WSDA®-Base-102

Data Sheet

RS-232 Serial Output Base Station

Introduction

The **WSDA®** -Base-102 RS-232 Serial Output Base Station operates as an integral part of **MicroStrain® mXRS™** Wireless Sensor Networks. It provides seamless 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

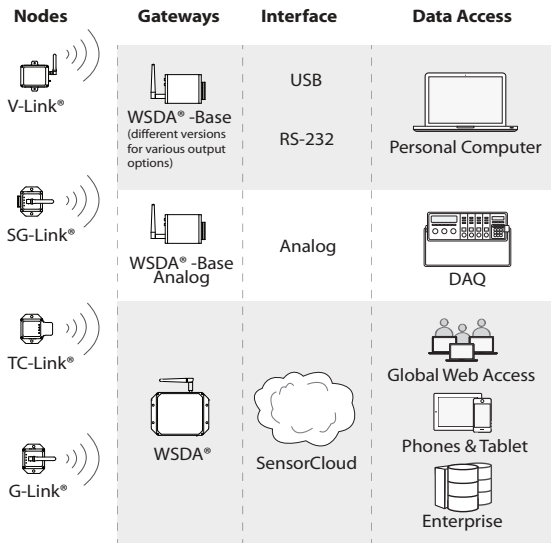
- Support for hundreds of simultaneously sampling wireless sensor nodes
- Node to node synchronization of +/- 32 microseconds
- Ultra-stable on-board precision timing reference of +/- 3 ppm over industrial temperature range
- Extended wireless communication range to 2 km
- RS-232 @ 115,200 and 921,600 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

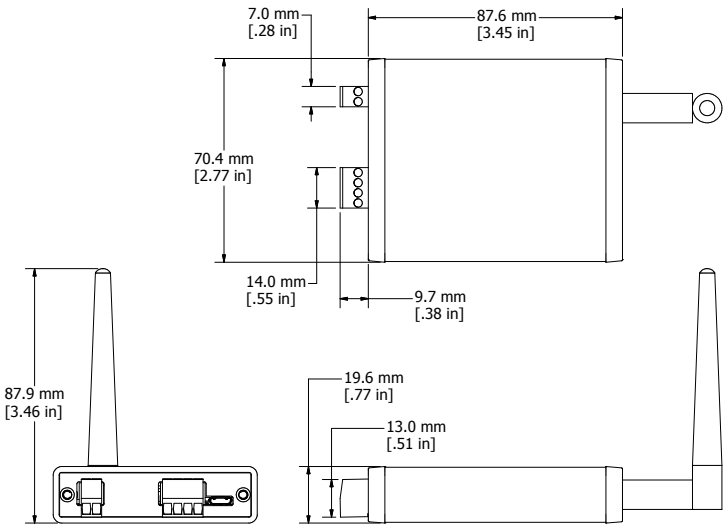
System Overview

At the heart of MicroStrain's mXRS™ Wireless Sensor Networks is the WSDA® -Base, which uses our exclusive beaconing protocols to synchronize precision timekeepers embedded within each sensor node in the network. The WSDA® -Base also coordinates data collection from all sensor nodes. Users can easily program each node on the scalable network for simultaneous, periodic, or burst mode sampling with our Node Commander® software, which automatically configures network radio communications to maximize the aggregate sample rate.



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



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Patents Pending