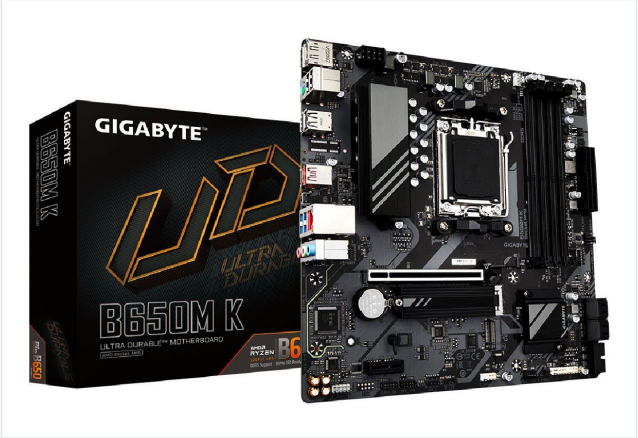
ComX Computers
Product Specification Sheet

MB-GB650MK

Gigabyte B650M-K AMD B650 Chipset AMD Ryzen 7000 AM5 Socket Micro ATX Motherboard

Product Overview

Gigabyte B650M-K: AMD AM5 mb - with 8 2 1 phase digital VRM, Addressable LED Strip Support, on-board multi-key buttons, 2x copper PCBs design, MoSFET heatsinks SmartFan6 with 5x temperature sensors 3x hybrid fan headers, solid pin power connectors



Specifications

Features:

UNPARALLELED PERFORMANCE
GIGABYTE Motherboards' unparalleled performance is guaranteed by innovative and optimized thermal design to ensure the best CPU, Chipset, SSD stability and low temperatures under full load application and gaming performance.

Digital VRM Design
To ensure maximum Turbo Boost and overclocking performance of AMD's new generation CPU, GIGABYTE UD series motherboard equip the best VRM design ever built with the highest quality components.

PCIe 4.0 Hardware Design
GIGABYTE B650 Motherboards are ready to work with the PCIe 4.0 devices which are expected to experience twice bandwidth than the current PCIe 3.0 devices. To reach the high speed and maintain good signal integrity, GIGABYTE R&D uses the low impedance PCB to provide the maximum performance.

DDR5 EXPO & XMP Overclocking Up to 6400 and Beyond*
AORUS is offering a tested and proven platform that the memory overclocking capability is able up to 6400 and beyond. All users need to do for achieving this extreme memory performance boost is to ensure that their DDR5 memory modules are AMD EXPO™/ Intel® XMP capable, the EXPO/XMP function is activated and enabled on their AORUS motherboard.

Unlock DDR5 Voltage

- GIGABYTE exclusive circuit design unlocks Native DDR5 voltage control
- Transforms Native DDR5 memory module to Overclocked DDR5 memory
- Increases DDR5 memory overclocking performance and capability
- Supports all PMIC vendors for maximum compatibility

Programmable Mode
GIGABYTE's exclusive design unlocks Native DDR5 PMIC secure mode into programmable mode and control Native DDR5 voltage with wide range.

Shielded Memory Routing
All memory routing is under the PCB inner layer shielded by a large ground layer to protect from external interference.

EXPO and XMP Dual Support
GIGABYTE AM5 MB supports both AMD EXPO™ and Intel® XMP overclocking memory modules for maximal compatibility. MB will automatically detect both profiles format in SPD, users can choose to enable one of profiles from BIOS menu and easily reach overclocked memory performance.

DDR5 Auto Booster
Automatically Boost the Native DDR5 frequency to 5000MHz while the system is under heavy loading by a single click.

AMD EXPO™ and Intel® XMP 3.0 User Profile
Define and create your own SPD profile into Native, EXPO and XMP 3.0 memory modules. One user-defined profile can be saved, loaded either locally or from/to an external storage device.

- One empty SPD profile can be defined by users and carry to next computer
- Quick memory performance simulation based on user input clock and timing parameters
- Profile save and load function to share your memory parameters online

THERMAL DESIGN
GIGABYTE Motherboards' unparalleled performance is guaranteed by innovative and optimized thermal design to ensure the best CPU, Chipset, SSD stability and low temperatures under full load application and gaming performance.

Advanced Thermal Heatsinks
Advanced thermal heatsinks to improve thermal efficiency with better airflow and heat exchange.

6-Layer & 2X Copper PCB
2X copper PCBs design effectively lower the component temperature by its high thermal conductivity and low impedance.

