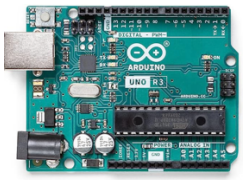
DIY wind-simulation with Simhub

Required/recommended parts (incl. Amazon links):

Arduino Uno:
https://www.amazon.de/gp/product/B008GRTSV6
1x



140mm PWM Fans (Noctua NF-A14 iPPC 3000 PWM 12V):
https://www.amazon.de/gp/product/B00KFCRF1A
2x

12V-5A power supply:
https://www.amazon.de/gp/product/B07L5GP7SD
1x
(5A is not really required, a 12V-1.5A power supply will be suffiecient)

Mount for Rig & GoPro-Mount:
https://www.amazon.de/dp/B08XQ93281
2x
(the GoPro-counterpart is included in the 3D-printed Honeycomb below)

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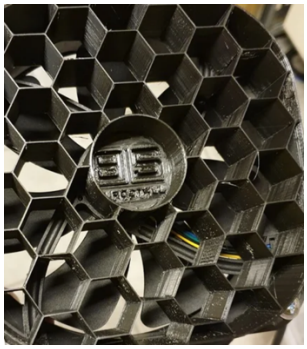
3D-Print parts (honeycomb for 140mm fans) with connector to GoPro-mount:
https://www.thingiverse.com/thing:4137804
2x

