



FMM003

Advanced OBDII tracker

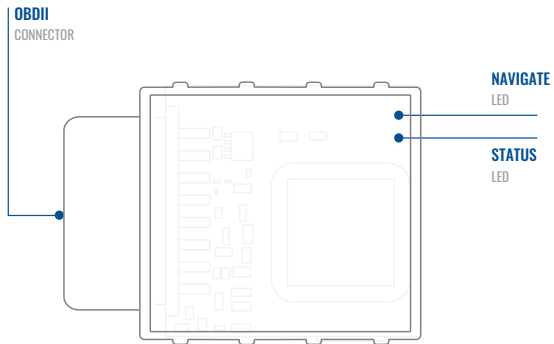
Quick Manual v2.0

CONTENT

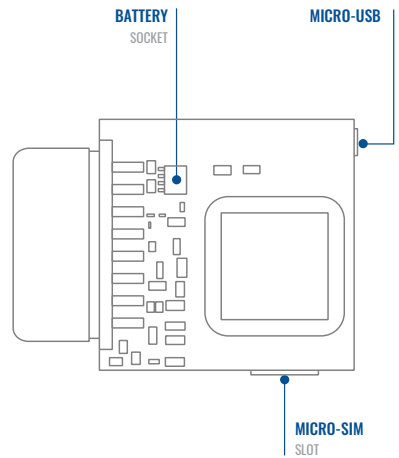
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KNOW YOUR DEVICE

TOP VIEW

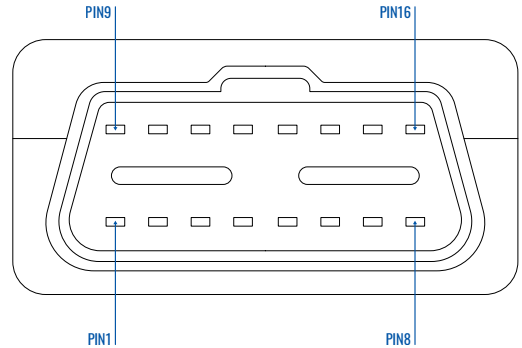


TOP VIEW (WITHOUT COVER)



PINOUT

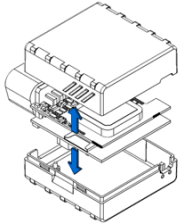
| PIN NUMBER | PIN NAME | DESCRIPTION |
|------------|-------------------------|-------------------------------------|
| 1 | LS_CAN_H | Low Speed CAN High/ PSA CAN High |
| 3 | MS_CAN_H | Medium Speed CAN High |
| 4 | GND (-) | Ground |
| 5 | GND (-) | Ground |
| 6 | CAN_H | High Speed CAN |
| 7 | K-Line | |
| 8 | CAN_L | PSA CAN Low |
| 9 | LS_CAN_L | Low Speed CAN Low |
| 11 | MS_CAN_L | Medium Speed CAN Low |
| 14 | HS_CAN_L | High Speed CAN Low |
| 15 | L-Line | |
| 16 | VCC (10 - 30)V DC(+) | POWER SUPPLY (+10- 30 V DC) |



FMM003 OBDII socket pinout

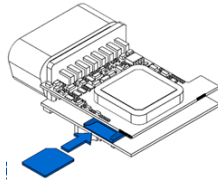
SET UP YOUR DEVICE

HOW TO INSERT MICRO-SIM CARD AND CONNECT THE BATTERY



1 COVER REMOVAL

Gently remove FMM003 cover using plastic pry tool from both sides.

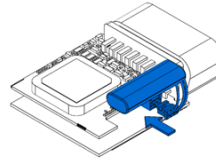


2 MICRO-SIM CARD INSERT

Insert **Micro-SIM** card as shown with **PIN request disabled** or read our [Wiki¹](#) how to enter it later in [Teltonika Configurator²](#). Make sure that Micro-SIM card **cut-off corner** is pointing forward to slot.

