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## ASUS PRIME B550-PLUS

# ASUS Prime B550-PLUS Motherboard User Manual

Model: PRIME B550-PLUS

## INTRODUCTION

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The ASUS Prime B550-PLUS is an ATX motherboard designed for AMD AM4 socket processors, including Zen 3 Ryzen 5000 and 3rd Gen AMD Ryzen CPUs. It features PCIe 4.0 support, 1Gb LAN, and comprehensive connectivity options, providing a stable foundation for various computing needs.

## PRODUCT OVERVIEW AND KEY FEATURES

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Figure 1: The ASUS Prime B550-PLUS motherboard alongside its retail packaging.

- **AMD AM4 Socket and PCIe 4.0:** Compatible with Zen 3 Ryzen 5000 and 3rd Gen AMD Ryzen CPUs, offering high-speed data transfer.
- **Ultrafast Connectivity:** Includes one PCIe 4.0 x16 SafeSlot, 1Gb LAN, dual M.2 slots (one with PCIe 4.0 x4 connectivity), USB 3.2 Gen 2 Type-A, HDMI 2.1 (4K@60Hz), DisplayPort 1.2, and a Thunderbolt 3 header.
- **Comprehensive Cooling:** Features a VRM heatsink, chipset heatsink, hybrid fan headers, and Fan Xpert 2 utility for efficient thermal management.
- **5X Protection III:** Provides all-round protection with LANGuard, DRAM overcurrent protection, overvoltage protection, SafeSlot Core safeguards, and a stainless-steel back I/O.
- **Boosted Memory Performance:** ASUS OptiMem proprietary trace layout enables memory kits to operate at higher frequencies with lower voltages.

