

## ASUS TUF GAMING Z790-PRO WIFI

# ASUS TUF Gaming Z790-PRO WiFi Motherboard User Manual

Model: TUF GAMING Z790-PRO WIFI

## 1. INTRODUCTION

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This manual provides essential information for the installation, operation, and maintenance of your ASUS TUF Gaming Z790-PRO WiFi motherboard. Designed for high-performance computing, this ATX motherboard supports Intel 12th, 13th, and 14th Generation processors via the LGA 1700 socket, offering robust features for gaming, content creation, and demanding workloads.



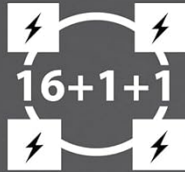
Image 1.1: The ASUS TUF Gaming Z790-PRO WiFi motherboard alongside its retail packaging and WiFi Q-Antenna.

## 2. KEY FEATURES

The ASUS TUF Gaming Z790-PRO WiFi motherboard integrates several advanced technologies to deliver stable and powerful performance:

- **Intel LGA 1700 Socket:** Compatible with Intel Core 12th, 13th, and 14th Gen, Pentium Gold, and Celeron Processors.
- **Premium Power Solution:** Features 16+1+1 DrMOS VRMs, a six-layer PCB, ProCool sockets, alloy chokes, and durable capacitors for stable power delivery.
- **Exclusive AI & Memory Technology:** Includes AI Overclocking, AI Cooling II, Two-Way AI Noise Cancellation, and ASUS Enhanced Memory Profile II for optimized performance.
- **Next-Gen Connectivity:** Supports PCIe 5.0, USB 20Gbps (Type-C with Power Delivery 3.0), and a Thunderbolt 4 header.
- **Optimized for Online Gaming:** Equipped with WiFi 6E, ASUS WiFi Q-Antenna, and Intel 2.5 Gb Ethernet with TUF LANGuard.
- **Comprehensive Cooling:** Features enlarged VRM and chipset heatsinks, M.2 heatsinks, hybrid fan headers, and Fan Xpert 4 utility.

# Better, Faster & More



16+1+1 DR MOS POWER STAGES  
(RATED UP TO 60A) WITH  
ENLARGED VRM HEATSINKS



PCIe® 5.0 FOR GRAPHICS CARDS



7800+ MT/S, AEMP II



FRONT USB 20GBPS (USB TYPE-C®)  
CONNECTOR FOR PD 3.0 AT 30W



AI OVERCLOCKING



PCIe Q-RELEASE



WITH ASUS  
WIFI Q-ANTENNA

Image 2.1: Overview of the motherboard's primary features, including power delivery, connectivity, and performance enhancements.

# Extreme Power & Performance

16+1+1 DrMOS Power Stages, 4 x DIMM 192GB DDR5, 4 x M.2 NVMe SSD and 1 x PCIe 5.0 x16 Slots

