

Massless Pen, Studio and Mouse troubleshooting

Updated: 16/12/2019

Issues with the Massless Pen

The Pen won't turn on after holding the power button for two seconds.

It is likely that your Pen (3.2) has run out of battery during sleep mode, in which case nothing will happen when you press the button for two seconds. To fix this, you need to plug the Pen and leave it for at least 30 mins before pressing and holding the power button for two seconds again, at which point the Pen will vibrate and begin "blue breathing" (slowly flashing between blue and black). Leave the pen like this for a couple of hours, and it will eventually begin "green breathing", which means that the Pen is fully charged.

I have just plugged in the pen, but when I unplugged it and press the button to turn it on, the button turns white and the pen vibrates.

It is likely that your pen ran out of battery during sleep mode, prior to you plugging it in. The white light and vibration indicates that the battery is too low to be able to charge yet. To fix this, leave the pen plugged in for at least 30 minutes, and then press and hold the power button for two seconds, until the pen vibrates and begins "blue breathing" (slowly flashing blue). Leave the pen like this for a couple of hours, and it will eventually begin "green breathing", which means that the Pen is fully charged.

When I start Massless Studio, the virtual Massless Pen inside Massless Studio isn't aligned with the physical Massless Pen outside of Studio.

The Massless Pen has 18 tracking points across the length of the Pen and an incredibly accurate Inertial Measurement Unity (IMU). As of this writing, we're only using the tracking point on the tip of the Pen, one at the back and the IMU.

If the virtual Massless Pen inside Massless Studio is not aligned with the Pen outside of VR, it could be because you are drawing at an angle/in an area where the Tracker cannot see both tracking points, and therefore does not know the orientation of the pen. Make sure that the Massless tracker is pointed directly at your workstation, and almost level with your hand raised in the air when your elbow is rested on your desk/table. Moreover, when you're drawing, don't draw move the pen too far outside of the tracking area (when you're about 2 feet from your tracker, the tracking area is roughly 3-4ft squared). If you move too far outside of the area, the Tracker will not be able to "see" the pen. Similarly, try to draw with the tip of the pen always closer to the

tracker than the rear of the Pen; this will allow the Tracker to orient the Pen in VR more accurately.

[I plugged my Pen in overnight and it wasn't charged when I came in the next day.](#)

This is likely because the power was off when you plugged it in (for Version 3.1 of the Pen). If you have plugged it in, and the on/off button is not on (it is just black), this means it is not charging. For the pen to receive a charge, plug it in, and then hold the power button for two seconds, until you feel it vibrate and the button starts “blue breathing” (slowly flashing blue). If you leave the pen like this for long enough, it will eventually begin “green breathing”, which means that the Pen is fully charged.

Alternatively, the battery may have run out fully by the time you plugged the pen in. If this is the case, when you press the button to turn it on, the button will turn white and the Pen will vibrate. To fix this, leave the pen plugged in for at least 30 minutes, and then press and hold the power button for two seconds, until the pen vibrates and begins “blue breathing” (slowly flashing blue). Leave the pen like this for a couple of hours, and it will eventually begin “green breathing”, which means that the Pen is fully charged.

[My Pen behaves erratically when the tip is aimed away from the tracker.](#)

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[The Pen seems to create lines and objects erratically.](#)

The Pen has a capacitive touch pad (capacitive sensor) which is currently programmed in Massless Studio as one big touch pad for creation. If your finger is touching the pad, then the Pen is creating content. To stop creating, lift your finger off the touchpad.

If your finger mistakenly touches the touch pad, then the Pen will create, so you want to be aware of when your finger is touching the touchpad and when its not. Some operations in Studio require you to touch, hold and release one or more times. You can see on the virtual Pen if you are touching the touchpad - there is a purple dot on the virtual Pen that will light up at the location on the virtual touch pad which is the same is the actual touch pad.

What do the different Pen led colors mean?

The Pen LED colors indicate what the status of the Pen is. The is covered in the email distribution on 23 July, but it is covered below.

