Features at a Glance

OPEN DEVELOPMENT DEVICE

Develop your own application to gather sensor data from the harshest environments and ensure the wireless signal gets through.

MULTIPLE SENSOR INTERFACE OPTIONS FOR ULTIMATE DESIGN CHOICE

Analog (voltage or current), digital inputs, dry contact, digital outputs, I2C, UART, SPI, and external sensor power source.

BROAD CERTIFICATION AND APPROVALS

Fully certified for FCC, ISED, CE, UKCA, MIC, and AS/NZS as well as Bluetooth SIG listing.

ZEPHYR BASED OPEN-SOURCE FIRMWARE

Application development environment using nRF Connect SDK / Zephyr RTOS SDK for customizable applications

PERSONAL SUPPORT FOR YOUR IMPLEMENTATION

Partner with Laird Connectivity's Tier 2 support and engineering to help configure and deploy your application.

Sentrius™ BT610 I/O Sensor + AC Current Assemblies

Open Development device

Long Range Bluetooth 5 Sensor + AC Current Assemblies (**sold separately**

Laird Connectivity's **Sentrius™ BT610** I/O Sensor with Bluetooth 5 turns your wired sensors into IP67-rated battery-operated wireless nodes, providing robust, secure, and cloud ready messaging. Leveraging our BL654 module, it provides full Bluetooth 5 capabilities, opening up industrial and equipment monitoring applications.

This configuration is designed with three-phase AC current measurement in mind, enabling customers to develop their own application on the device to monitor an electrical load profile remotely using a current sense method. It enables users to read and report sensor data to the cloud and define alarm conditions.

There are two application development paths on offer;

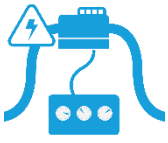
- Using our Canvas platform firmware and sample applications as the basis for your application giving a head start on your development
- Ground up using Zephyr RTOS board files provided by Laird Connectivity

- **Software / RTOS Envrionment:**
  - nRF Connect SDK / Zephyr RTOS SDK for customizable applications
- **Option for Canvas Device Management**
  - Application development environment to develop Canvas device management
  - Advanced deployment tools including mobile app (Android and iOS) to register devices, and engineering services support.
- **Three measurement ranges** of AC Current Sensor for measuring the RMS current of an AC system:
  - 0 – 20 Arms
  - 0 – 150 Arms
  - 0 – 500 Arms
- **Comprehensive Certifications** for FCC, ISED, CE, UKCA, AS/NZS, MIC
- **Industrial temperature range** (-40º to +85º C)
- **Industrial IP67 enclosure**
- **Industry-leading support** works directly with our engineers to help customize and deploy your design.
- **Replaceable large capacity battery**

Zephyr™ Project

NORDIC SEMICONDUCTOR

Bluetooth®



AC Current Monitoring

Industrial Monitoring

Machine Monitoring And Control

Shared Specifications

Category	Feature	Specification
Chipset	Bluetooth® 5	Laird Connectivity BL654 module with Nordic nRF52840
	Processor	Cortex M4F – 1 MB Flash and 256 k RAM
Antenna	Integrated	Laird Connectivity FlexPIFA
Interfaces	Wired	Internal screw terminal block for sensor connections Relevant to this focused application: 4x Analog inputs Refer to BT610 - Hardware Configuration and Installation Guide for sensor connection guidance.
	Buttons	2x buttons (accessible with cover removed) for reset, configuration, and pairing
	Magnet switch	1x for pairing
	LED Indicator	Red/green indicator visible outside housing for configuration, pairing, and activity indication
Power	Battery	3.6V Lithium Thionyl Chloride AA size - replaceable
Software	Configuration	Application development environment using nRF Connect SDK / Zephyr RTOS SDK for customizable applications Example applications provided as support
	Device Manager	Canvas Device Management can be enabled by customer Contact Laird Connectivity for details.
	Programming	Field accessible 10-pin ARM Cortex micro header (cover removed)
Device Programming	Tools	Laird Connectivity USB-SWD Programming Kit (453-00062-K1) 6 Pin Dupont Connector Male-to-Female header jumper wires cable
Regulatory	Approvals	FCC, ISED, CE, UKCA, AS/NZS, MIC, and Bluetooth SIG
Physical	Dimensions	126.5 mm x 81.5 mm x 40 mm
Environmental	Operating Temp.	-40° to +85°C
Enclosure	Housing	IP67 moulded Polycarbonate plastic housing with pressure equalizing vent and removable cover
	Tamper Detection	Indication provided when cover is removed during operation
	Cable Glands	4x M12 waterproof inlets with IP-rated gaskets for wiring to external sensors
	Plugs	3x M12 waterproof plugs with IP-rated gaskets to cap off inputs where not required
	Mounting	Screws, bracket mounts
Accessories	Included	Magnet (for external activation of pairing mode)
Warranty		1 year
Customization	Options**	Branding on front label, packaging, or mobile app. Enclosure colors. Custom firmware

