G-Link®-200-8G®

Ruggedized High-Speed Triaxial Accelerometer Node

The G-Link-200-8G wireless accelerometer node features an on-board triaxial accelerometer that allows high-resolution data acquisition at noise levels as low as 25 µg√Hz, lossless data transmission and node-to-node synchronized sampling at ±50 microseconds. The G-Link-200-8G can output continuous waveform data, or one of four derived channels, including Velocity RMS, Acceleration RMS, Acceleration p-p, and Crest Factor, allowing long-term monitoring of key performance indicators while maximizing battery life.

To acquire sensor data, the G-Link-200-8G is used with a LORD Sensing data gateway such as the WSDA-101 or WSDA-1500 Base. G-Link-200-8G sensor nodes come with the following components.
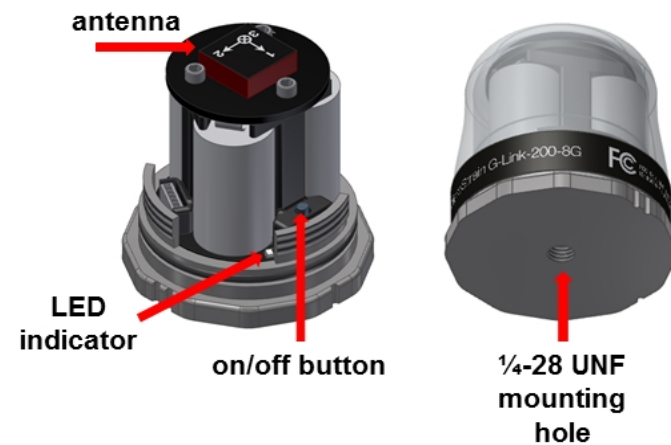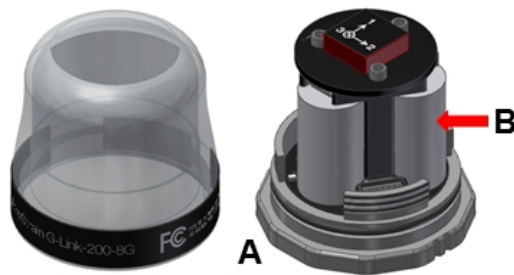

Figure 1 - Interface and Indicators

Item	Description	Quantity
A	G-Link-200-8G Wireless Accelerometer Node	1
B	½ AA, 3.6 V Lithium Batteries	3

Table 1 - G-Link-200-8G Components List

Indicator	Behavior	Node Status
Device status indicator	OFF	Node is OFF
	Rapid green flashing on start-up	Node is booting up
	1 (slow) green pulse per second	Node is idle and waiting for a command
	1 green blink every 2 seconds	Node is sampling
	Blue LED during sampling	Node is resynchronizing
	Red LED	Error or low battery

Table 2 - Indicator Behaviors

Wireless Simplicity, Hardwired Reliability™

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SYSTEM OPERATION

Sensor nodes have three operational modes: *active*, *sleep*, and *idle*. When the node is sampling, it is in active mode. When sampling stops, the node is switched into idle mode, which is used for configuring node settings, and allows toggling between sampling and sleeping modes. The node will automatically go into the ultra low-power sleep mode after a user-determined period of inactivity. The node will not go into sleep mode while sampling.
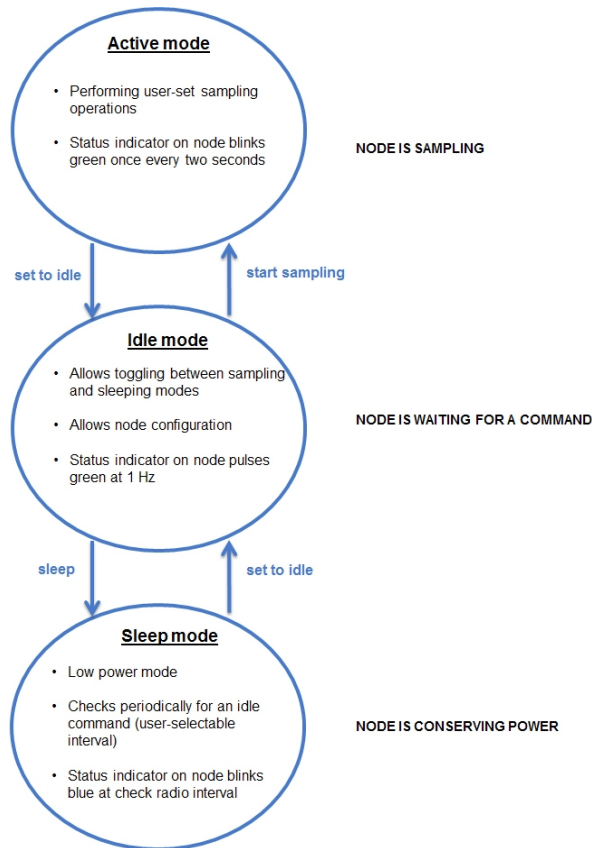

