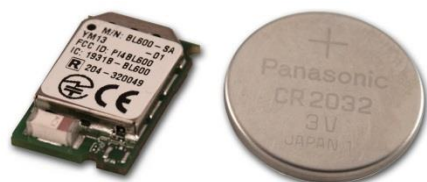# BL600 Series

Single-Mode BLE Module Featuring *smart*BASIC

BL600 Series modules from Laird Technologies make it easy to add single-mode Bluetooth Low Energy (BLE), or Bluetooth Smart™, to small, portable, power-conscious devices, including those powered by AAA or coin cell batteries. The fully approved, programmable modules feature Laird's innovative, event-driven smart BASIC programming language, which significantly simplifies BLE integration.

Based on the award winning Nordic Semiconductor nRF51822 chipset, BL600 modules provide exceptionally low power consumption with outstanding wireless range, all within a compact footprint of 19 mm x 12.5 mm. The modules incorporate all the hardware and firmware required to support development of BLE applications, including:

- Radio hardware
- UART, SPI, I2C, ADC, and GPIO interfaces for connecting peripherals and sensors
- A complete BLE software stack
- GATT-based BLE profiles that include Blood Pressure, Heart Rate, Health Thermometer, Proximity and Find Me.
- Custom Services to suit any application's needs

What makes the modules unique is *smart*BASIC, an event-driven programming language that enables standalone operation of the module whereby sensors can be attached via any of the interfaces without the need for an external processor. A simple *smart*BASIC application encapsulates the complete end-to-end process of reading, writing, and processing of sensor data and then using BLE to transfer it to any Bluetooth v4.0 device – smartphone, tablet, gateway, or computer. Ultimately *smart*BASIC accelerates initial development, creation of prototypes, and mass production by providing you with your own BLE expert within the module.

In addition to carrying FCC modular, IC, CE and MIC approvals, BL600 modules are fully qualified as a Bluetooth End Products, enabling designers to integrate the modules in devices without the need for further Bluetooth Qualification. A low-cost developer's kit including simple software tools simplifies module integration and guarantees the fastest route to market.

global solutions: **local** support.

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The details contained within the document are subject to change. Download the product specification from www.lairdtech.com/wireless for the most current specification.

BL600 Series

Single-Mode BLE Module Featuring *smart*BASIC

CATEGORIES	FEATURE	IMPLEMENTATION
Wireless Specification	Bluetooth®	V4.0 – Single-Mode
	Frequency	2.402 - 2.480 GHz
	Max Transmit Power	4dBm
	Receive Sensitivity	-91dBm (typical)
	Whisper Mode	Down to -55dBm (Transmit)
	Link Budget	95 dB (@ 1 Mbps)
	Raw Data Rates	1 Mbps (over the air)
Host Interfaces	Total	28 lines – multi function
	UART	TX, RX, CTS, RTS DTR, DSR, DCD, RI can be implemented in *smart*BASIC Default 9600, N, ,8, 1 From 1,200 to 115,200bps
	GPIO	Up to 28 lines
	SPI	3 lines
	I2C	2 lines
	ADC	6 lines (plus ADC reference)
Profiles		Blood Pressure, Heart Rate, Health Thermometer, Proximity & Find Me Custom Services
Services		Generic Access, Battery Service, Device Information Service, Heart Rate Service, Health Thermometer Service, Immediate Alert Service, Link Loss Service, Tx Power Service, Blood Pressure Service
Control Protocols		Any that can be implemented using *smart*BASIC
Encryption	AES	128 bit using CCM encryption
Supply Voltage	Supply	1.8V – 3.6V – internal LDO 2.1V – 3.6V – internal DCDC converter
Power Consumption	Current	'System Idle' – 3.5uA 'Transmit' – 10.5mA @ 0dBm
Physical	Dimensions	19mm x 12.5mm x 3mm
Environmental	Operating Temperature	-40° to +85° C when powered at 3.3 V +/- 10% -25° to +75° C when powered at 1.8V (contact Laird for any query)
	Storage Temperature	-40°C to +85°C
Miscellaneous	Lead Free	Lead-free and RoHS compliant
	Warranty	5-Year Limited Lifetime
Development Tools	Development Kit	Development board and free Software Tools
Approvals	Bluetooth®	End Product Listing (EPL)
	FCC / IC / CE / MIC	All BL600 Series

Ordering Information

BL600-SA-0x	Single Mode BLE Module featuring *smart*BASIC (internal antenna)
BL600-SC-0x	Single Mode BLE Module featuring *smart*BASIC (IPEX MHF4 antenna connecto
BL600-ST-0x	Single Mode BLE Module featuring *smart*BASIC (trace pin)
DVK-BL600-SA / ST / SC-0x	Development Kit for each BL600 series module above