

**VelociDrone Guide**

Last Updated 02.20.2025

This document will cover everything related to VelociDrone after purchasing and downloading the simulator. Many of the items listed in this guide are needed to make sure your VelociDrone account is ready for racing.

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## Section 1: Common VelociDrone Steps

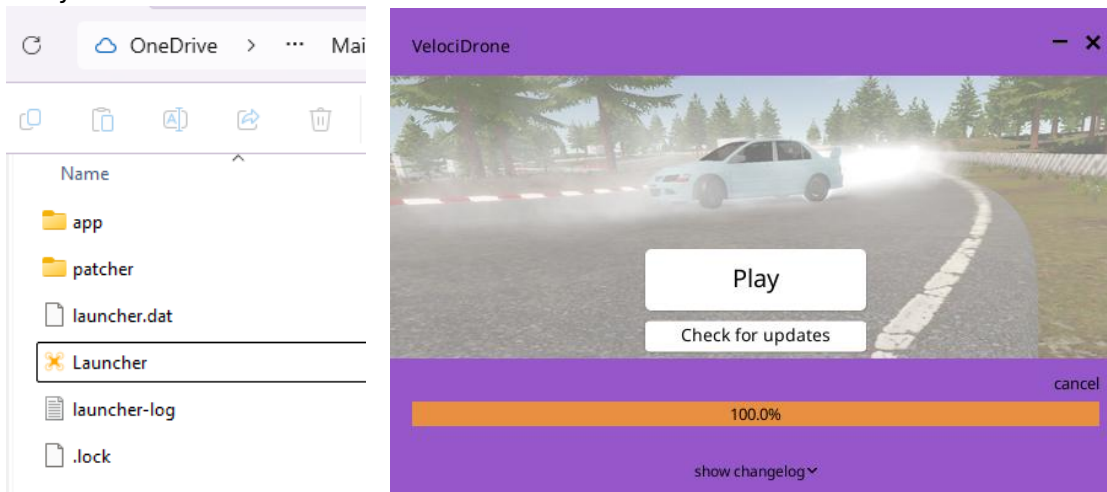
These steps will start with the first time launching the application and continue all the way to doing a race and common troubleshooting issues. For people returning, you can skip to whatever sections you have questions on.

For a guide on how to buy and download the simulator, click [here](#).

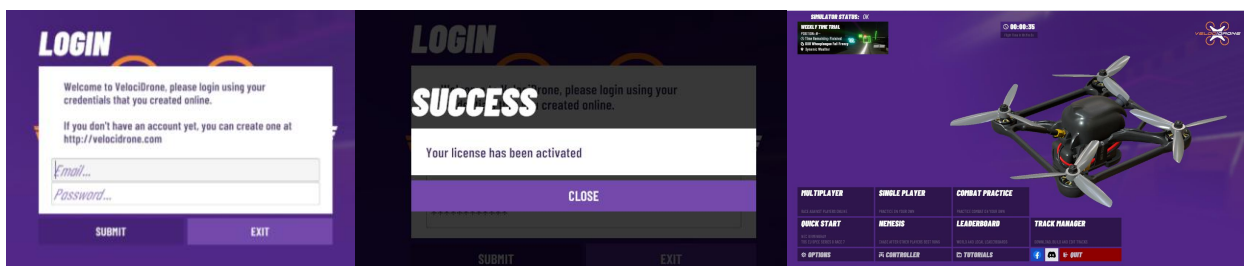
To download VelociDrone, click [here](#).

### A. Opening VelociDrone and Logging in

Find the VelociDrone Launcher in your computer files and open it. You will then be brought to the launch screen, where you can “check for updates” or “play.” Please check for updates often. Click “Play.”

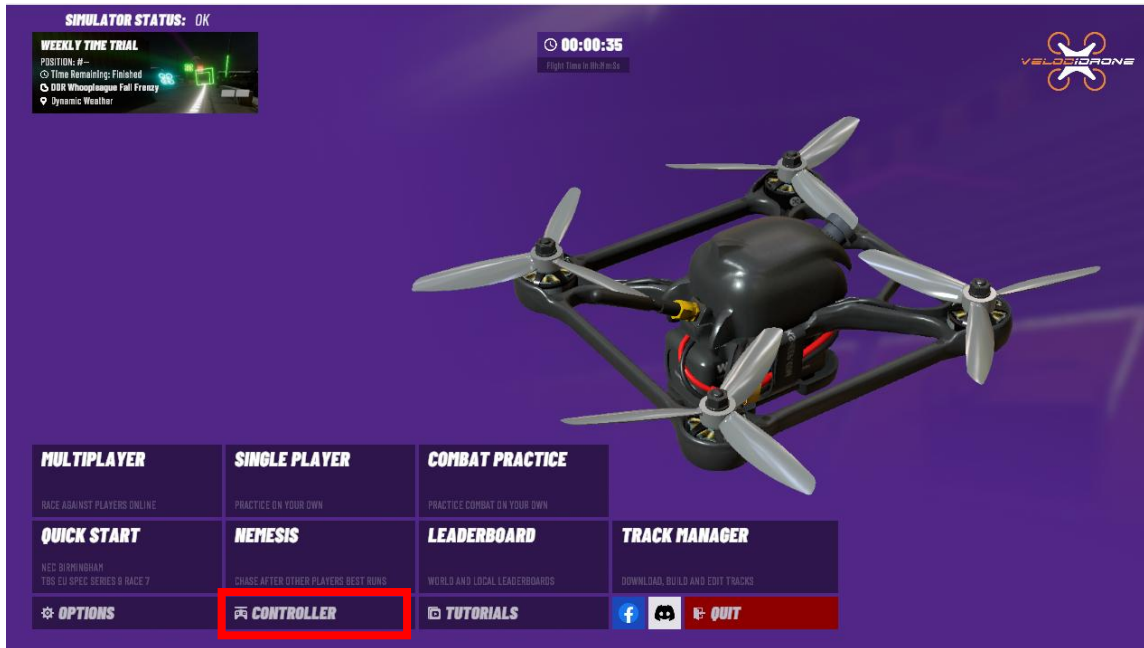


Once you hit “Play,” you will either be brought to the login screen or the game will launch. If you end up at the login screen, enter the email and password used to create the VelociDrone account when purchasing the license. If you are a student, your GM should have these credentials. If successful, you should see a “Success, your License has been activated” notification. Click close, and it will launch the game. Congrats, you should be brought to the main screen.



## B. Binding a Controller

The first time you open VelociDrone, you must connect and bind your controller to the game. To do this, click on “Controller” from the main menu.



