

MSI MPG Z490 Gaming Plus

MSI MPG Z490 Gaming Plus Motherboard User Manual

Model: MPG Z490 Gaming Plus

1. INTRODUCTION

This manual provides detailed instructions for the installation, configuration, and operation of your MSI MPG Z490 Gaming Plus motherboard. Designed for 10th Generation Intel Core / Pentium Gold / Celeron Processors with an LGA 1200 socket, this ATX motherboard offers robust performance and connectivity for personal computer systems. Please read this manual thoroughly before beginning installation to ensure proper setup and to maximize the performance and longevity of your system.

2. KEY FEATURES

- Supports 10th Generation Intel Core / Pentium Gold / Celeron Processors for LGA 1200 socket.
- Supports dual channel DDR4 memory up to 128GB (4800MHz).
- Twin Turbo M.2 with M.2 Shield Frozr delivers transfer speeds of up to 32 GB/s for ultra-fast SSDs.
- Core Boost technology combines optimized power circuit layouts, double CPU power connectors, and a digital power design for precise and steady current delivery to the CPU.
- Pre-installed I/O Shielding for convenience and protection from electrostatic discharge.
- Features a USB 3.2 Gen 2x2 Type C port and 2.5G LAN for enhanced connectivity.

3. PACKAGE CONTENTS

Verify that all items listed below are present in your motherboard package. If any item is damaged or missing, contact your retailer.