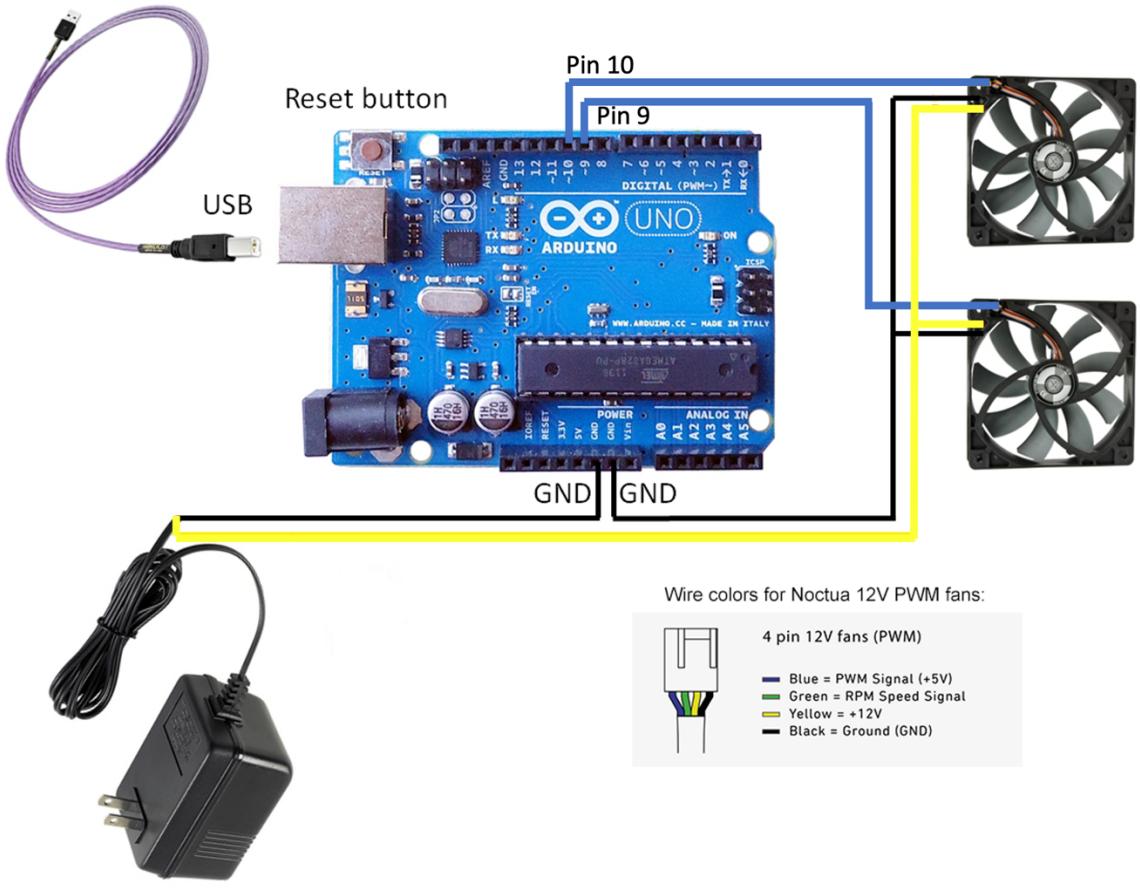


Wiring / Setup:

Make sure you wire the fans and the power supply as depicted in the below diagram:

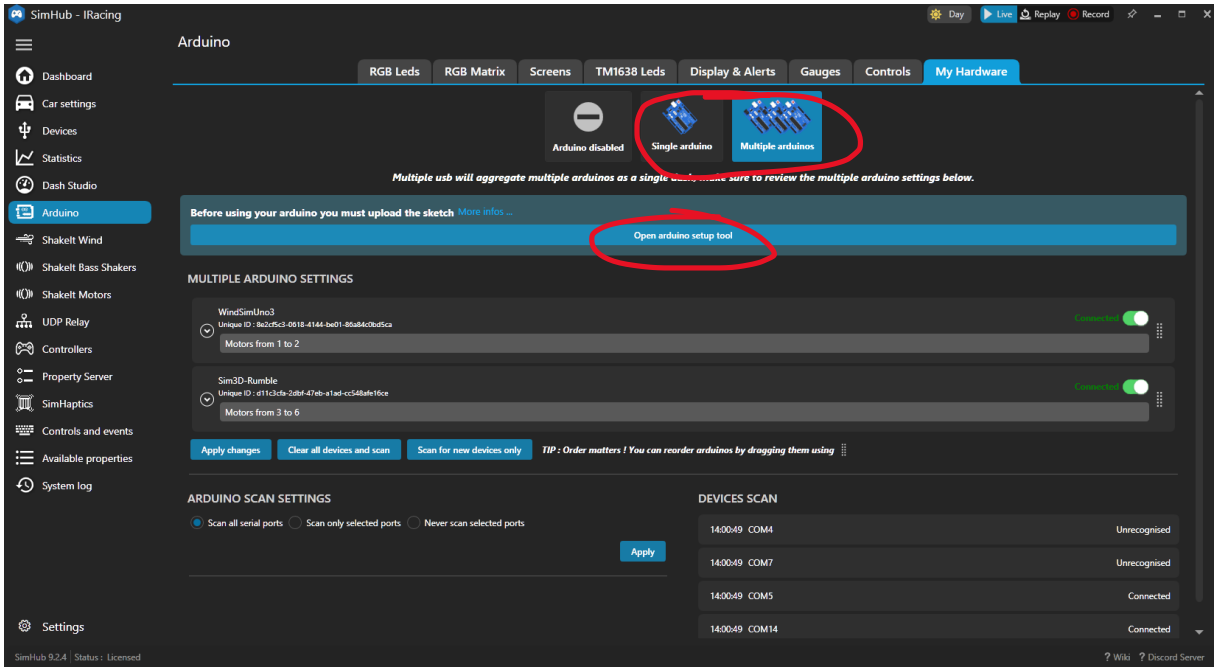
GND from the power supply to the fans must go through the Arduino GND pins, otherwise the fans will run permanently once the power supply is plugged in.

