

Motion Viewer

Motion Version 2.2

www.motionnode.com

www.motionshadow.com

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1 Introduction

The Motion Viewer provides a convenient means of displaying the output of the Motion Service. It displays the orientation of the device in a three-dimensional representation, as well as a plot view of the MotionNode device's sensor data. In addition, it shows a graphical and text views of the MotionNode device's output Euler angles.

The viewer uses OpenGL for rendering, so it requires a graphics card which supports hardware OpenGL processing. Most modern graphics cards with up-to-date drivers will be compatible.

Note that the viewer application only supports the Windows operating system. The User Interface includes a web browser based viewer for Linux and Mac users.

2 Controls

The viewer can be controlled in a number of ways. The easiest way to find out how to use it is to run it and hit the "F1" key on the keyboard. This will display a popup box which lists all keyboard and mouse commands. These commands are listed below:

Mouse left-click-drag	If you click the left mouse button while hovering over the 3D view panel and drag the mouse, this will rotate the view of the box representing the MotionNode device's 3D orientation. This is useful to orient the view on your computer screen with the actual orientation of the MotionNode device.
Mouse right-click-drag	Clicking the right mouse button while hovering over the 3D view panel and dragging the mouse will zoom the 3D view in and out.
'F1'	Displays a popup box with a list of keyboard and mouse commands.
'v'	Cycles through different viewing configurations of the viewer. The default startup view includes the 3D view of the device's orientation, a plot view of the device's sensor data, and a graphical representation of the device's Euler angles as output by the server. The second viewing configuration of the viewer includes only the 3D view of the device's orientation. The third configuration shows only a plot view of the device's sensor data.

'c'	If more than one MotionNode device is attached and reading, this keyboard command will change the actively displayed MotionNode device. Hitting this key repeatedly will cycle through all connected MotionNode devices.
'b'	Toggles between a textured rendering of the 3D view, and a wireframe rendering of the 3D view.
'1'	Sets the current plot view to display the raw accelerometer sensor data. X, Y, and Z axes are represented by red, green, and blue respectively.
'2'	Sets the current plot view to display the raw gyro sensor data.
'3'	Sets the current plot view to display the raw magnetometer sensor data.
'4'	Sets the current plot view to display the calibrated accelerometer sensor data.
'5'	Sets the current plot view to display the calibrated gyro sensor data.
'6'	Sets the current plot view to display the calibrated magnetometer sensor data.
'['	Zooms in on the current plot view (decreases the vertical window of displayed data)
']'	Zooms out of the current plot view (increases the vertical window of displayed data)
'-'	Shifts the vertical window of displayed data up.
'+'	Shifts the vertical window of displayed data down.
'r'	Resets all viewing parameters (zoom/shift) to the default values.
'k'	Toggles Kalman filtering of the currently selected plot data on and off. This is useful to eliminate noise in the data when the device is generally at rest or in slow motion. It should be noted that this filter takes some time to settle on an accurate estimate value. Thus, it is not best applied when the MotionNode device is undergoing high levels of dynamic acceleration or rotational velocity.
'Escape'	Exits the viewer.