

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



Laird's 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 Laird's field-proven and reliable RM1xx module hardware, providing **LoRaWAN** options in **868 and 915MHz** 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 Laird's Sentrius™ RG1xx Series of LoRa / multi-wireless gateways for simple out-of-the-box integration, and is compatible with 3<sup>rd</sup> party Cloud and LoRa network ecosystem partners.

- **Multi-wireless:** LoRaWAN (868 / 915 MHz) and Bluetooth v4.2 (Central / Peripheral) with fully integrated high-performance antennas
- **Multi sensor:** Temperature and Humidity, (future options for a range of additional sensors via expansion port)
- **Fully certified** for FCC/IC/CE 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 Laird RG1xx gateways for simple, out-of-the-box cloud connectivity

#### 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

FCC, IC, CE and Bluetooth SIG listing (all pending)



##### PLATFORM FOR BUILDING ACTIONABLE IOT INTELLIGENCE

Route sensor data to the Cloud with Laird's simplified wireless connectivity deployment



##### PERSONAL SUPPORT FOR YOUR IMPLEMENTATION

Support works with Laird engineering to help configure and deploy your application

#### APPLICATION AREAS



Cold Chain Management and Food Safety



Agricultural Humidity and Environmental Monitoring



Industrial Heating and Cooling

# Sentrius™ RS1xx Temperature & Humidity Sensor with LoRa + BLE

Product Brief



## SPECIFICATIONS

Category	Feature	Specification
Chipset	LoRa®	Semtech SX1272
	Bluetooth®	Nordic nRF51822 – 256k / 32k
	LoRa Frequencies	863 – 870 MHz (EU), 902 – 928 MHz (US)
Sensors	Temperature	-10° to +85°C (+/-0.4°C)
	Accuracy Ranges	-40° to +125°C (+/-0.9°C)
	Humidity Accuracy Ranges	0 – 90% RH (+/- 3%) 90 – 100% RH (+/- 4.5%)
Antenna	Integrated	Custom Laird antenna for 868 or 915MHz Ceramic chip antenna for 2.4GHz
Power	Battery	2 x AA - replaceable
Software	Mobile Application	Android & iOS – Remote sensor display and/or configuration + Firmware Update
	Data logging	10,000 measurements (256k of flash memory available)
Storage	Status	3 – BLE and LoRa status
LED	User Input	Multi-use – default BLE Pairing
Button	Dimensions	116 x 91 x 34 mm
Physical	Operating Temp.	-25° to +50°C
Environmental	Storage Temperature	-40° to +50°C
Regulatory	Approvals	FCC, IC, CE, 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
455-0002	Sentrius™ RS1xx Sensor - 868MHz Temp / Humidity including LoRa & BLE
455-0004	Sentrius™ RS1xx Sensor - 868MHz Temp / Humidity including LoRa & BLE – Bulk Packaging
455-0001	Sentrius™ RS1xx Sensor - 915MHz Temp / Humidity including LoRa & BLE
455-0003	Sentrius™ RS1xx Sensor - 915MHz Temp / Humidity including LoRa & BLE – Bulk Packaging

## Did You Know?

LSR, a Laird Business, is a leader in Wireless Product Development, offering true end-to-end solutions through its array of services & technical expertise



### Design Services

- RF Hardware & Antenna Design
- Software/Firmware Development
- Mobile App / Cloud Development
- Industrial Design
- Mechanical Engineering



### EMC Testing & Certification

- On-Site FCC/IC/CE/Gitaki/RCM EMC Certification
- Wireless & Antenna Testing
- EMC Emissions Testing
- International Testing Services

sales@lsr.com  
262.375.5500  
www.lsr.com

Interested in Laird's RS1xx Sensor?  
See more at [www.lairdtech.com/rs1xx-lora-sensors](http://www.lairdtech.com/rs1xx-lora-sensors)

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Laird:

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