



JWX5501

802.11a/ n/ac 3T3R Mini-PCI-Express Module

Technical Specifications

Standards

Data Rate

Operating Frequency

Interface

Modulation

Recommended Operating Conditions

Output Power & Sensitivity

STANDARDS

Wireless: IEEE 802.11a/n/ac (3T3R) / Chipset: Qualcomm Atheros QCA9880

DATA RATE

802.11a/g: 54Mbps / 802.11n: 450Mbps / 802.11ac: 1.3Gbps

OPERATING FREQUENCY

IEEE 802.11 a/n/ac ISM Band, 5150MHz ~ 5825MHz

INTERFACE

Mini PCI-e, Antenna Ports : MMCX * 3 for 3T3R

MODULATION

802.11a: 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)

RECOMMENDED OPERATING CONDITIONS

Operating Voltage: DC 3.3V \pm 5% & DC5 \pm 5%

(Internal DC+5V from Mini-PCIe bus or External DC+5V from pin-header)

Operating Temperature Range: -20°C to 70°C

Storage Temperature Range: -40°C to +80°C

Operating Humidity (non-condensing): 10% ~ 90%

Storage Humidity (non-condensing): 5% to 90%

Current consumption: 8W (Max.)

Dimension (in mm): 50.8 x 50 mm

contact for sales in europe & worldwide:

email: martin.hoehne@minipci.biz

Website: <https://minipci.biz>

OUTPUT POWER & SENSITIVITY

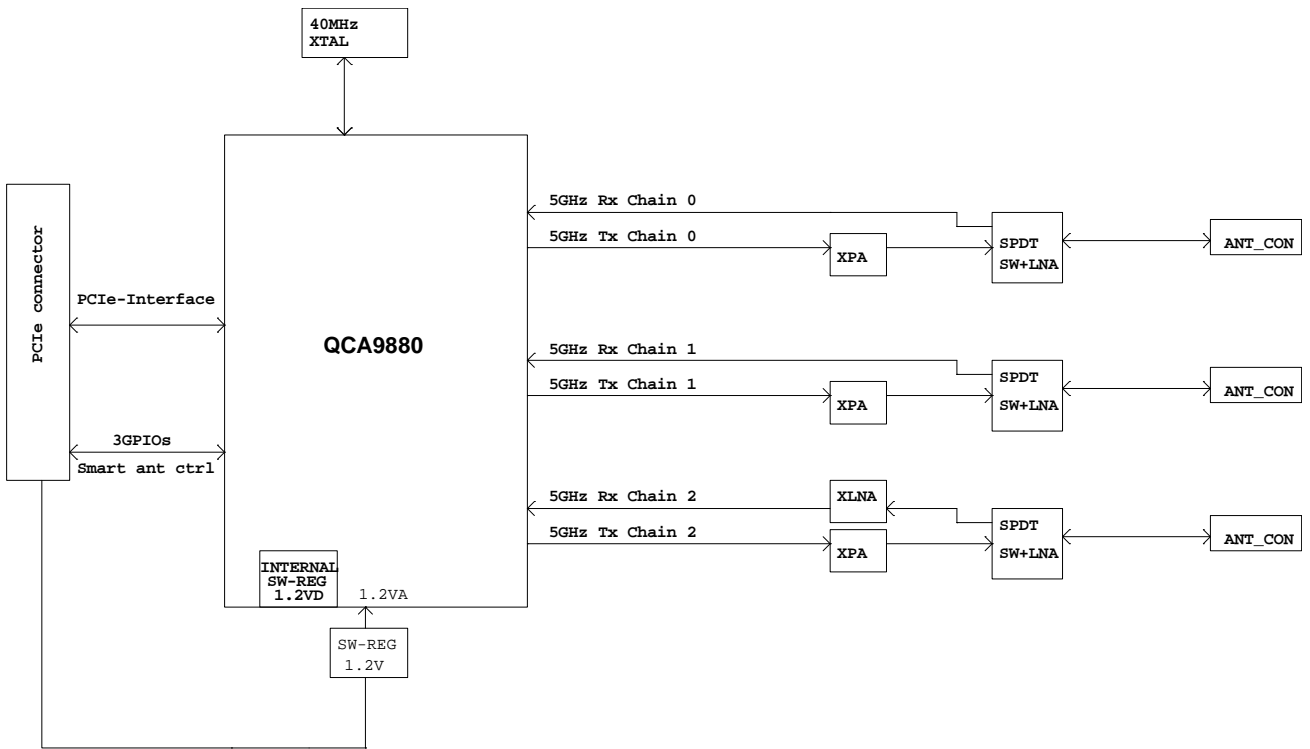
8 0 2 . 1 1 a		
Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
6Mbps	27dBm	-95dBm
9Mbps	27dBm	-95dBm
12Mbps	27dBm	-95dBm
18Mbps	27dBm	-93dBm
24Mbps	27dBm	-90dBm
36Mbps	26dBm	-87dBm
48Mbps	25dBm	-82dBm
54Mbps	24dBm	-81dBm

