EAI_X3 Radar ROS2

ROS 2 official website：https://docs.ros.org/

equipment：pc；X3

environment：Ubuntu20.04；ROS2（Foxy）

new workspace

```
mkdir -p X3_ws/src
```

When using this radar, you need to enter the workspace every time you execute a command

```
cd ~/X3_ws
```

Unzip the [X3_ws_src.zip] function package and put it into the src folder of the X3_ws workspace, and open the terminal in the workspace

```
colcon build              # compile
source install/setup.bash  # update environment
```

Note: Every time you modify the code in the function package, you need to [compile] and then [update environment].

Add the workspace to the .bashrc of the environment variable,

```
echo "source ~/X3_ws/install/setup.bash" >> ~/.bashrc
```

1、Remap the USB serial port

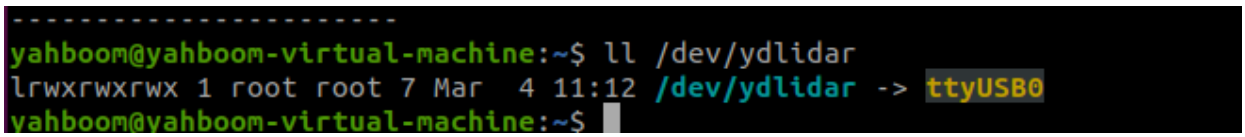
Terminal input,

```
cd ~/X3_ws/src/ydlidar_ros2_driver-master/startup
sudo chmod 777 *
sudo ./initenv.sh
```

After binding, unplug the radar again.

Use the following command to view modified remap

```
ll  /dev/ydlidar
```



Note: This is not necessarily ttyUSB0, as long as there is /dev/ydlidar, it means that the binding is successful.

2、terminal test

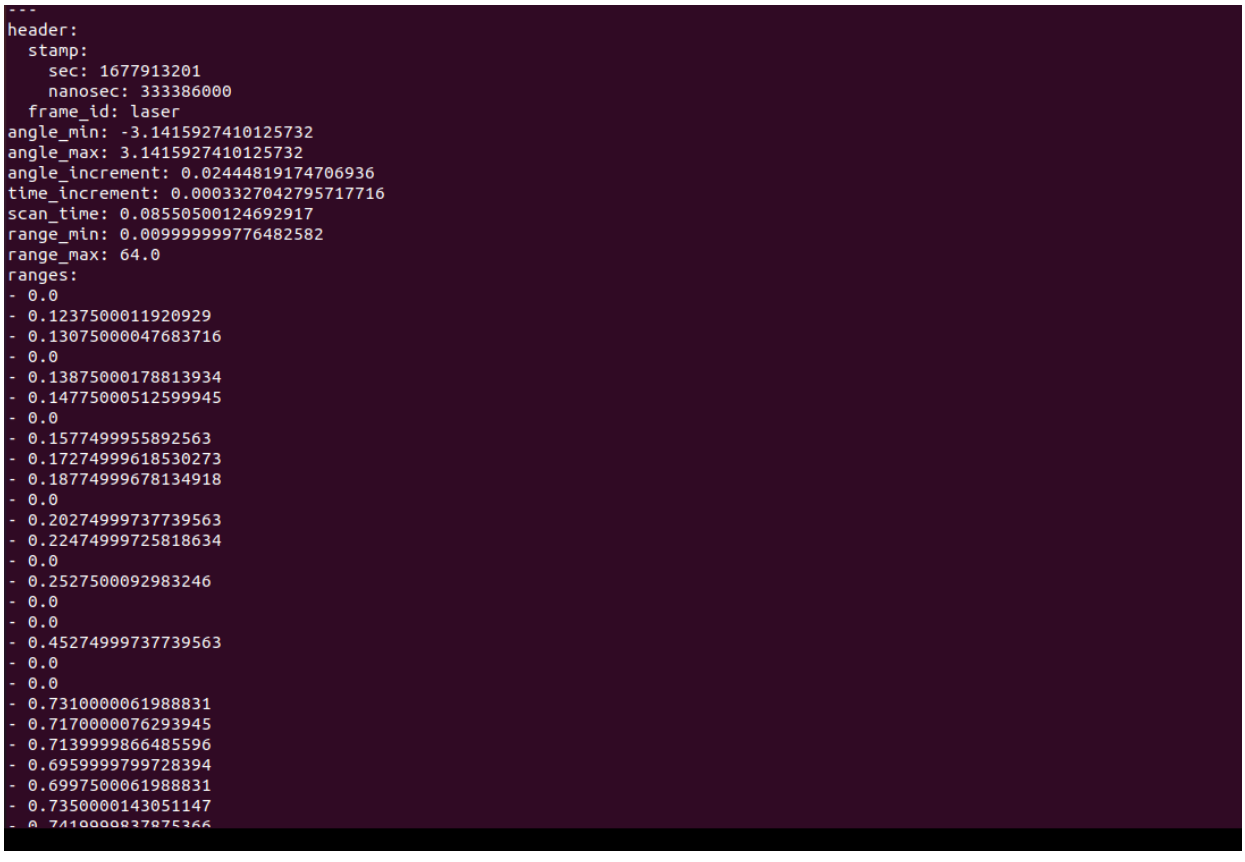
The first step is to start the corresponding radar

```
ros2 launch ydlidar_ros2_driver ydlidar_launch.py
```

