

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



Laird's Sentrius™ RS1xx External Series is a **battery powered, long range 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 **wide ranging external temperature probe**. At its core, the RS1xx External Series utilizes Laird's field-proven and reliable RS1xx Series 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 External 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
- **External Sensor Probe:** wide ranging temperature sensor on cabled IP67 probe
- **Fully certified** for FCC/IC/CE and Bluetooth SIG
- **Simple wireless configuration** using mobile application and BLE.
- **Harsh Environments:** Robust IP65 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



### 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

## KEY SPECIFICATIONS

| CATEGORY          | FEATURE              | SPECIFICATION                                                                |
|-------------------|----------------------|------------------------------------------------------------------------------|
| Chipset           | LoRa®                | Semtech SX1272                                                               |
|                   | Bluetooth®           | Nordic nRF51822 – 256k / 32k                                                 |
|                   | LoRa Frequencies     | 863 – 870 MHz (EU), 902 – 928 MHz (US)                                       |
| Temperature Probe | Temperature Accuracy | -10° to 85°C (+/-0.5°C)                                                      |
|                   | Ranges               | -55° to +125°C (+/-0.9°C)                                                    |
|                   | Dimensions           | Overall Length 1520mm. Stainless Steel end tube – 6.35mm DIA x 200mm Long    |
| 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 (Note external probe capable of -55 to 125°C)                  |
| Environmental     | Storage Temperature  | -40° to +50°C                                                                |
| Regulatory        | Approvals            | FCC, IC, CE, Bluetooth SIG                                                   |
| Warranty          |                      | 1-Year Warranty                                                              |



The Sentrius™ RS1xx External Series LoRa/BLE sensor features integrated antennas, external temperature probe and rugged IP65 enclosures.

## ORDERING INFORMATION

| PART NUMBER | DESCRIPTION                                                                                |
|-------------|--------------------------------------------------------------------------------------------|
| 455-0013    | Sentrius™ RS1xx External Sensor - 868MHz External Temperature Probe inc. LoRa & BLE        |
| 455-0010    | Sentrius™ RS1xx External Sensor - 868MHz External Temperature Probe inc. LoRa & BLE – Bulk |
| 455-0012    | Sentrius™ RS1xx External Sensor - 915MHz External Temperature Probe inc. LoRa & BLE        |
| 455-0009    | Sentrius™ RS1xx External Sensor - 915MHz External Temperature Probe inc. LoRa & BLE - Bulk |
| 455-0011    | External Temperature Probe Only (Single)                                                   |