

# FALCOM TWIST-USB-Set



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## Version history

Version Nr.	Author	Changes
1.00	S. Mohamad	Initial version
1.01	S. Mohamad	Setup.exe only for Windows <sup>®</sup> 2000 and Windows <sup>®</sup> XP (page 8)

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## 0 Preliminary notes

### 0.1 General

Thank you very much for deciding to buy the Falcom TWIST-USB GPRS-Modem.

This User Manual contains all information you require to use the Falcom TWIST-USB GPRS-Modem.

Please read this User Manual very carefully to avoid mistakes and to make optimal use of the modem.

### 0.2 Alert symbols used



Alerts the user to potential safety risks or damage of the application software



Indicates important information and tips

### 0.3 Scope of delivery

Parts	Quantity
Modem (Basic unit)	1
Antenna	1
USB data cable	1
Setup CD: Driver, Documentation and Cellular Phone Software "BVRP Mobile Phone Tools <sup>®</sup> "	1
Headset	1
Modem-Cradle	1
Binder	2

**Falcom TWIST-USB GPRS modem**



**GSM antenna**



**USB cable (2 m)**



**Headset**



**Cradle + Binder**



**Driver, documentation and application CD**



## 1 Technical specifications

Communications standard	
GSM 900/1800 Phase 2/2+ GPRS Class B, multi-slot class 8 with MC35 based engine Dual Band Modem	
GPRS and GSM Services	
Telephony	Emergency Calls
SMS	MO, MT, Cell Broadcast Return Call Message
Data	300 ... 14400BPS, non-transparent, V.21, V.22, V.23, V.22 up to V.26, V.32, V.34, V.110
FAX	Group3/Class 2
Supplementary services	
Echo Cancellation, Call Forwarding, Phonebook, Multiparty, Call Baring, Fixed Dialling Number, Call waiting and Call hold Call Line Identity, Advance of Charge, USSD	
Electrical Parameter	
Power supply	through USB-Port
Current consumption	<p><b>GSM 900:</b></p> <ul style="list-style-type: none"> <li>• 65 mA/5 V Power Mode 1 (idle)</li> <li>• 385 mA/5 V Power Mode 2 (Power Level 5; max.)</li> <li>• 308 mA/5 V Power Mode 3 (Power Level 7)</li> </ul> <p><b>GPRS 900:</b></p> <ul style="list-style-type: none"> <li>• 66 mA/5V Power Mode 1 (idle)</li> <li>• 184 mA/5V active</li> <li>• 320 mA/5V (during data transfer)</li> </ul> <p><b>GSM 1800:</b></p> <ul style="list-style-type: none"> <li>• 66 mA/5 V Power Mode 1 (idle)</li> <li>• 308 mA/5 V Power Mode 2 (Power Level 3; max.)</li> <li>• 237 mA/5 V Power Mode 3 (Power Level 7)</li> </ul>

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RF-Parameter	GSM 900: <-104 dBm GSM 1800: <-100 dBm
<b>Interfaces</b>	
USB 1.1	USB-Connector
2,5mm audio socket (4-poles)	Audio (Headset/Handset) Power Output, Control Signals
Falcom Dual-Band GSM-Antenna or SMB-Connector for other GSM-Antenna	
LED bar	LED-Indicators
SIM Card reader	Small SIM Card (3V only)

<b>Ambient temperature</b>	
Operating temperature	-20 °C up to +55 °C
Storage temperature	-20 °C up to +70 °C
<b>General specifications</b>	
Dimensions (L x B x H)	114 x 52 x 27 (without antenna) 118 x 52 x 56 (with Falcom Dual Band Antenna)
Weight	92 g
<b>Accessories</b>	
Cradle	
Antenna GSM 900/1800 (1900) Dual Band Antenna with SMB plug connector	
Standard USB Data cable	2 m

Setup CD for Windows® 2000 and Windows® XP with current driver and driver application as well as an application software (BVRP <b>Mobile Phone Tools</b> ® )	
Headset with 2,5mm plug (4-poles)	
Binder	For fasten the Modem on the cradle in case of operating in a vibrating Milieu
<b>Modem certification</b>	
CE label according to CE 0682	

## 2 Security

IMPORTANT FOR THE EFFICIENT AND SAFE OPERATION OF  
YOUR GSM MODEM READ THIS INFORMATION BEFORE USE !

Your GPRS modem is one of the most exciting and innovative electronic products ever developed. With it you can stay in contact with your office, your home, emergency services, and others, wherever service is provided.