Power on: This pattern will be active after booting for one second

Color: White for 300 ms (or until the power button is released)

Pen not connected/paired to tracker

Color: Orange flashing

Pen not connected/paired to tracker and battery low

Color: Red/Orange flashing

Pen connected/paired to tracker

Color: steady purple

Pen connected/paired to tracker and battery low

Color: Purple/Red flashing

Charging and Pen not connected/paired to tracker

Color: Blue/Orange flashing

Charging finished and Pen not connected/paired to tracker

Color: Green/Orange flashing

Charging and Pen connected/paired to tracker

Color: Blue/Purple flashing

Charging finished and Pen connected/paired to tracker

Color: Green/Purple flashing

Power off - this pattern will be active after holding the power button for 1s to let the user know it's about to turn off. It will be active until the user releases the button (or the pen hard reboots at 7s).

Color: White

Issues in Studio

The pen is not displaying in studio/it is displaying, but not moving in VR when I move the pen in real space.

There are several potential solutions for this:

1. Your Pen may not be on and/or connected to the Tracker. Ensure that both the light on the Pen and the light on the tracker are light with solid purple - this means the pen is on and connected to the tracker. If the Pen has no light on and the Tracker is flashing yellow, it means that the pen is off, and needs to be turned on (by pressing and holding the button for two seconds).
2. If this hasn't helped, ensure that the tracker and your headset are both fully connected to your computer, by checking that the cables fully are plugged in at both ends.
3. If everything is plugged in and the pen still isn't performing correctly, check that your computer can "see" the Tracker. Open up the Windows *Device Manager* and under *Cameras*, you want to make sure that "See3CAM_Stereo" is present. If you don't see the "See3CAM_Stereo" in the Cameras list, then try re-orienting the USB-C plug going into the tracker. In the beta 3 trackers, there is a hardware bug that the cable can only be oriented with the cable coming out towards the ground. So, if it is facing upwards, unplug the cable going into the tracker and turn it so that the cable runs downwards. You should now be able to see "See3CAM_Stereo" under *Cameras*, which should solve the problem.
4. If this doesn't change anything, open the Windows Device Manager and in Ports (COM & LPT), and make sure that there is a com-port assigned to the Massless tracker. You do this by viewing the list of com-ports assigned and noting the items in the list, then unplug the Massless tracker at either the computer end or the tracker end. The list should refresh and show one fewer items. Then plug it back in and the list should refresh again and now show the missing item again. If this is not occurring, and the list is not changing, you will need to unplug everything attached to your computer, restart it, and then plug in the Massless tracker before plugging anything else back in.
5. If the issue is still persisting, the next step is to check that the computer can "see through" the Massless tracker. To do this, open the Windows *Camera* app from the Windows *Start menu* or by typing "camera" in the Windows search field in the bottom bar. If you have a webcam connected to your computer, then, when the *Camera* app opens, your computer display what the webcam sees. To "see" through the Massless tracker, click on the "Switch Camera" icon in the top right of the Camera app. This icon looks like a camera with an arrow going around it. When you click on it, you should see the camera named *See3CAM_Stereo* flash next to the camera button and the screen

should go blank. You are now looking through the Massless tracker. Now - with the Massless Pen powered on - hold the Pen with the tip toward the camera in front of the camera. You should see a red dot (left) and a green dot (right).

6. If you have done all of the above, and nothing has worked, you may want to check that your USB ports are functioning. You could do this by plugging in a memory stick checking that the computer is reading it, or attaching a phone charger with a phone attached, and checking that it can charge/read the phone.
7. If there is no issue with your hardware, and your issue hasn't been resolved by the above steps, please contact us by emailing support@massless.zohodesk.eu.

The Pen is appearing in the device manager and camera app however Studio crashes on startup.

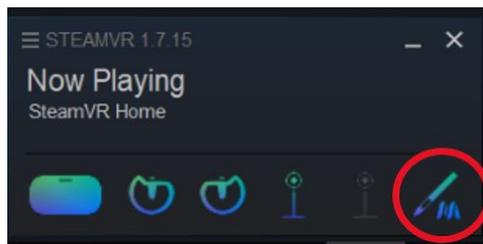
Always ensure that when the tracker is plugged into your computer that it registers as a COM port device. If it doesn't check the device manager to see if there are any 'unknown devices' or devices with an exclamation mark next them. Update the drivers for these devices, some of these devices are critical for the tracker being registered as a COM port .

