Scout Software & Motor Rotation

105mm – Micro –Racing Drone

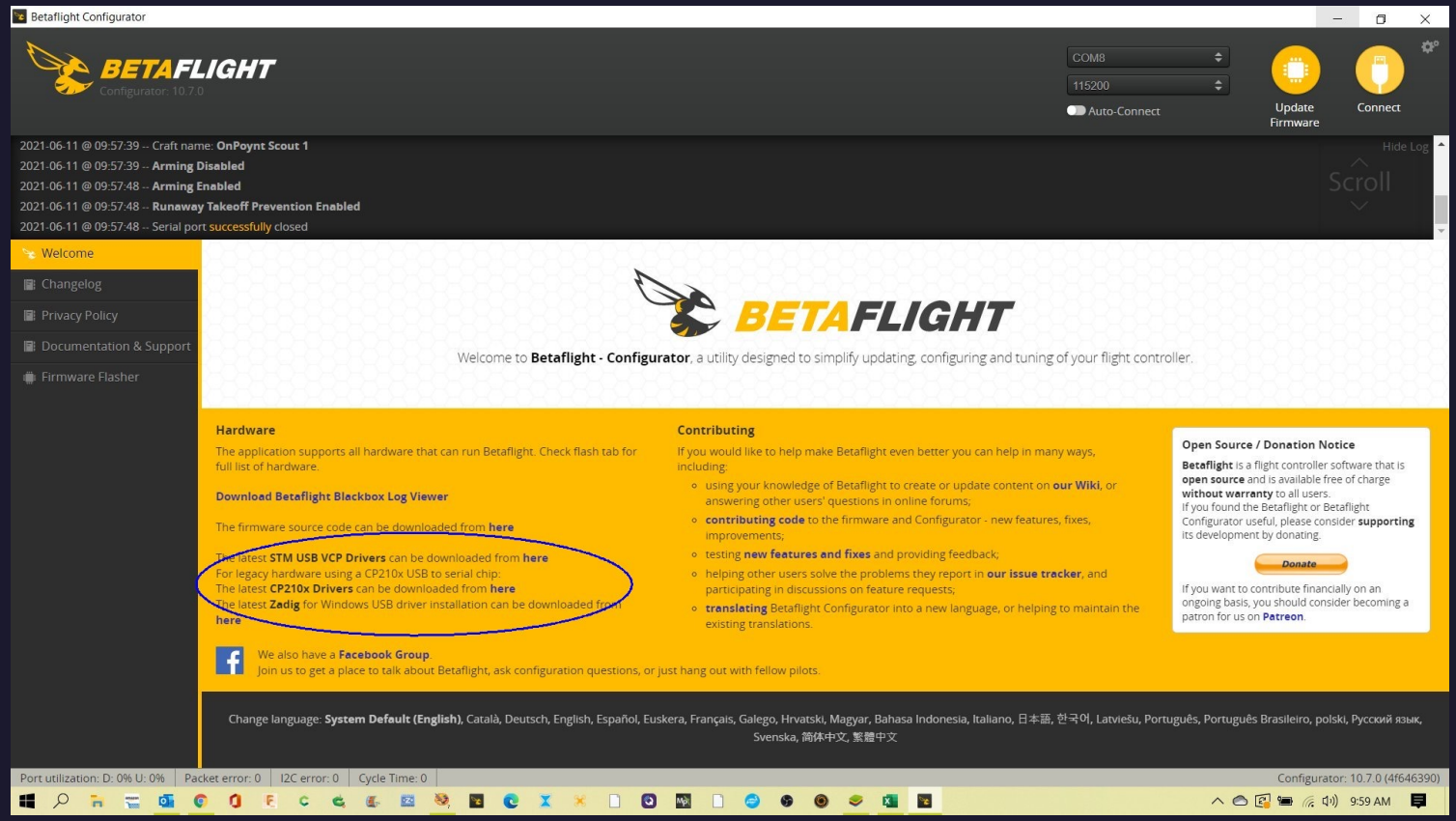
OnPoynt™

BetaFlight OpenSource Flight Controller Software

- Before adding props and zooming around the classroom, you'll need to download two pieces of software.
  - BetaFlight
  - BLHeli Suite
- Hopefully you have left room during assembly for the microUSB connector to plug in to the drone!!!

