TELTONIKA

ModemUSB/H7.2 (U3G150; U3G15L; U3G15S modems)

User Manual v0.2

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1. ATTENTION

All wireless devices for data transferring are susceptible to interference, which could affect performance

Only qualified personnel may install or repair this product

The device is not water-resistant. Keep it dry.

IMPORTANT NOTES!

IT IS MANDATORY TO READ THE NOTES AND MANUAL CAREFULLY BEFORE STARTING TO USE THE DEVICE.

2. FOR YOUR SAFETY

In this document you will be introduced how to use ModemUSB/H7.2 (U3G150; U3G15L; U3G15S) devices safely, later in the manual will be used only ModemUSB/H7.2 name. We suggest you to adhere to following recommendations so as to avoid any damage to person or property.

You have to be familiar with the safety requirements before starting to use the device!

Installation and technical support of the device can be performed only by a qualified personnel or a person who has enough knowledge about this device and safety requirements.

The PC to which the ModemUSB/H7.2 device is to be connected must have a USB port applied to USB 2.0 standards. Modem is supplied from +V5 ⎓ USB port.

The PC and power supply source to which the device is connected should satisfy LST EN 60950-1 standard. ModemUSB/H7.2 modem can be used on first (Personal Computer) or second (Notebook) computer safety class.

To avoid mechanical damage of the device, it is recommended to transport the device packed in damage-proof pack.

While using the device, place it such that the LEDs are visible to the user. It's because these LEDs provide information about the working modes and condition of the device.

Signal level of the modem depends on the environment in which it is working.

If the device fails to work properly only qualified personnel may repair this product. We recommend to forward device to repair centre or to the manufacturer. The modem does not contain any parts which can be replaced.

In the installation place and supply circuits should be tool up protective devices (bipolar release device) which will protect from short-circuit and wrong ground installation. The power of connected device should satisfy power of release device. The interstice between contacts should be no less than 3mm. Power supply network should be installed near device on easy accessible place
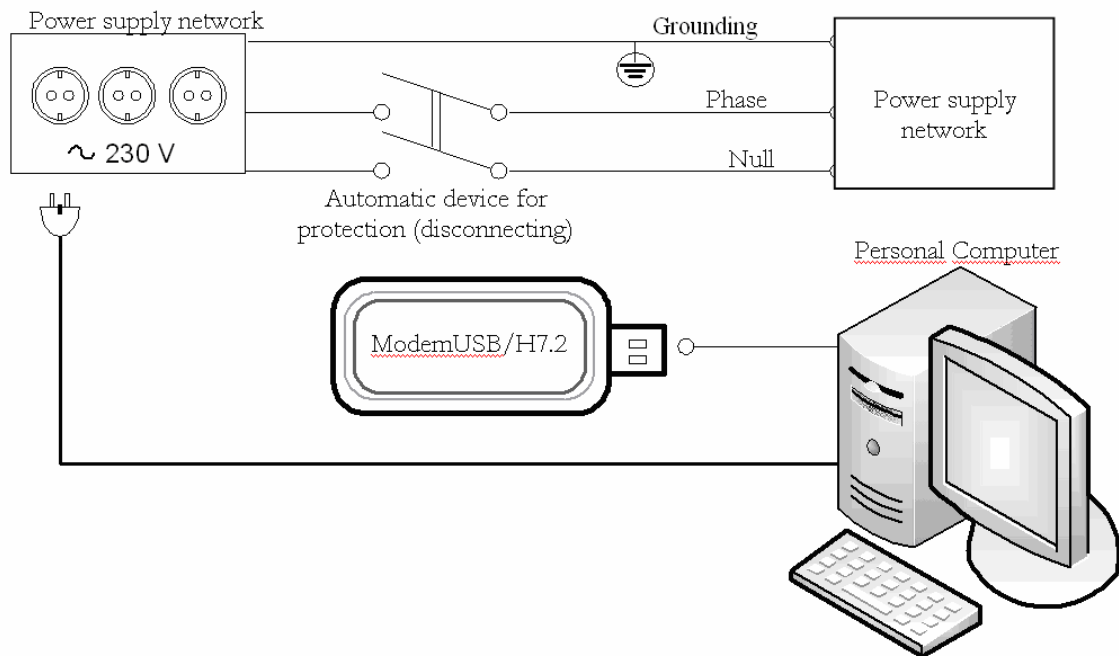

2.1.pic. Device release circuit.

To turn off the modem, unplug it from the USB port of the PC or unplug the PC from the power supply.

IT IS MANDATORY TO READ THE NOTES PRESENTED BELOW CAREFULLY BEFORE STARTING TO USE THE DEVICE

- ✍ U should install the drivers from the CD provided with modem before connecting device to your PC or connect it when prompted
- ✍ SIM card is mandatory for setting up connection to the GSM network. However the manufacturer of this equipment does not supply the SIM card. The SIM card can be purchased from your GSM (mobile) service provider!
- ✍ For APN, user name and password please contact your GSM (mobile) service provider.
- ✍ The modem must be unplugged from the PC while inserting or taking out the SIM card. If the SIM card will be inserted or taken out from the modem while it is still plugged to the PC – it may cause damage to the modem or the SIM card.
- ✍ The modem can be unplugged from the PC only if it is disconnected from the Internet and the MTC is properly closed.
- ✍ If the modem is unplugged properly from the PC wait for at least 10 seconds before plugging it back to the PC.

3. USER'S SERVICE

Then the device is not working or working bad the technical service of device can perform only qualified personnel. The strongly recommended to hand the modem over to repairer or manufacturer. No exchangeable parts inside of modem.
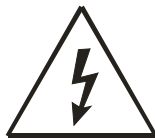
Do not mount or serve device during a thunderbolt

4. BASIC INFORMATION

4.1   Introduction

Basically ModemUSB/H7.2 is a device designed for data transmission via GSM Network. There are few tipes of the ModemUSB/H7.2, differences are described in 6.1 chapter. The user-friendly design allows you to directly connect the device to one of the USB ports of your PC/laptops. Once a SIM card is inserted in the modem and the device is connected to the PC, you would be able to send SMS, access internet via UMTS/GSM networks (mobile networks). "ModemUSB/H7.2" supports the following data-bearers: HSDPA, EDGE, GPRS, CSD, and SMS.

4.2   Legal Notice

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4.3   Contacts

If you face any problems related to the device, which you are not able to solve by yourself, you are always welcome to address our technical support department by e-mail support@teltonika.lt. We will be very glad to help you.

4.4   Acronyms

APN	Access Point Name.
CSD	Circuit Switched Data.
CSF	Circuit Switched Fax.
EDGE	Enhanced Data rates for GSM Evolution.
FDD	Frequency Division Duplex.
GPRS	General Packet Radio Service.
GSM	Global System for Mobile communications.
HSCSD	High Speed Circuit Switched Data.
IMEI	International Mobile Equipment Identity.
ISP	Internet Service Provider.
PIN	Personal Identification Number.
SIM	Subscriber Identity Module.
SMS	Short Message Service.
TCP/IP	Transmission Control Protocol/Internet Protocol.
USB	Universal Serial Bus.
WCDMA	Wideband Code Division Multiple Access.
HSDPA	High Speed Downlink Packet Access.

