



3dRudder

User Manual

v 1.0.1.1



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Introduction to the 3dRudder

The 3dRudder is an intuitive, easy-to-use, foot-based motion controller that enables precise and hands-free navigation in a 3D virtual environment. Designed to be used from the comfort of your chair, it connects to your computing environment seamlessly via a USB connector, so you can be up and running immediately with your favorite VR or 3D application.

Getting Started

Follow the 'Quick Start' instructions delivered in the box with your 3dRudder. These explain how to plug the 3dRudder into your computer, how to initialize it, and how to calibrate it. Once you have completed these steps, the dashboard displays...

Calibration

The calibration records your resting position and records settings for the device orientation and pressure on the board. These settings define a "zero" point for the controller, which the 3dRudder then sets as a default for 3D virtual navigation.

You need to recalibrate the 3dRudder each time you remove your feet from the 3dRudder for more than 500ms.

To calibrate the 3dRudder:

1. Place your feet on the 3dRudder, with your legs at a 90° angle within the floor.
2. Find a comfortable sitting position and then keep this position, without moving for 5 seconds, while the 3dRudder calibrates.
Note: If the 3dRudder is too far in front of you, it will slip. If it is too close it will be uncomfortable for extended use.
3. When this phase is complete, the 3dRudder emits a beep, signaling that it is ready for use.

Using the 3dRudder

The 3dRudder is intuitive and you will very quickly be able to navigate effortlessly. To maintain optimum responsiveness, we recommend that you:

- Avoid sudden movements, or partially removing your feet from the 3dRudder, as your feet may slide off the 3dRudder causing you to lose control of the device, and recalibrate the 3dRudder.
- Wear flat shoes when using the 3dRudder to prevent damage to the pad and maintain optimum responsiveness.

We recommend that you familiarize yourself with the moves of the 3dRudder by using the demonstration application before using it with games or applications. This demonstration rotates you around a statue.



4 Degrees Of Freedom (4DOF)

The four moves may vary with games, applications or software. By combining the 4 movements together, users can perform complex moves that cannot be achieved easily with other devices - keyboard, mouse, 3D mouse, or pen - on the market.

The current 3dRudder mappings are:



X Axis: Roll - (Lateral Left/Right)



Y Axis: Pitch - (Forward/Backward)



Rz Rotation: Yaw - (Orbit/Rotation)



