



BT900 Series - Bluetooth v4.0 Dual Module

Powerful, Intelligent BT in a Tiny Form Factor



SMALL. SMART. SIMPLE.

Laird's BT900 modules reduce the engineering burden and design risk of integrating Bluetooth and Bluetooth Low Energy into any OEM device. The BT900's tiny form factor, optimized power schemes and *smartBASIC* language provide a secure, stable Bluetooth environment for any embedded design. Let Laird's innovative BT900 series and decades of expertise in Bluetooth module design speed your product to market.



FLEXIBLE FOR ANY CHALLENGE: A COMPLETE SOLUTION

Laird's BT900 modules are designed for optimum performance in powered devices and sensors. From the latest CSR 8811 silicon to the power efficient Cortex M3 microcontroller, the BT900 provides maximum design flexibility. Easily balance throughput versus power efficiency, aided by sleep mode triggers to optimise the module's duty cycle. And thanks to the combination of the Cortex M3 and *smartBASIC*, the BT900 series provides true hostless operation for your product, providing maximum utility while saving you needless costs in your bill of materials.



EMBEDDED BLUETOOTH MADE EASY

A smart design is one you don't have to rewrite. Laird's *smartBASIC* acts as the bridge between software and hardware, enabling an application written for one *smartBASIC* radio to work on any other. Our event-driven *smartBASIC* language, unique to the wireless industry, offers built-in functions that replace thousands of lines of C code with a few abstracted lines of *smartBASIC*. Leverage Laird's years of Bluetooth expertise: write once and deploy anywhere with Laird's line of *smartBASIC*-ready modules.



GLOBAL APPROVALS – MAKE YOURSELF AT HOME.

Laird's BT900 module carries several modular FCC, IC, CE, MIC and Bluetooth SIG approvals, meaning you don't need costly and time-intensive testing to bring certified Bluetooth to market. Certifications from worldwide regulatory bodies take time, effort, financial cost, and ultimately slow development. Laird's approvals extend to your design with no additional testing, making them a fast and efficient route to production.

Features & Benefits

- Bluetooth v4.0 dual mode (BT and BLE)
- Broad range of hardware interfaces: UART, I2C, SPI, ADC, GPIO
- Tiny footprint (19mm x 12.5mm x 2.5 mm)
- *smartBASIC* powers rapid design and deployment
- Supports SPP and any BLE Peripheral or Central roles
- Supports simultaneous BT and BLE connections
- Hostless operation – no need for external MCU, reducing overall BOM

Application Areas



Logistics,
Barcode
Scanners



Point of Sale
terminals



Health and
Medical Devices

global solutions: local support.

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Europe: +44.1628.858.940
Asia: +852.2923.0610

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



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CATEGORIES	FEATURE	IMPLEMENTATION	
Wireless Specification	Bluetooth®	V4.0 – Dual-Mode	
	Frequency	2.402 - 2.480 GHz	
	Transmit Power	+ 8 dBm (maximum) Configurable down to -20 dBm	
	Receive Sensitivity	-90 dBm (typical)	
	Link Budget	98 dB	
	Raw Data Rates (Air)	3 Mbps (Classic BT – BR/EDR)	
Host Interface and Peripherals	UART Interface	TX, RX, CTS, RTS DTR, DSR, DCD, RI can be implemented in <i>smartBASIC</i> -using General Purpose I/O Default 115200, N, 8, 1 From 1200 bps to 921,600 bps	
	GPIO	18 (maximum – configurable) lines	
	I2C Interface	1 (configurable from GPIO total)	
	SPI	1 (configurable from GPIO total)	
	ADC Interface	2 channels (configured from GPIO total)	
	Wi-Fi-BT coexistence	3 dedicated pins	
	Profiles	Bluetooth Low Energy Classic Bluetooth	GATT Client & Peripheral – Any Custom Services Serial Port Profile (SPP) – Greater than 500kbps
Programmability	<i>smartBASIC</i> <i>smartBASIC</i> application	On-board programming language similar to BASIC Via UART or Over the Air	
Control Protocols		Any that can be implemented using <i>smartBASIC</i> vSP – Virtual Serial Port for BLE	
Maximum Connections	Classic Bluetooth	7 clients	
	Bluetooth Low Energy	5 clients	
FW upgrade	<i>smartBASIC</i> engine FW upgrade	Via UART	
Coexistence	802.11 (Wi-Fi)	3 wire CSR schemes supported (Unity-3;Unity-3e)	
Supply Voltage	Supply	1.8V – 3.6V	
Power Consumption	Current	Max Peak Current (@ +8dBm TX) – 85 mA Standby Doze (@ 4MHz) – 2.7 mA Deep Sleep – 233 uA (external signal wake up)	
	Physical	Dimensions	19 mm x 12.5 mm x 2.5 mm Pad Pitch 0.8 mm
	Environmental	Operating	-40°C to +85°C
Storage		-40°C to +85°C	
Miscellaneous	Lead Free	Lead-free and RoHS compliant	
	Development Kit	Development board and free software tools	
Development Tools	Utilities	Windows, Android, and iOS applications UART firmware upgrade	
Software Tools	Bluetooth®	Complete Declaration ID	
Approvals	FCC / IC / CE / MIC	All BT900 Series	
Warranty		5-Year Limited Lifetime Warranty	

Ordering Information

BT900-SA-0x	Intelligent BTv4.0 Dual Mode Module featuring <i>smartBASIC</i> (internal antenna)
BT900-SC-0x	Intelligent BTv4.0 Dual Mode Module featuring <i>smartBASIC</i> (u.FL connector)
DVK-BT900-SA / SC-0x	Development Kit for each BT900 series module above