

# Laird Connectivity

## Bluetooth Line Card



Laird Connectivity's Bluetooth product portfolio is designed to expedite time to market with the minimum development time required. Our Classic Bluetooth and Bluetooth Low Energy modules are agency-approved and offer feature-rich firmware in an assortment of data rates, ranges (power), and configurations. Our highly reliable Bluetooth modules are easily integrated and can be readily customized by our local support teams to meet your precise requirements.

|                             | BLUETOOTH LOW ENERGY  |  |   |   | DUAL-MODE BLUETOOTH                        |   |  | CLASSIC BT                                 |
|-----------------------------|---|--|---|---|--|---|--|--|
|                             |   |  |   |   |  |   |  |  |
|                             | <b>BL654 Series<br/>(includes USB adapter)</b>                                  | <b>BL652 Series</b>  | <b>BL651 Series</b>   | <b>SaBLE-x-R2</b>                                     | <b>BT850/BT860 Series</b>                  | <b>BT851</b>                                    | <b>BT900 Series<br/>(includes USB adapter)</b>           | <b>BT7x0 Series</b>                        |
| <b>Chipset</b>              | Nordic nRF52840   | Nordic nRF52832  | Nordic nRF52810   | TI CC2640 R2  | Cypress CYW20704 A2                        | Cypress CYW20704 A2                             | QCA CSR8811  | QCA CSRBC04                                |
| <b>Wireless Standards</b>   | BT 5 + NFC + Thread   | BT 5 + NFC   | BT 5  | BT 5  | Dual-Mode BT 5                             | Dual-Mode BT 5                                  | Dual-Mode BT v4.0  | BT v2.0 and v2.1                           |
| <b>Range</b>                | Up to 1000 m  | Up to 100 m  | Up to 100 m   | Up to 100 m   | Up to 100 m                                | Up to 100 m                                     | Up to 100 m  | Up to 1 km                                 |
| <b>Type</b>                 | Surface Mount Module with onboard MCU (ARM Cortex M4F, 1Mbit/256k)              | Surface Mount Module with onboard MCU (ARM Cortex M4F, 512k/64k) | Surface Mount Module with onboard MCU (ARM Cortex M4, 192k/24k) | Surface Mount Module with onboard MCU (ARM Cortex M3) | Surface Mount Modules with HCI             | USB Adapter                                     | Surface Mount Module with onboard MCU (ARM Cortex M3)    | SMT Module                                 |
| <b>Size</b>                 | 15 x 10 x 2.2 mm (module)<br>18.4 x 50.7 x 11 (USB)                             | 14 x 10 x 2.1 mm   | 14 x 10 x 2.1 mm  | 11.6 x 17.9 x 2.4 mm                                  | 8.5 x 12.9 x 2.2 (module)                  | 8.5 x 12.9 x 2.2 (module)<br>16 x 43 x 11 (USB) | 12.5 x 19 x 2.5 mm (module)<br>50.7 x 18.4 x 11 mm (USB) | 15.3 x 28.7 x 2.5 mm                       |
| <b>Antenna Options</b>      | Internal Antenna OR External via IPEX MHF4                                      | Internal Antenna OR External via IPEX MHF4                       | Internal Antenna OR External via IPEX MHF4                      | Internal Antenna OR External via U.FL                 | Internal Antenna OR External via trace pad | Internal Antenna                                | Internal Antenna OR External via U.FL                    | Internal Antenna OR External via U.FL      |
| <b>Data / Control</b>       | UART, GPIO, ADC, PWM, PDM, FREQ output, I <sup>2</sup> S, I <sup>2</sup> C, SPI | UART, GPIO, ADC, PWM, FREQ output, I <sup>2</sup> C, SPI         | UART, GPIO, I2C, SPI, ADC, PWM                                  | UART, SPI, I2C, PWM, ADC                              | USB, HCI BT (850)<br>UART, HCI BT (860)    | USB, HCI  | UART, GPIO, SPI, I <sup>2</sup> C, ADC                   | UART/GPIO                                  |
| <b>Transmit Power</b>       | -40 to +8 dBm   | -40 to +4 dBm  | -40 to +4 dBm   | -46 to +5 dBm   | Up to +8 dBm                               | Up to +8 dBm                                    | -20 to +8 dBm  | Up to +18 dBm                              |
| <b>Receiver Sensitivity</b> | -103 to -95 dBm   | -96 dBm typical  | -93 to -96 dBm  | -96 dBm at 0.1% BER                                   | -94 dBm                                    | -94 dBm   | -90 dBm typical  | Better than -87 dBm                        |
| <b>Temp Range (Storage)</b> | -40°C to 85°C<br>(-40°F to 185°F)   | -40°C to 85°C<br>(-40°F to 185°F)                                | -40°C to 85°C<br>(-40°F to 185°F)                               | -40°C to 85°C<br>(-40°F to 185°F)                     | -40°C to 85°C<br>(-40°F to 185°F)          | -40°C to 85°C<br>(-40°F to 185°F)               | -40°C to 85°C<br>(-40°F to 185°F)                        | -40°C to 85°C<br>(-40°F to 185°F)          |
| <b>Software/Firmware</b>    | smartBASIC in Hosted or Hostless mode, OR use Nordic SDK                        | smartBASIC in Hosted or Hostless mode, OR use Nordic SDK         | Nordic SDK or Zephyr RTOS                                       | Programmable via Serial-to-BLE API or TI SDK          | Any external BT software stack via HCI     | Any external BT software stack via HCI          | Hostless or hosted mode with smartBASIC app environment  | Programmable via AT Command Set            |
| <b>Profiles Supported</b>   | Any custom services via smartBASIC/Nordic SDK                                   | Any custom services via smartBASIC/Nordic SDK                    | Any services available via Nordic/Zephyr                        | Any supported by the TI SDK                           | Any supported by chosen BT stack           | Any supported by chosen BT stack                | SPP, HID, Any custom BLE Service via smartBASIC          | SPP, HID                                   |
| <b>Additional Features</b>  | BLE Mesh  | NFC  | ANT and proprietary 2.4 GHz                                     | LSR Developer Tool Suite application                  | Support for Searan Dotstack                | Support for Searan Dotstack                     | Simultaneous Classic BT and BLE Connections              | Ultra long range with Class 1 output power |
| <b>Certifications</b>       | FCC, IC, ETSI, Giteki, RCM, Bluetooth SIG                                       | FCC, IC, ETSI, Giteki, KCC, RCM, Bluetooth SIG                   | FCC, IC, ETSI, Giteki, RCM, Bluetooth SIG                       | FCC, IC, ETSI, Giteki, RCM, Bluetooth SIG             | FCC, IC, ETSI, Giteki, Bluetooth SIG       | FCC, IC, ETSI, Giteki, Bluetooth SIG            | FCC, IC, ETSI, Giteki, Bluetooth SIG                     | FCC, IC, ETSI, Bluetooth SIG               |

Modules not shown at actual size.

To learn more, visit [connectivity.lairdtech.com/bluetooth](http://connectivity.lairdtech.com/bluetooth)  
or contact us at [CS-Sales@lairdtech.com](mailto:CS-Sales@lairdtech.com)