

# FOG/IMU Developer's Kit Quick Start Guide



## Technical Support

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## Getting Started

This guide describes how to setup and test a KVH fiber optic gyro (FOG) or inertial measurement unit (IMU) using the KVH FOG/IMU Developer's Kit.

### Connect the Interface Box

Follow the steps below to connect the interface box to your PC.

#### **IMPORTANT!**

To avoid damaging the unit, do not connect or disconnect the Y-cable from the FOG or IMU while the Y-cable is powered.

1. Using the USB cable (*supplied in kit*), connect your PC to the interface box. The Power LED will illuminate to verify successful connection (see Figure 1).

**NOTE:** Verify that the Y-cable is unplugged and the power switch is set to the "Off" position (see Figure 1).

2. Using the Y-cable (*supplied in kit*), connect your FOG/IMU (15-pin connector) to the interface box (either 9-pin connector) as shown in Figure 1.
3. To supply power to the interface box, attach a power plug adapter (*supplied in kit*) to the Y-cable. If necessary, remove the current power plug adapter by squeezing the latch and sliding the adapter out in the direction shown in Figure 2. Then plug the Y-cable into an available power outlet.
4. Set the Y-cable power switch to the "On" position (see Figure 1).

Figure 1: Connected FOG/IMU Interface Box with Y-Cable

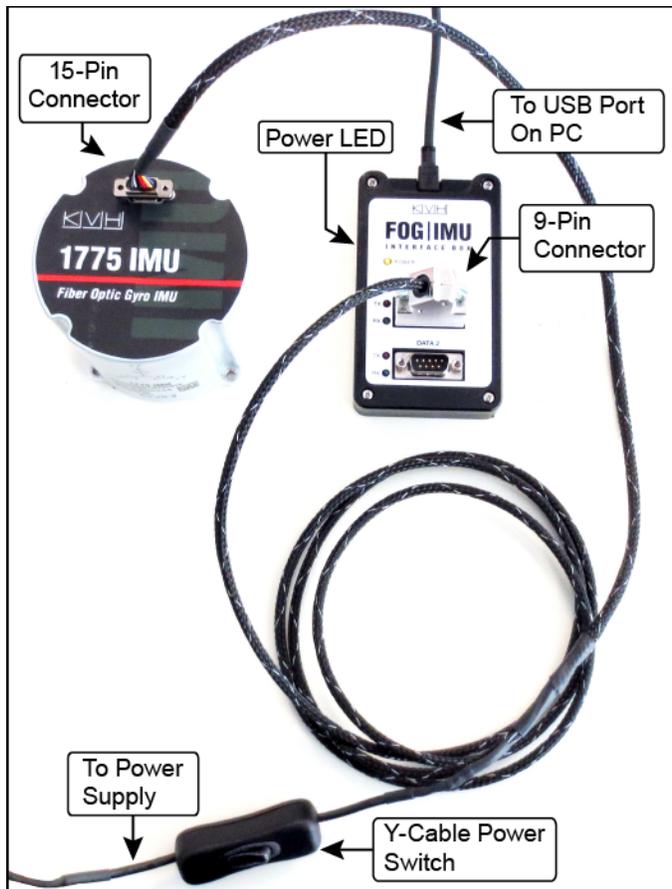
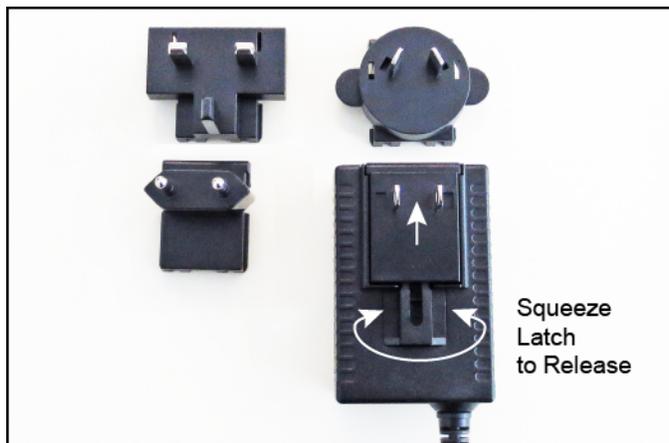


Figure 2: Power Plug Adapters



## Install the Software

Follow the steps below to install the FOG/IMU Interface Software on your PC.

1. Run the **ImuMainInstaller.msi** file.
2. Complete the Setup Wizard to select your installation directory, set permissions, and install the software (see Figure 3).
3. Load PC drivers, if necessary.
4. Double-click on the KVH desktop icon to run the software.

