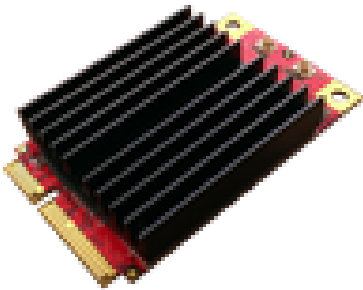


WMX6401



Wave-2 802.11ac Dual-Band Solution with MU-MIMO and 80+80MHz

WMX6401 is a Wave-2 802.11ac radio that helps premium Wi-Fi routers, gateways, set-top boxes and range extenders to support more devices and more demanding applications in the connected home. The dual-band, 4x4 solution is designed to deliver peak data rates up to 1.7 Gbps, and uses Multi-User MIMO to maintain fast connections on increasingly crowded networks. It supports up to 120 concurrent clients, designed for Enterprise solution.

Features

- Qualcomm QCA9984
- Multi-user MIMO (MU-MIMO)
- Mini PCIe 2.0 interface
- 2.4GHz Max 23dBm output power
- 5GHz Max 21dBm output power
- Designed for high bandwidth Enterprise Wireless Access Point

System Information

Wireless: IEEE802.11ac wave2 Dual-Band 4T4R

MU-MIMO

Chipset: Qualcomm Atheros QCA9984

Data Rate

802.11b: 11Mbps

802.11g: 54Mbps

802.11n: 800Mbps

802.11ac: 1.73Gbps

Operating Frequency

IEEE802.11bgn: 2.412GHz~2.484GHz

IEEE802.11ac: 5.180GHz~5.905GHz

Application

Access Point, Gateway, medical devices, security systems, industrial, PoS, digital signs, medical equipment, gaming machines, handheld devices, robotic, ect.

Specification

Standards	IEEE 802.11ac/a/b/g/n (4T4R)
Chipset	Qualcomm QCA9984
Interface	WLAN: PCIe
Form Factor	Mini PCIe
Antenna	4x IPEX MHF1 connectors
Modulation	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)
Power Consumption	5GHz: Tx 1411mA, Rx 750mA 2.4GHz: Tx 1248mA, Rx 492mA
Operating Voltage	DC 3.3V \pm %
Operating Temperature Range	-20°C~85°C
Storage Temperature Range	-40°C~135°C
Operating Humidity (Non-Condensing)	5%~95%
Storage Humidity (Non-Condensing)	5%~90%
Dimension L x W x H (in mm)	50.8mm x 30.0mm x 11.0mm
Driver Support	Linux (Open Source) ATH10K
Security	64/128-bits WEP, WPA, WPA2, WPA3, 802.1x
Certification	FCC/CE

Output Power & Sensitivity

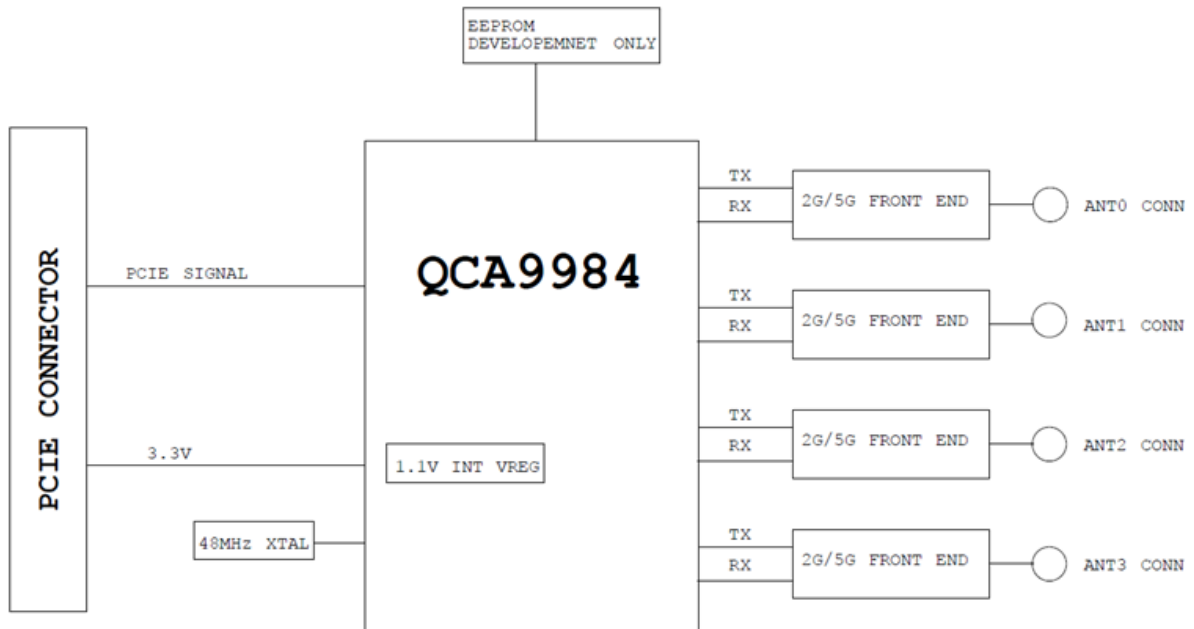
802.11b/g		
Data Rate	TX +/- 2dB	RX Sensitivity +/- 2dB
1~11Mbps	23 dBm	-90 dBm
24Mbps	20 dBm	-80 dBm
54Mbps	16 dBm	-70 dBm