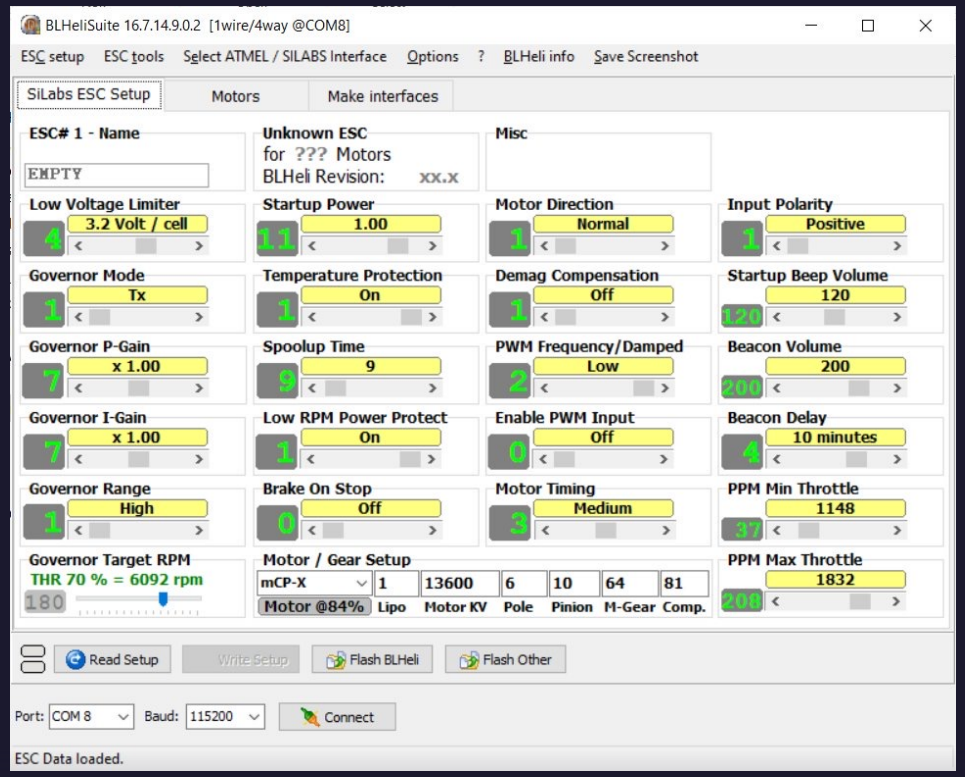
Links for Downloading BetaFlight

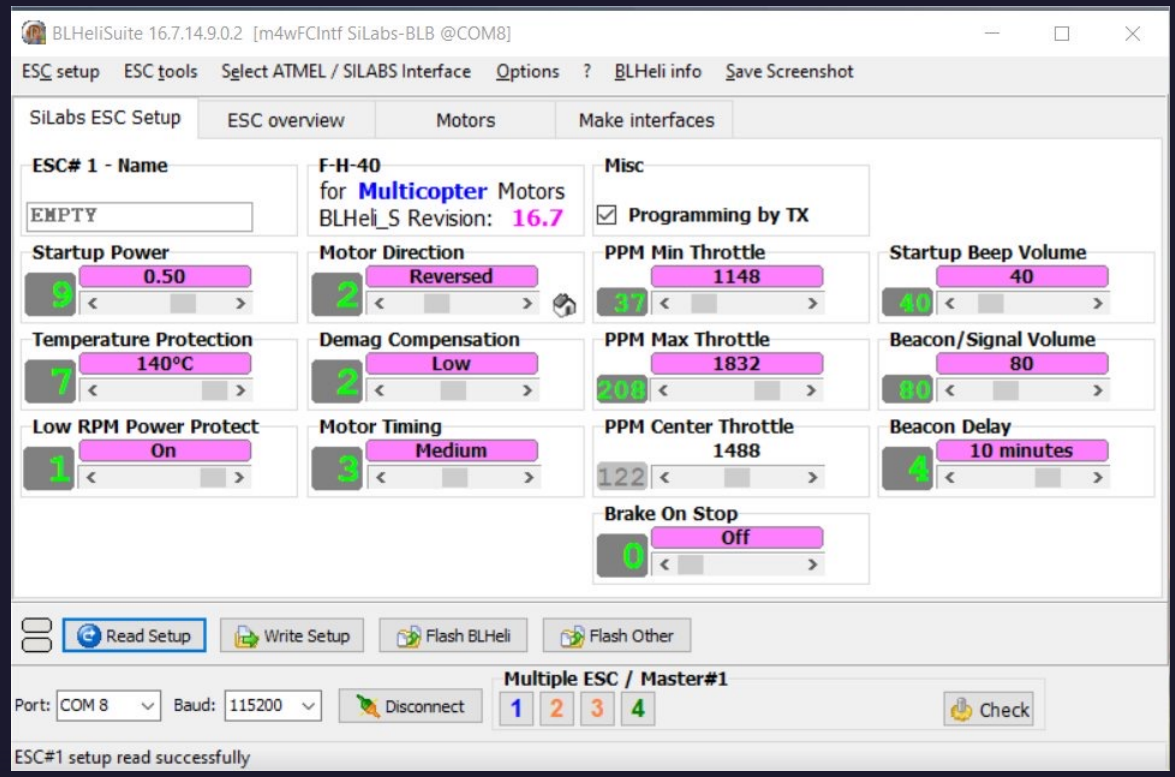
- BetaFlight Home Page - https://betaflight.com/
- BetaFlight Configurator - https://github.com/betaflight/betaflight-configurator/releases/tag/10.7.0
- Installation & Documentation - https://github.com/betaflight/betaflight/wiki
- Circled to the right are also links to some drivers you may possibly need depending on your computer