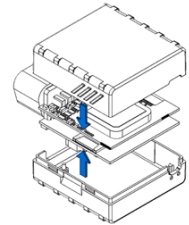
¹ wiki.teltonika-gps.com/view/FMM003_Security_info

² wiki.teltonika.lt/view/Teltonika_Configurator



3 BATTERY CONNECTION

Connect **battery** as shown to device. Position the battery in place where it does not obstruct other components.



4 ATTACHING COVER BACK

Attach device **cover** back. Device is ready to be connected.

PC CONNECTION (WINDOWS)

1. Power-up FMM003 with DC voltage (10 – 30 V) power supply using **supplied power cable**. LED's should start blinking, see "[LED indications](#)".
2. Connect device to computer using **Micro-USB cable** or Bluetooth connection:
 - Using Micro-USB cable
 - You will need to install USB drivers, see "[How to install USB drivers \(Windows\)](#)"
 - Using **Bluetooth**
 - FMM003 **Bluetooth** is enabled by default. Turn on Bluetooth on your PC, then select **Add Bluetooth or other device** > **Bluetooth**. Choose your device named – "FMM003_last_7_imei_digits", without LE in the end. Enter default password **5555**, press **Connect** and then select **Done**.
3. You are now ready to use the device on your computer.

¹wiki.teltonika-gps.com/view/FMM003_LED_status

²Page 6, "How to install USB drivers"

HOW TO INSTALL USB DRIVERS (WINDOWS)

1. Please download COM port drivers from [here](#)¹.
2. Extract and run **TeltonikaCOMDriver.exe**.
3. Click **Next** in driver installation window.
4. In the following window click **Install** button.
5. Setup will continue installing the driver and eventually the confirmation window will appear. Click **Finish** to complete the setup.

¹teltonika-gps.com/downloads/en/fmb120/TeltonikaCOMDriver.zip

CONFIGURATION

At first FMM003 device will have default factory settings set. These settings should be changed according to the users needs. Main configuration can be performed via [Teltonika Configurator](#)¹ software. Get the latest **Configurator** version from [here](#)². Configurator operates on **Microsoft Windows OS** and uses prerequisite **MS .NET Framework**. Make sure you have the correct version installed.

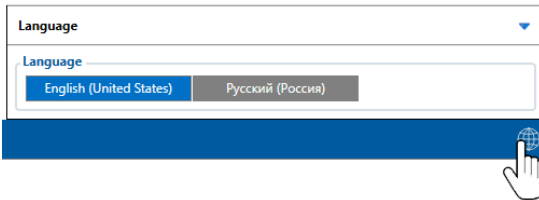
¹ wiki.teltonika-gps.com/view/Teltonika_Configurator


² wiki.teltonika-gps.com/view/Teltonika_Configurator_versions

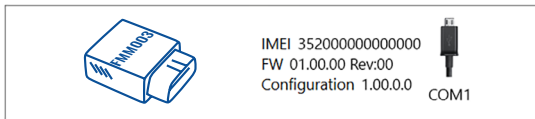
MS .NET REQUIREMENTS

| Operating system | MS .NET Framework version | Version | Links |
|------------------|---------------------------|---------------|---|
| Windows Vista | | | |
| Windows 7 | | | |
| Windows 8.1 | MS .NET Framework 4.6.2 | 32 and 64 bit | www.microsoft.com ¹ |
| Windows 10 | | | |

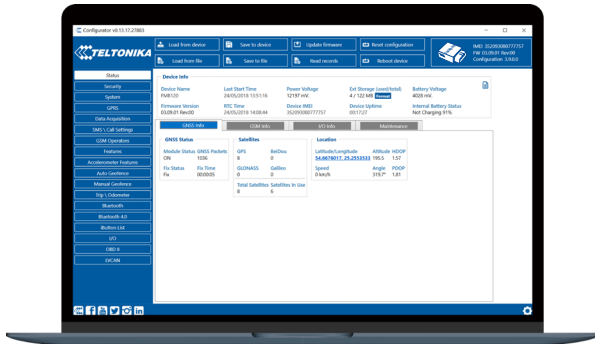
¹ dotnet.microsoft.com/en-us/download/dotnet-framework/net462



Downloaded Configurator will be in compressed archive. Extract it and launch Configurator.exe. After launch software language can be changed by clicking  in the right bottom corner.











