

WPEQ-353ACNI

802.11ac/abgn Dual-Band

3T3R Military Temp Mini PCIe Module



Industrial Wi-Fi transceiver for Military Temp Solution

The WPEQ-353ACNI is powered by Qualcomm Atheros radio chip and features 3x3 11ac/abgn technology for higher throughput performance, reliability and range. It is reliable design for outdoor and rugged environments. High interference immunity for Wi-Fi congested environment and regulatory modular certifications to expedite system integration.

Embedded Application :

Application included outdoor Access point , Aviation , Vehicle -mount computer , Traffic controller , Factory Automation ,Fleet management , Outdoor surveillance, Medical device ,Industrial 4.0,etc.

Key Feature :

- Military Temp Range: -40°C ~ +85°C
- Qualcomm Atheros QCA9890-BR4B
- Data Rates: allows link speeds up to 1.3Gbps
- Support Linux driver

Specification :

Standards:	IEEE 802.11ac/abgn (3T3R)
Chipset:	Qualcomm Atheros QCA9890-BR4B
Data Rate:	802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: 450Mbps / 802.11ac: 1.3Gbps
Operating Frequency:	IEEE 802.11 ac/abgn ISM Band, 2.412GHz ~ 2.472GHz, 5.1500MHz ~ 5.825MHz *Subject to local regulations
Interface:	Mini PCI Express
Form Factor:	Mini PCI-e
Antenna:	3 x UFL connector for 3T3R
Modulation:	802.11b: DSSS (DBPSK, DQPSK, CCK) 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)
Operating Voltage:	3.3V ± 9% I/O supply voltage
Operating Temperature Range:	-40°C ~ +85°C
Humidity (Non-Condensing):	Operating Humidity (non-condensing): 10% ~ 85% Storage Humidity (non-condensing): 5% ~ 90%
Power Consumption:	TX Mode: 1250mA / RX Mode: 350mA
Dimension (in mm):	50.8 x 29.85 x 3.95mm
Weight (g):	≤8g
Driver Support:	Linux
Security	64/128-bits WEP, WPA, WPA2, 802.1x

OUTPUT POWER & SENSITIVITY		
802.11g		
Data Rate	Tx \pm 2dBm	Rx Sensitivity
54Mbps	15dBm	\leq -75dBm

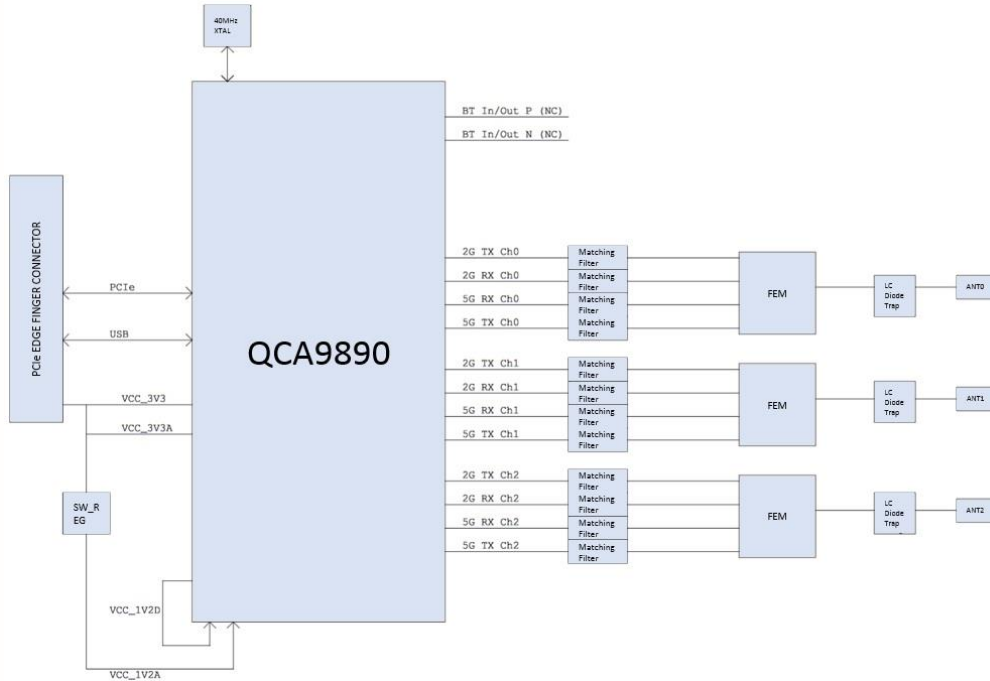
802.11n / 2.4GHz				
	Data Rate	Tx \pm 2dBm (1TX)	Tx \pm 2dBm (3TX)	Rx Sensitivity
HT20	MCS7	13dBm	18dBm	\leq -72dBm
	MCS7	13dBm	18dBm	\leq -68dBm