5. PACKAGE CONTENTS

ModemUSB/H7.2 modem is packed in a box and contains all the accessories required for normal operation:

- ModemUSB/H7.2 (U3G150; U3G15L or U3G15S type).
- CD with User Manual and drivers.
- "USB A jack ↔ USB A socket"connection cable.
- Leaflet "Quick Start Guide".

> **Note**: The manufacturer does not supply the SIM card, which is mandatory for setting up a connection to the GSM network! The SIM card may be purchased from your GSM(mobile) service provider!!

If any of the components is missing, please contact your local distributor.

6. TECHNICAL SPECIFICATION

6.1   Data transferring

The data type and data transfer speed depends on the service provided by your GSM operator. ModemUSB/H7.2 supports the following data-bearers depending on the modem type (U3G150; U3G15L or U3G15S).

MODEM TYPE	HSDPA/UMTS	EGPRS/GPRS/CSD
U3G150	850/1900/2100 MHz Power Class 3 (+24dBm). Supports UL and DL compressed modes. HSDPA 7.2: categories 1-4, 11 and 12. HSDPA 3.6: categories 5 and 6. HSDPA 7.2: category 7 and 8 (SW upgrade). Rx diversity. Equalization UMTS: 384 kbps operation in downlink and uplink. CSD: 64.0, 14.4 and 9.6 kbps.	EDGE 850/900/1800/1900 MHz GSM Power Class 4 (2W) for 850/900 bands. GSM Power Class 1 (1W) for 1800/1900 bands. EDGE class E2 (+27 dBm in 850/900 bands, +26 dBm in 1800/1900 bands). GPRS/EGPRS Multislot Class 12 (4 slots Rx, 4 slots Tx). GPRS/EGPRS Class B Type 1 MT. GPRS CS1-CS4; EGPRS MCS1-MCS9. CSD: 14.4 and 9.6 kbps.

MODEM TYPE	HSDPA/UMTS	EGPRS/GPRS/CSD
U3G15L	2100 Mhz Power Class 3 (+24 dBm). HSDPA modes: HSDPA 1.8: Categories 1-4, 11 and 12 HSDPA 3.6: Categories 5 and 6 HSDPA 7.2: Category 7 and 8 (SW upgrade). Equalization UMTS: 384 Kbps operation in downlink, 384 Kbps in uplink. Support UL and DL Compressed Modes. Circuit-switched data: 64, 14.4 and 9.6 Kbps	850 / 900 / 1800 / 1900 MHz EDGE GSM Power Class 4 (2W) for 850 / 900 bands, GSM. Power Class 1 (1W) for 1800 / 1900 bands. EDGE class E2 (+27 dBm in 850 / 900 bands, +26 dBm in 1800 / 1900 bands). GPRS / EDGE Multislot Class 12 (4 slots Rx, 4 slots Tx). GPRS / EDGE Class B Type 1 MT. GPRS CS1-CS4; EDGE MCS1-MCS9. Circuit-switched data: 14.4 and 9.6 Kbps Circuit-switched voice calls over GSM / WCDMA air interfaces, MO and MT
U3G15S	850 / 1900 / 2100 2100 MHz Rx diversity (MO 0301) Power Class 3 (+24 dBm) HSUPA mode: 2Mbps: Category 5 HSDPA modes: HSDPA 1.8: Categories 1-4, 11 and 12 HSDPA 3.6: Categories 5 and 6. HSDPA 7.2: Category 7 and 8. Equalization and Rx Diversity at the same time. UMTS: 384 Kbps operation in downlink, 384 Kbps in uplink. Support UL and DL Compressed Modes. Circuit-switched data: 64, 14.4 and 9.6 Kbps	850 / 900 / 1800 / 1900 MHz GSM Power Class 4 (2W) for 850 / 900 bands, GSM Power Class 1 (1W) for 1800 / 1900 bands EDGE class E2 (+27 dBm in 850 / 900 bands, +26 dBm in 1800 / 1900 bands) GPRS / EDGE Multislot Class 12 (4 slots Rx, 4 slots Tx) PRS / EDGE Class B Type 1 MT GPRS CS1-CS4; EDGE MCS1-MCS9 Circuit-switched data: 14.4 and 9.6 Kbps

6.2   Indication

Two LED indicators ("Power"and "Status") are located on the side of ModemUSB/H7.2 These LEDs indicate the operating mode and failure conditions of the modem. Modem operating modes are described in Table 3.2.1.

Table 6.2.1. Modem operating modes

LED Status	Description
„Power" LED is On	Modem power supply is on.
„Status" LED is blinking	Not inserted SIM card or need PIN code.
„Status" LED is On	Modem is ready for data transferring.

6.3   Operating parameters

ModemUSB/H7.2 modem derives +5V power from the USB port, therefore, the PC must have a USB port conforming to the USB 2.0 standards. The device does not require any external power supply for its operation.

Table 6.3.1. Modem operating parameters

Parameter	Minimal	Nominal	Maximal	Units
Power supply voltage	4.5	5.0	5.5	V
Power consumption	34		360	mA
Marginal operating temperature	-10		+55	°C
Storage temperature	-40		+65	°C
Modem weight		51		g
Reliative air humidyti			85	%

Note: modem may malfunction if the environment conditions do not conform to those provided in the Table!

6.4   Mechanical characteristics

ModemUSB/H7.2 modem housing is made of plastic. External view and measurements (in mm) of the device are shown in Figure 6.4.1.
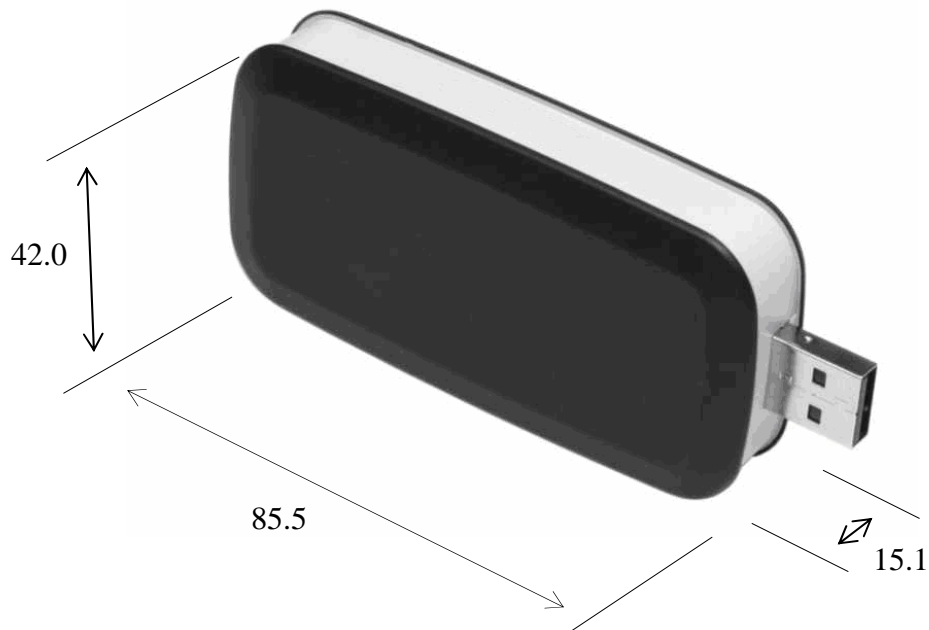

