

HS-Link™ 100 KHz

High Speed Wireless Node



Introduction

Fast, small, and rugged, the new HS-Link™ 100KHz high speed wireless node delivers the versatile MicroStrain® wireless sensing platform to applications that require speed. With maximum sample rates up to 100 kHz, and support for most types of analog sensors, including accelerometers, strain gauges, load cells, & pressure sensors, the node includes full strain gauge conditioning and programmable offset.

The node is designed to log data to internal memory and upload wireless data to a host computer once logging is complete. Data is collected during periodic, user definable sampling sessions, at rates up to 100 kHz. Burst data is temporarily stored in a sample buffer (125,000 data points) and is then transferred to non-volatile, internal flash memory.

The bi-directional RF communications link can trigger logging from 70 meters (up to 100 m possible), or request that stored data be transmitted to the host PC for data acquisition and analysis.

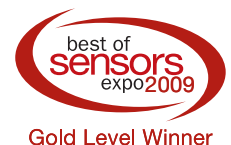
The node's scalable system architecture and programmable sensor interface enables a large network of nodes to simultaneously store dynamic data with node-to-node synchronization of ± 4 μ seconds.

Features & Benefits

- 2.4 GHz direct sequence spread spectrum radio is license free worldwide
- IEEE 802.15.4 open communication architecture
- high-speed, burst datalogging rates up to 100 KHz
- on-board buffer stores up to 125,000 measurements per sampling burst, 1,000,000 points can be stored in the node's non-volatile flash memory
- 16 bit A/D resolution
- communication range up to 70 m line-of-sight, 100 m with high gain antenna
- regulated 3 volt sensor excitation supports most analog sensors
- ultra low power consumption for extended use
- internal rechargeable battery
- 1 full differential input with optional Wheatstone bridge completion or 1 single ended 0-3 volt input

Applications

- condition-based monitoring of machines
- health monitoring of structures and vehicles
- smart structures and materials
- experimental test and measurement
- vibration and acoustic noise testing
- shock detection
- bearing failure monitoring

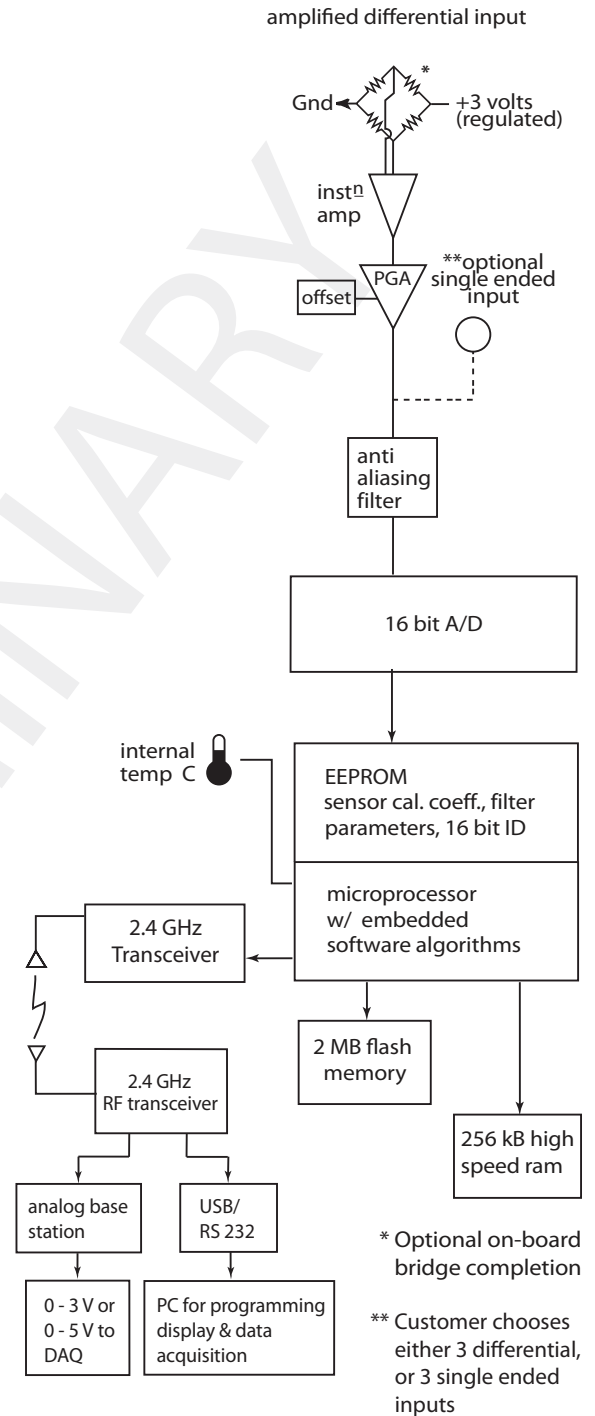




Specifications

Operating temperature range	-40 °C to +85 °C
Sensor inputs	1 full differential with optional Wheatstone bridge completion or 1 single ended 0 – 3 volt
Amplifier gain	software programmable: 20 – 2560 (custom settings optional)
Wheatstone bridge channel offset	software programmable
Sensor compatibility	pressure, strain, load, force, magnetic field, single ended 0 – 3 volt
RF transmission frequency	2.405 GHz to 2.480 GHz (16 software defined channels, 2 MHz wide, channel spacing 5 MHz)
RF channels	16
RF transmission range	70 m (line of sight), 100 m (with optional high gain antenna)
RF output power	0 dBm
Radio frequency (RF) transceiver carrier	2.4 GHz direct sequence spread spectrum, license free worldwide (2.405 2.480 GHz) - 16 channels, radiated power 0 dBm (1 mW)
Wireless data standard	IEEE 802.15.4
Data acquisition resolution	16 bit
Max data acquisition rate	100 KHz
Maximum sample burst period	1.25 seconds at 100 KHz (125,000 samples)
Synchronization between remote nodes	±4 µseconds
Non volatile memory	2 MB (1,000,000 data points)
Power supply	3.6 Volts DC
Mechanical dimensions	40.1 mm x 39.7 mm x 15.1 mm (without mounting ears or input connectors), 47.6 mm x 56.4 mm x 15.1 mm (with mounting ears and input connectors)
Environmental tolerances	IP67 rated industrial
Weight	24.8 grams (including battery)
Enclosure material	ABS plastic
Compatible base stations	USB, RS-232, WSDA®
Software	Node Commander®, Windows XP compatible

Connectors and potting are optional



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