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MSI X470 GAMING PLUS MAX

MSI X470 GAMING PLUS MAX Motherboard User Manual

Model: X470 GAMING PLUS MAX

1. Introduction

This manual provides comprehensive instructions for the installation, configuration, and operation of your MSI X470 GAMING PLUS MAX Motherboard. It is designed to assist users in setting up their system correctly and utilizing all available features. Please read this manual thoroughly before beginning installation.

2. Product Overview

2.1 Key Features

- Supports 1st, 2nd, and 3rd Gen AMD Ryzen™ / Ryzen™ with Radeon™ Vega Graphics and 2nd Gen AMD Ryzen™ with Radeon™ Graphics / Athlon™ with Radeon™ Vega Graphics Desktop Processors for Socket AM4.
- Supports DDR4 Memory, up to 4133(OC) MHz.
- Features Turbo M.2, AMD StoreMI Technology, and AMD Turbo USB 3.2 Gen2 for fast data transfer and storage.
- Equipped with Core Boost technology for optimized power delivery to support multiple CPU cores and enhance performance.
- Integrated Mystic Light and Mystic Light Sync for customizable RGB lighting with 7 colors and 7 effects, allowing synchronization with other compatible RGB solutions.

2.2 Motherboard Layout

Familiarize yourself with the main components and connectors on the motherboard.



Figure 1: Top-down view of the MSI X470 GAMING PLUS MAX Motherboard, highlighting the CPU socket, RAM slots, PCIe slots, and M.2 slots.



Figure 2: Angled view of the motherboard, showing the heatsinks, I/O shield area, and various connectors.

2.3 Rear I/O Panel

The rear I/O panel provides various ports for connecting external devices.

