WPEA-352ACNRB

802.11ac/a/b/g/n Dual-Band

3T3R Mini PCIe Module

High Performance Mini PCIe Module

WPEA-352ACNRB is a IEEE 802.11ac wireless adapter that operates in 2.4GHz and 5 GHz bands, available in PCIe mini card form factor. Featuring QCA9880 chipset, the WPEA-352ACNRB dramatically increases the overall throughput up to 1.3Gbps with 3x3 MIMO technique. Leveraging the revolutionary 11ac technology, WPEA-352ACNRB sets a new benchmark in throughput and range, making it ideal for consumer and enterprise applications, such as video, voice and data transmission. The WPEA-352ACNRB is backward compatible with 802.11a/n and fully supports industry standards compliant security.

It supports 3T3R (3x3) technology, which runs up to 433Mbps (11an MSC15) and 1.3Gbps (11ac VHT MCS9). The WPEA-352ACNRB supports 20/40/80MHz and 256-QAM to maximize bandwidth efficiency. Adopting the latest 802.11ac solution, WPEA-352ACNRB is ideal for next-generation high throughput enterprise networking solution. Incorporated with advanced security encryption, such as 64/128-bits WEP, WPA, WPA2, and 802.1x, it helps prevent users' devices from malicious attacks.

Embedded Application

Applications include medical devices, security systems, industrial, PoS, digital signs, Access Point, Gateway, Medical equipment, Gaming machines, handheld devices, Robotic, and many more.

Key Feature

- Qualcomm Atheros QCA9880
- Antenna: 3 x IPEX MHF1 connectors, 3T3R
- Data Rates: allows link speeds up to 1.3GMbps.
- Support Linux driver

Specification

Standards	IEEE 802.11ac/a/b/g/n (3T3R)
Chipset	Qualcomm Atheros QCA9880-BR4A
Data Rate	802.11b: 11Mbps 802.11a/g: 54Mbps 802.11n: 450Mbps 802.11ac: 1.3Gbps
Operating Frequency	IEEE 802.11ac/a/b/g/n ISM Band: 2.412GHz~2.484GHz, 5.150GHz~5.850GHz *Subject to local regulations
Interface	WLAN: PCIe
Form Factor	Mini PCIe
Antenna	3 x IPEX MHF1 connectors
Modulation	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) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)
Power Consumption	TX mode: 1360mA (Max) RX mode: 720mA (Max)
Operating Voltage	DC 3.3V
Operating Temperature Range	-20°C~65°C
Storage Temperature Range	-30°C~75°C
Humidity (Non-Condensing)	10%~85% (Operating) 5%~90% (Storing)
Dimension L x W x H (in mm)	50.8mm(±0.3mm) x 29.85mm(±0.3mm) x 4.1mm(±0.3mm)
Weight (g)	7.8g
Driver Support	Linux
Security	64/128-bits WEP, WPA, WPA2, 802.1x