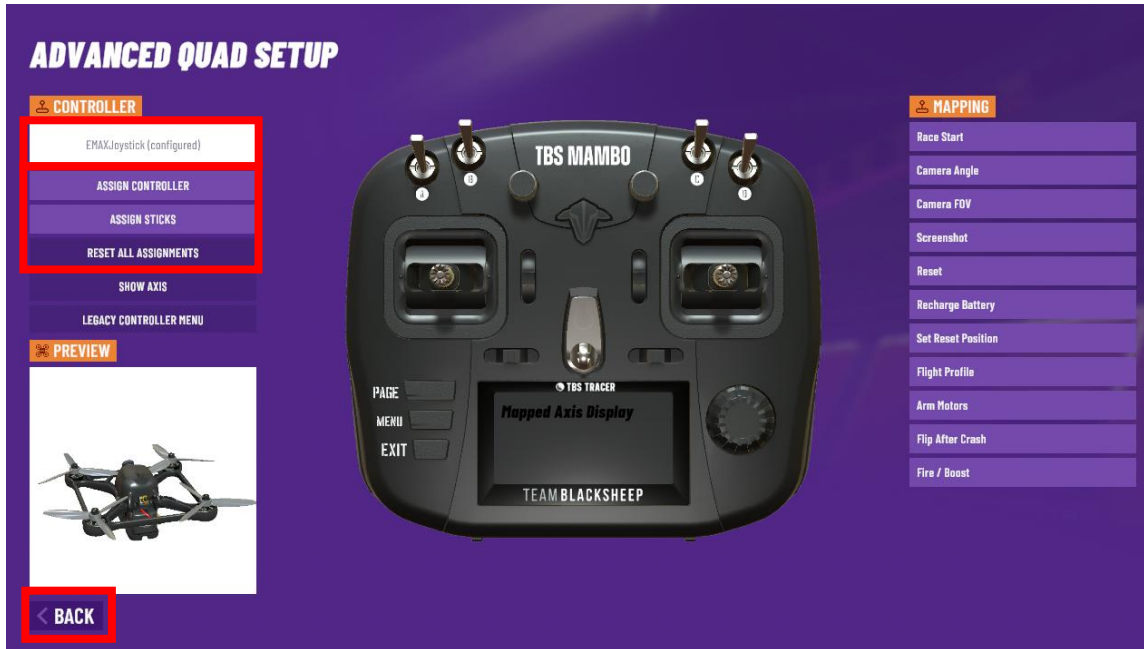
Take the 6-foot-long USB-A to USB-C or Micro-USB cord (depending on when purchased) and plug the USB-A Side into your computer and the USB-C/Micro-USB cord into the drone controller. Then, turn the controller on by holding the middle circle until it lights up green. This cord should be included in your drone package. Please note that if you use a different cord, you must ensure it has data-transfer capabilities.



On the top left of the screen, you should see EMAXJoystick. Sometimes, the controller is already set up; sometimes, you must configure it. Follow these steps to set up the controller. If the controller is not working correctly later in the season, feel free to return to this step and redo all assignments.

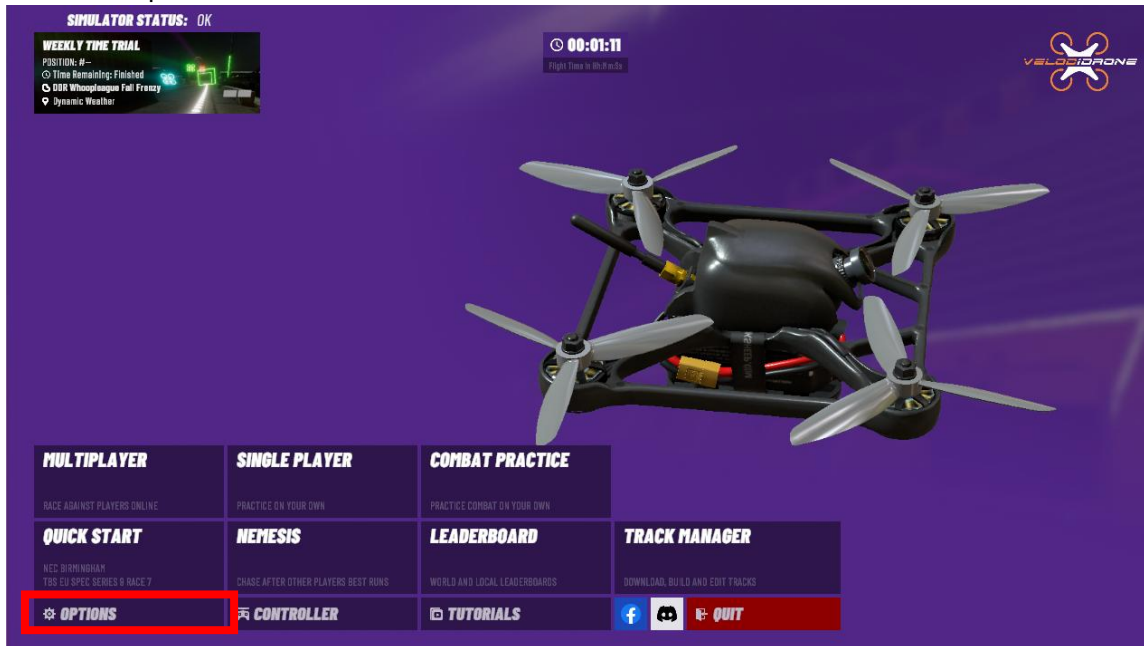
- **Assign Controller:** Move a stick on the controller to identify the controller to the software.
- **Assign Sticks:** Follow the instructions on the screen. For the terminology (Roll, Pitch, Yaw, and throttle, see this [handy terminology guide](#). Please don't reverse any controls as the drone controls won't match when flying FPV.
- **Reset all Assignments:** If you are having any issues later down the line or mess up the controls, click this button to redo it all.

Please don't touch any other settings on this page at this time. When done, click "Back" on the bottom left.



### C. Adjusting the Settings to Match the Official Settings

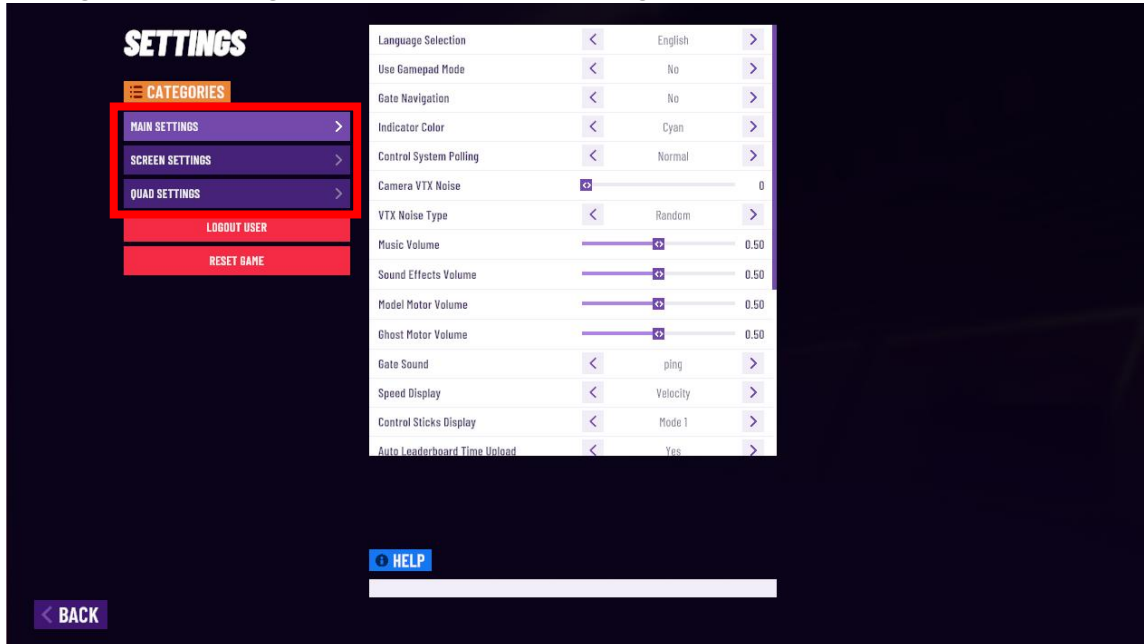
Click on "Options" from the Main Menu.



