LITE ON WCBN3606L Wireless IOT Module User Manual

ON WCBN3606L Wireless IOT Module
User Manual

Contents

PRODUCT FEATURES

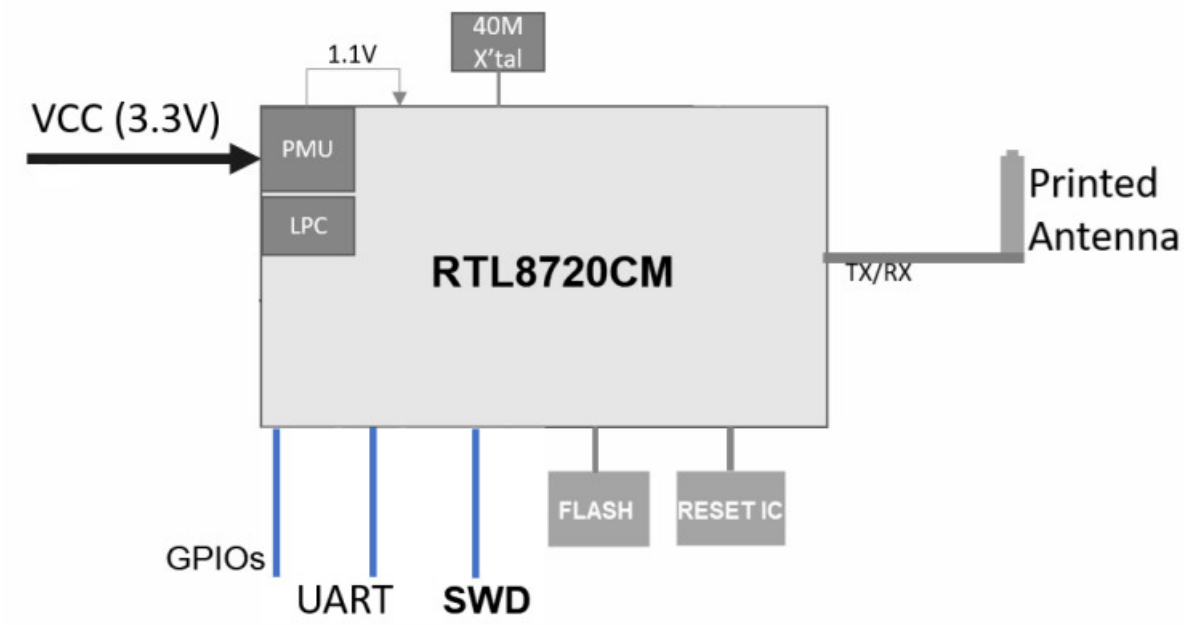
- WiFi / BLE4.2 operate at ISM frequency bands
- Compact Form Factor: 16 x 24 x 3.2 mm (PCB) ±0.1mm
- Standards support: 802.11b, 802.11g, 802.11n, 802.11d, 802.11e, 802.11i
- Enterprise level security complying with WPA/WPA2 certification
- One transmitter and one receiver 802.11n WLAN transceiver supports up to 150 Mbps downstream and 150 Mbps upstream PHY rates
- Pre-configured for the Afero Secure IoT Platform ■ HF/RoHS compliance

PRODUCT SPECIFICATIONS

MAIN CHIPSET
RTL8720CM-VT2
FUNCTIONAL SPECIFICATIONS

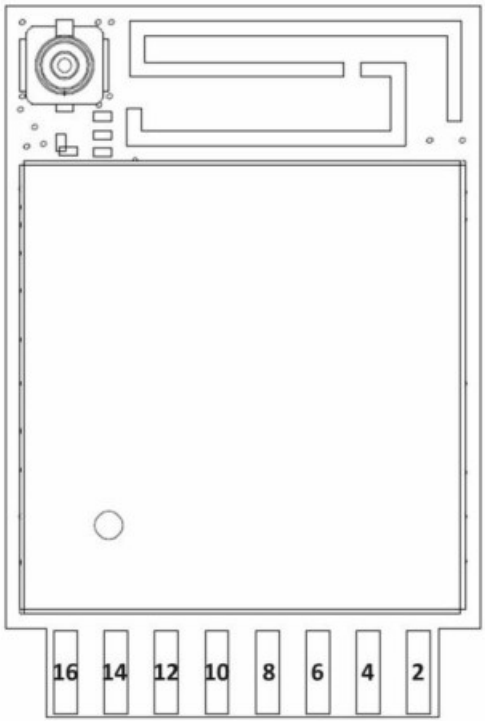
WiFi Function	
Standard	IEEE802.11b; IEEE 802.11g; IEEE 802.11n
Bus Interface	UART
Data Rate	802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: MCS 0 to 7
Media Access Control	CSMA/CA with ACK
Modulation Techniques	802.11b: CCK, DQPSK, DBPSK 802.11g: 64QAM, 16QAM, QPSK, BPSK 802.11n: BPSK, QPSK, 16QAM, 64QAM
Network Architecture	Ad-hoc mode (Peer-to-Peer) Infrastructure mode
Operation Channel	2.4GHz 11: (Ch. 1-11) – United States 13: (Ch. 1-13) – Europe 14: (Ch. 1-14) – Japan
Frequency Range	802.11bg 2.412 ~ 2.462 GHz
Transmit Output Power – 1×1 (Tolerance: +-1.5dBm)	802.11b: 17dBm 802.11g: 15dBm 802.11n: 14dBm
Security	WPA, WPA2, WPS, WEP 64/128, IEEE 802.11x, IEEE 802.11i
Operating Voltage	3.3V ±10% I/O supply voltage
Power Consumption (Average)	TX: MCS7-HT20 : 198mA OFDM 54M : 207mA CCK 11M : 249mA RX: MCS7-HT20:67mA CCK-11M:61mA
Antenna Type	Printed Antenna

