

Z790 GAMING PLUS

MSI MAG Z790 GAMING PLUS WIFI6e Intel 12th / 13th / 14th Gen Socket LGA 1700 ATX
Motherboard

Product Overview

MSI MAG Z790 GAMING PLUS WIFI6e Intel 12th / 13th / 14th Gen Socket LGA 1700 ATX Motherboard, 4x DDR5 DIMM Memory slots, 1x HDMI, 1x DisplayPort, 3x PCI-e x16 slot, 1x PCI-e x1 slot, PCI_E1 Gen PCI-e 5.0 supports up to x16, PCI_E2 Gen PCI-e 3.0 supports up to x1, PCI_E3 Gen PCI-e 4.0 supports up to x4, PCI_E4 Gen PCI-e 3.0 supports up to x1, 7.1-channel High Definition Audio, 4x M.2 supports up to PCI-e 4.0 x4, 6x SATA 6G Ports, USB 2.0, USB 5Gbps Type-A, USB 10Gbps Type-A, USB 10Gbps Type-C, USB 20Gbps Type-C, Intel 2.5Gbps LAN, Wi-Fi 6E, Bluetooth, Audio connectors, Flash BIOS Button





Specifications

Overview Summary:

The MSI MAG Z790 Gaming Plus WiFi is a high-performance ATX motherboard built for Intel 12th, 13th and 14th Gen processors. With DDR5 memory support, PCIe 5.0, four M.2 slots, Wi-Fi 6E and 2.5G LAN, it provides a strong foundation for a modern gaming or performance PC. Buy now and build a fast, capable system with advanced connectivity and expansion options.

Its robust power delivery, extensive cooling features and high-speed USB connectivity make it well suited to demanding workloads and enthusiast PC builds. Shop now in South Africa and upgrade your desktop with a versatile Intel Z790 platform.

Performance tier:High-end

Uses:Gaming PCs, high-performance desktops, content creation, streaming, multitasking, enthusiast PC builds

Overview:

MSI MAG Z790 GAMING PLUS WIFI6E Intel LGA 1700 ATX Motherboard

The MSI MAG Z790 GAMING PLUS WIFI6E is a performance-focused ATX motherboard designed for Intel 12th, 13th and 14th Gen processors using the LGA 1700 socket. It combines DDR5 memory support, PCIe 5.0 graphics connectivity, four M.2 slots, 2.5Gbps LAN, Wi-Fi 6E and a comprehensive selection of high-speed USB ports. With a reinforced power design, enhanced thermal management and practical installation features, it provides a strong foundation for gaming PCs, performance workstations and enthusiast systems.

Description:

The MSI MAG Z790 GAMING PLUS WIFI6E is built for users who want dependable performance and plenty of room for future upgrades. Its 14+1+1 power design, dual CPU power connectors and Core Boost technology help deliver stable power to compatible Intel processors, while the extended heatsinks and 7W/mK thermal pads assist with heat management during demanding workloads.

DDR5 memory support allows the motherboard to take advantage of high-speed memory kits, with support for speeds up to 7200+ MHz through overclocking. Four DIMM slots provide flexibility for building a system with substantial memory capacity, while MSI Memory Boost and XMP support make memory tuning easier.

Storage options are equally versatile. Four M.2 slots support high-speed PCIe storage, with M.2 Shield Frozr helping to

manage SSD temperatures. Six SATA 6Gbps ports are also available for additional storage drives. The primary PCIe slot uses PCIe 5.0 and is reinforced with Steel Armor to provide additional support for larger graphics cards.

Features:

Intel LGA 1700 Platform and DDR5 Memory

Designed for Intel 12th, 13th and 14th Gen processors, the Z790 GAMING PLUS WIFI6E provides a modern platform for gaming and demanding desktop applications. DDR5 memory support delivers improved bandwidth, while MSI XMP technology simplifies the process of applying compatible memory profiles.