Every student and GM must follow the settings guidelines before participating in any Matches. This will help make sure that everyone is competing evenly and fairly. We encourage all students to use the default settings as it makes it easier to transfer accounts between students. However, some students might prefer to adjust some of the VelociDrone settings. While it might help them, if students are not one-to-one with their accounts, these changes might mess with other students'

flying ability. Please ensure that you have students document their changes so they can apply for them more quickly if they change accounts and revert the account to another student.

Fenworks allows most modifications if they don't affect the racing quad. See below for a list of what settings can be changed and what cannot be changed.



- Main Settings

Setting	Default	Are you allowed to change it?
Language Selection	English	Yes
Use Gamepad Mode	No	Yes
Dark User Interface	No	Yes
Gate Navigation	No	<b>PLEASE CHANGE TO YES</b>
Indicator Color (of gate)	Cyan	Yes
Control System Polling	Normal	No
Camera VTX Noise	0	Yes
VTX Noise Type	Random	Yes
Music Volume	0.50	Yes
Sound Effects Volume	0.50	Yes
Model Motor Volume	0.50	Yes
Ghost Motor Volume	0.50	Yes
Gate Sound	Ping	Yes
Speed Display	Velocity	Yes
Control Sticks Display	Mode 2	Yes
Auto Leaderboard Time Upload	No	<b>PLEASE CHANGE TO YES</b>
Lap Time Announcement	Lap Delta Time	No
Single Player Race Countdown	3-2-1	No
Voice Announcements	No	Yes

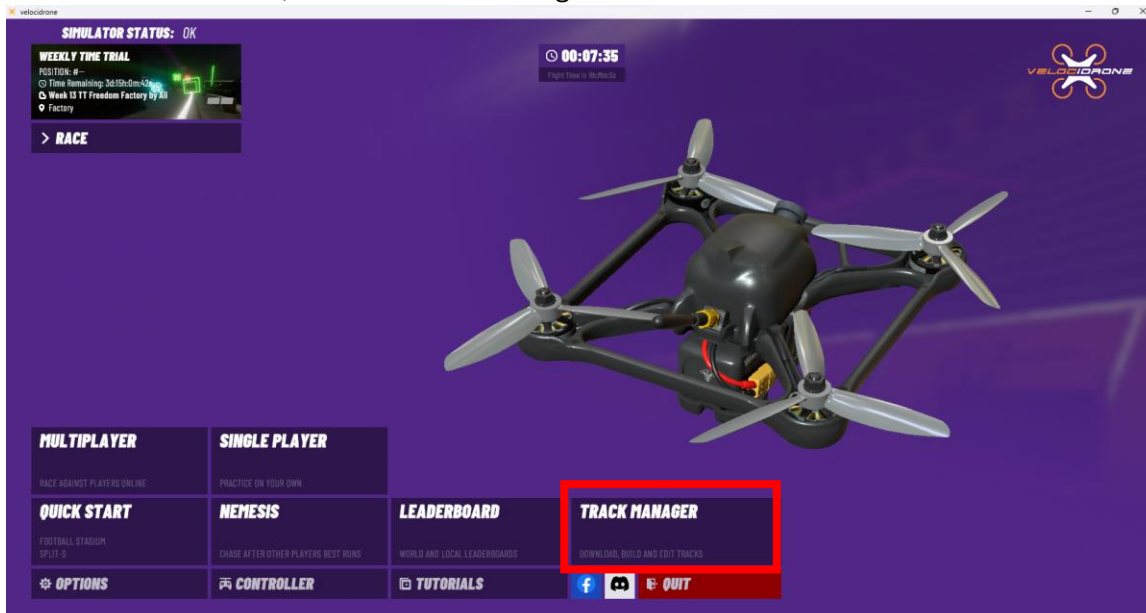
Hide My ID From Friends	No	No
End of Race Statistics	Auto Close – 10 Seconds	<b>PLEASE CHANGE TO NO AUTO CLOSE</b>
Session Join Method	Unrestricted	No
Websocket Communication	No	No
Leaderboard Times	All Times	No
Sign User Out on Quit	No	Yes

- Screen Settings
  - All options can be adjusted.
- Quad Setting

Setting	Default	Are you allowed to change it?
Multiplayer Color	Green	Yes
Physics CPU Usage	Medium	No
Camera Field of View	115	Yes
Flight Controller	BetaFlight 4.2	No
Quad Rear Spotlight	False	No
Low Detail Quads	True	No
Allow Midair Collision	False	No
Trails Enabled	True	Yes
Quad Audio	On Quad	Yes
Line of Sight Camera Height	1.80	Yes
True Lens	False	Yes
True Lens Size	Standard 2.1mm	Yes
True Lens Quality	High	Yes
Flight Displays	Normal	Yes
Ammunition Display	None	No

### D. Downloading a Track

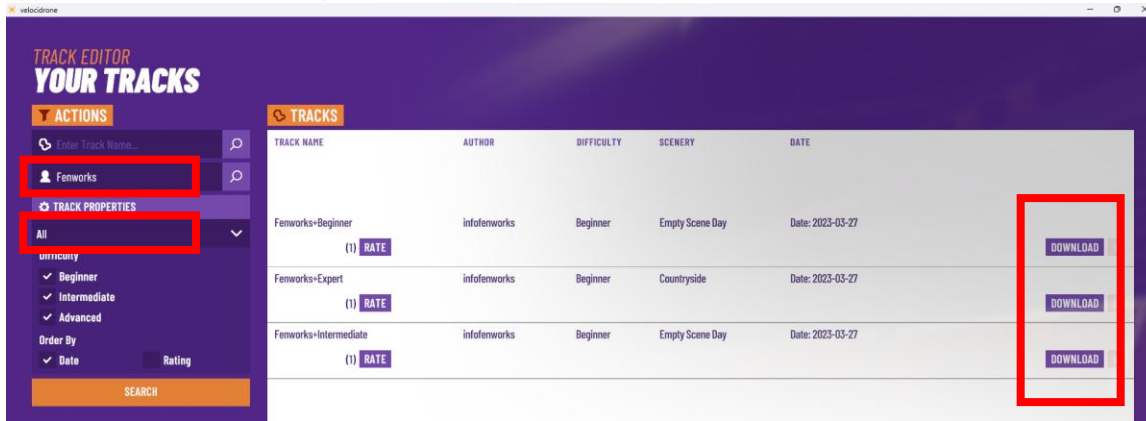
From the Main Screen, click on “Track Manager.”



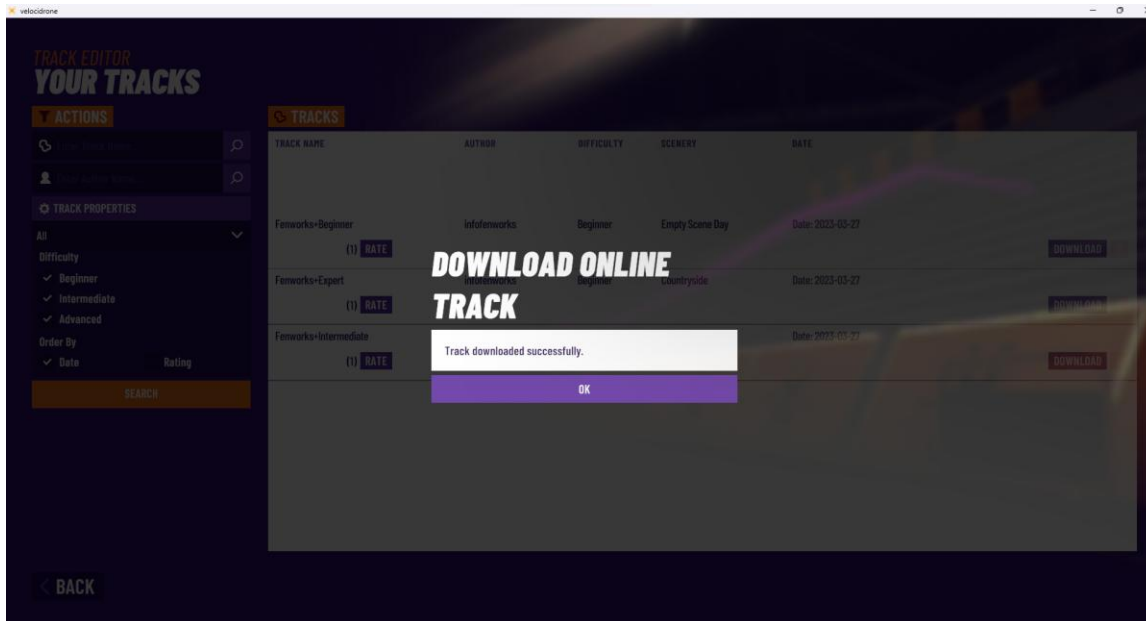
Click “Download Track”



