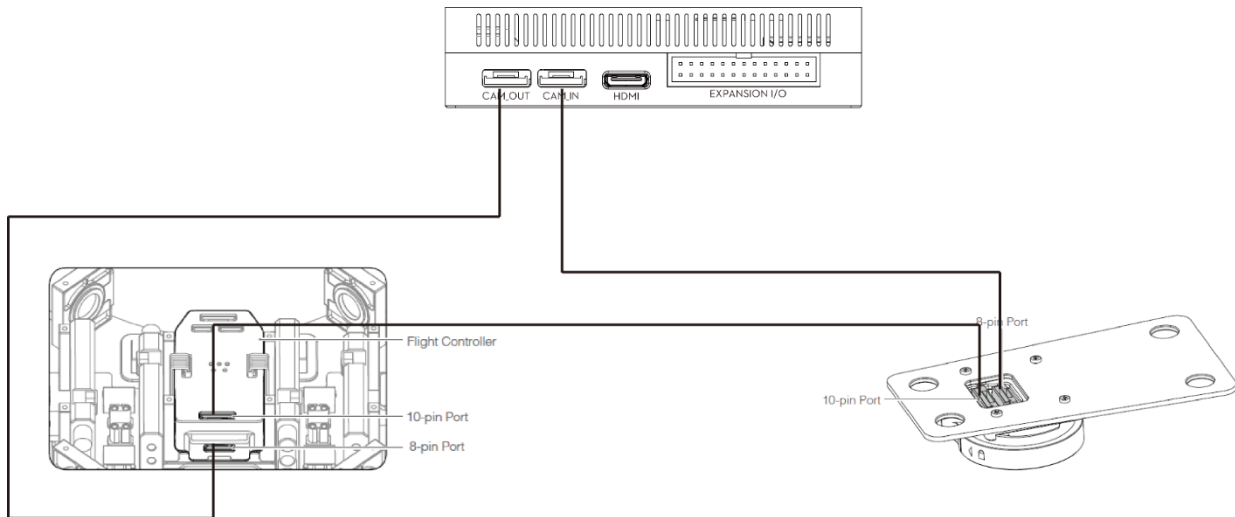


Using Manifold to Acquire Data from X3 Camera

This article describes how to use the Manifold to acquire image data from the Zenmuse X3 camera that mounted on the Matrices 100 through the libdcam.so library file.

1. Connecting Manifold to the Camera

Connect the 8-pins port on the camera to the CAM_IN port through the supplied 8-pins cable. Then, connect the CAM_OUT port to the 8-pins port on the N1 flight controller on the Matrice 100. Finally, connect the 10-pins port from the N1 flight controller to the 10 pins port on the gimbal camera.



Watch the connection video tutorial at <https://developer.dji.com/manifold/videos/>

2. Using libdcam.so Library

Power on the Manifold and log in to the default operating system. Access the libcam.so library from this path (/usr/lib/libdcam.so). Demo of the libcam.so library can be found from this path (/home/ubuntu/demo/manifold_cam).

2.1 Compiling

1. Locate the "manifold_cam" folder, compile the demo by using the make command. An executed file named "test" will be created.

```
$ cd /home/ubuntu/manifold_cam
$ make
```

2. Delete unwanted temporary files by executing the following command:

```
$ make clean
```

2.2 Running

Run the executable **test** file to implement real time video relay, acquiring data and so on. Run the following commands to carry out a test:

```
$ sudo ./test [-dgt]
```

The following options are available: "-d", "-g", "-t. Note that "-d" and "-g" is mutually exclusive. The usage of these options are as follows:

-d: display and play real time video feed.

- g: Decode current frame and save it as NV12 format.
- t: Acquiring video streaming and relay it to the N1 flight controller.

Press "Ctrl+C" to quit the running of the test program.

3. libdcam.so Functions

(1) int manifold_cam_init(int mode);

Usage

Initialization function.

Option

mode: Selecting the available modes from DISPLAY_MODE、GETBUFFER_MODE、TRANSFER_MODE、

Return Values

0: Initialization success.

-1: Initialization failed.

(2) int manifold_cam_exit();

Usage

Exits function. Check to verify if the function has exited successfully.

Return Values

0: System quits failed.

1: System quits success

(3) int manifold_cam_read(unsigned char *buffer, unsigned int *nframe, unsigned int block);

Usage

Acquiring decoded video data.

Options

buffer: Storing the first decoded frame as NV12 format.

nframe: Acquire the nth frame.

block: Setting block method as CAM_BLOCK or non-block method as CAM_NON_BLOCK.

Return Values

In CAM_BLOCK mode:

>0: The size of the acquired frame.

<0: Terminating signal received, or error in transmission.

In CAM_NON_BLOCK mode:

>0: The size of the acquired frame.

<0: No update on the current frame.

=0: Terminating signal received, or error in transmission.

This demo has been uploaded to GitHub at https://github.com/dji-sdk/manifold_cam.git Download the latest demo by using get command.