# Sentrius™ RS1xx Series

Integrated Temperature and Humidity with LoRaWAN / BLE

## SECURE, SCALABLE WIRELESS SENSORS FOR LONG RANGE IOT APPLICATIONS



The Sentrius™ RS1xx Series is a **battery powered, long range integrated sensor platform** leveraging the benefits of LoRaWAN and Bluetooth Low Energy (BLE) connectivity. Its small, rugged form factor contains superior RF performance and flexibility with **precise temperature and humidity sensors**, and room for future expansions. At its core, the RS1xx series utilizes our field-proven and reliable RM1xx module hardware, providing **LoRaWAN** options in **868, 915, and 923 MHz** frequencies, plus **BLE** for local data display, configuration and troubleshooting. Based on the **Semtech SX1272** and **Nordic nRF51 silicon**, it offers a **LoRa range up to 10 miles** with a local 2.4 GHz connectivity option to smartphones and tablets. The RS1xx Series works with our Sentrius™ RG1xx Series of LoRa/multi-wireless gateways for simple out-of-the-box integration and is compatible with 3rd party cloud and LoRa network ecosystem partners.

- **Multi-wireless**: LoRaWAN (868/915/923 MHz) and Bluetooth v4.2 (Central/Peripheral) with fully integrated high-performance antennas
- **Multi sensor**: Temperature and humidity
- **Fully certified** for FCC/IC/CE/ASNZS/NCC and Bluetooth SIG
- **Simple wireless configuration** using mobile application and BLE.
- **Harsh Environments**: Robust enclosure to serve many varied installation needs
- **Integrated out of the box networks**: Default configuration with RG1xx gateways for simple, out-of-the-box cloud connectivity
- **New**: The Sentrius™ RS1xx Series now offers a range of additional sensor options available via expansion port. For more details, visit https://www.lairdconnect.com/wireless-modules/lorawan-solutions/sentrius-rs1xx-lora-enabled-sensors

## FEATURES AT A GLANCE

### YOUR WIRELESS NETWORK

Develop a fully-owned private LoRa network to capture, route, and process IoT data for your application - choose from RM1xx modules, RS1xx finished sensors or RG1xx Gateways

### RUGGED DURABILITY WITH A BROAD SENSOR ARRAY

Robust enclosures provide a robust and resilient platform for recording and delivering sensor data from a range of harsh environments

### COMPREHENSIVE SECURITY AND RELIABILITY

Robust multi-layer security at each interface to safeguard your network at every level

### BROAD CERTIFICATION AND APPROVALS

Ready for deployment in multiple regulatory domains - FCC, IC, CE, ASNZS, NCC, and Bluetooth SIG listing

### PLATFORM FOR BUILDING ACTIONABLE IOT INTELLIGENCE

Route sensor data to the cloud with our simplified wireless connectivity deployment

### PERSONAL SUPPORT FOR YOUR IMPLEMENTATION

Our Tier-2 support and engineering teams work to help configure and deploy your application

## APPLICATION AREAS



Cold Chain Management and Food Safety



Agricultural Humidity and Environmental Monitoring



Industrial Heating and Cooling

Interested in our RS1xx Sensor?
https://www.lairdconnect.com/wireless-modules/lorawan-solutions/sentrius-rs1xx-lora-enabled-sensors

## Specifications

| Category | Feature | Specification |
|---|---|---|
| **Chipset** | LoRa® | Semtech SX1272 |
| | Bluetooth® | Nordic nRF51822 – 256 k/32 k |
| | LoRa Frequencies | 863 – 870 MHz (EU), 902 – 928 MHz (US), 915 – 928 MHz (AU + AS923) |
| **Sensors** | Temperature Accuracy Ranges | -10° to +85°C (+/-0.4°C)<br>-40° to +125°C (+/-0.9°C) |
| | Humidity Accuracy Ranges | 0 – 90% RH (+/- 3%)<br>90 – 100% RH (+/- 4.5%) |
| **Antenna** | Integrated | Custom Laird Connectivity antenna for 868, 915, or 923 MHz<br>Ceramic chip antenna for 2.4 GHz |
| **Power** | Battery | 2 x AA - replaceable |
| **Software** | Mobile Application | Android & iOS – Remote sensor display and/or configuration + firmware update |
| **Storage** | Data logging | 10,000 measurements (256 k of flash memory available) |
| **LED** | Status | 3 – BLE and LoRa status |
| **Button** | User Input | Multi-use – default BLE pairing |
| **Physical** | Dimensions | 116 mm x 91 mm x 34 mm |
| **Environmental** | Operating Temp. | -25° to +50°C |
| | Storage Temperature | -40° to +50°C |
| **Regulatory** | Approvals | FCC, IC, CE, ASNZS, NCC, and Bluetooth SIG |
| **Warranty** | | 1-Year warranty |




The Sentrius™ RS1xx Series LoRa/BLE sensor features integrated antennas, temperature, and humidity sensors in rugged enclosures.

## Ordering Information

| Part Number | Description |
|---|---|
| 455-0001 | Sentrius™ RS1xx Sensor - 915MHz Temp/Humidity including LoRa and BLE – North America |
| 455-0002 | Sentrius™ RS1xx Sensor - 868MHz Temp/Humidity including LoRa and BLE – Europe |
| 455-00059 | Sentrius™ RS1xx Sensor - 923MHz Temp/Humidity including LoRa and BLE – Taiwan |
| 455-00060 | Sentrius™ RS1xx Sensor - 923MHz Temp/Humidity including LoRa and BLE – New Zealand |
| 455-00061 | Sentrius™ RS1xx Sensor - 923MHz Temp/Humidity including LoRa and BLE – Hong Kong |
| 455-00062 | Sentrius™ RS1xx Sensor - 915MHz Temp/Humidity including LoRa and BLE – Australia (AU915) |
| 455-00063 | Sentrius™ RS1xx Sensor - 923MHz Temp/Humidity including LoRa and BLE – Australia (AS923) |

**NEW**: The **Sentrius™ RS1xx Series** now offers a **range of additional sensor options** available via expansion port. For more details, visit https://www.lairdconnect.com/wireless-modules/lorawan-solutions/sentrius-rs1xx-lora-enabled-sensors