### 2.1 GENERAL

Your modem utilises the GPRS standard for cellular technology. GPRS is a newer radio frequency («RF») technology than the current GSM and FM technology that has been used for radio communications for a couple of years. The GPRS standard has been established for use in the European community and elsewhere. Your modem is actually a low power radio transmitter and receiver. It sends out and receives radio frequency energy. When you use your modem, the cellular system handling your calls controls both the radio frequency and the power level of your cellular modem.

### 2.2 EXPOSURE TO RF ENERGY

There has been some public concern about possible health effects of using GPRS and GSM devices. Although research on health effects from RF energy has focused for many years on the current RF technology, scientists have begun research regarding newer radio technologies, such as GSM. After existing research had been reviewed, and after compliance to all applicable safety standards had been tested, it has been concluded that the product is fit for use. If you are concerned about exposure to RF energy there are things you can do to minimise exposure. Obviously, limiting the duration of your calls will reduce your exposure to RF energy. In addition, you can reduce RF exposure by operating your cellular modem efficiently by following the below guidelines.

### 2.3 EFFICIENT MODEM OPERATION

For your modem to operate at the lowest power level, consistent with satisfactory call quality: If your modem has an extendible antenna, extend it fully. Some models allow you to place a call with the antenna retracted. However your modem operates more efficiently with the antenna fully extended. Do not hold the antenna when the modem is «IN USE». Holding the antenna affects call quality and may cause the modem to operate at a higher power level than needed.

## 2.4 ANTENNA CARE AND REPLACEMENT

Do not use the modem with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn may result. Replace a damaged antenna immediately. Consult your manual to see if you may change the antenna yourself. If so, use only a manufacturer-approved antenna. Otherwise, have your antenna repaired by a qualified technician. Use only the supplied or approved antenna. Unauthorised antennas, modifications or attachments could damage the modem and may contravene local RF emission regulations or invalidate type approval.

## 2.5 DRIVING

Check the laws and regulations on the use of cellular devices in the area where you drive. Always obey them. Also, when using your modem while driving, please: give full attention to driving, pull off the road and park before making or answering a call if driving conditions so allow. When applications are prepared for mobile use they should fulfil road-safety instructions of the current law!

## 2.6 ELECTRONIC DEVICES

Most electronic equipment, for example in hospitals and motor vehicles is shielded from RF energy. However RF energy may affect some malfunctioning or improperly shielded electronic equipment.

## 2.7 VEHICLE ELECTRONIC EQUIPMENT

Check your vehicle manufacturer's representative to determine if any on board electronic equipment is adequately shielded from RF energy.

## 2.8 MEDICAL ELECTRONIC EQUIPMENT

Consult the manufacturer of any personal medical devices (such as pacemakers, hearing aids, etc...) to determine if they are adequately shielded from external RF energy. Turn your modem **OFF** in health care facilities when any regulations posted in the area instruct you to do so. Hospitals or health care facilities may be using RF monitoring equipment.

## 2.9 AIRCRAFT

Turn your modem **OFF** before boarding any aircraft. Use it on the ground only with crew permission.  
Do not use in the air.

To prevent possible interference with aircraft systems, Federal Aviation Administration (FAA) regulations require you to have permission from a crew member to use your modem while the plane is on the ground. To prevent interference with cellular systems, local RF regulations prohibit using your modem whilst airborne.

## 2.10 CHILDREN

Do not allow children to play with your modem. It is not a toy. Children could hurt themselves or others (by poking themselves or others in the eye with the antenna, for example). Children could damage the modem, or make calls that increase your modem bills.

## 2.11 BLASTING AREAS

To avoid interfering with blasting operations, turn your unit **OFF** when in a «blasting area» or in areas posted: «turn off two-way radio». Construction crew often use remote control RF devices to set off explosives.

## 2.12 POTENTIALLY EXPLOSIVE ATMOSPHERES

Turn your modem **OFF** when in any area with a potentially explosive atmosphere. It is rare, but your modem or its accessories could generate sparks. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death and damages to property. Areas with a potentially explosive atmosphere are often, but not always, clearly marked. They include fuelling areas such as petrol stations; below decks on boats; fuel or chemical transfer or storage facilities; and areas where the air contains chemicals or particles, such as grain, dust, or metal powders. Do not transport or store flammable gas, liquid, or explosives, in the compartment of your vehicle which contains your modem or accessories. Before using your modem in a vehicle powered by liquefied petroleum gas (such as propane or butane) ensure that the vehicle complies with the relevant fire and safety regulations of the country in which the vehicle is to be used.

