

FM1202 Sample User Guide for Recommended Configuration

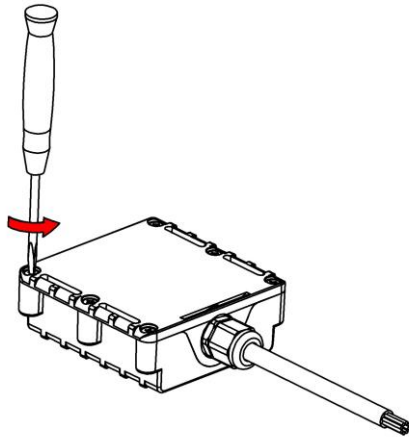
1 About the document

This document contains information required for fast testing of the FM1202 device.

1.1 Getting started with FM1202 device

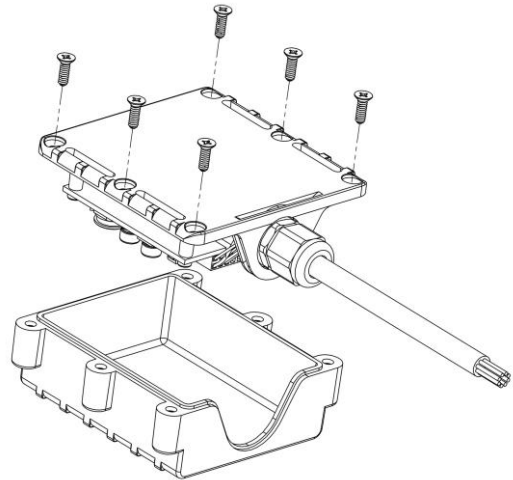
This paragraph contains the information needed to successfully launch and use the FM1202 device. The steps below should be followed carefully to completely test the FM1202.

1.2 SIM card insert scheme



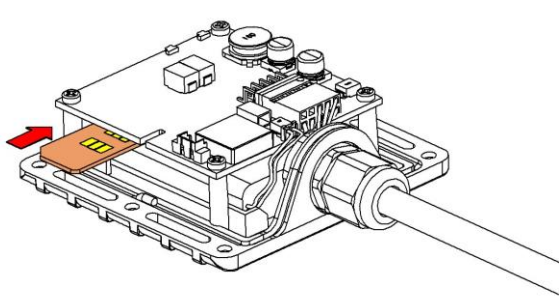
①

Open FM1200 case using screwdriver



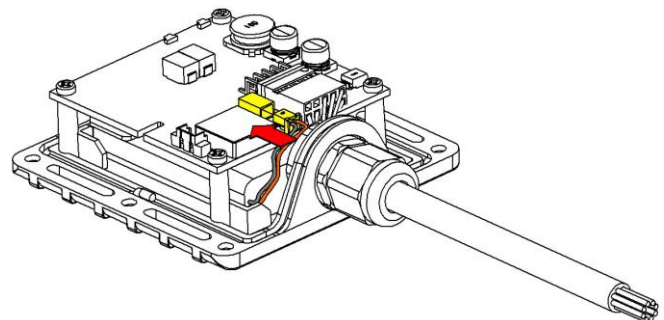
②

Remove FM1200 case



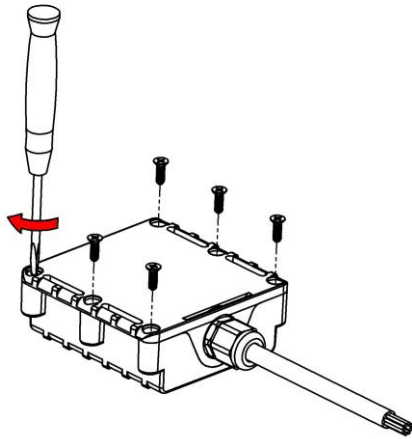
③

Insert SIM card as shown



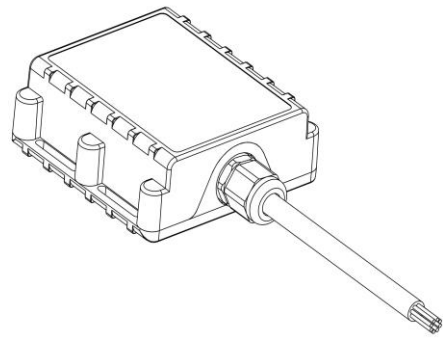
④

Connect battery connector as shown



⑤

Attach case, and screw in the screws



⑥

Device is ready

1.1 Power source connection

Nr.	Wire Name	Description	Wire color
1	VCC (6÷30)V DC (+)	Power supply for module. Power supply range (6...30) V DC	Red
2	OUT 2	Digital output. Channel 2. Open collector output. Max. $\overline{\text{I}} = 300\text{mA}$.	Pink
3	OUT 1	Digital output. Channel 1. Open collector output. Max. $\overline{\text{I}} = 300\text{mA}$.	White
4	DIN 2	Digital input, channel 2	Gray
5	DIN 1	Digital input, channel 1 DEDICATED FOR IGNITION INPUT	Yellow
6	GND(VCC(6÷30)V DC)(-)	Ground pin. (6÷30)V DC (-)	Blue
7	AIN 1	Analog input, channel 1. Input range: 0-30V/0-10V DC	Brown
8	DATA_DALLAS	Data channel for Dallas 1-Wire® devices	Green

