



**SAPPHIRE MAINBOARD
QUICK INSTALLATION GUIDE**

Pulse B650M WIFI

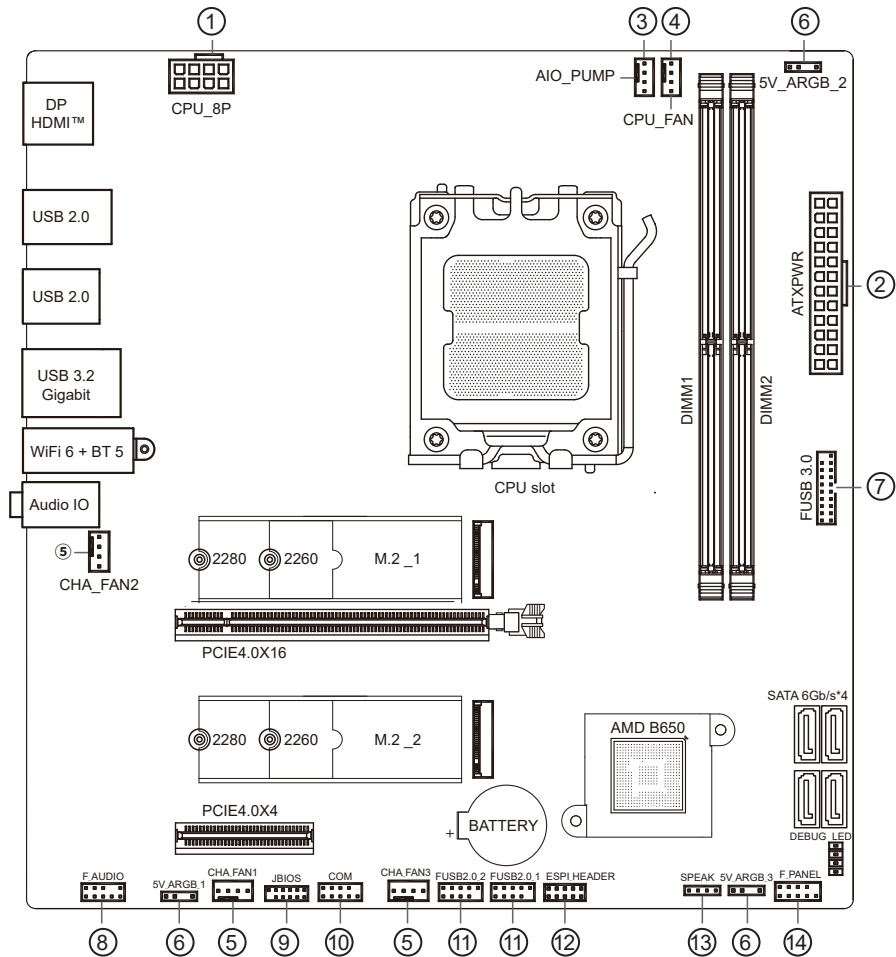
Pulse B650M WIFI

Chipset	AMD® B650 chipset
CPU	Support AMD® Ryzen™ 7000 Series desktop processors Support AMD® Ryzen™ 8000 Series desktop processors Support AMD® Ryzen™ 9000 Series desktop processors - Support AM5 socket processors
Memory	2 x DDR5 memory slots - Only support DDR5 memory - Up to 7400 MT/s (OC) - Maximum system memory capacity: 48GB * 2 Total 96GB - Support dual-channel memory technology - Support Extended Profiles for Overclocking (EXPO) memory module and Extreme Memory Profiles (XMP)
Extended slot	1 PCIE 4.0 x16 slot 1 PCIE 4.0 x4 slot
Audio	Realtek® ALC897 high-fidelity decoding chip (support up to 5.1 channels)
Network function	Realtek® RTL8111K network controller - Support Gigabit wired network Wi-Fi 6 module - Support 80211 a/b/g/n/ac/ax - Support 2.4GHz/5GHz wireless spectrum - Support Bluetooth 5 wireless transmission
Rear IO interface	- 1 DisplayPort interface - 1 HDMI™ interface - 6 USB 2.0 - 2 USB 3.2 - 1 Gigabit LAN (RJ45) interface - 2 Wi-Fi 6-antenna interfaces - 3 audio jacks
Front USB expansion interface	2 USB 2.0 pins can extend 4 USB 2.0 interfaces (FUSB2.0_1, FUSB2.0_2) 1 USB 3.2 Gen 1 pin can extend 2 USB 3.2 Gen 1 Type-A interfaces (FUSB3.0)
Debug indicator light	DRAM yellow indicator light CPU red indicator light GPU white indicator light BOOT green indicator light
Onboard pin jumper button	1 CPU fan pin (CPU_FAN) 1 water cooling pump pin (AIO_PUMP) 3 system fan pins (CHA_FAN1, CHA_FAN2, CHA_FAN3) 1 front audio pin (F_AUDIO) 1 front panel pin (F_PANEL) 3 5V ARGB pins (5V_ARGB_1, 5V_ARGB_2, 5V_ARGB_3) 1 speaker pin (SPEAK) 1 serial port pin (COM) 1 clear CMOS jumper (CLR_CMOS) 1 Flash BIOS pin (FL_BIOS) 1 BIOS burner pin (JBIOS) 1 diagnostic card pin (ESPI_HEADER)