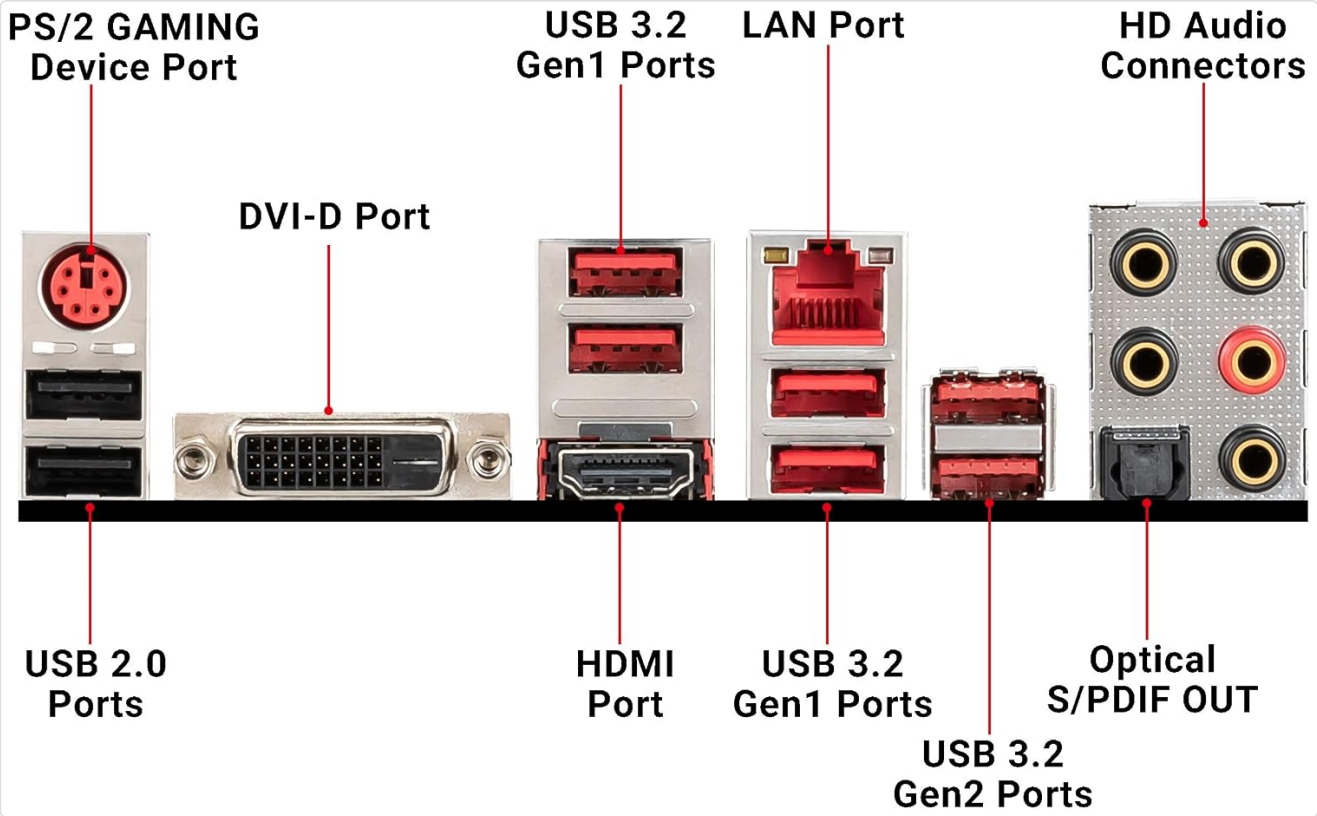


Figure 3: Detailed view of the rear I/O panel, including PS/2, USB 2.0, DVI-D, HDMI, USB 3.2 Gen1, LAN, USB 3.2 Gen2, and HD Audio connectors.

- **PS/2 GAMING Device Port:** For connecting a PS/2 keyboard or mouse.
- **USB 2.0 Ports:** For connecting USB 2.0 devices.
- **DVI-D Port:** For video output (requires an AMD Ryzen CPU with integrated Radeon Graphics).
- **HDMI Port:** For video output (requires an AMD Ryzen CPU with integrated Radeon Graphics).
- **USB 3.2 Gen1 Ports:** High-speed USB ports.
- **LAN Port:** For network connection.
- **USB 3.2 Gen2 Ports:** Ultra-high-speed USB ports.
- **HD Audio Connectors:** For audio input/output.
- **Optical S/PDIF OUT:** For digital audio output.

2.4 Package Contents

Verify that all items are present in the product package.



Figure 4: Overview of included accessories, such as the user manual, quick installation guide, SATA cables, I/O shielding, and driver CD.

- MSI X470 GAMING PLUS MAX Motherboard
- User Manual
- Quick Installation Guide
- 2 x SATA Cables
- I/O Shielding
- Driver CD
- Case Screw Guide
- MSI Case Badge
- Product Registration Card

3. Setup and Installation

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

3.1 Safety Precautions

- Always disconnect the power supply from the wall outlet before touching 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 parts.

3.2 Motherboard Installation

1. **Prepare the Case:** Install the I/O shield into the case's rear opening. Ensure the case stand-offs are correctly aligned with the motherboard's mounting holes. Refer to the "Case Stand-off Notification" guide included in the package.
2. **Install the CPU:** Open the CPU socket lever, align the CPU with the socket (matching the golden triangle on the CPU to the triangle on the socket), gently place the CPU into the socket, and close the lever.
3. **Install the CPU Cooler:** Follow the cooler manufacturer's instructions to install the CPU cooler onto the motherboard. Connect the CPU fan cable to the designated CPU_FAN header.
4. **Install RAM:** Open the clips on the DDR4 memory slots. Align the memory modules with the slots (notch alignment) and press firmly until the clips lock into place. For optimal performance, install memory in dual-channel configuration as indicated in the motherboard manual.
5. **Install M.2 SSDs (Optional):** If using M.2 SSDs, insert them into the M.2 slots and secure them with the provided screws. Note that using certain M.2 slots may disable specific SATA ports (e.g., M.2_1 disables SATA_1, M.2_2 disables SATA_6).
6. **Mount Motherboard:** Carefully place the motherboard into the case, aligning it with the stand-offs. Secure it with screws.
7. **Install Graphics Card (Optional):** Insert the graphics card into the primary PCIe x16 slot and secure it.
8. **Connect Power Supply:** Connect the 24-pin ATX power connector and the 8-pin CPU power connector from the power supply to the motherboard. Connect power to other components like graphics cards and storage drives.
9. **Connect Storage Drives:** Connect SATA data cables from your storage drives (HDDs/SSDs) to the SATA ports on the motherboard.
10. **Connect Front Panel Cables:** Connect the case's front panel connectors (power button, reset button, USB ports, audio jacks, LED indicators) to the corresponding headers on the motherboard.

4. Operating System and Software

4.1 BIOS/UEFI Configuration

Upon first boot, access the BIOS/UEFI by pressing the `DEL` key during startup. The BIOS provides advanced settings for your system.

