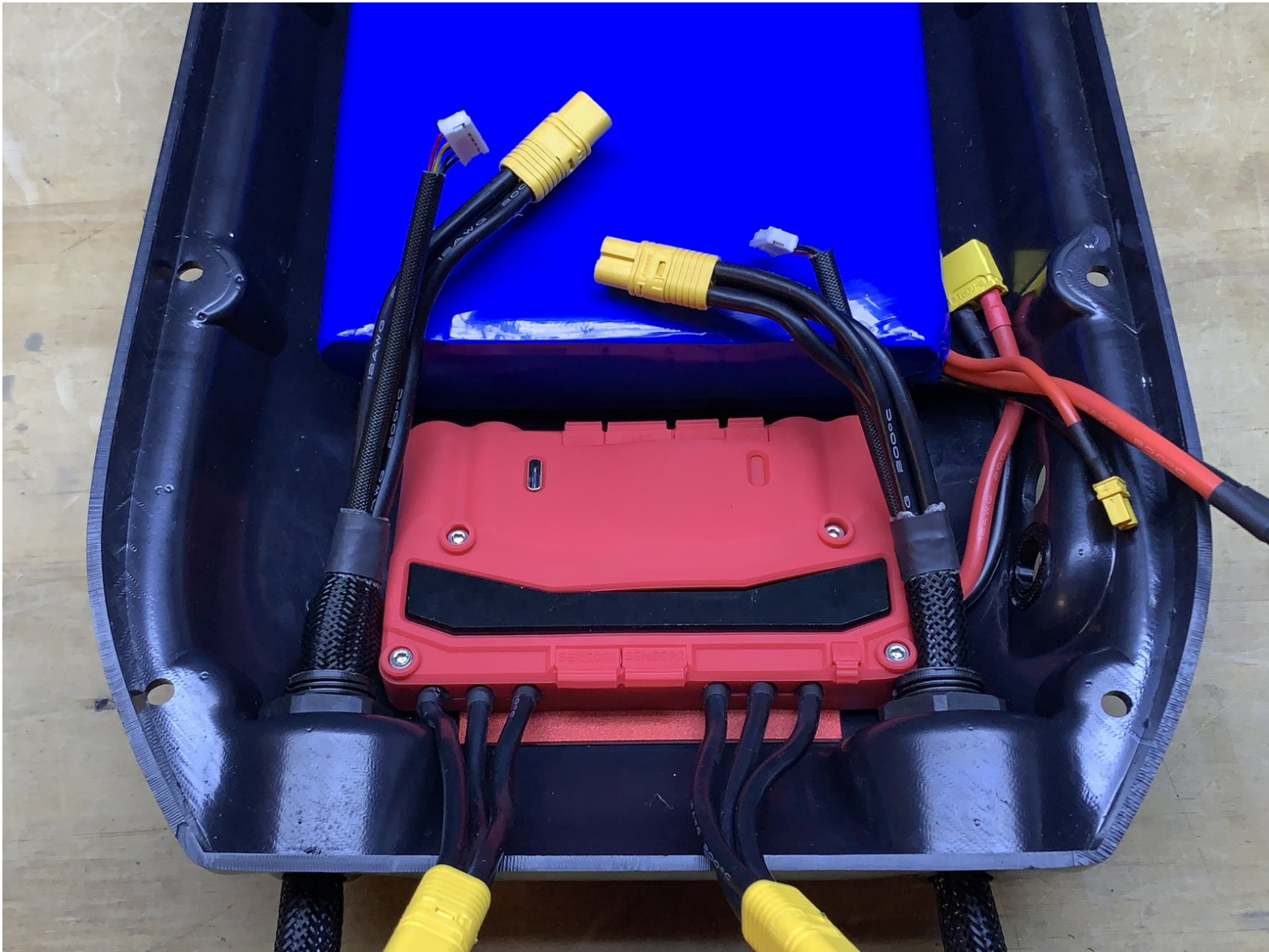


buildkitboards

How to Install the Xenith on the BKB Duo

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Written By: Jared Ebersole





TOOLS:

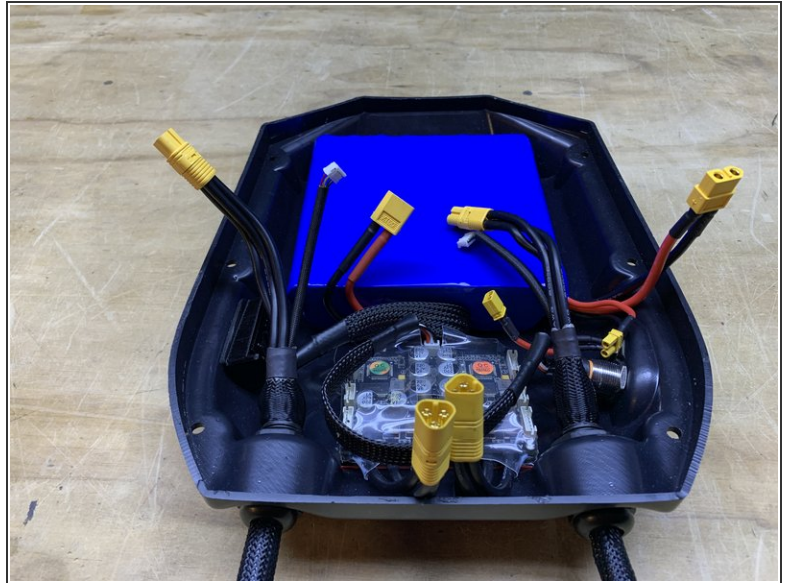
- [M2 Allen Wrench](#) (1)
- [M2.5 Allen Wrench](#) (1)
- [Hot Glue](#) (1)
- [Computer with an available USB-A connector](#) (1)



PARTS:

- [BKB Xenith](#) (1)
- [USB C Cable](#) (1)

Step 1 — How to Install the Xenith on the BKB Duo



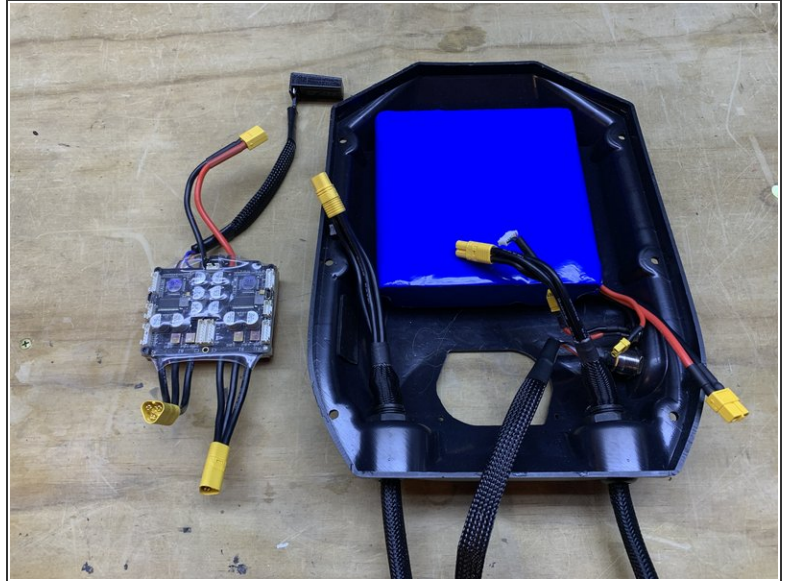
- Remove the enclosure from the deck and set aside the mounting hardware
- Unplug the motors, battery, and charge port

