LTG-LINK

Wireless Triaxial Accelerometer

Structural or seismic monitoring

LUNITEK

SEISMIC AND STRUCTURAL MONITORING

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Wireless Triaxial Accelerometer

The **LTG-Link** has an on-board triaxial accelerometer that allows high-resolution data acquisition with extremely low noise and drift. Additionally, derived vibration parameters allow for long-term monitoring of key performance indicators while maximizing battery life.

The Wireless Sensor Networks enable simultaneous, high-speed sensing and data aggregation from scalable sensor networks. Our wireless sensing systems are ideal for test and measurement, remote monitoring, system performance analysis, and embedded applications.

Users can easily program nodes for continuous, periodic burst, or event-triggered sampling with the software. The optional web-based cloud interface optimizes data aggregation, analysis, presentation, and alerts for sensor data from remote networks.

EASE OF USE

- End-to-End wireless sensing solution reduces development and deployment time
- Remote configuration, acquisition, and display of sensor data
- Optional web-based cloud platform optimizes data storage, viewing, alerts, and analysis.
- Easy custom integration with open-source, communications and command library (API)

APPLICATIONS

- Vibration monitoring
- Condition based maintenance (CBM)
- Impact and event monitoring

Analog Input Channels

- Measurement range **8g**: ±2 *g*, ±4 *g*, or ±8 *g* (user configurable)
- Measurement range **40g**: ±10 *g*, ±20 *g*, or ±40 *g* (user configurable)
- Noise density: **8g:** 25 µg/√ Hz, **40g:** 80 µg/√ Hz
- 0 g offset: **8g:** ±25 mg (±2g), **40g:** ±50 mg (±10g)
- 0 g offset vs Temperature: **8g**: ±.1 mg/ °C (typical), ±.15 mg/ °C (max); **40g:** ±0.5 mg/ °C (typical), ±0.75 mg/ °C (max)
- Integrated Sensors: Triaxial MEMS accelerometer, 3 channels
- Accelerometer bandwidth: DC to 1 kHz
- Resolution: 20-bit
- Scale factor error: <1% F.S.
- Cross axis sensitivity: 1%
- Sensitivity change (temperature): ±0.01%/°C
- Anti-aliasing filter: 1.5 kHz (-6 dB attenuation)
- Low-pass digital filter: 26 to 800 Hz (configurable)
- High-pass digital filter: Off to 2.5 Hz (configurable)

Integrated Temperature Channel

- Measurement range: - 40 °C to 85 °C
- Accuracy: ±0.25°C (over full range)

Sampling

- Sampling modes: Continuous, Periodic Burst, Event Triggered
- Output options: Acceleration, Tilt and Derived channels: Velocity (IPSrms), Amplitude (Grms and Gpk-pk), Crest Factor
- Sampling rates: 1 sample/hour to 4096 samples/second
- Sample rate stability: ±5 ppm
- Network capacity: Up to 128 nodes per RF channel
- Node synchronization: ±50 µsec
- Data storage capacity: 16 M Bytes (Up to 8,000,000 data points)

Operating Parameters

- Wireless communication range:
  - Outdoor/line-of-sight: 2 km (ideal)*, 800 m (typical)**
  - Onboard antenna: 1 km (ideal)*, 400 (typical)**
  - Indoor/obstructions: 50 m (typical)**
- Antenna: Surface mount or External through MMCX or U.FL connector
- Radio frequency (RF) transceiver carrier: License-free 2.405 to 2.480 GHz with 16 channels
- RF transmit power: User-adjustable 0 dBm to 20 dBm (Restricted regionally)
- Power source: 3.3 V dc to 36 V dc to solder pads
- Pulse Current***:
  Tx Power +20 dBm
  - VIN = 3.6 V 135 mA, VIN = 5.0 100 mA V, VIN = 12 V 45 mA

  Tx Power +16 dBm or less
  - VIN = 3.6 V 100 mA, VIN = 5.0 70 mA V, VIN = 12 V 32 mA
- ESD: ±4000 V (Applies to VIN, GND, Antenna and shield)
- External power with AC/DC adapter (9 ÷ 28 Vdc)
- Back-up LiPO4 battery, autonomy >20 days
- Energy balance controlled by microprocessor
- External battery pack and solar panel options
- Operating temperature: -40 °C to +85 °C
- Mechanical Shock Limit: 1000*g*/1.5ms

Physical Specifications

- Hermetic Case in anodized aluminum col. Black
- Dimensions: 12.3 x 6.4 x 3.5 mm
- Weight: ≈ 332 grams
- Mounting: 4x Slots for screws diam. 0.5 mm max
- Protection grade IP67
- Regulatory compliance: CE (European Union), FCC (USA), IC (Canada), JET(Japan)

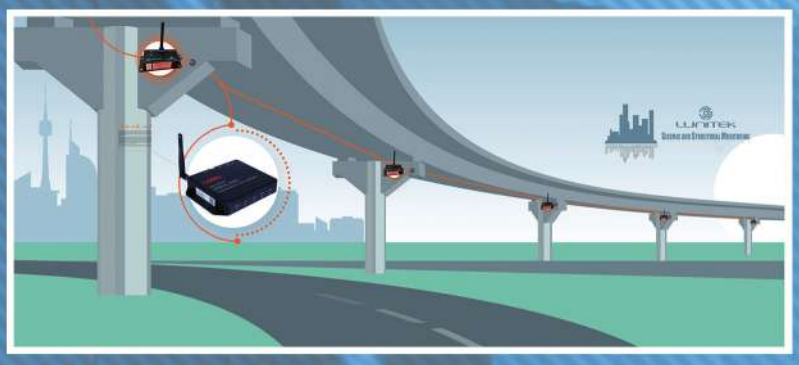
* Actual range varies with conditions

**Measured with antennas elevated, no obstructions and no RF interferers.

***Power source must supply short duration pulse currents as determined by the transmit power setting and the supply voltage.

Integration:

- Compatible gateways: All WSDA gateways
- Software: SensorCloud®, SensorConnect®, Windows 7/8/10 compatible
- Software development kit: http://www.microstrain.com/software/mscl



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www.lunitek-ssm.com

Main Characteristics

- On-board triaxial accelerometer with ±2 to ±40 g measurement range
- Continuous, periodic burst, and event-triggered sampling
- 20 bit resolution
- Output raw acceleration waveform data or derived vibration parameters (Velocity, Amplitude, Crest Factor)
- 1 Sample per hour to 4096 Samples per second
- Extremely low noise on all axis 25 µg/√Hz or 80 µg/√Hz
- High node syncronization ±50 µsec
- Wireless range up to 2 km (800 m typical)
- Wide input voltage from 3.3 to 36 VIP67 Protection grade
- IP67 Protection grade

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LUNITEK srl | via Variante Aurelia 115Bis | 19038 SARZANA [La Spezia] ITALY
Tel. [+39] 0187.692070 | fax [+39] 0187.622339 | info.sarzana@lunitek.it

Company with management system certificate No. 5010011753 according to UNI EN ISO 9001