Type “Fenworks” in the “Author Name” box and click “Search.” Make sure that “All” is set for Track Type. Choose the course you want to download and click “Download”

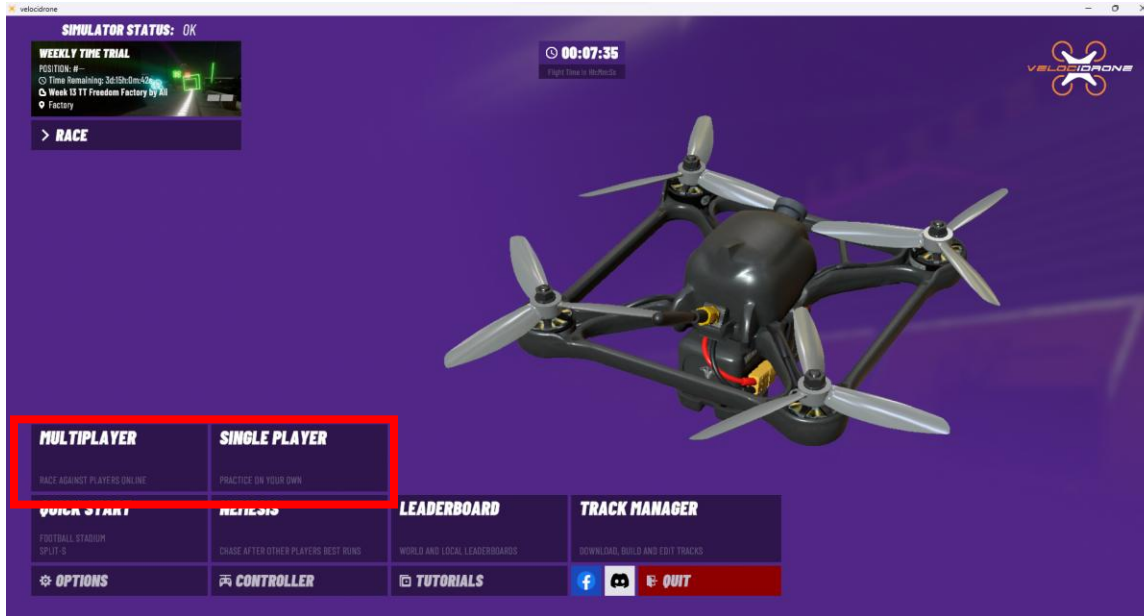


Congrats, your track is downloaded. Click the “OK” button and then click the “Back” button on the bottom left.

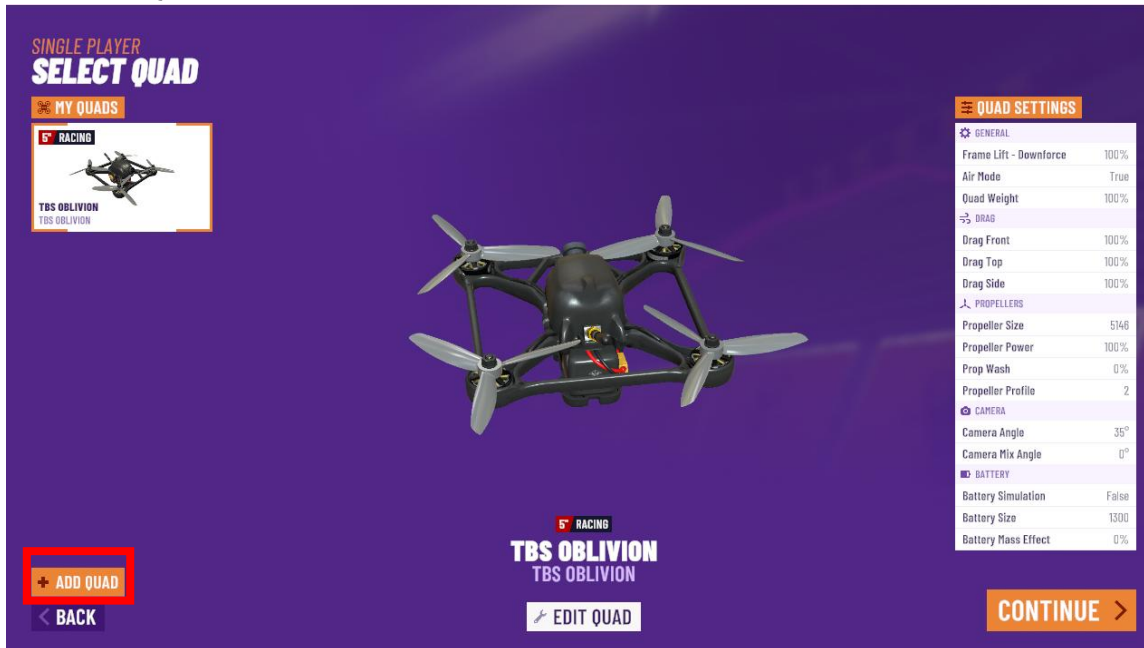


### E. Selecting a Quad

From the main menu, select either multiplayer or single-player, (single-player is easier).

