

WSDA[®] -Base-102 - LXRS[™]

Wireless RS-232 Serial Output Base Station



Introduction

The WSDA[®] -Base-102 RS-232 Serial Output Base Station operates as an integral part of MicroStrain[®] LXRS[™] Wireless Sensor Networks. It provides seamless lossless data communication between a host PC, single board computer or microcontroller, and single or multiple remote wireless nodes. Coupled with MicroStrain[®] Node Commander[®] software, the WSDA[®] -Base-102 supports configuration of the wireless nodes including discovery, initialization, radio frequency, sample rate, reading/writing to node EEPROM, calibrating nodes' sensors, managing the nodes' batteries including sleep, wake and cycle power, and upgrading the nodes' firmware. The WSDA[®] -Base-102 supports all data acquisition sessions between wireless nodes and host computers including Synchronized Sampling (both Continuous and Burst modes), Armed Datalogging, Datalogging, Streaming and Legacy Low Duty Cycle.

Features & Benefits






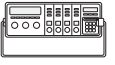









- lossless wireless communication protocol provides 100% packet success rate under most operating conditions
- programmable communication range from 70m to 2,000m
- scalable wireless sensor networks supporting continuous, burst, and hybrid sampling modes
- time synchronized to +/- 32 microseconds
- support for hundreds of simultaneously sampling wireless sensor nodes
- ultra-stable on-board precision timing reference of +/- 3 ppm over industrial temperature range
- RS-232 @ 115,200 and 921,600 baud

Applications

- condition based monitoring of machines and aircraft
- health monitoring of civil structures and vehicles
- embedded OEM sensing systems
- smart structures and materials
- Experimental test and measurement
- Robotics and machine automation
- Vibration and acoustic noise testing
- Sports performance and sports medicine analysis
- Distributed security networks

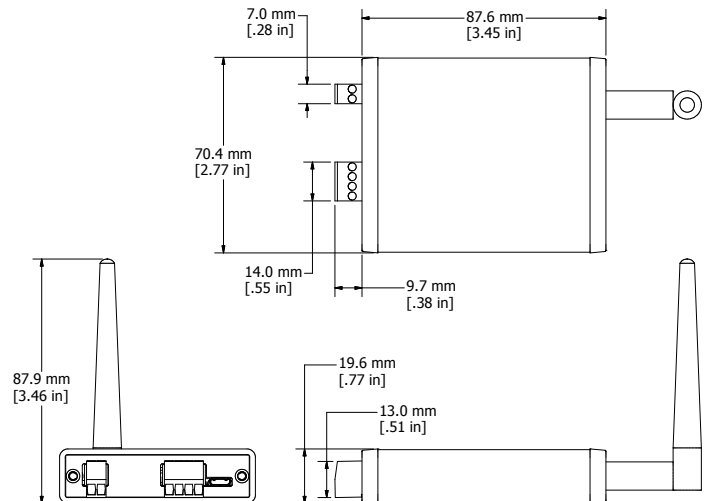
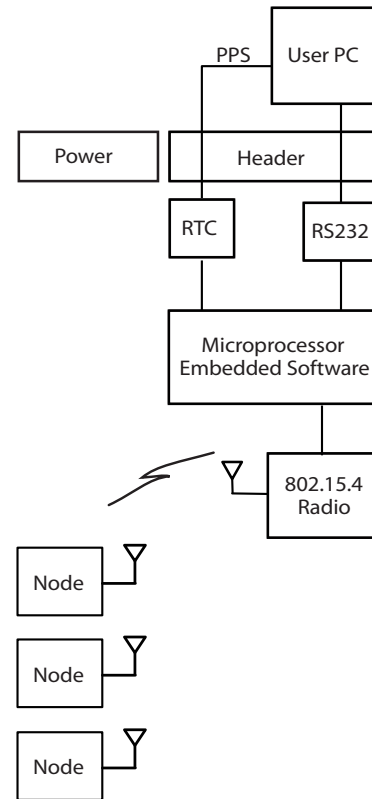
System Overview

At the heart of MicroStrain[®] LXRS[™] Wireless Sensor Networks is the WSDA[®] -Base, or WSDA[®] -1000 which use our exclusive beaconing protocols to synchronize precision timekeepers embedded within each sensor node in the network. Each LXRS[™] node in the network utilizes lossless communication protocols to provide 100 % data throughput under most operating conditions. The WSDA[®] coordinates data collection from all sensor nodes. Users can easily program each node on the scalable network for simultaneous, periodic, continuous, burst, or hybrid sampling modes with our Node Commander[®] software, which automatically configures network radio communications to maximize the aggregate sample rate

Nodes	Gateways	Interface	Data Access
 V-Link [®]	 WSDA [®] -Base (104, 102)	USB RS-232	 Personal Computer
 SG-Link [®]	 WSDA [®] Base -101	Analog	 DAQ
 DVRT-Link [®]	 WSDA [®] -1000	 SensorCloud [™]	 Global Web Access
 G-Link [®]	 WSDA [®] -1000	 SensorCloud [™]	 Phones & Tablet  Enterprise

Specifications

Node support	V-Link®-mXRS™ SG-Link®-mXRS™ G-Link®-MXRS™ DVRT-Link™-mXRS™ TC-Link®-6CH-mXRS™ TC-Link®-1CH-mXRS™ EH-Link® SG-Link® OEM-S TC-Link® OEM All legacy 2.4 GHz wireless nodes
Host communication interface	RS-232 @ 115,200 (except synchronized sampling) and 921,600 bps
Communication cable	pin terminal to DB9
Power	auxiliary @ 3.6 to 13.0 volts DC
Power consumption	62.6 mA - 8 active node channels operating at 256 Hz Synchronized Sampling 45.7 mA - Idle
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz) – up to 16 channels, radiated power programmable from 0 dBm (1 mW) to 16 dBm (39 mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
Range for bi-directional RF link	16 dBm (39 mW) Extended Power with range up to 2 kilometers (not available in Europe) 10 dBm (10 mW) Standard Power with range up to 1 kilometer 0 dBm (1 mW) Low Power with range up to 70 meters
Node synchronization	1 Hz beacon provides +/-32 microsecond node to node synchronization
Status LED	multi-color LED signals activity status
Operating temperature	-40 °C to +85 °C electronics only; -30 °C to +70 ° with standard enclosure
Dimensions	88 mm x 70 mm x 20 mm without antenna
Weight	126 grams
Enclosure material	black anodized aluminum
Software	Node Commander® Windows XP/Vista/7 compatible
Software development kit	includes Data Communication Protocol and sample code
FCC ID	XJQMSLINK0001
IC ID	8505A-MSLINK0001



 **MicroStrain®**

MicroStrain Inc.
459 Hurricane Lane,
Suite 102
Williston, VT 05495 USA
www.microstrain.com

ph: 800-449-3878
fax: 802-863-4093
sales@microstrain.com