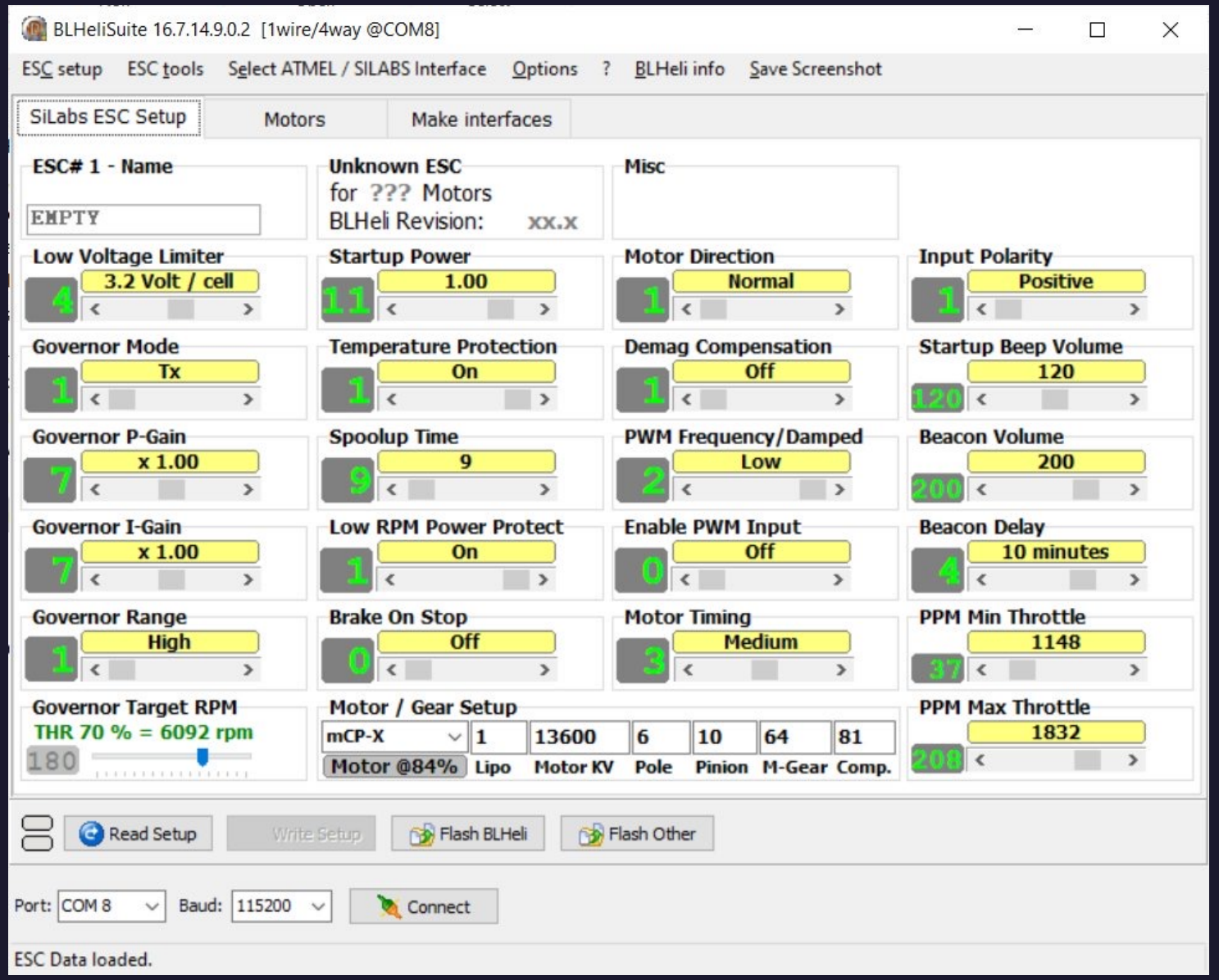


BLHeliSuite OpenSource ESC Configurator

- Used to change settings on your **E**lectronic **S**peed **C**ontrollers (ESC)
- The ESC speeds up and slows down the motors to facilitate flight in any given direction.
- The Scout uses BLHeli_S so when you launch the application it will look like the left image. After connecting to the drone and reading the setup, it will switch to looking like the image on the right.



