

WFBTRTL8822-USB-2 Series

802.11ac/a/b/g/n 2T2R

Wi-Fi + Bluetooth 4.2 USB Module



Support Multiple Operation Systems (Android/Linux/Windows)

SparkLAN WFBTRTL8822-USB-2 is a highly integrated single-chip Wireless LAN (WLAN), Bluetooth USB module which supports 2 streams 802.11ac solutions with multi-user MIMO (Multiple-Input, Multiple-Output) wireless LAN (WLAN) and integrated Bluetooth 4.2. It is integrated 2Tx2R WLAN MAC, baseband, and dual band RF in a single chip USB module. WFBTRTL8822-USB-2 provides a cost effective solution for M2M (machine to machine) connectivity product/device by one USB port, it can be easily integrated into the most familiar operation system (Android/Linux/Windows).

WFBTRTL8822-USB-2 802.11ac/abgn 2Tx2R USB WLAN/BT module with various USB input format & internal printing or external RF antenna connector for high performance wireless LAN and Bluetooth device. It is designed to provide completely M2M connection & excellent cost performance with low power consumption and enhance the advantages of robust system & applications. **Embedded Application**

Key Feature

Applications include portable handheld devices, thin client computer, medical devices, network security & monitoring, 3D printer, TV, STB, POS, digital signs, gaming machine, robotic machinery, industrial tablets, etc.

- 802.11ac/a/b/g/n Wi-Fi +Bluetooth
- Support 802.11ac 2x2, compliant with MU-MIMO. Operates in 2.4GHz and 5GHz frequency bands Maximum
- data rates: 54Mbps in 802.11g, 300Mbps in 802.11n, 866.7Mbps in 802.11ac.
- Support Multiple Operation Systems (Android/Linux/Windows)

Specification

Standards	IEEE 802.11ac/a/b/g/n (2T2R) Bluetooth v2.1+EDR, v3.0, v4.1, v4.2 LE
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Chipset	Realtek RTL8822BU-CG
Data Rate	802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: MCS0~7/ 802.11ac: MCS0~9 Bluetooth: 1Mbps, 2Mbps and up to 3Mbps EDR
Operating Frequency	IEEE 802.11 ac/a/b/g/n ISM Band, 2.412GHz~2.484GHz, 5.150MHz~5.850MHz *Subject to local regulations
Interface	USB for Wireless LAN & Bluetooth
Form Factor	4-Pin Wafer connector / USB Type A
Antenna	2 x IPEX connector or printed antenna for 2T2R (ANT 0 for WIFI only, ANT1 for WIFI+BT)
Modulation	WiFi : 802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11a/g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM) Bluetooth: GFSK, $\pi/4$ DQPSK, 8DPSK
Power Consumption	TX Mode: 450mA RX Mode: 250mA
Operating Voltage	DC 5V
Operating Temperature Range	-20°C ~+70°C
Storage Temperature Range	-40°C ~+80°C
Humidity (Non-Condensing)	5%~95% (Operating) 5%~90% (Storing)
Dimension (in mm)	40 x 20 mm (± 0.5 mm)
Weight (g)	(PU) / (MU) :4.6g ; (P4W) / (M4W) :2.8g
Driver Support	Windows 7, 8.1, 10 / Linux / Android
Security	WEP, WPA, WPA2

OUTPUT POWER & SENSITIVITY

802.11b

Data Rate	Tx \pm 2dBm	Rx Sensitivity
11Mbps	15dBm	\leq -80dBm

802.11g

Data Rate	Tx \pm 2dBm	Rx Sensitivity
54Mbps	14dBm	\leq -70dBm

802.11n / 2.4GHz

	Data Rate	Tx \pm 2dBm(1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity
HT20	MCS7	13dBm	16dBm	\leq -61dBm
HT40	MCS7	13dBm	16dBm	\leq -61dBm

