G-Link® -RGD

Ruggedized Wireless Accelerometer Node

The **G-Link® -RGD Ruggedized Wireless Accelerometer Node** is EMI/EMC qualified to MIL-STD-461F, and designed for use in the most hostile environments. Combining triaxial accelerometers, embedded processing, wireless communications, and precision timekeeping. G-Link- RGD wireless nodes operate within a fast, synchronized, scalable network of wireless sensor nodes located up to 2 km from our WSDA® -RGD. G-Link -RGD nodes include an internal replaceable battery pack and measure accelerations, vibrations, tilt angles and temperature.

Features & Benefits

Wireless Simplicity, Hardwired Reliability

- support for hundreds of simultaneous sampling wireless sensor nodes
- node to node synchronization up to ±32 microseconds
- EMI/EMC qualified to MIL-STD-461F
- flight certified and qualified to MIL-STD-810F and MIL-STD- 461F
- ultra-stable on-board precision timing reference of ± 3 ppm over industrial temperature range
- extended wireless communication range to 2km
- ow power consumption for extended use
- simple bolt-through design for quick, easy mounting

Applications

- modal testing
- inclination & vibration testing and control
- security systems and fence monitoring
- assembly line testing with “smart packaging”
- condition-based maintenance and structural health monitoring
- smart machines, smart structures, & smart materials
- track and balance for fixed and rotary wing aircraft

System Overview

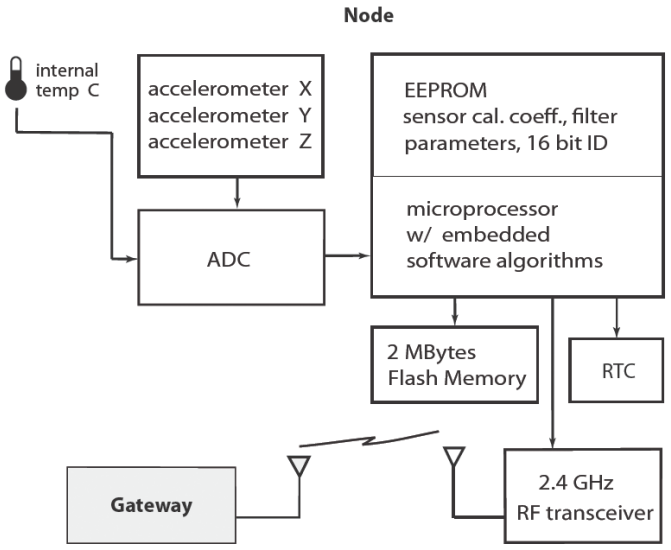
At the heart of **LORD MicroStrain's Ruggedized Wireless Sensor Networks** are WSDA®-RGD gateways, which use our exclusive beaconing protocols to synchronize precision timekeepers within each sensor node in the network. The WSDA-RGD also coordinates data collection from all sensor nodes. Users can easily program each node on the scalable network for simultaneous, periodic, burst, or data logging mode sampling with our **Node Commander®** software, which automatically configures radio communication to maximize the aggregate sample rate. Optional **SensorCloud™** enabled WSDA® support autonomous web-based data aggregation.

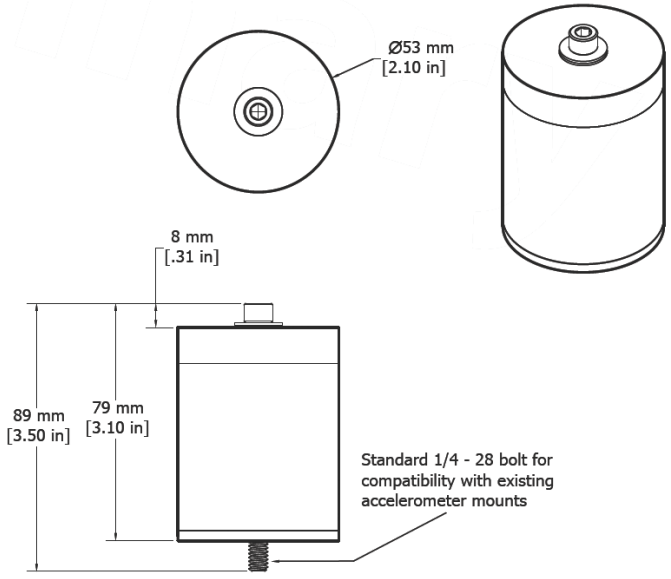
LORD MicroStrain®
SENSING SYSTEMS

G-Link® -RGD Ruggedized Wireless Accelerometer Node

Specifications

On-board accelerometers	triaxial MEMs accelerometers, Analog Devices AD22293 (± 2 g) or ADXL210 (± 10 g)
Accelerometer range	± 2 g or ± 10 g
Measurement accuracy	10 m g
Resolution	1.5 m g RMS (2 g), 9 m g RMS (10 g)
Temperature sensor	-40 ˚C to 70 ˚C range, typical accuracy ±2 ˚C (at 25 ˚C)
Anti-aliasing filter bandwidth:	-3 dB cutoff at 500 Hz (factory adjustable)
Analog to digital (A/D) converter	successive approximation type, 12 bit resolution
Sensor event driven trigger	commence datalogging when threshold exceeded
Synch sampling	supports many nodes on single RF channel, from 1 sample per hour to 512 Hz
Synchronization between nodes	± 32 µsec @ 10 second beacon interval
Sample rate stability	± 3.5 ppm
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
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz) – up to 16 channels, radiated power programmable from 0 dBm (1 mW) to 20 dBm (100 mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
RF data downloading	8 minutes to download full memory
Range for bi-directional RF link	2 km line-of-sight in extended range mode; 70 m in standard range mode
Battery	internal replaceable 2.4 AHr primary AA battery pack
Power consumption	synchronous sampling (128 Hz) - 2.4 mA, datalogging- 25 mA, sleeping - 0.1 mA
Operating temperature	-40 ˚C to +85˚C
Maximum acceleration limit	500 g
EMI/EMC qualification	MIL-STD-461F RE102 radiated emissions, RS103 radiated susceptibility
Environmental qualification	MIL-STD-810F
Enclosure	MIL-DTL-5541 Aluminum, NP3 (Electroless Nickel / Teflon) Plating
Dimensions	79 mm height x 54 mm diameter
Weight	222 g
Software	Node Commander® Windows XP/Vista/7 compatible
Compatible base stations	USB, RS-232, Analog, WSDA®





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