

Sentinel™ IoT Wireless Sensor Data Streaming

Innovative, Wireless Corrective Measurement Transmitter

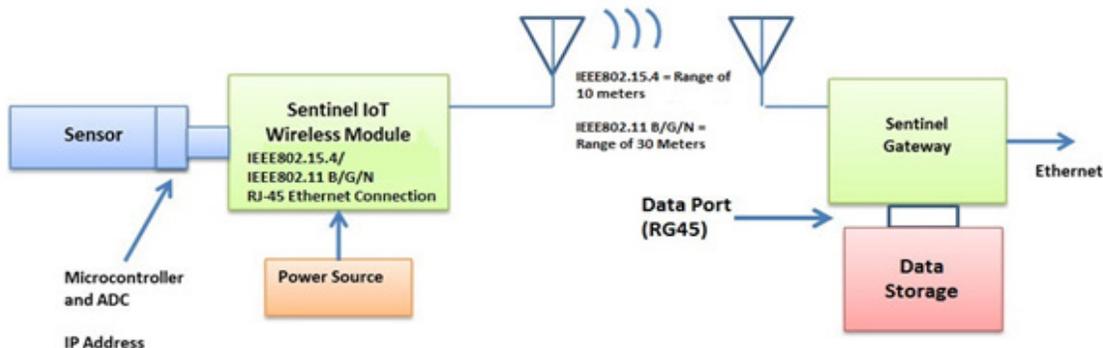


Features and Benefits

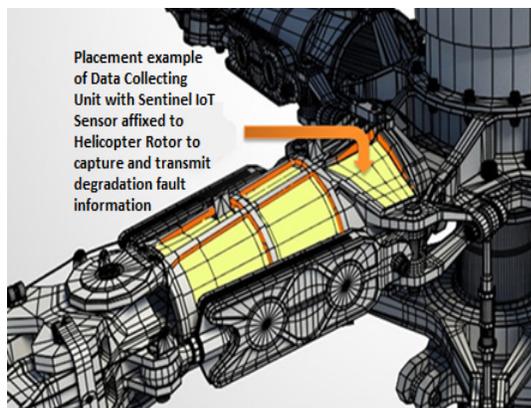
- Ridgetop IoT-enabled Structural Health Monitoring Transmission tool for real-time measurement and control.
- Versatile -- Can be used in lab, industrial, and factory automation applications.
- Eliminates bulky cables through Internet of Things (IoT) Wireless communication.
- When combined with a sensor, each sensor receives its own unique IP address.
- Wireless, low-power operation providing flexible configurations.

Sentinel Internet of Things (IoT) and IoT Wireless Transmission

Internet of Things (IoT) technology allows the placement of sensors on industrial equipment to be controlled by users remotely to monitor performance and functionality, or to manipulate programmed technology at a user's discretion. Ridgetop has been an early adopter for the implementation of technology that supports Industrial Internet of Things (IIoT) and the wireless solutions it represents to the business market.

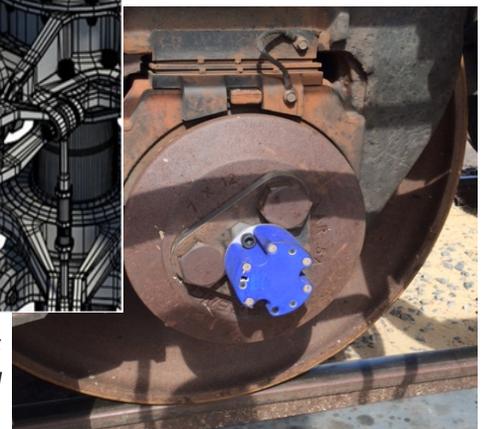


Ridgetop's **Sentinel IoT** is a versatile, wireless, low-power sensor that can be used in lab, industrial, and factory automation sectors, along with providing flexible configurations. It is designed to fit into small enclosures due to its small footprint. Recently, Ridgetop has supported customers who use Sentinel IoT for helicopter gear box monitoring, composite material monitoring, and railroad rolling stock installations.



Placement example of Data Collecting Unit with Sentinel IoT Sensor affixed to Helicopter Rotor to capture and transmit degradation fault information

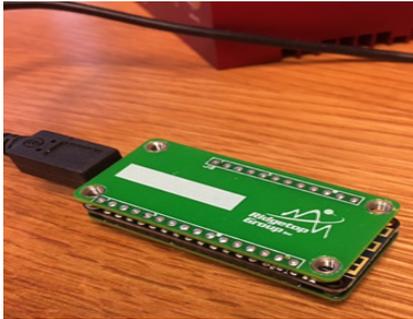
Sentinel IoT sensor placement for helicopter rotor and gear box monitoring



Sentinel IoT sensor placement on Ridgetop's RotoSense™ unit for locomotive wheel and railroad rolling stock installation

Sentinel IoT Wireless Sensor Data Streaming

Sentinel IoT, shown below, provides a means to stream sensor readings directly to the Sentinel Gateway™, the Ridgetop device that provides a path to the internet and cloud-based applications. Sentinel Suite™, available from Ridgetop, provides functionality to analyze the incoming data streams, and apply sophisticated anomaly detection algorithms to detect abnormal operating behavior of the monitored asset.



The Sentinel IoT (Left) and the Sentinel Gateway™ (Right) communicate seamlessly under Ridgetop's Sentinel Suite protocol, creating a proficient and optimum prognostic, transmission, and storing system.



Attribute	Specification	Comments
Protocol	IEEE802.15.4 along with IEEE802.11 B/G/N, including standard RJ-45 Ethernet connection.	2.4 GHz; Well above standard electronic switching rates
Transmission Range	10 Meters (30 Feet) for IEEE802.15.4 and 30 Meters (100 Feet) for IEEE802.11 B/G/N with range extenders available.	Longer distances possible through a mesh network topology
Sensor Input Range	4-10bit ADC, 8 -GPIO	Multi-I/O configuration
Time/Date-Stamps/GPS Coordinates	Provided by Sentinel Gateway after connection is made	Internal Real-time clock along with GPS synchronized time
IP Addressing Mechanism	Both Dynamic and Static IP support	User configurable
Software Drivers	TCP/IP socket interface	Multi-platform capable
Power Consumption	40ma	
Programming Port	Micro USB Connector	Utilizes standard USB tools
Size	.5 Inches High 2 Inches Long 1 Inch Wide	Special sizes available on request

About Ridgetop Group

Since its founding in 2000, Ridgetop has specialized in the development of advanced diagnostic and prognostic methods that are used to improve reliability, reduce downtime, and reduce the mean-time-to-repair (MTTR) of critical systems. Ridgetop also provides software-based development and monitoring tools supporting advanced condition-based maintenance (CBM) strategies.

Need modified or custom design? Contact Ridgetop at +1 520-742-3300 to discuss your ideal solution!

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