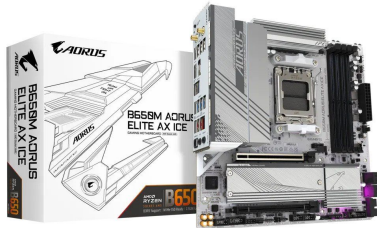


MB-GB650MAEW+W

Gigabyte B650M Aorus Elite AX Ice AMD B650 Chipset AM5 Ryzen Socket Micro ATX Motherboard

Product Overview

Gigabyte B650M AORUS Elite AX Ice WiFi Motherboard: AMD B650 chipset, Socket AM5, supports Ryzen 7000/8000 Series CPUs, PCIe 5.0 support, 2.5GbE LAN, Wi-Fi 6E, HDMI, DisplayPort, USB-C, and more.



Specifications

Features:

- AMD Socket AM5: Supports AMD Ryzen™ 7000 / Ryzen™ 8000 / Ryzen™ 9000 Series Processors
- Unparalleled Performance: Twin 12+2+2 Phases Digital VRM Solution
- Dual Channel DDR5: 4*DIMMs with AMD EXPO™ & Intel® XMP Memory Module Support
- Superfast Storage: 1* PCIe 5.0 x4 and 1* PCIe 4.0 x4 M.2 Connector
- Advanced Thermal Design & M.2 Thermal Guard : To Ensure VRM Power Stability & 25110 M.2 SSD Performance
- EZ-Latch: PCIe x16 Slot & M.2 Connectors with Quick Release & Screwless Design
- Fast Networks: 2.5GbE LAN & Wi-Fi 6E
- Extended Connectivity: HDMI, DP, Front USB-C® 20Gb/s, Rear USB-C® 10Gb/s
- Smart Fan 6: Features Multiple Temperature Sensors, Hybrid Fan Headers with FAN STOP
- Q-Flash Plus: Update BIOS Without Installing the CPU, Memory and Graphics Card

Power in number

All AORUS series gaming motherboards are equipped with an all-digital power design, which delivers the best stability under heavy workloads.

Digital Twin VRM Design

Ensures stable high-power delivery for advanced overclocking.

12 VCORE Phases 60A Dr.MOS

to unleash the full potential of multi-core CPU performance.

2 SOC Phases 60A Dr.MOS

for CPU integrated GPU performance and memory control.

2 MISC Phases

provide stable power for CPU-connected PCIe lanes.

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Memory, to the future

All AORUS series gaming motherboards feature multiple techniques to enhance the performance of DDR5 memory with the best compatibility.

BIOS Engineering

Feature-rich BIOS functions that enable easy access to the best-in-class DDR5 performance.

DDR5 Auto Booster

one click to boost native DDR5-4800 to 5000

AMD EXPO™/ Intel® XMP 3.0 User Profile

optimizes memory settings and achieve the best performance for the system

High Bandwidth

one click to increase DDR5 bandwidth

Low Latency

one click to shorten DDR5 latency

Maximize DDR5 performance with your memory settings

AMD EXPO™/ Intel® XMP 3.0 User Profile empowers you to optimize your memory settings and achieve the best performance for your system.

SPD Re-defined or retrieve from database

Users can define two empty SPD profiles and transfer them to another computer.

Save/Load Profile

Save and load memory profiles for online sharing.

Performance Simulation

Simulate memory performance quickly by inputting clock and timing parameters.

Boost non-overclockable DDR5 memory frequency

Increase the frequency of non-overclockable DDR5 memory.

One-click Clear Profile

Reset memory settings conveniently.

Hardware Craftsmanship

Maximize DDR5 performance with our advanced technology for an unparalleled gaming experience.

Shielded Memory Routing

Memory routing is shielded within the PCB's inner layer to protect against interference.

Daisy-Chained Routing

Optimized routing eliminates the stub effect, enabling higher memory frequencies and providing professional gamers with a faster and denser system memory experience.