Key memory and processor support includes:

- Intel Core 14th, 13th and 12th Gen processors
- LGA 1700 socket
- Four DDR5 DIMM slots
- DDR5 support up to 7200+ MHz (OC)
- MSI Memory Boost technology
- Intel XMP support

Power Delivery and Thermal Management

The 14+1+1 Duet Rail Power System is designed to provide stable power delivery to the CPU and other critical components. Dual 8-pin CPU power connectors provide additional power capacity for high-performance processors, while Core Boost technology helps optimise power delivery.

The motherboard also uses a 6-layer PCB with 2oz thickened copper to support reliable signal transmission and high-speed connectivity. Extended heatsinks, MOSFET thermal pads and additional choke thermal pads help keep important components under control during sustained workloads.

For liquid cooling systems, a dedicated water pump header supports pumps rated up to 3A. Multiple fan headers can also detect DC and PWM fans automatically, allowing users to manage cooling performance through the BIOS or MSI software.

PCIe 5.0 and Expansion

The primary PCIe x16 slot supports PCIe 5.0 and is reinforced with Steel Armor for improved mechanical strength. The SMT PCIe design helps reduce electrical interference and supports the high signal requirements of PCIe 5.0.

Expansion options include:

- PCI_E1: PCIe 5.0 x16
- PCI_E2: PCIe 3.0 x1
- PCI_E3: PCIe 4.0 x4
- PCI_E4: PCIe 3.0 x1
- Reinforced primary PCIe slot with additional solder points

The reinforced slot is particularly useful for systems using larger and heavier modern graphics cards.

Fast M.2 and SATA Storage

Four M.2 connectors provide a convenient way to build a fast NVMe storage configuration without relying solely on traditional SATA drives. PCIe 4.0 x4 support allows compatible M.2 SSDs to deliver high transfer speeds, while M.2 Shield Frozr helps reduce heat buildup.

The storage configuration includes:

- 4x M.2 slots supporting up to PCIe 4.0 x4
- 6x SATA 6Gbps ports

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- EZ M.2 Clip for easier SSD installation
- M.2 Shield Frozr thermal protection

With multiple M.2 and SATA connections, the board is well suited to systems requiring a combination of fast operating system storage, game libraries and larger data drives.

High-Speed USB Connectivity

The Z790 GAMING PLUS WIFI6E provides a broad range of USB connectivity for modern peripherals, external storage and accessories. Rear USB connectivity includes USB 20Gbps Type-C, while USB 10Gbps and USB 5Gbps ports provide additional options.

USB connectivity includes:

- USB 20Gbps Type-C
- USB 10Gbps Type-C
- USB 10Gbps Type-A
- USB 5Gbps Type-A
- USB 2.0
- Front USB Type-C support

The 20Gbps USB Type-C connection is useful for compatible high-speed external storage and other demanding USB devices.

Wi-Fi 6E, Bluetooth and 2.5Gbps Networking

Integrated networking makes it possible to build a high-performance PC without requiring additional expansion cards. Wi-Fi 6E provides access to the 6GHz wireless band on compatible networks, while Bluetooth 5.3 supports compatible wireless accessories.

The wired Intel 2.5Gbps LAN connection provides higher network throughput than standard Gigabit Ethernet, making it useful for fast local network transfers, gaming and other bandwidth-intensive applications.

Connectivity includes:

- Intel 2.5Gbps LAN
- Wi-Fi 6E
- Bluetooth 5.3

High Definition Audio and Mystic Light

MSI Audio Boost technology is designed to provide a cleaner and more immersive audio experience. The motherboard uses a high definition audio processor, quality audio capacitors, isolated audio circuitry and high-quality audio connectors.

MSI Mystic Light also allows compatible RGB lighting to be controlled and synchronised through software. RGB and addressable RGB headers provide additional options for compatible lighting accessories, while Ambient Link can synchronise supported lighting effects across compatible components.

Easy BIOS and System Management

MSI Click BIOS 5 provides both EZ Mode and Advanced Mode, allowing users to adjust system settings according to their experience level. Hardware monitoring provides access to information such as temperatures, voltages, clock speeds and memory status.

