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ASRock B660M PRO RS

ASRock B660M Pro RS MicroATX Motherboard User Manual

Model: B660M PRO RS

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your ASRock B660M Pro RS MicroATX Motherboard. This motherboard is designed to support 12th Generation Intel Core Processors (LGA1700) and DDR4 memory, offering a balanced platform for various computing needs.



Image: The ASRock B660M Pro RS motherboard displayed alongside its retail packaging, highlighting the product's branding and design.

2. Setup and Installation

Careful installation is crucial for optimal performance. Please follow these steps:

2.1. Preparing the Motherboard

Before installing any components, ensure the motherboard is placed on a non-conductive surface. Refer to the diagram below for component locations.



Image: A top-down view of the ASRock B660M Pro RS motherboard, showing the CPU socket, RAM slots, PCIe slots, and M.2 slots.

2.2. CPU Installation (LGA1700)

1. Open the CPU socket lever.
2. Carefully align the CPU (Intel LGA1700) with the socket, ensuring the notches match. Do not force the CPU into the socket.
3. Close the lever to secure the CPU.
4. Install the CPU cooler according to its manufacturer's instructions.

2.3. RAM Installation (DDR4)

1. Open the clips on both ends of the DDR4 memory slots.
2. Align the memory module with the slot, ensuring the notch on the module matches the key in the slot.
3. Press down firmly on both ends of the memory module until the clips snap into place.

2.4. M.2 SSD Installation

This motherboard supports PCIe 4.0 high-speed M.2 SSDs for rapid data transfer.

Image: A close-up view of the M.2 slots on the ASRock motherboard, labeled 'Hyper M.2 SSD' and 'Ultra M.2 SSD', illustrating support for multiple PCIe 4.0 M.2 storage devices.

1. Locate the M.2 slots on the motherboard.
2. Remove the M.2 screw and standoff.
3. Insert the M.2 SSD into the slot at an angle.
4. Gently push down the SSD and secure it with the screw.

2.5. Power Connections

Connect the 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard.

2.6. Peripheral Connections

Connect your storage drives (SATA), front panel connectors (USB, audio, power/reset switches), and any other necessary peripherals.

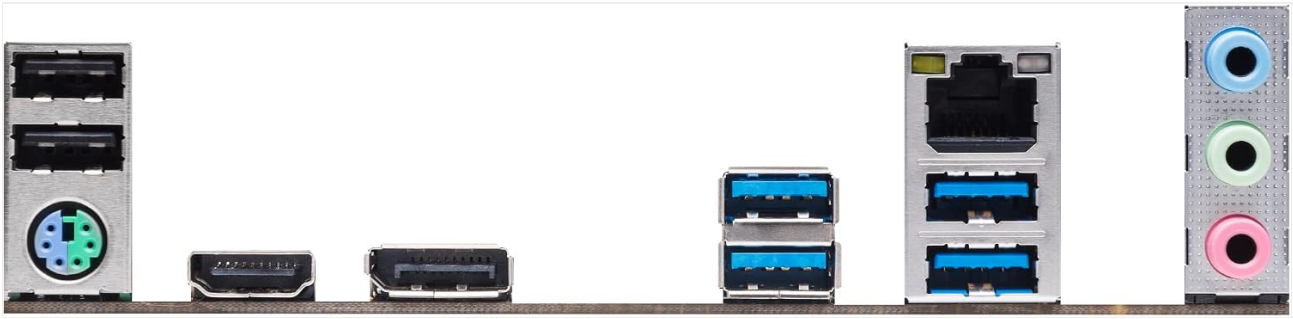


Image: A detailed view of the rear input/output (I/O) panel of the ASRock B660M Pro RS motherboard, showing various ports including USB, Ethernet, HDMI, DisplayPort, and audio jacks.

2.7. BIOS Flashback for Newer CPUs

If you are using a 13th or 14th generation Intel Core processor, you may need to update the BIOS using the BIOS Flashback feature before initial boot-up. Refer to the ASRock website for specific instructions on using this feature.

3. Operating Instructions

3.1. Initial Boot-Up and BIOS/UEFI

Upon first power-on, the system will enter the BIOS/UEFI setup utility. You can access this by pressing the `Del` or `F2` key during startup. The BIOS interface is designed for easy navigation.