Overall Thermal

Every AORUS motherboard is armored with the most advanced, full metal thermal design. These solid heatsinks are forged to keep your system cool while running fast.

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VRM Thermal Armor Advanced

These solid heatsinks are forged to keep your system cool.

M.2 Thermal Guard

prevents throttling and bottlenecks from high speed M.2 SSDs

VRM Thermal Armor Advanced

High coverage MOSFETs and integrated molded heatsinks improve thermal efficiency by enhancing airflow and heat exchange.

3X Large Surface

The surface area has been increased up to 3X larger compared to traditional heatsinks, resulting in improved heat dissipation from the MOSFETs.

Real One-piece Build

The TRUE single-piece heatsink offers superior cooling performance compared to competitors' multi-piece designs, thanks to its one-piece construction and larger surface area.

Multi-Cut Design

With its Multi-Cut Design, this heatsink includes multiple channels and inlets to enhance airflow, resulting in improved heat transfer performance.

6mm Heatpipe

6mm heatpipe helps to transfer heat between two heatsinks which improves overall thermal balance of the MOSFETs.

5 W/mK Thermal Pad

Optimize hardware performance with our advanced 5 W/mK Thermal Pad for efficient heat dissipation.

2X Copper Enhancement

Enhances system performance with improved heat dissipation, power handling, and seamless overclocking support.

Smart Fan 6

ensures optimal cooling and quiet operation for your gaming PC, with support for PWM/DC fans and pumps, customizable settings, and intuitive temperature monitoring.

High Current Support

Each fan headers support PWM and DC fan and Water Cooling Pump , and up to 24W (12V x 2A) with Over-Current Protection.

Precision Control

Multiple temperature/fan speed control points for precise fan curve.

Dual Curve Mode

Slope/Stair dual mode for different user scenario.

Fan Stop

Fan can stop completely below users' specified temperature point.

Enhance Fan Curve UI

Enhance fan curve control with an expanded number of control points, from 5 to 7, and a larger fan speed graph, enabling users to have more precise and effortless control over fan curve settings.

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Slope/Stair Dual Graph Mode

Switch between Slope and Stair modes to adapt to various user scenarios. Slope mode provides a linear fan speed curve, while Stair mode maintains a constant fan speed within specified temperature intervals.

Manual Input

For advanced users, manual input of fan speeds is available for fine-tuning and precise control over the cooling system.

EZ Tuning

Simplify the process with EZ Tuning by setting 4 points on a rough temperature/fan speed scale. Smart Fan 6 will quickly generate a fan curve based on these points.

Fan Curve Profile

Save your customized fan curve profile in the BIOS ROM, ensuring it remains intact even after BIOS updates.

Build effortless

Building your own PC is meant to be joyful and effortless. AORUS serious motherboard the most DIY-friendly ever.

EZ-Latch Designs

Effortless mechanisms that enable easy installations of components.

M.2 EZ-Latch Plus

screwless installation for M.2 SSDs

PCIe EZ-Latch

easy detachment for graphics cards

Multi-key

A multi-function reset button that can be reconfigured to other function in BIOS for different user scenarios.

RGB Switch

Turn off all lighting effect on motherboard.

Direct-To-BIOS

Boot into BIOS menu directly without pressing any keyboard button.

Safe Mode

Boot into BIOS safe mode to change specific option without losing other BIOS settings.

Q-FLASH PLUS

Update the BIOS easily without installing the CPU, memory and graphics card.

Get everythingUD

GIGABYTE Ultra Durable™ Technology represents our highest standards to provide a platform for gamers that is not only powerful but also durable and reliable. AORUS series motherboard is built to last longer and stand stronger.

PCIe UD Slot

GIGABYTE's one-piece stainless-steel shielding design reinforces the PCIe Slots, providing the extra strength required to support heavy graphics cards.

