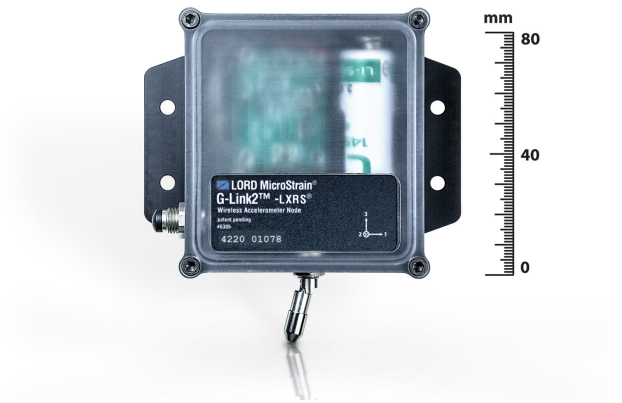
LORD DATASHEET

G-Link2™-LXRS®

Wireless Accelerometer Node

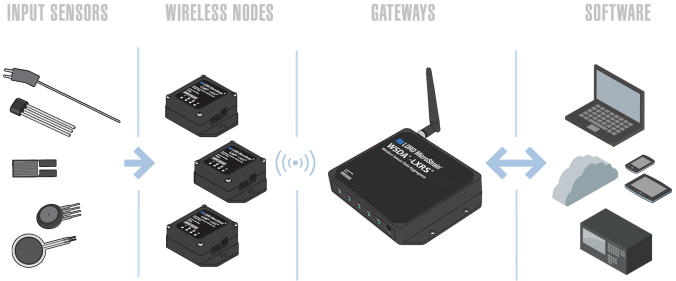


G-Link2™-LXRS® - *ruggedized node with high-speed sampling and optional integrated three-axis accelerometer or an external single-axis accelerometer*

LORD MicroStrain® LXRS® Wireless Sensor Networks enable simultaneous, high-speed sensing and data aggregation from scalable sensor networks. Our wireless sensing systems are ideal for sensor monitoring, data acquisition, performance analysis, and sensing response applications.

The **gateways** are the heart of the LORD MicroStrain wireless sensing system. They coordinate and maintain wireless transmissions across a network of distributed wireless sensor **nodes**. The LORD MicroStrain LXRS wireless communication protocol between LXRS nodes and gateways enable high-speed sampling, ±32 microseconds node- to- node synchronization, and lossless data throughput under most operating conditions.

Users can easily program nodes for data logging, continuous, and periodic burst sampling with the **Node Commander®** software. The web- based **SensorCloud™** interface optimizes data aggregation, analysis, presentation, and alerts for gigabytes of sensor data from remote networks.



Wireless Simplicity, Hardwired Reliability™

Product Highlights

- On-board triaxial, or external single axis MEMS accelerometer with up to +/-200 *g* measurement range
- Wireless framework is ideal for measuring vibration and acceleration in remote applications.
- High resolution data with 16-bit A/D converter
- User-programmable sample rates up to 10 KHz
- Small, lightweight IP67 enclosure rated for outdoor use

Features and Benefits

High Performance

- Lossless data throughput and node-to-node sampling synchronization of ±32 µS in LXRS-enabled modes
- Wireless range up to 2 km (800 m typical)
- User-programmable filters for optimized anti-aliasing

Ease of Use

- Scalable networks for easy expansion
- Internal or external accelerometer option for installation versatility
- Remotely configure nodes, acquire and view sensor data with Node Commander®.
- Optional web-based SensorCloud™ interface optimizes data storage, viewing, alerts, and analysis.
- Easy custom integration with comprehensive SDK

Cost Effective

- Out-of-the box wireless sensing solution reduces development and deployment time.
- Volume discounts

Applications

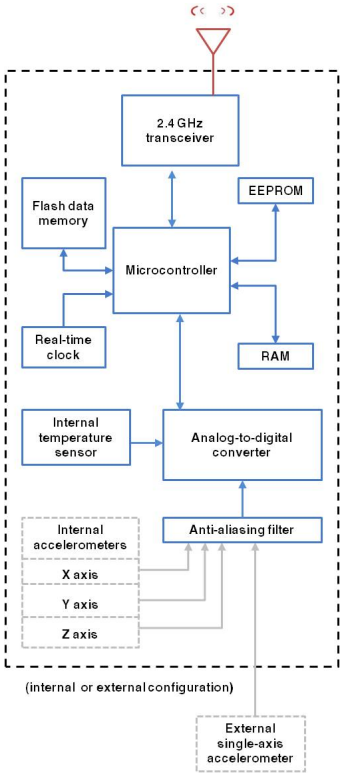
- Condition-based monitoring
- Health monitoring of rotating components, aircraft, structures, and vehicles
- Vibration monitoring
- Vehicle dynamics testing
- Product testing