3.2. Operating System Installation

Insert your operating system installation media (USB drive or DVD) and follow the on-screen prompts. Modern operating systems like Windows 11 may automatically install many necessary drivers.

3.3. Driver Installation

For optimal performance, install the latest drivers from the ASRock support website. This includes chipset, audio, LAN, and graphics drivers.

3.4. Nahimic Audio

This motherboard features Nahimic Audio technology, providing an enhanced audio experience for headphones, headsets, speakers, and other audio outputs.



Image: A graphic illustrating the Nahimic Audio feature, emphasizing its ability to deliver an immersive listening experience with vivid details across various audio devices.

3.5. Polychrome RGB

Customize your system's aesthetics with Polychrome RGB. The motherboard includes onboard RGB headers and addressable RGB headers, allowing synchronization of RGB LED devices for unique lighting effects.



Image: A collage showcasing various PC components illuminated with customizable RGB lighting, demonstrating the Polychrome RGB synchronization feature.

4. Maintenance

4.1. General Cleaning

Regularly clean your computer's interior to prevent dust buildup, which can affect cooling and performance. Use compressed air to remove dust from fans and heatsinks. Ensure the system is powered off and unplugged before cleaning.

4.2. BIOS Updates

Periodically check the ASRock website for BIOS updates. BIOS updates can improve system stability, add support for new hardware, or fix bugs. Follow the instructions provided by ASRock carefully when updating the BIOS.

4.3. Driver Updates

Keep your drivers updated to ensure compatibility and optimal performance with your operating system and hardware. Download drivers only from the official ASRock support page.

5. Troubleshooting

If you encounter issues, consider the following common troubleshooting steps:

- **No Power/No Boot:** Double-check all power connections (24-pin ATX, 8-pin CPU, GPU). Ensure the power supply is switched on.
- **No Display:** Verify that your monitor is connected to the correct graphics output (either integrated graphics on the motherboard or a dedicated graphics card). Reseat the graphics card and RAM modules.
- **System Instability/Crashes:** This can often be related to RAM. Try reseating RAM modules or testing them

individually. Ensure your CPU cooler is properly installed and making good contact.

- **Memory Slot Issues:** If specific memory slots are not functioning, ensure RAM modules are fully seated. Test with known-good RAM in different slots.
- **BIOS/UEFI Issues:** If you cannot enter BIOS or experience unexpected behavior, try clearing the CMOS (Complementary Metal-Oxide-Semiconductor) by removing the CMOS battery for a few minutes or using the clear CMOS jumper (refer to the motherboard diagram).

For persistent issues, refer to the ASRock support website or contact their technical support. Be prepared to provide detailed information about your system configuration and the problem encountered.

6. Specifications

The ASRock B660M Pro RS motherboard offers the following technical specifications:

Feature	Specification
Brand	ASRock
Model Name	B660M PRO RS
CPU Socket	LGA 1700
Compatible Processors	14th/13th/12th Gen Intel Core
Chipset Type	Intel B660
RAM Memory Technology	DDR4
Memory Speed	2133 MHz (Supports DDR4 4800MHz (OC))
PCIe Slots	1 PCIe 4.0 x16, 1 PCIe 3.0 x16, 1 PCIe 3.0 x1
M.2 Slots	Multiple (PCIe 4.0 support)
WiFi Support	1 M.2 Key-E for WiFi
Power Design	8 Phase Power Design
USB 2.0 Ports	9
Form Factor	MicroATX
Product Dimensions (LxWxH)	11.81 x 7.87 x 1.97 inches
Item Weight	2.4 pounds
First Available Date	January 25, 2022

Note: Specifications are subject to change without notice. Please refer to the official ASRock product page for the most up-to-date information.

7. Warranty and Support

7.1. Warranty Information

For detailed warranty terms and conditions, please refer to the warranty card included with your product or visit the official ASRock website. Warranty coverage typically includes defects in materials and workmanship under normal use.

7.2. Technical Support

If you require technical assistance, please visit the ASRock support page on their official website. You can find drivers, BIOS updates, FAQs, and contact information for technical support. When contacting support, have your product model and serial number ready.

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Question

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Details

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