

## WPEA-121N

802.11a/b/g/n Dual-Band

2T2R Mini PCIe Module



### High Performance, Cost Effective, Embedded WiFi Solution

The WPEA-121N is powered by Qualcomm Atheros radio chip and features 2x2 802.11a/b/g/n for higher throughput performance, reliability and range. It is designed to meet the demanding performance requirements of critical embedded applications.

#### Embedded Application

Applications include medical devices, security systems, Notebooks, Ultra Mobile PC, Networking Equipment, Digital Multimedia devices, Gaming Machine, HDTV, thin client devices, and many more.

#### Key Feature

- Qualcomm Atheros QCA9382
- Antenna: 2 x IPEX MHF1 connectors, 2T2R
- Data Rates: allows link speeds up to 300Mbps.
- Support WinXP/7/8.1/10 , Linux driver

## Specification

<b>Standards</b>	IEEE 802.11a/b/g/n (2T2R)
<b>Chipset</b>	Qualcomm Atheros QCA9382
<b>Data Rate</b>	802.11b: 11Mbps 802.11a/g: 54Mbps 802.11n: 300Mbps
<b>Operating Frequency</b>	IEEE 802.11a/b/g/n ISM Band: 2.412GHz ~ 2.4835GHz, 5.15GHz ~ 5.85GHz *Subject to local regulations
<b>Interface</b>	WLAN: PCIe
<b>Form Factor</b>	Half Mini PCIe
<b>Antenna</b>	2 x IPEX MHF1 connectors
<b>Modulation</b>	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)
<b>Power Consumption</b>	TX mode: 600mA RX mode: 237mA
<b>Operating Voltage</b>	DC 3.3V
<b>Operating Temperature Range</b>	0°C~75°C
<b>Storage Temperature Range</b>	-40°C~85°C
<b>Humidity (Non-Condensing)</b>	5%~90% (Operating) 5%~95% (Storing)
<b>Dimension L x W x H (in mm)</b>	30mm(±0.3 mm) x 26.8mm(±0.3 mm) x 4.5mm(±0.3mm)
<b>Weight (g)</b>	4.5g
<b>Driver Support</b>	WinXP/7/8.1/10 Linux
<b>Security</b>	64/128-bits WEP, WPA, WPA2, 802.1x

**OUTPUT POWER & SENSITIVITY**
**802.11b**

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
11Mbps	17dBm	$\leq$ -85dBm

**802.11g**

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
54Mbps	16dBm	$\leq$ -76dBm

**802.11n / 2.4GHz**

	Data Rate	Tx $\pm$ 2dBm (1TX)	Tx $\pm$ 2dBm (2TX)	Rx Sensitivity
HT20	MCS7	15dBm	18dBm	$\leq$ -75dBm
HT40	MCS7	14dBm	17dBm	$\leq$ -72dBm

