ASRock H110M-DGS

ASRock H110M-DGS Micro ATX Motherboard User Manual

Model: H110M-DGS

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your ASRock H110M-DGS Micro ATX Motherboard. Please read this manual thoroughly before attempting any installation or configuration to ensure proper functionality and to prevent damage to your components.

2. Safety Information

- Always disconnect the power cord from the wall outlet before touching any internal components.
- Wear an anti-static wrist strap when handling the motherboard or other components to prevent electrostatic discharge (ESD) damage.
- Handle components by their edges to avoid touching sensitive parts.
- Ensure proper ventilation within your computer case to prevent overheating.
- Keep the motherboard away from moisture and extreme temperatures.

3. Package Contents

Verify that all items are present in your motherboard package:

- ASRock H110M-DGS Motherboard
- I/O Shield
- SATA Data Cables
- Support CD (Drivers and Utilities)
- Quick Installation Guide

4. Motherboard Layout

The ASRock H110M-DGS is a Micro ATX motherboard designed for Intel LGA 1151 processors. Below is an

overview of the motherboard's key components and connectors.

Figure 4.1: Top-down view of the ASRock H110M-DGS Micro ATX Motherboard, showing the CPU socket, RAM slots, PCIe slots, and various headers.

Figure 4.2: Angled view highlighting the CPU socket area, DDR4 memory slots, and the chipset heatsink.

5. Setup and Installation

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

5.1. CPU Installation

1. Open the CPU socket lever and lift the metal load plate.

2. Carefully align the notches on your LGA 1151 CPU with the socket and gently place the CPU into the socket. Do not force it.
3. Close the load plate and secure it with the lever.

5.2. Memory (RAM) Installation

The H110M-DGS supports DDR4-2133 memory modules. It features two DIMM slots, supporting a maximum of 32GB in dual-channel configuration.

1. Open the clips at both ends of the DIMM slot.
2. Align the notch on the DDR4 memory module with the key in the DIMM slot.
3. Insert the module firmly until the clips snap into place.

5.3. Storage Device Installation

The motherboard provides four SATA3 ports for connecting storage devices such as HDDs and SSDs.

1. Connect one end of the SATA data cable to a SATA3 port on the motherboard.
2. Connect the other end of the SATA data cable to your storage device.
3. Connect a SATA power cable from your power supply unit (PSU) to the storage device.

5.4. Expansion Card Installation

The motherboard includes one PCI-Express 3.0 x16 slot for a graphics card and one PCI Express 2.0 x1 slot for other expansion cards.

1. Align your expansion card with the appropriate PCIe slot.
2. Press down firmly until the card is seated correctly in the slot.
3. Secure the card with a screw to the computer case.

5.5. Front Panel and Power Connections

Connect the various cables from your computer case to the corresponding headers on the motherboard.

- **Front Panel Headers:** Connect power switch, reset switch, HDD LED, and power LED cables. Refer to the motherboard diagram for correct pin orientation.
- **USB Headers:** Connect front panel USB 3.0 (2 ports via header) and USB 2.0 (2 ports via header) cables.
- **Audio Header:** Connect the front panel audio cable.
- **Power Connectors:** Connect the 24-pin ATX power connector and the 8-pin (or 4-pin) CPU power connector from your PSU to the motherboard.

Figure 5.1: Rear I/O panel showing PS/2 ports, DVI-D, USB 3.0, USB 2.0, RJ45 LAN, and audio jacks.

6. Operating Your System

6.1. Initial Boot and BIOS Setup

1. After assembling your system, connect a monitor, keyboard, and mouse.

2. Power on your system. During the boot process, press the `DEL` or `F2` key to enter the BIOS/UEFI setup utility.
3. Configure boot order, system time, and other settings as needed. Save changes and exit.

6.2. Operating System and Driver Installation

1. Install your preferred operating system (e.g., Windows 8.1, Windows 10).
2. After OS installation, install the necessary drivers from the provided support CD or download the latest versions from the ASRock official website. This includes chipset drivers, audio drivers, LAN drivers, and any other relevant device drivers.

7. Maintenance

7.1. Cleaning

- Regularly clean dust from inside your computer case, especially around fans and heatsinks, to maintain optimal cooling.
- Use compressed air to remove dust from hard-to-reach areas.

7.2. BIOS Updates

Periodically check the ASRock website for updated BIOS versions. BIOS updates can improve system stability, compatibility, and performance. Follow the instructions provided by ASRock carefully when performing a BIOS update.

8. Troubleshooting

This section addresses common issues you might encounter.

- **No Power:** Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected to the motherboard and the power supply is switched on. Check the power button connection to the front panel header.
- **No Display:** Verify that your graphics card is properly seated in the PCIe slot and connected to the power supply (if required). Ensure the monitor cable is securely connected to the graphics card or motherboard's integrated graphics port.
- **System Not Booting / POST Errors:** Check that the CPU, RAM, and graphics card are correctly installed. Listen for beep codes from the motherboard, which can indicate specific issues.
- **Memory Issues:** If experiencing issues with RAM, try installing one memory module at a time to identify a faulty stick or slot. Ensure memory modules are fully seated.
- **USB Ports Not Working:** Ensure front panel USB headers are correctly connected. Check device manager in your operating system for driver issues.
- **No Internet Connection:** Verify the Ethernet cable is connected to the RJ45 LAN port and your router. Install the latest LAN drivers.

If problems persist, consult the ASRock support website or contact technical support.

9. Specifications

Key technical specifications for the ASRock H110M-DGS Motherboard:

Feature	Specification

CPU Socket	LGA 1151
Chipset	Intel H110
Memory Slots	2 x DDR4 DIMM, Dual Channel
Memory Type	DDR4 SDRAM
Memory Speed	2133 MHz (Max 32GB)
PCI-Express Slots	1 x PCIe 3.0 x16, 1 x PCIe 2.0 x1
SATA Ports	4 x SATA3
USB 3.0 Ports	4 (2 rear, 2 via header)
USB 2.0 Ports	6 (4 rear, 2 via header)
Video Output	1 x DVI-D
LAN	Gigabit Ethernet
Audio	HD Audio Jacks
Form Factor	Micro ATX
Dimensions	7.5 x 7.4 x 2.8 inches

10. Warranty and Support

For warranty information, please refer to the warranty card included with your product or visit the official ASRock website. For technical support, driver downloads, and BIOS updates, please visit the ASRock support page:
www.asrock.com/support/
When contacting support, please have your motherboard model (H110M-DGS) and serial number ready.