The second step is to view the radar data

```
ros2 topic echo /scan
```

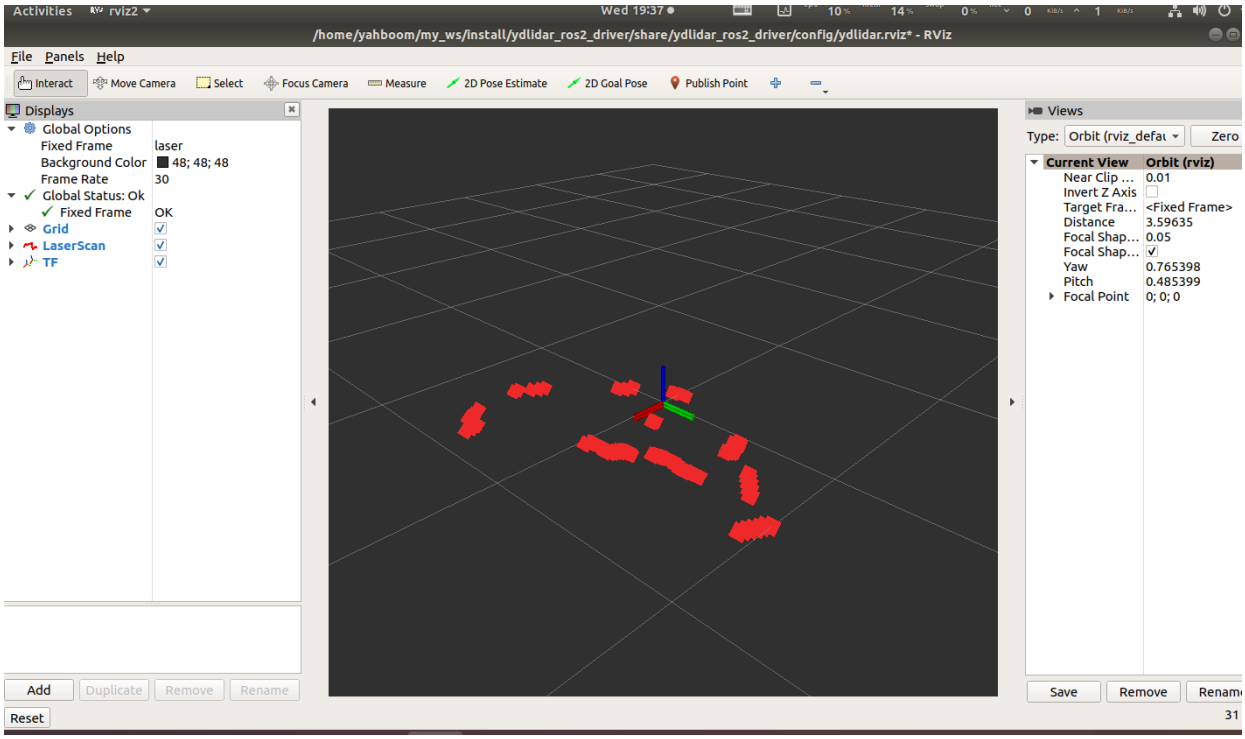
You should see rplidar scan results in the console



