



Smart Sensor & Tracker
www.nabitrack.com

Device Datasheet

Document nr.: NABIDSV1

Date: 16.02.2021

Key Features

- 3-5 years battery life
- IP67 waterproof enclosure
- Flexible operation options

Applications

- Logistics
- Asset tracking
- Operation monitoring

NaBi Solo



Overview

NaBi is a 5G NBloT network based low energy smart sensor and tracker. NaBi can periodically record location, temperature and motion information and this data is transferred to the General Track servers through the NBloT network. The device configuration regarding sensor recording and data synchronisation intervals and sensor based alarms can be configured and batch deployed to multiple devices in the General Track online system. The recorded data is available in the online system, mobile application or through REST API (https://www.nabitrack.com/documentation.html#/gt_api).

Features and functions

Flexible configuration options for different applications

Battery life prediction

Motion sensor:

- Selectable sensitivity
- Configurable event on motion
- Configurable event on standstill
- Configurable event on orientation changing

Location:

- Regular geolocation logs
- Geolocation logs on motion sensor event
- Location measurement falls back to NBloT cell based location measurement in case of GPS unavailability (when the device is inside a building)

Temperature:

- Regular temperature logs
- Overtemperature or undertemperature alerts

Scheduled data communication and active periods:

- Configurable calendar for scheduled data communication
- Configurable calendar for active time periods

Sensor characteristics

Accelerometer:

- | | |
|------------------------------|---|
| Static orientation detection | Adjustable event trigger: 10°..170°, resolution: 1° |
| Motion detection threshold | Adjustable: 0.063..5 G, resolution: 0.063 G |
| Maximum logged acceleration | ±12.7 m/s ² |
| Resolution | 0.1 m/s ² |

Temperature sensor:

- | | |
|-------------------|------------|
| Resolution | 1 °C |
| Accuracy | ±0.5 °C |
| Temperature range | -55..85 °C |

General Track

Pushbutton functions

Short press: Out of schedule instant data synchronization with the server
Long press (>10s): Debug mode (3 min): The LED is on when motion is detected*

*Works only when motion detection is configured with given thresholds.

LED functions

Normal operation: Blinks once in every minute
After battery replacement: Blinks in every second until first server communication is finished
After pushbutton press: Blinks in every second until first server communication is finished

Battery life prediction

Power consumption depends on device settings and usage. Most power is used by localization and NB-IoT communication. Battery lifetime estimation examples are shown in Table 1.

Table 1. Estimated battery lifetime in the function of data synchronisation and location rates

GPS sampling period	Data synchronisation		
	Every hour	Every 12 hours	Once a day
30 minutes	0.24 year	1.09 years	1.32 years
2 hours	0.26 year	1.98 years	2.9 years
12 hours	0.27 year	2.57 years	4.37 years
24 hours	0.27 year	2.65 years	4.6 years

Estimate the battery life of a configuration that suits your application at
<https://www.nabitrack.com/configuration.html>

Radio characteristics

GPS characteristics:

AGPS yes
GPS sensitivity -165 dBm

NB-IoT Radio characteristics:

Output power 22.5 dBm
Narrow-Band IoT freq. bands B5 / B8 / B20

Environmental characteristics

Maximum vibration ± 5 G
Operating ambient temperature -40..+85 °C
Storage temperature -40..+85 °C
IP rating IP67

Replaceable battery (included)

Battery type IEC FR20, Spiral Type Thionyl Chloride Lithium Battery Only
Battery voltage 3.6 V
Nominal capacity 14 Ah

Approvals

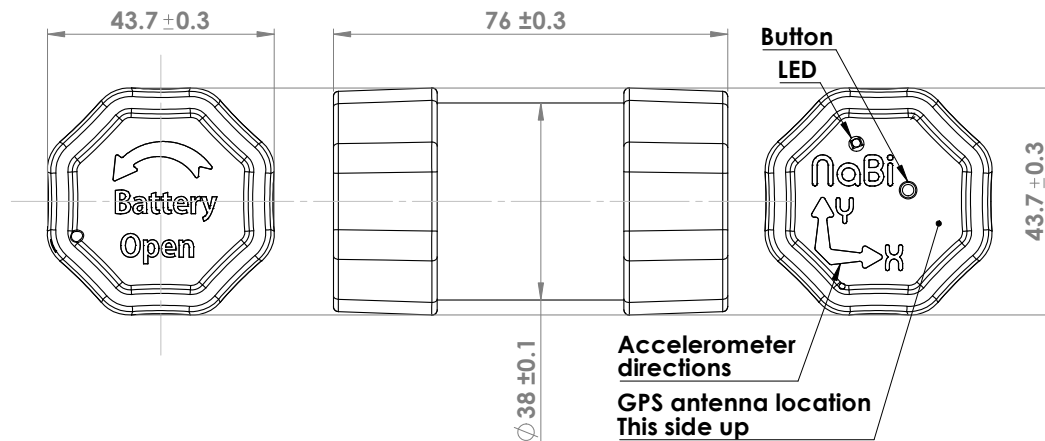
CE 1413, RoHS, PbFree



General Track

Mechanical dimensions

Size (L x W x H) 76 x 44 x 44 mm
Weight, incl. battery 170 g



Mounting options: https://www.nabitrack.com/documentation.html#mounting_options

! Safety & Warranty

The following precautions need to be ensured for safety and to maintain warranty:

- Do not exceed the limits stated under environmental characteristics.
- Do not mount or use NaBi in any way which cause deformation or other mechanical damage to the enclosure. Severe deformation of the rubber caps may reduce water resistance.
- Use NaBi with the proper type of battery, as described in the replaceable battery section.
- Clean and dry NaBi before opening the battery replacement lid.
- Do not expose NaBi to dust or water if the battery replacement lid is open.
- Do not touch the battery contacts and keep them clean during assembly. Clean them with isopropyl alcohol if needed.
- Replace the sealing O-ring every time, when the battery replacement lid is reclosed. Ensure, that the O-ring is in its place. Use silicone grease lubricate to avoid the adhesion of surfaces and ensure water resistance.
- Warning: Product contains Lithium Thionyl Chloride battery.
Fire, explosion, and severe burn hazard. Do not short circuit, recharge, crush, disassemble, heat above 85°C , or incinerate. Please read the detailed battery safety instructions at below:
https://www.general-track.com/fleet/static/nabi/battery_safety.pdf
For more information, please call: 0036-20-386-6282
- The warranty does not cover defects or malfunction caused by misuse, abuse or improper maintenance, failure to follow operating instructions, or use with equipment with which it is not intended to be used.
- The warranty shall not apply to damage caused by unauthorized alteration, modification or repairs of the product, either.



Disclaimer

© Copyright, General Mechatronics Ltd., Budapest, Hungary. All rights reserved. The text and pictures in this paper are all subject to copyright and other intellectual property protection. The document may also contain trademarks for which copyright is attributable to third parties. Reproduction or transmission, in whole or in part, of any material contained within this paper is prohibited, except if the source of the material is clearly stated.

The authors make no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserve the right to make changes to specifications and product descriptions at any time without notice.

For more information contact: info@nabitrack.com

General Track