## 2.13 NON-IONISING RADIATION

As with other mobile radio transmitting equipment, users are advised that for satisfactory operation and for the safety of personnel, it is recommended that no part of the human body be allowed to come too close to the antenna during operation of the equipment. The radio equipment shall be connected to the antenna via a non-radiating 50  $\Omega$  coaxial cable. The antenna shall be mounted in such a position that no part of the human body will normally rest close to any part of the antenna. It is also recommended to use the

equipment not close to medical devices as for example hearing aids and pacemakers.

## **2.14 Safety standards**

**THIS CELLULAR MODEM COMPLIES WITH ALL APPLICABLE RF SAFETY STANDARDS.**

This cellular modem meets the standards and recommendations for the protection of public exposure to RF electromagnetic energy established by governmental bodies and other qualified organisations, such as the following:

Directives of the European Community, Directorate General V in Matters of Radio Frequency Electromagnetic Energy.



## **CAUTION: Important notes for using Falcom TWIST-USB GPRS modem**

### **1. Disconnect the USB cable from the modem and/or the PC:**

Before you disconnect the USB cable from the USB port (modem and/or PC) please switch off the modem from the control panel “File Close” (see chapter 4.1.2.1 File menu item)

### **2. Remove/ Change the SIM card:**

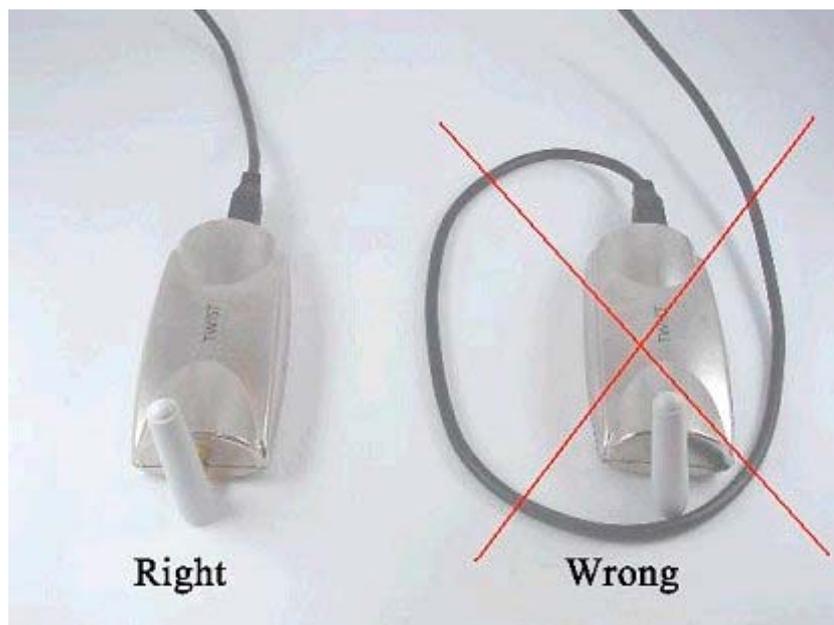
The Falcom TWIST-USB modem must be switched off before you remove or change the SIM card (see chapter 4.1.2.1 File menu item to switch off the modem).

### **3. Operating more than one TWIST-USB at the PC (e.g.: USB-Hub):**

The distance between the GSM antennas of the modems must not be less than 1,5 m (RF-Interference).

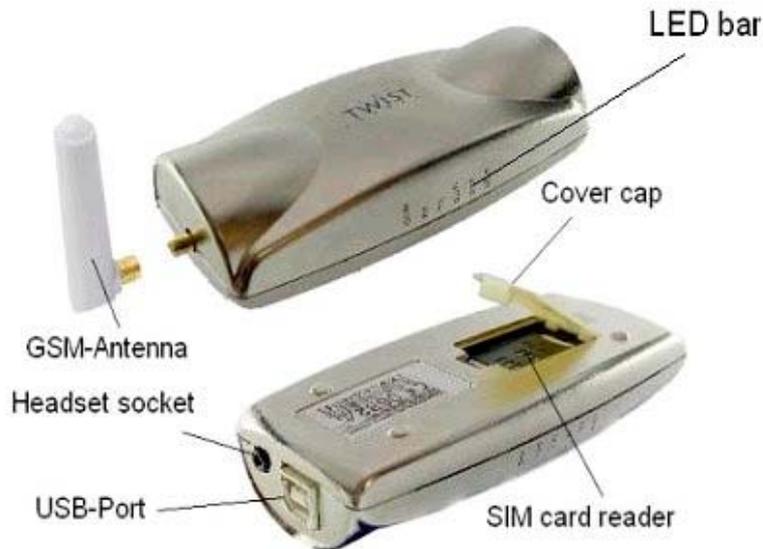
### **4. Connecting the USB cable to the FALCOM TWIST-USB and to the PC:**

