

TELTONIKA

ModemPCI G10 (PM1000)

User Manual

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ATTENTION



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



Service personnel may install driver of this product. We strongly recommend read this user manual before start installation.



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.

1 FOR YOUR SAFETY

In this document you will be introduced how to use Modem PCI G10 device safely. We suggest you to adhere to following recommendations to avoid any damage to person or property.

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

Modem PCI G10 is used for data transfer by GSM network. The modem is designed to be connected to a PC through PCI interface. By connecting the modem to a PC it is possible to connect to the Internet using GSM data transfer channel. To avoid user injures that could be caused by heat or electrical voltage it is important to follow safety requirements listed below.



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

The PC to which the Modem PCI G10 device is to be connected must have a PCI slot. Modem is supplied from +5V DC PCI interface.



The PC to which the device is connected shall comply with the requirements of standard EN 60950-1. Modem PCI G10 modem can be used on first (Personal Computer) safety class. It has to be fixed to PC chassis by 3mm screw and spacer.

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

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 dismantle the device and forward it to repair center 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 back up protection 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.

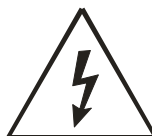


To turn off the modem, unplug the PC from the power supply.

- ↪ After installation the drivers restart your PC.
- ↪ 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 PC must be powered off while inserting or taking out the SIM card. If the SIM card will be inserted or taken out from the modem while the PC power is on – it may cause damage to the modem or the SIM card. In this case, the modem will not be replaced or repaired by the guarantee.
- ↪ The modem can be unplugged from the PC only when PC is powered off.

2 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.

3 BASIC INFORMATION

3.1 Introduction

Modem PCI G10 is a device designed for data transmission via GSM Network. Once a SIM card is inserted in the modem and the PC is powered on, you would be able to send SMS, access internet via GPRS/GSM networks (mobile networks). Modem PCI G10 supports the following data-bearers: CSD, GPRS, and SMS.

3.2 Legal Notice

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Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

3.3 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.

3.4 Acronyms

| | |
|---------------|--|
| APN | Access Point Name. |
| CSD | Circuit Switched Data. |
| GPRS | General Packet Radio Service. |
| GSM | Global System for Mobile communications. |
| 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. |

4 PACKAGE CONTENTS

Modem PCI G10 modem is packed in a box and contains all the accessories required for normal operation:

- ↖ Cardboard box.
- ↖ Modem PCI G10 modem.
- ↖ CD with User Manual and drivers.
- ↖ External GSM antenna (special orders only).
- ↖ 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.

5 TECHNICAL SPECIFICATION

5.1 Data transferring

The data type and data transfer speed depends on the service provided by your GSM operator. Modem PCI G10 supports the following GPRS data-bearers.

- ↖ 850/900/1800/1900 MHz.
- ↖ Power class 4 (2W) 850/900 MHz bands.
- ↖ Power class 1 (1W) 1800/19900 MHz bands.
- ↖ GPRS class 10.
- ↖ GPRS class B, type 1 MT.
- ↖ GPRS CS1 – CS4.
- ↖ CSD (up to 9.6 kbps)

5.2 Indication

One LED indicator is located on the side of Modem PCI G10. This LED indicates the operating mode and failure conditions of the modem. Modem operating modes are described in Table 1.

Table 1. Modem operating modes

| LED status | Description |
|--|--|
| LED is blinking shortly with long period | Modem is ready to use |
| LED is blinking chaotic | Modem is transferring data |
| LED is blinking periodical | No SIM card or no connection with operator |

5.3 System requirements:

- ↖ 133 MHz or faster PC processor.
- ↖ Windows98/ME/2000/2003/XP/Vista or Linux.

- ↺ At least 64 MB RAM.
- ↺ 10 MB available hard drive space.
- ↺ CD-ROM drive.
- ↺ PCI slot.

5.4 Operating systems

5.4.1 Windows2000/2003/XP/Vista

Automatic drivers and MCT (Modem Control Tool) installation. See “How to start” section.

