Reference and Troubleshooting Guide

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Disclaimer

The A3 motion simulator (the system) is capable of moving the user very rapidly and sharply and is therefore potentially dangerous for use by those with conditions including but not limited to spinal / neck injuries / weaknesses, epilepsy, motion sickness, vibration injuries / susceptibility and any other condition which makes the user adversely affected by sudden movements & vibration. If someone is in any doubt over their fitness to safely use the system then they should not do so.

The use of the system by children is entirely at the discretion of a responsible adult and we recommend that one be present at all times if children are using the system.

The system is also capable of causing injury / damage to adults, children, animals and objects located too close to the system while in use. It is therefore imperative that a clear area is kept around the system while in use. Special care should be taken to ensure that children and animals are not able to enter this area.

In any event, all users of the system, and those who approve use of the system by children, do so at their own risk. All those in close proximity to the system while in use, including the user, bear responsibility for ensuring that they, children, animals and possessions are not placed in danger by being too close to the system while in use.

The system is heavy and no attempt should be made by one person to lift or move the unit alone. When attempting to move the unit, or parts thereof, safe lifting practices should be employed. Anyone attempting to move, or assist in moving, the system or parts thereof do so at their own risk.

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Unpacking List

Small Crate

- ☐ 1x Vive Pro Virtual Reality Headset
- ☐ 1x A3 Full Motion Simulator
- ☐ 1x 15 ft Power cable
- ☐ 1x 15 ft Ethernet Cable
- ☐ 6x M8 Bolts for Overhead Mount
- ☐ 1x Pair of keys for cabinet
- ☐ 1x Kindle Fire Tablet
- ☐ 1x Tablet Charger
- ☐ 1x Wireless Keyboard

Large Crate

- ☐ 1x Vortex Arcade Cabinet
- ☐ 1x Vortex Overhead Mount
- ☐ 1x 50” Sceptre TV

**When unloading large crate, please use the 2x4 that is mounted to hold the TV in place, and place under the ramp as it is unloaded to prevent warping on the plywood.*

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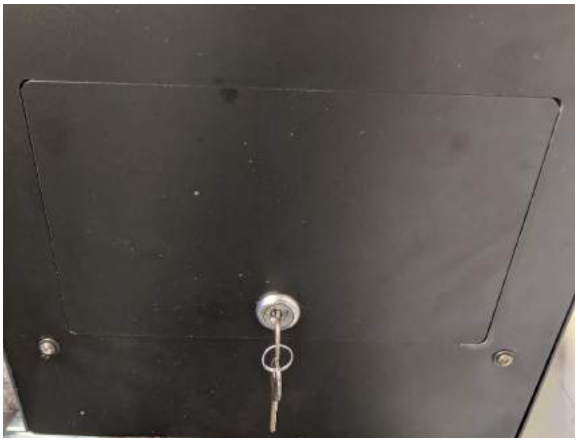
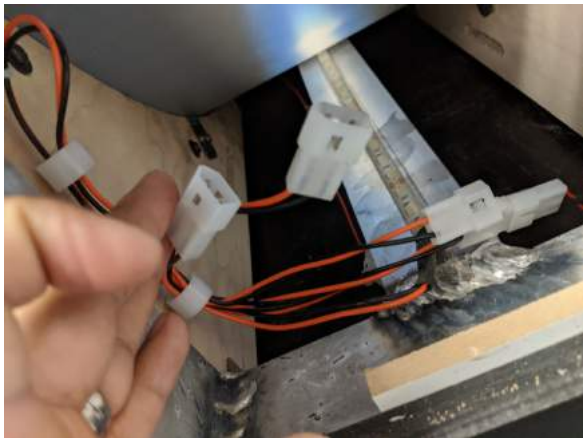
Arcade Cabinet Assembly

The **Talon Vortex Arcade Cabinet** comes in two pieces, the top and the bottom cabinet. You will need 3 people for this part, 2 people on either side of the **Top** and one person behind the **Cabinet**. Before lifting the top, open the **Panel door** on the back of the **Top** using the key we provided.

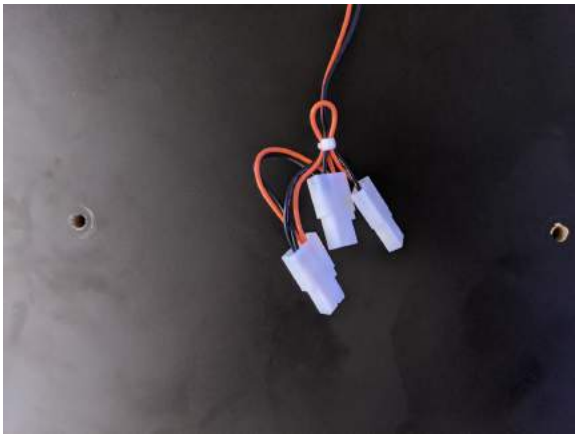
Step 1



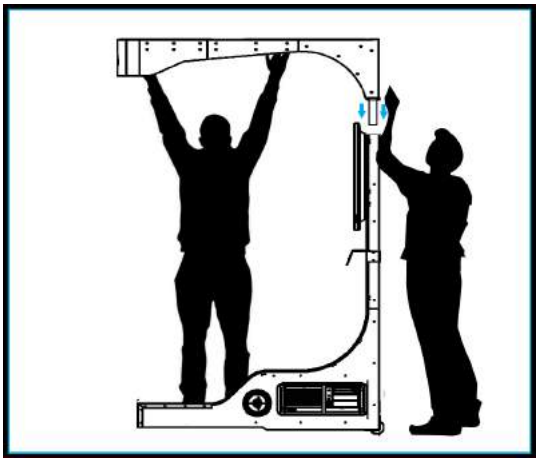
Step 2A



Step 2B



Step 3



Before pushing the top down completely in place, the person behind the Cabinet will need to plug in the **LED power cables**. Once this is done you can push down the Top all the way.

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With the **Top** on now it's time to bolt it in. You will need a **13 mm socket wrench**. Using the **six (6) M8 bolts** we provided bolt down the **top two holes** of the **TV mount.**

Then move to the back of the **Cabinet** and bolt down the the **M8 bolt holes.**

You can now safely mount the TV onto the brackets.

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Intro to A3 Simulator

The Talon A3 wire harness. In this bundle you will see:

1. **Power Plug**

2. **Usb A to B 2.0**

3. **Ethernet Cable**

4. **Usb A to B 3.0**

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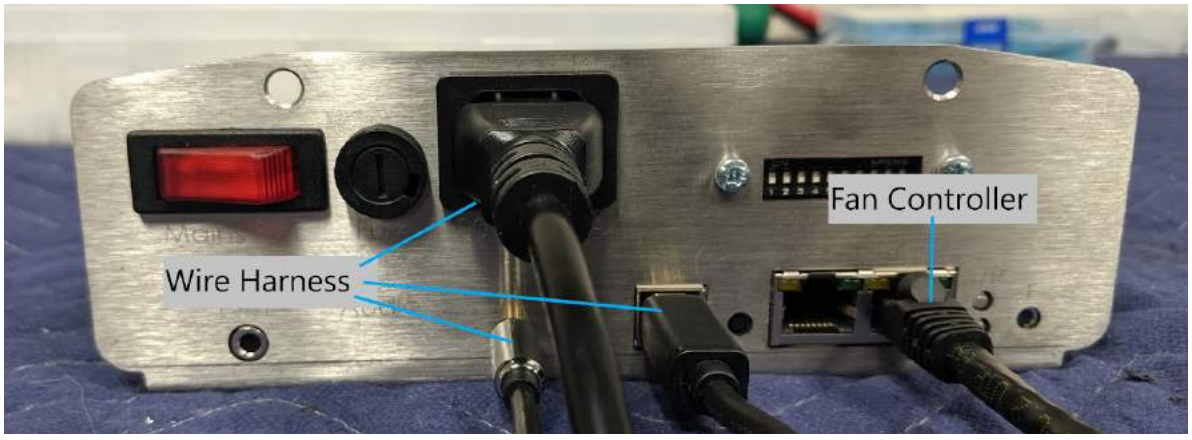
Behind the Simulator is a control panel.

There you will plug in the power cable, type B male USB connector, and ethernet cable. Once everything's plugged in, flip the power switch to the left of the power plug.



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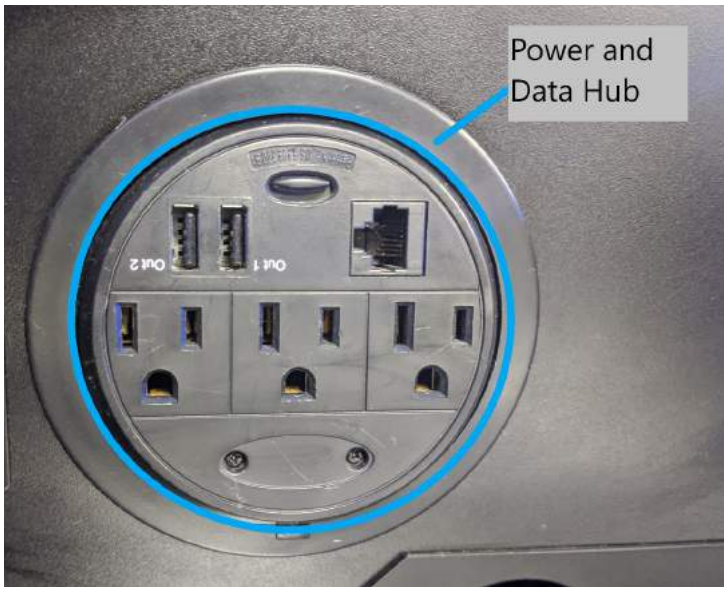
Make sure to plug in the USB hub with the USB A to B 3.0 cable provided in the wire harness. **Type B** side will be plugged into the **USB Hub** and **Type A** will be plugged into Power and Data Hub on the arcade cabinet.



Only use the USB Hub on the back of the simulator to plug in the controllers as there are limited ports on the Arcade cabinet.

Now you are ready to slide the simulator into the Arcade Cabinet, make sure not to run over any cable wires.

On the side of the A3, you will see a **Pendant with two buttons**. The **large red button** is the **Emergency Stop button**. **The Black button is the Reset Button**, this will **reset the system when the E-Stop is engaged.** If for whatever reason the rider becomes uncomfortable, you can **press the E-Stop stop motion and then the Reset button** to recenter the chair.

