

# Features at a Glance

## WIRELESS AND WIRED CONNECTIVITY

Gather data via Bluetooth 5, Ethernet, Serial, and USB, and then send it over high-performance 2x2 MIMO 802.11ac Wi-Fi or Global LTE Cat 1 (3G/2G fallback) to the cloud.

## SOFTWARE SUPPORT FOR THE CLOUD-NATIVE OR EMBEDDED-EXPERT

Choose the best software for you – go cloud-native with built-in integration of AWS IoT and AWS IoT Greengrass or use our long-term supported Linux BSP.

## SIGNED AND SECURED AT EVERY LAYER

Our Chain of Trust architecture creates secure devices that only runs approved software and stores data and files in encrypted memory.

## STAY SECURE FOR YEARS

Get peace of mind with Laird Connectivity's continuous security updates to the Laird Connectivity OS. With the AWS variant, get updates deployed over-the-air right to your gateways in the field.

## CERTIFIED FOR DEPLOYMENT AROUND THE WORLD

Regulatory approvals for FCC (USA), IC (Canada), CE (Europe), MIC (Japan), UL. LTE variants carry PTCRB, GCF, AT&T.

## 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.



# Sentrius™ IG60 Wireless IoT Gateways

Multi-wireless IoT gateways with Bluetooth 5, Wi-Fi, LTE Cat 1, Ethernet, USB, Serial (RS-232/422/485), and SD card

- Best-in-class wireless performance with Bluetooth 5, 802.11ac Wave 2 Wi-Fi, Global LTE Cat 1
- Over-the-air security and application updates and hardware root-of-trust security
- Cloud-native software and mobile app allows AWS connectivity in minutes with no coding
- Linux BSP provides an option for embedded experts

## The Sentrius™ IG60 brings all of Laird Connectivity's industrial wireless and IoT capabilities into one unique solution.

Based on Laird Connectivity's 60-series and BL654, capture data from legacy serial (RS-232, 422, 485) industrial devices or Bluetooth 5 sensors, add edge intelligence, and send to the cloud with 802.11ac Wi-Fi and global LTE Cat 1 (3G/2G fallback) wireless connectivity.

### For cloud-native organizations:

#### AWS IoT Greengrass Version:

- Manage your applications over-the-air, from the cloud, using integrated AWS IoT Greengrass
- Take the expertise out of deployment with our iOS and Android mobile app
- Stay secure in the field with automatic over-the-air security updates for 2 years

### For embedded Linux experts:

**Laird Connectivity Linux Version:** A long-term supported, open platform for your application, provided with our Linux Buildroot platform, hardware root of trust, and development tools.

- 802.11ac Wave 2 Wi-Fi (Marvell 88W8997) - 2x2 MIMO
- Onboard Cortex A5 (Microchip SAMA5D36)
- Nordic nRF52840 (IG60-BL654 variant only) – BT v5, Coded PHY (long range), 2MPHY, Cortex-M4F co-processor
- LTE Cat 1 global connectivity with 3G/2G fallback (Gemalto PLS62-W, LTE variants only)
- Industrial Temp Range – Operating range -30° to +85° C (+60° C for LTE variants)
- Globally & Carrier Certified – FCC, IC CE, MIC, UL, BT SIG plus PTCRB, GCF and End Device certified – AT&T
- Native AWS IoT Greengrass integration – iOS and Android mobile app allow connection to your AWS account in minutes with no coding
- Long term OS updates, delivered over-the-air (AWS variant only) or through Laird Connectivity's support team (Linux variant)
- Hardware root-of-trust based secure boot