SteamVR/Other Applications

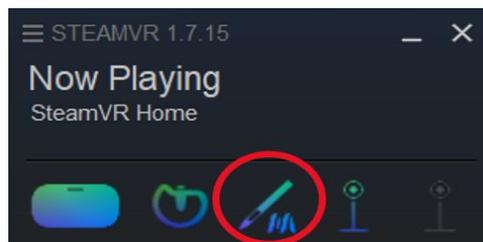
The pen is not appearing in the application I am using, what do I do?

The first thing you need to check is that you have the Massless SteamVR driver downloaded - this will let you use the Pen in other Apps through SteamVR.

If you have the driver downloaded, one reason that you might not be able to see the Pen is that both Oculus or Vive controllers are still connected, and the dominant hand controller is overriding the Massless Pen. You can immediately see if this is happening if your SteamVR driver looks like this:



To fix this, first shut down your SteamVR driver. Then, disconnect the dominant hand Oculus or Vive Controller. The easiest way to do this is to remove the batteries in this controller. Once you have done this, ensure your Massless Pen is turned on and connected by checking that both the light on the pen and the light on the Massless Tracker are both purple. Finally, re-open the SteamVR driver, and it should display that the Massless Pen and one Oculus controller are connected, looking like this:



Your Massless Pen should now be visible in any application.

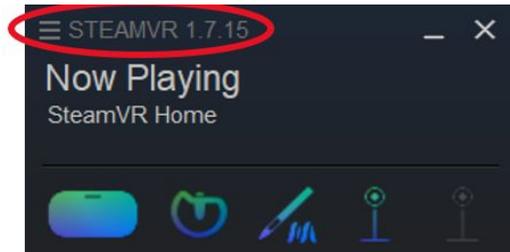
Alternatively, if the Massless Pen was not showing up in any area of your SteamVR, it could be for a number of reasons, outlined below:

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2. If this hasn't helped, ensure that the tracker and your headset are both fully connected to your computer, by checking that the cables fully are plugged in at both ends.
3. If everything is plugged in and the pen still isn't performing correctly, check that your computer can "see" the Tracker. Open up the Windows *Device Manager* and under *Cameras*, you want to make sure that "See3CAM_Stereo" is present. If you don't see the "See3CAM_Stereo" in the *Cameras* list, then try re-orienting the USB-C plug going into the tracker. In the beta 3 trackers, there is a hardware bug that the cable can only be oriented with the cable coming out towards the ground. So, if it is facing upwards, unplug the cable going into the tracker and turn it so that the cable runs downwards. You should now be able to see "See3CAM_Stereo" under *Cameras*, which should solve the problem.
4. If this doesn't change anything, open the Windows Device Manager and in *Ports (COM & LPT)*, and make sure that there is a com-port assigned to the Massless tracker. You do this by viewing the list of com-ports assigned and noting the items in the list, then unplug the Massless tracker at either the computer end or the tracker end. The list should refresh and show one fewer items. Then plug it back in and the list should refresh again and now show the missing item again. If this is not occurring, and the list is not changing, you will need to unplug everything attached to your computer, restart it, and then plug in the Massless tracker before plugging anything else back in.
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The pen is not responding/not performing the correct function when I tap the cap-sense, how can I fix this?

On your laptop/PC/desktop/computer, find the tab for the SteamVR driver. Then, click on the menu button, shown below:



This will open a list of options: select "devices". Within "Devices", select "Controller Settings". This will open a page, which on the top right will have an option to "Edit Controller Bindings", followed by a list of your downloaded SteamVR apps. Select the app you are using (if this app not displayed on the list immediately, select "Show More Applications", and find the app you are using). Next, you will see a screen that has an area at the top left labelled "Current Binding", and an area at the top right labelled "Current Controller". Below "Current Controller" it will display which controller you are using (for example, "Oculus Touch"). Click on the icon displaying the controller you are using, and this menu will appear:



Select "Massless Pen" from this menu, as highlighted above. This will take you back to the previous screen, where you will be able to choose your bindings. At this point you have two options:

- 1) Use our suggested bindings for this application, labelled "Massless Recommended Bindings".
- 2) Create your own bindings, by clicking "Create New Binding", at the bottom left of the screen. You will be able to configure what every different gesture on the pen will do within the app. The pen is able to perform functions with: various taps/holds/swipes on the cap-sense, twisting the pen clockwise/anti-clockwise, shaking the pen back and forth/side to side, tapping the pen onto a hard surface (desk), and more. You can configure each of these actions to perform a separate function based on what is most intuitive to your use.