# Enhanced Power Delivery and Cooling

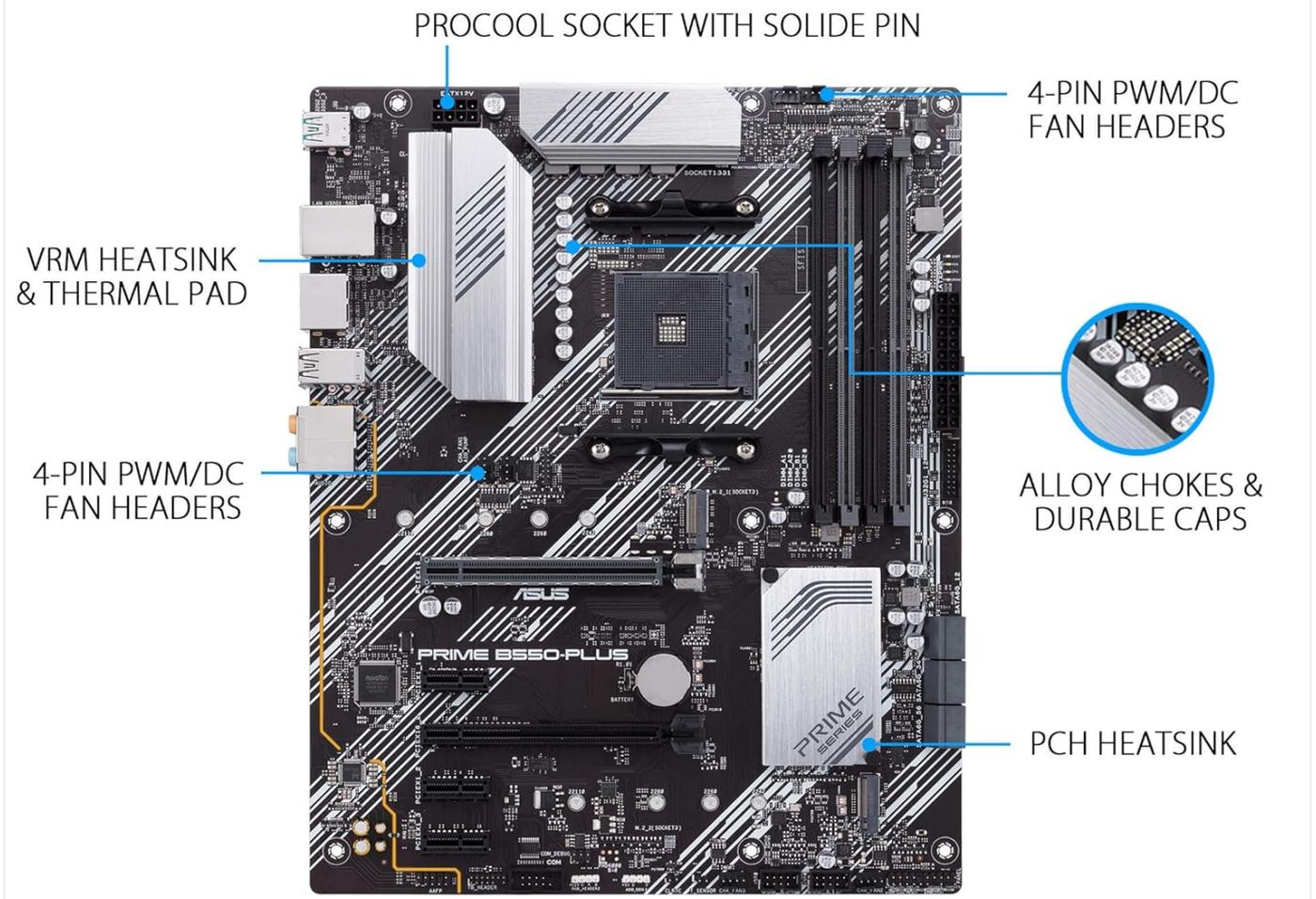


Figure 2: Diagram highlighting the VRM heatsink, PCH heatsink, 4-pin PWM/DC fan headers, alloy chokes, and durable capacitors for enhanced power delivery and cooling.

