

LM506 Bluetooth® v4.0 Dual Mode Adapter

Host Controller Interface (HCI) via USB Interface

Revised

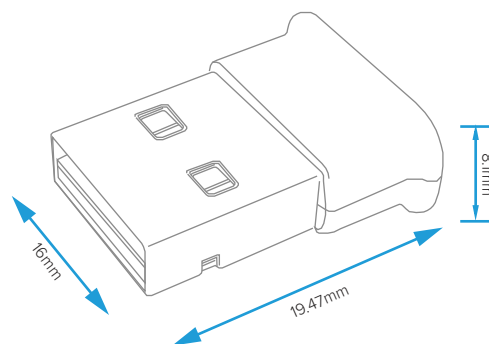
26/APR/2021

Datasheet Version

1.2

Ordering Options

See last page



Features

- Bluetooth® v4.0 (Backwards compatible with Bluetooth® v2.0, v2.1 and v3.0)
- 0 dBm (Bluetooth® v2.0, v2.1) and 4.7 dBm (Bluetooth® Smart) Tx Output Power
- USB 2.0 for data and power source
- Host Controller Interface (HCI)
- Plug and Play (macOS X, Linux and Windows XP – 10 compatible)
- iBeacon compatible
- Voice and Data Application support (including VoIP over Bluetooth®)
- Stereo Audio supported
- 19.47mm x 16mm x 8.1mm
- See our website for this products certifications.
- RoHS, REACH and WEEE

Overview

The LM506 Bluetooth® v4.0 dual mode adapter is a small, simple and highly compatible solution.

A plug and play USB adapter, compatible with Linux, macOS and Windows XP to Windows 10 platforms, allowing your host computer to wirelessly communicate with other nearby Bluetooth® v2.0, v2.1 and Bluetooth® v4.1 enabled devices (such as the iPhone and Android devices), providing a low energy connection and high quality data stream.

The LM506 has many possible uses e.g. within an iBeacon and a data logger. Typically used in industries such as EPOS, M2M and automotive and is ideal for developing voice and data applications. The adapter has a Host Controller Interface (HCI) for a simple connection via USB to a host computer or MCU.

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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	IC Antenna Onboard
Interfaces	USB 2.0
Power Supply	5V DC (USB powered)
Crystal Oscillator	20 MHz
LED Indicator	Power/ Active (BLUE)

RF Characteristics

Tx Output Power	0 dBm (Bluetooth® v2.0, v2.1) and 4.7 dBm (Bluetooth® Smart)
Rx Sensitivity	-82 dBm (Bluetooth® v2.0, v2.1)
Current Consumption	TBA
Continuous RX	TBA
Data Rate	Up to 3Mbps
Frequency	2.4GHz to 2.485 GHz
Modulation Scheme	GFSK for 1 Mbps, $\pi/4$ -DQPSK for 2 Mbps, 8-DPSK for 3 Mbps
Spread Spectrum	FHSS (Frequency Hopping Spread Spectrum)

Physical Characteristics

Operating Temperature	-30°C to +85°C
Dimensions (L x W x H)	19.47mm x 16mm x 8.1mm
Weight	1.68g +/- 0.25g tolerance (23.99g in retail pack)
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 LM506 runs the HCI Firmware, Link Manager Firmware and baseband controller.

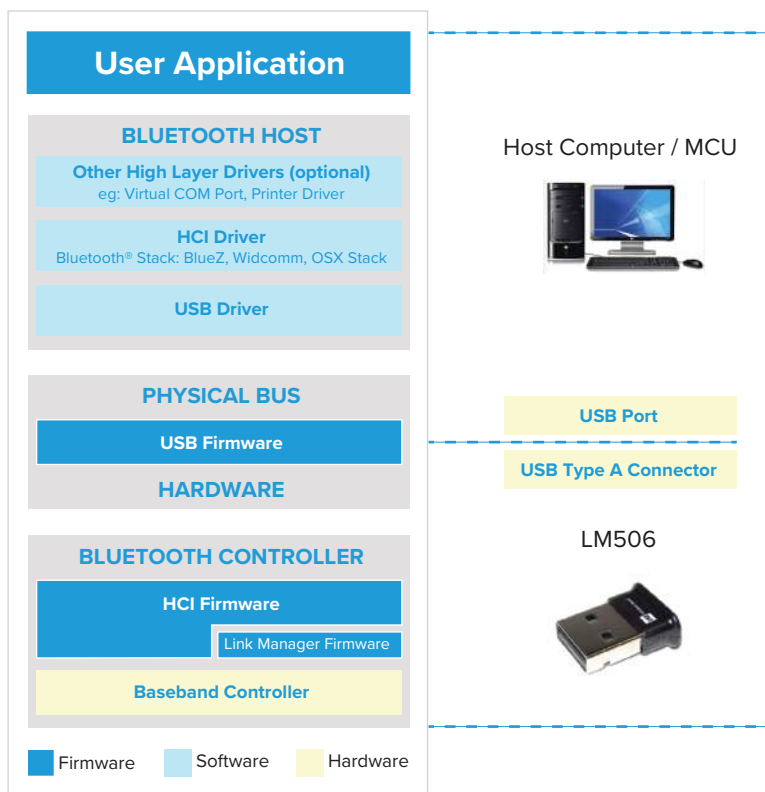
The host operating system runs the Bluetooth® v2.0, v2.1 / v4.0 user application. It also runs the Bluetooth® Stack (HCI Driver), USB Driver and other necessary drivers.

