LORD QUICK START GUIDE

3DM-GX4-25™

Attitude Heading Reference System

Starter Kit Components

The model 3DM-GX4-25™ (PN: 6234-4221) **RS-232** starter kit contains:

1. 3DM-GX4-25™ Module (PN: 6234-4220)
2. Micro DB-9-to-RS-232 Cable (PN: 4005-0037)
3. 100-240 VAC Power Supply (PN: 9011-0009)
4. Universal Power Supply Adapter Kit (PN: 9011-0022)
5. MIP™ Monitor Windows Software Flash Drive (PN: 8200-0020)

The model 3DM-GX4-25™ (PN: 6234-4241) **USB** starter kit contains:

1. 3DM-GX4-25™ Module (PN: 6234-4220)
2. Micro DB-9-to-USB Cable (PN: 9022-0019)
3. MIP™ Monitor Windows Software Flash Drive (PN: 8200-0020)

Figure 1: *3DM-GX4-25™ module*

Software Installation

1. ***IMPORTANT:*** *Before installing this software, insure that the Windows Operating System Service Pack is the latest available; older versions will cause installation errors.*
2. Insert the MIP™ Monitor Software Flash Drive into the host computer's drive.
3. An AutoPlay window will appear; click Run AUTORUN.EXE. If it does not, navigate to the drive and double-click AUTORUN.EXE.
4. The software menu will appear.
5. Click Install MIP Monitor Software and follow the on-screen instructions to complete the installation. You will receive a message indicating successful installation and be asked to restart the system. Do not restart the system yet.
6. Click Install MIP Hard and Soft Iron Calibration Software and follow the on-screen instructions to complete the installation. You will receive a message indicating successful installation and be asked to restart the system. Do not restart the system yet.
7. Click Install Inertial Drivers and follow the on-screen instructions to complete the installation.
8. Click the Install Inertial Manuals and follow the on-screen instructions to complete the installation.
9. Remove the Flash Drive and restart the system.

Hardware Installation

1. **If you have an RS-232 interface**, connect the male Micro DB-9 connector of the Micro DB-9-to-RS-232 communication and power cable to the female Micro DB-9 connector on the sidewall of the 3DM-GX4-25™. Connect the RS-232 connector to your host computer. Attach the appropriate country adapter to the power supply. Connect the power supply connector into the power pigtail on the RS-232 connector and plug the power supply into an appropriate source. The green Activity LED on the 3DM-GX4-25™ will begin blinking on and off, on and off, indicating it is powered up and in idle state. Proceed to the *Establish Communications* section.
2. **If you have a USB interface**, connect the male Micro-D connector of the Micro DB-9-to-USB communication and power cable to the female Micro-D connector on the sidewall of the 3DM-GX4-25™. Connect the USB end to your host computer. The green Activity LED on the 3DM-GX4-25™ will begin blinking on and off, on and off, indicating it is powered up and in idle state. You will notice the popup USB flag messages the first time you run the USB interface as it registers its driver with the operating system. Proceed to the *Establish Communications* section.

Establish Communication

1. Launch the MIP™ Monitor software and the Main window will appear.
2. The software will automatically search for the 3DM-GX4-25™ and display it in the Device pane. The Model Name, Serial Number, Firmware Version, Model Number, Options and COM port will be displayed as shown in Figure 2.

3. Click the device in the display to highlight it.
4. Click Settings.
5. Click Device and the Device Setup window appears, as shown in Figure 3.

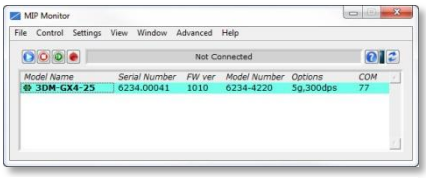

Figure 2: *Device pane*

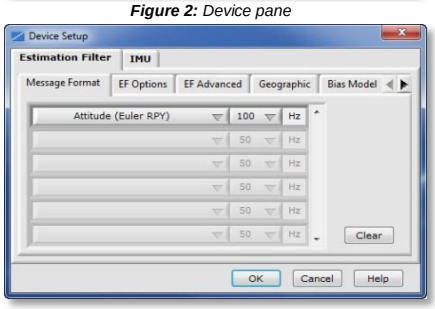

Figure 3: *Device Setup window*

Set Up Sampling

1. Click the Estimation Filter tab.
2. Click the Message Format tab.
3. Click the top drop-down to the left and select Attitude (Euler RPY); this is roll, pitch and yaw.
4. Click the top drop-down to the right and select 100 Hz; this is a sampling rate of 100 samples per second.
5. Click the IMU tab.
6. Click the Message Format tab.
7. Click the top drop-down to the left and select Accelerometer Vector; this is X, Y and Z axis accelerations.
8. Click the top drop-down to the right and select 100 Hz; this is a sampling rate of 100 samples per second.
9. Click OK and the Device Setup window disappears.

Start/Display/Stop Sampling Estimation Filter Data

1. Click View. Click EF Data Monitor and the Estimation Filter Data window appears as shown in Figure 4.
2. Click the *blue arrow* Start Streaming Data icon and Roll, Pitch and Yaw radians are displayed; rotate the 3DM-GX4-25™ module and observe the output.

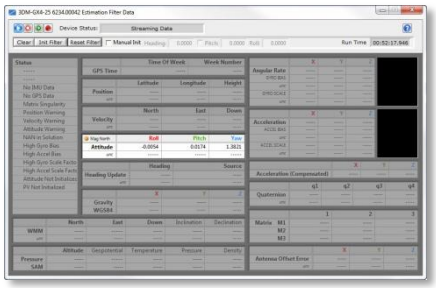

Figure 4: *Estimation Filter Data window*

3. Click the *red square* Stop Streaming Data icon and the device will stop streaming data.
4. Click the *red X* in the upper right-hand corner of the window and close the Estimation Filter Data window.

Start/Display IMU Data and Save Data to File

1. Click View. Click Sensor Data Monitor and the Sensor Data window appears.
2. Click the *blue arrow* Start Streaming Data icon and X, Y and Z axis accelerations are displayed.
3. Place the 3DM-GX4-25™ module flat and stable on your desktop with the label up.
4. Observe the accelerations and you will see the X axis outputting ~0*g*, the Y axis outputting ~0*g* and the Z axis outputting ~-1*g*.
5. While still streaming the acceleration data, click the red dot Arm Recording icon and the Log File Format window will appear. Click the drop-down and select Spreadsheet (CSV), click OK, and a dialog box appears.
6. Navigate to a data folder of your choosing and name your data file. Click OK and the dialog box disappears. All further acceleration data is now being written to the file as well as being displayed in the graph. Click the *red square* Stop Streaming Data icon and the device will stop streaming data. Click the *red dot* Arm Recording icon to close the data file.
7. A confirming message box will appear. Click OK and the message box will disappear.
8. Click the *red X* in the upper right-hand corner of the window and close the Sensor Data window.
9. Open the data file with a text viewer or a spreadsheet program like Microsoft Excel to view the saved data.
10. Also note that the Estimation Filter data is also being recorded.

Congratulations

You are up and running! LORD MicroStrain® support engineers are always available to expand on this subject and support you in any way we can™.

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