# Build For Every Productivity

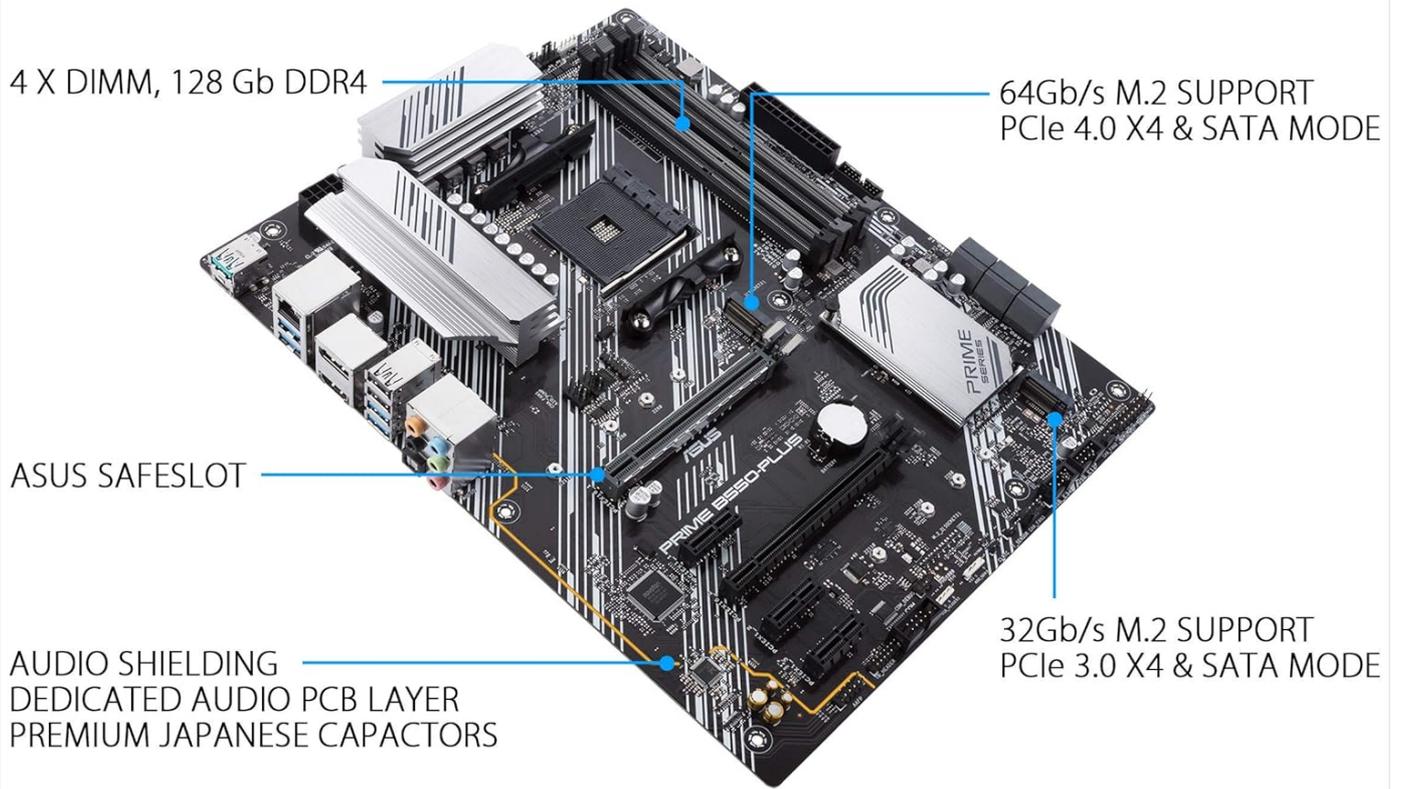


Figure 3: Overview of productivity features including 4 DIMM slots supporting up to 128GB DDR4, 64Gb/s M.2 support (PCIe 4.0 x4 & SATA mode), 32Gb/s M.2 support (PCIe 3.0 x4 & SATA mode), ASUS SafeSlot, audio shielding, dedicated audio PCB layer, and premium Japanese capacitors.

