

miro TrackIt

Flexible LoRaWAN® tracker
for industrial applications

Flexible multi-standard LoRaWAN®
WiFi/GPS tracker with various
sensors for demanding industrial
applications.



Description

miro TrackIt is a powerful and flexible GNSS tracking device that integrates a multi-standard GPS scanner and passive Wi-Fi MAC address scanner with Bluetooth 5.2 connectivity and various sensors such as accelerometer, humidity and temperature sensor, into one compact device. The IP65-rated housing with different mounting options prepares the device for operation in a harsh industrial environment.

Highly configurable device firmware allows for fine-grained adaptation to a specific use case to optimize performance and battery lifetime.

Features

- ▶ LoRaWAN® class A compliant device
- ▶ Low power GNSS and passive Wi-Fi AP MAC address scanner module
- ▶ Bluetooth 5.2 receiver and transmitter
- ▶ Various selection of sensors available
- ▶ Robust IP65 industrial housing
- ▶ Various battery options with up to 10 years of lifetime

Applications

- ▶ Industrial asset tracking
- ▶ Construction site management
- ▶ People and fleet management
- ▶ Theft protection

Document Information

About

File name	Document type	Date	Revision
DS-miro-TrackIt	Datasheet	2022-02-17	1.0

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Functional Description

miro TrackIt is a universal LoRaWAN[®] class A and Bluetooth 5.2 compliant GPS tracking device for industrial and other harsh environment tracking, indoor and outdoor localization applications. The integrated Bluetooth 5.2 receiver/transmitter module provides additional functionality such as additional localization and secure firmware updates or advanced device configurations.

The built-in accelerometer allows to detect movement to trigger acquisition of GPS fixes only when needed, resulting in lower current consumption and extended battery lifetime. Additionally, the device can also obtain fixes on regular intervals. Different device profiles for various applications can be configured even with the device deployed in the field using LoRaWAN[®] downlink messages. With its additional sensing capabilities, such as temperature, it is suitable for a variety of use cases.

miro TrackIt is compatible with all network providers and can detect when there is no network coverage. When no LoRaWAN[®] network is available, the tracker will store up to 100.000 locations in the internal flash memory and send it out with timestamp information when it later gets in reach of a LoRaWAN[®] network.

Technical Specifications

Mechanical specifications

Weight	53 g
Dimensions	89 × 79 × 33 mm
Enclosure	Plastic, ABS

Operating conditions

Temperature	-20 – 60 °C
Humidity	0 – 95 % RH, non-condensing

Device power supply

Battery type	1 × LiSOCl ₂ , 3.6V, Size A or AA 2 × AA, alkaline or lithium standard cell
Expected battery lifetime	Up 10 years depending on device profile

Radio / wireless

Wireless technologies	LoRaWAN [®] 1.0.3, Bluetooth 5.2
LoRaWAN [®] Device type	Class A
Supported LoRaWAN [®] features	OTAA, ADR, Adaptive Channel Setup
LoRaWAN [®] Link budget	137 dB (SF7) to 151 dB (SF12)
LoRaWAN [®] transmission power	14 dBm / 22 dBm (depending on region)
Bluetooth transmission power	6 dBm

Sensor Specifications

GPS

Receiver	Semtech LR1110 receiver with external patch antenna
GNSS	GPS & Beidou L1 band
Internal storage	Up to 100'000 fixes

Accelerometer

Range	$\pm 2, \pm 4, \pm 8, \pm 16$
Resolution	16 bit
Accuracy (typ.)	± 20 mg
Axis orientation	see figure 1, page 6

Magnetic sensor

Detection threshold	Max. ± 4.8 mT
Magnetic response	Omnipolar
Reset activation (typ.)	After 7.5 sec
Position	see figure 1, page 6

