

## Quuppa Bangle

### Bluetooth Low Energy Quuppa Compatible wristband

#### Data sheet



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

BlueBeacon Bangle is designed for children and hospital patients identification and tracking: weatherproof case, replaceable coin CR2032 battery, alarm button, LED.

It is provided with a disposable replaceable vinyl bracelet with NFC tag.

<b>General features</b>	
Firmware based on Quuppa libraries (Quuppa-Compatible) Supports back-channel communication	
Configuration options	Configurable with Quuppa Site Planner
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

<b>Device specifications</b>	
<b>Electrical specifications</b>	
Core module	Nordic nRF52832 SoC (MCU and radio transceiver)
MCU core	ARM Cortex-M4 32-bit CPU
Current consumption (25°C)	Radio TX: 7.1mA (0dBm TX) Radio RX: 6.5 mA Idle mode: 3 uA Idle mode with accelerometer ON: 7 uA
<b>Radio specifications</b>	
Standard	Bluetooth 4.2 Bluetooth Low Energy (BT5-ready)
Frequency band	2.401 to 2.481 GHz (Bluetooth 4.0 specifications + Quuppa proprietary channels)
Channel spacing	2 MHz (according Bluetooth 4.0 specifications)
TX power	Conducted: +4 dBm (max) EIRP (Equivalent Isotropic Radiated Power): +6 dBm (max)
RX sensitivity	-94 dBm



<b>Antenna</b>	
Type	Integrated meandered planar inverted F-antenna (PIFA)
Gain	2dB (max.)
Radiation diagram	Omnidirectional
<b>Power</b>	
Power supply	Battery
Replaceable	Yes
Type	CR2032 (3V, lithium)
Model	Panasonic CR2032 or equivalent (typical capacity 220 mAh @ 25°C)
Expected life	0.5 month (@100Hz) to 2 years (@0.1Hz), 24/7 at room temperature
<b>Sensors</b>	
Sensors	3-axis linear accelerometer, button, LED
Radio	NFC NTAG2 tag (in wrist-strap)
<b>Mechanical specifications</b>	
Material	ABS plastic
Color	White
Size	36 x 36 x 11 mm
Fastening	Disposable vinyl bracelet with NFC tag (replaceable)
Protection	IP66
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 (excl. proprietary channels) Quuppa Approved (pending)	

<b>Expected battery life-time (in months)</b>						
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	0.5	5	10	22	27	50+

*Expected battery life-time is estimated assuming the following standard operating conditions:  
 RX/TX duty cycle = 0%, nominal battery capacity, battery self-discharge, ambient operating temperature (about 20°C),  
 (optional) leds off.  
 Batteries from different manufacturers can have slightly different operating lives.*

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