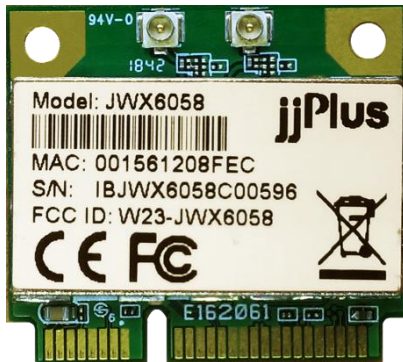


## JWX6058



### High performance 2x2 Dual-Band 802.11ac

### Wi-Fi with MU-MIMO and Bluetooth 5.0

JWX6058 is a 802.11ac wave2 2x2+BT5.0 Half Mini PCIe Module. It's highly integrated and cost effective and low-power consumption module which has all of the Wi-Fi and Bluetooth functionalities. It supports 2-stream 802.11ac solutions with Multi-user MIMO (Multiple-Input, Multiple-Output). It supports high-speed Wi-Fi connectivity and enriched media experiences. It is optimized for energy efficiency, which is critical to extending the battery life of portable devices.

#### Features

- Advanced 802.11ac features such as MU-MIMO and TX Beamforming to increase network capacity  
Mini PCIe 2.0 interface
- supports Classic Bluetooth as well as Bluetooth Low Energy hub and peripheral devices.
- Power saving techniques for low power consumption

#### System Information

Wireless: IEEE802.11ac wave2 Dual-Band 2T2R

MU-MIMO

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: 300Mbps

802.11ac: 867Mbps

#### Operating Frequency

IEEE802.11bgn: 2.412GHz~2.484GHz

IEEE802.11ac: 5.180GHz~5.850GHz

#### Application

Smart TV and OTT Box, medical devices, PoS, digital signs, gaming machines, handheld devices, digital Scale, ect.

## Specification

<b>Standards</b>	IEEE 802.11ac/a/b/g/n (2T2R) Bluetooth v5.0, v4.2, v4.1, v4.0 LE, v3.0+HS, v2.1+EDR
<b>Chipset</b>	Qualcomm QCA6174A-5
<b>Interface</b>	PCIe for WiFi, USB for BT
<b>Form Factor</b>	Half Mini PCIe
<b>Antenna</b>	2x IPEX MHF4 connectors
<b>Modulation</b>	<p>Wi-Fi:</p> <p>802.11b: DSSS (DBPSK, DQPSK, CCK)</p> <p>802.11g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)</p> <p>802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)</p> <p>802.11a: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)</p> <p>802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)</p> <p>Bluetooth:</p> <p>Header: GFSK, Payload 2M: <math>\pi/4</math>-DQPSK, Payload 3M: 8-DPSK</p>
<b>Power Consumption</b>	TX: 806mA, RX: 205mA, Max: 3.5W
<b>Operating Voltage</b>	DC 3.3V $\pm$ %
<b>Operating Temperature Range</b>	-40°C~85°C
<b>Storage Temperature Range</b>	-45°C~135°C
<b>Operating Humidity (Non-Condensing)</b>	5%~95%
<b>Storage Humidity (Non-Condensing)</b>	5%~90%
<b>Power Consumption</b>	TX: 806mA, RX: 205mA, Max: 3.5W
<b>Dimension L x W x H (in mm)</b>	26.8 x 29.8mm
<b>Driver Support</b>	Windows 7, Windows 8/8.1, Windows 10, Linux, Android
<b>Security</b>	64/128-bits WEP, WPA, WPA2, WPA3, 802.1x
<b>Certification</b>	FCC/CE

## Output Power & Sensitivity

802.11b/g		
Data Rate	TX +/- 2dB	RX Sensitivity +/- 2dB
1~11Mbps	18 dBm	-90~-85 dBm
6Mbps	18 dBm	-90 dBm
24Mbps	17 dBm	-83 dBm
54Mbps	16 dBm	-76 dBm

802.11n / 2.4GHz				
Data Rate		TX +/- 2dB (1TX)	TX +/- 2dB (2TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	17 dBm	20 dBm	-88 dBm
	MCS4	16 dBm	19 dBm	-77 dBm
	MCS7	15 dBm	18 dBm	-72 dBm
VHT 40	MCS0	17 dBm	20 dBm	-86 dBm
	MCS4	16 dBm	19 dBm	-76 dBm
	MCS7	15 dBm	18 dBm	-70 dBm

802.11a		
Data Rate	TX +/- 2dB	RX Sensitivity +/- 2dB
6Mbps	12 dBm	-90 dBm
24Mbps	11 dBm	-83 dBm
54Mbps	10 dBm	-76 dBm

