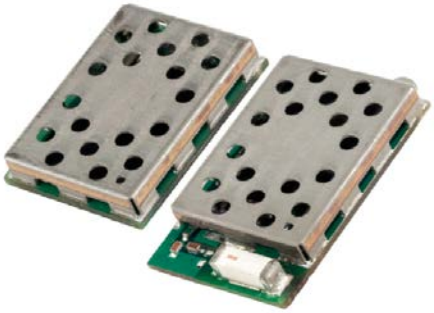
Bluetooth® AT Data Module

BTM410/411



The BTM410 and BTM411 Bluetooth® modules from Laird have been designed to meet the needs of developers who wish to add robust, short range Bluetooth data connectivity to their products. They are based on the market leading Cambridge Silicon Radio BC04 chipset, providing exceptionally low power consumption with outstanding range. They support the latest Bluetooth Version 2.1 Specification, providing the important advantage of Secure Simple Pairing, which improves security and enhances the ease of use for end customers.

With a footprint as small as 12.5 mm x 18.0 mm for the BTM410 and best of class, low-power operation, these modules are the ideal choice for applications where designers need both performance and minimum size. For maximum flexibility in systems integration, the modules are designed to support a separate power supply for I/O.

To aid product development and integration, Laird has integrated a complete Bluetooth protocol stack within the modules, including support for the Bluetooth Serial Port Profile. The modules are fully qualified as Bluetooth End Products, allowing designers to integrate them within their own products with no further Bluetooth Qualification. They can then list and promote their products on the Bluetooth website free of charge.

A comprehensive AT command interface is included, which simplifies firmware integration. Combined with a low cost developer's kit, this ensures that choosing Laird Bluetooth modules guarantees the fastest route to market.

Features and Benefits

- Bluetooth v2.1+EDR
- Adaptive frequency hopping to cope with interference from other wireless devices
- Secure Simple Pairing support
- External or internal antenna options
- Comprehensive AT interface for simple programming
- Bluetooth End Product Qualified
- Compact size
- Class 2 output – 4 dBm
- Low power operation
- UART interface
- PCM and SCO for external codec
- GPIO lines under AT control
- Wi-Fi co-existence

Application Areas

- Embedded devices
- Phone accessories
- Security devices
- Medical and telehealth devices
- Aftermarket automotive applications
- Bluetooth advertising
- ePOS

global solutions: local support

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CATEGORIES	FEATURE	IMPLEMENTATION
Wireless Specification	Bluetooth®	Version 2.1+EDR
	Frequency	2.402 – 2.480 GHz
	Max Transmit Power	Class 2 +4 dBm (at antenna pad – BTM410) +4 dBm (from integrated antenna – BTM411)
	Receive Sensitivity	Better than -84 dBm
	Range	Up to 30 meters
	Data Rates	Up to 2.1 Mbps (over the air)
	UART Data Transfer Rate	Greater than 300 Kbps
Host Interface	UART	Supports CTS, RTS, DRT, DSR, DCD and RI
User Interface	GPIO	8 lines (shared)
Profiles		SPP – Serial Port Profile Voice over SCO via a PCM interface
Supply Voltage	Supply	3.0 V to +3.3 V
	I/O	1.7 V to +3.6 V (independent of VCC
Power Consumption	Current Consumption	Less than 40 mA during SCO transmission Idle (sleep) < 1 mA
Coexistence / Compatibility	802.11 (Wi-Fi)	2 wire and 3 wire schemes supported
Connections	External Antenna	Connection via SMT pad – BTM410
	Internal Antenna	Multilayer ceramic – BTM411
Protocols		AT Command Set
Physical	Dimensions	12.5 mm x 18.0 mm x 3.4 mm (external antenna – BTM410) 12.5 mm x 22.0mm x 3.4 mm (integrated antenna – BTM411)
Environmental	Operating Temperature	-40° C to +85° C
	Storage Temperature	-40° C to +85° C
Miscellaneous	Lead Free	Lead-free and RoHS compliant
	Warranty	1 Year
Developmental Tools	Development Kit	Development board and software tools
Approvals	Bluetooth	End Product Approved
	FCC/IC & CE	BTM410 – Limited Modular Approval BTM411 – Full Modular Approval

Ordering Information

BTM410	Bluetooth AT Data Module (external antenna)
BTM411	Bluetooth AT Data Module (with integrated antenna)
DVK-BTM410	Development Kit (external antenna)
DVK-BTM411	Development Kit (with integrated antenna)

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

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