# Personalize Your Build

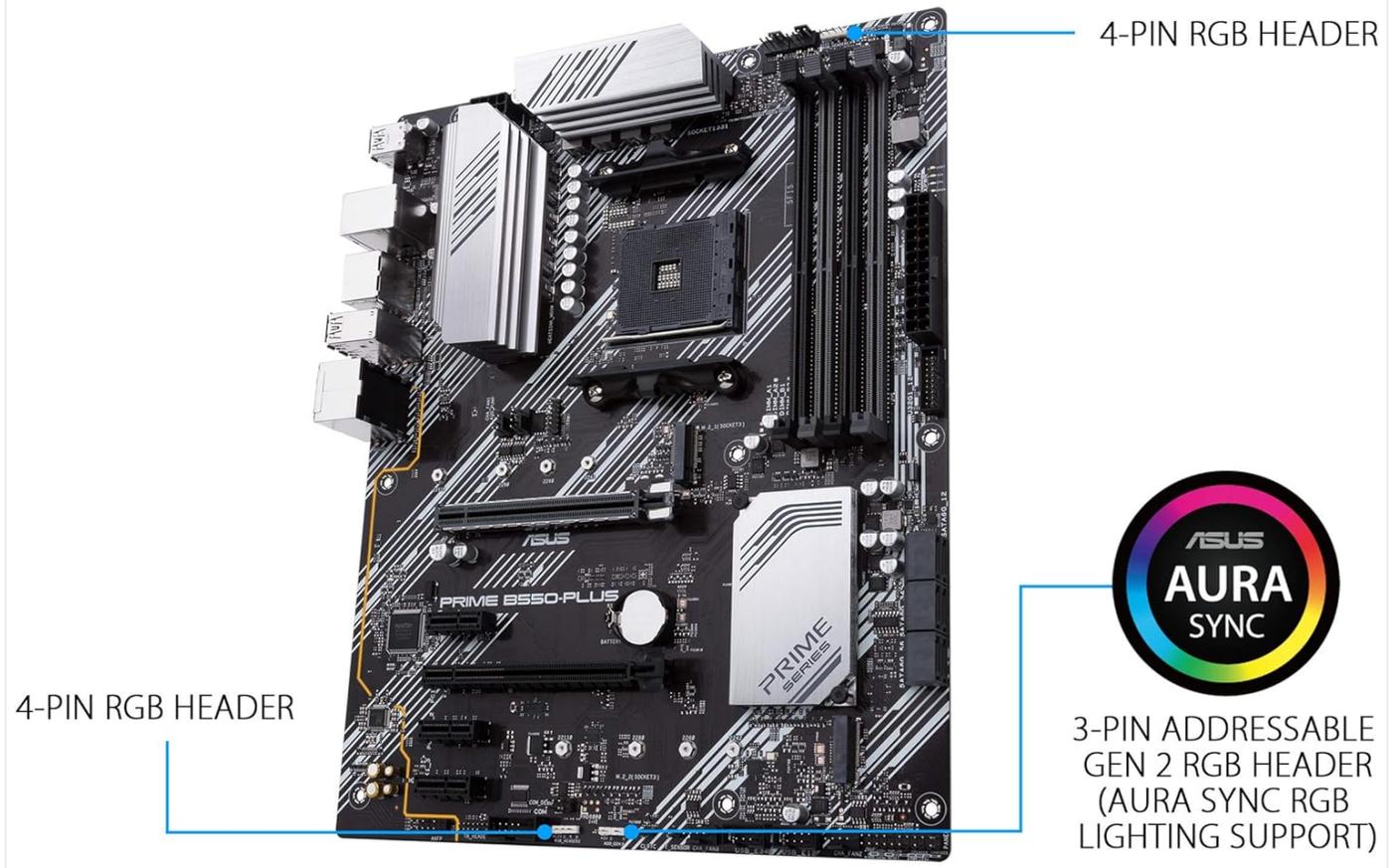


Figure 4: Illustration of personalization options, showing 4-pin RGB headers and a 3-pin Addressable Gen 2 RGB header with Aura Sync lighting support.

