

# Honeywell BW CONNECT/BEACON

## Document Information

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|-----------------|-------------------|
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## Approvals

| Name | Date | Signature |
|------|------|-----------|
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Release Histroy

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| 1.0  | Mar 09, 2018 | WangKai | Initial draft |
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# 1. Section1:

## 1.1 Summary:

Honeywell BW CONNECT/BEACON is based on BLE chips and IRDA module providing a quick, easy and cost effective way to add BLE capabilities for BW gas products with IRDA. It is an IRDA to BLE adapter (dongle) which allows existing BW instruments to become IoT enabled devices and instantly kick start the Connected Worker ecosystem, customers can read gas information by a wireless way on a phone.

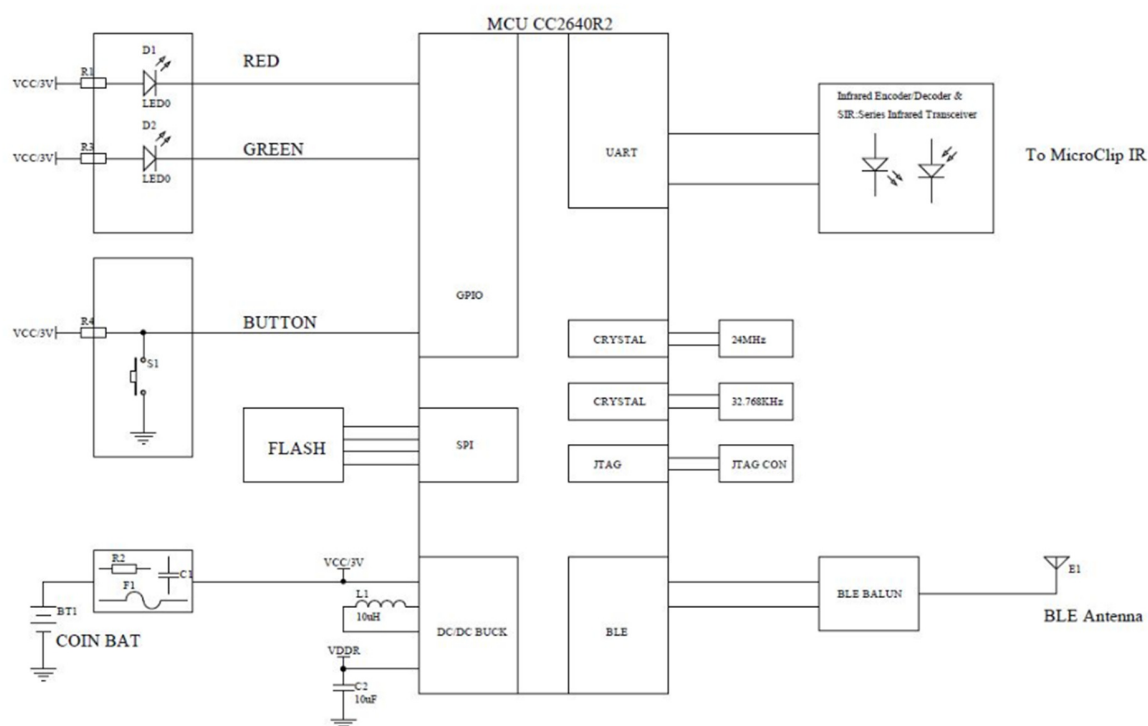
The differences between BWC-1001 and BWC-1002 are that: BWC-1002 has a different enclosure with power key which allow EUT sleep or be waked up.

## 1.2 Key Features:

- BLE with internal antenna
- Support BLE4.2 and 5.0
- Support 2.0Mbps data rate
- AES-128 security
- IRDA
- Low power consumption
- FCC and RED compliant, BQB compliant
- RoHS compliant, certified lead- and halogen-free

## 2. Section2:

### 2.1 Block Diagram:



## 3. Section3:

### 3.1 Voltage:

Power supply for the RMWIFI-M3 module will be provided by the host power pins.

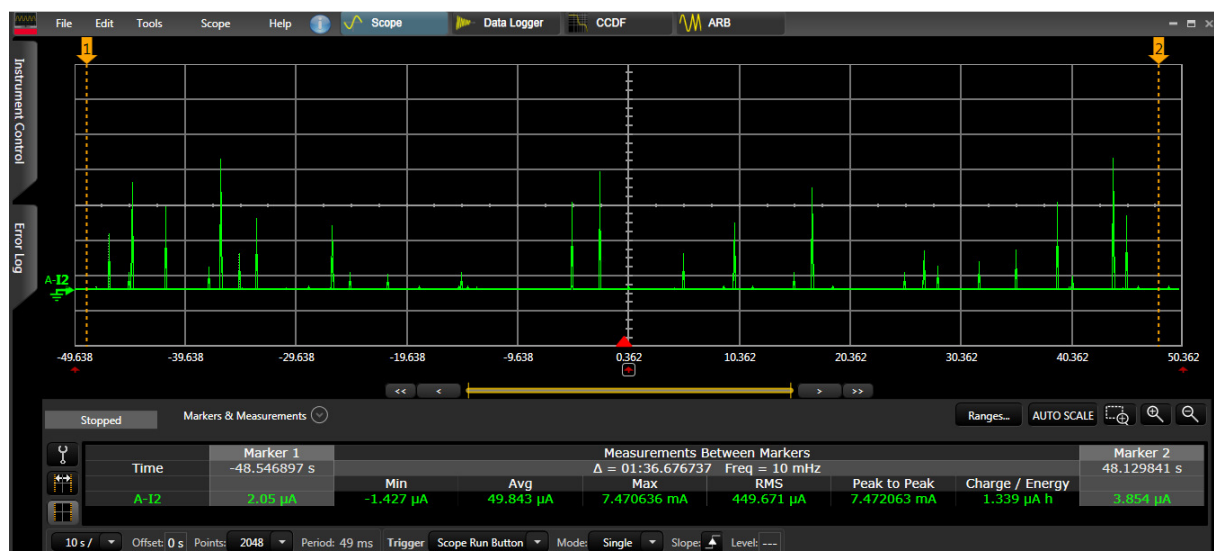
| Symbol | Min | Typ | Max | Unit |
|--------|-----|-----|-----|------|
| VCC    | 1.9 | 3.0 | 3.6 | V    |

