

# FM5300 Sample User Guide for Recommended Configuration

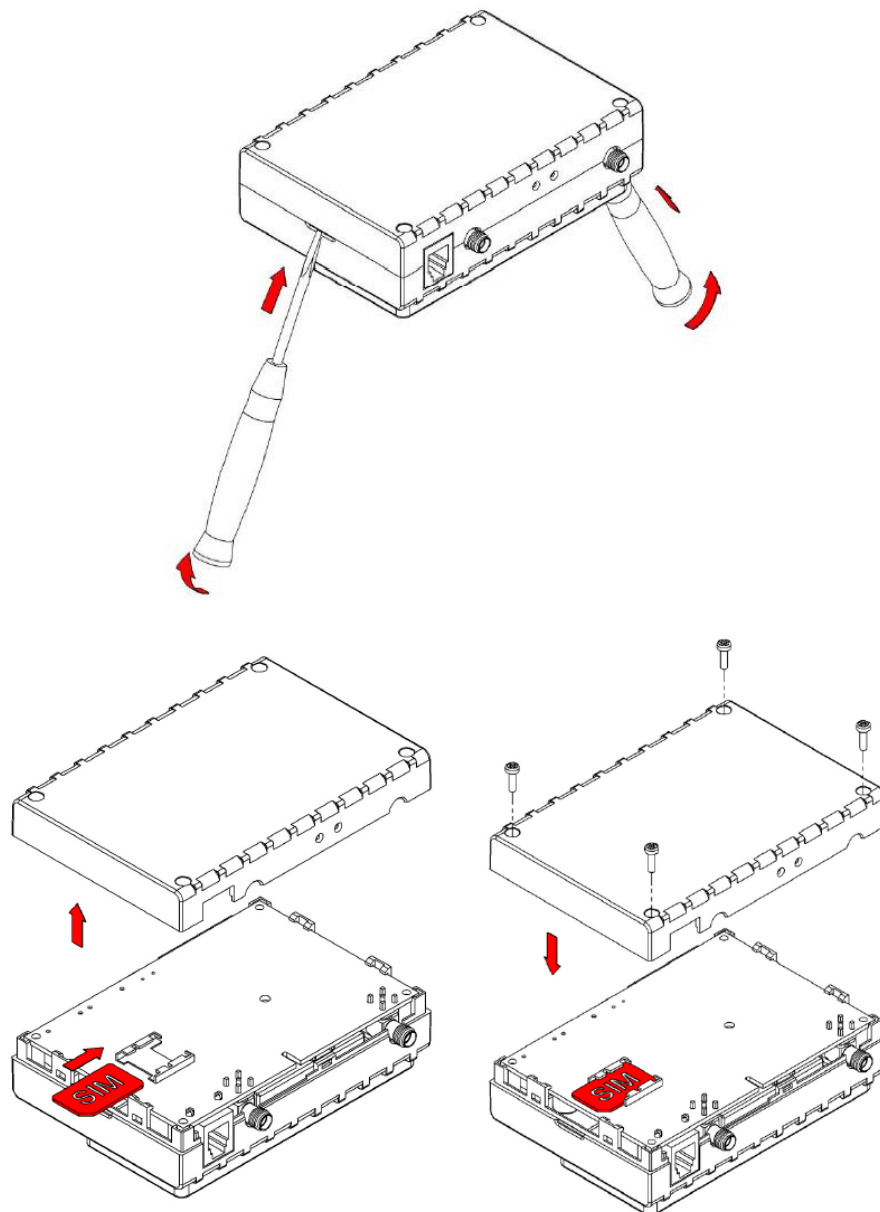
## 1 About the document

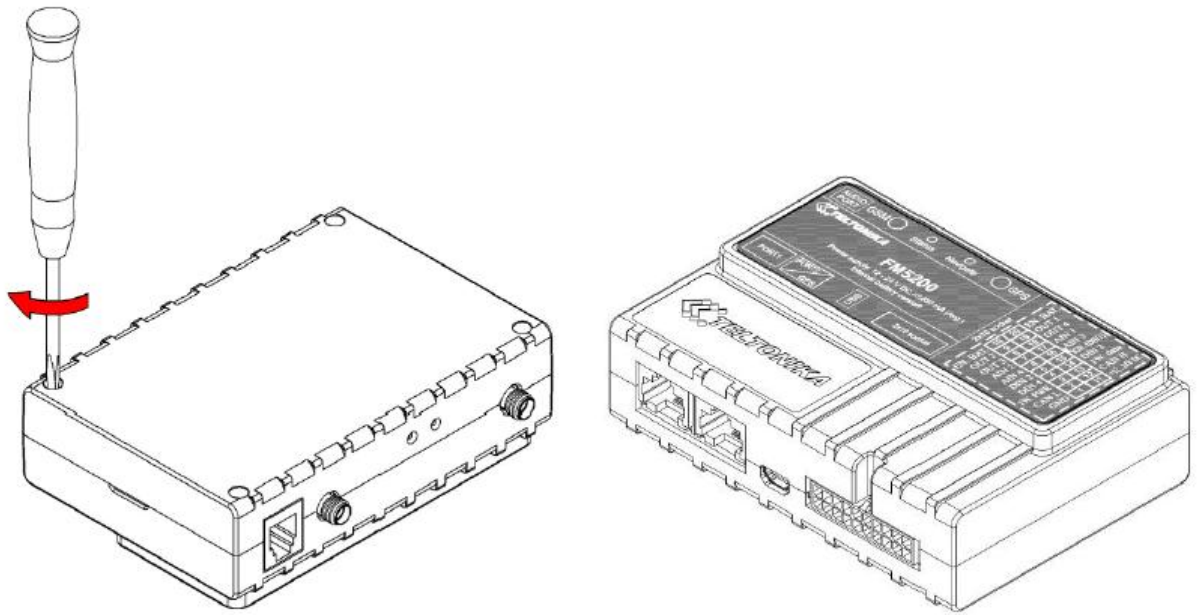
This document contains information required for fast testing of the FM5300 device

### 1.1 Getting started with FM5300 device

This paragraph contains the information needed to successfully launch and use the FM5300 device. The steps below should be followed carefully to completely test the FM5300.

