

## SpacePoint Fusion Quick Start Guide

### Introduction

The SpacePoint Fusion module incorporates a 3-axis accelerometer, 3-axis gyroscope, and 3-axis magnetometer. These 9 outputs are internally processed using PNI's SpacePoint algorithm to provide calculated orientation data in the form of quaternions. The USB/HID interface seamlessly integrates with a user's system, and provides both raw sensor and calculated quaternion data. Because the SpacePoint Fusion incorporates a USB/HID interface, no drivers are necessary, and no batteries are required since the host computer powers the SpacePoint Fusion module via the USB port.

### Getting Started with the SpacePoint Fusion

To use the SpacePoint Fusion, simply plug it into your computer's USB port. It is important to ensure the SpacePoint Fusion module is fully at rest for 3 seconds when plugging it into the computer's USB port, as the gyros initialize during this time. Once the module is connected to the USB port, its red and green LEDs will light up.

If using Windows and this is the first time plugging in a SpacePoint Fusion device, Windows automatically will launch the "Found New Hardware" wizard, indicate it has found the SpacePoint Fusion, and install the device.

If the LEDs do not come on or Windows otherwise does not seem to recognize the device, check the Device Manager, under Universal Serial Bus Controller – USB Composite Device. It should be identified with "Location 0 (SpacePoint Fusion)", and under the Details tab it should indicate "VID\_20FF&PID\_0100". Alternatively you can check under Game Controllers on the Control Panel, where it should be recognized as a "7 axis 2 button device". Here, under Properties, you should observe changes in the 7 axis states as the device is moved, although these 7 states are not correlated to their description.

That's about it. The device now will be streaming both raw sensor and calculated orientation data to the computer via the USB/HID interface. Things you can do next include:

- Run a demo program to demonstrate how the device can be used (and have a little fun). Web-based Unity [demo programs](#) are available at PNI's website, along with [instructions](#) for how to use these.
- Observe or log sensor data or calculated orientation data. PNI's [SpacePoint Game Pad](#) program allows you to do this, and instructions for how to use this are included in the [SpacePoint Game Pad Application Note](#).
- Begin developing code to integrate the SpacePoint Fusion's output into your application. The [SpacePoint Game Pad Application Note](#) includes an explanation of the streaming data at the USB/HID interface and sample hard-copy source code. Additionally PNI's complete [SpacePoint Game Pad](#) project provides a Visual C++ program to leverage.