

LM845 WiFi 802.11ac and Bluetooth® 4.2 Mini USB Adapter

Host Controller Interface (HCI) via USB Interface

Revised

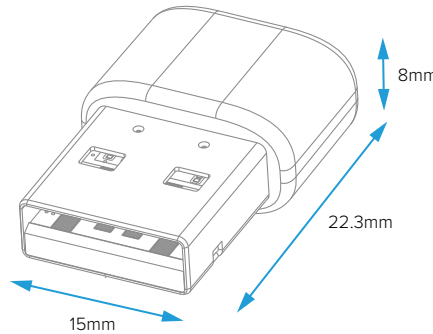
10/MAR/2021

Datasheet Version

1.0

Ordering Options

See last page



Features

- WiFi 802.11ac abgn
- WiFi 1T1R path, OFDM support.
- 802.11ac MIMO solution for 5G band.
- WiFi High Speed 433Mbps
- Bluetooth® 4.2 Dual Mode
- Backward Compatible including v2.1+EDR.
- LE can operate simultaneously.
- 2.4 GHz and 5 GHz ISM Frequency Bands.
- USB 2.0 Specification.
- Power Supply USB / 5V DC.
- 1T1R 802.11n 2.4 GHz WiFi speed up to 10 Mbps data rate.
- 1T1R 802.11ac 5 GHz WiFi speed up to 433 Mbps data rate.
- Bluetooth® RF Output Power 6dBm max.
- Supports Dual Mode (BR/EDR+AMP+Low Energy Controllers).
- Supports Multi-User MIMO
- Supports WPA, WPA2
- Supports WiFi Direct, easily build a WiFi P2P PAN network.
- Supported for Linux, Android, Windows 7, 8, 8.1 and 10
- CE / SIG Certification.
- RoHS, REACH and WEEE Compliant Solution

Overview

The LM845 Mini USB Adapter (Dongle) complies with Bluetooth® 4,2 (Dual Mode) and IEEE 802.11ac WiFi Standards of operation. Using a fully integrated single-chip that supports 1-stream 802.11ac solutions with Multi-user MIMO (Multiple-Input, Multiple-Output)

This adapter operates under 2.4GHz and 5Ghz. LM845 is compliant to IEEE 802.11ac /a/b/g/n and Bluetooth® v4.2, with backward compatibility with Bluetooth® v2.1+EDR, and v3.0. Bluetooth® Low Energy (LE) can operate simultaneously. Classic and LE can operate simultaneously. The Realtek IC uses a USB main interface and offers high throughput for both WiFi and Bluetooth® connections, connected via a (HCI) USB 2.0 TYPE A interface.

The LM845 provides a complete solution for a high-performance wireless client, it also supports WiFi Direct that can easily be used to build a WiFi P2P PAN network. Bluetooth® includes EDR transmission and supports bandwidths up to 2Mbps, or in HS Mode up to 3Mbps.

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General Specification

Wireless

Wireless Standard	WiFi: 802.11ac a/b/g/n/d/e/h/i Bluetooth®: v2.1+EDR/v3.0+HS/v4.0/4.2
Module Type	Host Controller Interface (HCI)
OS Compatibility	Linux, Android, Windows 7, 8, 8.1 and 10
Security	WiFi: WPA, WPA-PSK, WPA2, Bluetooth®: Simple Paring
Network Architecture	WiFi: Ad hoc mode (Peer-to-Peer) and Infrastructure mode Software AP; WiFi Direct Bluetooth®: Pico Net; Scatter Net, Low Power Mode(Sniff Mode)

Hardware

Chipset	Realtek Chipset
Antenna	PIFA Antenna x 1
Interfaces	USB 2.0
Power Supply	USB / 5V

RF Characteristics

Range (in open space)	WiFi: Up to TBC m Bluetooth®: Up to 10m
Data Transfer Rate	WiFi: 802.11b: 1, 2, 5.5, 11Mbps; 802.11g: 6, 9, 12, 18, 24, 36, 48, 433Mbps; 802.11n MCS0 to 7 for HT20MHz, MCS0 to 7 for HT40MHz Bluetooth®: Basic Rate 1Mbps; Enhanced Rate 2, 3Mbps; High Speed 6, 9, 12, 18, 24, 36, 48, 54Mbps
Frequency	2.4GHz and 5GHz ISM Band