Ensure a maximum distance between the USB cable and the GSM antenna (see below picture)



## 3 Technical description

### 3.1 Parts and brief description



**Fig. 1: GSM-Modem Falcom TWIST-USB**

With the Falcom TWIST-USB GPRS modem, connections can be made to the GSM 900/1800 mobile radio network via the computer and the supplied application software (BVRP **Mobile Phone Tools**<sup>®</sup>).

The following telecommunication services are available:

- making and receiving voice calls
- sending and receiving short messages
- data connections V32 (protocol)
- class 1/2 fax connections
- GPRS Class B, multi-slot class 8 with MC35 based engine

All technical components required to establish the above communication links are integrated in the Falcom TWIST-USB. The USB1.1 port is connected to the PC by the USB cable. The internal SIM card reader serves for holding the SIM card given to you by your provider, and it is closed by a cover cap. To make telephone calls you require suitable application software BVRP **Mobile Phone Tools**<sup>®</sup> or you can use a Terminal-Software like Hyperterminal<sup>®</sup>. Plug the headset in the headset socket. The parts and accessories of the Falcom TWIST-USB GPRS could be seen in the table in chapter **0.3 Scope of delivery**.

### 3.2 LED bar as an indicator on the Falcom TWIST-USB

LED	Colour	Function
USB	Yellow	<b>USB-Power indication</b> weak brightness: USB-Voltage is supplied Full brightness: Device is detected at the USB-Port
STA	Red	<b>Status-LED</b> Flashing 100ms: USB-New start Flashing 200ms: USB-Voltage is missing Flashing 400ms: USB-Enabled is missing (Initialisation failure) LED off: USB OK
DCD	Yellow	Indicator DCD: Lights during data connection
TX	Red	Data TX: Indicator for data flow in sender direction
RX	Green	Data RX: Indicator for data flow in receiver direction
GSM	Red	<b>Registration in GSM-Network</b> Slowly flashing: Registered in Network Fast flashing: Not registered

**Table 1: LED-Indicators on Falcom Twist-USB GPRS modem**



To use data and fax transmission, suitable software must be installed in the computer (e. g. BVRP **Mobile Phone Tools**<sup>®</sup>, **Microsoft Fax**<sup>®</sup> or similar).



A suitable antenna is the dual-band antenna supplied with the modem or a separate dual-band antenna with SMB plug which can be connected to the antenna socket.



When using the audio headset, we recommend using a remote GSM aerial\* to prevent interference radiation.

\* Order number of the remote GSM aerial is ANT-001 (FME) + adapter cable KA08

## 4 Start-up

### 4.1 Basic installation



**Attention:** In the following steps (**fig. 3** up to **fig. 11**) it is not allowed to connect the modem to the USB-Port of the PC, otherwise a failure in the driver installation could occur.



**Fig. 3: Installing the GSM antenna**

Open the cover cap on the underside of the modem (see fig. 4)



**Fig. 4: Loading the SIM card step 1**

Push the SIM card reader with the help of a screw driver in the direction of the marked arrow (see fig. 5).



**Fig. 5: Loading the SIM card step 2**

Flap the holder upwards.

Insert the SIM card into the SIM card holder with the contact surface facing down and the flattened side at the top left (see fig. 6).



**Fig. 6: Loading the SIM card step 3**

Press the holder down and engage it.

Close the opening with the cover cap.

The SIM card is removed in the inverse steps of loading it.



In general, it is not allowed to insert/change the SIM card into/from the TWIST-USB GPRS when the modem is connected to the PC, otherwise the SIM card could be damaged.

