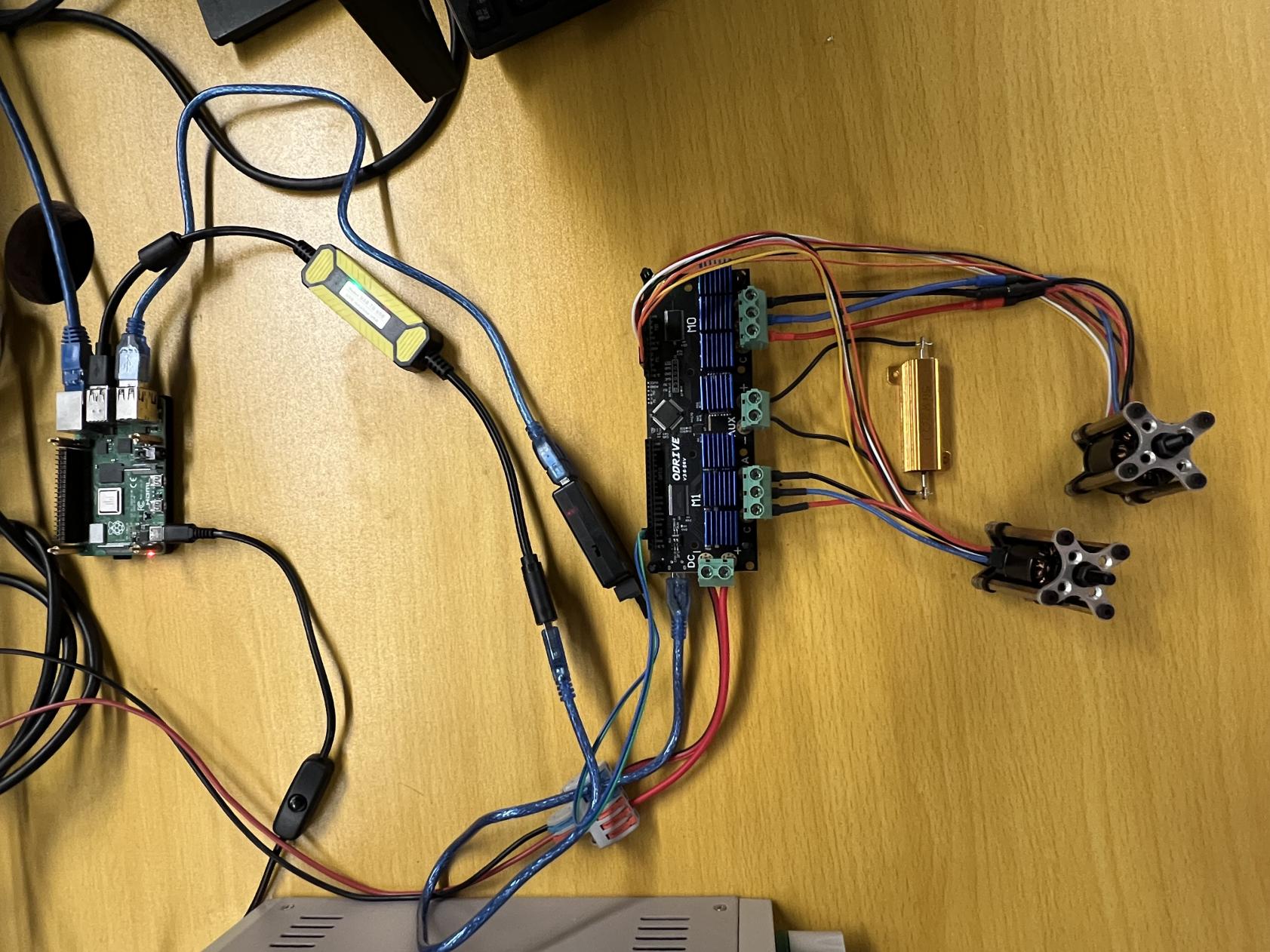
**ODrive v3.6的使用**

**树莓派接线图**

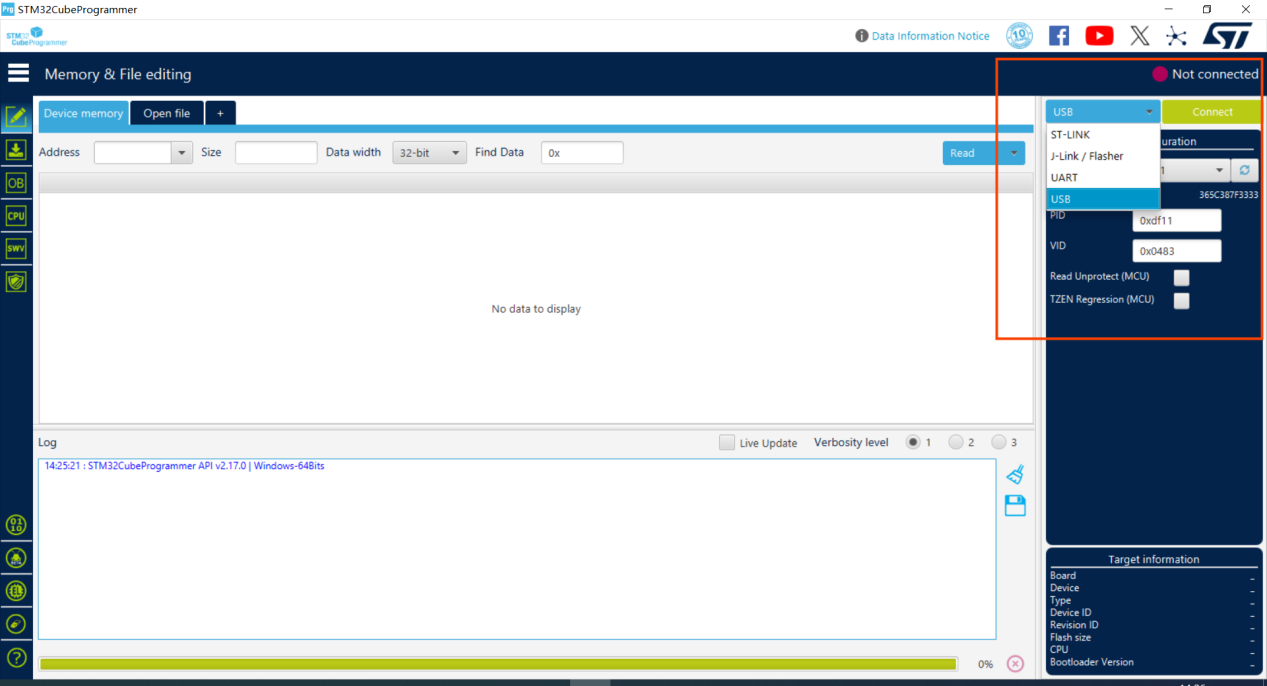


