Features:

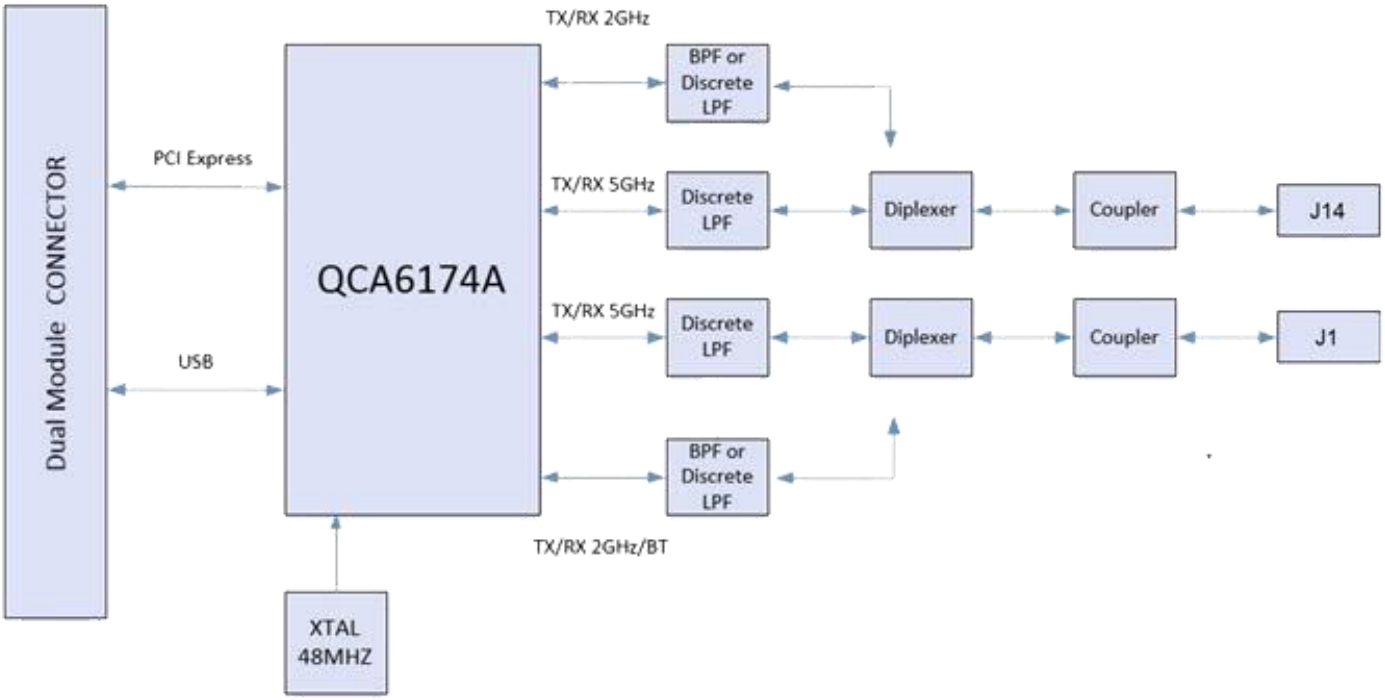
- **Supports low power PCIe (w/L1 substate) interfaces for WLAN and USB1.1 interface for Bluetooth.**
- **Support Bluetooth 5.0, BLE, ANT+ and be backwards compatible with Bluetooth 1.2, 2.X + enhanced data rate.**
- **Supports 20/40 MHz at 2.4 GHz and supports 20/40/80 MHz at 5 GHz (SW PL determines 2.4 GHz HT40/VHT40 support)**
- **Compatible for 5 GHz 802.11ac, or 2.4/5 GHz 802.11n WLAN applications.**

WPEA-251ACNI (BT)

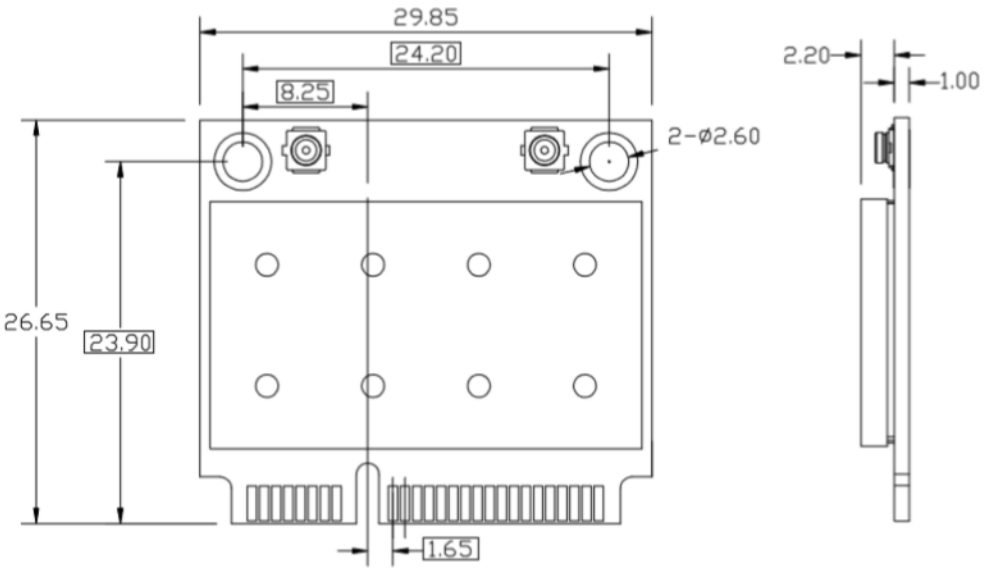
802.11ac/abgn 2T2R Dual-Band Industrial-Grade
Wi-Fi+Bluetooth 5.0 Combo Half Mini PCIe Module

System	
Standards:	IEEE 802.11ac/a/b/g/n (2T2R) Bluetooth V5.0, V4.2, V4.1, V4.0 LE, V3.0+HS, V2.1+EDR
Chipset:	Qualcomm Atheros QCA6174A-5
Data Rate:	802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: MCS0~15/ 802.11ac: MCS0~9 Bluetooth: 1 Mbps, 2Mbps and Up to 3Mbps
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:	PCIe: WLAN / USB: Bluetooth
Form Factor:	Half Mini PCIe
Antenna:	2xIPEX connectors (J1 for WIFI+BT, J14 for WIFI)
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 (Max.)	TX: 626mA RX: 286mA
Operating Voltage	DC 3.3V
Operating Temperature Range	-40°C~ 85°C (TBD)
Storage Temperature Range	-45°C~90°C
Humidity (Non-Condensing)	5%~90% (Operating) 5%~90% (Storing)
Dimension (in mm)	26.65mm x 29.85mm x 3.2mm
Weight (g)	≦ 6g
Driver Support	Windows 7/8.1/10 Linux (Open Source), Recommend Kernel v4.0+
Security	64/128-bits WEP, WPA, WPA2, 802.1x

Block Diagram



Mechanical Dimension (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.)