Mainboard size	MATX version 244mm x 235mm

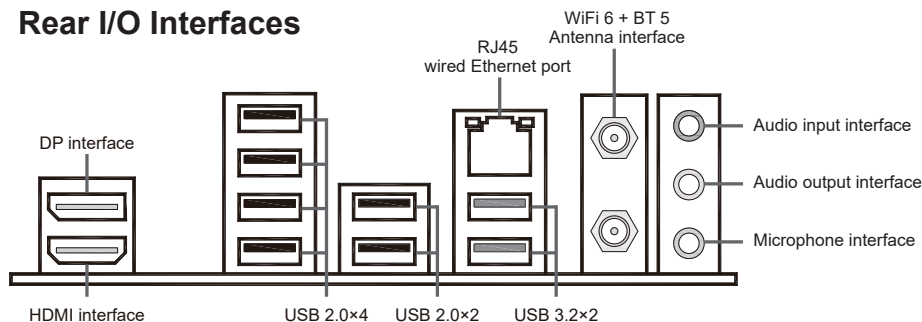
Mainboard User Manual

Version V1.0

Pulse B650M WIFI



Rear I/O Interfaces



Mainboard pins and jumpers

① CPU power supply (CPU_8P)

This mainboard provides one 8-pin CPU power supply pin. The socket has a fool-proof design, you need to pay attention to the direction during installation.



② Mainboard power supply (ATXPWR)

This mainboard provides one 24-pin mainboard power supply pin. The socket has a fool-proof design, you need to pay attention to the direction during installation.



③ Water cooling pump pin (AIO_PUMP)

This mainboard provides one 4-pin water cooling pump pin. The socket has a fool-proof design, you need to pay attention to the direction during installation. This pin is used to connect the power connector of the integrated water cooling CPU radiator water pump. you need to pay attention to the direction during installation.



④ CPU fan pin (CPU_FAN)

This mainboard provides one 4-pin CPU fan pin. The socket has a fool-proof design, you need to pay attention to the direction during installation. The cooling fan with speed control function can reduce the temperature of the CPU and system to achieve heat dissipation function and improve the stability of CPU operation.



⑤ System fan pins (CHA_FAN1, CHA_FAN2, CHA_FAN3)

This mainboard provides three 4-pin system fan pins. The socket has a fool-proof design, you need to pay attention to the direction during installation. The cooling fan with speed control function can reduce the temperature inside the chassis and help the chassis dissipate heat.



⑥ 5V ARGB pins (5V_ARGB_1, 5V_ARGB_2, 5V_ARGB_3)

This mainboard provides three 5V 3-pin ARGB pins, which are used to connect 5V ARGB devices.



