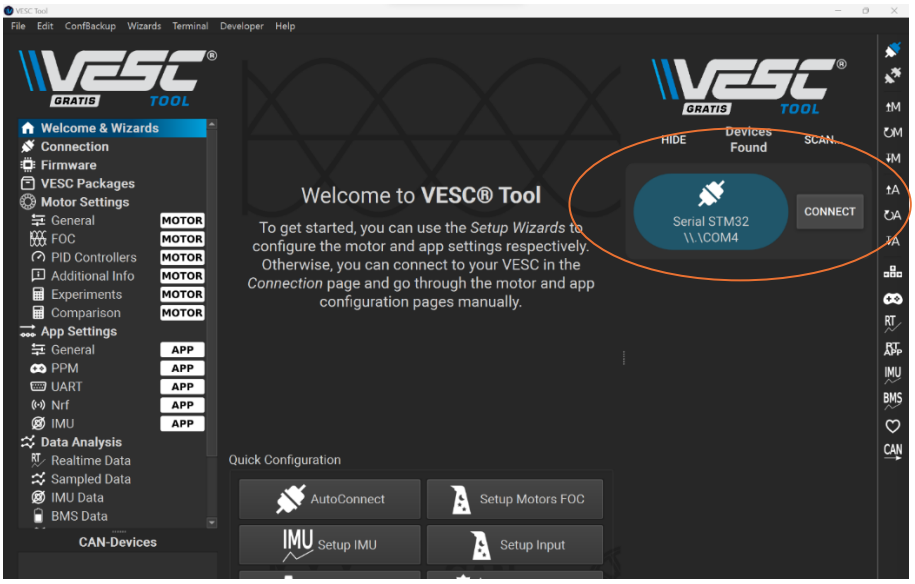
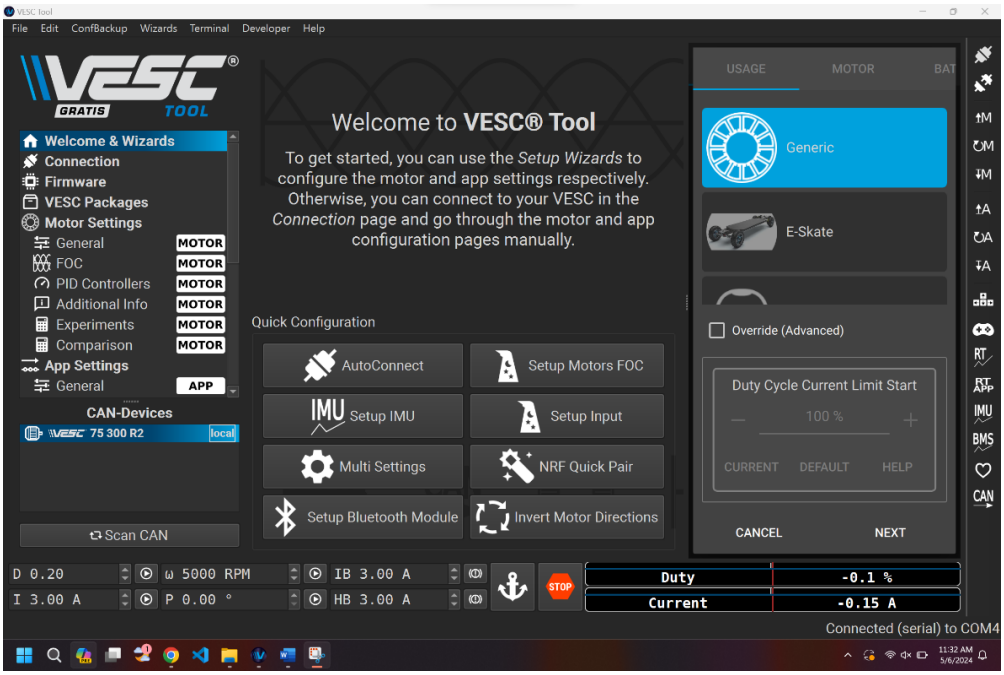
Motor Calibration Configuration