Step 2



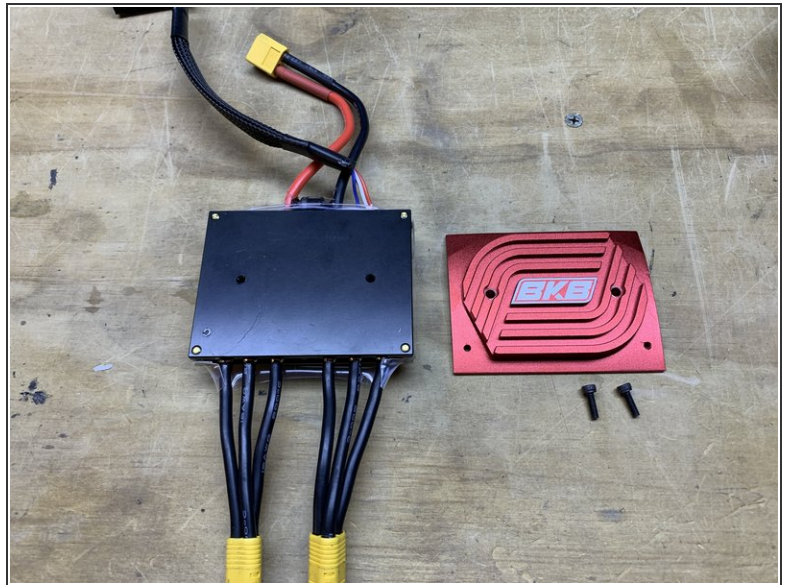
- Flip the enclosure over and remove the two M3 bolts securing the heatsink to the enclosure

Step 3



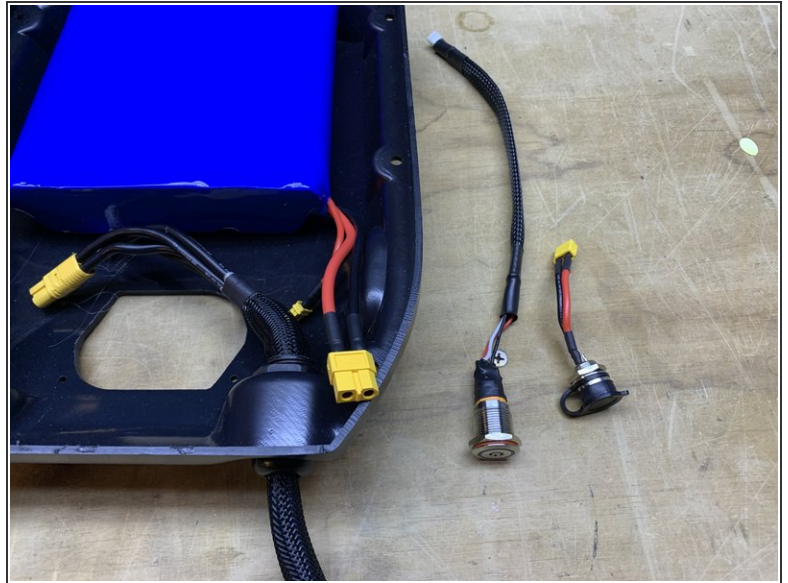
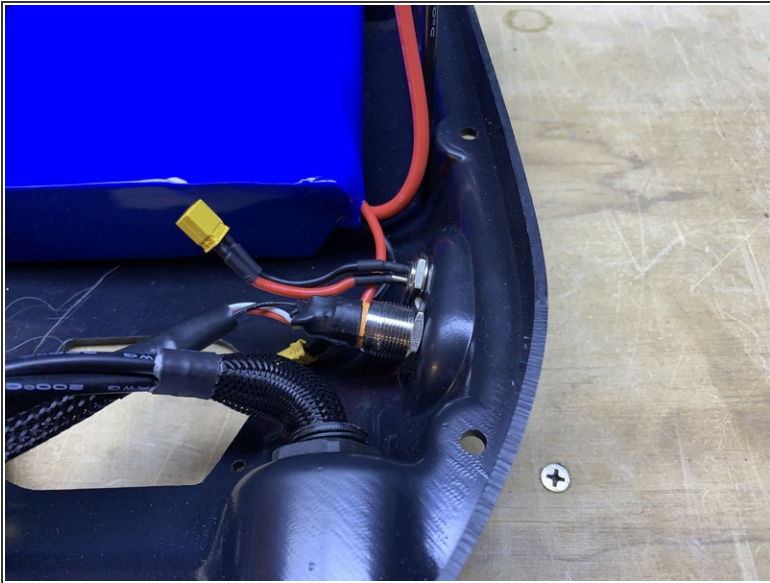
- Unplug the switch from the VESC
- Remove the VESC from the enclosure

Step 4



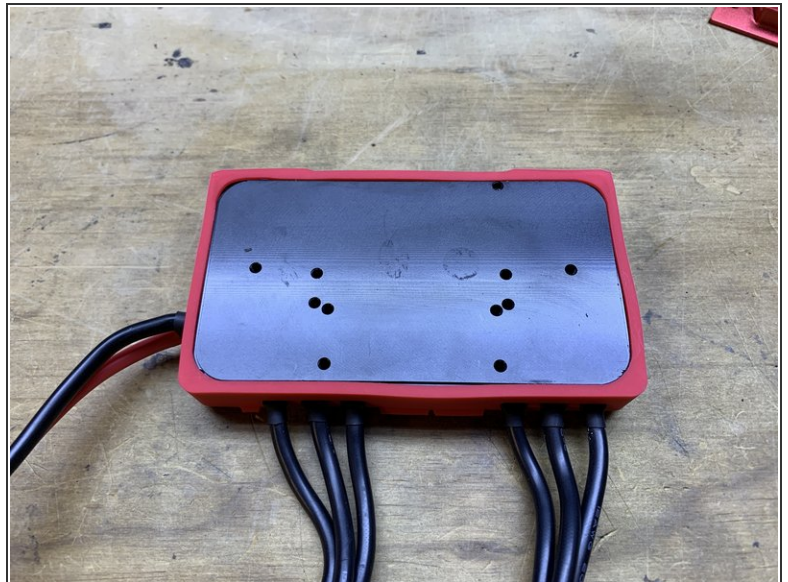
- Remove the two M3 bolts securing the heatsink to the VESC
- Remove the heatsink