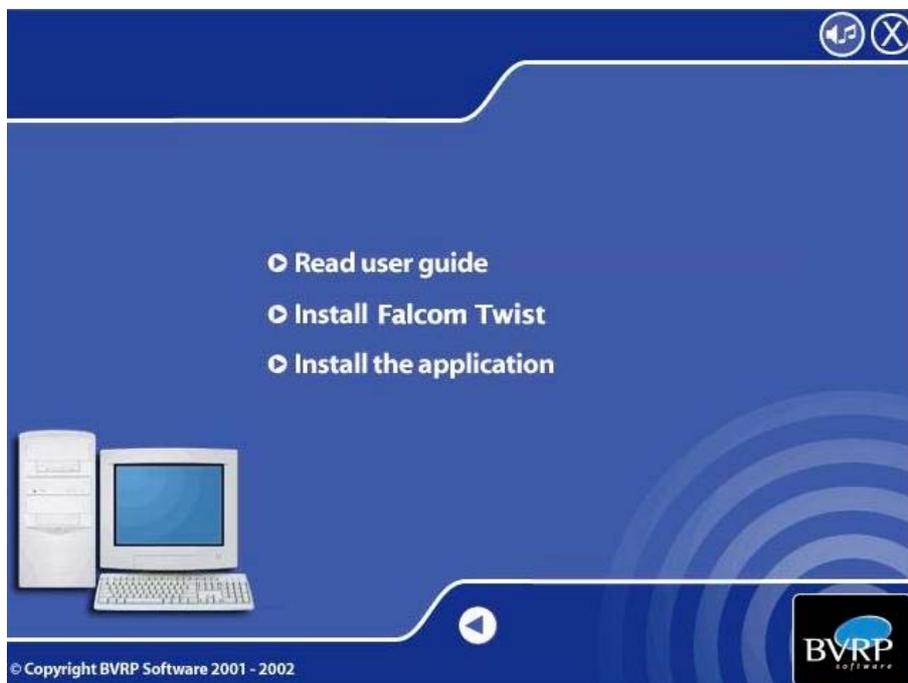
Insert the headset with the 2,5mm 4-pin connector in the headset socket of the modem (see fig. 7).



**Fig. 7: Headset connector**

#### 4.1.1 Installation of driver and driver application

- Load the installation CD in the CD-drive
- A start-up screen appears automatically on the Monitor of the PC (see fig. 8)



**Fig. 8: Start-up screen**

- 1<sup>st</sup> step: Go to the “**Read user guide**” in the start-up screen and read it carefully
- 2<sup>nd</sup> step: Select “**Install Falcom Twist**” in Start-up menu. Please follow the installation steps from figure 9 up to figure 15. Driver and “Control Panel” will be installed . Reboot the computer if needed.
- 3<sup>rd</sup> Step: Select “Install the application”. This application is a software called “**BVRP Mobile Phone Tools**® ” .
- 4<sup>th</sup> step: After following the installation instructions, exit the install screen.
- Note: For more information about this application it is recommended to start the software and to go to the **menu > Help**.



If the Setup detects a previous driver version, please follow the steps in chapter 4.2 then 4.1.1

Click **Next** (see fig. 9)



**Fig. 9: Installation program Controlpanel and Driver Falcom Twist USB - Step 1**

Select **B**rowse... to define the required program path.  
Click **N**ext (see fig. 10).



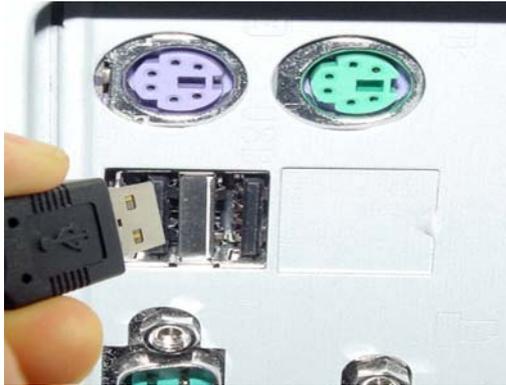
**Fig. 10: Installation program Controlpanel and Driver Falcom Twist USB – Step 2**

Click **Finish** (see fig. 11).



**Fig. 11: Installation program Controlpanel and Driver Falcom Twist USB - Step 3**

Connect the USB-Data cable to the PC (see fig. 12)



**Fig. 12: USB-Port of the PC**

Connect the USB-Data cable to Falcom Twist-USB (see fig. 13)



**Fig. 13: USB-Port of the modem**

The following window displays



Then click **Yes** or **OK** (see fig. 14)



**Fig. 14: Installation program Controlpanel and Driver Falcom Twist USB – Step 4**

The following window appears for a few seconds (see fig. 15)



**Fig. 15: The installation procedure is completed**

When the driver and the driver application have been successfully installed, an icon is displayed on the task bar and a window opens, which prompts you to enter the personal identification number „PIN“ of the inserted SIM card (see fig. 16).



