LM1010 Long Range Bluetooth® v4.0 Dual Mode Adapter

Host Controller Interface (HCI) via USB Interface

Revised	12/MAR/2021
Datasheet Version	1.3
Ordering Options	See last page

OSX Linux Win XP Win Vista Win 7 Win 8 Win 10



Features

- Bluetooth® v4.0 (Backwards compatible with Bluetooth® v2.0, v2.1 and v3.0)
- USB 2.0 for data and power source
- Host Controller Interface (HCI)
- Plug and Play (OS X, Linux and Windows XP – 10 compatible)
- iBeacon compatible
- Voice and Data Application support (including VoIP over Bluetooth®)
- Stereo Audio supported
- 53mm x 28mm x 14mm (Without SMA Connector)
- See our website for this products certifications.
- RoHS, REACH and WEEE

Overview

The LM1010 adapter is a small, versatile and powerful solution designed for long range communication over Bluetooth v4.0 (dual mode). It operates in HCI mode with excellent compatibility with Linux, Windows and macOS X.

The SMA connector provides the developer with the flexibility to add an antenna that suits the products unique requirements, such as dipole, IC or PCB antenna types. The characteristics of the selected antenna can produce a longer range, omnidirectional or unidirectional RF signal, typically used in industries such as EPOS, M2M, health care and is ideal for developing voice and data applications.

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General Specification

Wireless

Bluetooth® Standard	v4.0 low energy and v2.0, v2.1 wireless technologies
Adapter Type	Host Controller Interface (HCI)
OS Compatibility	OS X (Apple's Bluetooth® Stack), Linux (BlueZ) and Windows XP – 10 (Widcomm)
iBeacon Compatible	Yes

Hardware

Chipset	Broadcom
Antenna	SMA Connector
Interfaces	USB 2.0
Power Supply	5V DC (USB powered)
LED Indicator	Power/ Active

RF Characteristics

Tx Output Power	9.8 dBm (+ Antenna)
Rx Sensitivity	-86 dBm (Typical)
Current Consumption (Low Energy)	6.1 mA (Typical)
Current Consumption (Continuous Tx)	40.5 mA (Typical)
Current Consumption (Continuous Rx)	33.4 mA (Typical)
Current Consumption (Sleep Mode)	8.7 mA
Data Rate	Up to 3Mbps
Frequency	2.4GHz to 2.485 GHz
Modulation Scheme	GFSK for 1 Mbps, π/4-DQPSK for 2 Mbps, 8-DPSK for 3 Mbps
Spread Spectrum	FHSS (Frequency Hopping Spread Spectrum)

Physical Characteristics

Operating Temperature	-10° to +70°
Storage Temperature	-10° to +70°
Dimensions (L x W x H)	56mm x 28mm x 14mm (Without SMA Connector)
Weight	11.08g +/- 0.25g tolerance
Certifications	See our website for this products certifications.
Compliance	RoHS, REACH and WEEE

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HCI Architecture

Within the Host Controller Interface (HCI) Architecture, the LM1010 runs the HCI Firmware, Link Manager Firmware and baseband controller.

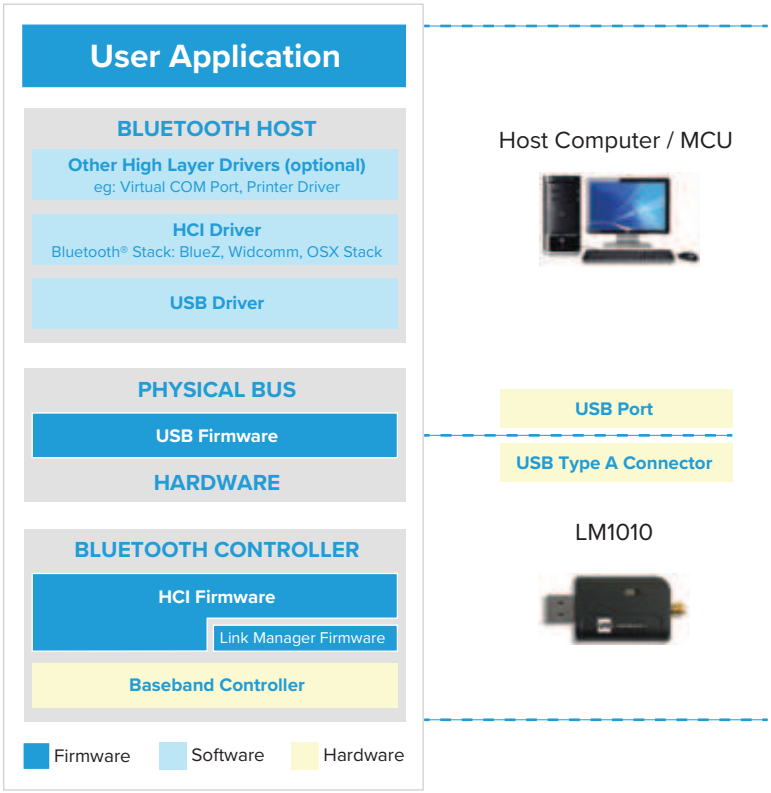
The host operating system runs the Bluetooth® v2.0, v2.1 / v4.0 user application. It also runs the Bluetooth® Stack (HCI Driver), USB Driver and other necessary drivers.

The Bluetooth® Stack (HCI Driver) exchanges data and commands with the HCI firmware via the USB interface.

The LM1010 is plug and play and compatible with the OSX, Linux and Windows XP – 10 platforms.