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On the **back of the simulator,** there is a **metal plate with a two color LED indicator.** When the **E-Stop** is pressed in, the **backlight will turn red** as shown in **Example A**. If the **backlight is red**, then **press the black reset button**, when the simulator is ready to go the **backlight will turn blue as in Example B.**

Example A

Example B

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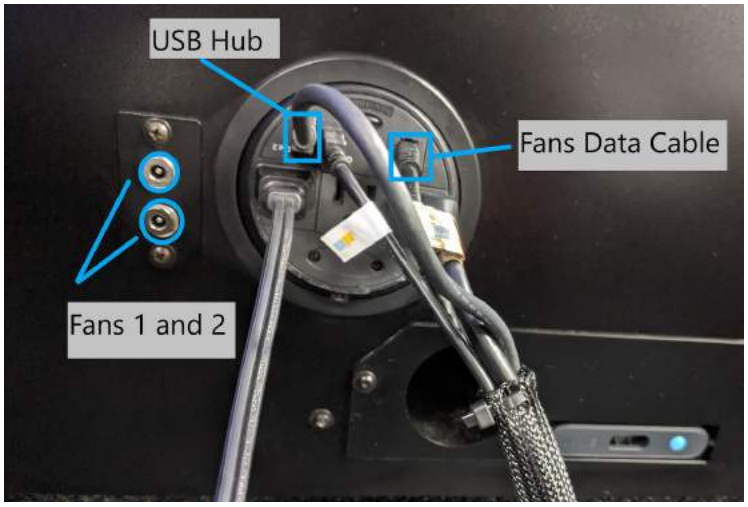
The Fan System

The fan connections consist of two barrel connectors coming from the aluminum steering wheel spline and an ethernet cable that is found in the wire harness. **(Example A).**

Example A

Plug in both barrel connectors **(Example A)** to the ports on the Fan Ports **(Example B)**



Example B

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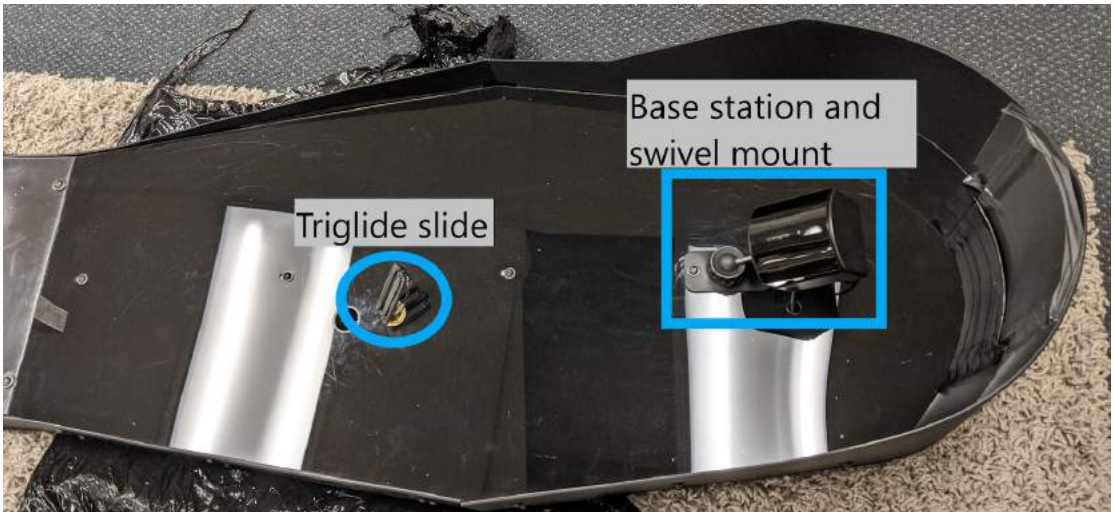
Vive Pro Setup

Once you unpack the Vive Pro, pull apart the velcro strap from the back of the headset and slip the strap through the triglide slide.

Grab one of the base stations from the Vive Pro box and screw into the swivel mount.



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Now plug in the 3 in 1 cable to the headset and thread the cable through the right hole on the top of the seat. For first time setup and to become familiar with the Vive Pro, please reference the Vive website at the link below:

https://www.vive.com/eu/setup/vive-pro-hmd/

Step 1

Step 2

When the Arcade Cabinet is turned on, the link box should be on always. However, if your headset's power indicator on the left side of the headset is not turned on, or if it is red, then you will need to press the blue button on the Vive linkbox to get the indicator light to turn green. .

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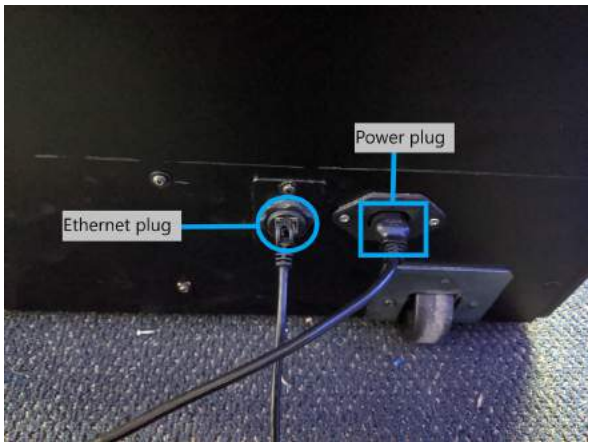
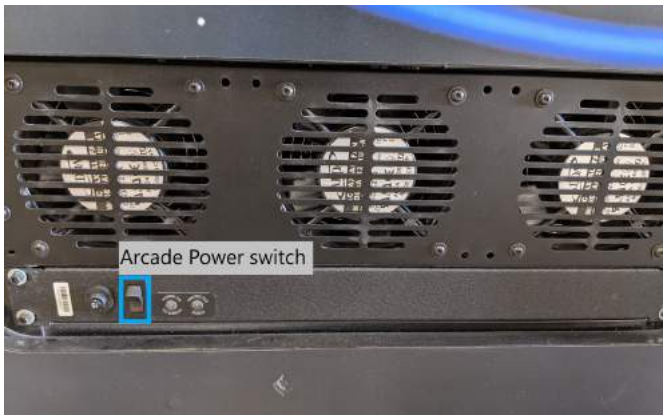
Turning on Your Cabinet

At this point your Arcade System should look like this:

All you need to do is plug in your ethernet and power plug to the back of the Cabinet and flip the switch on the bottom left side.





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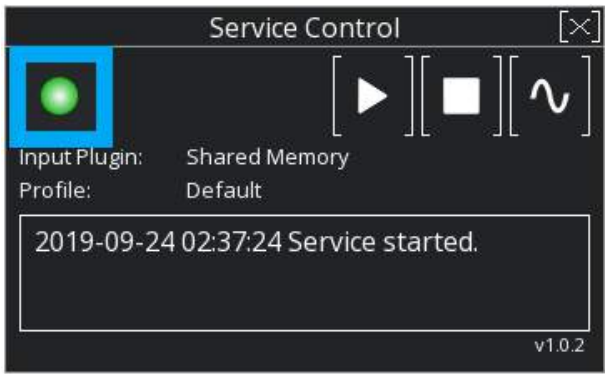
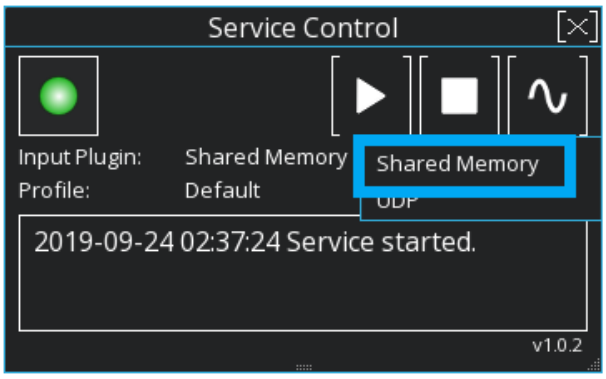
Actuate Motion Software

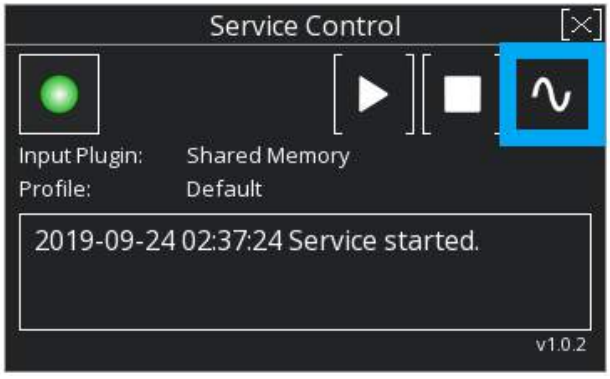
Step 1: Once the computer starts up, double click Actuate on the Desktop.

Step 2: Once Actuate opens up press the Start button to start service.



Step 3: Then click on the wave button to the right of stop. Click on sine wave and then on shared memory.





Step 4: If the simulator is plugged in properly it will start to test motion

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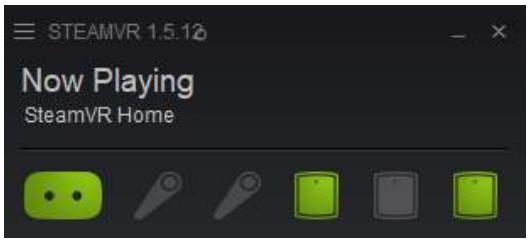
Steam VR

Now open steam VR by double clicking Vrstartup.exe on the desktop.

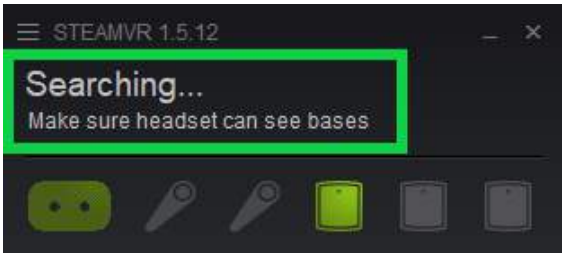
This is Steam VR, this software will be opened automatically on startup of your computer. However for each startup it's good to open this up manually and go through Room Setup for riders to have the best experience.

After running room setup you should have Solid Green base stations and Headset icons showing on the Steam VR GUI as shown below.



Before running Room Setup you will see steam vr searching for your headset. At the bottom of the GUI there are **a few indicator icons, a Green Headset and Base Stations.** On **Example A** you can see that when the **Headset is not tracking the icon will begin to blink. On Example C** you can see that **the headset is on "Idle Mode".** Inside the headset there is an optical sensor between the lenses.

If no one wears the headset for a certain duration, the headset goes idle to save power. These settings **can be changed in VR settings inside the headset. In Example B** There are two Icons displayed, one is a greyed out base station and the other is a green full lit base station. The grey one is not visible to the headset, the green base station is seen by the headset fully.



Example A

Example B and C

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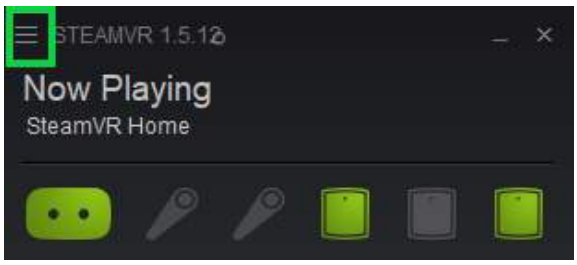
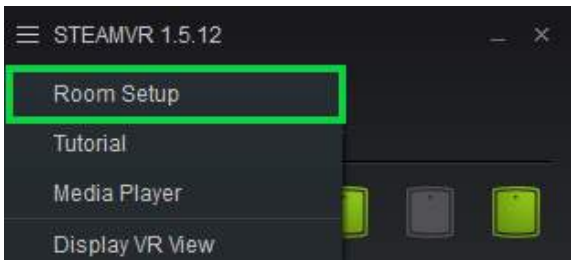
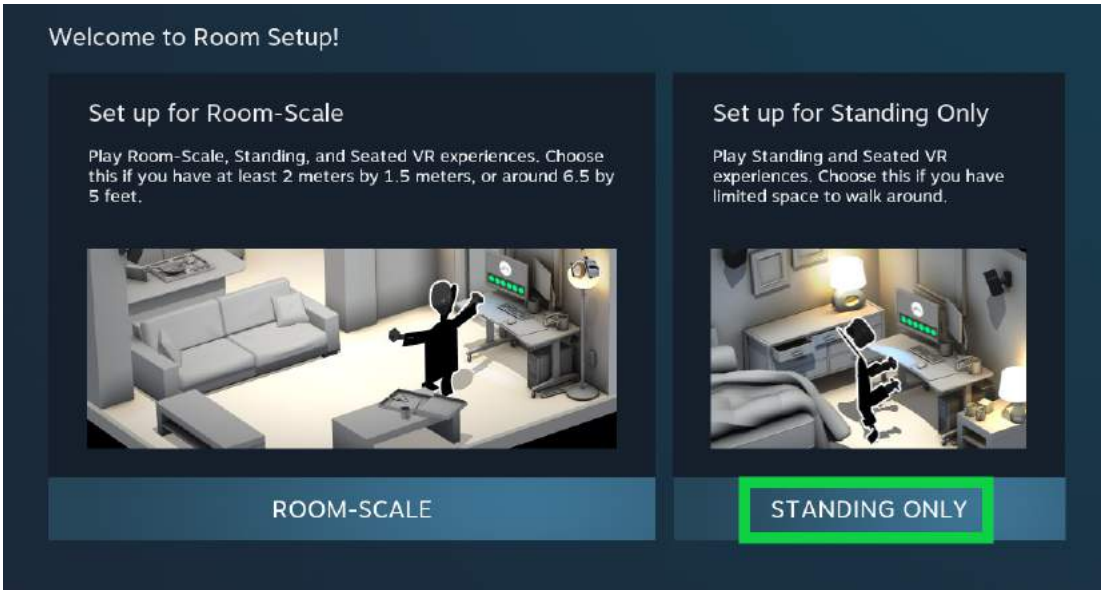
Steam VR Room Setup

Step 1 : Once **Steam VR** opens, above the gui or Graphic User Interface it may ask you to do a **Room Setup.** If not, you can left click on the **three horizontal lines** on the left side next to "STEAMVR Build #". Then click **"Room Setup".**





Step 2: When **Room Setup** begins left click on **"Standing Only"**. **We Recommend that for our experience "Standing Only" space should always be selected.**



Step 3: Now you will be asked to calibrate the Headset. Click **"Next"** and then put the headset in the seat facing straight ahead and click **"Calibrate Center"** on the next page. Don't move the headset until the process is complete.

