

BlueBeacon Sensor

Bluetooth Low Energy proximity-beacon

Data sheet v. 3.0



BlueBeacon Sensor is a sensor-enabled battery-powered Bluetooth Low Energy beacon. With firmware version 5.0 or higher, it supports advertising of multiple frames with iBeacon, Eddystone (full support) and/or Quuppa format, at the same time.

BlueBeacon Sensor integrates different environmental sensors: temperature, humidity, pressure. The vented enclosure ensures accurate measurements. Target markets are: home automation, retail, industry.

The 2xAA alkaline battery pack ensures a long operating life. Batteries are easily replaceable by simply removing the snap-fit back panel.

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 AA 1.5V (LR6 alkaline or FR6 lithium)
Model	VARTA Industrial 4006 (typical capacity 2600 mAh @ 25°C)
Expected life	18 months to 8 years, 24/7 at ambient temperature 3.5 years with default settings
Sensors	
Temperature	±0.5 °C (+15 to +40 °C)
Humidity	±3.5% rH (20 to +80% rH)
Pressure	±1 hPa (260 to 1260 hPa)
Mechanical specifications	
Material	ABS plastic
Color	White (silk-screen printing available on demand; custom color on demand)
Size	71 x 71 x 27 mm
Wall fastening	Double-sided tape or dual-lock
Opening	Snap-fit back cover
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	18	40	54	63	72	97
-8 dBm	19	43	56	65	74	98
-20 dBm	21	45	59	68	76	99

Expected battery life-time is estimated assuming nominal battery capacity, self-discharge and ambient operating temperature.
 Enabling Eddystone-EID and eTLM advertising reduce battery life-time of about 15/20%

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