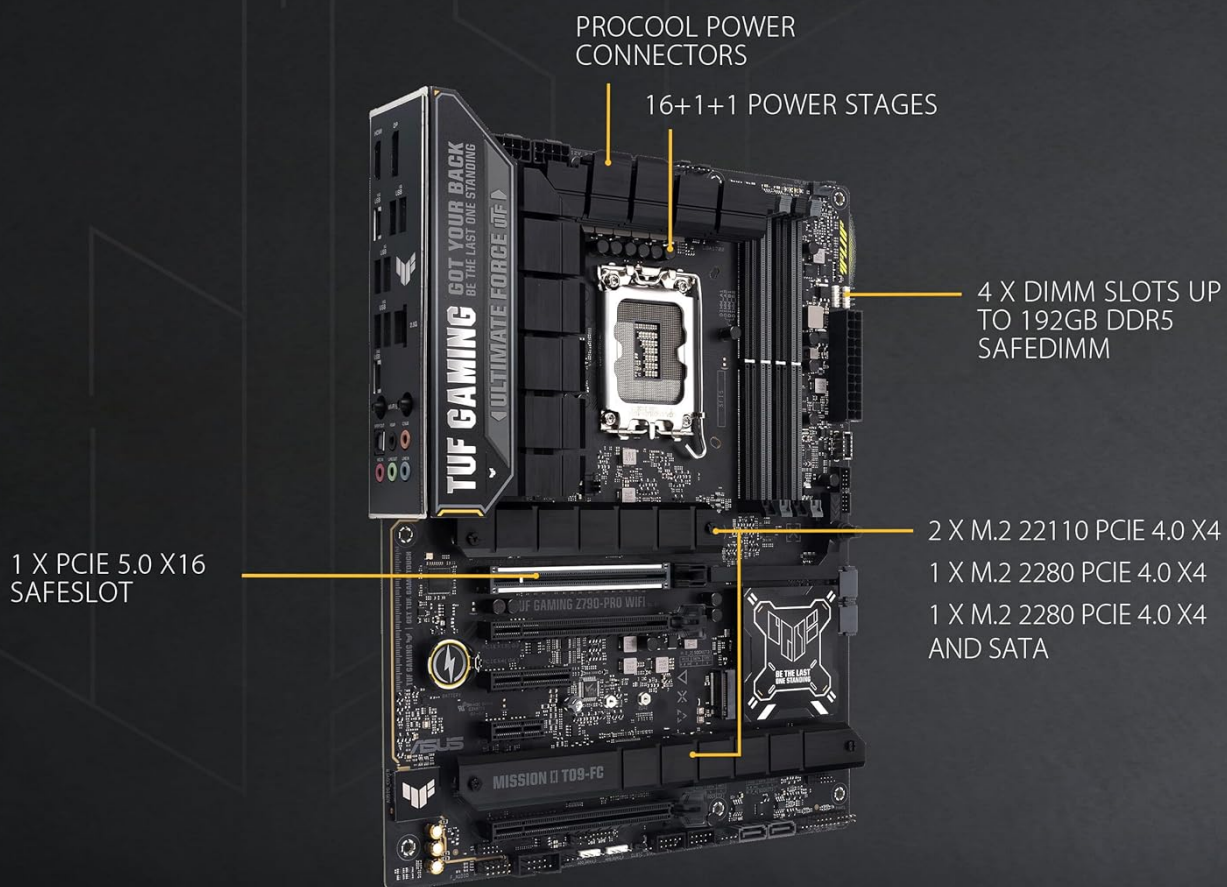


Image 2.2: Detailed layout showing power stages, DDR5 memory slots, M.2 slots, and the PCIe 5.0 x16 slot.



