

# MicroStrain Sensing Product Datasheet

## WSDA<sup>®</sup>-200-USB Wireless USB Gateway



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.

Gateways 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



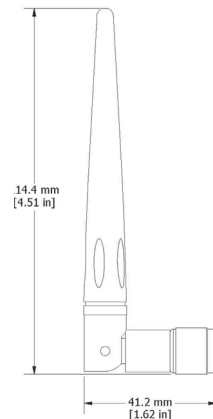
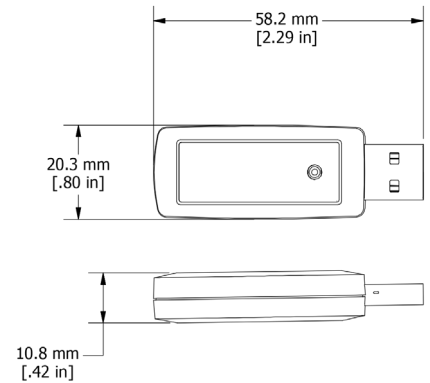
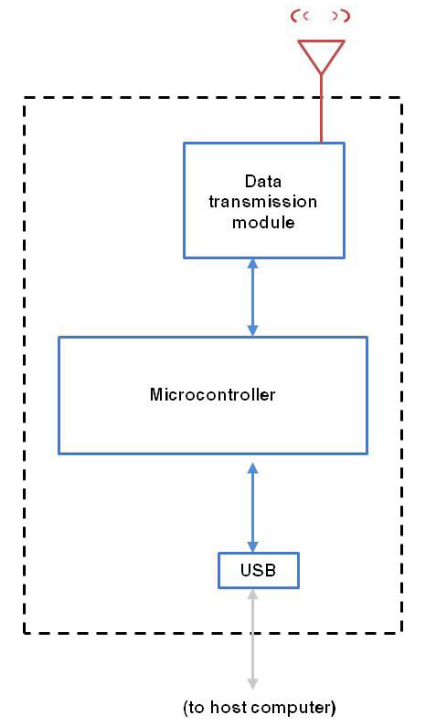
# Wireless USB Gateway

## 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 $\pm 50$ $\mu$ sec node-to-node synchronization  |          |         |
| Synchronization beacon stability         | $\pm 3$ ppm   |          |         |
| Network capacity                         | Up to 127 nodes per RF channel (& per gateway) depending on number of active channels and sampling settings. See 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             |   | 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°C to +85°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<br>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, RoHS (EU), MIC (Japan)   |          |         |

\*Actual range varies with conditions.

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



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