

## WUBQ-159ACN(BT) Series

802.11ac/abgn Dual-Band

1T1R Wi-Fi + Bluetooth 4.1

USB Module



### Wireless USB Module for Embedded Solution

SparkLAN WUBQ-159ACN(BT) is an 802.11ac/abgn 2.4GHz+5GHz USB module based on Qualcomm QCA9377-7 chipset. It supports 1T1R with RX diversity (Support Wi-Fi/BT co-existence) technology, which runs up to 433Mbps and 1~3Mbps EDR for BT, provides higher throughput performance, reliability and range. The WUBQ-159ACN(BT) supports 20/40/80MHz and 256-QAM to maximize bandwidth efficiency.

Adopting the latest 802.11ac solution, WUBQ-159ACN(BT) is ideal for high throughput networking and multimedia applications that requires better Wi-Fi performance. WUBQ-159ACN(BT) is a single-die wireless local area network (WLAN) and Bluetooth combination solution to support 1x1 802.11ac/abgn WLAN standards and Bluetooth 4.1+HS, designed to deliver superior integration of WLAN/Bluetooth and low-energy technology.

#### Embedded Application

Applications include medical devices, security systems, 3D printer, video streaming, PoS, digital signs, gaming machine, Medical equipment, industrial tablet PC's, handheld devices, thin client devices, and many more.

#### Key Feature

- Qualcomm Atheros QCA9377-7
- Antenna: PCB Printed Ant. or 1xU.FL connector, 1T1R
- Data Rates: allows link speeds up to 433Mbps
- Support Win7/8.1/10
- Bluetooth V4.1,V4.0 LE, V3.0+HS, V2.1+EDR

**Specification**

<b>Standards</b>	IEEE 802.11ac/a/b/g/n (1T1R) Bluetooth V4.1,V4.0 LE, V3.0+HS, V2.1+EDR
<b>Chipset</b>	Qualcomm Atheros QCA9377-7
<b>Data Rate</b>	802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: MCS0~7/ 802.11ac: MCS0~9 Bluetooth: 1Mbps, 2Mbps and up to 3Mbps EDR
<b>Operating Frequency</b>	IEEE 802.11 ac/a/b/g/n ISM Band, 2.412GHz~2.472GHz, 5.180MHz~5.825MHz *Subject to local regulations
<b>Interface</b>	USB
<b>Form Factor</b>	7 Pin connector
<b>Antenna</b>	PCB Printed Ant. or 1xU.FL connector Support WLAN/BT co-existence
<b>Modulation</b>	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)
<b>Power Consumption</b>	TX Mode: 1.1W RX Mode: 0.75W
<b>Operating Voltage</b>	DC 5V
<b>Operating Temperature Range</b>	-20°C~70°C
<b>Storage Temperature Range</b>	-30°C~85°C
<b>Humidity (Non-Condensing)</b>	5%~90% (Operating) 5%~95% (Storing)
<b>Dimension (in mm)</b>	40mm x 20.3mm
<b>Weight (g)</b>	≤ 7g
<b>Driver Support</b>	Windows 7/8.1/10, Linux 4.4 (other version by project request)
<b>Security</b>	64/128-bits WEP, WPA, WPA2, 802.1x

OUTPUT POWER & SENSITIVITY		
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802.11b		
Data Rate	Tx ± 2dBm	Rx Sensitivity
11Mbps	19dBm	≤-76dBm

802.11g		
Data Rate	Tx ± 2dBm	Rx Sensitivity
54Mbps	16dBm	≤-74dBm

802.11n / 2.4GHz			
HT20	Data Rate	Tx ± 2dBm	Rx Sensitivity
	MCS7	16dBm	≤-70dBm
HT40	MCS7	16dBm	≤-68dBm

