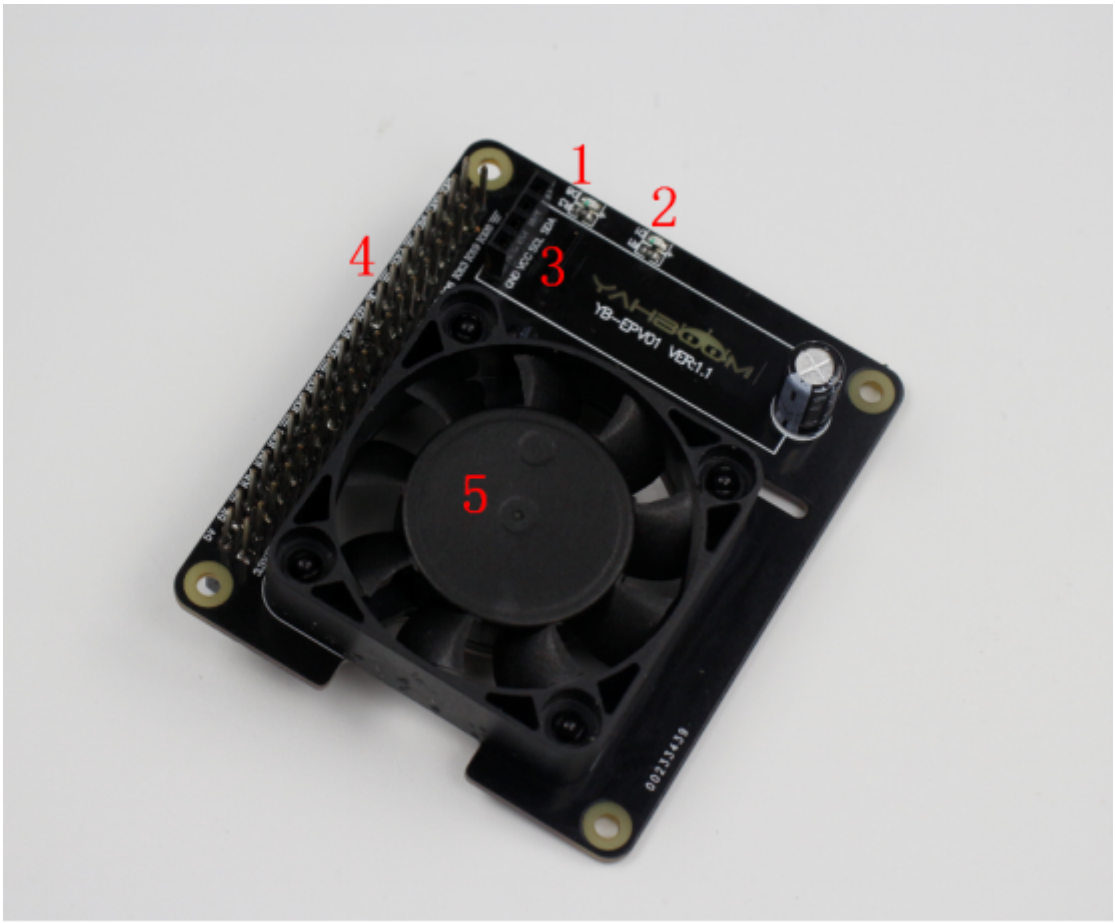
1.Introduction of Raspberry Pi RGB cooling HAT