BLOCK DIAGRAM



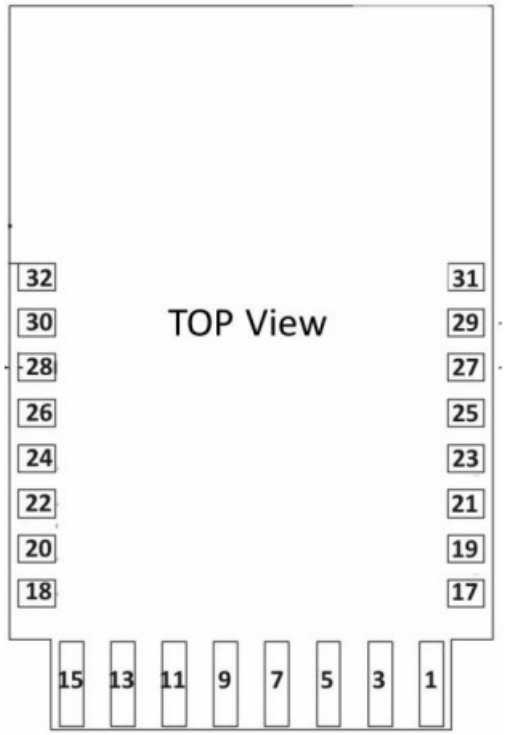
PRODUCT PICTURE

PIN DEFINITION



Pin No.	Pin Name	Module Pin Name/Function
2	GND	Ground
4	GPA 15	FACTORY UART RX
6	GPA 16	FACTORY UART TX
8	CHIP EN	RESET N
10	GPA 19	FACTORY MODE N
12	x	No Connected
14	GPA 3	TX1/SDA
16	GPA 2	RX1/SCL