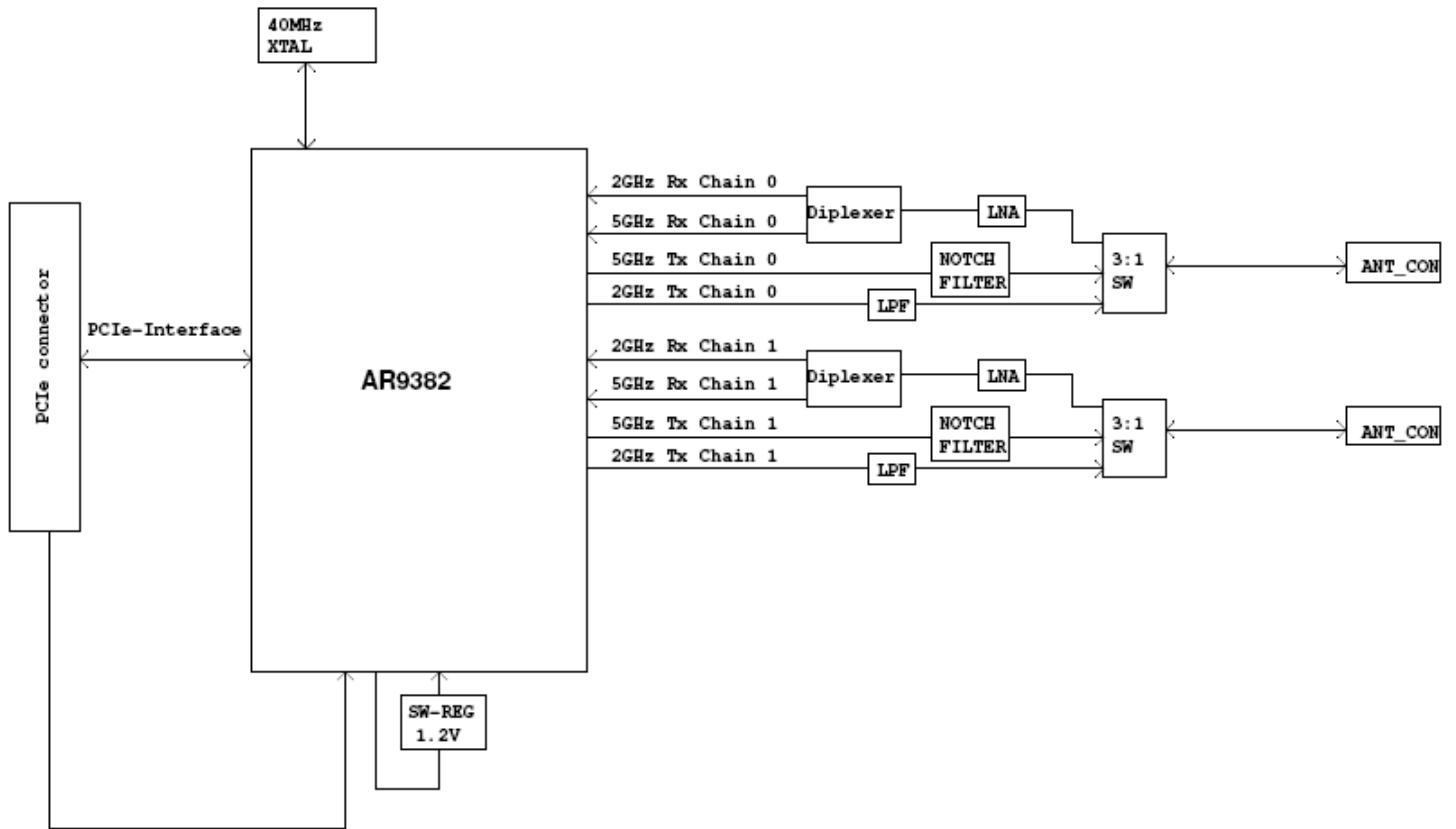
**802.11a**

Data Rate	Tx $\pm$ 2dBm	Rx Sensitivity
54Mbps	12dBm	$\leq$ -76dBm

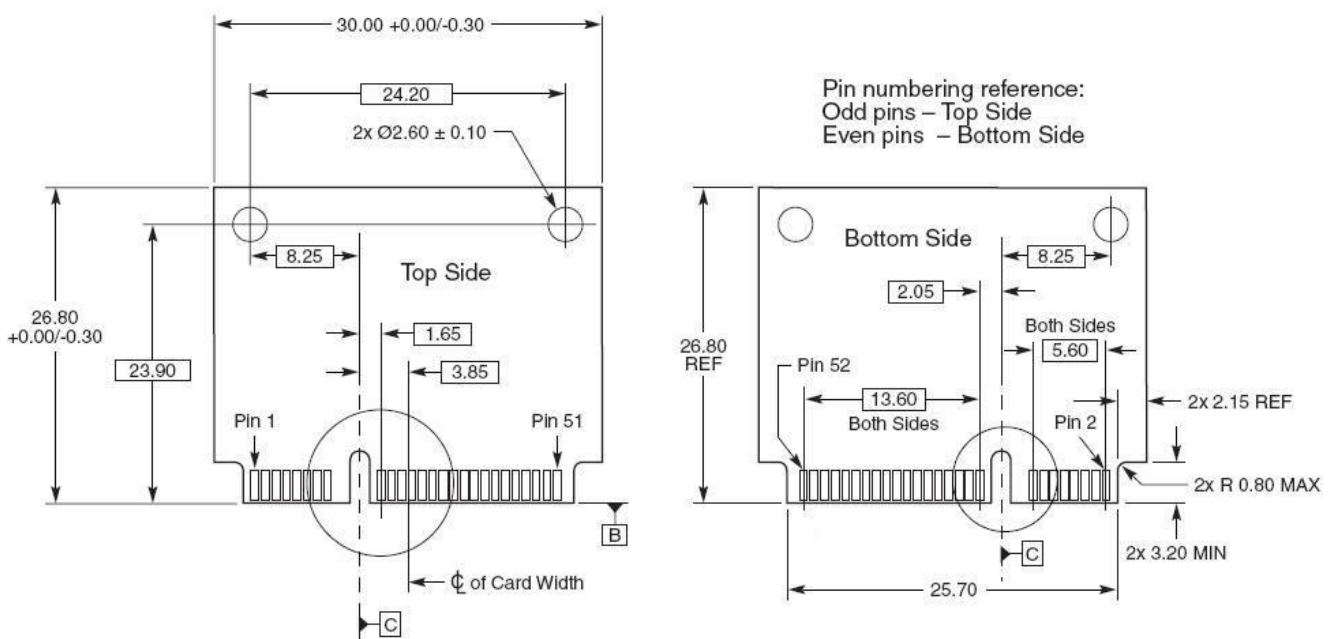
**802.11n / 5GHz**

	Data Rate	Tx $\pm$ 2dBm (1TX)	Tx $\pm$ 2dBm (2TX)	Rx Sensitivity
HT20	MCS7	12dBm	15dBm	$\leq$ -74dBm
HT40	MCS7	11dBm	14dBm	$\leq$ -71dBm

