GIGABYTE GA-Z87M-D3H

GIGABYTE GA-Z87M-D3H mATX Motherboard User Manual
Model: GA-Z87M-D3H

1. INTRODUCTION

This manual provides detailed instructions for the installation, configuration, and operation of your GIGABYTE GA-Z87M-D3H motherboard. The GA-Z87M-D3H is a micro-ATX motherboard designed for Intel LGA 1150 processors, featuring the Intel Z87 chipset. It supports CrossFireX multi-GPU configurations and offers DVI and HDMI display outputs.

Please read this manual thoroughly before beginning the installation process to ensure proper setup and to maximize the performance and stability of your system.
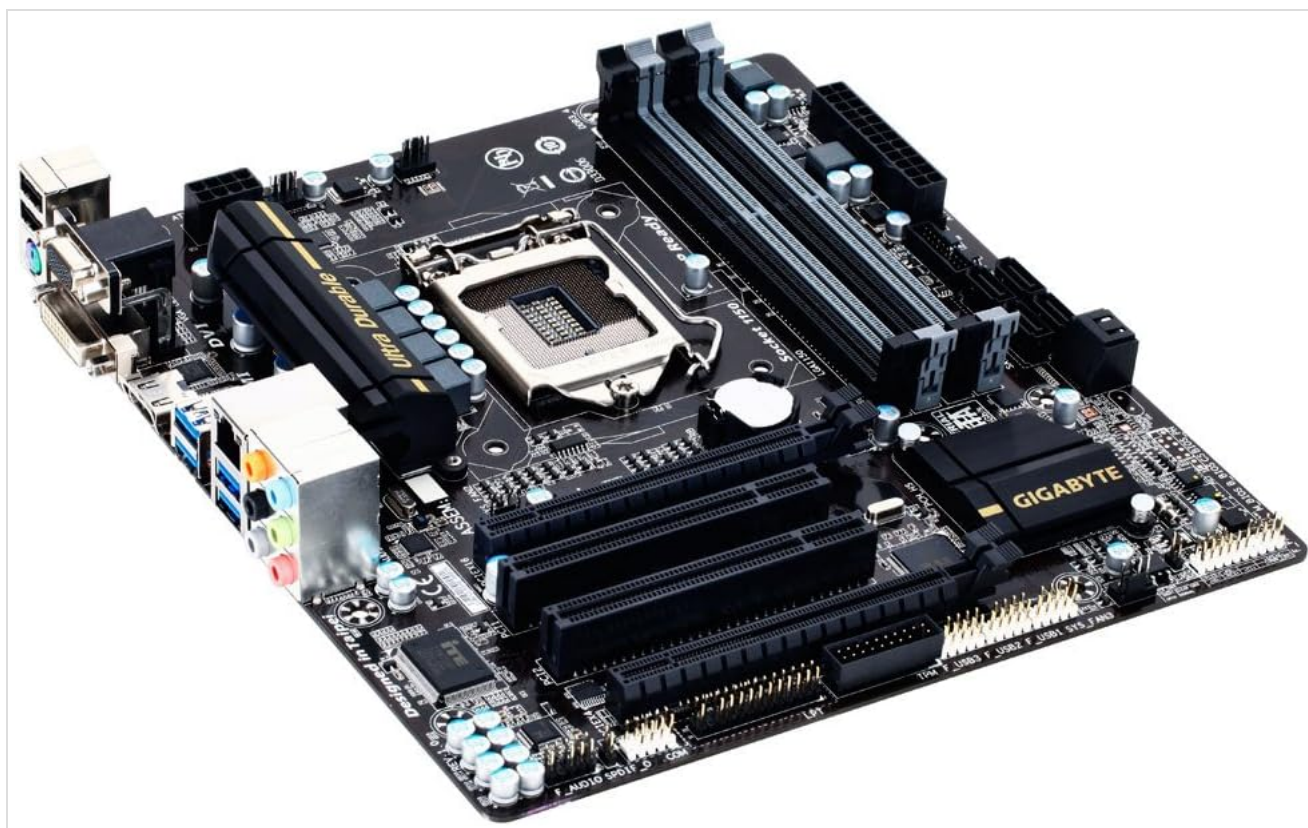

Image 1.1: Top-down view of the GIGABYTE GA-Z87M-D3H mATX Motherboard. This image displays the CPU socket, RAM slots, PCIe slots, and various connectors.

2. SETUP AND INSTALLATION

Before installing the motherboard, ensure your system case is compatible with the micro-ATX form factor. Always handle the motherboard by its edges to avoid static discharge.

2.1 CPU Installation

1. Locate the LGA 1150 CPU socket on the motherboard.
2. Open the CPU socket lever and lift the metal load plate.
3. Carefully align the notches on your Intel LGA 1150 processor with the socket and gently place the CPU into the socket. Do not force it.
4. Close the load plate and secure it with the lever.
5. Apply thermal paste to the CPU and install the CPU cooler according to its manufacturer's instructions.