**Fig. 16: Window for enter the PIN number**

Enter the PIN number and confirm with **OK**.

Save PIN	If you select the option “ <b>Save Pin</b> ” the PIN-number would be saved in the system
----------	--

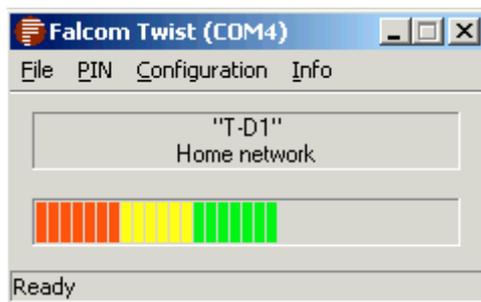


Saving the PIN is a safety feature to protect the modem from use by an unauthorized person. If a wrong PIN is entered 3 times in succession, the SIM card will be deactivated. When this happens, the SIM card can only be released by the PUK (super PIN) number supplied by the provider.

The red LED indicator “GSM” on the LED bar of the modem flashes from fast to slowly after approximately 5 seconds. The modem is registered (see chapter 3.2 LED bar as an indicator on the Falcom TWIST-USB).

#### 4.1.2 Display window

Mouse-click the task bar icon to open the display window with information about the status of the modem on the desktop (see fig. 17)



**Fig. 17: Status of the modem**

The display window menu contains the following functions:

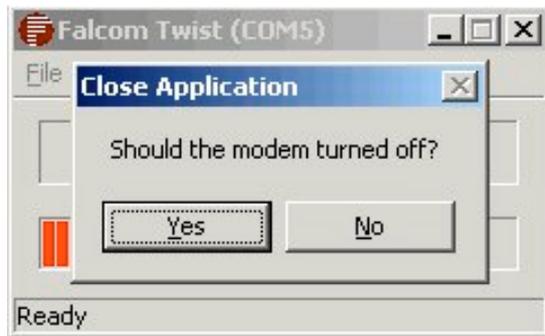
##### 4.1.2.1 File menu item



**Fig. 18: File menu item**

The **File** menu contains the **Close** function (see fig 18).

The **Close** function closes the display window and pits it in the task bar. The user is prompted to select **Yes** or **No** for **turning off** the modem (see fig. 19)



**Fig. 19: Close Application**

#### 4.1.2.2 PIN menu item

The PIN menu item contains the functions **Enter PIN** and **Delete PIN** (see fig. 20)



**Fig. 20: PIN menu item**

The function **Enter PIN** (see fig. 16) prompts the user to enter his personal identification number and confirm the entry. The function **Delete PIN** (see fig. 20) deletes the PIN in the registration of MS Windows<sup>®</sup>. After the PIN is deleted, it could be entered again with every new start of the application.



The function **Delete PIN** is only active when **Save PIN** has been selected in the PIN prompt window (see fig. 16)

#### 4.1.2.3 Configuration menu item

The **Configuration** menu item provides the functions **SMS Settings**, **Options** and **Reinitialisation** (see fig. 21)



**Fig. 21: Configuration menu item**

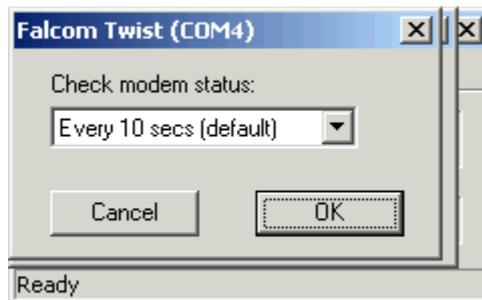
The number displayed in the **SMS Settings** (see fig. 22) function window is the telephone number of the SMS Service Center of your network provider. This number is permanently stored on the SIM card.



**Fig. 21: SMS Settings**

In the window of the function **Options** (see fig. 22) the „modem check function“ is set in the field **Check modem status** (see fig. 23). The status can be checked for:

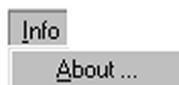
- Network in which the user has logged in
- Whether the user has logged in
- Field strength of the network



**Fig. 23: Options**

#### 4.1.2.4 Info menu item

Clicking **about** displays information about the modem, like manufacturer and version of the driver application (see fig. 24 and 25).