**固件烧录**

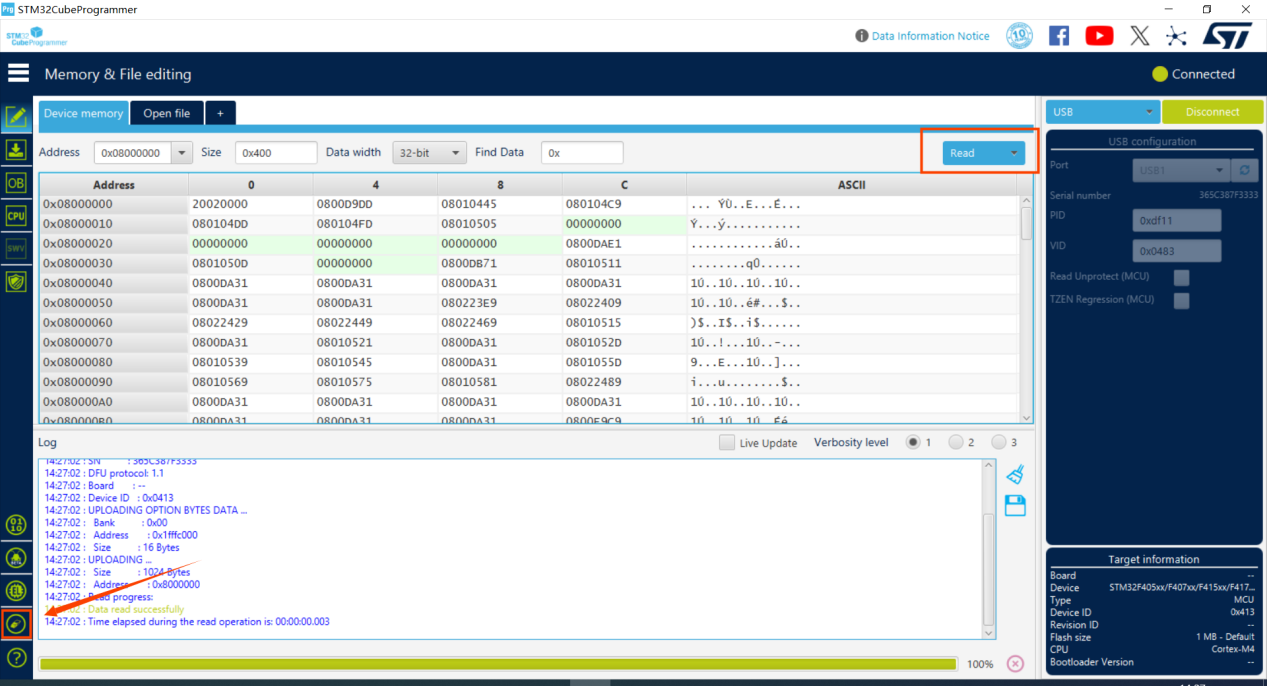
首先将ODrive板上的DFU开关打开，进入DFU Mode

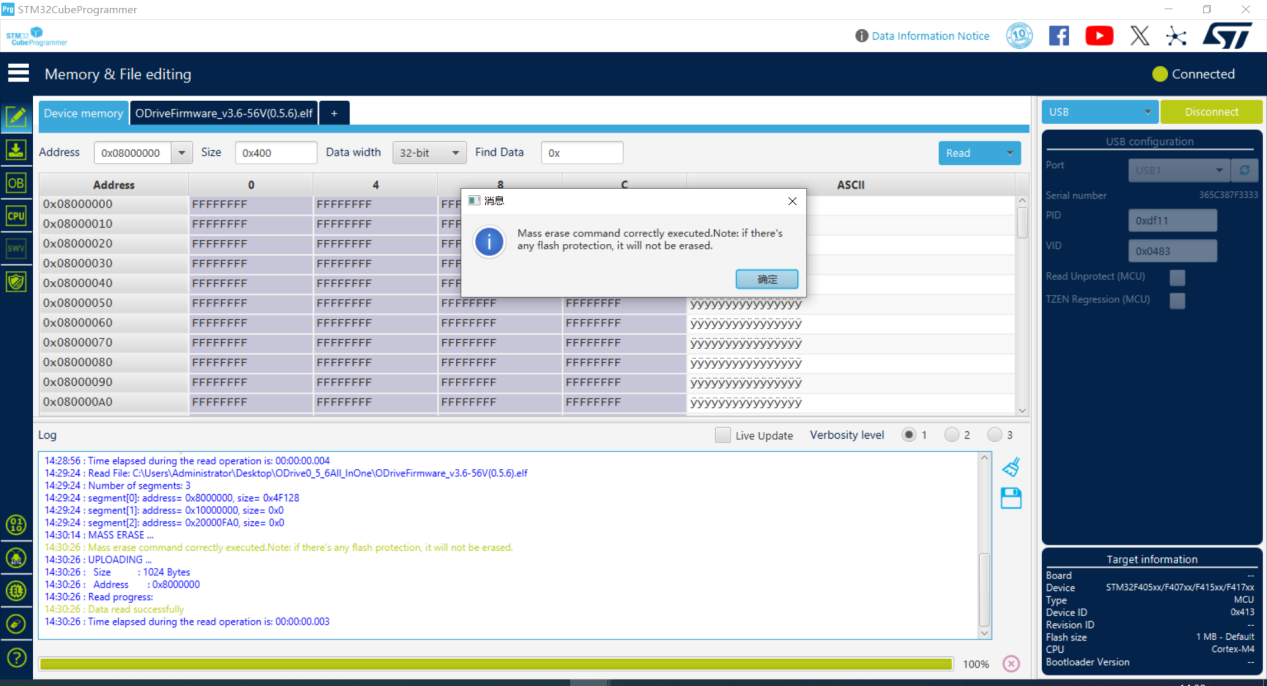
第一种方法(Recommended)