- **Optimal Settings:** If encountering boot issues or for initial setup, press `F6` within the BIOS to load optimal default settings. This configures basic hardware settings for proper functionality.
- **Virtualization (SVM):** For enabling AMD virtualization extensions, navigate to the "Overclocking Settings" menu within the BIOS. Look for the "SVM" option and enable it. Note that this setting is sometimes located under advanced or CPU features, but on this board, it may be found under overclocking.
- **Game Mode:** The BIOS may include a "Game Mode" option which can provide a performance boost (e.g., 450MHz speed increase). This can also be managed via MSI software.

4.2 Driver Installation

After installing your operating system, install the necessary drivers for optimal performance and stability. Drivers can be found on the included Driver CD or downloaded from the official MSI website.

- **Recommended:** Always download the latest drivers from the official MSI support website for your specific

motherboard model to ensure compatibility and access to the newest features and bug fixes.

4.3 MSI Software

MSI provides various utilities to enhance your user experience:

- **MSI Mystic Light:** Customize the onboard RGB lighting and synchronize it with other compatible RGB components.
- **Dragon Center (or similar utility):** Manage system performance, fan speeds, and other settings. This software may also allow you to toggle "Game Mode" and adjust performance profiles (e.g., for video editing, gaming, or general use).

5. Maintenance

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

- **Keep Drivers Updated:** Periodically check the MSI website for updated drivers and BIOS versions. Updating drivers can resolve compatibility issues and improve performance.
- **System Cleaning:** Regularly clean dust from your computer case, fans, and heatsinks to prevent overheating. Use compressed air and avoid direct contact with components.
- **BIOS Updates:** Only update the BIOS if necessary (e.g., for new CPU support or critical bug fixes) and follow MSI's instructions carefully. Incorrect BIOS updates can render the motherboard inoperable.

6. Troubleshooting

This section addresses common issues you might encounter.

- **System Not Booting:**
  - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected.
  - Verify that RAM modules are correctly seated in their slots.
  - Check CPU installation and cooler connection.
  - If using a dedicated graphics card, ensure it is properly seated and has power.
  - Try resetting the CMOS (Clear Complementary Metal-Oxide-Semiconductor) by removing the CMOS battery for a few minutes or using the designated jumper.
- **Display Issues (e.g., "Mode Not Supported"):**
  - This can occur after OS updates. Ensure you have the latest graphics drivers installed from the MSI website or AMD's official site.
  - Verify monitor cable connections.
- **Virtualization (SVM) Not Found in BIOS:**
  - As noted in Section 4.1, the SVM setting for AMD virtualization may be located under the "Overclocking Settings" menu in the BIOS.
- **SATA Ports Disabled:**
  - When M.2 SSDs are installed, certain SATA ports may be disabled. Refer to the motherboard manual's detailed layout for specific port sharing information. Typically, M.2_1 disables SATA_1 and M.2_2 disables SATA_6.

7. Specifications

Detailed technical specifications for the MSI X470 GAMING PLUS MAX Motherboard.

Feature	Specification
Brand	MSI
Model Name	X470 GAMING PLUS MAX (X470GPLMAX)
CPU Socket	Socket AM4
Compatible Processors	AMD 1st, 2nd, and 3rd Generation Ryzen, Ryzen with Radeon Vega Graphics, Athlon with Radeon Vega Graphics
Chipset Type	AMD X470
RAM Memory Technology	DDR4
Memory Speed	2133 MHz (Supports up to 4133(OC) MHz)
Max RAM Installed Size	64 GB
Graphics Output	DVI-D, HDMI (requires CPU with integrated graphics)
Storage Interfaces	2 x M.2 slots, 6 x SATA 6Gb/s ports
USB Ports	USB 3.2 Gen2, USB 3.2 Gen1, USB 2.0
LAN	Gigabit LAN
Audio	HD Audio Connectors, Optical S/PDIF OUT
Form Factor	ATX
Product Dimensions (LxWxH)	12 x 9.6 x 2 inches
Item Weight	3.15 pounds
Platform	Windows 10

8. Warranty and Support

For warranty information, please refer to the warranty card included with your product or visit the official MSI website. For technical support, driver downloads, and further assistance, please visit the MSI support page:

MSI Official Support Website

Ensure you have your product model number (X470 GAMING PLUS MAX) and serial number ready when contacting support.

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.

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After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

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.

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