

# EMBT20 *BLUETOOTH*® MODULE USER MANUAL

## 1. GENERAL DESCRIPTION

The EMBT0 is a Bluetooth compatible beacon based on the EM9304 IC with the following core features:

- A sealed plastic housing with IP-67 weatherproof rating
- External dimensions < 19.2mm in all directions
- Attachable to half inch customer-supplied hospital wristband (wristband not included in shipped product)
- An environmentally-friendly alkaline battery with 14 day minimum active lifetime after up to 10 months in storage beyond the EM shipment date.
- A push button and LED for use during the activation process
- RF antenna with typical range > 10m when attached to the wrist on the defined hospital wristband and within line of sight of the gateway
- Firmware with similar functionality as the EMBC20-F291 already shipping to HID
- Unique 2D code on each housing
- FCC and IC certification for sale in the US and Canada

## 2. MECHANICAL & PHYSICAL PROPERTIES

### 2.1. PRODUCT OUTLINE DIMENSIONS

The product is a compact design intended to be threaded onto a wristband  $12.7 \pm 0.1$ mm wide with a material thickness no more than 0.25mm and worn on the human body.

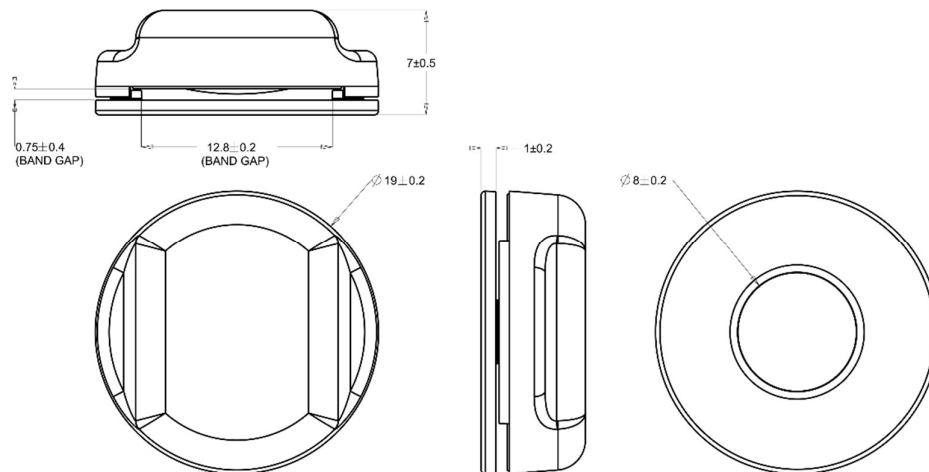


Figure 1: Complete product drawing

### 2.2. PRODUCT COLOR & MATERIAL

The plastics of the product are white ABS with finish VDI 3400 Class 12.

### 2.3. PRODUCT ACTUATORS & INDICATORS

The key mechanical features of the product are the push button to activate the beacon and LED to indicate successful activation.

## PUSH BUTTON

The push button is actuated with a firm press. Refer the application specific for details on the firmware operations Typical press force of 200g is required to depress the button.

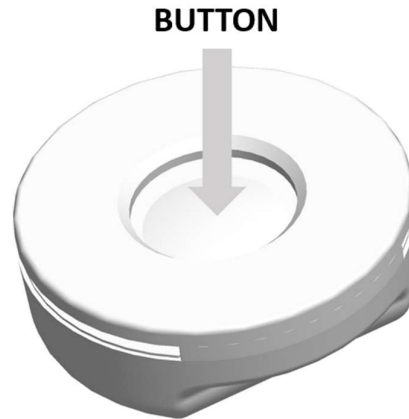


Figure 2: Button location in module

## LED

The red LED is visible along the edge of the beacon. The LED is used to indicate the beacon has been successfully activated.

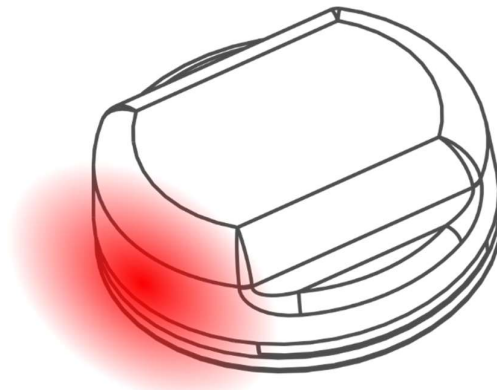


Figure 3: LED location in module

## 2.4. GENERAL OPERATING CONDITIONS

The general operating conditions are listed in **Table 1: General Operating Conditions**. Electrical characteristics are defined for the typical operating conditions with no more than 10% of the overall life of the active life of the product spent outside typical conditions.

Table 1: General Operating Conditions				
Parameter	Min	Typ	Max	Unit
Supply Voltage (VCC)	1.1	1.5	1.7	V
Temperature Range	0	25	+40	°C

### 3. REGULATORY

**NOTICE:**

This device complies with Part 15 of the FCC Rules [and contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's 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.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

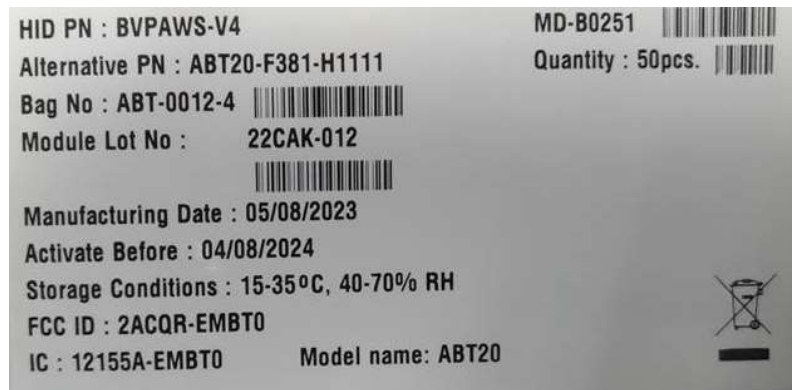
**NOTICE:**

Changes or modifications made to this equipment not expressly approved by (manufacturer name) may void the FCC authorization to operate this equipment.

**NOTE:** 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### 4. LABELING

Due to the small size of the product, it is impractical to label the units individually with the certification markings. Therefore, units are shipped in vacuum sealed bags and labelling on each bag includes the following regulatory markings:



Additionally, the exterior of the boxes include a label with the following regulatory markings.

