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ASUS TUF X470-Plus Gaming

ASUS TUF X470-Plus Gaming Motherboard User Manual

Model: TUF X470-Plus Gaming

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1. PRODUCT OVERVIEW

The ASUS TUF X470-Plus Gaming motherboard is designed for AMD Ryzen 2 AM4 processors, offering robust performance and durability for gaming and demanding applications. It features military-grade TUF components, advanced cooling solutions, and comprehensive connectivity options.

Key Features:

- Supports AMD Ryzen 2 AM4 and 7th generation Athlon processors.
- Dual NVMe M.2 slots, USB 3.1 Gen2, and Gigabit LAN for maximum connectivity and speed.
- Military-grade TUF components (TUF LANGuard, TUF Chokes, TUF Capacitors, TUF MOSFETs) for enhanced durability.
- Gamer's Guardian with SafeSlot and Fan Xpert 4 Core for hardware-level safeguards and dynamic system cooling.
- ASUS exclusive Aura Sync RGB lighting with additional RGB header for personalized aesthetics.



Figure 1: The ASUS TUF X470-Plus Gaming Motherboard, showcasing its overall design and key features.

2. SETUP & INSTALLATION

This section guides you through the physical installation of your ASUS TUF X470-Plus Gaming motherboard and its components into a PC case.

2.1. What's in the Box

Before you begin, ensure all components are present:

- ASUS TUF X470-Plus Gaming Motherboard
- Rear I/O Panel Shield
- TUF Certification Card
- User Manual
- Software Drivers DVD
- SATA Cables
- M.2 Screw Package
- TUF Sticker

What's In The Box



Figure 2: Contents of the ASUS TUF X470-Plus Gaming Motherboard retail package.

2.2. Motherboard Layout and Key Components

Familiarize yourself with the motherboard's layout to identify key connection points and features.

