Raspberry Pi Camera User Guide

This user guide will show how to install a camera module on the Raspberry Pi. We will demonstrate this by using the first version. After installing the camera module, you will use three apps to access the module: raspistill, raspiyuv and raspivid. The first two apps capture images and the last catches video. The raspistill tool create standard image files, .jpg images, for example, while raspiyuv generates unprocessed images through the camera.

Follow these steps to connect the raspberry patch camera module to the raspberry pi:

1. Find the CSI interface (next to the Ethernet) and lift up the dark tape.

2. Pull up the CSI interface baffle.

3. Pick up your camera module and tear off the plastic film attached to the lens. Make sure that the yellow part of the PCB (the side with words) is perfectly installed (you can guarantee it perfect by pressing the yellow part lightly).

Insert the cable into the CSI interface. Remember it, the side with blue tape should face the Ethernet. Then, pull the baffle down after installed the line.

The CSI Port
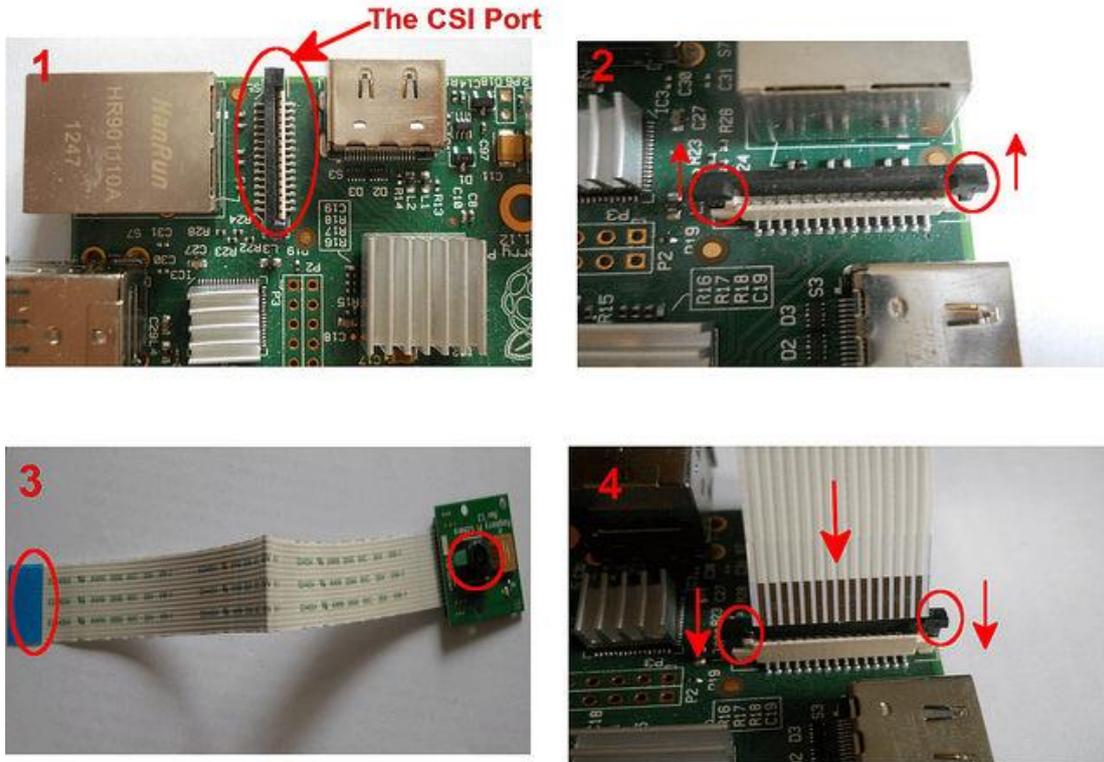
Ok, now, your Pi Cam is ready to take photos or video. Ok, now your Pi Cam is ready to take photos or video.

Firstly, make sure that you have upgraded and applied the latest raspberry

firmware after installing the camera module. Then, enter the following commands to operate:

```
$ sudo apt-get update

$ sudo apt-get upgrade
```

Operate the raspberry pie configuration tool to activate the camera module:

```
$ sudo raspi-config
```