OUTPUT POWER & SENSITIVITY

802.11b		
Data Rate	**Tx ± 2dBm**	**Rx Sensitivity**
11Mbps	20dBm	≦-86dBm

802.11g		
Data Rate	**Tx ± 2dBm**	**Rx Sensitivity**
54Mbps	16dBm	≦-73dBm

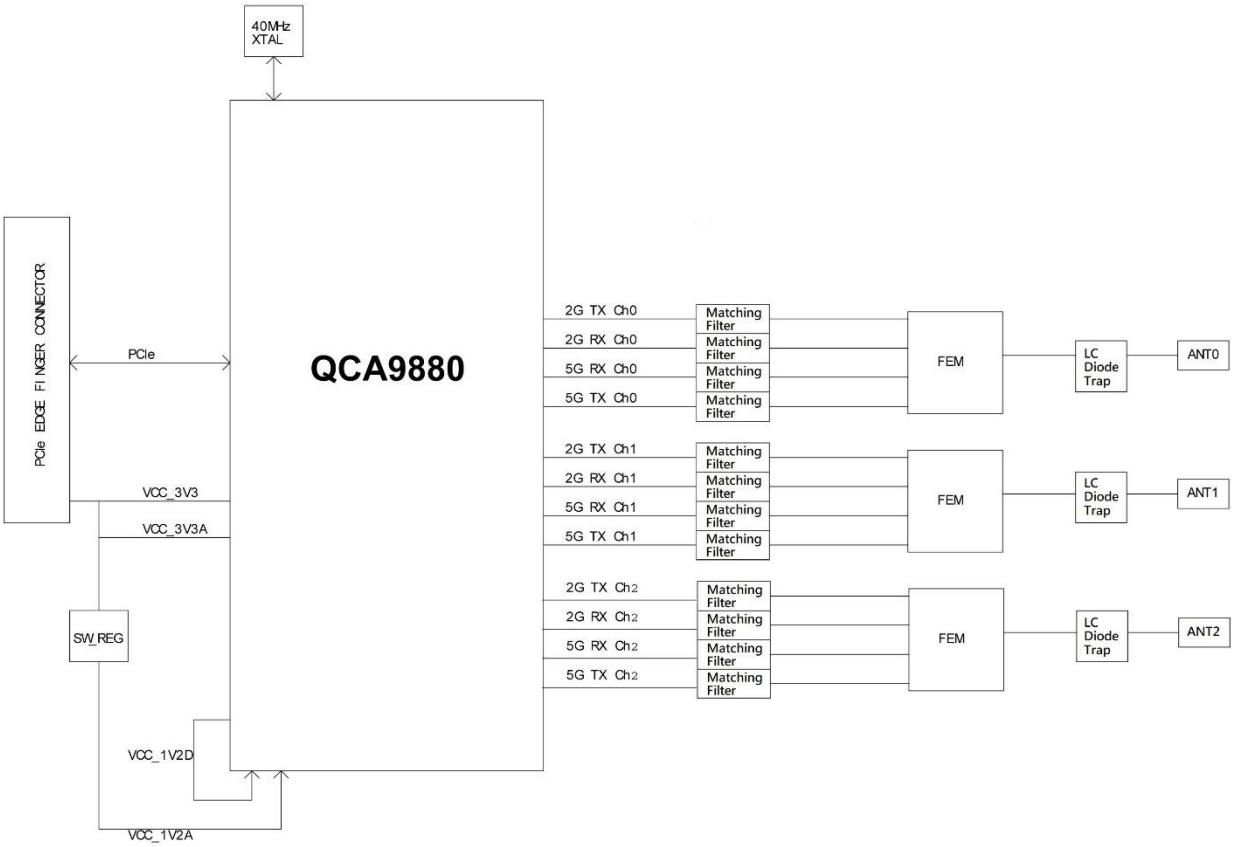
802.11n / 2.4GHz				
HT20	**Data Rate**	**Tx ± 2dBm (1TX)**	**Tx ± 2dBm (3TX)**	**Rx Sensitivity**
	MCS7	15dBm	19dBm	≦-70dBm
HT40	MCS7	15dBm	19dBm	≦-67dBm

802.11a		
Data Rate	**Tx ± 2dBm**	**Rx Sensitivity**
54Mbps	14dBm	≦-73dBm

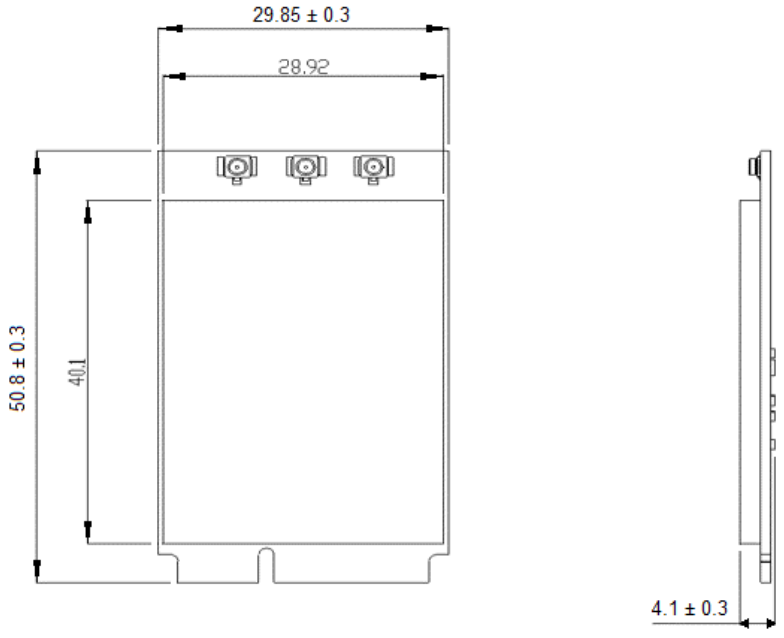
802.11n / 5GHz				
HT20	**Data Rate**	**Tx ± 2dBm (1TX)**	**Tx ± 2dBm (3TX)**	**Rx Sensitivity**
	MCS7	13dBm	16dBm	≦-71dBm
HT40	MCS7	13dBm	16dBm	≦-68dBm

