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ASRock B760 PRO RS/D4

ASRock B760 Pro RS/D4 Motherboard User Manual

Model: B760 PRO RS/D4 | Brand: ASRock

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your ASRock B760 Pro RS/D4 motherboard. Please read this manual thoroughly before installing or using the product to ensure proper functionality and to prevent damage.
The ASRock B760 Pro RS/D4 is an ATX motherboard designed to support 12th, 13th, and 14th Generation Intel Core Processors on the LGA1700 socket. It features DDR4 memory support up to 5333MHz (OC), multiple PCIe Gen4 slots, dual M.2 slots, 2.5G LAN, USB 3.2 Gen2 Type-C, and Nahimic Audio.



Image 1.1: ASRock B760 Pro RS/D4 Motherboard with its retail packaging.

2. Package Contents

Verify that all items listed below are present in your motherboard package. If any item is missing or damaged, contact your retailer.

- ASRock B760 Pro RS/D4 Motherboard
- User Manual

- SATA Data Cables
- M.2 Screws/Standoffs



Image 2.1: Contents typically included with the ASRock B760 Pro RS/D4 motherboard: the motherboard, user manual, SATA cables, and M.2 mounting hardware.

3. Specifications

Below are the key technical specifications for the ASRock B760 Pro RS/D4 motherboard:

Feature	Detail
CPU Socket	LGA 1700
Compatible Processors	12th, 13th, 14th Gen Intel Core
Chipset	Intel B760
RAM Memory Technology	DDR4
Memory Clock Speed	Up to 5333MHz (OC)
PCIe Slots	2x PCIe 4.0 x16, 1x PCIe 3.0 x16, 1x PCIe 3.0 x1

M.2 Slots	2x Hyper M.2 (PCIe Gen4x4), 1x M.2 (PCIe Gen4x2), 1x M.2 Key E for WiFi
SATA Ports	4x SATA3 6.0 Gbps
LAN	Dragon 2.5G LAN
USB Ports (Rear)	1x USB 3.2 Gen1 Type-C, 5x USB 3.2 Gen1 Type-A, 2x USB 2.0
USB Ports (Front)	1x USB 3.2 Gen2 Type-C, 2x USB 2.0
Graphics Output	HDMI, DisplayPort
Audio	Realtek ALC897 7.1 CH HD Audio Codec, Nahimic Audio
Form Factor	ATX
Dimensions	1.1 x 9.7 x 6.5 inches (Product), 12 x 9.6 inches (Motherboard)
Weight	2.2 pounds

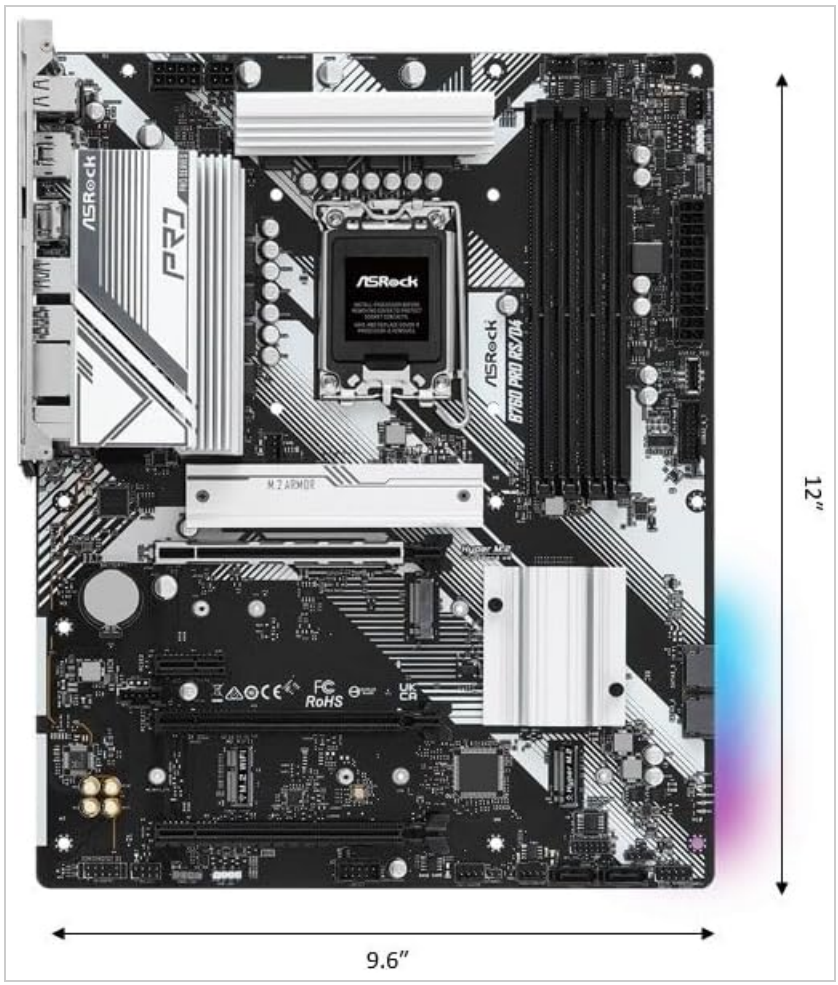


Image 3.1: Physical dimensions of the ASRock B760 Pro RS/D4 motherboard, illustrating its ATX form factor.

