

HS-Link™

High Speed Wireless Node



Introduction

With three differential mV level inputs, which include full strain gauge conditioning and programmable offset, HS-LINK™ is compatible with most types of analog sensors. Extremely fast and versatile, the HS-Link™ is designed to log data to internal memory and download data wirelessly to a host computer once logging is completed.

Data is collected during user definable periodic sampling sessions simultaneously on all three channels at rates up to 100 kHz. Maximum sample session is 3.3 seconds. These data are temporarily stored in the sample buffer (1,000,000 data points) and are then transferred to Micro SD memory.

The bi-directional RF communications link can trigger logging from 70 meters, or request stored data be transmitted to the host PC for data acquisition/analysis.

The scalable system architecture and programmable sensor interface enables a network of hundreds of nodes to simultaneously store dynamic data with node-to-node synchronization of 5 microseconds.

Features & Benefits

- 2.4 GHz direct sequence spread spectrum radio is license free worldwide
- IEEE 802.15.4 open communication architecture
- datalogging rates up to 100 KHz on all three channels for 3.3 seconds
- on-board buffer stores up to 1,000,000 measurements per sampling session
- stores up to 2000 sampling sessions in Micro SD memory
- communication range up to 70m line-of-sight, 300m with high gain antennas
- regulated 3 volt sensor excitation supports most analog sensors
- low power consumption for extended use
- internal rechargeable battery

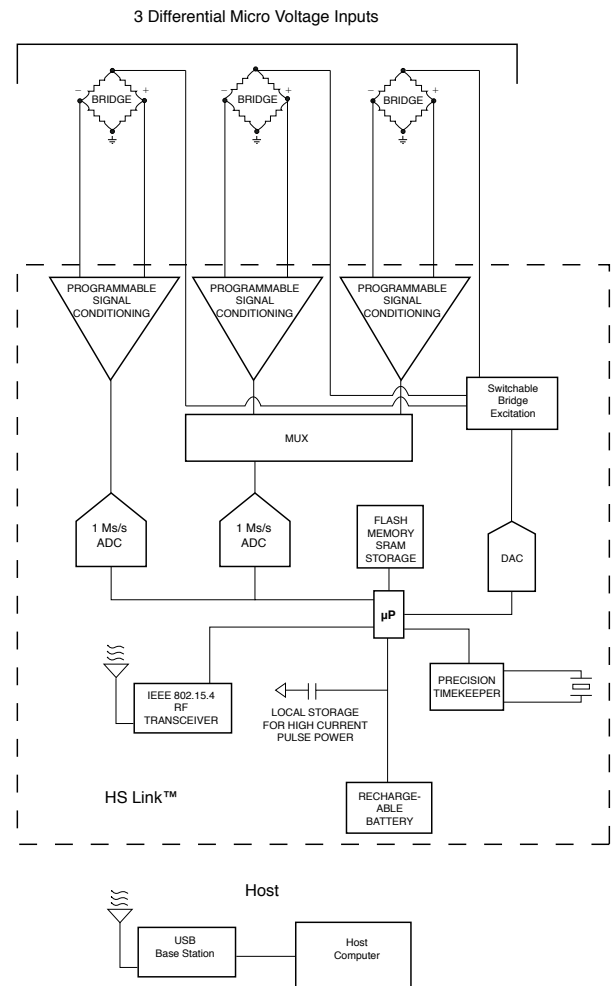
Applications

- 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	-45° C to +85°C
Sensor inputs	3 differential mV level input
Amplifier gain	Software programmable 10V-1,000V
Wheatstone bridge channel offset	Software programmable +/- 1.5V/Gain
Sensor compatibility	Pressure, Strain, Load, Force, Magnetic field (any sensor that can be arranged in a DC Wheatstone bridge)
RF transmission frequency	2.450 GHz- 2.490GHz
RF channels	16
RF transmission range	70 meters (line of sight)
RF output power	0dBm
RF modulation type	Direct Sequence Spread Spectrum
Wireless data standard	IEEE 802.15.4
Data acquisition resolution	16 bit
Max data acquisition rate	100,000 sweeps/second (1 sweep = 1 sample from each of three sensors)
Maximum sample period	3.3 seconds
Number of sampling sessions	2,000
Synchronization between remote nodes	+/- 5 microseconds
Data Storage on standard board	2 Megabytes SRAM + 4 gigabyte Micro SD memory card
Memory	1,000,000 data points
Power supply	3.6 Volts DC
Mechanical dimensions	1.5" w x 2" l x 1" h



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