COSWORTH

SIMREP

CCW Mk2 PRO SIM

USER MANUAL

Version 1.2 last updated 06-11-2024

Before you start racing

We would like to thank you for your purchase. With your purchase, we can keep developing more awesome Sim Racing products. This user manual will provide you with the information needed, on how to set up your Cosworth CCW Mk2 Pro Sim Pro Sim Pro Sim Pro Sim wheel. If you have any questions, or need help setting up your wheel, please contact customer support at service@simrep-enginering.com.

What's new	
V1.0	Initial version
V1.1	Artwork update
V1.2	New clutch calibration method

About the Cosworth CCW Mk2 Pro

The Cosworth CCW Mk2 Pro Sim has been developed through close collaboration between SimRep Engineering and Cosworth. The CCW Mk2 racing wheel has seen action in LMP2, IndyCar, and Super Formula in recent years. The CCW Mk2 Pro Sim provides sim racers and professional drivers with the visual, tactile, and functional accuracy of the real steering wheel, offering the highest level of realism and enabling productive sim training experiences for drivers and teams.

What's the difference between the CCW Mk2 and the CCW Mk2 Pro Sim?

The Mk2 Pro Sim is crafted from genuine Cosworth FIA-licensed mechanical parts. The only difference lies in its control method. Road and race cars typically use a CAN bus to send data from the wheel to the car's ECU. For sim racing, however, data is transmitted via USB to the computer. New electronics in the Mk2 Pro Sim convert the original race wheel to a USB-compatible device.

We hope you enjoy using the Cosworth CCW Mk2 Pro Sim Wheel! If you do, please consider leaving a Google Review and tagging us on social media.

Leave a Google review for SimRep Engineering

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Packaging contents

- 1x CCW Mk2 Pro Sim Pro Sim Pro Sim steering wheel
  - 2x Shifters
  - 2x Clutch (optional)
  - 2x Dual Input Paddle (optional)
- 1x powered hub
- 1x Curly cable
- 1x Bag mounting equipment powered hub
  - 2x M5x16mm hex bolt
  - 2x M5 T-Slot nut
  - 1x 3mm hex socket tool (used for M5x16mm hex bolt)
  - 1x 1.5mm hex socket tool (used for rotary knob and thumb encoder wheels)
  - 1x Fiber cloth
- 1x Sticker set CCW Mk2 Pro Sim
  - 1x Button stickers (10 pcs)
  - 1x Action stickers (10 pcs)

WARNINGS

SEIZURES

This product contains bright LEDs that may trigger seizures in individuals with photosensitive epilepsy.

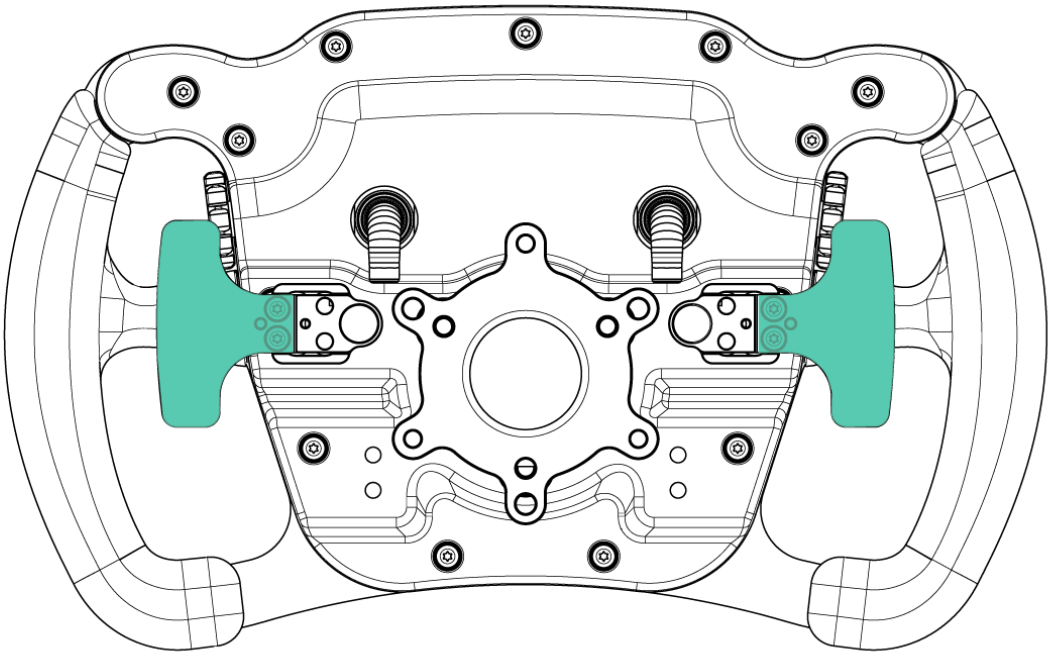
NOT FOR PUBLIC ROAD USE

This product is intended for motorsport/simulation purposes only. Do not use on public roads.

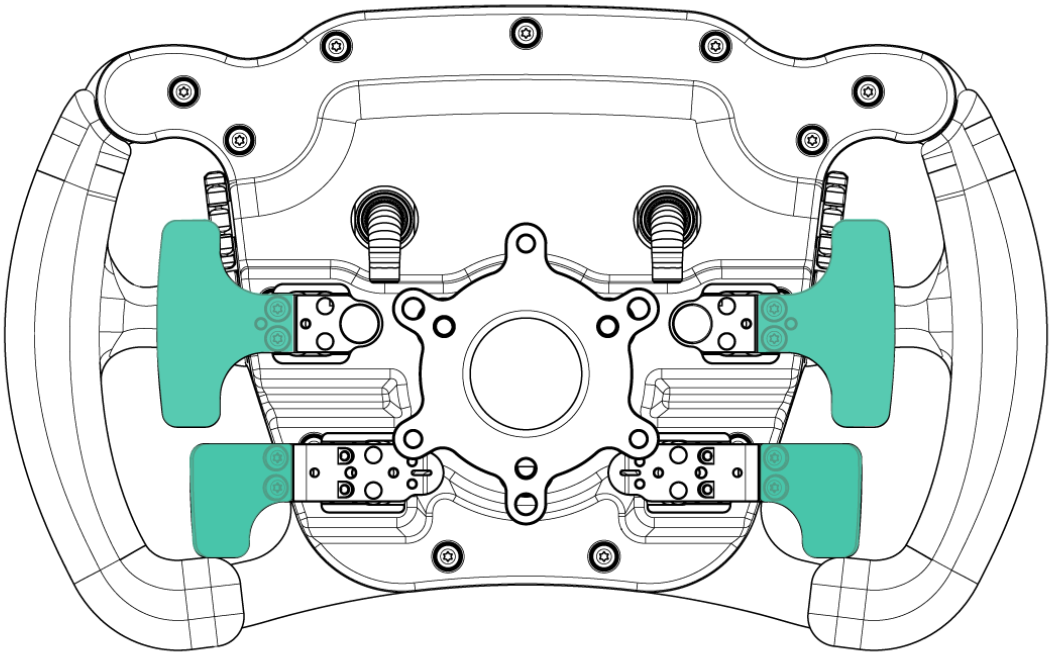
Table of contents

1. CCW Mk2 Pro Sim Configurations

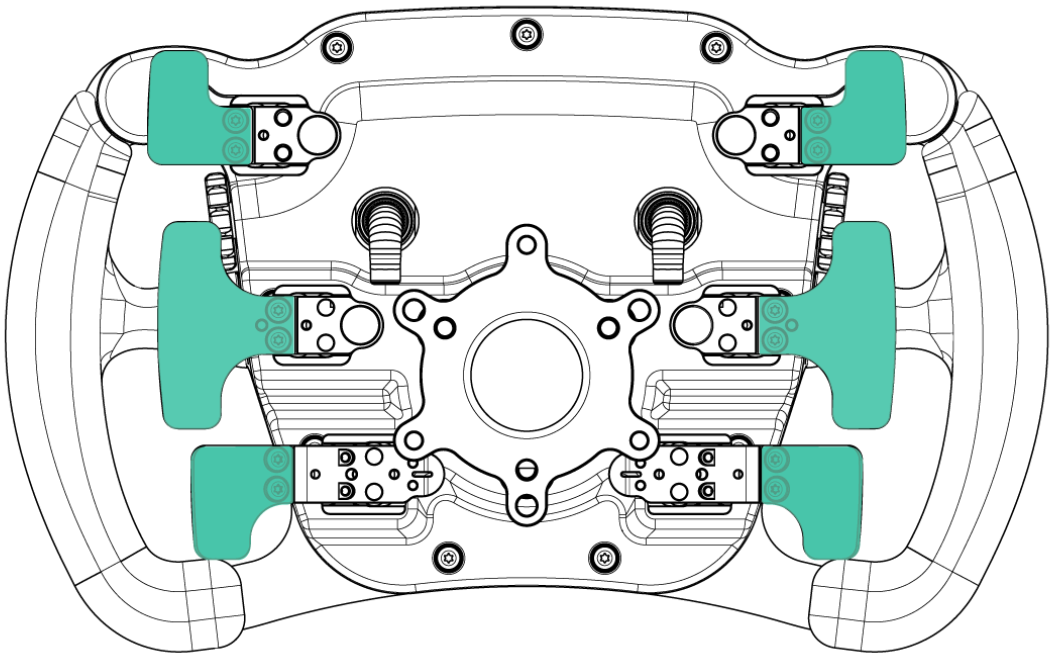
Shifter only



Shifter and Clutch



Shifter and Clutch + Dual Action Input



2. Wheelbase connection

The wheel hub features three bolt patterns, making it compatible with most wheel hubs. You can choose to mount it directly using the included bolts, or to install a quick-release adapter from any brand that follows the same bolt pattern.

- Pattern 1: 3x M5 thread hole with a 70mm PDC
- Pattern 2: 3x 5.2mm blank hole with a 70mm PDC
- Pattern 3: 3x 5.2mm blank hole with a 50.8mm PDC

3. Customizing the wheel

TIP

We recommend waiting to install the button stickers until you have finalized the buttons' positions.