The PWM signal from one fan needs to go to Pin 9 of the Arduino Uno and the PWM signal from the other fan needs to be connected to Pin 10 in preparation to the next step (configuring/flashing the Arduino with the correct sketch from within Simhub)

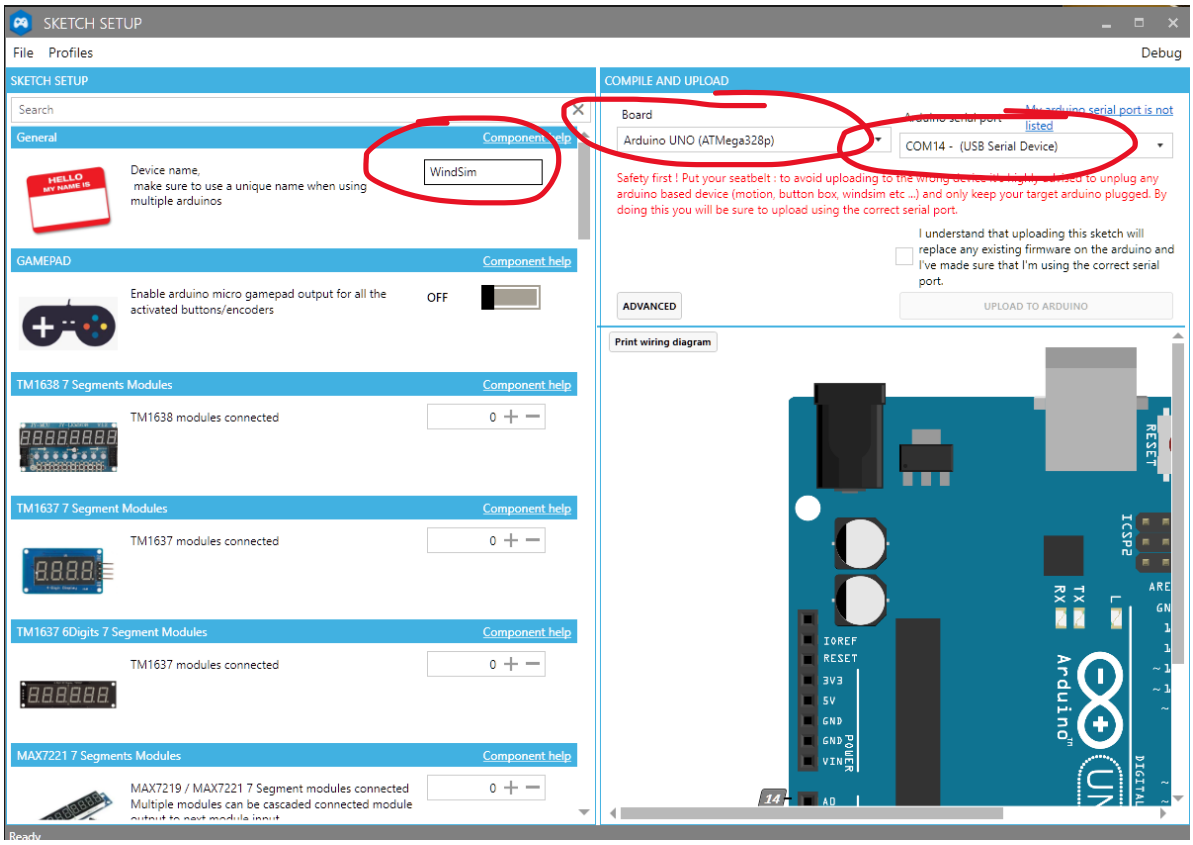


Arduino configuration and flashing in Simhub:

Connect your Arduino Uno via USB to your PC. To be on the safe side unplug other Arduinos if you are using multiple.
Launch Simhub, go to “Arduino” on the left menu pane and navigate to the tab “My Hardware”.
IMPORTANT: If you have only one Arduino connected to your system make sure to choose “Single arduino”. If you have more than one Arduino it’s crucial to select “Multiple arduinos”



