

USER'S MANUAL

WCBN3515A

QCA6174A-3

Version 1.5

Change History

Revision	Date	Author	Change List
Version 1.0	2019/02/11	Peggy Hsu	Preliminary
Version 1.1	2019/10/04	Peggy Hsu	Modify operating temperature Modify packing drawing Update module photo Remove BT function description
Version 1.2	2020/11/25	Peggy Hsu	Update TX/RX specification Add power consumption specification Change mechanical drawing Change module label Change module photo Change packing drawing Add FCC statement
Version 1.3	2021/02/17	Peggy Hsu	Add output power spec (5M/10M)
Version 1.4	2021/02/28	Peggy Hsu	Add power sequence
Version 1.5	2021/03/03	Peggy Hsu	Modify FCC statement

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DESCRIPTION

QCA6174A-3 is a wireless local area network(WLAN) solution to support 2x2 multiple input, multiple output (MIMO) with two spatial streams IEEE802.11 a/b/g/n/ac WLAN standards.

PRODUCT FEATURES

- Support low power SDIO3.0 interface for WLAN
- Highly integrated wireless local area network (WLAN) system-on-chip (SoC) for 5GHz 802.11ac, or 2.4/5 GHz 802.11n WLAN applications.
- Supports 20/40 MHz at 2.4 GHz and supports 20/40/80 MHz at 5 GHz (SW PL determines 2.4 GHz HT40/VHT 40 support)
- Support external PA and LNA with control logics
- Pb free, RoHS compliant, and halogen free.

PRODUCT SPECIFICATIONS

MAIN CHIPSET

Qualcomm QCA6174A-3

FUNCTIONAL SPECIFICATIONS

Wi-Fi Function	
Standard	IEEE802.11a; IEEE802.11b; IEEE 802.11g; IEEE 802.11n; IEEE802.11ac
Bus Interface	SDIO 3.0
Data Rate	<p>802.11a: 54, 48, 36, 24, 18, 12, 9, 6 Mbps</p> <p>802.11b: 11, 5.5, 2, 1 Mbps</p> <p>802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps</p> <p>802.11n: MCS 0 to 7 for HT20MHz MCS 0 to 7 for HT40MHz</p> <p>802.11ac: MCS 0 to 9 for HT80MHz</p>
Media Access Control	CSMA/CA with ACK
Modulation Technique	<p>802.11a: 64QAM, 16QAM, QPSK, BPSK</p> <p>802.11b: CCK, DQPSK, DBPSK</p> <p>802.11g: 64QAM, 16QAM, QPSK, BPSK</p> <p>802.11n: 64QAM, 16QAM, QPSK, BPSK</p> <p>802.11ac: 256QAM, 64QAM, 16QAM, QPSK, BPSK</p>
Network Architecture	Infrastructure mode
Operation Channel	<p>2.4GHz 11: (Ch. 1-11) – United States 13: (Ch. 1-13) – Europe 14: (Ch. 1-14) – Japan</p> <p>5GHz 21: USA 19: EU 8: Japan</p>
Frequency Range	<p>802.11bg 2.400 ~ 2.4835 GHz</p> <p>802.11a 5.15 ~ 5.85 GHz</p>

Operating Voltage 5 V \pm 5% I/O supply voltage

Power Consumption	Mode	Average		Peak	
		2.4G	5G	2.4G	5G
	<i>TX</i>	250mA	250mA	1A	1.3A
<i>RX</i>	30mA	40mA	1A	1.3A	
<i>Standby</i>		2mA			

Operating Voltage 3.3 V \pm 5% I/O supply voltage

Power Consumption	Mode	Average		Peak	
		2.4G	5G	2.4G	5G
	<i>TX</i>	130mA	200mA	250mA	450mA
<i>RX</i>	130mA	200mA	250mA	450mA	
<i>Standby</i>		10mA			

