我是樹莓派攝像頭，相容樹莓派任何版本。

【我的參數】

- **500** 萬圖元
- 感光晶片 **OV5647**
- 靜態圖片解析度為 **2592 × 1944**
- 支持 **1080p30, 720p60** 以及 **640×480p60/90** 視頻錄影
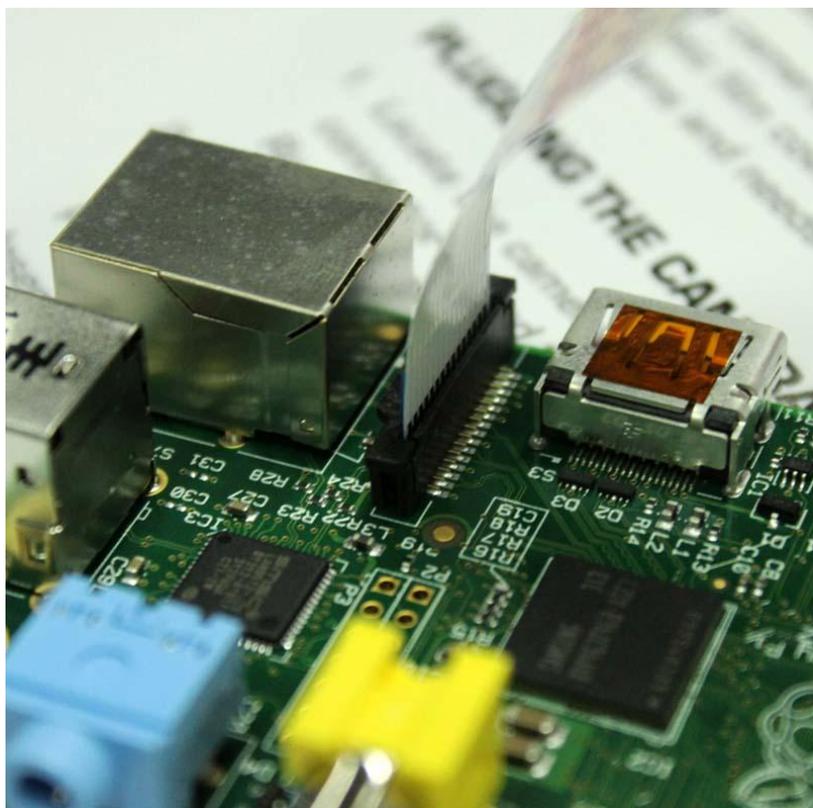- 尺寸：**25mm × 24mm × 9mm**

## 產品資料

資料包括：

- 用戶手冊

下載路徑： **www.waveshare.net/wiki/RPi_Camera**

## 配置清單

1. **RPi Camera × 1**
2. **15PIN FFC × 1**

連接方式：連接器的位置：**90** 度垂直連接器，**HDMI** 口旁邊那個。連接時觸點一側朝向 **HDMI** 接口

軟體使用：

1. RPi 固件和 raspi-config 已經爲了攝像頭更新，請執行一次 apt-get update; apt-get upgrade;
2. raspi-config 中選擇 camera，啓動 RPi 固件中的攝像頭驅動，然後重啓
3. 使用命令列程式 raspivid 和 raspistill 操作攝像頭，捕捉視頻片段或圖像
4. 捕捉到的視頻片段需要用 mplayer 播放

如何將攝像頭的資料通過網路直播播發出去：

通過 nc 命令（ncat - Concatenate and redirect sockets）將攝像頭的輸入資料，直接重定向到網路埠實現輸出

# 以下是详细说明

**How to enable camera support in Raspbian**

**Boot up the Pi and log in. The default username is pi, and the default password is raspberry. (Note: if you have changed these from the default then you will need to supply your own user/password details).**

**Run the following commands in a terminal to upgrade the Raspberry Pi firmware to the latest version:**

**sudo apt-get update**

```
pi@raspberrypi ~ $ sudo apt-get update
Get:1 http://archive.raspberrypi.org wheezy Release.gpg [490 B]
Get:2 http://mirrordirector.raspbian.org wheezy Release.gpg [490 B]
Get:3 http://mirrordirector.raspbian.org wheezy Release [14.4 kB]
Get:4 http://archive.raspberrypi.org wheezy Release [7,200 B]
Get:5 http://archive.raspberrypi.org wheezy/main armhf Packages [6,478 B]
Get:6 http://mirrordirector.raspbian.org wheezy/main armhf Packages [7,412 kB]
Ign http://archive.raspberrypi.org wheezy/main Translation-en_GB
Ign http://archive.raspberrypi.org wheezy/main Translation-en
56% [6 Packages 4,113 kB/7,412 kB 55%]
```
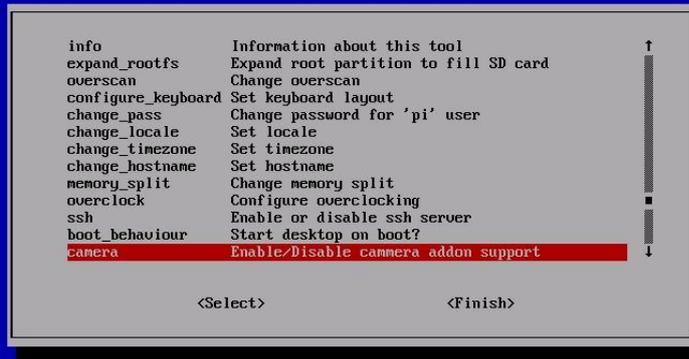
**Click to enlarge**