# Comprehensive Cooling

Massive VRM & M.2 Heatsinks, Multiple Fan Headers

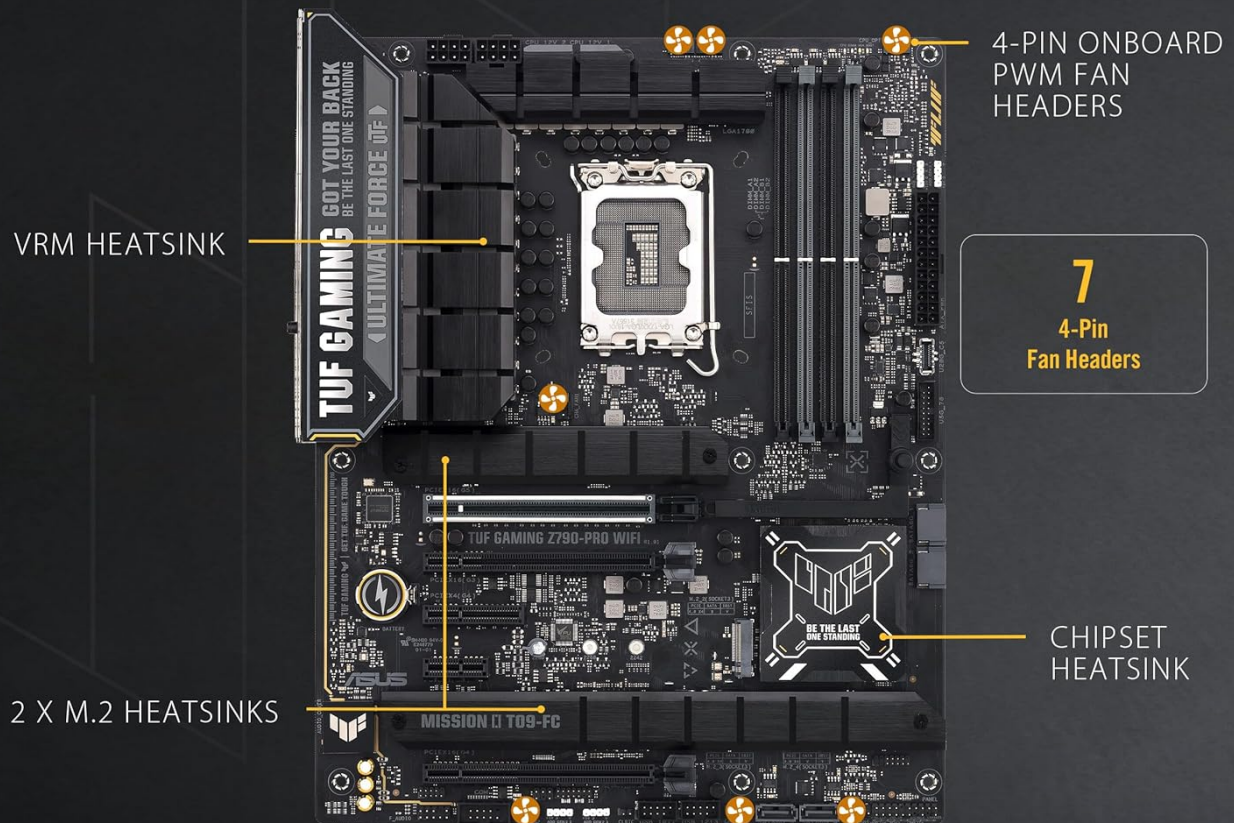


Image 2.3: Visual representation of the cooling system, including heatsinks and fan headers.

