

# ROS Camera Driver

## Installation

1. Get the file cam611\_driver and unpack it in for example ~/projects/cam611\_driver folder.
2. Compile it:  
> cd ~/projects/cam611\_driver  
> catkin\_make  
> source ~/projects/cam611\_driver/devel/setup.bash

## Running

espros\_cam611 package has two nodes: cam611\_range and cam611\_frame.

Depending on the connected camera can launch selected node:

```
roslaunch espros_cam611 range.launch
```

```
roslaunch espros_cam611 frame.launch
```

## ROS API

### cam611\_range

#### Published Topics

range/distance\_range ([sensor\\_msgs/Range](#))

- The confidence range pixel represents distance value in mm.

range/amplitude\_range ([sensor\\_msgs/Range](#))

- The confidence range pixel represents the amplitude value in LSB.

#### Parameters

## Static Parameters

port\_name(string, default: "/dev/ttyUSB0")

- The device path to open serial port.

## Dynamically Reconfigurable Parameters

See the [dynamic\\_reconfigure](#) package for details on dynamically reconfigurable parameters.

~range\_data\_type (int, default: 0)

- Data acquisition type: distance – 0, distance\_amplitude – 1.

~frame\_rate (double, default: 30.0)

- Acquisition rate at which the data are captured [Hz].

~start\_stream (bool, default: false)

- Enable data streaming.

~trigger\_single\_shot (bool, default: false)

- Trigger single measurement by changing state from false to true.

~auto\_integration\_time(bool, default: true)

- Enable automatic integration time mode

~integration\_time\_tof(int, default: 200)

- Sets the integration time in microseconds for distance measurements. Range: 1 ... 1600  $\mu$ s.

~temporal\_filter\_factor (double, default: 0.01)

- Sets the factor of temporal Kalman filter. Range 0.0 ... 1.0.

~temporal\_filter\_threshold (int, default: 300)

Sets the threshold for temporal Kalman filter. Range 0 ... 20000 mm (uses to filter out temporal noise in an image).

~modulation\_frequency(int, default: 1)

- Sets the modulation frequency. 0 – 10 MHz, 1 – 20 MHz.

## cam611\_frame

### Published Topics

image/distance\_image ([sensor\\_msgs/Image](#))

- The confidence 8x8 image (each pixel depending on selected image type represents the distance value).

image/amplitude\_image ([sensor\\_msgs/Image](#))

- The confidence 8x8 image (each pixel represents the amplitude value).

### Static Parameters

port\_name(string, default: `"/dev/ttyUSB0"`)

- The device path to open serial port.

### Dynamically Reconfigurable Parameters

See the [dynamic\\_reconfigure](#) package for details on dynamically reconfigurable parameters.

`~image_type` (int, default: 0)

- Image acquisition type: distance – 0, distance\_amplitude – 1.

`~frame_rate` (double, default: 30.0)

- Acquisition rate at which the frames are captured [Hz].

`~start_stream` (bool, default: false)

- Enable image streaming.

`~trigger_single_shot` (bool, default: false)

- Trigger single measurement by changing state from false to true.

`~integration_time_tof` (int, default: 200)

- Sets the integration time in microseconds for distance measurements. Range: 1 ... 1600  $\mu$ s.

`~temporal_filter_factor` (double, default: 0.01)

- Sets the factor of temporal Kalman filter. Range 0.0 ... 1.0.

`~temporal_filter_threshold` (int, default: 300)

Sets the threshold for temporal Kalman filter. Range 0 ... 20000 mm (uses to filter out temporal noise in an image).

**Notes:**

1. TOF> Frame uses modulation frequency 20MHz.
2. cam611\_driver is tested with ROS Noetic, Melodic and Kinetic versions.
3. If you want to connect more tof range or frame devices, you have to change static parameter port\_name.