

WUBQ-159ACN(BT)

802.11ac/abgn Dual-Band

1T1R 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 (for P7 & M7)

Specification :

Standards:	IEEE 802.11ac/a/b/g/n (1T1R) Bluetooth V4.1,V4.0 LE, V3.0+HS, V2.1+EDR (for P7 & M7)
Chipset:	Qualcomm Atheros QCA9377-7
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~2.472GHz, 5.180MHz~5.825MHz *Subject to local regulations
Interface:	USB
Form Factor:	USB 2.0 Type A or 7 Pin connector
Antenna:	PCB Printed Ant. or 1xU.FL connector Support WLAN/BT co-existence
Modulation:	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)
Power Consumption	TX Mode: 1.1W RX Mode: 0.75W
Operating Voltage:	DC 5V
Operating Temperature Range:	-20°C~70°C
Storage Temperature Range:	-30°C~85°C
Humidity (Non-Condensing)	5%~90% (Operating) 5%~95% (Storing)
Dimension (in mm):	40mm x 20.3mm
Weight (g):	≤ 7g
Driver Support:	Windows 7/8.1/10
Security	64/128-bits WEP, WPA, WPA2, 802.1x

OUTPUT POWER & SENSITIVITY

802.11b

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
11Mbps	19dBm	$\leq$ -76dBm

802.11g

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
54Mbps	16dBm	$\leq$ -74dBm

802.11n / 2.4GHz

HT20	Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
	MCS7	16dBm	$\leq$ -70dBm
HT40	MCS7	16dBm	$\leq$ -68dBm

802.11a

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
54Mbps	13dBm	$\leq$ -73dBm

802.11n / 5GHz

HT20	Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
	MCS7	13dBm	$\leq$ -67dBm
HT40	MCS7	13dBm	$\leq$ -63dBm

