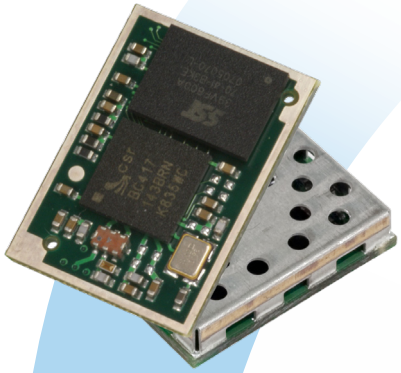
Laird TECHNOLOGIES

Innovative **Technology** for a **Connected** World

Bluetooth® HCI Data Module

BTM420/421



The BTM420 and BTM421 Bluetooth® modules are designed to meet the needs of developers adding robust, short range Bluetooth data connectivity to their products and using embedded Bluetooth stacks within these products. They are based on the market-leading Cambridge Silicon Radio BC04 chipset, providing exceptionally low power consumption with outstanding range. Supporting the latest Bluetooth Version 2.1 Specification with EDR (Enhanced Data Rate), HCI Data Modules increase data throughput up to 2.1 Mbps. BT version 2.1 provides the advantage of Secure Simple Pairing that improves security and enhances ease of use for end customers.

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

These modules present an HCI interface and are fully qualified as Bluetooth Controller Subsystem products. This also allows designers to integrate their existing pre-approved Bluetooth Host and Profile subsystem stacks to gain a Bluetooth END product approval for their products.

A low-cost developer's kit is available for prototyping, ensuring a fast 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
- HCI interface
- Bluetooth controller subsystem product qualified
- Compact size
- Class 2 output – 4dBm
- Low power operation
- USB interface
- PCM for external codec
- Wi-Fi co-existence hardware support

APPLICATION AREAS

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

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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 + 4dBm (at antenna pad – BTM420) +4dBm (from integrated antenna – BTM421)
	Receive Sensitivity	Better than -84dBm
	Range	Up to 30 meters
	Data Rates	Up to 2.1Mbps (over the air)
Host Interface	USB	Qualified to USB v 1.1. Compliant with USB 2.0 Data signalling requirements.
Power Consumption	Current Consumption	Less than 40 mA during SCO transmission
Supply Voltage	Supply	3.0V to +3.3V
	USB	3.1V to 3.6V
	I/O	1.7V to +3.3V (independent of Vcc)
Coexistence / Compatibility	802.11 (Wi-Fi)	2 wire and 3 wire schemes supported
Connections	External Antenna	Connection via SMT pad – BTM420
	Internal Antenna	Multilayer ceramic – BTM421
Physical	Dimensions	12.5mm x 18.0mm x 3.4mm (external antenna – BTM420)
		12.5mm x 22.0mm x 3.4mm (integrated antenna – BTM421)
Environmental	Operating Temperature	-30°C to +70°C
	Storage Temperature	-40°C to +85°C
Miscellaneous	Lead free	Lead-free and RoHS compliant
	Warranty	1 Year
Development Tools	Development Kit	Development board
Approvals	Bluetooth®	Controller Subsystem Product
	FCC/IC & CE	BTM420 - Limited Modular Approval BTM421 - Full Modular Approval

ORDERING INFORMATION

BTM420	Bluetooth HCI Data Module (external antenna)
BTM421	Bluetooth HCI Data Module (with integrated antenna)
DVK- BTM420	Development Kit (external antenna)
DVK- BTM421	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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