Step 5



- Remove the charge port and switch from the enclosure

Step 6



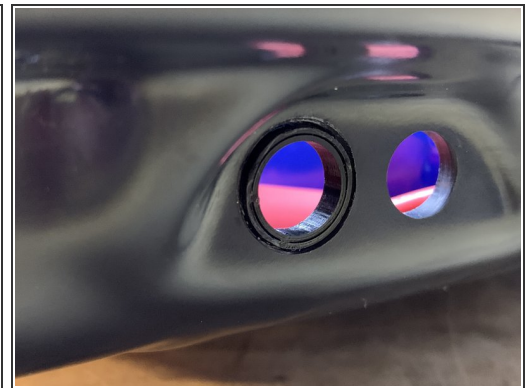
- You will now need to secure the heatsink to the Xenith. You will use the two holes circled in green
- Remove any stickers from the bottom of the Xenith

Step 7



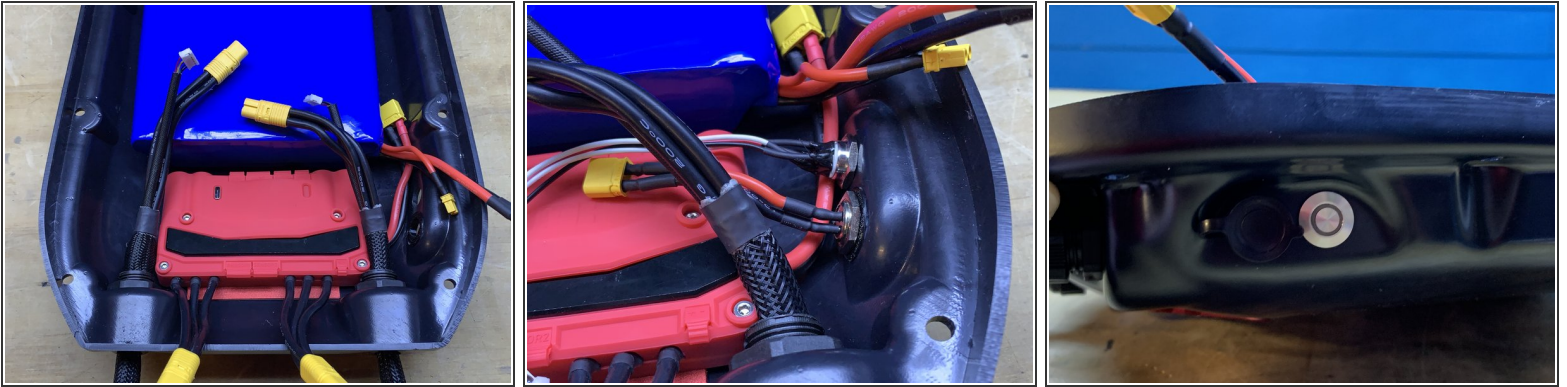
- Secure the Xenith to the heatsink with the bolts you just removed (be sure to place the bolts in the threaded holes circled in green, previous step)
- Secure the Xenith and heatsink to the enclosure using the bolts you remove prior.

Step 8



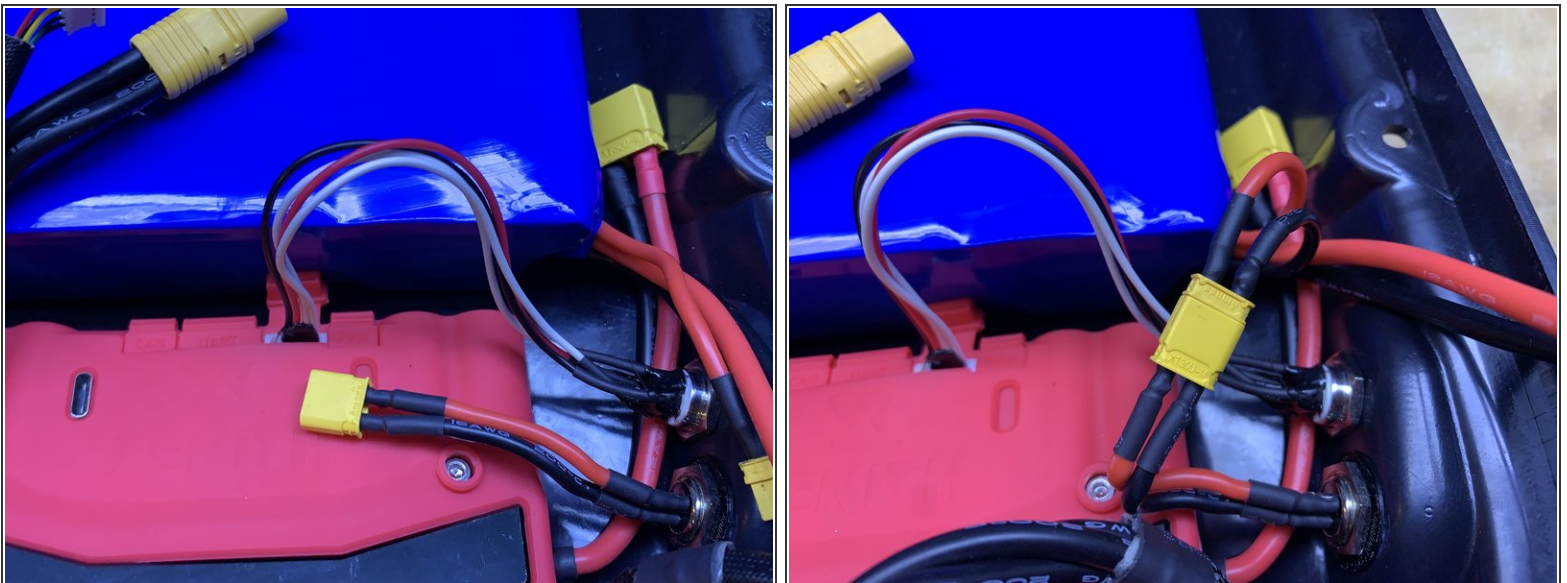
- Since the switch on the Xenith is smaller, you will need an enclosure spacer to fill in the gaps. Please email use after placing your order so we can include one free of charge.
- ❗ If you already have your Xenith and didn't receive one, you can download the STL and 3d print it yourself (file is at the bottom of this guide). If you do not have a printer we will send one if you cover the shipping.
- Place adhesive (superglue) on the outer rim of the spacer. Then press it into the enclosure with the rim inwards.