Picture 2. Main cable wires description

1.2 Installing FM1202 drivers

Software requirements

- Operating system 32-bit and 64-bit: Windows XP with SP3 or later, Windows Vista, Windows 7.
- MS .NET Framework V3.5 or later (<http://www.microsoft.com> or <http://av11.teltonika.lt/downloads/tav1/Framework/dotnetfx35setupSP1.zip>).

Drivers

Please download Virtual COM Port drivers from Teltonika website:

http://av11.teltonika.lt/downloads/FM11/vcpdriver_v1.3.1_setup.zip

Installing drivers

Extract and run VCPDriver_V1.3.1_Setup.exe. This driver is used to detect FM1202 device connected to the computer. Click 'Next' in driver installation window (figures below):

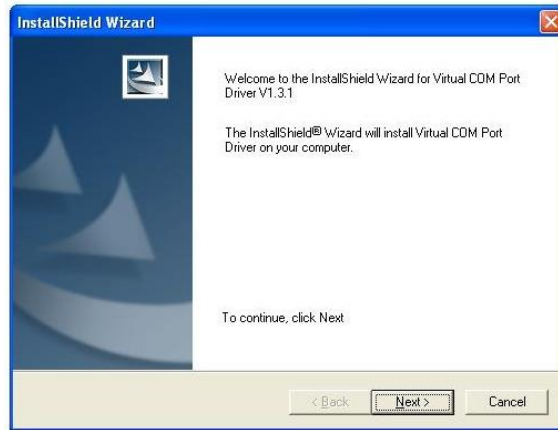


Figure 3. Driver installation window

This will launch device driver installation wizard. In the following window click 'Next' button again:



Figure 4. Driver installation window

Setup will continue installing drivers and will display a window about successful process in the end. Click 'Finish' to complete setup:



Figure 5. Driver installation window

You have now installed drivers for FM1202 device successfully.



Power source connection

Note, that FM1202 cannot be powered via USB cable, so the external 6...30 V DC (1,2 W Max) power supply must be used to power up the device.

1.3 FM1202 installation instruction

FM1202 is the device that has internal GNSS and GSM antenna.

Because of internal GNSS antenna device should be mounted with the sticker view to the open sky (metal free). With not less than 3/4 of metal free area.

FM1202 has IP67 protection class. It can be mounted outside the vehicle.

The device has 4 mounting holes on the edges, and can be tightened with screws, adhesive tape or plastic wires.