802.11a		
Data Rate	Tx \pm 2dBm	Rx Sensitivity
54Mbps	15dBm	\leq -73dBm

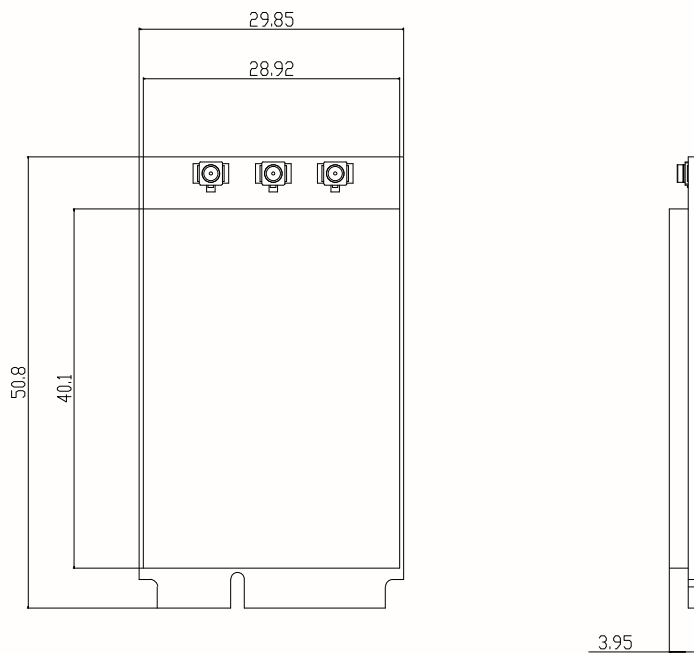
802.11n / 5GHz				
	Data Rate	Tx \pm 2dBm (1TX)	Tx \pm 2dBm (3TX)	Rx Sensitivity
HT20	MCS7	13dBm	18dBm	\leq -70dBm
	MCS7	12dBm	17dBm	\leq -68dBm

802.11ac				
	Data Rate	Tx \pm 2dBm (1TX)	Tx \pm 2dBm (3TX)	Rx Sensitivity
VHT80	MCS9	10dBm	15dBm	\leq -57dBm

Block Diagram



Mechanical Dimension (mm)



Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
1	WAKE_L(NA)	Output and open Drain active Low signal. This signal is used to request that the system return from a sleep/suspended state to service a function initiated wake event.	2	+3.3V	+3.3V
3	No Connection	-	4	GND	GND
5	No Connection	-	6	No Connection	-
7	CLKREQ_L	Output for reference clock request signal	8	No Connection	-
9	GND	GND	10	No Connection	-
11	REFCLK-	Input signal for PCI Express differential reference clock (100 MHz)	12	No Connection	-
13	REFCLK+	Input signal for PCI Express differential reference clock (100 MHz)	14	No Connection	-
15	GND	GND	16	No Connection	-
17	No Connection	-	18	GND	GND
19	No Connection	-	20	W_DISABLE_L	Input and active low signal. This signal is used by the system to disable radio operation on add-in cards that implement radio frequency applications. When implemented, this signal requires a pull-up resistor on the card.
21	GND	GND	22	PERST_L	Input signal for functional reset to the card
23	PERn0	PCI Express x1 data interface: one differential receive pair	24	+3.3V	+3.3V
25	PERp0	PCI Express x1 data interface: one differential receive pair	26	GND	GND
27	GND	GND	28	No Connection	-
29	GND	GND	30	No Connection	-

Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
31	PETn0	PCI Express x1 data interface: one differential transmit pair	32	No Connection	-
33	PETp0	PCI Express x1 data interface: one differential transmit pair	34	GND	GND
35	GND	GND	36	No Connection	-
37	GND	GND	38	No Connection	-
39	No Connection	-	40	GND	GND
41	No Connection	-	42	No Connection	-
43	GND	GND	44	LED_WLAN_L (OPT)	Output and open drain active low signal. This signal is used to allow the PCI Express Mini Card add-in card to provide status indicators via LED devices that will be provided by the system
45	No Connection	-	46	No Connection	-
47	No Connection	-	48	No Connection	-
49	No Connection	-	50	GND	GND
51	No Connection	-	52	+3.3V	+3.3V

*NA→No active, OPT →Optional