Bluetooth 5 Sensor Connectivity



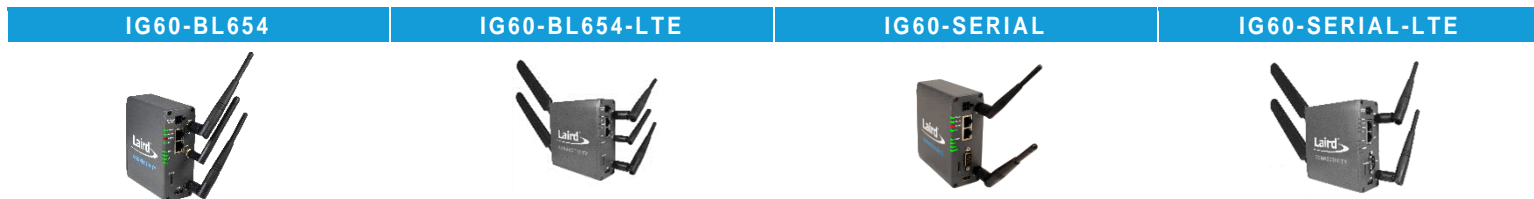
Industrial IoT



Medical IoT



Smart Buildings



**COMMON TO ALL IG60 GATEWAYS**

<b>Compute</b>	MPU	Microchip SAMA5D36 – Cortex A5, 536 MHz
<b>Memory</b>	RAM	256 MB LPDDR RAM
	Onboard Flash	512 MB NAND Flash
	Additional Storage	SD card support
<b>External Interfaces</b>	Ethernet	1x 10/100 Mbit/s and 1x 10/100/1000 Mbit/s with IEEE 1588
	USB	1x USB 2.0 Host
	SD Card	1x MicroSD slot (SDHC, SD Card 2.0) for additional external storage
<b>Wi-Fi</b>	Wi-Fi Standard	802.11ac with 2x2 MU-MIMO
	Radio	Marvell 88W8997
	Security Standards	WEP, WPA, WPA2, EAP-FAST, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-TLS*, EAP-TTLS* *Note: Available with Linux software version only
<b>Physical</b>	Dimensions	85mm x 22mm 100mm (without antennas or mounting brackets)
<b>Electrical</b>	Input Voltage	9-30 VDC (AC power adapters available)
<b>Environmental</b>	Relative Humidity	0-95% Non-condensing

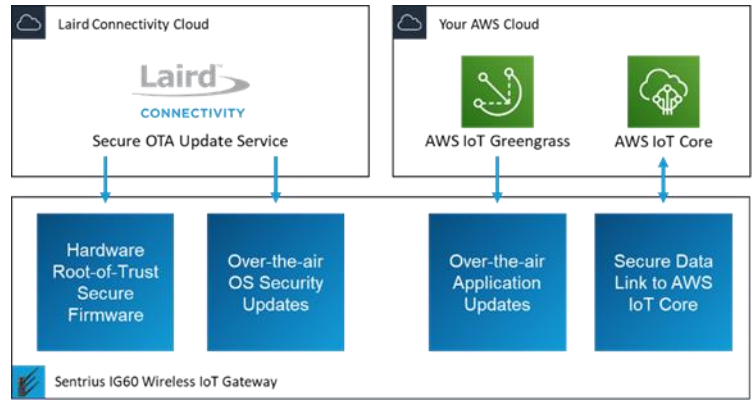
	IG60-BL654	IG60-BL654-LTE
<b>With Bluetooth Co-Processor</b>		
<b>Specification</b>	Bluetooth 5	Bluetooth 5
<b>PHY Support</b>	LE, 1M, 2M	LE, 1M, 2M
<b>Radio</b>	Nordic nRF52840	Nordic nRF52840
<b>CPU</b>	Cortex-M4F	Cortex-M4F
	1 Mbit Flash	1 Mbit Flash
<b>Memory</b>	256k RAM	256k RAM
	Laird <i>smartBasic</i>	Laird <i>smartBasic</i>
<b>Software</b>	Nordic SoftDevice	Nordic SoftDevice
	Zephyr	Zephyr
	FreeRTOS	FreeRTOS
<b>Cellular</b>	N/A	
Radio		Gemalto PLS62-W
Region		Global
4G LTE		Bands 1,2,3,4,5,7,8, 12,18,19,20,28
3G		Bands 1,2,4,5,8,9
2G		850, 900, 1800, 1900 MHz
<b>Certifications</b>		
RF	FCC, IC, CE, MIC	FCC, IC, CE, MIC
Safety	CE, UL, IEC62368-1	CE, UL, IEC62368-1
Cellular Certifications	N/A	PTCRB, GCF, AT&T, Vodafone
<b>Operating Temperature</b>	-30° to +85°C (-22° to +185°F)	-30° to +60°C (-22° to +140°F)
<b>Antenna Ports</b>	3x SMA, front-face	3x SMA, front-face 2x SMA, back-face
<b>Mounting</b>	DIN-rail, wall mount	Wall mount only

