Sentrius™ MG100 Gateway

Multi-wireless IoT gateway with LTE-M/NB-IoT and Bluetooth 5.

Features at a Glance

WIRELESS CONNECTIVITY

Gather data with long range Bluetooth 5 and then send it over high-performance LTE-M /NB-IoT cellular networks to the cloud.

STAY SECURE

Our bootloader architecture creates secure devices that only run approved software.

CERTIFIED FOR DEPLOYMENT AROUND THE WORLD

Regulatory approvals for FCC (USA), ISED (Canada), CE (Europe) and cellular approvals PTCRB, GCF, AT&T, Verizon, and Vodafone certifications (all pending).

CUSTOM APPLICATION DEVELOPMENT

Leverage the Sentrius MG100's sample application codebase to easily connect and send data to AWS or develop your own Zephyr applications.

PERSONAL SUPPORT AND SERVICES FOR YOUR IMPLEMENTATION

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

Powered by Laird Connectivity's Pinnacle™ 100 Modem, the **Sentrius MG100 Gateway** captures data from Bluetooth 5 long range sensors and sends it to the cloud via a global low power cellular (LTE-M / NB-IoT) connection.

Get Started Quickly

The out-of-box Starter Kit solution includes Laird Connectivity's innovative Sentrius™ BT510 Bluetooth 5 Multi-Sensor platform, with Bluegrass Cloud portal for a seamless out of the box end to end solution for your IoT application.

Custom Application Development

Leverage the power and simplicity of Zephyr RTOS programming on the integrated Cortex-M4F microcontroller to tailor your application specifically for your needs.

Flexible Power Options

Power the gateway with an external USB power supply with product options for a rechargeable backup battery in the event of a short-term power outage.

Antenna Choice

Use low cost internal LTE and BT antennas or choose the external antenna variants to suit your application environment.

- LTE-M / NB-IoT radio via Sierra Wireless HL7800 module (Chipset: Altair ALT1250)
- LTE bands 1, 2, 3, 4, 8, 12, 13, 20, 28
- Nordic nRF52840 – BT v5, Coded PHY (Long range), 1MPHY & 2MPHY support
- Onboard Cortex-M4F Microcontroller – 32-bit @ 64 MHz, 256 KB of RAM, 1 MB internal flash, 8 MB QSPI
- Certifications – FCC, IC, CE, BT SIG plus PTCRB, GCF and End Device certified – AT&T, Verizon, Vodafone (all pending)
- Flexible Programming – Design your way: hostless mode via Zephyr RTOS or Hosted mode AT Command Set
- Secure Firmware Upgrade – Comes pre-programmed with Laird's secure bootloader.
- Antenna Options – Unique integrated antenna variant plus external variant with SMA connectors
- Compact Form Factor: 110.28mm x 99.16mm x 35.32mm
- Customization – Custom branding, packaging, application development all available.

Bluetooth 5 Sensor Connectivity | Industrial IoT | Cold Chain Monitoring | Smart Buildings | Transportation

SENTRIUS MG100 GATEWAY SPECIFICATIONS		
Wireless	Bluetooth	▪ BT 5.0 – Single mode ▪ 4x Range (CODED PHY support) – BT 5.0 ▪ 2x Speed (2M PHY support) – BT 5.0 ▪ LE Advertising Extensions – BT 5.0 ▪ Concurrent master, slave ▪ BLE Mesh capabilities ▪ Diffie-Hellman based pairing (LE Secure Connections) – BT 4.2 ▪ Data Packet Length Extension – BT 4.2 ▪ Link Layer Privacy (LE Privacy 1.2) – BT 4.2 ▪ LE Dual Mode Topology – BT 4.1 ▪ LE Ping – BT 4.1
	Cellular	▪ Multi-Band cellular operation for world-wide operation ▪ Category LTE M and category NB-IoT support ▪ Power class 3 ▪ Sensitivity: Cat-M1: -105 dBm ▪ Sensitivity: Cat-NB1: -114 dBm
Compute	MCU	Nordic nRF52840 Cortex-M4F
Memory	RAM	256 KB
	Onboard Flash	1 MB
	Additional Storage	SD card support ***(SD card not included)***
External Interfaces	USB	1x USB 2.0 Host
	SD Card	1x MicroSD slot (SDHC, SD Card 2.0) for additional external storage
Physical	Dimensions	110.28mm x 99.16mm x 35.32mm
Electrical	Input Voltage	4.35-5.5V (standard USB power)
Accelerometer	Ultra-low power	Consumption down to 2 µA
	Sensitivity	±2g/±4g/±8g/±16g dynamically selectable full scale
	Input	I2C
NFC	Specification	13.56 MHz, Data rate 106 kbps, NFC Type2 and Type4 tag emulation
Temperature	Operating Range	-40° to +80° C (*non battery back up version)*
Power	Battery Backup	Lithium Ion 18650 Size
		2600 mAh Standard Capacity
		Built In Protection Circuit Module (PCM)
Certifications	Regulatory	FCC (US), ISED (Canada), CE (Europe)
	Industry	PTCRB, GCF
	Carrier	AT&T, Verizon, Vodafone (all pending)