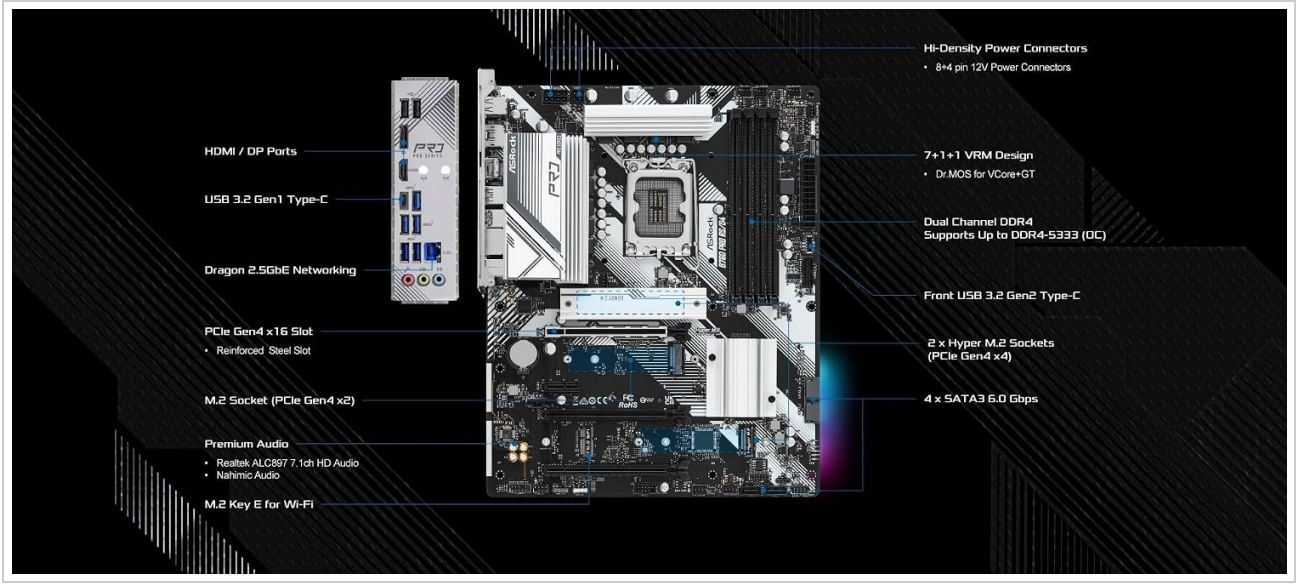


Image 3.2: Detailed diagram highlighting key features and connectivity options on the ASRock B760 Pro RS/D4 motherboard, including power connectors, VRM design, memory slots, PCIe slots, M.2 sockets, SATA ports, and rear I/O ports.

4. Setup and Installation

This section guides you through the physical installation of the motherboard and its components.

4.1 Safety Precautions

- Always disconnect the power supply from the wall outlet before handling any components.
- Wear an anti-static wrist strap or frequently touch a grounded metal object to discharge static electricity.
- Handle components by their edges to avoid touching sensitive circuitry.

4.2 Installing the CPU

1. Locate the LGA1700 socket on the motherboard.
2. Open the CPU socket lever and lift the load plate.
3. Carefully align the CPU with the socket, ensuring the triangular mark on the CPU matches the mark on the socket. Do not force the CPU into the socket.
4. Lower the load plate and secure it with the lever.
5. Apply thermal paste to the CPU and install the CPU cooler according to its manufacturer's instructions.

4.3 Installing DDR4 Memory

1. Locate the DDR4 DIMM slots. For dual-channel operation, refer to the motherboard manual for recommended slot configurations (typically A2 and B2).
2. Open the clips at both ends of the DIMM slot.
3. Align the memory module with the slot, ensuring the notch on the module matches the key in the slot.
4. Press down firmly on both ends of the memory module until the clips snap into place.

4.4 Installing M.2 SSDs

1. Locate the M.2 sockets on the motherboard. The B760 Pro RS/D4 has two Hyper M.2 (PCIe Gen4x4) and one M.2 (PCIe Gen4x2) slot.
2. Remove the M.2 heatsink (if present) and the pre-installed standoff/screw from the desired M.2 slot.
3. Insert the M.2 SSD into the slot at a 30-degree angle.
4. Gently push the SSD down and secure it with the standoff and screw. Reinstall the heatsink if applicable.

4.5 Installing PCIe Expansion Cards

1. Locate the desired PCIe slot (e.g., PCIe 4.0 x16 for a graphics card).
2. Remove the corresponding expansion slot cover from your PC case.
3. Align the expansion card with the slot and press down firmly until it is seated correctly.
4. Secure the card to the case with a screw or latch.

4.6 Connecting Power Supply

- Connect the 24-pin ATX power connector from your power supply to the motherboard.
- Connect the 8-pin (or 8+4-pin) CPU power connector(s) to the motherboard.
- Connect SATA power cables to SATA devices (SSDs/HDDs) and PCIe power cables to your graphics card, if applicable.