## Verify FOG/IMU Connection

Follow the steps below to verify that your FOG/IMU is connecting to the interface software and that the software can stream live data from your FOG/IMU.

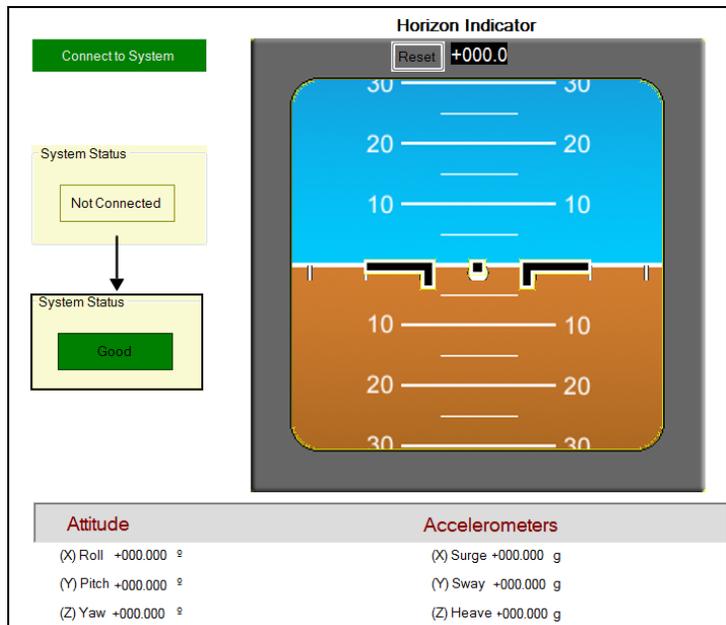
1. At the Dashboard (default view) tab, click **Connect to System** to connect to your FOG/IMU and begin streaming live data (see Figure 4).
  2. Once connected, verify that the system's status is "Good" as shown in Figure 4.
- NOTE: Green indicates a "good" status.*
3. Move your FOG/IMU in various directions to verify that the FOG/IMU is streaming accurate data.

*NOTE: Click **Reset** to refresh the yaw reference.*

Figure 3: Complete the Setup Wizard



Figure 4: Connect At the Dashboard Tab (Default View)



# Software Features

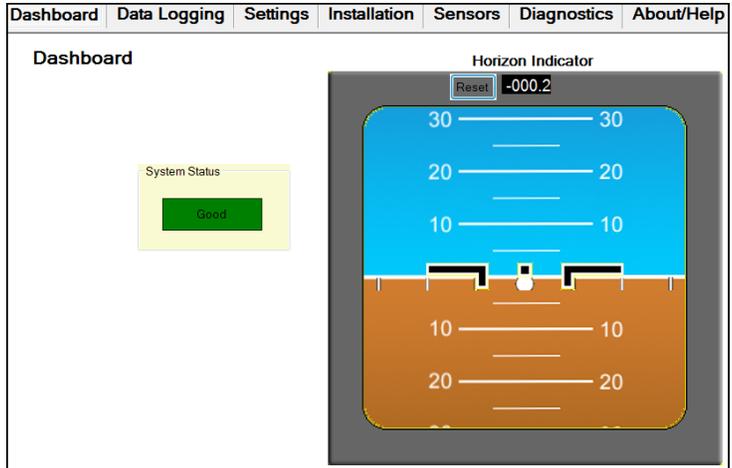
This section provides an overview of the software features and basic functions.

## Overview

When you start the FOG/IMU interface software, you will see the Dashboard page and several tabs (see Figure 5). Below is a list of the major functions of each tab that will help you to operate and view/capture data from your FOG/IMU.

- **Dashboard (Default View)** - Connect to your FOG/IMU and view data
- **Data Logging** - Stream or capture live data, and export saved binary data to ASCII hex files
- **Settings** - Display or change the configuration of your FOG/IMU (e.g., sampling rate, filtering, units, etc.)
- **Installation** - Display or change rotation matrix and transform sensor reference frame into user-defined reference frame
- **Sensors** - Plot streaming live data or display saved log files
- **Diagnostics** - Run built-in tests
- **About/Help** - Reference the FOG/IMU user manual and an interface control drawing (ICD)

Figure 5: Interface Tabs (Dashboard View)



# Basic Functions

This section provides an overview of the basic functions you can perform with the FOG/IMU interface software.

## Stream and View Live Data

Follow the instructions below to stream live data and view select streams.

### Streaming Live Data

At the Dashboard (Default View) tab, click **Connect to System** to connect to your FOG/IMU and begin streaming live data (see Figure 6).

Alternatively, at the Data Logging, Installation, or Sensors tab, under Page Controls, click **Start** to connect to your FOG/IMU and begin streaming live data (see Figure 7).