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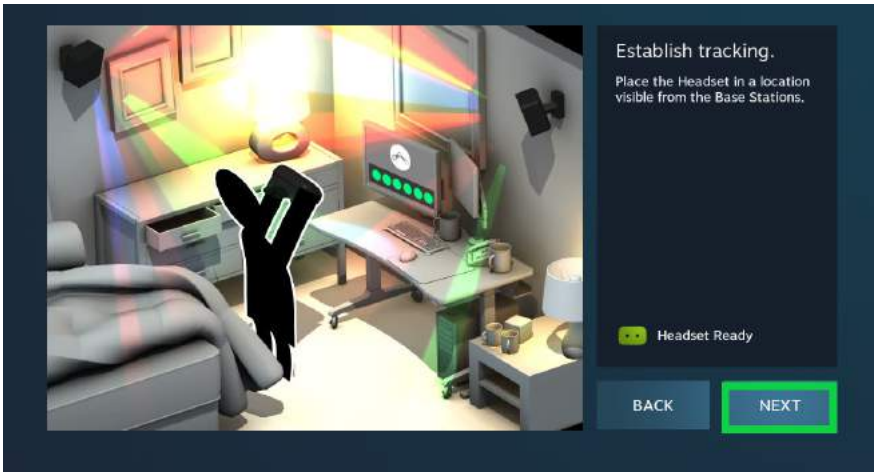
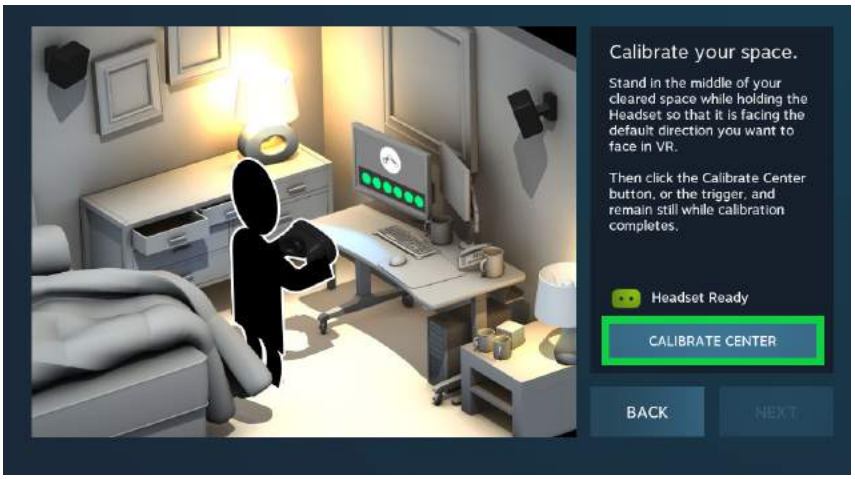
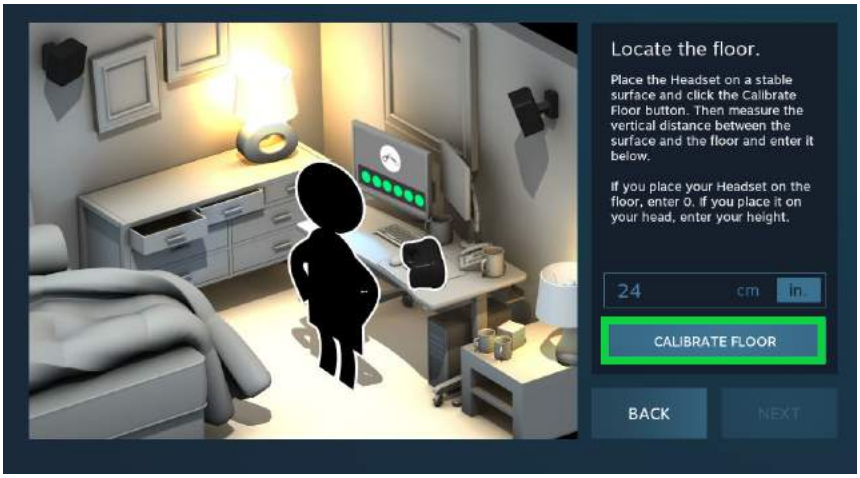




Step 4: Steam VR will now ask you to measure the distance between the Headset in the chair to the floor. **With the Headset still in the chair, type in 24 inches**. Then Click on **"Calibrate Floor".**



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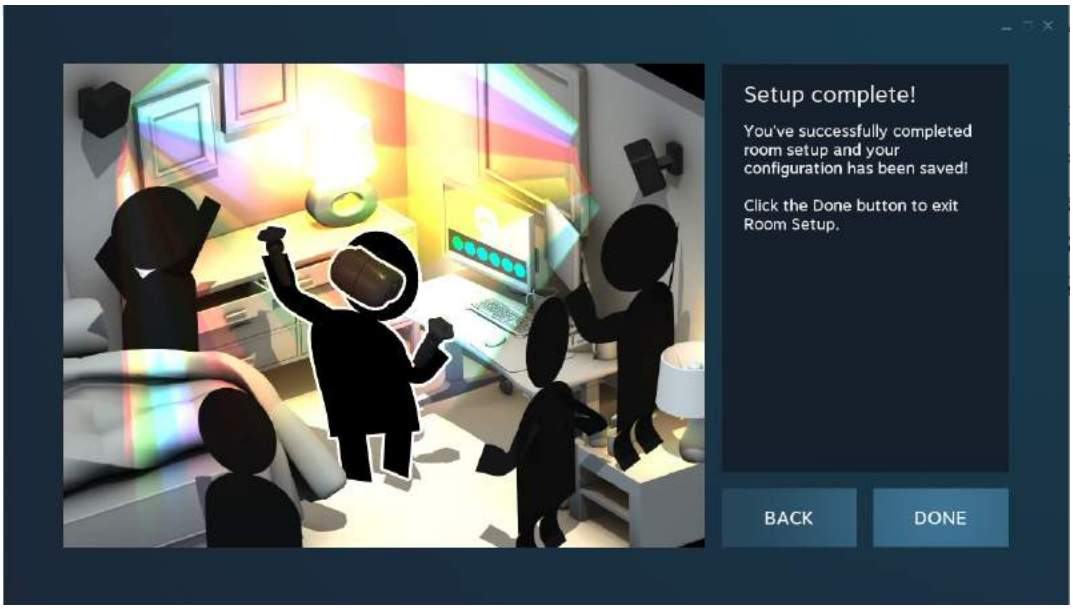
Your Setup is now complete. You can move onto the next step.



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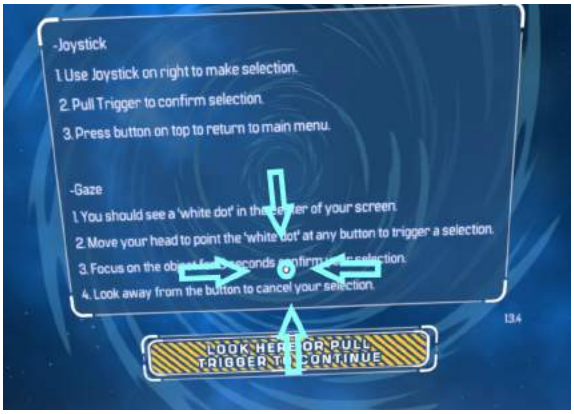
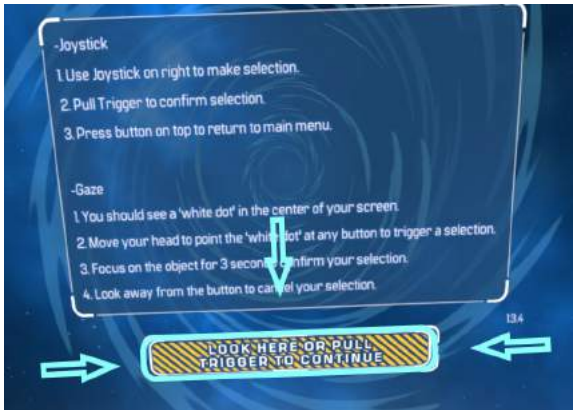
Vortex User Interface

Vortex is our VR Game Launching interface. From here a user can step into the seat, put on the VR headset and select an experience. Instructions on how to put on the headset will display before swiping your card.

There are two ways to make selections. First, is through “Gaze.” At the center of the screen you will see a white dot. Align this dot with the select button to make a selection. The second method is by using the Joystick to the right of your leg when seated on the motion platform. Click the trigger in front of the joystick to make a selection and move the joystick left or right to highlight a different experience. These two methods can be used together and are the default way of selecting games.



Gaze Dot Selector



Joystick Selector

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Credit Card Reader

Before a user scans their credit card on the reader you should see the image below:

On the bottom right of the image you will see a message saying “Insert card” and below that it displays the Session Cost.

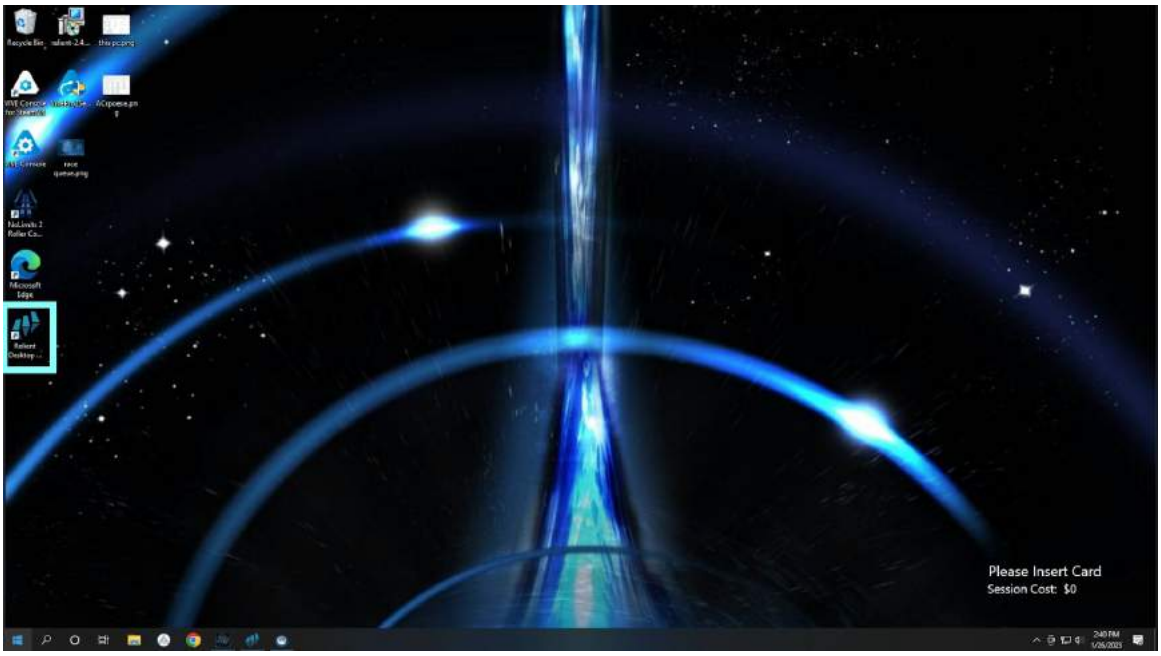
Session Cost will display the accrued cost based on the games played. Once a card is inserted, tapped or slid, a green message will show “Open Session”. This means the card scan was accepted.

