LORD PRODUCT DATASHEET

IEPE-Link™ -LXRS®

Wireless IEPE Sensor Node

Delivering 24-bit resolution and up to 104 kHz sample rates, the **IEPE-Link™ -LXRS®** Wireless IEPE Sensor Node is designed for high-speed vibration sensing in challenging applications. Ideally suited for critical structure and machine health monitoring, IEPE-Link™ works through periodic burst sampling with ultra low noise, high sensitivity IEPE (Integral Electronic Piezoelectric) accelerometers. It features 109.5 dB of dynamic range, 1 kHz to 104 kHz sampling rates, ± 32 µseconds network burst synchronization, and user selectable low pass filtering. Globally recognized, license-free IEEE 802.15.4 radio communications provide up to 2 kilometers (line of sight) range with host gateways. Small, rugged, and easy to use, the IEPE-Link™ is packaged with a rechargeable high-capacity battery, and **Node Commander®** software for out-of-the-box use with user supplied IEPE accelerometers. Sign up for a free **SensorCloud™** account to have seamless connectivity between your IEPE-Link™ and the cloud.

Features & Benefits

High Performance

- Ultra high-speed, synchronized platform accepts most IEPE accelerometers
- Lossless data throughput under most operating conditions
- Low-power for extended battery life
- SensorCloud™ – integrated web solution for data storage, viewing & analysis

Ease of Integration

- Rapidly deployable wireless form factor
- Simple integration supported by comprehensive SDK

Cost Effective

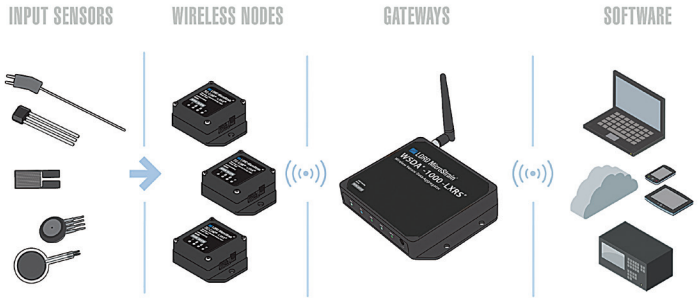
- Reduced cost and rapid time to market for customer's applications
- Aggressive volume discount schedule

Applications

- Vibration Monitoring
- Condition-Based Monitoring of Machines
- Health Monitoring of Aircraft, Structures and Vehicles
- Product Testing
- Modal Analysis

System Overview

Lord MicroStrain® Sensing Systems offer wireless sensors for remote sensor data acquisition, storage, analysis, and response systems. A system comprises wireless sensor nodes, gateways, and software. Using the MicroStrain® LXRS (Lossless Extended Range Synchronized) protocol, one gateway can coordinate thousands of unique nodes for synchronized and lossless data delivery. Bidirectional wireless communication allows gateways to collect data and configure nodes up to 2 km away (line of sight). Gateways can be connected locally by PC or DAQ, and remotely to the web, through Ethernet, cellular, or satellite. The selection of available nodes allow monitoring with most standard sensor types, including accelerometers, strain gauges, pressure transducers, load cells, torque and vibration sensors, magnetometers, thermocouples, RTD sensors, soil moisture and humidity sensors, inclinometers, and orientation and displacement sensors. Nodes are IEEE 802.15.4 compliant and can sample in a large range of rates and configurations to suit the widest possible variety of end user needs. Node Commander® and SensorCloud™ software platforms allow both local and remote network management from almost anywhere on the globe.