Figure 2 - Node Operational Modes

1. Install Software

Install the SensorConnect software on the host computer before connecting any hardware. The SensorConnect software is available on the LORD Sensing website for free download:

http://www.microstrain.com/software/software

2. Establish Gateway Communication

The WSDA-101-Base USB gateway is used in this example. For information on how to use other gateways, refer to the gateway or SensorConnect user manual.

Drivers for the USB gateways are included the SensorConnect software installation. With the software installed, the USB gateway will be detected automatically whenever the gateway is plugged in.

1. Power is applied to the gateway through the USB connection. Verify the gateway status indicator is illuminated, showing the gateway is connected and powered on.

2. Open the SensorConnect software.

3. The gateway should appear in the Controller window automatically with a communication port assignment. If the gateway is not automatically discovered, verify the port is active on the host computer, and then remove and re-insert the USB connector.
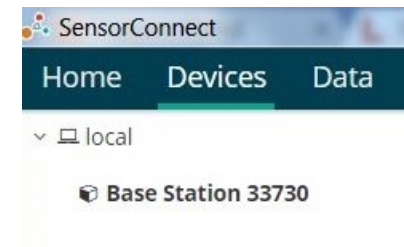

Figure 3 - USB Gateway Communication

3. Connect to Nodes

The node can be connected with the automatic node discovery feature and by manually entering the node address and then searching for it on the current gateway communication frequency.

1. If the base and node are on the same operating frequency, the node will populate below the Base Station listing when powering on the G-Link-200-8G.
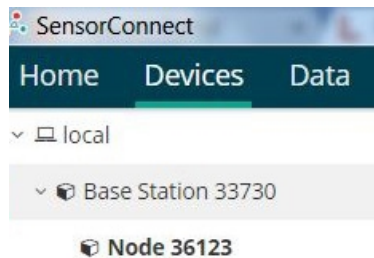

Figure 4 - Automatic Node Discovery

2. If a red circle with a number appears next to Base Station, the node is operating on a separate radio channel. Select Nodes on Other Frequencies tile.
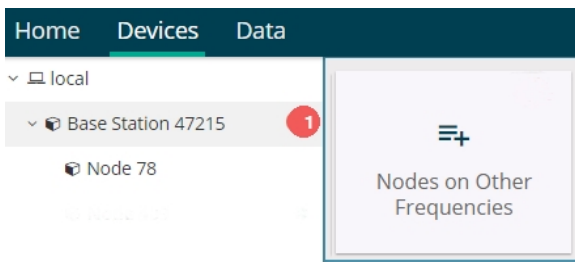

Figure 5 - Nodes On Other Frequencies

3. Highlight the new node being added. Select Move Node to Frequency (#).
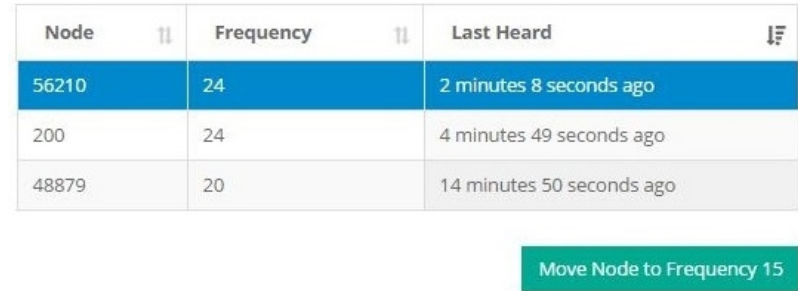

Figure 6 - Move Node

4. When manually entering the node address, select Manual Add Node, enter Node Address, last known Frequency (factory default is 15), and select Add Node.
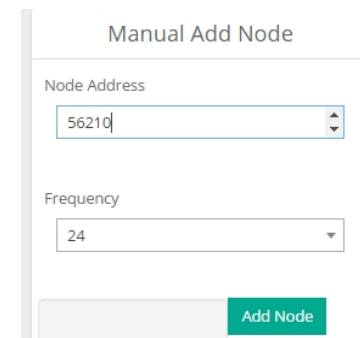

Figure 7 - Adding a Node by Address

4. Configure Node

While the individual sensor settings are stored in the node's internal, non-volatile memory, there are user-set configuration options available which can be set in SensorConnect. The configuration menus show the channels and configuration options available for the type of node being used.