# Full Gaming Connectivity

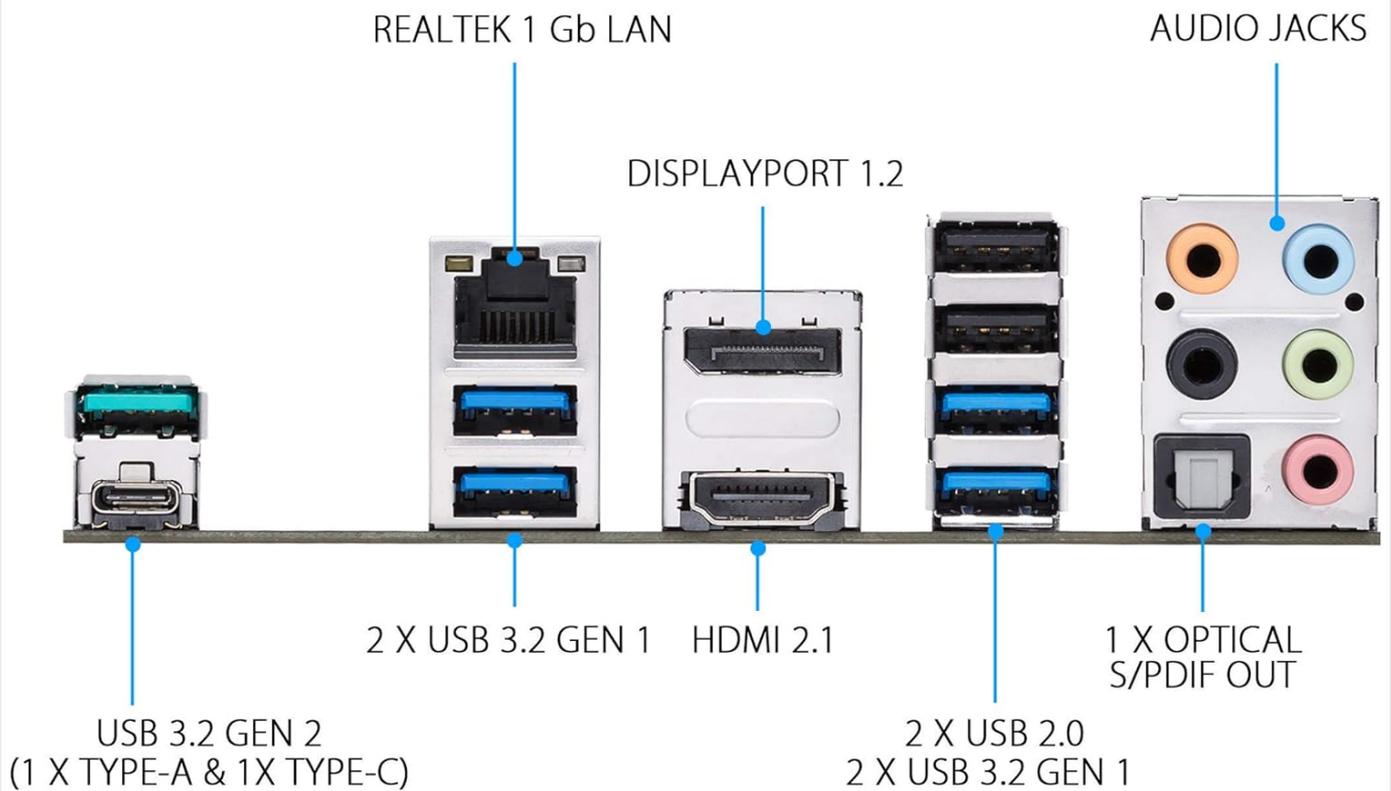


Figure 5: Rear I/O panel showcasing connectivity options: USB 3.2 Gen 2 (Type-A & Type-C), Realtek 1Gb LAN, DisplayPort 1.2, HDMI 2.1, USB 3.2 Gen 1, USB 2.0, and audio jacks with optical S/PDIF out.