STM 32Cube Programmer 通过USB刷入固件 版本为0.5.6

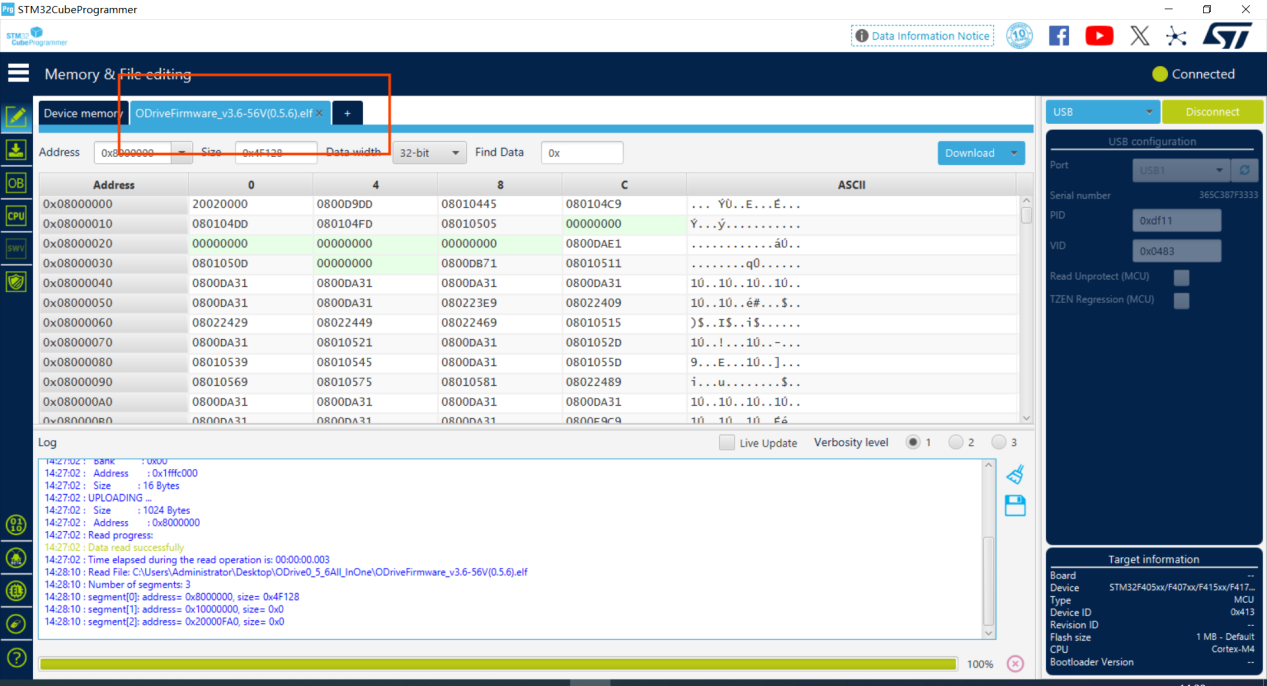


左下角将原本的固件擦除

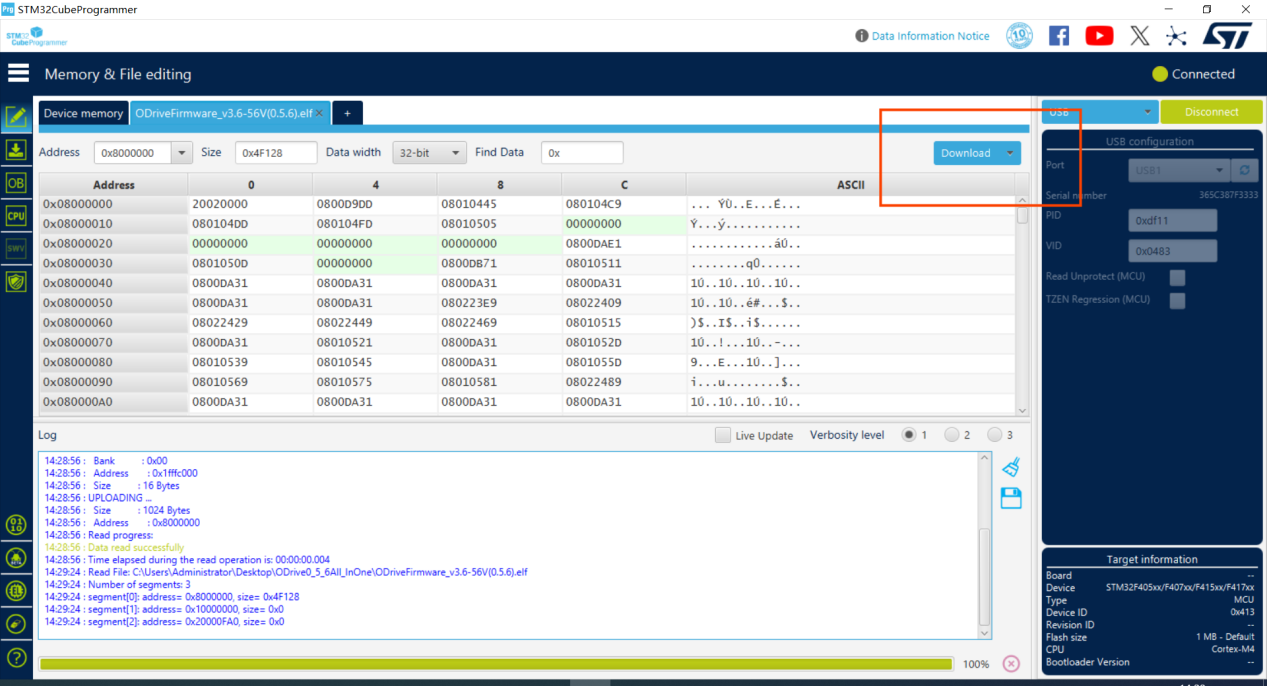


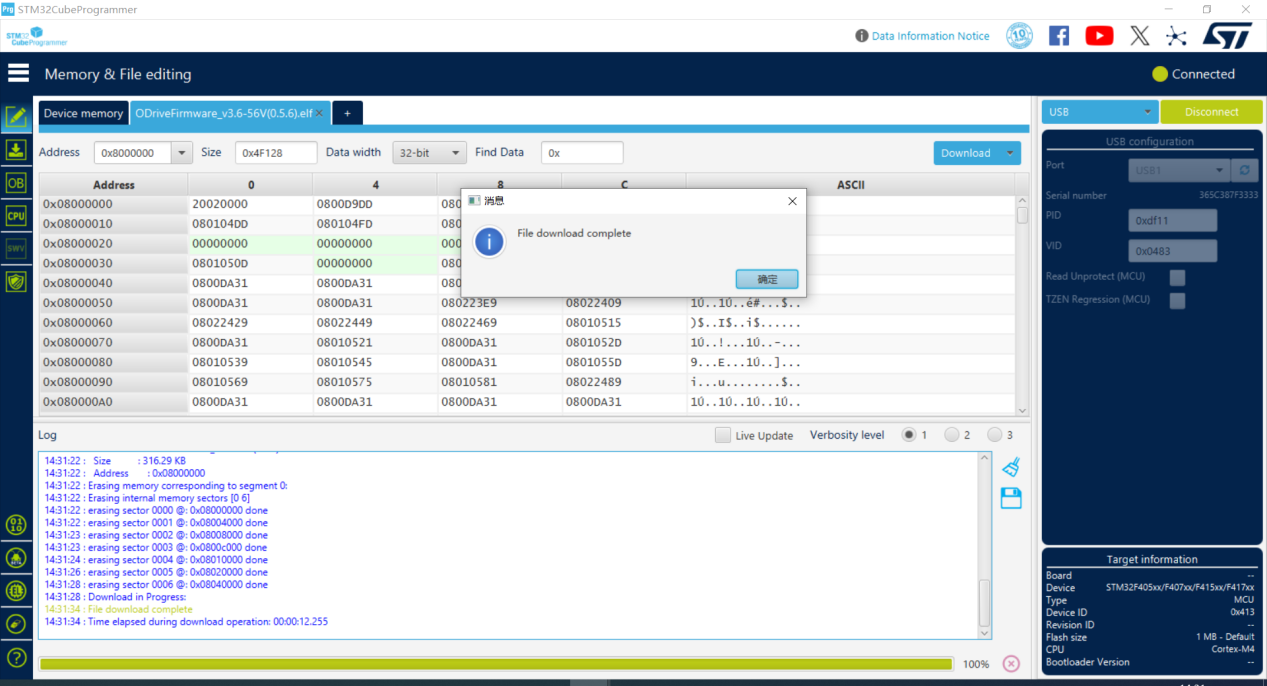


打开要刷入的固件

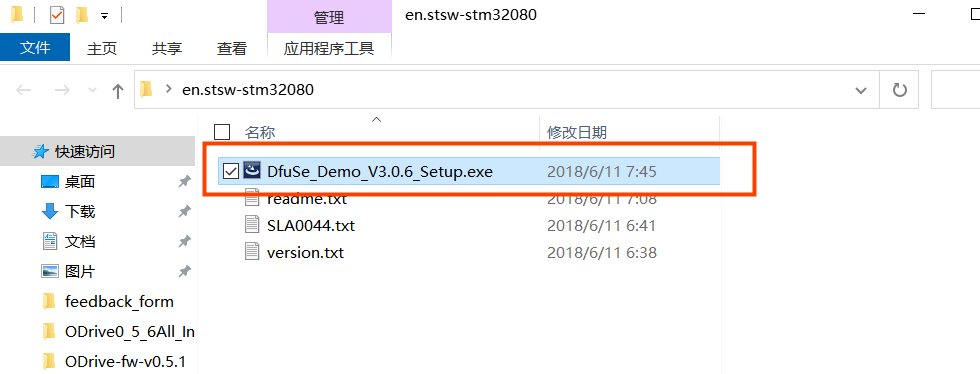


点击下载

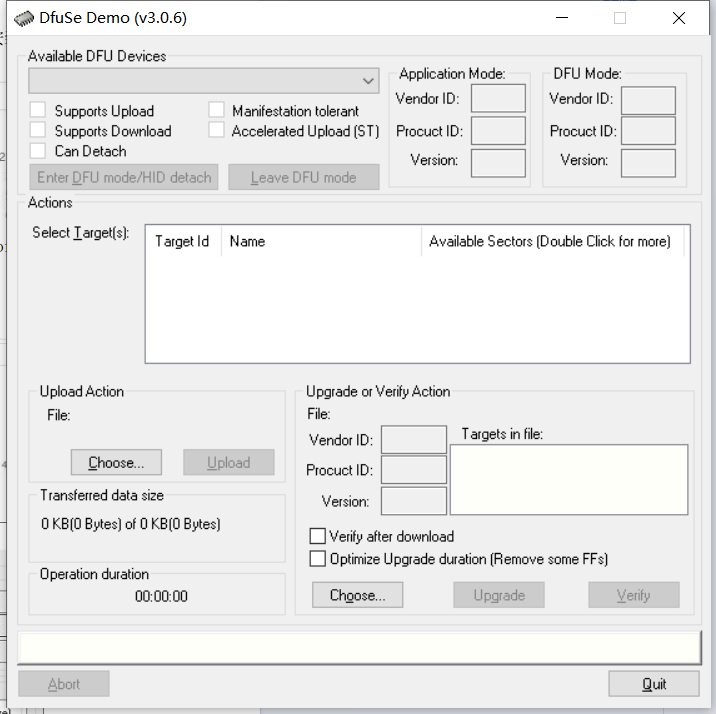




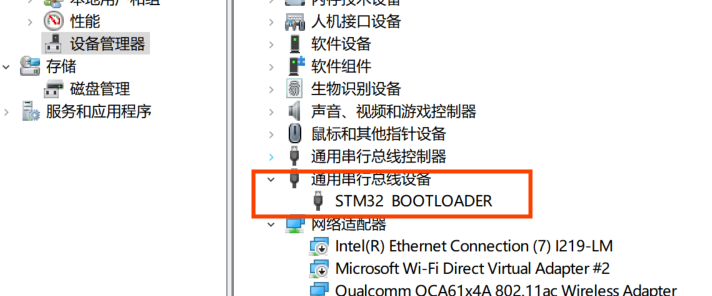
第二种方法(不推荐,v3.6的最新版0.5.6固件只发布了.elf文件)