Step 9



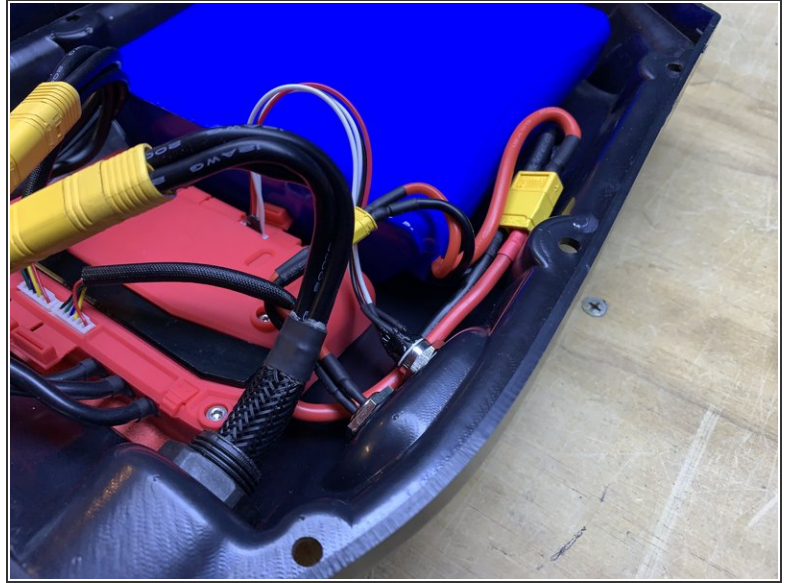
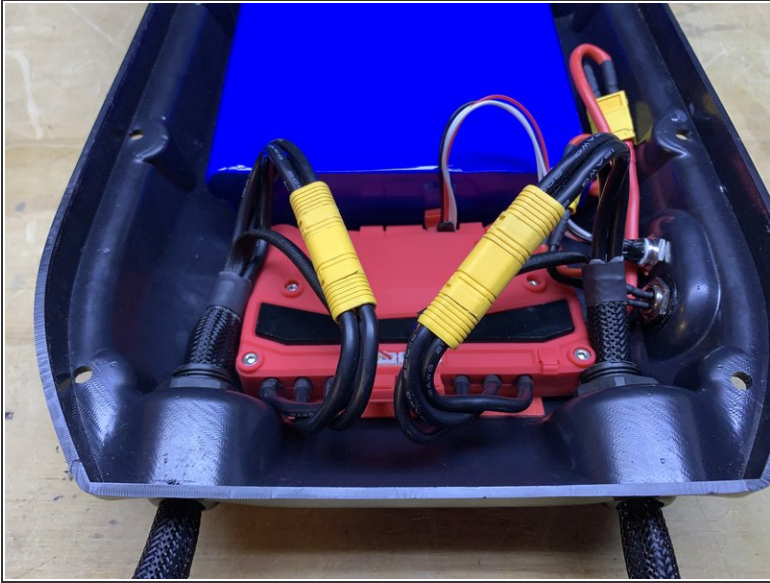
- Install the charge port and switch onto the enclosure
- ① The switch and charge port have now swapped positions

Step 10



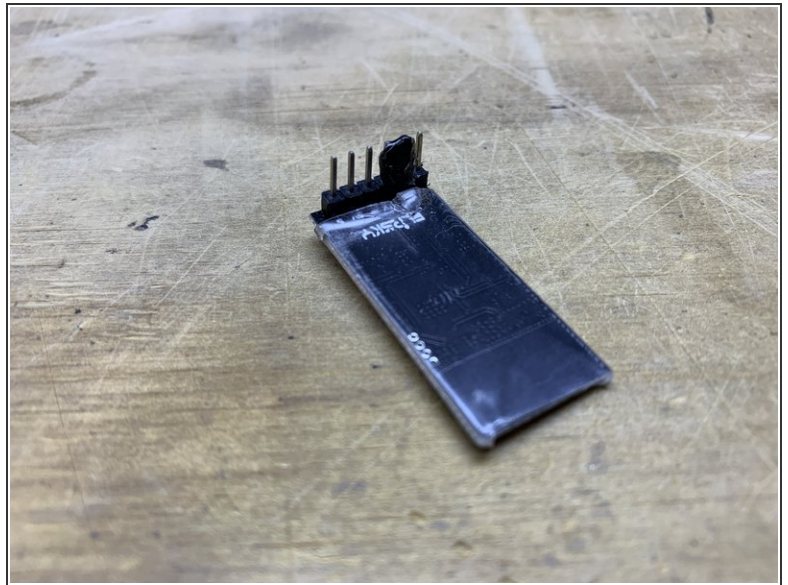
- Plug the switch into the Xenith
- Reconnect the charge port

Step 11



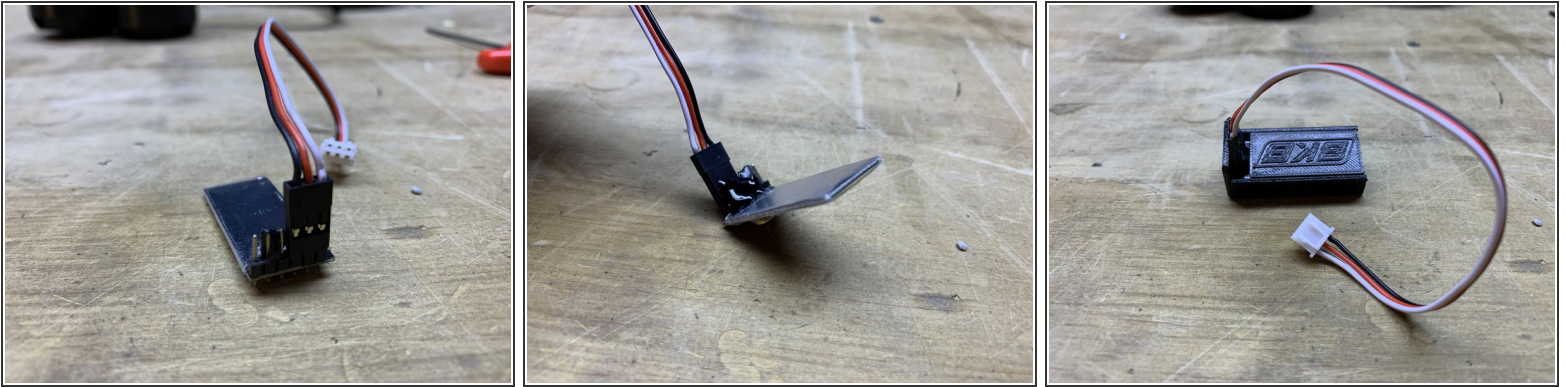
- Plug in the yellow motor connectors and sensor wires.
- Plug in the power cable as shown

Step 12



- Now it is time to transfer the receiver. The lid slides off of the 3d printed housing
- Carefully remove the black glue, and then remove the 3pin connector

Step 13



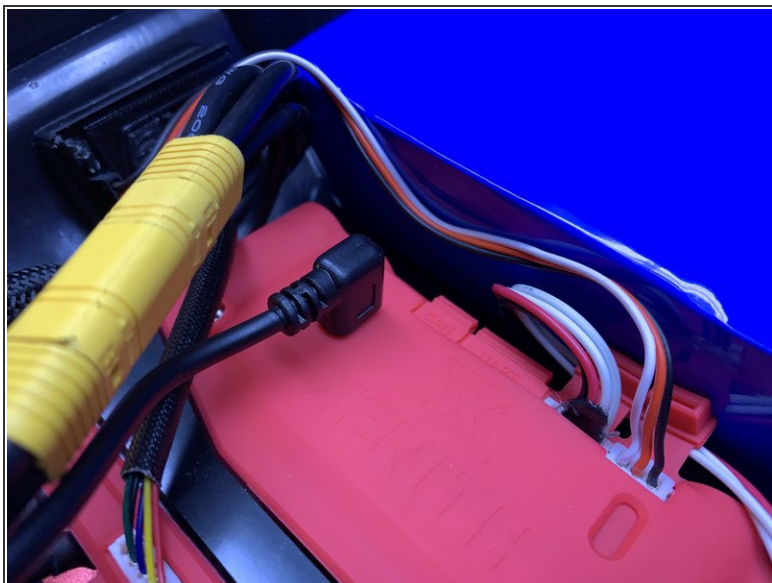
- Attach the connector provided with the Xenith to the receiver as shown
- Secure it with some kind of adhesive/glue
- Slide the lid back onto the case

