# Teltonika FOTA user manual v1.04

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## 1. About

Teltonika fleet management systems firmware remotely update tool. Teltonika FOTA software can update any FMXXXX device firmware.

#### 2. Requirements

- Microsoft Windows or Server operating system
- .NET Framework 2.0;
- Microsoft SQL Standard or Express edition 2005/2008/2008R2/2012
  - SQL Server Management Studio
  - o SQL Server and Windows Authentication mode
- TAVL SMS service or Teltonika ModemCOM/G10 GSM modem
- Internet connection with static IP address (no Proxy allowed);
- Opened TCP port to computer from outside;



Note, that every FOTA program must have its own FOTA database. The same FOTA database can't be used by different FOTA programs.

# 3. Getting started

## 3.1. "FotaData" database

Before FOTA program could work "FotaData" database must be created. If you do not have required SQL data engine running, please download free copy of SQL Server Express edition from Microsoft website:

#### http://www.microsoft.com/express/sql/

And install it with default settings with one exception: change default setting from *Windows authentication mode* to SQL *Server and Windows Authentication mode*.

After installing MS SQL Server data engine, please contact Teltonika export manager for "FotaData" database creation.

#### **3.2.Licensing**

The first time you will start Teltonika FOTA you will be prompted to enter License Key (Fig.1).



Fig. 1 Licensing window

In this window is displayed your *Hardware Key* (blue marker). This key must be copied and provided to your Teltonika sales manager together with external IP. Sales manager will respond to you with valid license key, which must be put in the *License Key* (green marker) field. After clicking OK, license will be assigned to your computer.

## **3.3.Security Alert**

When you first time start FOTA program window like following should pop up



Fig. 2 Security Alert

Check Private network as well as Public network and press "Allow access".



Note, that it is necessarry to check Public network if your internet connection identified as Public by computer.

# 4. Configuration

#### **4.1.Communication**

*In Communication* section you need to set your external IP address and TCP port (Fig. 3). Note, that you can get your external IP by simply clicking *Get my IP*.

Coptions	×
Communication Modem Database	3
External IP 89 . 47 . 56	Get my IP
Port 7070	<b>*</b>
Advanced settings	
Time to wait for device connection	300 sec.
Network receive timeout	300 💌 sec.
Network send timeout	300 🚖 sec.
	Ok Cancel
IP Received	

Fig. 3 Communication tab

You must check if configured TCP port is accessible from outside. To do that:

- a) Start FOTA application and configure External IP and TCP port in communication tab options.
   Press Ok.
- b) Check if configured TCP Port is available from outside by going to <a href="http://www.canyouseeme.org/">http://www.canyouseeme.org/</a>

If TCP port is not available you must check two points:

a) Check Windows firewall if it is blocking current TCP port from outside and create new rule of inbound rules with needed TCP port.



Fig. 4 Windows firewall configuration

b) Check Gateway router configuration and forward needed TCP port dirrectly to your computer internal IP.



Gateway Router forwarding configuration must be done by IT administrator.

#### 4.2.Modem

For FOTA update to work Teltonika GSM modem must be installed and fully working or TAVL SMS Server must be configured.

If you will be using GSM modem, after it will be installed, you must configure its connection with FOTA program in *Modem* tab (Fig. 4). Note, that COM port, where GSM modem connected, must not be used by other program.

Picture below shows Teltonika ModemCOM/G10 GSM modem correct configuration. Note, that COM port could be different. COM port, where GSM modem connected, could be checked in Device Manager (Right mouse click on My Computer -> Properties -> Device Manager).

Coptions		X
Communication N	lodem Database	
GSM Moden	n 🔘 TAVL SMS Server	
GSM Modem		
Port name	COM10	<b>•</b>
Baud rate	BaudRate_115200	•
Data bits	Eight	•
Stop bits	One	•
Parity bits	None	<b>•</b>
Read timeout	5	×
Write timeout	5	Try connect
Flow Control	Hardware (RTS)	V DTR V RTS
		Ok Cancel

Fig. 5 Modem tab

To check whether there is connection with GSM modem click *Try connect*. Status bar appear *GSM modem found*. If not, check the modem interface settings again.

