

## JWX6056



### Dual Band 2.4/5GHz 2x2 Industrial Grade (85°C) 802.11ac Half Mini PCIe Module

JWX6056 is a 2x2 802.11ac Dual-Band Industrial-Grade Half Mini PCIe module designed to deliver up to 867Mbps wireless data rates and 256-QAM modulation and 80MHz channels. 802.11ac opens up new possibilities and speeds never possible before. Ath10K Support

#### Features

- IEEE 802.11ac compliant & backward compatible with 802.11a/b/g/n
- WiFi 5 Wave 1 2X2 MIMO; Up to 867Mbps Throughput
- Supports IEEE 802.11d, e, h, i, k, r, v time stamp, and w standards
- Supports 20/40/80MHz and 256-QAM to maximize bandwidth efficiency.

#### System Information

Wireless: IEEE 802.11ac/abgn (2T2R)

Chipset: Qualcomm Atheros QCA9892-BR4B

#### 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

Enterprise network access equipment, Gateway, Medical equipment, Gaming machines, handheld devices, security systems, etc.

## Specification

<b>Standards</b>	IEEE 802.11ac/a/b/g/n (2T2R)
<b>Chipset</b>	Qualcomm Atheros QCA9892-BR4B
<b>Interface</b>	PCIe for WiFi
<b>Form Factor</b>	Mini PCIe
<b>Antenna</b>	2x IPEX MHF1 connectors
<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>	2.5W (Max)
<b>Operating Voltage</b>	DC 3.3V $\pm$ 5%
<b>Operating Temperature Range</b>	-40°C to 85°C
<b>Storage Temperature Range</b>	-40°C to +90°C
<b>Operating Humidity (Non-Condensing)</b>	10%~90%
<b>Storage Humidity (Non-Condensing)</b>	5%~90%
<b>Dimension L x W x H (in mm)</b>	29.8mm x 26.8mm
<b>Driver Support</b>	Linux
<b>Security</b>	64/128-bits WEP, WPA, WPA2, 802.1x
<b>Certification</b>	FCC/CE

## Output Power & Sensitivity

802.11b/g		
Data Rate	TX +/- 2dB	RX Sensitivity +/- 2dB
1~11Mbps	20 dBm	-90 dBm
6Mbps	21 dBm	-90 dBm
24Mbps	21 dBm	-84 dBm
54Mbps	18 dBm	-75 dBm

802.11n / 2.4GHz				
Data Rate		TX +/- 2dB (1TX)	TX +/- 2dB (2TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	21 dBm	24 dBm	-92 dBm
	MCS4	20 dBm	23 dBm	-83 dBm
	MCS7	16 dBm	19 dBm	-75dBm
VHT 40	MCS0	20 dBm	23 dBm	-89 dBm
	MCS4	19 dBm	22 dBm	-79 dBm
	MCS7	16 dBm	19 dBm	-73 dBm

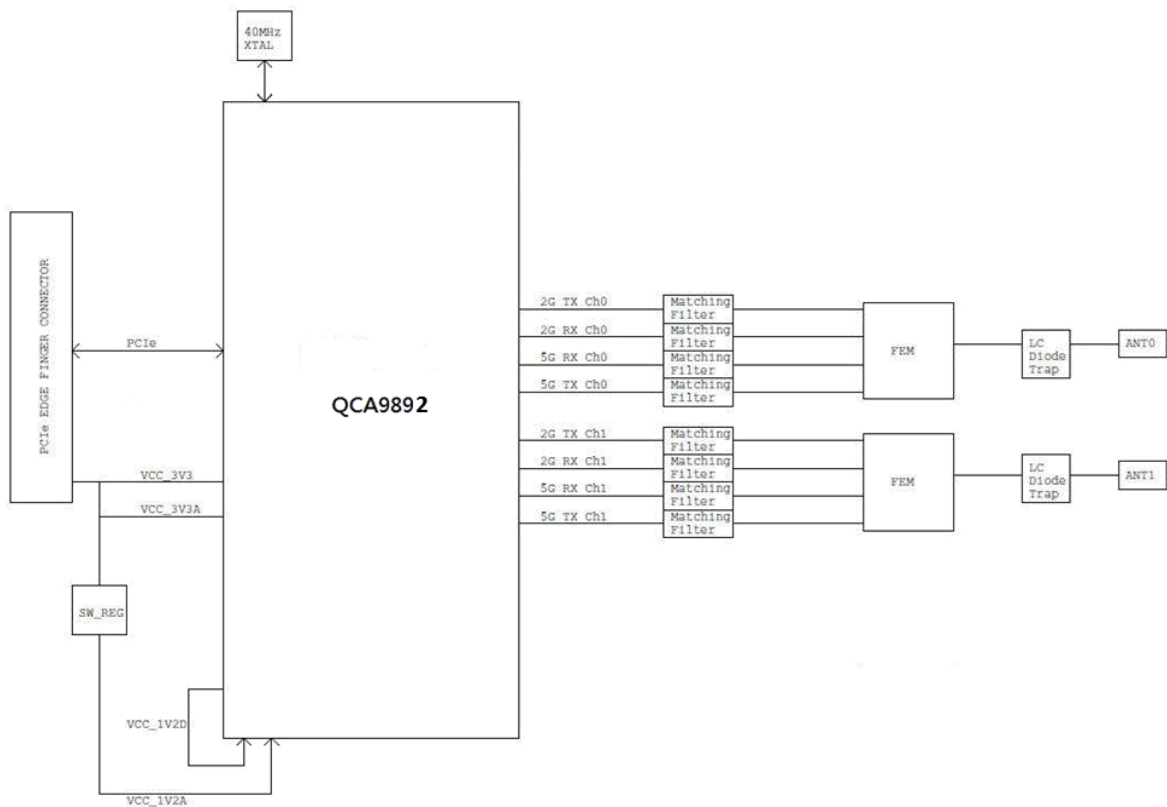
802.11a		
Data Rate	TX +/- 2dB	RX Sensitivity +/- 2dB
6Mbps	20 dBm	-92 dBm
24Mbps	20 dBm	-83 dBm
54Mbps	15 dBm	-75 dBm