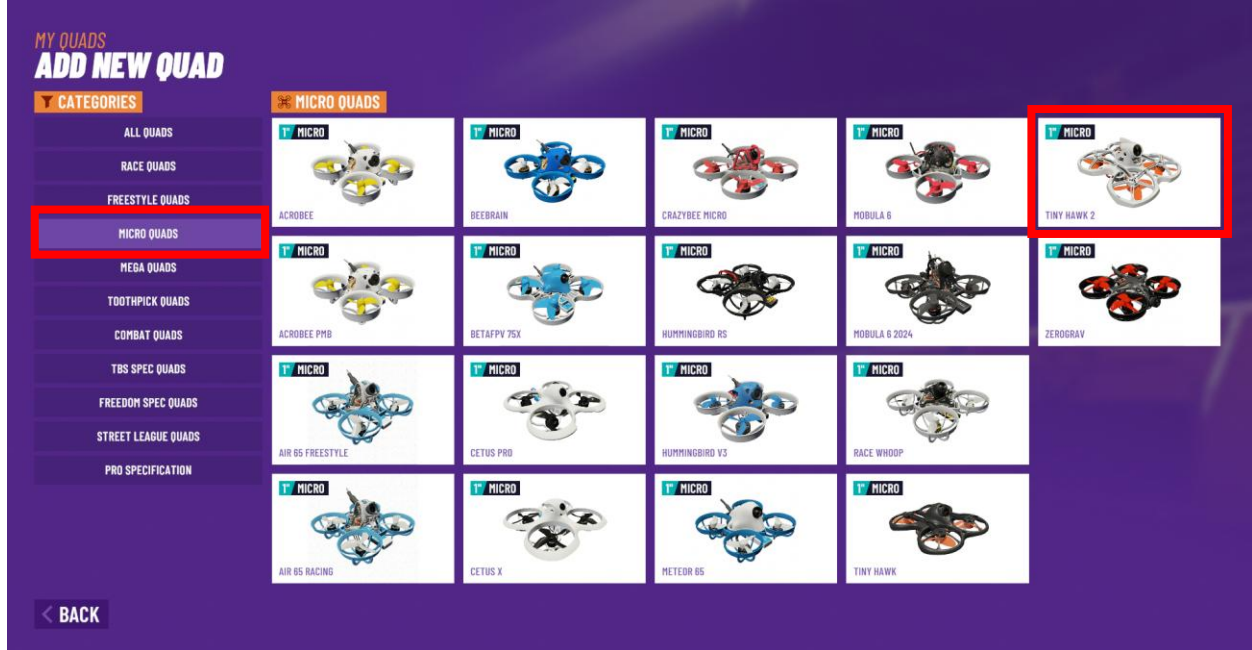


Click “Add Quad” in the bottom left.

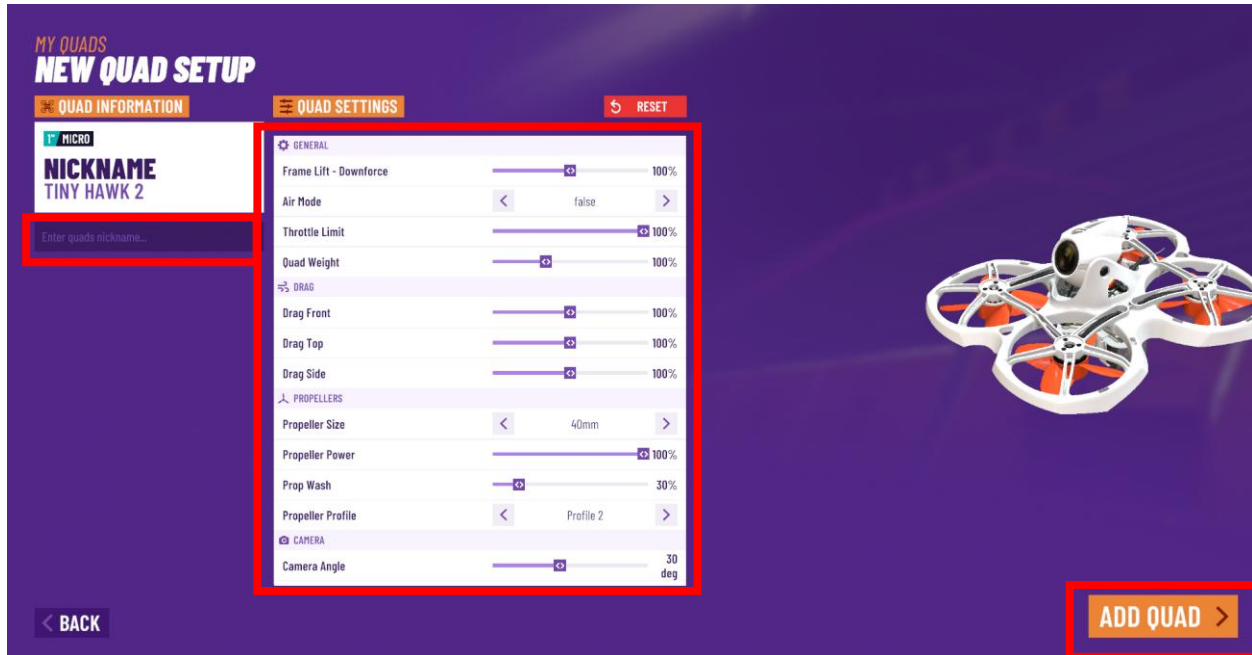




Select the category “Micro Quads.” Choose Tiny Hawk 2. Do not adjust any settings.



Click “Add Quad” in the bottom right. If you have multiple students using an account, feel free to add a nickname as well. Take note of the default settings. You are not allowed to change any of these. \*Note: there is a bug where on this screen it shows the propeller size of 40 mm, but the next screen shows 31mm. That’s fine.




Your Quad is now ready to be used in a race. Take note of the default settings. You are not allowed to change any of these. \*Note: there is a bug where on the edit quad screen it shows the propeller size of 40 mm but on this screen, it shows 31mm. That's fine.

**SINGLE PLAYER**  
**SELECT QUAD**


**MY QUADS**

**1" MICRO**




**DEFAULT QUAD 631**  
TINY HAWK 2

**5" RACING**



**TBS OBLIVION**  
TBS OBLIVION



**1" MICRO**  
**DEFAULT QUAD 631**  
TINY HAWK 2

**QUAD SETTINGS**

- GENERAL**
- Frame Lift - Downforce 100%
- Air Mode False
- Quad Weight 100%
- Throttle Limit 100%
- DRAG**
- Drag Front 100%
- Drag Top 100%
- Drag Side 100%
- PROPELLERS**
- Propeller Size 31
- Propeller Power 100%
- Prop Wash 30%
- Propeller Profile 2
- CAMERA**
- Camera Angle 30°
- Camera Mix Angle 0°
- BATTERY**
- Battery Simulation False
- Battery Size 450
- Battery Mass Effect 0%

**+ ADD QUAD**

**< BACK**

**EDIT QUAD**

**CONTINUE >**

## Section 2: Setting up a Single or Multiplayer Race on VelociDrone

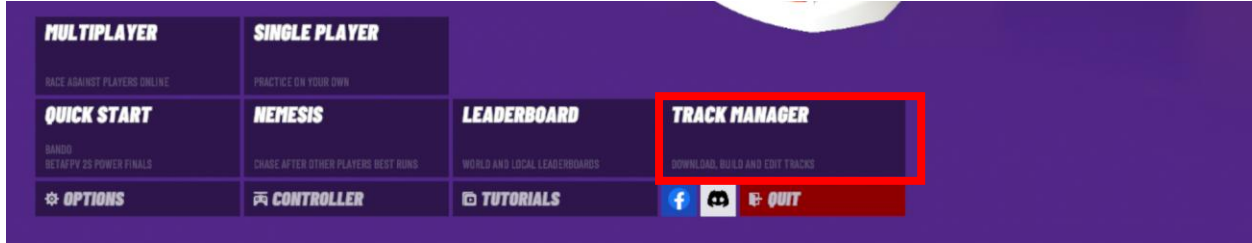
### Step 1: Open VelociDrone

All students will open VelociDrone, each on a different account.

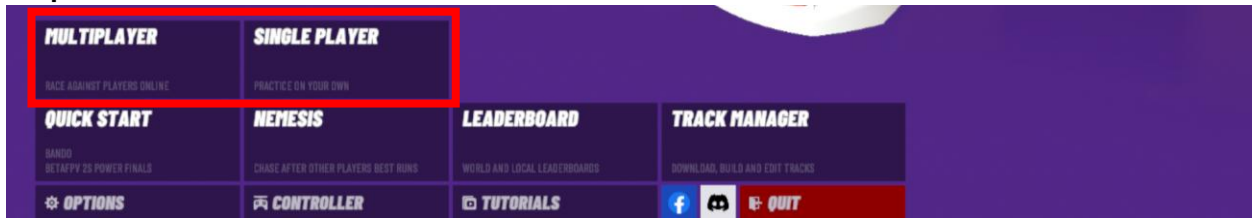
### Step 2: Download the Track

Click on “Track Manager” and download the track(s) of the week. See Section 1D above for more information on how to download the track. Once the track is downloaded, return to the main menu.

