

MicroStrain 3DM-GX5-10 Inertial Measurement Unit: Quick Start Guide

The LORD Sensing 3DM-GX5 family of high-performance, industrial-grade, board-level inertial sensors provides a wide range of triaxial inertial measurements and computed attitude and navigation solutions.



In all models, the Inertial Measurement Unit (IMU) includes direct measurement of acceleration and angular rate, and is fully temperature-compensated and calibrated over the operating temperature range.

The 3DM-GX5-10 Inertial Measurement Unit communicates through a serial connection and is monitored by a host computer. Sensor measurements and computed outputs can be viewed and recorded with SensorConnect software, available as a free download from the LORD Sensing website. Alternatively, users can write custom software with the open source data communication protocol, also available on the site. Data is time-aligned and available by either polling or continuous stream.



The sensor can be purchased by itself (A), or with a connectivity kit (B). The 3DM-GX5-10 communicates via RS232, (kit p/n 6212-XXXX). The kit includes all necessary cables and power supply. **This guide assumes that you have a connectivity kit and will download the latest version of SensorConnect™ software.**



Step 1:

Download and install the latest SensorConnect™ software:
http://updates.microstrain.com/SensorConnect_12.3.0_x64.msi

Step 2:

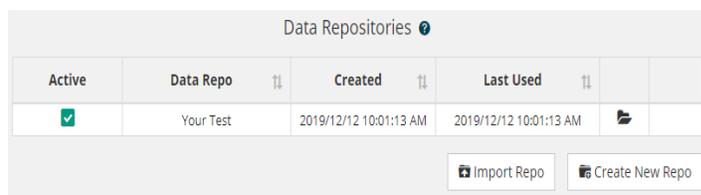
Attach the interface cable to the sensor. Plug the power supply into the power jack on the RS232 MDB9 connector, and then plug it into AC power.

Step 3:

Plug the cable into the appropriate computer input. The green LED on the board should light, and the LED on the sensor should first blink, then pulse slowly, indicating that it is in the idle mode.

Step 4:

Start SensorConnect. The first thing you must do is create a repository file to which you will store settings and data. Click on HOME to see this screen:



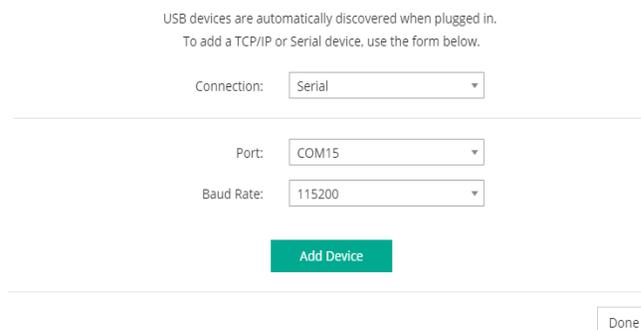
Then click on **Devices**, and **+ Add Device**:



This will bring up the following screen:



Select serial, and identify your COM port. Clicking the port select arrow may identify available comm's ports. Sensors are factory set to 115200 baud. Click Add Device, and Done:

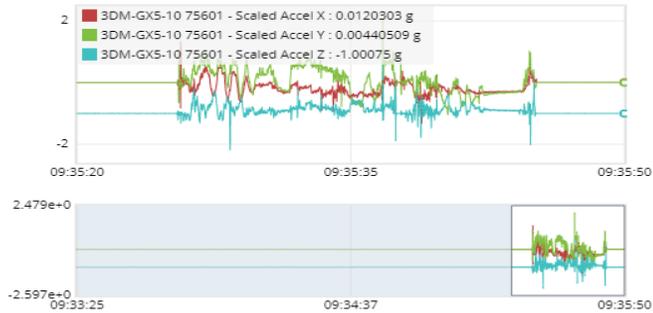


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Step 9:

Test the linkage to the widget. Pick up the sensor, and move it in 3 axes. As you move the unit, you'll observe graphical changes in value.

Time Series Graph

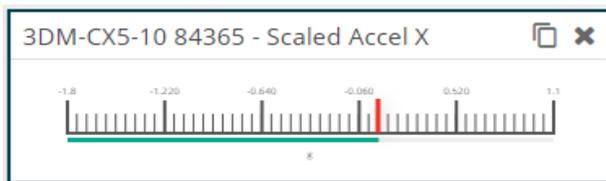


Now you know that your sensor is working, and you're in command. Let's add some other widgets. Click on + Add Widget, and select Linear Gauge. Click on the Gauge icon, and under Channels, select Scaled Accel X.