5.4.2 Windows98/ME

Drivers can be installed manually from the CD (D:\Drivers\Win98_ME). New driver version can be downloaded from <http://www.moschip.com/html/MCS9820.html>. After driver installation new COM port appears. Modem should be installed manually as “Standard 33600 bps Modem” on created COM port. COM port speed is 115200 bps. Hardware flow control have to be enabled. In modem properties extra settings AT+CGDcont command should be initialized. For example: “AT+CGDcont=1,"IP", "banga”.

5.4.3 Linux

Manual serial device installation. Serial device should be detected and created with the baud base 921600. Modem can be accessible through created serial port at speed 115200 bps. The configuration of serial port is: 115200 bps, 8 bit, Stop bits – 1, Parity – none, Hardware flow control enabled.

Modem PCI G10 have been tested with following linux operating systems:

- Fedora (Core 2,3,4 and 5)
- Redhat9 (2.4.20)
- Suse 9 (32-bit and 64-bit)
- Slackware 10.0

5.5 Operating Parameters

Modem PCI G10 modem derives +5V DC power from the PCI bus, therefore, the PC must have a 32bit-PCI slot. The device does not require any external power supply for its operation.

Table 5.3.1. Modem operating parameters

| Parameter | Minimal | Nominal | Maximal | Units |
|--------------------------------|---------|---------|---------|-------|
| Power supply voltage | 4.5 | 5.0 | 5.5 | V |
| Power supply current | 50 | | 1000 | mA |
| Marginal operating temperature | 0 | | +55 | °C |
| Storage temperature | -20 | | +85 | °C |
| Modem weight | | 100 | | g |
| Relative air humidity | | | 85 | % |

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

5.6 Mechanical characteristics

Modem PCI G10 modem is a board, which is mounted into the motherboard of a PC. Board can be fixed to PC chassis by 3mm screw. The modem communicates with motherboard by PCI interface. External view and measurements (in mm) of the device are shown in Figure 1.