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General Specification (Continued)

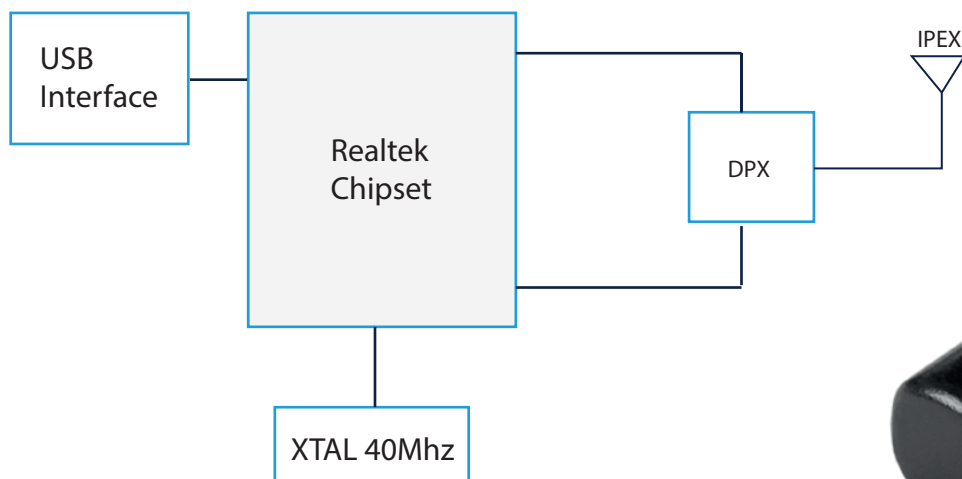
RF Characteristics

Modulation Scheme	WiFi: CCK, DQPSK, DBPSK, BPSK, QPSK, 16QAM, 64QAM, 256QAM Bluetooth®: 8DPSK, $\pi/4$ DQPSK, GFSKFSK
Security	WPA, WPA2
RF Output Power (tolerance ± 2 dBm)	WiFi 17dBm – 802.11b@CCK 11Mbps 15dBm – 802.11g@OFDM 54Mbps 13dBm – 802.11a@OFDM 54Mbps 13dBm – 802.11n@MCS7_HT20 13dBm – 802.11n@MCS7_HT40 11dBm – 802.11ac@NSS1 MCS9_BW20, BW40, BW80 Bluetooth Max + 6dBm
Receiver Sensitivity	WiFi -82dBm – 802.11b@11Mbps -71dBm – 802.11g@54Mbps -67dBm – 802.11n@MCS7_BW20 -64dBm – 802.11n@MCS7_BW40 -57dBm – 802.11ac@NSS1_MCS9_BW20 -54dBm – 802.11ac@NSS1_MCS9_BW40 -51dBm – 802.11ac@NSS1_MCS9_BW80 Bluetooth -85dBm@1Mbps -82dBm@2Mbps -80dBm@3Mbps
Operating Temperature	0°C to +50°C ambient temperature 5 to 90 % (non-condensing)
Storage Temperature	-10°C to +70°C ambient temperature 5 to 95 % (non-condensing)
Dimensions (L x W x H)	22.3mm x 15mm x 8mm
Weight	TBC g
Certifications	See our website for certifications
Compliance	RoHS, REACH and WEEE