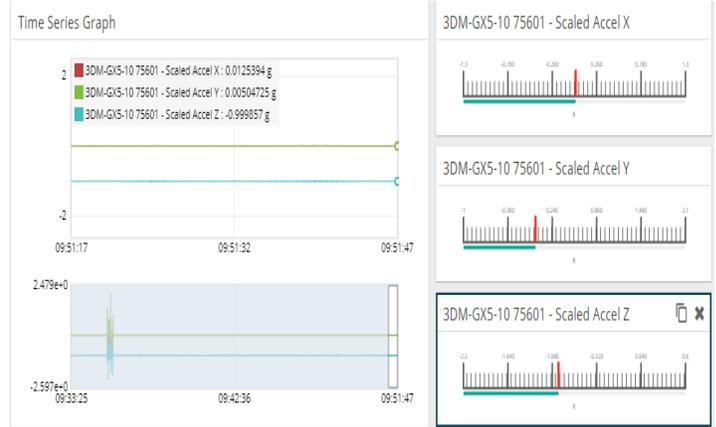
You can re-scale the widget and position it like this:



Move your cursor over the linear gauge. An X will appear, and next to it a duplication icon.



Step 10: If you click on the duplicate icon on the first gauge, you can place two more linear gauges. Click on each of them, and select Accel, X and Y, respectively. Now you'll see the gauge displays move, as you manipulate the sensor.



Step 11: There is one last step to consider, before exploring SensorConnect further, or incorporating the sensor into your own data handling system.

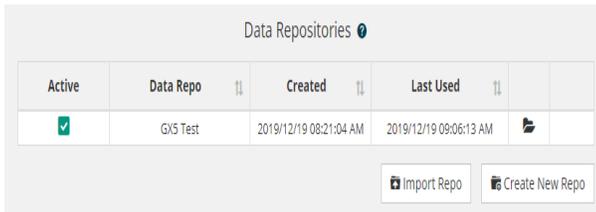
Click on Devices, your device, and select Monitor Bytes. You can see streaming data:

```
3DM-GX5-10 75601 byte monitoring
Record to file: [ ]
75
Read - 2019-12-19 14:54:33.665111552
65 80 1C 0E 04 3C 49 6A 19 3B AB 7C C6 BF 7F F9
9F 0E 12 40 A2 8D 1C 28 F5 C2 8F 00 00 00 00 A7
08 75 65 80 1C 0E 04 3C 50 4D 76 3B 8D 1B 68 BF
80 02 99 0E 12 40 A2 8D 21 47 AE 14 7B 00 00 00
00 30 59 75 65 80 1C 0E 04 3C 48 62 C8 3B B5 BA
BD BF 7F EF 4F 0E 12 40 A2 8D 26 66 66 66 66 00
00 00 00 66 03
Read - 2019-12-19 14:54:33.694981376
75
Read - 2019-12-19 14:54:33.6952624
65 80 1C 0E 04 3C 43 6A B1 3B 8C 8F CA BF 7F EC
C4 0E 12 40 A2 8D 2B 85 1E B8 52 00 00 00 00 97
D3 75 65 80 1C 0E 04 3C 3E 04 62 3B AB B9 2A BF
80 08 DA 0E 12 40 A2 8D 30 A3 D7 0A 3D 00 00 00
00 D2 6A 75 65 80 1C 0E 04 3C 45 AA 55 3B A3 BE
5B BF 80 10 A6 0E 12 40 A2 8D 35 C2 8F 5C 29 00
00 00 00 8E 06
```

Pin to Bottom

Clear

Step 12: When you're done exploring SensorConnect, click on Home, and save your setup and data to a repository file:



Active	Data Repo	Created	Last Used		
<input checked="" type="checkbox"/>	GX5 Test	2019/12/19 08:21:04 AM	2019/12/19 09:06:13 AM		

Now, you're ready to put your sensor to work in your application. For sensor pinout and other details, refer to the user manual, which is found on the MicroStrain website:

<https://www.microstrain.com/inertial/3dm-cx5-10>

Additional information about MicroStrain data communications software and related information will be found by scrolling down to DOCUMENTATION.

Details about other MicroStrain software can be found here: <https://www.microstrain.com/software#web>