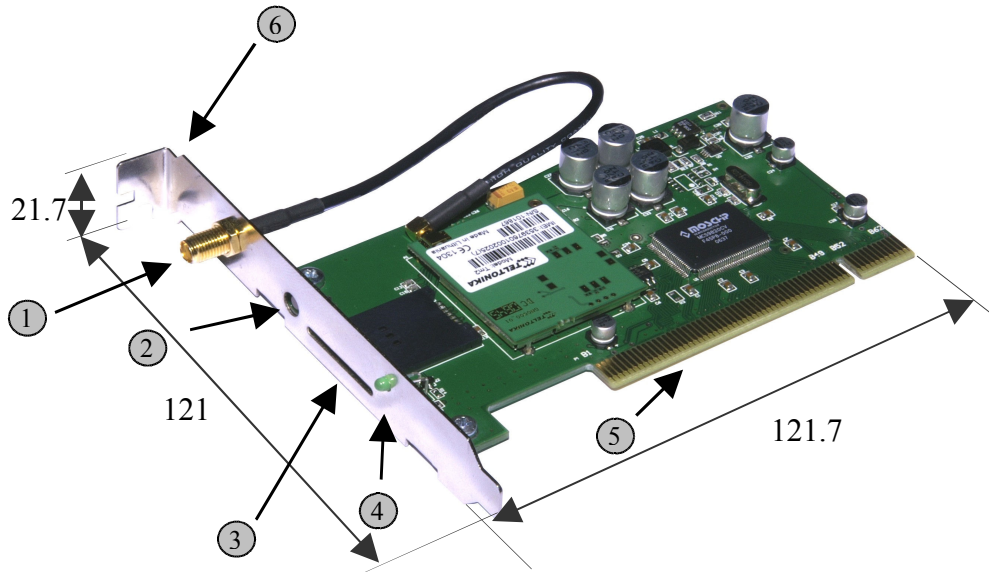


Figure 1. External view of Modem PCI G10

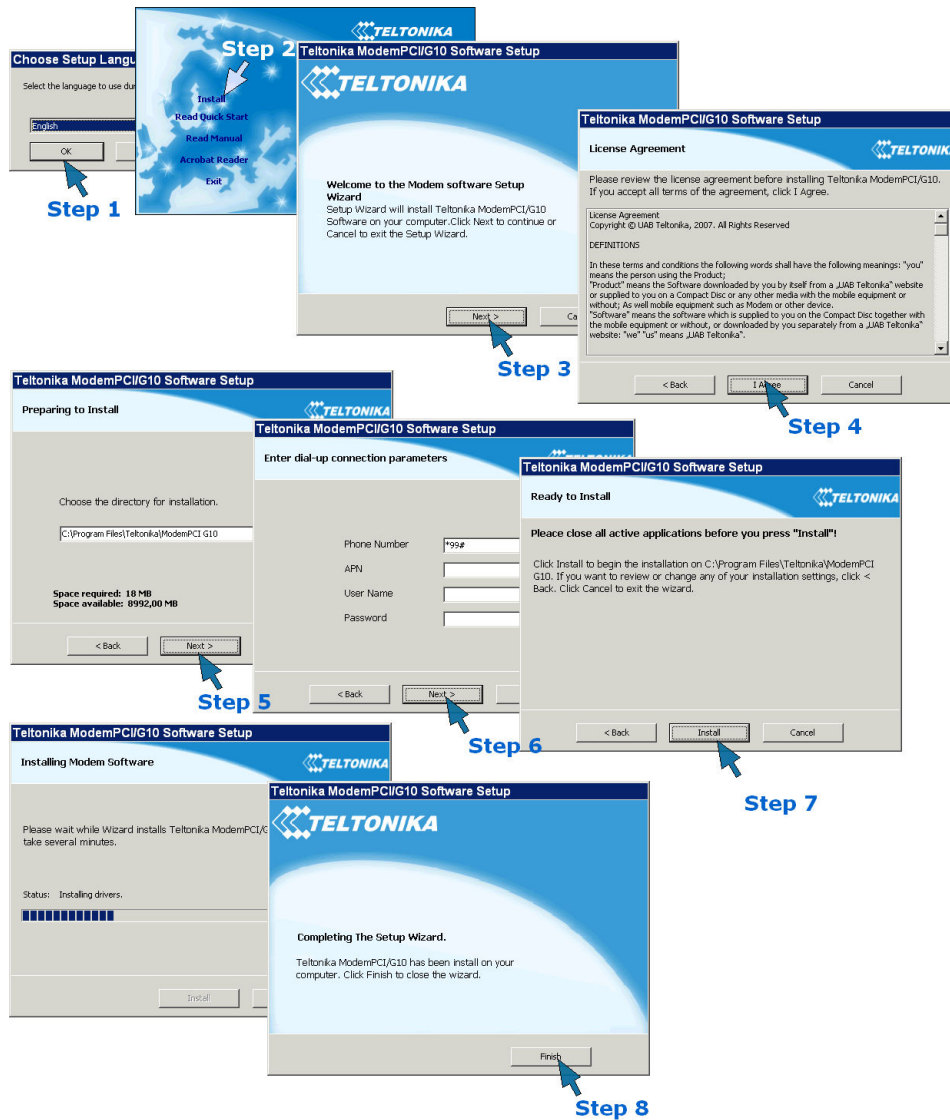
- | | |
|------------------------------|----------------------|
| 1. External antenna adapter. | 4. Indicator. |
| 2. "Reset" button. | 5. PCI adapter. |
| 3. Socket for SIM card. | 6. Ground connector. |

6 HOW TO START?

6.1 Driver and Software Installation

In order to install Modem PCI G10 drivers and software, do the following:

- ↗ Turn off your PC. Mount the Modem PCI G10 modem into the motherboard of a PC. Insert SIM card into the modem. Turn on your PC.
- ↗ Insert the CD into CD-ROM.
- ↗ Click Install in automatically opened window. The installation procedure of the Modem PCI G10 modem will begin.



More questions about UART bridge can be found on www.moschip.com/data/products/NM/FAQ_98XX.pdf.