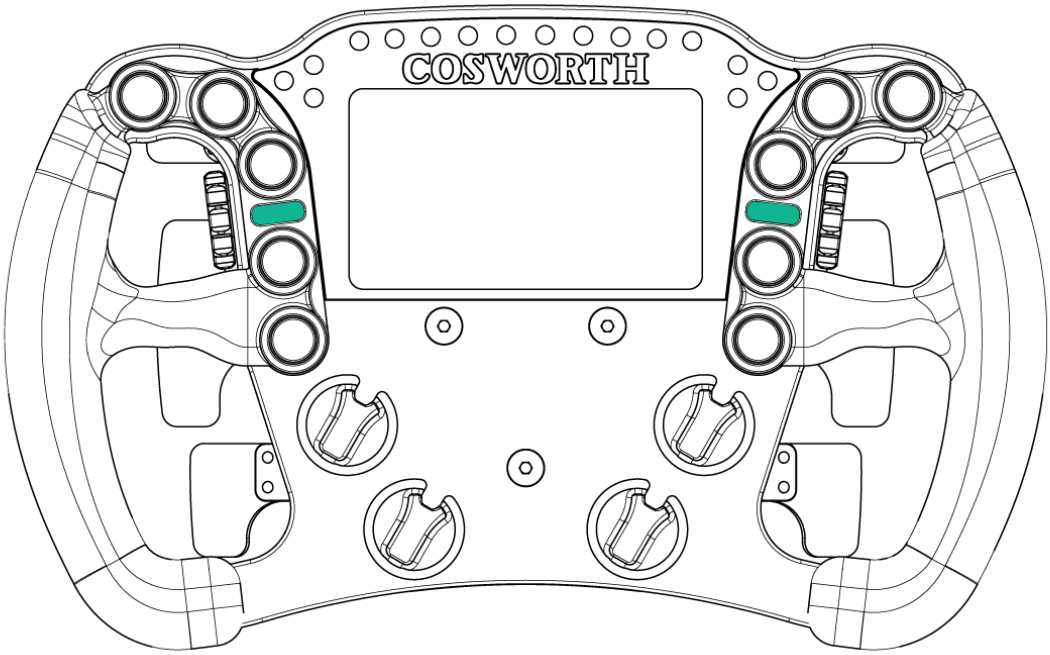
5-10 min

Tools used in these steps

- Tweezer (optional)

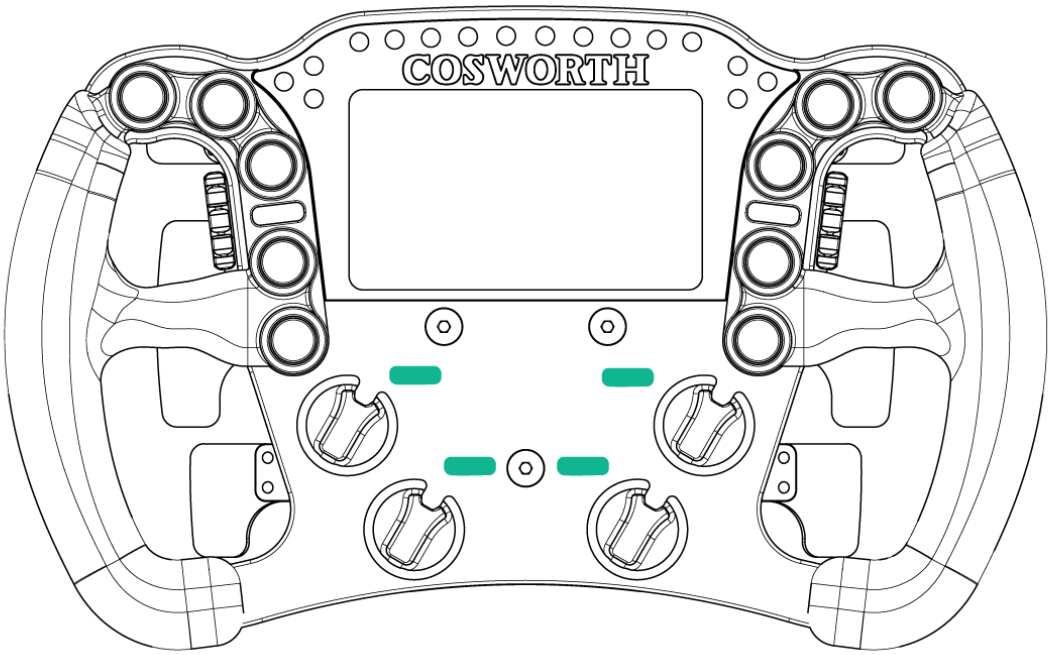
3.1. Thumb rotary stickers

Position of the thumb rotary action sticker.



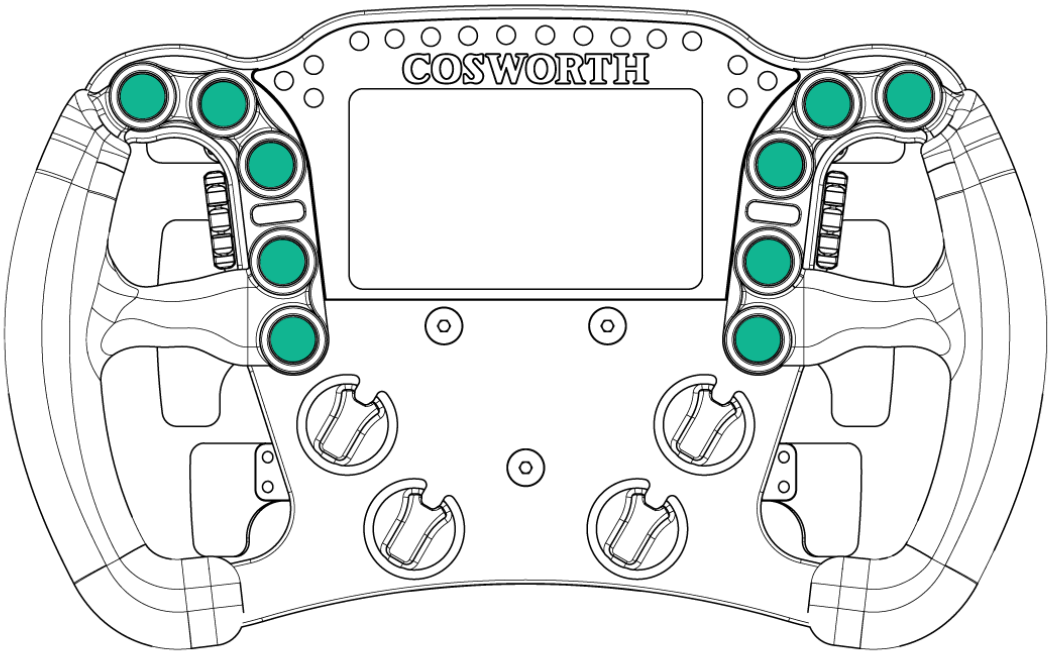
3.2. Front rotary stickers

Position of the front rotary action sticker.



3.3.Button stickers

Place the button stickers onto the button caps as illustrated below.



4. Mechanical installation

Before using the wheel, ensure that the powered USB hub is securely attached to your sim rig or another stable surface. Failure to do so may result in damage to belongings or cause injury.

The powered USB hub consists of 3 connections. One 5 pin push-pull connector and two USB cables. The left USB cable is used for data, and the right USB cable for power.

One Weipu connecter, for the coiled cable, from the wheel. And two USB cables, one of these cables is data only, the other is for power. You can plug the power USB in to your computer or a separate 5V power adapter (like a phone charger).

5-10 min

Tools used in these steps

- HEX-Tool 3mm

4.1. Connect your wheel to your wheelbase

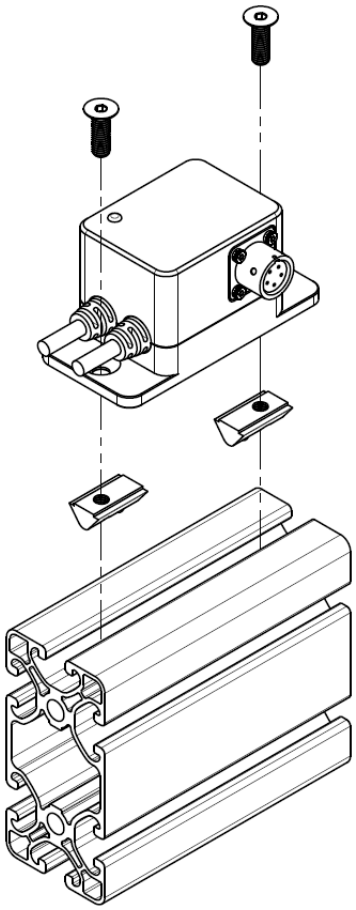
Install your preferred wheelbase quick release by following the manufacturers installation steps, and connect the wheel to the wheelbase.

4.2. Mount USB hub

Mount the Powered USB 2.0 hub to your rig using the supplied T-slot nuts and M5 bolts. Insert the T-slot nuts directly into the aluminum profiles by turning them 90 degrees to snap them into place. Open ends on the profiles are not required. Ensure that the connector faces the wheel in a logical orientation for easy access.

TIP

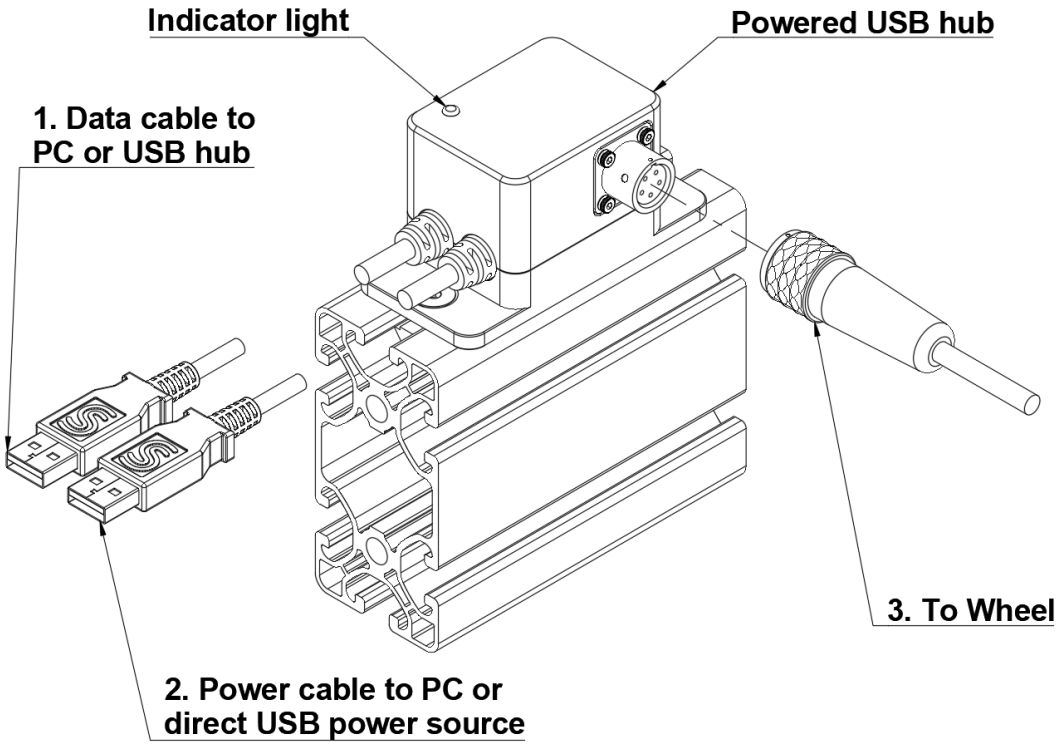
Connect the wheel to the wheelbase and plug the curly cable into both the wheel and the powered hub. Choose a position where the curly cable is free from tension, allowing the wheel to rotate freely and the cable to extend and retract without overstressing it. If it provides a better fit, you may wrap the curly cable around the wheel hub once.



4.3. Connect the USB hub

Now, proceed to connect all components. You will notice two USB-A connectors. USB-A Connector **(1)** connects directly to the PC and handles data transmission. USB-A Connector **(2)** can connect either to the PC or to a 5V power adapter (additional adapter not supplied). This additional connection is recommended if you are low on available USB ports or if a notification appears on the PC indicating that the device requires more power.

Finally, connect the coiled cable **(3)**. This cable uses a Push-Pull connector; align the red dots on both ends and push until you hear a click. To disconnect, pull the ring on the connector back to disengage the locking mechanism.



- Indicator light out: No USB connection
- Indicator light blue: USB connection
- Indicator light purple: USB and power connection (ready to operate)

***Quick troubleshooting**

When an external power source is used via a USB 5V power adapter, in rare occasions, the wheel may fail to connect properly. This issue can result from interference with other hardware that is plugged in to the power outlet. If this occurs, try using a different power outlet or connect the power USB directly to your PC instead of an external power supply.

