MSI X470 GAMING PRO CARBON

MSI X470 GAMING PRO CARBON Motherboard User Manual

Model: X470 GAMING PRO CARBON

Product Overview

The MSI X470 GAMING PRO CARBON is an ATX form factor motherboard designed for AMD Ryzen and AMD A-series/Athlon processors using the AM4 socket. It features the AMD X470 chipset and supports up to 64GB of Dual DDR4-SDRAM. This motherboard is engineered to provide robust performance and connectivity for gaming and high-performance computing.



Image: The MSI X470 GAMING PRO CARBON motherboard displayed alongside its retail packaging, highlighting the product's branding and design.

Key Features

- Supports AMD Ryzen and AMD A-series / Athlon Processors for socket AM4.
- AMD X470 Chipset for enhanced performance.
- Supports up to 64GB Dual DDR4-SDRAM.
- ATX form factor for standard PC builds.
- Comprehensive connectivity including USB 2.0, USB 3.0 Type-A, USB 3.1 Type-A, USB 3.1 Type-C, Ethernet LAN (RJ-45), PS/2, HDMI, and DisplayPorts.
- Advanced storage support for ultra-fast devices.

Setup Guide

1. Unpacking and Inspection

Carefully remove the motherboard from its packaging. Inspect for any visible damage during transit. Ensure all accessories listed in the product manual are present.



Image: A top-down view of the MSI X470 GAMING PRO CARBON motherboard, showing the layout of components such as the CPU socket, RAM slots, and PCIe slots.

2. Component Installation

1. **CPU Installation:** Open the CPU socket lever. Align the triangular mark on the AMD Ryzen processor with the mark on the socket. Gently place the CPU into the socket without force. Close the lever to secure the CPU.
2. **CPU Cooler Installation:** Install the CPU cooler according to its manufacturer's instructions. Ensure proper thermal paste application and secure mounting.
3. **RAM Installation:** Open the clips on the DDR4 memory slots. Align the notch on the memory module with the key

in the slot. Press down firmly on both ends of the module until the clips snap into place. For dual-channel performance, refer to the motherboard manual for recommended slot configurations (typically slots 2 and 4).

4. **Graphics Card (GPU) Installation:** Open the retention clip on the primary PCIe x16 slot. Align the graphics card with the slot and press down firmly until it is fully seated and the clip locks. Secure the card with a screw to the PC case.
5. **Storage Device Installation:**
    - **SATA Drives:** Connect SATA data cables from the motherboard's SATA ports to your SSDs/HDDs. Connect power cables from your power supply.
    - **M.2 SSDs:** Locate the M.2 slots on the motherboard. Insert the M.2 SSD at an angle and then gently push it down. Secure it with the provided M.2 screw or standoff.



Image: An angled view of the MSI X470 GAMING PRO CARBON motherboard, showcasing the heatsinks, M.2 slots, and RGB lighting elements.

3. Power Supply and Case Connections

- Connect the 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard.
- Connect front panel headers (power button, reset button, HDD LED, power LED) to the corresponding pins on the motherboard. Refer to the motherboard's detailed manual for pinout diagrams.
- Connect USB 2.0, USB 3.0, and audio headers from your case to the motherboard.


GAMING PRO
CARBON
CORE BOOST
DDR4 BOOST
msi
X470 GAMING PRO CARBON
M.2 SHIELD
AUDIO BOOST
msi



Image: A view of the MSI X470 GAMING PRO CARBON motherboard from the rear I/O perspective, showing the various ports available for external connections.



Image: A detailed close-up of the rear input/output (I/O) panel of the MSI X470 GAMING PRO CARBON motherboard, displaying ports such as USB, Ethernet, HDMI, DisplayPort, and audio jacks.

