



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

13 ULN2003驱动步进电机实验

1 实验操作过程：

```
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/ULN2003 $ ls
ULN2003.c
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003 $ vi ULN2003.c
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003 $ g++ ULN2003.c -o ULN2003 -lwiringPi
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003 $ ls
ULN2003  ULN2003.c
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003 $ sudo ./ULN2003 0 1 2 3
pi@raspberrypi ~/keyes_树莓派高级版套件资料/ULN2003 $
```

2 实验源程序：

```
pi@raspberrypi: ~/keyes_鑼戮幧蜈鸱珮缤xi谱濂榭欢璧勤枰/ULN2003
/* moto.c
 * A program to control a stepper motor through the GPIO on Raspberry Pi.
 *
 * Author: Darran Zhang (http://www.codelast.com)
 */

#include <wiringPi.h>
#include <stdio.h>
#include <unistd.h>
#include <stdlib.h>

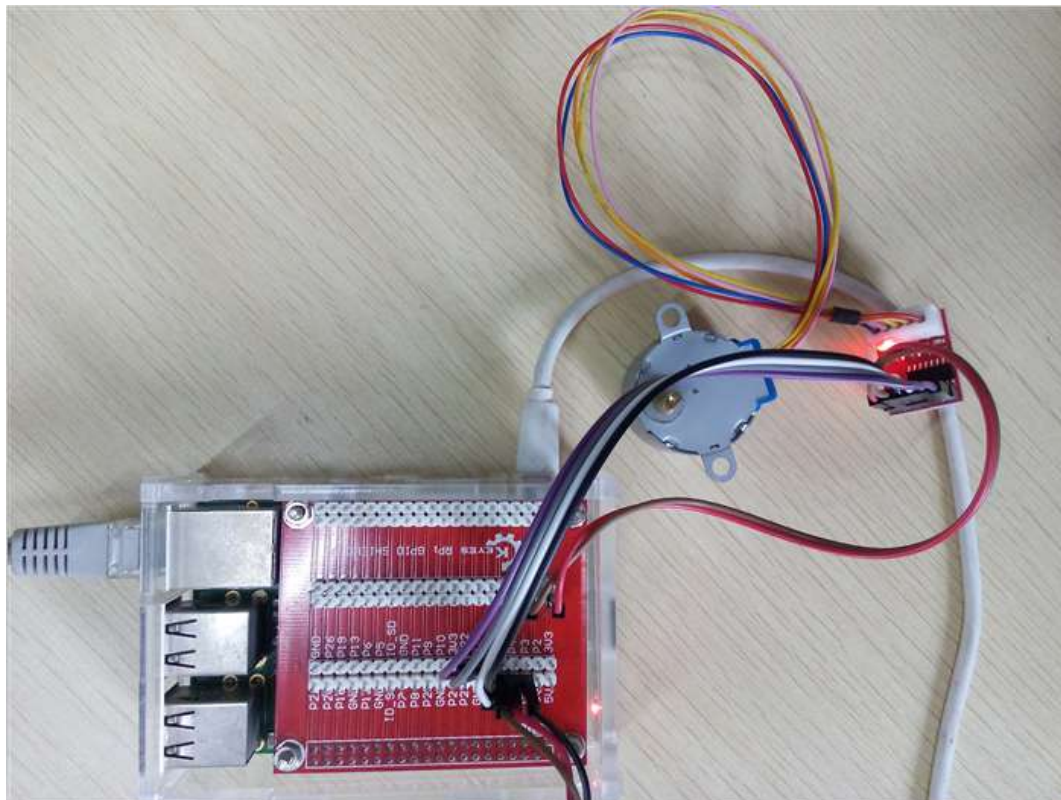
#define CLOCKWISE 1
#define COUNTER_CLOCKWISE 2

void delayMS(int x);
void rotate(int* pins, int direction);

int main(int argc, char* argv[]) {
    if (argc < 4) {
        printf("Usage example: ./motor 0 1 2 3 \n");
        return 1;
    }

    /* number of the pins which connected to the stepper motor driver board */
    "ULN2003.c" 83L, 1996C                                     1,1      Top
```

3 实验接线图



4 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 ALT0  | TxD    | 15   | 14   |
|      |      | 0v       |      |   | 9         | 10| 1 ALT0  | RxD    | 16   | 15   |
| 17    | 0    | GPIO. 0  | OUT  | 1 | 11        | 12| 0 OUT   | 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
~
~

```