**Biostar TB250-BTC**

# Biostar TB250-BTC Motherboard User Manual
Model: TB250-BTC

## 1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, maintenance, and troubleshooting of the Biostar TB250-BTC motherboard. Designed for Intel LGA1151 processors, this ATX motherboard supports DDR4 memory and features multiple PCI Express slots, making it suitable for various computing applications, including specialized setups.

## 2. SETUP AND INSTALLATION

Before beginning installation, ensure your workspace is clean, well-lit, and free of static electricity. Use an anti-static wrist strap to prevent damage to components.

### 2.1 Motherboard Overview

*Image: Top-down view of the Biostar TB250-BTC motherboard, showing the LGA1151 CPU socket, DDR4 RAM slots, PCI Express slots, and various connectors.*

## 2.2 CPU Installation

Carefully open the LGA1151 CPU socket lever. Align the triangular mark on your Intel LGA1151 processor with the corresponding mark on the socket. Gently place the CPU into the socket without forcing it. Close the lever to secure the CPU.

## 2.3 RAM Installation

The motherboard supports DDR4 memory. Open the clips on both ends of the DIMM slots. Align the notch on the DDR4 memory module with the key in the DIMM slot. Insert the module firmly until the clips snap into place. Ensure both clips are fully closed.

## 2.4 Motherboard Mounting

Install standoffs in your PC case according to the ATX form factor. Carefully place the motherboard onto the standoffs, aligning the screw holes. Secure the motherboard with screws, ensuring not to overtighten.

## 2.5 Power Connections

Connect the 24-pin ATX power connector from your power supply unit (PSU) to the main power socket on the motherboard. Connect the 8-pin (or 4-pin) CPU power connector to the corresponding socket near the CPU.

## 2.6 PCI Express Device Installation

The TB250-BTC features multiple PCI Express slots. For graphics cards or other expansion cards, align the card with an available PCIe slot and press firmly until it is seated. Secure the card with a screw to the PC case. For multi-GPU setups, ensure adequate power delivery and cooling.

## 2.7 Storage Device Connections

Connect SATA data cables from your storage devices (HDDs, SSDs) to the SATA ports on the motherboard.

Connect SATA power cables from your PSU to the storage devices.

## 2.8 Front Panel Connectors

Connect the front panel cables (power button, reset button, HDD LED, power LED, USB ports, audio jacks) to their respective headers on the motherboard. Refer to the motherboard diagram for correct pin assignments.

# 3. OPERATING INSTRUCTIONS

## 3.1 Initial Boot and BIOS Access

After all components are installed and connected, power on your system. To access the BIOS/UEFI setup utility, press the `DEL` key repeatedly during startup. The BIOS allows configuration of system settings, boot order, and hardware parameters.

## 3.2 BIOS Configuration for Multi-GPU (Mining Mode)

For systems utilizing multiple PCI Express graphics cards, especially for specialized applications like cryptocurrency mining, specific BIOS settings may be required:

1. Enter the BIOS setup utility.
2. Navigate to the **Chipset** or **PCIe Subsystem Settings** section.
3. Locate the **Mining Mode** option and set it to **Enabled**. This setting optimizes the motherboard for multiple GPU detection and stability.
4. Ensure **PCIe Slot Speed** is set to **Gen2** for optimal compatibility with risers and multiple GPUs.
5. In the **Boot** section, set **CSM Support** to **Enabled** initially if experiencing boot issues with graphics cards. After successful boot, you may disable it if desired.
6. Save changes and exit the BIOS.

## 3.3 Operating System Installation

Insert your operating system installation media (USB drive or DVD). Configure the boot order in the BIOS to prioritize the installation media. Follow the on-screen prompts to install your preferred operating system (e.g., Windows 10, Windows 7).

## 3.4 Driver Installation

After OS installation, install the necessary drivers for the motherboard chipset, audio, LAN, and any other integrated components. These drivers are typically provided on a support CD/DVD or can be downloaded from the Biostar official website.

# 4. MAINTENANCE

Regular maintenance helps ensure the longevity and stable operation of your motherboard and system.

## 4.1 Cleaning

Periodically clean dust from the motherboard and other components using compressed air. Ensure the system is powered off and unplugged before cleaning. Avoid using liquids or abrasive materials.