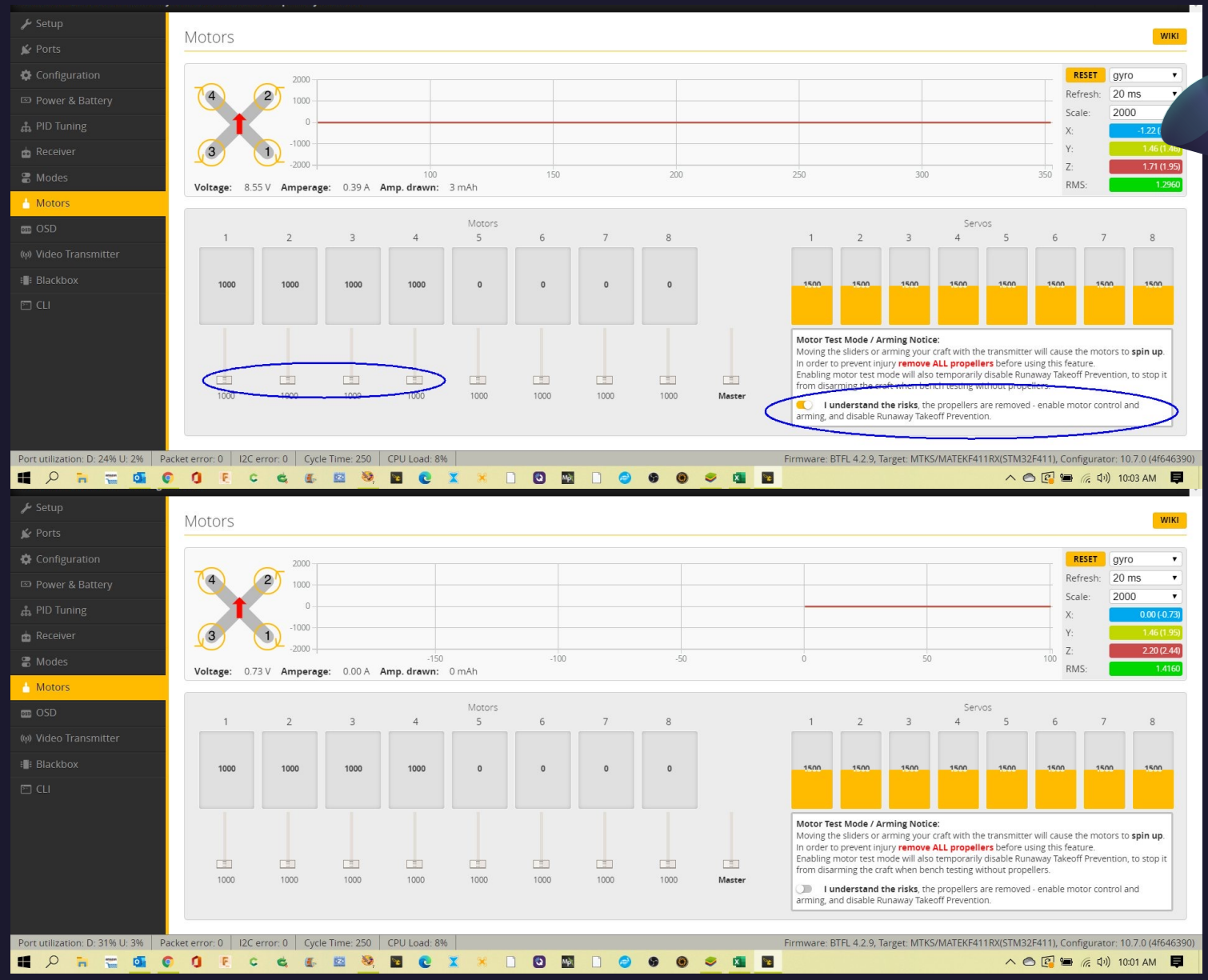




Links for Downloading BLHeliSuite

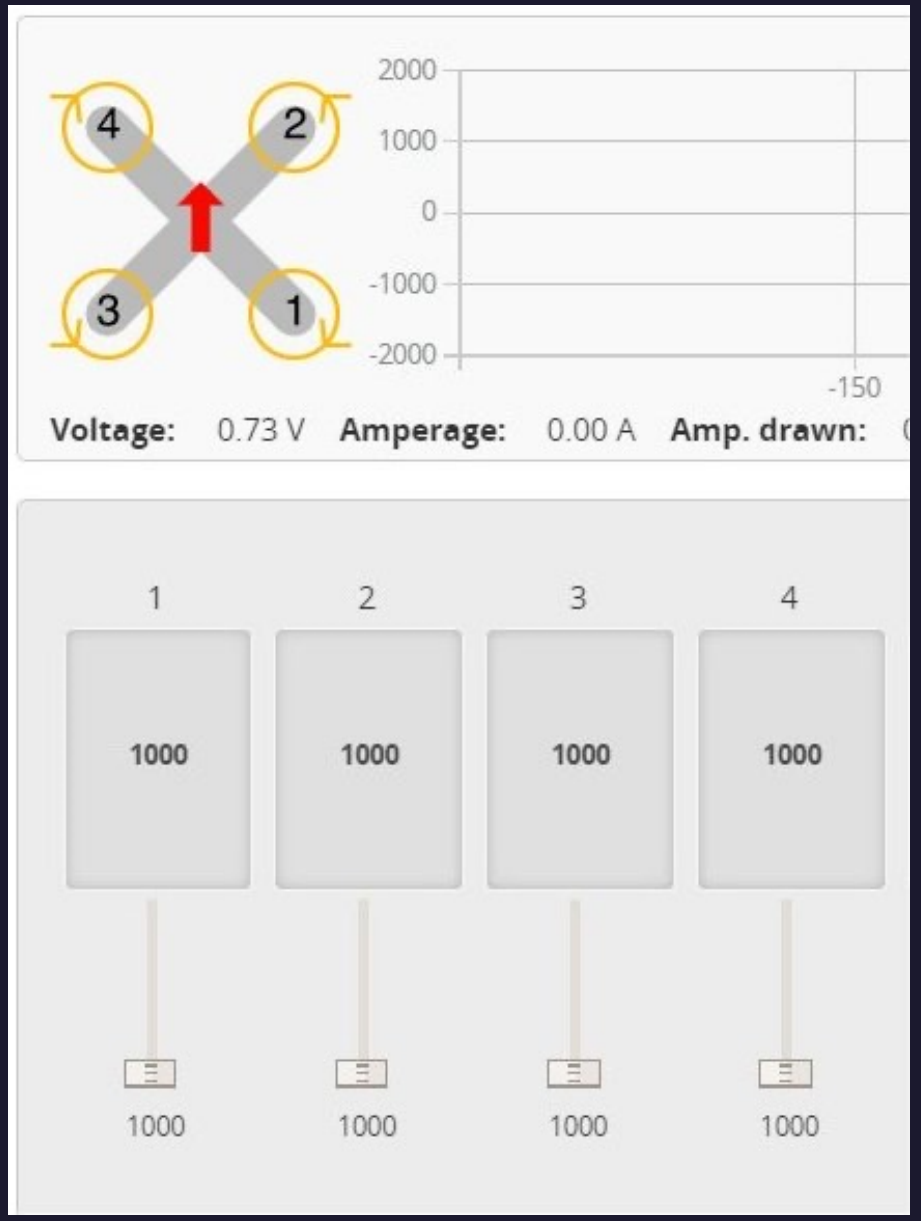
- BLHeliSuite Github page - https://github.com/bitdump/BLHeli
- BLHeliSuite Configurator - https://www.mediafire.com/folder/dx6kfaasyo24l/BLHeliSuite
- Installation and Documentation - http://www.multirotorguide.com/guide/blheli-suite-and-blheli-configurator-how-to-download-install-use-blhelisuite/

