

IMX219-83 Stereo Camera

From Waveshare Wiki

Introduction

IMX219 Camera, 800 megapixels, and 83 FOV. Compatible with Jetson nano Developer Kit (B01)

Specification

- 8 Megapixels
- Sensor: Sony IMX219
- Resolution: 3280 × 2464 (per camera)
- Lens specifications:
 - CMOS size: 1/4inch
 - Focal Length: 2.6mm
 - Angle of View: 83/73/50 degree (diagonal/horizontal/vertical)
 - Distortion: <1%
 - Baseline Length: 60mm
- ICM20948:
 - Accelerometer:
 - Resolution: 16-bit
 - Measuring Range (configurable): ±2, ±4, ±8, ±16g
 - Operating Current: 68.9uA
 - Gyroscope:
 - Resolution: 16-bit
 - Measuring Range (configurable): ±250, ±500, ±1000, ±2000°/sec
 - Operating Current: 1.23mA
 - Magnetometer:
 - Resolution: 16-bit
 - Measuring Range: ±4900μT
 - Operating Current: 90uA
- Dimension: 24mm × 85mm

User Guide

Hardware connection

- Connect the camera to the CSI interfaces of Jetson Nano. Set the metal side of FFC into Heat-sink
- Connect an HDMI LCD to Jetson Nano
- Connect the I2C interface (only the SDA and SCL pins are required) of the Camera to I2C interface of the Jetson Nano Developer Kit (the Pin3, and Pin5)

Software setting

- Power on Jetson Nano and open the Terminal (Ctrl+ALT+T)
- Check the video devices with command:

```
ls /dev/video*
```

Check if both video0 and video1 are detected

- Test video0

```
DISPLAY=:0.0 gst-launch-1.0 nvarguscamerasrc sensor-id=0 ! 'video/x-raw(memory:NVMM), width=3280, height=2464, format=(string)NV12, framerate=(fraction)20/1' ! nvoverlaysink -e
```

IMX219-83 Stereo Camera



IMX219 sensor, FOV 83, compatible with jetson nano

Primary Attribute

Category: Modules, Cameras

Brand: Waveshare

Onboard Interfaces

CSI

Related Products

- IMX219-77 Camera
- IMX219-77IR Camera
- **IMX219-83 Stereo Camera**
- IMX219-120 Camera
- IMX219-160 Camera
- IMX219-160IR Camera
- IMX219-160 IR-CUT Camera
- IMX219-170 Camera
- IMX219-200 Camera
- RPi NoIR Camera V2
- RPi Camera V2

- Test video1

```
DISPLAY=:0.0 gst-launch-1.0 nvarguscamerasrc sensor-id=1 ! 'video/x-raw(memory:NVMM), width=3280, height=2464, format=(string)NV12, framerate=(fraction)20/1' ! nvoverlaysink -e
```

- Test the ICM20948

```
wget https://www.waveshare.com/w/upload/a/a4/D219-9dof.tar.gz
tar zxvf D219-9dof.tar.gz
cd D219-9dof/07-icm20948-demo
make
./ICM20948-Demo
```

- If you find that the image captured is red. You can try to download .isp file and installed:

```
wget https://www.waveshare.com/w/upload/e/eb/Camera_overrides.tar.gz
tar zxvf Camera_overrides.tar.gz
sudo cp camera_overrides.isp /var/nvidia/nvcam/settings/
sudo chmod 664 /var/nvidia/nvcam/settings/camera_overrides.isp
sudo chown root:root /var/nvidia/nvcam/settings/camera_overrides.isp
```

Selection Guide

Product	Pixels	Sensor	Dual Len	Infrared	Angle of View (Diagonal) (degree)	Afterture (F)	Focal Length (MM)	PCBA	Suit for
RPi Camera (https://www.waveshare.com/rpi-camera-v2.htm)	8 Mega	IMX219	×	×	62.2	2.0	3.04	✓	Raspberry Pi, Jetson Nano
RPi NoIR Camera V2 (https://www.waveshare.com/rpi-noir-camera-v2.htm)				✓	62.2	2.0	3.04	✓	Raspberry Pi, Jetson Nano
IMX219-77 Camera (https://www.waveshare.com/IMX219-77-Camera.htm)				×	77	2.0	2.96	✓	Jetson Nano, CM3/3+
IMX219-77IR (https://www.waveshare.com/IMX219-77IR-Camera.htm)				✓	77	2.0	2.96	✓	Jetson Nano, CM3/3+
IMX219-120 Camera (https://www.waveshare.com/IMX219-120-Camera.htm)				×	120	2.2	1.88	✓	Jetson Nano, CM3/3+
IMX219-160 Camera (https://www.waveshare.com/IMX219-160-Camera.htm)				×	160	2.35	3.15	✓	Jetson Nano, CM3/3+
IMX219-160IR Camera (https://www.waveshare.com/IMX219-160IR-Camera.htm)				✓	160	2.35	3.15	✓	Jetson Nano, CM3/3+
IMX219-170 Camera (https://www.waveshare.com/IMX219-170-Camera.htm)				×	170	2.0	0.87	✓	Jetson Nano, CM3/3+
IMX219-200 Camera (https://www.waveshare.com/IMX219-200-Camera.htm)				×	200	2.0	3.15	✓	Jetson Nano, CM3/3+
IMX219-D160 (https://www.waveshare.com/IMX219-D160.htm)				×	160	2.35	3.15	×	Raspberry Pi, Jetson Nano
IMX219-83 Stereo Camera (https://www.waveshare.com/imx219-83-Stereo-camera.htm)			✓	×	83	NA	2.6	✓	Jetson Nano, CM3/3+

Resources

Demo codes

- Demo codes (<https://www.waveshare.com/w/upload/a/a4/D219-9dof.tar.gz>)
- Demo codes with calibration example (https://1drv.ms/u/s!At1XVmt1PVrlgRqPrFX-I_u6x1oY?e=SZmjWX)

3D Drawing

- IMX210-83 Stereo Camera 3D Drawing (<https://www.waveshare.com/w/upload/c/cc/IMX219-83-Stereo-Camera-3D-Drawing.zip>)

Related resources

- Jetson Nano Developer Kit

Dimension

- Dimension (https://www.waveshare.com/w/upload/9/9d/IMX219-83_Stereo_Camera_Dimension.zip)

FAQ

Support

Please contact us by Email/Skype/WeChat for technology support. Our response may be delay, you can just leave your questions, we will reply to you as soon as possible in working time.

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