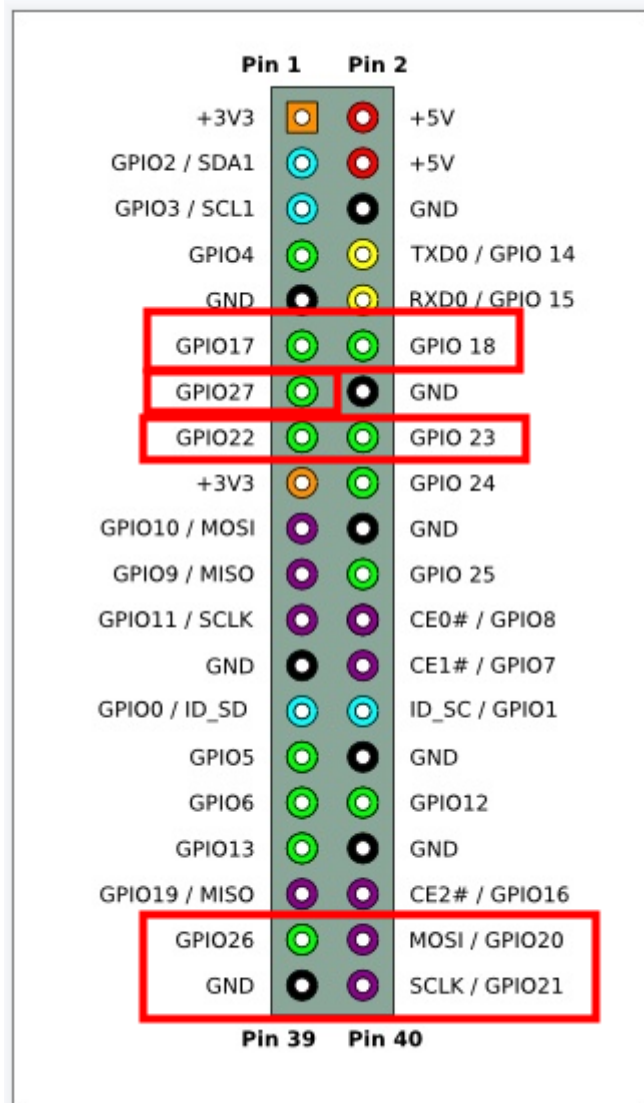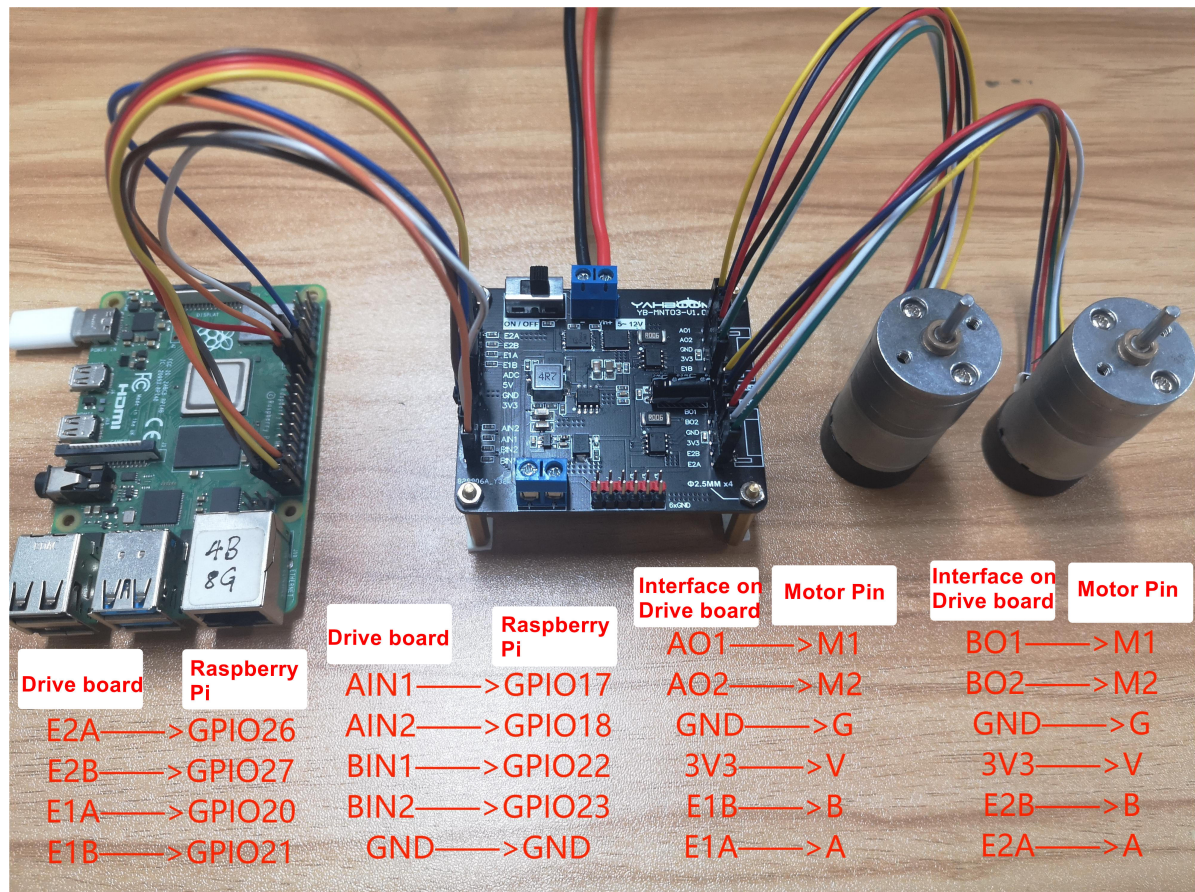# RaspberryPi

