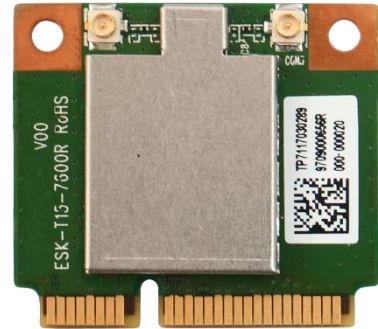


## WPEQ-160ACN(BT)

802.11ac/abgn Dual-Band

1T1R Wi-Fi+Bluetooth 4.1 Combo

Half Mini PCIe Module



### Next-Generation High Throughput Enterprise Networking Solution

WPEQ-160ACN(BT) is an 802.11ac/abgn 2.4GHz+5GHz half-mini PCIe module based on Qualcomm QCA9377-7 chipset. It supports 1T1R with RX diversity technology, which runs up to 433Mbps, provides higher throughput performance and support Bluetooth 4.1+HS,, reliability and range. The WPEQ-160ACN(BT) supports 20/40/80MHz and 256-QAM to maximize bandwidth efficiency.

WPEQ-160ACN(BT) is a Wi-Fi+Bluetooth 4.1 Combo Half Mini PCIe Module form factor, but with USB bus interface.

WPEQ-160ACN(BT) is a single-die wireless local area network (WLAN) solution to support 1x1 802.11ac/abgn WLAN standards, designed to deliver superior integration of WLAN and low-energy technology.

#### Embedded Application

Applications include medical devices, security systems, industrial, 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: 2xU.FL connectors, 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: 1 Mbps, 2Mbps and Up to 3Mbps
<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>	Wifi: USBx1 / Bluetooth: USBx1
<b>Form Factor</b>	Half Mini PCIe
<b>Antenna</b>	2xU.FL connectors (main antenna 0 on, diversity antenna 1 off) for 1T1R
<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: TBD / RX: TBD
<b>Operating Voltage</b>	DC 3.3V
<b>Operating Temperature Range</b>	-20°C~70°C
<b>Storage Temperature Range</b>	-30°C~85°C
<b>Humidity</b> <b>(Non-Condensing)</b>	5%~90% (Operating) 5%~95% (Storing)
<b>Dimension (in mm)</b>	29.85mm x 26.65mm
<b>Weight (g)</b>	≤ 4.7g
<b>Driver Support</b>	Windows7/8.1/10
<b>Security</b>	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