M.2 Thermal Guard
The M.2 Thermal Guard prevents throttling and bottlenecks from high speed M.2 SSDs as it helps to dissipate heat before it becomes an issue.

SMART FAN 6
Smart Fan 6 contains several unique cooling features that ensure gaming PC maintain its performance while staying cool and quiet. Multiple fan headers can support PWM/DC fan and pump, and users can easily define each fan curve based on different temperature sensors across the board via intuitive user interface.

Cooling Features
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

Improve fan curve UI
We increase control points from 5 to 7 and larger fan speed graph for precise and easier fan curve control.

Slope/Stair dual graph mode

Fan curve can be quickly switch with Slope and Stair modes for different user scenario. Slope is traditional and intuitive linear fan speed curve. With newly added Stair non-linear mode, fan keeps at same speed between specified temperature interval.

Manual Input
For advanced users, we provide fan speed manual input for more precise control.

EZ Tuning
Use can place 4 EZ Tuning points at rough temperature/fan speed, and Smart Fan 6 can quickly generate a fan curve.

Fan curve profile
Fan curve profile can be saved in BIOS ROM, profile will be kept after updating BIOS.

CONNECTIVITY
GIGABYTE Motherboards enable the ultimate connection experience with blazing data-transfer speeds through the next generation network, storage.

2X Faster than ever

- Adoption of 2.5G LAN provide up to 2.5 GbE network connectivity, with at least 2 times faster transfer speeds compared to general 1GbE networking, perfectly designed for gamers with ultimate online gaming experience.
- Support Multi-Gig(10/100/1000/2500Mbps) RJ-45 Ethernet

Connecting the Future - USB Type-C®
The USB Type-C with front USB 3.2 Gen 1 and rear USB 3.2 Gen 2 ports provide with speeds up to 5Gbps & 10Gbps . With doubled bandwidth compared to the previous generation as well as backward compatibility with USB 2.0, the improved USB protocol is available now over the new reversible USB Type-C™ and the traditional USB Type-A connector for better compatibility over a wider range of devices.

High-End Audio Capacitors
AORUS motherboards use high-end audio capacitors. These high quality capacitors help deliver high resolution and high fidelity audio to provide the most realistic sound effects for gamers.

Audio Noise Guard
AORUS motherboards feature an audio noise guard that essentially separates the board's sensitive analog audio components from potential noise pollution at the PCB level.

PERSONALIZATION
GIGABYTE motherboards bundle several useful and intuitive software to help users to control every aspect of motherboard and provide customizable lighting effect with outstanding aesthetics to fit your unique personality.

Friendly User Interface
The EASY MODE shows important hardware information in one page including CPU clock, Memory, Storage, Fan.

My Favorites
Add constantly used items into the favorite menu for quick access.

Storage Information
Show all kinds of storage information including SATA, PCIE and M.2 interface.

Changelog
List all changes before saving and exiting bios. Quickly review overall settings modification.

Intuitive Load Line Curve

Clearly show each loadline calibration setting in an intuitive curve graph.

GIGABYTE Control Center
GIGABYTE CONTROL CENTER (GCC) is a unified software for all GIGABYTE supported products. It provides newly designed intuitive user interface to control all essential function.

- Unified software platform for all Gigabyte supported products
- Intuitive user interface for an eased experience
- Modularized control components only for installed hardware
- Auto update function to keep system up to date and support future products

Multi-key
A multi-function reset pin headers 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.

PCIe EZ-Latch
Unlock the latch of the PCIe slot easily when remove the graphics card in the PCIe slot.

Update the BIOS easily without installing the CPU, memory and graphics card.
With GIGABYTE Q-Flash Plus, you don't need to install the CPU, memory and graphics card nor enter the BIOS menu to flash the BIOS. Just download and save a new BIOS file (rename to gigabyte.bin) on the USB flash drive, then press the dedicated Q-Flash Plus button and you're good to go!

