

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.



Sentries™ 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 Sentries™ 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 | | |
|-----------------------------|--------------------|---|
| Compute | MPU | Microchip SAMA5D36 – Cortex A5, 536 MHz |
| Memory | RAM | 256 MB LPDDR RAM |
| | Onboard Flash | 512 MB NAND Flash |
| | Additional Storage | SD card support |
| External Interfaces | 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 |
| Wi-Fi | 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 |
| Physical | Dimensions | 85mm x 22mm 100mm (without antennas or mounting brackets) |
| Electrical | Input Voltage | 9-30 VDC (AC power adapters available) |
| Environmental | Relative Humidity | 0-95% Non-condensing |

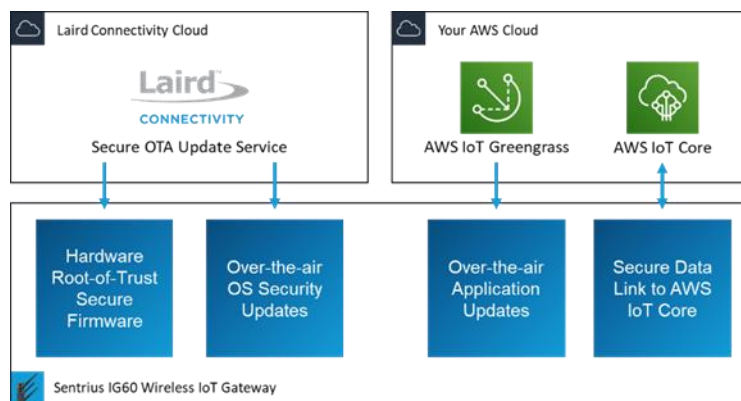
| | IG60-BL654 | IG60-BL654-LTE |
|------------------------------|--------------------------------|---|
| With Bluetooth Co-Processor | | |
| Specification | Bluetooth 5 | Bluetooth 5 |
| PHY Support | LE, 1M, 2M | LE, 1M, 2M |
| Radio | Nordic nRF52840 | Nordic nRF52840 |
| CPU | Cortex-M4F | Cortex-M4F |
| Memory | 1 Mbit Flash | 1 Mbit Flash |
| | 256k RAM | 256k RAM |
| | Laird <i>smartBasic</i> | Laird <i>smartBasic</i> |
| | Nordic SoftDevice | Nordic SoftDevice |
| Software | Zephyr | Zephyr |
| | FreeRTOS | FreeRTOS |
| Cellular | 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 |
| Certifications | | |
| 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 |
| Operating Temperature | -30° to +85°C (-22° to +185°F) | -30° to +60°C (-22° to +140°F) |
| Antenna Ports | 3x SMA, front-face | 3x SMA, front-face 2x SMA, back-face |
| Mounting | DIN-rail, wall mount | Wall mount only |

| | IG60-SERIAL | IG60-SERIAL-LTE |
|------------------------------|--------------------------------|---|
| With Serial Port | | |
| Connector | 1x DB-9 | 1x DB-9 |
| Standards | RS-232/422/485 | RS-232/422/485 |
| Isolation | 1.5 kV | 1.5 kV |
| Protocols | ASCII | ASCII |
| | Modbus | Modbus |
| | Proprietary | Proprietary |
| Bluetooth | | |
| Specification | Bluetooth 4.2 | Bluetooth 4.2 |
| Radio | Marvell 88W8997 | Marvell 88W8997 |
| Software | BlueZ (HCI) | BlueZ (HCI) |
| Cellular | 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 |
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| Operating Temperature | -30° to +85°C (-22° to +185°F) | -30° to +60°C (-22° to +140°F) |
| Antenna Connectors | 2x SMA, front-face | 2x SMA, front-face 2x SMA, back-face |
| Mounting | 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



| | | |
|--------------------------|-------------------------------------|--------------------------------|
| IoT Technology | 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 |
| Embedded Security | 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



| | | |
|-----------------|-------------------|---|
| Linux | 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 |
| Security | 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

