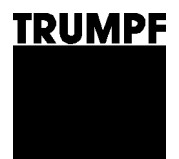


Operator's manual

Marker Mini

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Good to know

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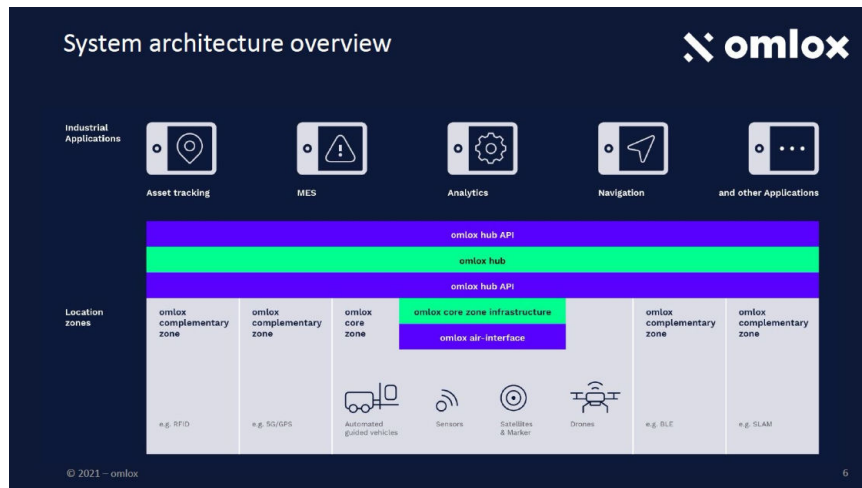
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1. Introduction

omlox Marker Mini is a TRUMPF product which can be used in the core zone of any omlox compatible real-time locating system (RTLS) which uses Ultra-Wideband (UWB) pulses for real-time 3D location of objects in buildings in various industries.

omlox Marker Mini are mainly used as mobile devices while omlox Satellites are used as fixed bases in the RTLS. In this case, the omlox Satellites are synchronized with each other. The mobile devices, such as omlox *Marker Mini* or *SmartAntennas* are tracked in two modes which can coexist: Multi-Tag Tracking (server-centric; position is calculated by server) and GPS-like Positioning (device-centric; device calculates its own position). While the SmartAntenna can be tracked in both modes, Marker Mini can only be tracked in Multi-Tag Tracking Mode.

What is the omlox core zone?



System architecture overview

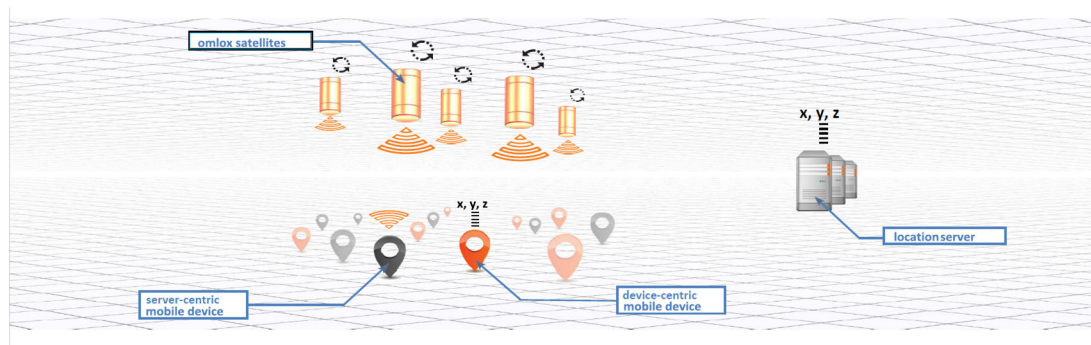
Fig. 116078

Marker mini meets the standard of omlox air interface and with that is useable in any omlox core zone (marked in red).

The omlox core zone contains:

- satellites (e.g. omlox satellites)
- location server (e.g. TRUMPF location server)
- tags (e.g. Marker mini)

Overview omlox core zone RTLS



Overview omlox core zone RTLS

Fig. 116079

This document includes regulatory information, as well as a detailed hardware specification and a description of its features.

Note

For detailed features and user instructions regarding the complete system, please refer to the documentation of each product you are using in the omlox core zone.

2. Safety and compliance information

2.1 FCC - safety and compliance

This device complies with Part 15 of the Federal Communications Commission (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.

CAUTION

This equipment may only be operated indoors.

- Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

CAUTION

This equipment may only be operated as a fixed installation.

- Mobile operation is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

CAUTION

UWB devices may not be employed for the operation of toys.

- Operation onboard an aircraft, a ship or a satellite is prohibited.

CAUTION

Changes or modifications

- Any changes or modifications not expressly approved by TRUMPF could void the user's authority to operate this equipment.

