

## WPEQ-262ACNI(BT)High Power

802.11ac/a/b/g/n 2T2R Dual-Band

Industrial-Grade

Wi-Fi Mini PCIe Module



### Industrial-Grade Wi-Fi Solution

WPEQ-262ACNI(BT) is high power 802.11ac/a/b/g/n dual band 2T2R Industrial-Grade (-40°C ~+85°C) Wi-Fi mini PCIe module, multiple output (MU-MIMO) with two spatial streams IEEE 802.11ac/a/b/g/n WLAN standards, designed to deliver superior integration of WLAN.

It supports Windows and Linux Drivers solution. WPEQ-262ACNI(BT) is using a QCA6174A-5 along with Windows and Linux driver which provide excellent solution for Automation/ Robotic various applications. Adopting the latest 802.11ac solution. WPEQ-262ACNI(BT) is dual band AC on 2.4GHz+5GHz. The download speed are 300Mbps on N networks and 867Mbps on AC network.

#### Embedded Application

Applications include medical devices, security systems, industrial PC, Point of Sale, digital signs, set-top/net-top box, embedded / tablet PC's, Vehicle mounted front, Robot/ Intelligent Gateway, Gaming machine, etc.

#### Key Feature

- Supports 20/40 MHz at 2.4 GHz and supports 20/40/80 MHz at 5 GHz (SW PL determines 2.4 GHz HT40/VHT40 support)
- Compatible for 5 GHz 802.11ac, or 2.4/5 GHz 802.11n WLAN applications.

## Specification

<b>Standards</b>	IEEE 802.11ac/a/b/g/n (2T2R)
<b>Chipset</b>	Qualcomm Atheros QCA6174A-5
<b>Data Rate</b>	802.11b: 11Mbps 802.11a/g: 54Mbps 802.11n: MCS0~15 802.11ac: MCS0~9
<b>Operating Frequency</b>	IEEE 802.11ac/a/b/g/n ISM Band: 2.412GHz~2.484GHz, 5.150GHz~5.850GHz *Subject to local regulations
<b>Interface</b>	WLAN: PCIe
<b>Form Factor</b>	Mini PCIe
<b>Antenna</b>	2 x IPEX MHF1 connectors (J1 for WIFI+BT, J14 for WIFI)
<b>Modulation</b>	Wi-Fi: 802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11a: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)
<b>Power Consumption</b>	TX mode: 610mA(Max.) RX mode: 298mA(Max.)
<b>Operating Voltage</b>	DC 3.3V
<b>Operating Temperature Range</b>	-40°C~85°C
<b>Storage Temperature Range</b>	-45°C~90°C
<b>Humidity (Non-Condensing)</b>	5%~90% (Operating) 5%~90% (Storing)
<b>Dimension L x W x H (in mm)</b>	50.80mm(±0.3mm) x 29.85mm(±0.3mm) x 3.4mm(±0.3mm)
<b>Weight (g)</b>	7.5g
<b>Driver Support</b>	Windows 7/8.1/10 Linux (Open Source), Recommend Kernel v4.0+
<b>Security</b>	64/128-bits WEP, WPA, WPA2, WPA3, 802.1x

**OUTPUT POWER & SENSITIVITY**
**802.11b**

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
11Mbps	18dBm	$\leq$ -86dBm

**802.11g**

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
54Mbps	14.5dBm	$\leq$ -72dBm

**802.11n / 2.4GHz**

	Data Rate	Tx $\pm$ 2dBm (1TX)	Tx $\pm$ 2dBm (2TX)	Rx Sensitivity
HT20	MCS7	14dBm	17dBm	$\leq$ -69dBm
HT40	MCS7	13.5dBm	16.5dBm	$\leq$ -67dBm

