

# RDK X3 course

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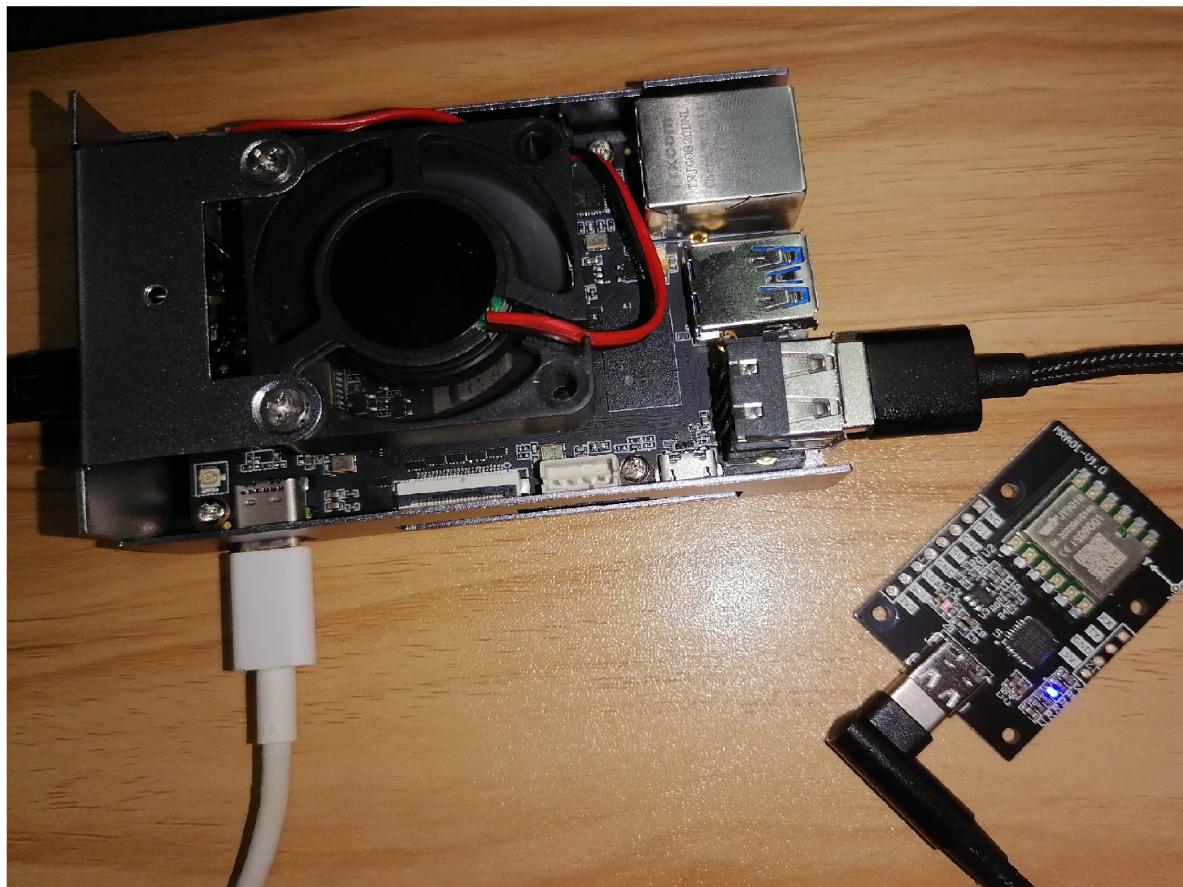
[RDK X3 course](#)

- 1.Hardware connection
- 2.Programming
3. Install serial port driver library
4. Experimental effect

Need prepared: Win10 computer, IMU module, Type-C data cable, X3 development kit.

## 1.Hardware connection

Connect the IMU module to the USB port of RDK X3 using a Type-C data cable.



## 2.Programming

About code,check code file.

If there is more than one USB device connected to the current computer, please check and confirm the USB device number of the IMU module and modify the port value.