The Satellites only operate (i.e. receive and transmit UWB signals) within a complete UWB real-time location system TRUMPF RTLS, which must be professionally installed. The installed system is configured to cover only the area inside the building, preventing the Satellites and other UWB devices of the system from emitting UWB signals outdoors. Contact your system administrator if you are unsure as to the extent of coverage. .

The local representative in terms of the Federal Communications Commission (FCC) for the USA is:

Anupam Chakraborty
TRUMPF Inc., 1900 W Central Road, 60192 Hoffman Estates,
USA
Phone +775 (842) 3420

2.2 EU Declaration of Conformity



EU Declaration of Conformity
in accordance with
Directive relating to electromagnetic compatibility 2014/30/EU
EU-RoHS-Direktive 2011/65/EU
Radio equipment directive 2014/53/EU

We hereby declare that the following machine complies with all the relevant requirements of the EU directives listed above.

Product type:	Marker Mini
Product designation:	Indoor localization device
Product No.:	>= 1910154B00301389
Applied harmonized standards, in particular:	EN 300 328 V2.2.2, EN 302 065-1 V2.1.1, EN 55032:2015
Party authorized to compile the technical file:	Eberhard Wahl

This declaration shall lose its validity if any changes are made to the machine without our authorization.

Town / Date / Signature Ditzingen, 20.12.2021 

Eberhard Wahl
CEO

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Fig. 116095

2.3 Battery

Improper use of the battery may cause heat, fire, rupture, damage or capacity deterioration of the battery. In order to ensure a safe and efficient use of omlox Marker Mini's battery, read the following information and apply the following instructions carefully.

Nominal capacity	2400 mAh
Nominal voltage	3.7 V

Tab. 1

Note

Capacity recovery rate should be more than 80% of initial Capacity.

- Please note, that the temperatures mentioned above only apply to the battery. For omlox Marker Mini there are other temperature ranges divergent from the ones stated above (see ["Technical Data"](#), pg. 7).
- Charge omlox Marker Mini with a charging station approved according (see ["Hardware overview"](#), pg. 7).
- The omlox Marker Mini was inspected carefully before shipment. However, in the case any abnormality of bad smell or heat, etc, arises after purchase, please contact TRUMPF.

Note

Marker Mini must not be opened and battery must not be replaced.

 CAUTION**Handling batteries**

- Do not put into a fire, or heat, do not store in high temperature environment.
- Do not drive a nail in, hit with a hammer, or stamp, do not strike in other ways.
- Do not submerge in water, do not wet.
- Do not leave on a charging station or equipment if it generates any deterioration (weakening and/or heat, color and/or shape changes, electrolytes, or cause leaks, etc.) or any abnormality.
- Do not discharge continuously when it is not charged.
- In case omlox Marker Mini, including their batteries, must be disposed of, they must be collected in compliance with Directive 2012/19/EU (Waste of Electrical and Electronic Equipment).

3. Technical Data

Data connections	Bluetooth, UWB
Housing material	ABS/PC, PC
Weight	160 g
Dimensions	h: 24 mm, Ø : 84.2 mm
Operating temperature range	0°C +40°C Do not operate outside this ambient temperature.
Charging temperature range	0°C +35°C Do not charge outside this ambient temperature.
Max. rel. humidity	max. 100% at 24 °C
Radio	UWB: 3.25 GHz - 4.75 GHz Max Mean power (EIRP) -41.3 dBm/Mhz BLE: 2.4 GHz - 2.48 GHz Max power (EIRP) 4 dBm
IP code	64
Pre-programmed Unique ID	64 bits

Data sheet

Tab. 2

Status	Color	Lighting details
Starting	3 colors (green, orange, red)	All colors after another – each 500 ms
Supplied / Charching	Orange	Continous
Battery critical (waiting for charge)		Slow blink (every 5s)
Temperature protection		Fast blink (every 200ms)
Scanning	Green if battery > 20% (otherwise red)	Slow breath
Calibrating		Fast blink
Rating		Blink every 5s

Light indicators

Tab. 3

3.1 Hardware overview



Front view

Fig. 116080



Front view

Fig. 116081



Base view

Fig. 116082

Loading the device

You can use any wireless charger with a maximal output of 5V/2A and maximal power of 10W. Any damage following the loading-process is in responsibility of the wireless charger supplier.

Equipment needs

- Charging station
- To use marker mini in a working system there is the need for an operating omlox core zone including all the parts mentioned in [.\(see "Introduction", pg. 2\)](#)

4. Support

We offer standardized as well as customized solutions. Please note that all documents may be updated without notice to individual customers beforehand.

We provide remote assistance by e-mail at info@trumpf.com.

In case of support request, please indicate your system references.

