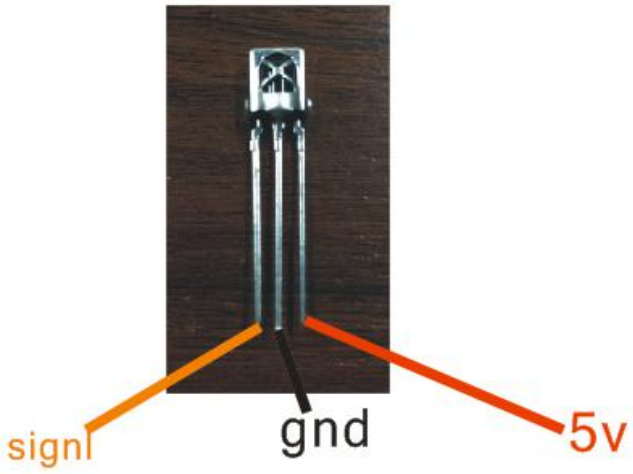
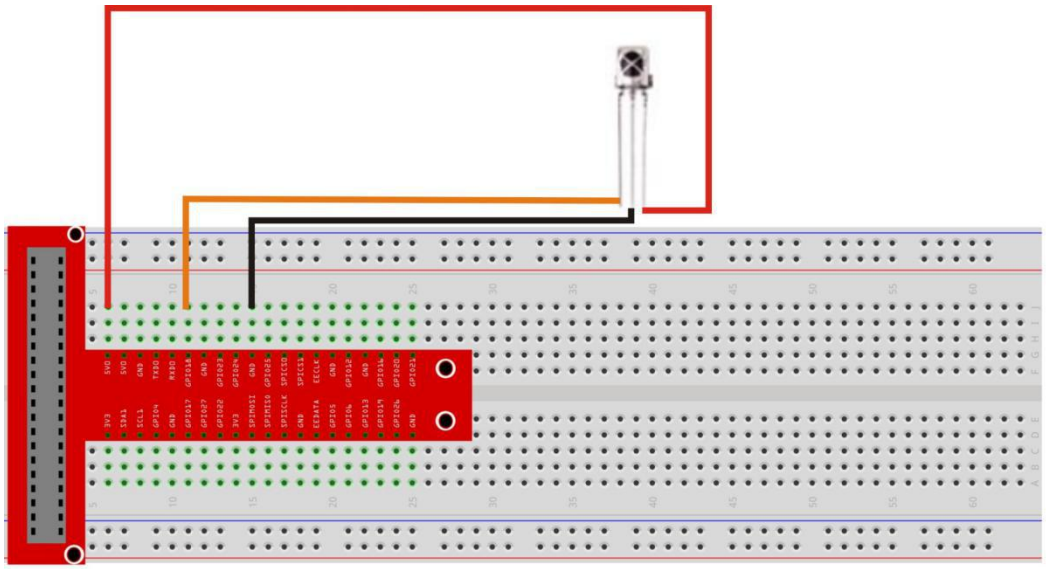
IRremote

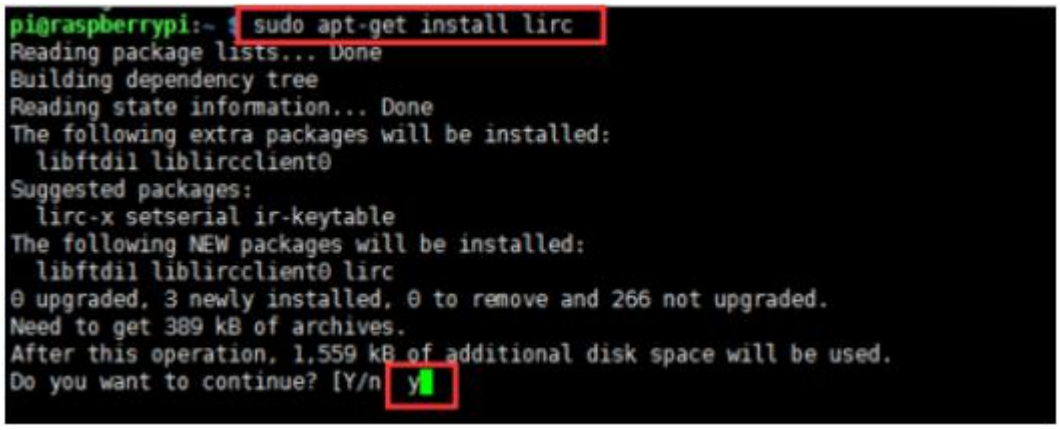
Product pictures：



Wiring diagram：



1. Install LIRC, LIRC (Linux Infrared Remote Control) is an open source software package for Linux. Allows the Linux system to receive and send infrared signals, please be careful to connect the Raspberry Pi to the network
Use the command: sudo apt-get install lirc



