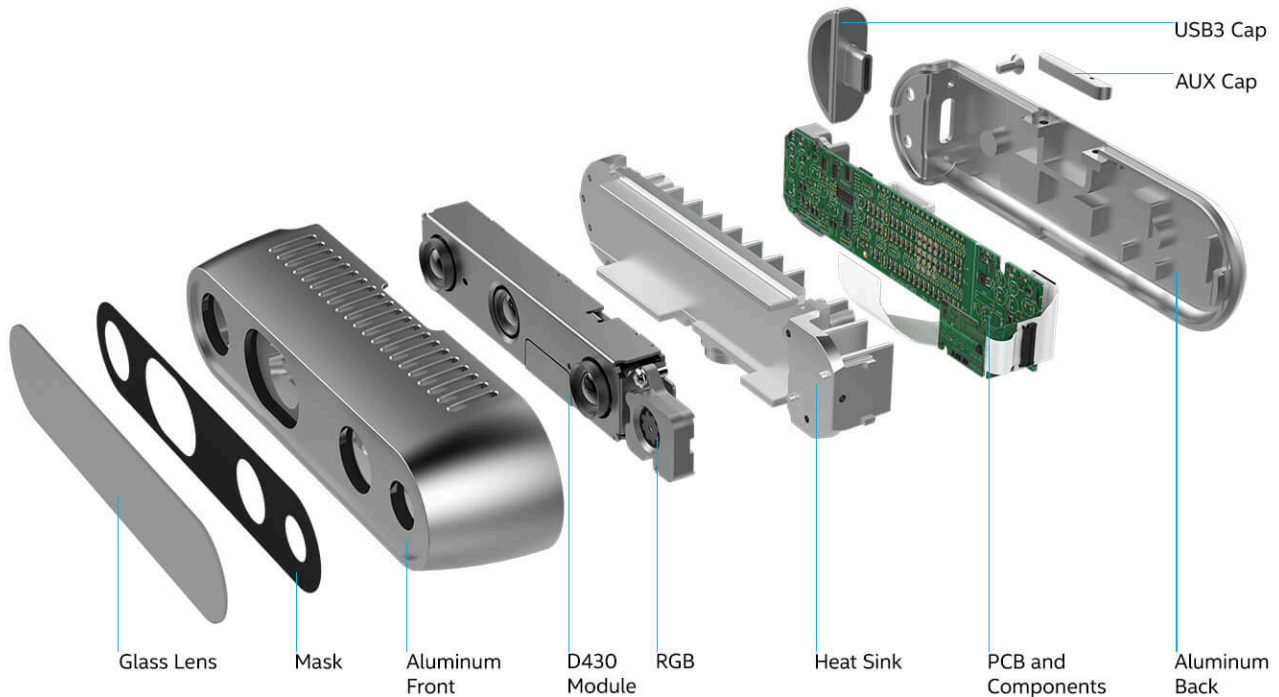


#

参考: <https://zhaoxuhui.top/blog/2020/09/09/intel-realsense-d435i-installation-and-use.html>

<https://www.intelrealsense.com/developers/>

## 设备简介



设备:

1. 一个RGB-D相机（最右边那个）
2. 两个红外相机（左右分别一个）
3. 一个红外发射器（中间那个）
4. 一个IMU单元（D435后的i就是指imu）

深度成像原理: 主动立体红外成像

## 安装

参考<https://blog.csdn.net/wanghq2013/article/details/123325671>

### SDK2.0安装

1. 注册服务器公钥并将服务器添加到软件存储库列表中

```
sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-key
F6E65AC044F831AC80A06380C8B3A55A6F3EFCDE || sudo apt-key adv --keyserver
hkp://keyserver.ubuntu.com:80 --recv-key F6E65AC044F831AC80A06380C8B3A55A6F3EFCDE

sudo add-apt-repository "deb https://librealsense.intel.com/Debian/apt-repo $(lsb_release -
cs) main" -u
```

2. 安装SDK2 Libraries

```
sudo apt install librealsense2-dkms
sudo apt install librealsense2-utils
```