	IG60-SERIAL	IG60-SERIAL-LTE
<b>With Serial Port</b>		
<b>Connector</b>	1x DB-9	1x DB-9
<b>Standards</b>	RS-232/422/485	RS-232/422/485
<b>Isolation</b>	1.5 kV	1.5 kV
<b>Protocols</b>	ASCII	ASCII
	Modbus	Modbus
	Proprietary	Proprietary
<b>Bluetooth</b>		
Specification	Bluetooth 4.2	Bluetooth 4.2
Radio	Marvell 88W8997	Marvell 88W8997
Software	BlueZ (HCI)	BlueZ (HCI)
<b>Cellular</b>	N/A	
Radio		Gemalto PLS62-W
Region		Global
4G LTE		Bands 1,2,3,4,5,7,8, 12,18,19,20,28
3G		Bands 1,2,4,5,8,9
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<b>Operating Temperature</b>	-30° to +85°C (-22° to +185°F)	-30° to +60°C (-22° to +140°F)
<b>Antenna Connectors</b>	2x SMA, front-face	2x SMA, front-face 2x SMA, back-face
<b>Mounting</b>	DIN-rail, wall mount	Wall mount only

## For cloud-native organizations without embedded or wireless expertise

Sentrius IG60 with integrated AWS IoT Greengrass, deployment tools, and managed IoT security services

- Securely connect to your AWS cloud in minutes with a mobile app – *no coding or compiling required!*
- Deploy your applications instantly, over-the-air, using AWS IoT Greengrass
- Data flows directly to your cloud via AWS IoT Core
- Gateways in the field receive automatic, over-the-air security updates
- All gateway firmware is secured out-of-box with a hardware root-of-trust



<b>IoT Technology</b>	Application	AWS IoT Greengrass
	Scripting Languages Supported	Python, Node.JS
	Data Broker	AWS IoT Core (MQTT)
	IoT Security	X.509 Certificates
	Mobile App Support	iOS, Android
<b>Embedded Security</b>	Secure Boot	Hardware Root-of-Trust Enabled
	Over-the-Air Linux Security Updates	2 years

## For engineering organizations with embedded experience looking for multi-wireless connectivity

Sentrius IG60 with Laird Linux and Chain of Trust Security

- Develop your application on top of a long-term supported (LTS) Buildroot environment
- Complete set of development tools including precompiled SDK and tool chain, IDE support, and a host communications API
- Annual major releases and bi-annual minor releases for new security updates
- Achieve best-in-class wireless performance using our performance-optimized Wi-Fi supplicant and Bluetooth programming language, *smartBasic* (IG60-BL654 only).
- Secure processes for secure boot and ongoing security maintenance via Laird's Chain of Trust



<b>Linux</b>	Linux Kernel	v4.19
	Build Environment	Buildroot
	Development Tools	Use precompiled SDKs & images or build your own. Host communications API, Eclipse IDE Support, Laird Connection Manager
<b>Security</b>	Chain of Trust	Secure boot, encrypted file system