2. Use the command to enter the configuration file directory and modify it

Modify content：

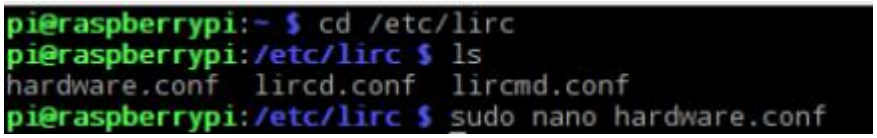
LIRCD_ARGS="--uinput"

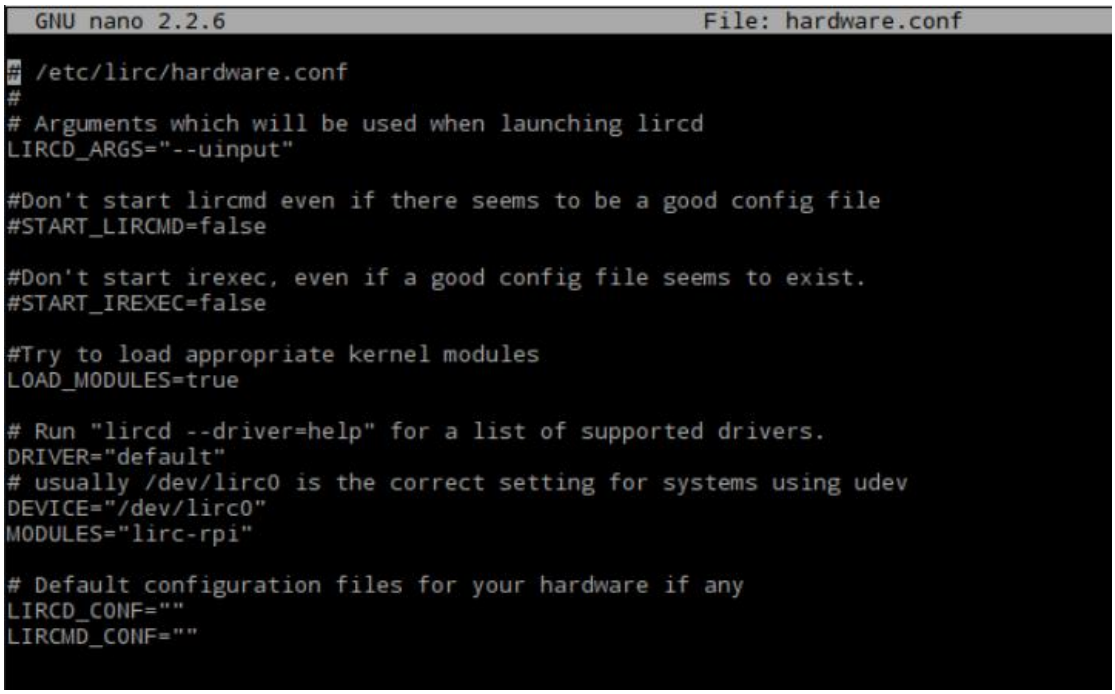
DRIVER="default"

DEVICE="/dev/lirc0"

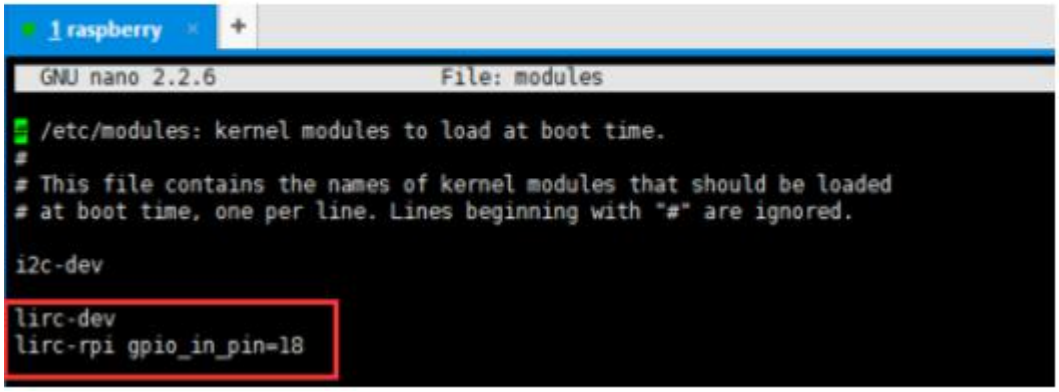
MODULES="lirc-rpi"

The following figure is the instruction and diagram to be input. After the modification, press the key combination “ctrl+X”, then press Y, and finally press the Enter key.