- Now that you have BetaFlight and BLHeliSuite downloaded and installed, you will be able to change motor rotation.
- Connect your Scout to your computer and open the **BetaFlight Configurator**. *(You will need a fully charged battery plugged in to the drone before connecting the Scout to the computer.)*
- Navigate to the Motors Tab where you will need to click the slider circled in blue to the right, showing you understand the risk of doing this if you haven't removed your propellers
- Then, one at a time, you will click & hold each vertical slider circled in blue on the left, and while clicking & holding you will drag the slider up just enough for you to determine which way the motor is spinning.
- Do this for each motor, taking note to which ones are correct and which ones are wrong. They NEED to match the picture of the craft showing in the top left of the image.



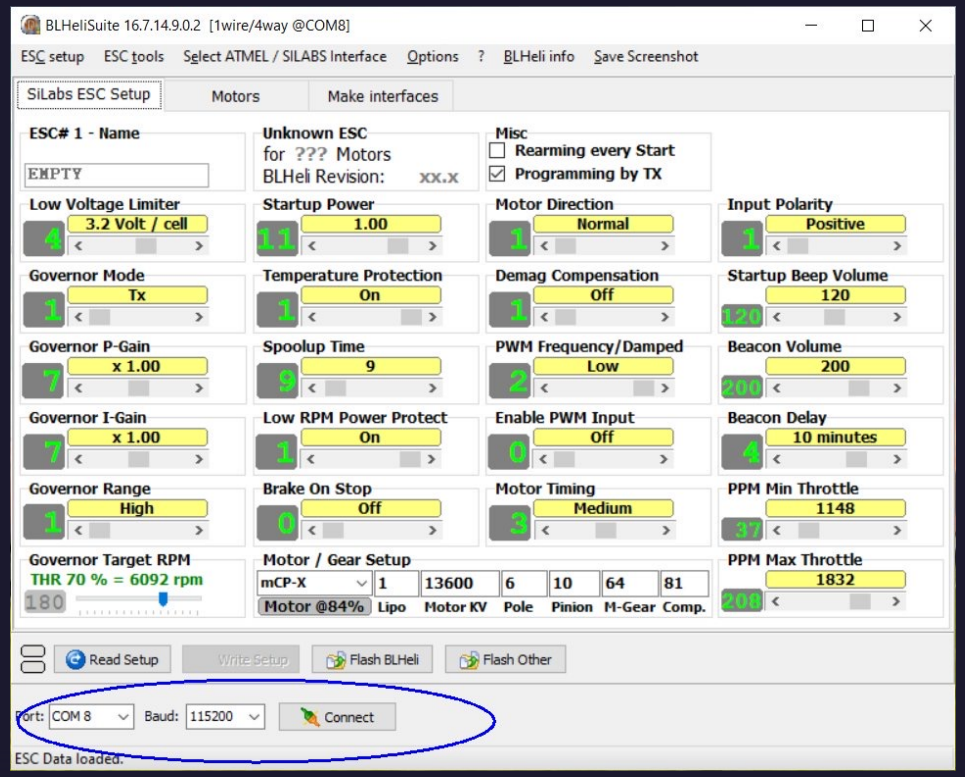
Motor Rotation

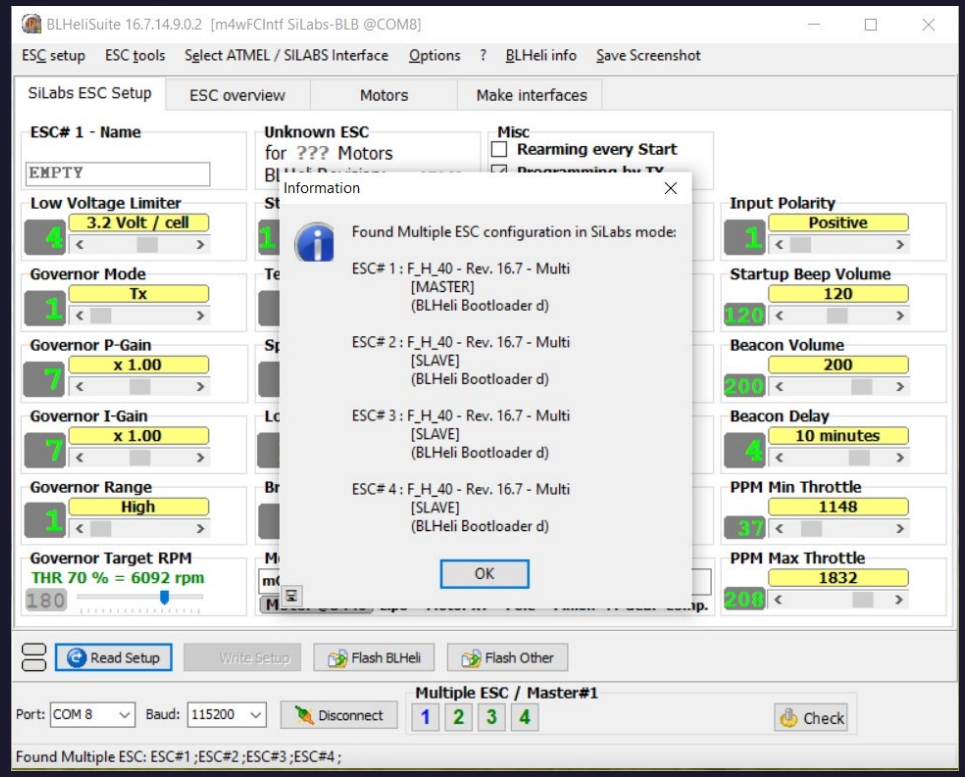
- Now that you know which motors are spinning correctly and which need to be changed you will move to BLHeliSuite
- Leave the battery plugged in to the drone and connected to the computer but disconnect from BetaFlight and open BLHeliSuite



BLHeliSuite & Motor Rotation

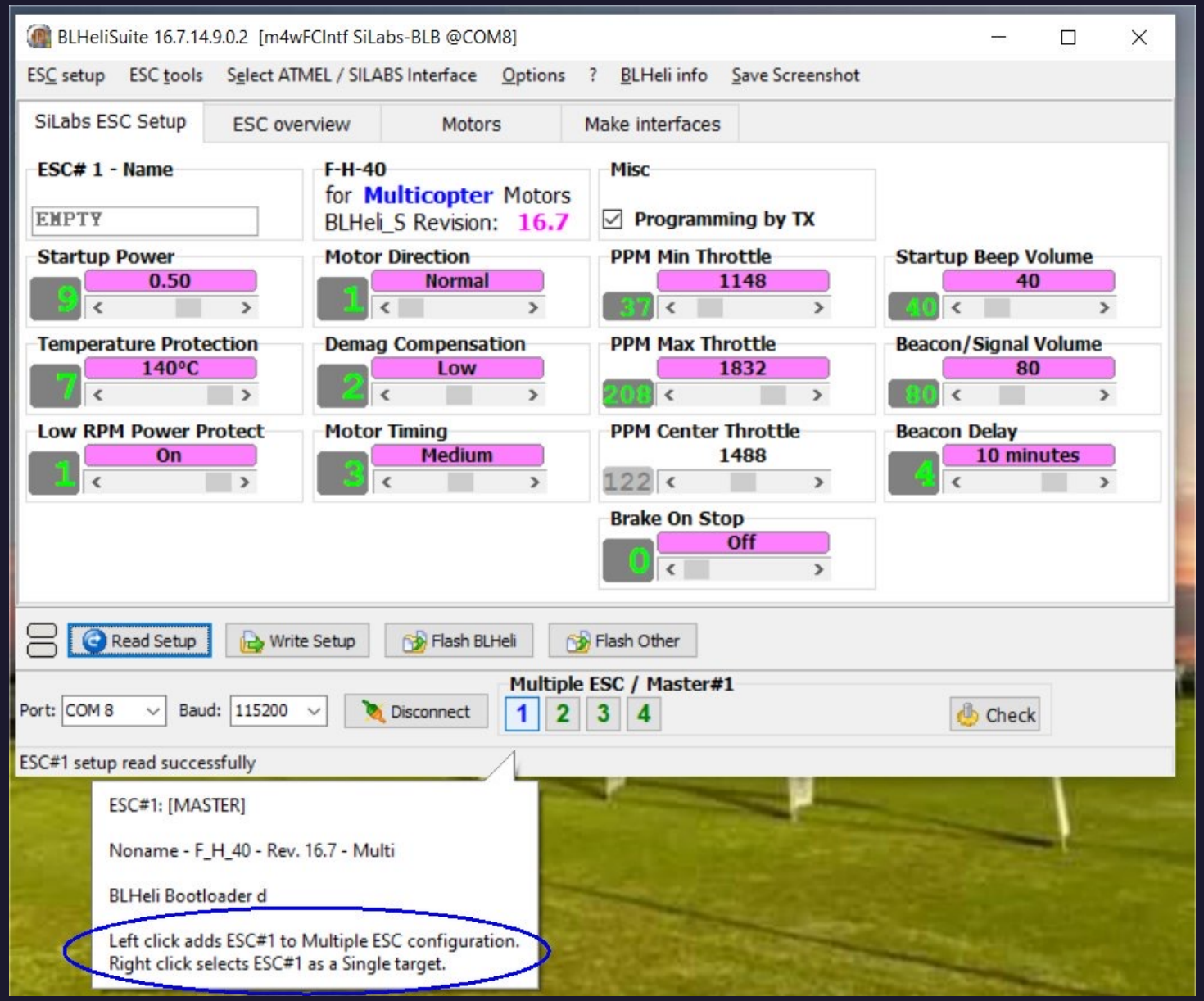
- In the image on the left, circled in blue, you see the port your drone is connected to, click the dropdown in the event connection fails to see if there are more than one com port showing. Click on the ***"Connect"*** button.
- In the image on the right, in the bottom left you will see a **"Read Setup"** button, click that and it will show you all four of your ESCs and the firmware they are running.

