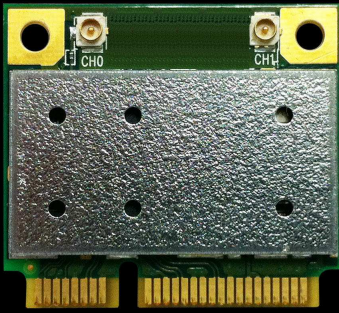


JWX6056

802.11ac/abgn 2T2R Half Mini-PCI-Express Module

Technical Specifications

Standards
Data Rate
Operating Frequency
Interface
Modulation
Recommended Operating Conditions
Output Power & Sensitivity



STANDARDS

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

IEEE 802.11 ac/abgn ISM Band, 2.412GHz ~ 2.472GHz, 5150MHz ~ 5825MHz

INTERFACE

Mini PCI-e, Antenna Ports : U.FL * 2 for 2T2R

MODULATION

802.11a/g: 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%

Operating Temperature Range: -40°C to 85°C

Storage Temperature Range: -40°C to +90°C

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

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

Current consumption: TBD

Dimension (in mm): 29.79 x 26.75 mm

FCC & CE certification planned

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OUTPUT POWER & SENSITIVITY

802.11g		
Data Rate	Tx +/- 2dB (1TX)	Rx Sensitivity +/- 2dB
1~11Mbps	20dBm	-90dBm
6Mbps	21dBm	-91dBm
9Mbps	21dBm	-90dBm
12Mbps	21dBm	-90dBm
18Mbps	21dBm	-87dBm
24Mbps	21dBm	-84dBm
36Mbps	20dBm	-79dBm
48Mbps	19dBm	-77dBm
54Mbps	18dBm	-75dBm

802.11n/2.4GHz				
	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
HT20	MCS 0	21dBm	24dBm	-92dBm
	MCS 1	21dBm	24dBm	-92dBm
	MCS 2	21dBm	24dBm	-90dBm
	MCS 3	21dBm	24dBm	-86dBm
	MCS 4	21dBm	24dBm	-83dBm
	MCS 5	20dBm	23dBm	-78dBm
	MCS 6	20dBm	23dBm	-77dBm
	MCS 7	18dBm	21dBm	-76dBm
HT40	MCS 0	20dBm	23dBm	-90dBm
	MCS 1	20dBm	23dBm	-89dBm
	MCS 2	20dBm	23dBm	-87dBm
	MCS 3	20dBm	23dBm	-84dBm
	MCS 4	20dBm	23dBm	-80dBm
	MCS 5	19dBm	22dBm	-76dBm
	MCS 6	19dBm	22dBm	-75dBm
	MCS 7	18dBm	21dBm	-73dBm

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802.11a		
Data Rate	Tx +/- 2dB (1TX)	Rx Sensitivity +/- 2dB
6Mbps	20dBm	-92dBm
9Mbps	20dBm	-90dBm
12Mbps	20dBm	-88dBm
18Mbps	20dBm	-86dBm
24Mbps	20dBm	-82dBm
36Mbps	18dBm	-78dBm
48Mbps	16dBm	-75dBm
54Mbps	15dBm	-74dBm

802.11n/5GHz				
	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
HT20	MCS 0	19dBm	22dBm	-93dBm
	MCS 1	19dBm	22dBm	-91dBm
	MCS 2	19dBm	22dBm	-89dBm
	MCS 3	19dBm	22dBm	-85dBm
	MCS 4	19dBm	22dBm	-81dBm
	MCS 5	18dBm	21dBm	-77dBm
	MCS 6	17dBm	20dBm	-76dBm
	MCS 7	16dBm	19dBm	-74dBm
HT40	MCS 0	18dBm	21dBm	-90dBm
	MCS 1	18dBm	21dBm	-88dBm
	MCS 2	18dBm	21dBm	-86dBm
	MCS 3	18dBm	21dBm	-82dBm
	MCS 4	18dBm	21dBm	-79dBm
	MCS 5	17dBm	20dBm	-75dBm
	MCS 6	16dBm	19dBm	-73dBm
	MCS 7	15dBm	18dBm	-72dBm