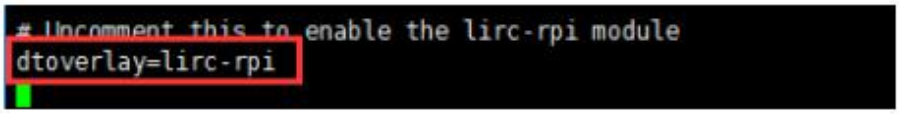




3.In the configuration file, add the infrared module
Join statement:
lirc-dev
lirc-rpi gpio_in_pin=18
Because it only uses infrared reception and does not use the infrared emission function, so only add the in_pin statement. Operate as shown below. After the modification, press the key combination “ctrl+X”, then press Y, and finally press enter Key.



4.Modify the system config configuration file
Remove the "#" in front of the sentence in the red box, after the modification, press the key combination "ctrl + X", then press Y, and finally press the Enter key



5. Restart the Raspberry Pi Controller
Use the command: sudo reboot

6. Re-open the lirc function, so that the lirc software is configured。
sudo /etc/init.d/lirc restart

```
pi@raspberrypi:~ $ sudo /etc/init.d/lirc restart
[ ok ] Restarting lirc (via systemctl): lirc.service.
pi@raspberrypi:~ $
```

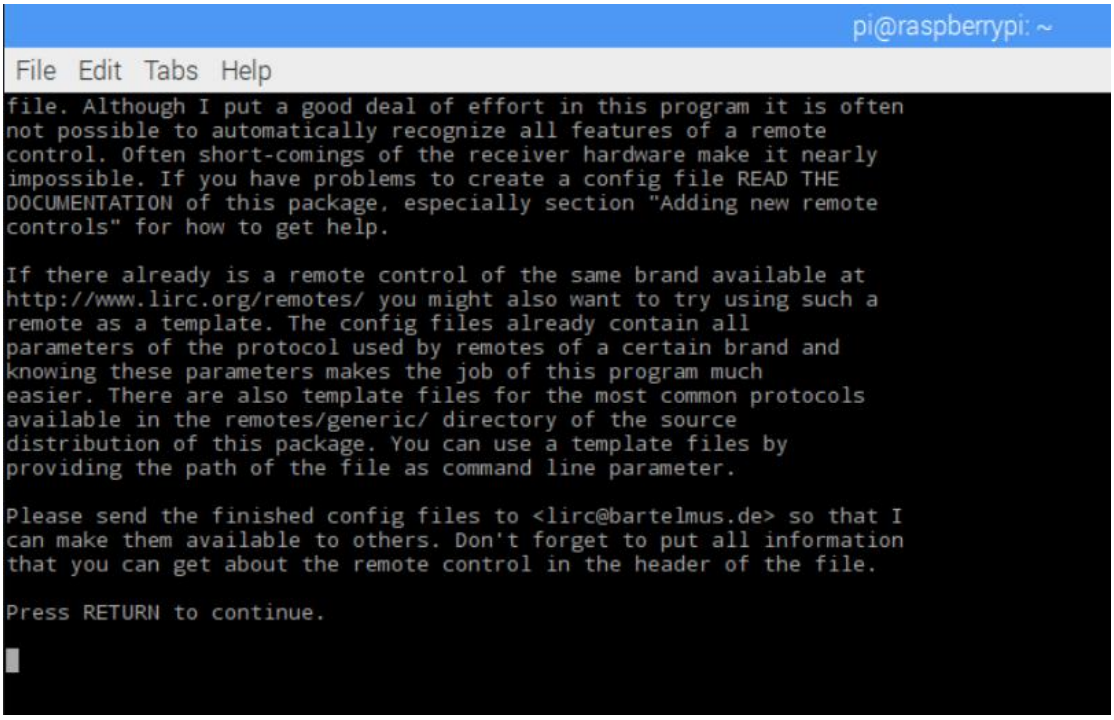
7. Infrared reception configuration detection
First shut down the lirc software, use the following command
sudo /etc/init.d/lirc stop
Then execute the following command
mode2 -d /dev/lirc0
Pressing any key of the remote control will return something similar to the following figure, indicating that the infrared receiving configuration is successful.

```
pulse 578
space 1633
pulse 599
space 1639
pulse 602
space 1637
pulse 607
space 552
pulse 572
space 1639
pulse 603
space 39805
pulse 9045
space 2218
pulse 598
```

8. Recording infrared code
First shut down the lirc software and look at the available key names
Use the command:
sudo /etc/init.d/lirc stop
irrecord -list-namespace
Return to the currently available key name

```
pi@raspberrypi:~ $  irrecord -list-namespace
KEY_0
KEY_102ND
KEY_1
KEY_2
KEY_3
KEY_4
KEY_5
KEY_6
KEY_7
KEY_8
KEY_9
KEY_A
KEY_AB
```

