GIGABYTE GA-B150M-D3H

GIGABYTE GA-B150M-D3H Micro ATX Motherboard Instruction Manual

Model: GA-B150M-D3H

Introduction Safety Information Package Contents Motherboard Layout Setup Operating Maintenance Troubleshooting Specifications Warranty & Support

1. Introduction

This manual provides detailed instructions for installing, configuring, and maintaining your GIGABYTE GA-B150M-D3H Micro ATX motherboard. The GA-B150M-D3H is designed to support 6th Generation Intel Core Processors and features Dual Channel DDR4 memory, PCIe Gen3 x4 M.2 connector, SATA Express, and 8-channel HD audio with Audio Noise Guard.

Please read this manual thoroughly before beginning installation to ensure proper setup and operation.

Image 1.1: GIGABYTE GA-B150M-D3H Micro ATX Motherboard. This image displays the overall layout of the motherboard, highlighting its compact Micro ATX form factor and various component slots.

2. Safety Information

Observe the following safety precautions to prevent damage to the motherboard and injury to yourself:

- Always disconnect the power cord from the wall outlet before touching any components.
- Wear an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity.
- Handle the motherboard by its edges to avoid touching sensitive components.
- Keep the motherboard away from moisture and extreme temperatures.
- Ensure proper ventilation within the computer case to prevent overheating.

3. Package Contents

Verify that all items are present in your motherboard package:

- GIGABYTE GA-B150M-D3H Motherboard
- User Manual
- I/O Shield
- SATA Cables
- Driver CD/DVD

Note: Contents may vary slightly depending on region or revision.

4. Motherboard Layout

Familiarize yourself with the various components and connectors on the GA-B150M-D3H motherboard.

Image 4.1: GIGABYTE GA-B150M-D3H Motherboard Layout. This image provides a visual reference for the location of key components such as the CPU socket, DIMM slots, PCIe slots, SATA ports, and M.2 connector.

Key Components:

- **LGA 1151 CPU Socket:** For 6th Generation Intel Core Processors.
- **DDR4 DIMM Slots (4):** Supports Dual Channel DDR4 memory up to 2133 MHz.
- **PCIe Slots:** Includes PCIe Gen3 x16 for graphics cards and PCIe x1 slots for expansion.
- **M.2 Connector:** Supports PCIe NVMe & SATA SSDs with up to 32Gb/s data transfer.
- **SATA Express Connector:** For up to 16Gb/s data transfer.
- **SATA 6Gb/s Ports:** For connecting traditional SATA storage devices.
- **24-Pin ATX Power Connector:** Main power input.
- **8-Pin ATX 12V Power Connector:** CPU power input.
- **Front Panel Headers:** For power button, reset button, LED indicators, and USB ports.
- **Audio Connectors:** 8-channel HD Audio with high quality capacitors and Audio Noise Guard.

5. Setup and Installation

Follow these steps for proper installation of your motherboard and components.

5.1. Installing the CPU

1. Locate the LGA 1151 CPU socket.
2. Open the CPU socket lever and lift the load plate.
3. Carefully align the CPU with the socket, ensuring the gold triangle on the CPU matches the triangle on the socket. Do not force the CPU into the socket.
4. Lower the load plate and secure it with the lever.

5.2. Installing the CPU Cooler

Refer to your CPU cooler's instruction manual for specific installation steps. Ensure thermal paste is applied correctly between the CPU and cooler base.

5.3. Installing Memory (RAM)

1. Open the clips at 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. For dual-channel performance, install memory modules in matching colored slots (e.g., DIMM1 and DIMM2).

5.4. Installing Expansion Cards

1. Remove the metal bracket from the desired PCIe slot on your computer case.
2. Align the expansion card with the PCIe slot and press down firmly until it is seated correctly.
3. Secure the card with a screw to the computer case.

5.5. Connecting Storage Devices

- **SATA Devices:** Connect one end of the SATA data cable to a SATA 6Gb/s port on the motherboard and the other end to your hard drive or SSD. Connect the SATA power cable from your power supply to the device.
- **M.2 SSD:** Insert the M.2 SSD into the M.2 slot at an angle, then gently push it down and secure it with the provided screw.
- **SATA Express:** If using a SATA Express device, connect it to the designated SATA Express connector.

5.6. Connecting Front Panel Connectors

Connect the cables from your computer case's front panel (power button, reset button, HDD LED, power LED, front USB, front audio) to the corresponding headers on the motherboard. Refer to the motherboard layout diagram for exact locations and pin assignments.