802.11n / 2.4GHz			
Data Rate		TX +/- 2dB (1TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	21 dBm	-90 dBm
	MCS4	20 dBm	-80 dBm
	MCS7	15 dBm	-70 dBm
VHT 40	MCS0	20 dBm	-90 dBm
	MCS4	20 dBm	-75 dBm
	MCS7	16 dBm	-65 dBm

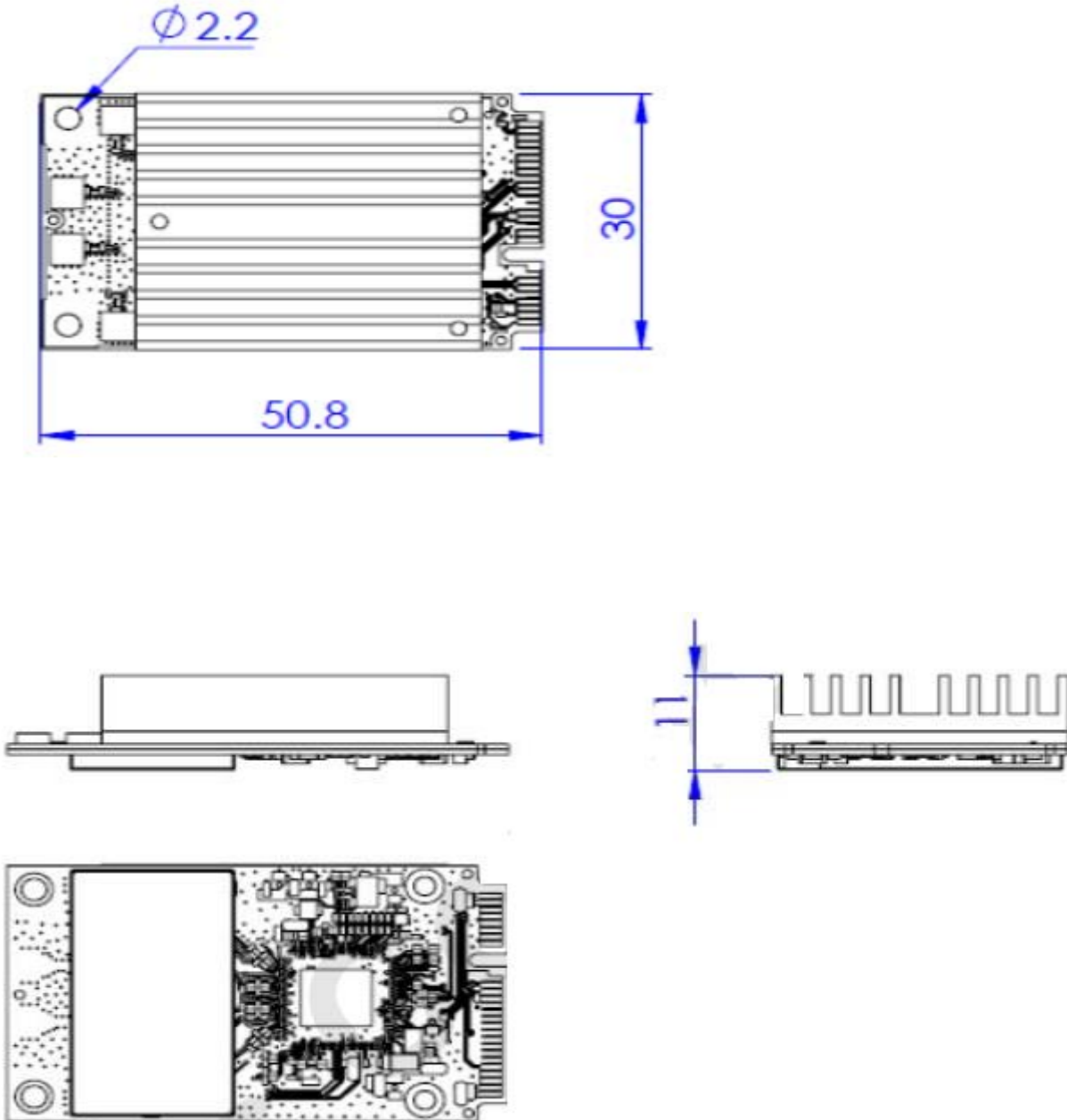
802.11a		
Data Rate	TX +/- 2dB	RX Sensitivity +/- 2dB
6Mbps	21 dBm	-90 dBm
24Mbps	20 dBm	-80 dBm
54Mbps	17 dBm	-70 dBm