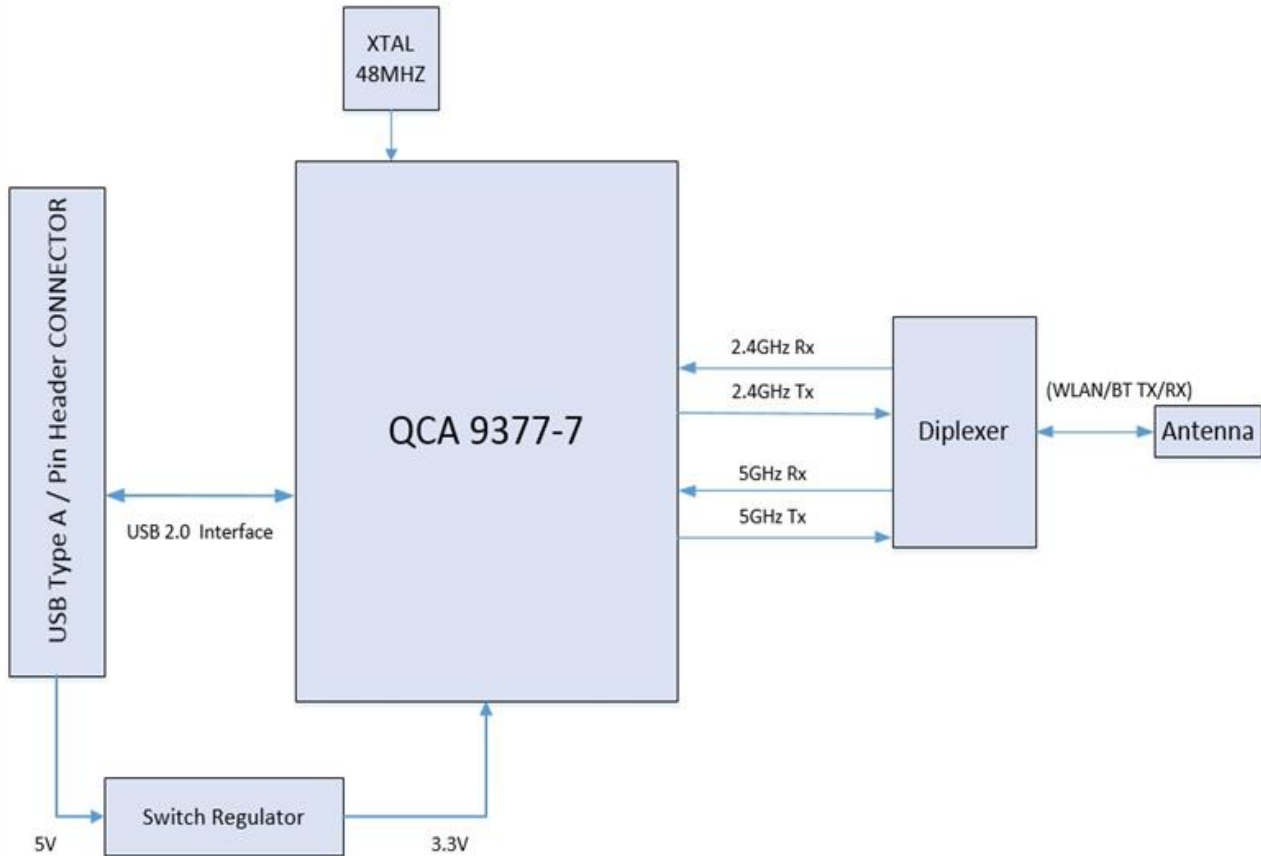
802.11ac

VHT80	Data Rate	Tx $\pm$ 2dBm (1TX)	Rx Sensitivity
	MCS9	10dBm	$\leq$ -55dBm

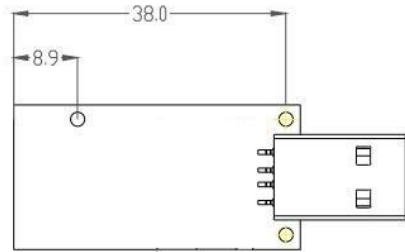
Bluetooth (for P7 & M7)

Data Rate	Tx Power	Rx Sensitivity
1Mbps, 3Mbps	$-4 \leq$ Output Power $\leq$ -1dBm	<0.1% BR, BER at -70dBm
1Mbps	$-4 \leq$ Output Power $\leq$ +0dBm	<0.1% BLE at -70dBm

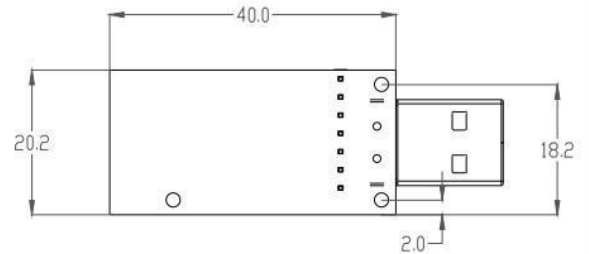
Block Diagram



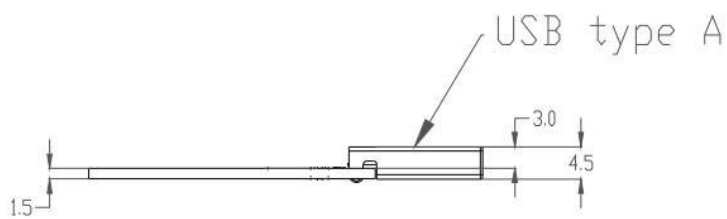
Mechanical Dimension (mm) (for PU & MU)



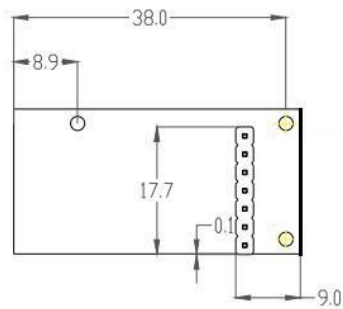
TOP VIEW



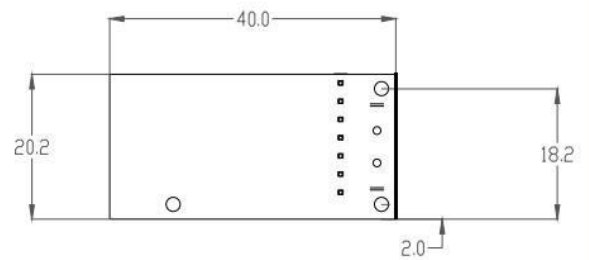
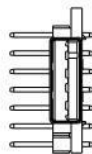
BOTTOM VIEW



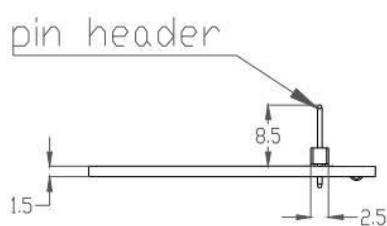
Mechanical Dimension (mm) (for P7 & M7)



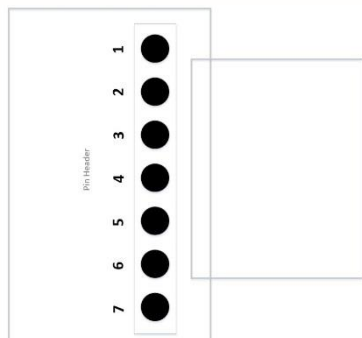
TOP VIEW



BOTTOM VIEW



Pin connector Define



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

Order Information

WUBQ-159ACN(BT) is designed with multiple product skus to fit is all platforms. Here are all the skus for this USB module:

Sku Part Name	Specification
WUBQ-159ACN(MU)	USB Type A & U.FL Connector
WUBQ-159ACN(PU)	USB Type A & Printed Antenna
WUBQ-159ACN(BT)(M7)	7Pin & U.FL Connector
WUBQ-159ACN(BT)(P7)	7Pin & Printed Antenna