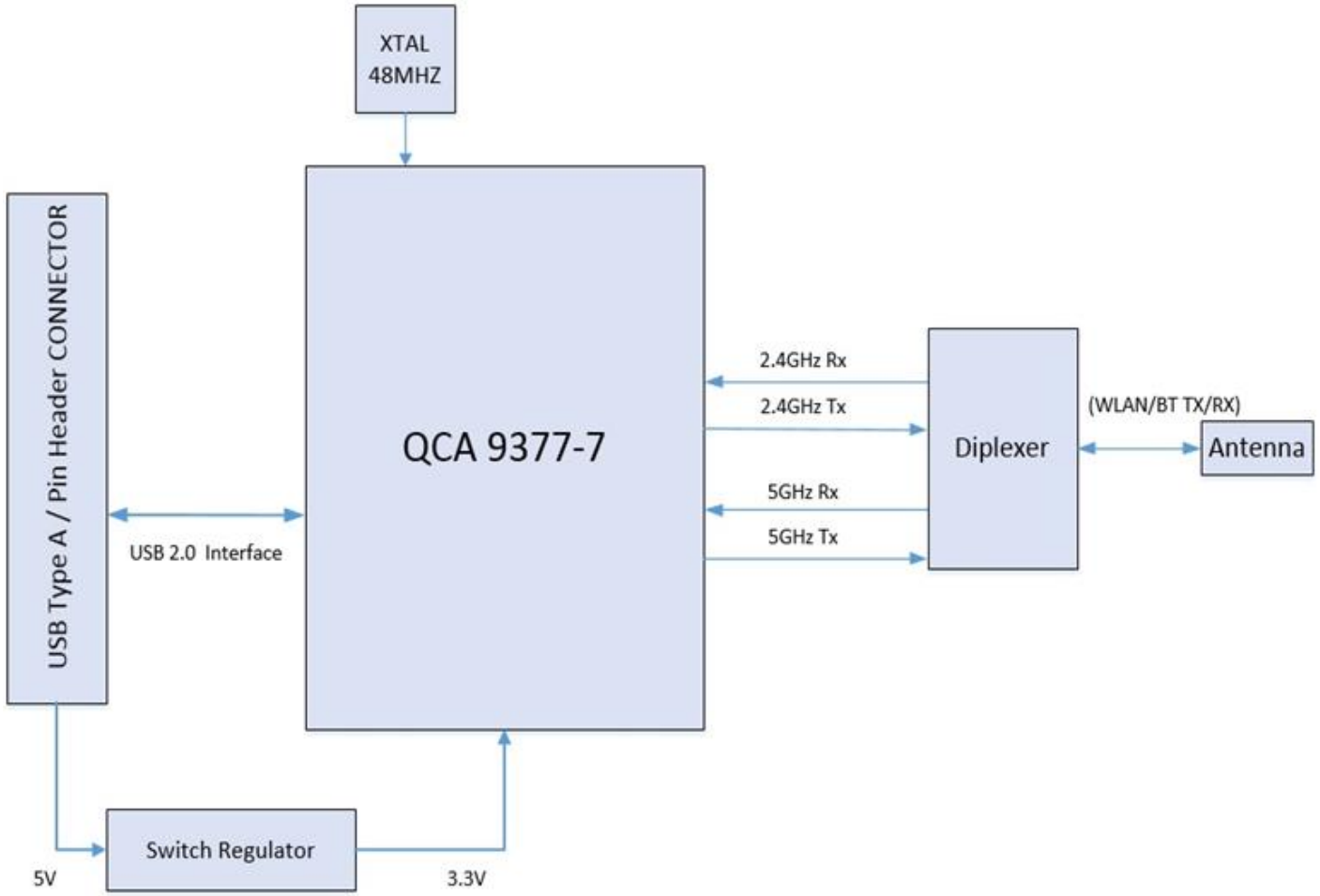
802.11a		
Data Rate	Tx ± 2dBm	Rx Sensitivity
54Mbps	13dBm	≤-73dBm

802.11n / 5GHz			
HT20	Data Rate	Tx ± 2dBm	Rx Sensitivity
	MCS7	13dBm	≤-67dBm
HT40	MCS7	13dBm	≤-63dBm

