B850MS-E Motherboard

- Supports AMD Ryzen™ 9000 / 8000 / 7000 series Processors
- AMD B850 single chip architecture
- Supports 2-DIMM DDR5 up to 128 GB Memory
- Supports PCIe 5.0 M.2
- Supports HDMI® & Display Port
- Supports USB 3.2 Gen1
- Supports WiFi 7 & 6E module (No WiFi card included)

Specifcation	
CPU SUPPORT	Socket AM5 support AMD Ryzen™ 9000 / 8000 / 7000 series Processors Support for future AMD Ryzen processors with BIOS update * Please refer to www.biostar.com.tw for CPU support list.
MEMORY	AMD Ryzen 9000 / 8000 / 7000 Series Processors: Supports Dual Channel DDR5 - 8000+(OC) MT/s, Non-ECC, Un-buffered Memory 2 x DDR5 DIMM Memory Slot, Max. Supports up to 128 GB Memory Support Intel® Extreme Memory Profile (XMP) memory modules and AMD EXTended Profiles for Overclocking (EXPO) memory modules * Please refer to www.biostar.com.tw for Memory support list.
INTEGRATED VIDEO	By CPU model Supports DX12 Supports HDCP
STORAGE	Total support 2 x M.2 Socket and 2 x SATA (6Gb/s) ports AMD Ryzen 9000 / 8000 / 7000 Series Processors 1 x M.2 (Key M2) Socket (M2M_CPU): Support M.2 Type 2280 SSD module Support PCIe 5.0 x 4 (128Gb/s) - NVMe SSD AMD B850 Chipset 1 x M.2 (Key M2) Socket (M2M_SB): Support M.2 Type 2280 SSD module Support PCIe 4.0 x 4 (64Gb/s) - NVMe SSD 2 x SATA III Connector (6Gb/s): Supports AHCI & RAID 0, 1, 10
LAN	Realtek RTL8111H 10/ 100/ 1000 Mb/s auto negotiation, Half / Full duplex capability
AUDIO CODEC	Realtek ALC897 7.1 Channels, High Definition Audio, Hi-Fi (Front)
USB	6 x USB 3.2 (Gen1) port (4 on rear I/O and 2 via internal header) 6 x USB 2.0 port (2 on rear I/O and 4 via internal header)

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EXPANSION SLOT	AMD Ryzen 9000 / 8000 / 7000 Series Processors 1 x PCIe 5.0 x16 Slot (x16 mode) AMD B850 Chipset 1 x PCIe 4.0 x1 Slot (x1 mode)
REAR I/O	2 x WiFi Antenna Port 4 x USB 3.2 (Gen1) Port 2 x USB 2.0 Port 1 x Gigabit LAN port 3 x Audio Jack 1 x SMART BIOS UPDATE Button 1 x SMART BIOS USB Port 1 x HDMI® Port 1 x DP Port
INTERNAL I/O	2 x SATA III Connector (6Gb/s) 1 x M.2 (E Key) Socket : Supports 2230 type Wi-Fi & Bluetooth module 1 x USB 3.2 (Gen1) Header (each header supports 2 USB 3.2 (Gen1) ports) 2 x USB 2.0 Header (each header supports 2 USB 2.0 ports) 1 x 8-Pin Power Connector 1 x 24-Pin Power Connector 1 x CPU Fan Connector 1 x CPU water cooling connector (CPU_OPT) 1 x System Fan Connector 1 x Front Panel Header 1 x Front Audio Header 1 x Speaker Header 1 x Clear CMOS Header 1 x COM Port Header 1 x TPM Header * M.2 (E Key) Wi-Fi card is not provided
RAID	Supports RAID 0, 1, 10 for SATA storage devices Supports RAID 0, 1 for NVMe storage devices
DIMENSION	Micro ATX Form Factor Dimension: 23.5cm x 24.4cm (W x L)
OS SUPPORT	Supports Windows 10(64bit) / Windows 11(64bit) ※Biostar reserves the right to add or remove support for any OS with or without notice.
ACCESSORIES	1 x SATA Cable 1 x I/O Shield 1 x WiFi antenna accessories(Wi-Fi accessories are optional, contact your local dealer to purchase.)

OVERVIEW

AMD B850 chipset

The AMD B850 platform is the foundation for next-generation gaming and content creation experiences. Featuring enhanced overclocking capabilities, DDR5 memory support with AMD EXPO™ Technology, and PCIe® 5 connectivity for NVME storage, the AMD B850 platform is ready to power your desktop for years to come.

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HD Audio

Provides high quality sound with minimal loss of audio fidelity.

DisplayPort

DisplayPort is a digital display interface developed by the Video Electronics Standards Association (VESA). The interface is primarily used to connect a video source to a display device such as a computer monitor, though it can also be used to carry audio.

DX12

DirectX 12 introduces the next version of Direct3D, the graphics API at the heart of DirectX. Direct3D is one of the most critical pieces of a game or game engine, and we've redesigned it to be faster and more efficient than ever before. Direct3D 12 enables richer scenes, more objects, and full utilization of modern GPU hardware.

HDMI® 2.1

HDMI® 2.1 supports true 4K resolution- 4096*2160@120hz. A significant increase in bandwidth is up to 18mbps, and significant enhancements are added to support the continued increase consumer demands on video and audio experience.

SATAIII 6Gbps

SATAIII 6Gbps provides a higher bandwidth to retrieve and transfer HD media. With this super speed data transfer, SATAIII allows an incredible data boost which is 2x faster than the SATA II.

