

BlueBeacon Quuppa SafeX

Quuppa-compatible wearable tag for industry and safety

Data sheet v. 0.1



BlueBeacon Quuppa SafeX is a wearable battery-powered Bluetooth Low Energy beacon based on nRF52832 SoC, with full support of Quuppa software features (Quuppa Compatible).

BlueBeacon Quuppa SafeX is designed for industrial and safety applications: robust and elegant weatherproof case, replaceable long-life coin CR2477 battery, alarm button, leds, vibration/buzzer.

It is provided in multiple wearable and IP-rated versions:

- SafeClip: with clip for belt/pocket (IP65)
- SafeCord: with eyelet for lanyard (IP65)
- SafeBand: with silicone wriststrap (IP65)
- SafeTag: with eyelet for lanyard or badge clip (IP31)

General features	
Firmware based on Quuppa libraries (Quuppa-compatible). Supports back-channel communication	
Configuration options	Fully configurable with Quuppa platform
TX power	-40, -20 to 4 dBm (with 4dB steps)
Advertising interval	0.1 to 10 secs (BLE channel) 0.01 to 10 secs (Quuppa proprietary channel)
Advertising channels	BLE (CH37 - 2.402 GHz) or Quuppa proprietary
Quuppa ID	MAC address or custom ID

Device specifications	
<i>Electrical specifications</i>	
Core module	Nordic nRF52832 SoC (MCU and radio transceiver)
MCU core	ARM Cortex-M4 32-bit CPU
Current consumption	Radio TX: 7.1mA (@ 0dBm) Radio RX: 6.5 mA Idle mode: 2 uA Sleep mode: 1 uA
<i>Radio specifications</i>	
Compatible standard	Bluetooth 4. 0 or higher (Bluetooth Low Energy)
Frequency band	2.402 to 2.480 GHz
TX power	Conducted: +4 dBm (max) EIRP (Equivalent Isotropic Radiated Power): +6 dBm (max)
Sensitivity	-96 dBm
<i>Antenna</i>	
Type	Integrated meandered planar inverted F-antenna (PIFA)
Gain	2dB (max.)
Radiation diagram	Omnidirectional



Power		
Power supply	Battery	
Replaceable	Yes	
Type	CR2477 Li-MnO2 3V battery	
Model	Panasonic CR2477 (typical total capacity 1000 mAh @ 25°C)	
Expected life	2 month (@100Hz) to 10 years (@0.1Hz), 24/7 at ambient temperature	
Sensors		
Accelerometer	3-axis linear accelerometer	
Interfaces		
Button	Yes	
Leds	Yes (2x, 1 red, 1 yellow)	
Mechanical specifications		
Version	<i>Waterproof</i>	<i>Non-waterproof</i>
Size	55 x 46 x 17 mm	55 x 45 x 16 mm
Opening	4x screws (Torx)	4x screws (Phillips)
Protection	IP65	IP31
Material	ASA plastic	ABS plastic
Color	White w/ grey sealing ring	White (custom color on demand)
Flammability	UL 94 HB	UL 94 HB
Wearability options	Wrist strap (SafeBand) Eyelet for lanyard (SafeCord) Clip for pocket/belt (SafeClip)	Eyelet for lanyard or clip (SafeTag)
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)	

Expected battery life-time (in months)						
TX power	Advertising interval (frequency)					
	10 msec (100 Hz)	100 msec (10 Hz)	250 msec (4 Hz)	500 msec (2 Hz)	1000 msec (1 Hz)	10000 msec (0.1 Hz)
0 dBm	2	19	46	79	120	240

*Expected battery life-time is estimated assuming the following standard operating conditions:
 RX/TX duty cycle = 0%, nominal battery capacity, estimated battery self-discharge, ambient operating temperature (about 25°C), leds off.*

Batteries from different manufacturers can have slightly different operating lives.

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