If you will be using TAVL SMS Server, choose TAVL SMS Server option and configure its IP (127.0.0.1 for TAVL SMS service on local system) and port number (usually 19898 for TAVL SMS service).

C Options	
Communication	Modem Database
GSM Mod	em 💿 TAVL SMS Server
- Tavl SMS Ser	ver
Server IP	127 . 0 . 0 . 1
Port	19898
	Ok Cancel
GSM modem fo	und

Fig. 6 TAVL SMS Server option

#### 4.3.Database configuration

You must configure the connection to the database. If you have installed MS SQL Server express with default settings leave default settings for database connection as well. If other SQL Server used, enter its name in *Server* field, other settings must remain unchanged for "FotaData" database (Fig 2.).

C Options	-	×
Communication M	odem Database	
Server	.\SQLEXPRESS	
Login	Fota	
Password	••••	
Database	FotaData	
	Test	Connection
⊂ Database Backup		
Available back	ups:	
Automatic back	up every 1	Hours
		Ok Cancel
Database Access S	ucceeded	

Fig. 7 Database login

Check whether entered login information is correct by click *Test Connection*. Status bar should appear *Database Access Succeeded*.

# 5. Creating new objects

#### **5.1.Adding new object**

To add a new object press "+" button in Teltonika FOTA main window (Fig.6).



Fig. 8 Teltonika FOTA main window

Enter all reguared information and press Save changes.

Item Properties					x
Item details					
IMEI	999999999999999999	APN	banga	Status:	
GSM number	+3700000000	Login	ора	Firmware:	
Module type	FM1100 -	Password	•••	Last update:	
Vehicle number	ABC 123			Delete Save changes	
L					



#### 5.2.Importing new objects from file

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If you have CVS file, saved earlier with FOTA object export functionality, you can import objects from this file. To do that press File -> *Import*... button and browse for this CVS file.



Fig. 10 Teltonika FOTA main window

## 6. Managing Objects

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#### 6.1.Object editing

To edit existing object or view its history, select object and press "Edit" button.

🗱 Teltonika Fota v2.1.4.4											
File Tools Help											
Show Statuses - Filter by Vehi	de:	IMEI:		GSM:		Firmware:			Module:	Show All	<ul> <li>Apply filter Clear</li> </ul>
Vehicle Number	IMEI	GSM Number	Module Type		Firmware	Last Update		Status			▲ Firmware
ABC 123	9999999999999999999	+370000000	F	M1100		2015.02.25	10:4				Selected Firmware:
											Select firmware file
											Start Update
											Cancel Update
											▲ Configuration
											Selected Configuration:
											Select configuration file
											Start Upload
N 44 4 Database Access Succeeded	► ₩ + - <b>▲</b> <									) 	1 objects found





## 6.2.Deleting object

To delete existing object, select object and press "-" button.

C Teltonika Fota v2.1.4.4								
File Tools Help								
Show Statuses - Filter by Vehic	de:	IMEI:	GSM:		Firmware:		Module: Show All	<ul> <li>Apply filter Clear</li> </ul>
Vehicle Number	IMEI	GSM Number M	odule Type	Firmware	Last Update	Status		⊿ Firmware
• Ø ABC 123	99999999999999999999	+370000000	FM1100		2015.02.25 10:4	4		Selected Firmware:
								Select firmware file
								Start Update
								Cancel Update
								4 Configuration
								Selected Configuration:
								Selected Comgaration.
								Select configuration file
								Start Upload
He e e	• ₩ + - ▲ <							
Database Access Succeeded	(							1 objects found

Fig. 12 Item properties window

To delete multiple objects from Teltonika FOTA, select objects to be deleted in object window and press "-" button.

