

## LM842 WiFi 802.11ac / Bluetooth® 5.0 2T2R USB Adapter

USB 2.0 Interface

Revised 26/JAN/2021  
 Datasheet Version 2.0  
 Ordering Options See last page



### Features

- WiFi 802.11ac, abgn
- Wave-2 compatible with MU-MIMO
- Bluetooth® v5.0 Dual Mode (Backwards compatible from Bluetooth® v4.2)
- WPA, WPA-PSK, WPA2, WPA2 -PSK and WEP (64bit & 128bit) encryption schemes
- 2.4 GHz and 5GHz ISM Frequency bands
- 2T2R 802.11n 2.4GHz WiFi 300Mbps data rate [Untested]
- 2T2R 802.11ac 5GHz WiFi 867Mbps data rate [Untested]
- 2T2R BT5.0 2.4GHz 1.3Mbps data rate [Tested]
- WiFi/Bluetooth® coexistence enabled
- USB 2.0 with multi interface controller
- 32-37mm x 17.1mm x 9.4mm
- Bluetooth® SIG, FCC, CE, Canada, Australia, Brazil, India, Pakistan, Russia, Singapore
- RoHS, REACH and WEEE, plus CCATS/ECCN.



### Overview

The LM842 USB Adapter (Dongle) complies with Bluetooth® 5.0 (Dual Mode) and IEEE 802.11ac WiFi Standards of operation. Using a fully integrated single-chip that supports 2-stream 802.11ac solutions with Multi-user MIMO (Multiple-Input, Multiple-Output)

#### Supplied in two option form factors

With 2 x Onboard Metal Frame Antennas, or 1 x Metal Frame and 1 x SMA

Compliant to; IEEE 802.11ac, abgn additional standards,  
 Compliant to; Bluetooth® 5.02 and backward compatible with Bluetooth v2.1+EDR / v3.0 / v3.0+HS / v4.0, 4.1, & 4.2 with both BR/EDR. Classic and LE can operate simultaneously.  
 The Realtek IC, RTL8822CU uses a USB main interface. LM842 offers high throughput for both WiFi and Bluetooth® connections, connected via a (HCI) USB 2.0 TYPE A interface.

### Certification

The LM842 is certified for United States of America, under FCC and Europe under CE standards. Further countries by request depending on volumes. LM Technologies Ltd has a wealth of experience and has certified products all over the world, with access to a global network of local representatives, enabling fast certification processing when requested. Please enquire with us for further details.



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## General Specification

### Wireless

Wireless Standard

WiFi;

802.11ac, abgn-dehi

Bluetooth®;

v2.1+EDR/v3.0/v3.0+HS/v4.2

Adapter Type

Host Controller Interface (HCI)

OS Compatibility

Android, Linux, Windows 7, Windows 10

Security

WiFi;

WPA, WPA-PSK, WPA2, WPA2 -PSK and WEP (64bit & 128bit)

Bluetooth®;

Simple Pairing

Network Architecture

WiFi;

Ad hoc mode (Peer-to-Peer) and Infrastructure mode Software AP; WiFi Direct

Bluetooth®;

Pico Net; Scatter Net

### Hardware

Chipset

Realtek

Antenna

Onboard Chip Antenna

Interfaces

USB 2.0 Maximum Throughput 480Mbps (58.7MBps)

### RF Characteristics

Tx Output Power

WiFi;

17dBm – 802.11b@CCK 11Mbps 15dBm – 802.11g@OFDM 54Mbps 13dBm –

802.11n@MCS7\_HT20 13dBm – 802.11n@MCS7\_HT40 13dBm –

802.11a@OFDM 54Mbps 9Bm – 802.11ac@NSS1 MCS9\_VHT80

Bluetooth®;

Maximum 7.8dBm

Rx Sensitivity

WiFi;

-80dBm – 802.11b@11Mbps -71dBm – 802.11g@54Mbps -67dBm – 802.11n@MCS7\_BW20

-64dBm - 802.11n@MCS7\_BW40 -57dBm – 802.11ac@NSS1\_MCS9\_BW20

Bluetooth®;

-89dBm@1Mbps -90dBm@2Mbps -83dBm@3Mbps



## LM842 WiFi 802.11ac / Bluetooth® 5.0 2T2R USB Adapter

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#### General Specification (Continued)