For this example, the G-Link-200-8G is using the default settings found under Configure > Hardware, see Figure 8 - Node Configuration

Input Range: ± 2 G's (acceleration)

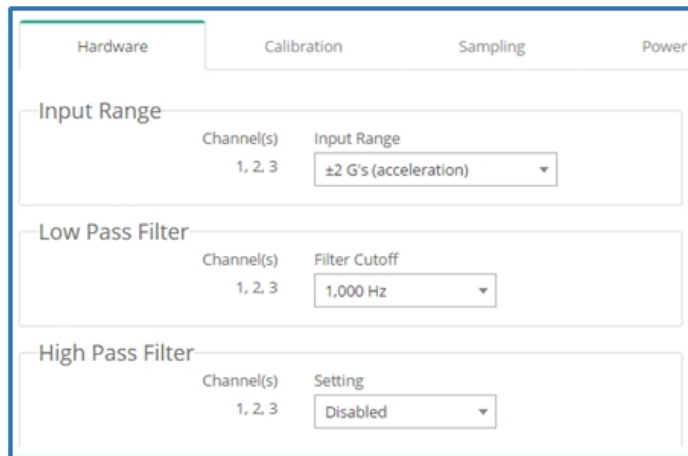**Low Pass Filter:** 1,000 Hz

High Pass Filter: Disabled

Figure 8 - Node Configuration

5. Configure Sampling Setting and Start Data Acquisition

1. Left click on the Base Station > Sampling, and indicate the nodes to be sampled by checking the box to the left of each node.

2. Under 3 Channels, select Raw Channels, ch1, ch2 and ch3 from the drop down menu.

3. Under Sampling, select Sample Rate from the drop down menu, select Continuously to sample indefinitely.
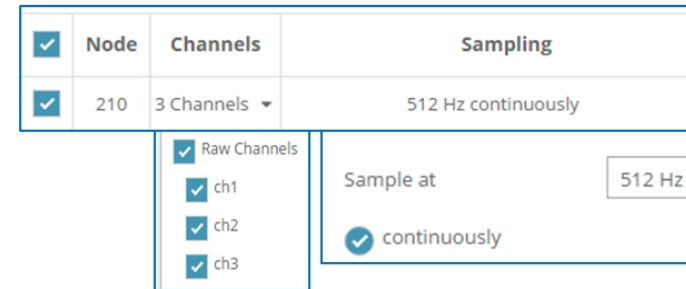

Figure 9 - Sampling Setting

4. Select Apply and Start Network.

5. Select Create Quick View Dashboard in the pop up window immediately to create a dashboard of the new data.
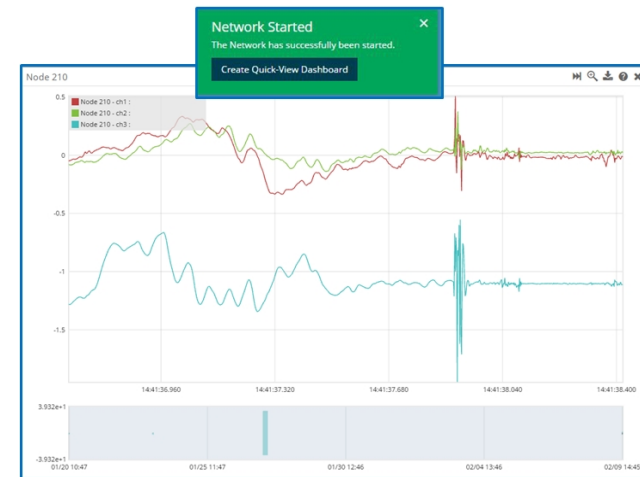

Figure 10 - Quick View Dashboard

6. Replacing Batteries

1. Remove the cap from the G-Link-200-8G.

2. Remove the three ½ AA batteries from the G-Link-200-8G.

3. Insert three new ½ AA batteries (Saft LS 14250 recommended), observing the correct polarity orientation. The positive polarities are indicated on the batteries and the node by a "+" symbol.

4. Replace the cap.

7. Battery Hazards

Lithium batteries contain toxic chemicals that are harmful to humans and the environment. Disposal is subject to federal and local laws. Do not discard the battery or the node in the trash. Follow proper battery disposal protocol, or contact LORD Sensing Technical Support for information on extracting the battery or returning the product for proper recycling and disposal.

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