There is a Session Length that is defaulted to 30 seconds. Once the 30 seconds ends without any more selections or the End Session button is

selected on the top of the screen, the session will close and the session cost will be charged to the scanned credit card. If you find that the session length is too short or too long, contact Talon Support and one of our team members can modify the length for you.

Transaction Methods

Vortex has three methods of transaction, Freeplay, Internal Card (Embed, Intercard, etc) and Credit Card. There are two steps to change your transaction method. If we were to change from Credit Card to Free Play mode, you would first need to open up Relient from your desktop.



Go to the Vortex Tab on the top right of the window. Now click on “Show”.

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This will ask for a password. The default password set is “9841” this can be changed by contacting Talon Support.

On the right side of the window you should see three selections, Click on Free Play and close the Relient window by clicking the X on the top right of the window.

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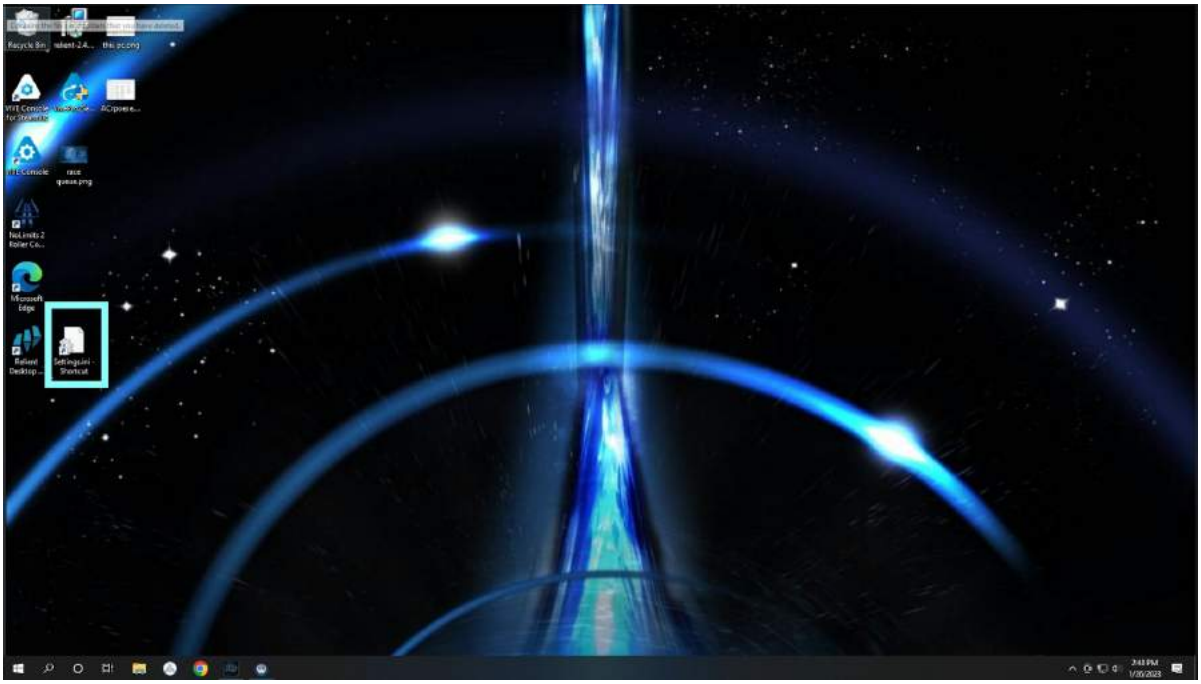
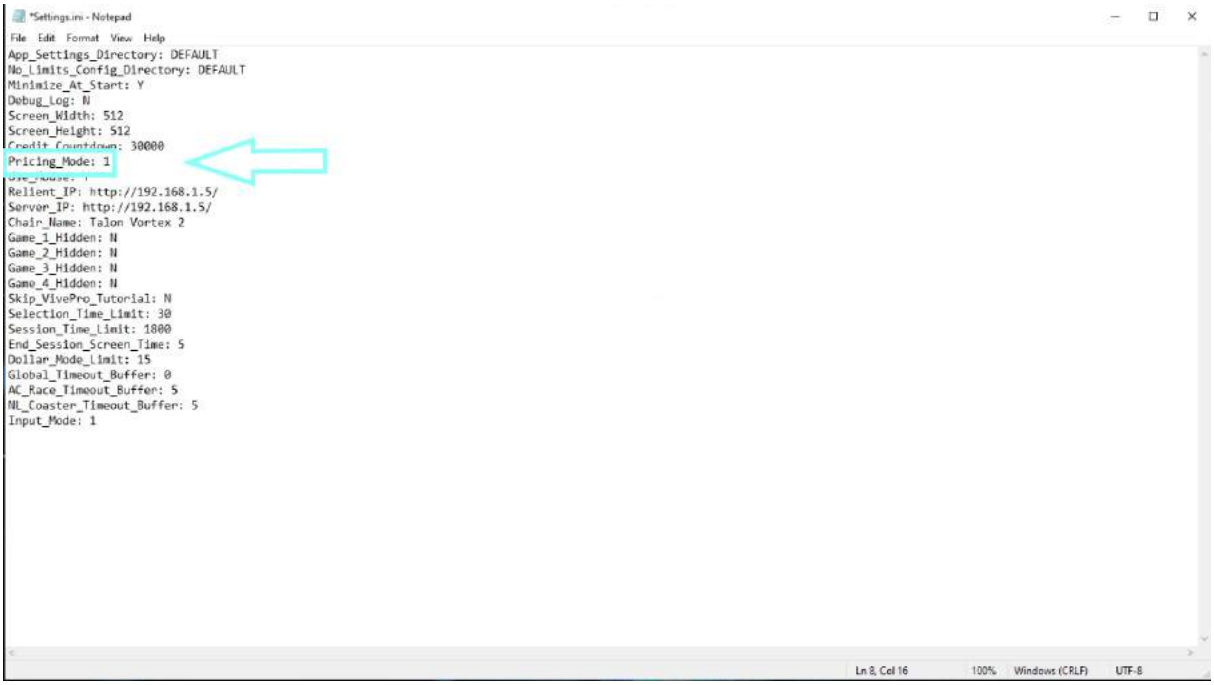
Now double click on the Settings.ini file on your desktop. Now change the Pricing Mode from “3” to “1”.





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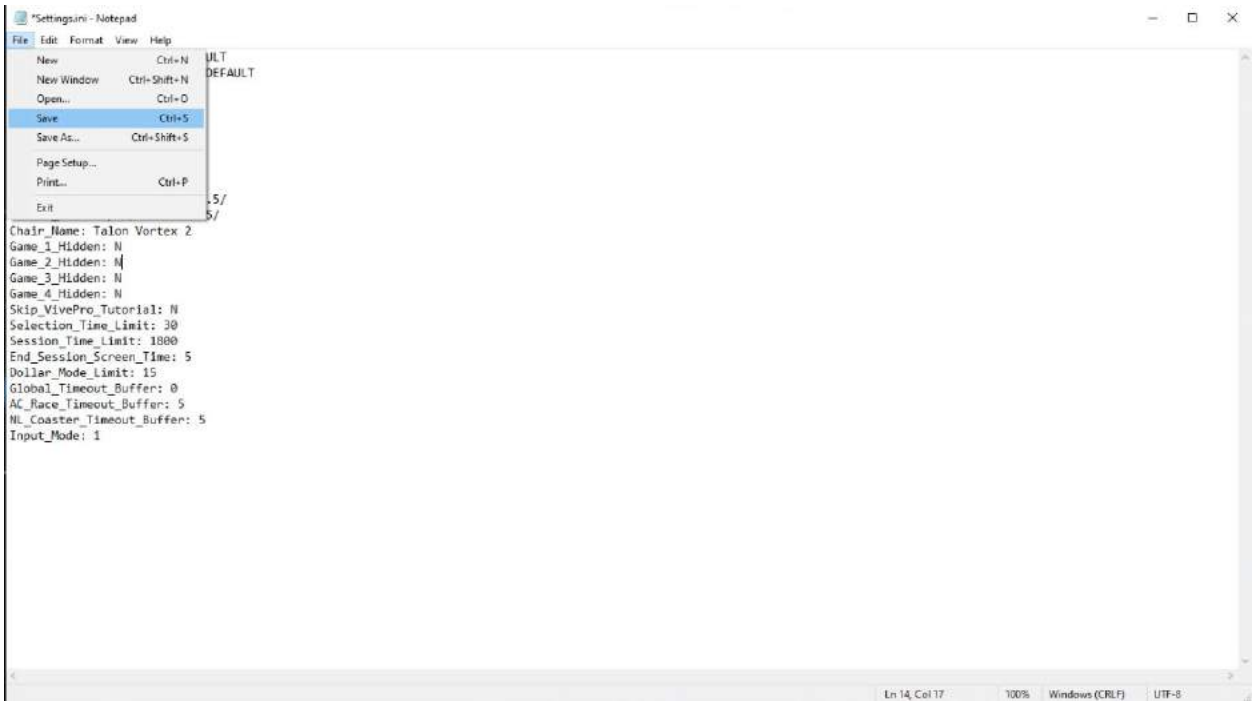
Once that is done, go to File on the top left of the window and click on save. Now close this window and re-open Relient.



You can now open Vortex and you will find that you are in Free play mode. This will display on the bottom right of the screen.

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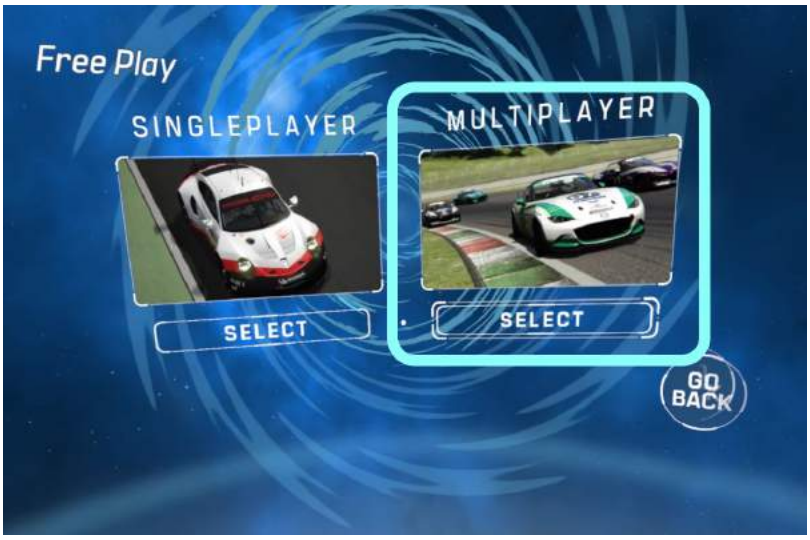
Vortex Multiplayer Race Setup

When setting up a multiplayer race both users go to Cruzn VR.

