Wireless Module

WPEA-252NI

802.11abgn Dual-Band 2T2R

Military Temp Mini PCIe Module

Industrial Wi-Fi transceiver for Military Temp Solution

The WPEA-252NI is powered by Qualcomm Atheros radio chip and features 2x2 11abgn 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 :

Being able to function in tough environmental conditions, it is ideal for devices such as Industrial PC, outdoor military applications, and in-vehicle communication systems, Aviation , Traffic controller, Fleet management, Outdoor surveillance, etc.

Key Feature :

- Qualcomm Atheros QCA9592-AR1B
- Military Temp Range: -40C to +85C
- Data Rates: allows link speeds up to 300Mbps.
- Support Linux driver

Specification :

Standards:	IEEE 802.11abgn (2T2R)
Chipset:	Qualcomm Atheros QCA9592-AR1B
Data Rate:	802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: 300Mbps
Operating Frequency:	IEEE 802.11 abgn ISM Band, 2.400GHz ~ 2.4835GHz, 5.1500MHz ~ 5.825MHz *Subject to local regulations
Interface:	Mini PCI Express
Form Factor:	Mini PCI-e
Antenna:	2 x UFL connector for 2T2R
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)
Operating Voltage:	3.3V ± 9% I/O supply voltage
Temperature Range:	-40°C ~ +85°C (Operating) / -50°C ~ +90°C (Storage)
Humidity (Non-Condensing):	Operating Humidity (non-condensing): 10% ~ 85% Storage Humidity (non-condensing): 5% ~ 90%
Power Consumption:	Continue TX: 700mA / Continue RX: 300mA
Dimension (in mm):	29.85 x 50.8 x 2.86 mm (± 0.5mm)
Weight (g):	8g
Driver Support:	Linux
Security	64/128-bits WEP, WPA, WPA2, 802.1x

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OUTPUT POWER & SENSITIVITY		
802.11g		
Data Rate	Tx ± 2dBm	Rx Sensitivity
54Mbps	16dBm	≦-77dBm

802.11n / 2.4GHz				
HT20	Data Rate	Tx ± 2dBm (1TX)	Tx ± 2dBm (2TX)	Rx Sensitivity
	MCS7	15dBm	18dBm	≦- 74dBm
HT40	MCS7	14dBm	17dBm	≦- 71dBm

802.11a		
Data Rate	Tx ± 2dBm	Rx Sensitivity
54Mbps	14dBm	≦-77dBm

802.11n / 5GHz				
HT20	Data Rate	Tx ± 2dBm (1TX)	Tx ± 2dBm (2TX)	Rx Sensitivity
	MCS7	12dBm	15dBm	≦- 73dBm
HT40	MCS7	11dBm	14dBm	≦- 70dBm