**sudo apt-get upgrade**

```
pi@raspberrypi ~ $ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be upgraded:
  libraspberrypi-bin libraspberrypi-dev libraspberrypi-doc libraspberrypi0 raspberrypi-bootloader raspi-config
6 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 60.4 MB of archives.
After this operation, 5,120 B of additional disk space will be used.
Do you want to continue [Y/n]?
```
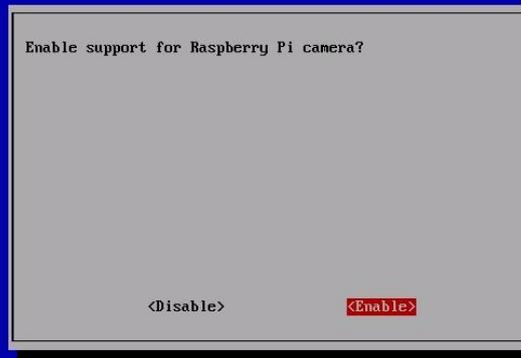
**Click to enlarge**

**Access the configuration settings for the Pi by running the following command:**

**sudo raspi-config**

**Navigate to "camera" and select "enable".**

**Click to enlarge**



**Click to enlarge**

**Select "Finish" and reboot.**

Would you like to reboot now?

<Yes>          <No>

**Click to enlarge**

**How to use the Raspberry Pi camera software**

**raspivid is a command line application that allows you to capture video with the camera module, while the applicationraspistill allows you to capture images.**

**-o or –output specifies the output filename and -t or –timeout specifies the amount of time that the preview will be displayed in milliseconds. Note that this set to 5s by default and that raspistill will capture the final frame of the preview period.**

**-d or –demo runs the demo mode that will cycle through the various image effects that are available.**

**Example commands**

**Capture an image in jpeg format:**

**raspistill -o image.jpg**

**Capture a 5s video in h264 format:**

**raspivid -o video.h264**

**Capture a 10s video:**

**raspivid -o video.h264 -t 10000**

**Capture a 10s video in demo mode:**

raspivid -o video.h264 -t 10000 -d

**To see a list of possible options for running raspivid or raspistill, you can run:**

raspivid | less

raspistill | less

**Use the arrow keys to scroll and type q to exit.**

**Extended documentation is available.**

**Note that we recommend that you change SSH password if you are using a camera, in order to prevent unwanted access.**

**How to stream video from the Raspberry Pi camera over a network**

**To view the feed on Linux**

**Install the dependencies by running the following in a terminal:**

sudo apt-get install mplayer netcat

**Find your IP address by running ifconfig. (Your IP address will be listed in the console output and will probably be of the form 192.168.1.XXX).**

**Run the following command in a terminal to view the feed using MPlayer:**

nc -l -p 5001 | mplayer -fps 31 -cache 1024 -

**To view the feed on Windows**

**Install and run Linux instead.**

**Find your IP address by running ipconfig. (Your IP address will be listed in the console output and will probably be of the form 192.168.1.XXX).**

**Download MPlayer.**

**Download Netcat.**

**Note that your browser may complain that these files are malicious, as they are unsigned executables.**

**Press the Windows key and the 'r' key simultaneously to bring up the "Run" dialog.**
**Enter cmd.exe into the dialog and press enter/return to open a DOS prompt.**

**Enter the following command at the prompt to view the feed using MPlayer:**

[Path to nc.exe]\nc.exe -L -p 5001 | [Path to mplayer.exe]\mplayer.exe -fps 31 -cache 1024 -

**To view the feed on OS X**

Download MPlayer.

Alternatively, you can download mplayer using Brew, which we recommend.

Find your IP address by running ifconfig. (Your IP address will be listed in the console output and will probably be of the form 192.168.1.XXX).

Run the following command in Terminal to view the feed using MPlayer:

nc -l -p 5001 | mplayer -fps 31 -cache 1024 -

**To view the feed on a Raspberry Pi:**

Find your IP address by running ifconfig. (Your IP address will be listed in the console output and will probably be of the form 192.168.1.XXX).

Run the following commands in a terminal on the receiving Pi:

mkfifo buffer

nc -p 5001 -l > buffer | /opt/vc/src/hello_pi/hello_video/hello_video.bin buffer

**To transmit the feed from the Pi with camera module attached**

After setting up the "receiving" machine as per the instructions above, run the following commands in a terminal on the "transmitting" Pi:

raspivid -t 999999 -o − | nc [insert the IP address of the client] 5001

You can then use the commands listed in the "How to use the Raspberry Pi camera software" section above to change the capture time or to add a video effect.