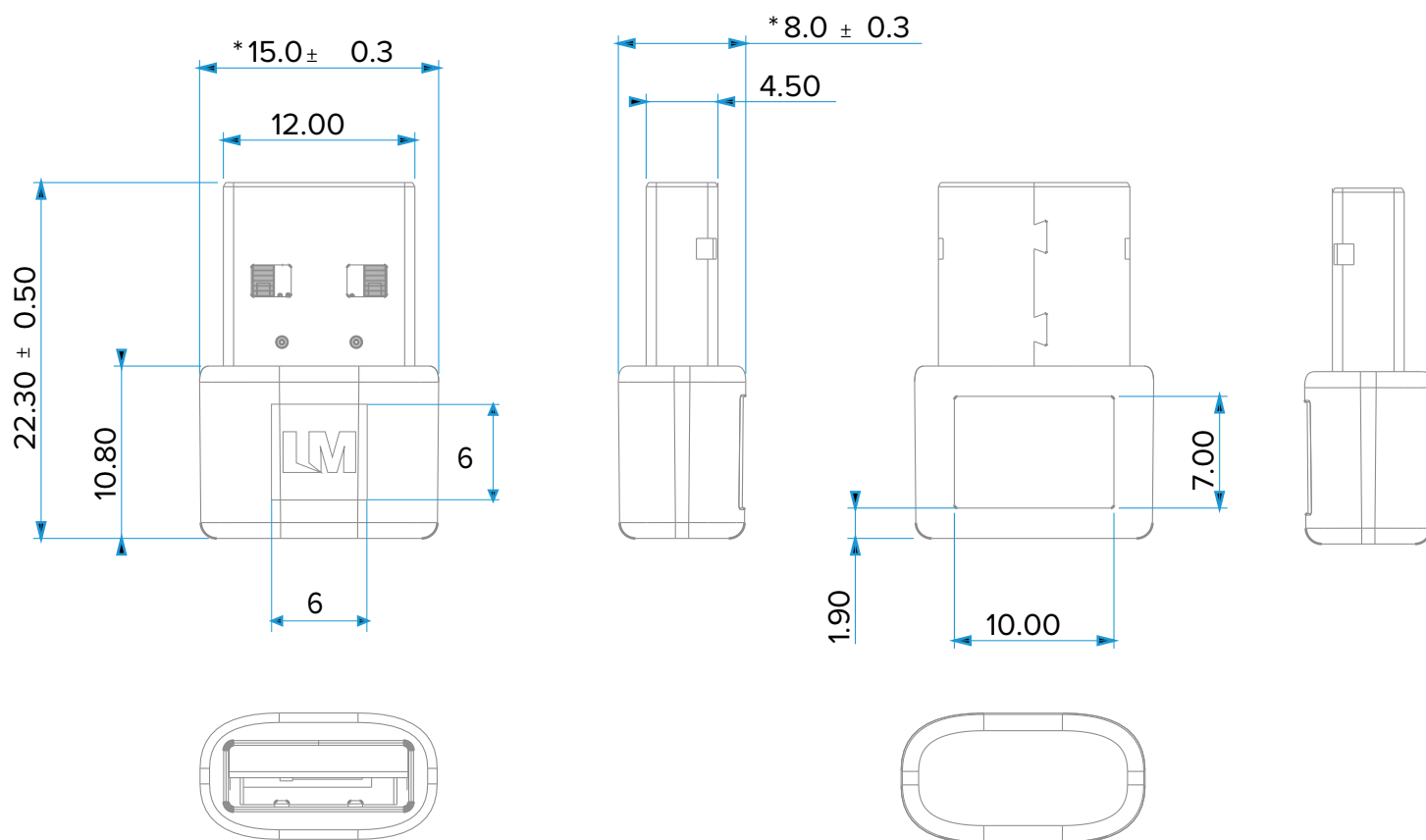
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Block Diagram



Physical Dimensions





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Datasheet Version Notes

v1.0	10 MAR2021	Initial release of Datasheet.
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Ordering Options



845-8500-000
PIECES

5V Adapter

ADPT 802.11ac BT4.2 USB MF Ant 1T1R AO

ETSI

845-8502-000
RETAIL PACK

5V Adapter

ADPT 802.11ac BT4.2 USB MF Ant 1T1R RP

ETSI

845-8504-000
SAMPLE PACK

5V Adapter

ADPT 802.11ac BT4.2 USB MF Ant 1T1R SP

ETSI



845-8501-000
PIECES

5V Adapter

ADPT 802.11ac BT4.2 USB MF Ant 1T1R AO

US

845-8503-000
RETAIL PACK

5V Adapter

ADPT 802.11ac BT4.2 USB MF Ant 1T1R SP

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- Product User Guides, Manuals and Configuration Software can be downloaded via our website - <http://www.lm-technologies.com/downloads>