# Full Gaming Connectivity

Intel® 2.5Gb Ethernet, Bluetooth v5.3  
and Front USB 20Gbps For PD 3.0 at 30W

1 X FRONT USB 20GBPS TYPE-C® PORT  
WITH UP TO 30W PD FAST-CHARGE

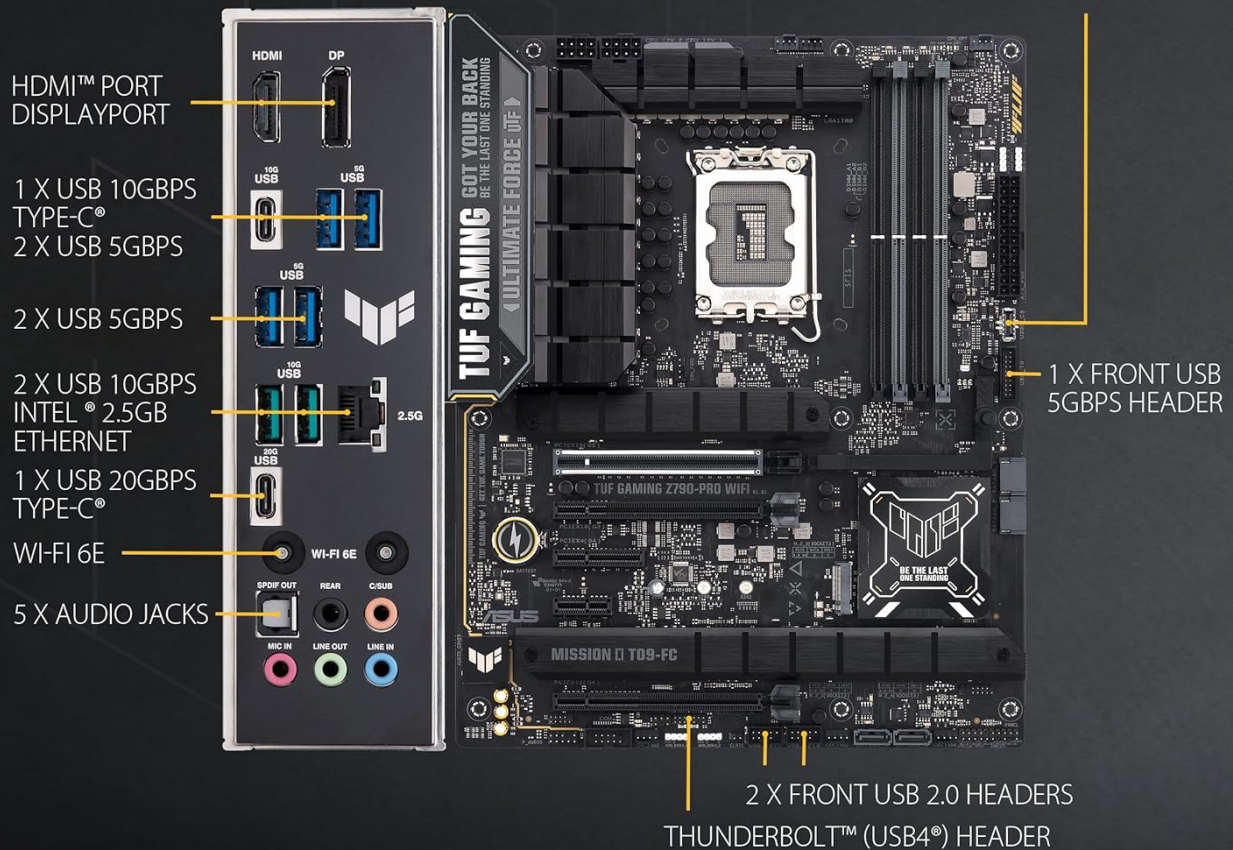


Image 2.4: Overview of the motherboard's input/output ports and internal headers for comprehensive connectivity.

## 3. What's in the Box

Verify that all items are present in your package:

- TUF GAMING Z790-PRO WIFI Motherboard
- SATA 6Gb/s cables x 2
- ASUS WiFi Q-Antenna
- TUF GAMING sticker
- M.2 rubber packages
- Screw package for M.2 SSD
- TUF certification card
- Quick start guide

