

# Camera image encoding

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## Camera image encoding

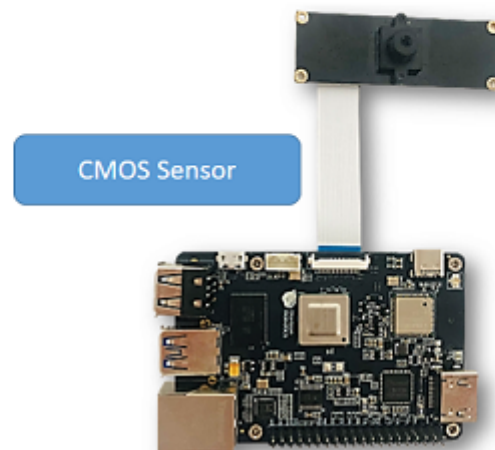
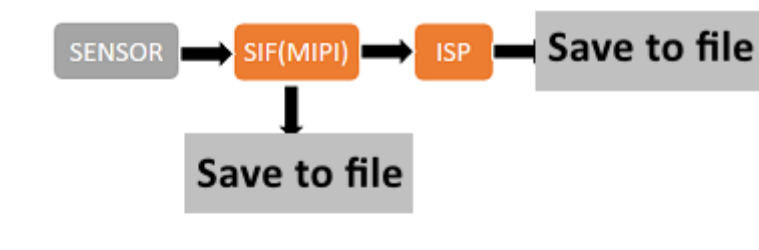
1. Environment preparation
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## 1. Environment preparation

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This example `vio2encoder` example implements the `MIPI` camera image acquisition function, and saves it locally after encoding. Users can preview the image through the display.

The example flow chart is as follows:



- When the development board is powered off, connect the MIPI camera to the development board (with the black side facing the HDMI port).
- Connect the development board to the monitor via an HDMI cable
- Power on the development board and log in via the command line

## 2. Run mode

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Execute the program according to the following command. The sample code is provided in source code form and needs to be compiled and run using the `make` command.

The steps are as follows.

```
sunrise@ubuntu:~$ cd /app/cdev_demo/vio2encoder
sunrise@ubuntu:/app/cdev_demo/vio2encoder$ sudo make
sunrise@ubuntu:/app/cdev_demo/vio2encoder$ sudo ./vio2encoder -w 1920 -h 1080 --iwidth 1920 --iheight 1080 -o test.h264
```

Parameter description:

- -w: Encoded video width
- -h: Encoded video height
- --iwidth: Sensor output width
- --iheight: Sensor output height
- -o: Encoded output path

### 3. Expected results

After the program runs correctly, a video file named `test.h264` will be generated in the current directory.

The running log is as follows.

```
sunrise@ubuntu:/tmp/nfs/sp_cdev/cdev_demo/vio2encoder$ sudo ./vio2encoder -w 1920 -h 1080 --iwidth 1920 --iheight 1080 -o test.h264
2023/03/28 02:27:32.560 !INFO [x3_cam_init_param][0099]Enable mipi host0 mclk
2023/03/28 02:27:32.561 !INFO [x3_cam_init_param][0099]Enable mipi host1 mclk
Camera: gpio_num=114, active=low, i2c_bus=3, mipi_host=0
Camera: gpio_num=114, active=low, i2c_bus=1, mipi_host=1
Camera: gpio_num=114, active=low, i2c_bus=0, mipi_host=2
Camera 0:
    enable: 1
    i2c_bus: 3
    mipi_host: 0
Camera 1:
    enable: 1
    i2c_bus: 1
    mipi_host: 1
Camera 2:
    enable: 1
    i2c_bus: 0
    mipi_host: 2
cmd=i2ctransfer -y -f 3 w2@0x10 0x0 0x0 r1 2>&1, result=0x02

Found sensor:imx219 on i2c bus 3, use mipi host 0
Setting VPS channel-2: src_w:1920, src_h:1080; dst_w:1920, dst_h:1080;
Setting VPS channel-1: src_w:1920, src_h:1080; dst_w:1920, dst_h:1080;
sp_open_camera success!
sp_start_encode success!
sp_module_bind(vio -> encoder) success!
```