Useful motherboard tools include:

- XMP memory profile support
- M-FLASH BIOS updating
- Hardware Monitor

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- Memory Try It
- Search and Favorites
- Resizable BAR support
- EZ Debug LED
- Flash BIOS Button

The Flash BIOS Button provides a convenient way to update the BIOS with a connected power supply, without requiring a CPU or memory to be installed.

Practical DIY Design

MSI has included several features intended to make PC assembly and maintenance easier. The pre-installed I/O shield simplifies installation, while the enlarged PCIe clip makes it easier to remove expansion cards. The EZ M.2 Clip also reduces the need to work with small screws when installing compatible M.2 SSDs.

The Driver Utility Installer can detect suitable drivers and utilities once the system is connected to the internet, helping simplify initial system setup.

Display and Internal Connectivity

The motherboard provides HDMI and DisplayPort outputs for compatible processor graphics, alongside multiple internal headers for cooling, USB devices and RGB lighting.

The main hardware connections include:

- 1x HDMI
- 1x DisplayPort
- 3x PCIe x16 physical slots
- 1x PCIe x1 slot
- 4x M.2
- 6x SATA 6Gbps
- Internal USB and front USB Type-C connectivity
- CPU, system fan and water pump headers
- RGB and addressable RGB headers

MSI MAG Z790 GAMING PLUS WIFI6E for Gaming and Performance PCs

With PCIe 5.0 graphics support, fast DDR5 memory, four M.2 slots, 2.5Gbps Ethernet and Wi-Fi 6E, the MSI MAG Z790 GAMING PLUS WIFI6E provides the connectivity and expansion needed for a modern high-performance desktop. Its strong VRM design and thermal solution also make it suitable for demanding processors and extended workloads.

The part number / SKU for this motherboard is Z790 GAMING PLUS, making it easy to identify when checking compatibility, availability or system build requirements.

Key Technical Details

- Model: MSI MAG Z790 GAMING PLUS WIFI6E
- Form factor: ATX
- CPU socket: LGA 1700
- Processor support: Intel 12th, 13th and 14th Gen
- Memory: 4x DDR5 DIMM
- Memory speed: Up to 7200+ MHz (OC)
- Graphics interface: PCIe 5.0 x16
- M.2 storage: 4x PCIe 4.0 x4
- SATA: 6x SATA 6Gbps

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- Wired networking: Intel 2.5Gbps LAN
- Wireless networking: Wi-Fi 6E
- Bluetooth: Bluetooth 5.3
- Audio: 7.1-channel High Definition Audio
- USB: Up to USB 20Gbps Type-C
- Video outputs: HDMI and DisplayPort
- BIOS recovery: Flash BIOS Button
- Part Number / SKU: Z790 GAMING PLUS

Specifications:

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Specifications	
Product Code	Z790 GAMING PLUS
Chipset	INTEL Z790
CPU	Support Intel Core 14th/ 13th/ 12th Gen Processors, Intel Pentium Gold and Celeron Processors
	LGA 1700
Memory	4x DDR5, Maximum Memory Capacity 256GB
	Memory Support 7200+(OC) / 7000(OC) / 6800(OC) / 6600(OC) / 6400(OC) / 6200(OC) / 6000(OC) / 5800(OC) / 5600(JEDEC) / 5400(JEDEC) / 5200(JEDEC) / 5000(JEDEC) / 4800(JEDEC) MHz
	Max. overclocking frequency:
	1DPC 1R Max speed up to 7200+ MHz
	1DPC 2R Max speed up to 6600+ MHz
	2DPC 1R Max speed up to 6400+ MHz
	2DPC 2R Max speed up to 5600+ MHz
	Supports Intel XMP3.0 OC
	Supports Dual-Controller Dual-Channel mode
	Supports non-ECC, un-buffered memory
Onboard Graphics	1x HDMI
	Support HDMI 2.1 HDR, maximum resolution of 4K 60Hz
	1x DisplayPort
	Support DP 1.4, maximum resolution of 4K 60Hz
	*Available only on processors featuring integrated graphics. Graphics specifications may vary depending on the CPU installed.