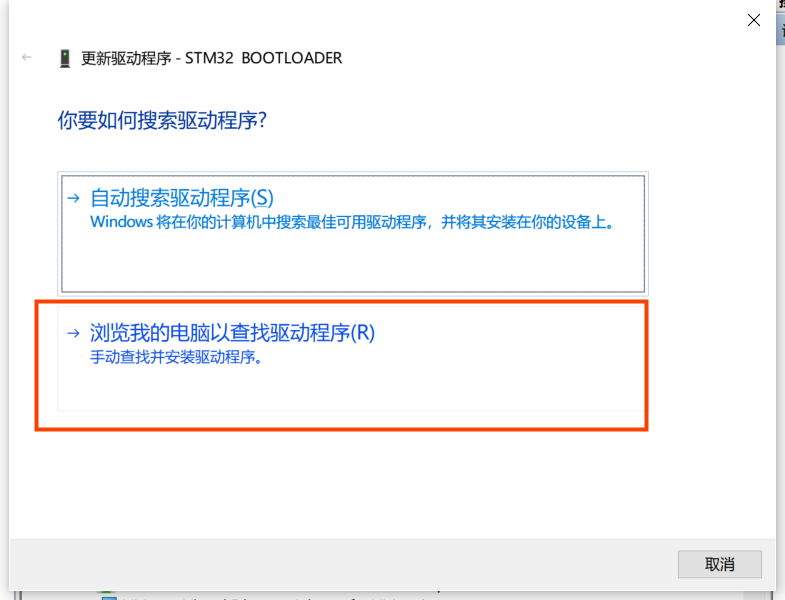
没发现DFU设备，打开设备管理器

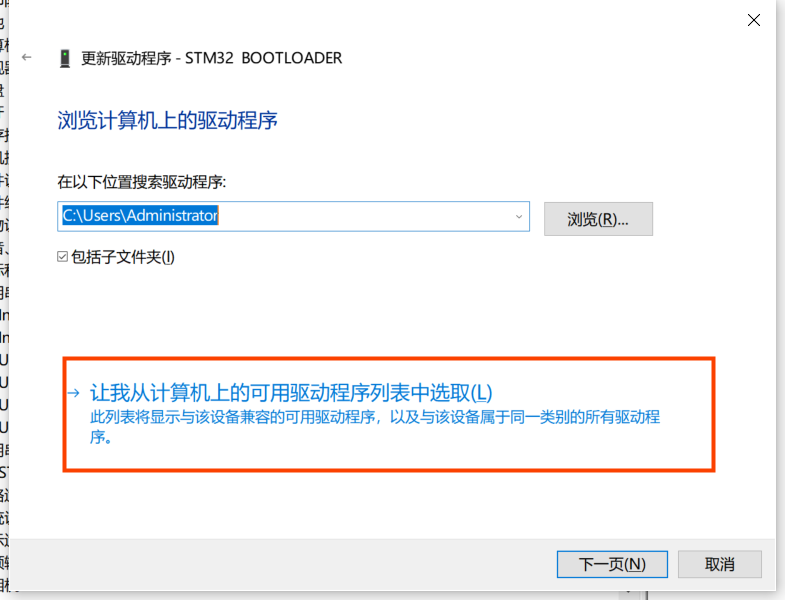


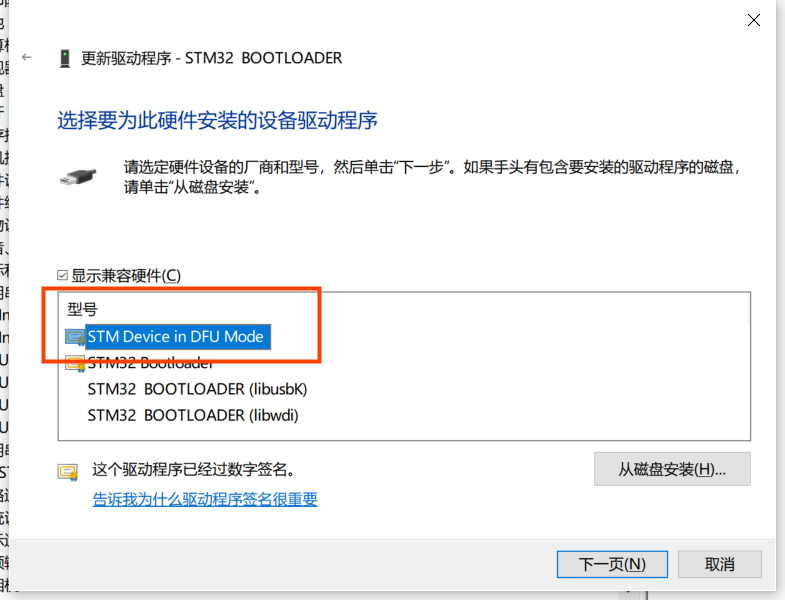
显示为STM32 BOOTLOADER

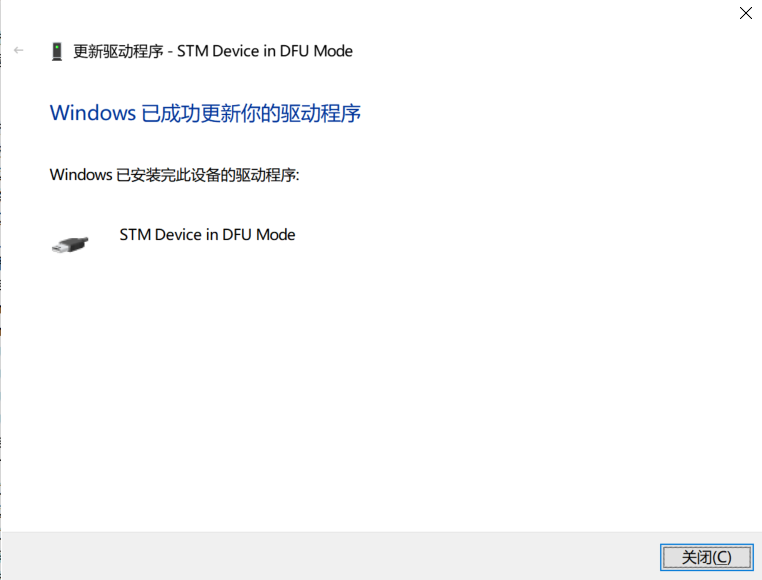


更新驱动程序



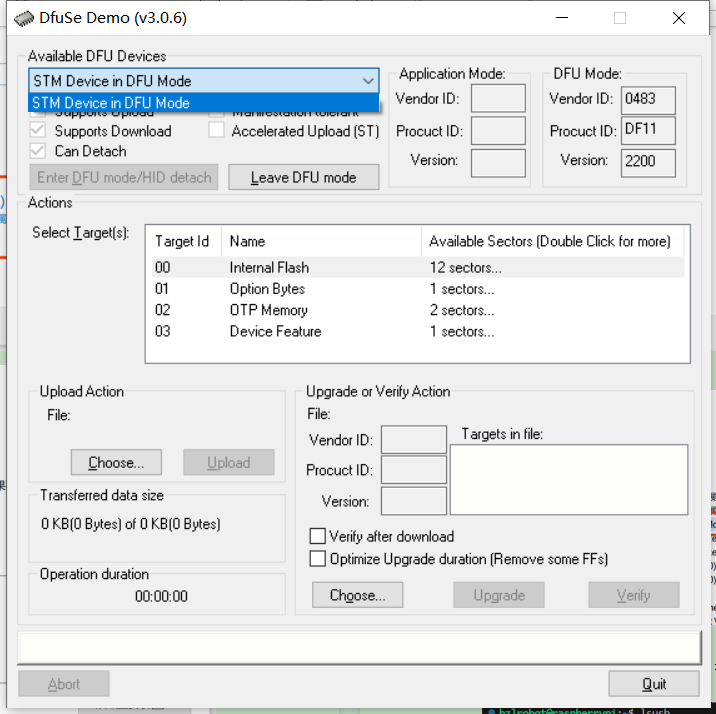




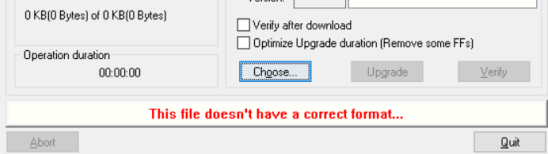




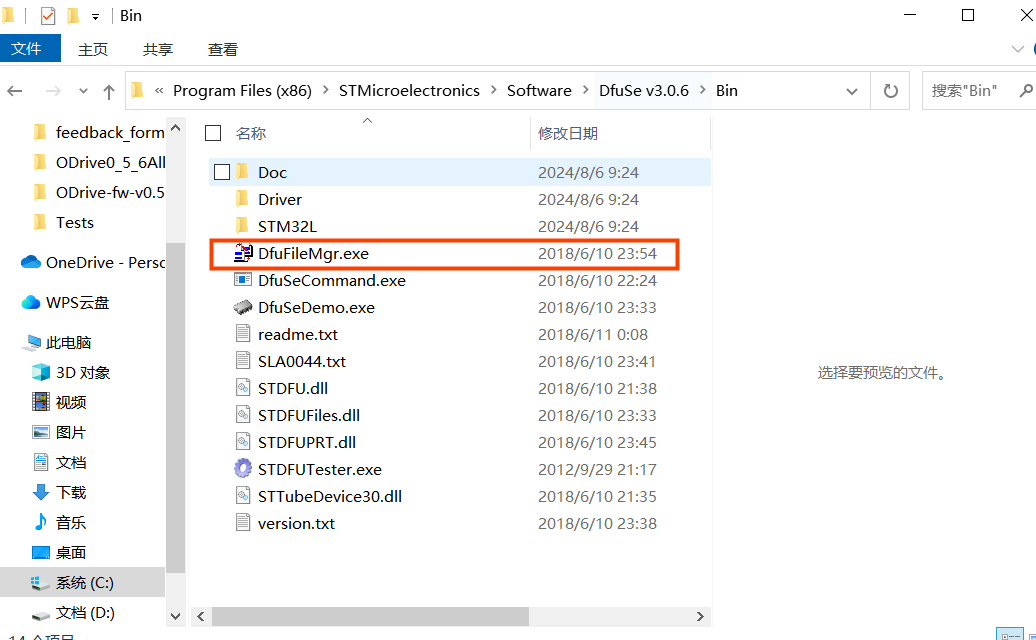
重新打开后发现设备



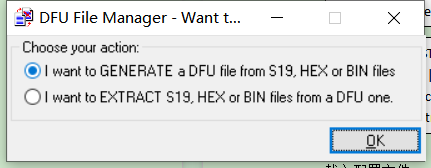
仅支持烧入后缀名为 .dfu格式的固件

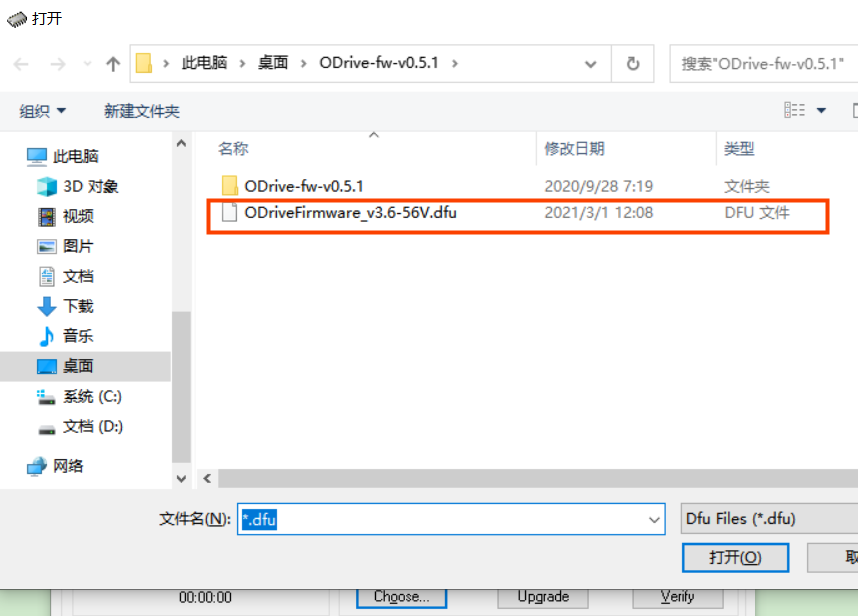


在安装目录下打开DfuFileMgr.exe

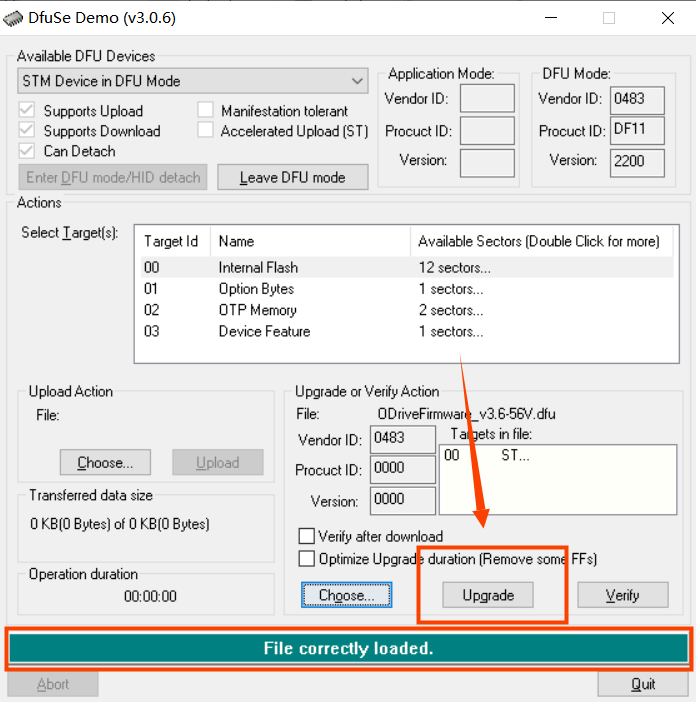


DFU文件可以由S19,HEX或者BIN文件生成

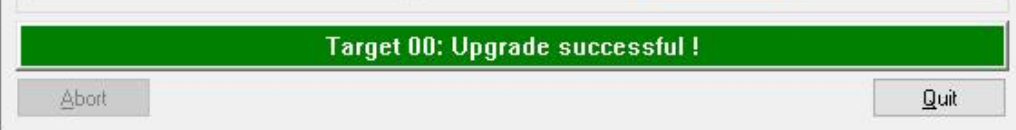




选中后会出现下面的结果







至此固件烧入完成

