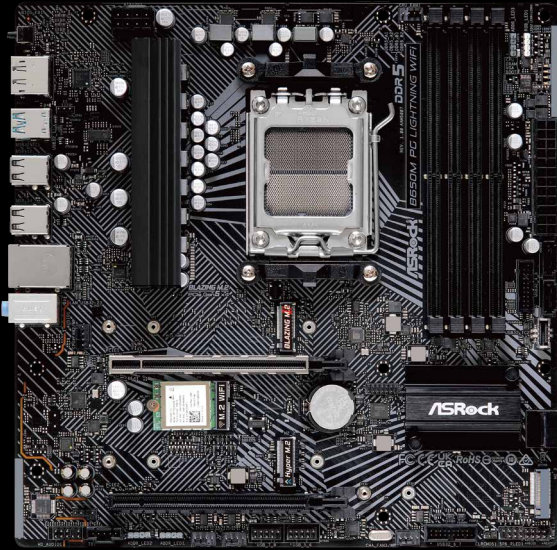




PHANTOM GAMING



# B650M PG LIGHTNING

WiFi



B650



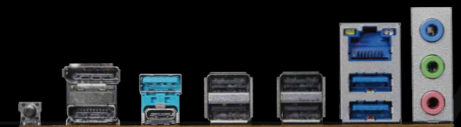
## PRODUCT BRIEF :

- Supports AMD Socket AM5 Ryzen™ 7000 Series Processors
- 6+2+1 Power Phase, Dr.MOS
- Supports DDR5 6000+ MHz (OC)
- 1 PCIe 4.0 x16, 1 PCIe 3.0 x16
- Integrated AMD RDNA™ 2 Graphics \*1
- Graphics Output Options: HDMI, DisplayPort
- Realtek ALC897 7.1 CH HD Audio Codec, Nahimic Audio
- 4 SATA3, 1 Blazing M.2 (PCIe Gen5 x4), 1 Hyper M.2 (PCIe Gen4 x4), 1 M.2 (PCIe Gen4 x2)
- 1 USB 3.2 Gen2 Type A+C (Rear), 1 USB 3.2 Gen1 Type-C (Front), 6 USB 3.2 Gen1 Type-A (2 Rear, 4 Front), 8 USB 2.0 (4 Rear, 4 Front)
- Phantom Gaming 2.5G LAN
- 802.11ax WiFi 6E + Bluetooth

- Supports ASRock Auto Driver Installer, BIOS Flashback

\*1 Actual support may vary by CPU.

I/O OVERVIEW



## USB 3.2 TYPE-C (FRONT + REAR)

Providing a blazing fast data transfer interface with reversible USB Type-C design that fits the connector either way.



## Dr. MOS

Intelligently delivering higher current for each phase, thus providing improved thermal result and superior performance.

Dr.Mos

## Dragon 2.5Gbps LAN

Enjoy the faster connectivity experience for gaming, file transfers and backups.

2.5X Faster



## Blazing M.2

Supports PCIe 5.0 SSD with a breathtaking data transfer rate.



## Auto Driver Installer

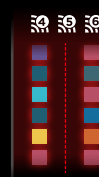
The LAN driver has already prepacked in BIOS ROM, simply follow the instructions and install all necessary drivers automatically.



## WiFi 6E (802.11ax)

Better and faster internet traffic with lower latency!

\* The availability of Wi-Fi 6E (6GHz) may vary between different countries.