5. Software installation

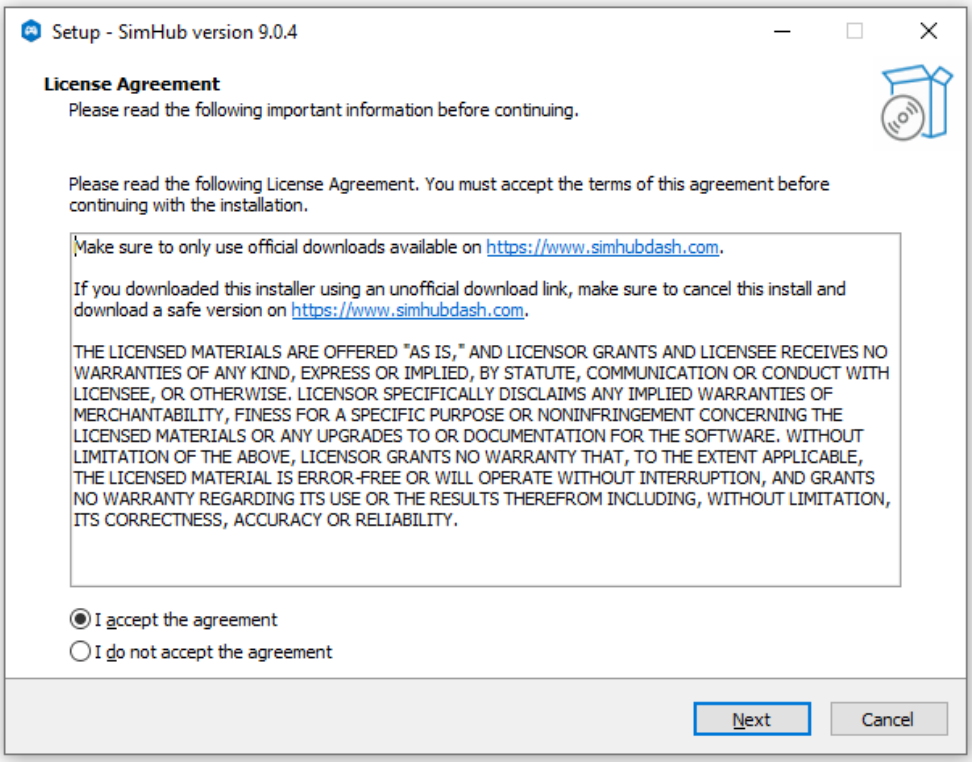
5.1. SimHub

SimHub can be used to control the LEDs and LCD display. Download the latest version of SimHub HERE.

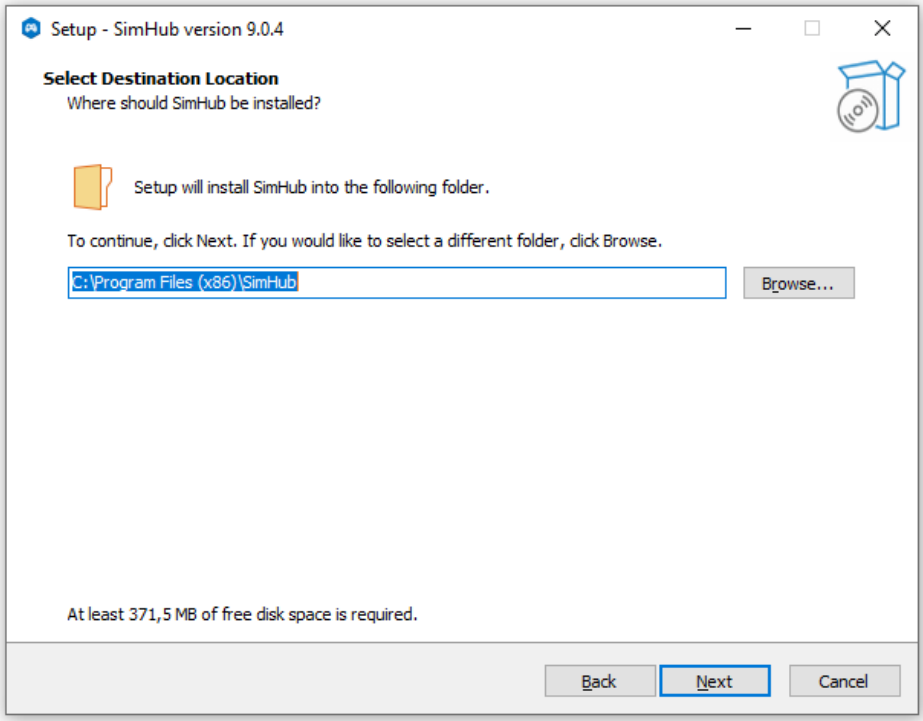
Installation instructions may be slightly different depending on the SimHub software version.

5.2. Installing SimHub software

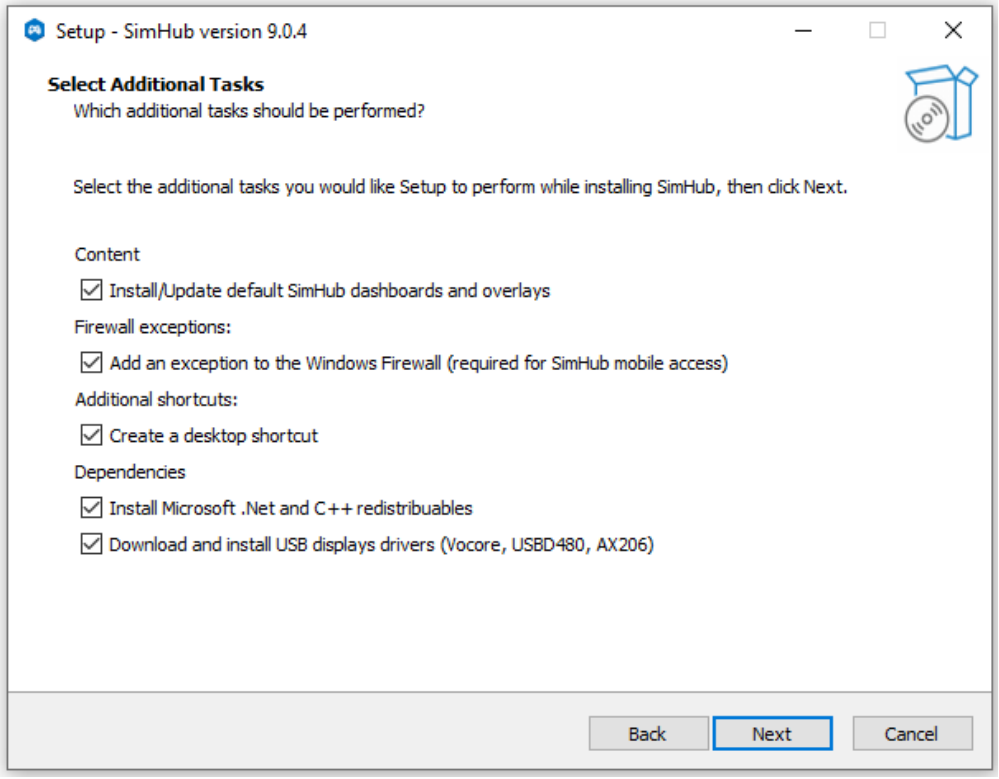
Accept the agreement and press “Next”.



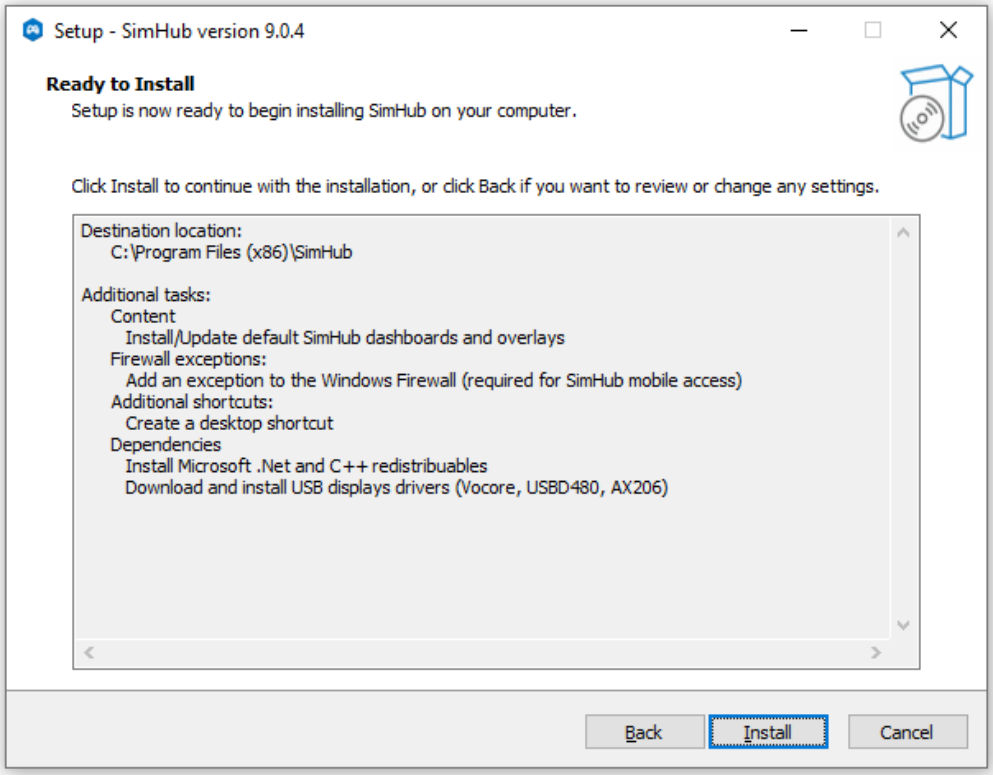
Specify where you want to install the software and press “Next”.



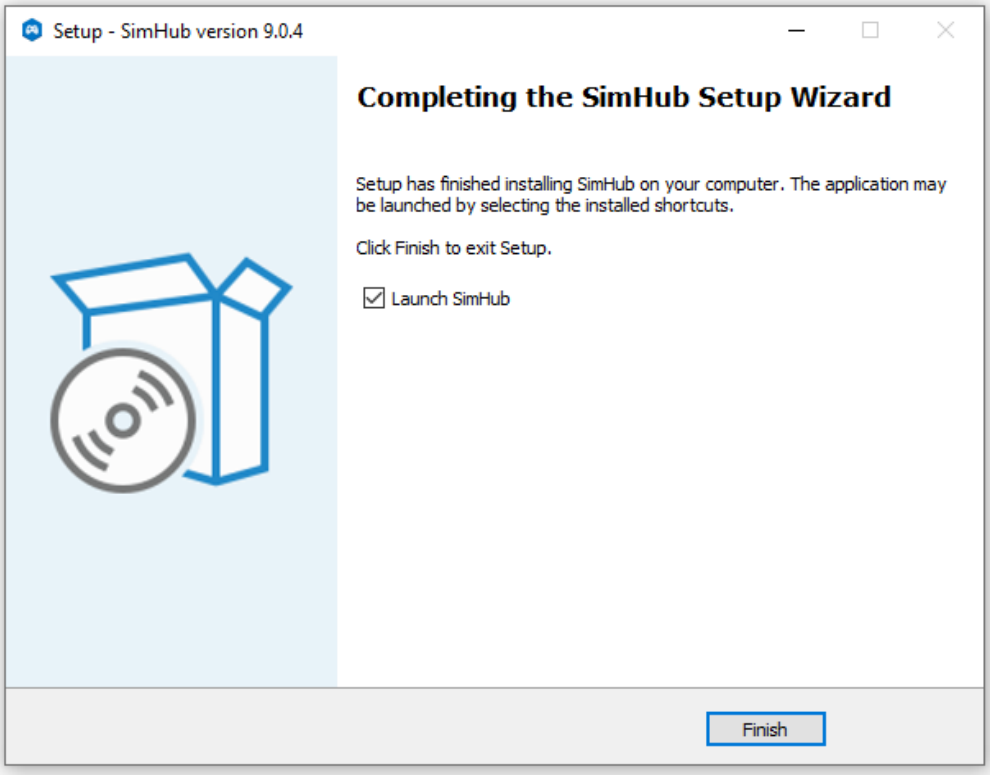
Check all boxes and press “Next”. Make sure the “Download and install USB displays drivers (Vocore, USBD480, AX206)” box I checked, otherwise the display won’t work.