Figure 6.4.1. External view of ModemUSB/H7.2

7. HOW TO START?

In order to install ModemUSB/H7.2 drivers and software, do the following:

- ModemUSB/H7.2 modem can only be connected after the driver installation has finished. Unplug the device ModemUSB/H7.2 from USB port of the PC (if it is plugged)! Otherwise, the PC will have to be restarted after completion of driver installation.
- Insert the CD into CD-ROM.
- Click Install in automatically opened window. If the window did not appear, run autorun.exe file located on the CD. The installation procedure of the ModemUSB/H7.2 modem will begin.

7.1 Driver and Software Installation on Windows XP
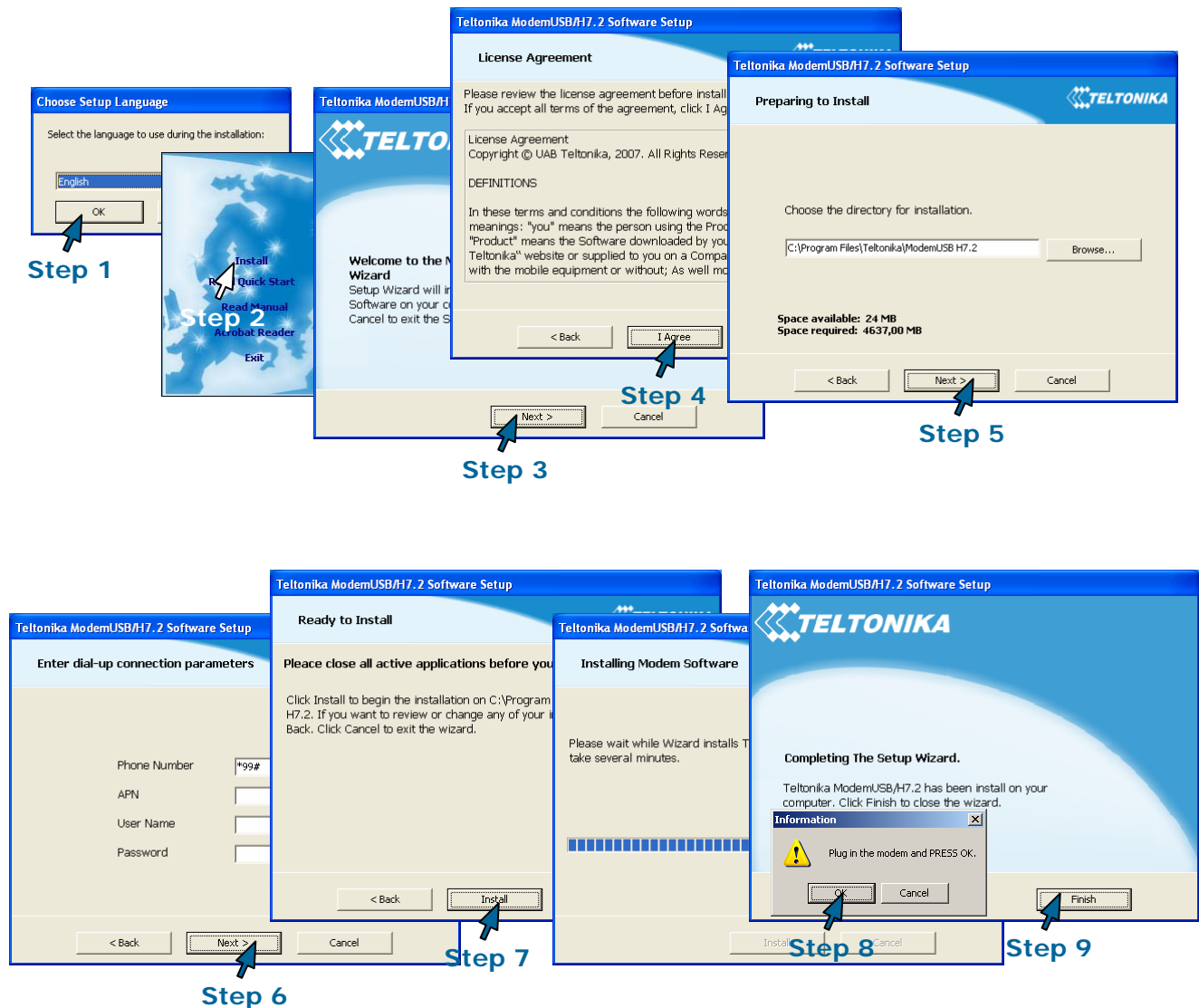
7.2   Driver and Software Installation on Windows 2000

Installation procedure is same as on Windows XP.

