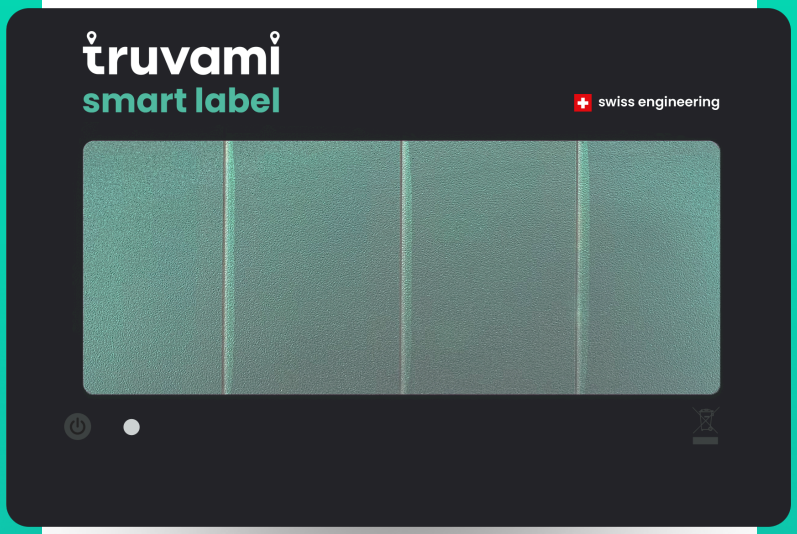
truvami

preliminary

smart label



148 x 97.5 mm

LoRaWAN® GNSS Wi Fi Sniffing

Truvami® smart label is a powerful, seamless indoor/outdoor tracker offering precise localization with minimal energy consumption. It integrates a multi-standard GNSS receiver, passive Wi-Fi MAC address scanner, and sensors such as an accelerometer and temperature/ humidity sensor, all within an ultra-slim, flexible form factor. Fully autonomous, the device is completely battery free, powered entirely by ambient light through OPV technology, and can even last for weeks without light.

Multi-protocol approach

Seamless indoor and outdoor positioning through WiFi, LoRaWAN and GNSS technology

Powered by ambient light harvesting

Battery-free using environmental friendly LiC capacitor, powered by ambient light through OPV technology

Built-in accelerometer

Features an integrated accelerometer to trigger motion-induced location fixes,

Flexible and slim form factor

Designed for the slimmest requirements and curved assets, with reusable seal and shelf mode for highest longevity

Easy commissioning

Quickly associate the tracker with any asset by simply scanning the QR code

datasheet 2025 version 1.1

Copyright © Truvami 2025. All Rights Reserved. | www.truvami.com

Mechanics & power

Mechanical specifications

Weight	20g
Dimensions	148 x 97.5 x 2 mm
Enclosure	Sticker cover and 3M Dual Lock Thin SJ-4570

Operating conditions

Temperature	0 - 40 °C
Humidity	0 – 95 % RH, non-condensing

Power management

Storage type	LiC capacitor
Power	3.8V, 50F
Charging	OPV through ambient light (recommended value = 1000 lux constant)

Estimated battery life without light source

*Capacitor self-discharging is disregarded, battery lifetime calculated for SF10, 50% indoor, 50% outdoor distribution, 1 transmission per position, no sensor data

1 position / day	59 days
4 position / day	30 days
1 position / hour	7 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	LR11xx GNSS scanner
GNSS	GPS, BeiDou, geostationary
GNSS bands	L1
Accuracy (assuming - 130 dBm)	10 meters

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

Sensors and peripherals

LED/Button

Status LED	red/green/blue
Button: power on	0.2 s in shelf mode to power on
Button: power off	10 s in active mode to power off

Accelerometer (3-axis)

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

Temperature/relative humidity

Range	-40 to + 125°C / 0 - 100 %RH
Resolution	0.01 °C / 0.01 %RH
Accuracy (typ.)	±0.2 °C / ±2 %RH

Pressure

Range	30 - 120 kPA
Resolution	1/64 Pa
Accuracy (typ.)	±75 Pa, full range

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 OpenID Connect and SAML 2.0.
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

We reserve the right to make technical changes, which serve to improve the product, without prior notification.
LoRa®, Semtech®, the Semtech logo, LoRa®, and LoRaWAN® are registered trademarks or service marks of Semtech Corporation, the LoRaAlliance® or its affiliates.
SAFETY-CRITICAL, MILITARY, AND AUTOMOTIVE APPLICATIONS DISCLAIMER: Truvami products are not designed for and will not be used in connection with any applications where the failure of such products would reasonably be expected to result in significant personal injury or death ("Safety-Critical Applications") without an truvami officer's specific written consent. Safety-Critical applications include, without limitation, life support devices and systems, equipment, or systems for the operation of nuclear facilities and weapons systems. Truvami products are not designed nor intended for use in military or aerospace applications or environments. Truvami products are not designed nor intended for use in automotive applications unless specifically designated by Truvami as automotive grade.

truvami

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!

truvami.com

Copyright © Truvami 2025. All Rights Reserved.
www.truvami.com