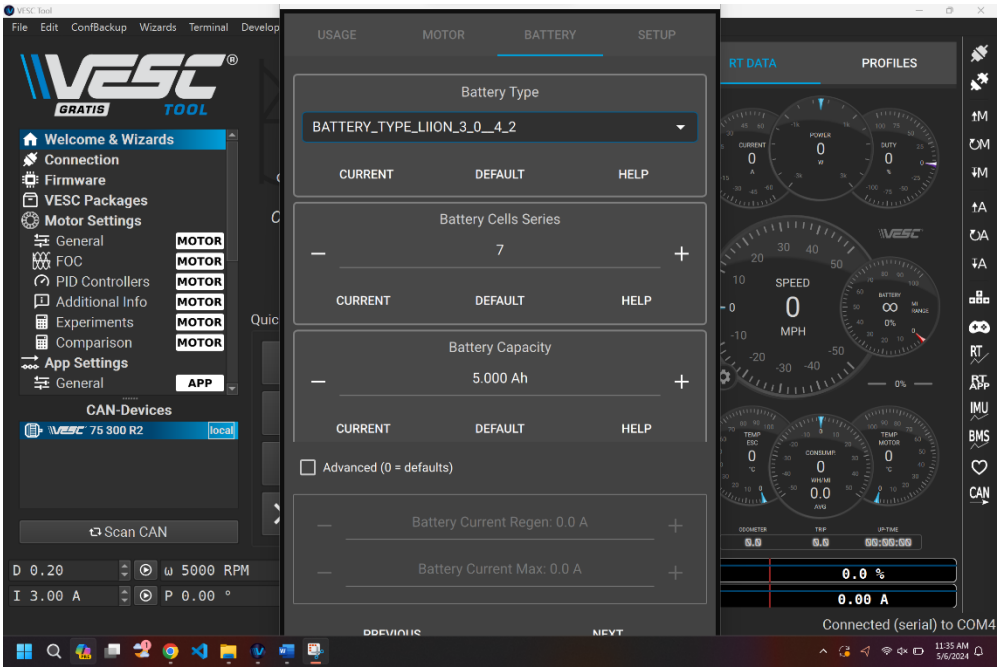
1. Download VESC Tool
    a. https://vesc-project.com/
    b. Create Account and Download free version
2. Open VESC Tool
3. Plug in USB into USB on either of the Electronic Speed Controllers (ESC)
4. VESC tool should show device, click connect.



5. To Calibrate Motor, click Wizards on Toolbar and Select “Setup Motors FOC” or click “Setup Motors FOC” in Quick Configuration
    6. Choose “Generic” for Usage and Click Next. When given a warning, click yes.



7. For Battery,
    a. use “BATTERY_TYPE_LIION_3_0__4_2”
    b. Enter amount of battery series, should say on the battery itself. Ours is 7 Cells
    c. For Battery Capacity, put 5.000 Ah