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Slot	3x PCI-E x16 slot
	1x PCI-E x1 slot
	PCI_E1 Gen PCIe 5.0 supports up to x16 (From CPU)
	PCI_E2 Gen PCIe 3.0 supports up to x1 (From Chipset)
	PCI_E3 Gen PCIe 4.0 supports up to x4 (From Chipset)
	PCI_E4 Gen PCIe 3.0 supports up to x1 (From Chipset)
Audio	Realtek ALC897 Codec
	7.1-Channel High Definition Audio
Storage	4x M.2
	M.2_1 Source (From CPU) supports up to PCIe 4.0 x4 , supports 22110/2280/2260/2242 devices
	M.2_2 Source (From Chipset) supports up to PCIe 4.0 x4 , supports 2280/2260/2242 devices
	M.2_3 Source (From Chipset) supports up to PCIe 4.0 x4 / SATA mode, supports 2280/2260/2242 devices
	M.2_4 Source (From Chipset) supports up to PCIe 4.0 x4 / SATA mode, supports 2280/2260/2242 devices
	6x SATA 6G
RAID	Supports RAID 0, RAID 1, RAID 5 and RAID 10 for SATA storage devices
	Supports RAID 0, RAID 1, RAID 5 and RAID 10 for M.2 NVMe storage devices
USB	4x USB 2.0 (Rear)
	4x USB 2.0 (Front)
	2x USB 5Gbps Type A (Rear)
	4x USB 5Gbps Type A (Front)
	1x USB 10Gbps Type A (Rear)
	1x USB 10Gbps Type C (Front)
	1x USB 20Gbps Type C (Rear)
LAN	Intel 2.5Gbps LAN

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Internal IO	1x Power Connector(ATX_PWR)
	2x Power Connector(CPU_PWR)
	1x CPU Fan
	1x Pump Fan
	6x System Fan
	2x Front Panel (JFP)
	1x Chassis Intrusion (JCI)
	1x Front Audio (JAUD)
	1x Tuning Controller connector(JDASH)
	2x Addressable V2 RGB LED connector (JARGB_V2)
	2x RGB LED connector(JRGB)
	1x TPM pin header(Support TPM 2.0)
	1x USB4 card connector (JTBT_U4_1, supports RTD3)
	4x USB 2.0 ports
	4x USB 5Gbps Type A ports
	1x USB 10Gbps Type C ports
WIRELESS LAN & BLUETOOTH	Intel Wi-Fi 6E
	The Wireless module is pre-installed in the M.2 (Key-E) slot
	Supports MU-MIMO TX/RX, 2.4GHz / 5GHz / 6GHz* (160MHz) up to 2.4Gbps
	Supports 802.11 a/ b/ g/ n/ ac/ ax
	Supports Bluetooth 5.3, FIPS, FISMA
	* Wi-Fi 6E 6GHz may depend on every country's regulations and will be ready in Windows 11.
	** Bluetooth 5.3 will be ready in Windows 10 build 21H1 and Windows 11.
LED FEATURE	4x EZ Debug LED
BACK PANEL PORTS	Keyboard / Mouse
	DisplayPort
	USB 2.0
	2.5G LAN Port
	Wi-Fi / Bluetooth Antenna
	Audio Connectors
	Flash BIOS Button
	USB 2.0
	HDMI 2.1 Port
	USB 3.2 Gen 1 5Gbps Type-A
	USB 3.2 Gen 2x2 20Gbps Type-C
	USB 3.2 Gen 2 10Gbps Type-A
OPERATING SYSTEM	Support for Windows 11 64-bit, Windows 10 64-bit

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Product Specification Sheet

PCB Info	ATX
	243.84mmx304.8mm

Product Information Online

For the latest product information, availability and purchasing details, please visit the product page:

Product page:

<https://www.comx-computers.co.za/Z790-GAMING-PLUS-MSI-MAG-Z790-GAMING-PLUS-WIFI6e-Intel-Buy-p-339972.php>

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