

# MicroStrain®

## Quick Start Guide

### SG-Link® Wireless Strain Node

Firmware Version 6.03 and higher  
Software Version 1.5.26 and higher  
Issued: 5 April 2010  
Document #: 8501-0002



### Software Installation

- Place the Node Commander® CD in your CD-ROM drive and follow the on-screen instructions to install MicroStrain's Node Commander® software.

### Hardware Installation

- Install the antenna on the base station antenna connector. Tighten hand tight; do not over tighten.
- If you have a serial base station (see Figure 1), connect the RS-232 cable to a serial port on your PC and to the serial base station RS-232 connector. Connect the external power supply to the power connector on the serial base station and plug it into a proper power receptacle. Turn the serial base station power switch on and the green LED will illuminate indicating the base station is powered
- If you have a USB base station, plug the USB connector into any USB port on your PC. The blue LED will illuminate indicating the base station is powered.
- If you have an analog base station, connect the USB cable to any USB port on your PC and to the analog base station USB connector on the back panel. Connect the external power supply to the power connector on the back panel of the analog base station and plug it into a proper power receptacle. Depress the red power button on the front panel and the green LED will illuminate indicating the base station is powered.
- Install the antenna on the SG-Link® antenna connector. Tighten hand tight; do not over tighten. Insure the SG-Link® is turned off (switch towards power connector).



Figure 1

## Software Operations

- Double-click the Node Commander<sup>®</sup> desktop icon to launch the software.
- The **Streaming Graph** screen will appear. See Figure 2.
- If you have a USB or analog base station, the software will discover it and a base station icon and com port label (example: **Base Station Com 4**) will appear in the **Controller** frame. This indicates that the PC and the base station are communicating.
- If you have a serial base station, move your mouse pointer within the white area of the **Controller** frame on the left.
- Right-click in the white area and a pop-up menu will appear. See Figure 3.
- Click **Scan Com Ports**. The **Scanning Com Ports** window will appear.
- The program will scan the serial ports on your PC and attempt to locate the base station.
- If the serial base station is found, a base station icon and com port label (example: **Base Station Com 1**) will appear in the **Controller** frame. This indicates that the PC and the base station are communicating.
- Right-click on the base station and a pop-up menu will appear. See Figure 4.
- Click **Node Discovery**. The **Node Discovery** window will appear. See Figure 5.
- Turn the SG-Link<sup>®</sup> switch on and a node icon and address label (example: **Node 857**) will appear under the base station.
- Click **Stop** on the **Node Discovery** window.
- Right-click on the node icon/label and a pop-up menu will appear. See Figure 6.
- Click **Load Node Information**. A tree of information (**Model, Serial number, Firmware, Memory Full and Num Triggers**) will open up under the node. See Figure 7. This indicates that the PC, the base station and the node are all communicating.
- Right-click on the node and a pop-up menu will appear.
- Click **Range Test**. The **Short Packet Range Test** window will appear. Radio signal strength and good vs. bad pings will be reported. Good pings indicate that the PC, the base station and the node are all communicating at range. Click **Cancel**.
- Right-click on the node and a pop-up menu will appear.
- Click **Configure**. The **Configuration** window will appear. See Figure 8.
- Click the **Channels** tab. Check the box to enable SG-Link<sup>®</sup>'s **channel 1** (differential input channel). By default, channel 1's physical units will be in *bits* and the hardware gain will be set to 104. Uncheck channels 2 thru 4 (all other channels). Click **Apply**.
- Click the **Streaming** tab. Uncheck box for **Continuous Streaming**. Enter the value 5000 into the **Sweeps** scroll box. Note that a streaming session of approximately 6 seconds has been set. Click **Apply**. Click **OK**.
- Right-click on the node and a pop-up menu will appear.
- Click **Stream**. Click **Start**. The node will start streaming its raw sensor data (0-4096 bits) and display channel 1 (green line) as an advancing plot on the **Streaming Graph**. The Y-axis will auto-scale the raw sensor bits and should report approximately 2048 bits (mid-scale) if no strain gauge (or other sensor) is

connected to the SG-Link<sup>®</sup> inputs. The channel plot will continue along the X-axis until 5000 sweeps (~6 seconds) has elapsed. See Figure 9. This indicates that the node is successfully streaming its sensor data.