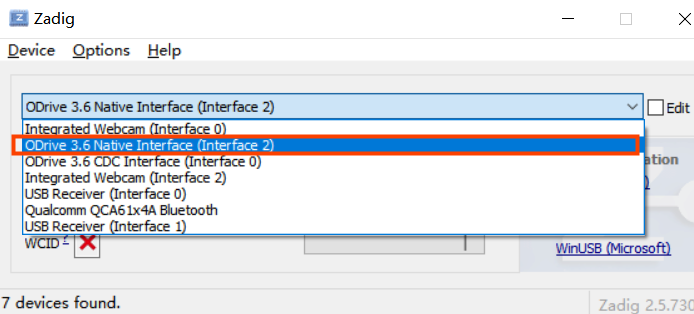
**测试**

固件烧录完成后断电然后将主板上的DFU模式切换回去后重新上电

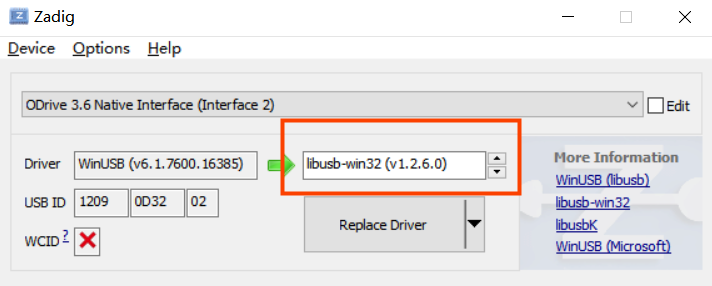
**Windows**

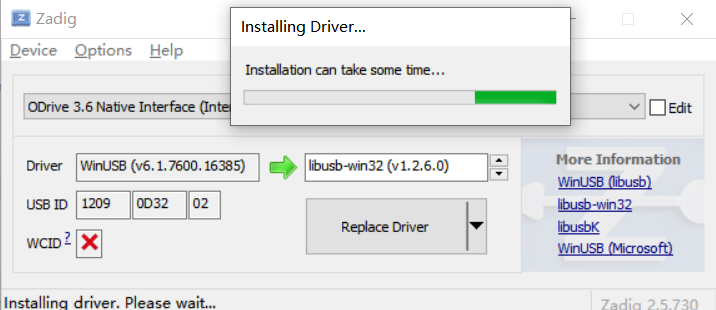
打开zadig-2.5.exe

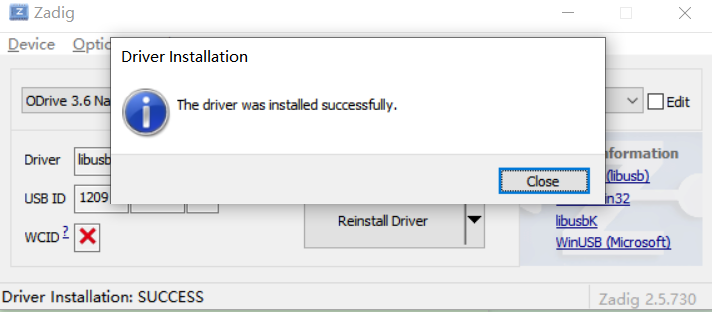
Options中选中List All Devices



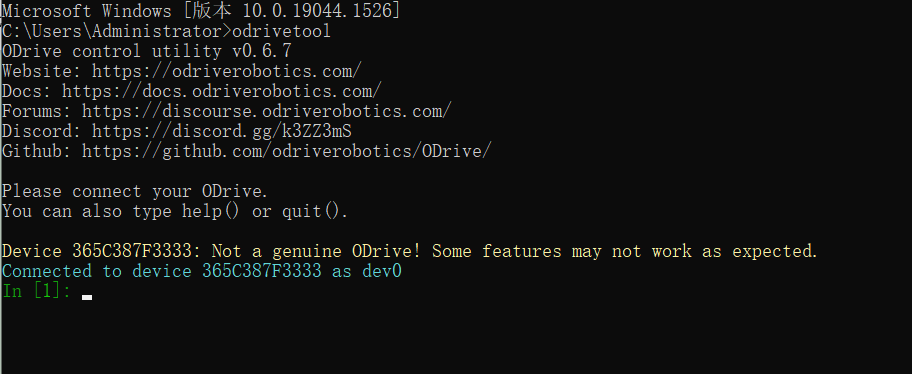
选择libusb-win32(v1.2.6.0)然后按下安装(这边是已经安装过了)







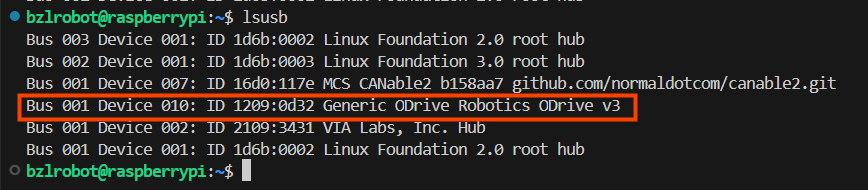
打开终端输入 odrivetool，结果如下代表成功



可以直接发送命令到odrive

**树莓派配置**

再连接到树莓派后上电后发现设备



pip install odrive ==0.5.4

**配置ODrive**

echo 'SUBSYSTEM=="usb", ATTR{idVendor}=="1209", ATTR{idProduct}=="0d[0-9][0-9]", MODE="0666"' | sudo tee /etc/udev/rules.d/91-odrive.rules