**Fig. 24: Info menu item**



**Fig. 25: Info menu item**

## 4.2 Detecting previous driver version during installation

Insert the with the modem delivered CD in the CD drive.

If the Setup detects a previous version, the following window appears (see fig. 26). To avoid installation troubles, it is recommended to uninstall the previous driver version if you click **Yes**.



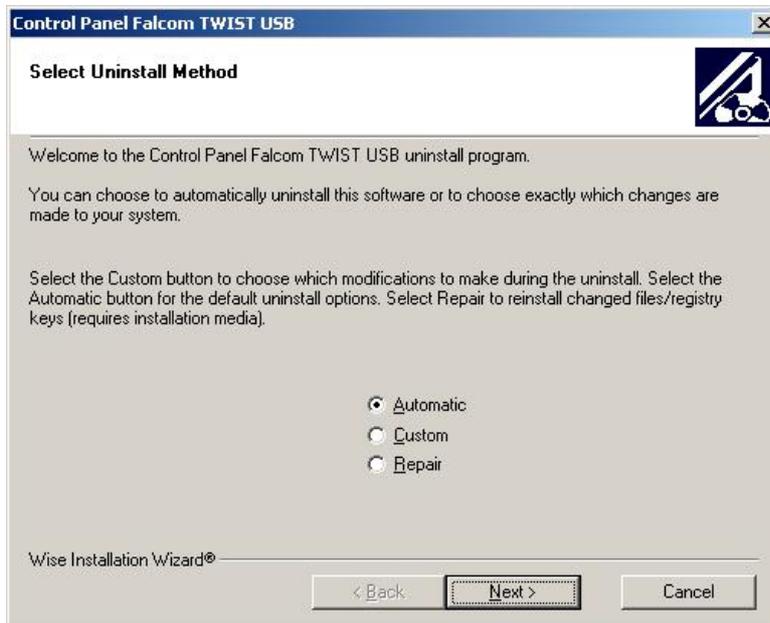
**Fig. 26: detection of a previous driver version**



Select **No** leads to terminate the installing procedure

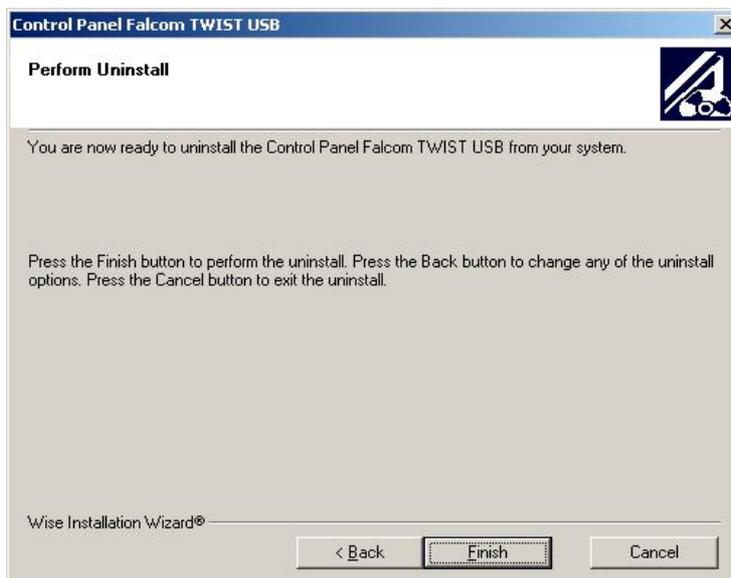
After clicking **Y**es the window **Select Uninstall Method** appears (see fig. 27).

Select **A**utomatic and click **N**ext.