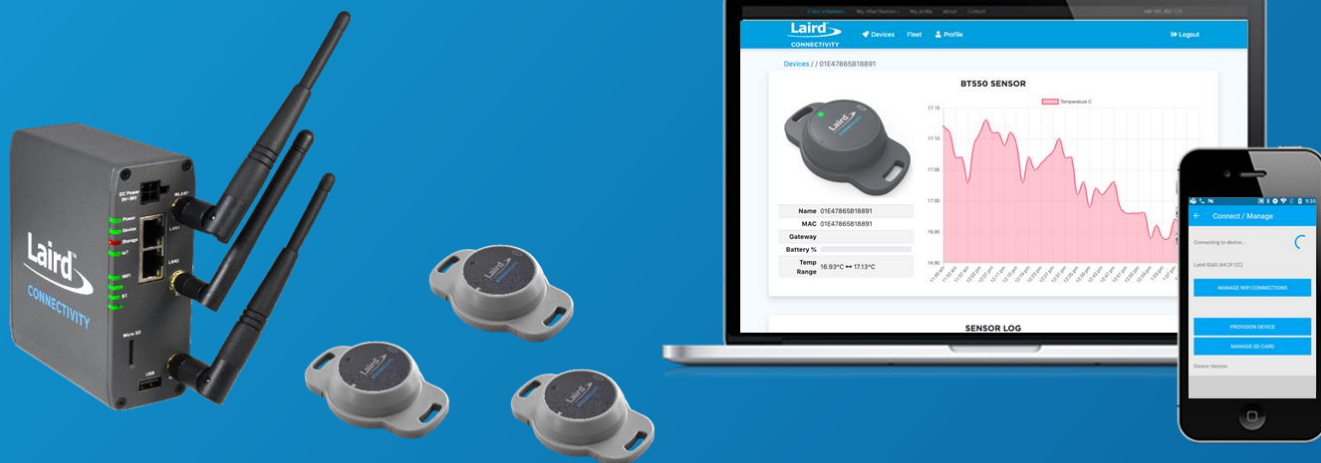
| GATEWAY | CONTENTS | SOFTWARE | PART NUMBER |
|-----------------|---|--------------------|-------------|
| IG60-BL654 | <ul style="list-style-type: none"> 1x Sentries IG60 Bluetooth 5 (BL654) and Wi-Fi 3x dipole antennas 1x DIN-rail mounting bracket 1x wall mounting bracket 8x screws for mounting brackets Power supply not included – choose an option below | Laird Linux | 455-00076 |
| | | AWS IoT Greengrass | 455-00081 |
| IG60-BL654-LTE | <ul style="list-style-type: none"> 1x Sentries IG60 Bluetooth 5 (BL654), Wi-Fi, and LTE gateway 5x dipole antennas 2x SIM cards (AT&T and Global) 1x wall mounting bracket 8x screws for mounting brackets Power supply not included – choose an option below | Laird Linux | 455-00088 |
| | | AWS IoT Greengrass | 455-00089 |
| IG60-SERIAL | <ul style="list-style-type: none"> 1x Sentries IG60 Serial, BLE4.2, and Wi-Fi gateway 2x dipole antennas 1x DIN-rail mounting bracket 1x wall mounting bracket 8x screws for mounting brackets 1x AC power supply included 1x DC power cable included | Laird Linux | 455-00006 |
| | | AWS IoT Greengrass | 455-00008 |
| IG60-SERIAL-LTE | <ul style="list-style-type: none"> 1x Sentries IG60 Serial, BLE4.2, Wi-Fi, and LTE gateway 4x dipole antennas 2x SIM cards (AT&T and Global) 1x wall mounting bracket 8x screws for mounting brackets Power supply not included – choose an option below | 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) – Not UL Rated | 223-00004 |

For documentation visit documentation.lairdconnect.com

To launch the out-of-box demonstration, visit demo.lairdconnect.com



Laird Connectivity's Sentrius Wireless IoT Starter Kit

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

Contains:

- ✓ 1x Sentrius IG60-BL654 Wireless IoT Gateway
- ✓ 3x Sentrius BT510 – Long-range Bluetooth 5 temperature, motion, and open door sensor
- ✓ Laird Connectivity's free AWS-based IoT monitoring platform
- ✓ Sentrius 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 |
|--|-------------|
| Sentrius Wireless IoT Starter Kit with IG60-BL654 and BT510s (Wi-Fi and Ethernet uplink) | 455-00113 |
| Sentrius Wireless IoT Starter Kit with IG60-BL654-LTE and BT510s (Wi-Fi, Ethernet, and LTE uplink) | 455-00114 |

Mouser Electronics

Authorized Distributor

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

Laird Connectivity:

[455-00076](#) [455-00081](#) [455-00113](#) [223-00004](#) [455-00089](#) [455-00114](#) [455-00088](#) [455-00085](#) [455-00084](#)