Now select Multiplayer.



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For multiplayer both users will need to select the same vehicle.

Once the vehicle is selected “Join Session”. This will add you to the queue, make sure all racers are in the queue before beginning the race.

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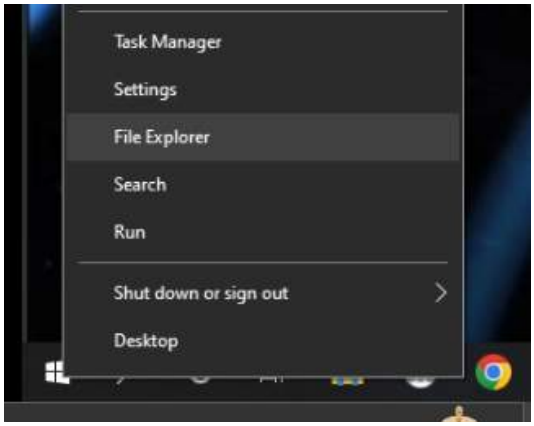
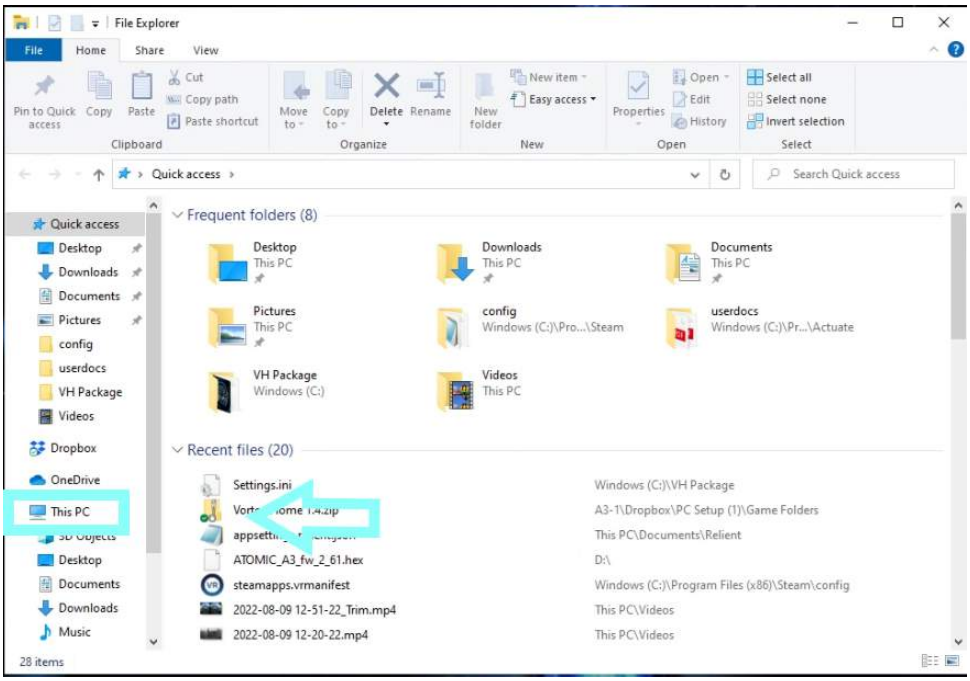
Cruzin VR Troubleshooting tips

If you find that your controls are not working in a race (Steering wheel and pedals). You may need to reassign the controls in Assetto corsa.

You can do this by opening up file explorer, right clicking on the windows button on the bottom left of the screen. From there click on file explorer.



Now click on This PC and double click Windows(C:).



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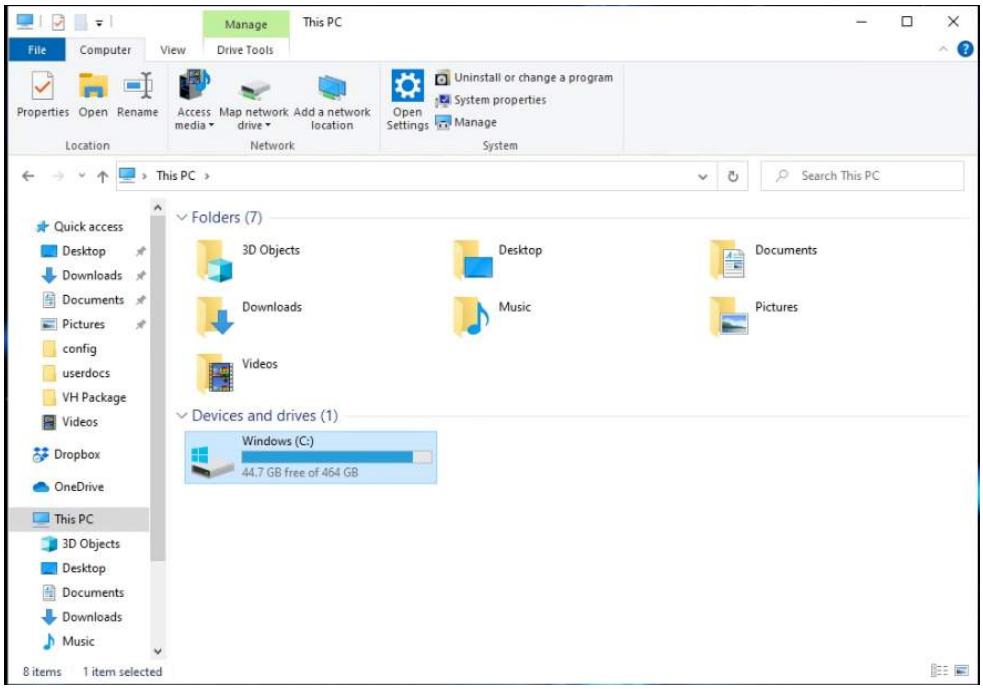
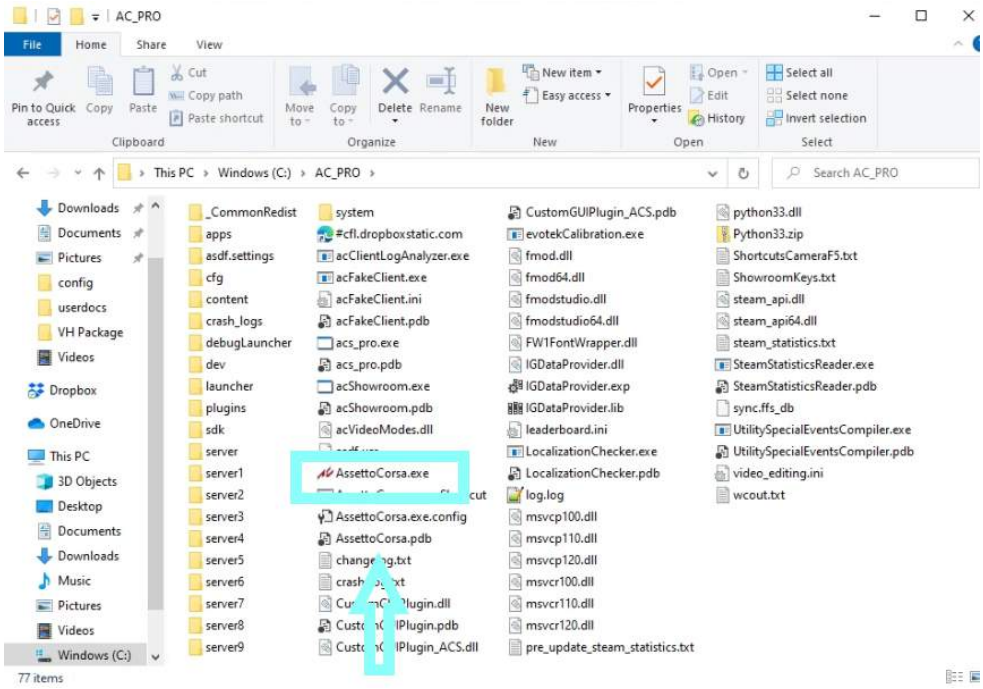
From here you should see AC_PRO double click this folder and look for AssettoCorsa Application.





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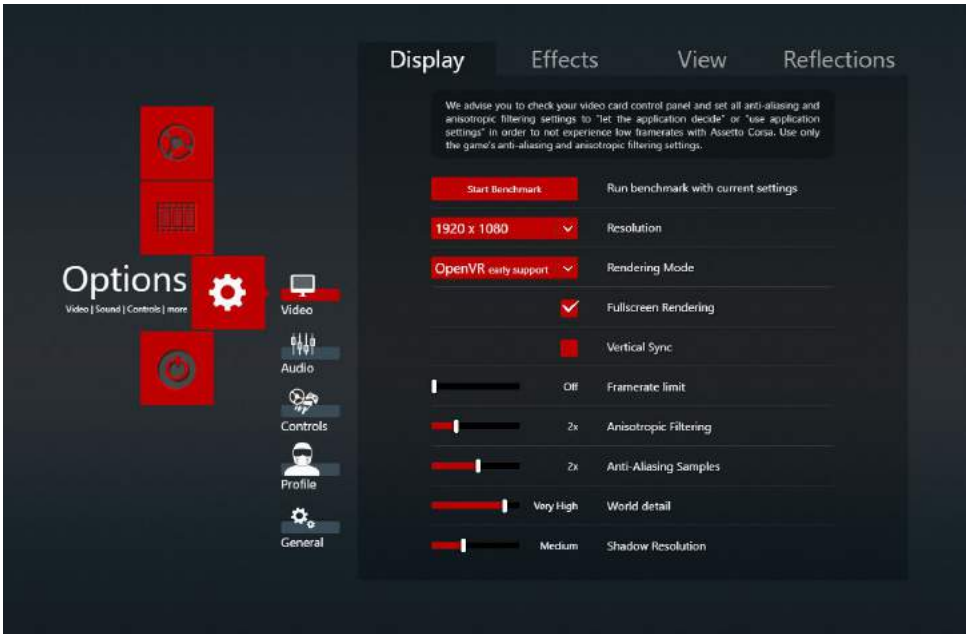
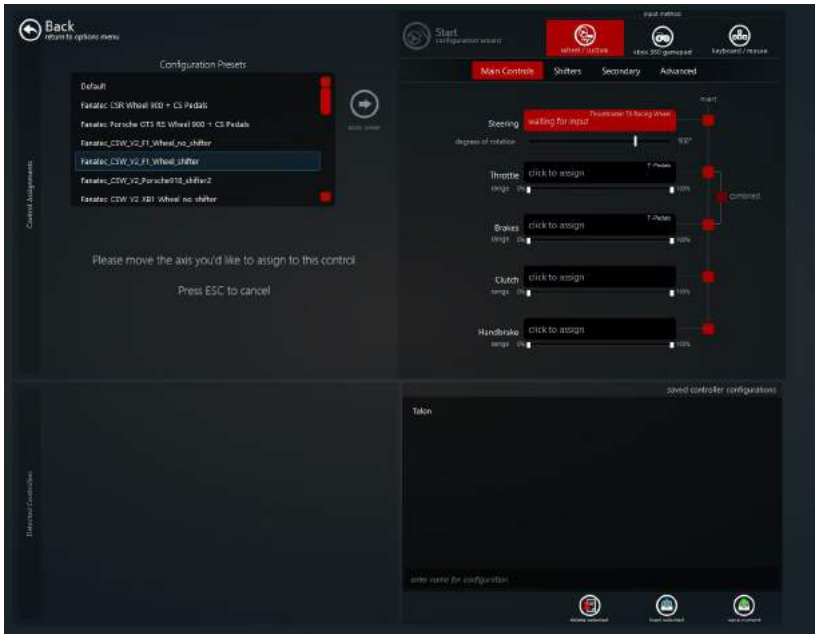
Once you're in the game go to Options and then to controls.