Bottom


TOP View
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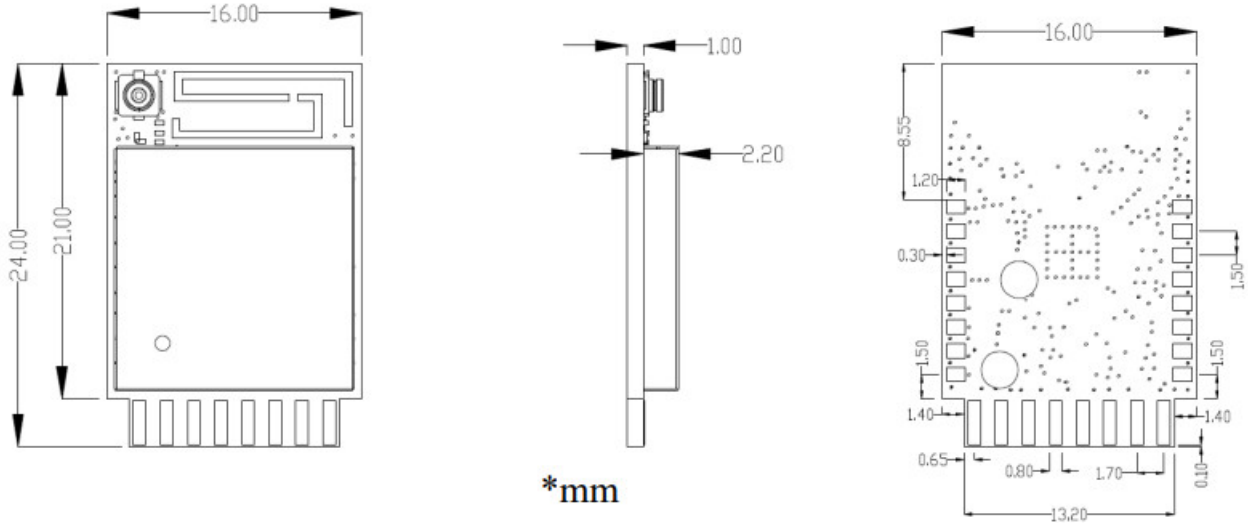
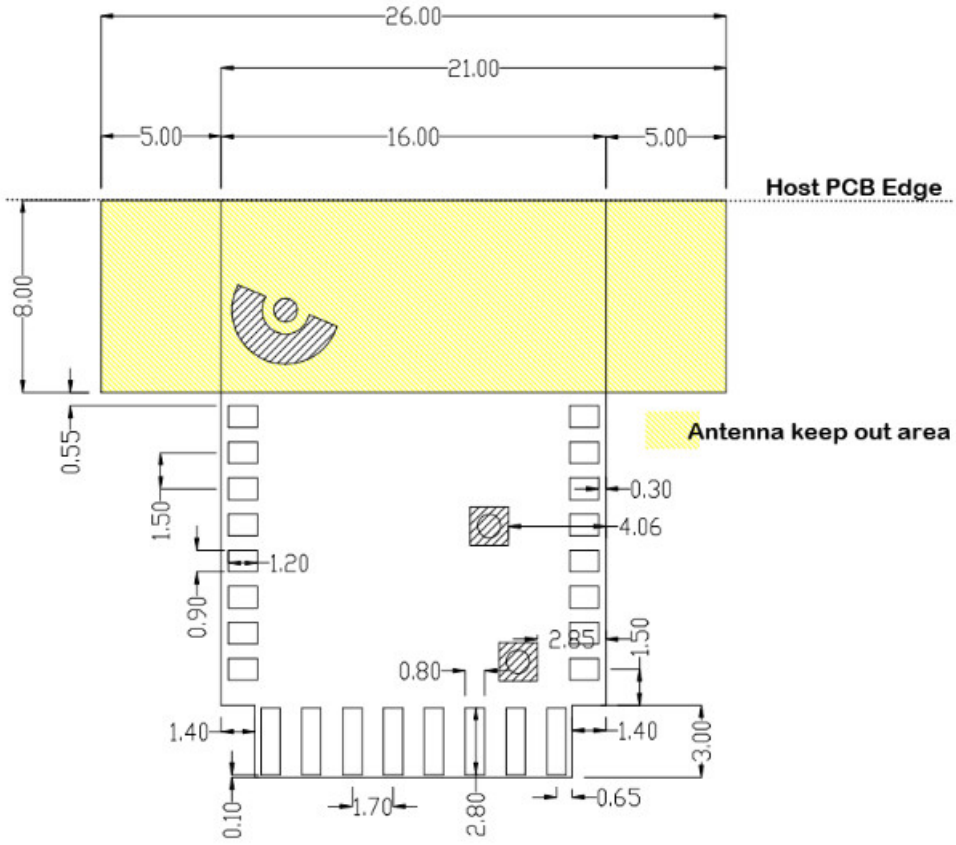
Pin No.	Pin Name	Module Pin Name/Function
1	GPIOA 14	PWMI/GPIOO
3	GPIOA 13	PWM2/GPIOI
5	GPIOA 4	PWM3/GPIO2
7	GPIOA 17	PWM4/GPIO3
9	GPIOA 18	PWM5/GPIO4
11	GPIOA 20	PWM6/GPIO5
13	GND	Ground
15	3V3	Power
17	GPIOA 19	FACTORY MODE N
19	CHIP EN	RESET N
21	GPIOA 16	FACTORY UART TX
23	GPIOA 15	FACTORY UART R X
25	X	No Connected
27	X	No Connected
29	GPIOA 23(ext.PL)	GPIO7
31	GND	Ground
18	GPIOA 2	RX I /SCL
20	GPIOA 3	TX USDA
22	GPIOA 1	GPIO8 (no pulldown)
24	GND	Ground
26	x	No Connected
28	x	No Connected
30	GPIOA 0	GPIO10
32	GND	Ground

