

Identify color

1. Learning target

1.1 In this course, we will learn how to use pins of the Raspberry Pi Pico board.

1.2 How to use color recognition sensor.

2. Preparation

Raspberry Pi Pico board *1

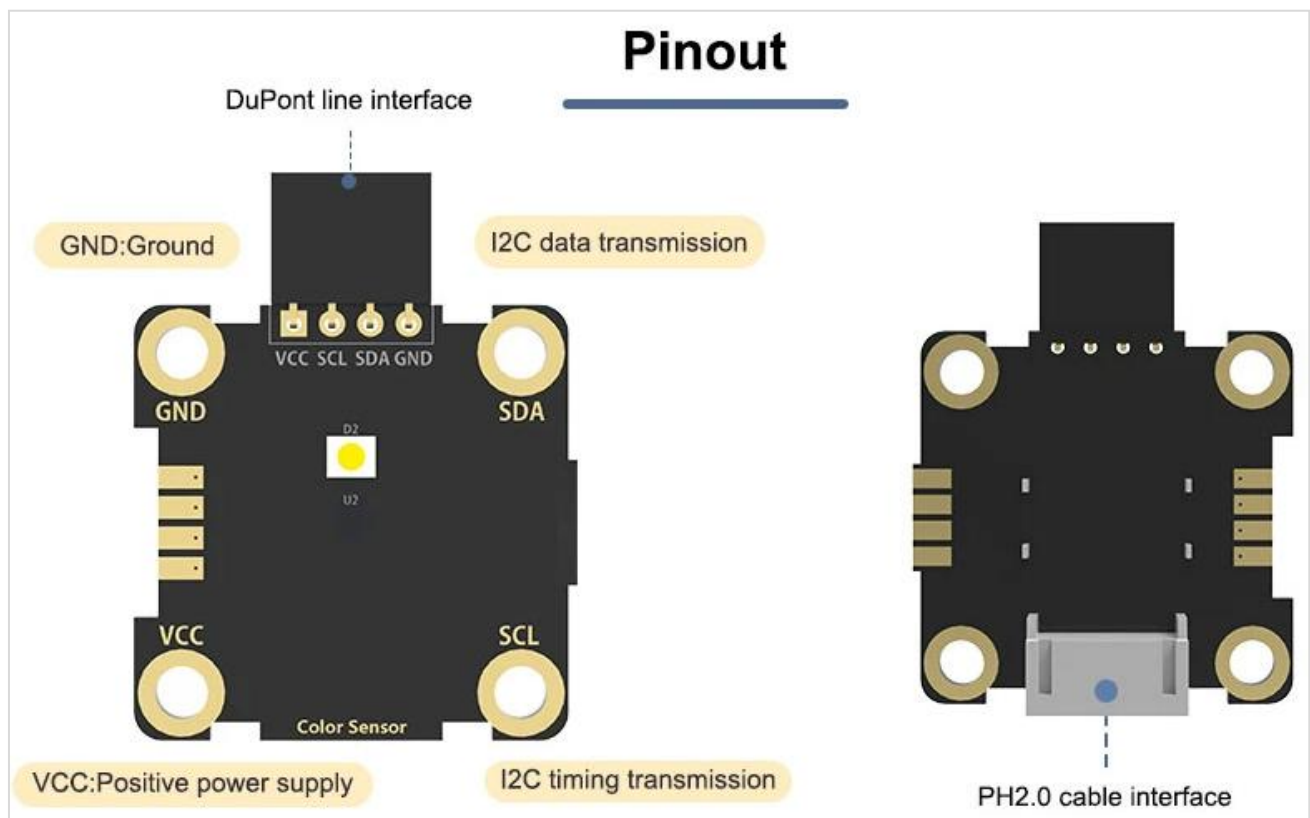
Pico sensor expansion board *1

PC *1

USB data cable *1

Color recognition sensor *1

Female-to-male DuPont line *4



The color recognition module is equipped with ZC-CLS381 professional color recognition chip, which can judge different colors through different color RGB values, and make small items such as color recognition.

