GIGABYTE GA-X99-Phoenix SLI

GIGABYTE GA-X99-Phoenix SLI Motherboard User Manual

Model: GA-X99-Phoenix SLI

1. Overview

The GIGABYTE GA-X99-Phoenix SLI is an ATX motherboard designed for high-performance computing. It supports Intel Core i7 Broadwell-E processors on the LGA2011-3 socket and features the Intel X99 chipset. This motherboard is equipped with Quad Channel DDR4 memory support, multiple PCIe slots for 3-Way/2-Way SLI and CrossFire configurations, and advanced storage options including NVMe PCIe Gen3 x4 M.2 and U.2 interfaces. It also integrates Intel USB 3.1 with Type-C, dual Intel Gigabit Ethernet, and Intel 802.11ac wireless connectivity.

Figure 1: Top-down view of the GIGABYTE GA-X99-Phoenix SLI motherboard, showcasing its layout including the CPU socket, RAM slots, PCIe slots, and various connectors.

2. Setup and Installation

2.1 Pre-Installation Checklist

- **Case Compatibility:** Ensure your PC case supports the E-ATX form factor. Standard ATX cases may not accommodate this motherboard.
- **Processor:** Verify you have an Intel Core i7 processor compatible with the LGA 2011-3 socket.
- **Memory:** Use DDR4 DIMMs. The motherboard supports Quad Channel, Registered / Non-ECC Unbuffered DDR4.

- **Power Supply:** A stable power supply unit (PSU) with sufficient wattage is crucial for system stability.

2.2 Motherboard Installation

1. **Prepare the Case:** Install the I/O shield into the rear opening of your PC case.
2. **Mount the Motherboard:** Carefully align the motherboard with the standoffs in your case and secure it with screws.
3. **Install CPU:** Open the CPU socket lever, align the CPU with the socket (matching the golden triangle on the CPU to the mark on the socket), gently place the CPU, and close the lever.
4. **Install CPU Cooler:** Attach your chosen CPU cooler according to its manufacturer's instructions.
5. **Install Memory (RAM):** Open the clips on the DDR4 DIMM slots. Align the memory modules with the slots, ensuring the notch on the module matches the key in the slot. Press down firmly until the clips snap into place. For optimal performance, populate memory in a quad-channel configuration as recommended by the motherboard manual.
6. **Connect Power:** Connect the 24-pin ATX main power connector and the 8-pin CPU power connector from your PSU to the motherboard.
7. **Connect Storage Devices:** Connect SATA, M.2, or U.2 drives to the appropriate ports.
8. **Connect Peripherals:** Connect front panel headers (power, reset, USB, audio), USB devices, and other peripherals.

Figure 2: Angled view of the motherboard, highlighting the rear I/O panel and the layout of the PCIe and RAM slots.

2.3 Initial Boot and BIOS Access

After connecting all necessary components, power on your system. During the Power-On Self-Test (POST), press the **DEL** key repeatedly to enter the UEFI BIOS setup. You may also press the **End** key during POST to access Q-Flash for BIOS updates.

3. Operating the Motherboard

3.1 UEFI BIOS Navigation

The GIGABYTE UEFI BIOS provides a graphical interface for system configuration. While mouse navigation is available, some users may find the keyboard more responsive for precise control due to potential mouse lag within the BIOS environment.

3.2 Overclocking Features

This motherboard offers robust overclocking capabilities. For users new to overclocking, GIGABYTE's**EasyTune** utility (part of the APP Center) provides one-click overclocking options (e.g., 3.8GHz, 4.0GHz, 4.2GHz) for compatible CPUs. Memory overclocking can be adjusted directly in the BIOS by selecting desired speeds from a dropdown menu, allowing the motherboard to manage voltage settings automatically.

3.3 Software Utilities

The **GIGABYTE APP Center** provides access to various utilities, including:

- **EasyTune:** For system tuning, monitoring, and overclocking.
- **Cloud Station:** For cloud-based data management and sharing.
- Other utilities for fan control, system information, and more.

3.4 Audio and Network

The motherboard features 115dB SNR HD Audio with a built-in rear audio amplifier for enhanced sound quality. Network connectivity is provided by Dual Intel Gigabit Ethernet LAN ports, which can be optimized with cFosSpeed Internet Accelerator Software, and integrated Intel 802.11ac Dual Band Wireless with Bluetooth 4.2.

Figure 3: Close-up of the rear I/O panel, showing various ports including USB, Ethernet, audio jacks, and wireless antenna connectors.

4. Maintenance

4.1 CMOS Battery

The motherboard uses a Lithium Metal battery (CR2032) to retain BIOS settings and the system clock when the computer is

powered off. If you experience issues with incorrect time/date or lost BIOS settings, the CMOS battery may need replacement. Refer to the motherboard diagram for its location.

4.2 BIOS Updates

GIGABYTE's **Q-Flash Plus** utility allows you to update the BIOS without installing a CPU, memory, or graphics card. Simply download the latest BIOS version from the GIGABYTE website, place it on a USB flash drive, and follow the instructions for Q-Flash Plus. Regular BIOS updates can improve system stability, compatibility, and performance.

5. Troubleshooting

5.1 Common Issues

- **System Fails to POST (Power-On Self-Test):**
  - Check all power connections (24-pin ATX, 8-pin CPU).
  - Ensure CPU and RAM are correctly seated.
  - Verify the CPU cooler is properly installed.
  - Try booting with only essential components (CPU, one RAM stick, GPU if no integrated graphics).
- **System Freezes or is Unstable:**
  - Ensure the BIOS is updated to the latest stable version. Early BIOS versions may have compatibility issues.
  - Check CPU and GPU temperatures to rule out overheating.
  - If overclocking, revert to default settings to check for stability.
  - Run memory diagnostic tools to check RAM integrity.
- **No Debug Code LED:** This motherboard does not feature a debug code LED. Troubleshooting will rely on beep codes (if enabled) or visual inspection of components.
- **Mouse Lag in BIOS:** This is a known characteristic for some users. Use keyboard navigation for a more responsive experience.

6. Specifications

Feature	Specification
Brand	GIGABYTE
Model Name	GA-X99-Phoenix SLI
CPU Socket	LGA 2011-3
Compatible Processors	Intel Core i7 (Broadwell-E)
Chipset Type	Intel X99
RAM Memory Technology	DDR4 SDRAM
Memory Channels	Quad Channel

Feature	Specification
Max Memory Capacity	Up to 256 GB (8 DIMMs)
Graphics Interface	PCIe Gen3 x16 slots (Supports 3-Way/2-Way SLI & CrossFire)
Storage Interfaces	NVMe PCIe Gen3 x4 22110 M.2, U.2, SATA Express, SATA 6Gb/s
USB Ports	Intel USB 3.1 (Type-A & Type-C), USB 3.0, USB 2.0
LAN	Dual Intel Gigabit Ethernet
Wireless Connectivity	Intel 802.11ac Dual Band Wireless, Bluetooth 4.2
Audio	115dB SNR HD Audio with Built-in Rear Audio Amplifier
Form Factor	E-ATX (14.48 x 12.2 x 3.85 inches)
Special Features	Ambient Surround LED, Ultra Durable Metal Shielding, Anti-Sulfur Resistors, Anti-Rust Rear I/O, Dual Hybrid Fan Headers, GIGABYTE UEFI Dual BIOS with Q-Flash Plus
CMOS Battery	1 Lithium Metal battery required