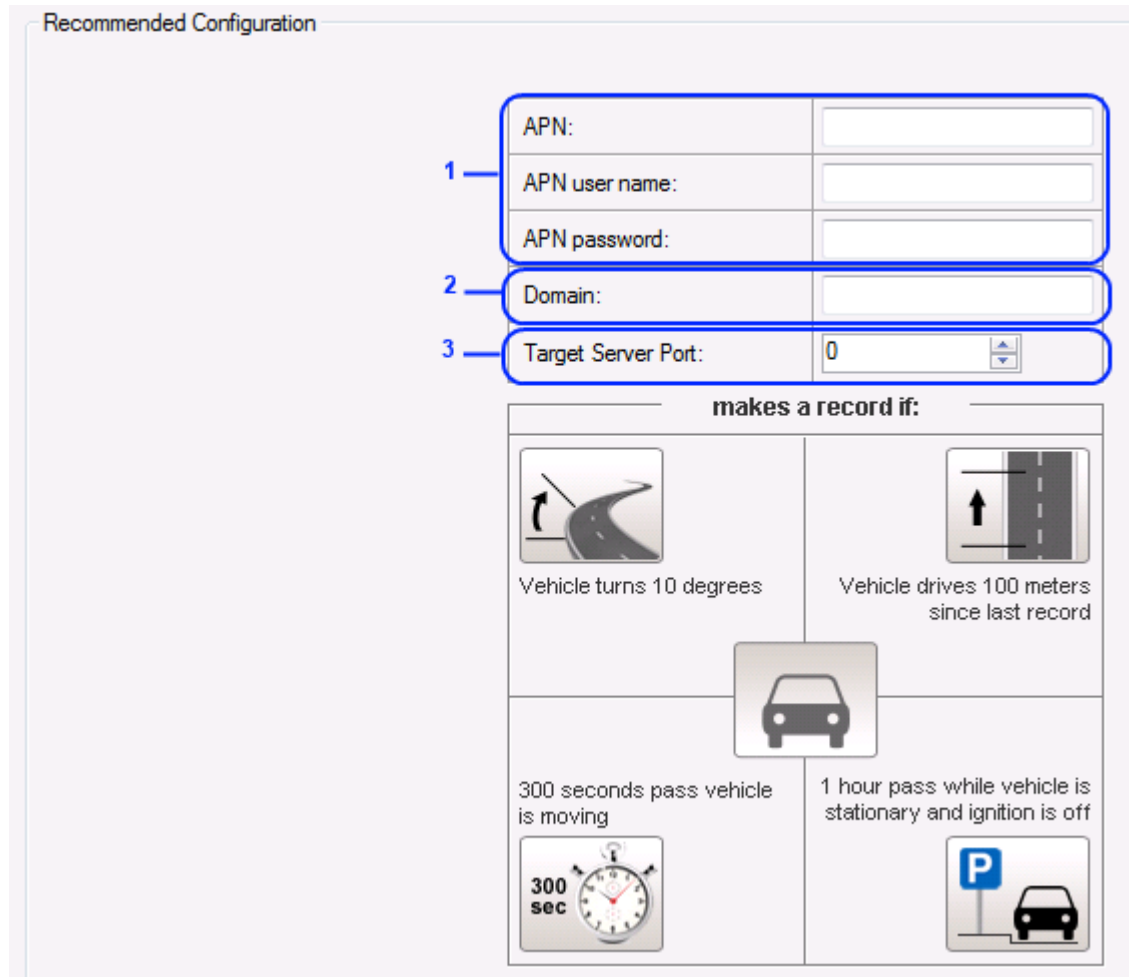
FM1202 area with sticker and GNSS antenna is shown in picture 6.



Picture 6. FM1202 view

1.4 Loading the Configuration into the FM1202 Device





FM1202 Configurator must be used to configure the FM1202 device. The only data client is required to enter to configuration is APN data, domain and target server port.



Recommended Configuration

1	APN:	<input type="text"/>
	APN user name:	<input type="text"/>
	APN password:	<input type="text"/>
2	Domain:	<input type="text"/>
3	Target Server Port:	0 <input type="button" value="▲"/> <input type="button" value="▼"/>

makes a record if:

 Vehicle turns 10 degrees	 Vehicle drives 100 meters since last record
 300 seconds pass vehicle is moving	 1 hour pass while vehicle is stationary and ignition is off

Picture 7. Recommended configuration view

1.4.1 APN configuration

In order to FM1202 device to be able to connect to local GPRS network (and send AVL data) the following APN data (provided by local GSM services provider) must be entered into FM1202 configuration (1 selection):

- Access Point Name (APN) with authentication type CHAP or PAP (if required);
- APN login;
- APN password;

If you are not sure what APN settings should be, ask your GSM operator.

1.4.2 Domain and Port configuration

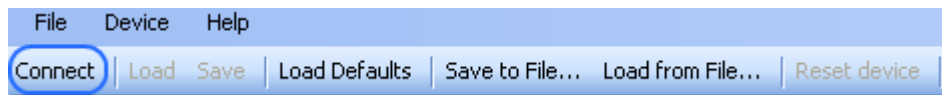
In field which is marked as number 2 you have to enter your server IP address, where to send FM AVL data.

In field which is marked as number 3 you have to enter Port number. In recommended configuration mode transfer protocol - TCP. But also you can set UDP transfer protocol in advanced configuration.

1.4.3 Saving the Configuration into the FM1202 Device

Follow these steps:

1. Press connect in configurators navigation bar (make sure that your FM1202 is connected to PC and power source).



Picture 8. Connecting FM1202 to configurator

2. When device is to connected to configurator you can save your configuration by clicking Save.



Picture 9. Saving configuration to FM1202 device

1.4.4 Recommended Configuration

Recommended configuration is based on fast periodic AVL data acquisition mainly according to the change of the object's geographic angle (Min.Angle = 10 degrees). According to this configuration the FM1202 device will generate AVL record every time the object's angle is changed more than 10 degrees. Such AVL data acquisition is rational in cases the object mostly moves in the city. Min.Distance = 100 meters, so the additional AVL record will be generated after driving more than 100 meters in the straight line. If the object with FM1202 device is not moving, the AVL data records are generated periodically every 1 hour (Vehicle on STOP Min.period = 3600 s). If the object with FM1202 device is moving, the AVL data records are generated periodically every 300 seconds.

AVL data is sent via GPRS to the server as soon as the AVL data record is generated (Min. saved records = 1; Send period = 1 s). According to this configuration one AVL data record, containing information about the GPS position and Input/Output (I/O) parameters is sent to the server at least every 300 seconds.