Press “Install”. The installation may take up to 5 minutes.



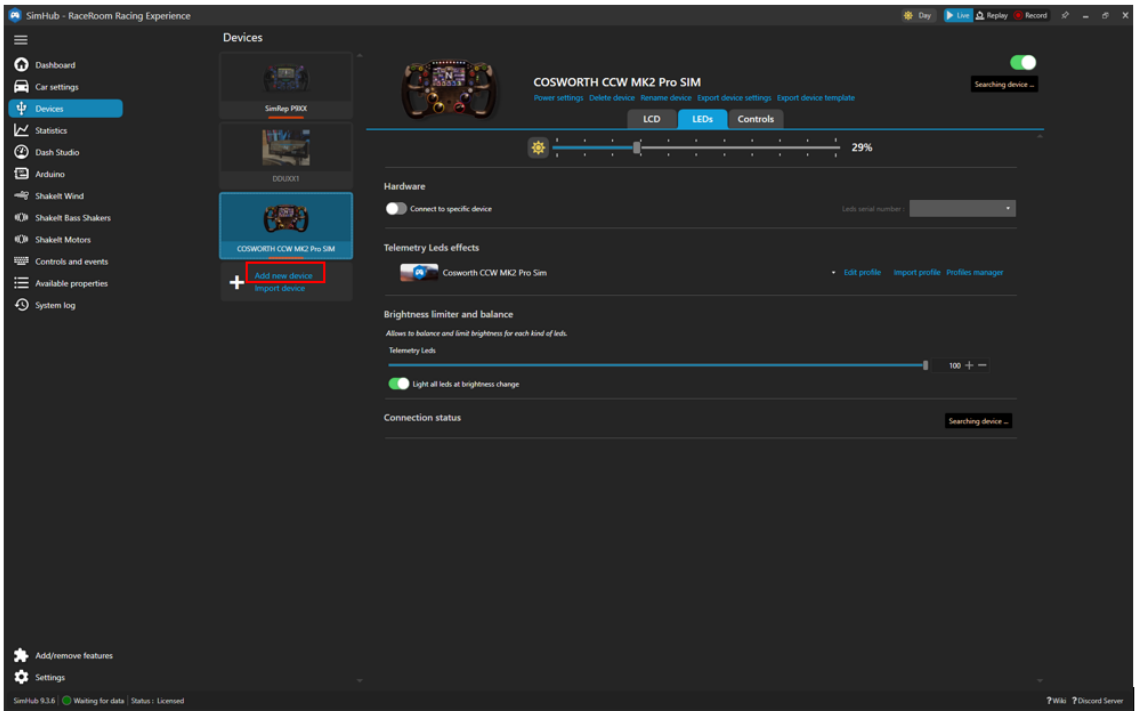
After the installation press “Finish”.



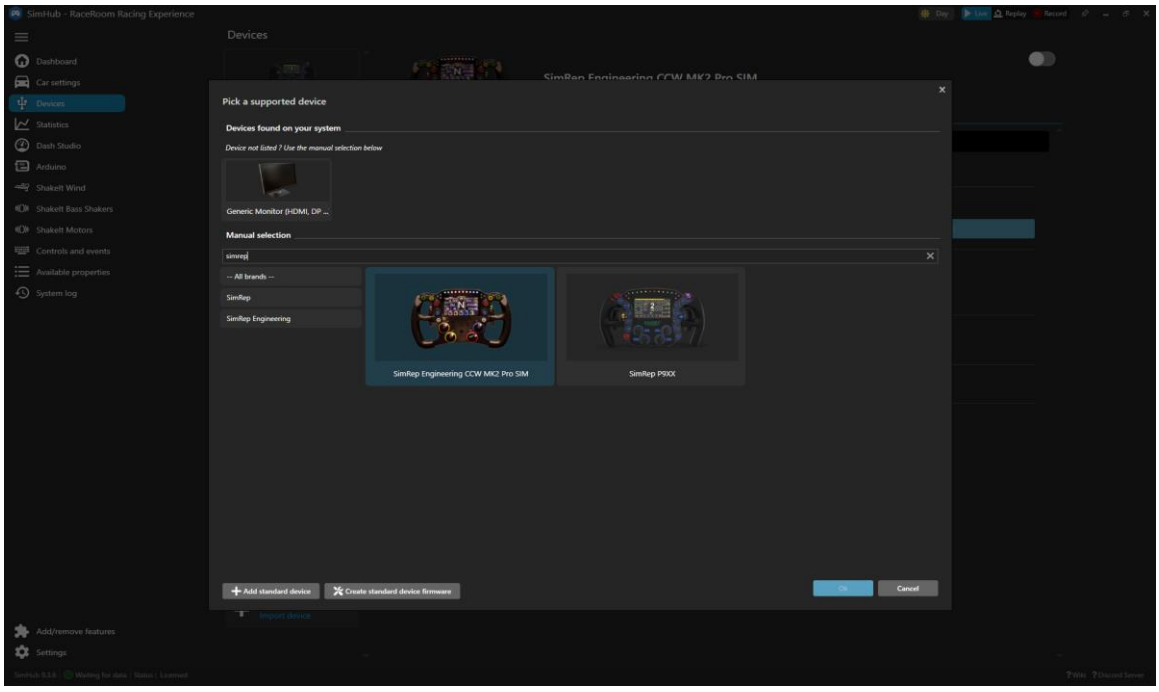
5.3.SimHub configuration

After installing SimHub, its needs to be configured in order to control the wheels functionalities like LED profiles, dash templates and customizing settings.

5.4. Importing the wheel



Search for the CCW Mk2 Pro Sim steering wheel in the list devices list.



Double click on the “COSWORTH CCW Mk2 Pro Sim” and it will install automatically.

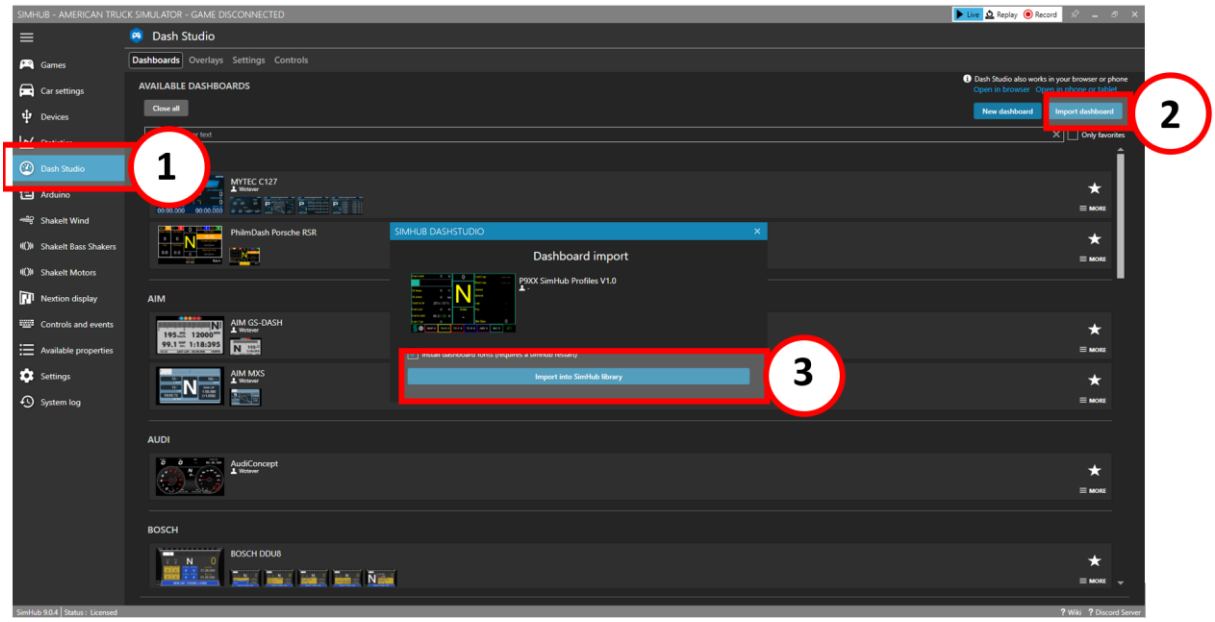
***Note**

Alternatively you can download the “SimHub standard device template” from the SimRep Engineering downloads page HERE (only needed if you can’t add the device through SimHub)

5.5. Loading SimHub profiles

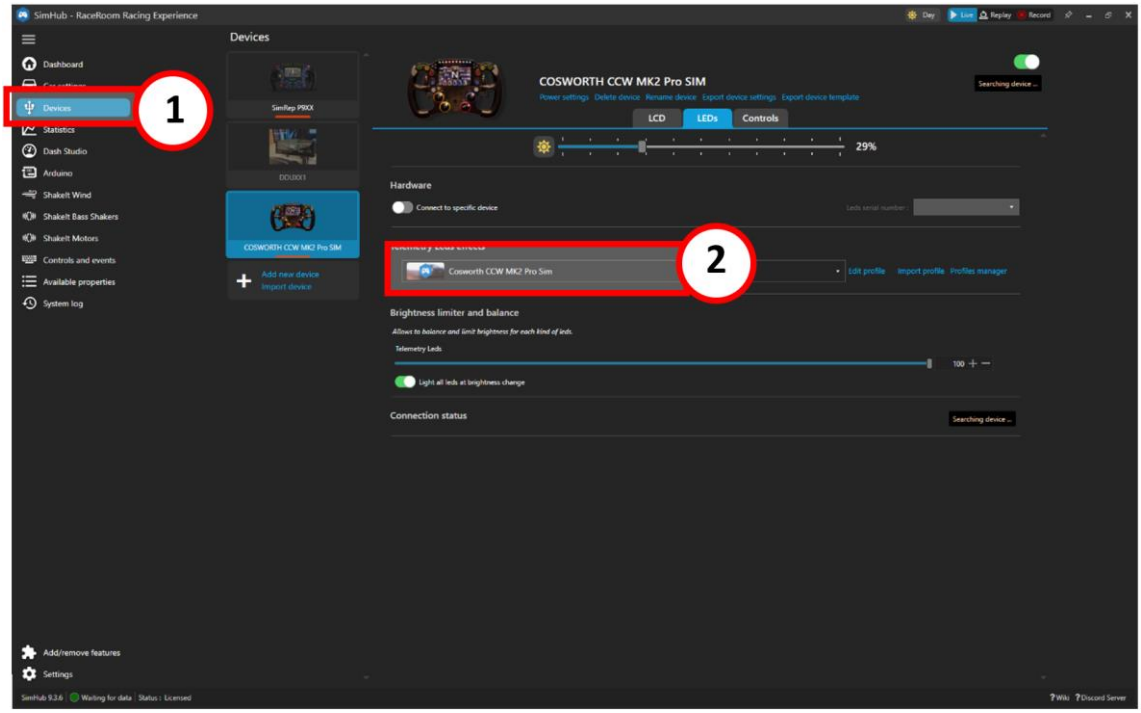
Download the “CCW Mk2 Pro Sim Pro Sim Pro Sim SimHub Profiles V1.0” file (or newer version) from our
downloads page HERE. Unzip the file to your hard drive.

Go to “Dash Studio” **(1)** and click on “Import Dashboard” **(2)**. Open the directory where you have extracted the downloaded files and import file “CCW Mk2 Pro Sim Pro Sim Pro Sim SimHub Dash” **(3)**.
SimHub restart may be required.

