

ROS2 instructions

Version	Revised Date	General Version	Description	Editor
v1.0.0	20230222	v1.0.0	Initial Version	ysy

1. Descriptions

Mode: CS20 Single modulation frequency, CS20 Dual modulation frequency
CS30 Single modulation frequency, CS30 Dual modulation frequency
System: ubuntu20.04, ubuntu22.04
ROS version : Foxy Galactic Humble

2. Compile

2.1 File directory structure

```
synexens_package
├── CMakeLists.txt
├── ext
│   └── sdk
├── include
│   └── synexens_package
├── launch
│   ├── driver_launch.py
│   └── viewer_launch.py
├── package.xml
├── rviz
│   └── synexens_node_rviz.rviz
├── scripts
│   └── synexens-usb.rules
├── src
│   ├── synexens_calibration_transform_data.cpp
│   ├── synexens_ros_device.cpp
│   ├── synexens_ros_node.cpp
│   └── synexens_ros_params.cpp
```

Core code file: include/synexens_ros_driver/*.h, src/*.cpp → Realize main node functions

Core package file: package.xml, CMakeLists.txt → ROS Core package file

SDK Dependency: ext/sdk/ → Synexens SDK Dependency library

ROS Executive document: launch/*_launch.py → For the ros2 launch command

Rviz Visualization file: rviz/*.rviz → File used to record rviz UI format

USB rules: scripts/ synexens-usb.rules → Synexens USB Device Permission Modification

2.2 Colcon compile

a. Copy Synexens_ROS_Driver to workspace project_ws/src file

b. Compile in workspace

```
cd project_ws/src && colcon build
```

2.3 Instructions

2.4 UVC Permission Configuration Description

Execute setup.sh to configure the uvc permissions.

2.5 ros package calling explanation

- 1) **Start only** Synexens ROS Node: \$ ros2 launch synexens_package driver_launch.py
- 2) **Start** Synexens ROS Node 和 rviz2: \$ ros2 launch synexens_package viewer_launch.py

2.6 Workspace use synexens_package

```
$ cd project_ws/src  
$ . install/setup.bash  
$ ros2 launch synexens_package driver_launch.py
```

2.7 synexens_package provided topic

```
/depth/camera_info  
/depth/image_raw  
/ir/camera_info  
/ir/image_raw  
/parameter_events  
/points2  
/rgb/camera_info  
/rgb/image_raw
```

2.8 synexens_package provided parameters functions

ROS provides the parameter server function [ROS Parameters] of configuring parameters at startup. We have defined some parameters that can be configured at launch. For details, please refer to driver_ The launch.py file.

3. Note

3.1 PointCloud size

Due to the display problem of rviz2 point cloud, the actual PointCloud is 1000 times larger than that in ros2. The size difference between the point cloud saved by gui and the point cloud saved by ros is 1000.