3、rviz2 visual test

```
ros2 launch ydlidar_ros2_driver ydlidar_launch_view.py
```

You should see the radar scan results in rviz2



Note: The topic of [Fixed Frame] coordinate system and [LaserScan] should be consistent with the published ones.

4、gmapping mapping test

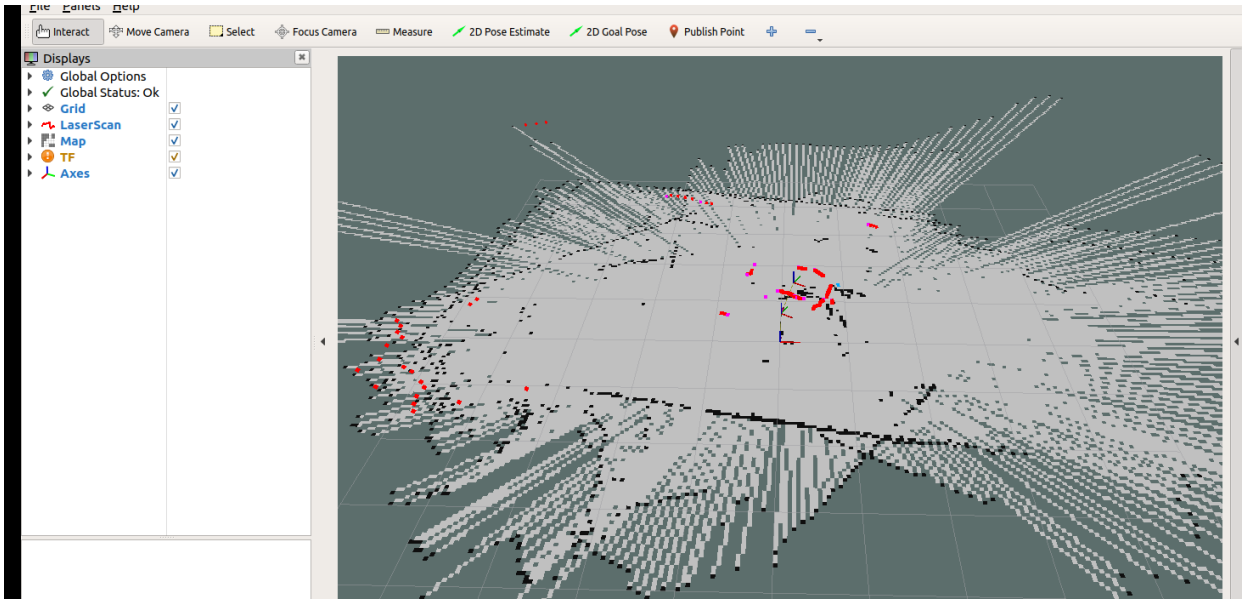
The first step is to start the corresponding radar

```
ros2 launch ydlidar_ros2_driver ydlidar_launch.py
```

The second step is to start gmapping to build a map

```
ros2 launch sllidar_ros2 gmapping_launch.py
ros2 run slam_gmapping slam_gmapping
```

You should see the mapping result in rviz2



Note: [Fixed Frame] coordinate system, [LaserScan] topic, and [map] topic should be consistent with the published ones.