802.11n / 5GHz				
Data Rate		TX +/- 2dB (1TX)	TX +/- 2dB (2TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	13 dBm	16 dBm	-88 dBm
	MCS4	11 dBm	14 dBm	-77 dBm
	MCS7	10 dBm	13 dBm	-72 dBm
VHT 40	MCS0	12 dBm	15 dBm	-86 dBm
	MCS4	11 dBm	14 dBm	-76 dBm
	MCS7	10 dBm	13 dBm	-70 dBm

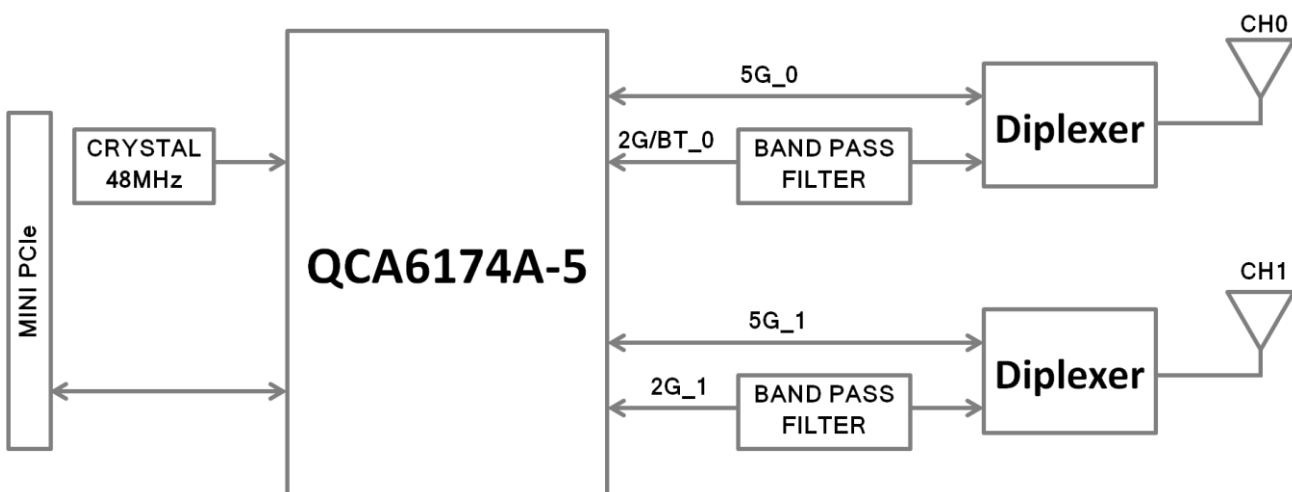
### 802.11ac

Data Rate		Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	13 dBm	16 dBm	-90 dBm
	MCS4	12 dBm	15 dBm	-80 dBm
	MCS8	7 dBm	10 dBm	-70 dBm
VHT 40	MCS0	12 dBm	15 dBm	-90 dBm
	MCS4	12 dBm	15 dBm	-75 dBm
	MCS9	6 dBm	9 dBm	-65 dBm
VHT 80	MCS0	12 dBm	15 dBm	-85 dBm
	MCS4	12 dBm	15 dBm	-70 dBm
	MCS9	6 dBm	9 dBm	-60 dBm