## 4.2 BIOS Updates

Biostar may release BIOS updates to improve compatibility, stability, or add new features. Always download BIOS updates from the official Biostar website. Follow the provided instructions carefully, as an incorrect BIOS update can

render the motherboard inoperable. It is recommended to perform BIOS updates only when necessary and with a stable power supply.

## 4.3 Component Checks

Occasionally inspect all cable connections (power, data, front panel) to ensure they are secure. Check for any signs of physical damage or overheating on components.

# 5. TROUBLESHOOTING

This section addresses common issues you might encounter with your Biostar TB250-BTC motherboard.

## 5.1 No Power / No Boot

- Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected to the motherboard and PSU.
- Verify the PSU is switched on and connected to a working power outlet.
- Check front panel power button connections.
- Try booting with minimal components (CPU, one RAM stick, integrated graphics if available) to isolate the issue.

## 5.2 System Instability / Random Restarts

- Check RAM compatibility and ensure modules are properly seated. Incompatible memory (e.g., certain DDR4 2800MHz modules) can cause instability; try different modules or lower speeds (2400MHz is recommended).
- Ensure adequate cooling for CPU and other components.
- Verify PSU wattage is sufficient for all installed components, especially multiple GPUs.
- Update BIOS to the latest stable version.

## 5.3 Multiple GPU Detection Issues

- Ensure **Mining Mode** is **Enabled** in the BIOS.
- Set **PCIe Slot Speed** to **Gen2** in the BIOS for all relevant slots.
- Verify all GPU risers and power connections are secure and functional.
- Some configurations may have limitations on mixing NVIDIA and AMD cards or the total number of cards. Test with fewer cards to identify potential conflicts.
- Ensure your operating system and drivers are up to date.

## 5.4 USB Boot Issues

- If the system interrupts USB ports during boot, try enabling **CSM Support** in the BIOS under the **Boot** section.
- Ensure your USB drive is properly formatted and contains a bootable image.
- Try different USB ports (USB 2.0 ports might be more reliable for initial boot than USB 3.0).

## 5.5 BIOS Reset (Clear CMOS)

If BIOS settings become corrupted or prevent booting, you can reset the CMOS:

1. Power off the system and unplug the power cord.
2. Locate the **CLR_CMOS** jumper on the motherboard (refer to the motherboard manual for exact location).
3. Move the jumper from pins 1-2 to 2-3 for 5-10 seconds, then move it back to 1-2.
4. Alternatively, remove the CMOS battery for 1-2 minutes, then reinsert it.
5. Reconnect power and boot the system. You may need to reconfigure basic BIOS settings.

# 6. SPECIFICATIONS

| Feature | Detail |
|---|---|
| Brand | Biostar |
| Model Name | TB250-BTC |
| CPU Socket | LGA 1151 |
| Compatible Processors | Intel Core i7, i5, i3 (6th/7th Generation) |
| Chipset Type | Intel B250 |
| RAM Memory Technology | DDR4 |
| Memory Speed | 2400 MHz (Max) |
| Expansion Slots | 1 x PCIe 3.0 x16, 5 x PCIe 3.0 x1 (total 6 PCIe slots) |
| Storage | 6 x SATA III (6Gb/s) ports |
| USB Ports | 4 x USB 2.0, 2 x USB 3.0 (Rear I/O), Internal headers for additional USB ports |
| Audio | Realtek ALC887 8-Channel HD Audio |
| LAN | Realtek RTL8111H Gigabit LAN |
| Form Factor | ATX |
| Dimensions (LxWxH) | 13.2 x 10.2 x 2.5 inches |
| Operating System Support | Windows 10, Windows 7 |



*Image: Rear I/O panel of the Biostar TB250-BTC motherboard, showing PS/2 ports, DVI, USB 2.0, USB 3.0, LAN, and audio jacks.*

# 7. WARRANTY INFORMATION

For detailed warranty terms and conditions, please refer to the official Biostar website or the warranty card included with your product. Warranty coverage typically includes defects in materials and workmanship under normal use. Keep your proof of purchase for warranty claims.

# 8. TECHNICAL SUPPORT

If you encounter issues that cannot be resolved using this manual, please contact Biostar technical support. You can

find support resources, driver downloads, and contact information on the official Biostar website:

**Visit Biostar Support Website**

When contacting support, have your motherboard model (TB250-BTC) and a detailed description of your issue ready.