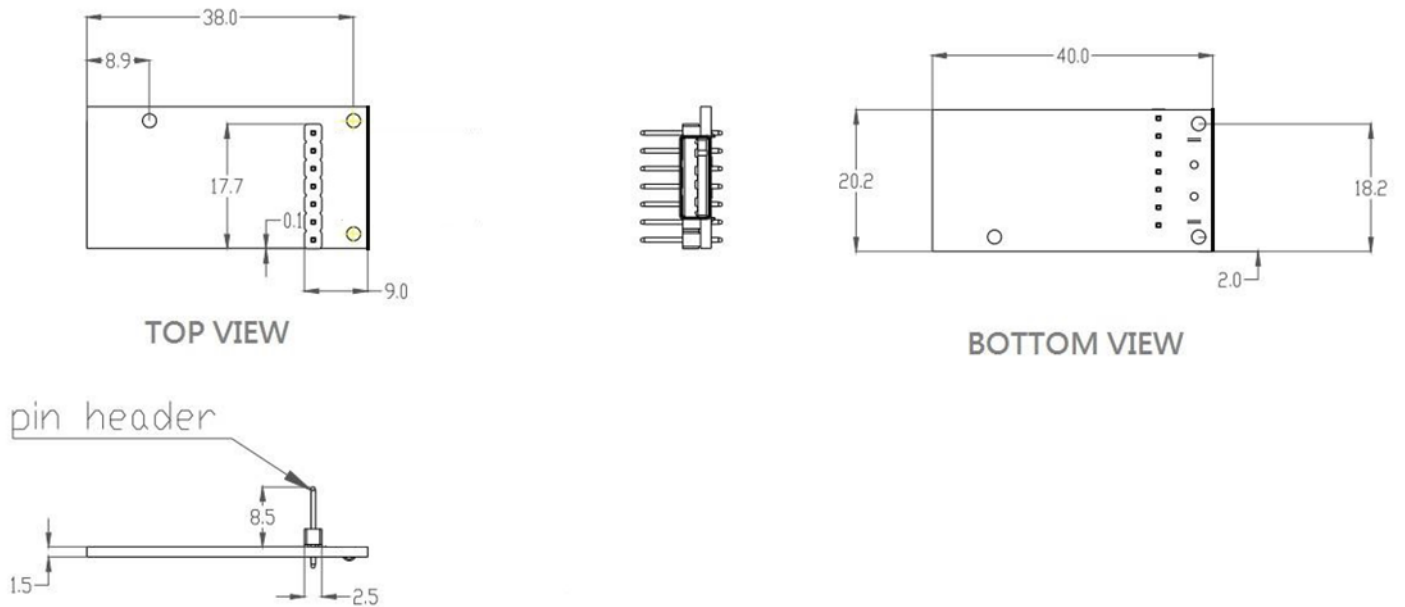
802.11ac			
VHT80	Data Rate	Tx ± 2dBm	Rx Sensitivity
	MCS9	10dBm	≤-55dBm

Bluetooth		
Data Rate	Tx ± 2dBm (Class 2 Device)	Rx Sensitivity
1Mbps, 3Mbps	-4 ≤ Output Power ≤ -1dBm	<0.1% BR, BER at -70dBm
1Mbps	-4 ≤ Output Power ≤ 0dBm	<0.1% BER at -70dBm

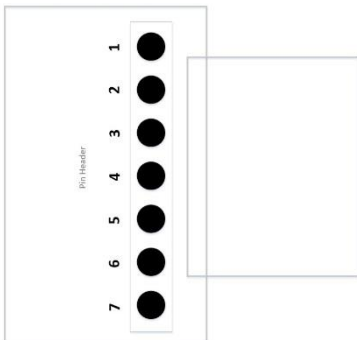
### Block Diagram



### Mechanical Dimension (mm)



### Pin Connector Define



Pin#	Pin Name	Description
1	TBD	TBD
2	V+	Voltage input, 5V
3	D-	WLAN Date input(-)
4	D+	WLAN Date input(+)
5	GND	Voltage input, GND
6	D-	BT Date input(-)
7	D+	BT Date input(+)

## Certification

### PIFA Ant.

- FCC
- IC
- SRRC
- CE (RED EN 300 328 V2.1.1 / EN 301 893 V2.1.1)
- MIC

### Dipole Ant.

- FCC
- IC
- SRRC
- CE (RED EN 300 328 V2.1.1 / EN 301 893 V2.1.1)
- MIC

## Ordering Information

Product Name	Part Number	Description
<a href="#">WUBQ-159ACN(BT)(M7)</a>	R970183001	802.11ac/abgn Dual-Band 1T1R Wi-Fi + Bluetooth USB Module 7Pin & U.FL Connector
<a href="#">WUBQ-159ACN(BT)(P7)</a>	R970183004	802.11ac/abgn Dual-Band 1T1R Wi-Fi + Bluetooth USB Module 7Pin & Printed Antenna

## Optional Accessory

Product Name	Part Number	Description
Ant. AD-300N	R3410110219	3dBi/5dBi 2.4G/5GHz Dipole RP-SMA
RF-101US	R3470300004	J-C SMA F/M1.37 L=150mm+UFL