### Viewing Select Data Streams

1. If live data is not already streaming, at the Sensors tab, under Page Controls, click **Start** to begin streaming live data (see Figure 7).

*NOTE: Within ten seconds of connecting, live data should begin streaming.*

2. Select which sensor streams to display (see Figure 8).

Figure 6: Stream Live Data (Dashboard Tab)

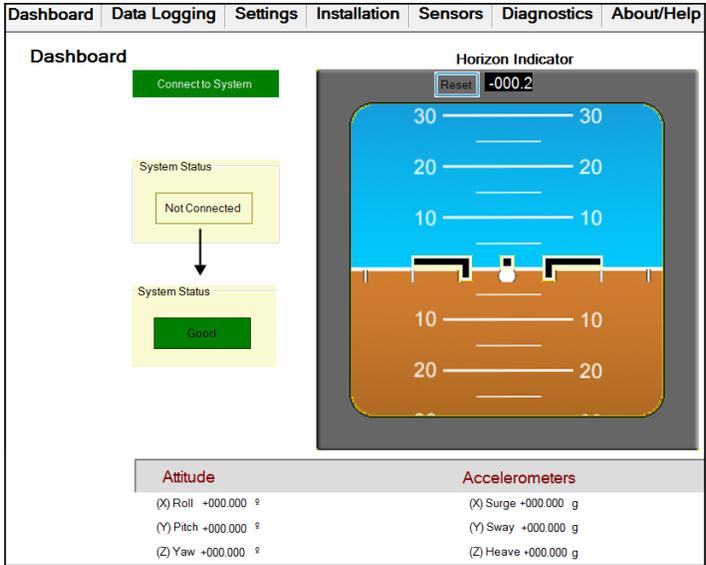
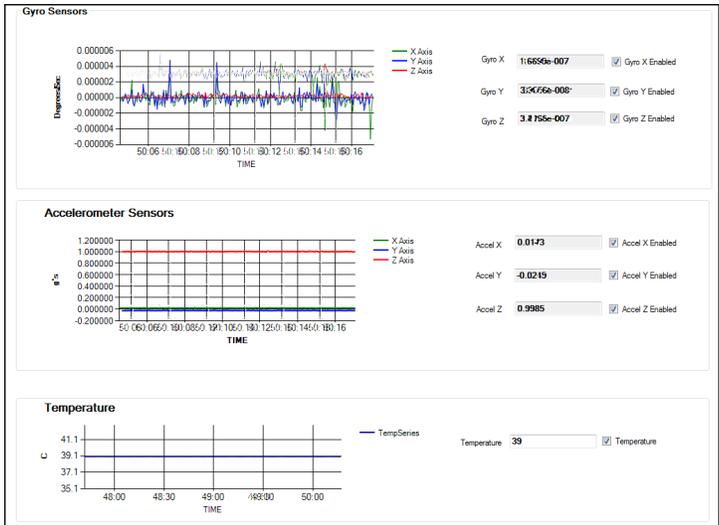


Figure 7: Stream Live Data (Data Logging and Sensors Tabs)



Figure 8: Select Sensors Streams



## Record and Playback Live Data Streams

Follow the instructions below to record live data files, convert binary files to ASCII Hex, or play back recorded files.

### Recording Data

1. At the Data Logging tab, under Page Controls, click **Stop** to halt live data streaming, if necessary (see Figure 9).
2. Navigate to the directory where you would like to save the recorded data.
3. At Start Download, click **Start** to begin logging data.
4. Click **Stop** to stop logging data.

### Converting Data

1. Under Convert Binary to ASCII Hex, navigate to the saved binary data stream file that you wish to convert to ASCII Hex (see Figure 10).
2. Click **Start** to convert your saved binary data stream file to a **.csv** file that can be played back at the Sensors tab.

### Play Back Saved Data Files

1. At the Sensors tab, under File Controls, click **Playback Recorded Data** (see Figure 11).
2. Navigate to the saved data stream **.csv** file that you want to play back. Then double-click the file to begin playback (see Figure 11).

