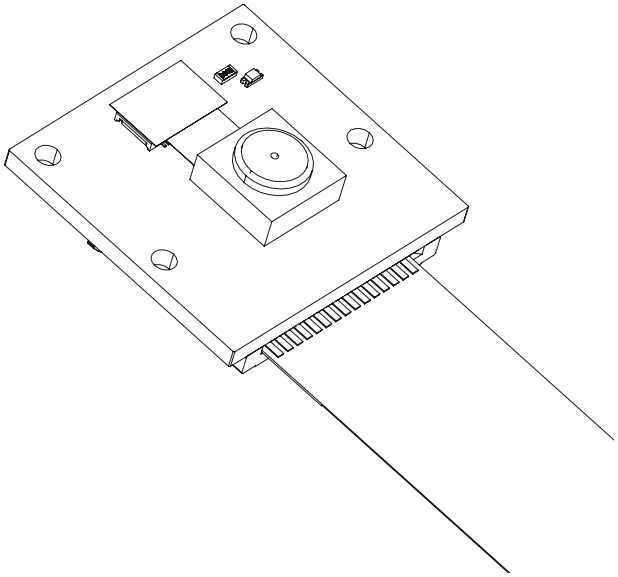
ArduCam

OV5647 Mini Camera Module for Raspberry Pi



Introduction

5MP OV5647 cameras, namely the V1 camera series, are used a lot on Raspberry Pi camera applications. Unlike the V2 cameras which are encrypted on the camera board with a chip, the 5MP OV5647 cameras can be easily modified and customized by third-party manufacturers, thus you will see a lot of variations of this series.

Models in this Series

These camera modules may vary in camera board size, default lens mount, IR sensitivity, field of view and etc. But they are the same in terms of software operation.

V1 Size(25x24mm)

SKU	Image	Case	Focus Type	Camera Cable	IR Sensitivity
B0033R		×	Fixed Focus	15cm/100cm 15pin cable	Visible Light
B0033C		√	Fixed Focus	15cm 15pin cable	Visible Light
B003301		×	Fixed Focus	15cm 15pin cable	NoIR
B0033+B0087		×	Fixed Focus	15cm 15pin cable, 15cm 15-22pin cable	Visible Light
B0033		×	Fixed Focus	15cm 15pin cable	Visible Light

Common Specs

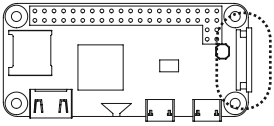
Sensor Model	OV5647
Shutter Type	Rolling Shutter
Active Pixels	2592×1944
Resolution	5MP
Video Modes	1080p30, 720p60 and 640 × 480p60/90
Image Sensor Format	Type 1/4"
Pixel Size	1.4μm×1.4μm
FoV	54 x 41 degrees
Focal Length	3.60 mm

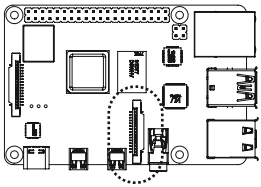
Quick Start Guide

Hardware Setup

You need to connect the camera module to the Raspberry Pi's camera port.

1. Locate the camera port (CSI) near the HDMI connector, and gently pull up on the plastic edge.
2. Push in the camera ribbon and make sure the silver connector is facing the Raspberry Pi camera MIPI port. Do not bend the flex cable and make sure it is firmly inserted.
3. Push the plastic connector down while holding the flex cable until the connector is back in place.





Software Setup

At present, we support using libcamera and raspistill to capture images with OV5647 camera, please refer to the following steps:

For Raspberry Pi OS(Bullseye)

- **Using libcamera to access the camera**

The Raspberry Pi Bullseye system support using libcamera to capture images. Please make sure you have downloaded the official Bullseye.

When using Raspberry Pi 4, you can use libcamera command to capture images.

When using Raspberry Pi 0-3, you need to enable Glamor graphic acceleration firstly and then use libcamera command to capture images. Please see the following:

1. Run raspi-config

Open your terminal and input sudo rapi-config

sudo raspi-config

2. Navigate to Advanced Options
3. Enable Glamor graphic acceleration
4. Save and reboot

sudo reboot

5. Use libcamera command

For more commands for using libcaemra, please refer to

https://www.arducam.com/docs/cameras-for-raspberry-pi/raspberry-pi-libcamera-guide/

- **Using raspistill to access the camera**

The raspberry pi Bullseye system support using raspistill command to capture image too, you need to run the raspi-config to enable legacy, please see the following:

1. Run raspi-config

Open your terminal and input sudo rapi-config

```
sudo raspi-config
```

2. Move to interface option
3. Enable the legacy camera
4. Save and reboot

```
sudo reboot
```

5. Detect the camera

```
vcgencmd get_camera
```

If the camera is detected, the output will be the follows:

```
vcgencmd get_camera
supported=1 detected=1, libcamera interfaces=0
```

6. Run the camera

Preview:

```
raspistill -t 0
```

Save a file:

```
raspistill -t -5000 -o test.jpg
```

For more usage of raspistill or previous command, please refer to the following messages:https://projects.raspberrypi.org/en/projects/getting-started-with-picamera

For Raspberry Pi OS (Legacy)

1. Run raspi-config

Open your terminal and input sudo rapi-config

```
sudo raspi-config
```

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

Libraries for using the camera are available in:

- Shell (Linux command line):

https://www.raspberrypi.com/documentation/accessories/camera.html

- Python:

https://projects.raspberrypi.org/en/projects/getting-started-with-picamera/0

Contact Us

Email: support@arducam.com
Forum: https://www.arducam.com/forums/
Skype: arducam