- Move your mouse pointer within the black area of the **Streaming Graph**. Right-click and a pop-up menu will appear.
- Click **Save Stream**. A **Save As** dialog box appears. Accept or modify the **File Name** for the CSV file that will be saved. Click **Save**. The dialog box will disappear. This indicates that the streaming data was successfully saved to file on your PC.
- Right-click on the node and a pop-up menu will appear.
- Click **Configure**. The **Configuration** window will appear.
- Click the **Datalogging** tab. Uncheck box for **Continuous Datalogging**. Uncheck box for **Enable Sensor Event Driven Trigger**. Enter the value 1000 into the **Sweeps** scroll box. Enter the value 256Hz in the **Sample Rate** drop-down. Note that a datalogging session of approximately 3.9 seconds has been set. Click **Apply**. Click **OK**.
- Right-click on the node and a pop-up menu will appear.
- Click **Datalogging**. Click **Erase**. A confirming message box will appear. Click **Yes**. A progress bar will appear and disappear. This indicates that the datalogging memory of the node was successfully erased.
- Right-click on the node and a pop-up menu will appear.
- Click **Datalogging**. Click **Trigger Session**. A progress bar will appear and disappear. This indicates that a datalogging session was successfully triggered.
- Right-click on the node and a pop-up menu will appear.
- Click **Datalogging**. Click **Download**. A progress bar will appear and disappear. This indicates that all datalogging sessions were successfully downloaded.
- Right-click on the node and a pop-up menu will appear.
- Click **Datalogging**. Click **Browse Triggers**. The **Trigger Browser** window will appear.
- Click the + sign to the left of the trigger label (example: July 20, 2009 09:36:07) and **Trigger 1** will appear. Highlight **Trigger 1** and click **Open Trigger**. The data in **Trigger 1** will be displayed in spreadsheet format (assuming you have Microsoft<sup>®</sup> Excel installed). This indicates that the data from **Trigger 1** was successfully saved to file on your PC.
- Close the spreadsheet. Click **OK** on **Trigger Browser** window.

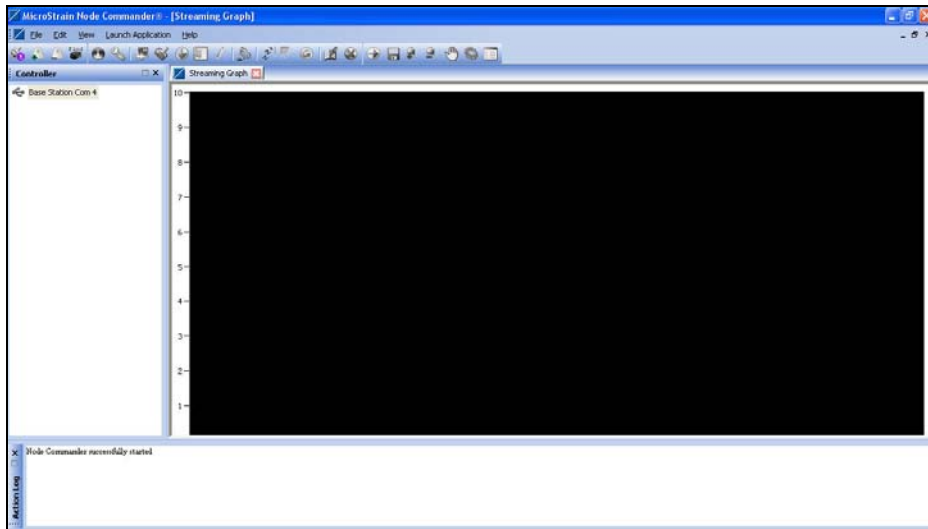
### **Congratulations!**

You are off and running! Please read the SG-Link<sup>®</sup> user manual and the Node Commander<sup>®</sup> software manual to learn how to successfully put your wireless data acquisition system to work.

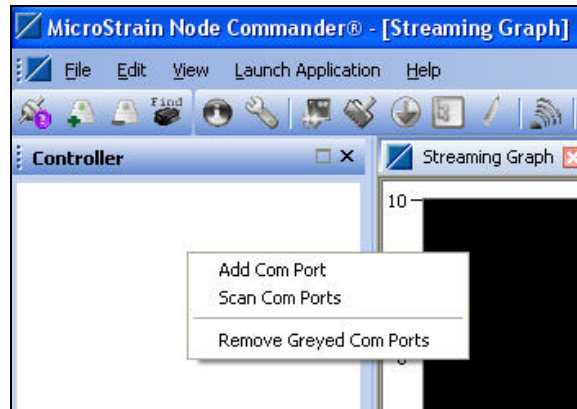
### **Further Support**

MicroStrain Support Engineers are always available by phone, email or SKYPE to support you in any way we can.

