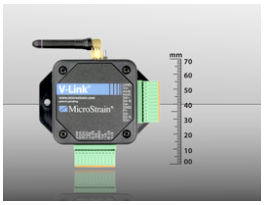
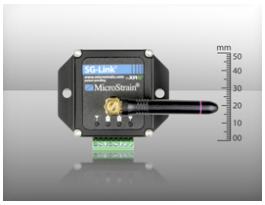
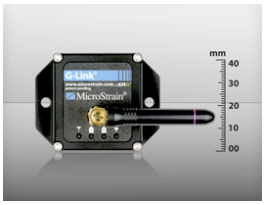
MicroStrain® Little Sensors, Big Ideas®

Wireless Sensors Comparison

Specifications				
Model	**V-Link®**	**SG-Link® -mXRS™**	**DVRT-Link™ -mXRS™**	**G-Link® -mXRS™**
Input channels	Up to 8 input channels: 4 full differential, 350 Ω resistance or higher (with optional bridge completion), 3 single ended inputs (0-3 volts maximum), and internal temperature sensor	1 full differential input channel, 350 Ω resistance or higher (with optional bridge completion), 1 single ended input (0 - 3 volts maximum), and internal temperature sensor	Inductive (DVRT®)	Triaxial MEMs accelerometers, Analog Devices AD22293 (+/-2 g) or ADXL210 (+/-10 g)
Temperature sensor	-40˚C to +70˚C range, typical accuracy ±2˚C (at 25˚C)	-40 °C to 70 °C range, typical accuracy +/-2 °C (at 25 °C)	-40 °C to 70 °C range, typical accuracy +/-2 °C (at 25 °C)	-40 °C to 70 °C range, typical accuracy +/-2 °C (at 25 °C)
Signal to noise ratio	–	–	1,000 : 1 typical(Factory calibrated with DVRT® sensor)	–
Excitation	–	–	Regulated sinewave, 150 kHz standard; other frequencies available on request	–
Low pass filter	–	–	800 Hz standard; factory adjustable 10 Hz – 20 kHz	–
Anti-aliasing filter bandwidth	-3 dB cutoff at 250 Hz (factory adjustable)	-3 dB cutoff at 500 Hz (factory adjustable)	-3 dB cutoff at 500 Hz (factory adjustable)	-3 dB cutoff at 500 Hz (factory adjustable)
Measurement accuracy	±0.1% full scale typical	+/-0.1% full scale typical	–	10 mg
Resolution	1 bit: 0.024% 1 microstrain typical for 3 wire full bridge strain gauge (when used in accordance with MicroStrain® recommendations)	1 bit: 0.024% 1 microstrain typical for 3 wire full bridge strain gauge (when used in accordance with MicroStrain® recommendations)	–	–
DC bridge excitation	+3 volts DC at 50 mA maximum (pulsed to sensors for sample rates of 100 Hz and below to conserve power)	+3 volts DC at 50 mA maximum (pulsed to sensors for sample rates of 100 Hz and below to conserve power)	–	–
Programmable gain	Software programmable for differential input channels from 210 to 4844 (can be reduced with hardware resistor change)	Software programmable: 104 to 1800	–	–
Programmable offset	Software programmable	Software programmable	–	–
Analog to digital (A/D) converter	Successive approximation type, 12 bit resolution	Successive approximation type, 12 bit resolution	Successive approximation type, 12 bit resolution	Successive approximation type, 12 bit resolution
Data storage capacity	2 megabytes (approximately 1,000,000 data points)	2 megabytes (approximately 1,000,000 data points)	2 megabytes (approximately 1,000,000 data points)	2 megabytes (approximately 1,000,000 data points)

Model	V-Link®	SG-Link® -mXRS™	DVRT-Link™ -mXRS™	G-Link® -mXRS™
Data logging mode	Log up to 1 million data points at sampling rates from 32Hz to 2048Hz per channel in fixed (from 100 to 65,500 samples) or continuous (until memory full) sessions	Log up to 1,000,000 data points (from 100 to 65,500 samples or continuous) at 32 Hz to 2048 Hz	Log up to 1,000,000 data points (from 100 to 65,500 samples or continuous) at 32 Hz to 2048 Hz	Log up to 1,000,000 data points (from 100 to 65,500 samples or continuous) at 32 Hz to 2048 Hz
Sensor event driven trigger	Commence datalogging when threshold exceeded	Commence datalogging when threshold exceeded	Commence datalogging when threshold exceeded	Commence datalogging when threshold exceeded
Real-time streaming mode	Transmit real time data from node to PC - rate depends on number of active channels: 1 channel - 4 KHz, 2 channels - 2 KHz, 3 channels - 1.33 KHz, 4 channels - 1 KHz, 5 channels - 800 Hz, 6 channels - 666 Hz, 7 channels - 570 Hz, 8 channels - 500 Hz	–	–	–
Low duty-cycle mode	Supports multiple nodes on single RF channel	–	–	–
Sample rates	–	1/hr - 4 kHz; synchronous mode 1 Hz - 512 Hz	1/hr - 4 kHz; synchronous mode 1 Hz - 512 Hz	1/hr - 4 kHz; synchronous mode 1 Hz - 512 Hz
Synchronous sampling mode network capacity	–	–	Transmit real time data from node to PC - rate depends on number of active channels and transmitting nodes. e.g.: 3 nodes, 1 channel, 512 Hz 15 nodes, 1 channel, 256 Hz 31 nodes, 1 channel, 128 Hz 63 nodes, 1 channel, 64 Hz 127 nodes, 1 channel, 32 Hz sample rates and # of channels are easily configured within Node Commander® Network Configuration Wizard	Transmit real time data from node to PC - rate depends on number of active channels and transmitting nodes. e.g.: 3 nodes, 1 channel, 512 Hz 15 nodes, 1 channel, 256 Hz 31 nodes, 1 channel, 128 Hz 63 nodes, 1 channel, 64 Hz 127 nodes, 1 channel, 32 Hz sample rates and # of channels are easily configured within Node Commander® Network Configuration Wizard
Synchronization between nodes	Datalogging ±4 µsec ±50 ppm, LDC mode time stamped at PC	+/-32 µsec in synchronous sampling mode with 10 second beacon interval	+/-32 µsec in synchronous sampling mode with 10 second beacon interval	+/-32 µsec in synchronous sampling mode with 10 second beacon interval
Sample rate stability	±25 ppm for sample rates > 1 Hz, ±10% for sample rates < 1 Hz	–	–	–
Synchronous sample rate stability	–	+/-3 ppm	+/-3 ppm	+/-3 ppm
Wireless shunt calibration	Channels 1 to 4, internal shunt calibration resistor 499 KΩ	Channel 1, internal shunt calibration resistor 499 KΩ	–	–
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 0 dBm (1mW)	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 20 dBm (100 mW)	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 20 dBm (100 mW)	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 20 dBm (100 mW)
RF data packet standard	IEEE 802.15.4, open communication architecture	IEEE 802.15.4, open communication architecture	IEEE 802.15.4, open communication architecture	IEEE 802.15.4, open communication architecture
RF data downloading	8 minutes to download full memory	8 minutes to download full memory	8 minutes to download full memory	8 minutes to download full memory

