

Features at a Glance

OPEN DEVELOPMENT DEVICE

Zephyr RTOS based board file available for the BT510 for you to develop your own applications on the device.

RUGGED PRODUCT WITH LONG RANGE BLE CONNECTIVITY

Gather sensor data from the harshest of environments and ensure your wireless signal gets through

MULTIPLE INTEGRATED SENSORS = MANY APPLICATIONS

Single sensor can support Bluetooth LE proximity beaconing, temperature sensing, motion, and impact, as well as open/close door sensing

SENSOR DATA TO CLOUD THROUGH THE LAIRD MG100 GATEWAY

Gather BT510 sensor data with MG100 and then send it over low power LTE-M / NB-IoT cellular networks to the cloud.

GLOBAL CERTIFICATIONS AND APPROVALS

Regulatory compliance for FCC, ISED, EU, UKCA, MIC, and RCM as well as Bluetooth SIG Qualification

INDUSTRY-LEADING SUPPORT

Laird Connectivity's Tier 2 and FAE support brings expert assistance to your integration, working with you and our engineering team to reduce your time to market.



Bluetooth v5 Long Range IP67 Multi Sensor

Rugged, multi-function Bluetooth 5
Open Development Device for your IoT application

Bluetooth® 5



Contact



Temperature



Proximity



Acceleration

The Sentrius™ BT510 Sensor is a battery powered, Bluetooth v5 Long Range integrated open development device enabling application development for robust, reliable sensor data transfer in the harshest of environments.

The Sentrius™ BT510 packs in more than just a IP67 temperature sensor, also seamlessly integrating open / close contact and motion / impact detection and Bluetooth LE beaconing capabilities.

The BT510 is powered by Laird Connectivity's field proven BL654 Bluetooth LE module that integrates Nordic Semiconductor's nRF52840 silicon for feature rich application development in the Cortex M4F with 1 MB Flash memory, which also enables integrated sensor data logging and storage. The ultra-low power sensor uses a single replaceable CR2477 coin cell battery, for a multi-year life and hassle-free, long-term maintenance.

The BT510 is a multi-sensor platform, with a magnetic reed switch sensor, temperature sensor, proximity sensor, and accelerometer. These multiple sensing capabilities support a massive array of use cases and applications, and its IP67 enclosure ensures robust protection for even the harshest of environments

- **Multi Sensor Platform** – Integrated temperature, accelerometer and magnetic reed switch sensors
- **Best-in-Class BTv5 Performance** – Bluetooth LE long range, secure connections and Bluetooth LE beaconing
- **Application Environment**
 - Utilize the Open source Zephyr RTOS to build your application using the Laird Connectivity BT510 Zephyr board file and sample applications.
 - Alternatively use legacy FreeRTOS binary application with supporting mobile apps (Note : No future firmware updates planned)
- **IP67 Enclosure** – A rugged IP67 certified enclosure with simple twist / lock design for hassle free maintenance
- **Replaceable Battery** – Ultra low power capabilities and replaceable CR2477 coin cell
- **Worldwide Approvals** – Device certified for FCC, ISED, CE, UKCA, MIC, RCM, and Bluetooth SIG
- **Customization** – Custom branding, packaging, application development all available!



Cold Chain Management
and Food Safety



Agricultural Humidity
and Environment
Monitoring



Industrial Heating
and Cooling

CATEGORY	FEATURE	SPECIFICATION
Wireless	Bluetooth® 5	Laird Connectivity - BL654 Module with Nordic nRF52840
	Processor	Cortex M4F – 1MB Flash and 256k RAM
Sensors	Temperature IC - Range	-40° to +125°C
	Temperature - Accuracy	+/-0.5°C
	Accelerometer	3-axis MEMS – Programable motion and contact detection
	Open/Close Contact	Omni polar magneto-resistive sensor
Antenna	Integrated	Onboard PCB antenna
Power	Battery	CR2477 coin cell - replaceable
Software	Zephyr Open-source Firmware	Zephyr RTOS board file available to help developers to build their own application
Storage	Data Logging	Up to 7 days of data at 15-minute read intervals (Temperature)
LED	Status	1 – multi state
Button	User Input	Multi-use
Mounting	Placement	Zip tie, industrial Velcro or screw
Physical	Dimensions	80 mm x 51 mm x 19 mm
Environmental	Operating Temp.	-20° to +60°C (coin cell battery is limiting factor)
	Storage Temp	-40° to +85°C
Regulatory	Approvals	FCC, ISED, CE, UKCA, MIC, RCM, and Bluetooth SIG
Warranty		One-year warranty
Customization	Options **	Branding on front label, packaging or mobile app Enclosure colors Pre-configuration options Custom firmware

** Dependent on commercial case

For full specifications on the BT510, please see the appropriate datasheet.

Ordering Information

PART	DESCRIPTION	PACKAGING
455-00083	Sentrius™ BT510 Sensor, Single	Single (1)
450-00048B	Sentrius™ BT510 Sensor, Bulk Packaged	Bulk (100)
455-00058B	Magnet Kit (Open/Close) for Sentrius™ BT510, Bulk	Bulk (100)