

# MicroStrain<sup>®</sup>

## Quick Start Guide

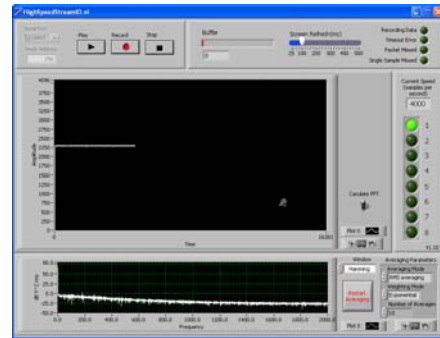
### High Speed Streaming

NC Software Version 1.5.26 and higher

HSS Software Version 1.02 and higher

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### Software Installation

- Place the Node Commander<sup>®</sup> CD in your CD-ROM drive and follow the on-screen instructions to install MicroStrain's Node Commander<sup>®</sup> software.
- Install the High Speed Streaming application.

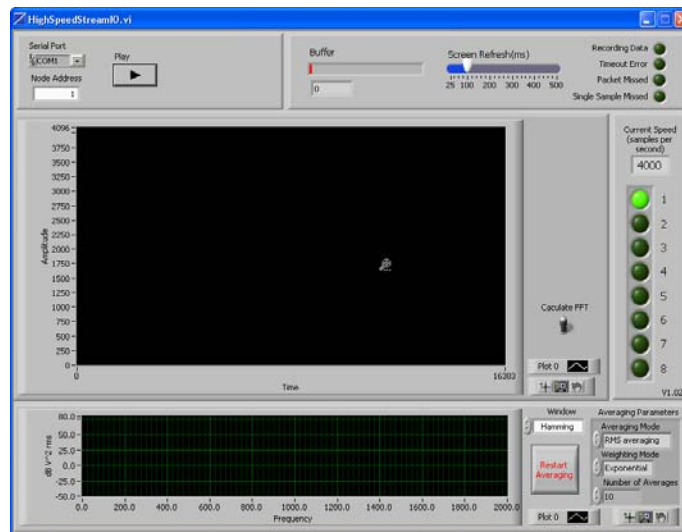
### Hardware Installation

- Follow the hardware installation instructions contained in the V-Link<sup>®</sup>, SG-Link<sup>®</sup>, SG-Link<sup>®</sup> OEM, G-Link<sup>®</sup> and/or DVRT-Link<sup>™</sup> Quick Start Guides to ready your hardware for use.
- **Note:** High Speed Streaming does not work with MicroStrain's TC-Link<sup>®</sup> product line.

### Software Operations

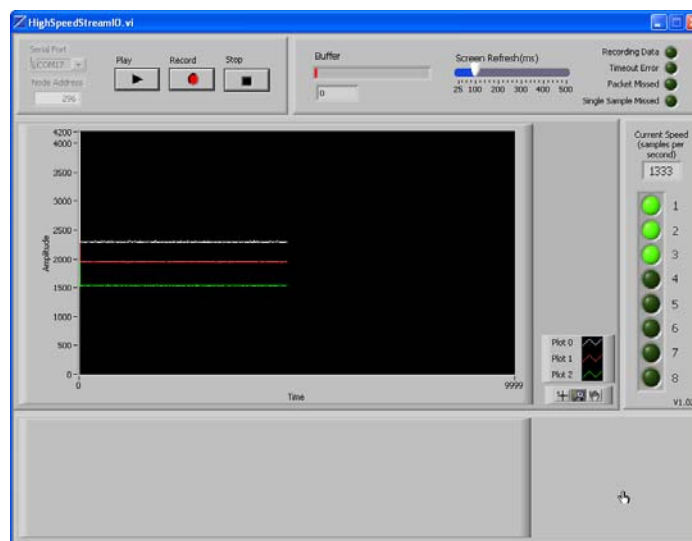
- This Quick Start Guide assumes you have familiarity with MicroStrain's Wireless Sensing Systems software, base stations and nodes.
- The High Speed Streaming application is designed to display and record data from one node only.
- You must first configure the node for high speed streaming by using Node Commander<sup>®</sup> software.
- To get started, launch Node Commander<sup>®</sup>, establish communication with the node, and navigate to the node's configuration screen.
- Click the Channels tab and enable the channels you want to high speed stream. For purposes of instruction and by example, we will use a G-Link<sup>®</sup> with channels 1, 2 and 3 enabled. Click Apply.
- Click the Streaming tab and either set Continuous Streaming by checking the checkbox, or set Finite Streaming by unchecking the check box.
- If you select Finite Streaming, enter a sweep value up to 65500 (maximum allowed in finite streaming). **Note:** Most users will want to enable Continuous Streaming to allow for longer data acquisition sessions.
- For our 3 channel G-Link<sup>®</sup> example, we will enter 5000 sweeps giving us a finite streaming time of ~8 seconds. Click Apply. Click OK.