\*Note: Only single racers or the host of a multiplayer racer needs to download the track.

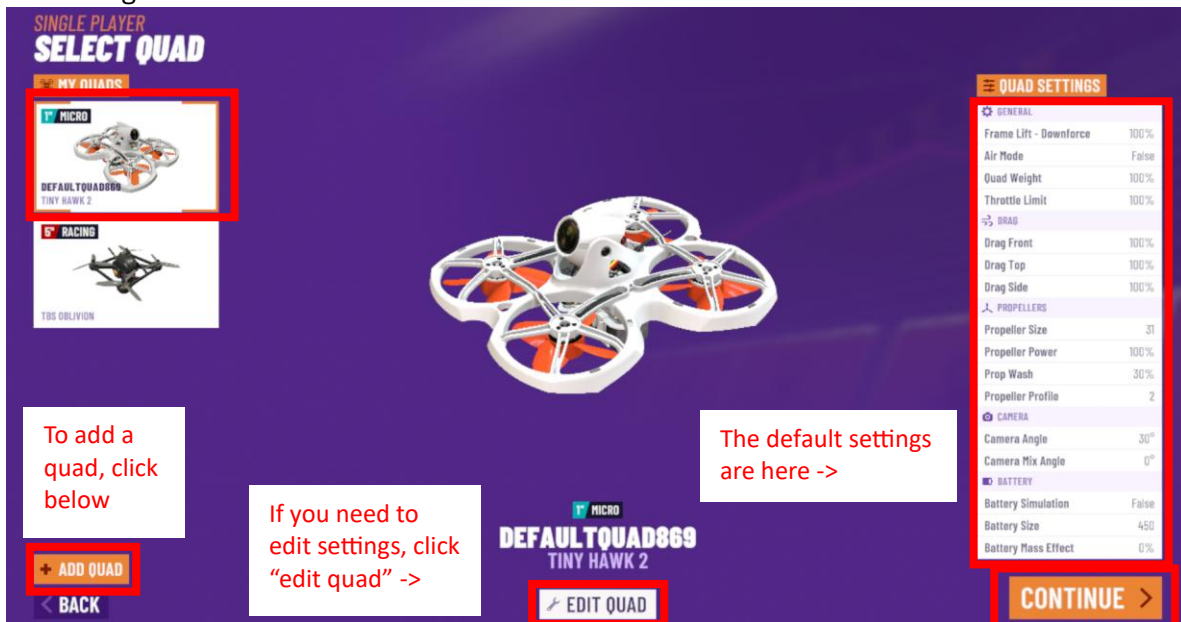


### Step 3: Select Race Mode



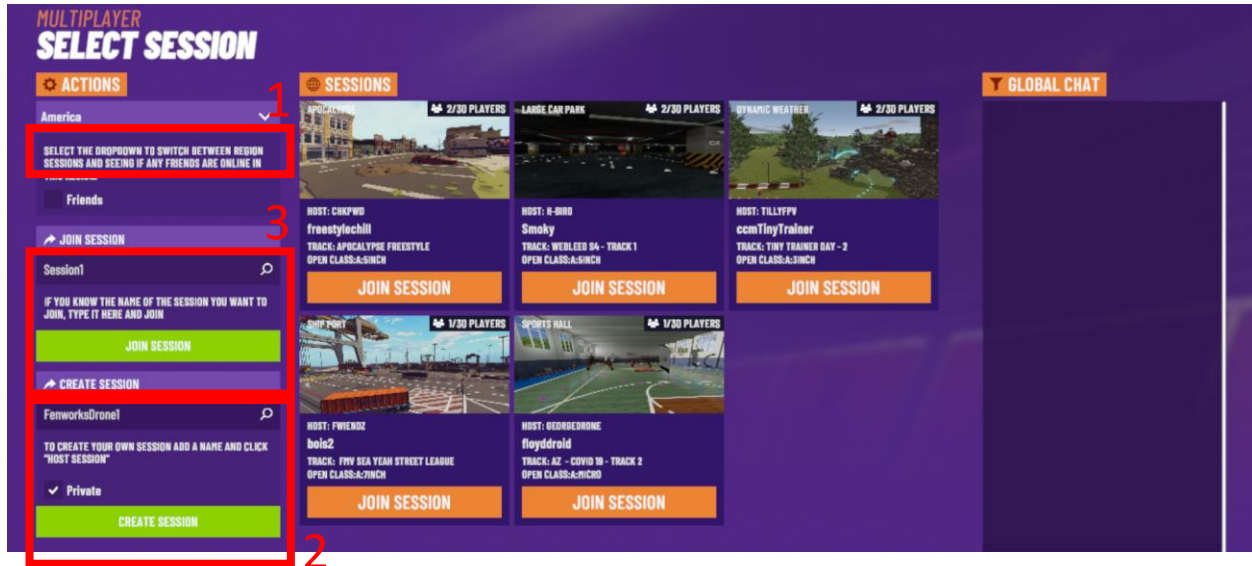
### Step 4: Select Quad

You will be brought to the “Select Quad” screen. Please check that the Tiny Hawk 2 drone is selected and that all the default settings are correct. For more help making sure you have the correct Tinyhawk settings, see Section 1E above. If everything is good, click “Continue” in the bottom right.



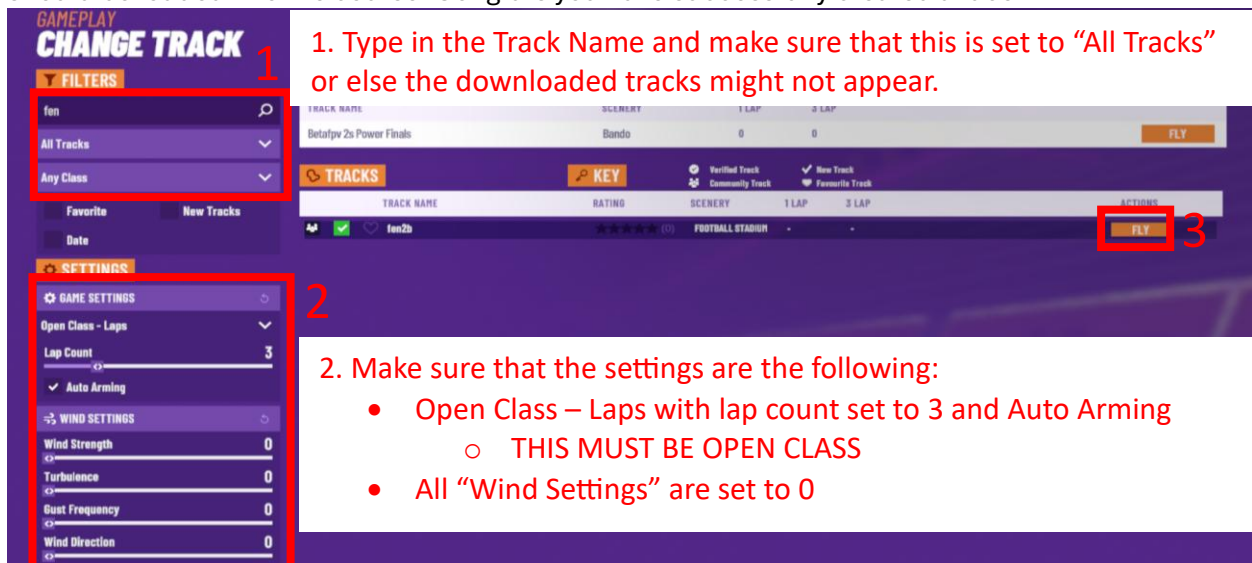
### Step 5: Create or Join a Session (Multiplayer mode only)

- **1. Everyone:** For all multiplayer lobbies, please make sure the region is set to “America.”
- **2. Host:** One racer must set up the lobby if you are the home (left) team. Find the “Create Session” box, create a unique session name, and check the “Private” box. Then click “Create Session.” Make sure to message in the chat on the Fenworks Platform what the lobby name is to the other team. \*NOTE: The session name is case-sensitive.
- **3. All Other Racers:** If you are on the away team or the home team and not the racer hosting the server, find the “Join Session” box and type in the code the host racer messaged in the chat on the Fenworks Platform. \*NOTE: The session name is case-sensitive.