7.3   Driver and Software Installation on Windows Vista OS
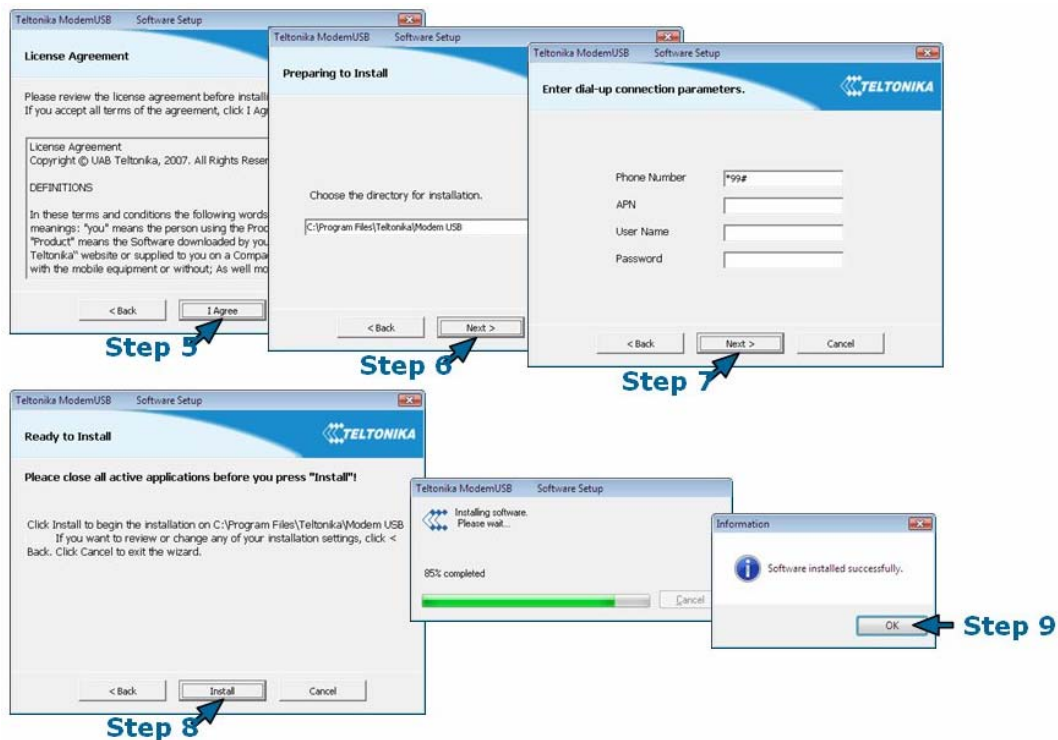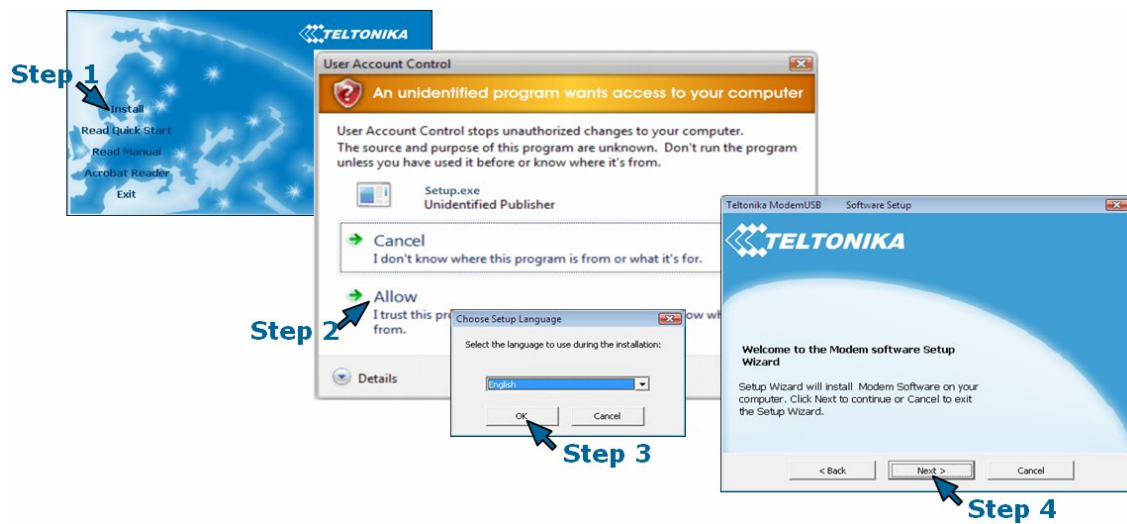
7.4   Uninstall of the Driver and Software

How to Un-Install:
1)   Remove the modem from the USB port of the PC, and go to
   - Start→Programs→Teltonika → **Modem USB H7.2** → click on "**Uninstall**", and then please follow instructions.

2)   Or alternatively you can remove "Modem Control Tool" program from "Add or Remove Programs"

Start → Settings → Control Panel → Add or Remove Programs & remove **Modem USB H7.2**

7.5   Software description

This section provides the main information about MCT (Modem Control Tool), its settings and features.

7.5.1   Modem Control Tool Preparation to Work

Before start working with Modem Control Tool, make sure that:
   - You have a GSM SIM card with activated data transfer service;
   - ModemUSB/H7.2 is set to work – drivers and software are installed, SIM card is inserted, modem is connected to the PC, LEDs "Status" and "Power" is on.

To run the Modem Control Tool, double click the MCT pictogram located on the desktop, or go to Start → Programs → Teltonika ModemUSB/H7.2 → Modem Control Tool USB H7.2. If the program is run for the first time or there are more than one modems installed, a window asking to select modem from the list will appear, click **OK** in this window. In the opened window choose **Teltonika 3G Modem Interface** and click **Set As Current Modem**, and **OK**.
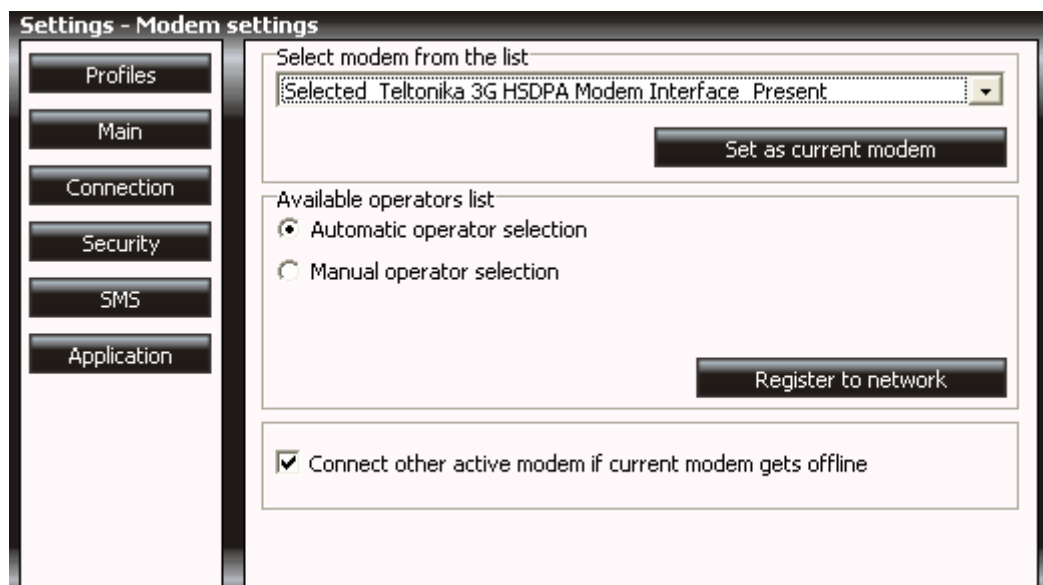
If PIN code request is active in your SIM card, a window for inserting the PIN code will appear.


If you will enter wrong PIN code three times in a row, the program will ask to enter the PUK code! When the required data inserted correctly, click OK and the main Modem Control Tool window will open.