6.2 Software description

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

6.2.1 Modem Control Tool Preparation to Work

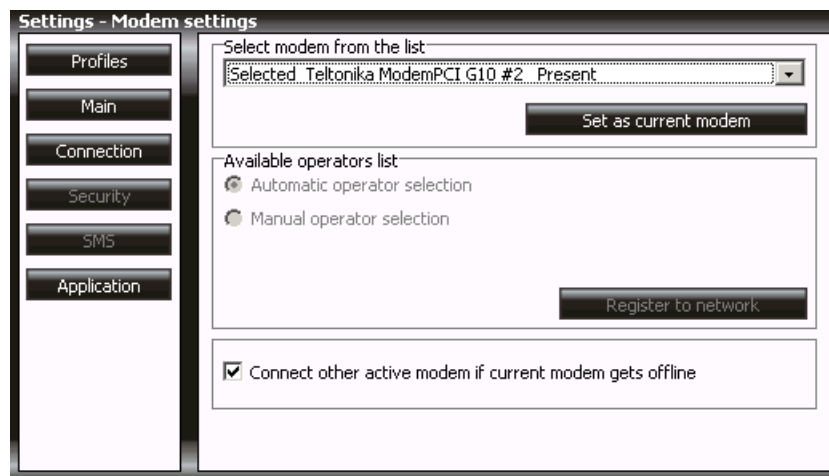
Before starting working with Modem Control Tool, make sure that:

- ↪ You have a GSM SIM card with activated data transfer service;
- ↪ TCP/IP protocol support is installed in the PC (Operating System);
- ↪ Modem PCI G10 is set to work – drivers and software are installed, SIM card is inserted, modem is connected to the PC, LED is blinking.

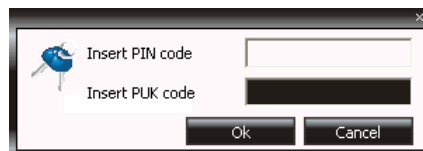
To run the Modem Control Tool, double click the MCT pictogram located on the desktop, or go to Start → Programs → Teltonika → ModemPCI G10 → Modem Control Tool PCI G10. If the program is run for the first time or there are more than one modems installed, a window asking to select modem from the list will appear.



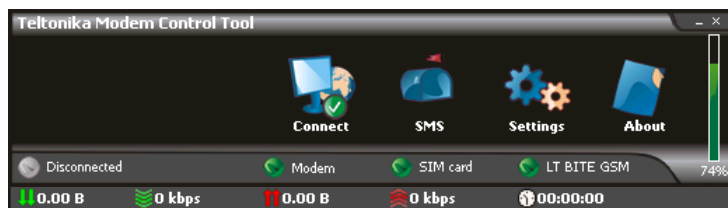
Click OK. In the opened window choose Teltonika Modem PCI G10 Present and click Set As Current Modem, and OK.



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.



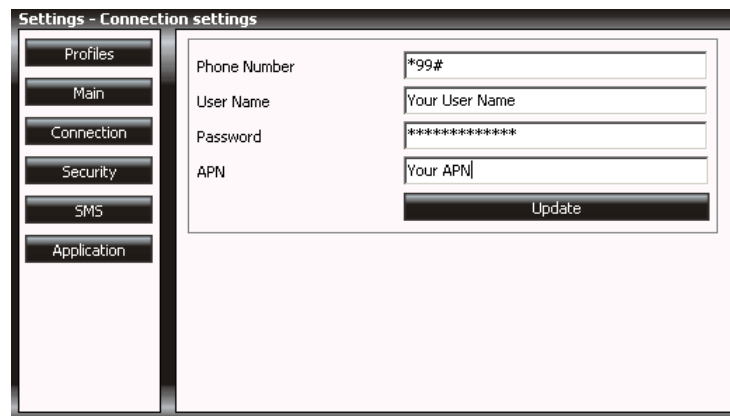
6.2.2 Connecting to Internet

One of the following connecting types can be used in order to connect to the Internet using the Modem PCI G10 modem:

- ↪ GPRS. In this case, you have to know the APN, and sometimes user name and password;
- ↪ CSD. In this case you have to know the phone number of the dial-up server.

