

# FMB140 First Start

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**GNSS/GSM/Bluetooth® tracker with integrated CAN chip, internal GNSS/GSM antennas and internal battery**



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## How to insert Micro-SIM card

1. Gently remove FMB140 **cover** using **plastic pry tool** from both sides.
2. Insert **Micro-SIM** card as shown with **PIN request disabled** or read [Security info](#) how to enter it later in Configurator. Make sure that Micro-SIM card **cut-off corner** is pointing forward to slot.
3. Attach device **cover** back.
4. Device is ready to be connected.



**Micro-SIM card insertion/removal must be performed when device is powered off -**

 **external voltage and internal battery disconnected. Otherwise Micro-SIM card might be damaged or device will not detect it.**

## Battery placement after complete device disassembling



1. Using double sided tape, stick internal battery to the bottom part of the device case. Battery should be glued approximately 15 millimeters from the bottom wall of the case. *Picture on the left.*
2. Connect battery to the PCB.
3. Gently place PCB into the bottom case.

## 2x6 socket pinout

PIN NUMBER	PIN NAME	DESCRIPTION	✖
1	<b>VCC</b> (10-30)V DC (+)	Power supply (+10-30 V DC)	
2	DIN3 / AIN2	Digital input, channel 3 / Analog input, channel 2. Input range: 0-30 V DC	
3	DIN2-N / AIN1	Digital input, channel 3 with ground sense / Analog input, channel 1. Input range: 0-30 V DC.	
4	DIN 1	Digital input, channel 1	
5	CAN2L	CAN2 Low	
6	CAN1L	CAN1 Low	
7	GND	Ground	
8	DOUT 1	Digital output, channel 1. Open collector output. Max. 3,3 A DC.	
9	DOUT 2	Digital output, channel 2. Open collector output. Max. 3,3 A DC.	
10	1WIRE DATA	Data for 1-Wire devices.	
11	CAN2H	CAN2 High	
12	CAN1H	CAN1 High	

## Mounting recommendations

- Connecting wires
  - Wires should be connected while the module is not plugged in.
- Wires should be fastened to stable wires or other non-moving parts. Any heat emitting and/or moving objects should be kept away from the wires.
- There should be no exposed wires. If factory isolation was removed while connecting wires, the isolation material should be applied.

- If the wires are placed in the exterior or in places where they can be damaged or exposed to heat, humidity, dirt, etc., additional isolation should be applied and the wires should not be loose.
  - Wires cannot be connected to the board computers or control units.
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- Connecting power source
    - Be sure that after the car computer goes to sleep mode, power might be still available on the power wires. Depending on car, this may happen in 5 to 30 minutes period.
    - When module is connected, measure voltage again to make sure it did not decrease.
    - It is recommended to connect to the main power cable in the fuse box.
    - 3 A, 125 V external fuse shall be used.
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- Connecting ignition wire
    - Be sure to check if it is a real ignition wire i. e. power does not disappear after starting the engine.
    - Check if this is not an ACC wire (when key is in the first position, most of the vehicle electronics are available).
    - Check if power is still available when you turn off any of vehicles devices.
    - Ignition is connected to the ignition relay output. As alternative, any other relay, which has power output when ignition is on, may be chosen.
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- Connecting ground wire
    - Ground wire is connected to the vehicle frame or metal parts that are fixed to the frame.
    - If the wire is fixed with the bolt, the loop must be connected to the end of the wire.
    - For better contact scrub paint from the spot where loop is going to be connected.

**PAY ATTENTION! Connecting the power supply must be carried out in a very low impedance point of on-board vehicle network. These points in the car are the battery terminals. Therefore, we recommend connecting the power of FMB140 (GND and POWER wires) directly to the battery terminals. Another valid option is to connect the wires to the main POWER cable inside the fuse box (if there is none, then to the power supply where the fuses of vehicle's computer are), GND wire must be connected in a special point, designed to connect GND vehicle computer. Connecting the GND at an arbitrary point to the mass of the car is unacceptable, as static and dynamic potentials on the line GND will be unpredictable, which can lead to unstable FMB140 operation and even its failure.**

## Installation photos

FMB140 is the device that has internal GNSS and GSM antenna.

Device should be mounted with the sticker / engraving view to the open sky (metal free). FMB140 area with engraving is shown in figure below:



FMB140 can be mounted under the plastic panel behind the front window, with the sticker / engraving direction to a window (sky). It is recommended to place FMB140 behind dashboard as close to the window as possible. A good example of GNSS antenna placement is displayed in a picture below (area colored blue).

SIM card should be inserted in the module while the connector is plugged off (while module has no power).










## Safety information

This message contains information on how to operate FMB140 safely. By following these requirements and recommendations, you will avoid dangerous situations. You must read these instructions carefully and follow them strictly before operating the device!

- The device uses SELV limited power source. The nominal voltage is +12 V DC. The allowed voltage range is +10..+30V DC.
- To avoid mechanical damage, it is advised to transport the device in an impact-proof package. Before usage, the device should be placed so that its LED indicators are visible. They show the status of device operation.
- When connecting the 2x6 connector wires to the vehicle, the appropriate jumpers of the vehicle power supply should be disconnected.
- Before unmounting the device from the vehicle, the 2x6 connector must be disconnected.
- The device is designed to be mounted in a zone of limited access, which is inaccessible to the operator. All related devices must meet the requirements of EN 60950-1 standard.
- The device FMB140 is not designed as a navigational device for boats.

## Precautions

-  **Do not disassemble the device. If the device is damaged, the power supply cables are not isolated or the isolation is damaged, DO NOT touch the device before unplugging the power supply.**
-  **All wireless data transferring devices produce interference that may affect other devices which are placed nearby.**
-  **The device must be connected only by qualified personnel.**
-  **The device must be firmly fastened in a predefined location.**
-  **The programming must be performed using a PC with autonomic power supply.**
-  **The device is susceptible to water and humidity.**
-  **Installation and/or handling during a lightning storm is prohibited.**

<https://teltonika-gps.com/product/fmb140/>