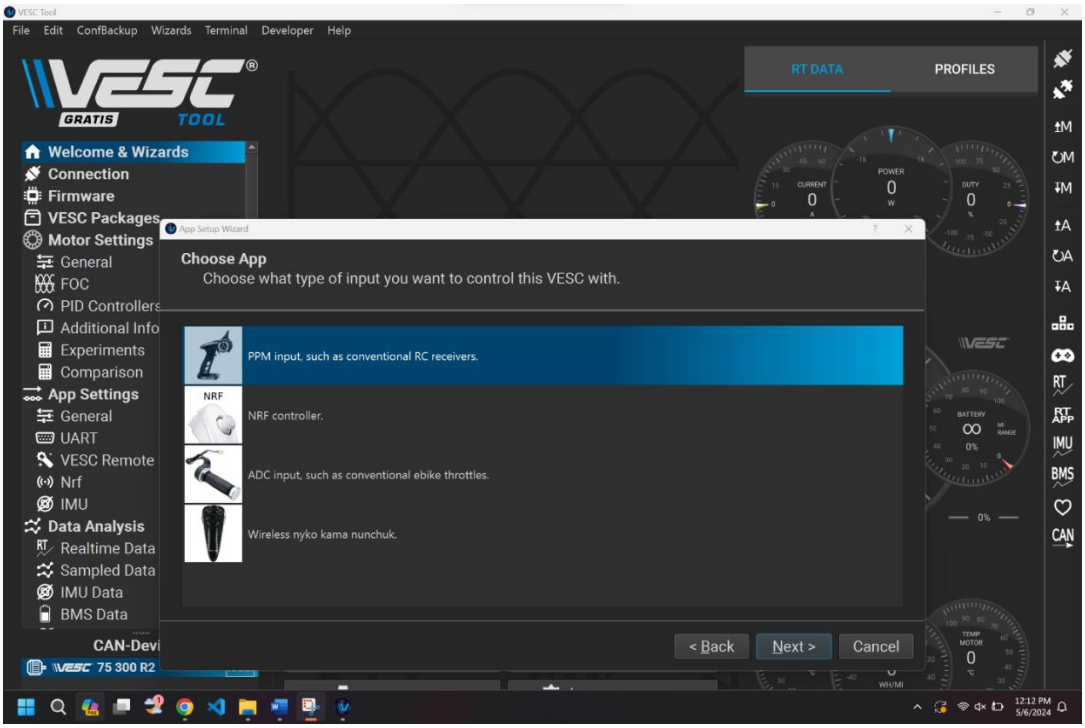


8. For Setup,
    a. Motor Pulley: 11
    b. Wheel Pulley: 55
    c. Wheel Diameter: 330mm
    d. Motor Poles: 14
9. Finally Click Run Detection (The motor will spin and make weird noises; however, this is completely normal)

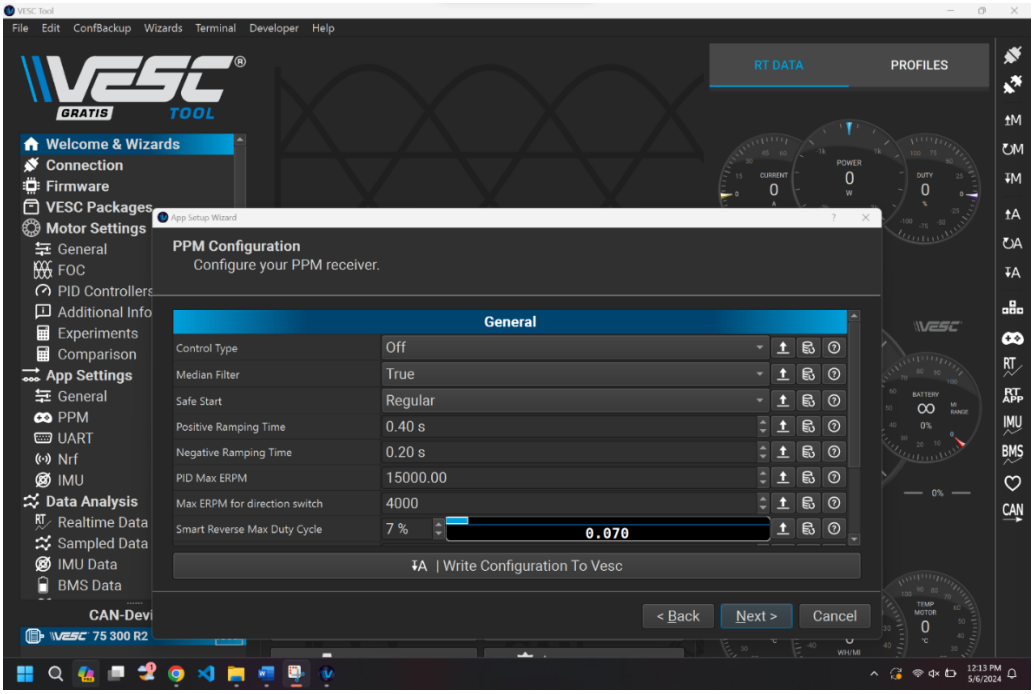
Switch USB to other motor and repeat steps.

