



8 HC-SR04 ultrasonic module

1 Project process:

```
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/HC-SR04 $ ls
HC-SR04.c  HC-SR04.o  Makefile
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/HC-SR04 $ vi HC-SR04.c
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/HC-SR04 $ make
gcc HC-SR04.c -o HC-SR04 -lwiringPi
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/HC-SR04 $ ls
HC-SR04  HC-SR04.c  HC-SR04.o  Makefile
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/HC-SR04 $ sudo ./HC-SR04
```

2 Project source code:

```
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/HC-SR04
#include <wiringPi.h>
#include <stdio.h>
#include <sys/time.h>

#define Trig    4
#define Echo    5

void ultraInit(void)
{
    pinMode(Echo, INPUT);
    pinMode(Trig, OUTPUT);
}

float disMeasure(void)
{
    struct timeval tv1;
    struct timeval tv2;
    long start, stop;
    float dis;

    digitalWrite(Trig, LOW);
    delayMicroseconds(2);

    digitalWrite(Trig, HIGH);
    delayMicroseconds(10);    //发出超声波脉冲
}
```

3 Result

```
pi@raspberrypi: ~/keyes_树莓派高级版套件资料/HC-SR04 $ sudo ./HC-SR04
distance = 9.49 cm
distance = 11.00 cm
distance = 11.05 cm
distance = 10.56 cm
distance = 10.49 cm
distance = 11.00 cm
distance = 10.03 cm
distance = 9.16 cm
distance = 8.06 cm
distance = 5.85 cm
distance = 4.73 cm
distance = 4.18 cm
distance = 6.00 cm
distance = 6.73 cm
distance = 8.81 cm
distance = 11.03 cm
distance = 12.36 cm
distance = 12.78 cm
distance = 15.49 cm
^Cpi@raspberrypi ~/keyes_树莓派高级版套件资料/HC-SR04 $
```

4 Project circuit connection



Connection diagram

```
GND-----GND
Echo-----5
Trig-----4
Vcc-----■--5V
```

~ ~ ~