# One wireless IoT hardware platform. Two software approaches to match your needs.

## Ordering a Sentries IG60

### Gateways

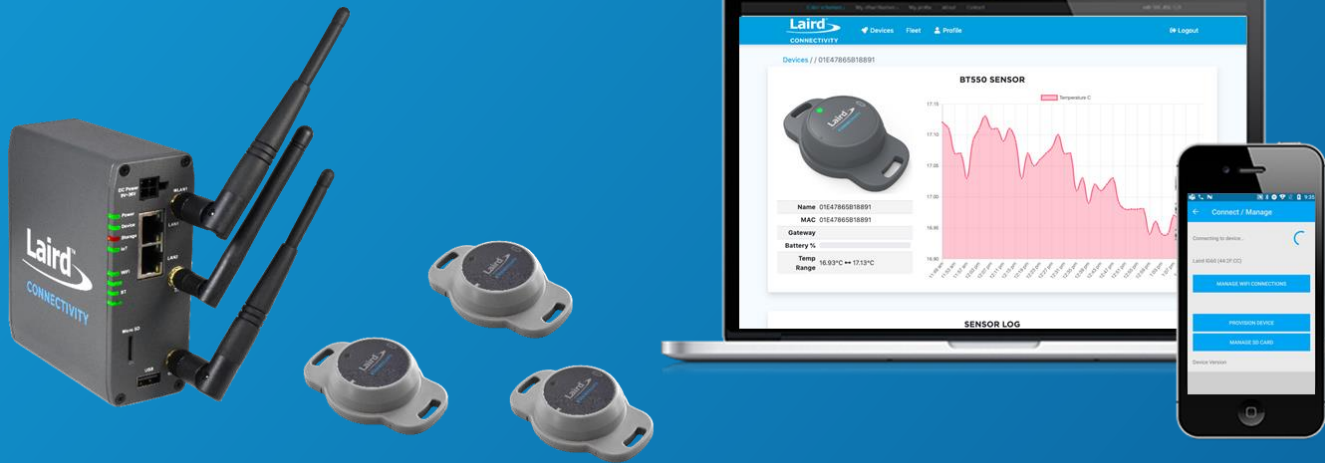
GATEWAY	CONTENTS	SOFTWARE	PART NUMBER
IG60-BL654	<ul style="list-style-type: none"> <li>1x Sentries IG60 Bluetooth 5 (BL654) and Wi-Fi</li> <li>3x dipole antennas</li> <li>1x DIN-rail mounting bracket</li> <li>1x wall mounting bracket</li> <li>8x screws for mounting brackets</li> </ul> <p><b>Power supply not included – choose an option below</b></p>	Laird Linux	455-00076
		AWS IoT Greengrass	455-00081
IG60-BL654-LTE	<ul style="list-style-type: none"> <li>1x Sentries IG60 Bluetooth 5 (BL654), Wi-Fi, and LTE gateway</li> <li>5x dipole antennas</li> <li>2x SIM cards (AT&amp;T and Global)</li> <li>1x wall mounting bracket</li> <li>8x screws for mounting brackets</li> </ul> <p><b>Power supply not included – choose an option below</b></p>	Laird Linux	455-00088
		AWS IoT Greengrass	455-00089
IG60-SERIAL	<ul style="list-style-type: none"> <li>1x Sentries IG60 Serial, BLE4.2, and Wi-Fi gateway</li> <li>2x dipole antennas</li> <li>1x DIN-rail mounting bracket</li> <li>1x wall mounting bracket</li> <li>8x screws for mounting brackets</li> <li>1x AC power supply included</li> <li>1x DC power cable included</li> </ul>	Laird Linux	455-00006
		AWS IoT Greengrass	455-00008
IG60-SERIAL-LTE	<ul style="list-style-type: none"> <li>1x Sentries IG60 Serial, BLE4.2, Wi-Fi, and LTE gateway</li> <li>4x dipole antennas</li> <li>2x SIM cards (AT&amp;T and Global)</li> <li>1x wall mounting bracket</li> <li>8x screws for mounting brackets</li> </ul> <p><b>Power supply not included – choose an option below</b></p>	Laird Linux	455-00084
		AWS IoT Greengrass	455-00085

### Power Supplies

REGION	DESCRIPTION	PART NUMBER
US	AC Adapter, 12V-4A, US, 4-pin 7.5mm x 9.2mm Plug	223-00007
Europe	AC Adapter, 12V-4A, EU, 4-pin 7.5mm x 9.2mm Plug	223-00008
UK	AC Adapter, 12V-4A, UK, 4-pin 7.5mm x 9.2mm Plug	223-00009
Global - DC	DC Cable, 20AWG, UL2464, 41 Strands, Black	131-00225
Global – AC	AC Adapter, Global (US, EU, UK) – <b>Not UL Rated</b>	223-00004

For documentation visit [documentation.lairdconnect.com](https://documentation.lairdconnect.com)

To launch the out-of-box demonstration, visit [demo.lairdconnect.com](https://demo.lairdconnect.com)



## Laird Connectivity's Sentries Wireless IoT Starter Kit

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

### Contains:

- ✓ 1x Sentries IG60-BL654 Wireless IoT Gateway
- ✓ 3x Sentries BT510 – Long-range Bluetooth 5 temperature, motion, and open door sensor
- ✓ Laird Connectivity's free AWS-based IoT monitoring platform
- ✓ Sentries IG Connect - iOS and Android mobile app for fast, in-field provisioning
- ✓ Global AC and DC power supplies

### Use Cases:

- Cold chain transportation monitoring
- Refrigeration monitoring
- Discover the power of Bluetooth 5, long-range battery-powered sensors

DESCRIPTION	PART NUMBER
Sentries Wireless IoT Starter Kit with IG60-BL654 and BT510s (Wi-Fi and Ethernet uplink)	455-00113
Sentries Wireless IoT Starter Kit with IG60-BL654-LTE and BT510s (Wi-Fi, Ethernet, and LTE uplink)	455-00114

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