Wi-Fi 6E only



## Detail Specification

<b>Platform</b>	- Micro ATX Form Factor: 9.6-in x 9.6-in, 24.4 cm x 24.4 cm	<b>Rear Panel I/O</b>	- 2 x Antenna Ports - 1 x HDMI Port - 1 x DisplayPort 1.4 - 1 x USB 3.2 Gen2 Type-A Port (10 Gb/s) - 1 x USB 3.2 Gen2 Type-C Port (10 Gb/s) - 2 x USB 3.2 Gen1 Type-A Ports - 4 x USB 2.0 Ports - 1 x RJ-45 LAN Port - 1 x BIOS Flashback Button - HD Audio Jacks: Line in / Front Speaker / Microphone
<b>Unique Feature</b>	Superb Productivity - PCIe Gen5 (M.2) - Dual Channel DDR5 Rock-Solid Durability - 6+2+1 Power Phase, 50A Dr.MOS Ultrafast Connectivity - 2.5G LAN, 802.11ax Wi-Fi 6E Module EZ Update - BIOS Flashback Button - ASRock Auto Driver Installer EZ Troubleshooter - ASRock Post Status Checker	<b>Storage</b>	CPU: - 1 x Blazing M.2 Socket (M2_1, Key M), supports type 2260/2280 PCIe Gen5x4 (128 Gb/s) mode* Chipset: - 1 x Hyper M.2 Socket (M2_2, Key M), supports type 2260/2280 PCIe Gen4x4 (64 Gb/s) mode* - 1 x M.2 Socket (M2_3, Key M), supports type 2260/2280 PCIe Gen4x2 (32 Gb/s) mode* - 4 x SATA3 6.0 Gb/s Connectors  * Supports NVMe SSD as boot disks
<b>CPU</b>	- Supports AMD Socket AM5 Ryzen™ 7000 Series Processors*	<b>RAID</b>	- Supports RAID 0, RAID 1 and RAID 10 for SATA storage devices - Supports RAID 0, RAID 1 and RAID 10 for M.2 NVMe storage devices* * Requires additional M.2 NVMe expansion cards to support RAID 10
<b>Chipset</b>	- AMD B650	<b>Connector</b>	- 1 x SPI TPM Header - 1 x Power LED and Speaker Header - 1 x RGB LED Header* - 3 x Addressable LED Headers** - 1 x CPU Fan Connector (4-pin)*** - 1 x CPU/Water Pump Fan Connector (4-pin) (Smart Fan Speed Control)**** - 3 x Chassis/Water Pump Fan Connectors (4-pin) (Smart Fan Speed Control)***** - 1 x 24 pin ATX Power Connector - 1 x 8 pin 12V Power Connector (Hi-Density Power Connector) - 1 x Front Panel Audio Connector - 1 x Thunderbolt AIC Connector (5-pin) (Supports ASRock Thunderbolt 4 AIC Card) - 2 x USB 2.0 Headers (Support 4 USB 2.0 ports) - 2 x USB 3.2 Gen1 Headers (Support 4 USB 3.2 Gen1 ports) - 1 x Front Panel Type C USB 3.2 Gen1 Header * Supports in total up to 12V/3A, 36W LED Strip ** Support in total up to 5V/3A, 15W LED Strip *** CPU_FAN1 supports the fan power up to 1A (12W). **** CPU_FAN2/WP supports the fan power up to 2A (24W). ***** CHA_FAN1~3/WP support the fan power up to 2A (24W). ***** CPU_FAN2/WP and CHA_FAN1~3/WP can auto detect if 3-pin or 4-pin fan is in use.
<b>Memory</b>	- Dual Channel DDR5 Memory Technology - 4 x DDR5 DIMM Slots - Supports DDR5 non-ECC, un-buffered memory up to 6000+(OC)* - Max. capacity of system memory: 192GB - Supports Extreme Memory Profile (XMP) and EXTended Profiles for Overclocking (EXPO) memory modules * Please refer to Memory Support List on ASRock's website for more information. ( <a href="http://www.asrock.com/">http://www.asrock.com/</a> )	<b>BIOS Feature</b>	- 256Mb AMI UEFI Legal BIOS with GUI support
<b>Expansion Slot</b>	CPU: - 1 x PCIe 4.0 x16 Slot (PCIe1), supports x16 mode* - 1 x PCIe 3.0 x16 Slot (PCIe2), supports x4 mode* Chipset: - 1 x M.2 Socket (Key E), supports type 2230 WiFi/BT PCIe WiFi module  * Supports NVMe SSD as boot disks - Supports AMD CrossFire™ - 15µ Gold Contact in VGA PCIe Slot (PCIe1)	<b>Software and UEFI</b>	Software - ASRock Motherboard Utility (Phantom Gaming Tuning) - ASRock Phantom Gaming LAN Software - ASRock Polychrome SYNC * These utilities can be downloaded from ASRock Live Update & APP Shop.  UEFI - ASRock Full HD UEFI - ASRock Auto Driver Installer - ASRock Instant Flash
<b>Graphics</b>	Integrated AMD RDNA™ 2 graphics (Actual support may vary by CPU) - 1 x HDMI 2.1 TMDS/FRL 8G Compatible, supports HDR, HDCP 2.3 and max. resolution up to 4K 120Hz - 1 x DisplayPort 1.4 with DSC (compressed), supports HDCP 2.3 and max. resolution up to 4K 120Hz	<b>OS</b>	- Microsoft® Windows® 10 64-bit / 11 64-bit
<b>Audio</b>	- 7.1 CH HD Audio (Realtek ALC897 Audio Codec) - Nahimic Audio	<b>Certifications</b>	- FCC, CE - ErP/EuP ready (ErP/EuP ready power supply is required)
<b>LAN</b>	- 2.5 Gigabit LAN 10/100/1000/2500 Mb/s - Dragon RTL8125BG - Supports Phantom Gaming LAN Software - Smart Auto Adjust Bandwidth Control - Visual User Friendly UI - Visual Network Usage Statistics - Optimized Default Setting for Game, Browser, and Streaming Modes - User Customized Priority Control	<b>Accessories</b>	- 1 x User Manual - 1 x I/O Shield - 2 x SATA Data Cables - 2 x SMA WiFi Antenna Cables - 2 x ASRock WiFi 2.4/5/6 GHz Antennas - 1 x Plastic Cover for Wi-Fi Module - 3 x Screws for M.2 Sockets
<b>Wireless LAN</b>	- 802.11ax Wi-Fi 6E Module - Supports IEEE 802.11a/b/g/n/ac/ax - Supports Dual-Band 2x2 with extended 6GHz band* support * Wi-Fi 6E (6GHz band) will be supported by Microsoft® Windows® 11. The availability will depend on the different regulation status of each country and region. It will be activated (for supported countries) through Windows Update and software updates once available. * A 6GHz compatible router is required for 6E functionality. - 2 antennas to support 2 (Transmit) x 2 (Receive) diversity technology - Supports Bluetooth 5.2 + High speed class II - Supports MU-MIMO		
<b>USB</b>	- 1 x USB 3.2 Gen2 Type-C (Rear) - 1 x USB 3.2 Gen2 Type-A (Rear) - 1 x USB 3.2 Gen1 Type-C (Front) - 6 x USB 3.2 Gen1 Type-A (2 Rear, 4 Front) - 8 x USB 2.0 (4 Rear, 4 Front) * All USB ports support ESD Protection		