

### General specifications

- **Name:** Beacon Mini-RX
- **Size:** 47x42x15mm
- **Weight:** ~ 25g (including housing)
- **Weight:** ~ 19g (without housing)
- **Power:** 5V, supplied via Micro-USB cable
- **Radio frequency band:** 868/915MHz
- **Radio output power:** <10 mW (<10 dBm)
- **Battery:** Li-Ion 500mAh (soldered to the board)
- **Ports:** Micro-USB port

### Tracking performance

|                        | IA | NIA | MF NIA |
|------------------------|----|-----|--------|
| Stationary beacon      | ×  | ✓   | ✓      |
| Automatic map building | ×  | ×   | ×      |
| Mobile beacon          | ✓  | ×   | ×      |

- **TX frequency:** None
- **RX frequency:** Any of: 19, 22, 25, 28, 31, 34, 37, 45kHz\*\*
- **Distance measurement:** Up to 50m 1D / Up to 120m 1D (With Marvelmind Horn)
- **Precision:** Differential:  $\pm 2\text{cm}$ , Absolute: 1–3% of the distance to the beacons
- **Additional sensors:** IMU - Accelerometer + gyroscope

### Interfaces

- UART
- SPI
- Virtual UART via USB
- NMEA
- I2C (for compass simulation)

### Supported Accessories

- Antenna Full-Size
- External microphone-IP67
- Omni-Microphone-IP67
- Horn



### Overview

The Beacon Mini-RX is a beacon for Marvelmind precise Indoor positioning and navigation system. It has a digital microphone that allows Beacon Mini-RX to receive any frequency used in the Marvelmind system. Beacon Mini-RX has no sensors onboard, so it can only receive ultrasonic signals. Due to its compact dimensions, it was mainly designed to work in IA as a mobile beacon, but it can also be used in other architectures. Beacon Mini-RX has an IMU on board, which allows users to get information from the gyroscope and accelerometer.

The system is used for autonomous robots, vehicles, drones, and people, as well as for industrial applications requiring precise positioning and indoor localization.

### Applications

- Industrial (Forklift/people tracking, factory automation)
- Healthcare (locate assets, patients & staff)
- Retail (security, navigation, customer analytics)
- Consumer (connected home, sports analytics)
- Distance measurement indoors

\*\*digital microphone can receive any frequency we use in Marvelmind products; it can be switched automatically (IA/MF NIA) or manually (NIA)