Following I/O elements' vales are monitored in every AVL data record:

- DIN1 (as ignition) {values: 0 – Off; 1 – On};
- Movement {values: 0 – object is not moving; 1 – object is moving};

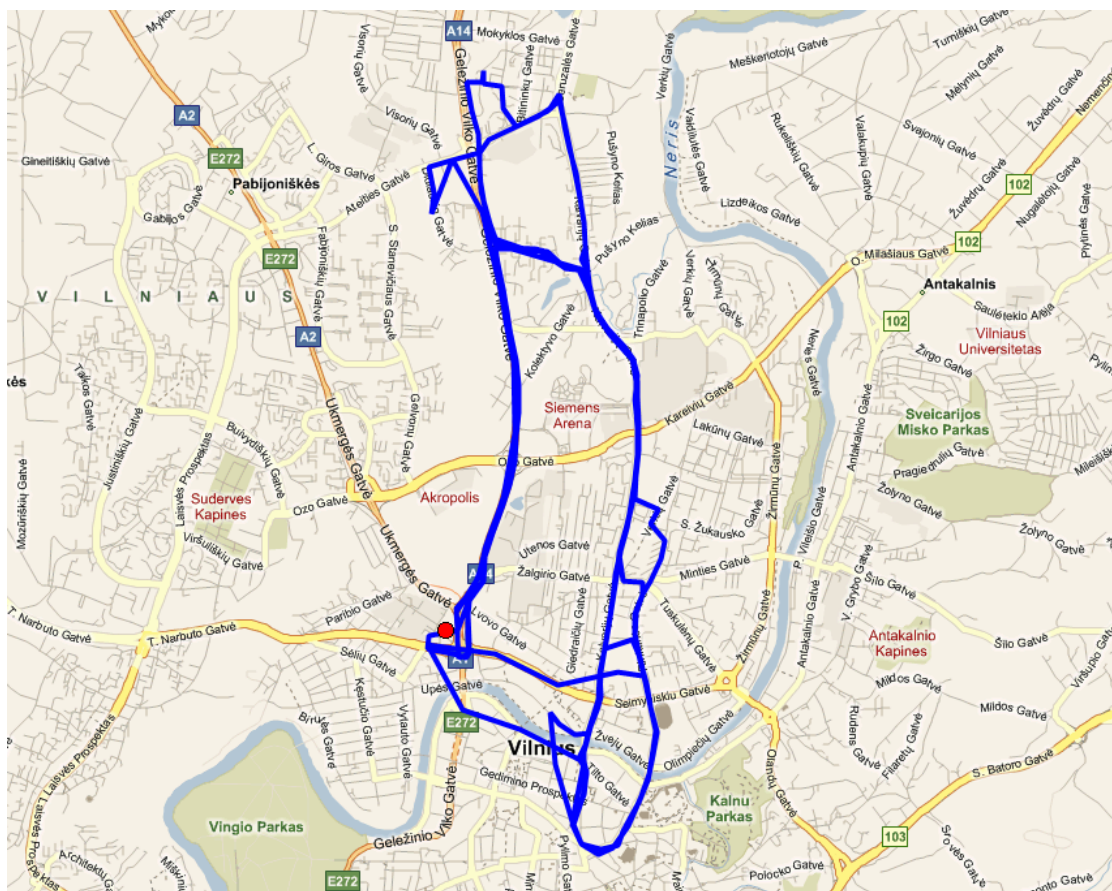
- Power voltage {values: from 10 V to 30 V, according to the power source}.
- Speed {values: current vehicle speed in km/h}

Additional AVL data records called “events” are generated on following parameter value changes:

- If power voltage value falls to less than 11 V;
- Speed is less than 5 km/h for more than 1 minute;
- Ignition is turned ON/OFF (DIN1=1 or DIN1=0).

1.4.5 What is the purpose of testing FM1202 in this scenario?

The main purpose of this testing scenario is for the user to see the highly detailed track (as in the sample screenshot below) of his driven track in the city. The user will be able to see his vehicles current position as well as the position in any selected time in the past. The user will be able to see the time and points in the map in which the ignition has been turned ON/OFF, power voltage has become less than 11 V (car battery needs to be recharged). The user will be able to compare “Vehicle on STOP” and “Vehicle MOVING” modes.



Picture 10. Track of the FM1100 working in "Recommended Configuration"

The track showed in the screenshot above contains the information of 3 days driving of real vehicle in the city of Vilnius, Lithuania. Using the service of local GSM service provider “Bite GSM” 1 MB of data has been transmitted through the GPRS to generate such track.



NOTE, that GPRS traffic differs from the GPRS coverage at the area and the GSM service provider’s data averaging policy, so the GPRS traffic can be higher than the described in the example above.