##### RF Characteristics

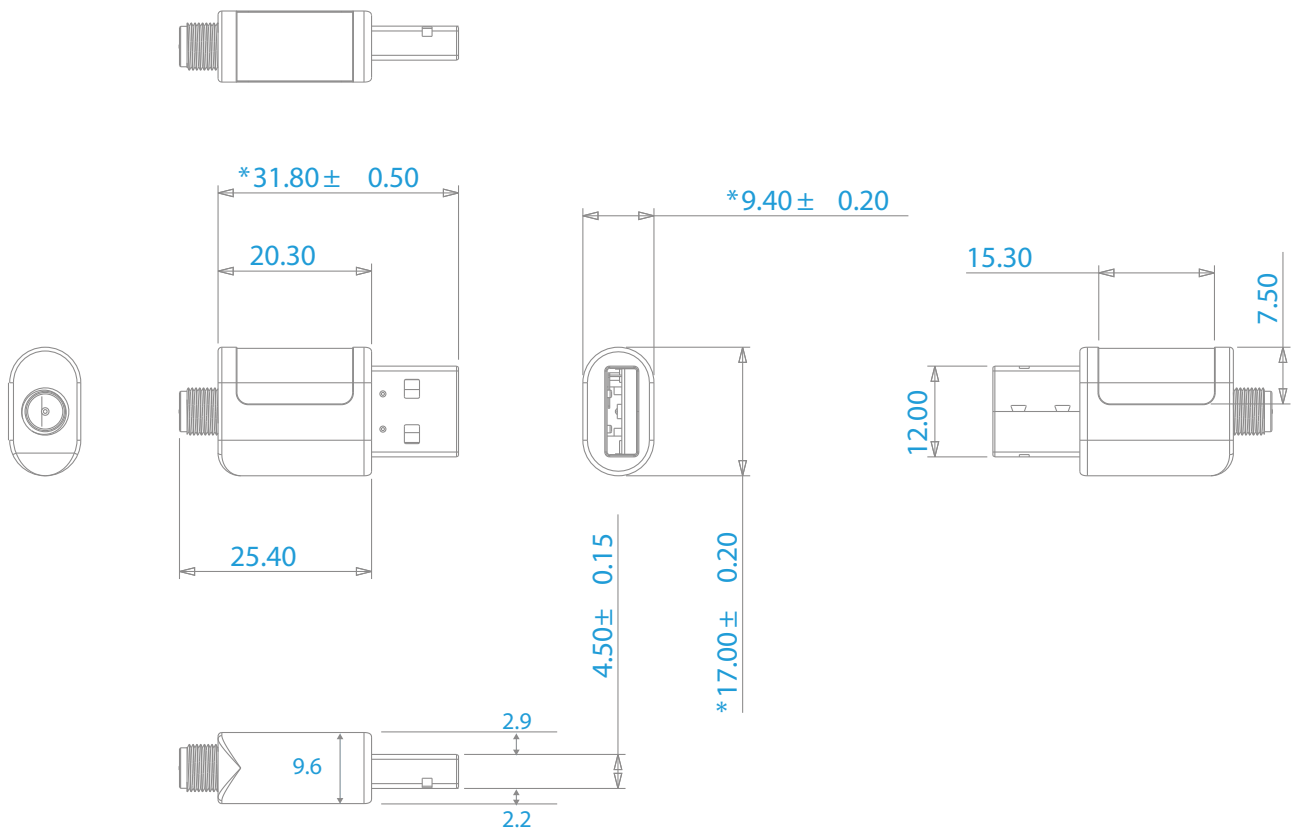
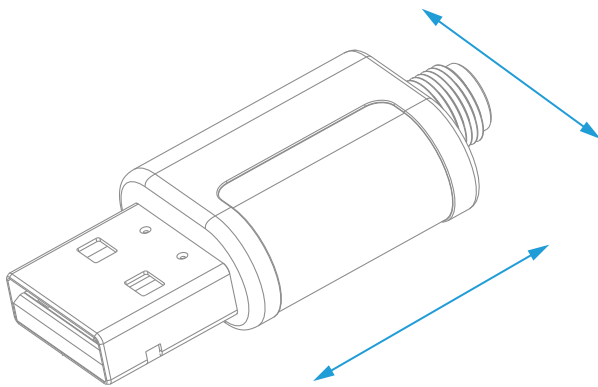
Range (in open space)	<b>WiFi:</b> 220m  <b>Bluetooth®:</b> Class 1
Data Transfer Rate	<b>WiFi:</b> 802.11n mode up to 110Mbps 802.11ac mode up to 255Mbps  <b>Bluetooth®:</b> Basic Rate 1.1 & 1.3Mbps
Frequency	2.4GHz (2.4GHz - 2.4835GHz) and 5GHz (5.15GHz - 5.825GHz)
Modulation Scheme	<b>WiFi:</b> 802.11b: CCK, DQPSK, DBPSK 802.11g/n: 64QAM, 16QAM, QPSK, BPSK 802.11ac: 256QAM, 64QAM, 16QAM, QPSK, BPSK  <b>Bluetooth®:</b> 8DPSK, $\pi/4$ DQPSK, GFSKFSK
Spread Spectrum	<b>WiFi:</b> IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE 802.11ac/a/g/n: OFDM (Orthogonal Frequency Division Multiplexing)  <b>Bluetooth®:</b> FHSS (Frequency Hopping Spread Spectrum)
Operating Channel	<b>WiFi (2.4GHz):</b> 11: (Ch. 1-11) – United States 13: (Ch. 1-13) – Europe 14: (Ch. 1-14) – Japan  <b>Bluetooth® (2.4GHz):</b> Ch. 0 to 78

