

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/IMDA 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, IMDA 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

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 (AU915 + AS923)
Sensors	Temperature Accuracy	-10° to +85°C (+/-0.4°C)
	Ranges	-40° to +125°C (+/-1.1°C)
	Humidity Accuracy	0 – 80% RH (+/- 3%)
	Ranges	80 – 100% RH (+/- 4.5%)
		The humidity sensor is designed to work in environments where humidity is maintained between 20%RH and 80%RH. The sensor can work below 20%RH and above 80% RH, however the environment must be non-condensing.
Antenna	Integrated	Custom Laird Connectivity antenna for 868, 915, or 923 MHz 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, IMDA 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 – 915 MHz Temp/Humidity including LoRa and BLE – North America
455-0002	Sentrius™ RS1xx Sensor – 868 MHz Temp/Humidity including LoRa and BLE – Europe
455-00059	Sentrius™ RS1xx Sensor – 923 MHz Temp/Humidity including LoRa and BLE – Taiwan
455-00060	Sentrius™ RS1xx Sensor – 923 MHz Temp/Humidity including LoRa and BLE – New Zealand (AS923)
455-00061	Sentrius™ RS1xx Sensor – 923 MHz Temp/Humidity including LoRa and BLE – Hong Kong
455-00062	Sentrius™ RS1xx Sensor – 915 MHz Temp/Humidity including LoRa and BLE – Australia (AU915)
455-00063	Sentrius™ RS1xx Sensor – 923 MHz Temp/Humidity including LoRa and BLE – Australia (AS923)
455-00095	Sentrius™ RS1xx Sensor – 923 MHz Temp/Humidity including LoRa and BLE – Singapore

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>