

## BlueBeacon Badge-Holder

### Bluetooth Low Energy wearable badge tag

#### Data sheet



BlueBeacon Badge Holder is a wearable badge-holder battery-powered BLE beacon, based on BT5-ready SoC Nordic nRF52832, for people and asset tracking. It designed to host standard ISO/IEC 7810 cards (magnetic, RFID, NFC) for personnel identification.

Standard BlueUp BLE beacon firmware supports several packet formats: iBeacon, Eddystone (full support), Quuppa (Emulation mode), Safety (proprietary BlueUp format with short/long button push, motion, free-fall, man-down flags).

BlueBeacon Badge-Holder integrates 3-axis linear accelerometer, panic button, 2x Led and powered by a thin non-replaceable lithium battery that guarantees a long operating life.

Advertising	
Up to 4 slots configurable for Eddystone frame types: UID, URL, TLM, EID Full support for specifications Eddystone Configuration GATT Service by Google	
Up to 4 slots configurable for the following frame types: iBeacon, Quuppa (Direction Finding packet)	
Support for Safety packet: beacon ID, battery status, motion, button-press (short/long), man-down detection	
TX power	-40, -20 to 4 dBm (with 4 dB steps). Programmable for each slot
Advertising interval	0.1 to 60 secs. Programmable for each slot
Global configuration options	non-connectable mode, anonymous mode, programmable time period, orientation/motion-detection mode, locked/unlocked mode, change password
Default settings	
iBeacon: UUID = ACFD065E-C3C0-11E3-9BBE-1A514932AC01, major = 8, minor = S/N, ADV interval = 400 msec, TX power = -8 dBm	
Global configuration	connectable, locked

Device specifications	
Electrical specifications	
Core module	Nordic nRF52832 SoC (MCU and radio transceiver)
MCU core	ARM Cortex-M4 32-bit CPU
Current consumption (25°C)	Radio TX: 7.1 mA (0 dBm TX) Radio RX: 6.5 mA Idle mode: 3 µA Idle mode with accelerometer ON: 7 µA
Radio specifications	
Standard	Bluetooth 4.2 Bluetooth Low Energy (BT5-ready)
Frequency band	2.402 to 2.480 GHz (according to Bluetooth 4.0 specifications, worldwide ISM band)



<b>Radio specifications</b>	
Advertising channels	CH37 (2.402 GHz), CH38 (2.426 GHz), CH39 (2.480 GHz) (according to Bluetooth 4.0 specifications)
Channel spacing	2 MHz (according to Bluetooth 4.0 specifications)
TX power	+4 dBm (max)
<b>Antenna</b>	
Type	Integrated meandered planar inverted F-antenna (PIFA)
Gain	2 dB (max)
Radiation diagram	Omnidirectional
<b>Power</b>	
Power supply	Battery
Replaceable	No
Type	3V lithium thin battery
Model	CP224147 (typical capacity 800 mAh @ 25°C)
<b>Sensors</b>	
Sensors	3-axis linear accelerometer, button
Actuators	2x Led (Green, Yellow)
<b>Mechanical specifications</b>	
Material	ABS plastic
Color	White (custom color on demand: yellow, black)
Size	95 x 64 x 7 mm
Host ID card	ISO7810 ID-1 (85.6 x 54 x 0.76 mm)
Protection	IP67
Flammability	UL-94 HB
<b>Environmental specifications</b>	
Operating temperature	-20°C to +60°C (battery operating life sharply decreases under 0°C)
Storage temperature	-40°C to +85°C (without battery)
<b>Certifications</b>	
CE, FCC (pending)	

<b>Expected battery life-time (in months)</b>						
TX power	Advertising interval					
	100 msec	300 msec	500 msec	700 msec	1000 msec	5000 msec
+4 dBm	7	20	32	43	58	171
0 dBm	8	23	37	49	66	180
-16 dBm	10	27	43	57	76	180

Expected battery life-time is estimated assuming nominal battery capacity, self-discharge and ambient operating temperature.

Batteries from different manufacturers can have different operating lives.

Enabling Eddystone-EID and eTLM advertising reduces battery life-time of about 15/20%.

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