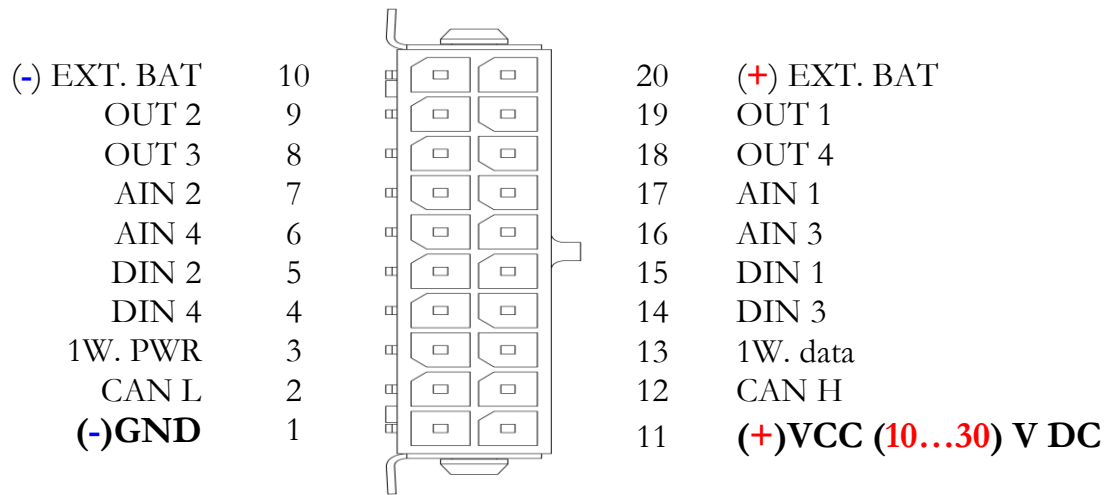
### 1.2 SIM card insert scheme





Pic. 1. Illustration of how to insert the SIM card

### 1.3 Power source connection



Pic. 2. Standard FM5300 2x10 socket pinout

The external 10...30 V DC (12 W Max) power supply must be used to power up the device. Connect power supply to 1 pin and 11 pin as shown above.