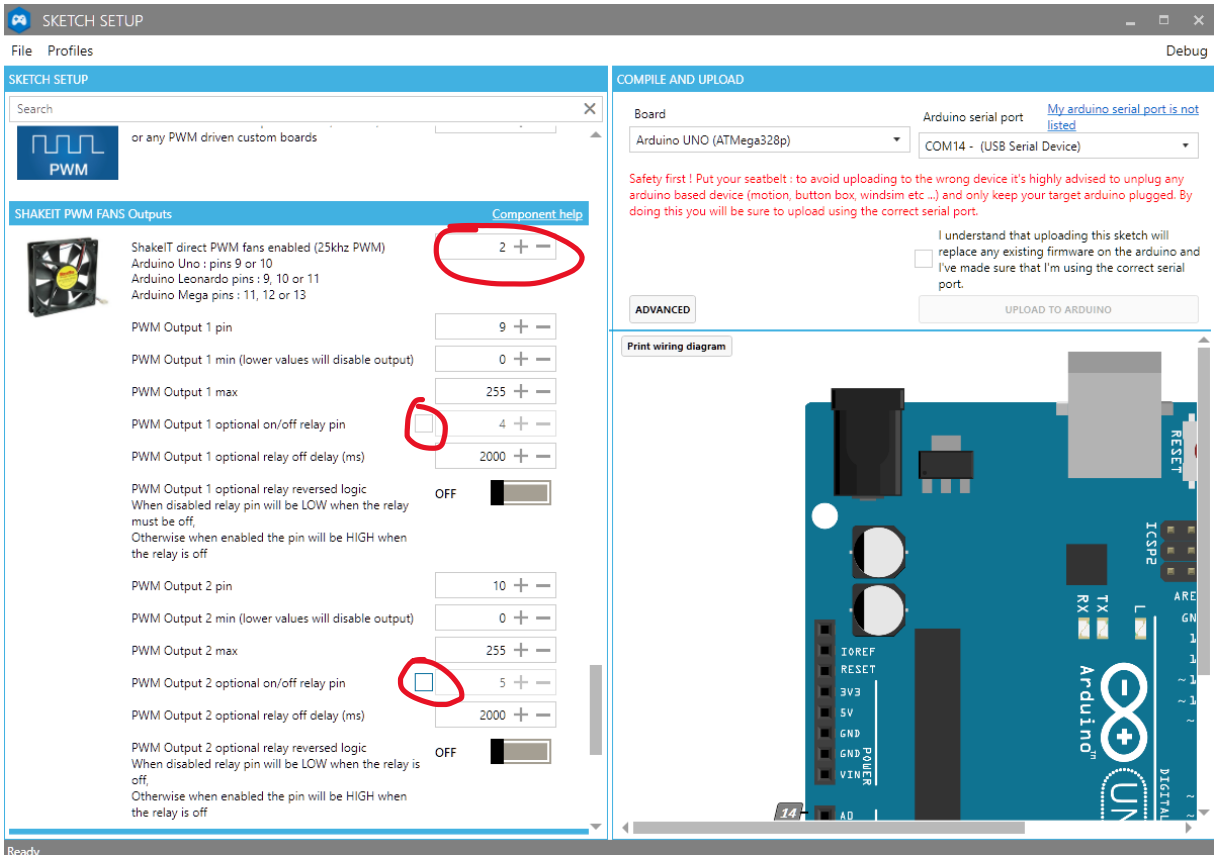
Next, click on “Open Arduino setup tool” which will open in a separate window:



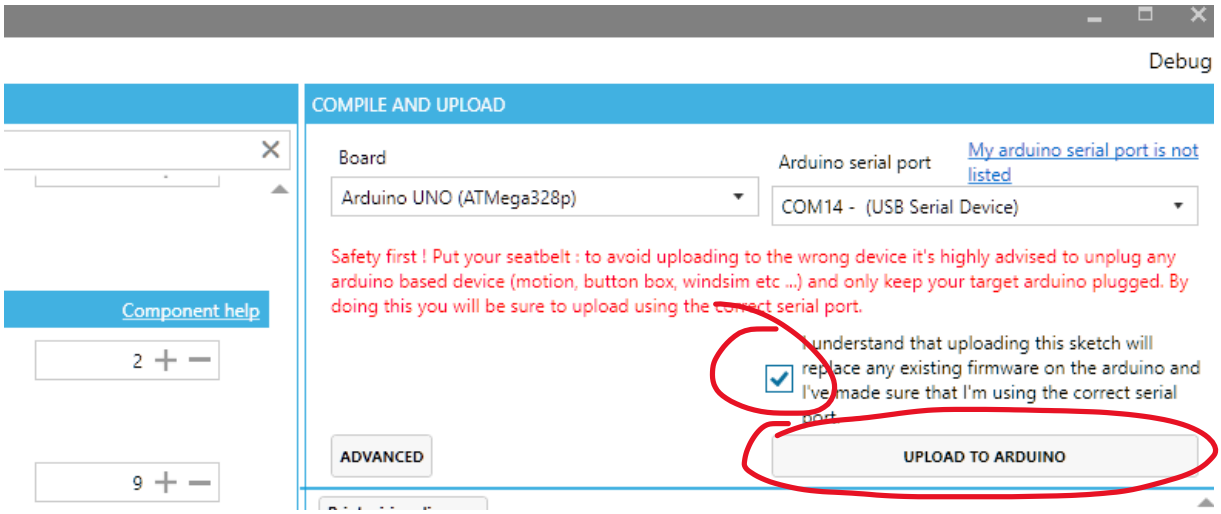
Make sure you pick the correct board model (Arduino Uno) and the correct COM-port in the top right. In the left pane two things need to be configured, ignore all other options.

1) Name the device under "**General**" so you can identify it later. Use something like "WindSim".
2) Scroll down on the left options until you get to "**SHAKEIT PWM FANS Outputs**"

Set the number of fans to 2 and remove the checkmarks from the relay option as we are not using any relays here. Leave the rest as default like depicted below:



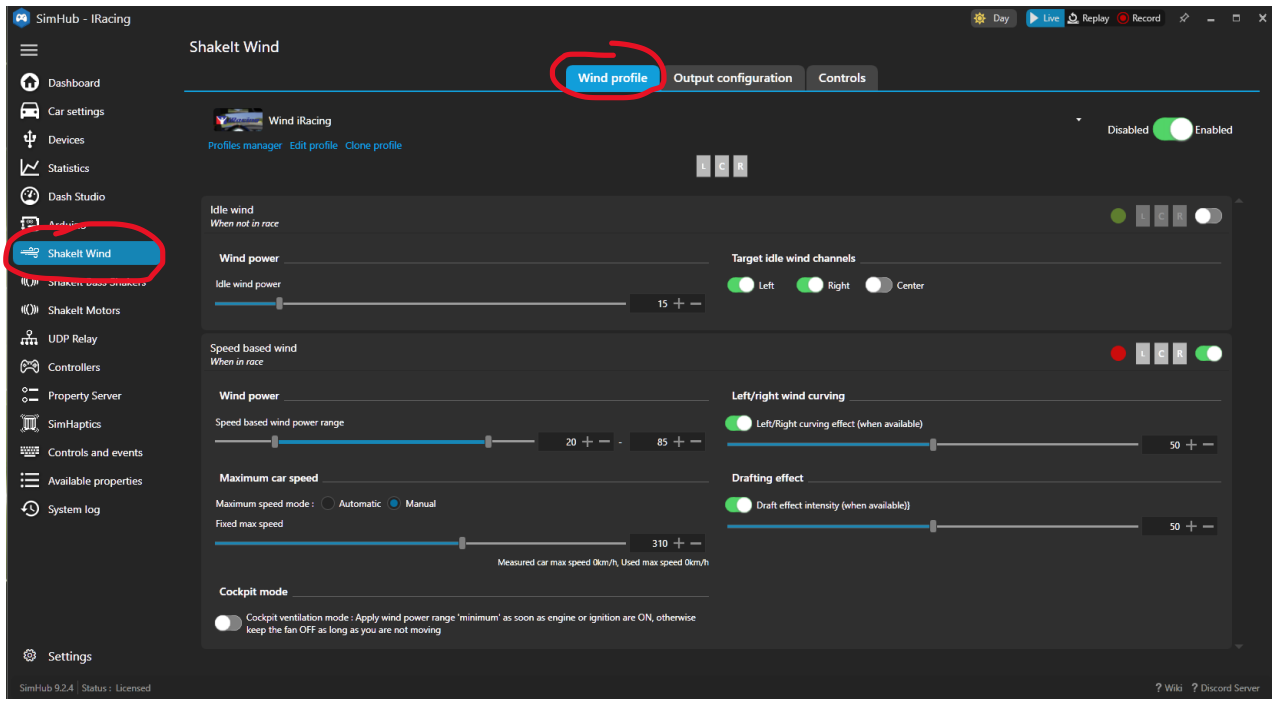
When done, go back to the top right, check the "I understand that uploading…." checkbox and click on "UPLOAD TO ARDUINO":