# What's in the Box

## Exclusive TUF GAMING Z790-PRO WIFI Bundle

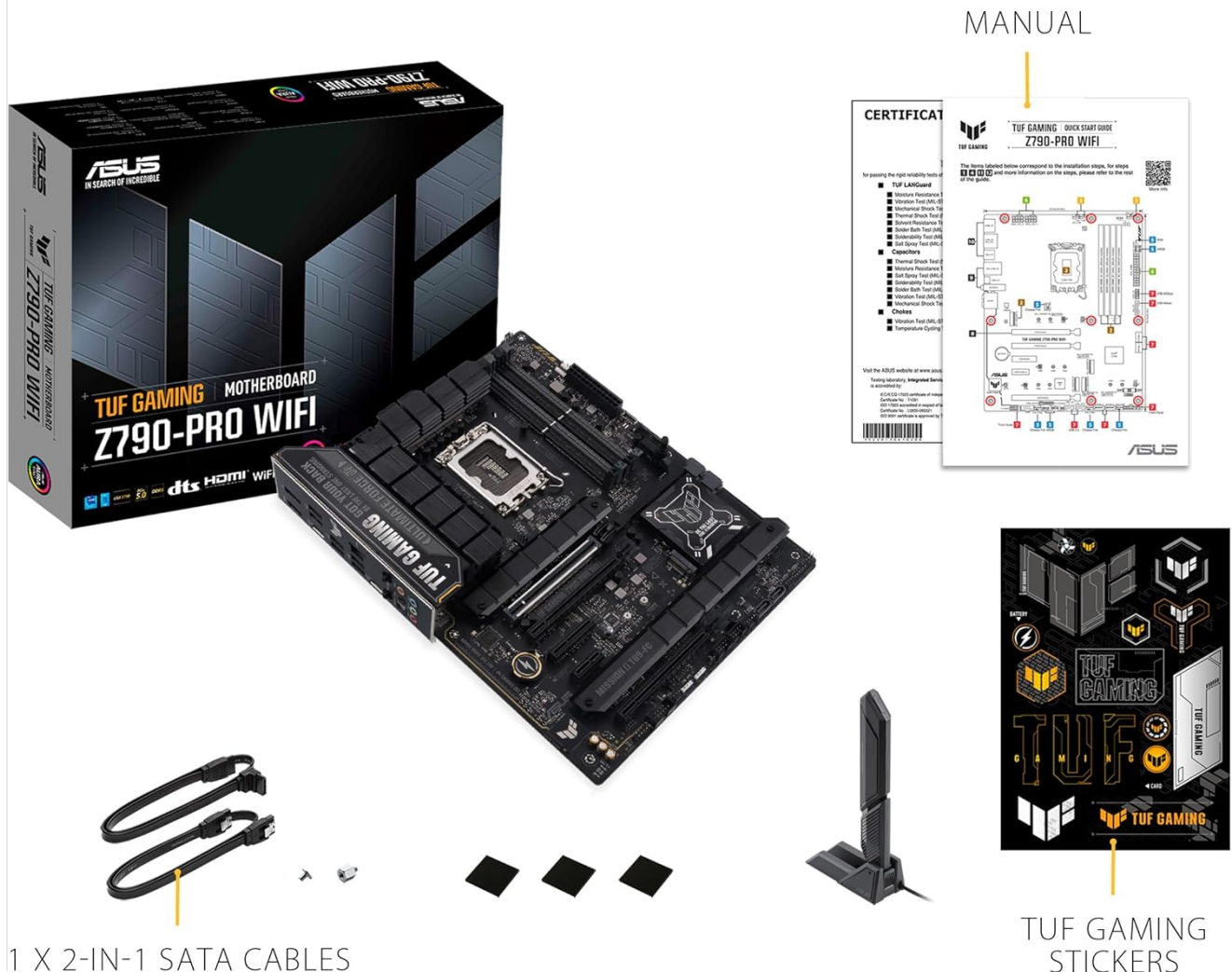


Image 3.1: All components included in the ASUS TUF Gaming Z790-PRO WiFi motherboard package.

## 4. SETUP AND INSTALLATION

### 4.1. CPU Installation

Carefully open the CPU socket retention arm. Align the triangular marker on your Intel LGA 1700 processor with the corresponding marker on the socket. Gently place the CPU into the socket, ensuring it sits flush. Close the retention arm to secure the CPU.







Image 4.1: The LGA 1700 socket, ready for CPU installation.

## 4.2. Memory (RAM) Installation

This motherboard supports DDR5 memory. Open the clips on the DIMM slots. Align the notch on your DDR5 memory



module with the key in the DIMM slot. Press down firmly on both ends of the module until the clips snap into place. Refer to the motherboard manual for recommended dual-channel configurations.