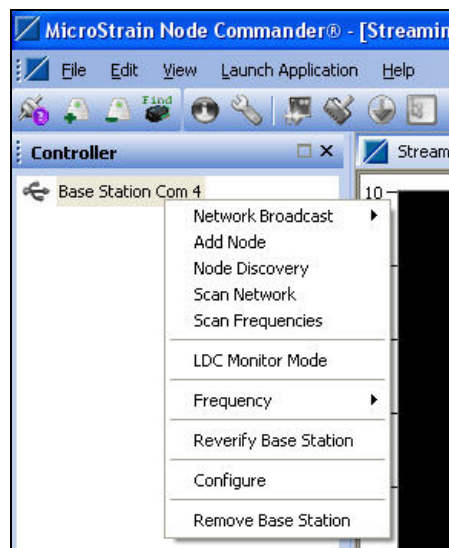
## Figures



**Figure 2**



**Figure 3**



**Figure 4**

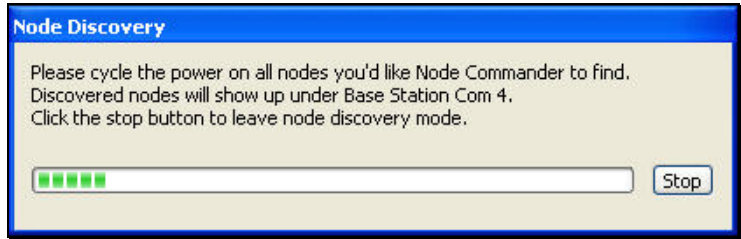


Figure 5

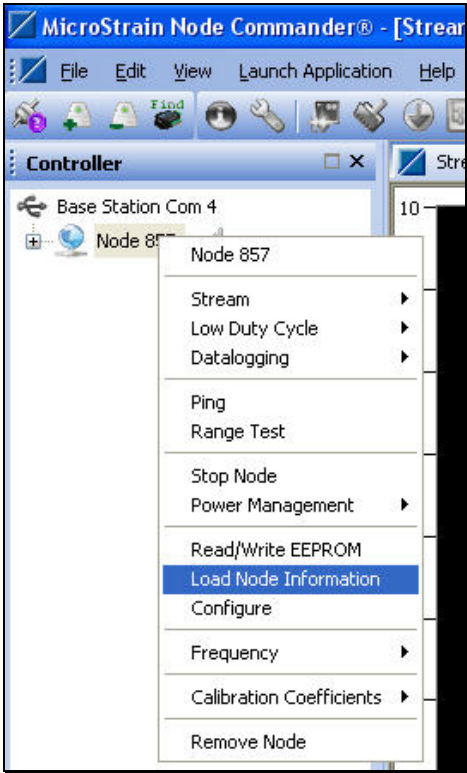