I can see the Pen in SteamVR and inside Unity but it's not tracking. I am using Rift controller serial number with _Camera0 configuration. I do not see any error messages in SteamVR.

- Confirm the "Rift Controller serial number" with _Camera0 appended to it is the headset's serial number, not the controller's serial number.
- Also, just checking that you only have one Oculus Tracker connected (the one on the Massless Tracker), rather than two.
 - If you have two, it might be worth trying _Camera1 just in case it assigned the numbers the other way around.
- Other things to check that might help:
 - The tracker has a purple light on it to match the pen's purple light, this means they are connected over the radio (flashing orange is not connected).
 - Some of this is covered in above - Check the USBC cable is the right way around in the tracker, at the moment the camera part of our tracker will only work with the L-shaped cable end plugged in one way around.
 - You can do this by starting Windows' built-in camera viewer and switching to See3CAM_Stereo. If you don't see it, try the USBC cable in the other way around.
 - When doing this camera test it is probably worth switching the pen "on" and holding it in front of the Massless Tracker, you should see a red and a green dot in the image.
 - If you see lots of red and green all over the picture then you might want to try angling the tracker so it points away from the other sources of IR light.
 - If you don't see any dots when showing the camera (from the pen), try and confirm that the pen is on and charged.
 - If the image is completely black, try unplugging the tracker, waiting for a short time (20 seconds) and plugging it back in.
 - At the moment we are writing logs to <UserFolder>/AppData/Roaming/Massless/MasslessLogfile.log this log may help discover where the problem is.

Sometimes the Massless Pen is oriented differently inside the virtual world than it is in the physical world - why is that? How do I fix that?

Occasionally if a system has been moved or (as of this writing) if there is a newly introduced strong magnetic field then the Pen needs recalibrating. This is done by making sure the cable doesn't fall out, and rotating the tracker approximately 180° (or just over) and back again around each of the axes (x, y, and z). Occasionally, this needs to be done more than once.

Massless Mouse

I have installed Massless mouse, but the Pen isn't controlling the cursor.

To start Massless Mouse, you need to do two things:

1. go into your start menu and start Massless Mouse
2. Open Massless Mouse and select "Control Mouse"

The Massless Pen should now be controlling the Massless Mouse.

I am using the Massless Mouse with dual monitors and its very difficult to access my second monitor with the Massless Mouse

As of this writing, Massless Mouse only works with your primary monitor. And the Massless Mouse center point is the center of your primary monitor. You may be able to move the mouse across to your second monitor using the Massless Pen, but the behaviour will be erratic.

I'm using Massless Mouse and want to switch back to my normal mouse, but Massless Mouse tracking volume can't reach the System Tray and when I try to use my mouse, it keeps snapping back to the location where Massless Mouse has the cursor.

The Massless Tracker can see the Massless Pen when it refreshes every second, it will move the cursor back to that spot each time. Simply turn the Pen off or hide the Pen out of view from the tracker (e.g: under the desk) and your mouse or trackpad will be able to take over to turn off the Massless Mouse.

I'm using the Massless Mouse and I have to keep my arm in the air the whole time, I want to be able to keep my elbow on the desk.

If you want to use the Massless Pen with your elbow on the desk, its best to mount it under your monitor. We don't ship a bracket to mount it under your monitor, but you have two options - you can either 1. unscrew the top section of the tracker stand pole off the tracker stand and lower the tracker all the way down to below your monitor with the tracker stand base in the middle of your monitor or 2. Slide the tracker bracket off the tracker stand pole and have it sit under the monitor on a pad facing upward, toward the Pen position at about 45 degrees.

I'm using Massless Mouse, but the Pen can't control the cursor to get to the bottom of my monitor.

This will sound counter-intuitive, but if you aim the tracker down to have the tracking volume "aim" at the desk - with Massless Mouse - you're actually going to push the cursor up. If you keep the tracker aimed at 45 degrees upward from the

bottom of the monitor, that should be OK. You can gently rotate the tracker up and down and see the effect of the cursor moving up or down on the screen with the Pen held still.

If your question isn't answered here, please contact Massless support at support@massless.zohodesk.eu