802.11a

Data Rate	Tx \pm 2dBm	Rx Sensitivity
54Mbps	13dBm	\leq -70dBm

802.11n / 5GHz

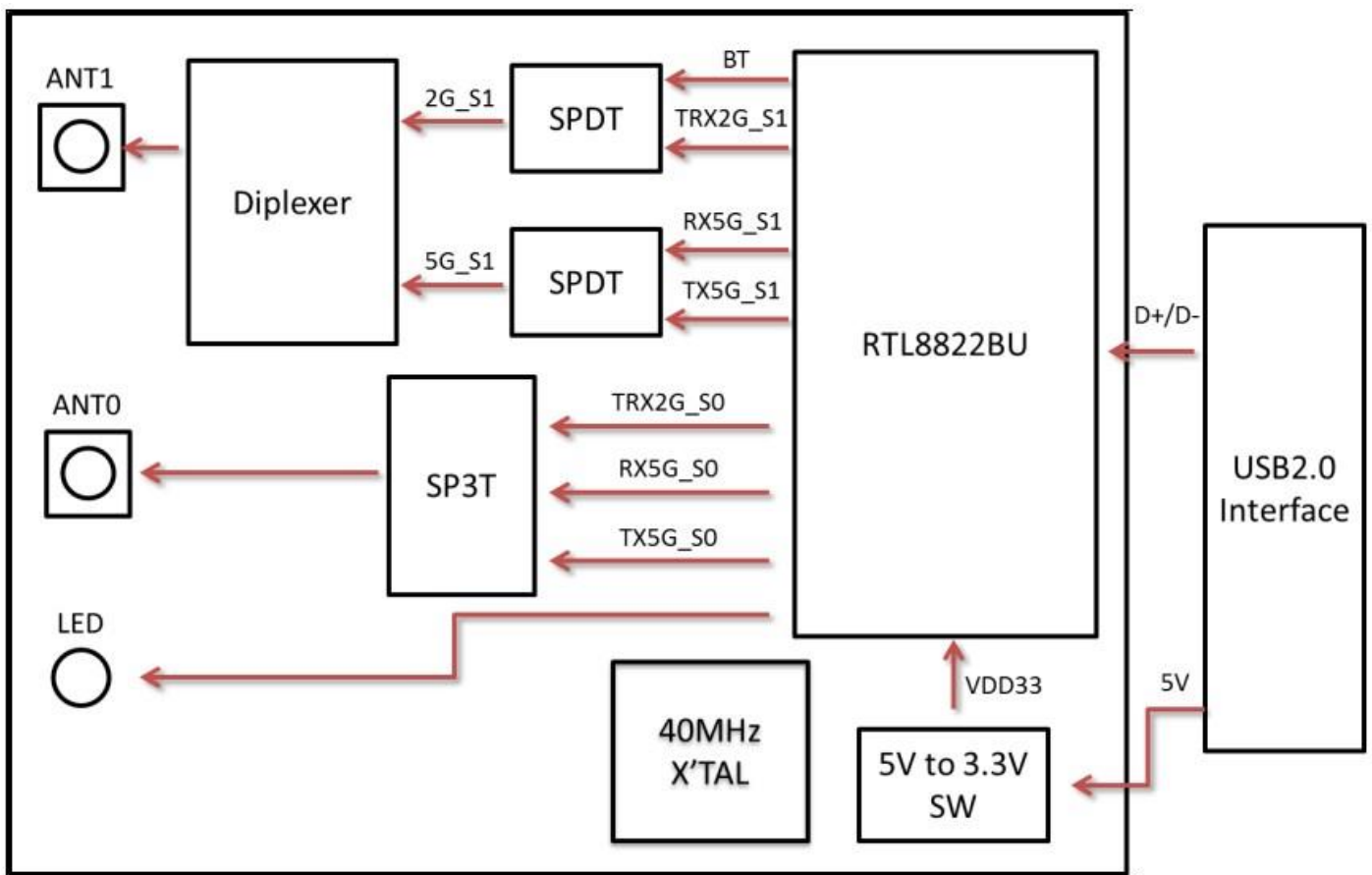
	Data Rate	Tx \pm 2dBm(1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity
HT20	MCS7	12dBm	15dBm	\leq -60dBm
HT40	MCS7	12dBm	15dBm	\leq -60dBm