7.5.2   *Connecting to Internet*

Five profiles for the user to set are available; this is very suitable if you are using more than one SIM card for your Modem. You can set up connection parameters for each SIM card (Operator) in these profiles and rename them in manner you like. This feature available in Settings/Profiles tab.
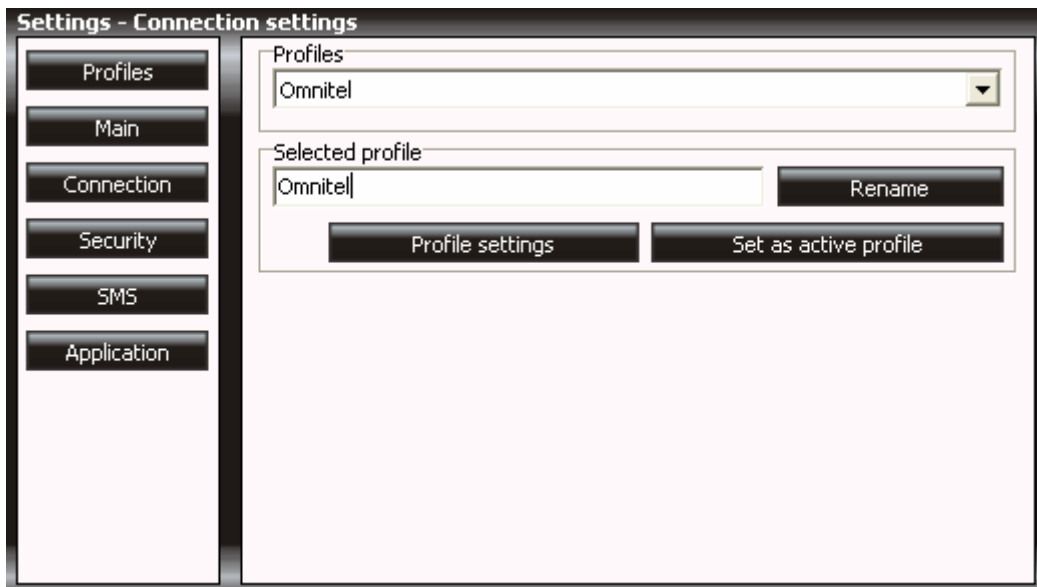
By clicking on the Profile settings you are able quickly review and edit all parameters of the available profiles.

In the Main menu you can select modem and set Automatic or Manual operator selection option.
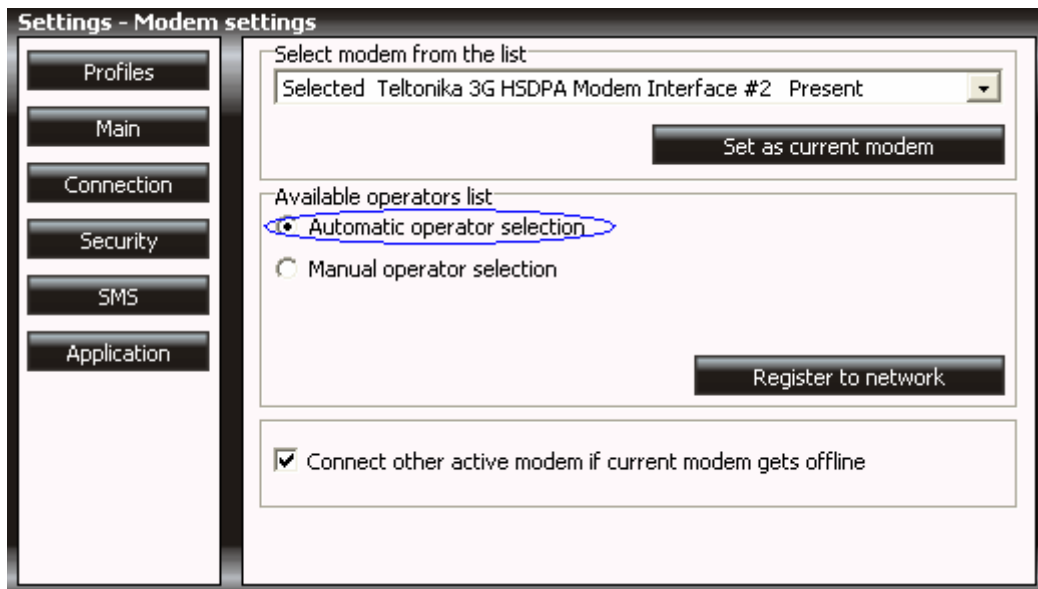
It is advisable to use automatic Operator selection, manual operator selection is usable for the roaming usually.
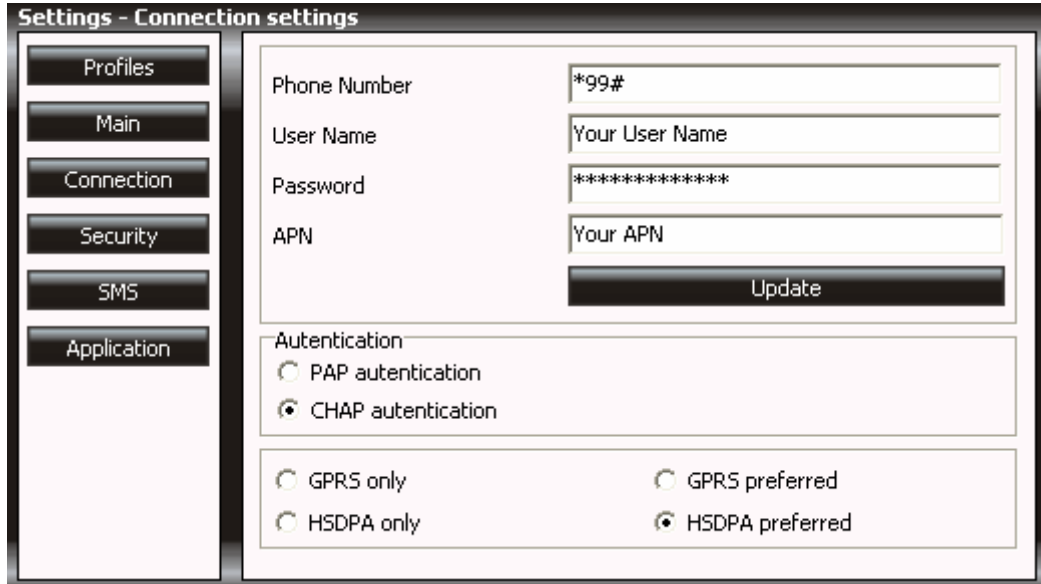
If you are using more than one modem – it is possible to automatically connect via other available modem if current become unavailable.

One of the following connecting types can be used in order to connect to the Internet using the ModemUSB/H7.2 modem:

✎ GPRS/EDGE/HSDPA. In this case, you have to know the APN, and sometimes user name and password;

✎ CSD/HSCSD. In this case you have to know the phone number of the dial-up server.

Note: APN, user name and password are provided by the GSM operator.

In order to connect to the Internet, enter the required data in Connection window. In the main MCT window click Settings → Connection. Enter connection data as shown below. To save the entered data, click Update.

One of the four connection types can be chosen in the Connection window:

- ✍ GPRS only. Only GPRS and EDGE (depends upon the operator) technology will be used for connection to the Internet. If the operator does not provide these services, modem will not be able to connect to the Internet.
- ✍ GPRS preferred. Modem will always use GPRS/EDGE whenever it will be possible. If the operator does not provide this service, another high speed connection type will be used.
- ✍ HSDPA only. Only HSDPA technology will be used, if the operator does not provide this service, the modem will not be able to connect the Internet.
- ✍ HSDPA preferred. Modem will always use HSDPA whenever it will be possible. When GPRS is not provided, another high speed connection type will be used.