Move the cursor to the "Enable Camera "in the menu and set it to Enable. Restart the raspberry pie when it is done.
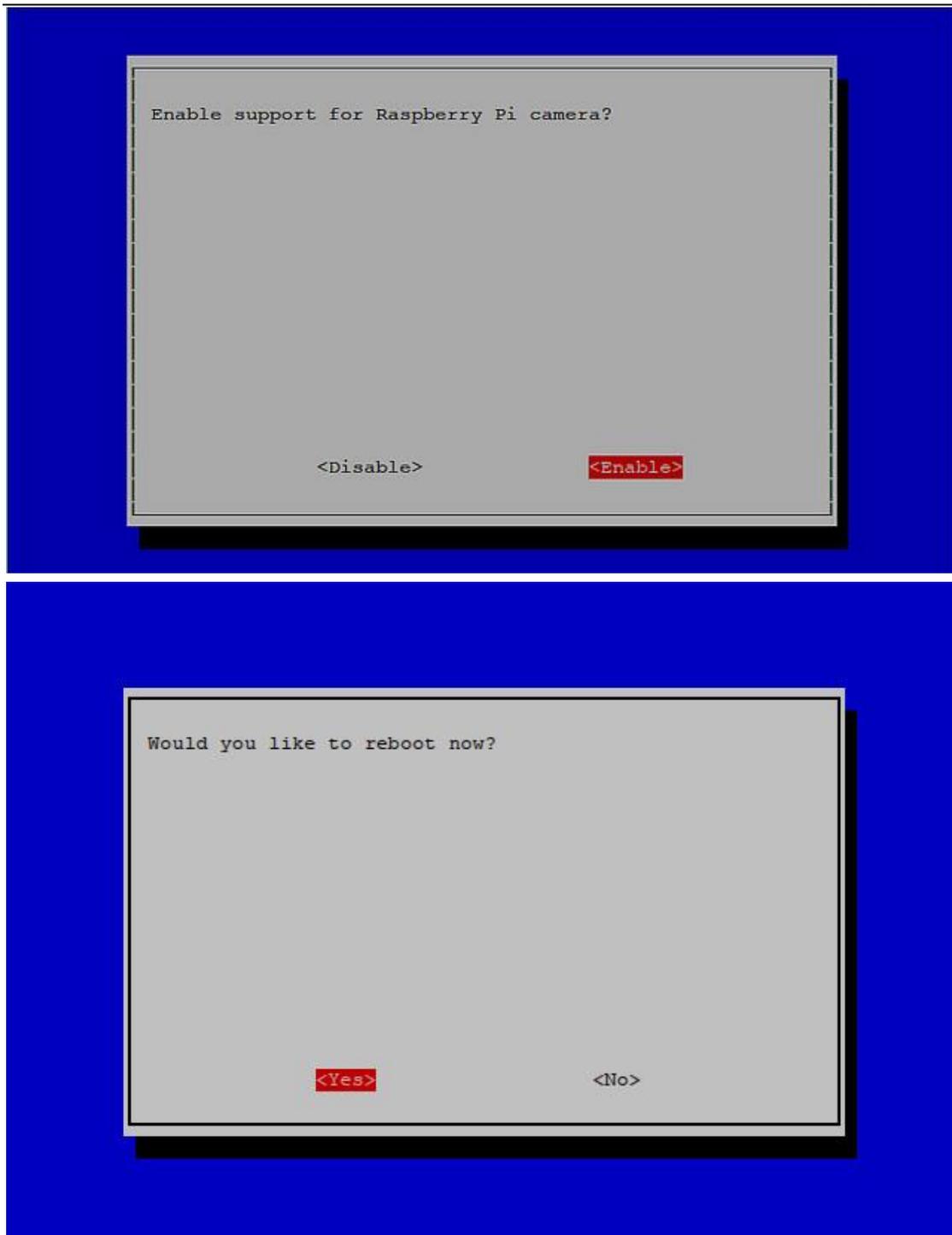
Now, we can use Pi Cam after restarting the raspberry pie. If you want to take a picture, just run raspistill.

```
$ raspistill -o keychain.jpg -t 2000
```

This instruction will take a photo 2000ms later, and save it as "keychain.jpg". There is a key chain of my Little bear toy, photographed by Pi Cam. See it as

below:

The raspiyuv tool is similar in usage, except that you will get an unprocessed picture.

Just run the raspivid tool if you want to shoot a video with the camera module. The following instruction will shoot a video with the default configuration (5 seconds, resolution: 1920x1080, bitrate: 17Mbps).

```
$ raspivid -o mykeychain.h264
```

If you want to change duration, just set the time you want (in milliseconds) by using the -t option.

```
$ raspivid -o mykeychain.h264 -t 10000
```

Use the "-w" and "-h" options to reduce the resolution to 1280x720...

```
$ raspivid -o mykeychain.h264 -t 10000 -w 1280 -h 720
```

Raspivid's output is an uncompressed h.264 video stream, and there's no

sound in this video. This raw h.264 video needs to be converted in order to be played by the common video player. You can use the MP4Box from gpac package.

Install on Raspbian and enter the instruction: gpac

```
$ sudo apt-get install -y gpac
```

Then convert the raw h.264 video stream to 30 frames per second in.mp4 video:

```
$ MP4Box -fps 30 -add keychain.h264 keychain.mp4
```

If you want the full command-line options of raspistill, raspiyuv, and raspivid, simply operate the above instructions without any options.