802.11ac				
VHT80	**Data Rate**	**Tx ± 2dBm (1TX)**	**Tx ± 2dBm (3TX)**	**Rx Sensitivity**
	MCS9	10dBm	13dBm	≦-58dBm

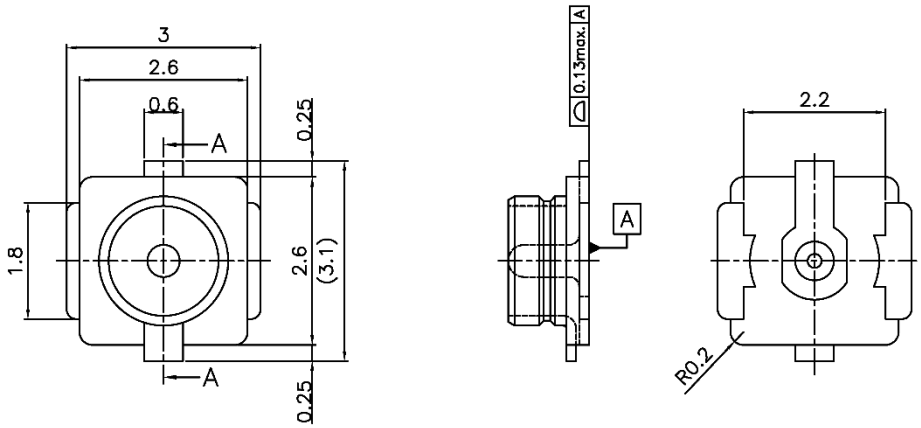
Block Diagram



Mechanical Dimension (mm)



MHF1 connector spec.



Unit: 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

Pin Assignment

Pn#	Pin Name	Description	Pin#	Pin Name	Description
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	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	-
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**

Certification

Dipole Ant.

- ■ **FCC**
- ■ **IC**
- ☐ **NCC**
- ■ **CE** (RED EN 300 328 V2.2.2 / EN 301 893 V2.1.1)
- ■ **MIC**
- ☐ **ASNZS**

Ordering Information

Product Name	Part Number	Description
WPEA-352ACNRB	R9701890022	802.11ac/b/g/n Mini PCIe module,3T3R

Optional Accessory

Product Name	Part Number	Description
AD-103AG	R3410110203	Dipole Antenna, 2dBi 2.4GHz/5GHz, RP-SMA(M) connector
AD-300N	R3410110219	Antenna Dual -Band 2.4GHz/5GHz 3dBi/5dBi Omnidirectional RP-SMA PLUG(BSMA)
AD-301N	R3410110220	Dipole Antenna, 2.4G/5G 4.4dbi/5dbi RP-SMA(M) connector
AD-302N	R3410110221	Dipole Antenna, 3dBi/2dBi 2.4G/5GHz, RP-SMA(M) connector
AD-303N	R3410110222	Dipole Antenna, 3dBi/3dBi 2.4G/5GHz, RP-SMA(M) connector
AD-305N	R3410110223	Dipole Antenna, 5dBi/5dBi 2.4G/5GHz, RP-SMA(M) connector
CBIRF-ME150	R3470300023	I-PEX/MHF1 to RP-SMA Female; L:150mm; Coaxial 1.37 Black
CBIRF-ME250	R3470300024	I-PEX/MHF1 to RP-SMA Female; L:250mm; Coaxial 1.37 Black