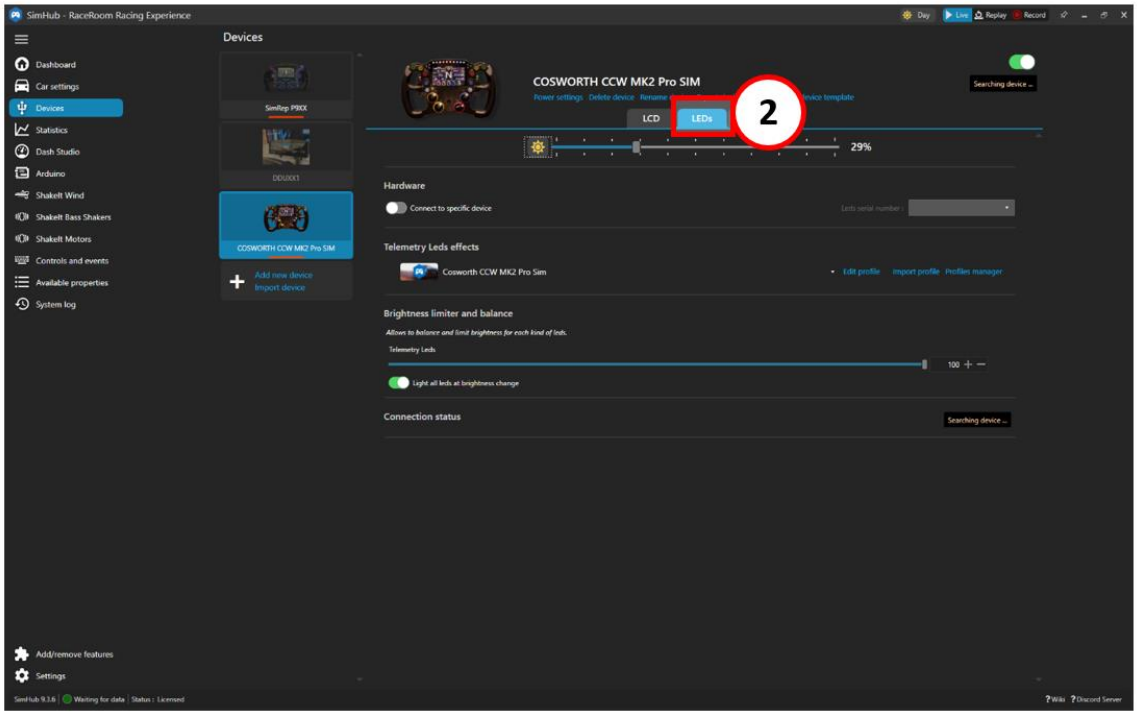


Your wheel should now display as connected. If this is not the case, we advise you to disconnect the USB cable from your computer and reconnect. If that doesn’t work, try to reinstall SimHub.

Go back to the “Devices” **(1)** tab and select the “CCW Mk2 Pro Sim Dash” in the “Main dashboard” **(2)** dropdown.

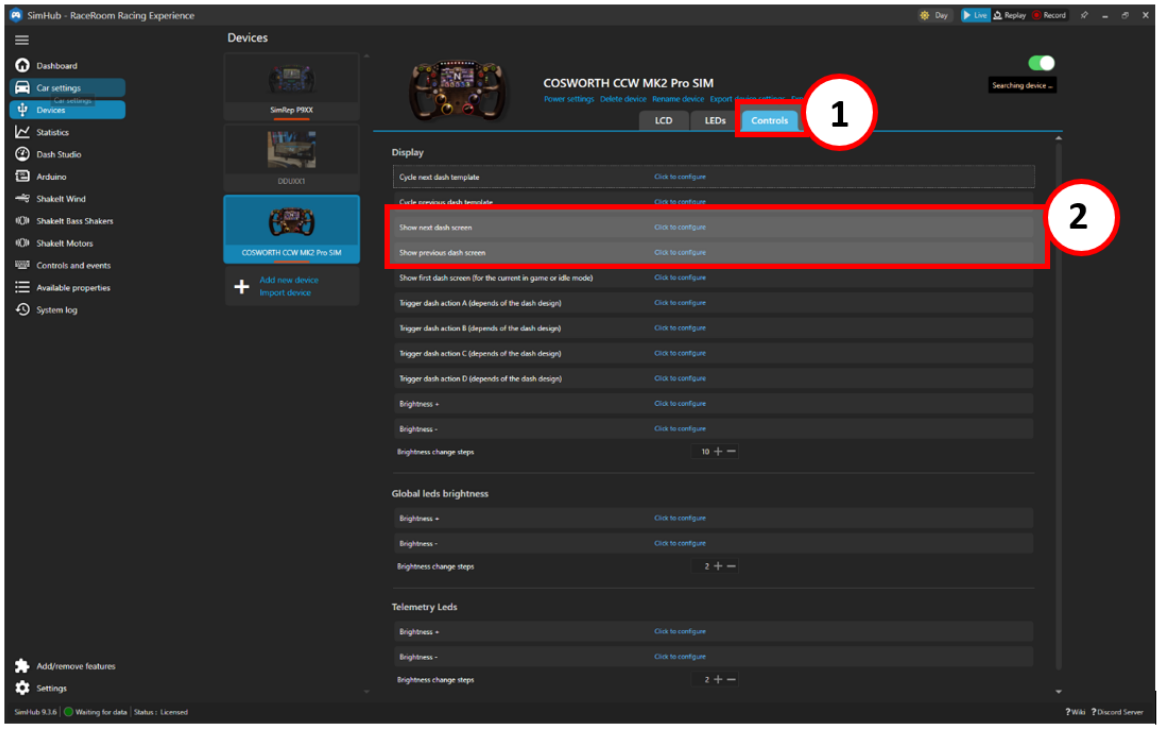


Next to the LCD tab, you'll find a tab labeled LEDs **(2)**. Here, you can customize the LED settings by changing colors, adjusting brightness, and loading (or creating) custom LED profiles.



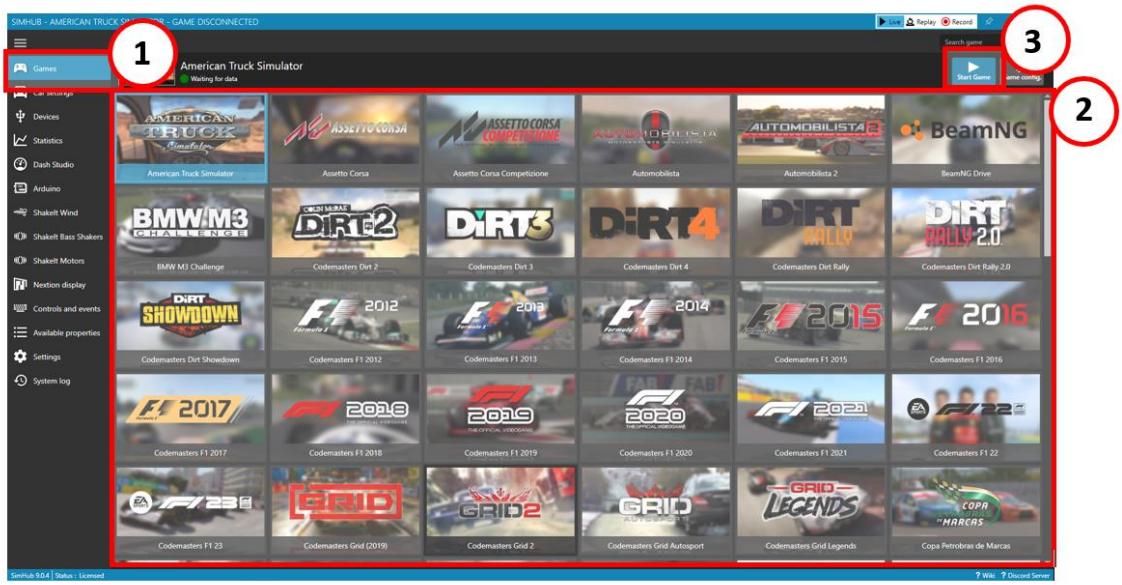
5.6. Setting dashboard page buttons

You can assign a 'Next' and 'Previous' button to cycle through the dashboard templates. To do this, navigate to the Controls tab **(1)** under the CCW Mk2 Pro Sim device. Select Show Next Dash Screen and Show Previous Dash Screen **(2)**. A pop-up will appear, prompting you to press the button you want to assign for each action.



5.7. Starting a game

Go to the "Games" tab **(1)** , select your game **(2)** and click "Start Game" **(3)**.

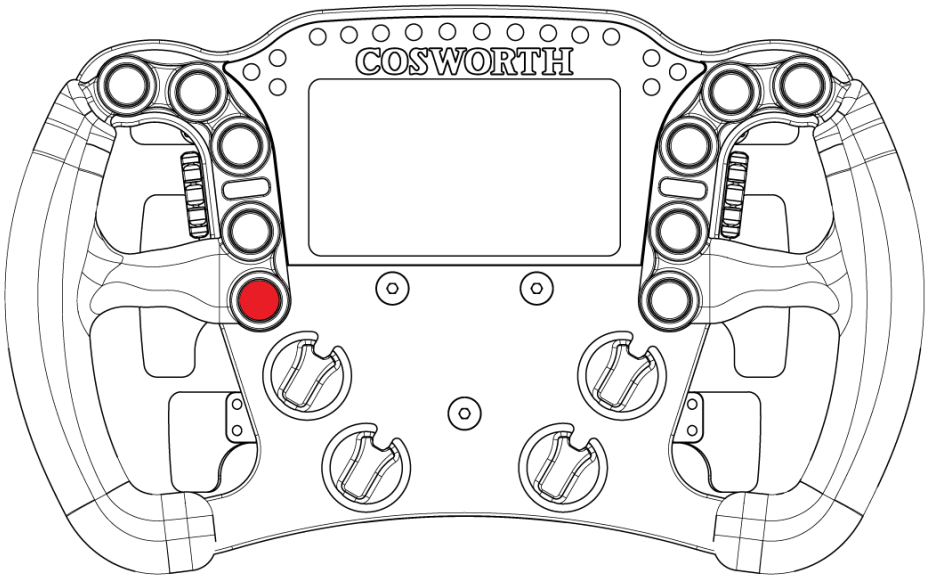


6. Firmware updates

To update the firmware of your CCW Mk2 Pro Sim steering wheel, follow these steps:

