

**802.11 a/n/ac Module**

**PCE4502AN**

User's Manual

## PRODUCT DESCRIPTION

The PCE4502AN is adapting the next generation Wi-Fi technology, 802.11ac. It provides the great improvement in performance compare with 802.11n by utilizing 2Tx / 2Rx technology to achieve 867Mbps throughput on the 5GHz bands.

## PRODUCT SPECIFICATION

### Hardware Specification

Standard	IEEE802.11a; IEEE802.11n; IEEE802.11ac
RF	QCA9882
Interface	64-bit PCI-E
Operating Voltage	3.3v
Antenna Connectors	I-PEX x2

### Radio specification

Data rate	867Mbps	
Channel	Data rate	Typical Rx Sensitivity (dBm combined)
802.11a	6Mbps	$\leq$ -92 dBm
	54 Mbps	$\leq$ -74 dBm
802.11a/n_HT20	MCS 0/8	$\leq$ -91 dBm
	MCS 7/15	$\leq$ -72 dBm
802.11n_HT40	MCS 0/8	$\leq$ -90 dBm
	MCS 7/15	$\leq$ -70 dBm
802.11ac_HT80	MCS 0	$\leq$ -87 dBm
	MCS 9	$\leq$ -62 dBm

\* All RF parameters tolerance are +2/-1 dBm

### Antenna Specification

(Internal Antennas)

Antenna	2 x Antennas			
Type	Internal PIFA			

Antenna Peak Gain (dBi)	5150~5250MHz	5250~5350MHz	5470~5725MHz	5725~5850MHz
Ant0	5.74	5.91	6.13	3.78
Ant1	5.50	5.40	4.74	4.29

### Environment

Operation temperature	0-40 deg C
-----------------------	------------

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

## **USERS MANUAL OF THE END PRODUCT:**

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the IC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. IC statement is required to be available in the users manual: This Class B digital apparatus complies with Canadian ICES-003. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

## **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

## **IMPORTANT NOTE:**

### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

### **This device is intended only for OEM integrators under the following conditions:**

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna,

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

#### **End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: TVE-120502".

#### **Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.