

LM506 Bluetooth® v4.0 Dual Mode Adapter

Host Controller Interface (HCI) via USB Interface

Revised

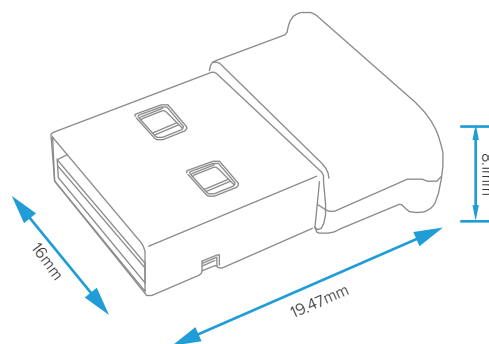
26/APR/2021

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.

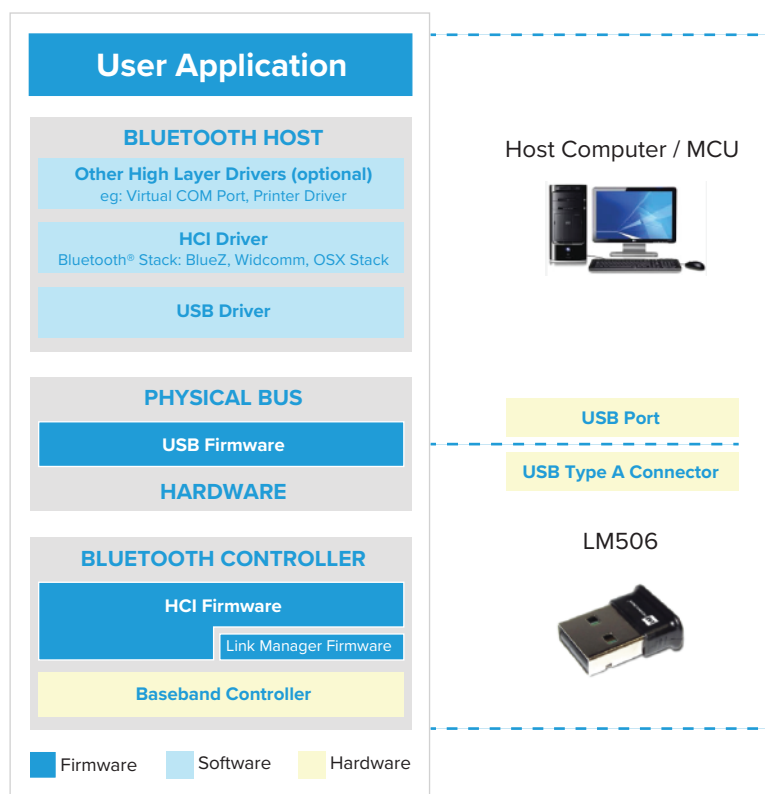
The host operating system runs the Bluetooth® v2.0, v2.1 / v4.0 user application. It also runs the Bluetooth® Stack (HCI Driver), USB Driver and other necessary drivers.

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

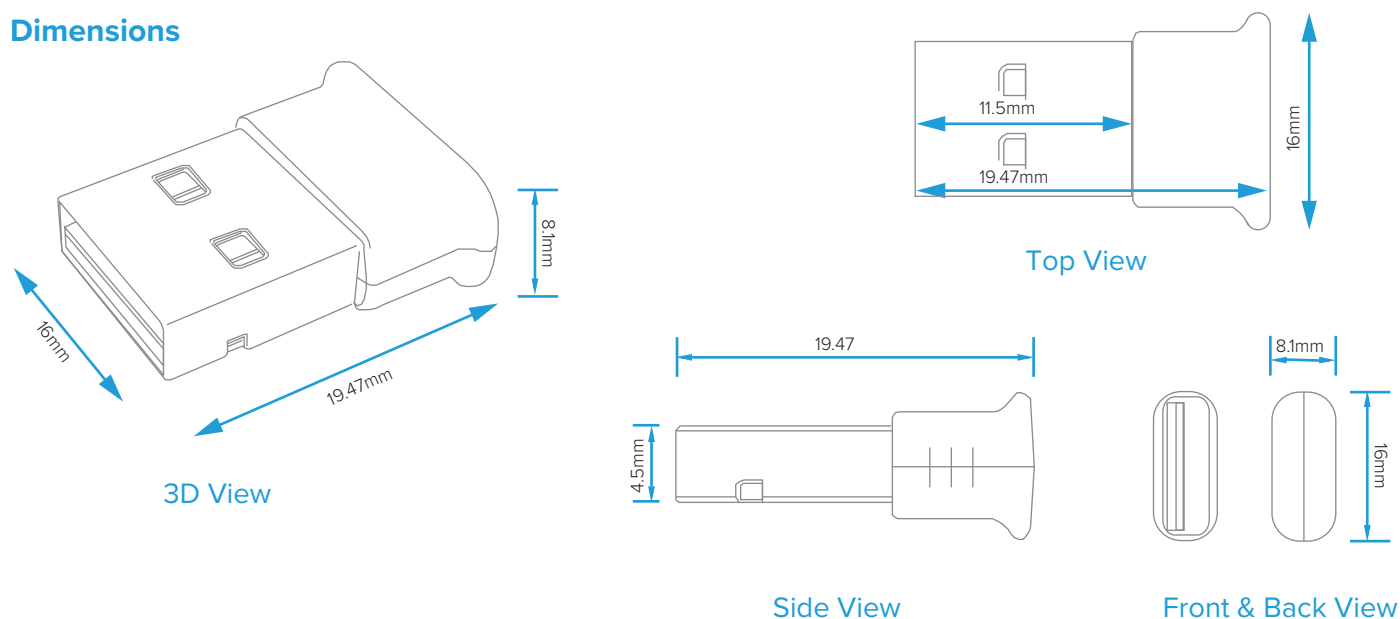
v1.0	11 JAN 2018	Added version notes to datasheet.
v1.1	19 JAN 2021	Datasheet branding updates.
v1.2	26 APR 2021	Length typo changed from 14.47 to 19.47mm



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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