- ⑦ **5V ARGB pins (5V_ARGB_1, 5V_ARGB_2, 5V_ARGB_3)**
This mainboard provides one front USB 3.2 Gen 1 extended pin, which can be extended into two USB 3.2 Gen 1 Type-A interfaces and is backward compatible with USB 2.0 devices.



- ⑧ **Front audio pin (F_AUDIO)**
The audio interface on the front panel of the chassis can be connected to the front audio pin through the audio cable inside the chassis, allowing you to implement audio input/output and other functions through the audio interface on the front panel.



- ⑨ **BIOS burner pin (JBIOS)**
The BIOS burner pin can be used to upgrade the mainboard BIOS by connecting the BIOS burner when the regular BIOS upgrade is not possible.



- ⑩ **Serial port pin (COM)**
The serial port pin can be used to connect the serial port module. First connect the data cable of the serial port module to the serial port pin, and then fix the module in the empty slot on the rear panel of the chassis to connect the serial port device.



- ⑪ **Front USB 2.0 pin (FUSB2.0_1, FUSB2.0_2)**
This mainboard provides two front USB 2.0 extended pins, which can be extended into four USB 2.0 interfaces.



- ⑫ **Diagnostic card pin (ESPI_HEADER)**
The diagnostic card pin can be used to connect the mainboard diagnostic card and analyze the cause of the mainboard failure based on the code displayed on the diagnostic card.



- ⑬ **Speaker pin (SPEAK)**
The speaker pin can be used to connect the speaker on the chassis.



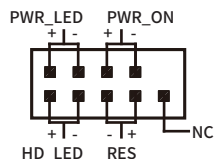
⑭ Front panel pin (F_PANEL)

PWR_ON: power switch. Short-circuit this pin to power on.

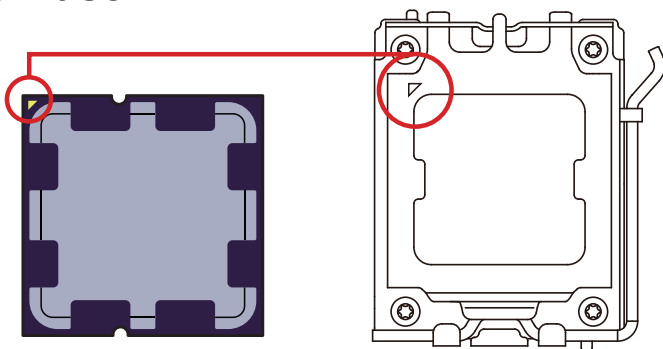
RES: restart switch. Short-circuit this pin to restart the computer without shutting down the system power.

PWR_LED: power indicator light. When the system is powered on, the connected light will light up.

HD_LED: hard disk indicator light. When the data is accessed from the hard disk, the connected light will light up.



CPU Base

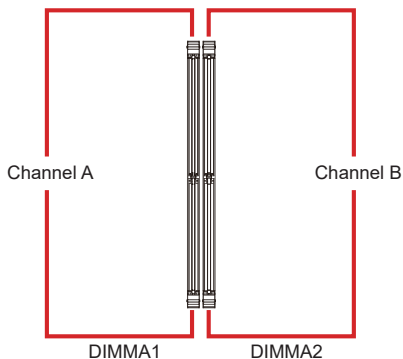
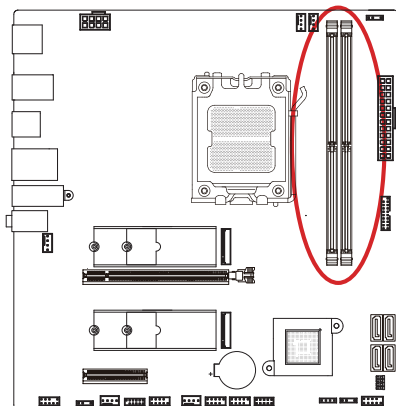


When installing the CPU, please make sure your CPU uses the AM5 slot; Align the two alignment points and a gold triangle indicator on the edge of the CPU and mainboard and insert them for installation.