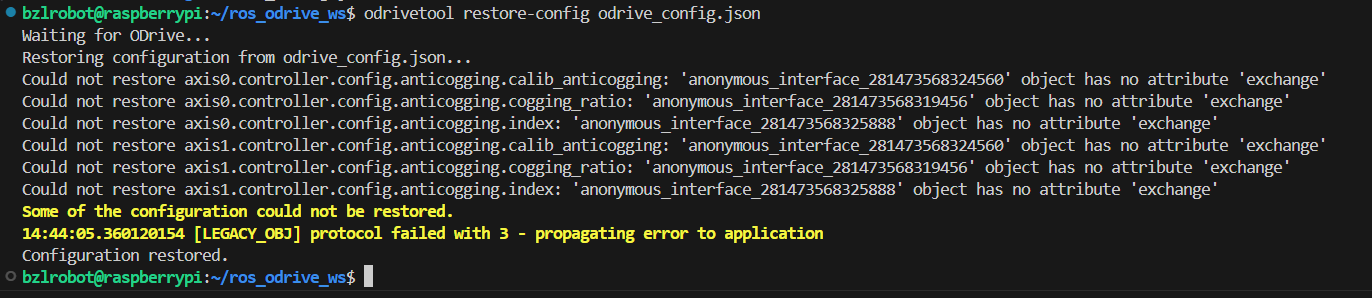
sudo udevadm control --reload-rules

sudo udevadm trigger

载入配置文件

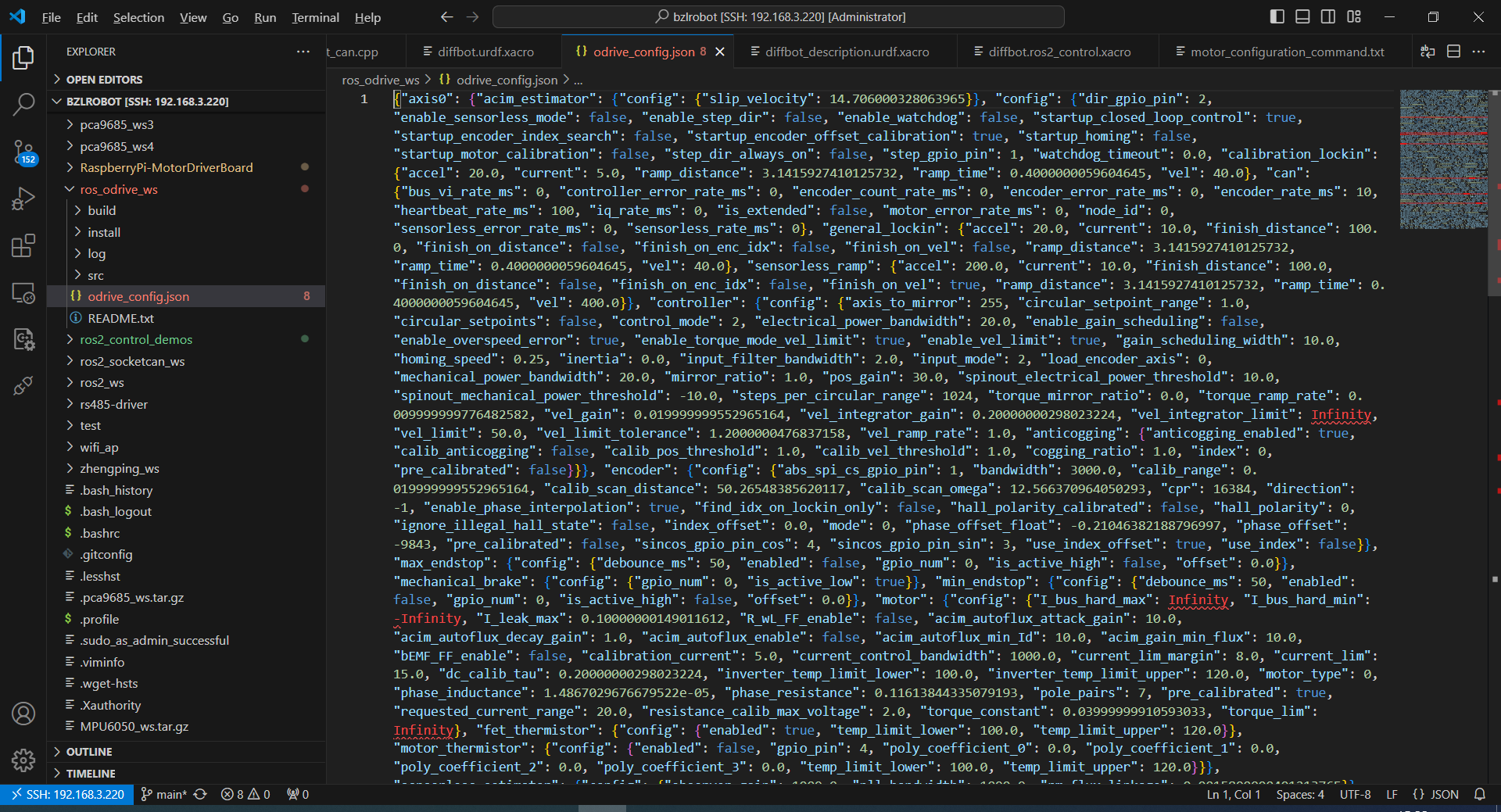


odrivetool restore-config odrive\_config.json

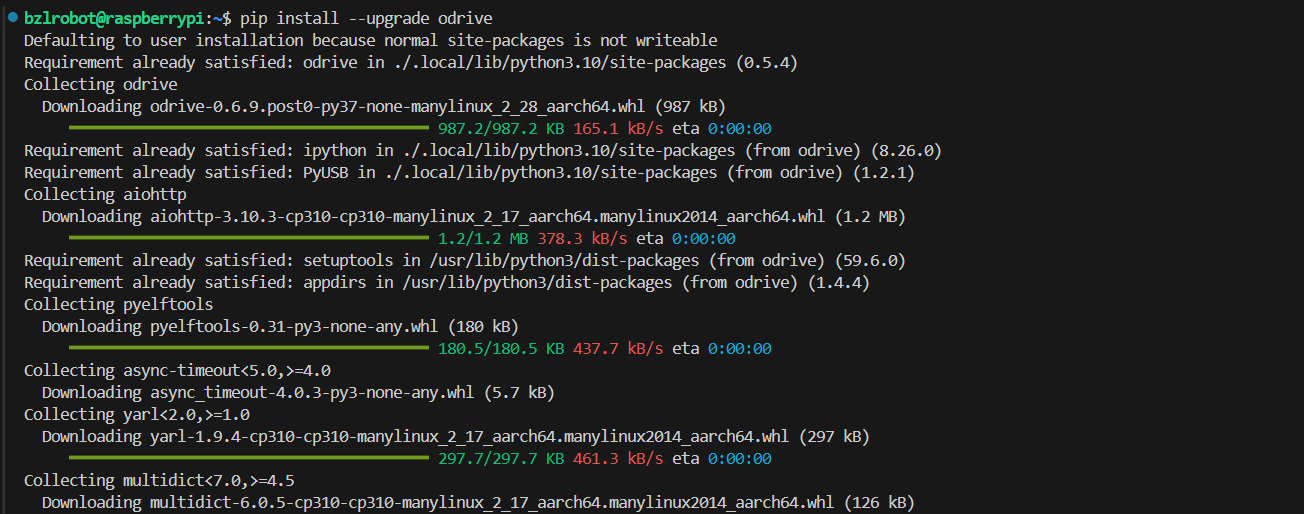


加载完成后重新上电可以看到电机自动校准，编码器自动校准，进入闭环模式

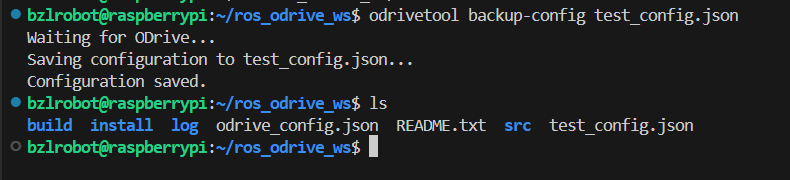
可以看到之前0.5.4版本的odrivetool备份生成的配置文件有点乱，不方便更改