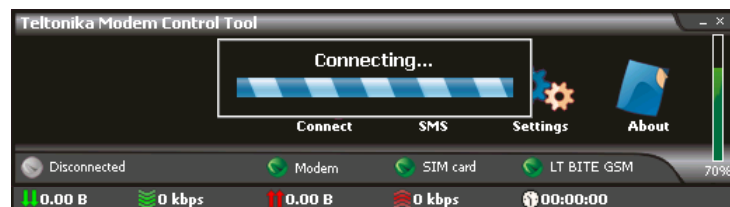
Note: APN, user name and password are provided by the GSM operator.

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.

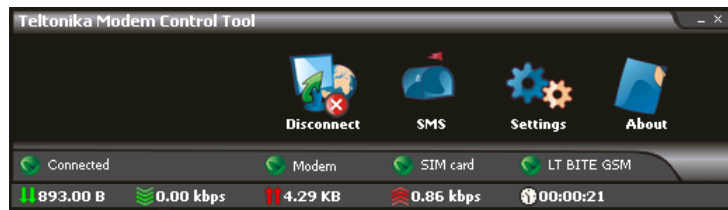


Before connecting to the Internet, check the GSM signal quality (see the indicator located on the right side of the Modem Control Tool program). Also check if the Network indicator is green. If the signal indicator shows low signal quality, place the modem to more open place, where the signal will not 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 symbol is clicked in the main MCT window (if the APN, user name and password were entered correctly).



If the Modem PCI G10 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.



When connected to the Internet, on the bottom side of MCT you will be able to monitor downloaded/uploaded traffic, upload/download speed time while connected.

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

6.2.3 Sending SMS

With Modem PCI G10 you can send and receive SMS messages. Before sending/receiving SMS messages you must disconnect from Internet! 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.

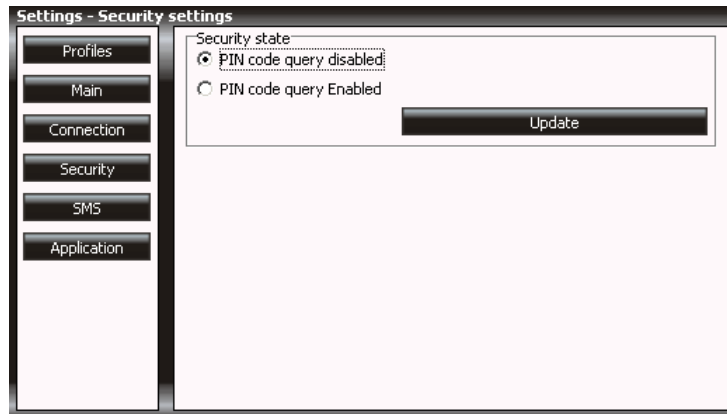


To make a reply to the message, click Reply. To forward – Forward. To close the window – Close. Settings of Modem PCI G10

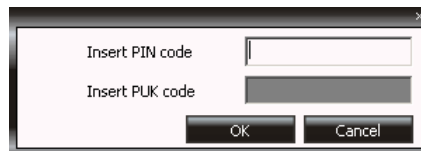
To set Modem PCI G10 modem parameters or to change them, click Settings in the main Modem Control Tool window. If you click Main in the Settings window, you will be able to choose a modem from the list of modems installed in your PC.

If you click Connection in the Settings window, you will be able to change the Modem PCI G10 modem Internet connection parameters.

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



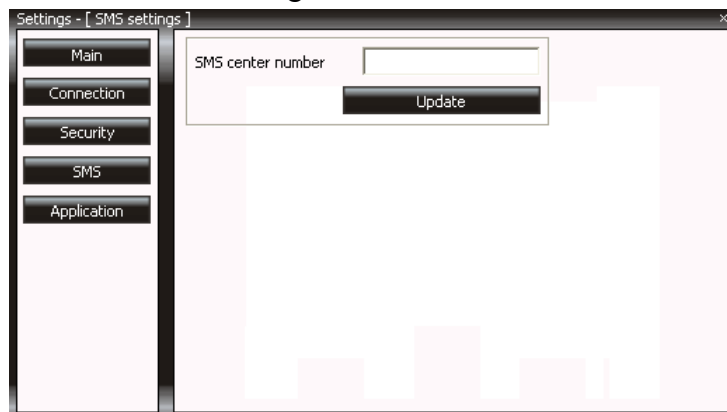
To enable PIN code query, choose PIN Code Query Enabled in Security State frame and click Update. A pop-up window will appear. Enter the PIN code of your SIM card in the Insert Pin Code field and click OK.



