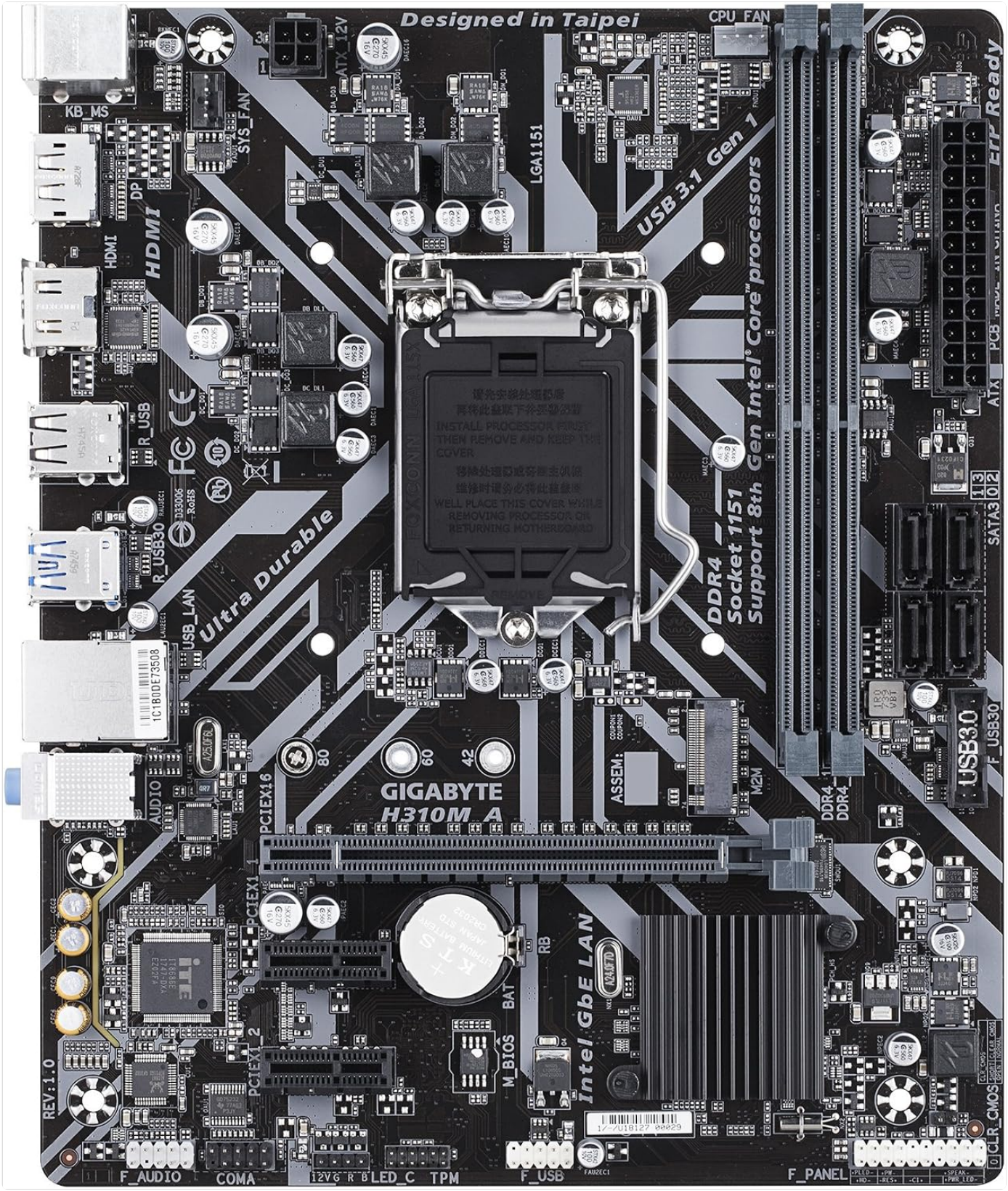


Figure 3.1: Top-down view of the GIGABYTE H310M A Motherboard. This image provides a clear layout of the CPU socket, DIMM slots, PCIe slots, and M.2 slot, crucial for component installation.

3.3. Connecting Peripherals and Power

1. **ATX Power Connectors:** Connect the 24-pin ATX main power connector and the 4-pin ATX 12V power connector from your power supply to the corresponding ports on the motherboard.
2. **SATA Devices:** Connect your SATA storage devices (HDDs/SSDs) to the SATA 6Gb/s ports on the motherboard using SATA data cables. Connect power from the PSU to these devices.
3. **Front Panel Connectors:** Connect the power button, reset button, HDD LED, and power LED cables from your case's front panel to the F_PANEL header on the motherboard. Refer to the motherboard's silkscreen for correct pin alignment.

4. **USB Headers:** Connect your case's front USB 2.0 and USB 3.0 ports to the F_USB and F_USB30 headers respectively.
5. **Audio Header:** Connect your case's front audio panel cable to the F_AUDIO header.
6. **System Fan Headers:** Connect case fans to the SYS_FAN header. The motherboard features Smart Fan 5 for intelligent fan control.
7. **Rear I/O Connections:** Connect your monitor to the HDMI or D-Sub (VGA) port on the motherboard's rear I/O panel. Connect USB peripherals (keyboard, mouse) to the USB ports. Connect Ethernet cable to the LAN port.