Motor Input Configuration

1. Once Motor is configured for voltage and current, click “Setup Input” Wizard
2. Select PPM and click Next.



3. Before running anything click Next and set Control Type to Off, then click “Write Configuration to Vesc”.



4. Now go back and check “Use Centered Control”.
    a. Then from the Raspberry Pi, run these commands:

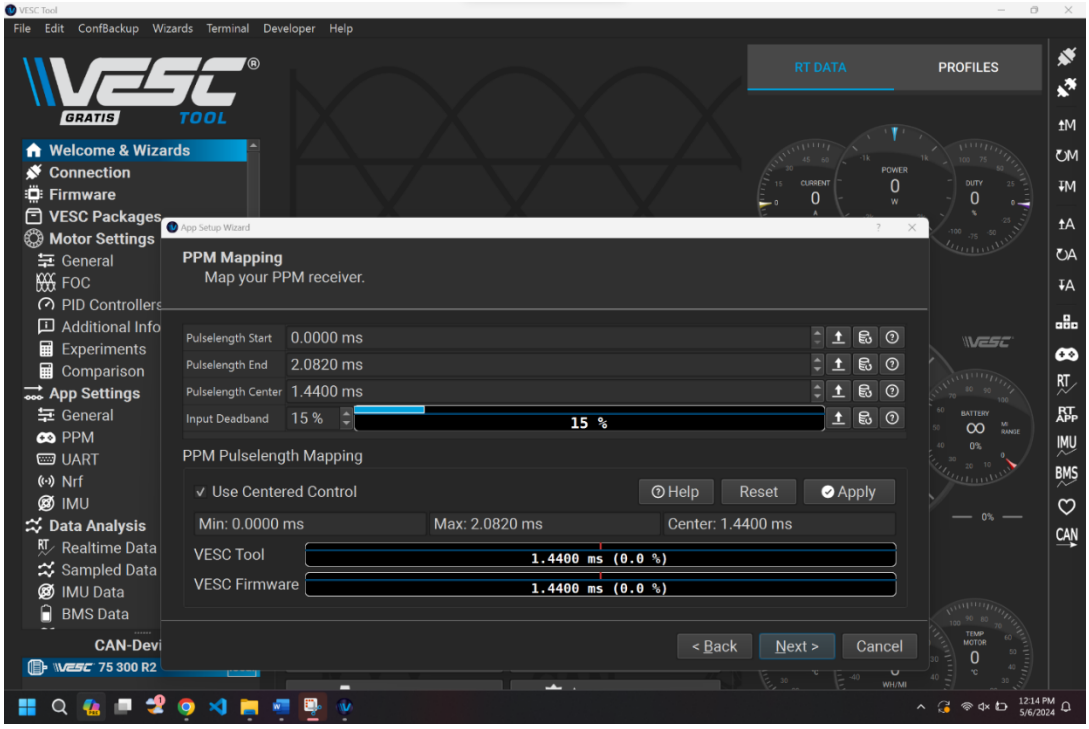
        ./servo <Servo Number> 90

        ./servo <Servo Number> 150

        ./servo <Servo Number> 30

        ./servo <Servo Number> 90

    b. For servo number, the left motor is 1 and right motor is 0
    c. Once the min, max and center are populated in PPM Pulselength Mapping, click apply.



5. Finally, click next and use PID for Control Type, then click “Write Configuration to Vesc”.
6. Then, switch USB to other motor and enter the values from the first motor into Pulselength Start, End and Center to make sure they spin at the same speed for input.

That should complete the setup of the motors for both calibration and setup