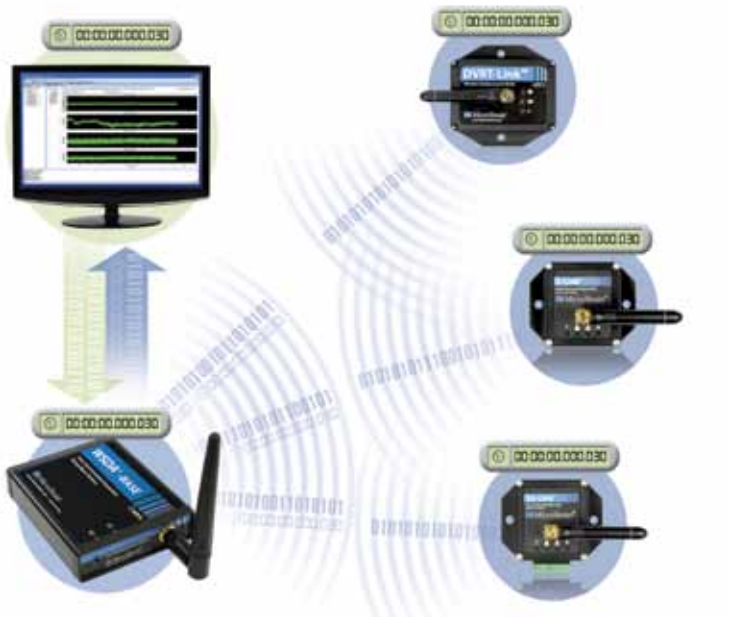
MicroStrain Extended Range, Synchronized (mXRS™) Wireless Sensing System

mXRS™

MicroStrain's Extended Range, Synchronized (mXRS™) Wireless Sensing System combines breakthrough ultra-stable precision time sync with network scalability to enable thousands of wireless sensor nodes to communicate to a single base station over long distances.

Our new mXRS™ Wireless Sensing System includes:

1. WSDA®-Base or WSDA® gateways which synchronize the precision timekeepers on every node to +/- 32 microseconds and autonomously perform wireless sensor data aggregation using time as unifying variable.
2. Node Commander® software which enables users to configure various nodes in their wireless network for periodic or burst mode sampling with high channel counts and high sample rates - for example: 2016 nodes at 2 samples per second (SPS), 32 nodes at 128 SPS, 4 nodes at 512 SPS.
3. Wireless sensor nodes with on-board, ultra-stable precision timekeepers and user-configurable communications range to 2 kilometers (~1 mile).



MicroStrain's mXRS™ Wireless Sensor Node Family (users can mix and match):

SG-Link®	Strain Gauges, Load Cells, Torque Cells, Magnetoresistors, Hall Effect Devices
G-Link®	Triaxial MEMS Accelerometers (+/- 2G and +/- 10G FS)
DVRT-Link™	Linear Displacement and Non-Contact Displacement Transducers (1 ch)
V-Link®	Differential Voltage Input (4 chs), Single Ended Voltage Inputs (3 chs)
TC-Link®	Thermocouples w/ cold junction compensation and on-board linearization (6 ch and 1 ch avail.)
ENV-Link™	Environmental (Temperature, Humidity, Sunlight, Soil Moisture, Leaf Wetness)

The mXRS™ Wireless Sensing System is ideally suited for applications where synchronized data is required, where precision timing is critical, where many sensor nodes must communicate over a single radio frequency channel, and where extended communications is required. Because the sensor nodes can be programmed to sample simultaneously, or in short bursts at high data rates, energy is conserved. For many applications, this enables energy harvesters to be used to power the sensor nodes.

Applications include advanced condition based maintenance and structural health monitoring of heavy equipment, industrial machines, fixed wing aircraft, helicopters, civil structures, vehicles, and wind turbines.

Learn more about our sensors here.

www.microstrain.com/wireless-sensors

MicroStrain® Little Sensors, Big Ideas®

800.449.3878

www.microstrain.com

mXRS™ Synchronized Sampling Network Capacity

Sample Rate	Number of Channels			Aggregate Capacity*
	1	3	8	
512 SPS Continuous	3 nodes	1 node	–	1536 SPS
256 SPS Continuous	15 nodes	7 nodes	1 node	5376 SPS
128 SPS Continuous	31 nodes	15 nodes	3 nodes	5760 SPS
64 SPS Continuous	63 nodes	31 nodes	7 nodes	5952 SPS
32 SPS Continuous	127 nodes	63 nodes	15 nodes	6048 SPS
16 SPS Continuous	224 nodes	111 nodes	15 nodes	5328 SPS
8 SPS Continuous	480 nodes	240 nodes	55 nodes	5760 SPS
4 SPS Continuous	992 nodes	496 nodes	123 nodes	5952 SPS
2 SPS Continuous	2016 nodes	1008 nodes	252 nodes	6048 SPS
1 SPS Continuous	2032 nodes	2032 nodes	508 nodes	6096 SPS
2048 SPS for 10s every 1min	7 nodes	3 nodes	1 node	3072 SPS
1024 SPS for 10s every 1 min	15 nodes	7 nodes	3 nodes	4096 SPS
512 SPS for 10s every 1 min	31 nodes	15 nodes	7 nodes	4778 SPS
256 SPS for 10s every 1 min	128 nodes	31 nodes	15 nodes	5461 SPS
2048 SPS for 10s every 10min	128 nodes	31 nodes	15 nodes	4369 SPS
1024 SPS for 10s every 10 min	128 nodes	64 nodes	31 nodes	4232 SPS
512 SPS for 10s every 10 min	128 nodes	128 nodes	64 nodes	4369 SPS
256 SPS for 10s every 10 min	128 nodes	128 nodes	128 nodes	4369 SPS

*Maximum aggregate network capacity expressed in Samples per second (SPS).
Note: Example network configurations shown.
To configure custom sampling requirements, go to the Sync Sampling Wizard at www.microstrain.com/sync