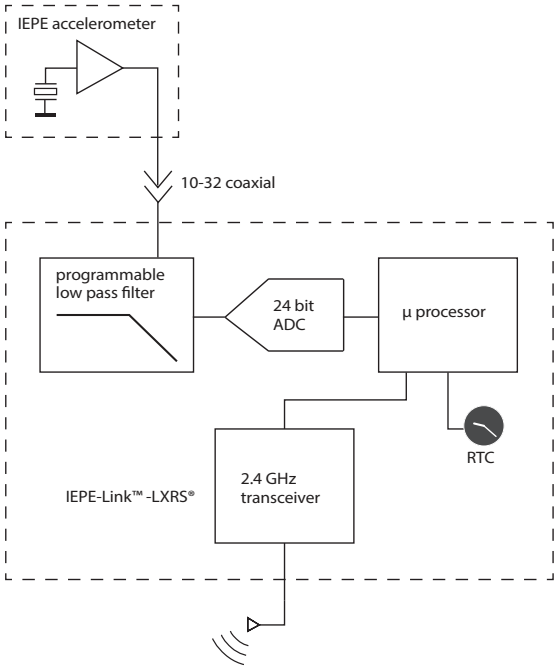
LORD MicroStrain®
SENSING SYSTEMS

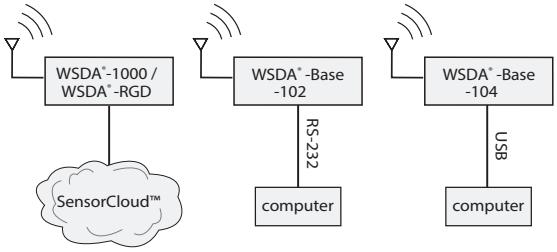
IEPE-Link™ -LXRS® Wireless IEPE Sensor Node

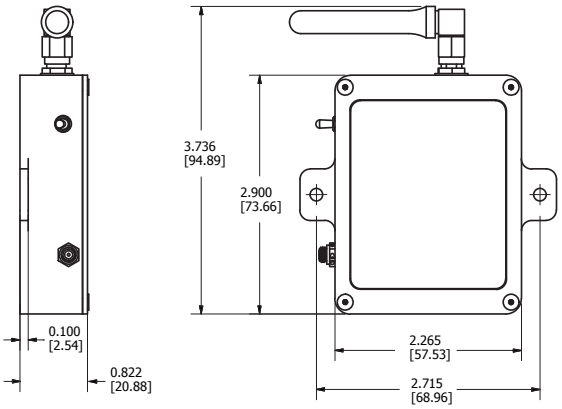
Specifications

Input channels	single external channel for IEPE accelerometer
Accelerometer options	most IEPE accelerometers; ask your Lord support engineer
IEPE connector type	10-32 coaxial
IEPE excitation voltage	23 volts
IEPE excitation current	2.3 mA
Programmable analog low-pass filter	5th order low-pass Butterworth filter with programmable anti-aliasing filter ranging from 26 Hz to 33 kHz
Digital finite impulse response (FIR) filter	100 dB in frequency band from 1/2 sample rate to 8X sample rate
Analog to digital (A/D) converter	24-bit resolution, 109.5 dB dynamic range
Sampling mode	periodic burst mode (synchronized sampling)
Sampling rate	1 kHz to 104 kHz
Bandwidth	1 Hz to 33 kHz
Maximum burst periods	150 seconds @ 1 kHz; 3 seconds @ 50 kHz; 1.3 seconds @ 104 kHz
Wireless network capacity	up to 125 IEPE-Link-LXRS per WSDA depending on network configuration
Synchronization between nodes	± 32 µsec
Time synchronization rate stability	±3 ppm
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.470 GHz) – 14 channels, radiated power programmable from 0 dBm (1 mW) to 16 dBm (39 mW); European models limited to 10 dBm (10 mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
Range for bi-directional RF link	programmable communication range from 70 m to 2 km (line of sight)
Maximum vibration/shock limit	200 g
Dimensions	95 mm x 79 mm x 21 mm (see drawing)
Weight	114 grams
Enclosure material	aluminum
Power consumption	1 burst /10 minutes: 2.9373mA (10.57 mW) 1 burst/hr: 0.6957mA (2.50 mW) 1 burst/4 hrs: 0.2875mA (1.04 mW) 1 burst/24 hrs: 0.1738mA (0.63 mW) All sampling @ 10kHz with 5 second burst duration; contact support for additional specs
Power	internal rechargeable 3.7 volt 650 mAh battery or external +3.2 to +9.0 volts DC
Operating temperature	-20 ˚C to +60 ˚C with standard internal lithium polymer battery and enclosure; extended range to -40 ˚C to +85˚C with optional external battery
ROHS	compliant
Compatible gateways	WSDA-RGD, WSDA-1000-LXRS, WSDA-Base-102-LXRS, WSDA-Base-104-LXRS
Software	Node Commander for Windows XP/Vista/7/8
Software development kit (SDK)	includes complete data communications protocol manual, EEPROM maps and sample code (OS and platform independent)
SensorCloud	compatible
FCC ID	XJQMSLINK0003
IC ID	8505A-MSLINK0003

Electrical Diagram







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Specifications are subject to change without notice. 1.02a

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