



树莓派高级版套件 <http://keyes-robot.taobao.com>

## 14 ULN2003驱动步进电机实验2

### 1 实验操作过程：

```
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/ULN2003_python
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003_python $ ls
ULN2003.py
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003_python $ vi ULN2003.py
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003_python $ sudo python ULN2003.py
```

### 2 实验源程序：

```
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/ULN2003_python
# Name: bujindianji
# Created: 03/16/2014
#-----
#!/usr/bin/env python

# Import required libraries
import time
import RPi.GPIO as GPIO

GPIO.setmode(GPIO.BCM)

StepPins = [17,18,27,22]

# Set all pins as output
for pin in StepPins:
    print "Setup pins"
    GPIO.setup(pin, GPIO.OUT)
    GPIO.output(pin, False)

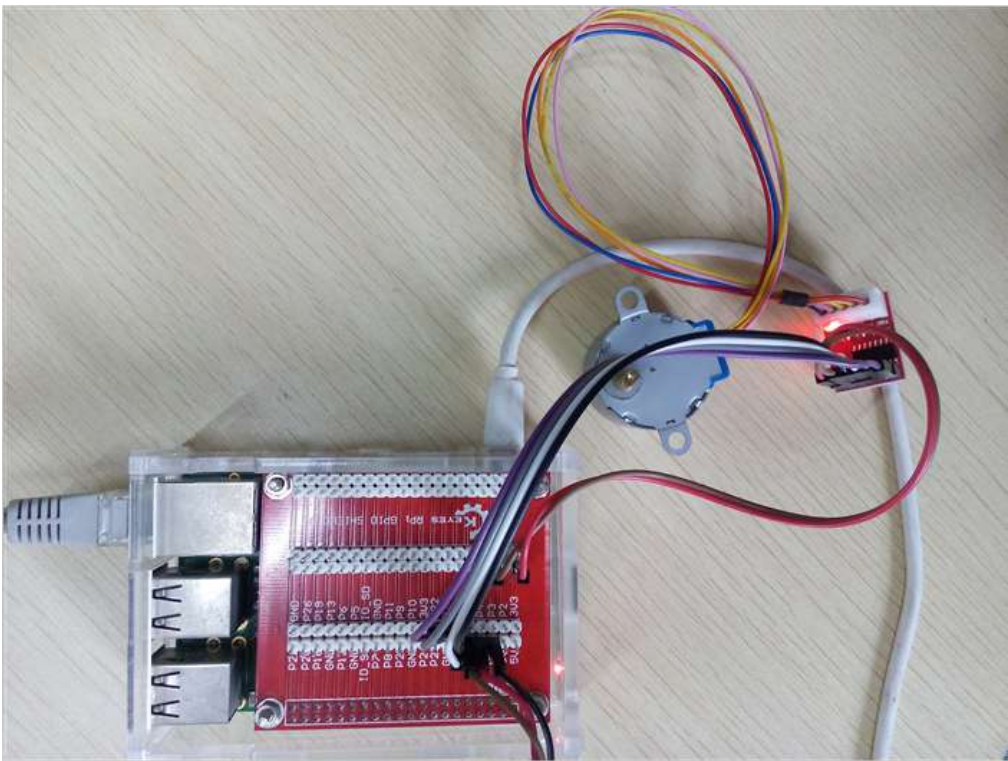
# Define some settings
StepCounter = 0
WaitTime = 0.02

"ULN2003.py" 73L, 1411C 1,1 Top
```