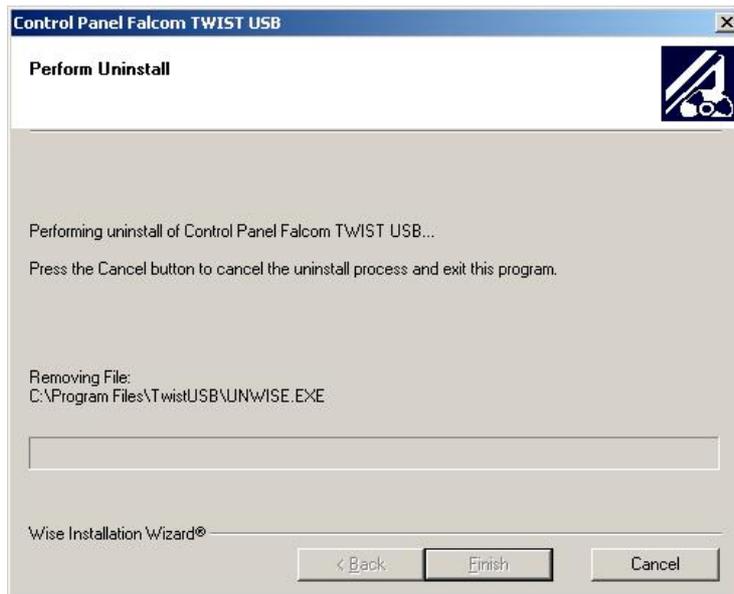
**Fig. 27: Select Uninstall Method**

A window **Perform Uninstall** displays (see fig. 28)  
Click **F**inish to start the Uninstall procedure



**Fig. 28: Perform Uninstall**

The Uninstall procedure is started (see fig. 29).



**Fig. 29: Uninstall procedure**

Click **Finish** after the Uninstall procedure is completed.

After clicking **Finish** you are prompted to restart your system (PC) as it shown below (see fig. 30).

Click **OK** to restart your PC.



**Fig. 30: window for restart the system**

## 5 Falcom TWIST-USB Modem troubleshooting guide

<b>Problem</b>	<b>Cause</b>	<b>Possible solution</b>
The LED's do not light	<ul style="list-style-type: none"> <li>• USB cable is not connected</li> </ul>	<ul style="list-style-type: none"> <li>• Connect the USB cable to the PC and modem correctly</li> </ul>
GSM LED (red) flashes fast	<ul style="list-style-type: none"> <li>• PIN Nr. is not entered</li> <li>• Antenna is not connected</li> <li>• Antenna is defective</li> <li>• Network registration unsuccessful</li> <li>• Poor transmission and reception (poor "field strength")</li> </ul>	<ul style="list-style-type: none"> <li>• Check whether the PIN Nr. has been entered</li> <li>• Make sure that the antenna is connected and not defective</li> <li>• Change to a position where the "field strength" is stronger</li> </ul>
STA LED (red) flashes	<ul style="list-style-type: none"> <li>• Failure in the modem initialisation on the USB-Port</li> </ul>	<ul style="list-style-type: none"> <li>• Install the actual modem driver</li> </ul>
No calls or accept call function possible	<ul style="list-style-type: none"> <li>• Poor transmission and reception (poor "field strength")</li> <li>• Network registration unsuccessful</li> <li>• Antenna is not connected</li> <li>• Antenna is defective</li> <li>• PIN Nr. is not entered</li> </ul>	<ul style="list-style-type: none"> <li>• Change to a position where the "field strength" is stronger</li> <li>• Make sure that the antenna is connected and not defective</li> <li>• Check whether the PIN Nr. has been entered</li> </ul>
I cannot communicate with the modem through a terminal	<ul style="list-style-type: none"> <li>• Wrong terminal port</li> <li>• USB cable is not connected</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure that the opened terminal port matches that of the modem while setup the driver</li> <li>• Connect the USB cable to the PC and modem correctly</li> </ul>
I cannot hear my partner when making a voice call	<ul style="list-style-type: none"> <li>• No headset is connected</li> </ul>	<ul style="list-style-type: none"> <li>• Please use the recommended headset</li> </ul>
My SMS does not get to destination	<ul style="list-style-type: none"> <li>• Weak "field strength"</li> <li>• Service Center is overloaded</li> </ul>	<ul style="list-style-type: none"> <li>• Change to a position where the "field strength" is stronger</li> </ul>
No data link is possible	<ul style="list-style-type: none"> <li>• Selected call number is not a data number</li> </ul>	<ul style="list-style-type: none"> <li>• Please contact your provider</li> </ul>

## 6 Abbreviations

DCD	Data Carrier Detect
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
Hub	A device which connects to the USB port on PC or Notebook and provides several USB ports for connection to USB devices.
LED	Light Emitting Diode
MO	Mobile Originated
MT	Mobile Terminated
PC	Personal Computer
RF	Radio Frequency
RX	Receive Data
SIM	Subscriber Identity Module
SMS	Short Message Service
STA	Status
USB	Universal Serial Bus
USSD	Unstructured Supplementary Service Data