2.2 Memory (RAM) Installation

The GA-Z87M-D3H supports up to 32 GB of DDR3 RAM across four DIMM slots. For optimal performance, install memory modules in matched pairs.

1. Open the clips at both ends of the DIMM slot.
2. Align the notch on the DDR3 memory module with the key in the DIMM slot.
3. Press down firmly on both ends of the memory module until the clips snap into place.
4. Repeat for additional modules.

Note: Some users have reported potential stability issues when utilizing all four memory slots. Ensure your memory modules are on the Qualified Vendor List (QVL) and consider updating to the latest BIOS version for improved compatibility and stability.

2.3 Expansion Card Installation

The motherboard features PCIe slots for graphics cards and other expansion cards.

1. Locate the desired PCIe slot. For a primary graphics card, use the top PCIe x16 slot.
2. Remove the corresponding expansion slot cover from your PC case.
3. Align the card with the slot and press down firmly until it is seated correctly.
4. Secure the card with a screw or retention clip from your PC case.

2.4 Storage Device Installation

Connect SATA storage devices (HDDs, SSDs) to the SATA ports on the motherboard using SATA data cables. Ensure the power supply provides power to these devices.

2.5 Connecting Peripherals and Power

Connect your power supply's 24-pin ATX power connector and 8-pin CPU power connector to the motherboard. Connect front panel headers (power button, reset button, USB, audio) according to the labels on the motherboard and your case manual.
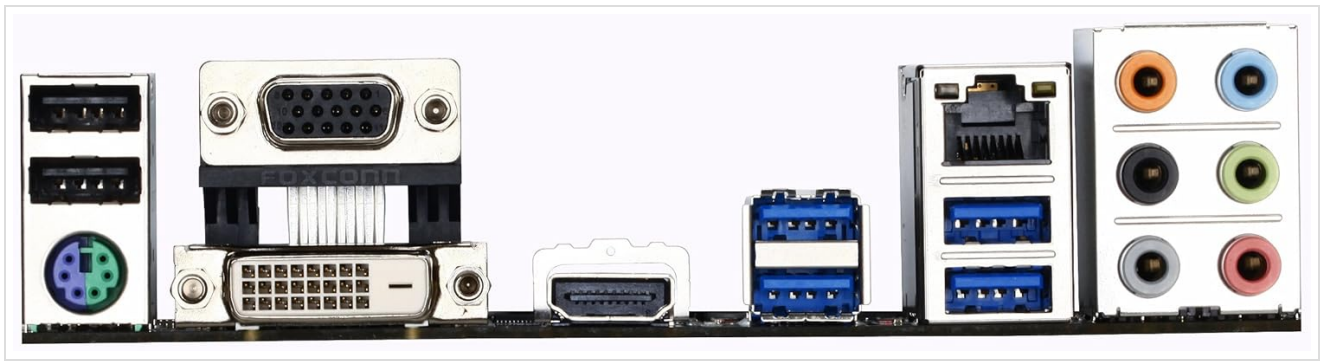
Image 2.1: Rear I/O panel of the GIGABYTE GA-Z87M-D3H Motherboard. This image shows the various external ports including USB, DVI, HDMI, VGA, Ethernet, and audio jacks.

Connect external peripherals such as keyboard, mouse, monitor, and network cable to the appropriate ports on the rear I/O panel.

3. OPERATING SYSTEM AND DRIVER INSTALLATION

After physical installation, install your preferred operating system. Following the OS installation, it is crucial to install the latest drivers for your motherboard components to ensure optimal performance and stability.

- Insert the GIGABYTE driver CD/DVD (if included) or download the latest drivers from the official GIGABYTE website.
- Install chipset drivers, audio drivers, LAN drivers, and any other necessary utility drivers.
- For USB 3.0 functionality, ensure the latest Intel Rapid Storage Technology drivers and USB 3.0 drivers are installed.

4. BIOS SETUP

The BIOS (Basic Input/Output System) or UEFI (Unified Extensible Firmware Interface) is firmware that initializes hardware components during startup. To enter the BIOS setup, press the DEL key during the Power-On Self-Test (POST) sequence.

The GIGABYTE UEFI BIOS offers various settings for system configuration, including boot order, CPU settings, memory timings, and fan control. Familiarize yourself with the interface and consult the comprehensive GIGABYTE manual for detailed explanations of each setting.

Caution: Incorrect BIOS settings can lead to system instability or damage. Proceed with caution and only change settings if you understand their function.

5. MAINTENANCE

5.1 BIOS Updates

GIGABYTE periodically releases BIOS updates to improve system stability, enhance compatibility, and add new features. It is recommended to keep your BIOS updated to the latest stable version.

- Download the latest BIOS version for your GA-Z87M-D3H from the official GIGABYTE website.
- Follow the instructions provided by GIGABYTE for the specific BIOS flashing utility (e.g., Q-Flash).
- Ensure a stable power supply during the update process to prevent interruption.

Warning: Interrupting a BIOS update can render your motherboard inoperable.