8 0 2 . 1 1 a n				
	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (3TX)	Rx Sensitivity +/- 2dB
HT 20	MCS 0	26dBm	31dBm	-96dBm
	MCS 1	26dBm	31dBm	-95dBm
	MCS 2	26dBm	31dBm	-93dBm
	MCS 3	26dBm	31dBm	-89dBm
	MCS 4	26dBm	31dBm	-86dBm
	MCS 5	25dBm	30dBm	-81dBm
	MCS 6	24dBm	29dBm	-79dBm
	MCS 7	23dBm	28dBm	-78dBm
HT 40	MCS 0	26dBm	31dBm	-93dBm
	MCS 1	26dBm	31dBm	-92dBm
	MCS 2	26dBm	31dBm	-90dBm
	MCS 3	26dBm	31dBm	-86dBm
	MCS 4	26dBm	31dBm	-83dBm
	MCS 5	25dBm	20dBm	-79dBm
	MCS 6	24dBm	29dBm	-77dBm
	MCS 7	23dBm	28dBm	-76dBm

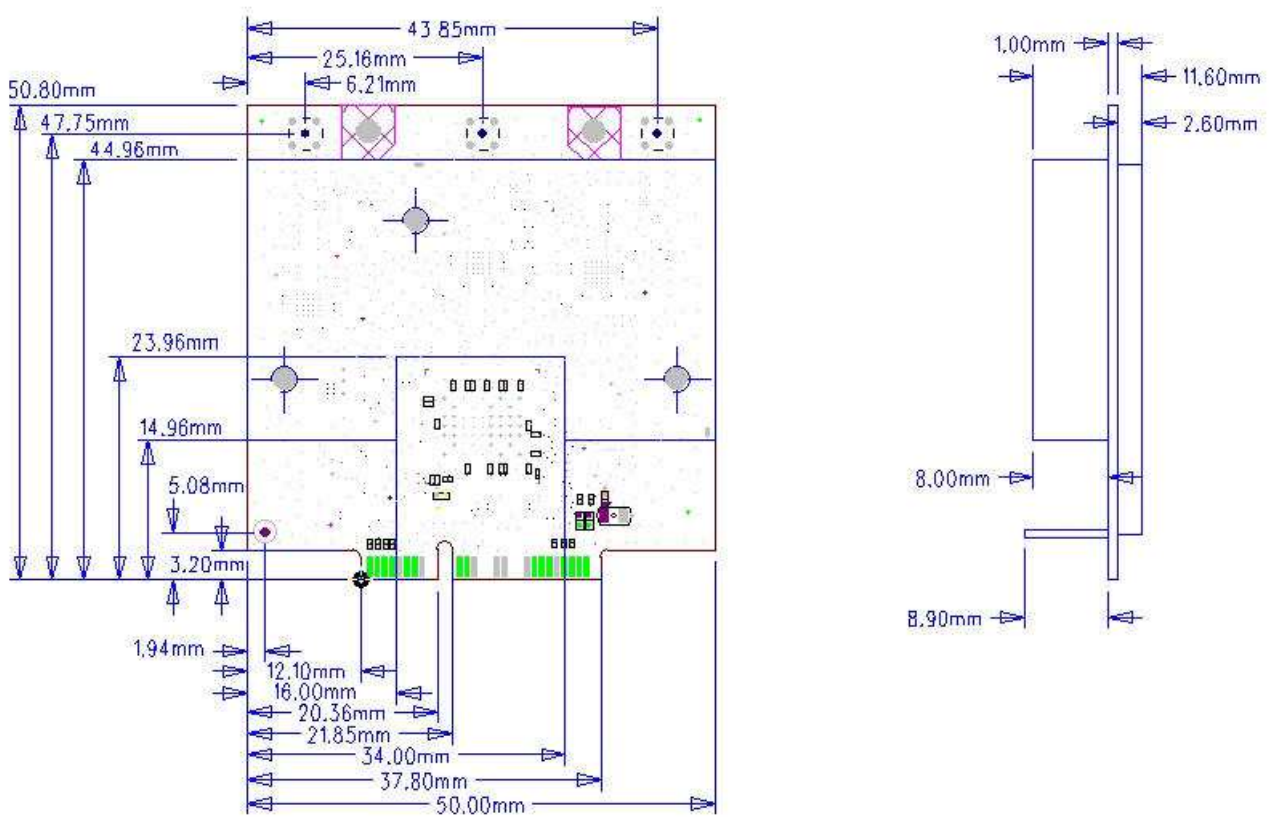
802.11ac

	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (3TX)	Rx Sensitivity +/- 2dB
VHT20	MCS 0	26dBm	31dBm	-96dBm
	MCS 1	26dBm	31dBm	-95dBm
	MCS 2	26dBm	31dBm	-93dBm
	MCS 3	26dBm	31dBm	-89dBm
	MCS 4	26dBm	31dBm	-86dBm
	MCS 5	25dBm	30dBm	-81dBm
	MCS 6	24dBm	29dBm	-79dBm
	MCS 7	23dBm	28dBm	-78dBm
	MCS 8	22dBm	27dBm	-74dBm
VHT40	MCS 0	26dBm	31dBm	-96dBm
	MCS 1	26dBm	31dBm	-95dBm
	MCS 2	26dBm	31dBm	-93dBm
	MCS 3	26dBm	31dBm	-89dBm
	MCS 4	26dBm	31dBm	-86dBm
	MCS 5	25dBm	30dBm	-81dBm
	MCS 6	24dBm	29dBm	-79dBm
	MCS 7	23dBm	28dBm	-78dBm
	MCS 8	22dBm	27dBm	-74dBm
	MCS 9	21dBm	26dBm	-70dBm
VHT80	MCS 0	26dBm	31dBm	-90dBm
	MCS 1	26dBm	31dBm	-89dBm
	MCS 2	26dBm	31dBm	-87dBm
	MCS 3	26dBm	31dBm	-82dBm