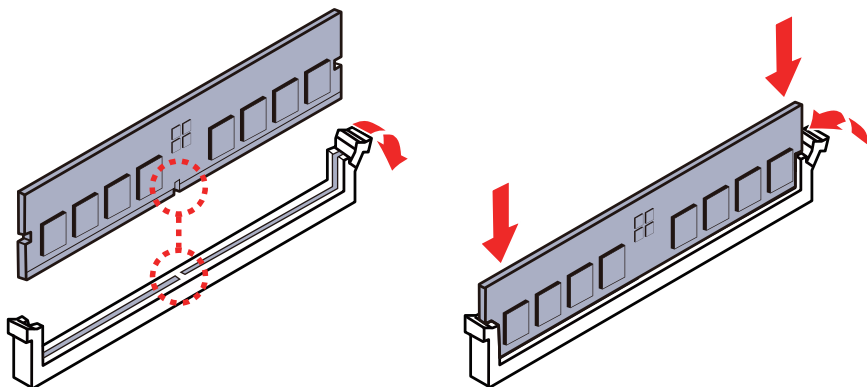
⚠ Notice

- When changing the processor, due to the architecture of the AM5 processor, the system configuration can be cleared and the BIOS is reset to the default values.
- Before installing or removing the CPU, please turn off the power and unplug the power cord from the socket.
- Please keep the CPU protective cover after installing the processor. Sapphire® requires a protective cover on the CPU base attached to the mainboard when it is returned to After-sales Services.
- When installing the CPU, please make sure that the CPU radiator is installed and the thermal grease (or phase change film) is applied correctly. The CPU radiator is necessary to prevent overheating and maintain system stability.
- Excessive temperature can seriously damage the CPU and system. Please make sure that the CPU cooling system used can always work properly to protect the CPU from overheating and burning.
- If the CPU is not installed, please cover the CPU base protective cover on the CPU base to avoid damage to the base.

DIMM slot



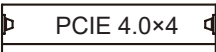
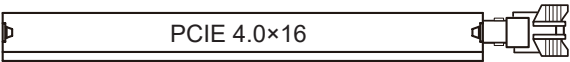
Memory Module Installation



Notice

- The DIMM slot of this mainboard only has single-sided ear clip. Be careful when installing or removing the memory module to avoid damage to the slot. · To ensure system stability in dual-channel mode, memory modules must be of the same type, quantity and density.
- When the memory is overclocked, the stability and compatibility of the memory module depends on the installed CPU and device.

PCI_E1~2 Extended Slot



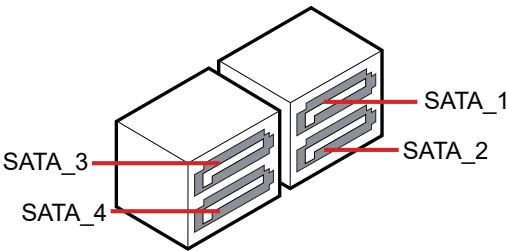
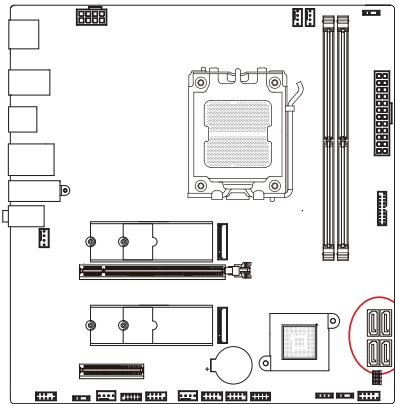
Notice

If you install a large and heavy graphics card, you need to use an auxiliary load-bearing bracket tool to support its prevent the slot and graphics card PCB board from deforming.