DDR5

DDR5 provides 50% higher bandwidth than DDR4, the frequency can be up to 6000+(OC)MHz, and can boasts the largest memory capacity available. It also supports dual channels and has lower power consumption, which can provide better performance and experience for overclockers.

PCIe 5.0

PCIe 5.0 increases the data rate from 16GT/s to 32GT/s, which is twice as fast as PCIe 4.0. The maximum data transfer of bandwidth for two-way communication can reach 128GB/s. In addition, synchronized compatible with PCIe 4.0 and previous versions of devices.

PCIe 4.0

PCIe 4.0 is the ubiquitous and general-purpose PCI Express I/O standard. At 16GT/s bit rate, the interconnect performance bandwidth is doubled over PCIe 3.0, while preserving compatibility with software and mechanical interfaces.

PCIe 4.0 M.2

PCIe 4.0 M.2 delivers the highest bandwidth and lower latency. It is 2 times faster compared with PCIe 3.0 M.2 .

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PCIe 5.0 M.2

PCIe 5.0 M.2 is the latest storage interface, it delivers the highest bandwidth and lower latency. It is 2 times faster compared with PCIe 4.0 M.2 .

USB 3.2 Gen1 Type-A

USB 3.2 Gen1 delivers a compelling performance boosts and can be used to connect multiple devices without worrying about compatibility. It is capable of data transfer speeds up to 5Gbps and backwards compatible with all existing USB products.

USB 3.2 Gen1 Type-C

USB 3.2 Gen1 offers up to at 5 Gbps that allows for much higher data transfer rates and more efficient data transfer.
And the Type-C connector is reversible so it is easier to plug in.

WiFi 7

The latest version of WiFi utilizes three different frequency bands: 2.4GHz, 5GHz, and 6GHz. It offers lower latency, improved performance, and enhanced security, allowing more devices to smoothly operate on wireless networks simultaneously under optimal conditions.

Super Durable Solid Caps

The best quality solid state capacitors with ultra low ESR design, the Super Durable Solid Caps doubles the lifespan.

Iron Slot Protection

The exclusive Iron Slot Protection can reinforce PCI-E x16 slots to handle heavier graphics cards, prevent bending, and extend longevity of the slot, making the new-gen RACING Series much more robust.

Tough Power Connectors

Tough Power Connectors are very robust that have larger area to ensure stable and reliable power supply. They can pack more power and durability to make your PC last longer.

Super Durable Inductor

Super Durable Inductor brings the benefits of higher current capacity, lower energy loss and better power stability.

Moistureproof PCB

The PCB will be oxidizing easily by damp or absorbed moisture, and ionic migration or CAF (Conductive Anodic Filament) will be generated. Moistureproof PCB meets high density and high reliability requirements for moisture proof.

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ESD Protection

ESD (Electrostatic Discharge) is the major factor to destroy the PC by electrical overstress (EOS) condition. ESD occurred by PC users when touch any devices connect to a PC, which may result in damage to the motherboard or parts. ESD protection is designed to protect the motherboard and equipment from damage by EOS.

OC / OV / OH Protection

OC / OV / OH Protection design detects overvoltage conditions and prevents voltage surges from spreading in real time. It also actively cuts off the overvoltage supply to protect your system.

UEFI BIOS

Unified Extensible Firmware Interface (UEFI) is a brand new framework that provides a revolutionary interface. It is a modern clear and easy-to-use graphical user interface. The UEFI comes with a colorful easy-understand icons lead users into the setup layer directly.

BIO-Flasher

BIO-Flasher is a convenient BIOS update tool. Just launch this tool and put the BIOS on USB pen driver before entering the OS. You can update your BIOS with only a few clicks without preparing an additional floppy disk or other complicated flash utility.

A.I FAN

With A.I FAN users can ensure that their gaming PC can maintain its performance while staying cool. According to different cooling needs and usage scenarios, users can control speed modes. Allows users to have more customizability of fan modes and automatically detects different temperatures to make fan operate at defined speed for optimal cooling performance.

CPU OPT

BIOSTAR offers one more fan header which is called CPU OPT. Users can use it to connect any kind of water coolers for a liquid cooling system. Keep your computer stable and enjoy your machine at the utmost potential.

Debug LED

Debug LED helps you identify any issues going with your board or hardware. When error occurs, the corresponding LED lights will inform you on the status of your board or hardware to shorten the test time effectively.

A.I TP Control

A.I TP Control is designed for overclockers. It provides a user-friendly BIOS environment that overclockers can adjust the temperature setting to keep your PC safe and enjoy extreme overclocking performance.

Smart Update

Biostar Smart Update is a utility that can help users run online update. It can download the drivers for your motherboard from Biostar official website and install them automatically.

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	SMART BIOS UPDATE The easiest way to update the BIOS is provided. Connect the USB driver to the SMART BIOS USB port to update.
	Auto Installer The Auto Installer is capable of automatically installing the required drivers on Windows OS, providing users with a more intuitive and convenient experience, eliminating the hassle of manually searching for drivers.
	HDMI® The terms HDMI® and HDMI® High-Definition Multimedia Interface, and the HDMI® Logo are trademarks or registered trademarks of HDMI® Licensing Administrator, Inc. in the United States and other countries.

*The specification and pictures are subject to change without notice and the package contents may differ by area or your motherboard version!

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