1.7X

stronger shearing test

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3.2X

stronger retention force test

UD Power Connector

The unique design provides better conductivity for power and better dissipation for the heat generated from it.

Solid Pin Power Connector for CPU

provides superior conductivity & signal transmission, reducing metal loss from repeated plugging.

Connectivity versatile

Enable the ultimate connection experience with blazing data-transfer speeds through the next generation network, storage, and Wi-Fi connectivity.

Enhancing VR Experiences with Wi-Fi 6E

Wi-Fi 6E enhances VR with faster speeds, lower latency, increased capacity, and stronger security, enabling seamless wireless streaming of high-quality VR games and improved multi-user experiences.

Lower Latency

Lower latency ensures minimal delay between their actions and the corresponding response in online games, resulting in a more responsive and immersive gaming experience.

Increased Capacity

Wi-Fi 6E's increased capacity ensures smoother gameplay by minimizing congestion and maintaining consistent performance.

Higher Speeds

Faster transmission speeds enable quick downloads, seamless online gaming, and smooth video streaming without interruptions.

Broader spectrum

Wi-Fi 6E's use of the 6 GHz frequency band provides additional bandwidth, reducing congestion and interference from other devices.

GIGABYTE Ultra-high Gain Antenna

Experience enhanced signal strength with the GIGABYTE Ultra-high gain Antenna, which incorporates a smart antenna function to optimize Wi-Fi signal transmission.

High Quality Sound

Enjoy a high-quality sound experience, which supports 7.1 channel playback, features an advanced microphone array, and offers versatile connectivity options for gaming and entertainment.

Audiophile Grade Capacitors

Premium Grade Audio capacitors provide stable current, delivering a studio-quality experience.

Elevating Performance Together

AORUS series motherboard signifies our dedication to BIOS optimization. Through our community partnership, we're making next-gen performance more user-friendly.

UC BIOS

Redesigned as user-centered and provides intuitive performance tweakers.

Redesigned UI and UX

an intuitive operation interface with an aesthetically pleasing design.

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Quick Access

9 customizable option slots for effortless access in Easy Mode.

Enhanced Intuitive UX

GIGABYTE User-Centred(UC) BIOS has enhanced the BIOS UX to provide users with an optimized experience featuring an intuitive operation interface and an aesthetically pleasing design.

Quick Access Function

GIGABYTE UC BIOS' Quick Access function selects 9 practical preset options from ADVANCE MODE and places them in EASY MODE for effortless access without switching or searching.

Exclusive Partnership

introduces innovative features for computer enthusiasts and professionals

Default AORUS skin

When running HWINFO on a GIGABYTE motherboard, a unique, AORUS-themed skin will be automatically applied as default that is available in bright or dark mode. This AORUS skin can also be manually applied on non-GIGABYTE motherboards.

Memory Timings Monitor

As a result of the great efforts of expert developers from GIGABYTE and HWINFO, this advanced readout application shows the most detailed memory timing settings ever, and help users monitor their memory performance and gain valuable insights.

Detailed BIOS information

GIGABYTE motherboard users can now check out the detailed BIOS information in real time via HWINFO, such as status of toggles or tweakers, and the BIOS versions. No more reboot for BIOS check!

GIGABYTE Control Center

a unified software platform across a variety of GIGABYTE products.

RGB Fusion

customize the RGB lighting on the motherboard or devices that connect to it.

Showcase your style

Unleash your creativity with GCC's customizable lighting effects for your motherboard. Personalize your system with stunning visuals that reflect your individuality and style.

Supercharge your lighting options

Addressable RGB LED headers allow you to customize each LED individually (for ARGB GEN2 devices), and you can easily accomplish this using GCC.