### 1.4 Placement of GPS antenna

- GPS antenna must be placed so its state is as horizontal as possible (if antenna is leaning more than 30 degrees, it is considered incorrect mounting).
- GPS antenna cable cannot be bent more than 80 degrees.
- GPS antenna must be placed sticker facing down



Fig. 3. GPS antenna correct mounting

It is recommended to place GPS antenna as close to the window as possible.

**NOTE**, that most of modern office windows are equipped with filters that could block GPS signal so for best GPS signal quality we recommend to put GPS antenna outside (on windowsill, some plate etc.).

### 1.5 Installing FM5300 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>).

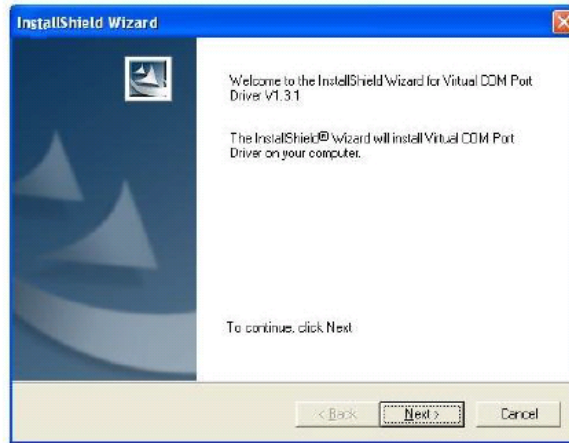
#### Drivers

Please download Virtual COM Port drivers from Teltonika website:

[http://av11.teltonika.lt/downloads/FM11/vcpdriver\\_v1.3.1\\_setup.zip](http://av11.teltonika.lt/downloads/FM11/vcpdriver_v1.3.1_setup.zip)

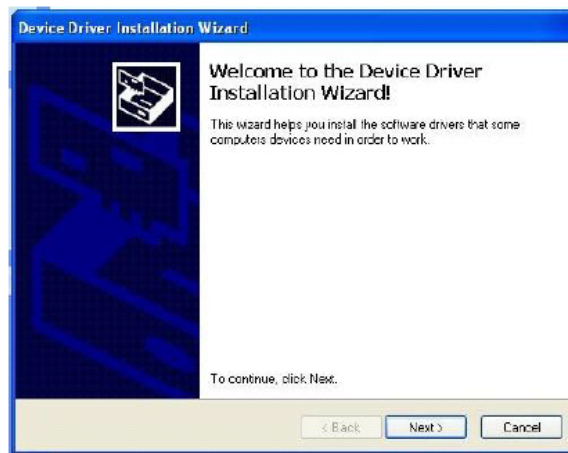
#### Installing drivers

Extract and run VCPDriver\_V1.3.1\_Setup.exe. This driver is used to detect FM5300 device connected to the computer. Click 'Next' in driver installation window (pictures 5-7):



**Pic. 4. Driver installation window**

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



**Pic. 5. Driver installation window**

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








**Pic. 6. Driver installation window**

You have now installed drivers for FM5300 device successfully.

## 1.6 Loading the Configuration into the FM5300 Device

FM5300 Configurator must be used to configure the FM5300 device. Configurator can be downloaded from: <http://avl1.teltonika.lt/downloads/FM53/> or contact our sales manager to get latest configurator version. The only data client is required to enter to configuration is APN data, domain and target server port.

APN:	<input type="text"/>
APN user name:	<input type="text"/>
APN password:	<input type="text"/>
Domain:	<input type="text"/>
Target Server Port:	<input type="text" value="0"/>
<b>makes a record if:</b>	
	
Vehicle turns 10 degrees	Vehicle drives 100 meters since last record
	
300 seconds pass while vehicle is moving or stationary	
	

Pic. 7. Configuration toolbar view

### 1.6.1 APN configuration

In order to make FM5300 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 FM5300 configuration:

- 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, please contact your GSM operator.