Configuration process begins by pressing on connected device.



After connection to Configurator **Status window** will be displayed.

Various **Status window**¹ tabs display information about **GNSS**², **GSM**³, **I/O**⁴, **Maintenance**⁵ and etc. FM03 has one user editable profile, which can be loaded and saved to the device. After any modification of configuration the changes need to be saved to device using **Save to device** button. Main buttons offer following functionality:

-  **Load from device** – loads configuration from device.
-  **Save to device** – saves configuration to device.
-  **Load from file** – loads configuration from file.
-  **Save to file** – saves configuration to file.
-  **Update firmware** – updates firmware on device.
-  **Read records** – reads records from the device.
-  **Reboot device** – restarts device.
-  **Reset configuration** – sets device configuration to default.

Most important configurator section is **GPRS** – where all your server and **GPRS settings**⁶ can be configured and **Data Acquisition**⁷ – where data acquiring parameters can be configured. More details about FM03 configuration using Configurator can be found in our **Wiki**⁸.

¹ wiki.teltonika-gps.com/view/FMM003_Status_info

² wiki.teltonika-gps.com/view/FMM003_Status_info#GNSS_Info

³ wiki.teltonika-gps.com/view/FMM003_Status_info#GSM_Info

⁴ wiki.teltonika-gps.com/view/FMM003_Status_info#I2FO_Info

⁵ wiki.teltonika-gps.com/view/FMM003_Status_info#Maintenance

⁶ wiki.teltonika-gps.com/index.php?title=FMM003_GPRS_settings

⁷ wiki.teltonika-gps.com/index.php?title=FMM003_Data_acquisition_settings

⁸ wiki.teltonika-gps.com/index.php?title=FMM003_Configuration

QUICK SMS CONFIGURATION

Default configuration has optimal parameters present to ensure best performance of track quality and data usage.

Quickly set up your device by sending this SMS command to it:

```
« setparam 2001:APN;2002:APN_username;2003:APN_password;2004:Domain;2005:Port;2006:0»
```

1

2

3

4

5

6

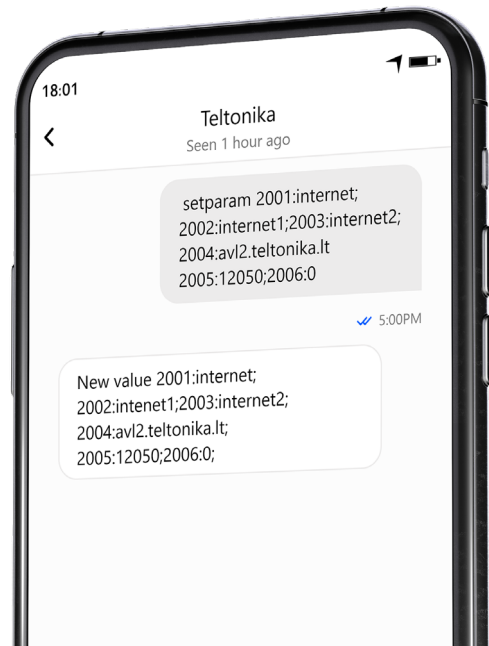
Note: Before SMS text, two space symbols should be inserted.

