

YDLIDAR ROS MANUAL

DOC#: 01.13.000000

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CREATE A YDLIDAR ROS DRIVER PACKAGE

- (1) Use the command to create the catkin_ws workspace, the terminal switches to a ROS workspace src directory, and catkin_ws to replace your ROS workspace.

```
$ mkdir -p ~/catkin_ws/src  
$ cd ~/catkin_ws/src  
$ catkin_init_workspace  
$ cd ~/catkin_ws && catkin_make
```

- (2) Add the catkin environment variable to the ~/.bashrc file and make it take effect.

```
$ echo "source ~/catkin_ws/devel/setup.bash" >> ~/.bashrc  
$ source ~/.bashrc
```

- (3) Cloning the corresponding Lidar types ydlidar project to the src directory under your ROS workspace.

```
$git clone https://github.com/YDLIDAR/ydlidar\_ros  
$cd ydlidar_ros  
$git checkout G4  
$cd ../../
```

Note: git checkout followed by the corresponding Lidar model

- (4) Compile and generate ydlidar_node and ydlidar_client.

```
$catkin_make
```

RUN YDLIDAR ROS DRIVER PACKAGE

Create a serial port alias [/dev/ydlidar] for Lidar

```
$roscd ydlidar/startup

$sudo chmod 0777 *

$sudo sh initenv.sh
```

Note: After creating a serial port alias, you need to re-plug the USB to take effect.

There are two ways to run the YDLIDAR ROS driver package.

(1) Run ydlidar_node and rviz

```
$roslaunch ydlidar lidar_view.launch

### You can see the scan results in the rviz
```

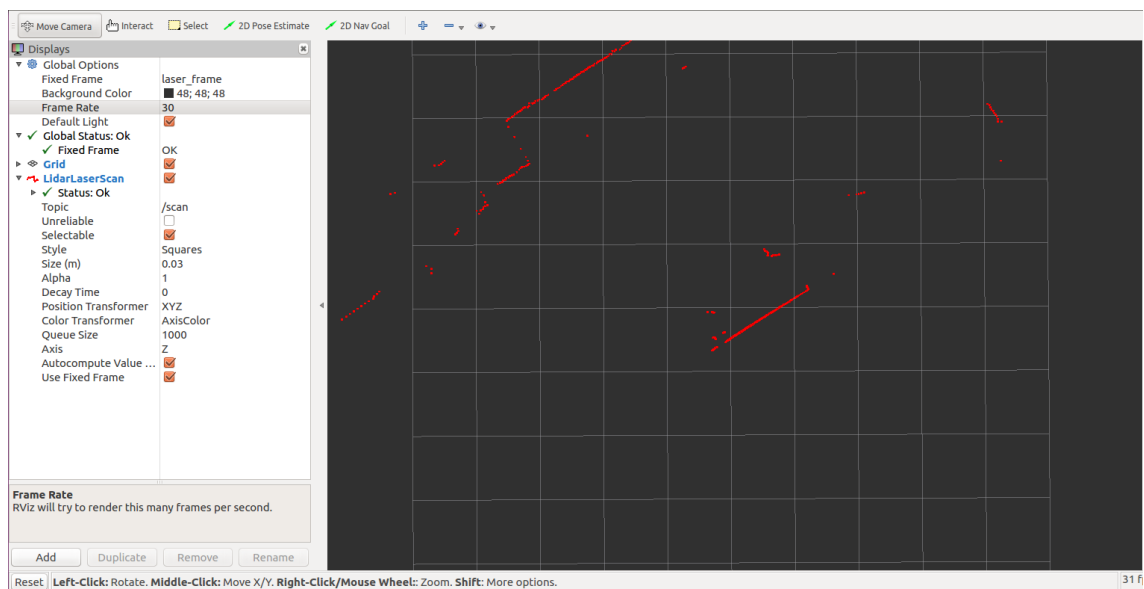


图 1 YDLIDAR RVIZ 运行显示

(2) Run ydlidar_node and ydlidar_client

```
$roslaunch ydlidar lidar.launch

$roslaunch ydlidar ydlidar_client

### Lidar data output visible at the terminal
```

```
/home/jacky/catkin_ws/src/ydlidar_ros/launch/lidar.launch http://localhost:11311
started core service [/rosout]
process[ydlidar_node-2]: started with pid [59547]
process[base_link_to_laser4-3]: started with pid [59552]

YDLIDAR

[ INFO] [1568253748.673239257]: [YDLIDAR INFO] Now YDLIDAR ROS SDK VERSION:1.4.2
.....
fhs_lock: creating lockfile:      59547

[YDLIDAR]:SDK Version: 1.4.2
[YDLIDAR]:Lidar running correctly ! The health status: good
[YDLIDAR] Connection established in [/dev/ydlidar][230400]:
Firmware version: 2.33
Hardware version: 2
Model: G4
Serial: 2019082100000007
[YDLIDAR INFO] Current Sampling Rate : 9K
[YDLIDAR INFO] Current Scan Frequency: 10.000000Hz
[YDLIDAR INFO] Now YDLIDAR is scanning .....
```