##### Physical Characteristics

Operating Temperature	-20°C to +85°C ambient temperature 5 to 90 % (non-condensing)
Storage Temperature	-40°C to +90°C ambient temperature 5 to 90 % (non-condensing)
USB Input Voltage	5v
Dimensions (L x W x H)	32-37mm x 17.1mm x 9.4mm
Weight	TBA
Certifications	See our website or enquire for this products certifications.
Compliance	RoHS, REACH and WEEE
Warranty	2 Year Manufacturer RTB

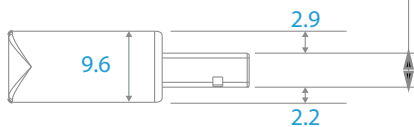
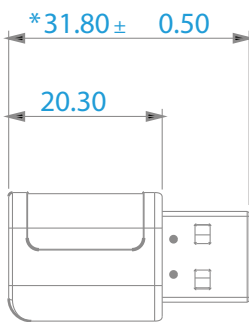
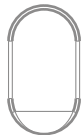
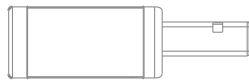
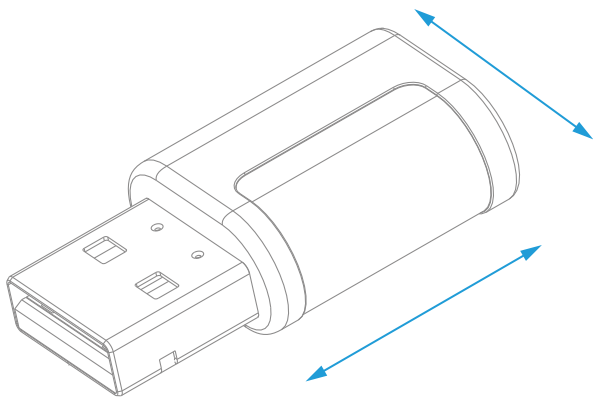
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 USB 2.0 Interface

**Physical Dimensions (Version with 1 x SMA and 1 x Onboard Metal Frame Antenna)**

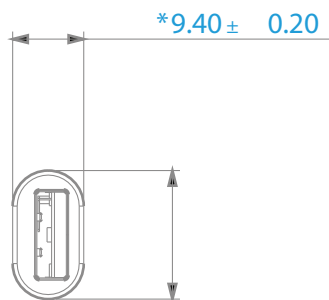


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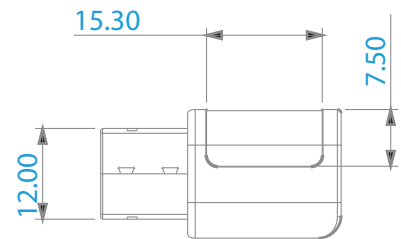
**Physical Dimensions (Version with 2 x Onboard Metal Frame Antennas)**