Specifications:

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Specifications	
Product Code	MB-GB650MAEW+W
CPU	AMD Socket AM5, support for:
	AMD Ryzen 7000 / Ryzen 8000 / Ryzen 9000 Series Processors
Chipset	AMD B650

Memory	Support for DDR5 8000(OC) / 7800(OC) / 7600(OC) / 7200(OC) / 7000(OC) / 6800(OC) / 6666(OC) / 6600(OC) / 6400(OC) / 6200(OC) / 6000(OC)/5600(OC)/5200/4800/4400 MT/s memory modules
	4 x DDR5 DIMM sockets supporting up to 256 GB (64 GB single DIMM capacity) of system memory
	Dual channel memory architecture
	Support for non-ECC Un-buffered DIMM 1Rx8/2Rx8/1Rx16 memory modules
	Support for AMD EXtended Profiles for Overclocking (AMD EXPO) and Extreme Memory Profile (XMP) memory modules
	(The CPU and memory configuration may affect the supported memory types, data rate (speed), and number of DRAM modules)
Onboard Graphics	Integrated Graphics Processor with AMD Radeon Graphics support:
	- 1 x DisplayPort, supporting a maximum resolution of 3840x2160@144 Hz
	* Support for DisplayPort 1.4 version and HDR.
	- 1 x HDMI port, supporting a maximum resolution of 4096x2160@60 Hz
	* Support for HDMI 2.1 version and HDCP 2.3.
	** Support for native HDMI 2.1 TMDS compatible ports.
	(Graphics specifications may vary depending on CPU support.)
Audio	Realtek Audio CODEC
	High Definition Audio
	2/4/5.1/7.1-channel
	* You can change the functionality of an audio jack using the audio software. To configure 7.1-channel audio, access the audio software for audio settings.
	Support for S/PDIF Out
LAN	Realtek 2.5GbE LAN chip (2.5 Gbps/1 Gbps/100 Mbps)
Wireless Communication module	Realtek Wi-Fi 6E RTL8852CE (PCB rev. 1.0)
	- WIFI a, b, g, n, ac, ax, supporting 2.4/5/6 GHz carrier frequency bands
	- BLUETOOTH 5.3
	- Support for 11ax 160MHz wireless standard
	Intel Wi-Fi 6E AX210 (PCB rev. 1.1)
	- WIFI a, b, g, n, ac, ax, supporting 2.4/5/6 GHz carrier frequency bands
	- BLUETOOTH 5.3
	- Support for 11ax 160MHz wireless standard
	(Actual data rate may vary depending on environment and equipment.)

Expansion Slots	1 x PCI Express x16 slot (PCIEX16), integrated in the CPU:
	AMD Ryzen 7000 Series Processors/ Ryzen 9000 Series Processors support PCIe 4.0 x16 mode
	AMD Ryzen 8000 Series-Phoenix 1 Processors support PCIe 4.0 x8 mode
	AMD Ryzen 8000 Series-Phoenix 2 Processors support PCIe 4.0 x4 mode
	* The PCIEX16 slot can only support a graphics card or an NVMe SSD. If only one graphics card is to be installed, be sure to install it in the PCIEX16 slot.
	Chipset:
	- 1 x PCI Express x16 slot, supporting PCIe 4.0 and running at x4 (PCIEX4)
Storage Interface	1 x M.2 connector (M2A_CPU), integrated in the CPU, supporting Socket 3, M key, type 25110/22110/2580/2280 SSDs:
	AMD Ryzen 7000 Series Processors/ Ryzen 9000 Series Processors support PCIe 5.0 x4/x2 SSDs
	AMD Ryzen 8000 Series-Phoenix 1 Processors support PCIe 4.0 x4/x2 SSDs
	AMD Ryzen 8000 Series-Phoenix 2 Processors support PCIe 4.0 x4/x2 SSDs
	1 x M.2 connector (M2B_CPU), integrated in the CPU, supporting Socket 3, M key, type 25110/22110/2580/2280 SSDs:
	AMD Ryzen 7000 Series Processors/ Ryzen 9000 Series Processors support PCIe 4.0 x4/x2 SSDs
	AMD Ryzen 8000 Series-Phoenix 1 Processors support PCIe 4.0 x4/x2 SSDs
	AMD Ryzen 8000 Series-Phoenix 2 Processors support PCIe 4.0 x2 SSDs
	4 x SATA 6Gb/s connectors
	RAID 0, RAID 1, and RAID 10 support for NVMe SSD storage devices
	RAID 0, RAID 1, and RAID 10 support for SATA storage devices
USB	CPU:
	- 1 x USB Type-C port on the back panel, with USB 3.2 Gen 2 support
	- 2 x USB 3.2 Gen 2 Type-A ports (red) on the back panel
	CPU + USB 2.0 Hub:
	- 4 x USB 2.0/1.1 ports on the back panel
	Chipset:
	- 1 x USB Type-C port with USB 3.2 Gen 2x2 support, available through the internal USB header
	- 3 x USB 3.2 Gen 1 ports (1 port on the back panel, 2 ports available through the internal USB header)
	- 4 x USB 2.0/1.1 ports available through the internal USB headers
	Chipset+USB 3.2 Gen 1 Hub:
	- 4 x USB 3.2 Gen 1 ports on the back panel