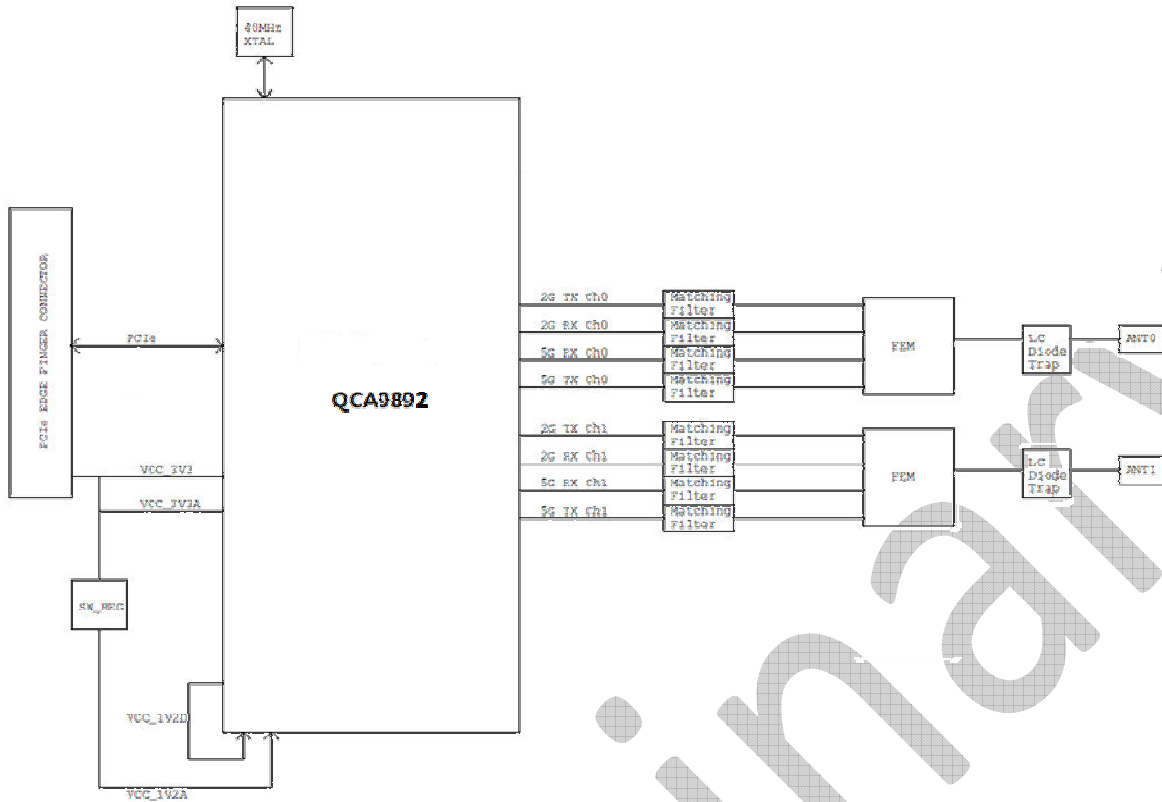
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802.11ac

	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
VHT20	MCS 0	19dBm	22dBm	-93dBm
	MCS 1	19dBm	22dBm	-91dBm
	MCS 2	19dBm	22dBm	-89dBm
	MCS 3	19dBm	22dBm	-85dBm
	MCS 4	19dBm	22dBm	-81dBm
	MCS 5	18dBm	21dBm	-77dBm
	MCS 6	17dBm	20dBm	-75dBm
	MCS 7	16dBm	19dBm	-74dBm
	MCS 8	14dBm	17dBm	-70dBm
VHT40	MCS 0	18dBm	21dBm	-91dBm
	MCS 1	18dBm	21dBm	-88dBm
	MCS 2	18dBm	21dBm	-86dBm
	MCS 3	18dBm	21dBm	-81dBm
	MCS 4	18dBm	21dBm	-79dBm
	MCS 5	17dBm	20dBm	-75dBm
	MCS 6	16dBm	19dBm	-74dBm
	MCS 7	15dBm	18dBm	-72dBm
	MCS 8	14dBm	17dBm	-68dBm
	MCS 9	13dBm	16dBm	-66dBm
VHT80	MCS 0	18dBm	21dBm	-87dBm
	MCS 1	18dBm	21dBm	-85dBm
	MCS 2	18dBm	21dBm	-82dBm
	MCS 3	18dBm	21dBm	-79dBm
	MCS 4	18dBm	21dBm	-75dBm
	MCS 5	17dBm	20dBm	-71dBm
	MCS 6	16dBm	19dBm	-70dBm
	MCS 7	15dBm	18dBm	-68dBm
	MCS 8	14dBm	17dBm	-64dBm
	MCS 9	13dBm	16dBm	-62dBm

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■ Block Diagram



■ Pin Definition

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