Z Axis: Up/Down

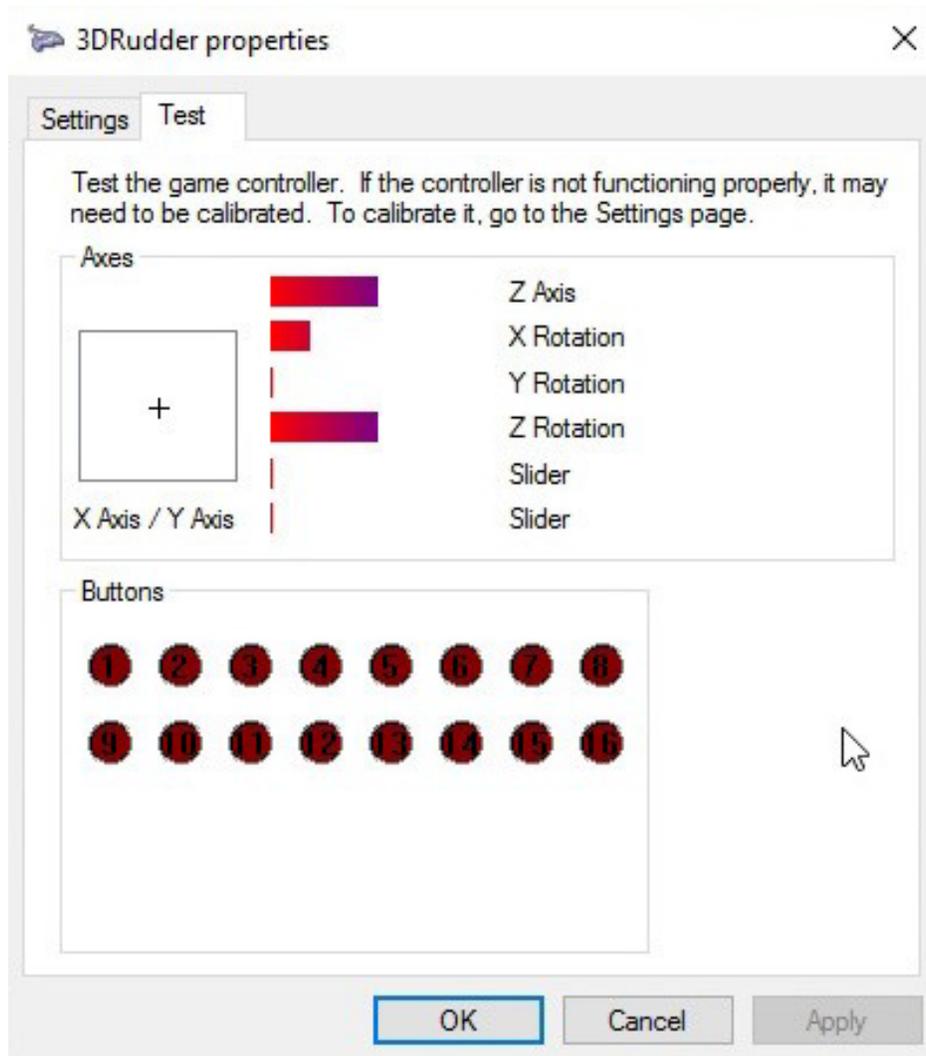


We recommend using standard horizontal motion to comply with these recommended movements, as they are intuitive, and enable quick use of the 3dRudder. Gamers are used to this configuration as two of the three horizontal movements are similar to those of the left stick of a game pad.

Data exchanged between the 3dRudder and the PC

The 3dRudder is recognized as a joystick. Under Windows, the 3dRudder uses the 8 axes provided by Windows:

- 4 axes for movement (X,Y,Z, and Rz)
- 1 axis for 3dRudder status
- 3 axes for pressure sensors



Description	Axis Number
Roll	Axis 1
Pitch	Axis 2
Up/Down	Axis 3
Status	Axis 4
Force sensor 1 et 2	Axis 5
Yaw	Axis 6
Force Sensor 5 et 6	Axis 7
Force Sensor 3 et 4	Axis 8



UpDown

To provide the up and down information, the 3dRudder currently uses 6 pressure sensors located on the pads, as follows:



Developers can get the data using Axis 5, 7 and 8.



Integration of the 3dRudder Controller

The 3dRudder controller sends status data on Axis 4.

Status	Description
1	Don't put your Feet!!! Stay still 5s...
2	Initialization...
3	Please put your feet...
4	Put your second foot...
5	Stay still 0.5s...
6	3DRudder in use...
7	Extended functions activated...

At stage 6, the 3dRudder is ready to be used. The 3dRudder continues to optimize its computation for a few more seconds. Once this is complete, it moves to stage 7.

Under UNITY 5.X

Our demonstration application runs under Unity.



<https://www.youtube.com/watch?v=EfCuJqFSCzE>

Troubleshooting

Updating the Firmware

To update the firmware, clear all existing 3dRudder installation. To do this:

1. Go to http://www.nirsoft.net/utils/usb_devices_view.html and download then install USBDeviw
2. Select the 3dRudder controller
3. Delete the 3dRudder controller

Move Beyond



4. Unplug the 3dRudder USB cable from your computer
5. Plug the 3dRudder USB cable back in again

If the 3dRudder axis does not react according to the required settings after a firmware update:

1. Launch the Windows game controller
2. Click the "Properties" button
3. Click "Re-init"

Move Beyond



Should you experience any issues that are not listed in this manual, please contact our engineering team at support@3drudder.com.

3dRudder

France

Hôtel Technoptic
2 Rue Marc Donadille
Technopôle de Château-Gombert
13013 Marseille

United States

222 Broadway
New York, NY 10038

Email: support@3drudder.com

Site: <http://www.3drudder.com/>

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