### 1.6.2 Domain and Port configuration

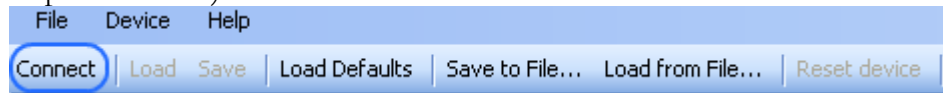
In the domain field you have to enter your server IP address, where to send FM AVL data.

In Target Server Port field you have to enter your server Port number. In recommended configuration mode transfer protocol is set to TCP. But also you can set UDP transfer protocol in advanced configuration.

### 1.6.3 Saving the Configuration into the FM5500 Device

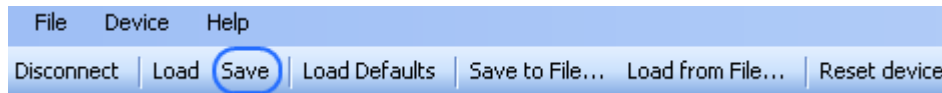
Follow these steps:

1. Press connect in configurators navigation bar ( make sure that your FM5300 is connected to PC and power source).



Picture 8. Connecting FM5300 to configurator

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



Picture 9. Saving configuration to FM5300 device

### 1.6.4 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 FM5300 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 FM5300 device is not moving, the AVL data records are generated periodically every 300 seconds (Min.period = 300 s).

AVL data is sent via GPRS to the server as soon as the AVL data record is generated (Min. saved records = 1; Send period = 10 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:

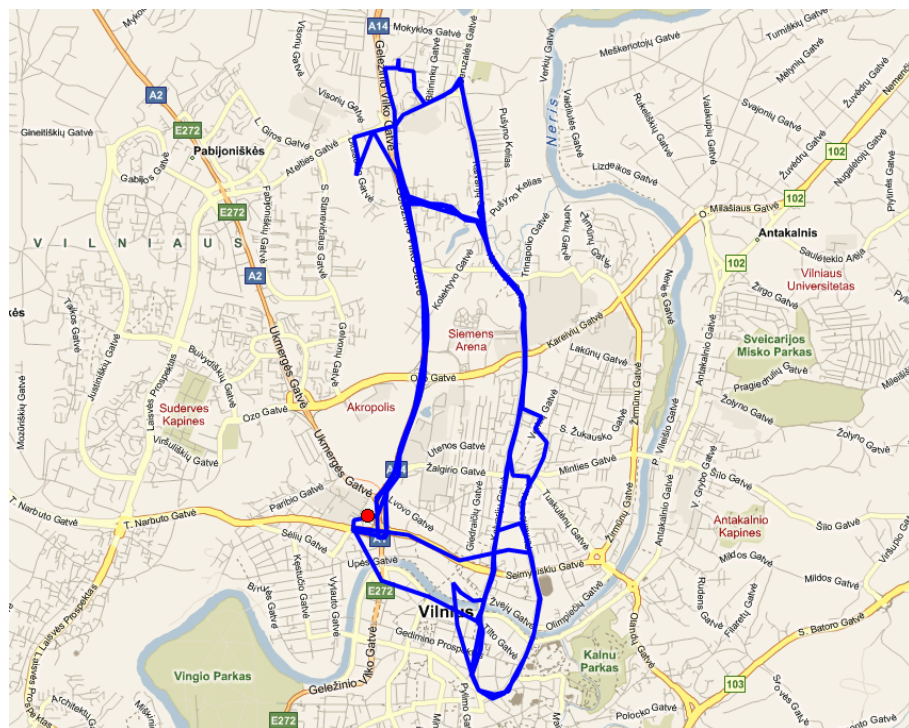
- DIN1 (as ignition) {values: 0 – Off; 1 – On};
- Power voltage {values: from 10 V to 30 V, according to the power source}.
- Odometer {values: what is driven distance between two coordinate's points}

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

- If power voltage value falls less than 11 V;
- Ignition is turned ON/OFF (DIN1=1 or DIN1=0).

### 1.6.5 What is the purpose of testing FM5300 in this scenario?

The main propose 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 then 11 V (car battery needs to be recharged).



Pic. 10. Track of the FM5300 working in "City scenario"

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.