### Step 6: Lobby Settings

If you are making the lobby, please make sure all the lobby settings are correct. Type the track's name and ensure that “All Tracks” is selected below it. If you don’t, the track might not appear. Also, make sure that the “Game Settings” are correct, as if they are on something other than Open Class, it could impact how your drone operates in the game. Once everything is correct, click “Fly.” You should be loaded into the course. Congrats you have successfully created a race.

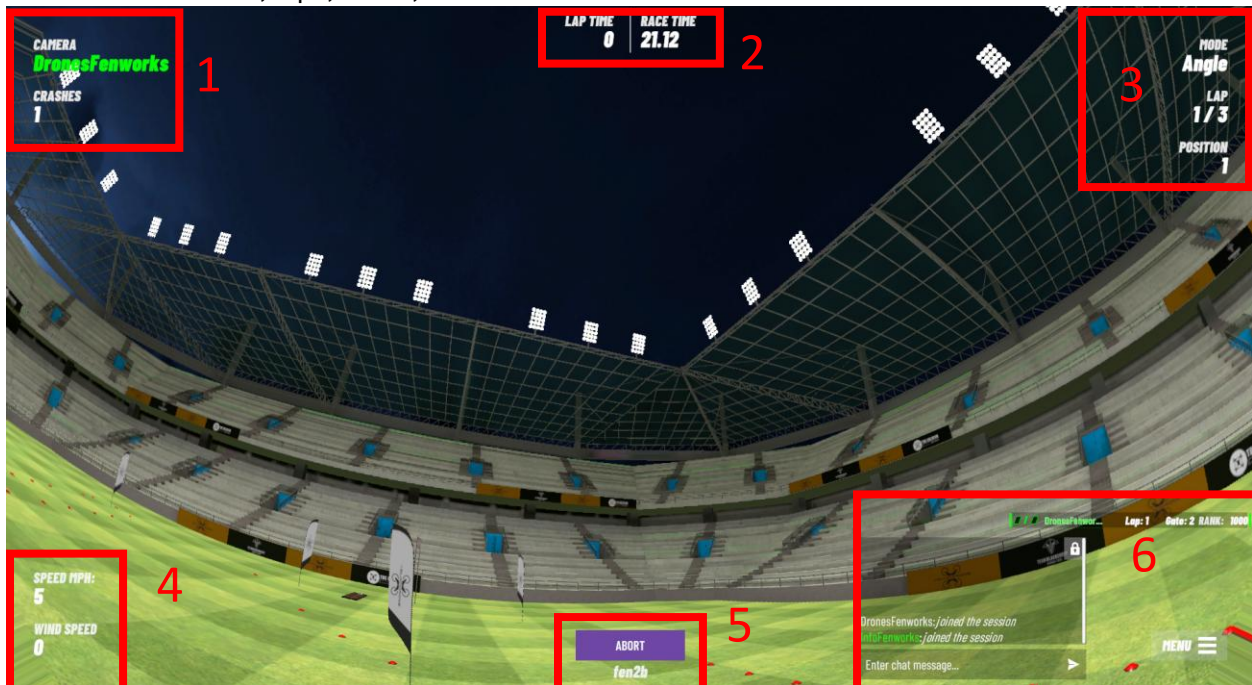


### Section 3: Race Support

#### A. The Hud

Upon spawning into the race, you will have time to fly around and test the course. The HUD displays several important items.

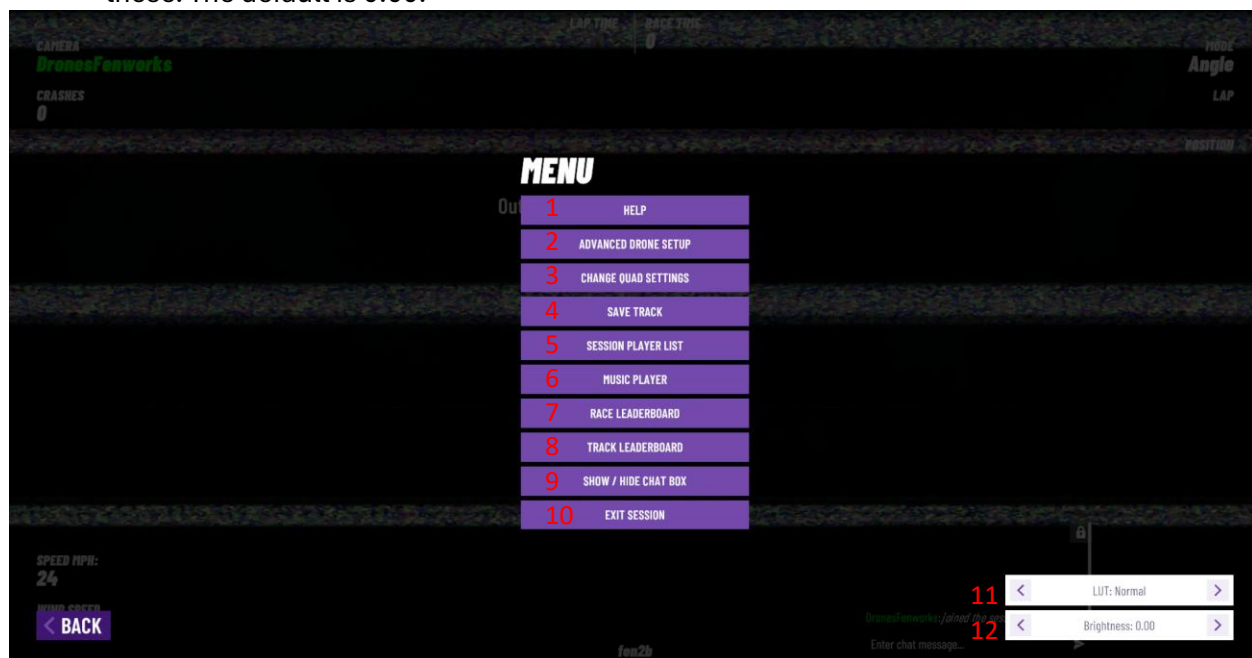
1. The top left corner shows your VelociDrone account name and crashes. Please note that we do not care about crashes and that there are no penalties for them.  
\*Note: You should not see the battery icon. If you do, you set up the lobby settings incorrectly. Please see Section 2, Step 6 of this guide for more support.
2. The top middle shows the lap time and the total race time. For the Fenworks Program, total race time will be the only important number we will focus on.
3. The top right shows the racer's mode, lap, and position.
  - a. Mode: All racers are allowed to fly using any of the 3 modes: Angle, Horizon, and Rate. Angle is the easiest as it automatically self-levels itself. Horizon is like Angle, however, it does less self-leveling than Angle. Rate is the hardest as there is no self-leveling, allowing for full utilization of the drone controls. Section 3B in the Help section shows how to change these
4. The bottom left shows the drone's speed and wind speed. Please note that the Tiny Hawk 2s should not go faster than 28 mph. If you are going faster than that, please double-check your drone and make sure it's on default settings. Additionally, there should never be wind on any of the courses, so the wind should be at 0. If it is at anything higher than 0, please double-check the lobby settings.
5. The bottom middle shows the Start/Abort button for the race. Only the race host will see this button. Below the button, you will find the track name. Please make sure that the track is correct.
6. The bottom right shows the simulator match chat, the info of all racers in the race, such as racer names, laps, times, and the menu button.