First assign your steering wheel. Click on the font saying “click to assign” then physically rotate the steering wheel.

Now move onto the throttle click on the font like before and press the accelerator pedal on the footrest down completely then click the box to the right of the throttle under invert as shown below. Now select the “shifter” tab above.



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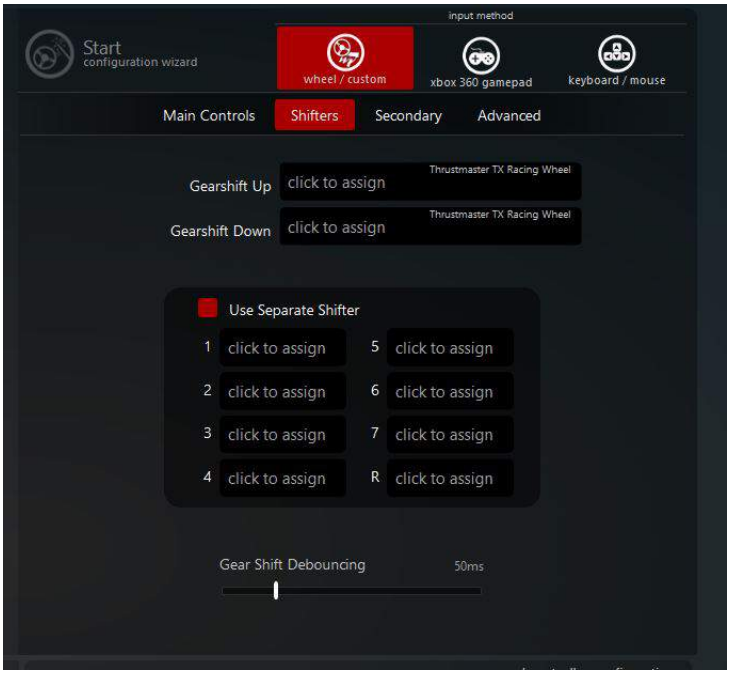
From here you will do the same as previous steps: double click on the font Click to assign on Gear Shift Up. On the physical steering wheel behind the wheel are two paddle shifters. Press down the right Paddle shifter. For Gear Shift down you will do the same but instead press down the left paddle shifter.



Controls should now be assigned and you can now exit the application.

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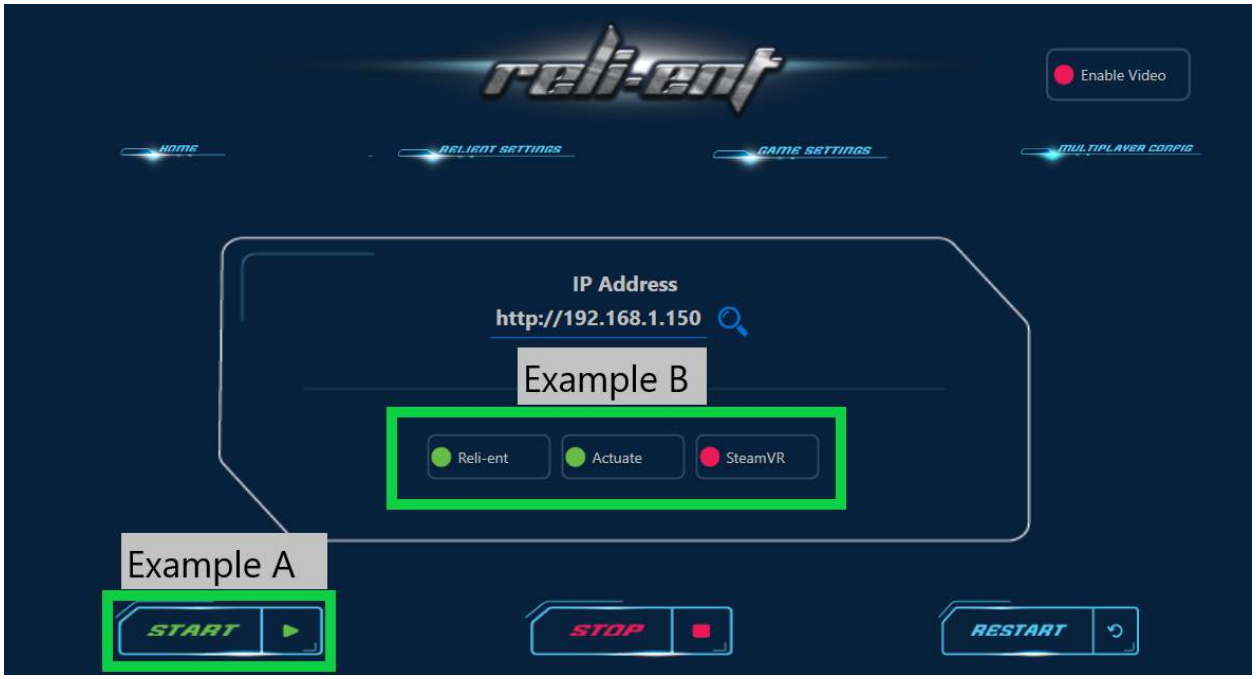
Relient Operator Interface

Step 1: The next step is Relient. Open up **Relient** from the **Desktop**.

Step 2: After opening the software you should see **Ip Address** at the center and below that is the **Status indicator bar** (Example B). Here you can see the programs needed to run our experience and their status. **If Relients indicator becomes red** like SteamVr in the example just **click on start at the bottom left**. (Example A)



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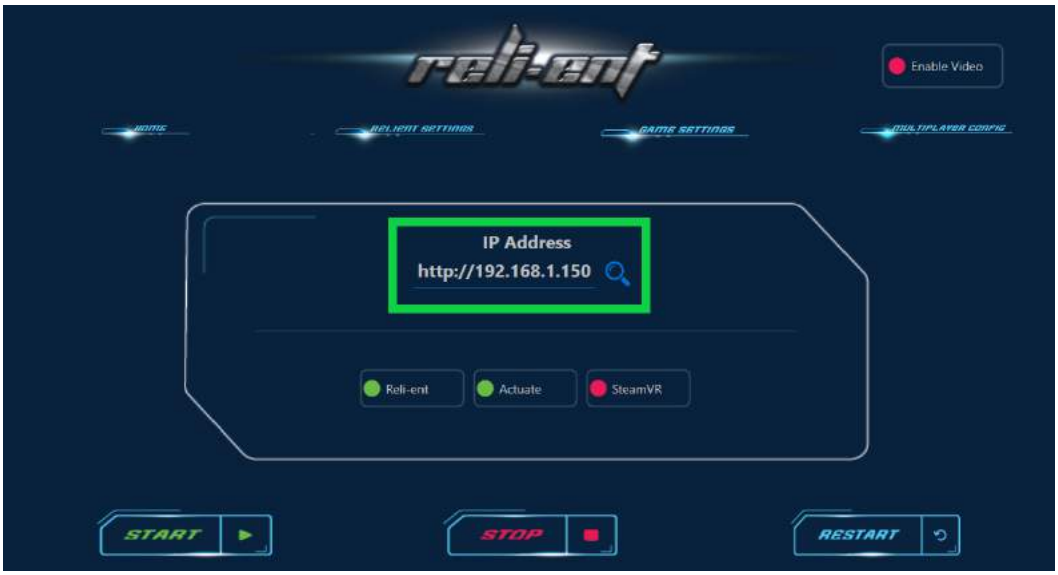
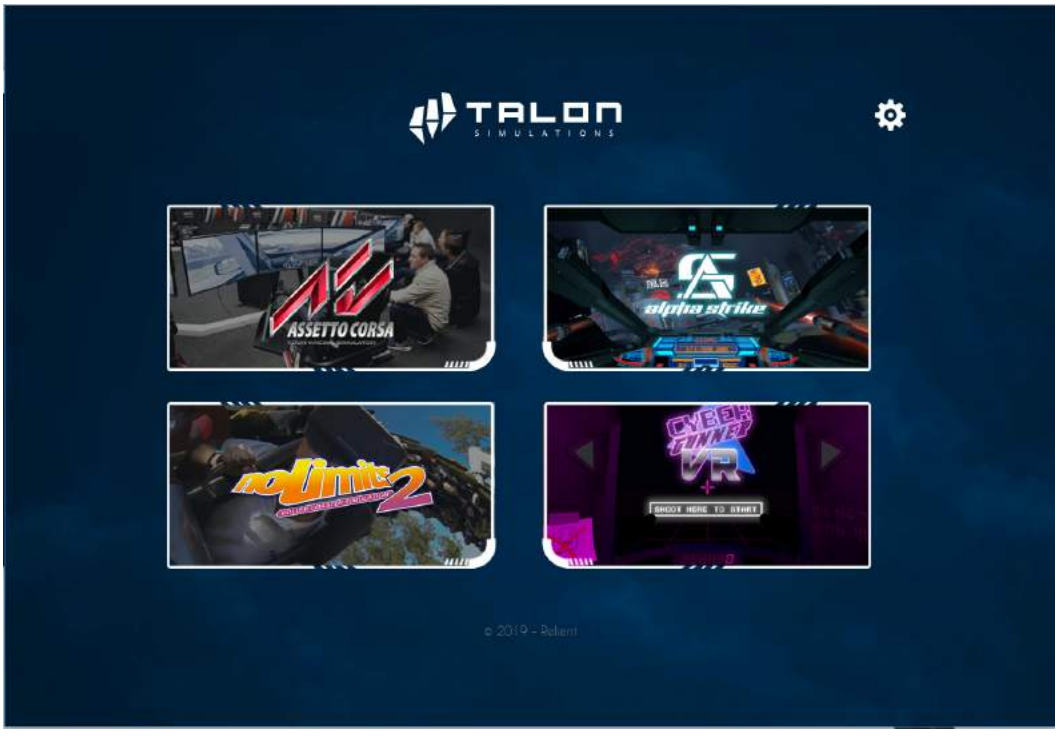
Step 3: Now that the server is running, **click on the Ip Address at the center of the screen (Example A).** This will **open a Google Chrome Tab.** Once opened up you should see each game we support **(Example B)**.



Example A



Example B

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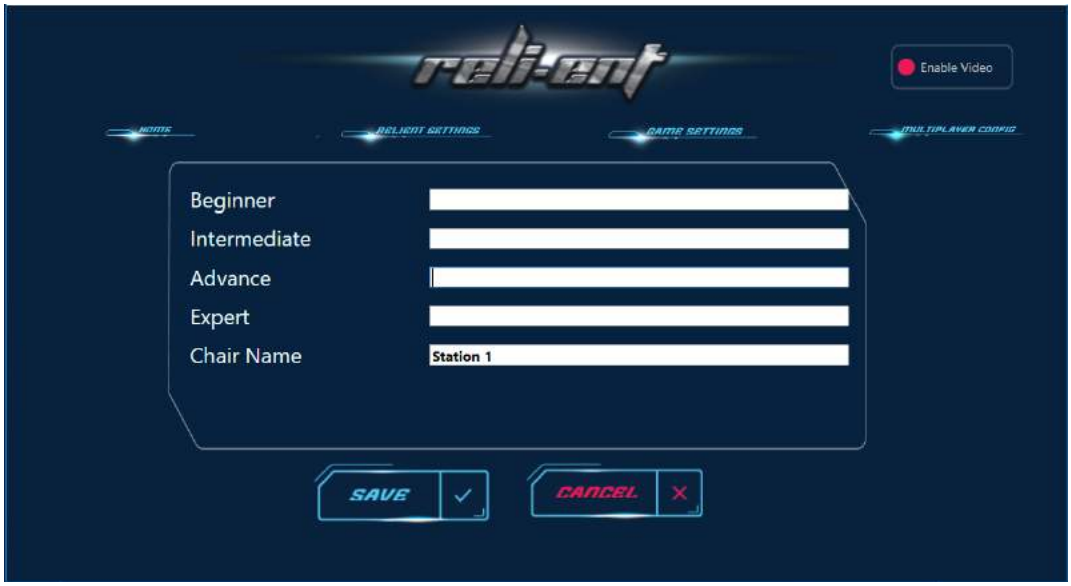
Multiplayer

Multiplayer is now available on Relient, in Multiplayer Racing you can compete against other stations in your location. Let's go through how to setup a race.