### 3.2 Current Consumption:

Condition: 25deg.C. The default voltage is 3.0V.

| Item    | Condition                               | Min | Nom | Max | Unit |
|---------|-----------------------------------------|-----|-----|-----|------|
| Max     | Sending data peak value                 |     | 7   |     | mA   |
| Average | IRDA Interval 10s,<br>BLE interval 30ms |     | 50  |     | uA   |
| Sleep   | Average                                 |     | 20  |     | uA   |





### 3.3 RF Specification:

The RF performance of RMWIFI-M5 is given as follows. The default voltage is 3.3V.

| Parameter       | Condition         | Min  | Nom | Max  | Unit |
|-----------------|-------------------|------|-----|------|------|
| Frequency Range |                   | 2402 |     | 2480 | MHz  |
| Channel Space   |                   |      | 2   |      | MHz  |
| RX sensitivity  | PER 1%            |      | -85 |      | dBm  |
| TX Power        | RBW=1M,<br>VBW=3M |      | 3   | 4    | dBm  |

### 3.4 Antenna Specification:

### "High Frequency Ceramic Solutions"

2.45 GHz wide band, small form factor SMD chip antenna P/N 2450AT43F0100  
Detail Specification: 4/22/2016 Page 1 of 5

| General Specifications    |                 |                                |                                          |
|---------------------------|-----------------|--------------------------------|------------------------------------------|
| Part Number               | 2450AT43F0100   | Reel Quantity                  | 2,000 pcs                                |
| Operating Frequency (MHz) | 2400 - 2500 Mhz | Operating Temperature          | -40 to +85°C                             |
| Peak Gain (XZ-total)      | 2.1 dBi typ.    | Recommended Storage Conditions | +5 ~ +35 °C, Humidity 45~75%RH 12 months |
| Average Gain (XZ-total)   | 1.0 dBi typ.    | Power Capacity                 | 2W max. (CW)                             |
| Impedance                 | 50 Ω            |                                |                                          |

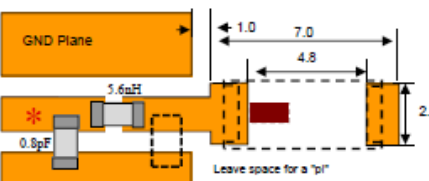
| Part Number Explanation |                  |          |                                                  |
|-------------------------|------------------|----------|--------------------------------------------------|
| P/N Suffix              | Packing Style    | Bulk     | Suffix = S eg. 2450AT43F0100S                    |
|                         |                  | T & R    | Suffix = E eg. 2450AT43F0100E                    |
|                         |                  | 100% Tin | Suffix = E or S eg. 2450AT43F0100 (E or S)       |
|                         | Evaluation Board | Bulk     | 2450AT43F0100-EB1SMA (with female SMA connector) |

| Mechanical Dimensions |                           |                   |
|-----------------------|---------------------------|-------------------|
|                       | In                        | mm                |
| L                     | 0.236 ± 0.008             | 6.00 ± 0.20       |
| W                     | 0.079 ± 0.008             | 2.00 ± 0.20       |
| T                     | 0.047 0.2 +0.004 / -0.008 | 1.20 + 0.1 / -0.2 |
| a                     | 0.020 ± 0.012             | 0.50 ± 0.30       |



| Terminal Configuration |               |
|------------------------|---------------|
| No.                    | Function      |
| 1                      | Feeding Point |
| 2                      | NC            |



| Mounting Considerations                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mount these devices with brown mark facing up. Units: mm                            |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| *Line width should be designed to provide 50 Ω impedance matching characteristics.  |                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | <p>It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values above are used when antenna is mounted on Johanson's evaluation board. The matching values on client's PCB will be different. Go to: <a href="http://www.johansontechnology.com/tuning.html">www.johansontechnology.com/tuning.html</a> and see how to obtain the new values.</p> |

## 4. Section3:

### 4.1 Physical Characteristics:

| Parameter             | Range         | Unit |
|-----------------------|---------------|------|
| Size                  | 35.5 * 32*7.2 | mm   |
| Operation Temperature | -40 to +55    | °C   |

## 5. Regulatory:

### Caution:

This device complies with Part 15 of the FCC Rules / Industry Canada licence-exempt RSS standard(s). 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.

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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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

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.

**Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.**

**Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.**