5.7. Connecting Power Supply

1. Connect the 24-pin ATX main power connector from your power supply to the 24-pin power socket on the motherboard.
2. Connect the 8-pin ATX 12V CPU power connector to the 8-pin socket near the CPU.
3. Ensure all power connections are secure.

6. Operating Instructions

6.1. First Boot

After assembling all components, connect your monitor, keyboard, and mouse. Power on the system. The system should display the GIGABYTE splash screen and then enter the BIOS/UEFI setup or attempt to boot from a connected storage device.

6.2. BIOS/UEFI Setup

To enter the BIOS/UEFI setup, press the **DEL** key repeatedly during the boot process when the GIGABYTE logo appears. Here you can configure system settings, boot order, and monitor hardware status. The GA-B150M-D3H features GIGABYTE UEFI Dual BIOS for enhanced reliability.

6.3. Driver Installation

After installing your operating system, install the necessary drivers for the motherboard components. These can be found on the included driver CD/DVD or downloaded from the official GIGABYTE website. Key drivers include chipset, audio (Realtek ALC892 codec), LAN, and any integrated graphics drivers.

6.4. Operating System Installation

Insert your operating system installation media (USB drive or DVD) and configure the boot order in the BIOS/UEFI to boot from it. Follow the on-screen instructions to install your preferred operating system (e.g., Windows 8.1, Windows 10).

7. Maintenance

7.1. Cleaning

Regularly clean the interior of your computer case to prevent dust buildup, which can lead to overheating. Use compressed air to remove dust from fans, heatsinks, and motherboard components. Ensure the system is powered off and unplugged before cleaning.

7.2. BIOS Updates

GIGABYTE periodically releases BIOS updates to improve system stability, compatibility, and performance. Visit the official GIGABYTE website for your motherboard model (GA-B150M-D3H) to check for the latest BIOS version and follow the provided instructions for updating. Exercise caution during BIOS updates, as an interruption can render the motherboard inoperable.

8. Troubleshooting

This section addresses common issues you might encounter.

8.1. No Power / System Does Not Turn On

- Check if the power supply is connected correctly to the motherboard (24-pin and 8-pin connectors).
- Ensure the power supply switch is in the ON position.
- Verify that the front panel power button cable is correctly connected to the motherboard header.
- Test the power supply with another system or a power supply tester.

8.2. No Display Output

- Ensure the monitor is connected to the correct graphics output (either integrated graphics on the motherboard or a dedicated graphics card).
- Reseat the graphics card and memory modules.
- Try booting with only one memory module installed.
- Check if the monitor is powered on and set to the correct input source.

8.3. System Instability / Crashes

- Check CPU and GPU temperatures to ensure they are within safe operating limits.
- Verify that all drivers are installed and up to date.
- Run memory diagnostic tools to check for faulty RAM.
- Ensure the power supply provides sufficient and stable power to all components.

9. Specifications

Detailed technical specifications for the GIGABYTE GA-B150M-D3H motherboard:

Feature	Specification
Model Name	GA-B150M-D3H
Form Factor	Micro ATX (24.4cm x 22.5cm)
CPU Socket	LGA 1151
Compatible Processors	6th Generation Intel Core Processors
Chipset	Intel B150 Express Chipset
Memory Technology	DDR4
Memory Slots	4 x DDR4 DIMM sockets (Dual Channel)
Max Memory Capacity	16 GB
Memory Clock Speed	2133 MHz

Feature	Specification
PCIe Slots	1 x PCI Express x16, 1 x Total PCIe Ports
Storage Interfaces	PCIe Gen3 x4 M.2, SATA Express, SATA 6Gb/s
Audio Codec	Realtek ALC892 codec, 8-channel HD Audio
USB Ports	Total 8 USB Ports (including USB 2.0)
Main Power Connector	24-Pin ATX
CPU Power Connector	8-Pin ATX 12V
Unique Features	GIGABYTE UEFI Dual BIOS, Audio Noise Guard with LED Trace Path Lighting, App Center (Easy Tune, Cloud Station)

10. Warranty and Support

For warranty information, please refer to the warranty card included in your product package or visit the official GIGABYTE website. Warranty terms and conditions may vary by region.
For technical support, driver downloads, BIOS updates, and further product information, please visit the GIGABYTE official support website:
https://www.gigabyte.com/Support
When contacting support, please have your motherboard model (GA-B150M-D3H) and serial number ready.