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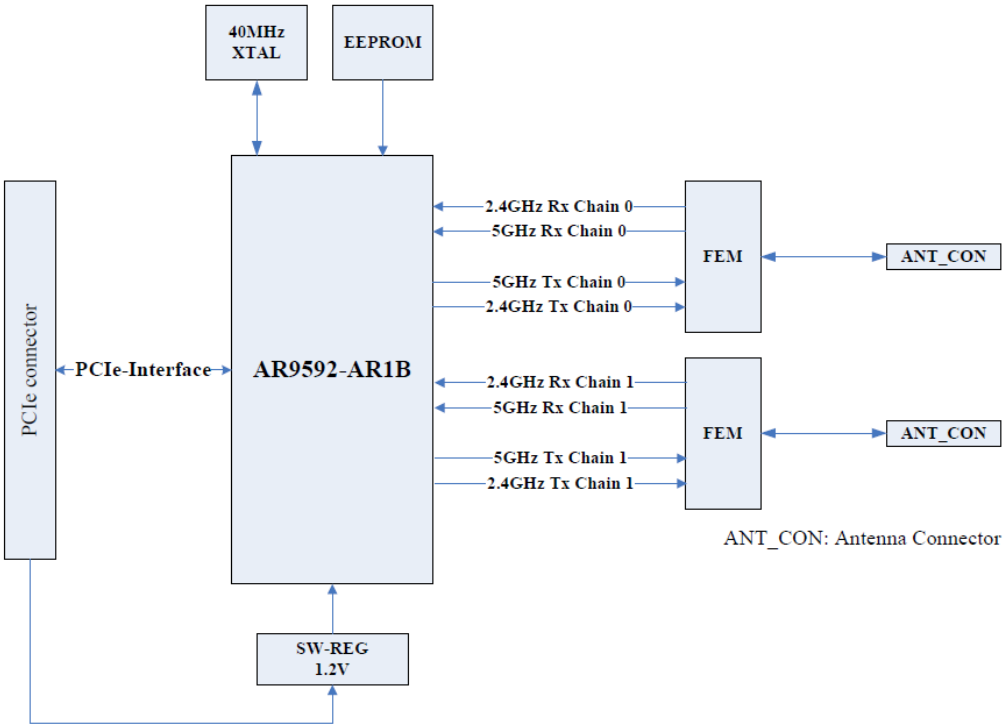
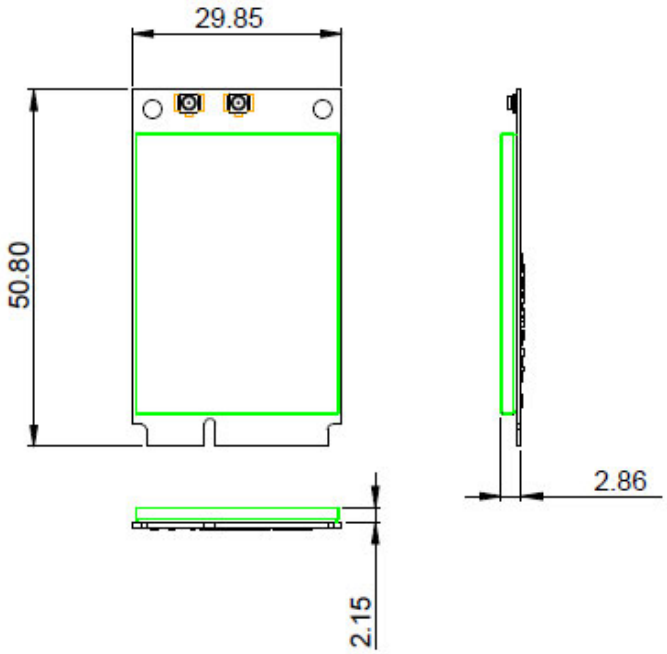
Block Diagram



Mechanical Dimension (mm)



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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	GPIO12(OPT)	This pin is reserved for definition with future revisions of this specification.	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(OPT)	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	Signal for PCI Express x1 data interfaces: one differential receive pair	24	No Connection	-
25	PERp0	Signal for PCI Express x1 data interfaces: one differential receive pair	26	GND	GND
27	GND	GND	28	No Connection	-
29	GND	GND	30	No Connection	-

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Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
31	PETn0	Signal for PCI Express x1 data interfaces: one differential receive pair	32	No Connection	-
33	PETp0	Signal for PCI Express x1 data interfaces: one differential receive pair	34	GND	GND
35	GND	GND	36	No Connection	-
37	No Connection	-	38	No Connection	-
39	+3.3V	+3.3V	40	No Connection	-
41	+3.3V	+3.3V	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	GPIO13(OPT)	These pins are reserved for definition with future revisions of this specification	48	No Connection	-
49	GPIO14(OPT)	These pins are reserved for definition with future revisions of this specification	50	GND	GND
51	GPIO15(OPT)	These pins are reserved for definition with future revisions of this specification	52	+3.3V	+3.3V

***NA→No active, OPT →Optional**

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