Arm Your Battlestation

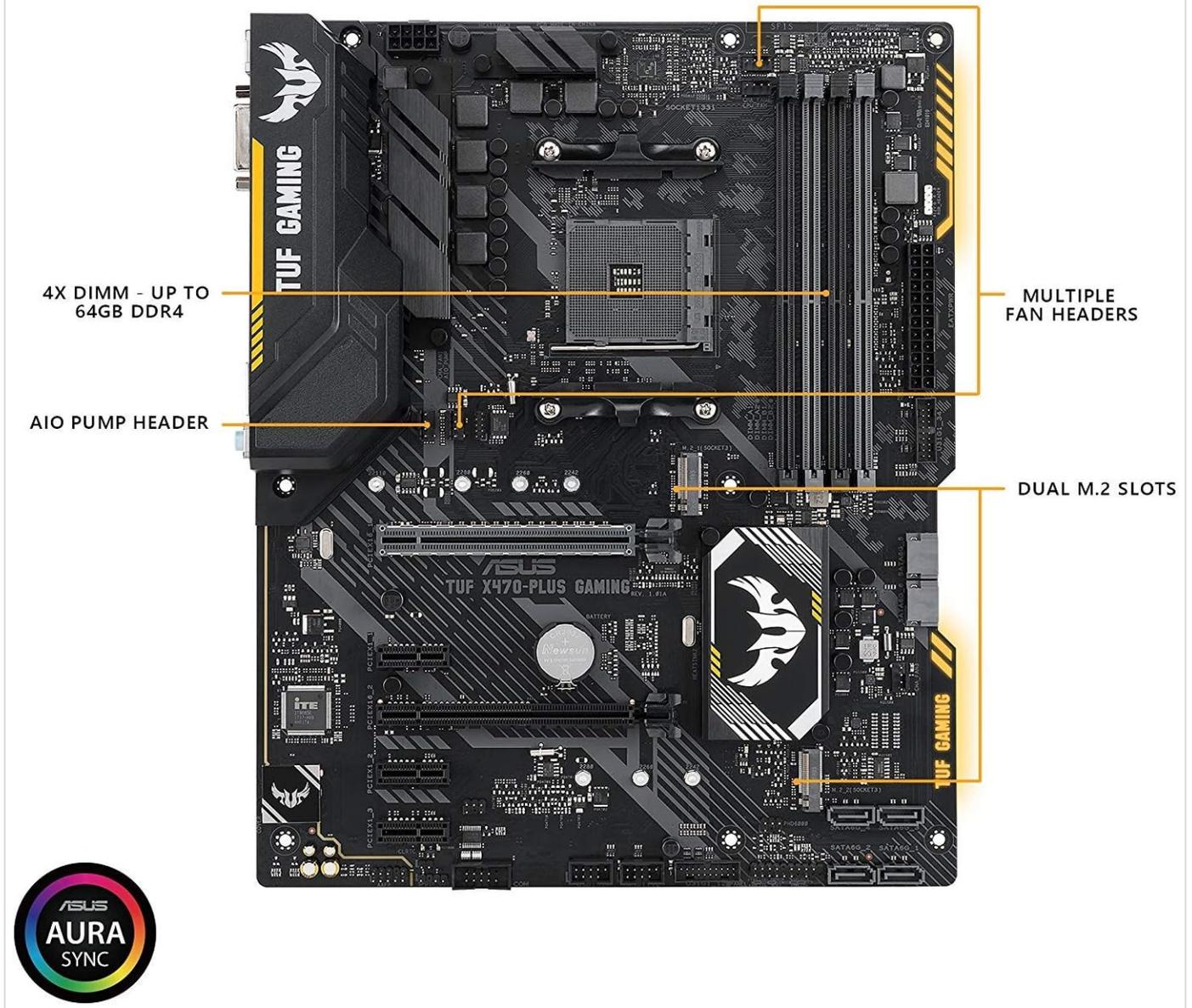


Figure 3: Overview of the ASUS TUF X470-Plus Gaming Motherboard highlighting 4x DIMM slots (up to 64GB DDR4), AIO Pump Header, Multiple Fan Headers, and Dual M.2 Slots.

TUF Components for Unwavering Stability

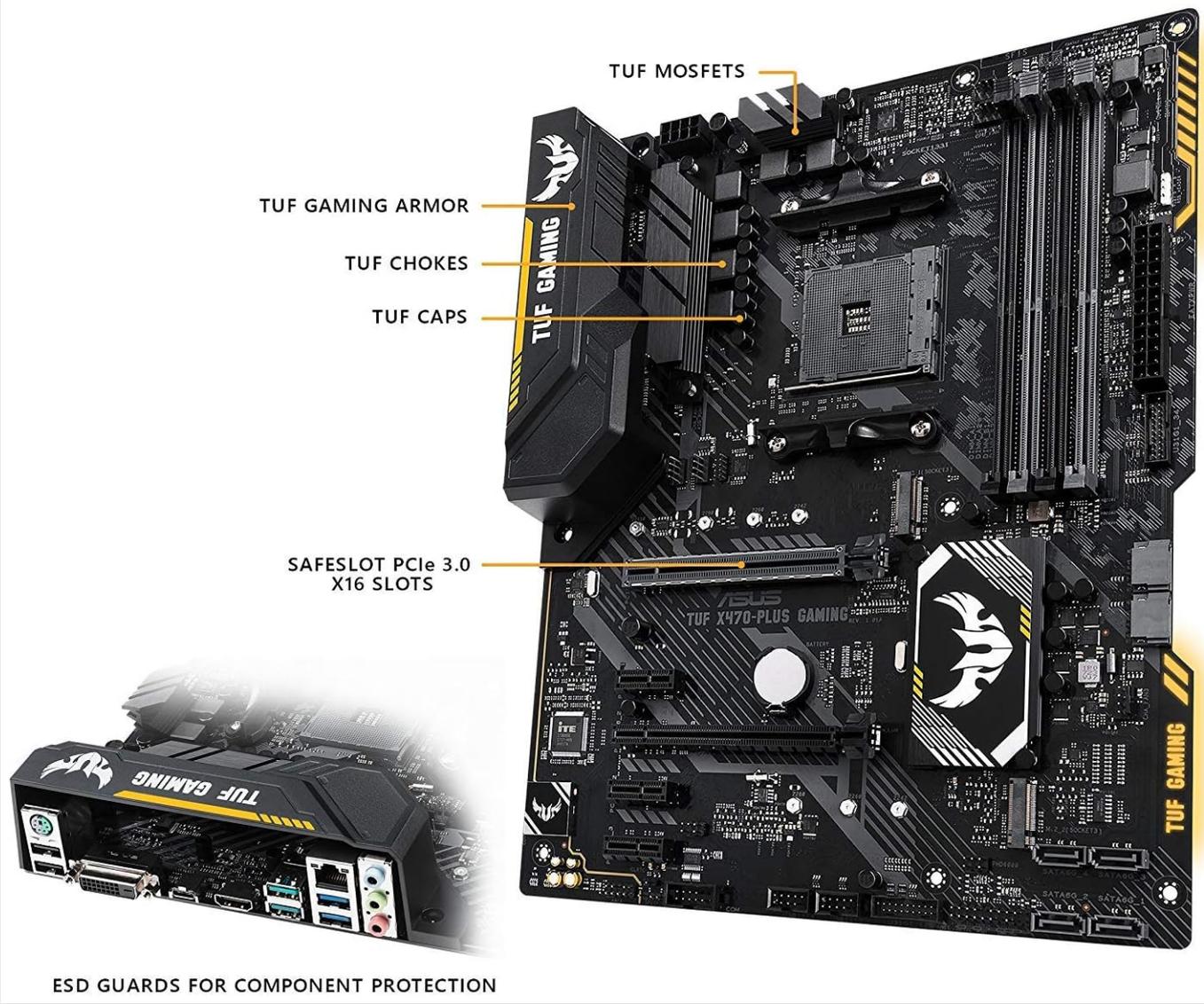


Figure 4: Close-up of TUF Components for Unwavering Stability, including TUF MOSFETs, TUF Chokes, TUF Caps, SafeSlot PCIe 3.0 x16 Slots, and ESD Guards for component protection.