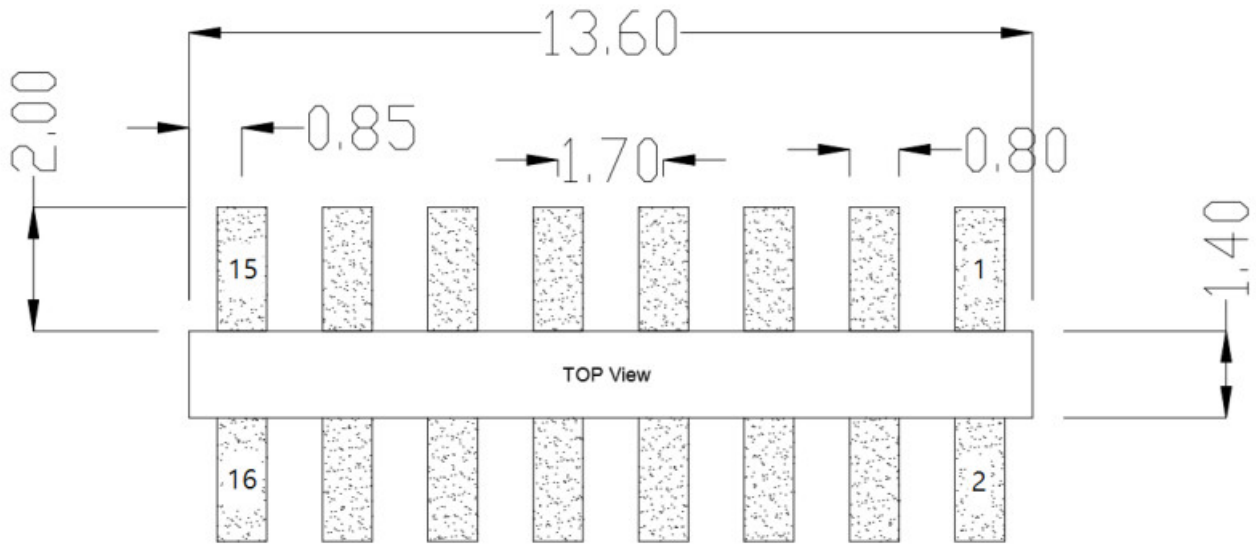
MECHANICAL



*mm

RECOMMENDED FOOTPRINT HORIZONTAL MOUNT





ENVIRONMENTAL

Operating
Operating Temperature: -40 to 105 C
Relevant Humidity: 5-90% (non-condensing)
Storage
Temperature: -50 to 150 ºC
Relevant Humidity: 5-95% (non-condensing)

WARNING STATEMENTS

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 products 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 except in accordance with FCC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple transmitter(s) and module(s) can be operated simultaneously without C2PC.
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 a minimum distance of 20 cm between the radiator & your body.

IMPORTANT NOTE: This module is intended for OEM integrators. The OEM integrator is responsible for compliance with 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.
USERS MANUAL OF THE END PRODUCT: In the user's manual of the end product, the end-user has to be informed to keep at least 20 cm separation with the antenna while this end product is installed and operated. The end-user has to be informed that the FCC 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. If the size of the end product is smaller than 8x10cm, then an additional FCC part 15.19 statement is required to be available in the user's manual: This device complies with Part 15 of 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.
LABEL OF THE END PRODUCT: The final end product must be labeled in a visible area with the following " Contains FCC ID: PPQWCBN3606L". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

OEM Integrator Checklist
The party below will implement the LITE-ON Module in host systems in accordance with the instructions specified in this document and the documents referenced herein.

1. The OEM integrator will ensure the Module is integrated into a host system using only the approved antenna model(s) described in this document.
2. The OEM integrator will ensure the antenna placement inside the host system will maintain the required spacing to the end-user for RF Exposure compliance, as specified in this document.
3. If other radios are integrated inside the host with the LITE-ON Module, the OEM integrator will contact its test lab, TCB, or LITE-ON to determine if additional FCC compliance evaluation is required to meet FCC collocation rules.
4. The OEM integrator will ensure end-user documentation will contain the specified regulatory wording and ensure the host system and the Module itself are labeled as specified in this document.
5. The OEM integrator will ensure the Module is programmed in the factory with compliant transmit power not exceeding the levels specified in this document. LITE-ON requests that the O EM integrator acknowledge its receipt of this document and the above instructions. You may contact LITE-ON with any questions concerning this document or the responsibilities of the OEM in the generator

IC statement:
This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the full owing two conditions:

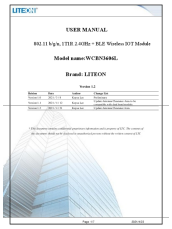
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

IC Radiation Exposure Statement

This equipment complies with IC RSS-102 radiation exposure limit set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

End Product Labeling
This transmitter module is authorized only for use in devices where the antenna may be installed such that 25 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains IC: 4491A-WCBN3606L”.

Documents / Resources

	LITE ON WCBN3606L Wireless IOT Module [pdf] User Manual WCBN3606L, PPQ-WCBN3606L, PPQWCBN3606L, Wireless IOT Module, WCBN3606L Wireless IOT Module

References

- WebSiteHosting Provider