The baud rate of USB has been set to 9600 in the program. Modify the baud value based on the baud rate of the IMU module.

```

if __name__ == '__main__':
    port = '/dev/ttyUSB0' # USB serial port
    baud = 9600 # Same baud rate as the INERTIAL navigation module
    ser = serial.Serial(port, baud, timeout=0.5)
    print("Serial is Opened:", ser.is_open)
    while(1):
        datahex = ser.read(33)
        DueData(datahex)

```

### 3. Install serial port driver library

If the serial port driver library is not installed in Python 3, please run the following command to install it.

```
pip3 install pyserial
```

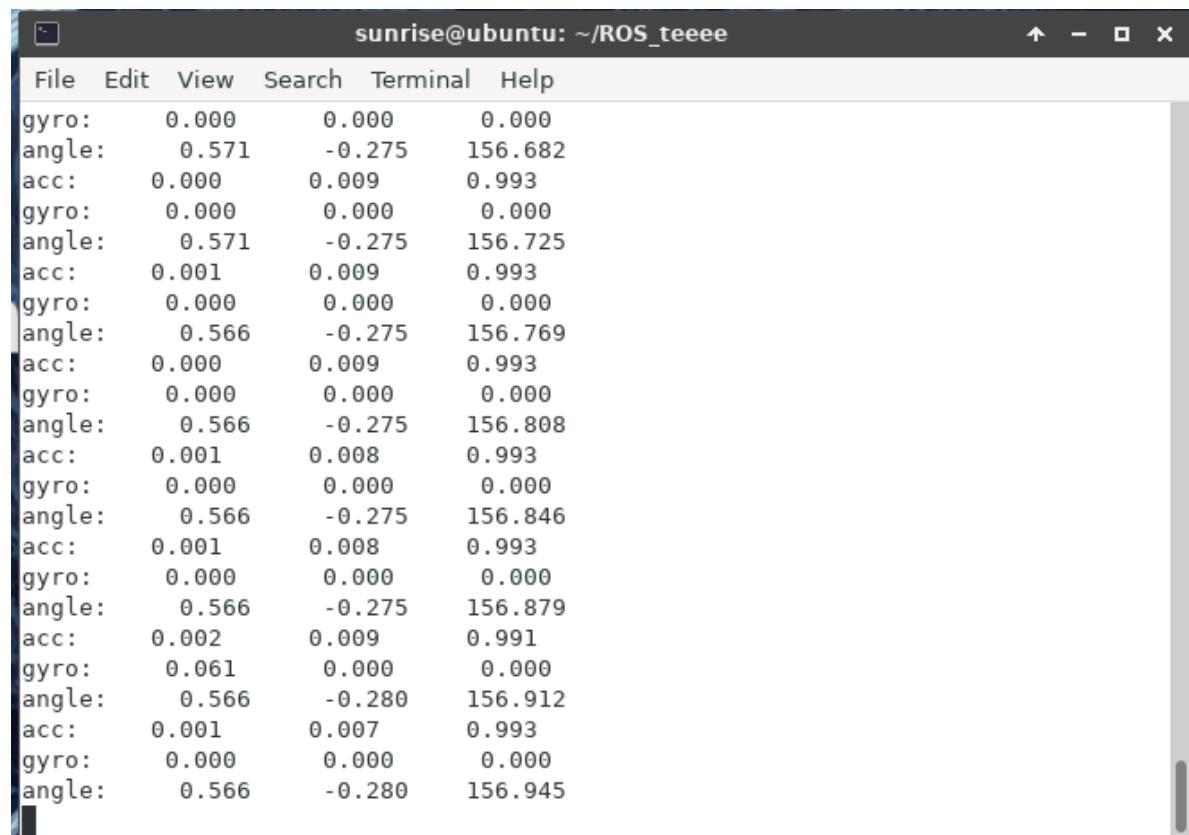
### 4. Experimental effect

Import the imu-usb.py file into the system, open the terminal, enter the corresponding folder, and then run the following command.

```
sudo python3 imu_usb.py
```

Entering the password again (the password is the login password, default is: **sunrise**)

You can see that the terminal keeps printing the data of the IMU module, and when the posture of the IMU module is changed, the data will change accordingly.



The screenshot shows a terminal window titled "sunrise@ubuntu: ~/ROS\_teeee". The window contains a table of IMU sensor data. The columns are labeled "gyro", "angle", and "acc". The data is as follows:

	gyro	angle	acc
0	0.000	0.000	0.000
1	0.571	-0.275	156.682
2	0.000	0.009	0.993
3	0.000	0.000	0.000
4	0.571	-0.275	156.725
5	0.001	0.009	0.993
6	0.000	0.000	0.000
7	0.566	-0.275	156.769
8	0.000	0.009	0.993
9	0.000	0.000	0.000
10	0.566	-0.275	156.808
11	0.001	0.008	0.993
12	0.000	0.000	0.000
13	0.566	-0.275	156.846
14	0.001	0.008	0.993
15	0.000	0.000	0.000
16	0.566	-0.275	156.879
17	0.002	0.009	0.991
18	0.061	0.000	0.000
19	0.566	-0.280	156.912
20	0.001	0.007	0.993
21	0.000	0.000	0.000
22	0.566	-0.280	156.945