GPRS SETTINGS:

- 1 2001 – APN
- 2 2002 – APN username (if there are no APN username, empty field should be left)
- 3 2003 – APN password (if there are no APN password, empty field should be left)

SERVER SETTINGS:

- 4 2004 – Domain
- 5 2005 – Port
- 6 2006 – Data sending protocol (0 – TCP, 1 – UDP)



DEFAULT CONFIGURATION SETTINGS

MOVEMENT AND IGNITION DETECTION:



VEHICLE MOVEMENT
will be detected by
accelerometer



IGNITION
will be detected by
vehicle power voltage
between 13,2 – 30 V

DEVICE MAKES A RECORD ON STOP IF:



1 HOUR PASSES
while vehicle is
stationary and
ignition is off



EVERY 120 SECOND
it is sent to the server
If device has made a
record

DEVICE MAKES A RECORD ON MOVING IF ONE OF THESE EVENTS HAPPEN:



PASSES
300 seconds



VEHICLE DRIVES
100 meters



VEHICLE TURNS
10 degrees



SPEED DIFFERENCE
between last coordinate
and current position is
greater than 10 km/h

After successful SMS configuration, FMM003 device will synchronize time and update records to configured server. Time intervals and default I/O elements can be changed by using [Teltonika Configurator¹](#) or [SMS parameters²](#).

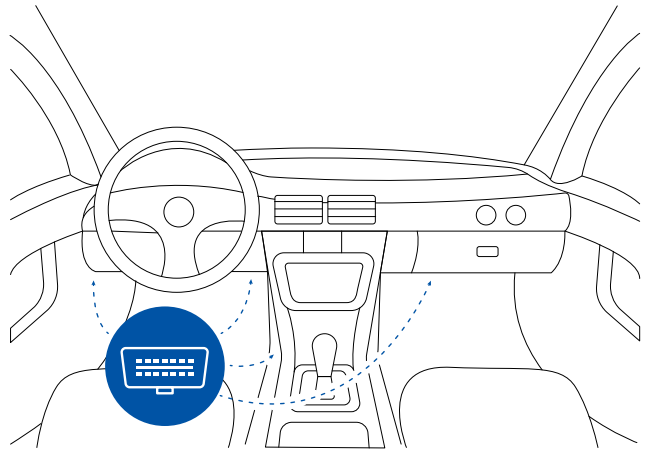
¹ wiki.teltonika-gps.com/view/Teltonika_Configurator

² wiki.teltonika-gps.com/view/Template:FMB_Device_Family_Parameter_list

MOUNTING RECOMMENDATIONS

CONNECTING THE DEVICE TO THE VEHICLE:

Find OBDII connector in your vehicle.



Most common OBDII connector locations.

LED INDICATIONS

NAVIGATION LED INDICATIONS

| BEHAVIOUR | MEANING |
|--------------------------|---|
| Permanently switched on | GNSS signal is not received |
| Blinking every second | Normal mode, GNSS is working |
| Off | GNSS is turned off because: Device is not working or Device is in sleep mode |
| Blinking fast constantly | Device firmware is being flashed |

STATUS LED INDICATIONS

| BEHAVIOUR | MEANING |
|--------------------------------|---|
| Blinking every second | Normal mode |
| Blinking every two seconds | Sleep mode |
| Blinking fast for a short time | Modem activity |
| Off | Device is not working or Device is in boot mode |

BASIC CHARACTERISTICS

MODULE

| | |
|------------|---|
| Name | Quectel BG95-M3, Teltonika TM2500 Quectel BG95-M6 (only Japan and North Korea) FMM003-Q51B0 (BG95-M6) |
| Technology | LTE CAT M1/CAT NB2/EGPRS/GNSS/BLUETOOTH |

GNSS

| | |
|----------------------|---|
| GNSS | GPS, GLONASS, GALILEO, BEIDOU, SBAS, QZSS, DGPS, AGPS |
| Receiver | 33 channel |
| Tracking sensitivity | -165 dBm |
| Accuracy | < 3 m |
| Hot start | < 1 s |
| Warm start | < 25 s |
| Cold start | < 35 s |