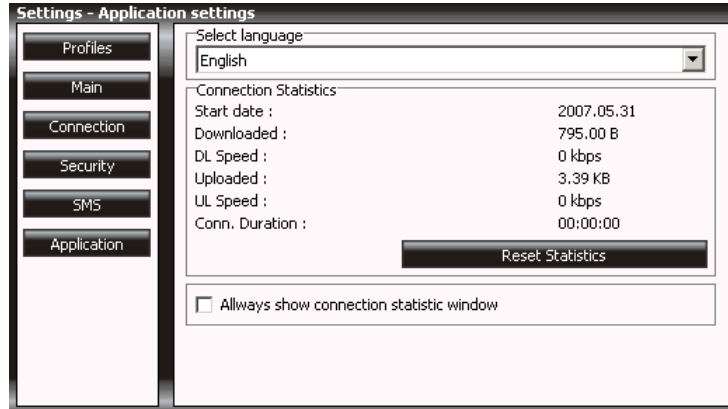
Now, the Modem Control Tool program will ask for the PIN code each time you turn on your PC.

To disable PIN code query, choose PIN Code Query Disabled in Security State frame and click Update.

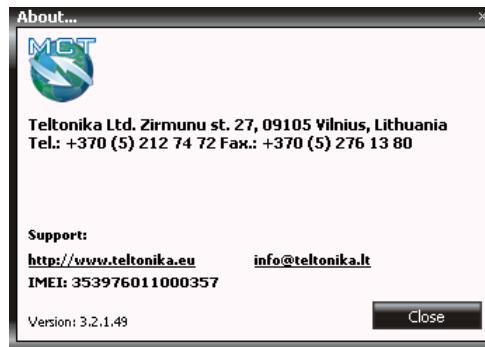
SMS center number is shown in Settings → SMS.



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.



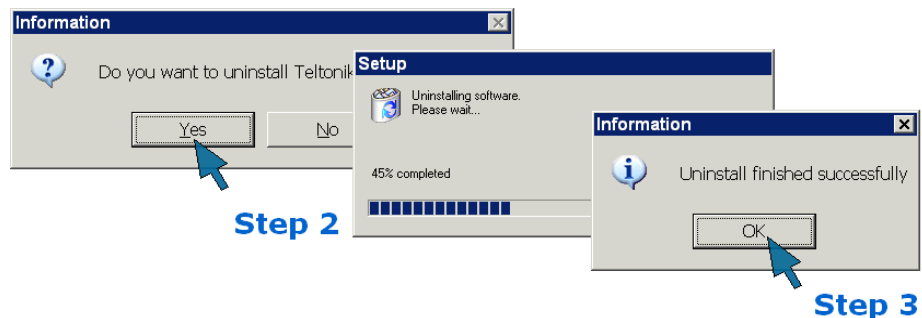
Click About to see the Modem Control Tool program version and other Information.



6.3 Uninstalling Modem PCI G10

To uninstall Modem PCI G10 modem, go to:

Step 1. Start → Programs → Teltonika Modem PCI G10 → Uninstall.



Now the Modem PCI G10 modem is completely removed from the operating system of your PC.

7 TECHNICAL SUPPORT

Unforeseen cases and alternative modes

7.1 Modem Control Tool does not detect the modem.

Solution: Check if the device is inserted in the motherboard and its “Status” LED is ON. Reboot the PC.

7.2 Cannot connect to the Internet.

Solution: Check if the SIM card is inserted properly. Check if antenna is plugged in. Check if the correct network parameters are set in Modem Control Tool program (Settings → Connection → APN, User Name, and Password). Reboot the PC.

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.

8 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.