

M2 Asset Tracker

Hardware specification guide

Version 0.5



Introduction

M2 is a professional asset tracker leveraging multiple communication technologies and can be used in multiple logistics applications. It is developed by Zyx AB for MOST Tech Sweden AB.

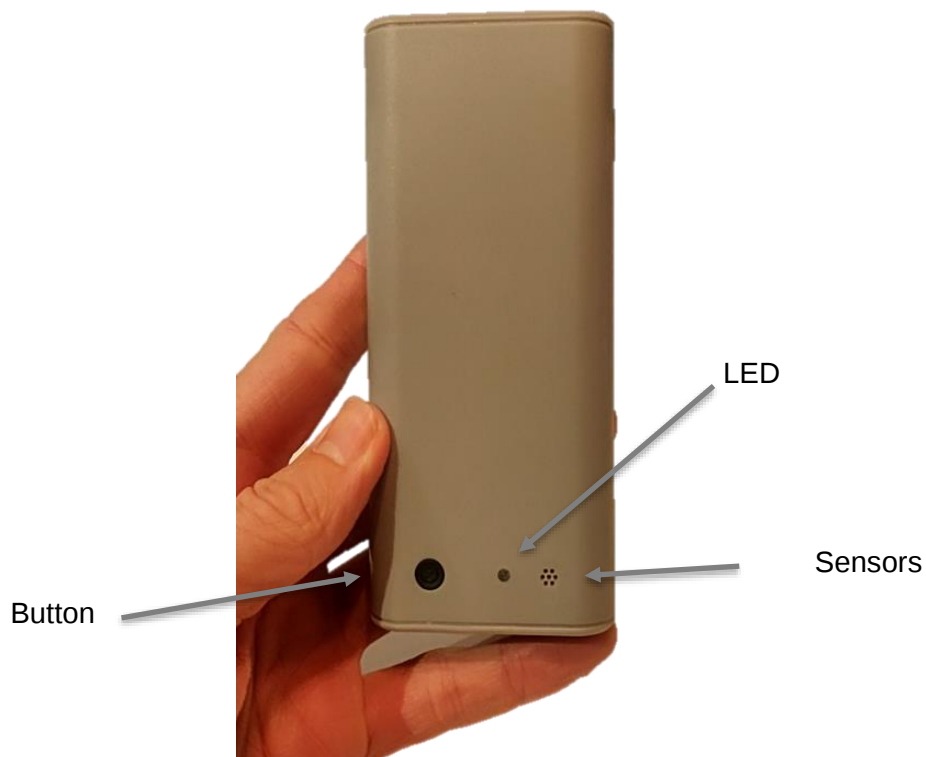
The device has excellent sensor measurement performance for monitoring temperature, relative humidity, ambient light level, motion detection, magnet sensors, and air pressure. The device is designed to operate in cold environments on ultralow power consumption.

Basic functionality

Each device has its own set of encryption keys and configuration to allow the device to securely communicate with the cloud server and perform measurements and uploads according to the client's requirement.

Sensors can be sampled down to seconds intervals, and uploads are performed on periodic intervals in which all sampled data is uploaded. The device's configuration is updated after all data has been uploaded.

The device comes pre-charger and can easily be started by holding the function button for 3 seconds. A started device is confirmed by a steady green light for 10 minutes.



Normal operating temperature range of the produce is between -20 - 55°C (-4 - 131°F), and storage temperature between -20 - 55°C (-4 - 131°F).

Installation instructions

The device comes with a double-sided adhesive tape. Please tear off the tape and gently press the device to a reliable surface.

Charging

The device should be charged with a 1A 5V DC USB C Charger. This charger does not come with the product. Charging is disabled in temperatures outside of 0 - 45°C (32 - 113°F).

Operational instructions

Press the button for 3 seconds until a constant green light is shown. The device is pre-configured and operates automatically on 2G and LTE-M networks and may optionally be configured to communicate with external BLE sensors through the cloud interface.

The device collects sensor data every 10 minutes, that are stored on the device's internal memory and are uploaded on set frequency. Standard configuration performs uploading over the mobile network every 1 hour.

