



OV5647 Camera Module for Raspberry Pi

Rev 2.0, Sep 2016

1 Introduction

In order to meet the increasing need of Raspberry Pi compatible camera modules. The Arducam team now released a revision C add-on camera module for Raspberry Pi which is fully compatible with official one. It optimizes the optical performance than the previous Pi cameras, and give user a much clear and sharp image. Also it provides the FREX and STROBE signals which can be used for multi-camera synchronize capture with proper camera driver firmware.

It attaches to Raspberry Pi by way of one of the two small sockets on the board upper surface. This interface uses the dedicated CSI interface, which was designed especially for interfacing to cameras. The CSI bus is capable of extremely high data rates, and it exclusively carries pixel data. The camera is supported in the latest version of Raspbian, Raspberry Pi's preferred operating system

The board itself is tiny, at around 36mm x 36mm. The highlight of our module is that the Lens is replaceable compared to official one, making it perfect for mobile or other applications where size and image quality are important. It connects to Raspberry Pi by way of a short ribbon cable. The camera is connected to the BCM2835/BCM2836 processor on the Pi via the CSI bus, a higher bandwidth link which carries pixel data from the camera back to the processor. This bus travels along the ribbon cable that attaches the camera board to the Pi.

The sensor itself has a native resolution of 5 megapixel, and has a fixed focus lens onboard. In terms of still images, the camera is capable of 2592 x 1944 pixel static images, and also supports 1080p30, 720p60 and 640x480p60/90 video.

2 Features

High-Definition video camera for Raspberry Pi Model A/B/B+ and Raspberry Pi 2

Omnivision OV5647 sensor in a fixed-focus module with replaceable Lens

Lens holder: M12x0.5 , CS mount or C mount

5MPixel sensor

Integral IR filter

Still picture resolution: 2592 x 1944

Max video resolution: 1080p

Max frame rate: 30fps

Support FREX/ STROBE feature

Size: 36 x 36 mm

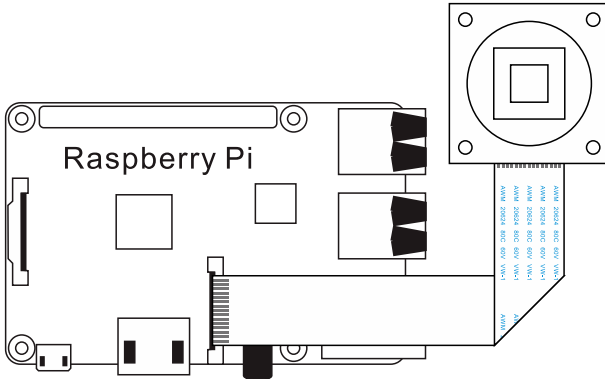
15 cm flat ribbon cable to 15-pin MIPI Camera Serial Interface (CSI) connector

3 Connecting the camera

The flex cable inserts into the connector situated between the Ethernet and HDMI ports, with the silver connectors

facing the HDMI port. The flex cable connector should be opened by pulling the tabs on the top of the connector upwards then towards the Ethernet port. The flex cable should be inserted firmly into the connector, with care taken not to bend the flex at too acute an angle. The top part of the connector should then be pushed towards the HDMI connector and down, while the flex cable is held in place.

Watch the following picture to see a demonstration of the camera being connected:



The camera may come with a small piece of translucent blue plastic film covering the lens. This is only present to protect the lens while it is being mailed to you, and needs to be removed by gently peeling it off.

4 Enabling the camera

Open the *raspi-config* tool from the Terminal:

```
sudo raspi-config
```

Select **Enable camera** and hit **Enter**, then go to **Finish** and you'll be prompted to reboot.

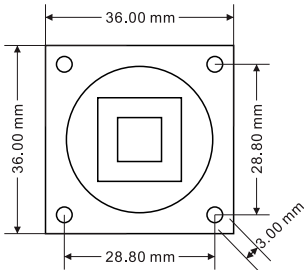
5 Using the camera

Libraries for using the camera are available in:

Shell (Linux command line): <https://www.raspberrypi.org/documentation/usage/camera/raspicam/README.md>

Python: <https://www.raspberrypi.org/documentation/usage/camera/python/README.md>

6 Mechanical dimension



7 Arducam Team:

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