

WSDA[®] -1000 -LXRS[™]

Wireless Sensor Data Aggregator

The LORD MicroStrain[®] Wireless Sensor Data Aggregator is an enclosed single-board computer with Ethernet connectivity. The WSDA[®]-1000-LXRS[™] operates in 3 different modes including Standalone, LAN, and SensorCloud[™].

The WSDA[®]-1000-LXRS[™] may operate on its own with a static IP, act as an autonomous data logger on a LAN with a DHCP server, or integrate with SensorCloud[™] for secure, web-based data access as well as remote network command, control and monitoring.



Features & Benefits

Wireless Simplicity, Hardwired Reliability

- Dependable data with 100% throughput under most operating conditions
- Scalable, extended range wireless sensor communication
- Autonomously aggregate high-speed, synchronized data

Ease of Use

- Quick path to unlimited sensor data via web-based portal
- Remotely configure, command and control wireless sensor networks
- Accepts all LORD MicroStrain[®] LXRS[™] and legacy sensor nodes

Cost Effective

- Manage thousands of wireless sensors on a single gateway
- Rapid time to market for industrial and early adopter applications
- Aggressive volume discount schedule

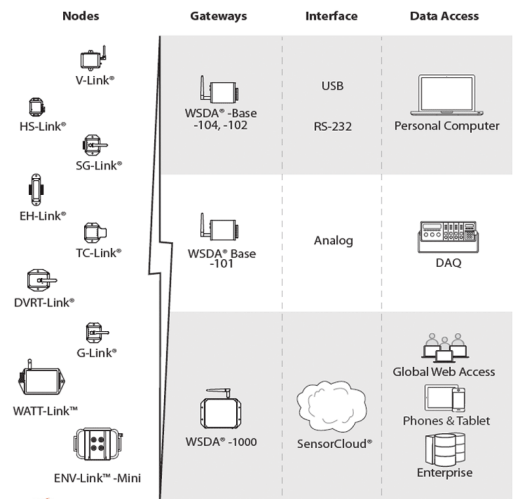
Applications

- Web-Based Wireless Sensor Data
- Health Monitoring of Vehicles & Structures
- Condition-Based Monitoring of Machines
- Rotating Component Health
- Experimental Test and Measurement
- System Control

System Overview

WSDA[®] gateways are the heart of the LORD MicroStrain[®] wireless sensing system. The WSDA[®] coordinates and maintains wireless transmissions across networks of distributed sensor nodes. Each WSDA[®] is configured with LORD MicroStrain[®]'s LXRS[™] wireless communication protocol. As such, WSDA[®] gateways support high-speed sampling, thousands of wireless sensor nodes, ± 32 microsecond node-to-node synchronization, user-programmable range up to 2 kilometers, and up to 100% data throughput.

Users can easily program each node on the scalable network for simultaneous, periodic, burst, or data logging mode sampling with our Node Commander[®] software, which automatically configures radio communication to maximize the aggregate sample rate. The SensorCloud[™] enabled WSDA[®]-1000 support autonomous, web-based data aggregation that allows the user to navigate through gigabytes of data within seconds and quickly drill down to points of interest



Specifications

Node support	V-Link®-LXRS™, SG-Link®-LXRS™, G-Link®-LXRS™, DVRT-Link™-LXRS™, TC-Link®-6CH-LXRS™, TC-Link®-1CH-LXRS™, EH-Link®, SG-Link®-OEM-LS, SG-Link®-OEM-LXRS™, HS-Link®-S-100 kHz, TC-Link® OEM, ENV-Link™-Mini-LXRS™, all legacy 2.4 GHz wireless nodes
CPU	Marvell® PXA270
Operating system	Linux 2.6.31 kernel
Internal memory	32 MB flash, 128 MB ram
Data storage memory	Micro SD 2 GB
Connectivity	IEEE 802.3 Ethernet, 10/100, IEEE 802.15.4 wireless, optional external cell modem
Accessibility	HTTP, HTTPS TCP/IP socket
IP assignment	DHCP, static IP
Remote data synchronization	optional - periodically uploads data to secure portal (SensorCloud™), requires internet connection or cellular modem
Firmware upgrade options	upgradable via web
Communication cable	10 foot CAT 6 Ethernet
Power supply	universal 12 volts DC
Power supply range	7.0 to 36.0 volts DC
Power consumption	max - 2000 mW, typical - 1400 mW
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 to 2.480 GHz) – 16 channels, radiated power programmable from 0 dBm (1 mW) to 16 dBm (39 mW); European models limited to 10 dBm (10 mW)
RF data packet standard	IEEE 802.15.4, open communication architecture
Range for bi-directional RF link	programmable communication range from 70 meters to 2 kilometers
Node synchronization	1 Hz beacon provides ± 32 µsec node to node synchronization
Status LED	multi-color LED signals activity status
Operating temperature	-40 °C to +85 °C with standard enclosure
Dimensions	146 mm x 109 mm x 23 mm without antenna
Weight	304 grams
Enclosure material	black anodized aluminum
Software	Node Commander®, LiveConnect, and WSDA® Data Downloader (all Windows XP/Vista/7 compatible)
Software development kit (SDK)	includes data communications protocol, EEPROM maps and sample code (OS and computing platform independent)
FCC ID	XJQMSLINK0001
IC ID	8505A-MSLINK0001