**Dependent on commercial case

AC Current Sensor (133-00720, 133-00721, 133-00722)

The AC current sensor probes enable the BT610 to measure the RMS current of AC systems. Up to 3 individual AC current sensors supported per BT610.

Feature	Specification		
Current Measurement Range	0 – 20 Arms AC Current (133-00720)	0 – 150 Arms AC Current (133-00721)	0 – 500 Arms AC Current (133-00722)
Absolute Maximum CT current	30 Arms	200 Arms	600 Arms
Frequency Measurement Range		50 – 60 Hz	
Accuracy		±2%	
Sensor Operating Temperature		-30˚C to +60˚C	
Current Sensor Cable Length		1 m (+/-20 mm)	
Current Transducer Dimensions	31.9 x 32 x 65 mm	31.9 x 32 x 65 mm	57 x 38.4 x 81.5 mm
Customization Options*		Current Sensor cable length	

*Dependent on commercial case

Ordering Information

Note: Sensor cable assemblies sold **separately**. Order a BT610 I/O Sensor in addition to your chosen sensor assemblies.

Part	Description
450-00121-K1	Sentrius™ BT610 I/O Sensor – including magnet kit
450-00136B	Sentrius™ BT6xx Magnet Kit – bulk (50x magnets)

Cable Assemblies

Part	Description
133-00720	Sentrius™ BT6xx 0-20 Arms AC Current Sensor Assembly
133-00720B	Sentrius™ BT6xx 0-20 Arms AC Current Sensor Assembly – BULK carton 15pcs
133-00721	Sentrius™ BT6xx 0-150 Arms AC Current Sensor Assembly
133-00721B	Sentrius™ BT6xx 0-150 Arms AC Current Sensor Assembly – BULK carton 15pcs
133-00722	Sentrius™ BT6xx 0-500 Arms AC Current Sensor Assembly
133-00722B	Sentrius™ BT6xx 0-500 Arms AC Current Sensor Assembly – BULK carton 15pcs

Introducing

CANVAS™ DEVICE MANAGER

Laird Connectivity's industry leading IoT sensors and gateways are deployed and successfully enhancing business outcomes for customers every day. As these systems grow, ensuring uptime poses larger, more complex tasks demanding additional tools to manage.

Introducing Canvas™ Device Manager, our device management platform that simplifies workflows for configuration and maintenance of IoT device deployments. Easily setup your devices, monitor performance, and keep software up-to-date across your entire IoT device fleet.

Remote Device Management Platform

Canvas Device Manager expands our world class hardware with software services that support key device management workflows. Product developers benefit from a cohesively designed hardware + software solution ensuring robust connectivity is maintained in the field. Canvas Device Manager will continue to grow alongside our products ensuring compatibility across the ecosystem. Get started with our gateway and sensor open development devices today.

Why Device Management?

Control your devices

Remotely manage device parameters and monitor performance, keeping your IoT-driven services and revenue streams online.

Deliver end-to-end solutions

View and organize large numbers of devices to quickly build and maintain IoT solutions for your enterprise customers.

Cut the cost of ownership

Reduce time-to-market with pre-provisioned devices, remotely apply software updates and rapidly scale up your solutions.

Ensure your devices are secure

Remotely deploy software updates to your fielded devices, allowing rapid response to the accelerating pace of security attacks.

Keep your devices compliant

Ensure devices are configured the way you need to keep your valuable data streams online.

A path to scalability

API-based access to devices reduces the need for on-site assistance by automating management of a large number of IoT devices.

Supported Features

- Fleet Management
- Provisioning
- Monitoring & Alerts
- Software Management
- Security

Learn more at lairdconnect.com/iot-software/canvas-device-manager

Laird CONNECTIVITY