Gaming Audio



Figure 5: Detail of the Gaming Audio section with DTS Custom Onboard Audio.

Full Gaming Connectivity

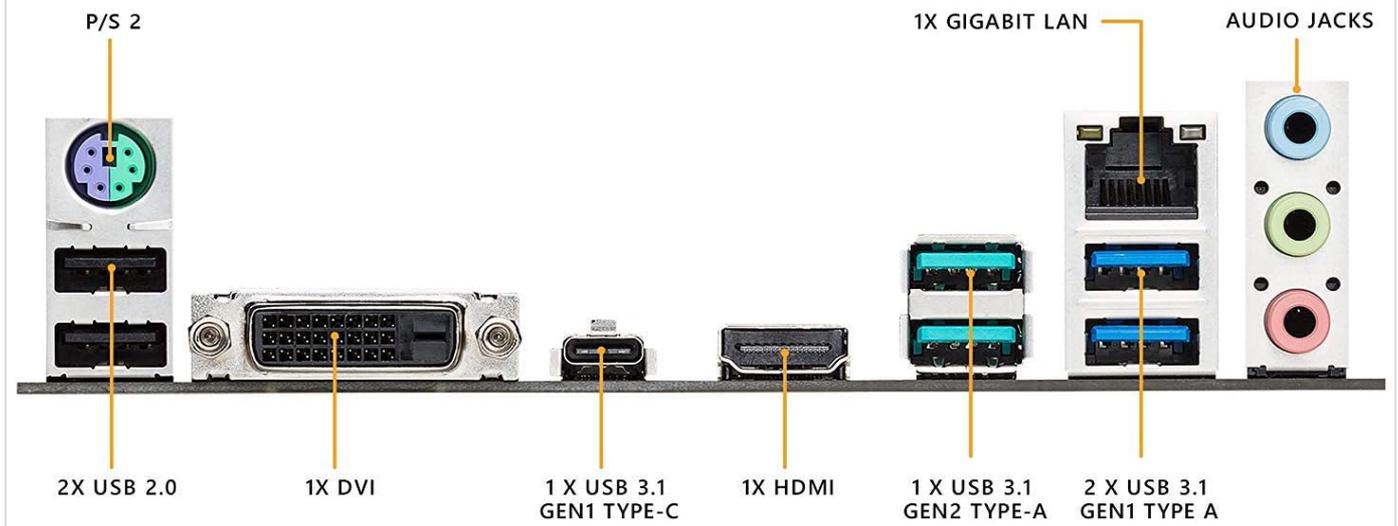


Figure 6: Full Gaming Connectivity on the rear I/O panel, including P/S 2, 2x USB 2.0, 1x DVI, 1x USB 3.1 Gen2 Type-C, 1x HDMI, 1x USB 3.1 Gen1 Type-A, 2x USB 3.1 Gen2 Type-A, 1x Gigabit LAN, and Audio Jacks.

2.3. Installation Steps

1. **Prepare the Case:** Ensure your PC case is ready for motherboard installation. Install standoffs if necessary.
2. **Install I/O Shield:** Snap the I/O shield into the rear opening of your PC case.
3. **Install Motherboard:** Carefully align the motherboard with the standoffs and I/O shield, then gently lower it into place. Secure it with screws.
4. **Install CPU:** Open the CPU socket lever, align the CPU with the triangle marker on the socket, and gently place it in. Close the lever to secure.
5. **Install CPU Cooler:** Attach your CPU cooler according to its specific instructions. Ensure thermal paste is applied correctly.
6. **Install RAM:** Open the clips on the DIMM slots, align the RAM modules, and press down firmly until the clips snap into place. Refer to your motherboard manual for optimal slot population.
7. **Install M.2 SSDs:** Insert M.2 SSDs into the M.2 slots and secure them with the provided screws.
8. **Install Graphics Card:** Insert your graphics card into the primary PCIe x16 slot (SafeSlot) and secure it with the case latch/screw.
9. **Connect Power:** Connect the 24-pin ATX power connector and the 8-pin CPU power connector from your power supply to the motherboard. Connect SATA power and data cables to your storage drives.
10. **Connect Front Panel Cables:** Connect the front panel headers (power button, reset, USB, audio) to the corresponding pins on the motherboard.