802.11n / 5GHz				
Data Rate		TX +/- 2dB (1TX)	TX +/- 2dB (2TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	19 dBm	22 dBm	-94 dBm
	MCS4	18 dBm	21dBm	-77 dBm
	MCS7	14 dBm	17 dBm	-74 dBm
VHT 40	MCS0	18 dBm	21 dBm	-90 dBm
	MCS4	17 dBm	20 dBm	-79 dBm
	MCS7	14 dBm	17 dBm	-72 dBm

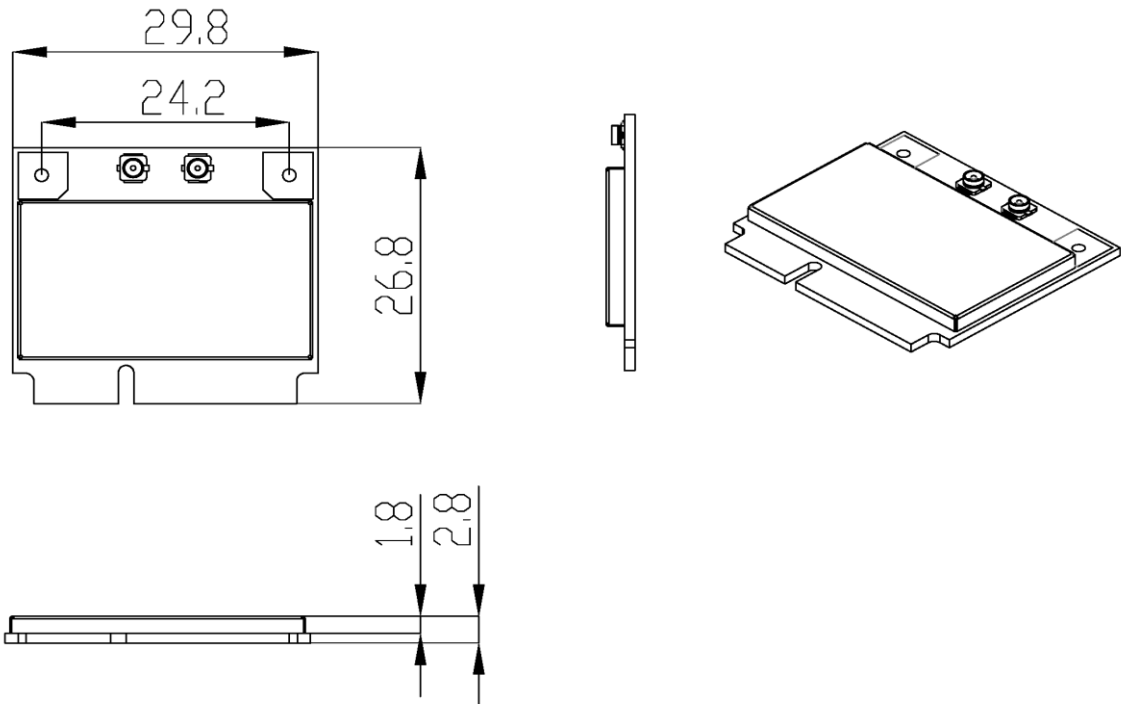
### 802.11ac

Data Rate		TX +/- 2dB (1TX)	TX +/- 2dB (2TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	19 dBm	22 dBm	-94dBm
	MCS4	18 dBm	21dBm	-82 dBm
	MCS8	13 dBm	16 dBm	-70 dBm
VHT 40	MCS0	18 dBm	21dBm	-90 dBm
	MCS4	17 dBm	20 dBm	-79 dBm
	MCS9	13 dBm	16 dBm	-66 dBm
VHT 80	MCS0	18 dBm	21dBm	-88dBm
	MCS4	17 dBm	20 dBm	-76 dBm
	MCS9	13dBm	16 dBm	-62 dBm

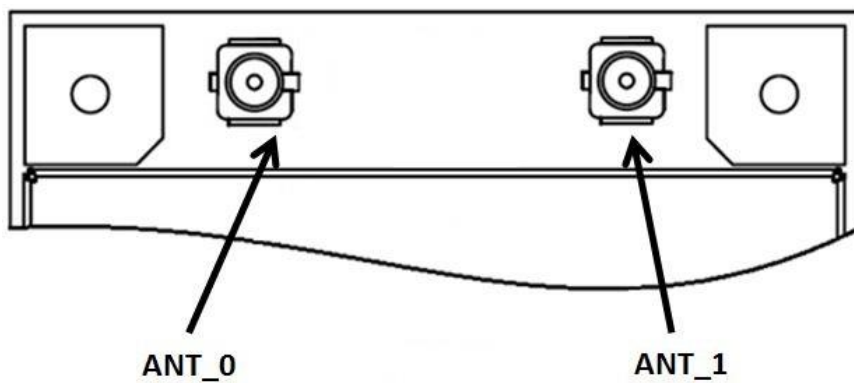
## Block Diagram



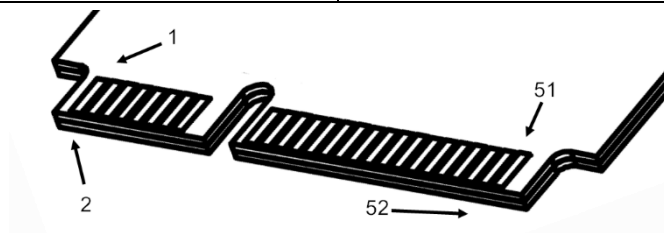
## Dimension



### Pin Assignment



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



## Pin Assignment

PIN#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	WAKE_L	Yes (PCIE_WAKE_L)	2	+3.3Vaux	YES