The Bluetooth® Stack is in-built into the operating system. With the Widcomm Bluetooth® Stack Software specifically designed for the Broadcom chipset within the LM1010.

The table below shows the tested OS version numbers:



Host Operating System	Bluetooth® Stack *	LM Tested OS Version Number
MAC OSX	OSX Bluetooth® Stack	OSX 10.11 (El Capitan)
Linux	BlueZ	Ubuntu 15.10 (Kernel 4.2.0-16-generic) and Ubuntu 14.04.03 (Kernel 3.13.0-77-generic)
Windows	Widcomm	Win 10 (64-bit), Win 10 (32-Bit), Win 8/8.1 (64-bit), Win 8/8.1 (32-Bit), Win 7 (64-bit) and Win XP (32-bit)

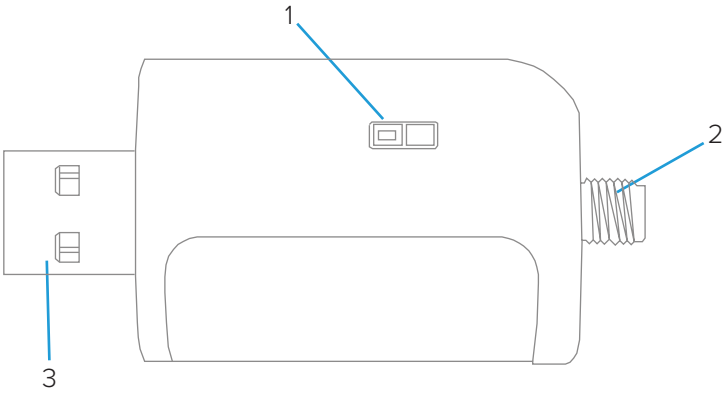
*NOTE: Third-party Bluetooth® Stack Software can be used as an alternative to the in-built Bluetooth® Stack for more supported profiles.

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Hardware Structure

1 LED Indicator.
2 Antenna RP-SMA Connector.
3 USB Connector.



LED Functions

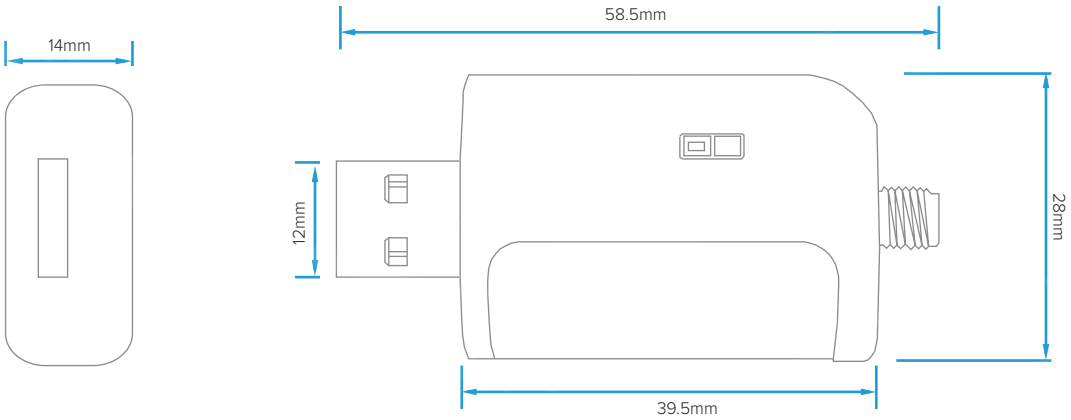
LED Red

- LED is permanently on - Power on
- LED is off - Power off

LED Blue

- LED is flashing slow = Bluetooth® is searching
- LED is permanently on = Bluetooth® is connected

Physical Dimensions



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Datasheet Version Notes

v1.0	11 JAN 2018	Added version notes to datasheet.
v1.1	04 JUL 2018	Added Operating Temperature.
v1.2	22 JAN 202	Datasheet branding update.
v1.3	12 MAR 20211	Ordering options clearly defined.

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Ordering Options



1010-0974

Sample LM1010 with LM251 Antenna

ADPT Dual Mode 4.0 USB 5V +LM251 rP-SMA JK SAMPLE

Adapter, Dual Mode, Bluetooth v4.0, USB 5 Volt
includes LM251 Antenna (Reverse Polarity SMA Jack)



1010-0970

Adapter Only

ADPT Dual Mode 4.0 USB 5V rP-SMA JK AO

Adapter, Dual Mode, Bluetooth v4.0, USB 5 Volt



1010-0971

LM1010 with LM251 Antenna

ADPT Dual Mode 4.0 USB 5V +LM251 rP-SMA JK AO

Adapter, Dual Mode, Bluetooth v4.0, USB 5 Volt
includes LM251 Antenna (Reverse Polarity SMA Jack)



1010-0972

Retail Pack LM1010 with LM251 Antenna

ADPT Dual Mode 4.0 USB 5V +LM251 rP-SMA RP

Adapter, Dual Mode, Bluetooth v4.0, USB 5 Volt
includes LM251 Antenna (Reverse Polarity SMA Jack)



1010-0973

LM1010 with LM255 Antenna

ADPT Dual Mode 4.0 USB 5V +LM255 rP-SMA

Adapter, Dual Mode, Bluetooth v4.0, USB 5 Volt
includes LM255 Antenna (Reverse Polarity SMA Jack)

- See our website to download any applicable Product Software, Manuals and Notes - http://www.lm-technologies.com/downloads