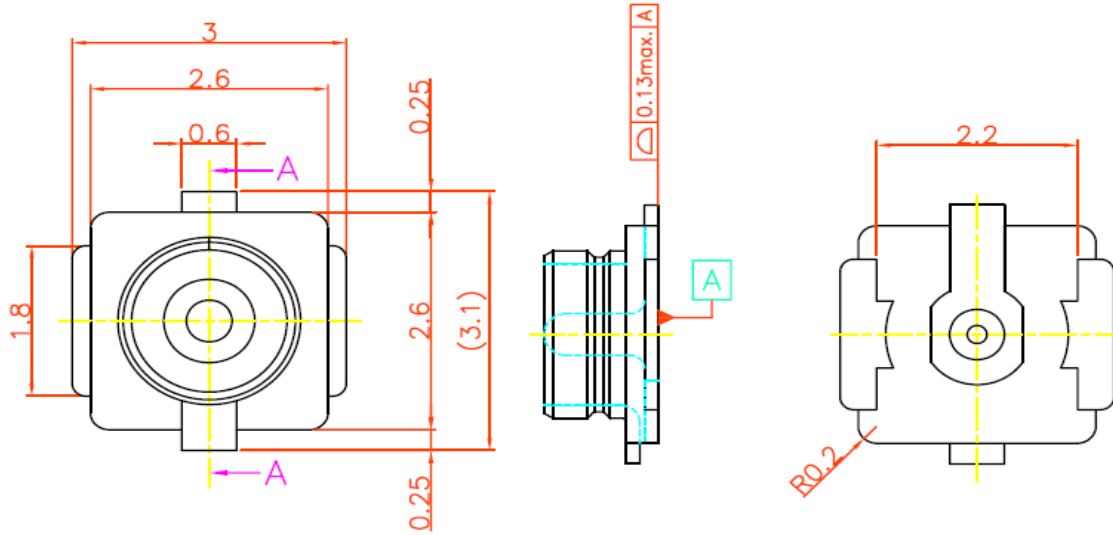
**Block Diagram**



**Mechanical Dimension (mm)**



**MHF1 connector spec**



## Pin Assignment

Pin#	Pin Name	Description	Pin#	Pin Name	Description
1	WAKE_L	NC	2	+3.3V	YES
3	GPIO4	NC	4	GND	YES
5	GPIO5	NC	6	+1.5V	NC
7	CLKREQ_L	YES	8	UIM_PWR	NC
9	GND	YES	10	UIM_DATA	NC
11	REFCLK-	YES	12	UIM_CLK	NC
13	REFCLK+	YES	14	UIM_RESET	NC
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
23	PERn0	YES	24	+3.3V	NC
25	PERp0	YES	26	GND	YES
27	GND	YES	28	+1.5V	NC
29	GND	YES	30	SMB_CLK	NC
31	PETn0	YES	32	SMB_DATA	NC
33	PETp0	YES	34	GND	YES
35	GND	YES	36	USB_D-	NC
37	RESERVED	NC	38	USB_D+	NC
39	+3.3V	YES	40	GND	NC
41	+3.3V	YES	42	LED_WWAN_L	NC
43	GND	NC	44	LED_WLAN_L	YES
45	RESERVED	NC	46	LED_WPAN_L	NC
47	RESERVED	NC	48	+1.5V	NC
49	RESERVED	NC	50	GND	YES
51	RESERVED	NC	52	+3.3V	YES

\*NA→No active

\*OPT →Optional

(This is optional as the function may or may not work under all platform configurations, to ensure this product performs the feature you need, please contact our Sales first with your platform design and configuration details before implementing layout design.)

## Certification

### Dipole Ant.

 FCC IC NCC CE (RED EN 300 328 V2.1.1 / EN 301 893 V2.1.1) MIC ASNZS

## Ordering Information

Product Name	Part Number	Description
WPEA-121N	R9701760000	802.11a/b/g/n Mini PCIe module (AR9382)

## Optional Accessory

Product Name	Part Number	Description
AD-103AG	R3410110203	Dipole Antenna, 2dBi 2.4GHz/5GHz, RP-SMA(M) connector
CBIRF-ME150	R3470300023	RF Cable, I-PEX/MHF1 to RP-SMA(F); L:150mm; Coaxial 1.37 Black
CBIRF-ME250	R3470300024	RF Cable, I-PEX/MHF1 to RP-SMA(F); L:250mm; Coaxial 1.37 Black