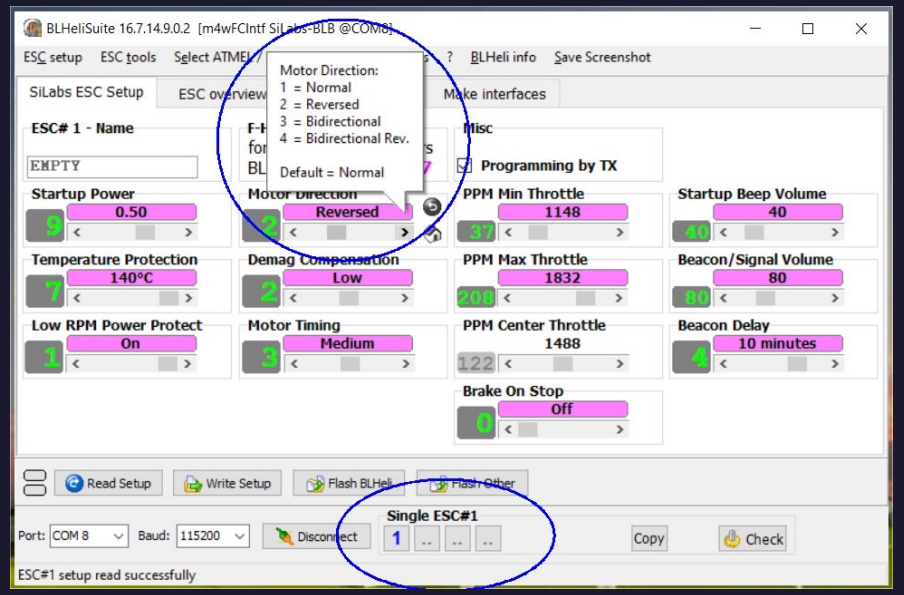


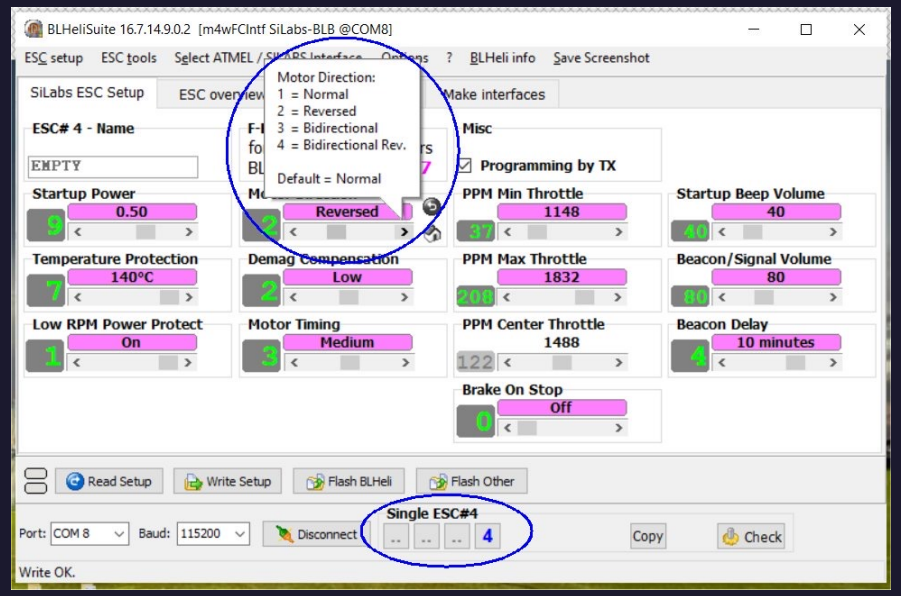


Motor Rotation Continued

- After BLHeliSuite reads the setup, it will switch from the yellowish looking interface to this pinkish look to signify the difference between BLHeli and BLHeli_S protocols.
- Circled in blue to the right you will see helpful information when you hover the mouse over a given field.
- We don't need to change all the ESCs, we're only interested in whichever motors you noted were not spinning the correct direction.
- So, if motor #1 was incorrect, as shown to the right, you would right click in the motor #1 box to select JUST THAT ONE ESC.



