

# The user manual of WIFI、BLE module

## 1. The product description

The user can achieve wireless connection to WIFI net and BLE, through this module

## 2. Basic parameters

| Feature Description   | Feature Description                                                                                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                 | MHCWB8G-B&MHCWB8G-IB                                                                                                                                                                           |
| Product Name          | 2.4GHz WIFI+Bluetooth Dual-Mode Module                                                                                                                                                         |
| Major Chipset         | BL616C                                                                                                                                                                                         |
| WLAN Standard         | IEEE 802.11b/g/n/ax                                                                                                                                                                            |
| BT Standard           | V5.3 BLE                                                                                                                                                                                       |
| WLAN Frequency Range  | 2.4GHz~2.4835GHz                                                                                                                                                                               |
| BT Frequency Range    | 2402MHz~2480MHz                                                                                                                                                                                |
| Spread Spectrum       | IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum)<br>IEEE802.11g/n: OFDM (Orthogonal Frequency Division Multiplexing)<br>IEEE802.11ax: OFDMA(orthogonal frequency-division multiple access) |
| Modulation Method     | DBPSK/DQPSK/CCK(DSSS):<br>BPSK/QPSK/16QAM/64QAM/256QAM(OFDM)                                                                                                                                   |
| Data Transfer Rate    | 11b:1,2,5.5, 11Mbps<br>11g: 6,9,12,18,24,36,48,54Mbps<br>11n:HT20MCS0~HT20MCS7;HT40MCS0~HT20MCS7<br>11ax:HT20MCS0~HT20MCS9;HT40MCS0~HT20MCS9                                                   |
| Antenna Reference     | MHCWB8G-B:WIFI/BLE Internal Printed ANT<br>MHCWB8G-IB:WIFI/BLE external ANT                                                                                                                    |
| Interface             | UART                                                                                                                                                                                           |
| Supply Voltage        | 3.3V±0.3V                                                                                                                                                                                      |
| Dimension             | MHCWB8G-B:18 (mm) *20 (mm) *2.5 (mm)<br>MHCWB8G-IB: 18 (mm) *14.3 (mm) *2.5 (mm)                                                                                                               |
| Operating Temperature | -40° C to 85° C                                                                                                                                                                                |
| Storage Temperature   | -40° C to 85° C                                                                                                                                                                                |

## 3. RF Output Power

|      | Band           | Power Limited |
|------|----------------|---------------|
| WLAN | 2400-2483.5MHz | ≤20dBm        |
| BLE  | 2402-2480MHz   | ≤20dBm        |

## 4. The display method of Model approved code

In the factory, the model approve code is lasered on the shielding case.

## 5. FCC 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 or more 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.

## 6. Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of FCC RF Rules. This equipment should be installed and operated with minimum distance of 50 cm (20 in) between the radiator and your body. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter

### CAUTION:

To comply with the limits of the Class B digital device pursuant to Part 15 of the FCC Rules, this device is compliant with Class B limits. All peripherals must be shielded and grounded. Operation with non-certified peripherals or non-shielded cables may result in interference to radio or reception

### MODIFICATION

To assure continued compliance, Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

## 6. Radiation Exposure Statement

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 50 cm (20 in) between the radiator and your body. NOTE: To satisfy FCC exterior labeling requirements, the following text must be placed on the exterior of the end product: Contains Transmitter module FCC ID: 2AFZZ-MHCWB8G-B & 2AFZZ-MHCWB8G-IB. To satisfy IC SED exterior labeling requirements, the following text must be placed on the exterior of the end product: "Contains Transmitter module IC: 25903-MHCWB8GB & 25903-MHCWB8GIB"

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

"Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1) L'appareil ne doit pas produire de brouillage;
- 2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Manufacturer: Xiaomi Communications Co.,Ltd.

Address: No.019, floor 9, building 6, yard 33, middle Xierqi Road, Haidian District, Beijing, China

A voltage stabilizing element or circuit is required on the power supplies to the module, and then the power supply is sent to the module

This equipment may be operated in all European countries

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.

#### Important Notice to OEM integrators

1. This module is limited to OEM installation ONLY.
2. This module is limited to installation in mobile or fixed applications, according to Part 2.1091(b).
3. The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations.
4. For FCC Part 15.31 (h) and (k): The host manufacturer is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with Part 15 Subpart B, the host manufacturer is required to show compliance with Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting, and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions). The host manufacturer must verify that there are no additional unintentional emissions other than what is permitted in Part 15 Subpart B or emissions are compliant with the transmitter(s) rule(s). The Grantee will provide guidance to the host manufacturer for Part 15 B requirements if needed.

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

(For module device use)

- 1) The antenna must be installed such that 50 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.