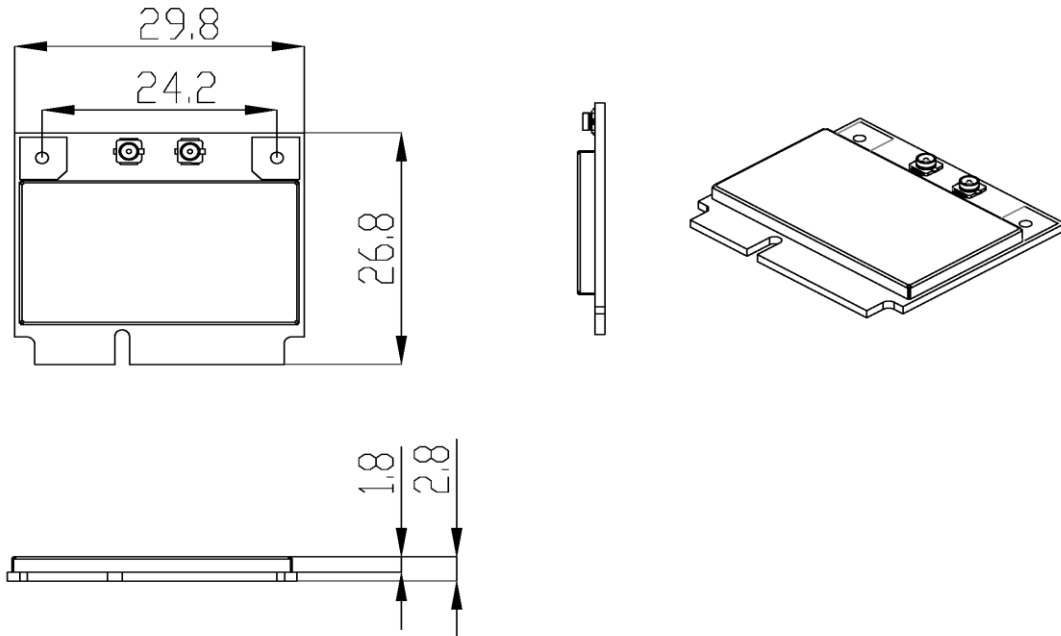
### Bluetooth

Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
3Mbps	$0 \leq \text{Output Power} \leq +4\text{dBm}$	<0.1% BER at -70dBm

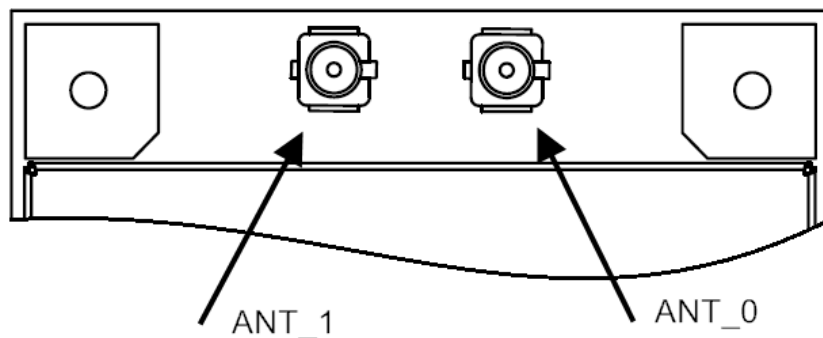
## Block Diagram



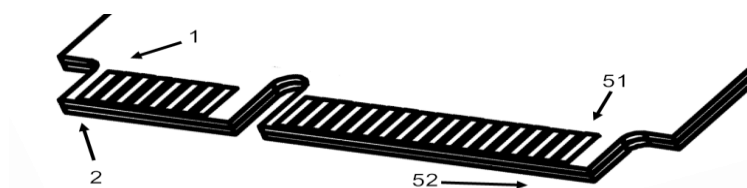
## Dimension



## Pin Assignment



Pin Name	Description
Ant_0	RF Antenna for WiFi 2.4GHz/5GHz & Bluetooth
Ant_1	RF Antenna for WiFi 2.4GHz/5GHz



## Pin Assignment

PIN#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	WAKE#	PCIE_WAKE	2	+3.3Vaux	VDD33
3	COEX1	NC	4	GND	GND
5	COEX2	NC	6	+1.5V	NC
7	CLKREQ#	PCIE_CLKREQ	8	UIM_PWR	NC
9	GND	GND	10	UIM_DATA	NC
11	REFCLK-	REFCLK-	12	UIM_CLK	NC
13	REFCLK+	REFCLK+	14	UIM_RESET	NC
15	GND	GND	16	UIM_VPP	NC
17	Reserved	NC	18	GND	GND
19	Reserved	NC	20	W_DISABLE#	WLAN_DISABLE
21	GND	GND	22	PERST#	PCIE_RST
23	PERn0	PCIE_RX_N	24	+3.3Vaux	NC
25	PERp0	PCIE_RX_P	26	GND	GND
27	GND	GND	28	+1.5V	NC
29	GND	GND	30	SMB_CLK	NC
31	PETn0	PCIE_TX_N	32	SMB_DATA	NC
33	PETp0	PCIE_TX_P	34	GND	GND
35	GND	GND	36	USB_D-	USB_DN
37	Reserved	NC	38	USB_D+	USB_DP
39	+3.3Vaux	NC	40	GND	GND
41	+3.3Vaux	NC	42	LED_WWAN	BT_LED
43	GND	GND	44	LED_WLAN	WLAN_LED
45	RESERVED	LTE_ACTIVE	46	LED_WPAN	NC
47	RESERVED	LTE_PRI	48	+1.5V	NC
49	RESERVED	LTE_SYNC	50	GND	GND
51	RESERVED	BT_RF_KILL	52	+3.3Vaux	VDD33

## Order Information

Product Name	Description
JWX6058	802.11ac/a/b/g/n 2x2 & BT5.0 Half Mini PCIe Module