5.2 Cleaning

Regularly clean your computer's interior to prevent dust buildup, which can lead to overheating and reduced component lifespan. Use compressed air to remove dust from fans, heatsinks, and other components. Ensure the system is powered off and unplugged before cleaning.

6. TROUBLESHOOTING

This section addresses common issues you might encounter.

- **System Does Not Power On:**
  - Check all power connections (24-pin ATX, 8-pin CPU, GPU, storage).
  - Ensure the power supply is switched on.
  - Verify front panel header connections (power button).

- **No Display Output:**
  - Ensure the monitor is connected to the correct display output (motherboard or discrete graphics card).
  - Reseat the graphics card and memory modules.
  - Test with a different monitor or cable if possible.

- **System Instability / Blue Screen of Death (BSOD):**
  - Verify all drivers are up to date.
  - Check memory compatibility and seating. As noted, using four memory modules may require specific configurations or BIOS updates for stability.
  - Monitor CPU and GPU temperatures to rule out overheating.
  - Run memory diagnostic tools.

- **USB 3.0 Port Issues:**
  - Ensure the latest Intel Rapid Storage Technology drivers and USB 3.0 drivers are installed from the GIGABYTE website.
  - Check physical connections for front panel USB 3.0 headers.

For more advanced troubleshooting or persistent issues, refer to the official GIGABYTE support website or contact their technical support.

7. SPECIFICATIONS

Feature	Specification
Brand	GIGABYTE
Model Name	GA-Z87M-D3H
CPU Socket	LGA 1150 (Intel 4th Gen Core)
Compatible Processors	Intel Core i3, i5, i7, i9 (Haswell, 4th Gen)
Chipset Type	Intel Z87
RAM Memory Technology	DDR3
Memory Slots	4 x DDR3 DIMM slots
Max Memory Storage Capacity	32 GB

Feature	Specification
Memory Clock Speed	2133 MHz (and higher via OC)
Graphics Output	DVI, HDMI, RGB (VGA)
Multi-GPU Support	CrossFireX
USB 2.0 Ports	2 (rear panel, plus internal headers)
Product Dimensions (LxWxH)	11 x 11 x 3 inches (approximate)
Item Weight	2.5 pounds
Voltage	1.5 Volts (for RAM)
Platform	Windows 10 (and earlier compatible versions)

8. SUPPORT AND WARRANTY

For detailed technical support, driver downloads, BIOS updates, and product information, please visit the official GIGABYTE website. The website provides comprehensive resources including FAQs, knowledge bases, and contact information for customer service.

Information regarding the product warranty, including terms and conditions, can be found on the GIGABYTE official website or within the documentation provided with your purchase. Please retain your proof of purchase for warranty claims.

GIGABYTE Official Website: www.gigabyte.com

Related Documents - GA-Z87M-D3H

GA-Z87M-D3H GA-H87M-D3H User's Manual	**GIGABYTE GA-Z87M-D3H / GA-H87M-D3H User's Manual** User's manual for the GIGABYTE GA-Z87M-D3H and GA-H87M-D3H motherboards, providing detailed instructions on hardware installation, BIOS setup, driver installation, and troubleshooting.
GA-Z77-D3H GA-H77-D3H ユーザーズマニュアル	**GIGABYTE GA-Z77-D3H/GA-H77-D3H** GIGABYTE GA-Z77-D3H GA-H77-D3H BIOS

GA-G41MT-USB3 GA-G41MT-D3V LGA775 socket motherboard for Intel® Core™ processor family/ Intel® Pentium® processor family/Intel® Celeron® processor family User's Manual Rev. 1001 12ME-41MT001-101R	[GIGABYTE GA-G41MT-USB3 / GA-G41MT-D3V Motherboard User's Manual](#) Comprehensive user's manual for GIGABYTE GA-G41MT-USB3 and GA-G41MT-D3V LGA775 socket motherboards. Covers hardware installation, detailed BIOS setup options, and driver installation procedures.
GA-B75M-D3H User's Manual Rev. 6002 12ME-B75MD3H-6002R	[GIGABYTE GA-B75M-D3H Motherboard User Manual - Installation & Setup Guide](#) Comprehensive user's manual for the GIGABYTE GA-B75M-D3H motherboard. Covers hardware installation, BIOS setup, product specifications, and connectivity for Intel LGA1155 processors.
GA-B75M-D3H User's Manual Rev. 1002 12ME-B75MD3H-1002R	[GIGABYTE GA-B75M-D3H Motherboard User Manual](#) Comprehensive user manual for the GIGABYTE GA-B75M-D3H motherboard, covering hardware installation, BIOS setup, product specifications, and driver installation. Learn how to assemble and configure your GIGABYTE motherboard.
GA-B75M-D3H User's Manual Rev. 1102 12ME-B75MD3H-1102R	[GIGABYTE GA-B75M-D3H Motherboard User Manual](#) This user manual provides comprehensive instructions for installing, configuring, and troubleshooting the GIGABYTE GA-B75M-D3H motherboard, including hardware setup, BIOS settings, and driver installation.