Module parameters:

VCC: power supply interface, can be connected to 3.3V, 5V

GND: ground **SDA:** I2C data transmission interface

SCL: I2C timing transmission interface

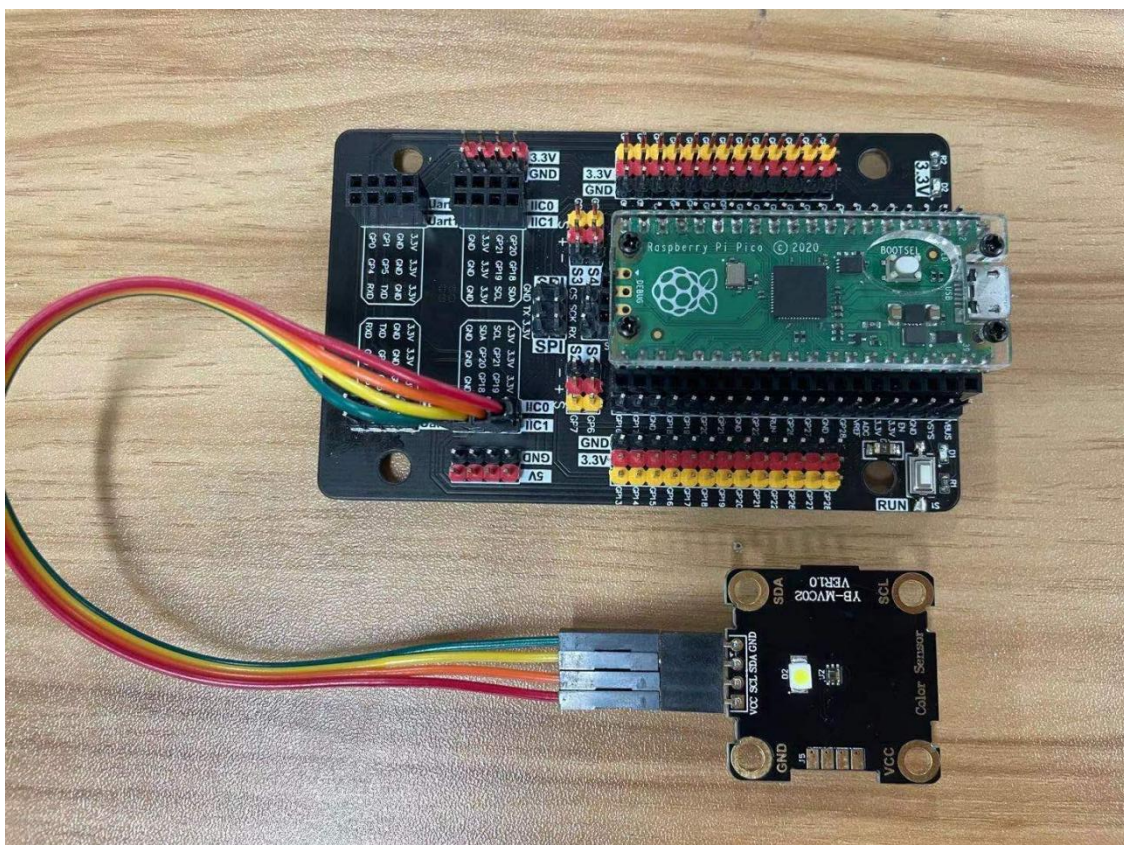
Module size: 29.4mm*36mm

Operating Voltage: 3.3V/5V

Interface mode: alligator clip interface, DuPont line interface, PH2.0 cable interface

3. About wiring

Color recognition module	Pico sensor expansion board
OUT	GP28
GND	GND
SCL	GP19
SDA	GP18



4. About code

Thonny programming

About how to using ThonnyIDE, please check the tutorials in 【2.Development environment】

```
from machine import Pin, I2C
import utime
# i2c=I2C(0, scl=Pin(21),sda=Pin(20), freq=100000)
i2c=I2C(1, scl=Pin(19),sda=Pin(18), freq=100000)

from color import color
Color = color(i2c)


utime.sleep(1)

while True:
    Colors = Color.GetRGBValue()
    print("Get Color...")
    print("Red is %d"%(Colors[0]))
    print("Green is %d"%(Colors[1]))
    print("Blue is %d"%(Colors[2]))
    utime.sleep(0.2)
```

Before running this program, you need to load color, please check the specific steps in **【2.Development environment】**

5. Phenomenon

Click the green run button  of Thonny IDE to start running the program. Click the red stop

button  to stop the program. When the program is running, the shell window under Thonny IDE will print the RGB value of the current environment.