Model	V-Link®	SG-Link® -mXRS™	DVRT-Link™ -mXRS™	G-Link® -mXRS™
Range for bi-directional RF link	70 m line-of-sight, up to 300 m with optional high gain antenna	1000 meters line-of-sight in extended range mode; 70 meters in standard range mode	1000 meters line-of-sight in extended range mode; 70 meters in standard range mode	1000 meters line-of-sight in extended range mode; 70 meters in standard range mode
Internal li-ion battery	3.7 volt lithium ion rechargeable battery, 600 mAh capacity Customer may supply external power from 3.2 to 9 volts	3.7 volt 250 mAh lithium ion rechargeable battery or external power 3.2 to 9 volts	3.7 volt 250 mAh lithium ion rechargeable battery or external power 3.2 to 9 volts	3.7 volt 250 mAh lithium ion rechargeable battery or external power 3.2 to 9 volts
Power consumption	**V-Link®** node only: real-time streaming - 25 mA, datalogging - 25 mA, sleeping - 0.5 mA External sensors: 350 Ω strain gauge - 8 mA, 1000 Ω strain gauge - 3 mA (add sensor consumption to above to calculate total power consumption)	SG-Link® node only: real-time streaming - 2.4 mA, datalogging - 25 mA, sleeping - 0.1 mA with 1000 ohm strain gauge	Synchronous sampling (128 Hz) - 2.4 mA, datalogging - 25 mA, sleeping - 0.1 mA	Synchronous sampling (128 Hz) - 2.4 mA, datalogging - 25 mA, sleeping - 0.1 mA
Operating temperature	-20˚C to +60˚C with standard internal battery and enclosure, extended temperature range optional with custom battery and enclosure. -40˚C to +85˚C for electronics only	-20 °C to +60 °C with standard internal battery and enclosure, extended temperature range optional with custom battery and enclosure, -40 °C to +85 °C for electronics only	-20 °C to +60 °C with standard internal battery and enclosure, extended temperature range optional with custom battery and enclosure, -40 °C to +85 °C for electronics only	-20 °C to +60 °C with standard internal battery and enclosure, extended temperature range optional with custom battery and enclosure, -40 °C to +85 °C for electronics only
Maximum acceleration limit	500 *g* standard (high *g* option available)	500 g standard (high g option available)	500 g standard (high g option available)	500 g
Warm-up time	–	–	30 seconds recommended	–
Dimensions	88 mm x 72 mm x 26 mm (enclosure without antenna) 72 mm x 65 mm x 12 mm(circuit board assembly only)	58 mm x 50 mm x 26 mm (enclosure without antenna) 46 mm x 36 mm x 16 mm (circuit board assembly only)	61 mm x 41 mm x 27 mm (enclosure without antenna) 46 mm x 36 mm x 16 mm (circuit board assembly only)	58 mm x 43 mm x 26 mm (enclosure without antenna) 36 mm x 36 mm x 24 mm (circuit board assembly only)
Weight	97 grams (with enclosure)	50 g (with enclosure); 17 g (circuit board assembly only)	55.48 g (with enclosure and antenna)	47 g (with enclosure) 15 g (circuit board assembly only)
Enclosure material	ABS plastic	ABS plastic	ABS plastic	ABS plastic
Software	**Node Commander®** Windows XP/Vista compatible	Node Commander® Windows XP/Vista/7 compatible	Node Commander® Windows XP/Vista/7 compatible	Node Commander®, Windows XP/Vista/7 compatible
Compatible base stations	USB, RS-232, Analog, **WSDA®**	USB, RS-232, Analog, WSDA® - Base, WSDA®	USB, RS-232, Analog, WSDA® - Base, WSDA®	USB, RS-232, Analog, WSDA® - Base, WSDA®

Call 802.862.6629 or visit us online at www.microstrain.com

Updated 3/9/11