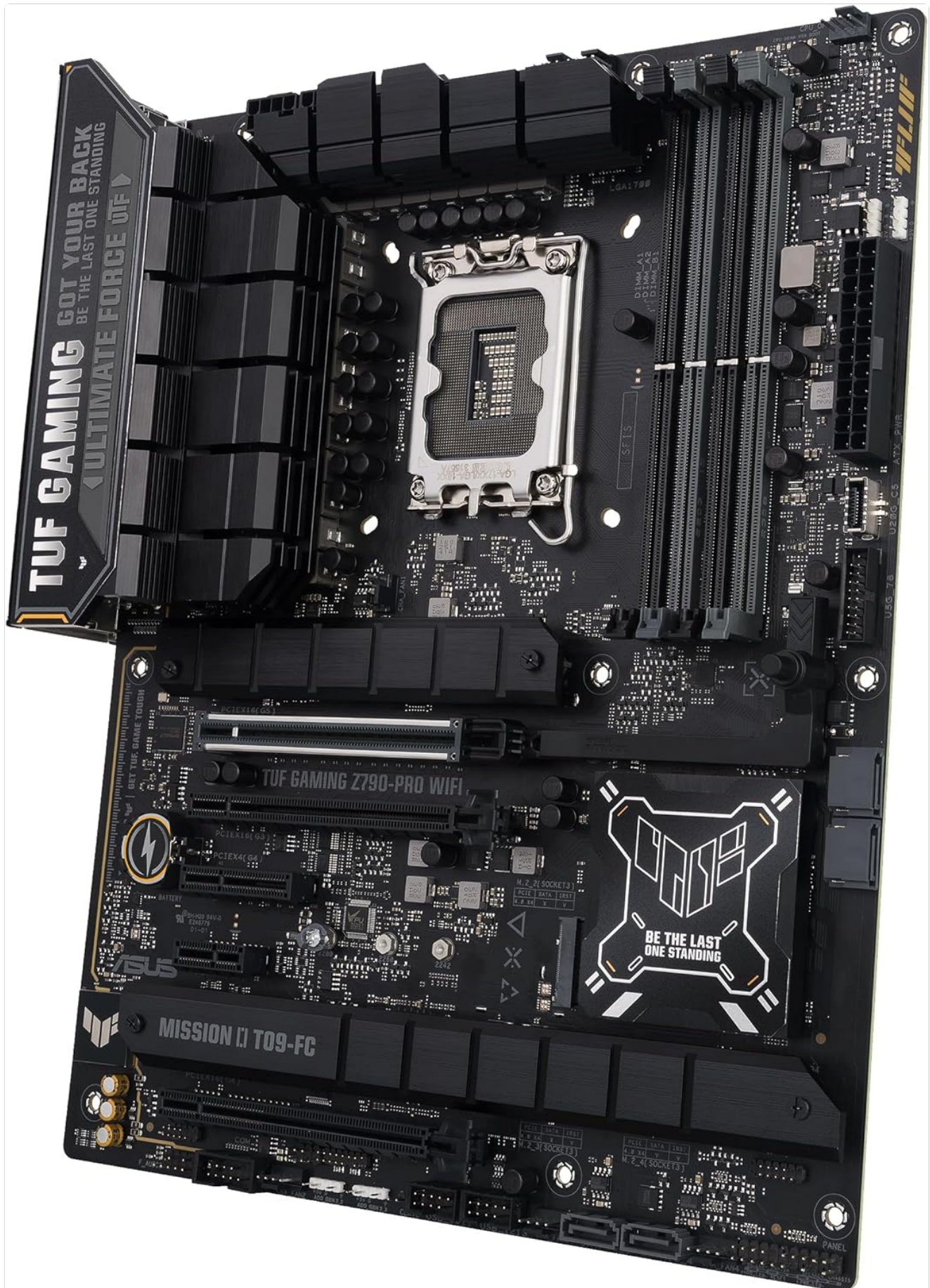


Image 4.2: The four DDR5 memory slots.

### 4.3. Storage Installation

The motherboard features multiple M.2 slots for NVMe SSDs and SATA 6Gb/s ports for traditional hard drives or SSDs. For M.2 SSDs, utilize the Q-Latch mechanism for tool-less installation. Simply align the M.2 SSD, insert it into the slot, and secure it with the Q-Latch.

#### **4.4. Graphics Card Installation**

Insert your PCIe 5.0 or PCIe 4.0 graphics card into the primary PCIe x16 slot. Ensure it is fully seated and secured with the retention clip. The Q-Release button simplifies graphics card removal.

#### **4.5. Power Connections**

Connect the 24-pin ATX power connector and the 8-pin + 4-pin CPU power connectors from your power supply to the motherboard.

#### **4.6. Front Panel and Rear I/O Connections**

Connect your case's front panel headers (USB, audio, power, reset, LED indicators) to the corresponding pins on the motherboard. Connect peripherals to the rear I/O panel ports, including USB devices, display cables (HDMI/DisplayPort), Ethernet, and audio jacks. Attach the ASUS WiFi Q-Antenna to the designated connectors for optimal wireless performance.





Image 4.3: The rear I/O panel provides a wide array of connectivity options.





Image 4.4: The WiFi Q-Antenna connected to the rear I/O for enhanced wireless signal reception.

## 5. OPERATING GUIDELINES

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### 5.1. BIOS/UEFI Setup

To access the BIOS/UEFI setup utility, press the **DEL** or **F2** key during system startup. Here you can configure system settings, enable XMP profiles for memory, adjust fan curves, and manage boot options.

### 5.2. AI Features

The motherboard incorporates several AI-driven features:

- **AI Overclocking:** Intelligently optimizes CPU performance based on system capabilities and cooling.
- **AI Cooling II:** Dynamically adjusts fan speeds to maintain optimal temperatures and minimize noise.
- **Two-Way AI Noise Cancellation:** Reduces background noise from both microphone input and audio output for clear communication.

### 5.3. Networking

Utilize the integrated WiFi 6E for high-speed wireless internet or the Intel 2.5 Gb Ethernet port for a stable wired connection. Ensure appropriate drivers are installed for full functionality.

Video 5.1: An official product video showcasing the ASUS TUF Gaming Z790-PRO WiFi motherboard's features and design.

## 6. MAINTENANCE

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### 6.1. Cooling System

Regularly inspect and clean the heatsinks and fan headers to prevent dust buildup, which can impede airflow and lead to overheating. Ensure all fans are functioning correctly.

### 6.2. General Cleaning

Use compressed air to remove dust from the motherboard and other components. Avoid using liquid cleaners directly on the motherboard. Ensure the system is powered off and unplugged before performing any cleaning.

## 7. TROUBLESHOOTING

### 7.1. Q-LED Indicators

The motherboard features Q-LED indicators that provide visual cues for troubleshooting during startup. These LEDs illuminate to indicate the status of key components (CPU, DRAM, VGA, BOOT). If a component fails during POST (Power-On Self-Test), the corresponding LED will remain lit.