Before connecting to the Internet, check the GSM signal quality (see the indicator located on the right side of the Modem Control Tool program). Also check if the Network indicator is green. If the signal indicator shows low signal quality, place the modem to more open place, where the signal will not be blocked by thick walls or ceilings. Placing the device near window may also help.

Modem will start connecting to the Internet after the Connect picture is clicked in the main MCT window (if the APN, user name and password were entered correctly).

If the ModemUSB/H7.2 modem connects to the Internet, red indicator denoted as *Disconnected* on the left corner of MCT window turns green and will be denoted as *Connected*.


In order to disconnect from the Internet, click **Disconnect** in the main Modem Control Tool window.

In application tab – you can select preferred language of MCT and check statistic of the transferred data.
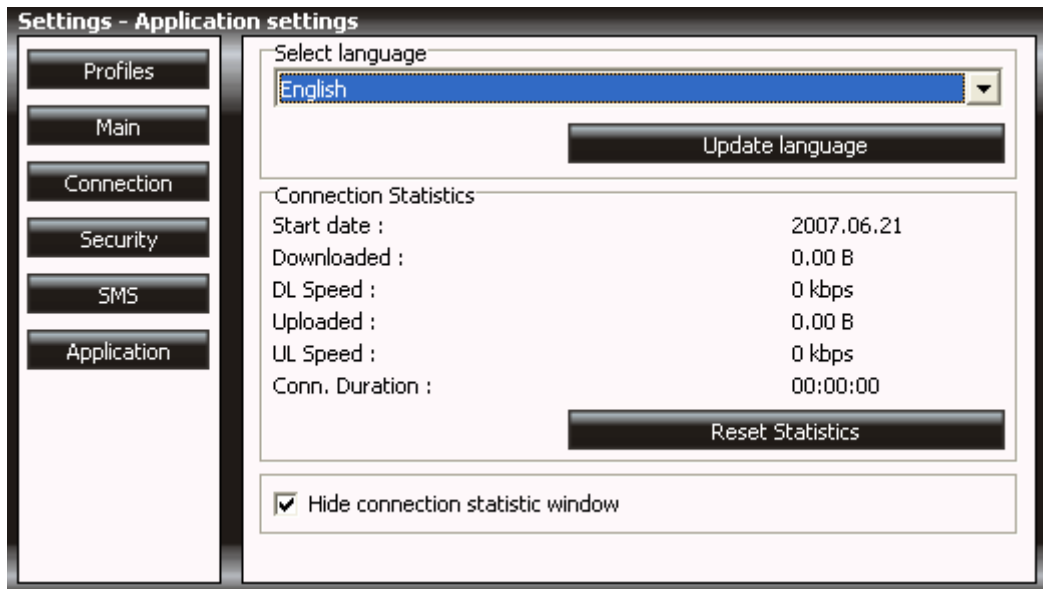
7.5.3 Sending SMS

With ModemUSB/H7.2 you can send and receive SMS messages and browse in the Internet at the same time! In order to send SMS, click **SMS** in the main MCT window. A **Short message service** window will open.
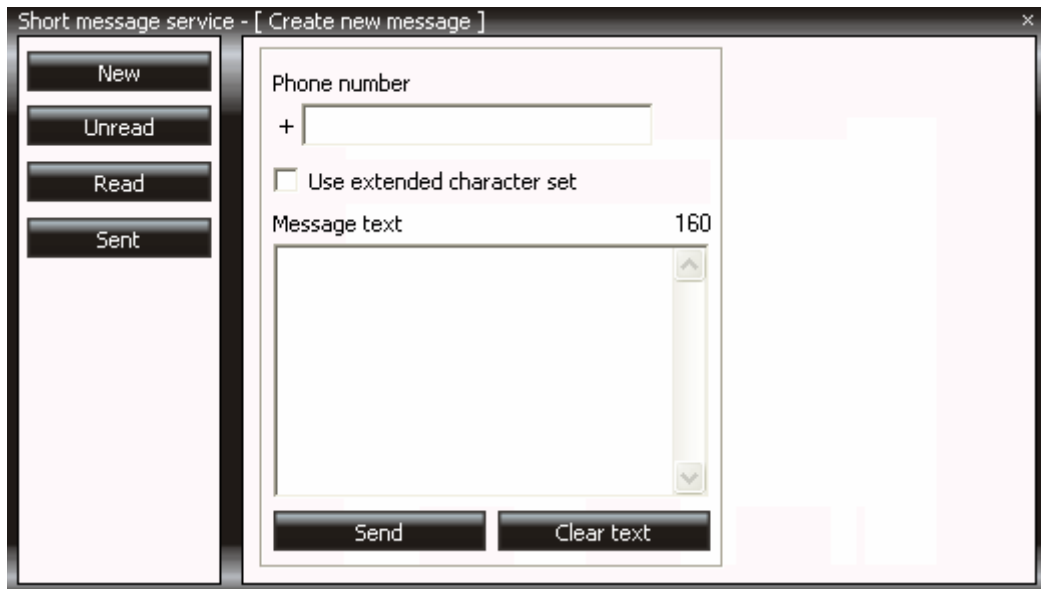
In the opened window, enter the receiver's phone number in the **Phone number** field. "+"is entered automatically. The message text is entered in the **Message text** field. Message can be of 160 characters. If you tick the **Use extended character set**, you will be able to use specific symbols in your message, but the number of characters will be reduced to 70.

If you want to look for received, read or sent SMS messages, click **Unread**, **Read** or **Sent** in the **Short message service** window. If you want to forward or reply, double click on the message. A **Message** window will appear.
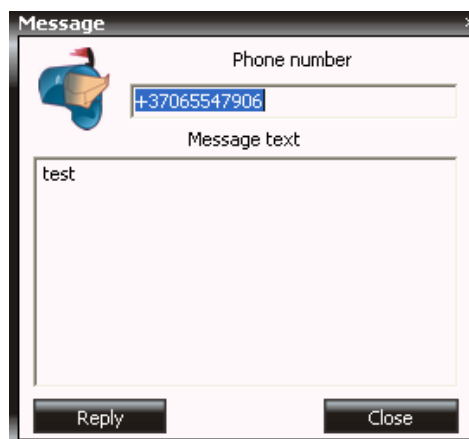
To make a reply to the message, click **Reply**. To close the window – **Close**.

7.5.4 Settings of ModemUSB/H7.2

There are few profiles available for the user to set

To set ModemUSB/H7.2 modem parameters or to change them, click **Settings** in the main Modem Control Tool window. If you click **Main** in the **Settings** window, you will be able to choose a modem from the list of modems installed in your PC.

If you click **Connection** in the **Settings** window, you will be able to change the ModemUSB/7.2 modem Internet connection parameters.

