FMC13A First Start

FMC13A

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How to insert Micro-SIM card and connect the battery

1. Gently remove FMC13A **cover** using **plastic pry tool** from both sides.

   Note: To properly open a new case please watch this video.

2. Insert **Micro-SIM** card as shown with **PIN request disabled** or read **Security info** how to enter it later in Teltonika Configurator. Make sure that Micro-SIM card **cut-off corner** is pointing forward to slot.
3. Connect **battery** as shown to device. Position the battery in place where it does not obstruct other components.
4. After **configuration**, see "**PC Connection (Windows)**", attach device **cover** back.

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 16 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	**VCC** (10-30)V DC (+)	Power supply (+10-30 V DC).
2	DOUT 3	Digital output, channel 3. Open collector output. Max. 0,5 A DC.
3	AIN 2 / DIN 3	Analog input, channel 2. Input range: 0-30 V DC / Digital input, channel 3.
4	DIN 2-N/AIN1	Digital input, channel 2, Negative input, Analog input, channel 1, Input range: 0-30 V DC.
5	DIN 1	Digital input, channel 1.
6	INPUT 6	TX EXT (LVCAN – TX).
7	**GND** (-)	Ground.
8	DOUT 1	Digital output, channel 1. Open collector output. Max. 0,5 A DC.
9	DOUT 2	Digital output, channel 2. Open collector output. Max. 0,5 A DC.
10	1WIRE POWER	+3,8 V output for 1–Wire devices.
11	1WIRE DATA	Data for 1–Wire devices.
12	INPUT 5	RX EXT (LVCAN - RX).

PC Connection (Windows)

1. Power-up FMC13A with **DC voltage 10-30 V** power supply using **supplied power cable**. LED’s should start blinking, see “**FMC13A LED status**”.
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®**
  - FMC13A Bluetooth® is enabled by default. Turn on **Bluetooth®** on your PC, then select **Add Bluetooth® or other device > Bluetooth®**. Choose your device named – "**FMC13A_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.

How to install USB drivers (Windows)

1. Please download COM port drivers from **here**.
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.

Configuration (Windows)

At first FMC13A device will have default factory settings set. These settings should be changed according to the user's needs.
Main configuration can be performed via **Teltonika Configurator** software. Get the latest FMC13A **Configurator** version from **here**. Configurator operates on Microsoft Windows OS and uses prerequisite MS .NET Framework. Make sure you have the correct version installed.

MS .NET requirements

Operating system	MS .NET Framework version	Version	Link
• Windows Vista • Windows 7 • Windows 8.1 • Windows 10	MS .NET Framework 5.0	32 and 64 bit	.NET Framework

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** tabs display information about **GNSS**, **GSM**, **I/O**, **Maintenance** and etc. FMC13A 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:

1. **Load from device** – loads configuration from device.
2. **Save to device** – saves configuration to device.
3. **Load from file** – loads configuration from file.
4. **Save to file** – saves configuration to file.
5. **Update firmware** – updates firmware on device.
6. **Read records** – read records from device.
7. **Reboot device** – restarts device.
8. **Reset configuration** – sets device configuration to default.

Most important configurator section is GPRS – where all your server and **GPRS settings** can be configured and **Data Acquisition** – where data acquiring parameters can be configured. More details about FMC13A configuration using Configurator can be found **here**.

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"
```

GPRS settings:

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

Server settings:

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

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

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 Moving** if one of these events happen:

300 seconds passes	Vehicle turns 10° degrees

☒ Vehicle drives 100 meters

☒ Speed difference between last coordinate and current position is greater than 10 km/h

Device makes a record **On Stop** if:

☒ 1 hour passes while vehicle is stationary and ignition is off

Records sending to server:

☒ If device has made a record it is sent to the server every 120 seconds

After successful SMS configuration, FMC13A device will **synchronize time** and **update records** to **configured server**. Time intervals and default I/O elements can be changed by using Teltonika Configurator or SMS parameters.

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.

- 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.

- 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.

- 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 FMC13A (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 FMC13A operation and even its failure.

Safety information

This message contains information on how to operate FMC13A 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 FMC13A 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.lt/product/fmc13A/