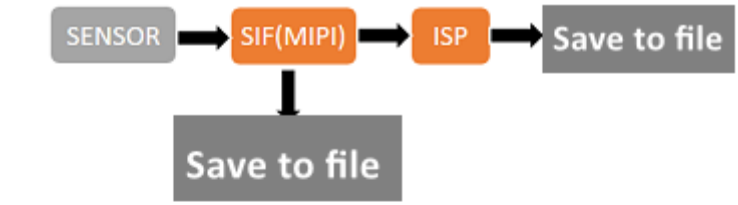
3. Camera image encoding

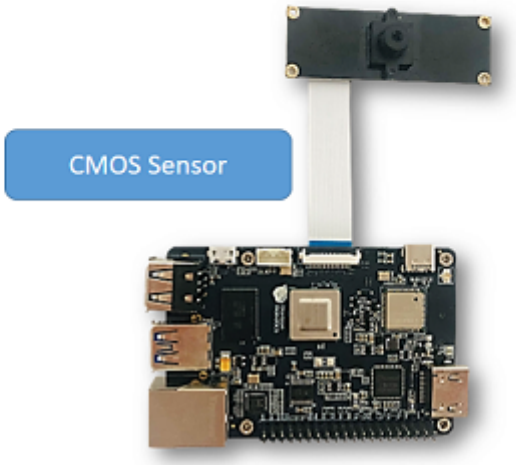
1. Preparation

This example `vio2encoder` example implements the `MIPI` camera image acquisition function, and saves the image locally after encoding.

The user can preview the image on the display.

The example flow chart is as follows.





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

2.Running method

Using following command to execute the program. 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
```

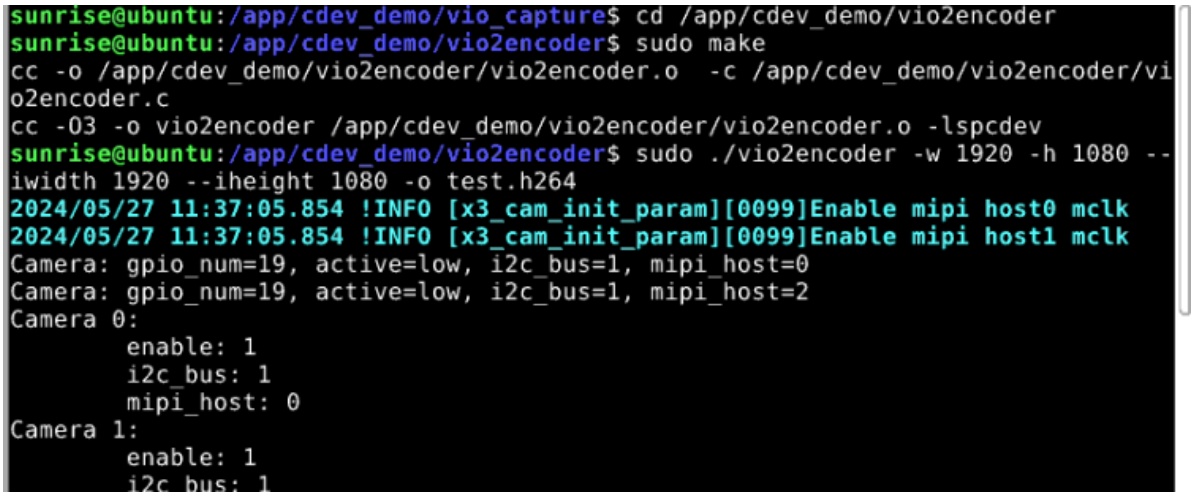
Parameter Description.

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

3. Result

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!
```