Figure 9: Record Live Data Streams

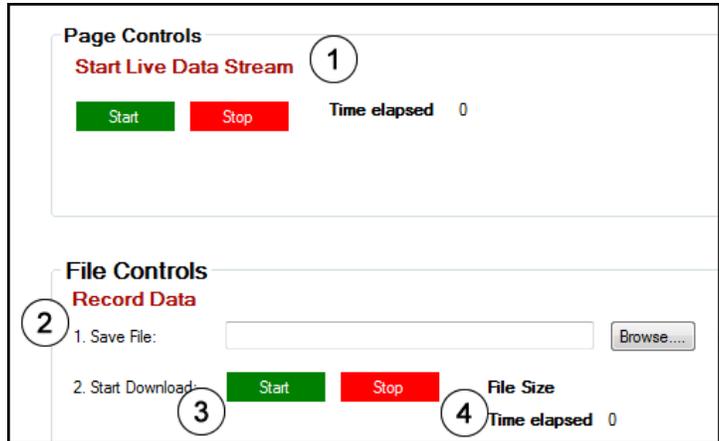


Figure 10: Convert Saved Data Files



Figure 11: Play Back Saved Data Files



## Configure Settings

Follow the instructions below to make changes to your FOG/IMU's settings or installation outputs (reference frame).

### IMPORTANT!

Some changes to your FOG/IMU settings or reference frames may impact system performance. Refer to your FOG/IMU's user manual.

### FOG/IMU Settings

1. At the Settings tab, under Page Controls, select **Read Config** then click **Start** to display current FOG/IMU settings (see Figure 12).

2. Make changes, as required.

3. Select **Save Config To Device** when finished.

*NOTE: Verify FOG/IMU settings have changed by navigating to the Data Logging tab or repeat step 1.*

4. Click **Start** to resume live data streaming.

### Installation Outputs

1. At the Installation tab, under Page Controls, click **Start** to begin streaming live data, if necessary (see Figure 13).

2. Make changes to the rotation matrix output and reference frame as required (see your FOG/IMU user manual).

3. Click **Save to Device** when finished.

## Diagnostics and Built-in-Tests

To run built-in tests or see diagnostic results, follow the instructions below.

1. At the Diagnostics tab, under Page Controls, select **Run BIT Status Report** then click **Start** to run a built-in test and display current results (see Figure 14).

2. Select **Run Diag Report** then click **Start** to view a more detailed capture of the results.

*NOTE: For assistance interpreting the results of a built-in test or diagnosing a problem, contact KVH Sales at [fogsupport@kvh.com](mailto:fogsupport@kvh.com).*

Figure 12: Configure FOG/IMU Settings

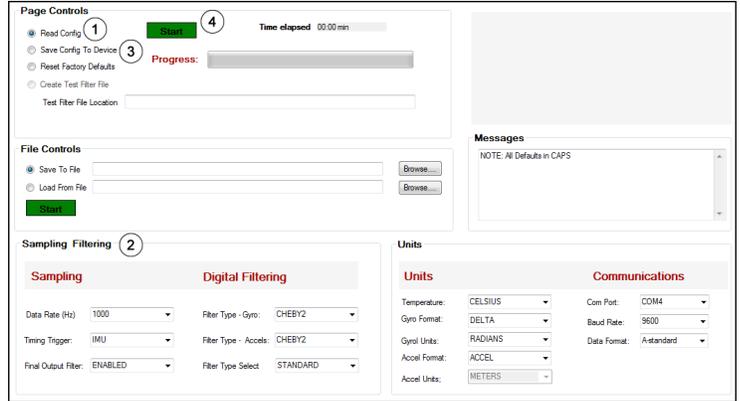


Figure 13: Configure Installation Outputs

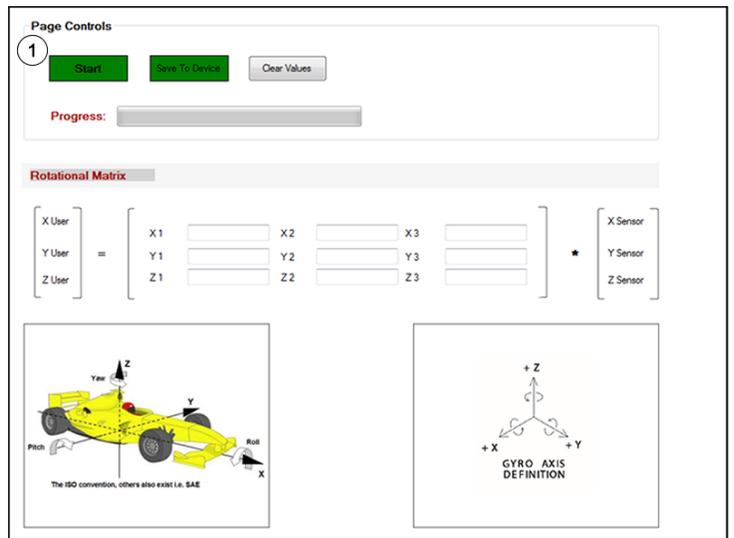


Figure 14: Run Diagnostics and Built-in-Tests