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

The LM506 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 LM506.

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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Datasheet Version Notes

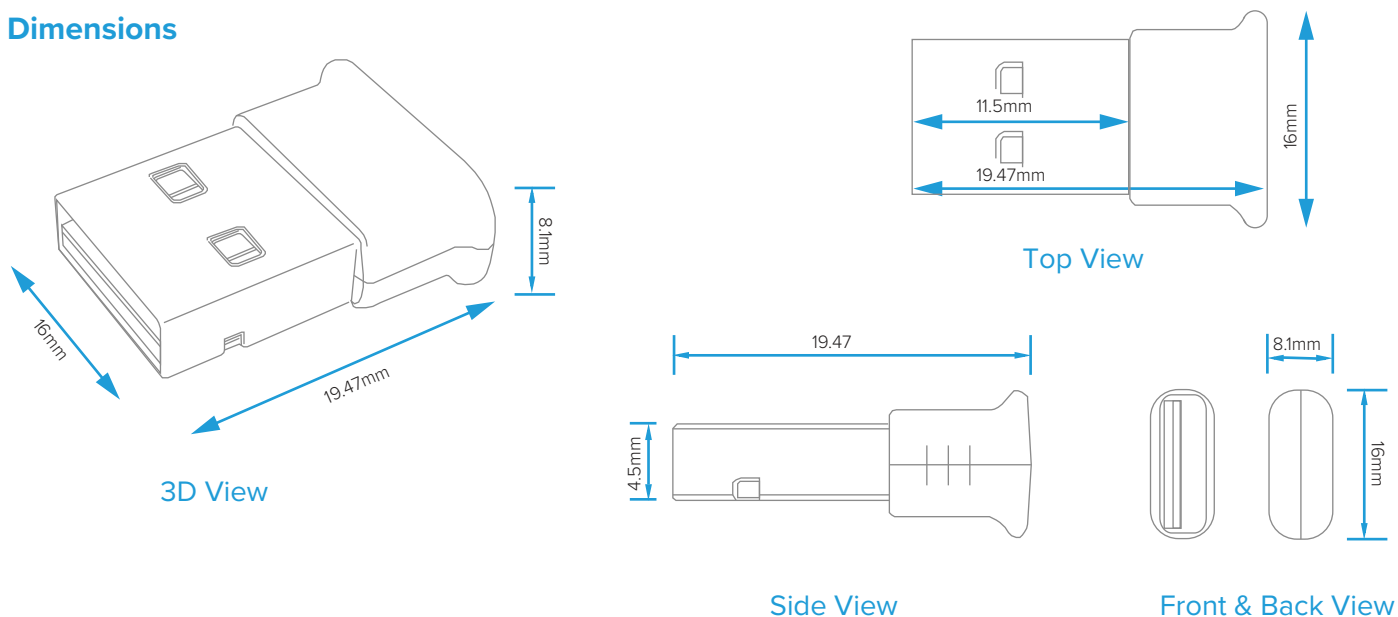
v1.0	11 JAN 2018	Added version notes to datasheet.
v1.1	19 JAN 2021	Datasheet branding updates.
v1.2	26 APR 2021	Length typo changed from 14.47 to 19.47mm



LM506 Bluetooth® v4.0 Dual Mode Adapter

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Dimensions



Ordering Options



506-0503

Sample

ADPT HCI BT4.0 EDR USB IC-ANT USB ETCH SAMPLE



506-0502

Adapter Only

ADPT HCI BT4.0 EDR USB BCM20702 IC-ANT USB ETCH AO



506-0508

Retail Pack

ADPT HCI BT4.0 EDR USB IC-ANT USB ETCH RP