On the Relient Server GUI select **Multiplayer Config.**

To set up a multiplayer server choose which station you'd like to be the **Host Computer,** this config window should be left empty besides the **Chair Name** as shown below.



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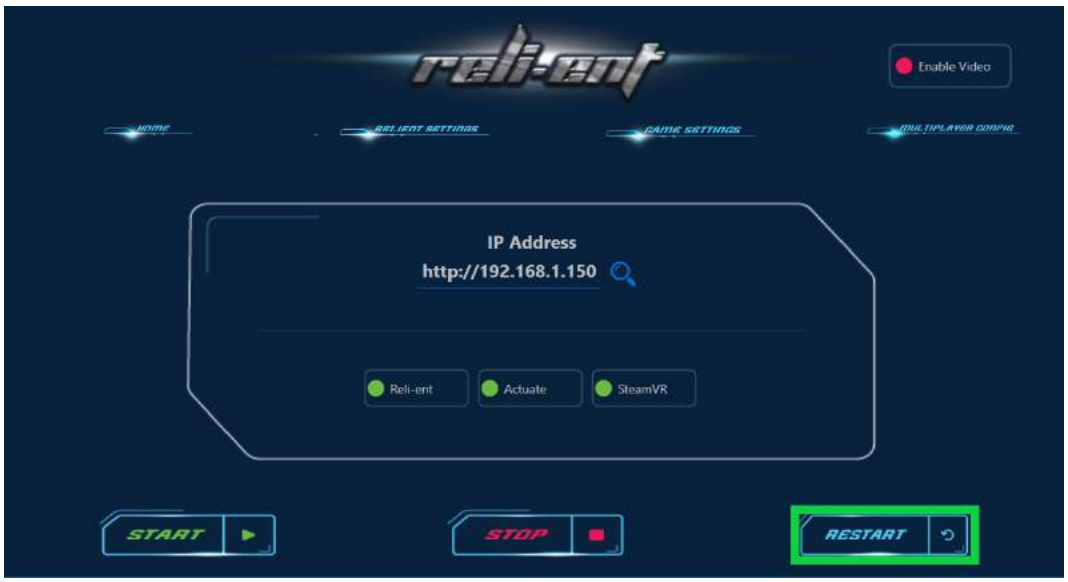
All other stations should have the **Ip Address** of the **Host Computer** as well as their **Chair Name.** Make sure to **add “Http://”** before the **Ip Address.** Now click save at the bottom left.

After you’ve saved the configuration, **Restart** the server.



Now that the Servers have been set up, go back to the **Assetto Corsa** through the **Web Application.**

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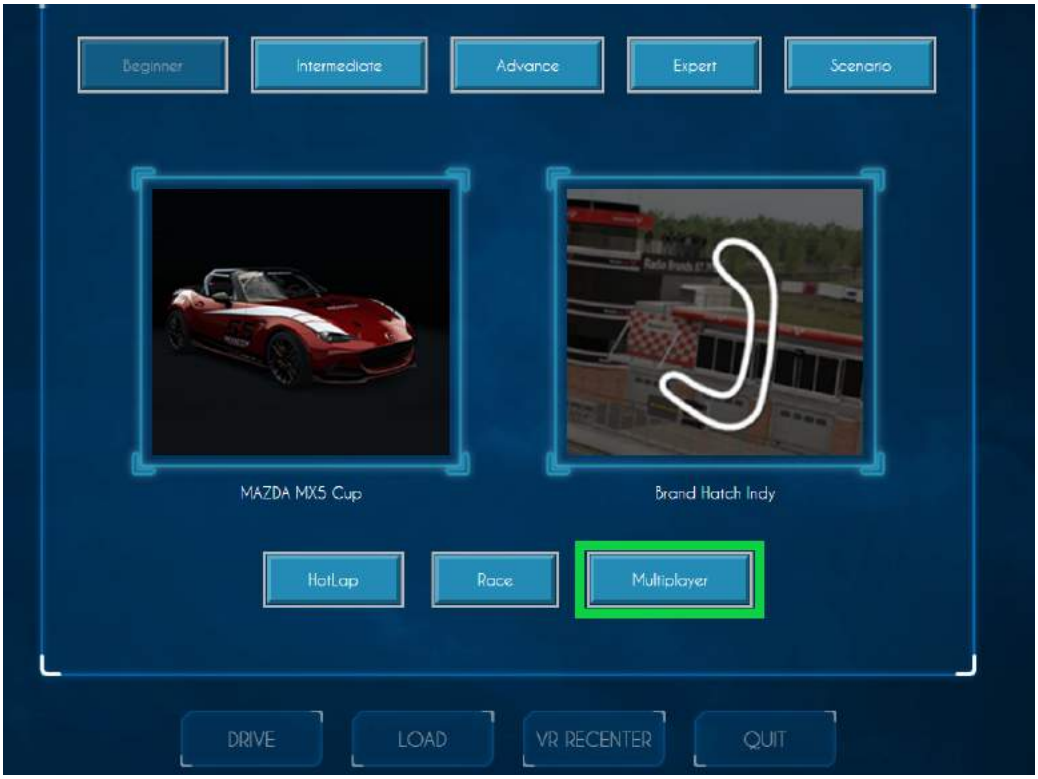
Select your level of difficulty. For this example we will choose **Beginner.**

Select **Multiplayer** on the mid right of the page.



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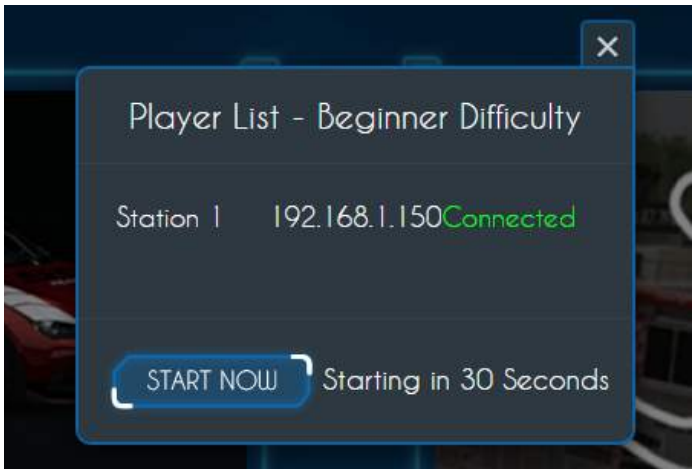
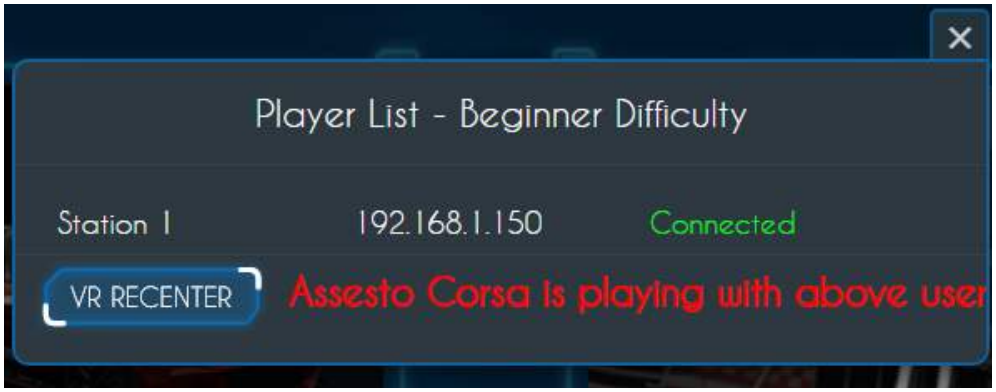
An overlay will pop up that will show a list of players and their Chair names.



Once you click on “Start Now,” a 5 second timer will begin, once the timer begins you will be launched into the game. If you click on the “X” on the top right the server will close out.



Now your location is ready for Multiplayer racing!

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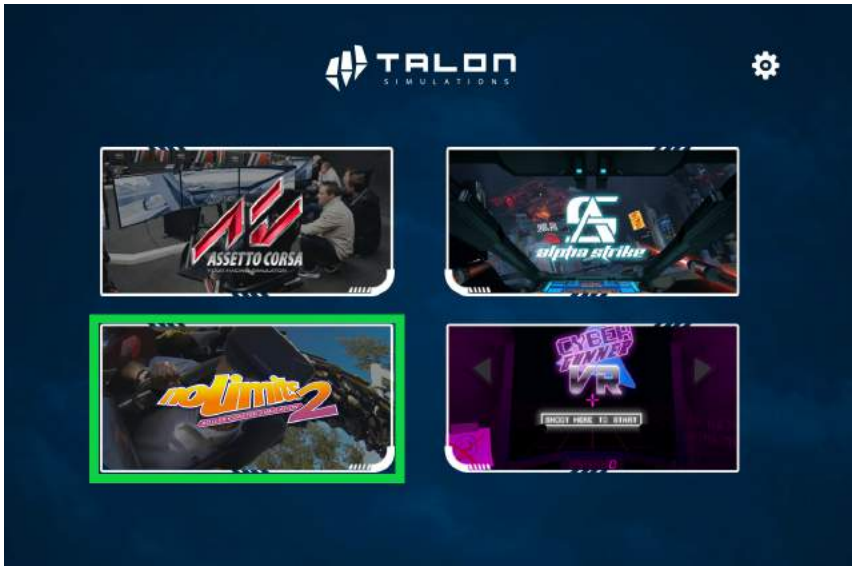
No Limits Roller Coasters

Click on No Limits.



No Limits will open up in the background, now select which coaster you would like to ride. Once you select your coaster the game will load in the track. **If the customer's view is off center you can tell them to look forward and click “VR Recenter” on the bottom right of the screen.**

If you would like to change the Coaster selection you have made, click on **“Close Park”** on the bottom left. Then select your next Coaster.