Step 14



- Plug the receiver into the Xenith and place it in the enclosure

Step 15



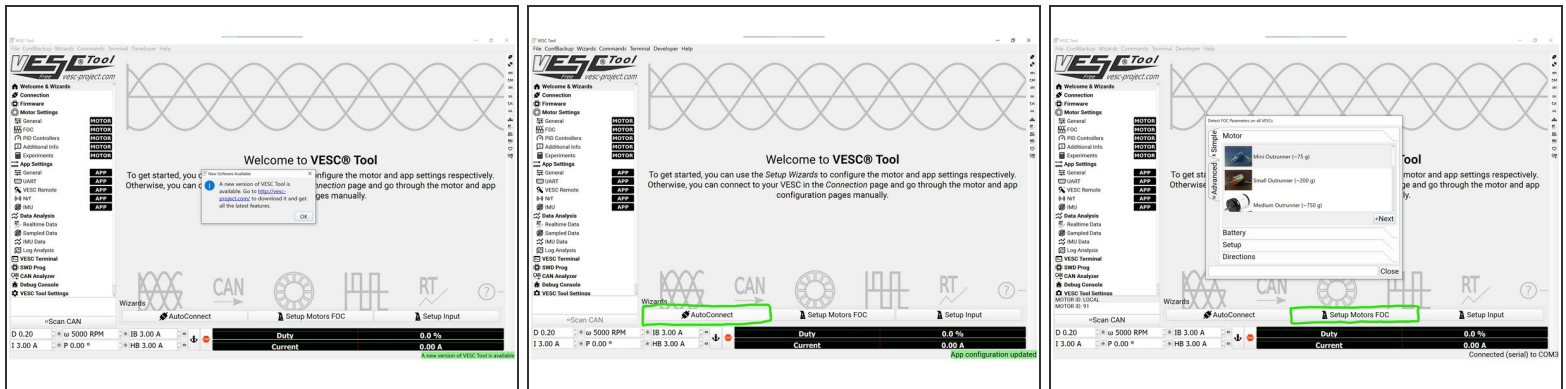
- Now its time to program the Xenith!
- Plug the USBC cable into the Xenith (it may require some force to snap-in, be careful!!)
- Plug the other end of the cable into your computer and turn the switch on

Step 16



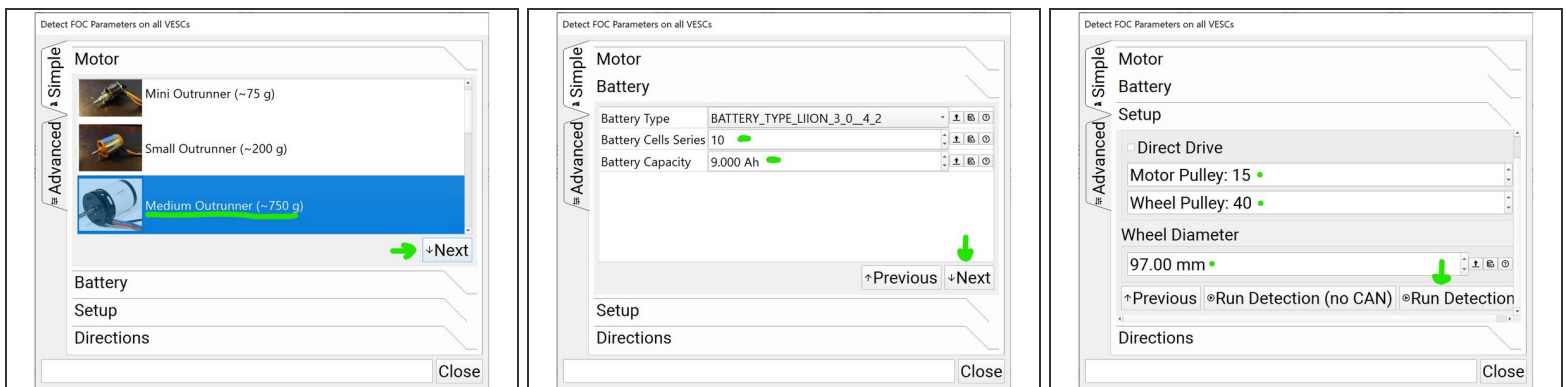
- Download the VESC Tool from [this link](#)
 - Click the download button in the upper right hand corner.
 - Once the file is downloaded, navigate to your downloads folder and unzip the compressed file VESC Tool 2.06.zip
 - Open the folder and double click vesc_tool_2.06
- If you get a blue security popup click more info, Run Anyway

Step 17



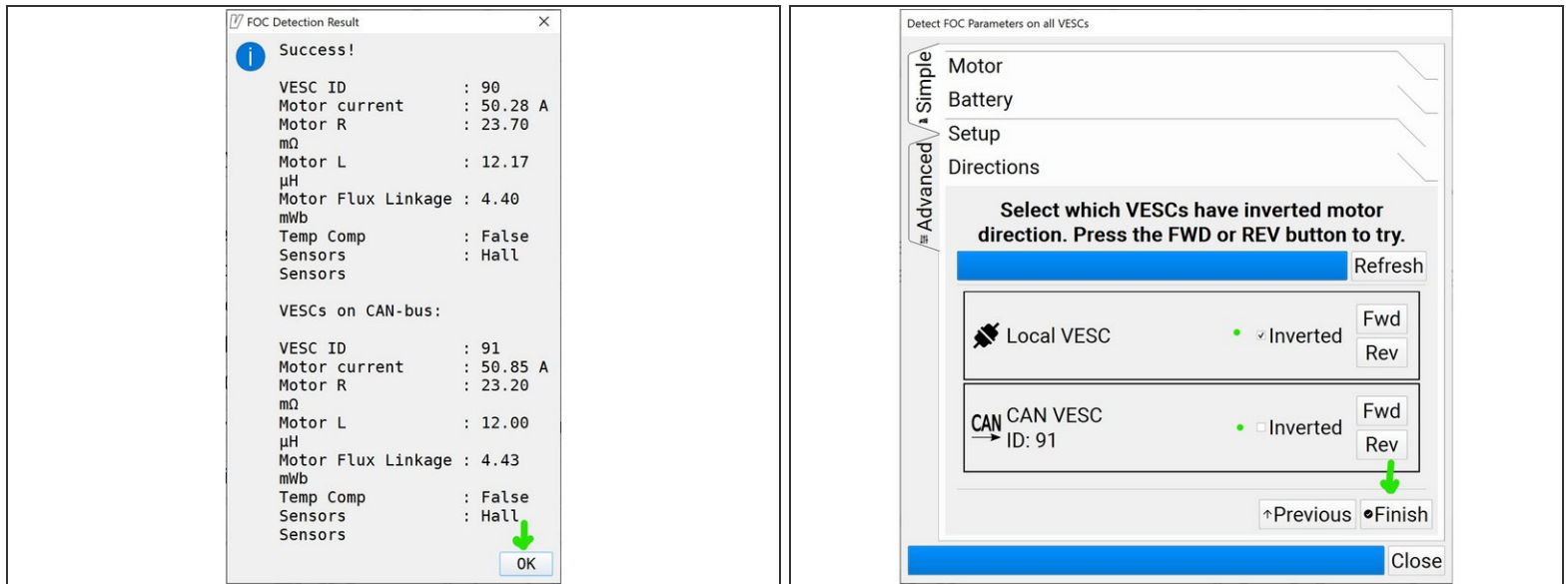
- Once the VESC Tool is open you should get a popup saying that there is a new version available. Ignore this and click OK
- Click the AutoConnect button at the bottom of the screen. The VESC Tool should say Connected COM# in the bottom right
- Click Setup Motors FOC at the bottom of the screen