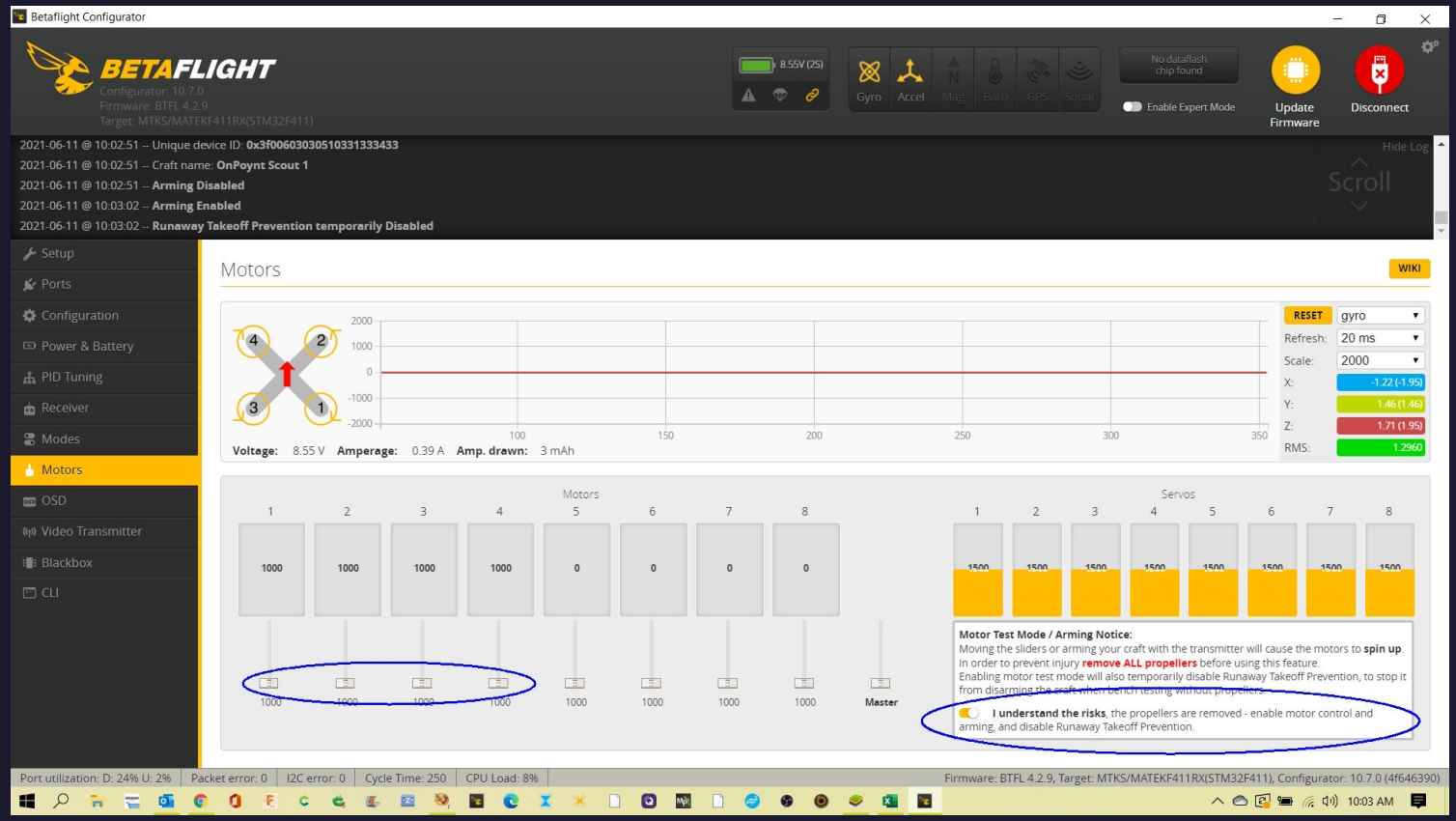




Motor Rotation Continued

- In the top image we are changing the direction of motor #1.
- In the bottom image we are changing the direction of motor #4.
- For each one, after making your change you must click the **“Write Setup”** for the changes to take effect.
- Next you will click the **“Disconnect”** button and close out of BLHeliSuite.
- Finally disconnect the drone from the computer and disconnect the battery. This acts as a hard reboot for all changes to be saved.

- Plug the battery back into the drone and plug the microUSB cable back into the computer & drone, if it has been disconnected
- Connect back up into BetaFlight and navigate back to your motors tab.
- Click the slider circled on the right and then just as before, raise each of the vertical sliders individually to confirm proper motor rotation.



Now you're ready for Props!!

- Pay attention to the direction the motors are spinning and then take a good look at your propellers.
- They should be scooping air and pushing it downward.
- You can use the images above as an example.
- Now you are ready to move to our Scout Operations Manual!!!!