CELLUAR

| | |
|------------|--------------------------------|
| Technology | LTE CAT M1, CAT NB2 |
| 2G bands | BG95-M3: EGPRS: B2/B3/B5/B8 |

| | |
|----------------------|---|
| 4G bands | BG95-M3 and BG95-M6: CAT M1: LTE-FDD: B1/B2/B3/B4/B5/ B8/B12/B13/B18/B19/B20/B25/B26/ B27/B28/B66/B85 CAT NB2: LTE-FDD: B1/B2/B3/B4/B5/ B8/B12/B13/B18/B19/B20/B2/B28/ B66/B71/B85 |
| Data transfer | BG95: LTE: Max. 588Kbps (DL)/ Max.1119Kbps (UL) GPRS: Max. 107Kbps (DL)/Max. 85.6Kbps (UL) |
| Maximum output power | Class 4 for GSM850/900: 33±2dBm Class 1 for GSM1800/1900: 30±2dBm Class 3 for LTE-TDD: 20±2dBm Class 3 for LTE-FDD: 20±2dBm Bluetooth: 4.30dBm (Maximum out EIRP) Bluetooth LE: -5.17dBm (Maximum out EIRP) |
| Data support | SMS (text/data) |

POWER

| | |
|---------------------|---|
| Input voltage range | 10 - 30 V DC with overvoltage protection |
| Back-up battery | 170 mAh Li-Po battery 3.7 V (0.63 Wh) |
| Internal fuse | 3A, 125V |

| | |
|-------------------|--|
| Power Consumption | At 12V < 6.5 mA (Ultra Deep Sleep) |
| | At 12V < 8 mA (Deep Sleep) |
| | At 12V < 13 mA (Online Deep Sleep) |
| | At 12V < 16.3 mA (GPS Sleep) |
| | At 12V < 31 mA (nominal with no load) |
| | At 12V < 0.25A Max. (with full Load / Peak) |

BLUETOOTH

| | |
|-----------------------|---|
| Specification | 4.0 + LE |
| Supported peripherals | Temperature and Humidity sensor¹ , Inateck Barcode Scanner, Universal BLE sensors support |

OBD INTERFACE

| | |
|------|--------------------------------|
| Data | HS CAN, MS CAN, SW CAN, K-line |
|------|--------------------------------|

¹ <https://teltonika.lt/product/bluetooth-sensor/>

| | |
|--|--|
| Data reading | OEM Fuel level, odometer and up to 32 vehicle onboard parameters, supported OBD protocols: |
| | ISO 9141-2 (5 baud init, 10.4 kbaud) |
| | ISO 14230-4 KWP (5 baud init, 10.4 kbaud) |
| | ISO 14230-4 KWP (fast init, 10.4 kbaud) |
| | ISO 15765-4 CAN (11 bit ID, 250 kbaud) |
| | ISO 15765-4 CAN (11 bit ID, 500 kbaud) |
| | ISO 15765-4 CAN (29 bit ID, 250 kbaud) |
| ISO 15765-4 CAN (29 bit ID, 500 kbaud) | |
| ISO 14229 (UDS) | |
| J2819 (VW TP2.0) | |

INTERFACE

| | |
|----------------|-----------------------------|
| Connection | OBDII socket |
| GNSS antenna | Internal High Gain |
| GSM antenna | Internal High Gain |
| USB | 2.0 Micro-USB |
| LED indication | 2 status LED lights |
| SIM | Micro-SIM |
| Memory | 128MB internal flash memory |

PHYSICAL SPECIFICATION

| | |
|------------|---------------------------------|
| Dimensions | 67,2 x 49,6 x 25 mm (L x W x H) |
| Weight | 63 g |

OPERATING ENVIRONMENT

| | |
|---|---|
| Operating temperature (without battery) | -40 °C to +85 °C |
| Storage temperature (without battery) | -40 °C to +85 °C |
| Operating humidity | 5% to 95% non-condensing |
| Operating temperature (with battery): | -20 °C to +40 °C |
| Ingress Protection Rating | IP41 |
| Battery charge temperature | 0 °C to +45 °C |
| Battery discharge temperature | -20 °C to +60 °C |
| Battery storage temperature | -20 °C to +45 °C for 1 month -20 °C to +35 °C for 6 months |