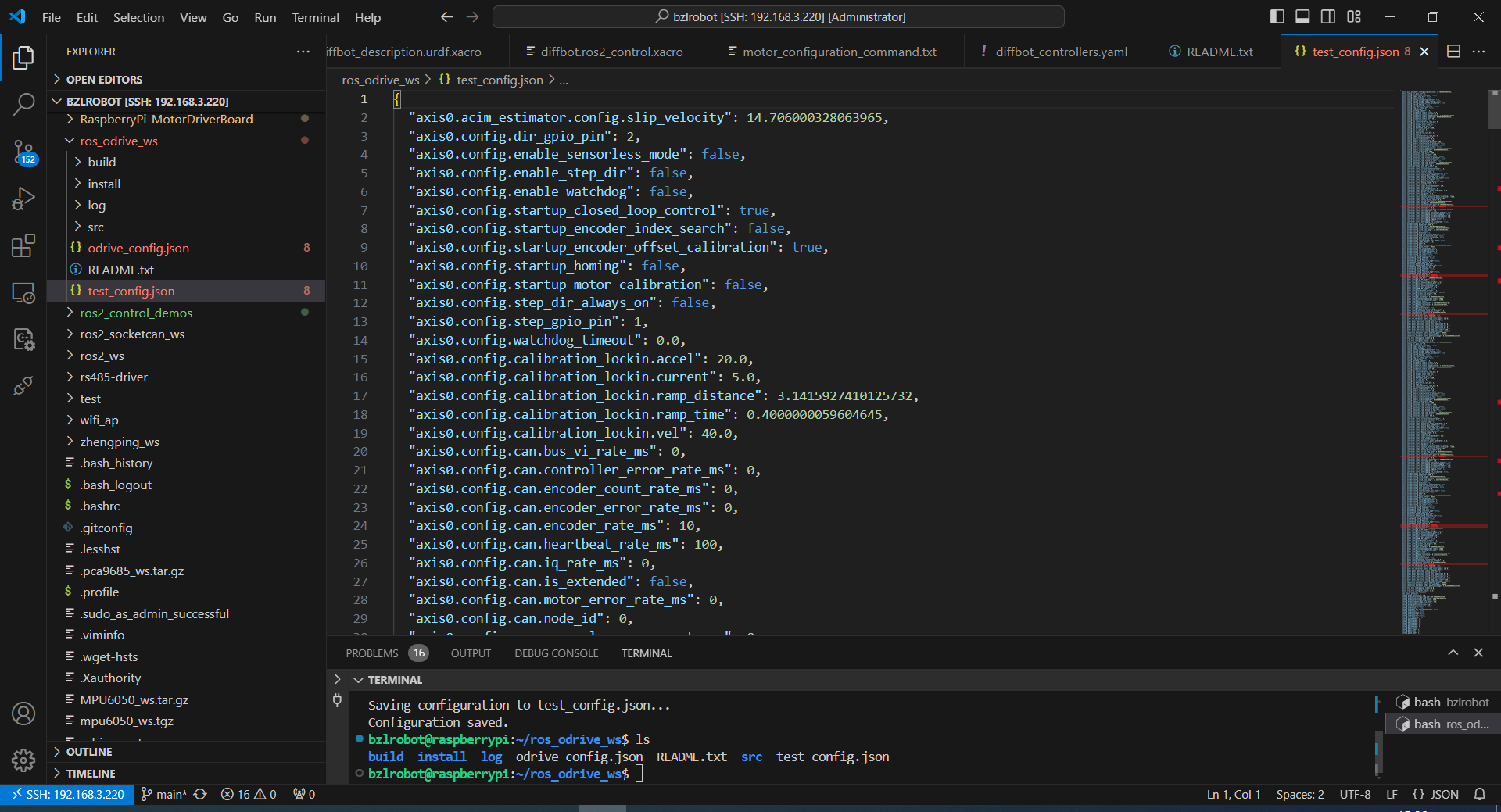


更新odivetool



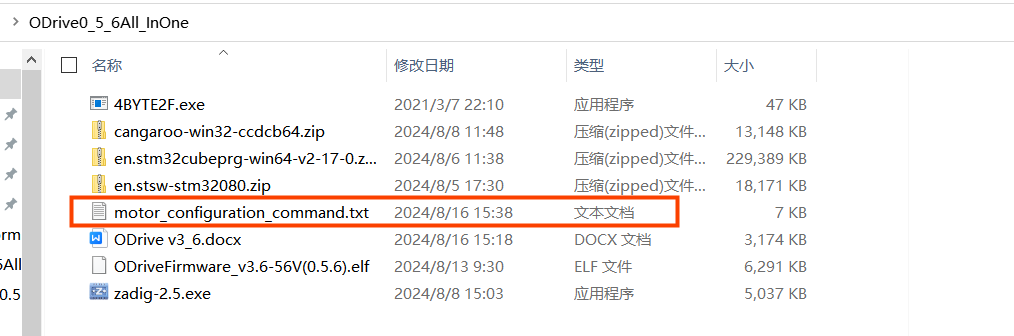
pip install --upgrade odrive





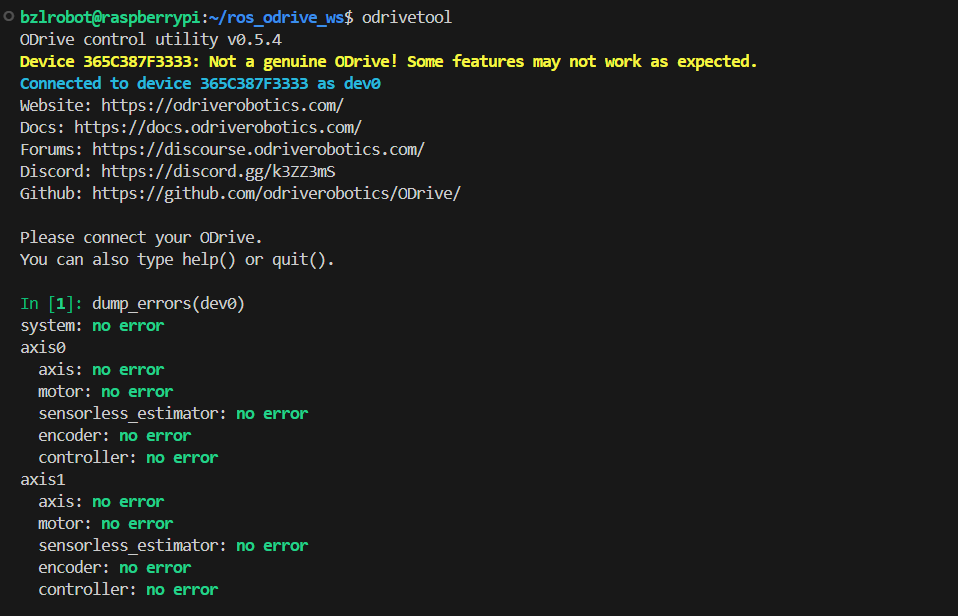
可以直接在json文件里面直接修改参数后再载入配置文件

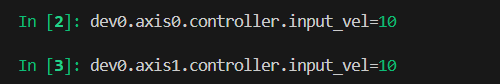
手动配置(比较费时)



一条一条命令发送后保存配置再重启

进入odrivetool测试





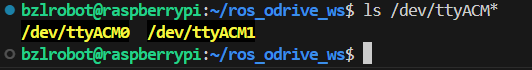
两个电机都会以10转/秒 的速度运转

**CAN的使用**

**树莓派上can0的配置**



先检查一下现有的设备，将CAN的H和L连接到树莓派



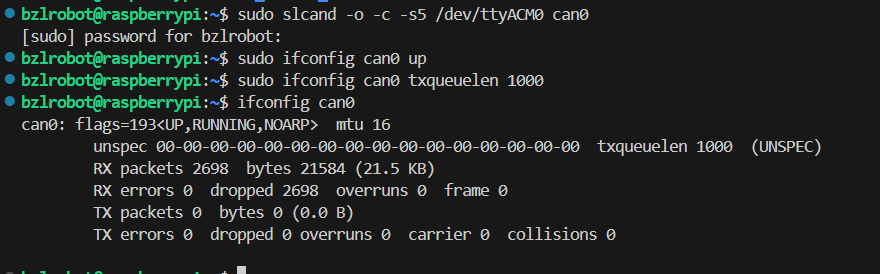
发现多出了个/dev/ttyACM0

输入下面的命令配置can0

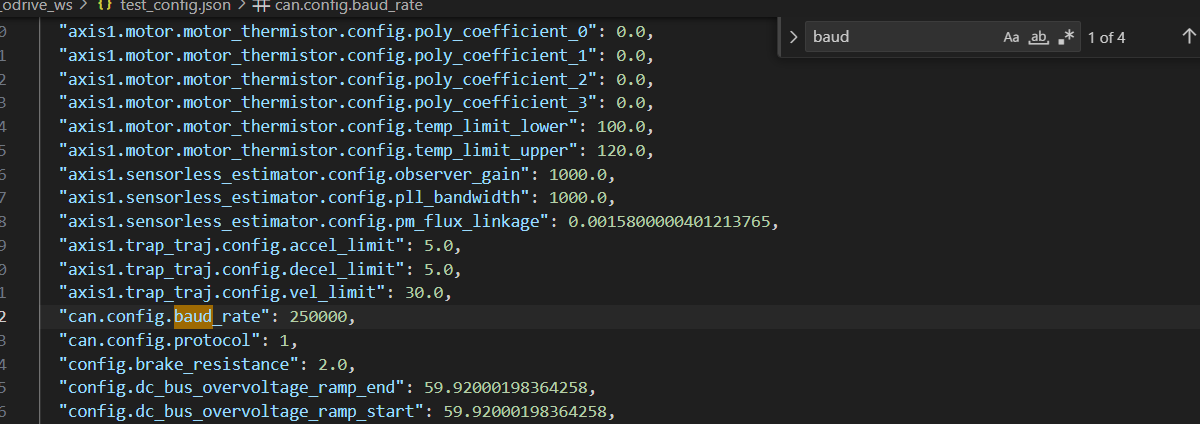
sudo slcand -o -c -s5 /dev/ttyACM0 can0 #s5代表250k baud\_rate