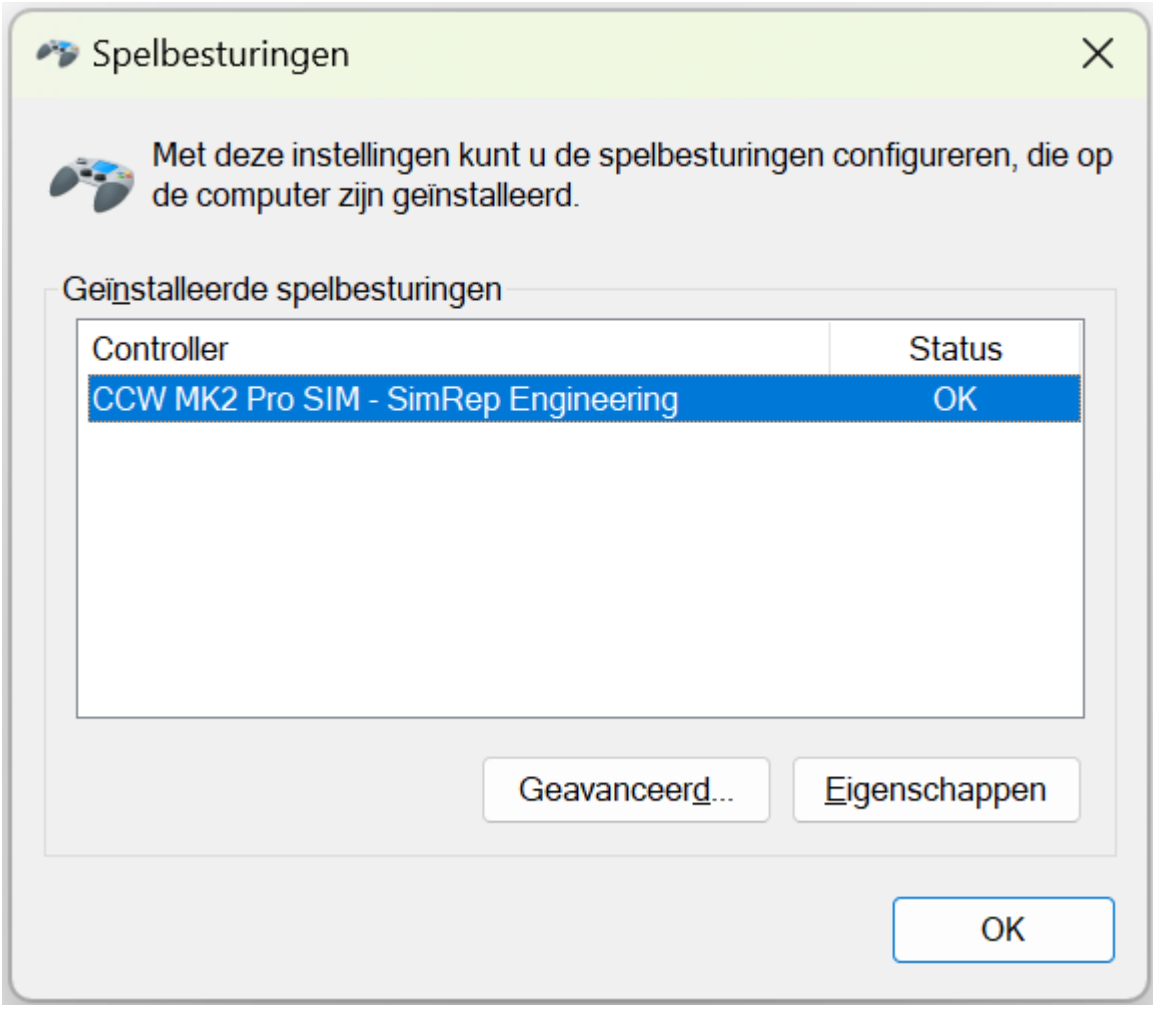
1. **Download the Firmware Update Tool**:
   - Visit the SimRep Engineering Support Page to download the firmware update tool.
   - The download package includes the update tool and a quick manual for firmware updates.
2. **Prepare the Wheel for Update Mode**:
   - Ensure the wheel is powered off.
   - Press and hold the button located at the bottom left of the wheel.
   - While holding the button, power on the wheel to enter update mode.
3. **Perform the Firmware Update**:
   - Connect the wheel to your PC via the appropriate USB connection.
   - Launch the firmware update tool on your PC.
   - Follow the on-screen instructions provided in the quick manual to complete the update process.
4. **Exit Update Mode**:
   - After the update is complete, restart the wheel to exit update mode.
   - If the wheel remains in update mode, power it off and on again without pressing any buttons.

Note: If you accidentally enter update mode by pressing the button during startup, you can exit by restarting the wheel. Simply unplug the connector located in the wheel hub and reconnect it to return to normal operation. For further assistance, refer to the quick manual included in the download package or contact SimRep Engineering support.



7. CCW Mk2 Pro Sim functions

The CCW Mk2 Pro Sim Wheel offers customizable configuration options to suit user preferences. To view and adjust its settings, open the Windows Game Controller settings by typing “joy.cpl” (or “Set up USB game controllers” in Dutch) in the Windows search bar. This will allow you to see the real-time output of the steering wheel. https://hardwaretester.com/gamepad



IMPORTANT NOTE: it only shows up to 31 buttons. The wheel outputs more, depending on the setting. These buttons cannot be viewed, but can be used in-game.

7.1. Quick function overview

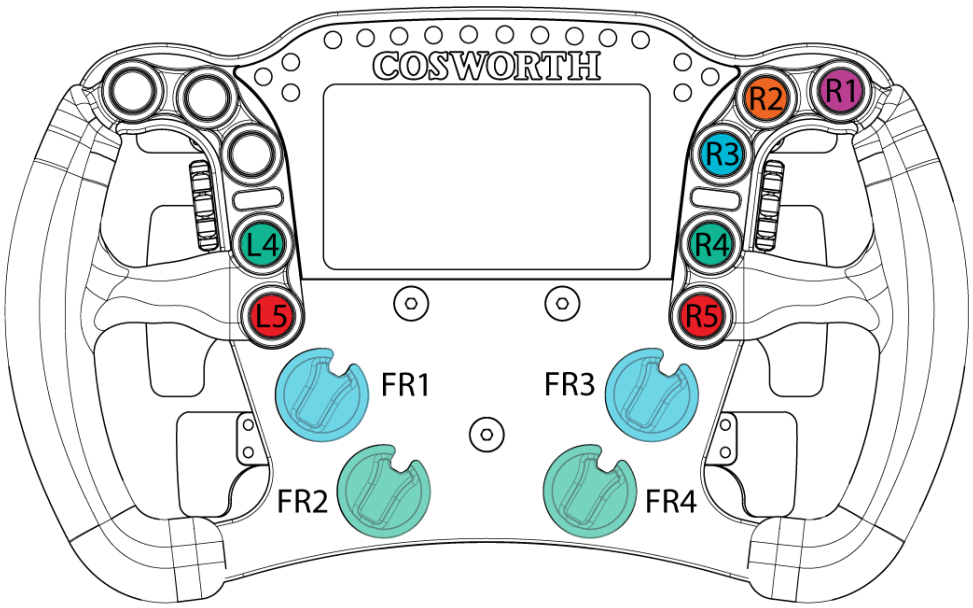
The following buttons are available for activating the wheel's functions:

L4 = **Function Activation Button** must be held down for a minimum of 2 seconds to activate. Keep it pressed while using other functions to maintain activation.
L5 = **Dual Function Button**

1. **Update Mode:** Hold down the designated button during startup to enter update mode. This action does not require a combination with other buttons.
2. **Asynchronous Clutch Adjustment:** When the wheel is powered on, pressing this button (without holding during startup) allows you to adjust the asynchronous clutch settings.

R1 = Synchronous Clutch
R2 = Asynchronous Clutch
R3 = Save Clutch Calibration
R4 = Clutch Calibration
R5 = Reset All Presets

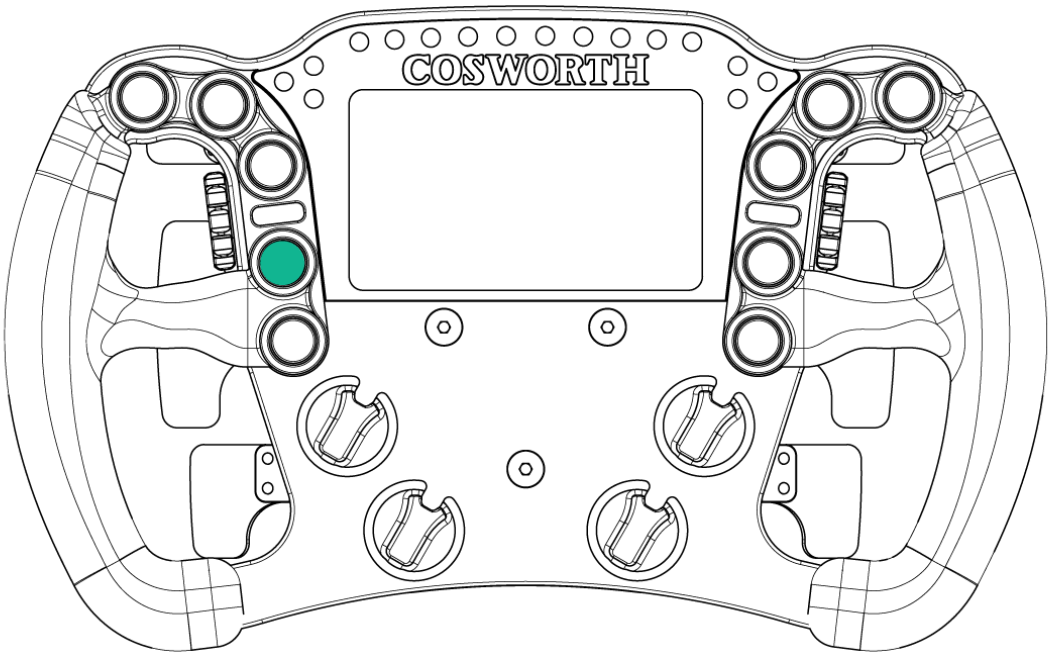
Only in asynchronous clutch mode:
FR1 = Left Clutch Fine Adjustment (Small Steps)
FR2 = Left Clutch Coarse Adjustment (Big Steps)
FR3 = Right Clutch Fine Adjustment (Small Steps)
FR4 = Right Clutch Coarse Adjustment (Big Steps)



7.2. Function Activation

IMPORTANT NOTE: It's important to note that the wheel uses **Button L4** on the left panel to activate certain functionalities. These functions will activate only after holding down **Button L4** for at least 2 seconds. To prevent accidental activation during gameplay, avoid assigning **Button L4** to functions that require a press longer than 2 seconds. Releasing **Button L4** will deactivate these functions.

Rest assured, if **Button L4** is pressed for longer than 2 seconds without using any of the combinations in the following chapters, **no** action will occur.

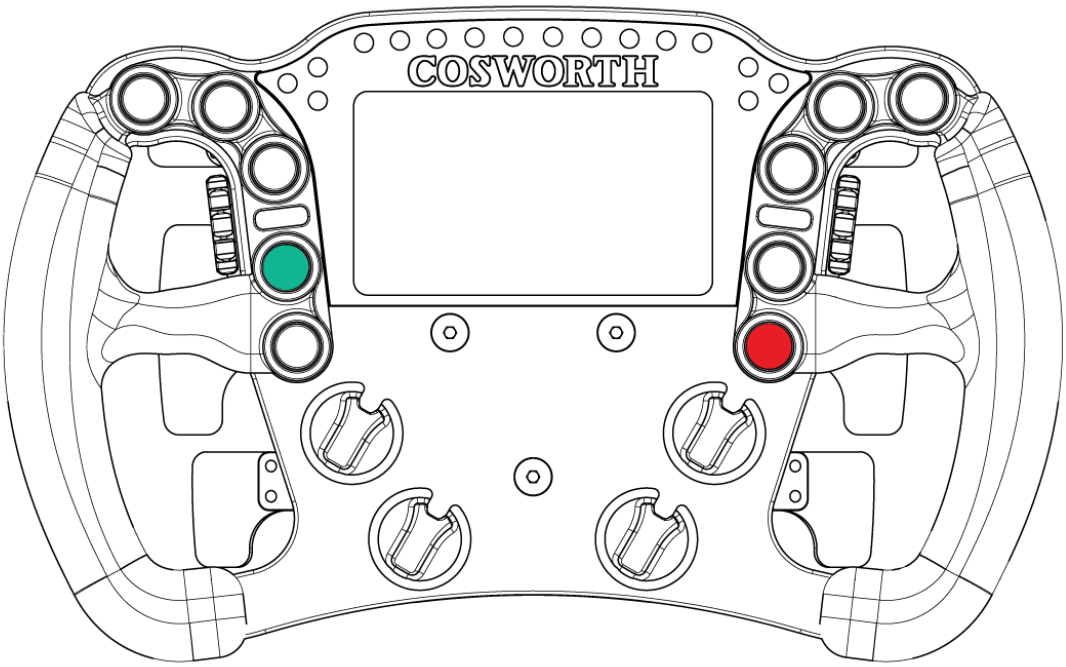


7.3. Reset configuration

IMPORTANT NOTE: When installing the wheel for the first time, it's essential to reset it using the button combination to calibrate the clutches.