## PACKAGE CONTENTS

# What's in the Box

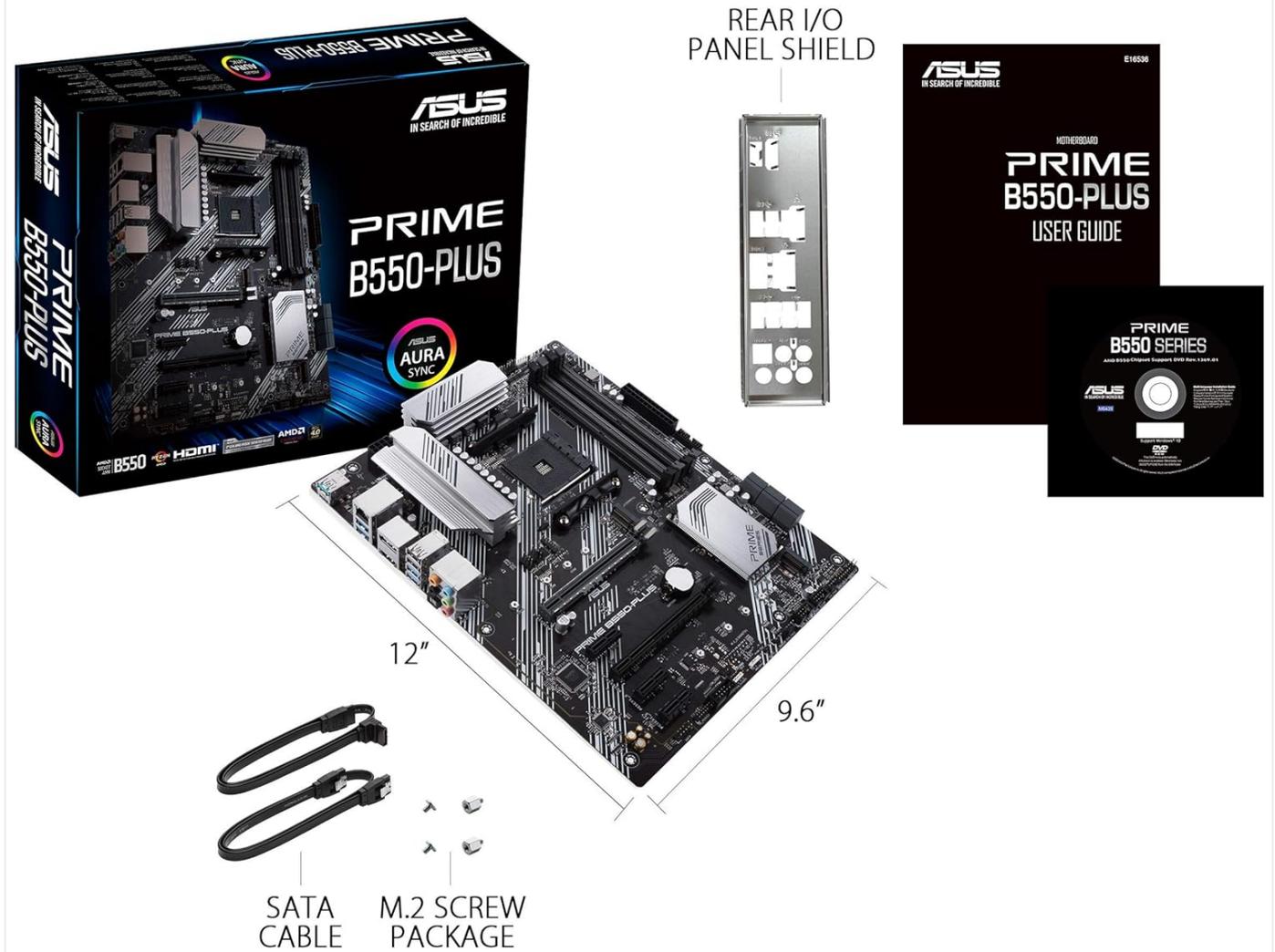


Figure 6: The contents typically found in the ASUS Prime B550-PLUS retail box.

The ASUS Prime B550-PLUS package typically includes:

- ASUS Prime B550-PLUS Motherboard
- Rear I/O Panel Shield
- User Guide / Manual
- Support DVD
- SATA Cables (typically 2)
- M.2 Screw Package

## SETUP AND INSTALLATION

This section provides general guidelines for installing your ASUS Prime B550-PLUS motherboard. For detailed, step-by-step instructions, always refer to the official [User Manual \(PDF\)](#) provided by ASUS.

### Pre-Installation Checklist:

- Ensure all components (CPU, RAM, storage, power supply, graphics card) are compatible with the B550 chipset and AM4 socket.

- Prepare your PC case with appropriate standoffs.
- Gather necessary tools: Phillips-head screwdriver, anti-static wrist strap (recommended).

## Installation Steps (Summary):

1. **Install CPU:** Carefully place the AMD AM4 processor into the CPU socket, aligning the triangle markers. Secure the retention arm.
2. **Install CPU Cooler:** Mount your chosen CPU cooler according to its manufacturer's instructions.
3. **Install RAM:** Insert DDR4 memory modules into the DIMM slots, ensuring they click into place. Refer to the motherboard manual for preferred slot configurations for dual-channel operation.
4. **Install M.2 SSDs:** Secure M.2 solid-state drives into the designated M.2 slots using the provided screws.
5. **Mount Motherboard:** Carefully place the motherboard into the PC case, aligning it with the standoffs. Secure it with screws.
6. **Connect Power:** Connect the 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard.
7. **Connect Storage and Peripherals:** Connect SATA drives, front panel connectors (USB, audio, power/reset buttons, LEDs), and case fans.
8. **Install Graphics Card:** Insert your graphics card into the primary PCIe x16 slot and secure it. Connect PCIe power cables if required.
9. **Initial Boot and BIOS Setup:** Power on the system. Access the BIOS/UEFI setup (usually by pressing Del or F2 during boot) to configure settings, set boot order, and enable features like DOCP/XMP for memory.

