

Camera image display

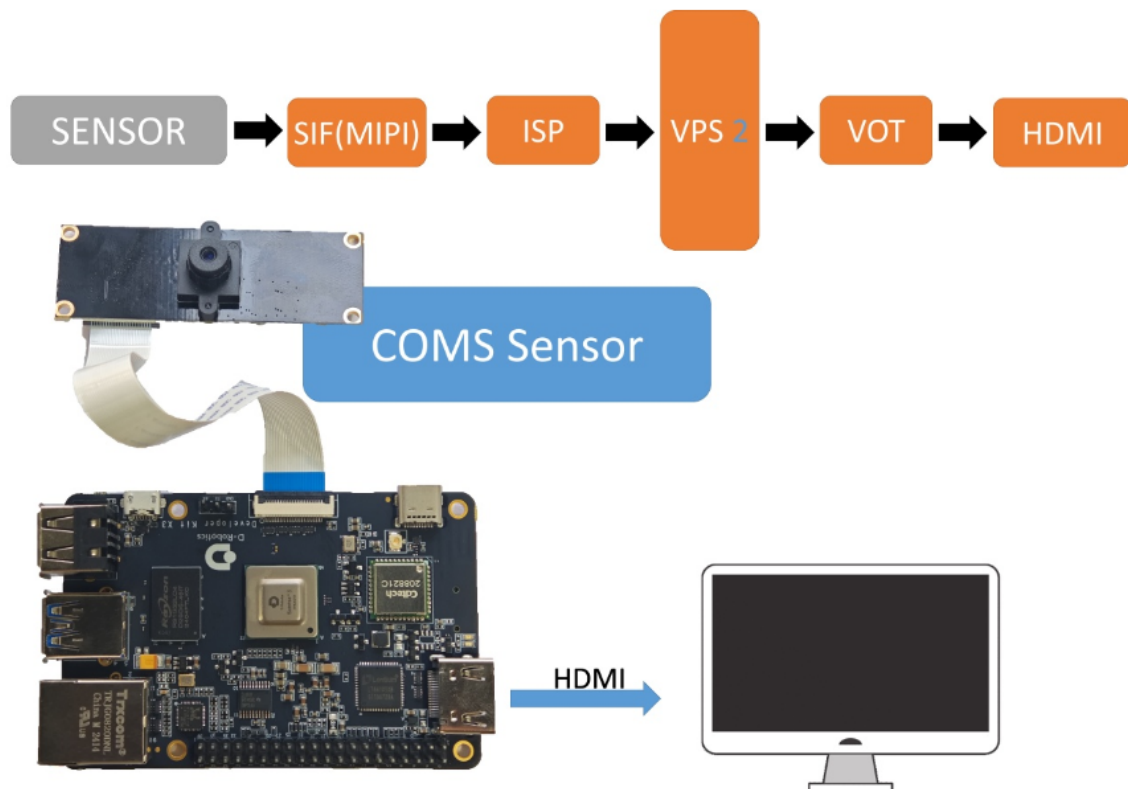
Camera image display

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1. Preparation

This example `vio2display` implements the `MIPI` camera image acquisition function and outputs it through the `HDMI` interface. 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 (blue side facing up).
- Connect the development board and the monitor via an HDMI cable
- Power on the development board and log in to the system

2. Running method

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/vio2display
sunrise@ubuntu:/app/cdev_demo/vio2display$ sudo make
sunrise@ubuntu:/app/cdev_demo/vio2display$ sudo ./vio2display -w 1920 -h 1080
```

Parameter description.

- -w: sensor output width
- -h: sensor output height

3. Result

After the program runs correctly, the development board will output the real-time image captured by the MIPI camera through the display.

The running log is as follows.

```
sunrise@ubuntu:~$ cd /app/cdev_demo/vio2display
sunrise@ubuntu:/app/cdev_demo/vio2display$ sudo make
cc -o /app/cdev_demo/vio2display/vio2display.o -c /app/cdev_demo/vio2display/vio2display.c
cc -O3 -o vio2display /app/cdev_demo/vio2display/vio2display.o -lspscdev
sunrise@ubuntu:/app/cdev_demo/vio2display$ sudo ./vio2display -w 1920 -h 1080
disp_w=1920, disp_h=1080
2024/05/27 11:10:56.311 !INFO [x3_cam_init_param][0099]Enable mipi host0 mclk
2024/05/27 11:10:56.312 !INFO [x3_cam_init_param][0099]Enable mipi host1 mclk
Camera: gpio_num=19, active=low, i2c_bus=1, mipi_host=0
Camera: gpio_num=19, active=low, i2c_bus=1, mipi_host=2
Camera 0:
```

```
sunrise@ubuntu:/tmp/nfs/sp_cdev/cdev_demo/vio2display$ ./vio2display -w 1920 -
h 1080
disp_w=1920, disp_h=1080
2023/03/28 02:08:03.359 !INFO [x3_cam_init_param][0099]Enable mipi host0 mclk
2023/03/28 02:08:03.359 !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!
libiar: hb_disp_set_timing done!

Press 'q' to Exit !
```

