

# JWX6058

## 802.11ac/abgn Mini-PCIe WiFi & BT Module

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### System Information

Wireless: IEEE 802.11ac/a/b/g/n (2T2R)

Bluetooth v4.2/ 5.0 (Note: 5.0 for Linux Only)

MU-MIMO

Chipset: Qualcomm Atheros QCA6174A-5

Antenna: U.FL x2 for 2T2R (2.4GHz & 5GHz dual band antenna)

### Data Rate

802.11b : 11Mbps

802.11a/g : 54Mbps

802.11n : 300Mbps

802.11ac : 867Mbps

### Operating Frequency

IEEE 802.11 b/g/n: 2.412GHz ~ 2.484GHz

IEEE 802.11 an/ac: 5.150GHz ~ 5.850GHz

### Interface

Mini PCIe for WiFi

Mini PCIe with USB for Bluetooth

Antenna Port: U.FL x2 for 2T2R

## Modulation

802.11a : BPSK, QPSK, 16-QAM, 64-QAM  
802.11b : DBPSK, DQPSK, CCK  
802.11g : BPSK, QPSK, 16-QAM, 64-QAM  
802.11n : BPSK, QPSK, 16-QAM, 64-QAM  
802.11ac : BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

## Recommended Operating Conditions

Operating Voltage: DC 3.3V  $\pm$  10%  
Operating Temperature Range: -40° ~ 85°C  
Storage Temperature Range: -45° ~ 135°C  
Operating Humidity (non-condensing): 5% ~ 95%  
Storage Humidity (non-condensing): 5% ~ 90%  
Power consumption: TX: 806mA, RX: 205mA, Max: 3.5W  
Dimension (in mm): 26.8(L) x 30.0(W) mm

Noted: The best RF performance specified in the data sheet, that's guaranteed only between -20° and 70° without reducing performance.

## Driver Support

### Windows:

Windows 7 (32bit/64bit)  
Windows 8/8.1 (32bit/64bit)  
Windows 10 (32bit/64bit)

### Linux:

Kernel version 4.4.15  
Kernel version 4.9.11  
Kernel version 4.11

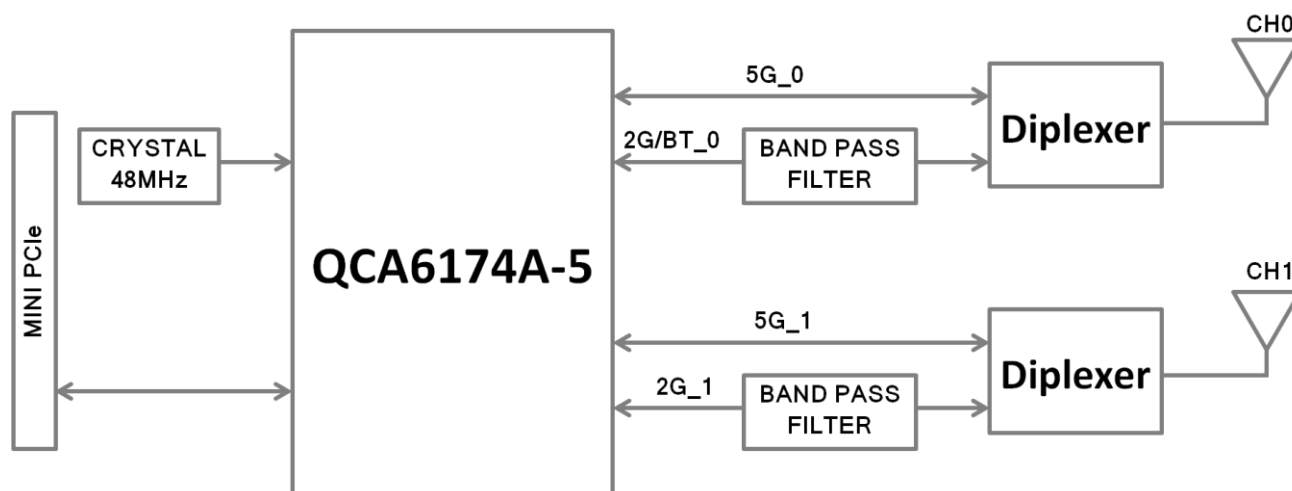
### Android N: (WiFi Only)