2.4. Installation Video Guide

Watch this video for a visual guide on unboxing and installing the ASUS TUF X470-Plus Gaming Motherboard and its components.

Your browser does not support the video tag.

Video 1: Unboxing and installation process for the ASUS TUF X470-Plus Gaming Motherboard, demonstrating component placement and assembly.

3. OPERATING INSTRUCTIONS

After physical installation, configure your system for optimal performance.

3.1. Initial Boot and BIOS/UEFI Setup

1. **Power On:** Connect your monitor, keyboard, and mouse. Power on your PC.
2. **Access BIOS/UEFI:** Press the **DEL** or **F2** key during startup to enter the BIOS/UEFI setup utility.
3. **Configure Settings:**
 - **Boot Order:** Set your primary boot device (e.g., M.2 SSD with OS).
 - **Fan Xpert 4 Core:** Utilize this feature to fine-tune fan speeds for optimal cooling and noise levels.
 - **Overclocking (Optional):** Adjust CPU and memory frequencies for enhanced performance, if desired. Exercise caution and consult advanced guides.
4. **Save and Exit:** Save your changes and exit the BIOS/UEFI. The system will restart.

3.2. Driver Installation

Install the necessary drivers for your motherboard components to ensure full functionality and stability. Use the provided Software Drivers DVD or download the latest drivers from the ASUS support website.

- Chipset Drivers
- Audio Drivers
- LAN Drivers
- USB Drivers
- Graphics Card Drivers (from GPU manufacturer)

3.3. ASUS Aura Sync

Personalize your system's lighting with ASUS Aura Sync. Install the Aura Sync software from the provided DVD or ASUS website to control RGB lighting on compatible components, including the motherboard's integrated LEDs and connected RGB headers.

4. MAINTENANCE

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

- **Dust Cleaning:** Periodically clean dust from the motherboard, CPU cooler, and case fans using compressed air. Ensure the system is powered off and unplugged.
- **BIOS Updates:** Check the ASUS support website for the latest BIOS updates. BIOS updates can improve system stability, compatibility, and performance. Follow ASUS's instructions carefully when updating the BIOS.
- **Driver Updates:** Keep your drivers updated to ensure compatibility with new software and hardware, and to benefit from performance improvements and bug fixes.

- **Cable Management:** Ensure internal cables are neatly managed to improve airflow and prevent interference.

5. TROUBLESHOOTING

This section addresses common issues you might encounter.

- **No Display on Boot:**
 - Check monitor connections and power.
 - Ensure graphics card is properly seated and powered.
 - Verify RAM modules are correctly installed.
 - Check motherboard debug LEDs (if available) for diagnostic codes.
- **System Instability/Crashes:**
 - Ensure all drivers are up-to-date.
 - Check CPU and GPU temperatures using monitoring software.
 - Test RAM stability using diagnostic tools.
 - Reset BIOS settings to default.
- **USB Device Issues:**
 - Ensure USB drivers are installed and updated.
 - Test devices in different USB ports.
 - Check BIOS settings for USB controller configuration.
- **Slow Performance:**
 - Verify M.2 SSDs are operating at their rated speeds.
 - Check for background processes consuming resources.
 - Ensure adequate cooling to prevent thermal throttling.

6. SPECIFICATIONS

Feature	Detail
Brand	ASUS
Series	TUF X470-PLUS GAMING
Model Name	TUF X470-PLUS GAMING
CPU Socket	Socket AM4
Compatible Processors	AMD Athlon, AMD Ryzen 2
Chipset Type	AMD X470
RAM Memory Technology	DDR4 SDRAM
Memory Speed	2400 MHz (up to 3200 MHz with Ryzen CPU)
Max RAM Supported	64 GB

Feature	Detail
Graphics Card Interface	PCIe 3.0 x16 (SafeSlot)
Storage Interface	Dual NVMe M.2, SATA
USB Ports	2x USB 2.0, 1x USB 3.1 Gen2 Type-C, 1x USB 3.1 Gen1 Type-A, 2x USB 3.1 Gen2 Type-A
Video Output	HDMI, DVI
LAN	Gigabit LAN
Audio	DTS Custom Onboard Audio (Realtek ALC887)
Form Factor	ATX
Item Dimensions LxWxH	12 x 2.1 x 9.6 inches
Item Weight	16 ounces
Date First Available	April 12, 2018

7. WARRANTY & SUPPORT

The ASUS TUF X470-Plus Gaming Motherboard comes with a **3-Year Warranty**, ensuring reliability built on military-grade engineering. For technical support, driver downloads, and further assistance, please visit the official ASUS support website.

For additional information or to contact ASUS support, please refer to the contact details provided in your product's user manual or on the official ASUS website.