Figure 3.2: Rear I/O panel of the GIGABYTE H310M A Motherboard. This image displays the various ports available for connecting external devices, including USB, HDMI, LAN, and audio jacks.

4. Operating Instructions

4.1. First Boot and BIOS Setup

1. After all components are installed and connected, connect the power cord to the power supply and turn on the power supply switch.
2. Press the power button on your computer case.
3. During the Power-On Self-Test (POST), repeatedly press the `DEL` key to enter the BIOS Setup Utility.
4. In the BIOS, you can configure system settings such as boot order, date/time, and enable/disable integrated peripherals. Save changes and exit to continue booting.

4.2. Driver Installation

After installing your operating system, it is crucial to install the latest drivers for optimal performance and stability. Drivers can be found on the GIGABYTE official website for your specific motherboard model (H310M A).

- **Chipset Drivers:** Essential for proper communication between the CPU and other components.
- **LAN Drivers:** Required for network connectivity (Intel GbE LAN).
- **Audio Drivers:** For 8-channel HD Audio functionality.
- **Graphics Drivers:** If using integrated graphics, install Intel graphics drivers. If using a discrete graphics card, install drivers from the GPU manufacturer.
- **GIGABYTE APP Center:** Install this utility for easy access to various GIGABYTE applications and features, including RGB FUSION and Smart Fan 5.

5. Maintenance

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

- **Dust Removal:** Regularly clean dust from inside your computer case, especially from fans and heatsinks, using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Periodically check the GIGABYTE website for BIOS updates. BIOS updates can improve compatibility, stability, and performance. Follow the update instructions carefully to avoid damaging the motherboard.

- **Driver Updates:** Keep your drivers updated to the latest versions to ensure compatibility with new software and to benefit from performance improvements and bug fixes.
- **Environmental Control:** Operate the computer in a well-ventilated area, away from direct sunlight, excessive heat, and humidity.

6. Troubleshooting

This section addresses common issues you might encounter and provides potential solutions.

Problem	Possible Cause	Solution
No power/System does not turn on.	Loose power connections, faulty PSU, case power button issue.	Check 24-pin and 4-pin ATX power connectors. Ensure PSU switch is ON. Verify front panel power button connection. Test PSU with another system if possible.
No display on monitor.	Incorrect monitor connection, faulty RAM, CPU not seated correctly, no discrete GPU.	Ensure monitor cable is securely connected to the correct port (motherboard or GPU). Reseat RAM modules. Verify CPU installation. If using integrated graphics, ensure CPU supports it.
System reboots or crashes frequently.	Overheating, unstable RAM, faulty PSU, driver issues.	Check CPU and case fan operation. Monitor temperatures using software. Test RAM with memory diagnostic tools. Update drivers.
No network connectivity.	Missing or outdated LAN drivers, loose Ethernet cable.	Install or update Intel GbE LAN drivers from GIGABYTE website. Ensure Ethernet cable is securely plugged in.
M.2 SSD not detected.	Improper installation, BIOS settings, SATA port conflict.	Reseat M.2 SSD. Check BIOS settings for M.2 slot configuration. Note that using the M.2 slot may disable one SATA port (refer to specifications).

7. Specifications

Key technical specifications for the GIGABYTE H310M A motherboard:

Feature	Detail
CPU Socket	LGA 1151 (Supports 8th Gen Intel Core Processors)
Chipset	Intel H310 Express Chipset
Memory	2 x DDR4 DIMM sockets supporting up to 32 GB of system memory; Dual Channel architecture; Support for DDR4 2666/2400/2133 MHz memory modules
Audio	Realtek ALC887 codec; High Definition Audio; 2/4/5.1/7.1-channel
LAN	Intel GbE LAN chip (10/100/1000 Mbit)
Expansion Slots	1 x PCI Express x16 slot (running at x16); 2 x PCI Express x1 slots

Feature	Detail
Storage Interface	4 x SATA 6Gb/s connectors; 1 x M.2 connector (Socket 3, M key, type 2242/2260/2280 SATA and PCIe Gen2 x2 SSD support)
USB Ports	4 x USB 3.1 Gen 1 ports (2 on back panel, 2 via internal header); 6 x USB 2.0/1.1 ports (4 on back panel, 2 via internal header)
Internal I/O Connectors	24-pin ATX main power connector; 4-pin ATX 12V power connector; CPU fan header; System fan header; Front panel header; Front panel audio header; USB 3.1 Gen 1 header; USB 2.0/1.1 headers; Clear CMOS jumper
Back Panel Connectors	PS/2 keyboard/mouse port; D-Sub port; HDMI port; 2 x USB 3.1 Gen 1 ports; 4 x USB 2.0/1.1 ports; RJ-45 port; 3 x audio jacks
Form Factor	Micro ATX Form Factor; 22.6cm x 18.5cm

8. Warranty and Support

For warranty information and technical support, please refer to the official GIGABYTE website or contact their customer service. Keep your proof of purchase for warranty claims.

- **Official GIGABYTE Website:** www.gigabyte.com
- **Product Support Page:** Look for the H310M A model on the support section of the GIGABYTE website for drivers, BIOS updates, and additional documentation.
- **Customer Service:** Contact GIGABYTE customer support for technical assistance or warranty inquiries.

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

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