FIG2 YDLIDAR TERMINAL DISPLAY STEP 1

```
jacky@jacky-eai: ~
[YDLIDAR INFO]: angle-distance : [-3.762382, 0.000000, 445]
[YDLIDAR INFO]: angle-distance : [-3.366341, 0.000000, 446]
[YDLIDAR INFO]: angle-distance : [-2.970299, 0.000000, 447]
[YDLIDAR INFO]: angle-distance : [-2.574257, 0.000000, 448]
[YDLIDAR INFO]: angle-distance : [-2.178216, 0.000000, 449]
[YDLIDAR INFO]: angle-distance : [-1.782188, 0.000000, 450]
[YDLIDAR INFO]: angle-distance : [-1.386146, 0.000000, 451]
[YDLIDAR INFO]: angle-distance : [-0.990104, 0.000000, 452]
[YDLIDAR INFO]: angle-distance : [-0.594063, 0.000000, 453]
[YDLIDAR INFO]: angle-distance : [-0.198021, 0.000000, 454]
[YDLIDAR INFO]: angle-distance : [0.198021, 0.000000, 455]
[YDLIDAR INFO]: angle-distance : [0.594063, 0.000000, 456]
[YDLIDAR INFO]: angle-distance : [0.990091, 0.000000, 457]
[YDLIDAR INFO]: angle-distance : [1.386132, 0.000000, 458]
[YDLIDAR INFO]: angle-distance : [1.782174, 0.000000, 459]
[YDLIDAR INFO]: angle-distance : [2.178216, 0.000000, 460]
[YDLIDAR INFO]: angle-distance : [2.574257, 0.000000, 461]
[YDLIDAR INFO]: angle-distance : [2.970299, 0.000000, 462]
[YDLIDAR INFO]: angle-distance : [3.366327, inf, 463]
[YDLIDAR INFO]: angle-distance : [3.762369, inf, 464]
[YDLIDAR INFO]: angle-distance : [4.158411, inf, 465]
[YDLIDAR INFO]: angle-distance : [4.554452, 0.000000, 466]
[YDLIDAR INFO]: angle-distance : [4.950494, inf, 467]
```

FIG2 YDLIDAR TERMINAL DISPLAY STEP 2

YDLIDAR COORDINATE SYSTEM

YDLIDAR rotates clockwise. The SDK data output is left-handed data with distance and angle information. The ROS driver package output has converted it to a right-handed coordinate system output.