To reset all settings to default, press and hold **Button L4** on the left panel (Green) and **Button R5** on the right panel (Red) for at least 2 seconds. This action will erase all custom settings, including the clutch calibration.

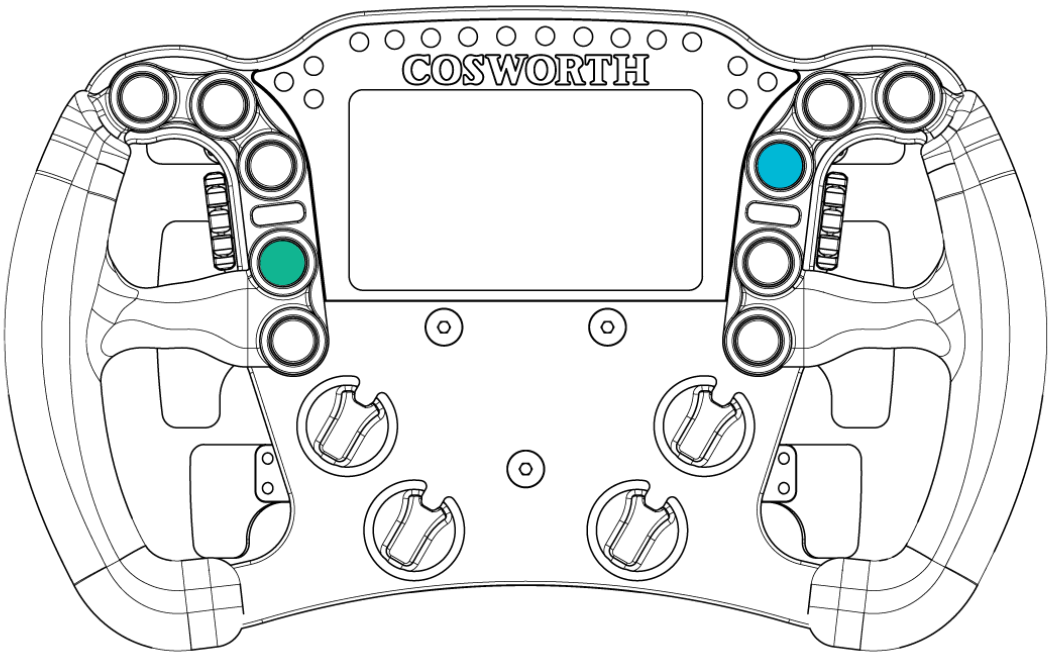
Press the buttons combo **L4 + R5** for at least 2 seconds restore the clutch calibration values and any other customized settings back to their default state.



7.4. Save configuration

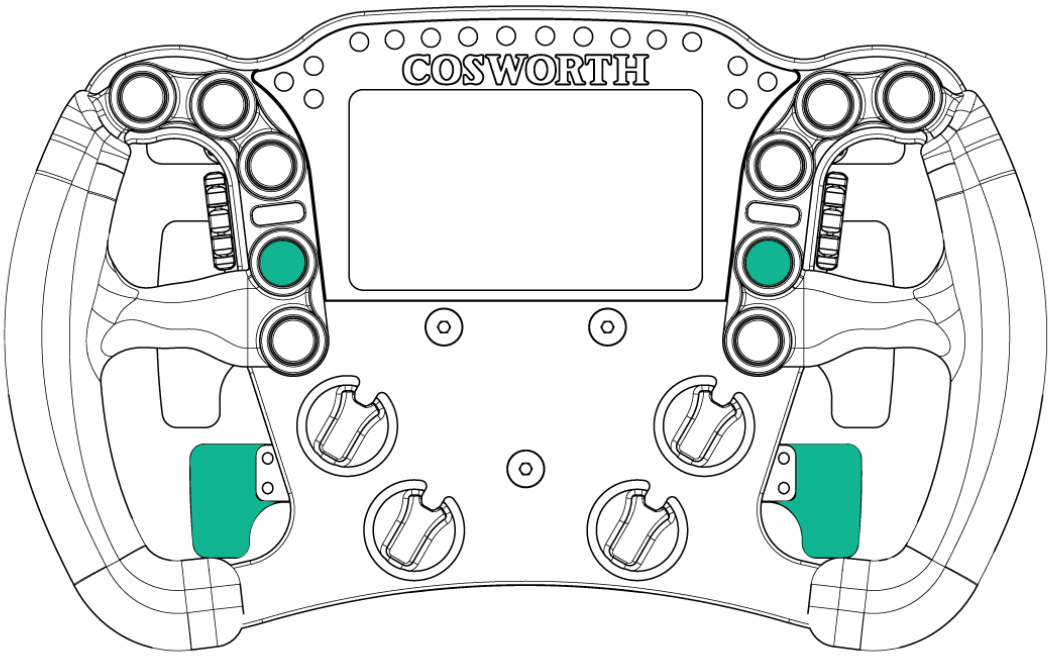
To save your output settings, press the specified button combination. Once saved, these settings will persist even when the wheel is powered off. Upon turning the wheel back on, your saved settings will automatically reload.

Press the buttons combo **L4 + R3** for at least 2 seconds to save your settings after every adjustment.



7.5. Clutch calibration

To activate **Clutch Calibration Mode**, press and hold the **L4** and **R5** buttons for **2 seconds**. While holding these buttons, press both clutch paddles several times to allow the wheel to recognize the full range of the clutch. Release the buttons to complete the clutch calibration. Press the **L4 + R3** combination to save the calibration settings.

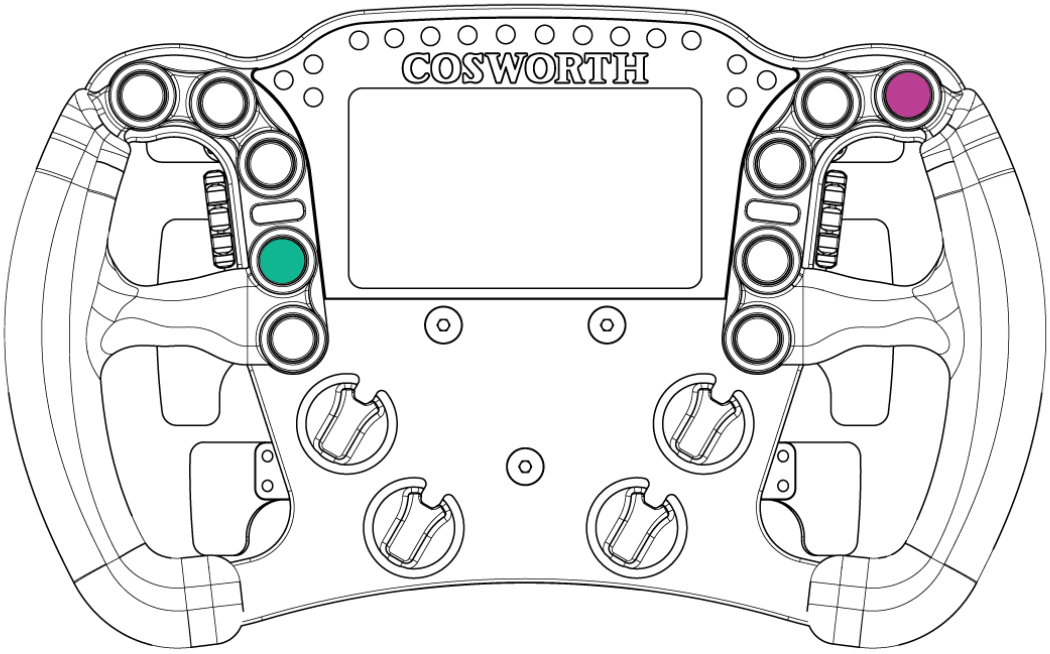


IMPORTANT NOTE: We recommend to recalibrate the clutch at least once a month for optimal accuracy.

7.6. Symmetric Clutch

The default mode of the wheel is **symmetric clutch**. In this mode, both clutch paddles have independent outputs, allowing you to use either the left or right paddle as a standalone clutch. This setup is also optimal if you want to assign one paddle for clutch and the other for functions like brake or throttle input.

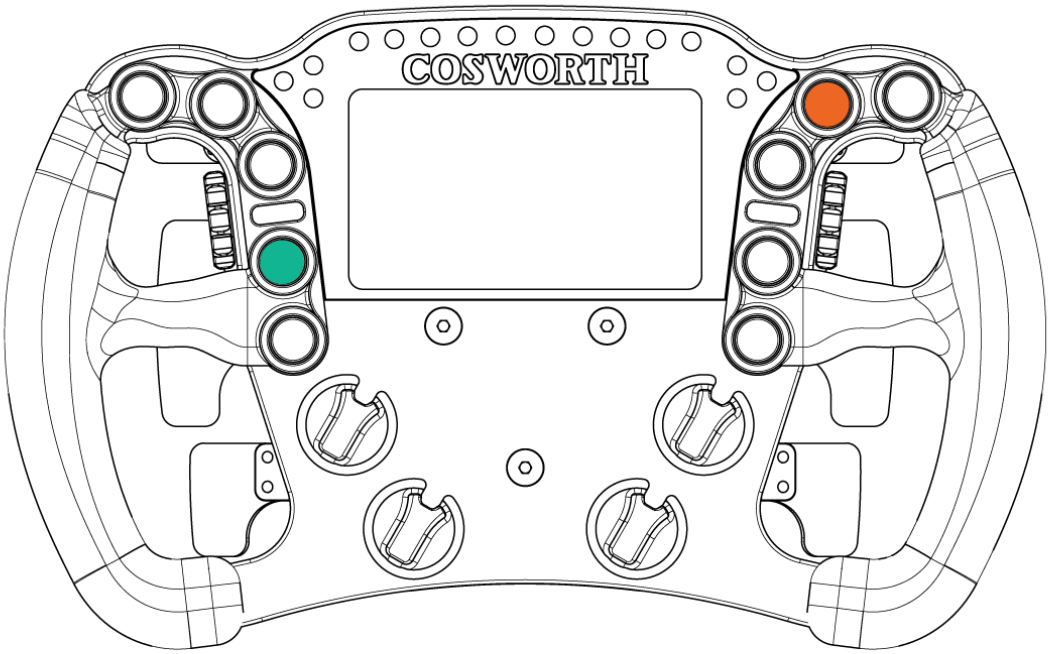
To setup the clutches symmetric, press and hold the **L4 + R1** button combination for at least 2 seconds. Press the **L4 + R3** combination to save the settings.



7.7. A-symmetric Clutch

You can optionally set the wheel to **asymmetric clutch mode**. In this mode, a single clutch output value is sent to the computer. One paddle can be configured to reach the car's bite point, while the other engages to 100%, giving you precise control over clutch engagement for optimal starts.

To setup the clutches asymmetric, press and hold the **L4 + R2** button combination for at least 2 seconds. Press the **L4 + R3** combination to save the settings.



