ASUS Z87-PRO

ASUS Z87 PRO Motherboard Instruction Manual

Model: Z87-PRO

1. INTRODUCTION

The ASUS Z87 PRO is an ATX motherboard designed for Intel LGA 1150 processors, supporting DDR3 memory. It features ASUS Dual Intelligent Processors 4 with 4-Way Optimization, USB 3.0 Boost, and Wi-Fi Go! This manual provides essential information for setting up, operating, and maintaining your motherboard.

Key Features

- ASUS Dual Intelligent Processors 4 With 4-Way Optimization
- ASUS Exclusive USB 3.0 Boost
- ASUS Wi-Fi Go!

2. PACKAGE CONTENTS

What's in the Box

The ASUS Z87 PRO motherboard package typically includes the following components:

- ASUS Z87 PRO Motherboard
- I/O Shield
- SATA Data Cables
- Q-Connectors (for front panel headers)
- Wi-Fi Antenna
- User Manual and Support DVD

This image displays the typical accessories included with the ASUS Z87 PRO motherboard, such as the I/O shield, multiple SATA data cables, Q-connectors for easier front panel header connection, and a Wi-Fi antenna.

3. SETUP

Before You Begin

- Ensure your power supply is compatible with ATX standards.
- Gather necessary tools: Phillips-head screwdriver, anti-static wrist strap.
- Refer to your CPU and memory manuals for specific installation instructions.

Motherboard Installation

1. **Prepare the Case:** Install the I/O shield into your computer case.
2. **Install the Motherboard:** Carefully place the motherboard into the case, aligning the screw holes. Secure it with screws.
3. **Install CPU:** Open the CPU socket lever, align the CPU with the socket (triangle/arrow indicator), gently place it, and close the lever.
4. **Install CPU Cooler:** Follow the cooler manufacturer's instructions to install the CPU cooler.
5. **Install Memory (RAM):** Open the DIMM slot clips, align the memory module notch with the slot key, and press down firmly until the clips lock.
6. **Install Graphics Card (Optional):** Insert your PCIe graphics card into the primary PCIe x16 slot and secure it.
7. **Connect Power Cables:** Connect the 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard.
8. **Connect Storage Devices:** Connect SATA data cables from your storage drives (HDD/SSD) to the SATA ports on the motherboard. Connect power cables from the PSU to the drives.
9. **Connect Front Panel Headers:** Use the Q-connectors to simplify connecting the front panel cables (power button, reset button, USB, audio).

10. **Connect Peripherals:** Connect your monitor, keyboard, mouse, and other peripherals to the appropriate ports on the I/O panel.

This image highlights the rear input/output panel of the ASUS Z87 PRO motherboard, featuring a range of connectivity options including multiple USB 2.0 and 3.0 ports, an Ethernet port, audio jacks, and video outputs such as HDMI, DVI, and DisplayPort for display connectivity.

BIOS Flashback Feature

The ASUS Z87 PRO supports BIOS Flashback, allowing you to update the BIOS without a CPU or memory installed.

1. Download the latest BIOS file from the ASUS support website.
2. Rename the BIOS file according to the instructions in the full manual (e.g. Z87P.CAP).
3. Copy the renamed BIOS file to the root directory of a USB flash drive (FAT16/32 formatted).
4. Insert the USB flash drive into the designated BIOS Flashback USB port on the rear I/O panel.
5. With the system powered off but connected to the PSU, press and hold the BIOS Flashback button until the LED starts blinking.
6. Release the button. The LED will continue to blink and then turn off when the update is complete.

4. OPERATING

First Boot and BIOS Configuration

After assembly, power on your system. Press the DEL key during startup to enter the UEFI BIOS.

- **System Time/Date:** Set the correct system time and date.
- **Boot Order:** Configure your boot device priority (e.g., SSD/HDD for OS, USB for installation).
- **Overclocking (Optional):** The Z87 PRO offers extensive overclocking options. Use ASUS 4-Way Optimization software for automated tuning or manually adjust settings.
- **Fan Control:** Utilize Fan Xpert 2 for precise fan speed control to optimize cooling and noise levels.

Software Installation

Install the operating system of your choice. After OS installation, install the necessary drivers and utilities from the provided support DVD or the ASUS website.

- **Chipset Drivers:** Essential for proper motherboard function.
- **Audio Drivers:** For sound output.
- **LAN/Wi-Fi Drivers:** For network connectivity.
- **USB 3.0 Drivers:** Ensure optimal performance for USB 3.0 devices.
- **ASUS Utilities:** Install ASUS AI Suite 3 for 4-Way Optimization, Fan Xpert 2, and other system monitoring tools.

ASUS Wi-Fi Go!

The Wi-Fi Go! feature provides wireless connectivity and allows for remote control of your PC from smart devices, media streaming, and file transfer. Refer to the ASUS Wi-Fi Go! utility guide for detailed setup and usage.

5. MAINTENANCE

General Care

- Keep the system clean and free of dust to prevent overheating.
- Ensure proper airflow within the computer case.
- Regularly check fan operation.

BIOS Updates

Periodically check the ASUS support website for BIOS updates. Updates can improve stability, compatibility, and performance. Follow the BIOS Flashback procedure or use the in-BIOS update utility.

Driver Updates

Keep your drivers updated to ensure optimal performance and compatibility with new hardware and software.

6. TROUBLESHOOTING

Common Issues and Solutions

- **No Display / CPU LED Red:**
  - Ensure the CPU is correctly seated and the CPU power cable is connected.
  - Verify RAM modules are properly installed in their slots.
  - Check if the graphics card is fully seated and has power (if applicable).
  - Try clearing the CMOS (refer to the full manual for jumper location).
  - Consider updating the BIOS using the BIOS Flashback feature if you are using a newer CPU that might require a newer BIOS version.

- **System Instability / Crashes:**
  - Check for overheating. Ensure CPU cooler is properly installed and fans are working.
  - Verify RAM stability (run memory diagnostic tools).
  - If overclocked, revert to default settings to test stability.
  - Ensure all power connections are secure.

- **USB 3.0 Devices Not Working:**
  - Install the latest USB 3.0 drivers from the ASUS website.
  - Ensure the devices are connected to the correct USB 3.0 ports.

- **No Network Connectivity:**
  - Install the latest LAN/Wi-Fi drivers.
  - Check network cable connections.
  - Verify Wi-Fi antenna is securely connected.

7. SPECIFICATIONS

Technical Specifications

Feature	Detail

Feature	Detail
Brand	ASUS
Model Name	Z87-PRO
CPU Socket	LGA 1150
Compatible Processors	Intel Core i3-4xxx, Intel Core i5-4xxx, Intel Core i7-4xxx, Intel Core i5-5xxx, Intel Core i7-5xxx
Chipset Type	Intel Z87
RAM Memory Technology	DDR3
Memory Speed	2800 MHz (OC)
Number of USB 2.0 Ports	4
Wireless Type	802.11a, 802.11b, 802.11g, 802.11n
Item Weight	3.37 pounds
Product Dimensions (LxWxH)	2.68 x 10.35 x 12.91 inches
Date First Available	June 1, 2013

8. WARRANTY AND SUPPORT

Warranty Information

ASUS provides a limited warranty for its motherboards. Please refer to the warranty card included in your product packaging or visit the official ASUS website for detailed warranty terms and conditions specific to your region. Keep your proof of purchase for warranty claims.

Technical Support

For further assistance, driver downloads, BIOS updates, or troubleshooting, please visit the official ASUS support website: www.asus.com/support/. You can also contact ASUS customer service for direct support.