802.11ac			
Data Rate		TX +/- 2dB (1TX)	RX Sensitivity +/- 2dB
VHT 20	MCS0	21 dBm	-90 dBm
	MCS4	20 dBm	-80 dBm
	MCS8	15 dBm	-70 dBm
VHT 40	MCS0	21 dBm	-90 dBm
	MCS4	20 dBm	-75 dBm
	MCS9	15 dBm	-65 dBm
VHT 80	MCS0	21 dBm	-85 dBm
	MCS4	20 dBm	-70 dBm
	MCS9	15 dBm	-60 dBm
VHT80+80	MCS0	21 dBm	-85 dBm
	MCS4	20 dBm	-70 dBm
	MCS9	15 dBm	-60 dBm

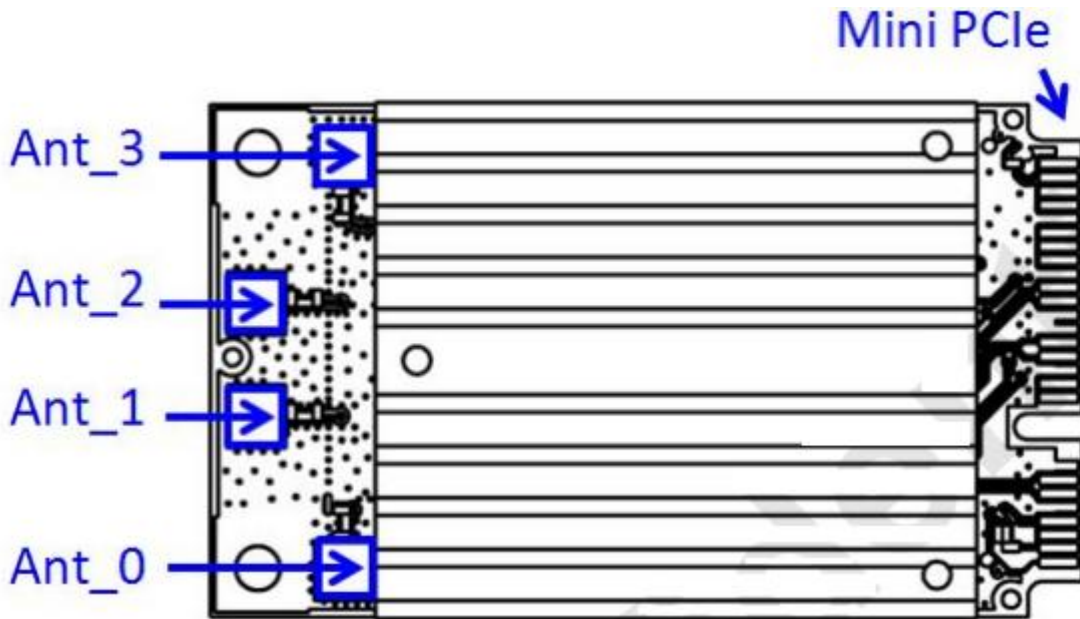
Block Diagram



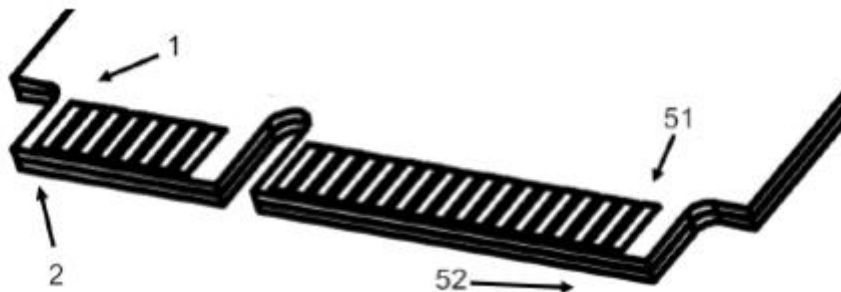
Dimension



Pin Assignment



Pin Name	Description
Ant_0, Ant_1, Ant_2, Ant_3	RF Antenna for WiFi 2.4GHz / 5GHz



Pin Assignment

PIN#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	WAKE#	WAKE	2	+3.3Vaux	VDDC33
3	COEX1	CHP_PWD	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#	REST
23	PERn0	PERn0	24	+3.3Vaux	VDD33
25	PERn0	PERn0	26	GND	GND
27	GND	GND	28	+1.5V	NC
29	GND	GND	30	SMB_CLK	NC
31	PETn0	PETn0	32	SMB_DATA	NC
33	PETn0	PETn0	34	GND	GND
35	GND	GND	36	USB_D-	NC
37	GND	NC	38	USB_D+	NC
39	+3.3Vaux	NC	40	GND	GND
41	+3.3Vaux	NC	42	LED_WWAN	NC
43	GND	GND	44	LED_WPAN	WLAN_LED
45	RESERVED	NC	46	+1.5V	NC
47	RESERVED	NC	48	GND	NC
49	RESERVED	NC	50	+3.3Vaux	GND
51	RESERVED	NC	52	+3.3Vaux	VDD33

Order Information

Product Name	Description
WMX6401	Wave 2 11ac Dual-Band 4x4 Mini PCIe Module