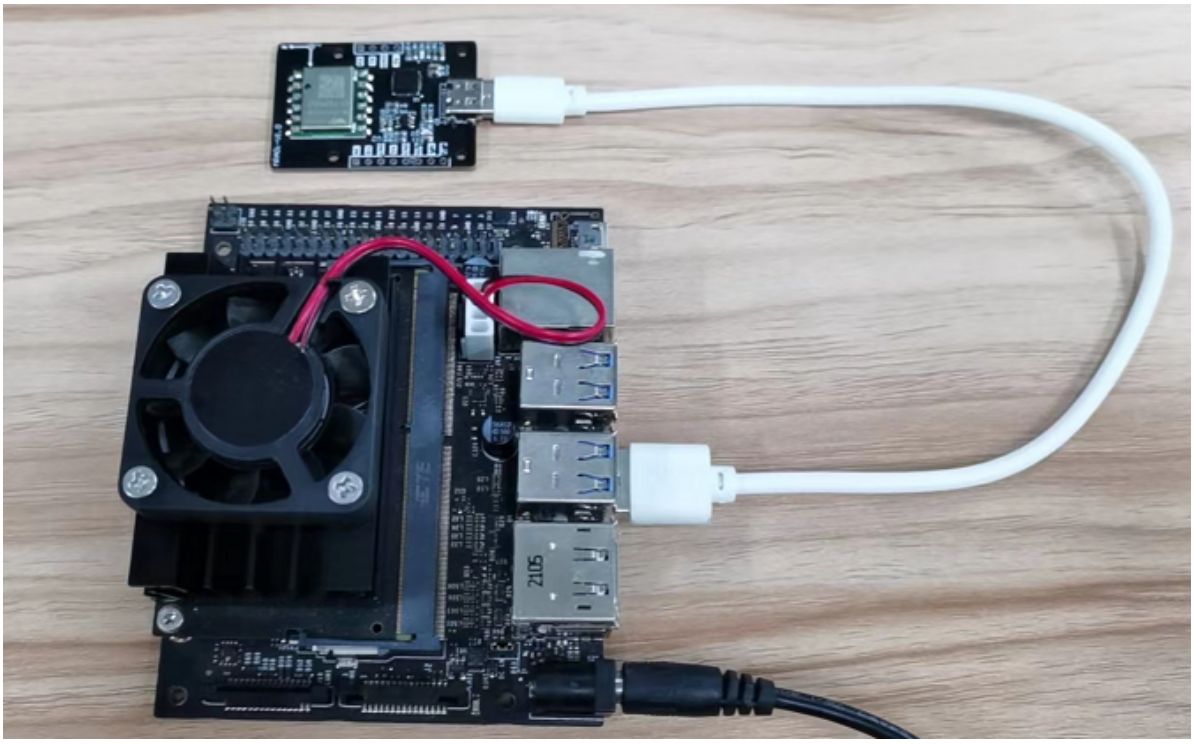
# Jetson Nano-USB application routines



Products to be prepared: Win10 computer, inertial navigation module, Type-C data cable, Jetson Nano development kit.

## 1. Hardware connection

Use the Type-C data cable to connect the inertial navigation module and the USB port of the Jetson Nano。



## 2. Software programming

For specific code, please see the source code in the information.

If more than one USB device is connected, please check and confirm the USB device number of the inertial navigation module, and modify the value of port.

The USB baud rate baud=9600 has been set in the program, and the baud value is modified according to the baud rate of the inertial navigation module.

```python
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 the serial port driver library

If the serial serial port driver library is not installed in Python3, 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:

```
python3 imu_usb.py
```

It can be seen that the terminal has been printing the data of the inertial navigation module. When the attitude of the inertial navigation module is changed, the data will change accordingly.

```
jetson@yahboom:~/ros_imu$ python3 imu_usb.py
Serial is Opened: True
acc:    -0.003      0.004      0.998
gyro:     0.000      0.000      0.000
angle:    0.396      0.253    175.298
acc:    -0.003      0.004      0.999
gyro:     0.000      0.000      0.000
angle:    0.396      0.253    175.298
acc:    -0.004      0.005      1.001
gyro:     0.000      0.000      0.000
angle:    0.396      0.258    175.298
acc:    -0.004      0.004      0.999
gyro:     0.000      0.000      0.000
angle:    0.390      0.258    175.298
acc:    -0.004      0.004      0.999
gyro:     0.000      0.000      0.000
angle:    0.390      0.258    175.298
acc:    -0.004      0.004      0.999
gyro:     0.000      0.000      0.000
angle:    0.390      0.258    175.298
acc:    -0.004      0.005      0.999
gyro:     0.000      0.000      0.000
angle:    0.390      0.258    175.298
acc:    -0.005      0.004      0.999
gyro:     0.000      0.000      0.000
angle:    0.385      0.264    175.298
acc:    -0.004      0.004      0.997
gyro:     0.000      0.000      0.000
angle:    0.385      0.264    175.298
acc:    -0.005      0.003      0.997
gyro:     0.000      0.000      0.000
angle:    0.385      0.264    175.298
acc:    -0.003      0.004      0.999
gyro:     0.000      0.000      0.000
angle:    0.379      0.264    175.298
acc:    -0.003      0.003      0.993
gyro:     0.000      0.000      0.000
angle:    0.379      0.264    175.298
```