Raspberry Pi IIC communication
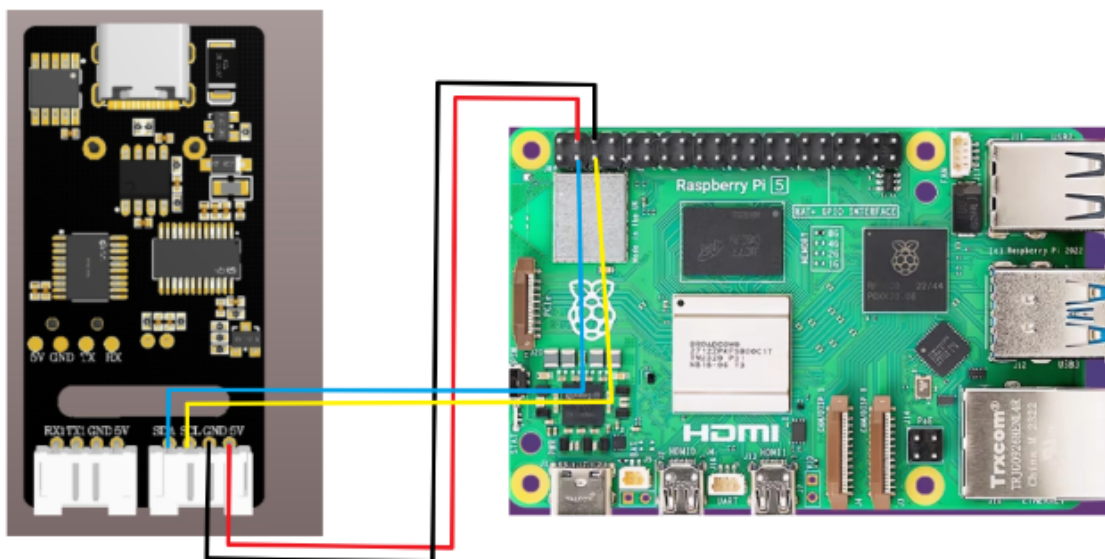
1. Experimental preparation

- Raspberry Pi
- Voice interaction module
- Dupont line

2. Wiring diagram

- Wiring diagram

Raspberry Pi	Voice interaction module
3	SDA
5	SCL
GND	GND
5V	5V

- Slide the module to the right, use the serial port of the stc firmware,

- Enter the command in the terminal, and the iic device address appears, indicating that it has been recognized normally.

```
sudo i2cdetect -y 1
```


3.Achievement effect

- Select the broadcast content by modifying the code in the program as shown below

```
#播报词 Active broadcast content
This_red=0x60
This_green=0x61
This_yellow=0x62
Recognize_yellow=0x63
Recognize_green=0x64
Recognize_blue=0x65
Recognize_red=0x66
init=0x67


def set_voice(data):
    bus.write_byte_data(address, register, data)


set_voice(init)
time.sleep(0.5)
```

- The broadcast content can be viewed according to the **Command word broadcast word protocol list V3_EN** file provided in the attachment,

where the first and second bytes are AA FF indicates the frame header of the protocol, the third byte FF indicates the broadcast function, and the fourth is the ID of the broadcast content. Here you can see that **"I am ready"** is hexadecimal 67, so in the program, sending 0x67 to register 0x03 can broadcast the corresponding content. The fifth byte is the end frame

84	THIS-IS-RED		命令词	this is red	被		AA 55 FF 5F FB	AA 55 FF 5F FB
85	THIS-IS-BLUE		命令词	this is blue	被		AA 55 FF 60 FB	AA 55 FF 60 FB
86	THIS-IS-GREEN		命令词	this is green	被		AA 55 FF 61 FB	AA 55 FF 61 FB
87	THIS-IS-YELLOW		命令词	this is yellow	被		AA 55 FF 62 FB	AA 55 FF 62 FB
88	THERE-IS-YELLOW		命令词	there is yellow	被		AA 55 FF 63 FB	AA 55 FF 63 FB
89	THERE-IS-GREEN	Command word	命令词	there is green	被	Passive	AA 55 FF 64 FB	AA 55 FF 64 FB
90	THERE-IS-BLUE		命令词	there is blue	被		AA 55 FF 65 FB	AA 55 FF 65 FB
91	THERE-IS-RED		命令词	there is red	被		AA 55 FF 66 FB	AA 55 FF 66 FB
92	I-AM-READY		命令词	i am ready	被		AA 55 FF 67 FB	AA 55 FF 67 FB

- Enter the following command in the terminal to run the program. When you hear **I am ready**, it means the program is running

```
python3 iic_test.py
```

```
yahboom@raspberrypi:~ $ python3 iic_test.py
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
Read data:0
```

- After I say the wake-up word to wake up, I say **"close light"** and the debugging assistant will reply to receive 10

```
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
Read data:10
```

- At this time, you can open the attached **Command Word Broadcast Word Protocol List V3_EN** file to view the "Turn off the light" protocol

| 20 | CLOSE-LIGHT | Command word | 命令词 | ok light is closed. | 主 Active | AA 55 00 0A FB | AA 55 00 0A FB |
| 21 | RED-LIGHT-UP | | 命令词 | ok red light is on | 主 | AA 55 00 0B FB | AA 55 00 0B FB |

The first and second bytes AA FF represent the frame header of the protocol, the third byte represents the ID of the ten function words of the chip, and the fourth is the command word ID. Here you can see **"close light"** is hexadecimal 0A, decimal 10. The fifth byte is the end frame.

- Say other command words, the serial port debugging assistant will also print the corresponding command word ID, you can try it yourself