

High-Precision Location Tracker (Tag2)

UWB + LoRaWAN RTLS Tracker



Tag2 Overview

The Macnman Tag2 is a compact, low-power location tracking device that combines **UWB (Ultra-Wideband) + BLE** for centimeter-level indoor positioning with LoRaWAN® for reliable long-range data backhaul.

It can operate flexibly as either a Tag (mobile asset tracker) or an Anchor (fixed locator). Multiple battery capacities and enclosures are available to meet different deployment needs, from wearables to rugged industrial assets.

Features

3 Axis IMU

GNSS *

Temperature*

*Optional Features

Wireless
Technology



Features

Dual Technology

UWB indoor ranging + LoRaWAN cloud connectivity

Ranging Accuracy

10–30 cm with ToF / TDoA

Integrated IMU

Fall detection & wake-on-motion

Configurable Role

Tag or Anchor

BLE Support

OTA firmware upgrade, tag configuration

Compact & Rugged

Rugged & lightweight for wearable/asset mounting

Supports MacTalk™ Protocol

Macnman's proprietary local device-to-device actions

Battery Options

1500 mAh compact, 5000 mAh industrial

Power Management

USB-C PD charging , NTC feedback

Mounting Options

Lanyard, Adhesive, Screw Mount & Magnetic

Technical Specifications

UWB Specifications - Positioning

Standard	IEEE 802.15.4z
Frequency Channels	Channel 5 (6.5 GHz) and Channel 9 (8.0 GHz)
Output Power	+10 dBm (ETSI/FCC compliant)
Ranging Accuracy	~10–30 cm (Line of Sight, TWR/ToF)
Data Rates	850 kbps, 6.8 Mbps
Ranging Methods	STS-secured ToF, DS-TWR, TDoA
Antenna	Integrated PCB antenna

Wireless Transmission - LoRaWAN

Technology	LoRaWAN® (v1.0.4), Macnman MacTalk Protocol
Antenna	Internal high-efficiency antenna
Supported Bands	IN865 / RU864 / EU868 / US915 / AU915 / KR920 / AS923-1/2/3/4
Tx Power	16 dBm @ 868 MHz 20 dBm @ 915 MHz 19 dBm @ 470 MHz
Sensitivity	-137 dBm @ 300 bps
Activation	OTAA / ABP
LoRaWAN® Class	Class A (default), Configurable to Class C via Maya

Sensors & Interfaces

IMU	3-axis accelerometer
LEDs	2 × RGB LEDs, Programmable
Button	1 × Action button (alarm ack / reboot / shutdown)
Buzzer	2048 Hz, up to 80 dBm output
Modes	Auto Sleep , Fall detection, Threshold & Motion Triggers

Configuration

Configuration	Via Ble & Server
Features	Threshold / Trigger / Sample based alarm triggers
LEDs States	Solid Blue Device is connected with Config App ,
Remote Configuration	Slow Blinking Green - Trying to connect with LoRaWAN Network

Physical Characteristics

Power Supply	Inbuilt Battery - 1500 mAh , Solar Panel* , Power Operated*
Operating Temp	-40°C to +80°C
Humidity Range	0% to 100% RH (non-condensing)
Ingress Protection	IP65 standard (IP67 optional variant)
Housing Material	Glass field Nylon , ABS *
Color	Matte White Matte Black
Weight	~120g (with 1500 mAh battery)
Dimensions	85 mm X 53 mm X 26 mm (customizable branding available)
Mounting Options	Pole Mounting / Wall Mounting / Pocket Friendly

Device Dimensions



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