## B. Multiplayer Menu (Single player menu looks similar)

If you click the menu button, you can find a variety of useful tools.

1. Help: Please check here to see many of the keyboard commands.
  - a. The main ones you will want to use are 1, 2, and 3. These change the mode the drone flies. All racers are allowed to fly using any of the 3 modes: Angle, Horizon, and Rate. Angle (1) is the easiest as it automatically self-levels itself. Horizon (2) is like Angle, however, it does less self-leveling than Angle. Rate (3) is the hardest as there is no self-leveling, allowing for full utilization of the drone controls.
2. Advanced Drone Setup: Please do not have students adjust these settings at all.
3. Change Quad Settings: If you need to adjust your quad, you can click this to adjust the settings. You shouldn't need to use this.
4. Save Track: This allows you to save the track.
5. Session Player List: This will show all the racers that are in the race.
6. Music Player: If you want to adjust the music to their radio.
7. Race Leaderboard: This shows the times for the most recent race. **THIS IS THE PAGE TO SCREENSHOT** for proof of your race. After a race ends, the results will appear just for a few seconds. If you miss getting the screenshot, you can navigate to the Race Leaderboard to see the times and screenshot them. This will show ALL RACERS times and places.
8. Track Leaderboard: If racers choose to submit their times to the VelociDrone Track Leaderboard, their times will appear here. It is not required to do so. All scores must be submitted to the Fenworks Platform.
9. Show/Hid Chat Box: Click this to show or hide the chat box. It will adjust in real time.
10. Exit Session: This brings you back to the Main Menu.
11. LUT: All racers are allowed to change the LUT. Feel free to play around with these. The default is Normal.
12. Brightness: All racers are allowed to change the Brightness. Feel free to play around with these. The default is 0.00.



## Section 4: Screenshotting Times

Make sure to screenshot the leaderboard after every race. You will need to upload them to the Fenworks Platform when you submit your scores.

### Step 1: Finish a Race

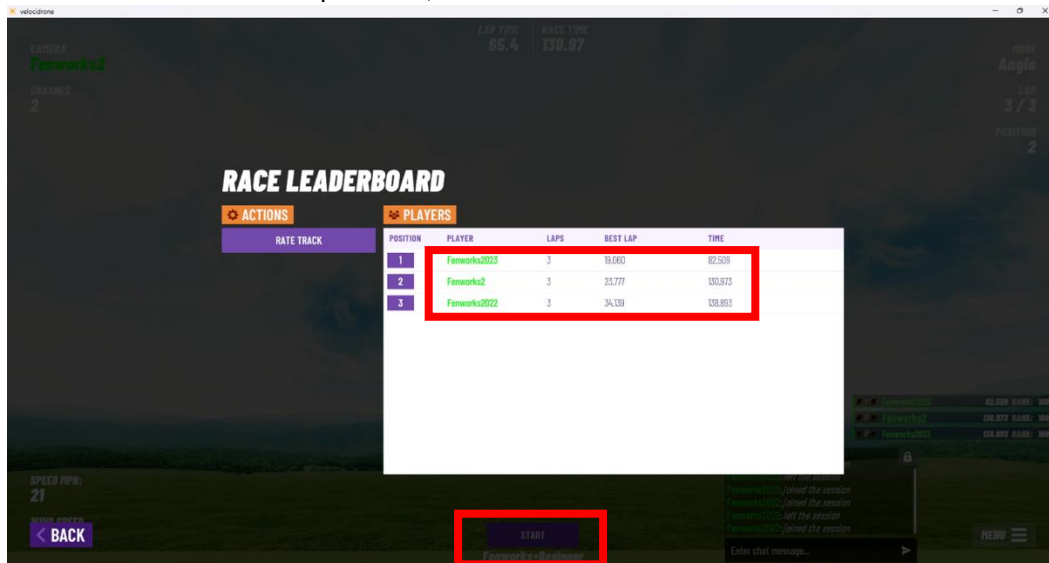
Wait until all the players' scores are on the screen. Then, either using a phone or the computer screenshot ability, take a screenshot.

#### How to Screenshot:

- Windows: Windows logo key + Shift + S OR click the PSC/PrtSc button (typically found adjacent to the backspace button)
- Mac: Command + Shift + 3



All screenshots must have the track name (shown faintly in the background), racer name, and total time in the screenshot. If possible, the current date and time would be nice but not required.



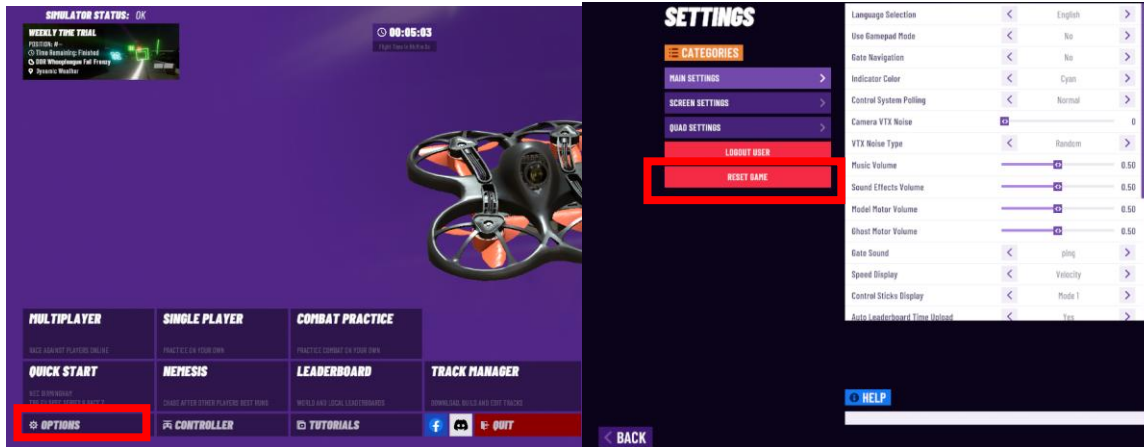
### Step 2: Submit times to the Fenworks Platform

See this [guide](#) on how to submit guides.

## Section 5: Troubleshooting

### A. Resetting Your Game

Fenworks recommends resetting your game to the default settings if you are concerned about the settings. To reset a VelociDrone account, go to the main menu and click "Options" in the bottom left." Once you are in the options, then click "Reset Game." \*\*Please note that this restarts everything, including deleting all settings, quads, and custom tracks. If you reset the game, you must edit any other manual settings, such as turning on Auto Leaderboard."



### B. Battery Simulation in a Race

If you are getting battery simulation in your races, please go check that you set up the lobby settings correctly. Please see Section 2, Step 6, for the correct instructions. There should be no battery simulation. If there is, it is likely that Single class got selected instead of Open Class.

