

# B850M AYW GAMING WIFI

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**Model** B850M AYW GAMING WIFI

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**CPU** AMD Socket AM5 for AMD Ryzen™ 9000 & 8000 & 7000 Series Desktop Processors\*

\* Refer to <https://www.asus.com/support/download-center/> for CPU support list.

**Chipset** AMD B850 Chipset

**Memory** 2 x DIMM slots, max. 128GB, DDR5 Supports up to 8200+MT/s(OC) with Ryzen™ 9000 Series Processors, 9600+MT/s(OC) with Ryzen™ 8000 Series Processors, 8000+MT/s(OC) with Ryzen™ 7000 Series Processors, ECC and Non-ECC Un-buffered DIMM\*

Dual channel memory architecture  
 Supports AMD Extended Profiles for Overclocking (EXPG )  
 ASUS Enhanced Memory Profile (AEMP)

\* Supported memory types, data rate (speed), and number of

DRAM modules vary depending on the CPU and memory configuration, for more information please refer to CPU/Memory Support list under the Support tab of product information site or visit

<https://www.asus.com/support/download-center/>.

Adjustments will be made based on the specifications of mass-produced memory products available on the market.

\* Non-ECC, un-buffered DDR5 memory supports On-Die ECC function.

## Graphics

1 x HDMI™ port\*\*

\* Graphics specifications may vary between CPU types. Please refer to AMD CPU specifications.

\*\* Supports 4K@60Hz as specified in HDMI 2.1.

## Expansion Slots

### **AMD Ryzen™ 9000 & 7000 Series Desktop Processors\***

1 x PCIe 5.0 x16 slot (supports x16 mode)

### **AMD Ryzen™ 8000 Series Desktop Processors**

1 x PCIe 4.0 x16 slot (supports x8/x4 mode)\*\*

### **AMD B850 Chipset**

1 x PCIe 4.0 x16 slot (support x4 mode)

\* Please check the PCIe bifurcation table on the support site (<https://www.asus.com/support/FAQ/1037507/>).

\*\* Specifications vary by CPU types.

- To ensure compatibility of the device installed, please refer to <https://www.asus.com/support/download-center/> for the list of supported

## Storage

### **Supports 2 x M.2 slots and 4 x SATA 6Gb/s ports**

#### **AMD Ryzen™ 9000 & 7000 Series Desktop Processors**

M.2\_1 slot (Key M), type 2280 (supports PCIe 5.0 x4 mode)

M.2\_2 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)

#### **AMD Ryzen™ 8000 Series Desktop Processors**

M.2\_1 slot (Key M), type 2280 (supports PCIe 4.0 x4 mode)

M.2\_2 slot (Key M), type 2280 (supports PCIe 4.0 x4/x2 mode)\*

#### **AMD B850 Chipset**

4 x SATA 6Gb/s ports

\* Specifications vary by CPU types.

#### **AMD RAIDXpert2 Technology**

Ryzen™ 9000 Series Processors: RAID 0/1/5/10

Ryzen™ 8000 Series Processors: RAID 0/1

Ryzen™ 7000 Series Processors: RAID 0/1/10

## Ethernet

1 x Realtek 2.5Gb Ethernet  
ASUS LANGuard

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## Wireless & Bluetooth

Wi-Fi 6  
1x1 Wi-Fi 6 (802.11ax)  
Supports 2.4/5GHz frequency band  
Bluetooth® v5.3\*  
\* The Bluetooth® version may vary, please refer to the Wi-Fi module manufacturer's website for the latest specifications.