## **6.3.Exporting objects to file**

To export objects from Teltonika FOTA, select objects to be exported and press File -> *Export*.

eltonik Tools	a Fota v2 Help	.1.4.4								
<u>I</u> mpo	rt	ilter by Veh	ide:	IMEI:	GSM:		Firmware:	Мо	dule: Show All	▼ Apply filter Clear
Expo	rt	Number	IMEI	GSM Number	Module Type	Firmware	Last Update	Status		⊿ Firmware
E <u>x</u> it		3	350000000000000000	+370000000	FM1100		2015.02.25 10:4			Selected Firmware:
<b>V</b>	ABC 12	:4	3500000000000001	+370000001	FM1100		2015.02.25 10:5			
<b>√</b>	ABC 12	5	350000000000002	+370000002	FM1100		2015.02.25 10:5			Select firmware file
<b>V</b>	ABC 12	:6	350000000000003	+370000003	FM1100		2015.02.25 10:5			
1	ABC 12	.7	350000000000004	+370000004	FM1100		2015.02.25 11:0			Start Lindate
<b>V</b>	ABC 12	18	350000000000005	+370000005	FM2200		2015.02.25 11:0			otarcopudte
										Cancel Update
										Configuration     Selected Configuration:
										Select configuration file
										Start Upload
4		•	<b>₩ ₩ + - ▲</b> (						•	
hase /	Access Su	creeded								5 objects fr

Fig. 13 Teltonika FOTA main window

## 7. Firmware updating process

## 7.1.Updating



IMPORTANT: For update to succeed selected objects must be registered in Teltonika licensing server otherwise the update will be rejected. To register objects with licensing server you should send a list of objects to Teltonika export manager with IMEI numbers and FM type specified.

You can update several devices at the same time. However, only the same module type devices could be updated simultaneously.

To update firmware using Teltonika FOTA:

a) Select objects from Teltonika FOTA main window.

	ools He	lp								
ow S	tatuses 🔻	Filter by Vehicle	:	IMEI:	GSM:		Firmware:	Modu	e: Show All	▼ Apply filter Clear
[	Veh	hide Number IN	MEI	GSM Number	Module Type	Firmware	Last Update	Status		▲ Firmware
	AB	C 123 3	50000000000000000	+3700000000	FM1100		2015.02.25 10:4			Selected Firmware:
6	AB	C 124 3	5000000000000001	+370000001	FM1100		2015.02.25 10:5			
6	AB	C 125 3	50000000000002	+370000002	FM1100		2015.02.25 10:5			Select firmware file
[	AB	C 126 3	50000000000003	+370000003	FM1100		2015.02.25 10:5			
	AB	C 127 3	50000000000004	+370000004	FM1100		2015.02.25 11:0			Start Update
	ABO	C 128 3	50000000000005	+370000005	FM2200		2015.02.25 11:0			
										Select configuration file
										Select configuration fil
										Select configuration file Start Upload

Fig. 14 Teltonika FOTA main window

b) Select firmware file to upload by pressing *Select firmware file*... button.

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w Statu	uses 👻 Filter by Vehi	alas.	_						
		ue:	IMEI:	GSM:		Firmware:	Module:	Show All	<ul> <li>Apply filter Clear</li> </ul>
	Vehicle Number	IMEI	GSM Number	Module Type	Firmware	Last Update	Status		⊿ Firmware
<b>V</b>	ABC 123	350000000000000000	+3700000000	FM1100		2015.02.25 10:4			Selected Firmware:
-	ABC 124	350000000000001	+370000001	FM1100		2015.02.25 10:5			
-	ABC 125	350000000000002	+370000002	FM1100		2015.02.25 10:5			Select firmware file
	ABC 126	350000000000003	+370000003	FM1100		2015.02.25 10:5			
	ABC 127	350000000000004	+370000004	FM1100		2015.02.25 11:0			Ctart Lindata
	ABC 128	350000000000005	+370000005	FM2200		2015.02.25 11:0			Start Opuate
									Selected Configuration: Select configuration file

#### Fig. 15 Teltonika FOTA main window

c) Press Start Update to review selected objects;

_	Selected Firmware:
	FM11_011012r17.e.CFW
	Select firmware file
	Start Update
	Cancel Update

Fig. 16 Start Update button

d) After reviewing selected objects, firmware version and module type to continue with update process press *Start Update* button.