sudo ifconfig can0 up

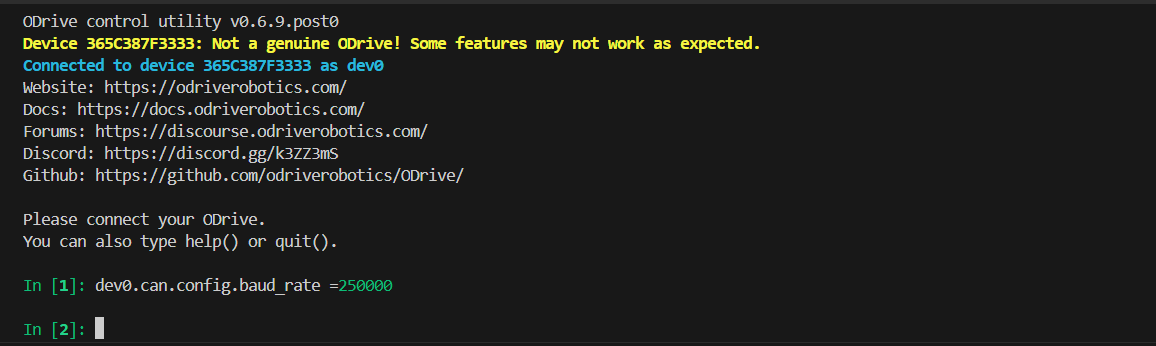
sudo ifconfig can0 txqueuelen 1000



Odrive 配置波特率

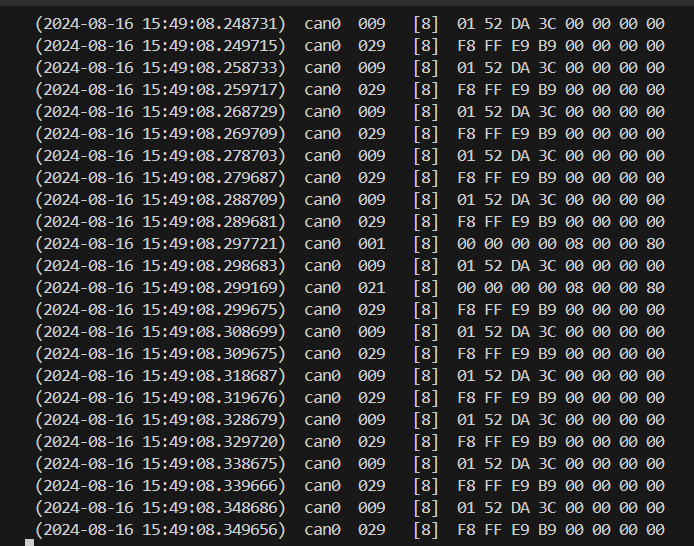


或者

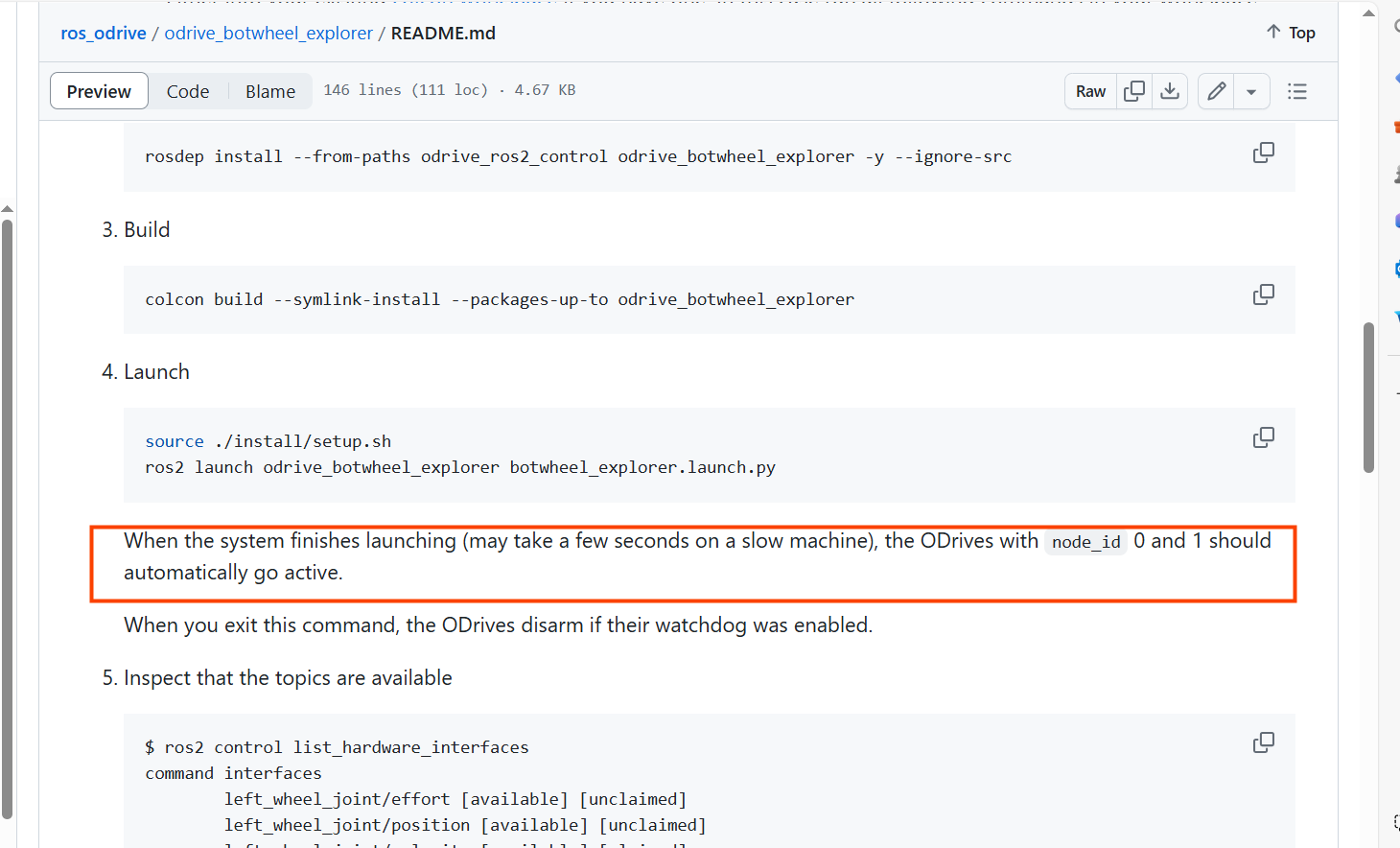


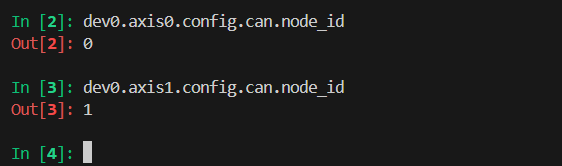
candump -tA can0

收到心跳包代表可以通讯



两个电机的node\_id分别为0和1





编译后运行

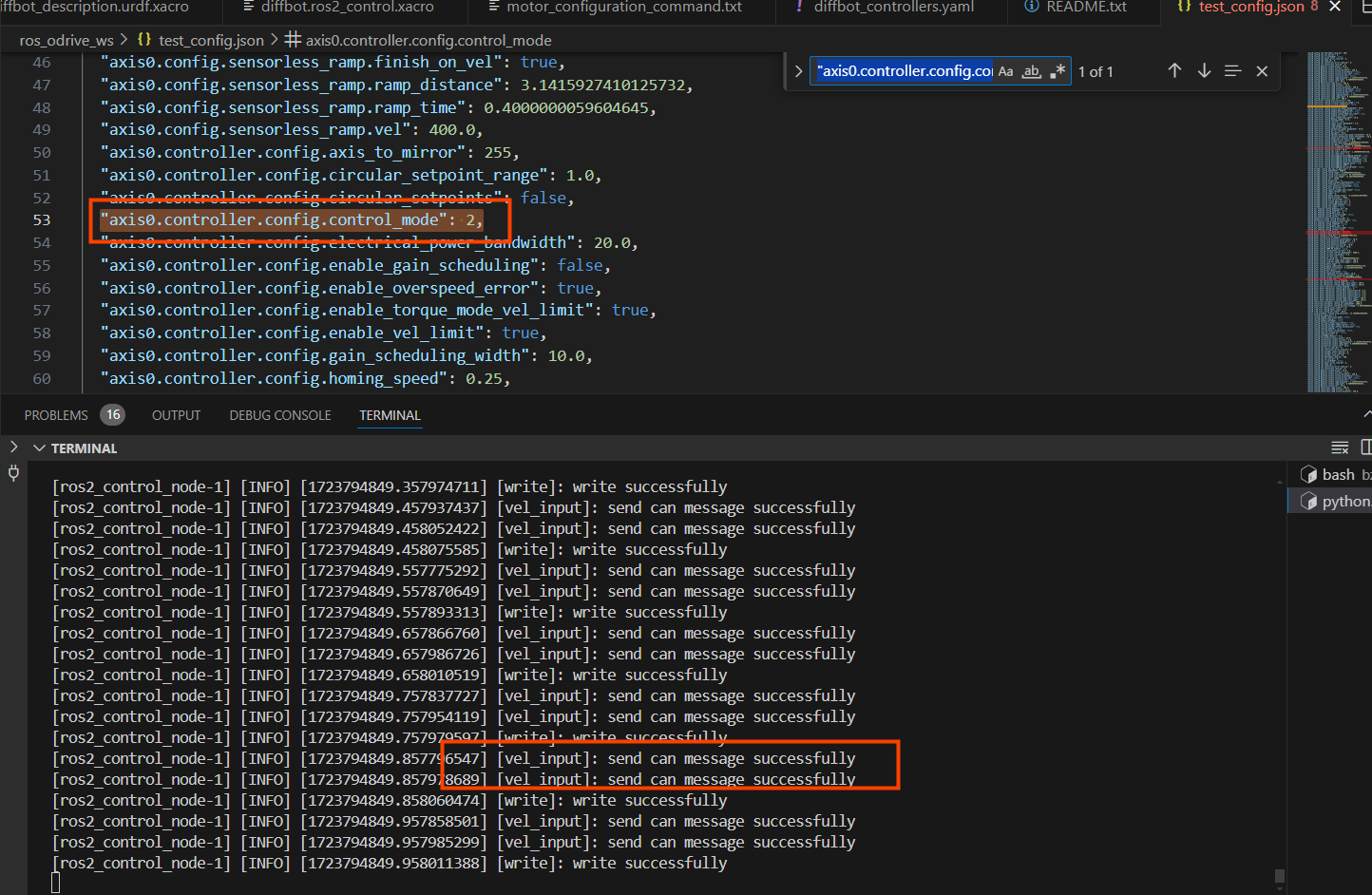
source install/setup.bash

colcon build

ros2 launch odrive\_botwheel\_explorer botwheel\_explorer.launch.py

ros2 run teleop\_twist\_keyboard teleop\_twist\_keyboard --ros-args --params-file ./teleop.yaml

两个电机都配置的是速度模式



运行后键盘遥控后可以控制电机

**参考链接**

<https://docs.odriverobotics.com/v/0.5.6/getting-started.html>

[CAN Bus Guide for ODrive — ODrive Documentation 0.5.6 documentation (odriverobotics.com)](https://docs.odriverobotics.com/v/0.5.6/can-guide.html)

<https://github.com/odriverobotics/ros_odrive/tree/main>

<https://github.com/odriverobotics/ODrive/releases/tag/fw-v0.5.6>

<https://canable.io/getting-started.html>