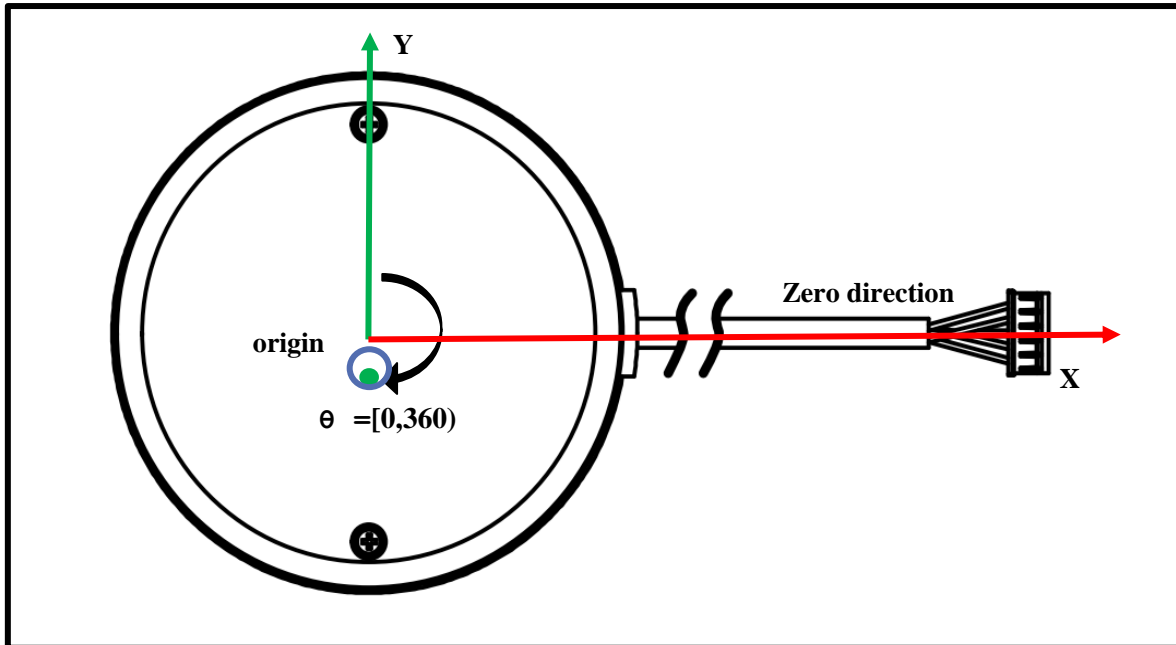


FIG4 YDLIDAR G2/G4/G6 COORDINATE SYSTEM

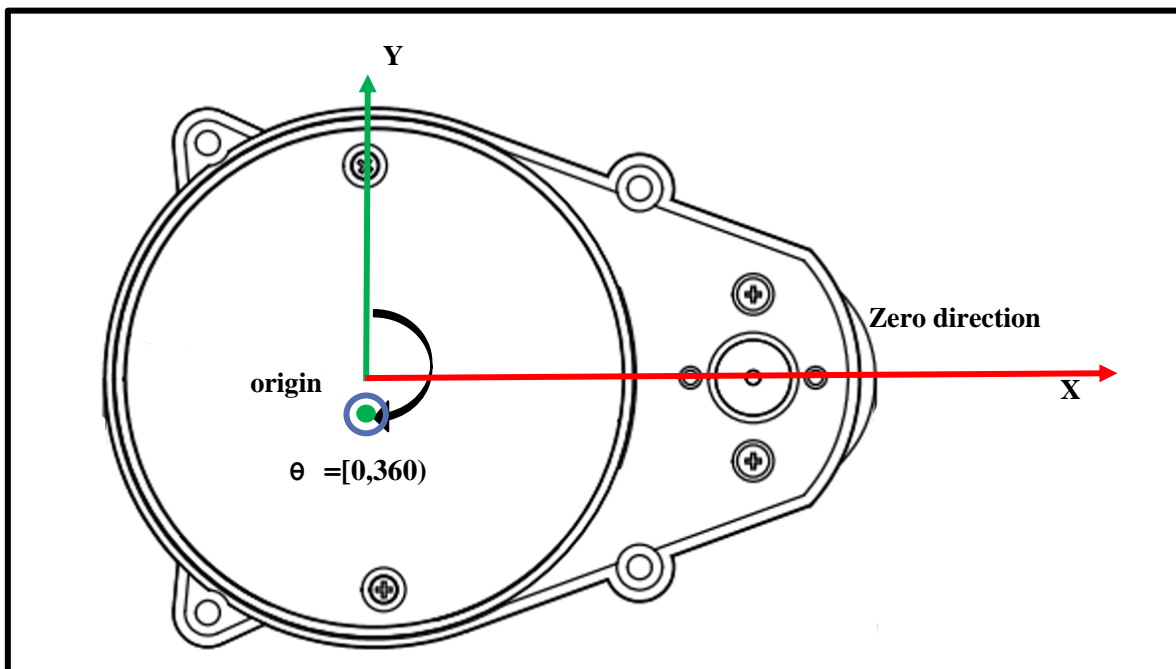


FIG5 YDLIDAR X4 COORDINATE SYSTEM

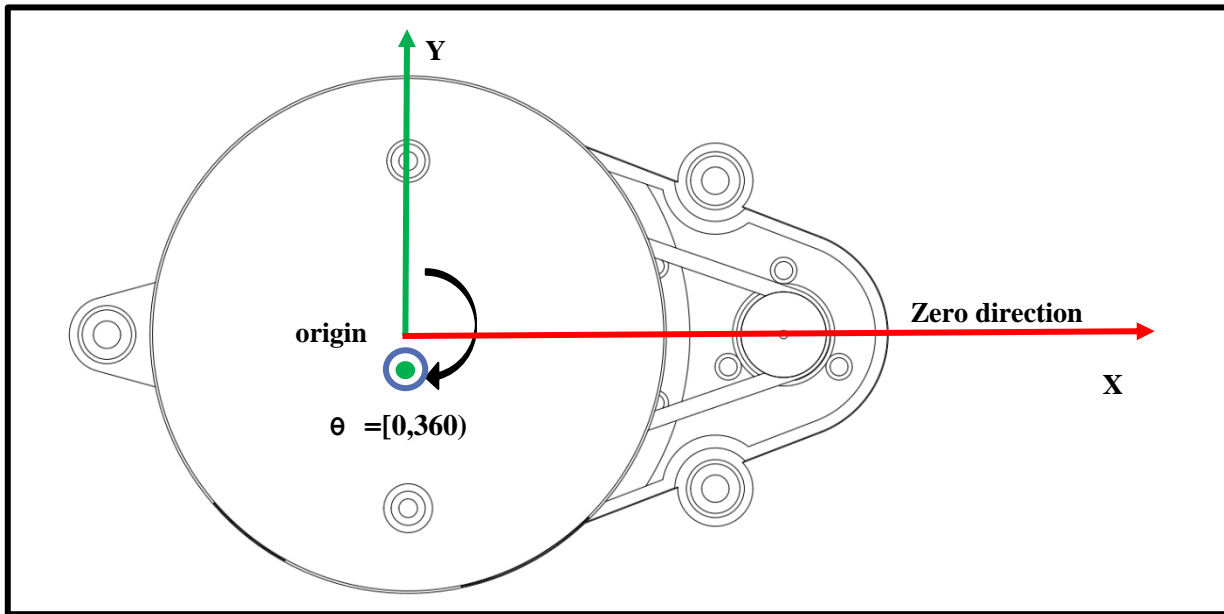


FIG6 YDLIDAR S2/X2/X2L COORDINATE SYSTEM