### 3. 安装dev和debug工具

```
sudo apt install librealsense2-dev
sudo apt install librealsense2-dbg
```

## ROS接口安装

```
sudo apt install ros-noetic-realsense2-camera
sudo apt install ros-noetic-realsense2-description
```

### 安装rgbd-launch

```
sudo apt install ros-noetic-rgbd-launch
```

## 使用

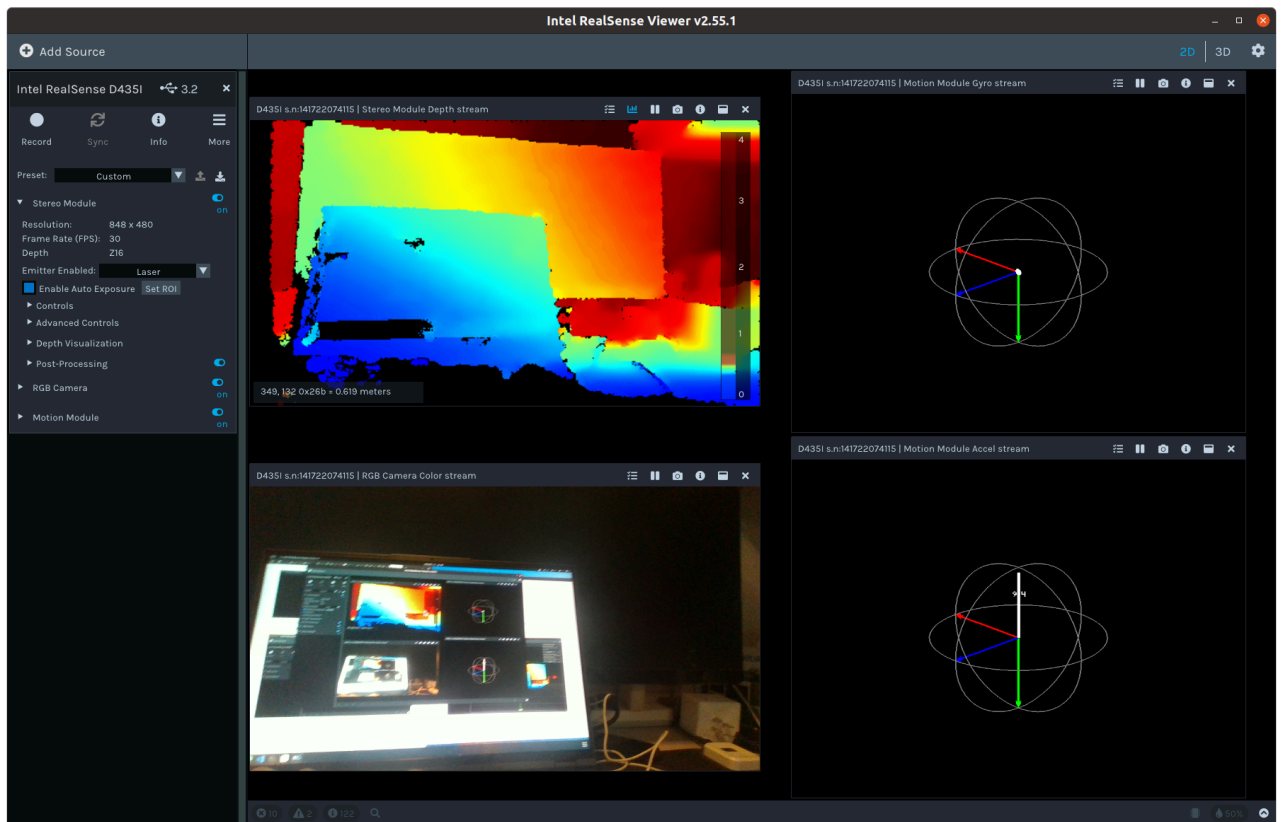
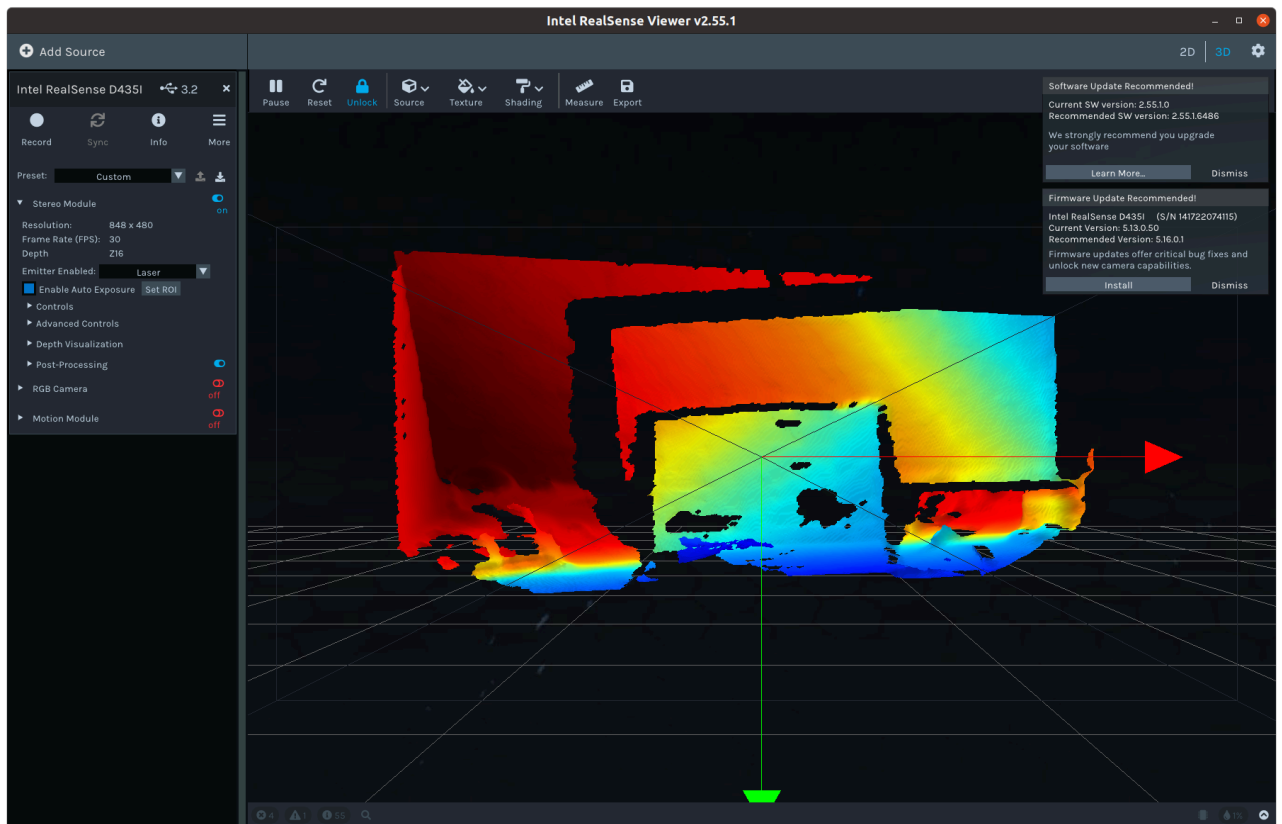
参考<https://zhaoxuhui.top/blog/2020/09/09/intel-realsense-d435i-installation-and-use.html>

