



## Project 18: IR received signal decoding

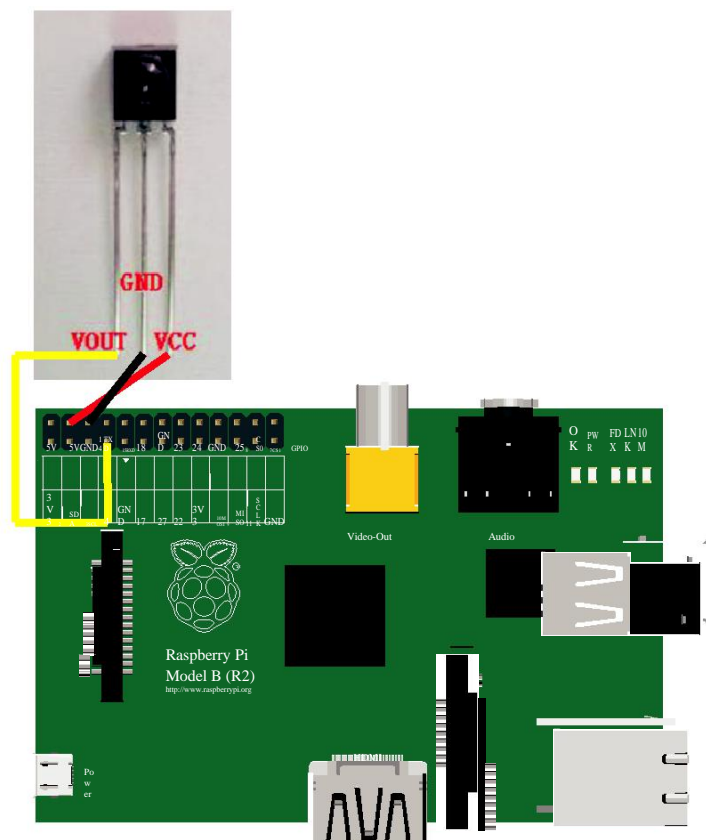
```
pi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码/
pi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码 $ ls
hongwai.c
pi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码 $ nano hongwai.c
pi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码 $ gpio readall
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 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   | 0 | 7 || 8 | 1    | ALT0    | TxD   | 15   | 14   |
|      |      | 0v       |      |   | 9 || 10 | 1    | ALT0    | RxD   | 16   | 15   |
| 17   | 0    | GPIO. 0  | IN   | 0 | 11 || 12 | 0    | IN      | GPIO. 1 | 1    | 18   |
| 27   | 2    | GPIO. 2  | IN   | 0 | 13 || 14 |      | 0v       |      |      |
| 22   | 3    | GPIO. 3  | IN   | 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    |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 28   | 17   | GPIO.17  | IN   | 0 | 51 || 52 | 0    | IN      | GPIO.18 | 18   | 29   |
| 30   | 19   | GPIO.19  | IN   | 0 | 53 || 54 | 0    | IN      | GPIO.20 | 20   | 31   |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| BCM | wPi |   Name   | Mode | V | Physical | V | Mode |   Name   | wPi | BCM |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
pi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码 $ gcc hongwai.c -o hongwai -lwiringPi
pi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码 $ ls
hongwai hongwai.c
pi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码 $ sudo ./hongwai
^Cpi@raspberrypi: ~/树莓派基础套件程序资料/第十八课 红外遥控 红外接收解码 $
```

Pic. 1

```
pi@raspberrypi: ~/...$ nano hongwai.c
GNU nano 2.2.6 File: hongwai.c

#include "wiringPi.h"
#include <stdlib.h>
#include <stdio.h>
#include <unistd.h>
#include <stdint.h>
#include <string.h>
#define IR_PIN 7
#define SETBIT(X,Y) ((X)|=(1<<(Y)))
#define CLRBIT(X,Y) ((X)&=~(1<<(Y)))
#define REVBIT(X,Y) ((X)^(1<<(Y)))
void main()
{
wiringPiSetup();
pinMode(IR_PIN, INPUT);
pullUpDnControl(IR_PIN, PUD_OFF);
uint32_t i;
uint32_t header1;
uint32_t header2;
uint32_t data[65];
while(1)
{
restart:
while(!digitalRead(IR_PIN))
{
header1=0;
while(!digitalRead(IR_PIN) && header1<65535)
header1++;
if(header1>=65535) goto restart;
header2=0;
while(digitalRead(IR_PIN) && header2<65535)
header2++;
if(header2>=65535) goto restart;
for(i=64;i>0;i--)
[ Read 101 lines ]
^G Get Help      ^O WriteOut      ^R Read File     ^Y Prev Page     ^K Cut Text      ^C Cur Pos
^X Exit          ^J Justify       ^W Where Is     ^V Next Page     ^U UnCut Text    ^T To Spell
```

Pic. 2



Pic. 3