Step 18



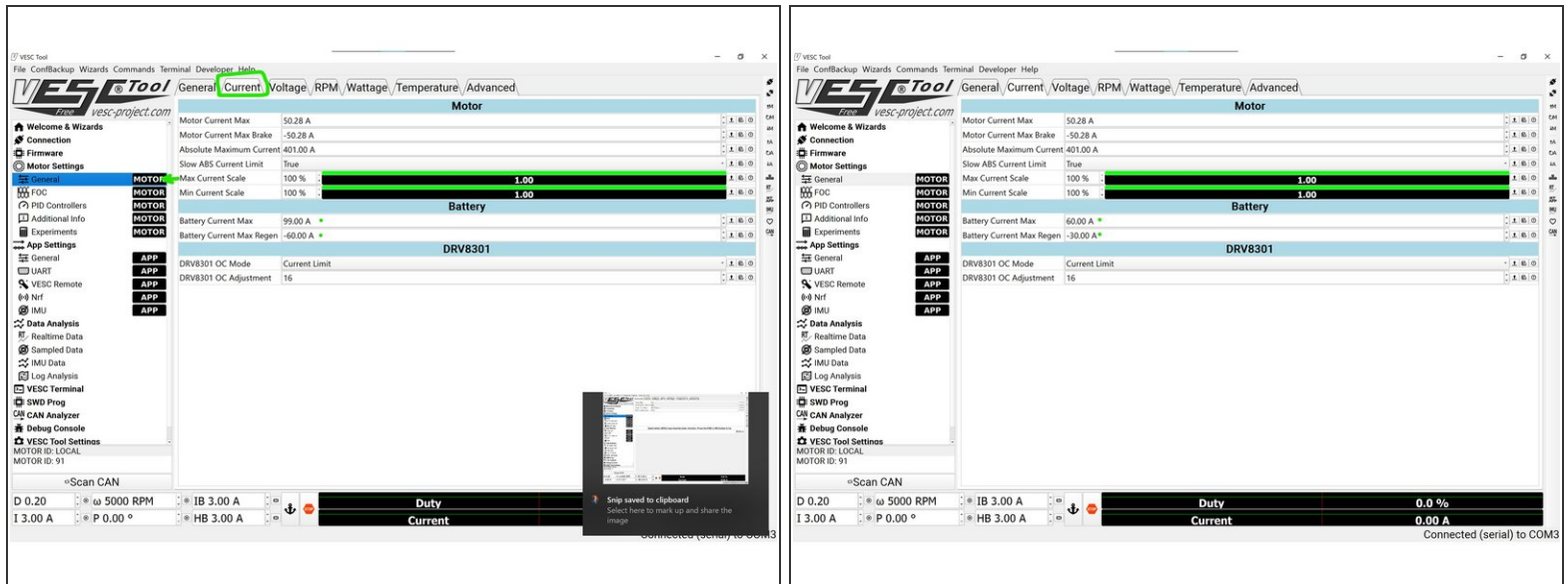
- Select Medium Outrunner and then click next
- Change the battery cells series value to 10 and the capacity to 9.00Ah. Click next
- Change the motor pulley value to 15, wheel pulley to 40, and wheel diameter to 97 (if you have the speed upgrade, 48t pulley, or other wheels these values should be different). Then click run detection.

Step 19



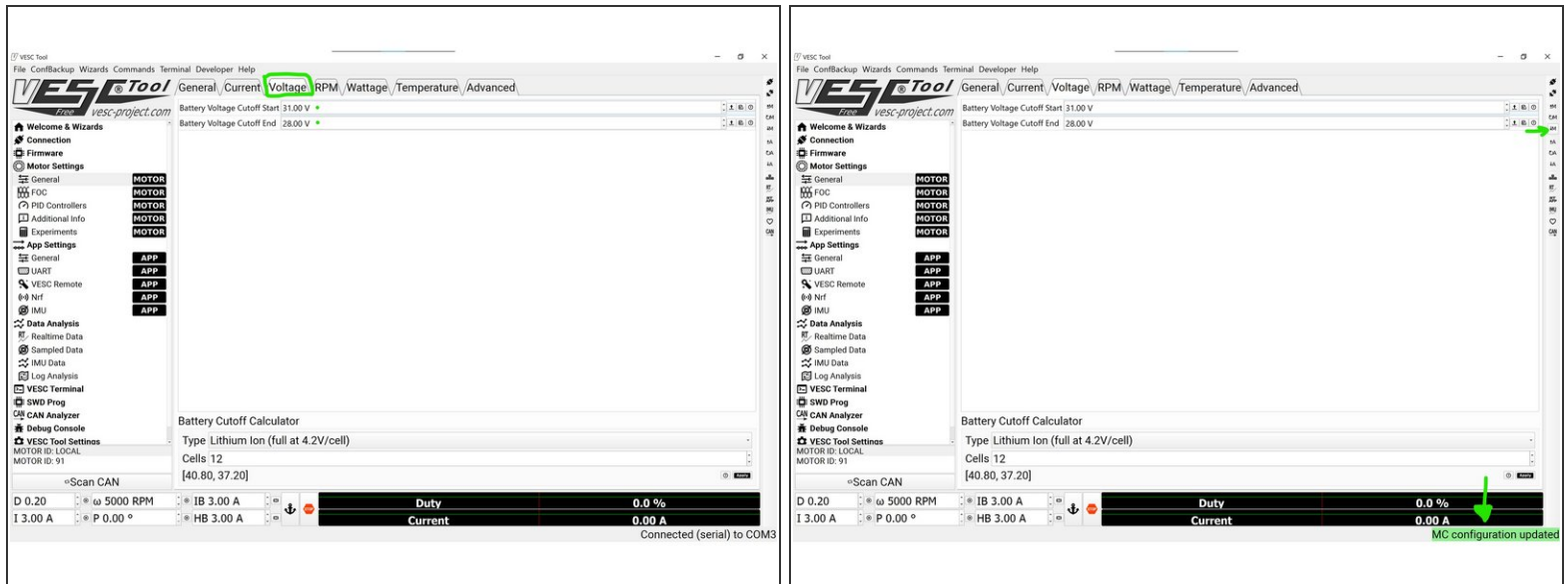
- You will then get a popup saying that the motors will spin and to make sure everything is clear. Verify that nothing will get caught by the wheels spinning, and then click ok.
- When the motor detection is completed you will get a popup similar to this (your values will be slightly different). Click ok
- Now its time to select the motor direction. You can click FWD on each motor to spin it in the forward direction. To determine which direction is correct place your finger on top of the motor with light force. Then click the FWD button and see what way the motor takes your finger.
 - If it drags your finger in towards the truck, it is spinning in the proper direction.
 - If it drags your finger out towards the enclosure it is spinning in the wrong direction. Select the inverted box next to the FWD button and repeat the process. It should now drag your finger in towards the trucks.
 - Repeat this process for LOCAL VESC motor and CAN VESC motor. Both motors should spin in towards the truck
- Then click finish