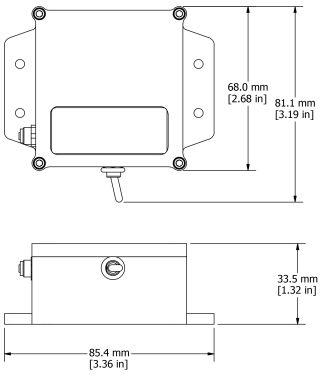
LORD MicroStrain®
SENSING SYSTEMS

G-Link2™-LXRS® Wireless Accelerometer Node

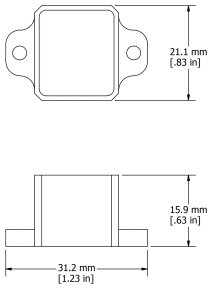
Specifications

General	
Sensor input channels	**Single-axis MEMS accelerometer (option)**, 1 channel
Integrated sensors	**Triaxial MEMS accelerometer (option)**, 3 channels **Internal temperature,** 1 channel
Data storage capacity	4 M bytes (up to 2,000,000 data points, data type dependent)
Accelerometer Channels (integrated or external)	
Measurement range	± 2 *g* or ± 10 *g* standard (± 5 *g*, ± 30 *g*, ± 50 *g*, ±100 *g*, or ± 200 *g* options available)
Accelerometer bandwidth	0 to ≤ 100 Hz (-3 dB cutoff), high bandwidth option available
Accuracy and resolution	< 0.3 % error (typical @ 25 Hz, 1/2 of dynamic range with sinusoidal input), 16 bit resolution
Noise	± 2 *g*: 130 µ *g*/√Hz , ± 10 *g*: 420 µ *g*/√Hz (typical with 100 Hz anti-aliasing filter setting)
Anti-aliasing filter bandwidth	Fifth order low-pass Butterworth filter, user programmable bandwidth from 26 Hz to 1 KHz
Integrated Temperature Channel	
Measurement Range	-40 °C to 125 °C
Accuracy and resolution	± 5 °C (over full range) , 16 bit
Sampling	
Sampling modes	Synchronized, low duty cycle, datalogging
Sampling rates	**Continuous sampling:** 32 to 512 Hz **Periodic burst sampling:** 32 Hz to 10 KHz **Datalogging:** 32 Hz to 10 KHz
Sample rate stability	±3 ppm
Network capacity	Up to 125 nodes per RF channel (and per gateway) depending on the number of active channels and sampling settings. Refer to the system bandwidth calculator: http://www.microstrain.com/configure-your-system
Synchronization between nodes	± 32 µsec
Operating Parameters	
Wireless communication range	Outdoor/line-of-sight: 2 km(ideal)*, 800 m (typical)** Indoor/obstructions: 50 m (typical)**
Radio frequency (RF) transceiver carrier	2.405 to 2.470 GHz direct sequence spread spectrum over 14 channels, license free worldwide, radiated power programmable from 0 dBm (1 mW) to 16 dBm (39 mW); low power option available for use outside the U.S.A.- limited to 10 dBm (10 mW)
Power source	Internal: 3.6 V dc, 2.6 Ah, AA replaceable lithium battery (Saft LS14500 included), External: 2.2 V dc to 5 V dc
Power consumption	1 channel: 20.1 mA (average), 3 channels: 34.9 mA (average)
Operating temperature	-40 ˚C to +85˚C
Acceleration limit	tested to 380 *g*
MTBF	378,000 hours (Telcordia method, SR332)
Physical Specifications	
Dimensions	Node: 68 mm x 85 mm x 33.5 mm with mounting tabs, external accelerometer (option): 32 mm x 21.5 mm x 16 mm
Weight	Node with internal accelerometer and battery: 178 grams node with external accelerometer, cable and battery: 252 grams
Environmental rating	IP67
Enclosure material	Aluminum and clear polycarbonate
Integration	
Compatible gateways	All WSDA® base stations and gateways
Compatible sensors	LORD MicroStrain® accelerometer (external accelerometer option)
Connectors	M5 screw-on IP67 connector (external accelerometer option)
Software	SensorCloud™, SensorConnect™, Node Commander®, WSDA® Data Downloader, Live Connect™, Windows XP/Vista/7 compatible
Software development kit (SDK)	Data communications protocol available with EEPROM maps and sample code (OS and computing platform independent) http://www.microstrain.com/wireless/sdk
Regulatory compliance	FCC (U.S.), IC (Canada), ROHS





G-Link2™-LXRS® Node



External Accelerometer

***Measured with antennas elevated, no obstructions, and no RF interferers.**
****Actual range varies depending on conditions such as obstructions, RF interference, antenna height, & antenna orientation.**

LORD Corporation
MicroStrain® Sensing Systems
ph: 802-862-6629
fax: 802-863-4093
sensing_sales@LORD.com
sensing_support@LORD.com