Operating Instructions

1. First Boot and BIOS Setup

After assembling all components, connect your monitor, keyboard, and mouse. Power on the system. Press the `DEL` key repeatedly during startup to enter the BIOS/UEFI setup utility. Here you can:

- Set system date and time.
- Configure boot order for your operating system drive.
- Enable XMP/DOCP for optimal RAM speed (if supported by your RAM).
- Monitor system temperatures and fan speeds.
- Update BIOS (refer to MSI's official website for instructions and latest versions).

2. Operating System Installation

Insert your operating system installation media (USB drive or DVD). Set the boot order in BIOS to prioritize the installation media. Follow the on-screen prompts to install your preferred operating system (e.g., Windows 10, Linux). After installation, install the latest drivers for the chipset, graphics, audio, and network from the MSI support website for your motherboard model.

3. Software and Utilities

MSI provides various software utilities to enhance your experience, such as Mystic Light for RGB control, Dragon Center for system monitoring and optimization, and Live Update for driver and BIOS updates. These can be downloaded from the official MSI website.

Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your motherboard and PC components.

- **Dust Removal:** Periodically clean dust from inside your PC case using compressed air. Pay attention to heatsinks, fans, and PCIe slots. Ensure the system is powered off and unplugged before cleaning.
- **BIOS Updates:** Check the MSI support website for new BIOS versions. Updates can improve compatibility, stability, and performance. Follow update instructions carefully to avoid system damage.
- **Driver Updates:** Keep your chipset, graphics, and other component drivers updated to ensure compatibility and optimal performance with new software and games.

- **Cable Management:** Ensure cables inside the case are neatly routed to improve airflow and prevent obstruction of components.

Troubleshooting

This section provides solutions to common issues you might encounter.

- **No Display Output:**
  - Ensure monitor cables are securely connected to the graphics card (or motherboard if using an APU with integrated graphics).
  - Reseat the graphics card and RAM modules.
  - Check if the monitor is on the correct input source.
- **System Fails to Boot:**
  - Verify all power connectors (24-pin ATX, 8-pin CPU) are firmly seated.
  - Check if the CPU and RAM are correctly installed.
  - Remove all non-essential components (e.g., extra drives, PCIe cards) and try booting with only CPU, one RAM stick, and GPU.
  - Clear CMOS (refer to motherboard manual for jumper/button location).
- **Overheating Issues:**
  - Ensure CPU cooler is properly installed and making good contact with the CPU.
  - Verify case fans are installed correctly and spinning.
  - Clean dust from heatsinks and fans.
  - Check thermal paste application on CPU.
- **Peripheral Not Detected:**
  - Try a different USB port.
  - Ensure drivers for the peripheral are installed.
  - Check BIOS settings for USB port enablement.

Specifications

Feature	Detail
Brand	MSI
Model Name	X470 GAMING PRO CARBON
CPU Socket	Socket AM4
Compatible Processors	AMD A-Series, AMD Athlon, AMD Ryzen
Chipset Type	AMD X470
RAM Memory Technology	DDR4 SDRAM

Feature	Detail
Memory Storage Capacity	Up to 64 GB
Memory Clock Speed	3466 MHz (OC)
Form Factor	ATX
Product Dimensions (LxWxH)	11.97 x 9.61 x 1.97 inches
Item Weight	1.1 pounds
Ports	2x USB 2.0, 4x USB 3.0 Type-A, 1x USB 3.1 Type-A, 1x USB 3.1 Type-C, 1x Ethernet LAN (RJ-45), 1x PS/2, 1x HDMI, 1x DisplayPort
Wireless Type	802.11a (Note: May require additional Wi-Fi module)

Warranty and Support

For detailed warranty information, please refer to the official MSI website or the warranty card included with your product. MSI provides technical support and resources for their products.

- **Online Support:** Visit the official MSI support website for FAQs, driver downloads, BIOS updates, and troubleshooting guides.
- **Contact Support:** For direct assistance, refer to the contact information provided on the MSI website for your region.

Note: Specific warranty terms and conditions may vary by region and retailer. Always retain your proof of purchase.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

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Email

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question