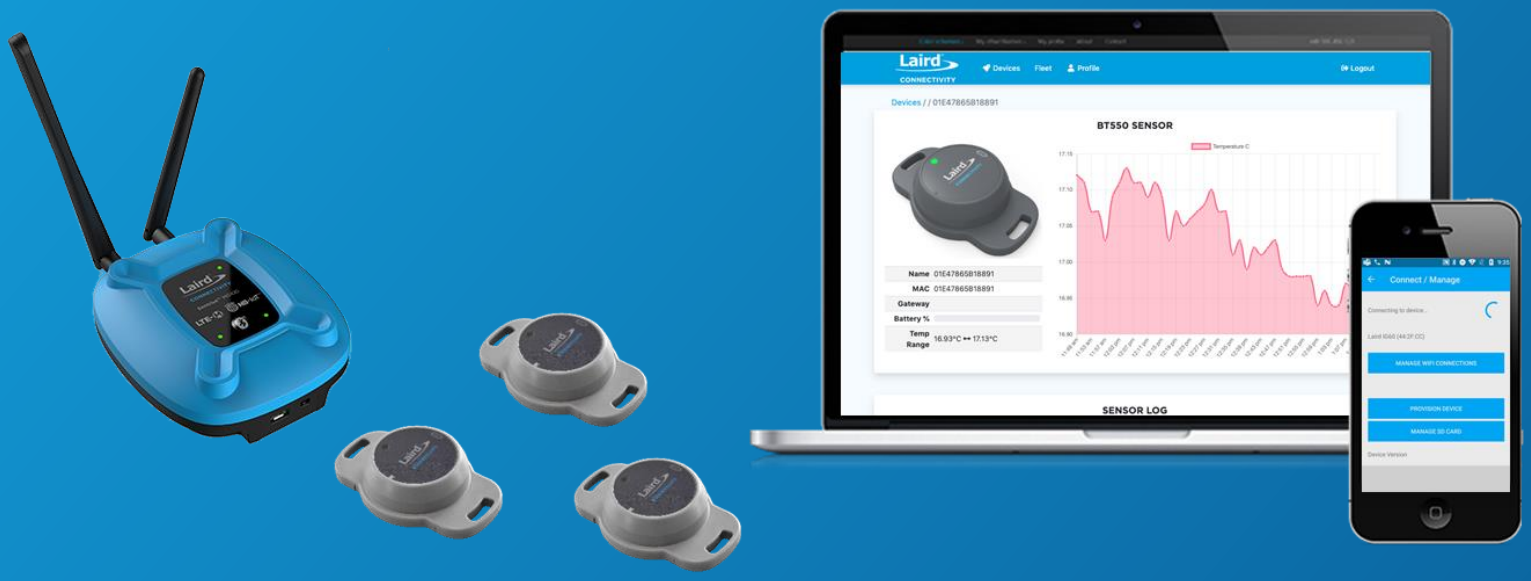
Ordering a Sentrius MG100

Micro-Gateways

PART NUMBER	DESCRIPTION
450-00011-K1	Sentrius MG100 Micro Gateway, LTE-M & NB1 Modem, BLE, MVNO SIM
450-00038-K1	Sentrius MG100 Micro Gateway, LTE-M & NB1 Modem, BLE, Battery Backup, MVNO SIM
450-00039-K1	Sentrius MG100 Micro Gateway, LTE-M & NB1 Modem, BLE, External Antenna, MVNO SIM
450-00054-K1	Sentrius MG100 Micro Gateway, LTE-M & NB1 Modem, BLE, External Antenna, Battery Backup, MVNO SIM

Power Supplies

PART NUMBER	DESCRIPTION
223-00010	AC Adapter, 5V-2A, US, 5-pin Micro-B USB Plug
223-00011	AC Adapter, 5V-2A, EU, 5-pin Micro-B USB Plug
223-00012	Adapter, 5V-2A, UK, 5-pin Micro-B USB Plug



Laird Connectivity's Sentrius™ MG100 - Wireless IoT Starter Kit

Everything you need in one box to start your wireless IoT proof-of-concept in minutes.

Contains:

- 1 x Sentrius MG100 Micro Gateway, LTE-M & NB1 Modem, BLE, External Antenna, Battery Backup, MVNO SIM
- 3 x Sentrius™ BT510 – Bluetooth 5 Multi Sensor, IP67 – Temperature, Shock / Movement & Open / Close contact
- 3 x Regional Power Supplies (U.S./EU/UK)

Use Cases:

- Cold chain transportation monitoring
- Predictive Maintenance
- Industrial IoT
- Discover the power of Bluetooth 5, long-range battery-powered sensors

DESCRIPTION	PART NUMBER
455-00120 - Kit, Starter, Sentrius MG100 Micro Gateway & BT510	455-00120

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Laird Connectivity:

450-00054-K1 223-00010 223-00011 450-00038-K1 450-00011-K1 450-00039-K1 455-00120 223-00012