3	COEX1	NC	4	GND	YES
5	COEX2	NC	6	+1.5V	NC
7	CLKREQ_L	YES (PCIE_CLKREQ_L)	8	UIM_PWR	YES (Reserved)
9	GND	YES	10	UIM_DATA	YES (Reserved)
11	REFCLK-	YES (PCIE_REFCLK_N)	12	UIM_CLK	YES (Reserved)
13	REFCLK+	YES (PCIE_REFCLK_P)	14	UIM_RESET	YES (Reserved)
15	GND	YES	16	UIM_VPP	NC
17	UIM_C8	NC	18	GND	YES
19	UIM_C4	NC	20	W_DISABLE_L	YES
21	GND	YES	22	PERST_L	YES (PCIE_RST_L)
23	PERn0	YES (PCIE_TX_N)	24	+3.3Vaux	YES
25	PERp0	YES (PCIE_TX_P)	26	GND	YES
27	GND	YES	28	+1.5V	NC
29	GND	YES	30	SMB_CLK	NC
31	PETn0	YES (PCIE_RX_P)	32	SMB_DATA	NC
33	PETp0	YES (PCIE_RX_N)	34	GND	YES
35	GND	YES	36	USB_D-	NC
37	GND	YES	38	USB_D+	NC
39	+3.3Vaux	YES	40	GND	YES
41	+3.3Vaux	YES	42	LED_WWAN_L	NC
43	GND	YES	44	LED_WLAN_L	YES (GPIO1_WLAN_LED)
45	RESERVED	NC	46	LED_WPAN_L	YES (GPIO17_BT_LED)
47	RESERVED	NC	48	+1.5V	NC
49	RESERVED	YES (VCC_FEM_4V)	50	GND	YES
51	RESERVED	NC	52	+3.3Vaux	YES

## Order Information

Product Name	Description
JWX6056	802.11ac/a/b/g/n 2x2 I-Grade Half Mini PCIe Module