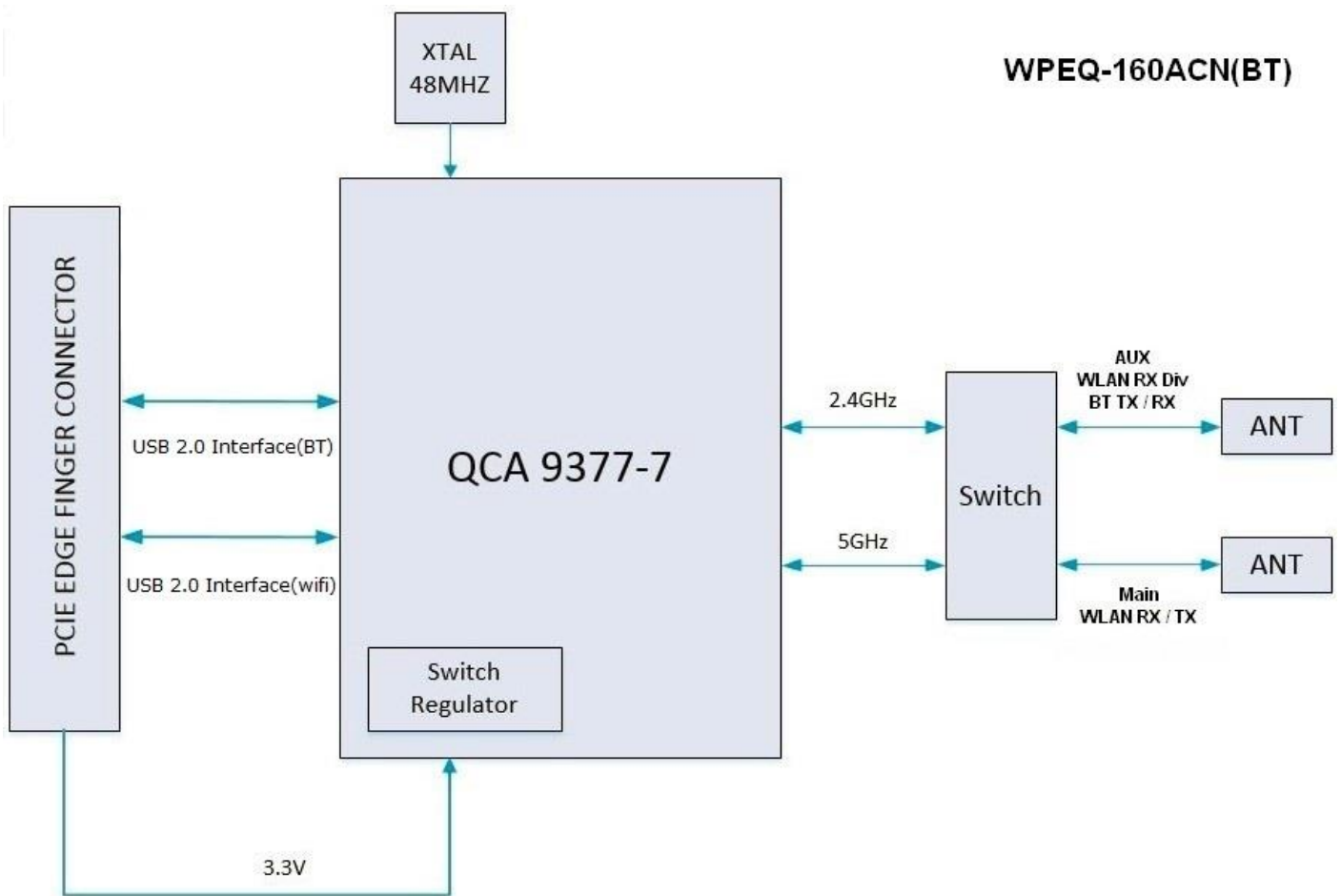
**802.11ac**

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

**Bluetooth**

Data Rate	Tx $\pm$ 2dBm (Class 1 Device)	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**



## Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
1	No Connection	-	2	+3.3V	+3.3V
3	No Connection	-	4	GND	GND
5	No Connection	-	6	No Connection	-
7	No Connection	-	8	No Connection	-
9	GND	GND	10	No Connection	-
11	No Connection	-	12	No Connection	-
13	No Connection	-	14	No Connection	-
15	GND	GND	16	No Connection	-
17	USB(BT) D-	USB serial data	18	GND	GND
19	USB(BT) D+	USB serial data	20	No Connection	-
21	GND	GND	22	No Connection	-
23	No Connection	-	24	+3.3V	+3.3V
25	No Connection	-	26	GND	GND
27	GND	GND	28	No Connection	-
29	GND	GND	30	No Connection	-
31	No Connection	-	32	No Connection	-
33	No Connection	-	34	GND	GND
35	GND	GND	36	USB(Wi-Fi) D-	USB serial data
37	GND	GND	38	USB(Wi-Fi) D+	USB serial data
39	3.3V	+3.3V	40	GND	GND
41	3.3V	+3.3V	42	No Connection	-
43	GND	GND	44	No Connection	-

## Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
45	No Connection	-	46	No Connection	-
47	No Connection	-	48	No Connection	-
49	No Connection	-	50	GND	GND
51	No Connection	-	52	3.3V	+3.3V