802.11ac

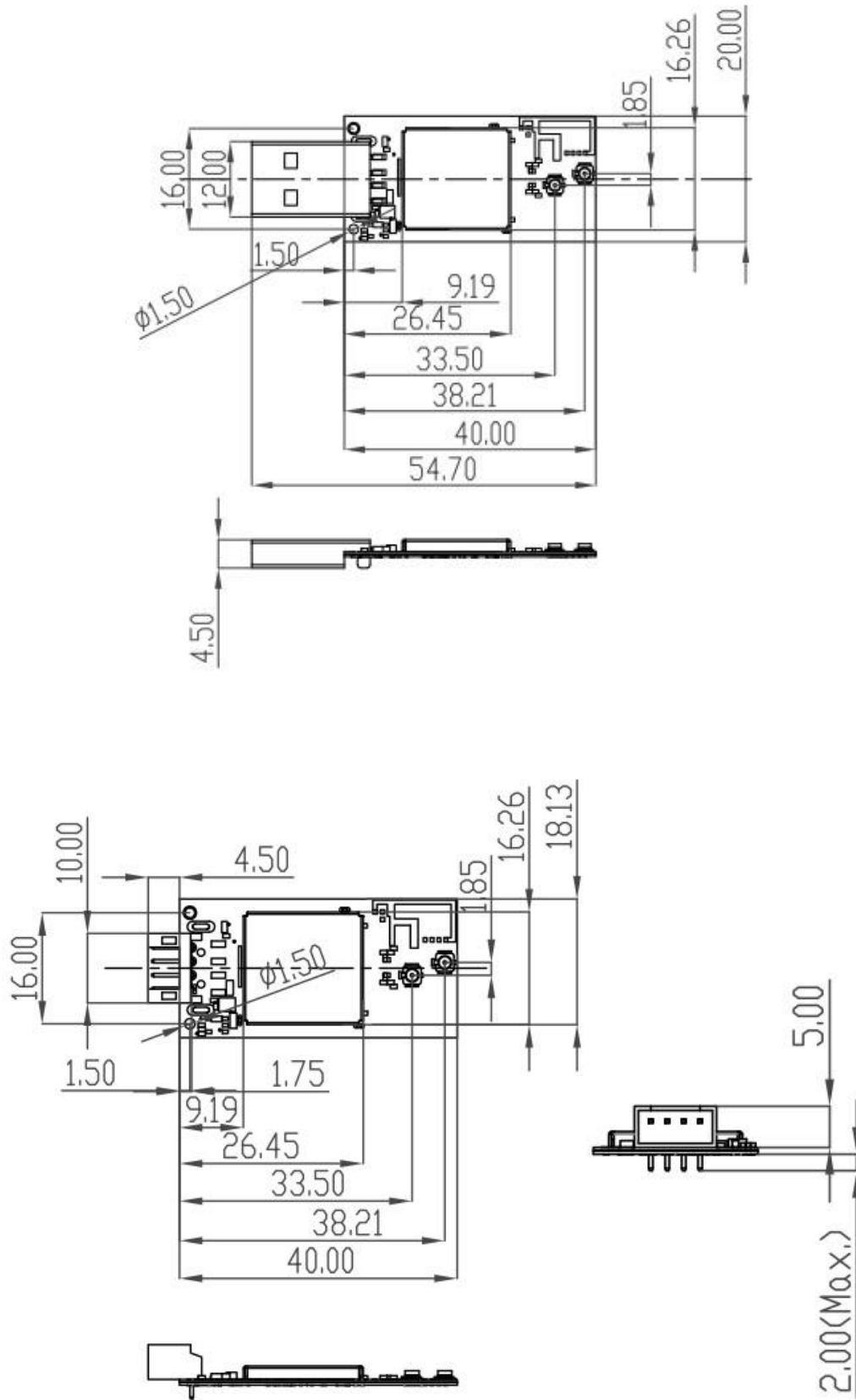
	Data Rate	Tx \pm 2dBm(1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity
VHT80	MCS9	9dBm	12dBm	\leq -51dBm