- Good practice would now dictate that you close Node Commander<sup>®</sup> software. Launch the High Speed Streaming application and its main screen will come into view; this is the only screen in the application. See **Figure 1**.



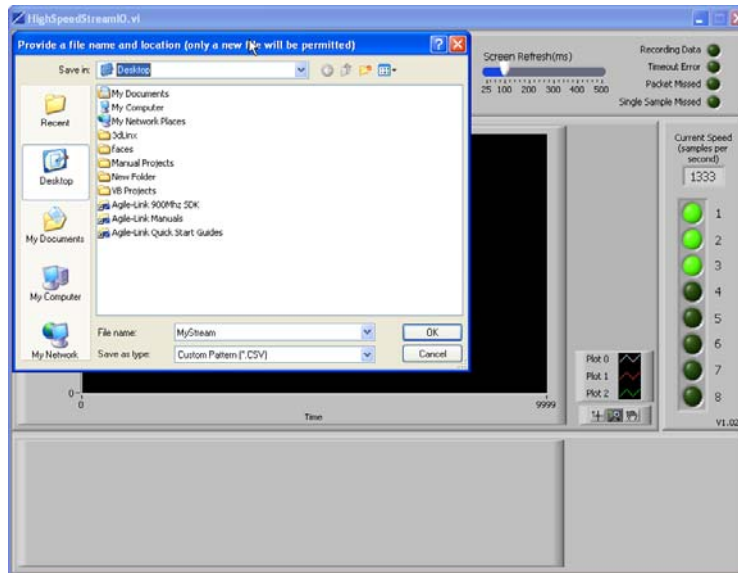
**Figure 1**

- To get started, enter the serial port of the base station by clicking the down arrow on the Serial Port drop-down box and selecting the appropriate port.
- Enter the address of the node in the Node Address text box.
- We are ready to high speed stream, therefore click the Play button.
- High Speed Streaming will be initiated on the node and the software will display the results in the graphing area in real time. The Y axis records sensor BITS. The X axis records TIME as in number of samples.
- When the finite session is completed, the node will stop high speed streaming and we will see results as shown in **Figure 2**.



