

WSDA[®]-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 and LXRS+ wireless communication protocols between compatible nodes and gateways enable high-speed, synchronized sampling and lossless data throughput at rates up to 16 kbps.

Users can easily program nodes for continuous, periodic burst, or event-triggered sampling with the SensorConnect 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 LORD Sensing LXRS and LXRS+ sensor nodes

Features and Benefits

High Performance

- Lossless data throughput and sampling of $\pm 50 \mu\text{s}$ in LXRS+ and LXRS-enabled modes
- Wireless range up to 2 km (400 m typical)
- External antenna option for embedded applications or enhanced range

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)
- Hundreds 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 (& per gateway) depending on number of active channels and sampling settings. See system bandwidth calculator: http://www.microstrain.com/configure-your-system		
Operating Parameters			
Wireless communication range		Typical*	Ideal**
	LXRS	1 km	2 km
	LXRS+	400 m	1 km
Radio frequency (RF) transceiver carrier	License-free 2.405 to 2.480 GHz with 16 channels		
RF communication protocol	IEEE 802.15.4 and Proprietary		
RF transmit power	User-adjustable from 0 dBm to 20 dBm. Power output restricted regionally to operate within legal requirements		
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	$-40 \text{ }^\circ\text{C}$ to $+85 \text{ }^\circ\text{C}$		
Physical Specifications			
Dimensions	58.2 mm x 20.3 mm x 10.8 mm		
Weight	17 grams		
Integration			
Connectors	Internal antenna: USB Type A male External antenna: Reverse Polarity TNC Type (RP-TNC) (1 meter cable included)		
Compatible nodes	All LORD Sensing LXRS [®] and LXRS+ nodes		
Firmware	Firmware upgradeable through software interface		
Software	SensorConnect™ 8.3 or newer, Windows 7, 8 & 10 compatible		
Regulatory compliance	FCC (U.S.), IC (Canada), CE (European Union)		

*Actual range varies with conditions

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

