Long-range, wireless temperature and humidity monitoring on AWS IoT with Laird

Wirelessly collect, monitor, and analyze your environmental conditions performance in real time

Laird is an AWS Partner Network (APN) Advanced Technology Partner.

The opportunity

Monitoring and analyzing temperature and humidity is essential to drive cost savings and optimization in the cold chain monitoring, agriculture, and industrial Heating, Ventilation, and Cooling (HVAC) industries. Applications include:

- **Cold chain monitoring**: Keeping food or pharmaceutical supplies at the optimal temperature helps prevent costly spoilage.
- **Agriculture**: Maintaining specific environmental conditions within greenhouses helps minimize crop loss.
- **Industrial HVAC**: Sustaining specific temperatures can sometimes put heating and cooling systems to the test. By identifying machines in need of maintenance and performing it earlier, you can minimize downtime and larger, more costly repairs.

The challenge

Monitoring these environmental parameters in real time has historically been costly and difficult. Sensors have been expensive, difficult to install, and challenging to maintain at scale. Analytics solutions have required extensive IT developments and expertise.

The Laird solution

Laird’s Sentrius™ LoRaWANTM sensor and gateway, combined with Amazon Web Services (AWS) IoT Core, AWS IoT Analytics, and Amazon SageMaker offer a fast, robust, and scalable solution. Customers can quickly deploy cloud-connected sensor networks, and easily run sophisticated analytics on massive amounts of IoT data without having to worry about the cost and complexity typically required to build IoT analytics platforms. With Laird and AWS, you can streamline workflow efficiency, increase productivity, and avoid perishable product loss or damage across all your assets, wherever they are.

The Sentrius™ RS1xx makes long-range wireless sensors practical for even the most challenging applications. It leverages long battery life and an onboard microcontroller to bring wireless sensors to countless use cases, like greenhouses, industrial equipment, smart irrigation, storage, asset management, and more. Own the entire network and bring sensor data to the cloud with Laird’s RS1xx Series.

Benefits

- **Easy integration**: Get a production-ready sensor solution into your AWS ecosystem in days
- **Industrial hardware**: Begin using industrial grade sensors without having to use prototyping hardware
- **Robust wireless**: Reliably send sensor data from tough radio frequency (RF) environments quickly and securely
- **Customizable solution**: Laird can help customize any part of the solution to fit your needs
## Solution overview

### Laird's Sentrius LoRa Temperature and Humidity Sensors

Temperature and humidity are essential variables to monitor and analyze to drive cost savings and optimization in the cold chain monitoring, agriculture, and industrial HVAC industries. Laird’s Sentrius™ wireless LoRa® sensors and gateway enable you to easily get data from your facility into AWS IoT securely, reliably, and in real time. Laird can also work directly with your team to develop a proof-of-concept visualization in days.

### Laird on AWS IoT Core and IoT Analytics

Among other AWS services, Laird leverages AWS IoT Core, AWS IoT Analytics, and Amazon SageMaker as part of its temperature and humidity monitoring solution. IoT Core is a managed cloud service that lets connected devices easily and securely interact with cloud applications and other devices.

AWS IoT Analytics is a fully-managed service that makes it easy to run and operationalize sophisticated analytics on massive volumes of IoT data without having to worry about the cost and complexity typically required to build an IoT analytics platform.

## How it works

Laird’s Sentrius sensors are battery powered, long-range temperature and humidity sensors equipped with LoRaWAN and Bluetooth Low Energy (BLE) connectivity. They are compact and rugged to offer high performance and flexibility.

The Sentrius sensors connect to the RG1xx LoRaWAN-Enabled Gateway which is a secure, scalable, and robust LoRaWAN solution for end-to-end control of your private LoRaWAN network. Leveraging Laird’s field-proven wireless module, it also offers dual-band Wi-Fi, BT v4.0 (BLE and Classic) and wired Ethernet for design freedom. It also offers a LoRa range up to 10 miles and pre-loaded LoRa packet forwarder software, great for highly scalable, flexible IoT networks.

The Sentrius™ RG1xx Gateway connects to your AWS IoT endpoint through preconfigured connectivity to LoRaWAN network servers such as The Things Network (TTN) and their AWS IoT connectors. Once the data is flowing in to your AWS environment, you can build your own visualization and intelligence using tools like AWS IoT Analytics, or optionally work with Laird.

## Getting started

Laird is a long-established leader in providing secure, mission-critical wireless IoT connectivity hardware and services. Combined with the flexibility and scalability of AWS IoT, this solution makes it easier or faster to launch your temperature and humidity monitoring application.

Get Started with Laird long range, wireless temperature and humidity monitoring on AWS

Laird offering on Solution Space