

# WSDA<sup>®</sup>-200-USB

## Wireless USB Gateway

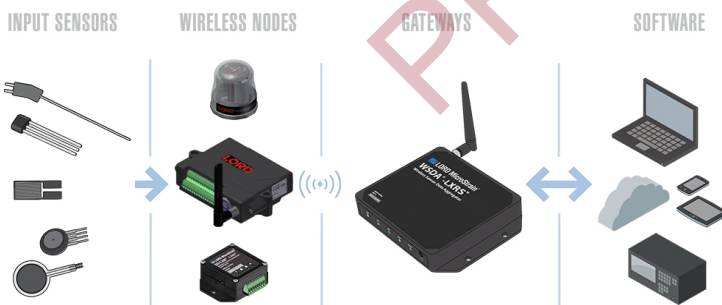


WSDA-200-USB - USB gateway for configuration and data collection

**LORD Sensing Wireless Sensor Networks** enable simultaneous, high-speed sensing and data aggregation from scalable sensor networks. Our wireless sensing systems are ideal for test and measurement, remote monitoring, system performance analysis, and embedded applications.

The gateways are the heart of the LORD Sensing wireless sensing system. They coordinate and maintain wireless transmissions across a network of distributed wireless sensor nodes. The LORD Sensing LXRS wireless communication protocol between LXRS nodes and gateways enable high-speed, synchronized sampling and lossless data throughput.

Users can easily program nodes for continuous, periodic burst, or event-triggered sampling with the software. The optional web-based [SensorCloud](#) interface optimizes data aggregation, analysis, presentation, and alerts for sensor data from remote networks.



## Product Highlights

- Data acquisition gateway collects synchronized data from scalable networks of wireless sensors
- Provides seamless communication between the wireless sensor nodes and host computer
- Quick deployment with host computer interface
- Compatible with all LORD Sensing LXRS and 200 Series sensing nodes

## Features and Benefits

### High Performance

- Lossless data throughput and synchronized node-to-node sampling of  $\pm 50 \mu\text{s}$  in LXRS-enabled modes
- Wireless range up to 2 km (800 m typical)

### Ease of Use

- Easy out-of-the-box installation with data collection in minutes
- Scalable networks for easy expansion
- Remote configuration, acquisition, and display of sensor data with SensorConnect
- Data visualization through web-based [SensorCloud](#) portal for quick data navigation and analysis
- Easy custom integration with open-source, comprehensive communications and command library (API)
- Thousands of sensors managed from a single gateway

## Applications

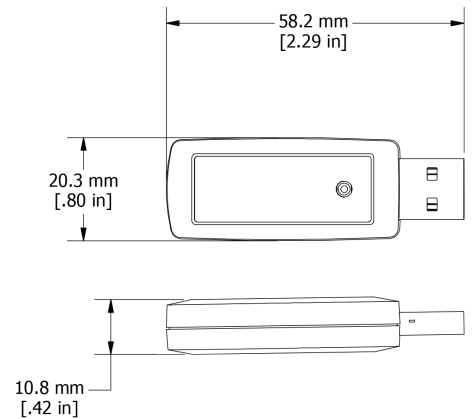
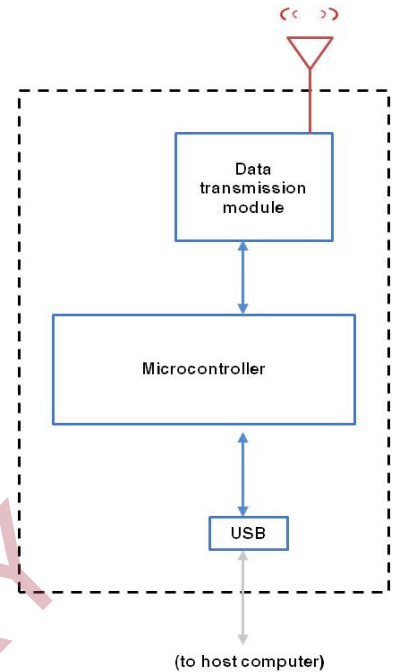
- Structural health monitoring
- Equipment performance monitoring, verification, evaluation, and diagnostics
- Test and measurement
- System control
- Environmental monitoring

## Specifications

General	
Connectivity	USB 2.0 virtual serial communication @ 3 mbps
Sampling	
Supported node sampling modes	Synchronized, low duty cycle, continuous, periodic burst, event-triggered, and datalogging
Synchronization beacon interval	1 Hz beacon provides $\pm 50 \mu\text{sec}$ node-to-node synchronization
Synchronization beacon stability	$\pm 3 \text{ ppm}$
Network capacity	Up to 2000 nodes per RF channel (and per gateway) depending on the number of active channels and sampling settings. Refer to the system bandwidth calculator: <a href="http://www.microstrain.com/configure-your-system">http://www.microstrain.com/configure-your-system</a>
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 ISM band 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)
RF communication protocol	IEEE 802.15.4
Power source	USB port: 5.0 V dc
Power consumption	50 mA; Eight active node channels operating at 256 Hz low duty cycle: 65.6 mA
Operating temperature	-40 °C to +85 °C
Physical Specifications	
Dimensions	58.2 mm x 20.3 mm x 10.8 mm
Weight	17 grams
Integration	
Connectors	USB Type A male
Compatible sensor nodes	LXRS <sup>®</sup> sensor nodes, legacy 2.4 GHz nodes, all 200 Series nodes
Firmware	Firmware upgradeable through software interface
Software compatibility	SensorCloud, SensorConnect, Windows 7 (and newer)
Software development	Open-source MicroStrain Communications Library (MSCL) with sample code available in C++, Python, and .NET formats, Labview (OS and computing platform independent) <a href="http://www.microstrain.com/software/mscl">http://www.microstrain.com/software/mscl</a>
Regulatory compliance	TBD

\*Measured with antennas elevated, no obstructions, and no RF interferers.

\*\*Actual range varies with conditions such as obstructions, RF interference, antenna height & orientation.



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