

BlueBeacon Tag

Bluetooth Low Energy proximity-beacon

Data sheet v. 3.0



BlueBeacon Tag is a keyfob-like battery-powered BLE beacon. It supports advertising of multiple frames with iBeacon, Eddystone (full support) and/or Quuppa format, at the same time.

Thanks to its low-profile form-factor, BlueBeacon Tag can be worn as an identification badge for personnel or hung on racks or products. Tusing the internal accelerometer, it can be configured to automatically enter into sleep-mode for battery savings.

BlueBeacon Tag uses a couple of CR2032 coin batteries that are easily replaceable by simply removing the snap-fit cover.

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, Sensors	
TX power	-40, -30, -20 to 4 dBm (with 4dB steps). Programmable for each slot
Advertising interval	0.1 to 5 secs. Programmable for each slot
Global configuration options	non-connectable mode, anonymous mode, programmable time period, locked/unlocked mode, change password
Default settings	
Eddystone-URL: URL = https://www.blueupbeacons.com, ADV interval = 1000 msec, TX power = -8dBm	
iBeacon: UUID = ACFD065E-C3C0-11E3-9BBE-1A514932AC01, major = 0, minor = S/N, ADV interval = 400 msec, TX power = -8dBm	
Global configuration	connectable, locked

Device specifications	
Electrical specifications	
Core module	Nordic nRF51822 SoC (MCU and radio transceiver)
MCU core	ARM Cortex-M0 32-bit CPU
Current consumption	Radio TX: 8mA (@ 0dBm) Radio RX: 9.7 mA Idle mode: 3 uA Sleep mode: 1.5 uA
Radio specifications	
Standard	Bluetooth 4. 0 (Bluetooth Low Energy or Bluetooth Smart)
Frequency band	2.402 to 2.480 GHz (according Bluetooth 4.0 specifications, worldwide ISM band)
Advertising channels	CH37 (2.402 GHz), CH38 (2.426 GHz), CH39 (2.480 GHz) (according Bluetooth 4.0 specifications)
Channel spacing	2 MHz (according Bluetooth 4.0 specifications)



Radio specifications (cont'd)	
TX power	Conducted: +4 dBm (max) EIRP (Equivalent Isotropic Radiated Power): +6 dBm (max)
Antenna	
Type	Integrated meandered planar inverted F-antenna (PIFA)
Gain	2dB (max.)
Radiation diagram	Omnidirectional
Power	
Power supply	Battery
Replaceable	Yes
Type	2x CR2032 (3V, lithium)
Model	Panasonic or equivalent (typical capacity 440 mAh @ 25°C)
Expected life	2.5 months to 2 years, 24/7 at ambient temperature 7 months with default settings Enabling Down-to-Sleep or Down-to-Unset mode can double battery life or over
Sensors	
Accelerometer	3-axis linear accelerometer
Mechanical specifications	
Material	ABS plastic
Color	White (silk-screen printing available on demand; custom color on demand)
Size	60 x 35 x 11 mm
Opening	Snap-fit
Protection	IP40
Flammability	UL 94 HB
Environmental specifications	
Operating temperature	-20°C to +60°C (battery operating life sharply decreases under 0°C)
Storage temperature	-40°C to +85°C (without battery)
Certifications	
CE (Directive 1995/5/CE R&TTE, 2011/65/UE RoHS2) iBeacon, Eddystone, Quuppa	

Expected battery life-time (in months)						
TX power	Advertising interval					
	100 msec	300 msec	500 msec	700 msec	1000 msec	5000 msec
0 dBm	2.5	7	10	12	15	25
-8 dBm	3	7.5	11	13	16	26
-20 dBm	3	8	11.5	14	17	27

*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 reduce battery life-time of about 15/20%.
 Enabling Accelerometer-based modes can double battery life or over*

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