**Figure 2**

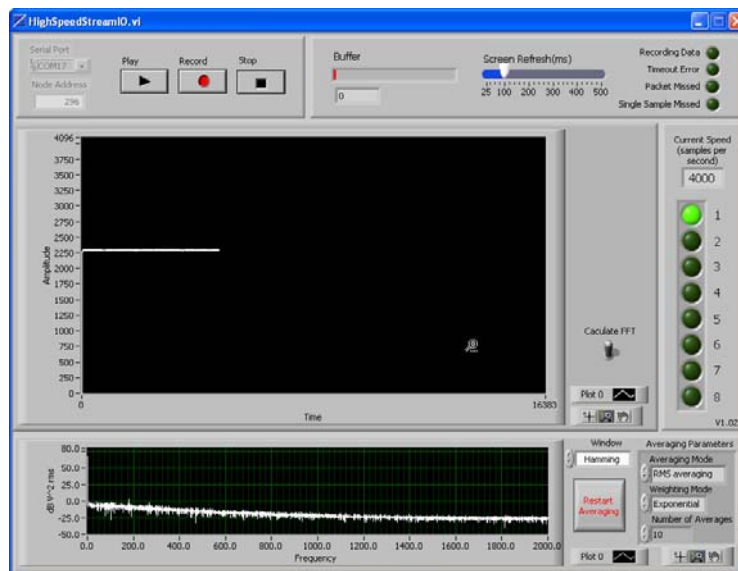
- You will note that the 3 channels have each charted approximately 5000 samples in the graph. This indicates that the system is operational.
- The rest of the interface presents several input functions and display objects which we will detail.
- To record data while you are high speed streaming, first click the Record Button.
- A common dialog window will appear as shown in **Figure 3**.



**Figure 3**

- Enter a new data file name in the File name text box. The application will not allow you to overwrite an existing data file.
- Click OK and the window will disappear. Any data captured from now on will be recorded in this file until you either create a new data file or close the application itself. In other words, every time you click the Play button, data will be appended to this same file.
- If you want to stop capturing data from the node prior to the end of a finite session or anytime during a continuous session, click the Stop button. This will stop the software from capturing data from the node, displaying it to the graph and recording it to a data file. **Note:** This software STOP does not stop the node from its high speed streaming. Streaming on the node itself will only end if a finite session comes to an end or in the case of both finite and continuous streaming, the power on the node is cycled. By observing the green activity LED on the node, you will be able to see its state.
- The Buffer progress bar is a visual indication of how many data packets are being processed per second. The text box below it displays the actual number of data packets being indicated.

- The Screen Refresh slider bar allows you to adjust the rate at which data packets are displayed to the screen. This is useful to optimize a host computer's ability to display real time graphics. A more powerful graphics processor can be set to allow more packets per second to be graphed without bogging down the whole process; a less powerful graphics processor can be set to allow less packets per second to be graphed without bogging down the whole process. **Note:** Regardless of what is being displayed, no data packets are lost by the file recording process.
- The red Recording Data LED illuminates anytime data is being recorded to a data file.
- The green TimeOut Error LED illuminates anytime no data is being received from the node while streaming is occurring. This can be an indication of an out-of-range condition, a low/dead battery, radio interference and the like.
- The green Packets Missed LED illuminates anytime a packet has been dropped by the system. This can be an indication of an out-of-range condition, a low/dead battery, radio interference and the like.
- The green Single Sample Missed illuminates any time a sample is missed within a data packet.
- The Current Speed text box indicates the high speed streaming sampling rate.
- The 8 vertical green LEDs on the right of the interface labeled 1 through 8 are channel indicators. These illuminate based on which channels are active in the node.
- Graphing controls are available to the lower left of the graph either by clicking or right-clicking. These provide zoom, pan and other functions.
- The blank panel seen in the lower half of Figure 2 is always hidden unless the node has only 1 channel enabled. This panel becomes visible in the one active channel session and automatically performs and displays an FFT of the channel data. See [Figure 4](#).



**Figure 4**

- Various graphing controls are available to the right of the panel to zoom, pan, modify the FFT method, etc.
- **Note:** The FFT results are displayed only; they are not captured into the data file.
- FFT may be turned off by clicking the Calculate FFT switch.

### **Data Post-processing**

- As indicated above, the High Speed Streaming application only displays and records sensor BITS. The data file will need to be further processed with whatever scaling factors to achieve engineering units. Please contact your MicroStrain Support Engineer if you need instruction in this area.

### **Congratulations!**

You are off and running! Please read the V-Link<sup>®</sup>, SG-Link<sup>®</sup>, SG-Link<sup>®</sup> OEM, G-Link<sup>®</sup> and/or DVRT-Link<sup>™</sup> users manuals 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.