Specifications:

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Specifications	
Product Code	MB-GB650MK
CPU	1. AMD Socket AM5, support for: AMD Ryzen 7000 Series Processors
Chipset	1. AMD B650
Memory	1. Support for DDR5 6400(OC) / 6200(OC) / 6000(OC) / 5600(OC) / 5200 / 4800 / MT/s memory modules
	2. 4 x DDR5 DIMM sockets supporting up to 128 GB (32 GB single DIMM capacity) of system memory
	3. Dual channel memory architecture
	4. Support for non-ECC Un-buffered DIMM 1Rx8/2Rx8/1Rx16 memory modules
	5. Support for AMD EXtended Profiles for Overclocking (AMD EXPO) and Extreme Memory Profile (XMP) memory modules

Onboard Graphics	Integrated Graphics Processor:
	1. 1 x DisplayPort, supporting a maximum resolution of 3840x2160@144 Hz
	* Support for DisplayPort 1.4 version.
	2. 1 x HDMI port, supporting a maximum resolution of 4096x2160@60 Hz
	* Support for HDMI 2.1 version and HDCP 2.3.
	** Support native HDMI 2.1 TMDS compatible ports.
Audio	1. Realtek Audio CODEC
	2. High Definition Audio
	3. 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.
LAN	1. Realtek 2.5GbE LAN chip (2.5 Gbps/1 Gbps/100 Mbps)
Expansion Slots	CPU:
	1. 1 x PCI Express x16 slot, supporting PCIe 4.0 and running at x16
	Chipset:
	1. 1 x PCI Express x1 slot, supporting PCIe 3.0 and running at x1
Storage Interface	CPU:
	1. 1 x M.2 connector (Socket 3, M key, type 2580 PCIe 4.0 x4/x2 SSD support)
	2. 1 x M.2 connector (Socket 3, M key, type 25110/2280 PCIe 4.0 x4/x2 SSD support)
	Chipset:
	1. 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. 1 x USB Type-C port on the back panel, with USB 3.2 Gen 2 support
	2. 1 x USB 3.2 Gen 2 Type-A port (red) on the back panel
	3. 2 x USB 2.0/1.1 ports on the back panel
	Chipset:
	1. 1 x USB Type-C port with USB 3.2 Gen 1 support, available through the internal USB header
	2. 4 x USB 3.2 Gen 1 ports (2 ports on the back panel, 2 ports available through the internal USB header)
	3. 4 x USB 2.0/1.1 ports (2 ports on the back panel, 2 ports available through the internal USB header)

Internal I/O Connectors	1. 1 x 24-pin ATX main power connector
	2. 1 x 8-pin ATX 12V power connector
	3. 1 x CPU fan header
	4. 2 x system fan headers
	5. 1 x addressable LED strip header
	6. 1 x RGB LED strip header
	7. 2 x M.2 Socket 3 connectors
	8. 4 x SATA 6Gb/s connectors
	9. 1 x front panel header
	10. 1 x front panel audio header
	11. 1 x USB Type-C header, with USB 3.2 Gen 1 support
	12. 1 x USB 3.2 Gen 1 header
	13. 1 x USB 2.0/1.1 header
	14. 1 x Trusted Platform Module header (For the GC-TPM2.0 SPI/GC-TPM2.0 SPI 2.0 module only)
	15. 1 x reset jumper
	16. 1 x Clear CMOS jumper
Back Panel Connectors	1. 1 x DisplayPort
	2. 1 x HDMI port
	3. 4 x USB 2.0/1.1 ports
	4. 1 x PS/2 keyboard/mouse port
	5. 1 x USB 3.2 Gen 2 Type-A port (red)
	6. 1 x USB Type-C port, with USB 3.2 Gen 2 support
	7. 1 x Q-Flash Plus button
	8. 1 x RJ-45 port
	9. 2 x USB 3.2 Gen 1 ports
	10. 3 x audio jacks
I/O Controller	1. iTE I/O Controller Chip
H/W Monitoring	1. Voltage detection
	2. Temperature detection
	3. Fan speed detection
	4. Water cooling flow rate detection
	5. Fan fail warning
	6. Fan speed control
	* Whether the fan speed control function is supported will depend on the cooler you install.

BIOS	1. 1 x 256 Mbit flash
	2. Use of licensed AMI UEFI BIOS
	3. PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0
Unique Features	1. 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.
	2. Support for Q-Flash
	3. Support for Q-Flash Plus
Bundled Software	1. Norton Internet Security (OEM version)
	2. LAN bandwidth management software
Operating System	1. Support for Windows 11 64-bit
	2. Support for Windows 10 64-bit
Form Factor	1. 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-computers.co.za/MB-GB650MK-Gigabyte-B650M-K-AMD-B650-Chipset-AMD-Ryzen-7000-AM5-Socket-Micro-ATX-p-278244.php

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