Figure 6

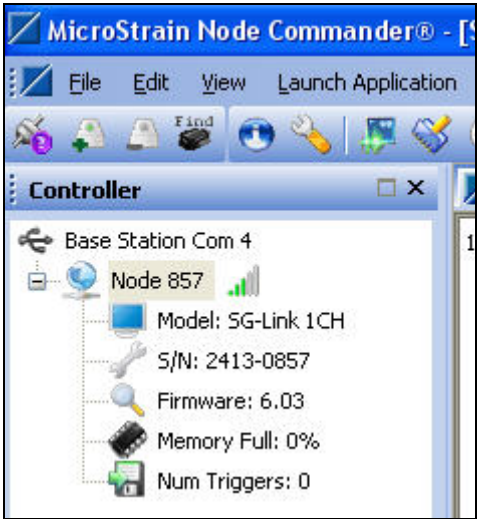
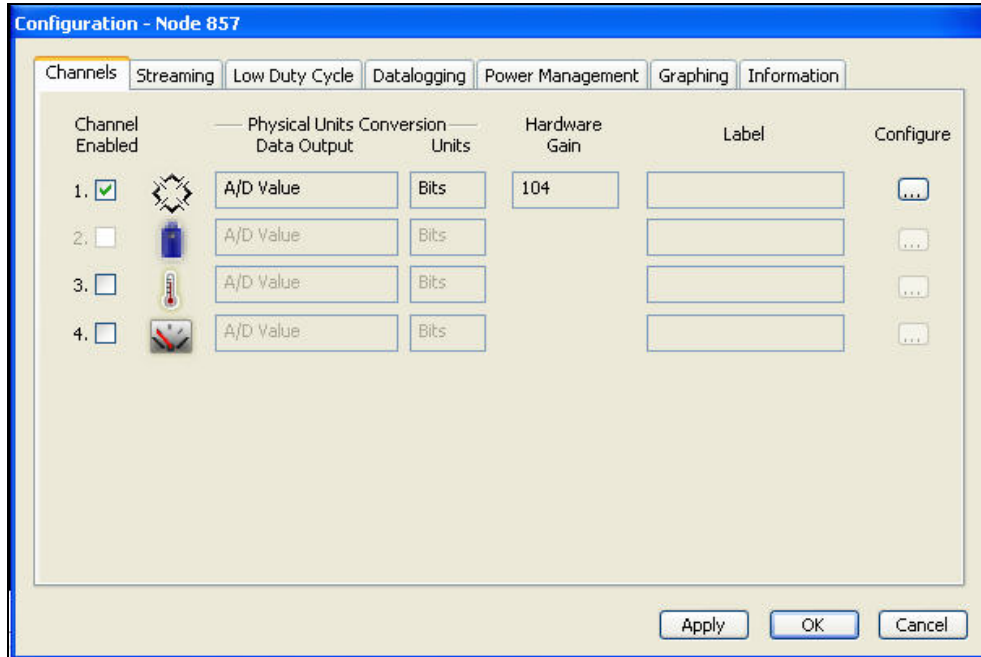
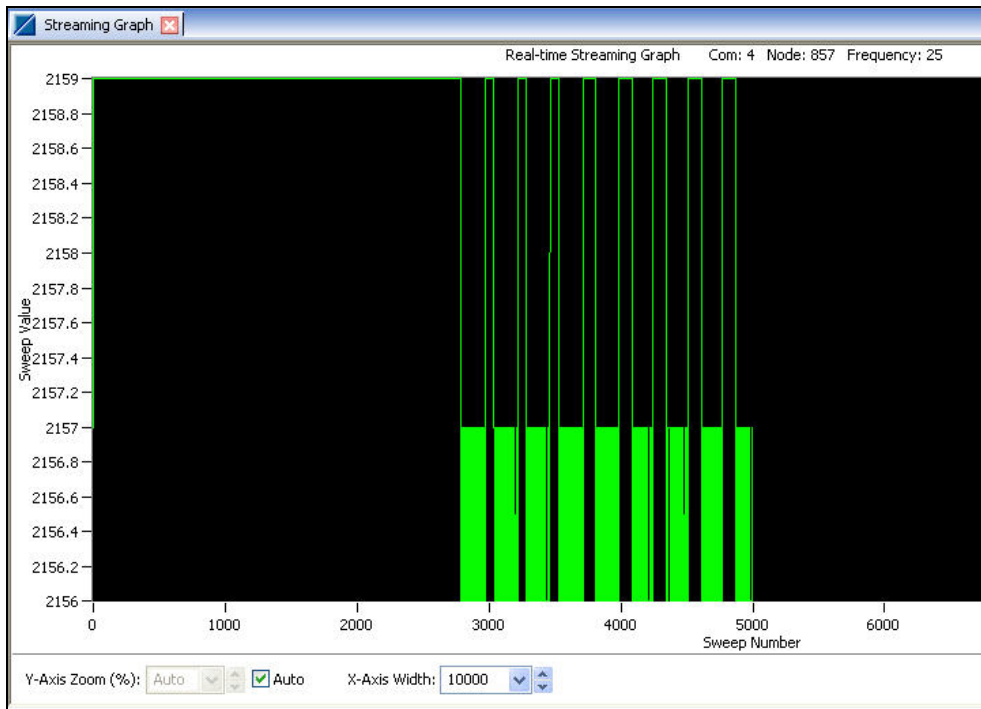


Figure 7



**Figure 8**



**Figure 9**