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## USB

**Rear USB (Total 8 ports)**  
2 x USB 10Gbps ports (2 x Type-A)  
2 x USB 5Gbps ports (2 x Type-A)  
4 x USB 2.0 ports (4 x Type-A)  
**Front USB (Total 7 ports)**  
1 x USB 5Gbps connector (supports USB Type-C®)  
1 x USB 5Gbps header supports 2 additional USB 5Gbps ports  
2 x USB 2.0 headers support 4 additional USB 2.0 ports  
\* USB Type-C® power delivery output: max. 5V/3A

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## Audio

Realtek 7.1 Surround Sound High Definition Audio CODEC\*  
- Supports: Jack-detection, Multi-streaming, Front Panel Jack-retasking  
- Supports up to 24-Bit/192 kHz playback  
**Audio Features**  
- Audio Shielding  
- Premium audio capacitors  
- Dedicated audio PCB layers  
\* A chassis with an HD audio module in the front panel is required to support 7.1 Surround Sound audio output.

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## Back Panel I/O Ports

2 x USB 10Gbps ports (2 x Type-A)  
2 x USB 5Gbps ports (2 x Type-A)  
4 x USB 2.0 ports (4 x Type-A)  
1 x HDMI™ port  
1 x Wi-Fi module  
1 x Realtek 2.5Gb Ethernet port  
3 x Audio jacks  
1 x BIOS FlashBack™ button

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## Internal I/O Connectors

### Fan and Cooling Related

- 1 x 4-pin CPU Fan header
- 3 x 4-pin Chassis Fan headers

### Power Related

- 1 x 24-pin Main Power connector
- 1 x 8-pin +12V CPU Power connector

### Storage Related

- 2 x M.2 slots (Key M)
- 4 x SATA 6Gb/s ports

### USB

- 1 x USB 5Gbps connector (supports USB Type-C®)
- 1 x USB 5Gbps header supports 2 additional USB 5Gbps ports
- 2 x USB 2.0 headers support 4 additional USB 2.0 ports

### Miscellaneous

- 3 x Addressable RGB Gen 2 headers
- 1 x Clear CMOS header
- 1 x COM Port header
- 1 x Front Panel Audio header (F\_AUDIO)
- 1 x S/PDIF Out header
- 1 x SPI TPM header (14-1 pin)
- 1 x 10-1 pin System Panel header

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## Special Features

### ASUS 5X PROTECTION III

- DIGI+ VRM
- LANGuard
- Overvoltage protection
- SafeSlot
- Stainless-steel back I/O

### ASUS Q-Design

- M.2 Q-Latch
- Q-Dashboard
- Q-DIMM
- Q-LED (CPU [red], DRAM [yellow], VGA [white], Boot Device [yellow green])
- Q-Slot

### ASUS Thermal Solution

- M.2 heatsink
- VRM heatsink design

### ASUS EZ DIY

- Pre-mounted I/O shield
- BIOS FlashBack™ button
- BIOS FlashBack™ LED
- SafeSlot

### Aura Sync

- Addressable RGB Gen 2 headers
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## Software Features

### ASUS Exclusive Software

Armoury Crate

- Aura Creator

- Aura Sync

- Fan Xpert 2+

ASUS AI Advisor

ASUS DriverHub

TurboV Core

ASUS GlideX

ASUS CPU-Z

Norton 360 Deluxe (60 Days Free Trial)

WinRAR (40 Days Free Trial)

### UEFI BIOS

ASUS EZ DIY

- ASUS CrashFree BIOS 3

- ASUS EZ Flash 3

- ASUS UEFI BIOS EZ Mode

- ASUS MyHotkey

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## BIOS

256 Mb Flash ROM, UEFI AMI BIOS

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## Manageability

WOL by PME, PXE

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## Accessories

### Cables

2 x SATA 6Gb/s cables

### Miscellaneous

1 x ASUS Wi-Fi moving antenna

1 x M.2 rubber package

1 x Screw package for M.2 SSD

### Documentation

1 x Quick start guide

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## Operating System

Windows® 11, Windows® 10 64-bit

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## Form Factor

micro-ATX Form Factor

9.6 inch x 8.7 inch ( 24.4 cm x 22.1 cm )



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\*\*Product specifications and battery design may vary depending on the model. For any questions, please contact ASUS official customer service.

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