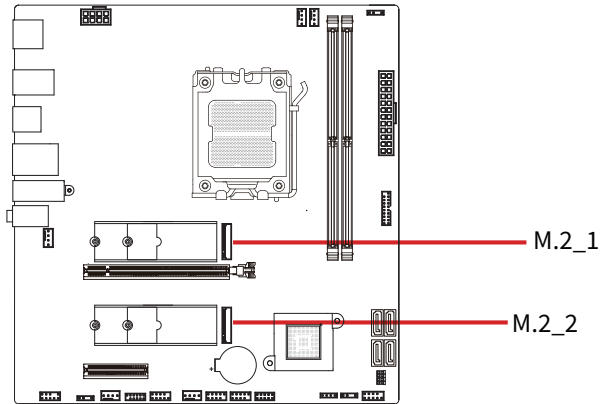
cWhen adding or removing the extended card, please shut down and turn off the power first.

SATA_1~4 Extended Interface

SATA_1~4 are four serial SATA 6Gb/s interfaces. Each interface can connect one serial SATA device.

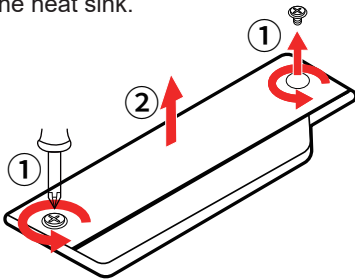


M2_1~2 Extended Interface

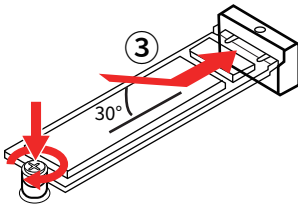


Install the M.2 module into the M.2 interface

1. Remove the screws from the M.2 heat sink on the mainboard and remove the heat sink.

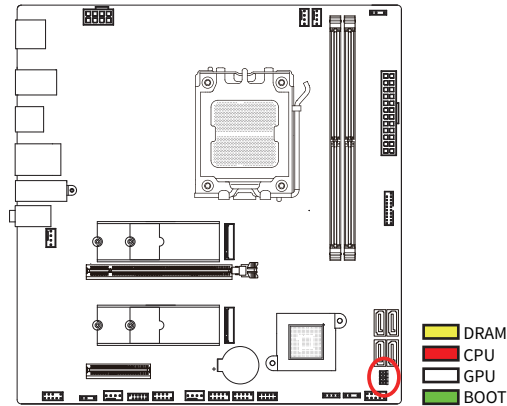


2. Insert the M.2 device into the M.2 interface at a 30-degree angle and tighten the screws in the rear.



3. Remove the thermal pad protective film under the M.2 heat sink of the mainboard.
4. Replace the M.2 heat sink on the mainboard and tighten the screws.

Onboard Debugging Indicator Light



DRAM - Indicates that the memory device was not detected or failed to run.

CPU - Indicates that the CPU was not detected or failed to run.

GPU - Indicates that the display output device was not detected or failed to run.

BOOT - Indicates that the boot driver was not detected or failed to run.

Driver Installation

You can visit Sapphire official website (<https://www.sapphiretech.com>), search for the product model, and find the corresponding driver in the technical support list for download.

BIOS Setup

- Enter BIOS: When the prompt message "Press DEL to run Setup" appears on the screen during the computer startup or restart process, press <Delete> key to enter the BIOS setup interface.
- If the system has already started but you still want to enter the BIOS setup program, press <RESET> key on the chassis to restart the computer or shut down the computer and then restart it, and repeat the above steps to enter the BIOS.
- Under normal circumstances, the default BIOS program setup can meet the usage requirements of most scenarios. It is recommended not to change the default BIOS setup unless necessary.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

15.105 (Part 15B unintentional radiator / including composite device)

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

15.21 (All FCC application)

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible

FCC RF Radiation Exposure Statement:

“This device contains transmitters and receivers which emit Radio Frequency (RF) energy. The device is designed to comply with the limits for exposure to RF energy set by the Federal Communications Commission (FCC) of the United States.”