# em microelectronic
### A COMPANY OF THE SWATCH GROUP



## Bluetooth®
# Low Energy V4.2 Encapsulated Proximity Beacon with Accelerometer

## General Description

The EMBP0 is a high-performance, customizable Bluetooth Low Energy proximity beacon with an accelerometer for advanced functionality. The small and rugged EMBP01 comes fully encapsulated with a resin based polymer for protection against dust and liquids and for reliable use in harsh environmental conditions. The beacon has been optimized for low-cost and ease of use.

The EMBP0 is compatible with all major beacon formats including iBeacon™ and Eddystone™, and proprietary systems such as Quuppa Intelligent Locating System™. The beacon is fully customizable over the air or in manufacturing. For example, the following parameters can be easily modified:

· UID (UUID, Major/Minor ID)

· URL and telemetry data

· Multiple interleaved packet types

· Output power

· Accelerometer function and sensitivity

The EMBP0 can be securely updated in the field with over-the-air programming from a mobile device.

The EMBP0 accelerometer can be used to implement efficient and low-energy algorithms for various applications. The accelerometer can be used to activate beaconing on movement, or gestures, for example. When not active, the beacon consumes minimal energy.

The EMBP0 can be stored in Warehouse Mode without significant degradation of the battery lifetime and with up to 10 years of battery life depending on usage conditions.

The EMBP0 is manufactured with Swiss quality by EM Microelectronic. It leverages Swatch Group technology, including the EM9304 Bluetooth system-on-chip from EM Microelectronic, a CR2032 battery from Renata, and a 32.768kHz crystal from Micro Crystal.

The EMBP0 can be delivered in any quantity with guaranteed unique ID. A 2D unique serial number is printed on the beacon for optical scanning.

The EMBP0 operates over a -20C to +60C temperature range.

The EMBP01 is Bluetooth, FCC, IC, CE and RCM certified, RoHS, REACH, and Halogen Free compliant.

## Features

l Small, rugged, and encapsulated in polymer resin

l Low-cost and easy to use

l Supports popular beacon formats such as iBeacon™ and Eddystone™, and proprietary such as Quuppa Intelligent Locating System™

l Secure over-the-air updates possible with all major mobile platforms in the field

l Up to 10 years of battery lifetime - Battery Lifetime Calculator available

l Extremely low power accelerometer can be used to activate beaconing on actions such as movement, taps, or gestures

l Up to 50m range line-of-sight (LOS) at maximum output power

l Can be stored in warehouse mode for more than 1 year without significant impact to battery life

l Rich set of parameters configurable Over the Air allowing for rapid development a very large range of applications without modifying any source

l Manufactured with Swiss quality and including the following Swatch Group technologies:
  · EM9304 state-of-the-art Bluetooth system-on-chip
  · Renata CR2032 battery
  · Micro Crystal 32.768kHz crystal

l Unique ID and scannable QR-code come standard

l Weatherproof Enclosure with IP-67 rating

l Temperature range from -20C to +60C

l Bluetooth, FCC, IC, CE and RCM certified

## Product Dimensions

The EMBP0 finished product outline dimensions are shown in Figure 1 with 32.1 x 22.1 x 5.3mm outer dimensions.
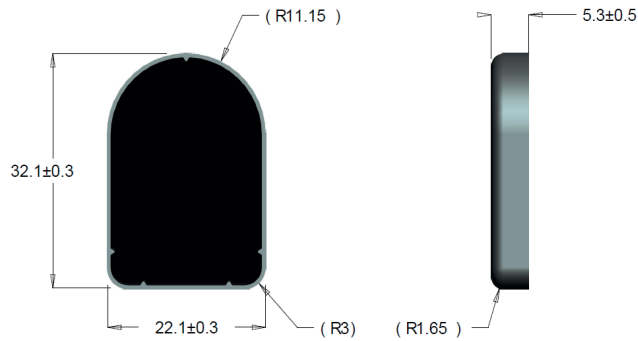


Figure 1: Finished Product Dimensions

(in mm)

## Ordering Information

The EMBP0 is available as a finished product with full FCC, IC, CE and RCM certification.  The EMBP01 ordering information is shown in Figure 2 and the order numbers are shown in Table 1.
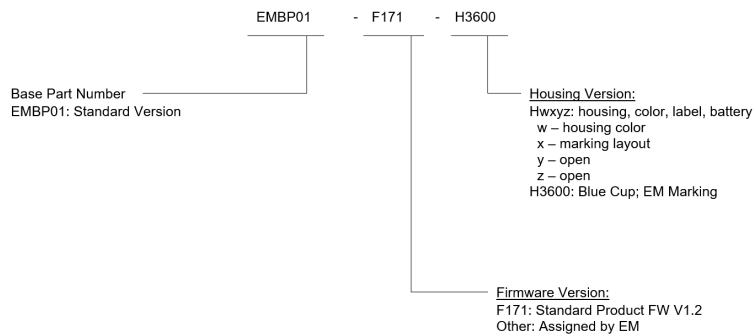


Figure 2: Ordering Information

| Order Number | Description | Container | Units per Container | Minimum Order Quantity |
|---|---|---|---|---|
| EMBP01-F171-H3600 | Standard Encapsulated Accelerometer Beacon in Blue Cup | Box | 800 | 800 |

Table 1: Ordering Information

## Contact Information

Inquiries for lead-times, quotes, orders: EMDirect@emmicroelectronic.com