1. Preparation

Connect the motor drive board and Raspberry Pi according to the wiring diagram, connect the battery to the power input interface on motor drive module.

Note: The motor interface wire sequence of the dual motor drive board should correspond to the motor pin! Otherwise, the motor drive plate will be damaged.

Note: The motor interface wire sequence of the dual motor drive board.

Pin details

Interface type	Pin name	Pin description	Interface type	Pin name	Pin description
MCU/ host interface	E1A	Motor 1 Hall signal A	Motor port	AO1	Motor 1 power supply+
	E1B	Motor 1 Hall signal B		AO2	Motor 1 power supply-
	E2A	Motor 2 Hall signal A		GND	GND
	E2B	Motor 2 Hall signal B		3V3	Motor 1 Hall power supply
	ADC	Collect VM input voltage		E1B	Motor 1 Hall signal B
	5V	Output 5V3A power supply		E1A	Motor 1 Hall signal A
	GND	GND		BO1	Motor 2 power supply+
	3V3	Output 3.3V voltage		BO2	Motor 2 power supply-
	AIN1	Motor 1 drive signal 1		GND	GND
	AIN2	Motor 1 drive signal 2		3V3	Motor 2 Hall power supply
	BIN1	Motor 2 drive signal 1		E2B	Motor 2 Hall signal B
	BIN2	Motor 2 drive signal 2		E2A	Motor 2 Hall signal A

2. Code

```python
import RPi.GPIO as GPIO   #Import Library
import time

GPIO.setmode(GPIO.BCM)     #Set pin
AIN1 = 17
AIN2 = 18
BIN1 = 22
BIN2 = 23

GPIO.setwarnings(False)      #Remove warning
GPIO.setup(AIN1, GPIO.OUT)    #Pin set to output
p1 = GPIO.PWM(AIN1, 50)   #50 is the frequency of 50 Hz
p1.start(0)

GPIO.setup(AIN2, GPIO.OUT)
p2 = GPIO.PWM(AIN2, 50)
p2.start(0)

GPIO.setup(BIN1, GPIO.OUT)
p3 = GPIO.PWM(BIN1, 50)
p3.start(0)

GPIO.setup(BIN2, GPIO.OUT)
p4 = GPIO.PWM(BIN2, 50)
p4.start(0)

# The rotation speed of the motor can be changed by changing the value in the
brackets. The value range is 0~100
def forward(time_sleep):    #Forward for a few seconds
    p1.start(0)
    p2.start(50)
    p3.start(0)
    p4.start(50)
    time.sleep(time_sleep)

def stop():  #Stop it
    p1.start(0)
    p2.start(0)
    p3.start(0)
    p4.start(0)

spin_count = 0
spin_count2 = 0
E1A = 20      #Set pin
E1B = 21
E2A=26
E2B=27
GPIO.setmode(GPIO.BCM)
GPIO.setup(E1B, GPIO.IN, pull_up_down=GPIO.PUD_UP)
GPIO.setup(E1A, GPIO.IN, pull_up_down=GPIO.PUD_UP)
GPIO.setup(E2B, GPIO.IN, pull_up_down=GPIO.PUD_UP)
```

```
GPIO.setup(E2A, GPIO.IN, pull_up_down=GPIO.PUD_UP)


def my_callback(channel): #Callback function
    global spin_count
    if GPIO.input(E1A):
        if not GPIO.input(E1B):
            spin_count += 1
        elif GPIO.input(E1B):
            spin_count -= 1
    print(spin_count)

def my_callback2(channel):
    global spin_count2
    if GPIO.input(E2A):
        if not GPIO.input(E2B):
            spin_count2 += 1
        elif GPIO.input(E2B):
            spin_count2 -= 1
    print(spin_count2)


GPIO.add_event_detect(E1A, GPIO.RISING, callback=my_callback)
GPIO.add_event_detect(E2A, GPIO.RISING, callback=my_callback2)

forward(5)    #Forward rotation for 5s
stop()      #Stop it
```

3. Experimental result

Run the program, the motor drive board drives the two-way motor to rotate for 5s, and the terminal prints the speed of the motor.