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Internal I/O Connectors	1 x 24-pin ATX main power connector
	1 x 8-pin ATX 12V power connector
	1 x CPU fan header
	1 x CPU fan/water cooling pump header
	3 x system fan headers
	1 x system fan/water cooling pump header
	2 x addressable LED strip headers
	2 x RGB LED strip headers
	1 x CPU cooler LED strip/RGB LED strip header
	2 x M.2 Socket 3 connectors
	4 x SATA 6Gb/s connectors
	1 x front panel header
	1 x front panel audio header
	1 x USB Type-C header, with USB 3.2 Gen 2x2 support
	1 x USB 3.2 Gen 1 header
	2 x USB 2.0/1.1 headers
	1 x serial port header
	1 x THB_U4 add-in card connector
	1 x Trusted Platform Module header (For the GC-TPM2.0 SPI/GC-TPM2.0 SPI 2.0/ GC-TPM2.0 SPI V2 module only)
	1 x reset button
	1 x reset jumper
	1 x Clear CMOS jumper
Back Panel Connectors	1 x Q-Flash Plus button
	2 x SMA antenna connectors (2T2R)jk
	1 x DisplayPort
	1 x HDMI port
	1 x USB Type-C port, with USB 3.2 Gen 2 support
	2 x USB 3.2 Gen 2 Type-A ports (red)
	5 x USB 3.2 Gen 1 ports
	4 x USB 2.0/1.1 ports
	1 x RJ-45 port
	1 x optical S/PDIF Out connector
	2 x audio jacks
I/O Controller	iTE I/O Controller Chip

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H/W Monitoring	Voltage detection
	Temperature detection
	Fan speed detection
	Water cooling flow rate detection
	Fan fail warning
	Fan speed control
	* Whether the fan (pump) speed control function is supported will depend on the fan (pump) you install.
BIOS	1 x 256 Mbit flash
	Use of licensed AMI UEFI BIOS
	PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0
Unique Features	Support for GIGABYTE Control Center (GCC)
	* Available applications in GCC may vary by motherboard model. Supported functions of each application may also vary depending on motherboard specifications.
	Support for Q-Flash
	Support for Q-Flash Plus
Bundled Software	Norton Internet Security (OEM version)
	LAN bandwidth management software
Operating System	Support for Windows 11 64-bit
	Support for Windows 10 64-bit
Form Factor	Micro ATX Form Factor; 24.4cm x 24.4cm

Product Information Online

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

Product page: <https://www.comx.co.za/MB-GB650MAEW-W-Gigabyte-B650M-Aorus-Elite-AX-Ice-AMD-Buy-p-320253.php>

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