Step 20



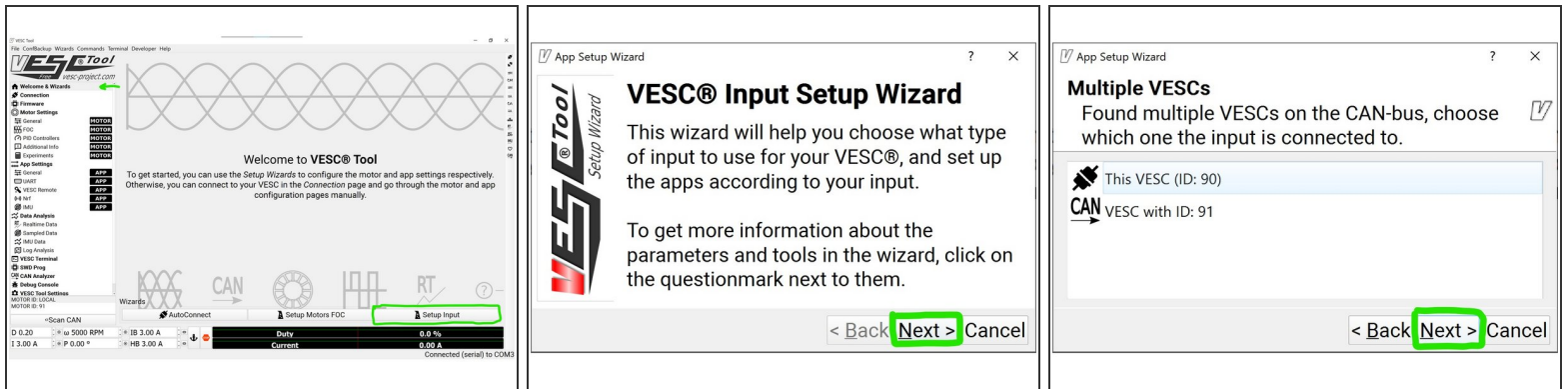
- Then select general under motor settings. Navigate to the current tab at the top.
- Change the Battery Current Max value from 99.00 A to 60.00 A
- Change the Battery Current Max Regen value from -60.00 A to -30.00 A

Step 21



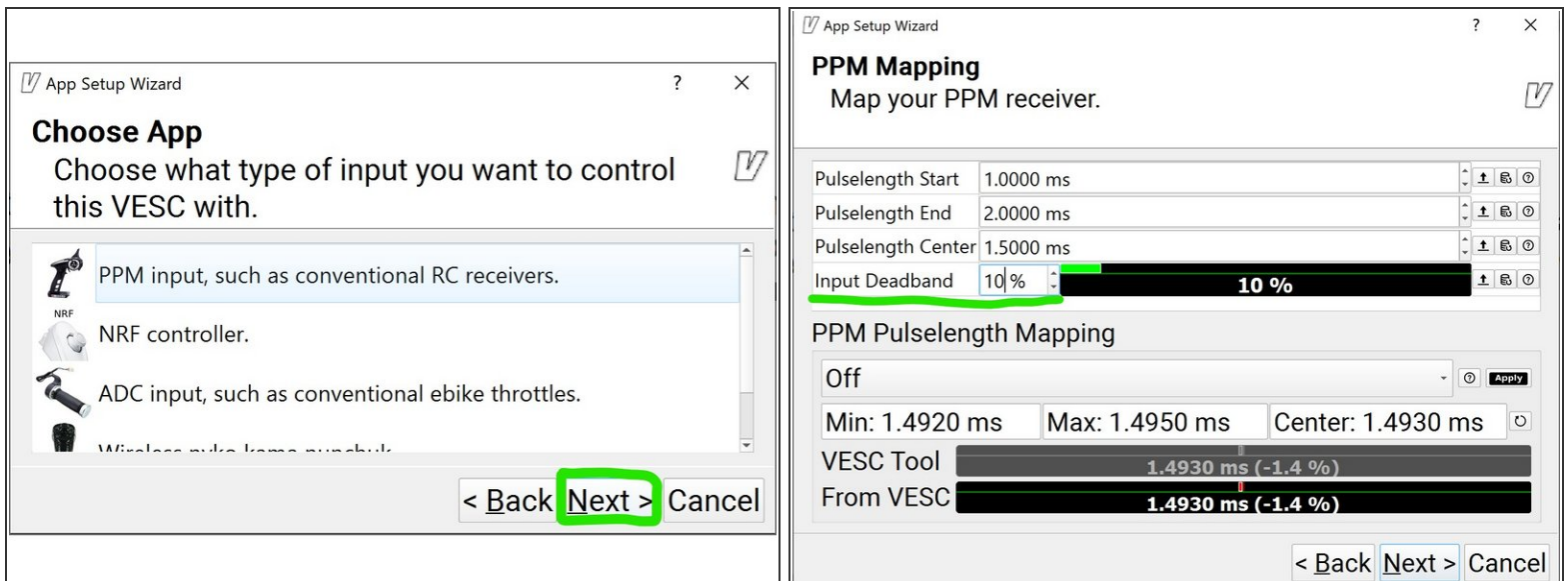
- Then navigate to the Voltage tab at the top of the screen
- Change the Battery Voltage Cutoff Start value to 31.00 V
- Change the Battery Voltage Cutoff End value to 28.00V
- Click the **downward M arrow** on the right side of the screen
- At the bottom right of the VESC tool it will say MC Configuration Updated