Bluetooth		
Data Rate	Tx +/- 2dB (Class 2 device)	Rx Sensitivity
3Mbps	$0 \leq \text{Output Power} \leq +4 \text{ dBm}$	<0.1% BER at -70dBm

Block Diagram

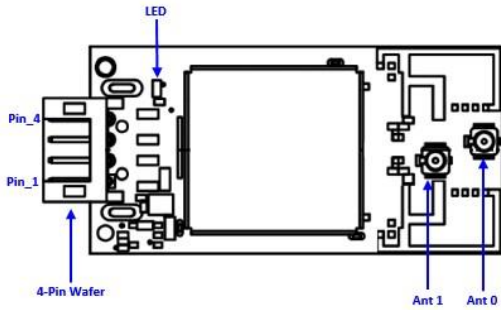


Mechanical Dimension (mm)

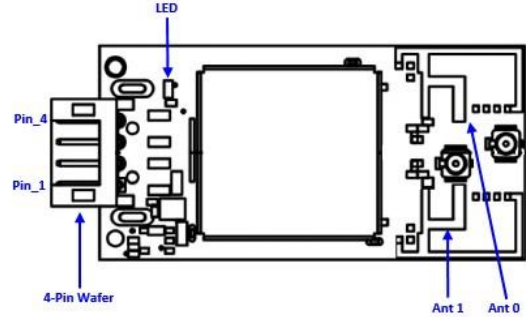


Pin Define

WFBTRTL8822-USB-2 (M4W)

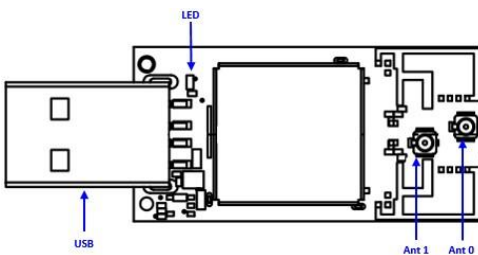


WFBTRTL8822-USB-2 (P4W)

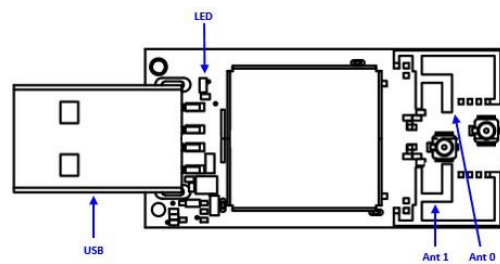


Pin	Description
Wafer Pin_1	USB 5V
Wafer Pin_2	USB D-
Wafer Pin_3	USB D+
Wafer Pin_4	USB GND
LED	WiFi LED
Ant_0	RF Antenna for WiFi 2.4GHz/5GHz
Ant_1	RF Antenna for WiFi 2.4GHz/5GHz & Bluetooth

WFBTRTL8822-USB-2 (MU)



WFBTRTL8822-USB-2 (PU)



Pin	Description
USB	USB Type-A connector for USB2.0
LED	WiFi LED
Ant_0	RF Antenna for WiFi 2.4GHz/5GHz

Ant_1	RF Antenna for WiFi 2.4GHz/5GHz & Bluetooth
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Certification

■ FCC

■ IC

□ NCC

■ CE (RED EN 300 328 V2.1.1 / EN 301 893 V2.1.1)

■ MIC

□ ASNZS