在插入D435i后屏幕翻转了180度。输入命令 `xrandr -o normal` 恢复

## 简单使用

### 1. 终端输入下述命令进行简单使用

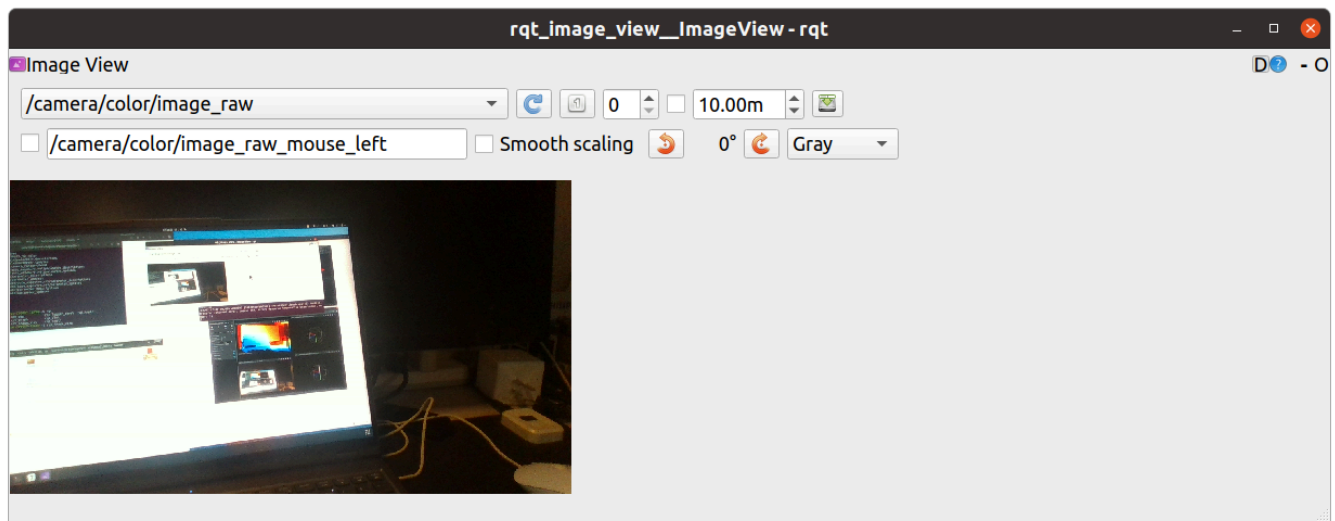
```
realsense-viewer
```



## ROS 使用

ROS接口使用，输入以下命令：

```
roslaunch realsense2_camera rs_camera.launch
```



## 内参获取

参考[https://blog.csdn.net/m0\\_56182552/article/details/141352006](https://blog.csdn.net/m0_56182552/article/details/141352006)

在没有其他进程占用相机的情况下，输入以下指令获取内参：

```
rs-sensor-control
```

1. 选择已经连接的相机

```
0 : Intel RealSense D435I #141722074115
Select a device by index: 0
```

2. 选择相机对应的模块

```
Device consists of 3 sensors:
0 : Stereo Module
1 : RGB Camera
2 : Motion Module
Select a sensor by index: 1
```

3. 选择展示流内参

```
0 : Control sensor's options
1 : Control sensor's streams
2 : Show stream intrinsics
3 : Display extrinsics
Select an action: 2
```

4. 选择对应选项的编号

```
10 : Color #0 (Video Stream: RGBA8 1920x1080@ 30Hz)
11 : Color #0 (Video Stream: RGBA8 1920x1080@ 15Hz)
12 : Color #0 (Video Stream: RGBA8 1920x1080@ 6Hz)
13 : Color #0 (Video Stream: BGR8 1920x1080@ 30Hz)
14 : Color #0 (Video Stream: BGR8 1920x1080@ 15Hz)
15 : Color #0 (Video Stream: BGR8 1920x1080@ 6Hz)
16 : Color #0 (Video Stream: YUYV 1920x1080@ 30Hz)
17 : Color #0 (Video Stream: YUYV 1920x1080@ 15Hz)
18 : Color #0 (Video Stream: YUYV 1920x1080@ 6Hz)
19 : Color #0 (Video Stream: RGB8 1280x720@ 30Hz)
20 : Color #0 (Video Stream: RGB8 1280x720@ 15Hz)
21 : Color #0 (Video Stream: RGB8 1280x720@ 6Hz)
22 : Color #0 (Video Stream: Y8 1280x720@ 30Hz)
23 : Color #0 (Video Stream: Y8 1280x720@ 15Hz)
24 : Color #0 (Video Stream: Y8 1280x720@ 6Hz)
25 : Color #0 (Video Stream: BGRA8 1280x720@ 30Hz)
26 : Color #0 (Video Stream: BGRA8 1280x720@ 15Hz)
27 : Color #0 (Video Stream: BGRA8 1280x720@ 6Hz)
28 : Color #0 (Video Stream: RGBA8 1280x720@ 30Hz)
29 : Color #0 (Video Stream: RGBA8 1280x720@ 15Hz)
```

5. 查看内参

```
Please select the desired streaming profile: 20

Principal Point      : 646.394, 362.166
Focal Length        : 909.728, 908.624
Distortion Model     : Inverse Brown Conrady
Distortion Coefficients : [0,0,0,0,0]
```