Device Orientation

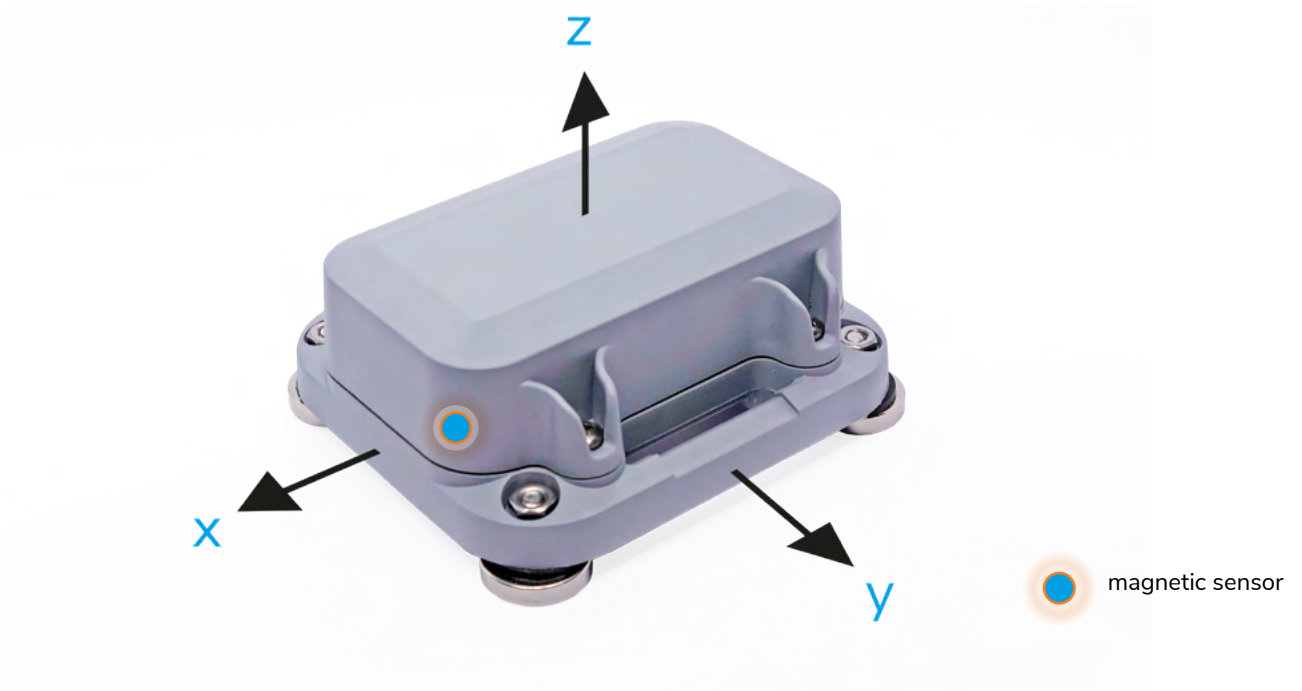


Figure 1: Axis Orientation

Mechanical Dimensions

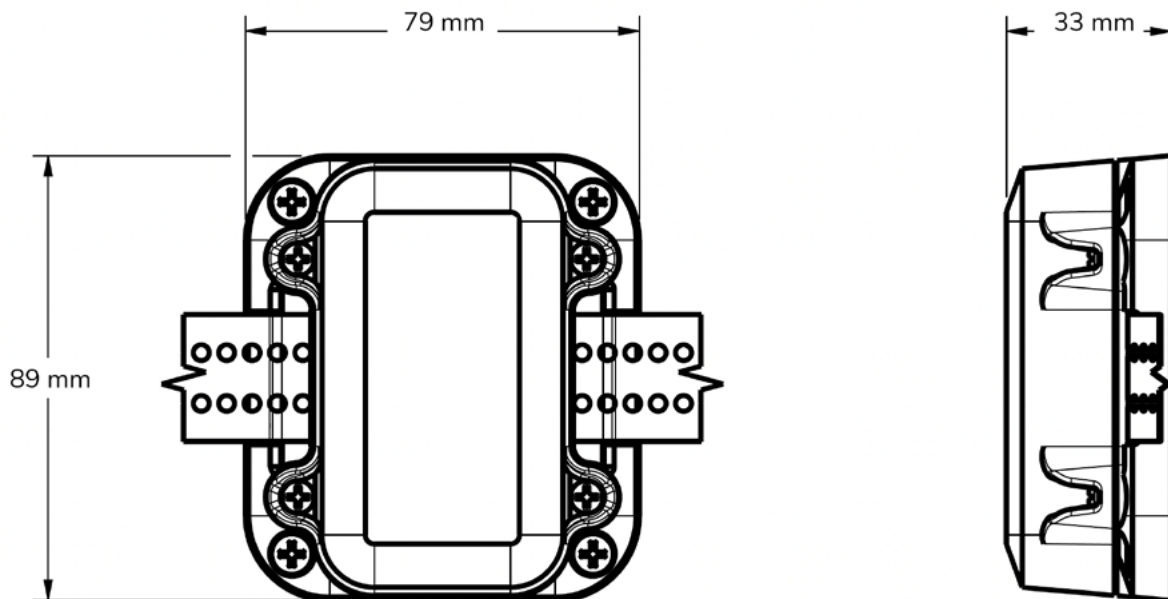


Figure 2: Mechanical Dimensions

Additional Documentation

Additional Resources

CE Certification Documents	pending
FCC Certification Documents	pending
LoRaWAN Alliance® Certification Document	pending
Product Information Page	miromico.ch/miro-trackit
Technical Documentation	docs.miromico.ch/datasheets/tracker.html

Device Options

Product ID	LoRaWAN® region					Options
	EU868	US915	AS923**	AU915**	IN865**	
TRACK-TRACKIT-LW/*	✓	✓	✓	✓	✓	

* LoRaWAN® Region (e.g. EU868)

** on request

Keep in touch

Miromico AG
Gallusstrasse 4
CH-8006 Zürich
Switzerland

info@miromico.ch
www.miromico.ch

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