### 3 实验结果

```
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/ULN2003_python
pi@raspberrypi ~/$ ls
ULN2003.py
pi@raspberrypi ~/$ vi ULN2003.py
pi@raspberrypi ~/$ sudo python ULN2003.py
Setup pins
ULN2003.py:18: RuntimeWarning: This channel is already in use, continuing anyway.
se GPIO.setwarnings(False) to disable warnings.
  GPIO.setup(pin, GPIO.OUT)
Setup pins
Setup pins
Setup pins
Step 0 Enable 17
Step 1 Enable 18
Step 2 Enable 27
Step 3 Enable 22
Step 0 Enable 17
Step 1 Enable 18
Step 2 Enable 27
Step 3 Enable 22
Step 0 Enable 17
Step 1 Enable 18
Step 2 Enable 27
Step 3 Enable 22
Step 0 Enable 17
Step 1 Enable 18
Step 2 Enable 27
Step 3 Enable 22
Step 0 Enable 17
```

4 实验接线图



5 引脚标示

红色框内的为ULN2003 IN1 IN2 IN3 IN4 和树莓派的对应连接的GPIO口

```

pi@raspberrypi: ~/keyes_树莓派高级版套件资料/UIN2003
pi@raspberrypi ~/keyes_树莓派高级版套件资料/UIN2003 $ gpio readall
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| BCM | wPi |   Name   | Mode | V | Physical | V | Mode | Name   | wPi | BCM |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|      |      | 3.3v     |      |   | 1  | 2  |      | 5v     |      |      | |
| 2    | 8    | SDA.1    | ALT0 | 1 | 3  | 4  |      | 5V     |      |      |
| 3    | 9    | SCL.1    | ALT0 | 1 | 5  | 6  |      | 0v     |      |      |
| 4    | 7    | GPIO. 7   | IN   | 1 | 7  | 8  | 1    | TxD    | 15   | 14   |
|      |      | 0v       |      |   | 9  | 10 | 1    | RxD    | 16   | 15   |
| 17   | 0    | GPIO. 0   | OUT  | 1 | 11 | 12 | 0    | GPIO. 1 | 1    | 18   |
| 27   | 2    | GPIO. 2   | OUT  | 0 | 13 | 14 |      | 0v     |      |      |
| 22   | 3    | GPIO. 3   | OUT  | 0 | 15 | 16 | 0    | IN     | GPIO. 4 | 4    | 23   |
|      |      | 3.3v     |      |   | 17 | 18 | 0    | IN     | GPIO. 5 | 5    | 24   |
| 10   | 12   | MOSI     | ALT0 | 0 | 19 | 20 |      | 0v     |      |      |
| 9    | 13   | MISO     | ALT0 | 0 | 21 | 22 | 0    | IN     | GPIO. 6 | 6    | 25   |
| 11   | 14   | SCLK     | ALT0 | 0 | 23 | 24 | 1    | ALT0   | CE0    | 10   | 8    |
|      |      | 0v       |      |   | 25 | 26 | 1    | ALT0   | CE1    | 11   | 7    |
| 0    | 30   | SDA.0     | IN   | 1 | 27 | 28 | 1    | IN     | SCL.0  | 31   | 1    |
| 5    | 21   | GPIO.21   | IN   | 1 | 29 | 30 |      | 0v     |      |      |
| 6    | 22   | GPIO.22   | IN   | 1 | 31 | 32 | 0    | IN     | GPIO.26 | 26   | 12   |
| 13   | 23   | GPIO.23   | IN   | 0 | 33 | 34 |      | 0v     |      |      |
| 19   | 24   | GPIO.24   | IN   | 0 | 35 | 36 | 0    | IN     | GPIO.27 | 27   | 16   |
| 26   | 25   | GPIO.25   | IN   | 0 | 37 | 38 | 0    | IN     | GPIO.28 | 28   | 20   |
|      |      | 0v       |      |   | 39 | 40 | 0    | IN     | GPIO.29 | 29   | 21   |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| BCM | wPi |   Name   | Mode | V | Physical | V | Mode | Name   | wPi | BCM |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
pi@raspberrypi ~/keyes_树莓派高级版套件资料/UIN2003 $

```

实验接线图：

```

VCC-----5V
GND-----GND
IN1-----0
IN2-----1
IN3-----2
IN4-----3
~
~

```