### 7.2. Common Issues

- **No Display/Boot:** Check all power connections, ensure RAM modules are properly seated, and verify the graphics card is correctly installed. Use Q-LEDs to pinpoint the issue.
- **Missing Network Drivers:** If you cannot connect to the internet after OS installation, download the latest Ethernet and WiFi drivers from the ASUS support website using another device and transfer them via USB.
- **System Instability:** Ensure your BIOS is up to date. Reset BIOS settings to default if recent changes caused instability. Verify memory compatibility and stability, especially with XMP profiles.

### 7.3. BIOS Updates

Regularly updating your BIOS can improve system stability, compatibility, and performance. Download the latest BIOS version from the official ASUS support website and follow the instructions provided in the motherboard manual for the update process.

## 8. SPECIFICATIONS

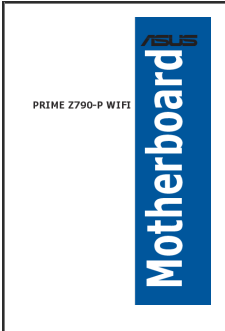
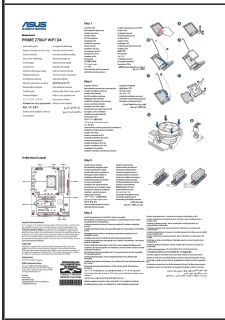
Feature	Detail
Brand	ASUS
Model Name	TUF GAMING Z790-PRO WIFI
CPU Socket	LGA 1700
Compatible Processors	Intel Core 13th Gen, Intel Core 12th Gen, Pentium Gold, Celeron
Chipset Type	Intel Z790
RAM Memory Technology	DDR5
Memory Storage Capacity	64 GB (Max)
Card Description	Integrated

Feature	Detail
Hardware Platform	PC
Operating System	Windows
Item Weight	1.5 pounds
Package Dimensions	13.98 x 10.79 x 2.8 inches
Color	BLACK

## 9. WARRANTY AND SUPPORT

For detailed warranty information, technical support, driver downloads, and FAQs, please visit the official ASUS support website. You can find the latest resources and contact information for customer service there.  
Official ASUS Support: <https://www.asus.com/support/>

### Related Documents - TUF GAMING Z790-PRO WIFI

	<p><a href="#">ASUS PRIME Z790-P WIFI Motherboard User Guide</a></p> <p>Comprehensive user guide for the ASUS PRIME Z790-P WIFI motherboard, covering installation, specifications, safety information, and BIOS setup. Learn about its features for building a high-performance PC.</p>
	<p><a href="#">ASUS PRIME Z790-P WIFI D4 Motherboard Quick Start Guide</a></p> <p>Concise installation guide for the ASUS PRIME Z790-P WIFI D4 motherboard, covering CPU, RAM, storage, expansion cards, and system connections for PC builders.</p>



<div><div><div>TUF GAMING B660-PLUS WIFI D4</div><div>ASUS</div><div>Motherboard</div></div></div>	<div><div><a href="#">ASUS TUF Gaming B660-PLUS WIFI D4 Motherboard User Manual</a></div><div>Comprehensive user manual for the ASUS TUF Gaming B660-PLUS WIFI D4 ATX motherboard. Includes installation guides, specifications, safety information, BIOS setup, and support details.</div></div>
<div><div><div>TUF GAMING Z790-PLUS WIFI D4</div><div>ASUS</div><div>Motherboard</div></div></div>	<div><div><a href="#">ASUS TUF GAMING Z790-PLUS WIFI D4 Motherboard User Manual</a></div><div>Comprehensive user manual for the ASUS TUF GAMING Z790-PLUS WIFI D4 motherboard, detailing installation, specifications, BIOS setup, and safety guidelines.</div></div>
<div><div><div>ProArt B760-CREATOR D4</div><div>ASUS</div><div>Motherboard</div></div></div>	<div><div><a href="#">ASUS ProArt B760-CREATOR D4 Motherboard User Manual and Specifications</a></div><div>Detailed user manual and specifications for the ASUS ProArt B760-CREATOR D4 motherboard, covering package contents, system specifications, layout, connectors, installation guides for CPU, DIMM, and M.2, and rear panel I/O.</div></div>
<div><div><div>Pro WS W480-ACE</div><div>ASUS</div><div>Motherboard</div></div></div>	<div><div><a href="#">ASUS Pro WS W480-ACE Motherboard User Manual</a></div><div>Detailed user manual for the ASUS Pro WS W480-ACE motherboard, covering installation, specifications, BIOS, RAID, and troubleshooting. Learn about CPU, memory, expansion slots, storage, I/O, and special features for professional workstation use.</div></div>