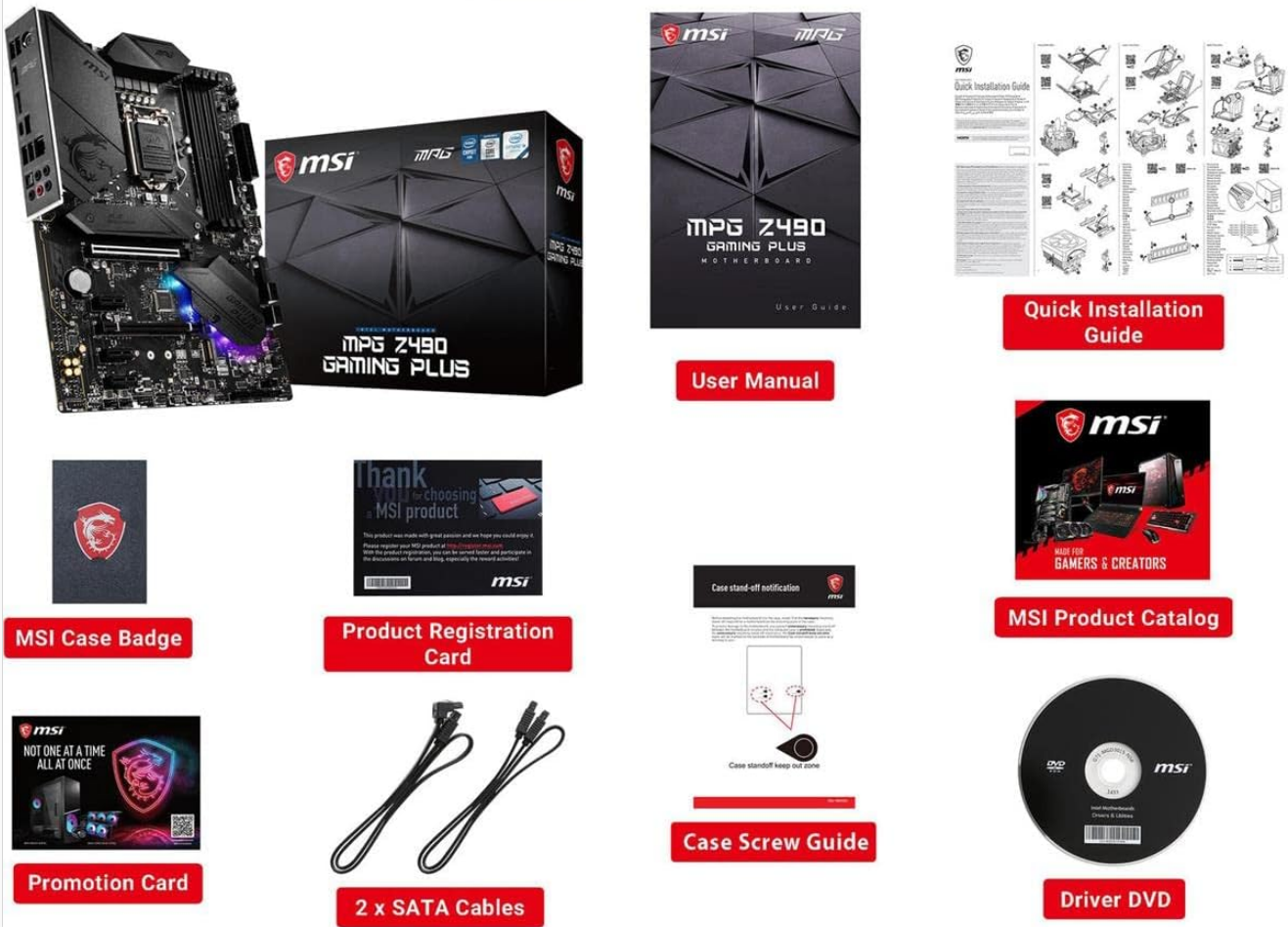


Image: The MSI MPG Z490 Gaming Plus motherboard and its accompanying accessories, including the user manual, quick installation guide, SATA cables, case screw guide, and driver DVD.

- MSI MPG Z490 Gaming Plus Motherboard
- User Manual
- Quick Installation Guide
- SATA Cables (x2)
- Case Screw Guide
- Driver DVD
- MSI Case Badge
- Product Registration Card
- Promotion Card

4. MOTHERBOARD LAYOUT

Familiarize yourself with the various components and connectors on the motherboard before installation.



Image: A top-down view of the MSI MPG Z490 Gaming Plus motherboard, highlighting the CPU socket, RAM slots, M.2 slots, and various headers.



Image: An angled view of the MSI MPG Z490 Gaming Plus motherboard, showcasing the heatsinks, I/O shield, and PCIe slots.

5. SETUP AND INSTALLATION

5.1 CPU Installation (LGA 1200)

1. Locate the LGA 1200 socket on the motherboard.
2. Open the CPU socket lever and lift the load plate.
3. Carefully align the notches on your 10th Gen Intel Core processor with the keys on the socket. Ensure the golden triangle on the CPU matches the triangle on the socket.
4. Gently place the CPU into the socket without forcing it.
5. Close the load plate and press down the lever until it clicks into place.

5.2 Memory (RAM) Installation

The motherboard supports dual-channel DDR4 memory. Refer to the motherboard manual for specific slot population guidelines for optimal dual-channel performance.

1. Open the clips at both ends of the DIMM slots.
2. Align the notch on the DDR4 memory module with the key in the DIMM slot.
3. Insert the memory module firmly into the slot until the clips snap into place.

5.3 Storage Installation (M.2 SSDs and SATA Drives)

The motherboard features two M.2 slots with M.2 Shield Frozr for NVMe SSDs and multiple SATA 6Gb/s ports for traditional hard drives or SSDs.

- **M.2 SSD:** Remove the M.2 Shield Frozr heatsink. Insert the M.2 SSD into the slot, secure it with the provided screw, and reattach the heatsink.
- **SATA Drives:** Connect one end of the SATA data cable to a SATA port on the motherboard and the other end to your storage device. Connect the SATA power cable from your power supply to the device.

5.4 Expansion Cards (PCIe)

Install your graphics card and other expansion cards into the appropriate PCIe slots.

1. Align the expansion card with the PCIe slot.
2. Press down firmly until the card is seated correctly and the retention clip engages.
3. Secure the card with a screw to the chassis.

5.5 Connecting Peripherals and Power

Connect all necessary cables for power, front panel, USB, audio, and display.



Image: A close-up view of the rear I/O panel of the MSI MPG Z490 Gaming Plus motherboard, showing ports for USB, HDMI, DisplayPort, LAN, and audio.

