

# G-Link<sup>®</sup>

## 2.4 GHz Wireless Accelerometer Node



### Introduction

Combining MEMS accelerometers with MicroStrain's award-winning Micro Datalogging Transceiver systems, G-Link<sup>®</sup> is a high speed, triaxial accelerometer node, designed to operate as part of an integrated wireless sensor network system.

Featuring 2 KHz sweep rates, combined with 2 Mbytes of flash memory, these little nodes pack a lot of power in a small package. Every node in the wireless network is assigned a unique 16 bit address, so a single host transceiver can address thousands of multichannel sensor nodes.

The bi-directional RF communications link can trigger a sample to be logged from 70 meters, or request real-time data to be transmitted to the host PC for data acquisition/analysis. The frequency agile system enables simultaneous real-time streaming from up to 16 nodes in the 2.4 GHz range.

Available in 2g or 10g range, these small, fast, wireless accelerometers can be used to monitor tilt and vibration in a wide range of machines and structures.

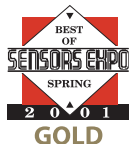
A Software Development Kit is available, which includes fully-commented source code and a compiled executable for: Microsoft<sup>®</sup> C++ 6.0, Microsoft<sup>®</sup> Visual Studio C++ .NET 7.1, Microsoft<sup>®</sup> VB 6.0, Microsoft<sup>®</sup> VB.NET 2003, Microsoft<sup>®</sup> VB.NET 2005 and LabVIEW<sup>®</sup> 7.1.

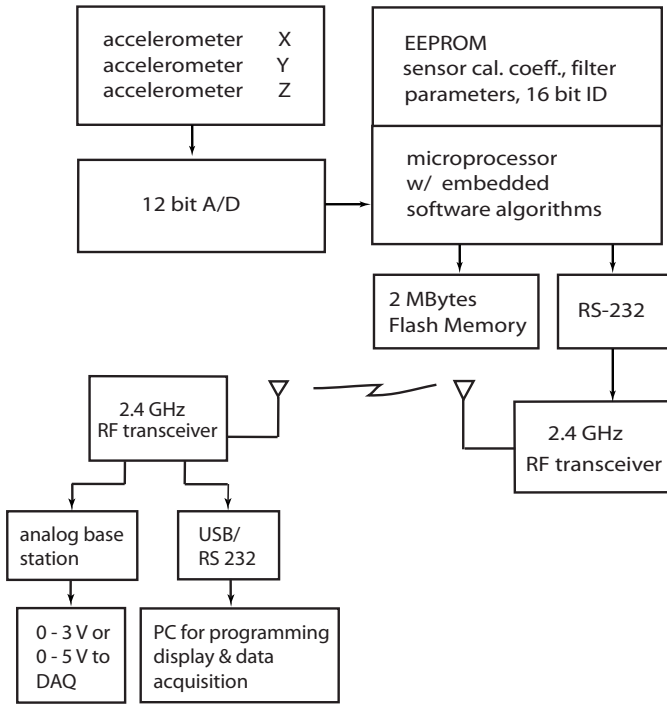
### Features & Benefits

- 2.4 GHz direct sequence spread spectrum radio is license free worldwide
- IEEE 802.15.4 open communication architecture
- supports simultaneous streaming from multiple nodes to PC
- Available with 2g or 10g range
- datalogging rates up to 2048 Hz
- real-time streaming rates up to 736 Hz
- on-board memory stores up to 1,000,000 measurements
- communication range up to 70m line-of-sight
- low power consumption for extended use

### Applications

- inclination & vibration testing and control
- security systems enabled by wireless sensor networks
- assembly line testing with "smart packaging"
- sports performance and sports medicine analysis
- condition- based maintenance by wireless sensor networks
- smart machines, smart structures, & smart materials





## Specifications

On-board accelerometers	triaxial MEMs accelerometers, Analog Devices ADXL202 or ADXL210
Accelerometer range	$\pm 2 g$ or $\pm 10 g$
Measurement Accuracy	10 mg
Resolution	200 $\mu g / \sqrt{Hz}$
Shock limit	500 g
Analog to digital (A/D) converter	successive approximation type, 12 bit resolution
Data storage capacity	2 megabytes (approximately 1,000,000 data points)
Data logging mode	log up to 1,000,000 data points (from 100 to 65,500 samples or continuous) at 32 Hz to 2048 Hz
Sensor event driven trigger	commence datalogging when threshold exceeded
Real-time streaming mode	transmit real time data from node to PC - rate depends on number of active channels: 1 channel - 4 KHz, 2 channels - 2 KHz, 3 channels - 1.33 KHz, 4 channels (including temp.) - 1 KHz
Low duty-cycle mode	supports multiple nodes on single RF channel, total update bandwidth of 500 Hz divided by number of nodes
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.450 to 2.490 GHz) - 16 channels
RF data packet standard	IEEE 802.15.4, open communication architecture
RF programming & downloading	8 minutes to download full memory
Range for bi-directional RF link	70 m line-of-sight, up to 300 m with optional high gain antenna
Internal Li-Ion battery	3.7 volt lithium ion rechargeable battery, 200 mAh capacity. Customer may supply external power from 3.2 to 9 volts
Power consumption	real-time streaming - 25 mA, datalogging - 25 mA, sleeping - 0.5 mA
Operating temperature	-20 to +60°C with standard internal battery and enclosure, extended temperature range optional with custom battery and enclosure. -40 to +85°C for electronics only
Dimensions*	58 mm x 43 mm x 26 mm without antenna (board only 36 mm x 36 mm x 24 mm)
Weight	46 grams
Case	ABS plastic
Software	Agile-Link™ Windows XP compatible
PC Comm	serial port, 115.2 kBaud

\*For dimensioned print go to [www.microstrain.com](http://www.microstrain.com)



**MicroStrain Inc.**

310 Hurricane Lane, Unit 4  
Williston, VT 05495 USA  
[www.microstrain.com](http://www.microstrain.com)

ph: 800-449-3878  
fax: 802-863-4093  
[sales@microstrain.com](mailto:sales@microstrain.com)