Step 22



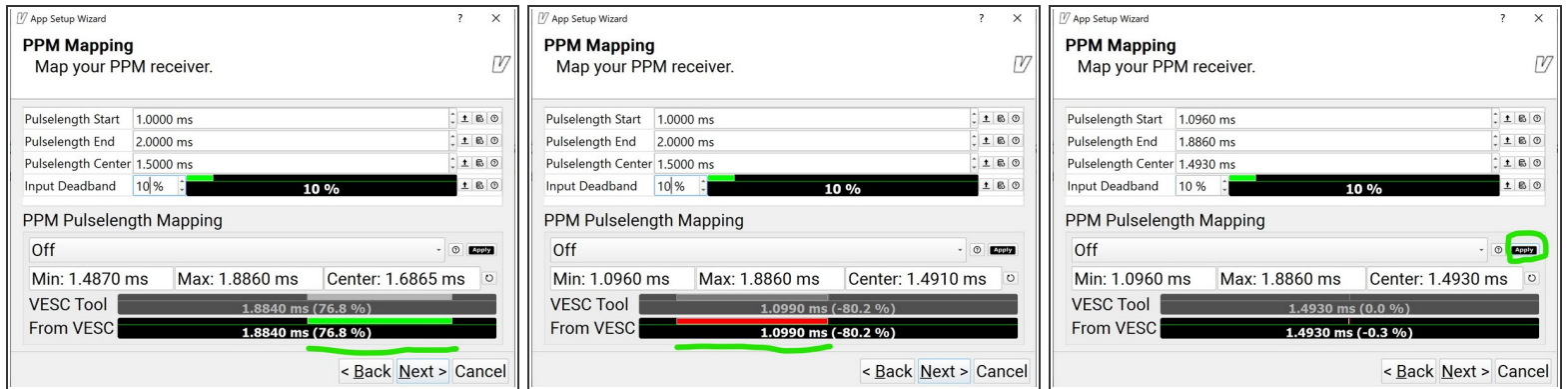
- Navigate to the welcome and wizards tab
- Select Setup Input
- Click Next
- Click Next

Step 23



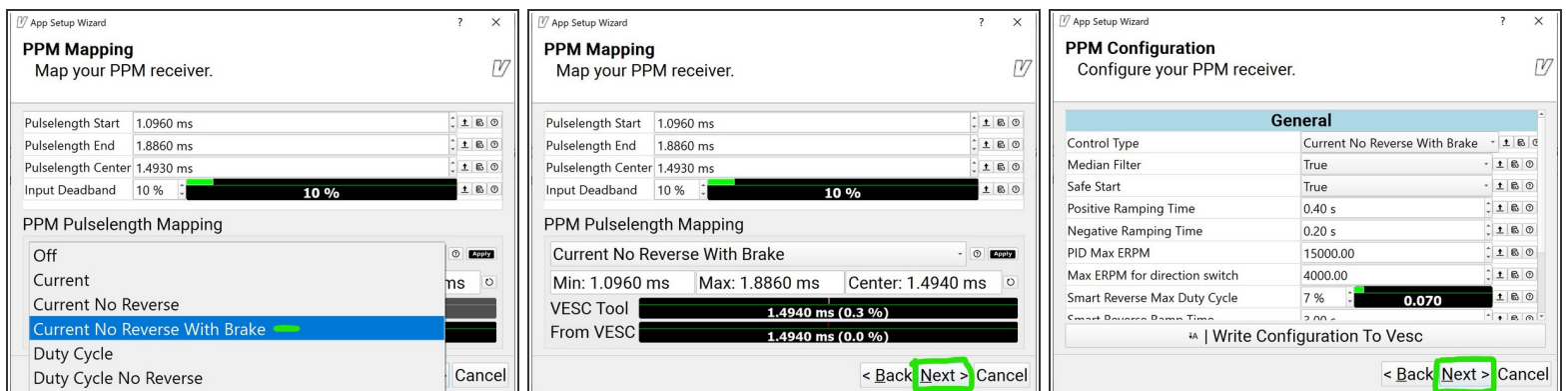
- Make sure PPM input is selected and then click Next
- Change the input deadband value from 15% to 10%

Step 24



- Now turn the remote on and apply full throttle on the remote
- You should see the bottom bar fill with green
- Then apply full brake on the remote. You should see the bottom bar fill with red
- Repeat this by applying full throttle and full brake one more time
- Then select apply

Step 25



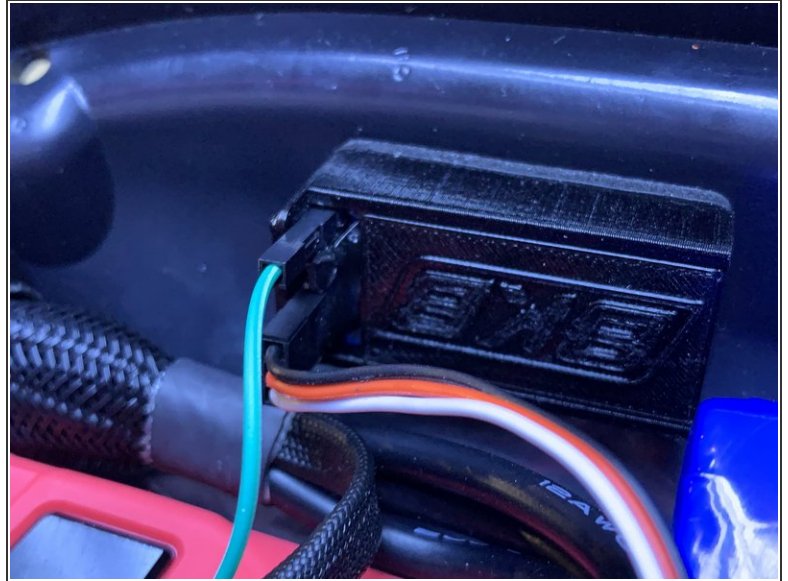
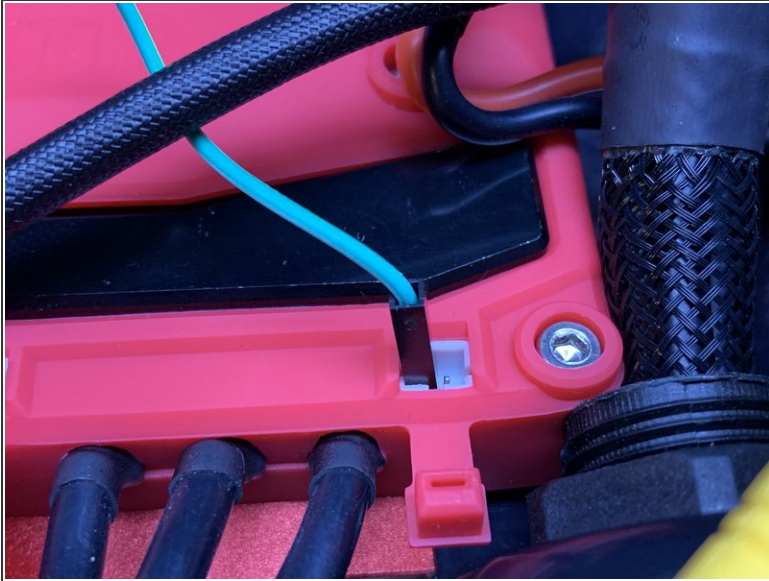
- From the drop-down select Current No Reverse With Brake
- Click Next
- Click Next

Step 26



- That's it! The Xenith is now programmed! You can unplug the USB cable and test the throttle. If something does not work, please re do the programming steps and follow them exactly.

Step 27



- As it stands now, the remote indication will not work on the remote. This is because there is no voltage wire. So the light will continually blink.
- We are working on an adaptor cable to ensure the battery indication works (timeline TBD for availability).
- In the mean time, you can use an Arduino jumper wire to connect the + voltage from the Xenith to the outer most pin on the receiver. This will allow the battery indication to work.

⚠ If you do this MAKE SURE to secure the wire!! Use some kind of hot glue or adhesive to make sure the wire does not come out of the Xenith OR the receiver