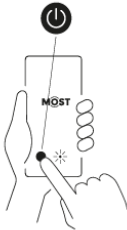
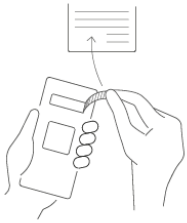
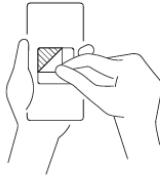
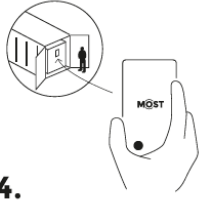
The device is equipped with GNSS to accurately determine its position in order to correlate sensor readings with time and place.

User's Guide / Guía de usuario

Version 1.0 ENG/SPA

Real-time monitoring sensor Sensor para monitorización en tiempo real

MOST 2.0

- | | | | |
|--|--|---|--|
|  <p>1.</p> |  <p>2.</p> |  <p>3.</p> |  <p>4.</p> |
| <p>To start the device, press the power-on button. Wait for the solid green light *</p> | <p>Remove the white sticker with device serial number and attach it to your declaration documents.</p> | <p>Remove the protective tape from the sticker under device.</p> | <p>Place the device at eye level as close to the doors as possible with the MOST logo facing the entrance.</p> |

Safety Precautions

- The device should be opened only by qualified service personnel.
- Never pour any liquid into an opening. This may cause fire or electrical shock.
- Do not crush, puncture, short external contacts or circuits, dispose of in fire or water, or expose a battery pack to temperatures higher than 60°C (140°F).

Regulations

The device conforms to the following regulations and certifications.

FCC Regulatory information

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: 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.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Exposure

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. To avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

ISED Regulatory information

This device complies with Innovation, Science and Economic Development 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 Innovation, Sciences et Développement économique 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

This device complies with the Canadian ICES-003 Class B specifications. CAN ICES-3(B)/NMB-3(B)

ISED RF Exposure

This device complies with ISED RSS-102 RF exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the IC RSS-102 RF exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

Cet appareil est conforme aux limites d'exposition aux rayonnements de la CNR-102 définies pour un environnement non contrôlé. Afin d'éviter la possibilité de dépasser les limites d'exposition aux fréquences radio de la CNR-102, la proximité humaine à l'antenne ne doit pas être inférieure à 20 cm (8 pouces) pendant le fonctionnement normal.

EU Compliance

The device complies with the essential requirements of Article 3 of the RED/EC Directive. The following standards have been applied

1. Safety
 - *EN 62368:2014*
2. Electromagnetic compatibility
 - *EN 55032:2015/EN 55035:2017/EN,*
 - *EN 301 489-1 V2.2.3(2019-11); EN 301 489-17 V3.2.2 (2019-12); ETSI EN 301 489-19 V2.1.1 (2019-04); EN 301 489-52 V1.1.0 (2016-11);*
3. Radio exposure and radio frequency spectrum usage
 - *EN 300 328 V2.2.2 (2019 -07); EN 301 511 V12.5.1 (2017-03); ETSI EN 301 908-1 V11.1.1 (2016-07); ETSI EN 301 908-2 V11.1.2 (2017-08);ETSI EN 303 413 V1.1.1 (2017-06); ETSI EN 301 908-13 V11.1.2 (2017-07)*

Hardware specification

Dimension	30 x 60 x 132 mm
Weight	127 g single battery, 187 g double battery
Operating environment	-20 – 55 C,
Storage environment	-20 – 55 C
Batteries	UN38.3 Compliant
Cellular	Cat-M1: B1/2/3/4/5/8/12/13/14/18/19/20/25/26/27/28/66/85 Cat-NB2: B1/2/3/4/5/8/12/13/18/19/20/25/26/28/66/71/85 EGPRS: 850/900/1800/1900MHz
Local communication	Bluetooth beacon data, Proprietary low power protocols,
GNSS	GPS/GLONASS/BeiDou/Galileo/QZSS
Cell-triangulation	Using 2G and 4G cell towers
Accelerometer	Tri-axis movement detection
Certifications	FCC, IC, CE, PTCRB