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ASRock H270M-ITX/ac

ASRock H270M-ITX/AC Motherboard User Manual

Model: H270M-ITX/ac | Brand: ASRock

1. Introduction

The ASRock H270M-ITX/AC is a high-performance Mini-ITX motherboard designed for Intel LGA1151 processors. It supports 6th and 7th Generation Intel Core processors, DDR4 memory, and features advanced connectivity options including M.2, WiFi, and dual Gigabit Ethernet. This manual provides essential information for proper installation, configuration, and maintenance of your motherboard.

Key Features:

- Supports 6th and 7th Generation Intel Core Processors (LGA1151 Socket)
- Dual Channel DDR4 2133/2400 MHz Memory Support
- 1 PCIe 3.0 x16 Slot for graphics cards
- 4 SATA3 Ports and 1 Ultra M.2 Slot for high-speed storage
- Integrated Intel Gigabit Ethernet (x2) and Wi-Fi 802.11ac
- Premium 45A Power Chokes and Dual-Stack MOSFET (DSM) for stable power delivery

2. Package Contents

Verify that all items are present in your motherboard package:

- ASRock H270M-ITX/AC Motherboard
- I/O Shield
- SATA Data Cables
- Wi-Fi Antenna(s)
- Support CD/DVD (Drivers and Utilities)
- Quick Installation Guide
- M.2 Screw Package

3. Setup and Installation

Before beginning installation, ensure your system is powered off and unplugged from the wall outlet. Wear an anti-static

wrist strap to prevent electrostatic discharge (ESD) damage to components.

3.1 Motherboard Layout

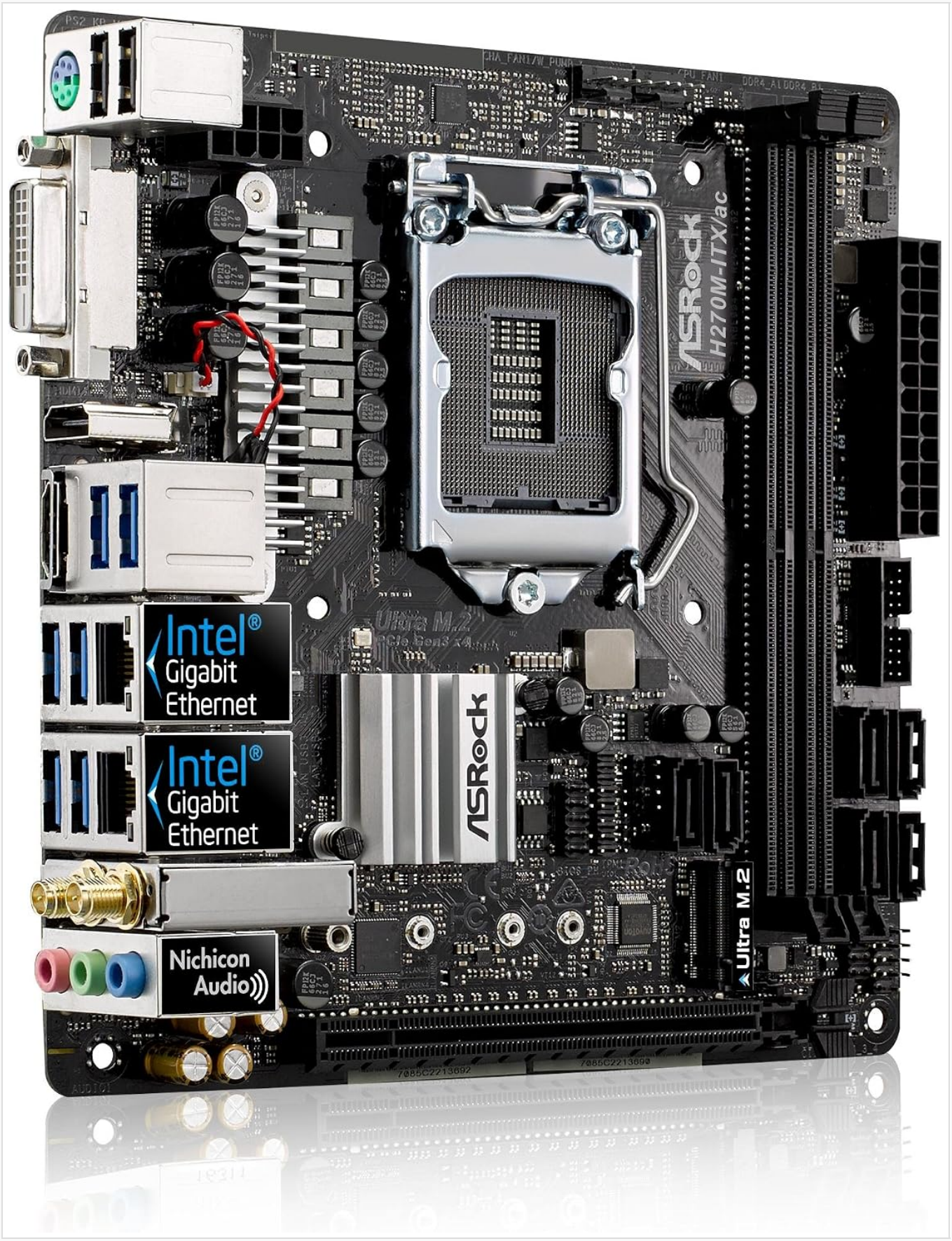


Figure 3.1: Top-down view of the ASRock H270M-ITX/AC motherboard, showing CPU socket, RAM slots, PCIe slot, and various connectors.

Familiarize yourself with the layout of the motherboard. Key components include the LGA1151 CPU socket, two DDR4

DIMM slots, one PCIe 3.0 x16 slot, SATA ports, and the Ultra M.2 slot.