**802.11a**

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
54Mbps	14dBm	$\leq$ -73dBm

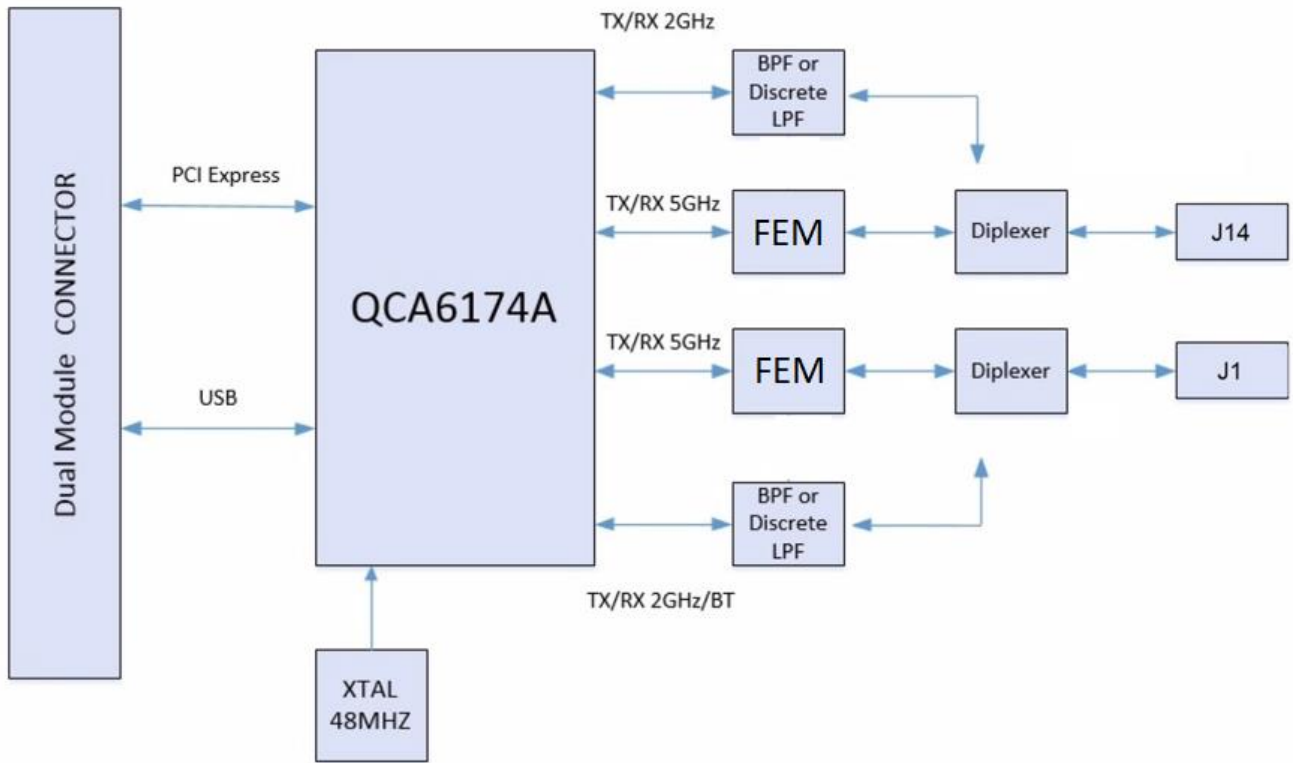
**802.11n / 5GHz**

	Data Rate	Tx $\pm$ 2dBm (1TX)	Tx $\pm$ 2dBm (2TX)	Rx Sensitivity
HT20	MCS7	13.5dBm	16.5dBm	$\leq$ -71dBm
HT40	MCS7	13.5dBm	16.5dBm	$\leq$ -67dBm

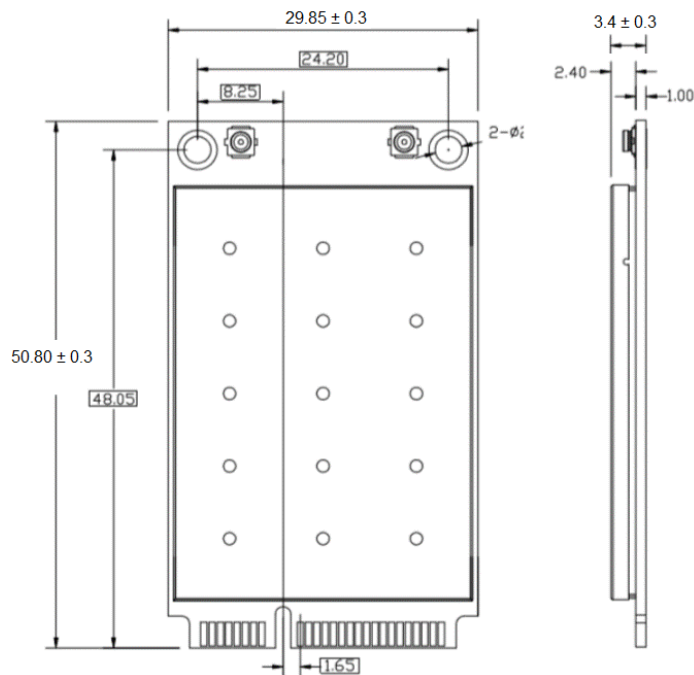
**802.11ac**

	Data Rate	Tx $\pm$ 2dBm (1TX)	Tx $\pm$ 2dBm (2TX)	Rx Sensitivity
VHT80	MCS9	11.5dBm	14.5dBm	$\leq$ -57dBm