Operating Voltage 1.8 V \pm 5% I/O supply voltage

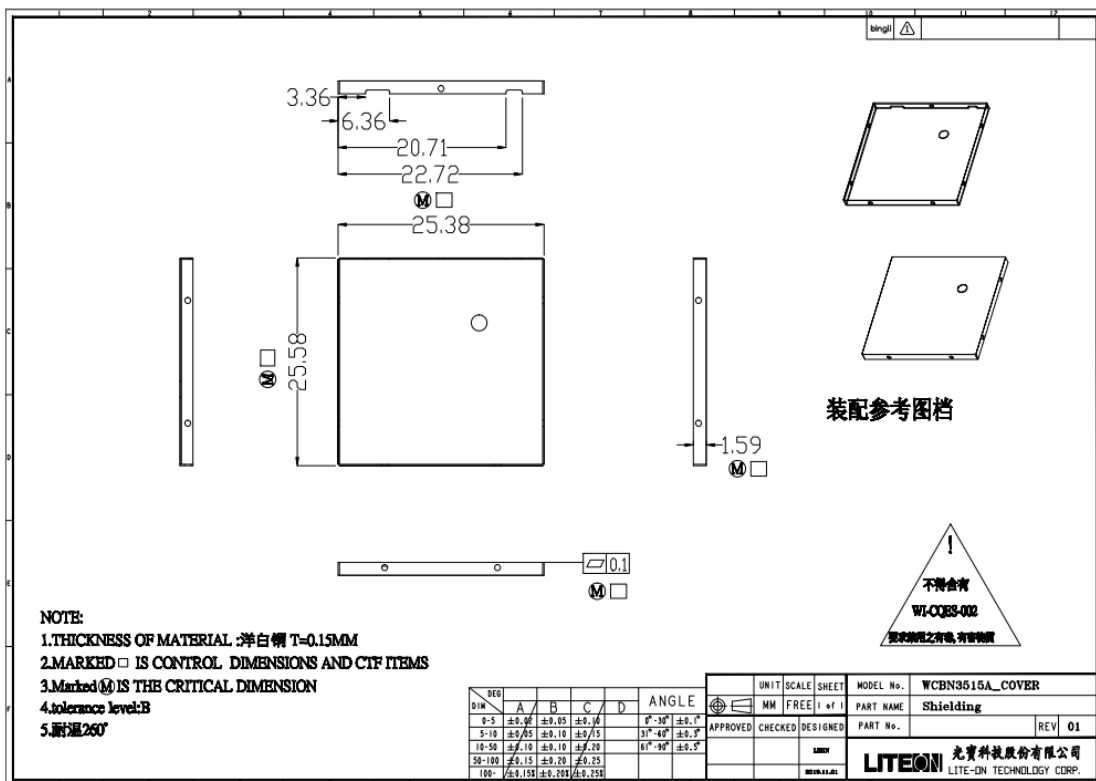
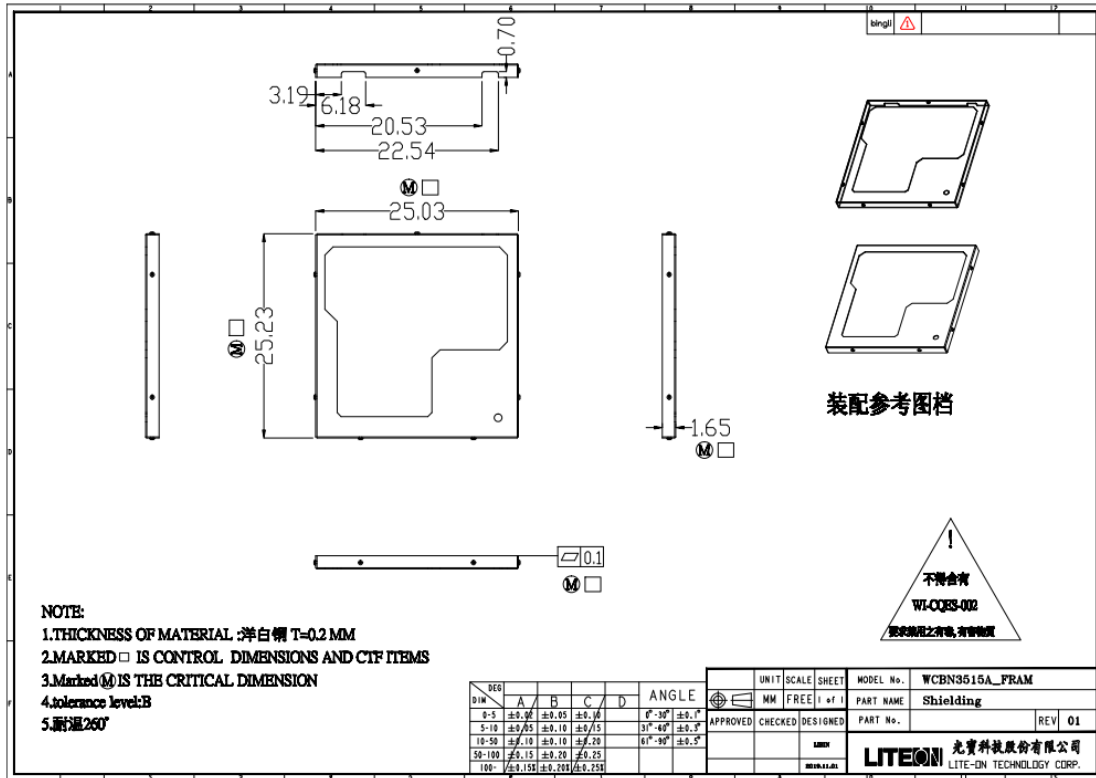
Power Consumption	Mode	Average		Peak	
		2.4G	5G	2.4G	5G
	<i>TX</i>	15mA	15mA	50mA	50mA
<i>RX</i>	15mA	15mA	50mA	50mA	
<i>Standby</i>		10mA			