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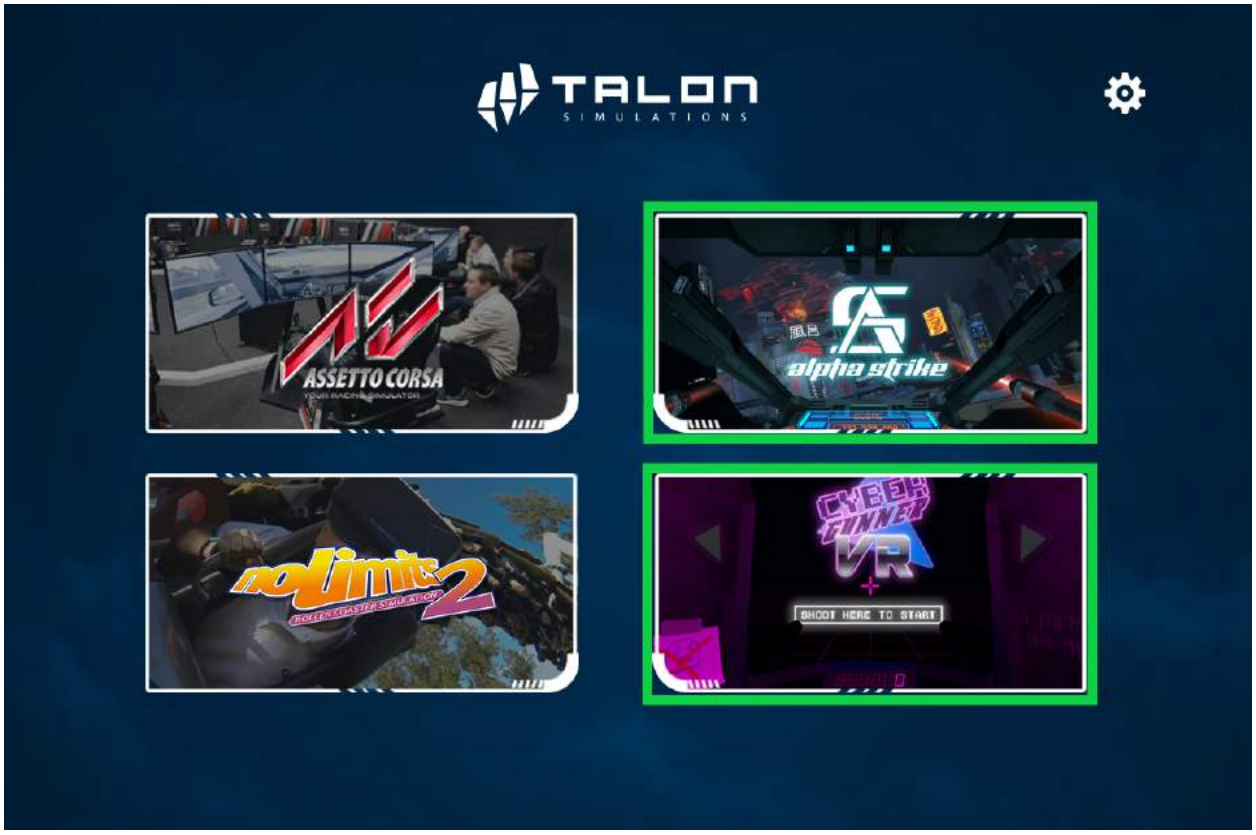
Cyber Gunner and Alpha Strike

Cyber Gunner and **Alpha Strike** are our inhouse developed experiences. **Alpha Strike** you play as a bounty hunter battling drone ships throughout a futuristic cityscape, the goal is to catch up to the bounty before it can escape. **Cyber Gunner** is an entry level VR Turret shooter, when a customer comes in that has never tried VR before this is a great option for them to try out.

These two experiences work the same way, once you click on either portal the game will load up. The loading page will also have a **“Back”** button and a **“VR Recenter”** button.



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Alpha Strike Controls

In **Alpha Strike** you use the joystick to navigate the city, the red trigger button will be how you shoot your guns. On top of the joystick is another red button, by pressing this button you can shoot heat seeking missiles.

There's a mini tutorial in the launch bay that describes how to get the most points.

Cyber Gunner Controls

Cyber Gunners controls are even simpler, just the trigger button is needed.

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Center of Gravity Setup

In order to maximize the performance of your system, it is important the COG is configured correctly based on the controllers you wish to use (some pedal sets are significantly heavier than others for example). Prior to configuring the COG, ensure you have fully assembled the unit, attached your controllers and adjusted everything for comfort by following the previous instructions in this manual. NOTE: Significantly incorrect COG settings can be detrimental to performance and reduce actuator life!

1. *Ensure the power is ON (see the Operation section) and the actuators homed to their center positions. With your back against the back of the seat (in normal seated position), press and hold the red emergency stop button for 4 seconds until power is disconnected from the actuators. If the upper motion platform does not fall to the front or rear (side to side movement is ok), the COG is balanced –proceed to step 4. If the COG is not balanced, proceed to step 2.*
2. *If the motion platform falls to either the front or the rear, loosen the reach adjustment levers of the steering wheel and pedal mounts. Slide the seat forwards or backwards along its mounting rails (in the opposite direction to which the platform was falling), moving the wheel and pedal mounts by the same amount as the seat to maintain the driving position.*
3. *Re-power the actuators by pressing the black button (see the Operation section), and once homed, repeat the above process from step 1 until the correct balance is achieved.*
4. *When satisfied the COG is configured correctly, fully tighten the seat mounting nuts shown in the picture above, along with the wheel and pedal mount reach adjustment levers.*

Note: In situations where many users will be riding (e.g. commercial settings), it is recommended the COG is configured for an average height user within the group to obtain the best results.

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Safety Precautions

•Ensure power to the unit is switched off when not in use.

•While not essential, it is recommended that a harness is worn at all times for added safety.

•Ensure spectators are kept at arm's length when the unit is in operation, and there are no obstructions in or around the base or foot rest.

•Ensure loose clothing is not in the proximity of any moving parts to reduce the risk of trapping or injury.

•For maximum stability, the base should be mounted on a flat, level surface, with the front support legs extended and all support feet making good contact with the ground when a user is seated. The rear castors should be just above, or barely touching the ground.

•As with any other highly-dynamic system, it is good practice to check all adjustment levers / fasteners are tight and secure before each use. The Atomic is a highly-durable system, however it is necessary to provide some user-releasable mechanisms to facilitate rapid comfort adjustment. It may be preferable in heavy-use situations (e.g. commercial scenarios) to replace hand-adjustable levers and fasteners with tooled alternatives.

•Ensure users keep their feet on the foot rest / pedal mount at all times while the unit is active to prevent trapping or injury.

•Adjust the system for comfort prior to operation, ensuring the user’s limbs can move freely and easily.

•It is strongly recommended the safety interlock mechanism is activated (via the emergency stop button) when entering or exiting the seat, to reduce the risk of injury in case unexpected motion occurs.

•When in use, it is strongly recommended pitch/roll movement range settings do not allow the actuators to hit their end-stops (indicated by a knocking sound when the pitch or roll reaches the end of its travel). Under normal use there is a protection mechanism to prevent this, however if abnormal loads are applied there is a slim possibility this can be defeated, potentially damaging the actuators due to excessive shock. If you feel this is happening, reduce your pitch/roll movement range settings.

•Take care when entering and exiting the seat, sudden impacts can result in excessive load / shock to the actuators. The actuators feature an overload protection mechanism which quickly disconnects power to the relevant actuator in these circumstances – should this happen, you will need to reset the unit by disconnecting and reconnecting both power and the USB cable.

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Hints & Tips

•Adjust your system fully to find the perfect driving position before starting. The Atomic provides extensive adjustment to simulate many different types of vehicle layout, which can greatly enhance the feel of the system when configured properly.

•Ensure the COG is configured correctly for the control set and user to maximize performance. If many users are using the system (e.g. in commercial situations), configure the COG for an average height person for optimum results.

•Use of a harness does not only provide added safety, but when tightly secured can significantly enhance the motion sensation. This is particularly applicable to highly-dynamic applications such as racing or rallying, where road surface detail typically produces smaller movements, some of which may not be perceived due to the natural shock-absorption of the upper-body with respect to the seat. The Atomic can provide exceptionally fast motion response and use of the harness maximizes this benefit.

•**Experiment extensively with your software settings!** to fine-tune your ride, in particular force level and pitch/roll movement range. As with any other system, incorrect settings may yield disappointing motion results, but a correctly tuned system can produce an incredible experience. Sometimes less is more – excessive force settings can result in 'overshoot' (producing a jittery feeling in flight-type applications), and excessive pitch/roll movement range settings can reduce the response of the system to more subtle feedback such as road surface detail.

•If you have a TTi unit, ensure your line level input (connected to the Audio IN port on the Atomic) has a strong signal and the volume output on your computer is set to maximum for the best results.

•If possible, secure your controllers firmly to their mounts using the mounting holes provided.

•To enhance the feeling of forward acceleration, it is more advisable to tilt the seat incline / recline further backwards using the mechanism described in section 1, rather than offsetting the center position of the unit in your software. This allows the system to still be able to respond to the greatest range of pitch motion possible for both acceleration and braking. If you are unsure, it is recommended you set the seat incline / recline to about halfway for most applications.

•If you are using force-feedback controllers, use a high force setting – the Atomic gives a substantial amount of force-feedback, so if your usual controller force settings are low they may get a little lost in the experience.

•For additional immersion and a better perceived motion experience it is highly recommended either headphones or a loud audio system is used.

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Troubleshooting

Device Firmware Update (DFU)

From time to time it may be necessary to update the firmware of your Atomic system as Talon Simulations introduces additional functionality. This is done via the AMS DFU (Device Firmware Updater), which is a software utility available freely from Talon Simulations for your Windows-compatible PC.

To update your device's firmware:-

1. Ensure power is connected to the system, and the system is connected to your PC via the supplied USB cable.

2. Ensure the AMS DFU is correctly installed on your PC (this also installs the required drivers to update your firmware).

3. Put the Atomic in 'DFU' mode:- Using a pair of pointed implements (e.g. Ballpoint pen), press and hold the 'F' (function) button on the Atomic's I/O panel.

4. Keeping the 'F' (function) button held down, press and release the 'R' (reset) button on the Atomic's I/O panel.

5. Finally, release the 'F' (function) button. The device is now in DFU mode.

6. Follow the on-screen instructions provided with the AMS DFU to perform the firmware update, and once complete disconnect and reconnect both the power and USB leads to the Atomic.

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Problem	Possible Cause(s)	Possible Solution(s)
No motion, one or more actuators move freely	• Power disconnected. • Actuator overload safety mechanism defeated.	• Check power is connected and AC power light is illuminated. • If power is connected, disconnect power and USB, then reconnect. • Press the black ON button (marked ‘1’).
No motion, actuators locked in place	• Safety interlock activated (LED on switch panel and ‘Atomic’ logo will be illuminated red). • Incorrect software settings. • Incorrect DMX channel setting.	• Disengage the safety interlock by pressing the black ON button (marked ‘1’). • If the red LED / ‘Atomic’ logo remains illuminated, check the base plastic cover is free from obstruction and not pressing down on any of the 4 safety switches. • Ensure USB cable is correctly connected and system is present in Windows Device Manager (refer to Windows manual). • Check software settings to ensure system is enabled and force or pitch/roll movement range settings are not 0 (refer to software user manual). • Check game has been recognized in software and motion preview is showing movement. • Check DMX channel is set correctly and corresponds with that in software (refer to software user manual).
Poor motion output	• Incorrect software settings • Incorrect COG configuration	• Increase pitch / roll movement range and / or force setting in software (refer to software user manual). • Correctly configure the COG.
No or poor Tactile Transducer feedback (TTi units only)	• Audio cables not correctly connected. • PC sound output low or muted.	• Ensure audio cables are properly connected, PC sound output is set to full and audio cable is connected to correct port on soundcard. • Check TT Gain software settings (refer to software user manual).

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The fans are not outputting wind.	• A cable is unplugged • A fan motor is blown • A fan fuse is blown	• Check that the power cord for the fan controller is plugged in and all four lights are lit up. The two outside lights are for the left fan and right fan, respectively, and the middle two for the power cord. If the two outside lights are out, a new 8A fuse will need to be replaced. • Some ways to identify the cause of the issue would be to swap the fan controller with a known working fan controller, try a different power supply, a different wall outlet, swapping the output cables for the left and right fans to see if the issue follows the wire or the fan, ensure there is sufficient termination at the fan wires.
A game controller is not working.	• The USB plug was disconnected • The device needs a firmware update.	• Check that the USB cord is connected properly to the USB hub and/or USB extension cord. • Update the firmware using the following links: Joystick Firmware Steering Wheel/Pedals Firmware
Relient is not loading properly.	• The IP address of the computer changed • The IP address was not typed into the browser properly.	• Open the Relient desktop application and verify what it says the IP address is. Ensure that exactly is what is being input into the browser of your tablet. • Reinstall Relient and verify there is an active license key.
A game is not loading properly.	• The path inside the Relient desktop app is incorrect or erased.	• Opent the Relient desktop application, go to Settings, and properly map the game to the correct file location.

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