Firmware Update	×					
Firmware Version:	FM11_011012r17.e.CFW					
Module Type:	FM1100					
SMS to be sent:	3					
Estimated Cost:	SMS cost is not configured in the options					
Selected Objects:						
Vehicle Number	IMEI					
ABC 123	35000000000000					
ABC 124	35000000000001					
ABC 125	35000000000002					
	Start Update Cancel					

Fig. 17 Update verification window

e) In the main window, you can monitor the status of each object update process and cancel updating if necessary.

#### 7.2.Canceling update

To cancel single object update press Cancel button next to object.

To cancel all pending updates before device connects press Cancel Update.



Fig. 18 Update canceling

## 8. Objects filtering and history information

#### 8.1.Filtering

You can filter the list and find the correct object. Objects can be filtered by object status (marked green) and by the vehicle information (marked blue) (Fig. 18).

≪∷ те	🗱 Teltonika Fota v2.1.4.4									
File	File Tools Help									
Show	Statuses - Filter by Vehicle:		IMEI:	GSM:		Firmware:	Module	: Show All	-	Apply filter Clear
	Show All	GSM Number Module Type Firmware Last Update Status			▲ Firmware					
	New	0000000000 +3700000000 FM110		FM1100	)	2015.02.25 10:4		Selected		ected Firmware:
	Failed	0000000001	+370000001	FM1100	0	2015.02.25 10:5				
	Failed (Connection Timeout)	0000000002	+370000002	FM1100	1	2015.02.25 10:5				Select firmware file
	Failed (Connection Lost)	000000003	+370000003	FM1100	0	2015.02.25 10:5				
	Failed (Licensing Check)	000000004	+370000004	FM1100	)	2015.02.25 11:0				Start Update
		0000000005	+370000005	FM2200	0	2015.02.25 11:0				
	Earled (Elaching Earled)	d (Download Failed)							Cancel Update	
	raileu (riastiitig raileu)									
	Cancelled								⊿	Configuration
	Completed								Sele	ected Configuration:
	Pending									
	Waiting for Device Connection								5	Select configuration file
	Device Connected to Server									
	Firmware is Sending									Start Upload
	Sending Configuration									
	Updating									
	Configuring									
-		1								
H4 44	· · · · · · · · · · · · · · · · · · ·							- F		
Database Access Succeeded 5 objects fou										5 objects found



To filter by object information, select the arguments and click *Apply*. To disable the filter click *Clear*.

## 8.2.Object update history

You can view each object update history, current firmware version and update time. In order to do that double mouse clicks on the selected object.

## 9. Object remote configuration

It's possible to update objects configuration via FOTA application. By default this function is disabled, contact Teltonika sales manager to enable configuration file sending. Remote configuration is supported for following FM models and firmware versions:

- FM1100 base firmware v.01.10.xx;
- FM1100 special firmware v43.00.xx with LV-CAN200 support;
- FM11YX (FM1110; FM1111; FM1120; FM1121; FM1122) base firmware v.00.03.xx.
- FM12YX (FM1200; FM1202; FM1204) base firmware v.01.03.xx.
- FM5300 base firmware v.01.07.xx (AutoCAN parameters configuration is not supported).

For instructions to objects configurations refer to document "FOTA remote configuration instructions"



# **Change log**

Nr.	Date	Version	Comments
1	2013.06.07	1.0	User manual released
2	2013.06.07	1.01	Minor revision
3	2013.06.11	1.02	Added static IP to requirements
4	2013.06.27	1.03	SQL database requirements and license procedure edited
5	2015.02.25	1.04	Object remote configuration added