If you click **Settings → Security**, a **Security** window will open where you can enable or disable PIN code query. To set ModemUSB/H7.2 modem parameters or to change them, click **Settings** in the main Modem Control Tool window. If you click **Main** in the **Settings** window, you will be able to choose a modem from the list of modems installed in your PC.

If you click **Connection** in the **Settings** window, you will be able to change the ModemUSB/7.2 modem Internet connection parameters.

If you click **Settings → Security**, a **Security** window will open where you can enable or disable PIN code query.
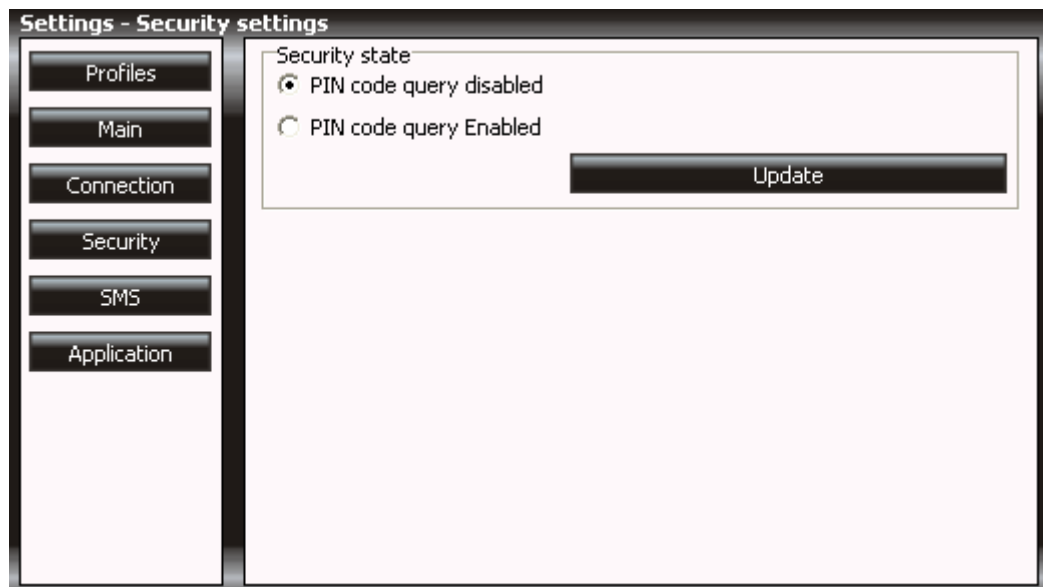

To enable PIN code query, choose **PIN Code Query Enabled** in **Security State** frame and click **Update.** A pop-up window will appear. Enter the PIN code of your SIM card in the **Insert Pin Code** field and click **OK**.
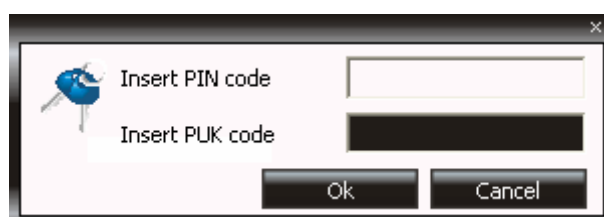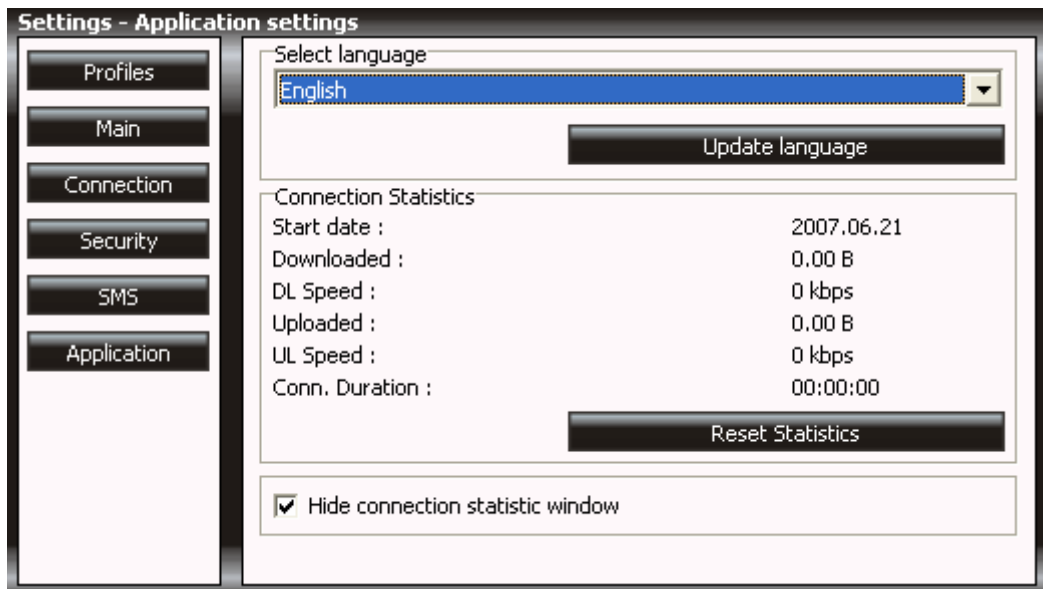

Now, the Modem Control Tool program will ask for the PIN code each time you connect the ModemUSB/H7.2 modem to your PC USB port