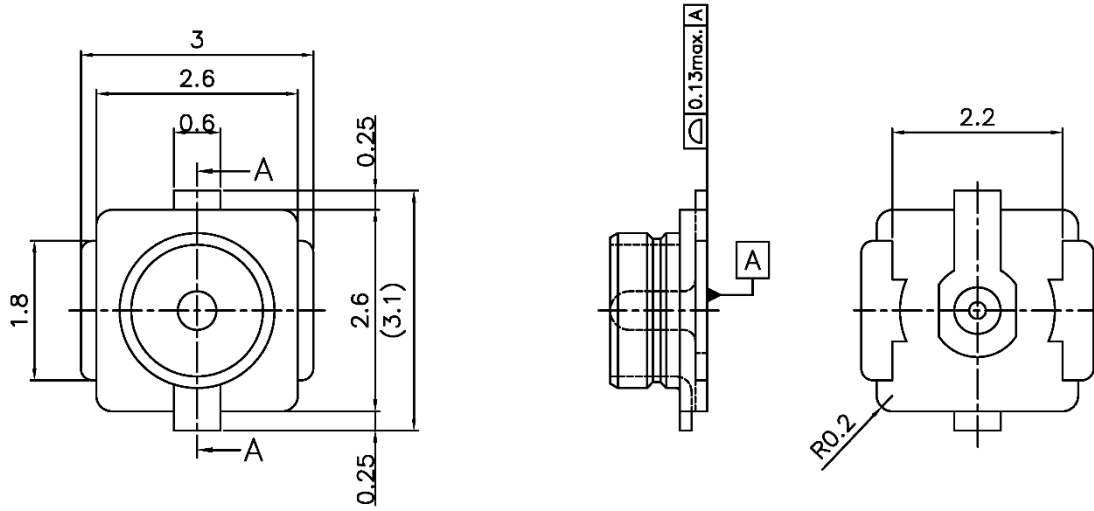
**Block Diagram**



**Mechanical Dimension (mm)**



### MHF1 connector spec.



Unit: mm

### Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
1	WAKE_L(OPT)	Output and open Drain active Low signal. This signal is used to request that the system return from a sleep/suspended state to service a function initiated wake event.	2	+3.3V	+3.3V
3	WL_DISABLE_L	WL_DISABLE_L	4	GND	GND
5	BT_DISABLE_L	BT_DISABLE_L	6	No Connection	-
7	CLKREQ_L	Output for reference clock request signal	8	No Connection	-
9	GND	GND	10	No Connection	-
11	REFCLK-	Input signal for PCI Express differential reference clock (100 MHz)	12	No Connection	-
13	REFCLK+	Input signal for PCI Express differential reference clock (100 MHz)	14	No Connection	-
15	GND	GND	16	No Connection	-
17	No Connection	-	18	GND	GND
19	No Connection	-	20	No Connection	-
21	GND	GND	22	PERST_L	Input signal for functional reset to the card
23	PERn0	PCI Express x1 data interface: one differential receive pair	24	3.3V/AUX	3.3V/AUX

## Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
25	PERp0	PCI Express x1 data interface: one differential receive pair	26	GND	GND
27	GND	GND	28	No Connection	-
29	GND	GND	30	No Connection	-
31	PETn0	PCI Express x1 data interface: one differential transmit pair	32	No Connection	-
33	PETp0	PCI Express x1 data interface: one differential transmit pair	34	GND	GND
35	GND	GND	36	USB D-	USB_D-
37	No Connection	No Connection	38	USB D+	USB_D+
39	+3.3V	+3.3V	40	GND	GND
41	+3.3V	+3.3V	42	No Connection	-
43	GND	GND	44	LED_WLAN_L (OPT)	Output and open drain active low signal. This signal is used to allow the PCI Express Mini Card add-in card to provide status indicators via LED devices that will be provided by the system.
45	No Connection	-	46	LED_WPAN_L (OPT)	Output and open drain active low signal. This signal is used to allow the PCI Express Mini Card add-in card to provide status indicators via LED devices that will be provided by the system
47	No Connection	-	48	No Connection	-
49	No Connection	-	50	GND	GND
51	No Connection	-	52	+3.3V	+3.3V

\*NA→No active

\*OPT →Optional

(This is optional as the function may or may not work under all platform configurations, to ensure this product performs the feature you need, please contact our Sales first with your platform design and configuration details before implementing layout design.)

## Certification

### Dipole Ant.

 FCC

 IC

 NCC

 CE (RED EN 300 328 V2.2.2 / EN 301 893 V2.1.1)

 MIC

 ASNZS

## Ordering Information

Product Name	Part Number	Description
WPEQ-262ACNI(BT)	R9701890029	802.11ac/a/b/g/n Industrial Grade 2T2R WiFi+BT High Power Mini PCIe

## Optional Accessory

Product Name	Part Number	Description
AD-103AG	R3410110203	Dipole Antenna, 2dBi 2.4GHz/5GHz, RP-SMA(M) connector
AD-300N	R3410110219	Antenna Dual -Band 2.4GHz/5GHz 3dBi/5dBi Omnidirectional RP-SMA PLUG(BSMA)
AD-302N	R3410110221	Dipole Antenna, 3dBi/2dBi 2.4G/5GHz, RP-SMA(M) connector
AD-303N	R3410110222	Dipole Antenna, 3dBi/3dBi 2.4G/5GHz, RP-SMA(M) connector
CBIRF-ME150	R3470300023	I-PEX/MHF1 to RP-SMA Female; L:150mm; Coaxial 1.37 Black
CBIRF-ME250	R3470300024	I-PEX/MHF1 to RP-SMA Female; L:250mm; Coaxial 1.37 Black