truvami

tag S



50 mm

15 mm

LoRaWAN® GNSS Wi Fi Sniffing BLE Scanning

Truvami® tag S is a powerful indoor/outdoor tracker designed to provide precise localization of assets and workforce. It combines a multi-standard GNSS receiver, passive Wi-Fi MAC address scanner, Bluetooth 5.2 connectivity, and an accelerometer in a compact device. The device firmware is highly configurable, allowing for customization to specific use cases, optimizing performance and battery life.

Multi-protocol approach

Accurate indoor and outdoor positioning through WiFi, BLE and GNSS technology

High accuracy

Achieves very high accuracy in location monitoring

Flexible charging

Rechargeable batteries with both wireless and usb type-c cable options

Built-in accelerometer

Features an integrated accelerometer to trigger motion-induced location fixes

Safety features

Supports automatic fall detection and panic button for added security

Compact size

Designed for the smallest requirements

Location buffer

Positions are stored until network becomes available

Datasheet 2024 version 1.0

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Mechanics & power

Mechanical specifications

Weight	24g
Dimensions	50 x 50 x 15 mm
Enclosure	Plastic

Operating conditions

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

Power management

Battery type	Lithium polymer
Power	3.7V, 0.32 Ah
Charging	USB-C, wireless (on request)

Estimated battery life*

*LiPo self-discharging is not calculated in

1 position / day	9 months
1 position / hour	2.5 months
1 position / 5 min.	7.5 days

Communication

LoRaWAN frequencies

EU868 MHz

US915 MHz – on request

AU915 MHz – on request

LoRaWAN details

LoRaWAN® device type	Class A
LoRaWAN® version	LoRaWAN® 1.0.3
Supported LoRaWAN® features	OTAA, ADR, adaptive channel setup
LoRaWAN® receiver sensitivity	-127 dBm (SF7, 125 kHz) to -141 dBm (SF12, 125 kHz)
LoRaWAN® transmission power	14 dBm / 22 dBm (depending on region)

Location

GNSS

Receiver	U-Blox M10 GNSS receiver
GNSS	BeiDou, Galileo, GLONASS, GPS / QZSS
GNSS bands	L1
Accuracy (assuming - 130 dBm)	3-5m

WiFi

Receiver	2.4 GHz passive MAC scanning 802.11 b/g/n
Frequency band	2412 – 2484 MHz
Sniffer sensitivity (best-case)	-75 dBm
Accuracy	10 - 20 meters

BLE

Transceiver	Advertising, FOTA, device config via BLE connection, 2.4 GHz passive BLE beacon scanning capabilities
Transmission power	6 dBm
Sensitivity	-106.7 dBm(125 kbps) to -96.2 dBm(2 Mbit/s)
Accuracy	Depends on infrastructure

Sensors and peripherals

Buzzer & LED

Buzzer	95 db
Amber LED	35 cd
Charging LED	(red/green)

Accelerometer (3-axis)

Range	±2, ±4, ±8, ±16
Resolution	16 bit
Accuracy (typ.)	±20 mg

Sensors and peripherals

Location buffer (0.5 MB external flash)

Buffer size	A maximum of 8'128 locations can be stored
Buffered messages	GNSS and Wi-Fi messages
Offloading trigger	After a confirmed message from a location message is acknowledged
Batch size	Batch size is configurable (default is 10 messages, meaning every 10th message is confirmed)
Offloading behaviour	After a confirmed message acknowledgement, the previous X (configured batch size) messages are marked as sent in the buffer (confirmed messages occur in relation to the batch size)
Offloading order	Oldest messages first, then gradually until the buffer is empty
Uploading time (estimated)	Messages every 30 seconds until the buffer is depleted or the duty cylce air time is <15 seconds

Integration and security

Truvami application

The truvami's application offers a range of powerful features, including receiving, decoding, storage, and efficient accessibility of the data for further processing. With the option of on-premise or cloud service installation, the application provides flexible deployment options to suit your needs. The application is built on a scalable and highly available architecture, allowing for independent scaling of microservices. When deployed on-premises, it can be horizontally and vertically scaled to meet the demands of your IoT solution.

Third party integration

SSO: Bring your own identity provider to truvami. We support SAML 2.0 and OpenID Connect.
API: Integrate truvami with your existing systems. We provide a RESTful API for easy integration.

Data security

LoRaWAN: Securely connect your LoRaWAN devices to truvami. LoRaWAN® networks use AES-128 Encryption.
TLS: Securely connect your devices to truvami.

Device management

Configure device parameters such as position update rate, movement and accelerometer settings, and more to fit any tracking application. The firmware can be upgraded with Bluetooth, while the settings can be configured via LoRaWAN downlink.

Operating modes

Efficiency mode	Settings optimized for battery saving
Dynamic mode	Regular interval for real-time tracking
Custom	Configure the parameters yourself to fit your needs

Customization

Branding	Customize the look and feel of truvami to match your corporate identity.
Custom views	Create custom views to display the data in a way that suits your needs.
Bring your own map	Use your own map provider in truvami

Disclaimer

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Truvami® is an IoT startup specialized in flexible end-to-end tracking solutions, based in Zurich , Switzerland. Our mission is to support enterprises in safeguarding their workforce and valuable assets through cutting-edge tracking technologies at smallest size. truvami offers a portfolio of different trackers that are designed to serve different use-cases in vertical markets like transport, logistics, industrial, construction, fleet- and animal tracking. The innovative multi-protocol approach combined with a dedicated geolocation engine allows seamless in- and outdoor tracking. Together with Truvami's cloud software platform, customers can easily integrate the solution into their existing IT landscape.

Get in touch today!

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