3.2 CPU Installation

1. Locate the LGA1151 CPU socket. Open the socket lever and lift the metal load plate.
2. Carefully align the notches on your Intel LGA1151 processor with the corresponding keys on the socket. Gently place the CPU into the socket without forcing it.
3. Close the load plate and secure it with the lever.
4. Install the CPU cooler according to its manufacturer's instructions.

3.3 Memory (RAM) Installation

1. Open the clips at both ends of the DDR4 DIMM slots.
2. Align the notch on the DDR4 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.

3.4 Storage Device Installation (SATA & M.2)

- **SATA Drives:** Connect SATA data cables from your storage devices (HDDs, SSDs) to the SATA3 ports on the motherboard. Connect power cables from your power supply to the drives.
- **M.2 SSD:** Locate the Ultra M.2 slot. Insert your M.2 SSD into the slot at an angle, then gently push it down and secure it with the provided M.2 screw.

3.5 Power Connections

- Connect the 24-pin ATX power connector from your power supply to the main power socket on the motherboard.
- Connect the 8-pin (or 4-pin) ATX 12V power connector to the CPU power socket.

3.6 Rear I/O Panel Connections



Figure 3.2: Rear I/O panel of the ASRock H270M-ITX/AC motherboard, showing USB ports, display outputs, Ethernet ports, audio jacks, and Wi-Fi antenna connectors.

Connect your peripherals to the appropriate ports on the rear I/O panel. This includes USB devices, display cables (HDMI, DVI-D), Ethernet cables, and audio devices. Install the Wi-Fi antennas to the designated connectors for wireless connectivity.



Figure 3.3: ASRock H270M-ITX/AC motherboard with Wi-Fi antennas attached to the rear I/O panel, ready for wireless network connection.

4. Operating Instructions

4.1 Initial Boot and BIOS/UEFI Setup

1. After assembling your system, connect a monitor, keyboard, and mouse. Power on your system.
2. During the boot process, press the **Del** or **F2** key repeatedly to enter the BIOS/UEFI setup utility.
3. In the BIOS/UEFI, you can configure system settings such as boot order, date/time, fan speeds, and enable/disable integrated peripherals.

4. Save your changes and exit the BIOS/UEFI to continue with operating system installation.

4.2 Driver Installation

After installing your operating system, install the necessary drivers for the motherboard components. These drivers are typically found on the included support CD/DVD or can be downloaded from the ASRock official website. Essential drivers include chipset, audio, LAN, and Wi-Fi drivers.

4.3 Operating System Installation

Insert your operating system installation media (USB drive or DVD) and follow the on-screen instructions to install the operating system. Ensure the boot order in BIOS/UEFI is set to prioritize your installation media.

5. Maintenance

- **Cleaning:** Regularly clean dust from your system's interior, especially around fans and heatsinks, using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **BIOS/UEFI Updates:** Periodically check the ASRock website for BIOS/UEFI updates. Updates can improve system stability, compatibility, and performance. Follow the update instructions carefully to avoid system damage.
- **Driver Updates:** Keep your drivers updated to ensure optimal performance and compatibility with new software and hardware.

6. Troubleshooting

This section provides solutions to common issues you might encounter.

6.1 No Power / System Does Not Turn On

- Check all power connections: 24-pin ATX, 8-pin CPU power, and power supply cable to the wall outlet.
- 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.

6.2 No Display Output

- Ensure your monitor is powered on and the video cable is securely connected to both the monitor and the motherboard's display output (or discrete graphics card).
- If using a discrete graphics card, ensure it is properly seated in the PCIe slot and has adequate power connections.
- Try reseating the RAM modules. Faulty or improperly seated RAM can prevent display output.

6.3 System Instability / Random Crashes

- Check CPU and GPU temperatures. Overheating can cause instability.
- Ensure all drivers are up to date.
- Run memory diagnostic tools to check for faulty RAM.
- Verify that your power supply provides sufficient wattage for all components.

7. Specifications

Feature	Specification
Brand	ASRock

Feature	Specification
Model Name	H270M-ITX/ac
CPU Socket	LGA 1151
Chipset Type	Intel H270
Compatible Processors	6th and 7th Generation Intel Core Processors
RAM Memory Technology	DDR4 SDRAM
Memory Clock Speed	2133 MHz (up to 2400 MHz with 7th Gen Intel CPUs)
Memory Slots Available	2 (Max 32 GB)
Graphics Card Interface	PCI Express 3.0 x16
SATA Ports	4 x SATA3 6.0 Gb/s
M.2 Slot	1 x Ultra M.2 (PCIe Gen3 x4 & SATA3)
USB 3.0 Ports (Rear)	6
USB 2.0 Ports (Rear)	2
Total USB Ports	9 (including internal headers)
Ethernet	Dual Intel Gigabit LAN
Wireless Connectivity	Intel 802.11ac Wi-Fi + Bluetooth 4.0
Audio	7.1 CH HD Audio with Nichicon Fine Gold Audio Caps
Display Outputs	2 x HDMI, 1 x DVI-D
Form Factor	Mini-ITX
Item Weight	1.76 Pounds (0.8 kg)

8. Warranty and Support

8.1 Warranty Information

The ASRock H270M-ITX/AC Motherboard comes with a **1-year limited warranty**. This warranty covers defects in materials and workmanship under normal use. For specific terms and conditions, please refer to the warranty card included with your product or visit the official ASRock website.

8.2 Technical Support

For technical assistance, driver downloads, BIOS updates, and further product information, please visit the official ASRock support website. You can typically find FAQs, troubleshooting guides, and contact information for customer service there.

Note: Always refer to the latest documentation and support resources available on the manufacturer's website for the most accurate and up-to-date information.

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