

Specification for **Sticker Tracker** RAK2270



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1. Overview

1.1. Description

RAK2270 is a battery-powered LoRaWAN tracker with a label-like form factor. It's compact; simply tear, peel, and stick RAK2270 to any product to virtually track its location in real time by leveraging the location estimator functionality of the Helium network server. It is activated using a Ri sensor, making it buttonless for ease of use.

With its built-in temperature sensor, it measures temperatures ranging from -20° C to +60° C with a temperature resolution of 0.1° C while simultaneously uploading the data to the server. It also includes an integrated 3-axis accelerometer that automatically adjusts the device positioning frequency. Because it detects whether the device is stationary or moving, it reduces device usage time.

Data, such as time, temperature, and motion state, remains safe and stored in an EEPROM storage space with a storage capacity of up to 64KB. Data can be saved locally when out of coverage and retained when coverage is restored.

RAK2270 supports various LoRaWAN bands, including IN865, EU868, AU915, US915, KR920, RU864, and AS923-1/2/3/4.

1.2. Features

1. Location based on LoRaWAN
2. Real-time location tracking
3. Utilizes the Location Estimator functionality of the Helium network server
4. Up to 64KB EEPROM storage space
5. Built-in temperature sensor
 - Temperature measurement: **-20° C ~ +60° C**
 - Temperature resolution: **0.1° C**
 - Operating temperature: **-20° C ~ +60° C**
6. Built-in 3-axis accelerometer for intelligent positioning frequency adjustment
7. Antenna gain: **2.0 dBi**
8. Maximum output power: **22 dBm**

9. Battery-operated:

- Type: **LiMnO₂**
- Battery capacity: **600 mAh**

10. LoRaWAN supported bands: **IN865, EU868, AU915, US915, KR920, RU864, AS923-1/2/3/4**

11. Compact size for easy attachment to any product: 85 mm x 118 mm x 1.5 mm

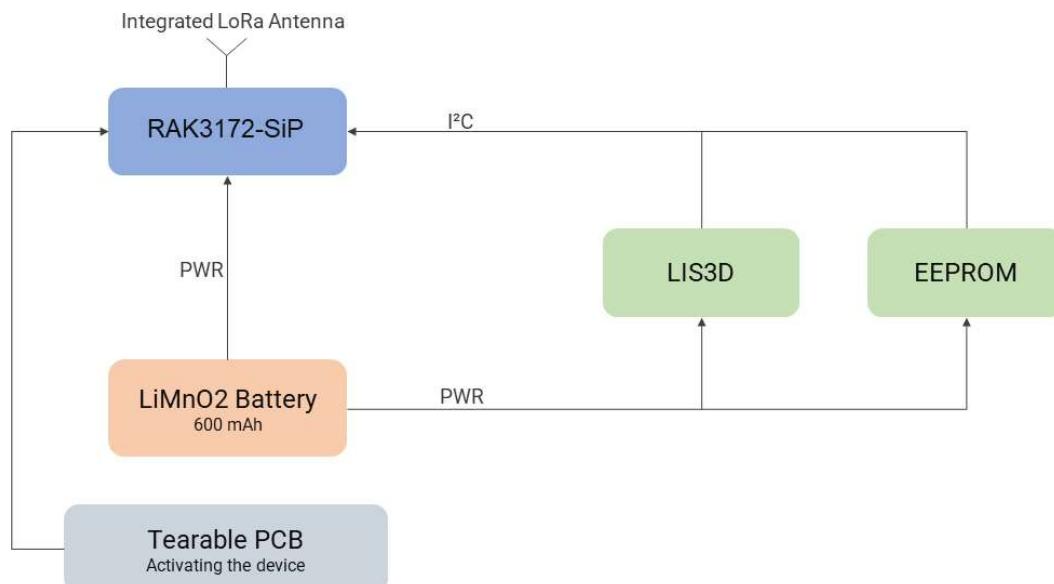
2. Specifications

2.1. Overview

2.1.a. Block Diagram

RAK2270 integrates one RAK3172-SiP, one LIS3DHTR, one LiMnO₂ battery, and one EEPROM.

- The RAK3172-SiP provides the required LoRa® modem and processing functions.
- The LIS3DHTR is used to determine the frequency of data transmission based on motion state judgment.
- EEPROM is used for local data storage.
- The LiMnO₂ battery powers the system with a nominal capacity of 600 mAh.



RAK2270 WisNode Sticker Tracker Block Diagram

2.2. Hardware

2.2.a. Main Specifications

| Parameter | | Values |
|-------------------|--------------------------|-------------------------|
| Temperature | Measurement Range | -20° C ~ +60° C |
| | Resolution | 0.1° C |
| | Operating Temperature | -20° C ~ +60° C |
| Battery | Type | LiMnO ₂ |
| | Nominal Battery Capacity | 600 mAh |
| RF | Antenna Gain | 2.0 dBi |
| | Maximum Output Power | 22 dBm |
| Module Size | | 85 mm x 118 mm x 1.5 mm |
| Activation Method | | Ri sensor (buttonless) |

2.3. RF Characteristics

2.3.a. Operating Frequencies

| Region | Frequency Band (MHz) |
|---------------|----------------------|
| Europe | EU868 |
| Canada | US915 |
| North America | US915 |
| Australia | AU915 |
| Korea | KR920 |
| India | IN865 |
| Asia | AS923-1/2/3/4 |
| Russia | RU864 |

Federal Communication Commission (FCC) Radiation Exposure Statement

When using the product, maintain a distance of 20cm from the body to ensure compliance with RF exposure requirements.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or changes to this equipment. Such modifications or changes could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IC Statement:

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device .

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.