Introduction

- About Arducam
  Arducam has been a professional designer and manufacturer of SPI, MIPI, DVP and USB cameras since 2012. We also offer customized turnkey design and manufacturing solution services for customers who want their products to be unique.

- About This Pivariety Camera
  Pivariety is a Raspberry Pi camera solution to take the advantage of using its hardware ISP functions. Pivariety camera modules make users get better performance and a wider variety of camera lens options. In other words, Pivariety breaks through the limitation of the closed-source official supported camera driver and camera modules (V1/V2/HiQ). Pivariety camera modules made it possible to be well-tuned ISP with Auto Exposure, Auto White Balance, Auto Gain Control, Lens Shading Correction, etc. This series of cameras use the libcamera framework, they can’t be supported by Raspistill, and the way to access the camera is libcamera SDK (for C++)/libcamera and the way to access the camera is libcamera SDK framework, they can't be supported by Raspistill, etc. This series of cameras use the libcamera well supported camera driver and camera modules (V1/V2) through the limitations of the closed-source official supported camera driver and camera modules (V1/V2/HiQ).

Quick Start Guide

2MP OG02B10
(Sku: 80348)

Software

1. Driver Installation
   
   ```shell
   wget https://raw.githubusercontent.com/Arducam/Arducam-Pivariety-V4L2-Device/releases/download/1.0.0/instal_pivariety_pkgs.sh
   chmod +x instal_pivariety_pkgs.sh
   ./instal_pivariety_pkgs.sh --list-formats=ext
   ```
   press y to reboot.

   **Note:** The kernel driver installation only supported by the latest version 5.10. For other kernel versions, please go to our Doc page: https://www.arducam.com/docs/cameras-for-raspberry-pi/pivariety/how-to-install-kernel-driver-for-pivariety-camera/.

2. Test the Driver and Camera
   After you've finished the hardware assembly and driver installation, you can test whether the camera is detected and working.

3. Official Libcamera App Installation
   
   ```shell
   ./install_pivariety_pkgs.sh -p libcamera_dev
   ./install_pivariety_pkgs.sh -p libcamera_apps
   ```

4. Capture Image and Record Video
   
   **Capturing image**
   For example, preview for 5s and save the image named test.jpg.
   ```shell
   libcamera-still -t 5000 -o test.jpg
   ```

   **Record video**
   For example, record a H.264 10s video with the frame size 1920×1080.
   ```shell
   gstreamer1.0-launch --list-formats=ext
   ```
   ```shell
   libcamera-still -v /dev/video1 -t 5000 -o test.jpg
   ```

   **Note:**Although V4L2 interface is supported, only RAW format images can be obtained, without ISP support.

3. Official Libcamera App Installation
   
   ```shell
   ./install_pivariety_pkgs.sh -p libcamera_dev
   ./install_pivariety_pkgs.sh -p libcamera_apps
   ```

Troubleshoot

1. Cannot Allocate Memory
   ```shell
   /dev/video1: Unable to request 4 buffers: Cannot allocate memory
   ```

2. The Image Displays Color Dots
   Add code `#!/system/bin/audio_dac` at the end of command.

3. Failed to Install the Driver
   Please check the kernel version, only provide the driver for the latest official kernel version image when this Pivariety camera released.

3. Failed to Install the Driver
   Note: If you want to compile the kernel driver by yourself, please refer to our Doc page: https://www.arducam.com/docs/cameras-for-raspberry-pi/pivariety/how-to-install-kernel-driver-for-pivariety-camera/.

4. Failed to import fd 18
   ```shell
   terminate called after throwing an instance of 'std::runtime_error'
   what(): failed to import fd 18
   ```

   If you find the same error, you may make the wrong selection about the graphics driver. Please follow Arducam Doc page to select the correct graphics driver.

5. Switch to the native camera (raspistill etc.)
   Edit the file of /boot/config.txt, make dtoverlay=arducam change to #dtoverlay=arducam
   After the modification is completed, you need to reboot the Raspberry Pi.

6. Failed to import fd 18
   ```shell
   sudo reboot
   ```

   **Note:** This camera module support trigger via an external signal, please refer to the Doc page to get the instruction: https://www.arducam.com/docs/cameras-for-raspberry-pi/pivariety/how-to-access-pivariety-og02b10-2mp-color-global-shutter-camera-using-external-trigger-snapshot-mode/.

   If you need our help or want to customize other models of Pi cameras, feel free to contact us via support@arducam.com