*Note: It is highly recommended to update the BIOS to the latest version before installing the operating system, especially when using newer generation CPUs. Refer to the ASUS support website for the latest BIOS files and update procedures.*

## OPERATING INSTRUCTIONS

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Once your system is assembled and the operating system is installed, the ASUS Prime B550-PLUS motherboard operates as the central hub for your PC. Key operational aspects include:

- **BIOS/UEFI Configuration:** The Unified Extensible Firmware Interface (UEFI) provides a graphical interface for managing motherboard settings. Access it during boot-up (typically by pressing Del or F2). Here you can:
  - Adjust boot order.
  - Enable or disable integrated peripherals.
  - Configure fan speeds using Fan Xpert 2.
  - Enable **D.O.C.P. (Direct Over Clock Profile)** or XMP for optimal memory performance. This allows RAM to run at its advertised speeds (e.g., 3200MHz) rather than default JEDEC speeds.
  - Monitor system temperatures and voltages.
- **Driver Installation:** After OS installation, install all necessary drivers from the ASUS support website or the provided support DVD for chipset, LAN, audio, and other integrated components to ensure full functionality.
- **ASUS Software Utilities:** ASUS provides various software utilities (e.g., Armoury Crate for Aura Sync RGB control, AI Suite 3 for system tuning) that can enhance your user experience. Install these from the ASUS website or support DVD as desired.

## MAINTENANCE

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Proper maintenance ensures the longevity and stable operation of your motherboard and PC system:

- **Dust Removal:** Regularly clean dust from inside your PC case, especially from heatsinks (CPU, chipset, VRM) and

fan blades. Use compressed air for best results. Ensure the system is powered off and unplugged before cleaning.

- **Cable Management:** Ensure internal cables are neatly routed to promote good airflow and prevent obstruction of components.
- **BIOS Updates:** Periodically check the ASUS support website for BIOS updates. These can provide performance improvements, bug fixes, and support for new hardware. Follow ASUS's instructions carefully when updating the BIOS.
- **Driver Updates:** Keep your motherboard drivers updated to ensure optimal performance and compatibility with new software and hardware.
- **Physical Inspection:** Occasionally inspect the motherboard for any loose connections, damaged components, or signs of overheating.

## TROUBLESHOOTING

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This section addresses common issues you might encounter. For more in-depth troubleshooting, consult the official [User Manual \(PDF\)](#) or ASUS support resources.

- **System Not Booting / No Display:**
  - Verify all power cables (24-pin ATX, 8-pin CPU, GPU PCIe) are securely connected.
  - Reseat RAM modules. Try booting with only one RAM stick.
  - Reseat the graphics card.
  - Clear CMOS: Power off the system, unplug it, remove the CMOS battery for a few minutes, or use the CLRRTC jumper (refer to manual for location). This resets BIOS settings to default.
- **Operating System Installation Issues (e.g., Windows 11):**
  - Ensure your USB installation media is properly created (e.g., formatted as FAT32, using a GPT partition scheme for UEFI boot).
  - In BIOS, ensure "CSM (Compatibility Support Module)" is disabled and "Secure Boot" is enabled and configured correctly for UEFI mode.
  - Update BIOS to the latest version.
- **RAM Not Running at Advertised Speed (e.g., 3200MHz):**
  - Access the BIOS/UEFI.
  - Navigate to the "Ai Tweaker" or "Extreme Tweaker" section.
  - Enable **D.O.C.P. (Direct Over Clock Profile)** or XMP. Select the profile corresponding to your RAM's advertised speed.
  - Save changes and exit. If the system fails to boot after enabling DOCP/XMP, clear CMOS to revert to default settings.
- **No Internet Connection (LAN):**
  - Ensure the Ethernet cable is securely connected to both the motherboard and the router/modem.
  - Install the latest LAN drivers from the ASUS support website.
  - Check network adapter settings in your operating system.