7.8. Asymmetric Clutch bite point adjustment

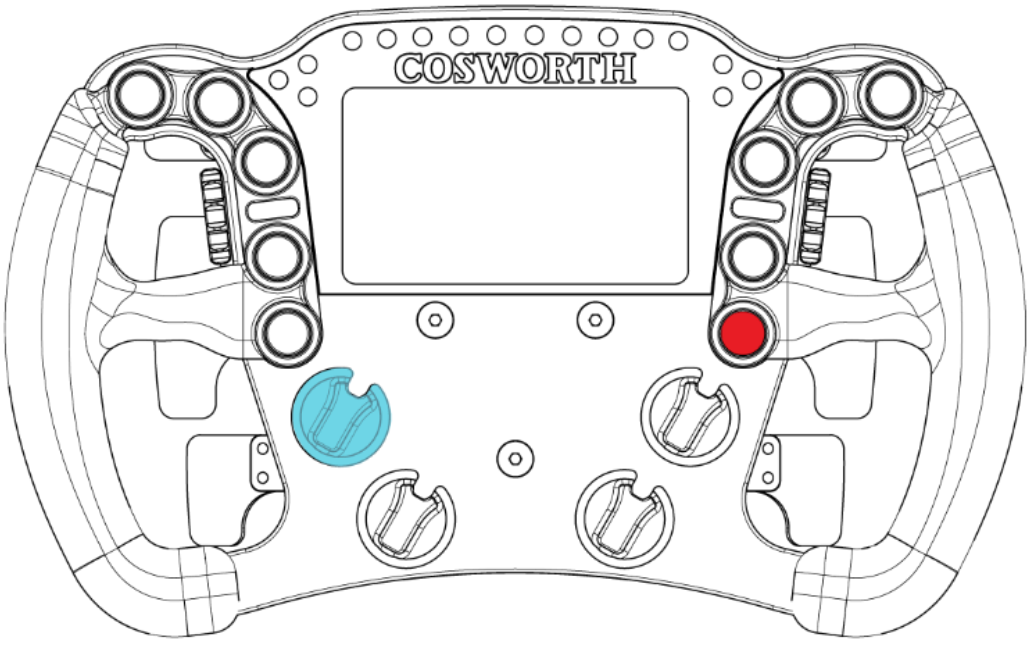
IMPORTANT NOTE: Bite point adjustment is only functional when Asymmetric Clutch Output is activated. Resetting the clutch calibration will revert all clutch settings to their default values, requiring you to reconfigure both the Asymmetric Clutch mode and the bite point settings.

In **Asymmetric Mode**, the left clutch is set to 50% by default, and the right clutch is set to 100% (bite point). You can visualize the clutch output in the game settings menu or the “Setup USB game controllers” program. Both points can be adjusted as follows:

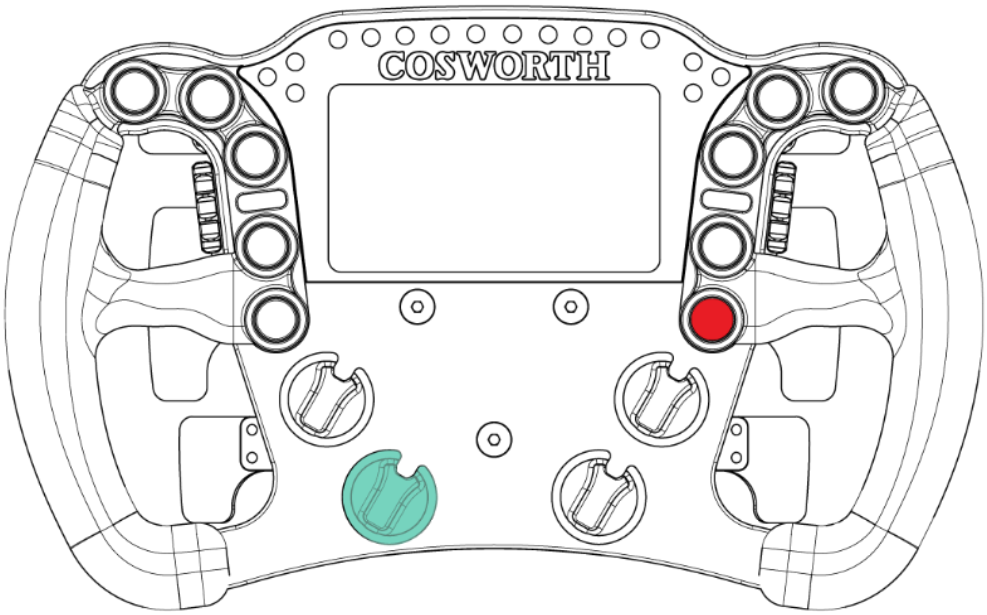
Left Clutch Adjustment:

Front Rotary 1 (FR1) is used for fine adjustment or front **Rotary 2 (FR2)** for coarse adjustments. For real-time feedback on the bite point, make sure the opposite clutch is fully disengaged to clear the input slider and display live input. For example, when fine-tuning the left clutch, fully press the right clutch to clear the input slider and show the live adjustments.

For finer adjustments to the bite point, hold **R5** together with **FR1** to make small, precise changes.



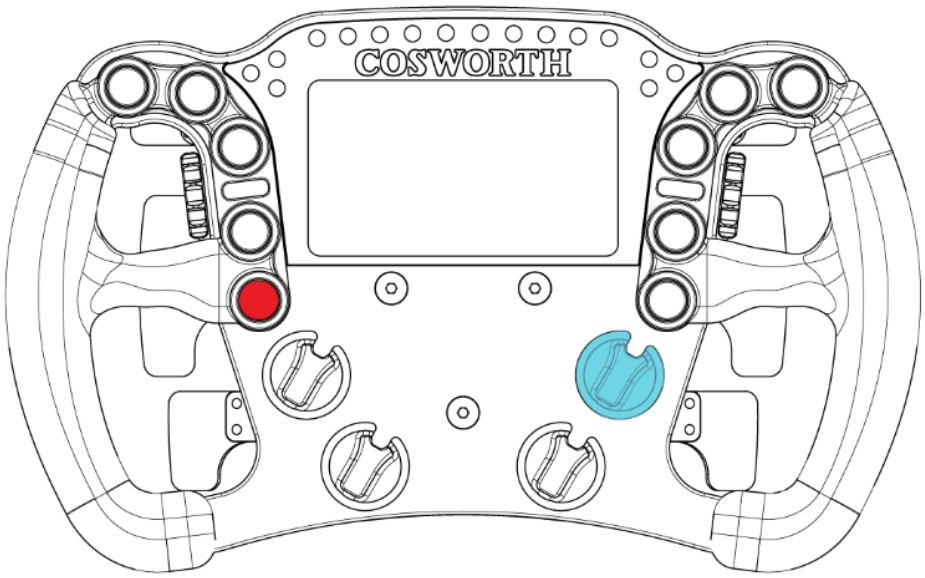
Hold down **R5** in combination with **FR2** to make coarse adjustments to the bite point. Press the **L4 + R3** combination to save the settings.



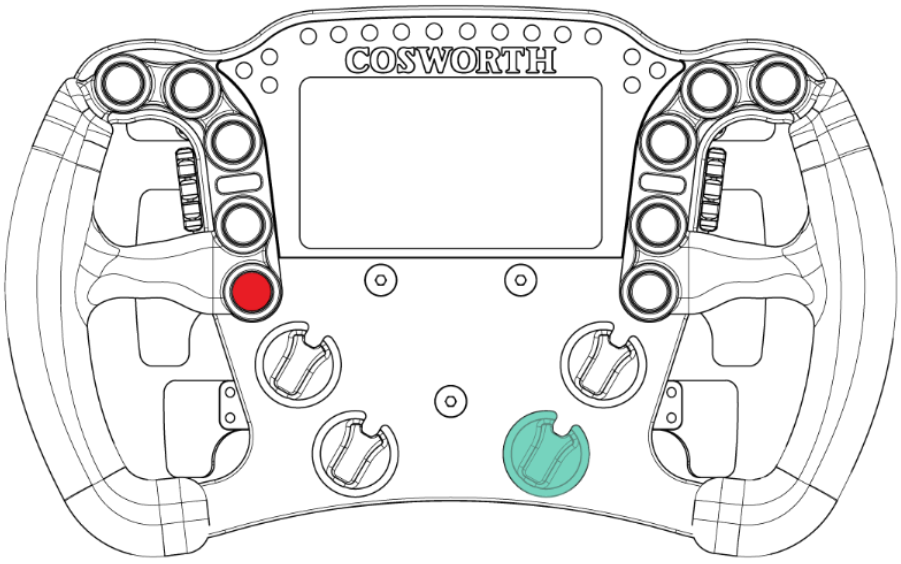
Right Clutch Adjustment:

Front Rotary 3 (FR3) is used for fine adjustment or front **Rotary 4 (FR4)** for coarse adjustments. For real-time feedback on the bite point, make sure the opposite clutch is fully disengaged to clear the input slider and display live input. For example, when fine-tuning the right clutch, fully press the left clutch to clear the input slider and show the live adjustments.

For finer adjustments to the bite point, hold **L5** together with **FR3** to make small, precise changes.

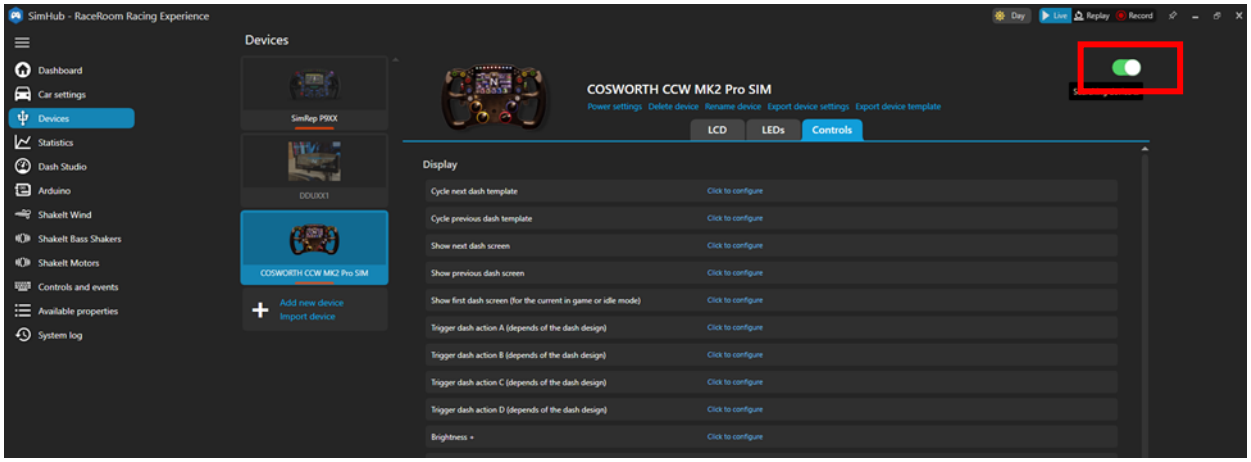


Hold down **L5** in combination with FR4 for **coarse** adjusting the bite point. Press the **L4 + R3** combination to save the settings.



8. Troubleshooting

- The CCW Mk2 Pro Sim is not visible in the Windows Game controller;
  - Unplug the USB from your computer and reconnect.
- No light on the USB hub;
  - Check the USB connection or try using a different USB port
- Only blue light on the USB hub wile everything is connected
  - In case you are using an external 5V adapter, try to use a free USB port as close to the wheel's data USB. Or a different power socket that is located closer to your PC. Bad socket grounding or long power cords can cause the wheel to stay in sleep mode.
- Can't calibrate the clutch;
  - Reset the settings by using the reset combo and save the setting by pressing the save combo, after calibration. Now the normal calibration procedure can be resumed.
- The clutch doesn't go from 0% to 100% properly;
  - Reset the settings by using the reset combo, and recalibrate.
- LEDs are not working;
  - Make sure you have SimHub running and the device is properly installed.
- Screen is not working;
  - You are probably missing the USBD480 display drivers. Reinstall SimHub and make sure to check the "Download display drivers" box before you install.
  - Check that the device is activated in SimHub, with the slider showing green.



Having any other trouble? Contact our customer support at info@simrep-engineering.com