Kernel version 4.9.31  
Kernel version 4.4.62

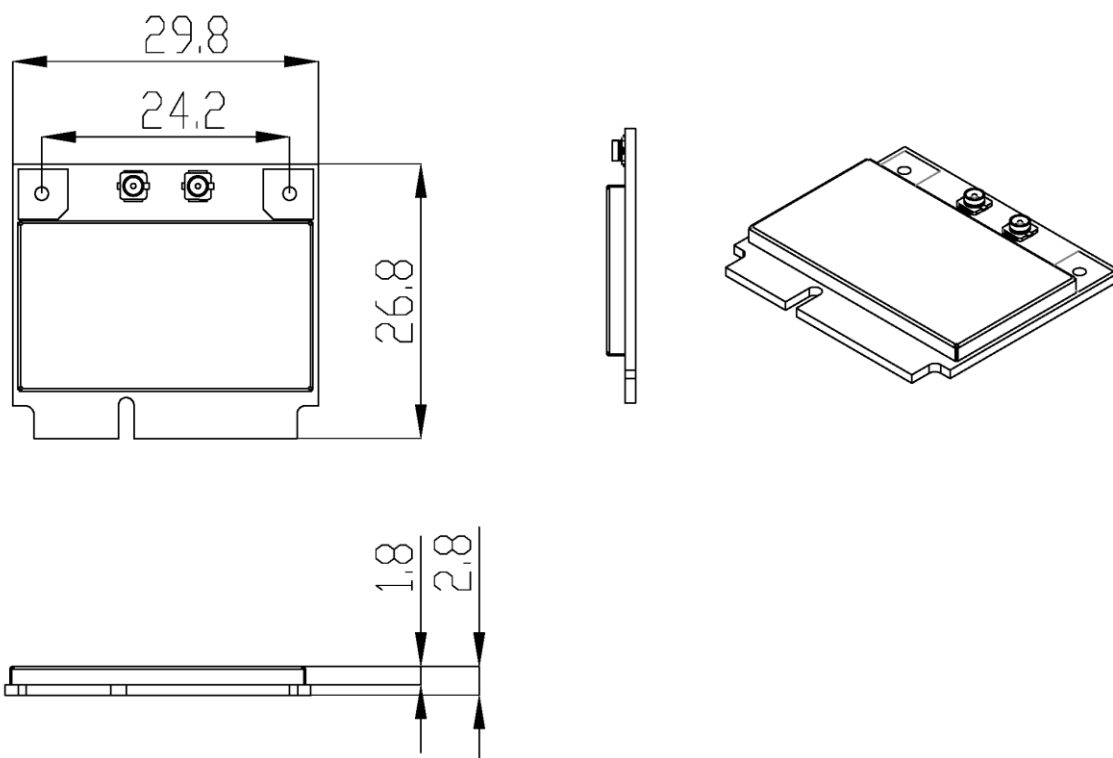
## Certification

CE / FCC

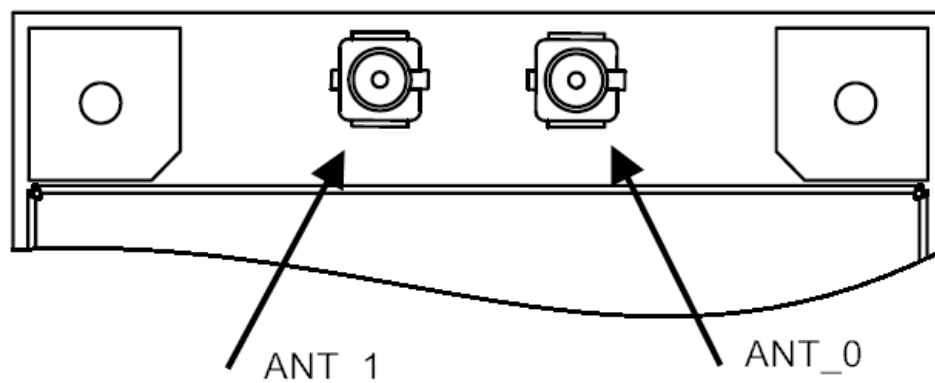
**Diagram**



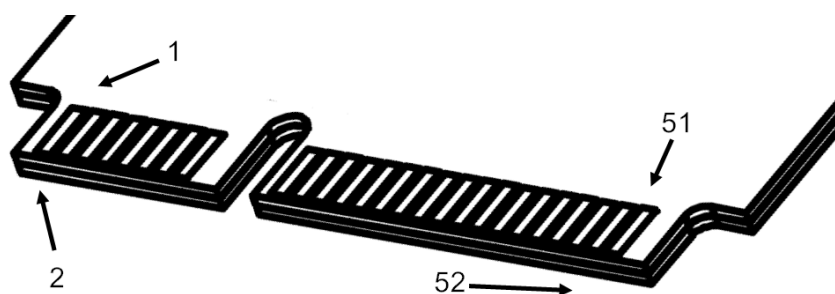
## Dimension



## 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#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	WAKE#	WAKE	2	+3.3Vaux	VDD33
3	COEX1	NC	4	GND	GND
5	COEX2	NC	6	+1.5V	NC
7	CLKREQ#	VLKREQ	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#	RESET
23	PERn0	PCIE_TX_P	24	+3.3Vaux	NC
25	PERp0	PCIE_TX_N	26	GND	GND
27	GND	GND	28	+1.5V	NC
29	GND	GND	30	SMB_CLK	NC
31	PETn0	PCIE_RX_P	32	SMB_DATA	NC
33	PETp0	PCIE_RX_N	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

## Output Power & Sensitivity

### Bluetooth

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

### 802.11bg / 2.4GHz

Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
1~11Mbps	18dBm	-95~-85dBm
6Mbps	18dBm	-90dBm
24Mbps	17dBm	-83dBm
54Mbps	16dBm	-76dBm