## SPECIFICATIONS

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Feature	Specification
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Brand	ASUS
Model Name	PRIME B550-PLUS
CPU Socket	Socket AM4
Compatible Processors	AMD 3rd Generation Ryzen, Zen 3 Ryzen 5000 Series
Chipset Type	AMD B550
RAM Memory Technology	DDR4
Memory Speed	Up to 2133 MHz (Base), Higher with DOCP/XMP
Product Dimensions (LxWxH)	10.35 x 2.09 x 12.91 inches
Item Weight	2.09 pounds
LAN	Realtek 1Gb Ethernet
Video Output	HDMI 2.1 (4K@60Hz), DisplayPort 1.2
USB Ports	USB 3.2 Gen 2 Type-A/C, USB 3.2 Gen 1, USB 2.0
PCIe Slots	1x PCIe 4.0 x16 SafeSlot, other PCIe slots
M.2 Slots	Dual M.2 slots (one PCIe 4.0 x4, one PCIe 3.0 x4)

## WARRANTY AND SUPPORT

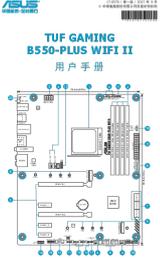
For information regarding product warranty, technical support, driver downloads, and further assistance, please visit the official ASUS support website. You can also refer to the comprehensive [User Manual \(PDF\)](#) for detailed diagrams and instructions.

**ASUS Support Website:** <https://www.asus.com/support/>



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## Related Documents - PRIME B550-PLUS

	<p><a href="#">ASUS TUF GAMING B550-PLUS WIFI II Motherboard User Manual</a></p> <p>This document is the user manual for the ASUS TUF GAMING B550-PLUS WIFI II motherboard. It provides detailed information on installation, component connections, BIOS settings, features, safety guidelines, compliance, warranty, and support.</p>
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<p>PRIME X370-PRO</p>  <p><b>Motherboard</b></p>	<p><a href="#">ASUS PRIME X370-PRO Motherboard User Manual</a></p> <p>This user manual provides detailed information on the ASUS PRIME X370-PRO motherboard, including installation, configuration, BIOS setup, RAID support, and specifications. Learn about its features, components, and safety guidelines.</p>
<p>TUF GAMING B550-PLUS WIFI II</p>  <p><b>Motherboard</b></p>	<p><a href="#">ASUS TUF GAMING B550-PLUS WIFI II Motherboard Handbuch</a></p> <p>Umfassendes Handbuch für das ASUS TUF GAMING B550-PLUS WIFI II Motherboard. Enthält Installationsanleitungen, Spezifikationen, BIOS-Informationen, Sicherheitsrichtlinien und Konformitätserklärungen.</p>
<p>PRIME B550M-A</p>  <p><b>Motherboard</b></p>	<p><a href="#">ASUS PRIME B550M-A Motherboard User Manual and Specifications</a></p> <p>Comprehensive guide to the ASUS PRIME B550M-A motherboard, covering installation, BIOS setup, specifications, safety, and compliance information for AMD Ryzen processors.</p>
<p>ROG STRIX B550-A GAMING</p>  <p><b>Motherboard</b></p>	<p><a href="#">ASUS ROG STRIX B550-A GAMING Motherboard User Manual</a></p> <p>Comprehensive user guide for the ASUS ROG STRIX B550-A GAMING motherboard, covering installation, specifications, BIOS, and system building for AMD AM4 platforms.</p>
<p>PRIME B550M-A AC</p>  <p><b>Motherboard</b></p>	<p><a href="#">ASUS PRIME B550M-A AC Motherboard User Manual</a></p> <p>User manual for the ASUS PRIME B550M-A AC motherboard, covering product introduction, BIOS and RAID support, safety information, package contents, and specifications.</p>