4.50 ± 0.15



\*17.00 ± 0.20

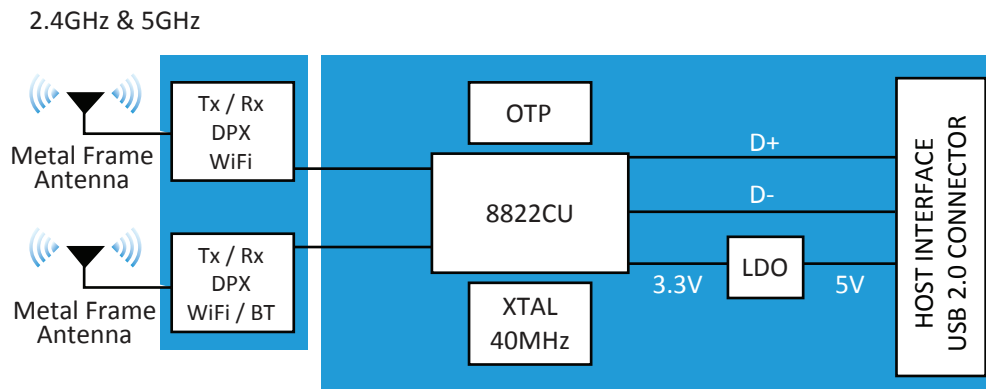




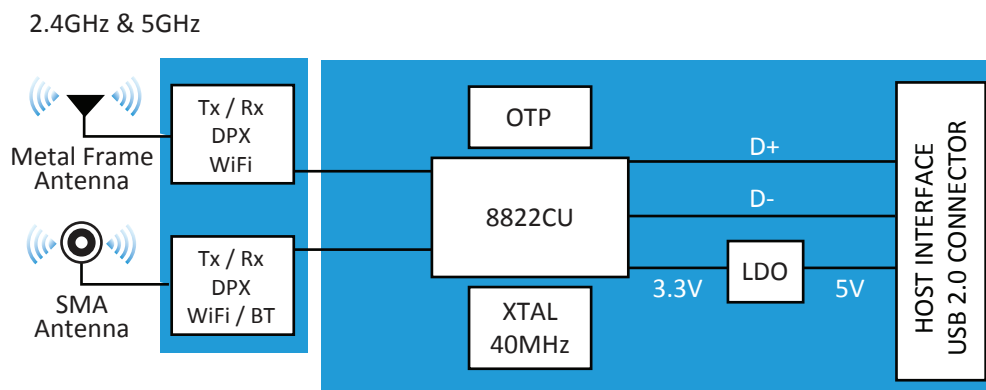
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### XCVR Block Diagram (Version with 2 x Onboard Metal Frame Antennas)



### XCVR Block Diagram (Version with 1 x SMA and 1 x Onboard Metal Frame Antenna)



### Extended Temperature Range

Housing Insulation coupled with a PCB and BOM that use components rated at -40c, other than the Realtek IC that is a 0c rated component.

Our products undergo an intensive test regime which if the product successfully passes we then approve it for use at -20c and provide a warranty for the product for two years. Our temperature test report is available upon request.



## LM842 WiFi 802.11ac / Bluetooth® 5.0 2T2R USB Adapter USB 2.0 Interface

### Datasheet Version Notes

v1.4	12/NOV/2019	Added side view measurements to drawing dimensions.
v1.5	13/NOV/2019	New photographs added.
v1.6	15/NOV/2019	Removed Win 8/10 Compatibility until confirmed.
v1.7	30/JUL/2020	Added Android, Linux, Windows 7, Windows 10
v1.8	30/NOV/2020	Dimensions amendment front page and General Spec page.
v1.9	22 JAN 2021	Datasheet branding update.
v2.0	26 JAN 2021	Bluetooth Tx Output Power updated to 7.8dBm.



## LM842 WiFi 802.11ac / Bluetooth® 5.0 2T2R USB Adapter

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### Ordering Options



#### Version with 2 x Onboard Metal Frame Antennas

842-8420		ADPT 802.11ac BT5 USB 433Mbps 5v MF ANT 2T2R AO	Adapter Only
842-8421	US	ADPT 802.11ac BT5 USB 433Mbps 5v MF ANT 2T2R AO	Adapter Only
842-8422		ADPT 802.11ac BT5 USB 433Mbps 5v MF ANT 2T2R RP	Retail Pack
842-8423	US	ADPT 802.11ac BT5 USB 433Mbps 5v MF ANT 2T2R RP	Retail Pack
842-8424		ADPT 802.11ac BT5 USB 433Mbps 5v MF ANT 2T2R SP	Sample Pack



#### Version with 1 x SMA and 1 x Onboard Metal Frame Antenna

842-8425		ADPT 802.11ac BT5 USB 433Mbps 5v MF SMA ANT 2T2R AO	Adapter Only
842-8426	US	ADPT 802.11ac BT5 USB 433Mbps 5v MF SMA ANT 2T2R AO	Adapter Only
842-8427		ADPT 802.11ac BT5 USB 433Mbps 5v MF SMA ANT 2T2R RP	Retail Pack
842-8428	US	ADPT 802.11ac BT5 USB 433Mbps 5v MF SMA ANT 2T2R RP	Retail Pack
842-8429		ADPT 802.11ac BT5 USB 433Mbps 5v MF SMA ANT 2T2R SP	Sample Pack

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