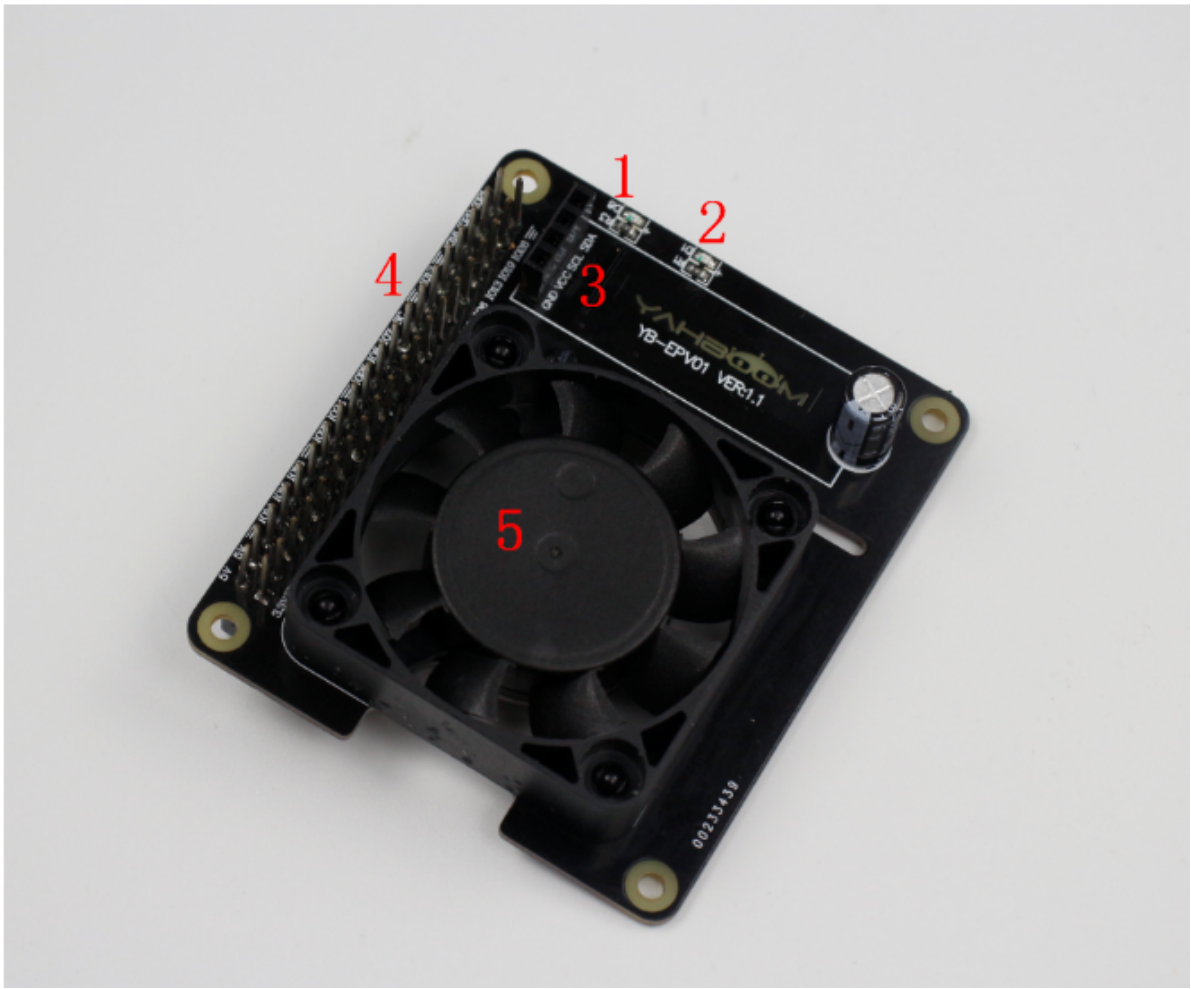
0.ReadMe

1. Functional Introduction

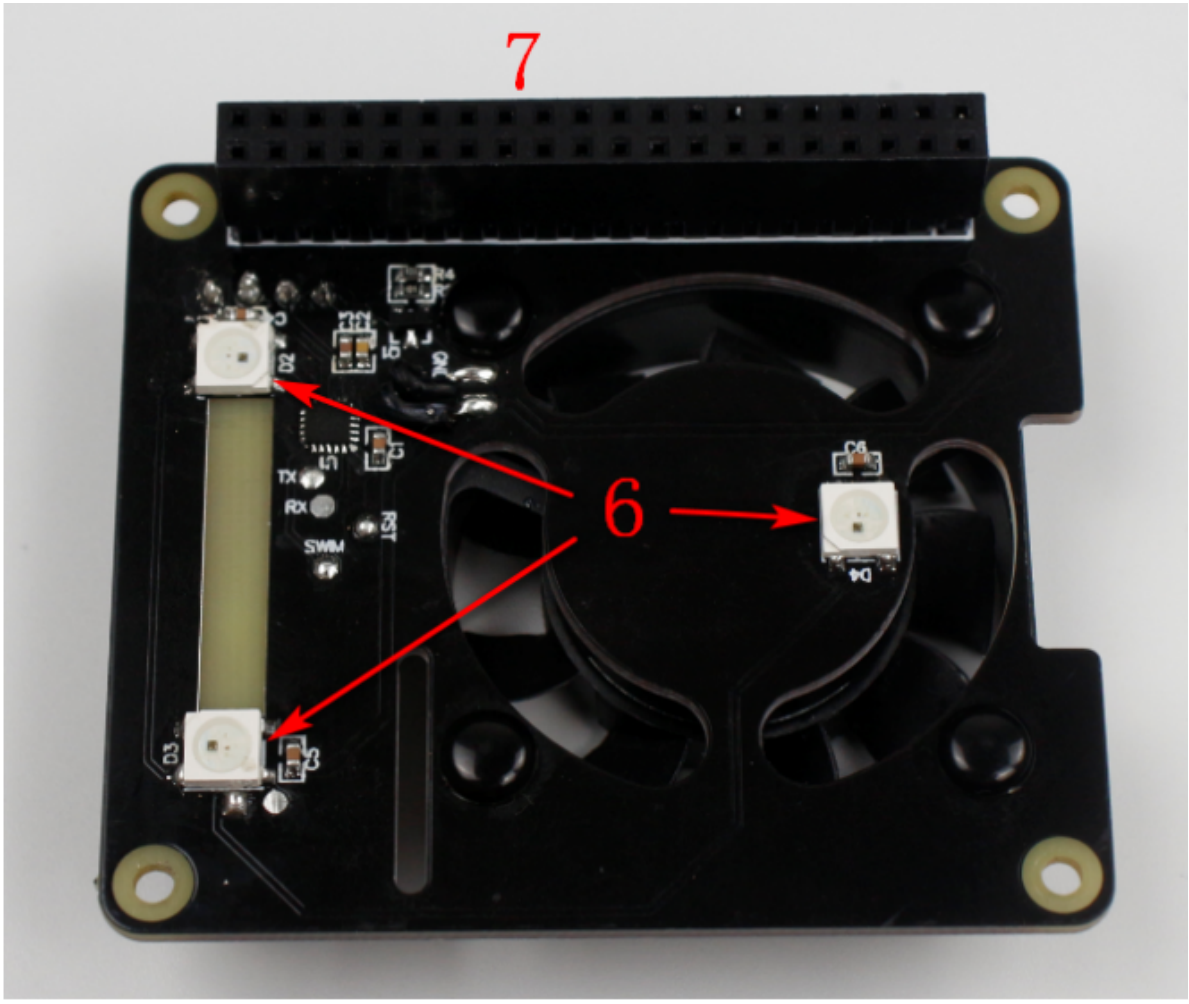
The heat dissipation expansion board has a powerful large fan (compatible with X3 pie), adopts active heat dissipation installation method, has obvious heat dissipation effect, supports I2C control speed regulation, and is comparable to computer heat dissipation fans; the expansion board has three built-in RGB full-color programming lights, which can display favorite colors and special effects according to manual operation, and can directly send commands to achieve RGB light effects such as running lights, marquees, rainbow lights, etc., and an advanced RDK X3 air-cooled radiator is presented in front of you; the 40pin pin is directly inserted into the 40pin pin on the RDK X3, and another 40pin pin is extended, which does not affect the connection of the GPIO port; not only that, the expansion board also reserves a position for the oled display screen, which can be used to display the CPU temperature, running memory and IP address of the RDK X3. It is really a very practical expansion board.

2. Component location

2.1 Front of RGB cooling HAT



2. 2 Back of RGB cooling HAT



1.D8 indicator light

Insert into RDK X3, it can be used to indicate the power on/off status of RDK X3:

D8 indicator light is connected to RDK X3 3.3V pin. If RDK X3 is turned on, the 3.3V pin voltage is 3.3V high voltage, and D8 is always on; if RDK X3 is turned off or abnormal, the 3.3V pin has no voltage and D8 is off.

Note: Regardless of whether RDK X3 is turned on or not, as long as the USB is plugged in, the 3.3V pin will output 3.3V voltage; unless RDK X3 is abnormal, the 3.3V pin will have no voltage.

2.D1 indicator light

MCU running indicator light, after normal startup, D1 indicator light will light up with breathing light effect. If it is found that D1 indicator light has no breathing effect, it means that the MCU is not running or the program is wrong.

3.I2C interface (oled display)

You can insert a 128*32 oled display screen, which is used for RDK X3 program to drive the display screen to display system information, or other pictures, etc.

4.40-pin male pin header

Directly connected to the 40-pin pin header on RDK X3, the function is the same as the original 40-pin pin header on RDK X3.

5.Fan

Used for heat dissipation, you can send commands to the microcontroller through RDK X3 to adjust the fan speed.

6.Three RGB lights

Used to display RGB light effects, you can send commands to the microcontroller through RDK X3 to modify the color and effect.

7.Pin header socket

Directly plug into the pin header of RDK X3.

3. Start up

1. RGB cooling HAT automatically turns on when powered on. The three RGB lights at the bottom light up green, and the brightness gradually increases. When it reaches the maximum, it stays on. At this time, the microcontroller is initialized, and the D1 indicator starts to run the breathing light effect, indicating that the microcontroller is running normally.
2. If the RDK X3 does not run the 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 startup program, or write code to control the expansion board according to the content of the communication protocol.

4. Installation Diagram