### 802.11n / 2.4GHz

Data Rate		Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
HT 20	MCS 0	17dBm	20dBm	-88dBm
	MCS 4	16dBm	19dBm	-77dBm
	MCS 7	15dBm	18dBm	-72dBm
HT 40	MCS 0	17dBm	20dBm	-86dBm
	MCS 4	16dBm	19dBm	-76dBm
	MCS 7	15dBm	18dBm	-70dBm

802.11a / 5GHz		
Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
6Mbps	12dBm	-90dBm
24Mbps	11dBm	-83dBm
54Mbps	10dBm	-76dBm

802.11n / 5GHz				
Data Rate		Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
HT 20	MCS 0	13dBm	16dBm	-88dBm
	MCS 4	11dBm	14dBm	-77dBm
	MCS 7	10dBm	13dBm	-72dBm
HT 40	MCS 0	12dBm	15dBm	-86dBm
	MCS 4	11dBm	14dBm	-76dBm
	MCS 7	10dBm	13dBm	-70dBm

802.11ac				
Data Rate		Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
VHT 20	MCS 0	13dBm	16dBm	-88dBm
	MCS 4	12dBm	15dBm	-77dBm
	MCS 8	7dBm	10dBm	-69dBm
VHT 40	MCS 0	12dBm	15dBm	-86dBm
	MCS 4	12dBm	15dBm	-76dBm
	MCS 9	6dBm	9dBm	-64dBm
VHT 80	MCS 0	12dBm	15dBm	-83dBm
	MCS 4	12dBm	15dBm	-74dBm
	MCS 9	6dBm	9dBm	-61dBm