4.7 Connecting Front Panel and USB Headers

- Connect the front panel headers (Power SW, Reset SW, HDD LED, Power LED) to their respective pins on the motherboard. Refer to the motherboard manual for exact pin assignments.
- Connect USB 2.0, USB 3.2 Gen1, and USB 3.2 Gen2 Type-C front panel headers.
- Connect audio headers for front panel audio.

5. Operating Instructions

5.1 Initial Boot and BIOS/UEFI Setup

1. After assembling all components, connect your monitor, keyboard, and mouse.
2. Power on your system. During the boot process, press**Del** or **F2** to enter the BIOS/UEFI setup utility.
3. In the BIOS/UEFI, verify that all installed components (CPU, RAM, storage devices) are detected correctly.
4. Configure boot order to install your operating system from a USB drive or optical disc.
5. Save changes and exit the BIOS/UEFI.

5.2 Driver Installation

After installing your operating system, install the necessary drivers for optimal performance. Drivers can be found on the ASRock support website for your specific motherboard model.

- Chipset Drivers
- LAN Drivers (for 2.5G Ethernet)
- Audio Drivers (Realtek ALC897, Nahimic Audio)
- Graphics Drivers (if using integrated graphics or a dedicated GPU)
- USB Drivers

The motherboard supports ASRock Auto Driver Installer, which can simplify this process.

5.3 Nahimic Audio Configuration

Nahimic Audio enhances your audio experience. Once the audio drivers are installed, you can access the Nahimic Audio software from your operating system to customize sound profiles, virtual surround sound, and other audio enhancements.

5.4 Overclocking (Advanced Users)

The ASRock B760 Pro RS/D4 supports DDR4 memory overclocking up to 5333MHz (OC). Overclocking can increase performance but may also increase heat generation and reduce component lifespan if not done correctly. Proceed with caution and refer to advanced guides for detailed overclocking procedures within the BIOS/UEFI.

6. Maintenance

6.1 BIOS/UEFI Updates

Periodically check the ASRock website for BIOS/UEFI updates. Updates can improve stability, add support for new CPUs or features, and fix bugs. Follow the instructions provided by ASRock carefully when updating the BIOS/UEFI to avoid system damage.

6.2 Driver Updates

Keep your system drivers updated to ensure optimal performance and compatibility. Regularly check the ASRock support website and component manufacturers' websites for the latest drivers.

6.3 Cleaning

Dust accumulation can lead to overheating and component failure. Periodically clean your PC case and motherboard using compressed air. Ensure the system is powered off and unplugged before cleaning.

7. Troubleshooting

This section addresses common issues you might encounter.

7.1 System Does Not Power On

- Check all power connections: 24-pin ATX, 8-pin CPU, and any PCIe power cables.
- Ensure the power supply switch is in the ON position.
- Verify front panel power switch connection to the motherboard.
- Test the power supply with another system or a power supply tester.

7.2 No Display Output

- Ensure the monitor is connected to the correct graphics output (either motherboard HDMI/DP for integrated graphics or dedicated GPU ports).
- Reseat the graphics card and memory modules.
- If using a dedicated graphics card, try removing it and using the integrated graphics (if your CPU supports it) to isolate the issue.

7.3 Component Not Detected (CPU, RAM, SSD)

- Reseat the component.
- Check for bent pins on the CPU socket (if applicable).
- Ensure memory modules are fully seated and in the correct slots for dual-channel operation.
- Verify M.2 SSDs are properly installed and secured.
- Check BIOS/UEFI settings to ensure the component is enabled or detected.

7.4 "GPU + RAM" Boot Issue

Some users have reported an issue where the system may not boot correctly when a dedicated GPU and RAM are installed simultaneously, potentially requiring BIOS tweaking or initial setup with onboard graphics. If you

encounter this, consider the following:

- **Initial Boot with Integrated Graphics:** If your CPU has integrated graphics, try booting the system without the dedicated GPU installed. Once the operating system is installed and updated, install the dedicated GPU.
- **BIOS/UEFI Settings:** Access the BIOS/UEFI and check for settings related to primary display output (PCIe vs. Integrated Graphics) or memory compatibility. Ensure the latest BIOS version is installed.
- **Memory Compatibility:** Verify your RAM is on the motherboard's Qualified Vendor List (QVL) for optimal compatibility.

Refer to the ASRock support website or contact ASRock technical support for specific BIOS settings or solutions related to this issue.

8. Warranty and Support

8.1 Warranty Information

ASRock motherboards typically come with a limited manufacturer's warranty. The duration and terms of the warranty may vary by region and retailer. Please retain your proof of purchase for warranty claims. For detailed warranty information, refer to the warranty card included with your product or visit the official ASRock website.

8.2 Technical Support

If you encounter issues that cannot be resolved using this manual or the troubleshooting steps, please contact ASRock technical support. You can find support contact information and resources on the official ASRock website:

ASRock Official Support Website

Before contacting support, have your motherboard model (B760 PRO RS/D4) and serial number ready, along with a clear description of the problem.

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