- **Main Power:** Connect the 24-pin ATX power connector from your power supply to the motherboard.
- **CPU Power:** Connect the 8-pin (and optional 4-pin) CPU power connector(s) from your power supply to the motherboard.
- **Front Panel Connectors:** Connect the power switch, reset switch, HDD LED, and power LED cables from your chassis to the JFP1 header. Refer to the motherboard manual for pin assignments.
- **USB Headers:** Connect front panel USB ports to the appropriate USB headers on the motherboard.
- **Audio Headers:** Connect front panel audio to the JAUD1 header.
- **Display Outputs:** Connect your monitor to the HDMI or DisplayPort on the rear I/O panel if using integrated graphics.
- **LAN:** Connect an Ethernet cable to the 2.5G LAN port for network access.

Note: This motherboard does not have built-in Wi-Fi functionality. A separate Wi-Fi adapter is required for wireless connectivity.

6. OPERATING INSTRUCTIONS

6.1 First Boot and BIOS/UEFI Setup

1. After completing all hardware installations, connect your monitor, keyboard, and mouse.
2. Power on your system.
3. Press the **DEL** key during startup to enter the BIOS/UEFI setup utility.
4. In the BIOS, you can configure system settings such as boot order, date/time, and enable/disable various features.
5. Save changes and exit the BIOS to continue with operating system installation.

6.2 Driver Installation

After installing your operating system (e.g., Windows 10), install the necessary drivers from the included Driver DVD or download the latest versions from the official MSI website (www.msi.com). This includes chipset drivers, LAN drivers, audio drivers, and any other relevant device drivers.

7. MAINTENANCE

- **Keep Clean:** Regularly clean dust from your computer case and motherboard components using compressed air. Ensure proper airflow within the chassis.
- **BIOS Updates:** Periodically check the MSI website for BIOS updates. BIOS updates can improve system stability, compatibility, and performance. Follow MSI's instructions carefully when updating the BIOS.
- **Driver Updates:** Keep your drivers updated to ensure optimal performance and compatibility with new software and hardware.

8. TROUBLESHOOTING

- **No Power/No Boot:**
 - Ensure all power cables (24-pin ATX, 8-pin CPU) are securely connected.
 - Verify that the power supply is switched on.
 - Check front panel connections (power switch).

- If the system powers on but does not display anything, check RAM seating and graphics card connections.
- **Operating System Issues After Motherboard Change:** If you are replacing an existing motherboard, a clean installation of your operating system (e.g., Windows 11) may be required to avoid compatibility issues and ensure system stability. Back up your data before proceeding.
- **Overheating:** Ensure CPU cooler is properly installed and making good contact. Verify case fans are functioning and providing adequate airflow.
- **Peripheral Not Detected:** Check USB or SATA cable connections. Ensure drivers are installed for the peripheral.

9. SPECIFICATIONS

Feature	Specification
Brand	MSI
Model Name	MPG Z490 GAMING PLUS
CPU Socket	LGA 1200
Compatible Processors	10th Gen Intel Core / Pentium Gold / Celeron
RAM Memory Technology	DDR4
Memory Clock Speed	4800 MHz (Max)
Maximum RAM Supported	128 GB
Chipset Type	Intel Z490
Product Dimensions	12 x 9.6 x 2 inches (ATX Form Factor)
Item Weight	2.79 pounds
LAN	2.5G LAN
USB Ports	USB 3.2 Gen 2x2 Type-C, USB 3.2 Gen 2, USB 3.2 Gen 1, USB 2.0
Video Outputs	HDMI, DisplayPort
Wireless Type	None (802.11ax mentioned in specs, but product description states no WIFI function)

Note: While 802.11ax is listed in some specifications, the product description explicitly states that the motherboard does not have WIFI function. Please refer to the product description for accurate information regarding wireless connectivity.

10. WARRANTY AND SUPPORT

MSI products are covered by a manufacturer's warranty. For detailed warranty terms, conditions, and duration, please refer to the warranty card included in your package or visit the official MSI website.

For technical support, driver downloads, and further assistance, please visit the official MSI support page:

[MSI Official Support](#)