	MCS 4	26dBm	31dBm	-79dBm
	MCS 5	25dBm	30dBm	-76dBm
	MCS 6	24dBm	29dBm	-74dBm
	MCS 7	23dBm	28dBm	-73dBm
	MCS 8	22dBm	27dBm	-68dBm
	MCS 9	21dBm	26dBm	-66dBm

■ Block Diagram



■ Dimension



■ Pin Definition

PIN#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	WAKE_L	Yes (PCIE_WAKE_L)	2	+3.3Vaux	3.3V
3	RESERVED	ANT_A	4	GND	GND
5	RESERVED	GPIO4	6	+1.5V	NC
7	CLKREQ_L	YES (PCIE_CLKREQ_L)	8	UIM_PWR	NC
9	GND	GND	10	UIM_DATA	NC
11	REFCLK-	YES (PCIE_REFCLK_N)	12	UIM_CLK	NC
13	REFCLK+	YES (PCIE_REFCLK_P)	14	UIM_RESET	NC
15	GND	GND	16	UIM_VPP	NC
17	UIM_C8	NC	18	GND	GND
19	UIM_C4	NC	20	W_DISABLE_L	GPIO0
21	GND	GND	22	PERST_L	YES (PCIE_RST_L)
23	PERn0	YES (PCIE_TX_N)	24	+3.3Vaux	3.3V
25	PERp0	YES (PCIE_TX_P)	26	GND	GND
27	GND	GND	28	+1.5V	NC
29	GND	GND	30	SMB_CLK	NC
31	PETn0	YES (PCIE_RX_P)	32	SMB_DATA	NC
33	PETp0	YES (PCIE_RX_N)	34	GND	GND
35	GND	GND	36	USB_D-	USB_D-
37	RESERVED	NC	38	USB_D+	USB_D+
39	RESERVED	3.3V	40	GND	GND
41	RESERVED	3.3V	42	LED_WWAN_L	NC
43	RESERVED	GND	44	LED_WLAN_L	YES (GPIO1_WLAN_LED)
45	RESERVED	GPIO3	46	LED_WPAN_L	YES (GPIO17_BT_LED)
47	RESERVED	GPIO2	48	+1.5V	NC
49	RESERVED	Can be using external 5V Vin	50	GND	GND
51	RESERVED	Can be using external 5V Vin	52	+3.3Vaux	3.3V

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