To disable PIN code query, choose **PIN Code Query Disabled** in **Security State** frame and click **Update**.
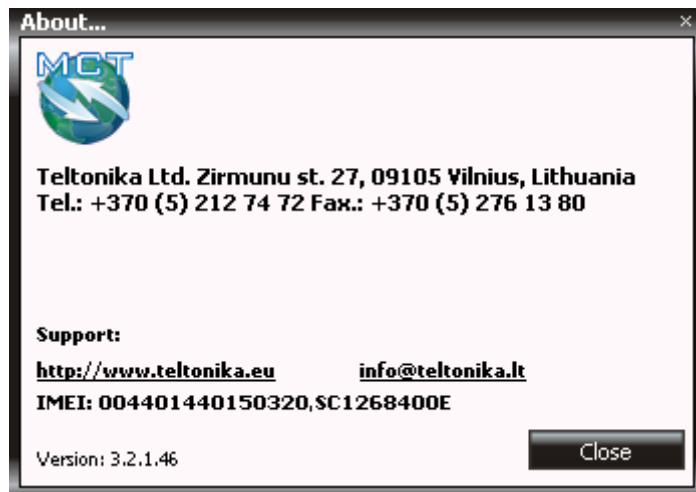
SMS center number is shown in **Settings → SMS**.
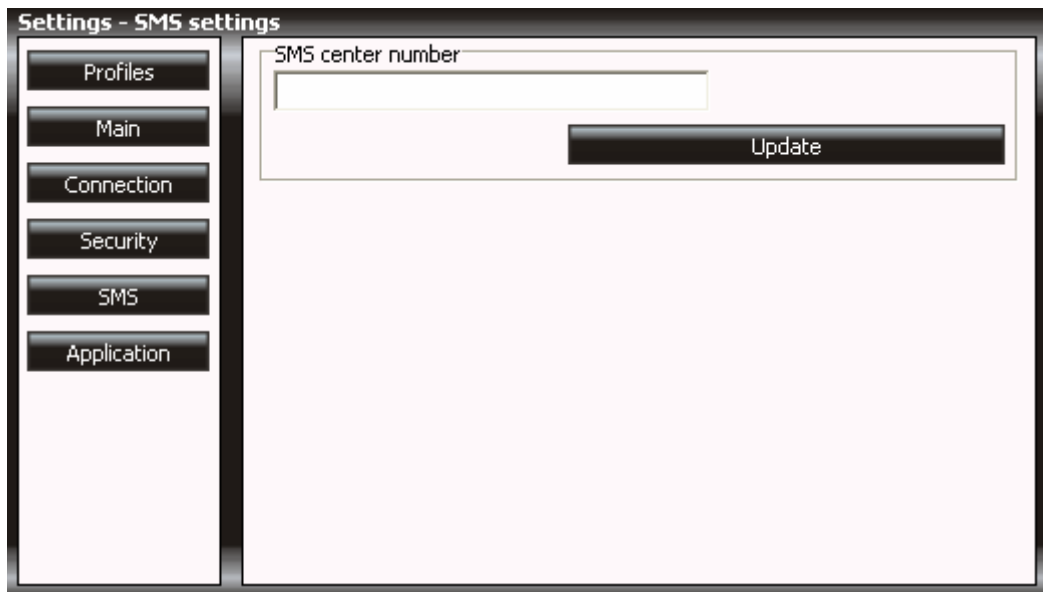
To change Modem Control Tool program language, go to **Settings → Application**. In **Application** window choose the language from **Set Language** field and click **Update Language**.
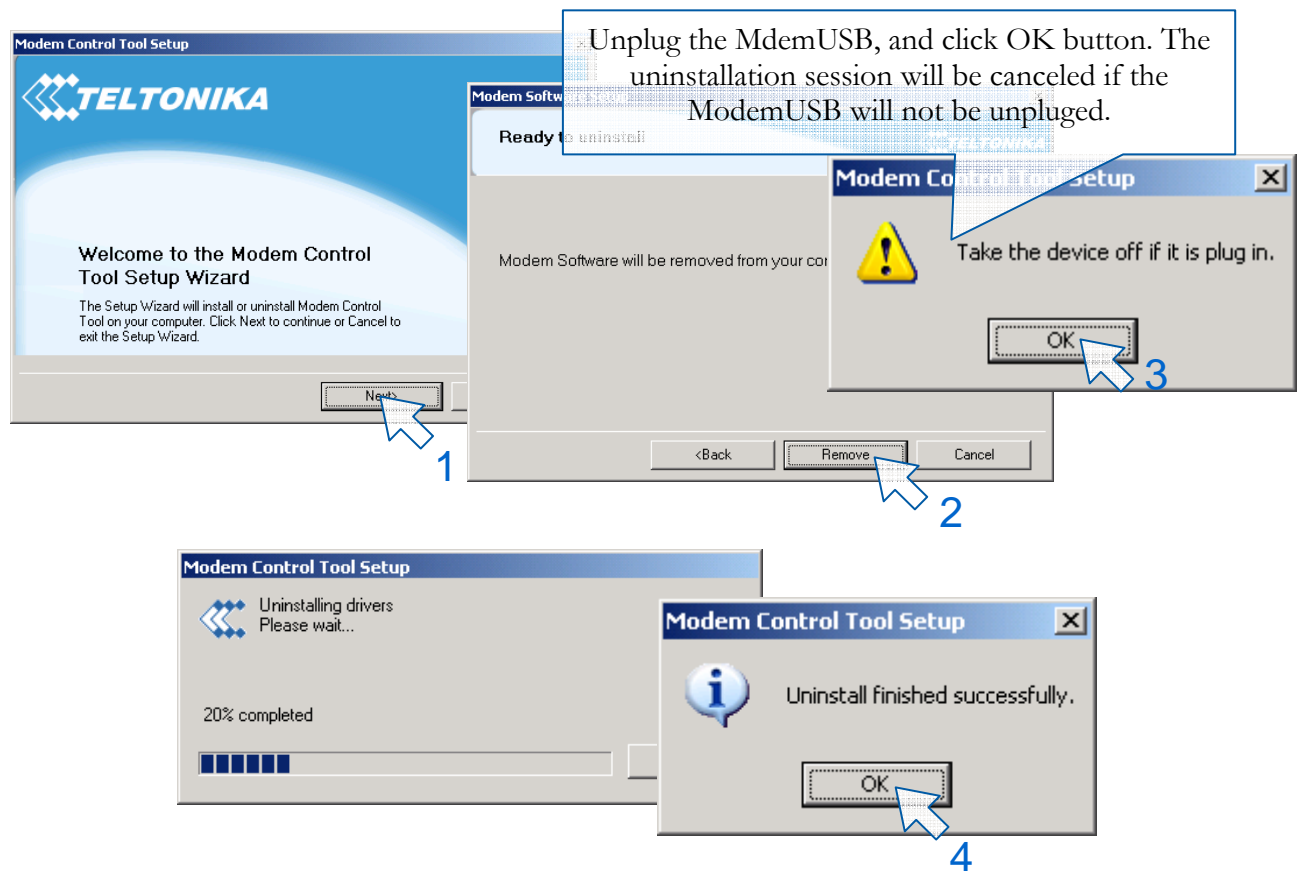

Click **About** to see the Modem Control Tool program version and other Information.

7.6   Uninstalling ModemUSB/H7.2

To uninstall ModemUSB/H7.2 modem, plug it off from the USB port of the PC, and go to **Start → Programs → Teltonika ModemUSB/H7.2 → Uninstall**. A uninstall window will appear.

Now the ModemUSB/H7.2 modem is completely removed from the operating system of your PC.

8. TECHNICAL SUPPORT

Problem: "Modem Control Tool" does not detect the modem.
Step 1: Check if the device is connected to the PC and its "Power" and "Status" LEDs are ON.
Step 2: Reboot the PC.
Step 3: Uninstall and then install the modem again by following all the steps described in this manual carefully

2. Cannot connect to the Internet.
Step 1: Check if the SIM card is inserted properly. If the "Status" LED is on and not blinking, check if the correct network parameters are set in Modem Control Tool program (Settings → Connection APN, user name, and password).
Step 2: Reboot the PC.
Step 3: Uninstall and then install the modem again by following all the steps described in this manual carefully

For further information, please read "ModemUSB/H7.2" Users Manual, on the CD, or on the WEB site (www.teltonika.com). If you face any problems related to the device, which you are not able to solve by yourself, please contact your local distributor they would be glad to help you.

9. ENDING

This sign on the package means that it is necessary to read the User Manual, which is on the CD, before starting using the device.

This sign on the package means that used electronic and electric equipment should be stored separately.

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