9. Execute the following IR coded recording command. The following picture will appear. Press the Enter button twice.
Command: irrecord -d /dev/lirc0 ~/lircd.conf



Then press any button until "..." fills up one line, then click any button, until the point is filled with the second line, and then the prompt for the name of the input button will pop up, we directly input just detected The name of the button, such as KEY_1, and then press the corresponding button on the remote control, you can complete the recording of the code. Repeat this method to record the other buttons. After the recording is completed, press the Enter button to end the recording.

```
Now start pressing buttons on your remote control.

It is very important that you press many different buttons and hold them
down for approximately one second. Each button should generate at least one
dot but in no case more than ten dots of output.
Don't stop pressing buttons until two lines of dots (2x80) have been
generated.

Press RETURN now to start recording.
.....................................................................
Found const length: 108546
Please keep on pressing buttons like described above.
.....................................................................
Space/pulse encoded remote control found.
Signal length is 67.
Found possible header: 9000 4603
Found trail pulse: 501
Found repeat code: 9001 2326
Signals are space encoded.
Signal length is 32
Now enter the names for the buttons.

Please enter the name for the next button (press <ENTER> to finish recording)
KEY_1

Now hold down button "KEY_1".

Please enter the name for the next button (press <ENTER> to finish recording)
KEY_2

Now hold down button "KEY_2".

Please enter the name for the next button (press <ENTER> to finish recording)
KEY_3
```

10.Overwrite the recorded configuration file with the corresponding file of lirc software. Here is the command：
sudo cp ~/lircd.conf /etc/lirc/lircd.conf

```
pi@raspberrypi:~ $ sudo cp ~/lircd.conf /etc/lirc/lircd.conf
pi@raspberrypi:~ $
```

11. Test the recording result of the infrared remote control button
input the command：
sudo /etc/init.d/lirc start

irw
Pressing the button just recorded by the infrared remote controller at this time will display the name of the button.

```
pi@raspberrypi:~ $ sudo /etc/init.d/lirc start
[ ok ] Starting lirc (via systemctl): lirc.service.
pi@raspberrypi:~ $ irw
0000000000ffa25d 00 KEY_1 /home/pi/lircd.conf
0000000000ffa25d 01 KEY_1 /home/pi/lircd.conf
0000000000ff629d 00 KEY_2 /home/pi/lircd.conf
0000000000ffe21d 00 KEY_3 /home/pi/lircd.conf
0000000000ffe21d 01 KEY_3 /home/pi/lircd.conf
0000000000ff22dd 00 KEY_4 /home/pi/lircd.conf
0000000000ff02fd 00 KEY_5 /home/pi/lircd.conf
0000000000ffc23d 00 KEY_6 /home/pi/lircd.conf
0000000000ffe01f 00 KEY_7 /home/pi/lircd.conf
0000000000ffe01f 01 KEY_7 /home/pi/lircd.conf
0000000000ffa857 00 KEY_8 /home/pi/lircd.conf
0000000000ff906f 00 KEY_9 /home/pi/lircd.conf
0000000000ff906f 01 KEY_9 /home/pi/lircd.conf
0000000000ff6897 00 KEY_A /home/pi/lircd.conf
A000000000ff9867 00 KEY_AB /home/pi/lircd.conf
0000000000ffb04f 00 KEY_F10 /home/pi/lircd.conf
```

12. The next thing is important, press the button, the Raspberry Pi to execute a command, use the key KEY_1 to reboot the system

Edit .lircrc and execute the following command

sudo pico ~/.lircrc

Add the following to the file

```
begin
        prog = irexec
        button = KEY_1
        config = sudo reboot
end
```

```
  GNU nano 2.2.6                                    File: /home/pi/.l

begin
        prog = irexec
        button = KEY_1
        config = sudo reboot
end
```

"KEY_1" is the key name, "sudo reboot" is the command to restart the Raspberry Pi

The following command can be used to control the remote control, press the "KEY_1" button, it will restart the Raspberry Pi。

irexec -d

13. You can also add other key functions behind the file, such as "KEY_2" button to start my desktop python code, such as the following：

```
begin
	prog = irexec
	button = KEY_1
	config = sudo reboot
end
begin
	prog = irexec
	button = KEY_2
	config = sudo python /home/pi/Desktop/led.py
end
```

14. Edit rc.local to enable the raspberry pie to automatically enable infrared reception upon startup. Now execute the following command:
sudo nano /etc/rc.local
In front of exit0, add the following:
(sleep 3;
sudo -u pi irexec -d
)&

As shown below:

```
(sleep 3;
sudo -u pi irexec -d
)&
exit 0
```

After the restart, the configuration takes effect. After the Raspberry Pi is started, the remote control key functions are activated directly.