1.Introduction of Function

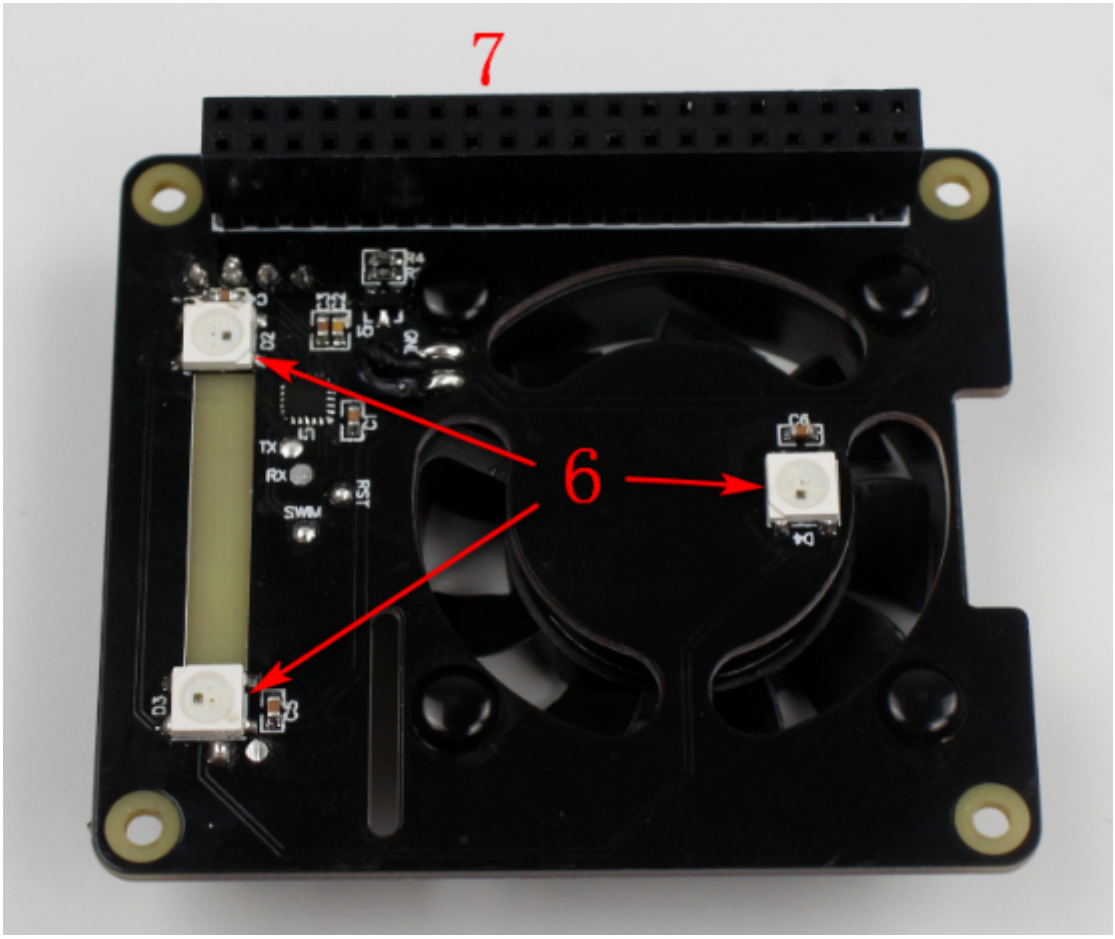
This is a Multi-function cooling expansion board designed for the Raspberry Pi board. It is perfectly compatible with the 4B/3B+/3B to protect Raspberry Pi and extends its life. A 4pin IIC interface for OLED display, which can real-time display CPU temperature, CPU usage, hard disk space, memory and IP address. The large-size cooling fan on the board with strong wind power, it can make Raspberry Pi can run more stably by automatically adjust the speed according to the CPU temperature. 3 high-brightness RGB programming lights on the bottom of the expansion board, which can realize following lights, breathing lights, marquees and so on. It also expand Raspberry Pi 40pin header and can be used to connect to other devices. We will provide a driver package for all Raspberry Pi images, which is convenient for users to drive fans, OLED displays, RGB lights.

2.On-board components location

Front



Back



①D8 indicator: Insert Raspberry Pi 4B, which can be used to indicate the Raspberry Pi 4B boot/shutdown status. This indicator is connected to the Raspberry Pi 3.3V pin. If the Raspberry Pi is powered on, the 3.3V pin voltage with 3.3V high voltage, so D8 keep on; if the Raspberry Pi is turned off or abnormal, the 3.3V pin has no voltage. D8 is off.

②D1 indicatorD1 is running indicator of the MCU. After the start up normally , the D1 indicator will light the effect of the breathing light. If the D1 indicator is not have breathing effect, it means that the MCU is not running, or the program is incorrect.

③I2C interface (OLED display): You can insert a 128*32 OLED display into this interface. Use the Raspberry Pi drive program to the display system information, or other images.

④40pin male pin: Directly connected to the 40pin pin header on the Raspberry Pi, it has the same function as the 40pin pin header on the original Raspberry Pi.

⑤Fan: For cooling, you can send commands to the MCU through the Raspberry Pi to adjust the fan speed.

⑥3 RGB lights: Used to display RGB light effects, you can send commands to the MCU to modify the color and effect through the Raspberry Pi.

⑦Pin header: Insert the pins of the Raspberry Pi directly.

3.Boot

1. The Raspberry Pi Intelligent Personal Butler turns on automatically when it is powered on. The three RGB lights at the bottom turn on green, and the brightness gradually increases, and stays on at the maximum. At this time, the microcontroller initialization is completed,

and the D1 indicator light starts to run the breathing light effect, indicating that the microcontroller Operating normally.

2. If the Raspberry Pi does not run a program to drive the expansion board, the fan and RGB lights of the expansion board will not work by default. You can directly run install.sh to install the program that starts automatically at boot, or you can write it yourself according to the content of the communication protocol. Code control expansion board.

4.Installation diagram