FEATURES

| | |
|---------|---------------|
| Sensors | Accelerometer |
|---------|---------------|

| | |
|-----------------------------------|--|
| Scenarios | Green Driving, Over Speeding detection, Jamming detection, GNSS Fuel Counter, Excessive Idling detection, Unplug detection, Towing detection, Crash detection, Auto Geofence, Manual Geofence, Trip² |
| Sleep modes | GPS Sleep, Online Deep Sleep, Deep Sleep, Ultra Deep Sleep³ |
| Configuration and firmware update | FOTA Web⁴, FOTA⁵, Teltonika Configurator⁶ (USB, Bluetooth), FMBT mobile application⁷ (Configuration) |
| SMS | Configuration, Events, Debug |
| GPRS commands | Configuration, Debug |
| Time Synchronization | GPS, NITZ, NTP |
| Fuel monitoring | OBDII |
| Ignition detection | Accelerometer, External Power Voltage, Engine RPM |

²wiki.teltonika-gps.com/view/FMM003_Features_settings

³wiki.teltonika-gps.com/view/FMM003_Sleep_modes#Deep_Sleep_mode

⁴wiki.teltonika-gps.com/view/FOTA_WEB

⁵wiki.teltonika-gps.com/view/FOTA

⁶wiki.teltonika-gps.com/view/Teltonika_Configurator

⁷wiki.teltonika-gps.com/view/FMBT_Mobile_application

SAFETY INFORMATION

This message contains information on how to operate FMM003 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...+30 V 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.
- Before unmounting the device from vehicle, ignition **MUST be OFF.**



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.



Please consult representatives of your vehicle model regarding OBDII location on your vehicle. In case you are not sure about proper connection, please consult qualified personnel.



The programming must be performed using a PC with autonomic power supply.



Installation and/or handling during a lightning storm is prohibited.



The device is susceptible to water and humidity.



Teltonika is not responsible for any harm caused by wrong cables used for connection between PC and FMM003



WARNING! Do not use FMM003 device if it distracts driver or causes inconvenience due to OBDII placement. Device must not interfere with driver.



Battery should not be disposed of with general household waste. Bring damaged or worn-out batteries to your local recycling center or dispose them to battery recycle bin found in stores.

CERTIFICATION AND APPROVALS



This sign on the package means that it is necessary to read the User's Manual before you start using the device. Full User's Manual version can be found in our [Wiki](#)¹.

¹ wiki.teltonika-gps.com/index.php?title=FMM003



The **RoHS**¹ is a directive regulating the manufacture, import and distribution of Electronics and Electrical Equipment (EEE) within the EU, which bans from use 10 different hazardous materials (to date).

¹ wiki.teltonika-gps.com/view/FMM003_RoHS



This sign on the package means that all used electronic and electric equipment should not be mixed with general household waste.

CHECK ALL CERTIFICATES

All newest certificates may be found in our [Wiki](#)².

² wiki.teltonika-gps.com/view/FMM003_Certification_%26_Approvals

WARRANTY

We guarantee our products 24-month warranty¹ period.

All batteries carry a 6-month warranty period.

Post-warranty repair service for products is not provided.

If a product stops operating within this specific warranty time, the product can be:

- Repaired
- Replaced with a new product
- Replaced with an equivalent repaired product fulfilling the same functionality
- Replaced with a different product fulfilling the same functionality in case of EOL for the original product

¹ Additional agreement for an extended warranty period can be agreed upon separately.

WARRANTY DISCLAIMER

- Customers are only allowed to return products as a result of the product being defective, due to order assembly or manufacturing fault.
- Products are intended to be used by personnel with training and experience.
- Warranty does not cover defects or malfunctions caused by accidents, misuse, abuse, catastrophes, improper maintenance or inadequate installation – not following operating instructions (including failure to heed warnings) or use with equipment with which it is not intended to be used.
- Warranty does not apply to any consequential damages.
- Warranty is not applicable for supplementary product equipment (i. e. PSU, power cables, antennas) unless the accessory is defective on arrival.
- [More information on what is RMA¹](#)

¹ wiki.teltonika-gps.com/view/RMA_guidelines