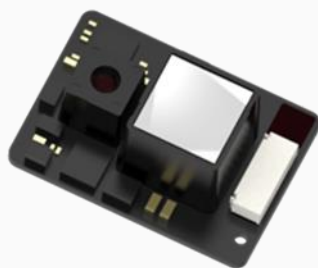


YDLIDAR SDM18 USER MANUAL ^{BETA}



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1 OPERATION UNDER WINDOWS

1.1 Device Connection

When SDM18 is evaluated and developed under windows, SDM18 and PC need to be interconnected. The specific process is as follows:

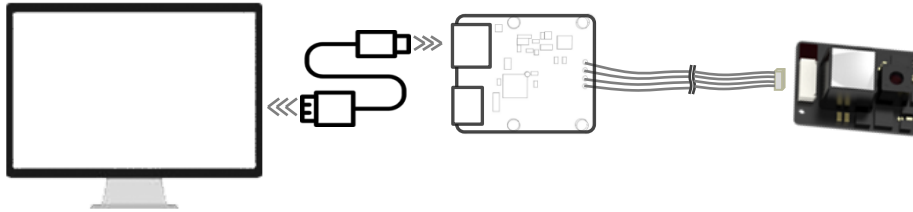


FIG 1 YDLIDAR SDM18 DEVICE CONNECTION

1.2 How to Use LidarViewer

YDLIDAR provides LidarViewer, a point cloud data visualization software EaiLidarTest.exe for SDM18 real-time scanning. Users can use this software to visually observe the SDM18 measurement data waveform.

Before using the software, please make sure that the SDM18 USB adapter board serial port driver is installed successfully, and interconnect the SDM18 with the USB port of the PC. Run the evaluation software: EaiLidarTest.exe, select the corresponding serial port number.

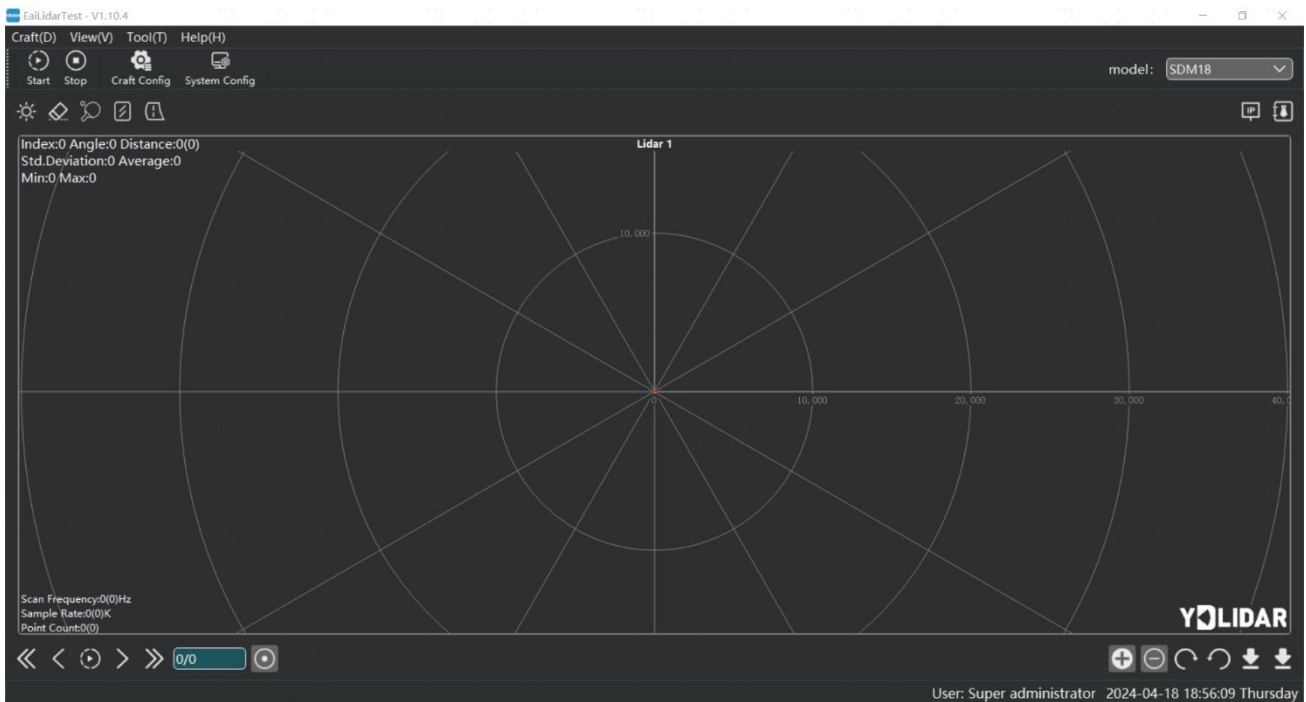


FIG 2 YDLIDAR SDM18 EVALUATION SOFTWARE

1.2.1 Start Scanning

Click "start" in the stopped state. The lidar will automatically start scanning and display the real-time data waveform. The distance is displayed on the right. Dis is the real-time distance (unit: mm). Click "Stop" again and the lidar will stop scanning, as shown below:

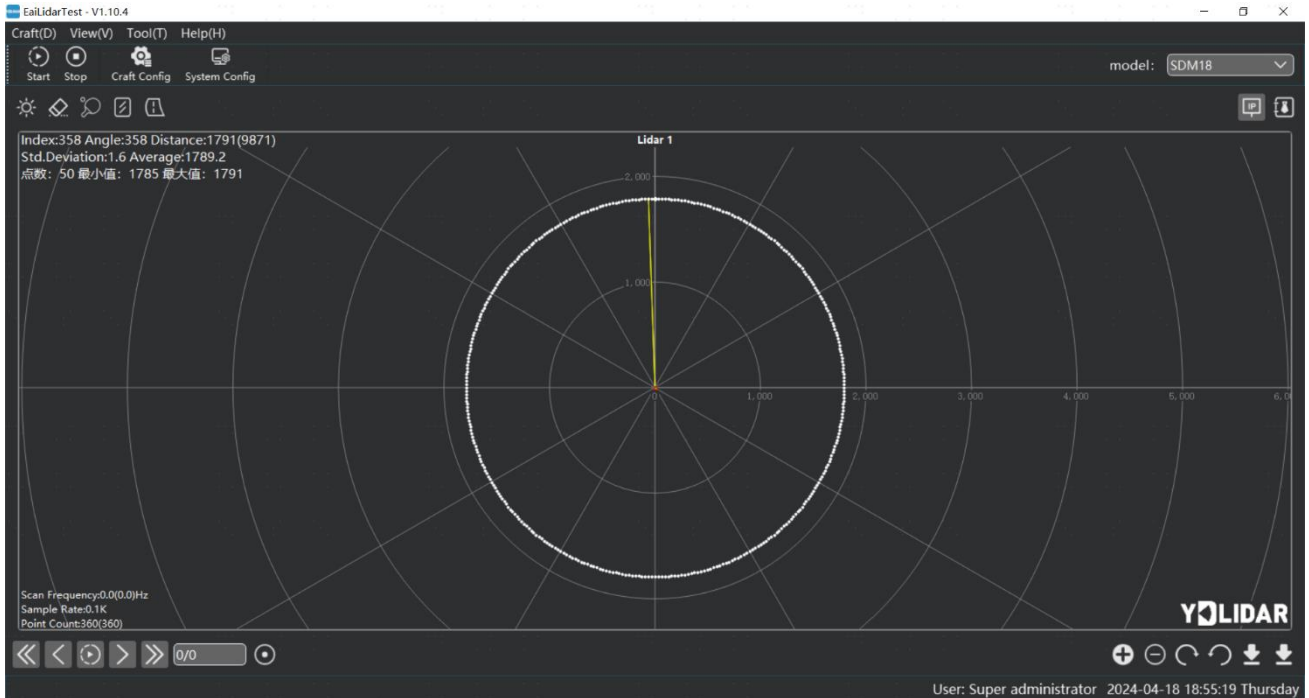


FIG 3 LIDAR SCANNING POINT CLOUD DISPLAY

2 LINUX ROS OPERATION

There are many Linux versions, this article only uses Ubuntu 18.04, Melodic version ROS as an example.

SDK driver address:

<https://github.com/YDLIDAR/YDLidar-SDK>

ROS driver address:

https://github.com/YDLIDAR/ydlidar_ros_driver

2.1 Device Connection

Under Linux, the T-mini Plus and PC interconnect processes are consistent with those under Windows. See [Device Connection under Window](#).

2.2 Compile and Install YDLidar-SDK

ydlidar_ros_driver depends on the YDLidar-SDK library. If you have never installed the YDLidar-SDK library, or it has expired, you must first install the YDLidar-SDK library. If you have the latest version of YDLidar-SDK installed, please skip this step, then go to the next step.

```
$ git clone https://github.com/YDLIDAR/YDLidar-SDK.git
$ cd YDLidar-SDK/build
$ cmake ..
$ make
$ sudo make install
```

2.3 ROS Driver Installation

- 1) Cloning GitHub's ydlidar_ros_driver Package:

```
$ git clone https://github.com/YDLIDAR/ydlidar_ros_driver.git
ydlidar_ws/src/ydlidar_ros_driver
```

- 2) Build the ydlidar_ros_driver software package:

```
$ cd ydlidar_ws
$ catkin_make
```

- 3) Package environment Settings:

```
$ source ./devel/setup.sh
```

Note: Add a permanent workspace environment variable. It will be very convenient if ROS environment variables are automatically added to your bash session every time you start a new shell:

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

- 4) Verify that your package path is set, echo the ROS_PACKAGE_PATH variable.

```
$ echo $ROS_PACKAGE_PATH
```

You should see something like this: /home/tony/ydlidar_ws/src:/opt/ros/melodic/share.

- 5) Create Serial Port Alias [Optional]

```
$ chmod 0777 src/ydlidar_ros_driver/startup/*  
$ sudo sh src/ydlidar_ros_driver/startup/initenv.sh
```

Note: After completing the previous operation, re-insert the LiDAR again.

2.4 Run the ydlidar_ros_driver

Run ydlidar_ros_driver with startup file, as shown below:

```
$ roslaunch ydlidar_ros_driver SDM18.launch
```

3 ATTENTION

3.1 Ambient Temperature

When the working temperature of SDM18 is too high or too low, it will affect the accuracy of the ranging system, and may damage the structure of the scanning system, reducing the service life of lidar. Please avoid using in high temperature (>50 °C) and low temperature (- 20 °C).

3.2 Ambient Lighting

If users need to use it outdoors, please avoid the SDM18's vision system directly facing the sun.

4 REVISE

Date	Version	Content
2024-02-21	1.0	The 1st release