You are done with the hardware setup. As a last step you need to configure ShakeIt Wind:

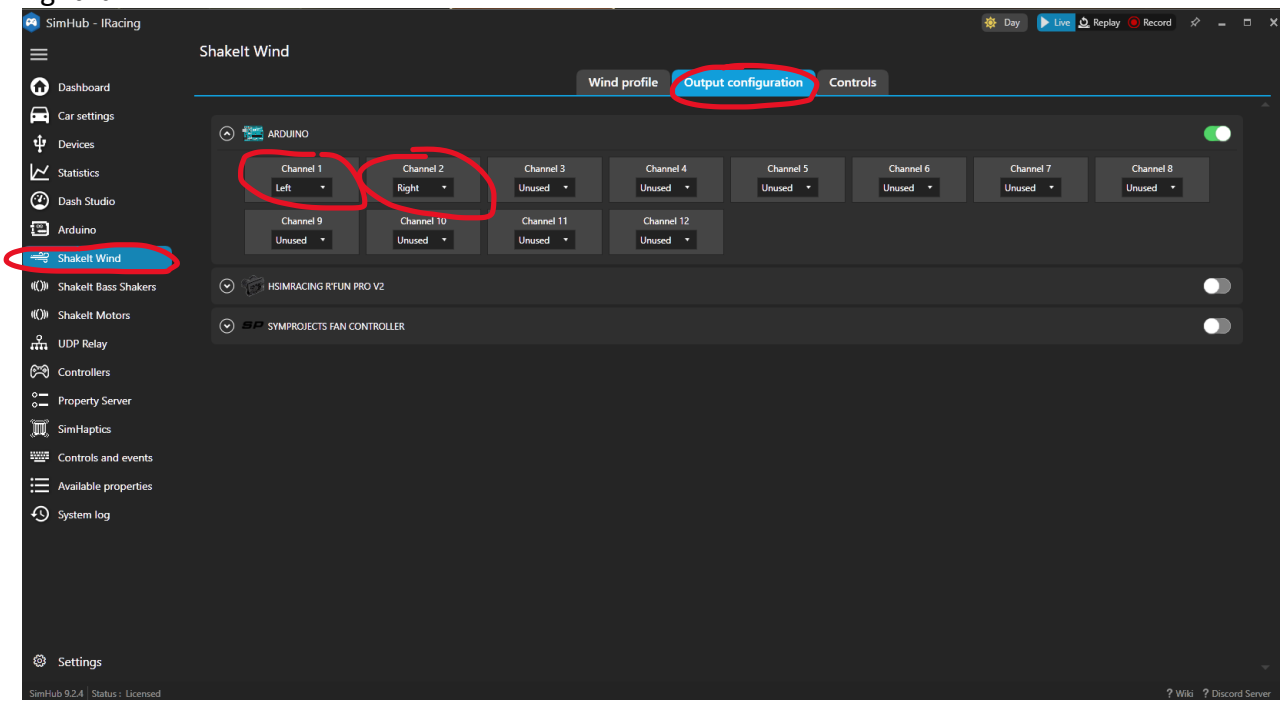
ShakeIt Wind configuration in Simhub:

Click on “ShakeIt Wind” in the left menu pane of Simhub:

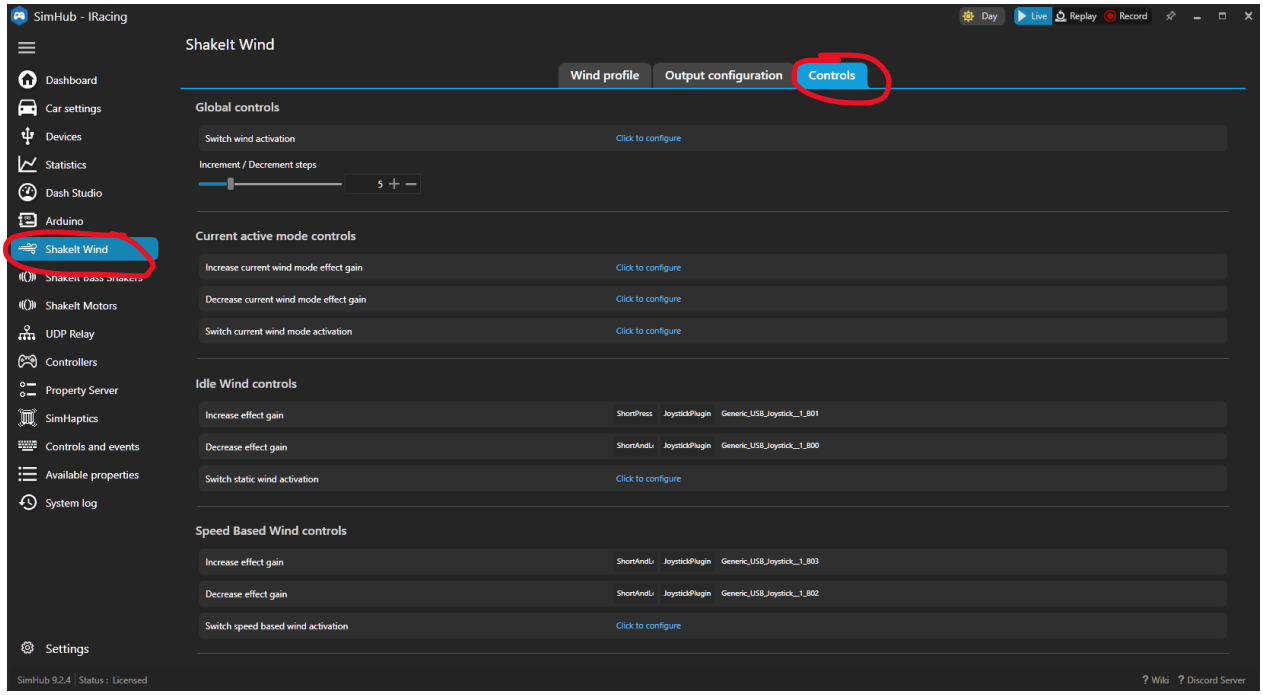


Here you can define the wind behavior, like static wind on/off, min/max speed (of your car) and the according fan-level you want to assign, curving etc. The Noctua iPPC fans are very strong so it’s most likely enough to set the maximum power to somewhere between 70-85% which will still give you a lot of wind but reduce the fan noise significantly (they do get loud when on 90-100% power)

Then move on to the “Output configuration” tab within ShakeIt Wind to define the left and right fan:



As an optional step you can move to the “Controls” tab to configure manual controls:



Here you can define switches/buttons to turn on/off the Wind sim and define controls for increasing / decreasing the Wind sim. (In the example above, I have mapped some buttons of my simrig button boxes to increase/decrease wind.)

That’s all and you are now ready to enjoy the added immersion of a wind sim in your simracing.