Antenna Type Dual MHF Antenna connectors for WiFi

RECOMMENDED OPERATION CONDITIONS

Symbol	Parameter	Min	Typ	Max	Units
VDD33	3.3V Supply Voltage	3.135	3.3	3.465	V
VDD_1P8	Voltage supply	1.71	1.8	1.89	V

MECHANICAL



ENVIRONMENTAL**OPERATING**

Operating Temperature: -10 to 70 °C (14 to 158 °F)

Relative Humidity: 5-90% (non-condensing)

STORAGE

Temperature: -40 to 80 °C (-40 to 176 °F)

Relative Humidity: 5-95% (non-condensing)

WARNINGS**FCC Statement:**

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.

This device complies with Part 15 of the FCC Rules. 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.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located with any other transmitters

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter

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 20 cm between the radiator & your body.

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.

Additional testing and certification may be necessary when multiple modules are used.

20 cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

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

This module has been approved to operate with the antenna types listed below, with the maximum permissible gain indicated.

Antenna Type	Model Number	Gain(dBi)		
		2400-2483.5MHz	5150-5250MHz	5725-5850MHz
Dipole	ANW-3001	2.8	3.5	4.6
Patch	Patch-3001	3.6	4.6	3.2

USERS MANUAL OF THE END PRODUCT:

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

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

This device complies with part 15 of the FCC Rules. 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.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

LABEL OF THE END PRODUCT:

The host product must be labeled in a visible area with the following " Contains FCC ID: PPQ-WCBN3515A ".

The end product shall bear the following 15.19 statement: This device complies with part 15 of the FCC Rules. 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.

This module has been approved under stand-alone configuration.

OEM integrator has be limited the operation channels in channel 1-11 for 2.4GHz band.

The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations

The information on how to configure test modes for host product evaluation for

different operational conditions for a stand-alone modular transmitter in a host , versus with multiple, simultaneously transmitting modules or other transmitters in a host can be found at KDB Publication 996369 D04

Appropriate measurements (e.g. 15 B compliance) and if applicable additional equipment authorizations (e.g. SDoC) of the host product to be addressed by the integrator/manufacturer.

This module is only FCC authorized for the specific rule parts 15.247, 15.407 listed on the grant, and the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host product as being Part 15 Subpart B compliant.

Japan Statement:

5GHz band (W52, W53): Indoor use only