FALCOM
WIRELESS COMMUNICATIONS GMBH

User Manual

Falcom TWIST GSM-Modem

Contents

List of figures

Versions

Version number	Author	Changes
1.00	J. Skeide	Initial version

1   Preliminary notes

1.1   General

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

This User Manual contains all information you require to use the
Falcom TWIST GSM-Modem.
Please read this User Manual very carefully to avoid mistakes and to
make optimal use of the modem.

1.2   Alert symbols used

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

Indicates important information and tips

1.3   Scope of delivery

Part	Quantity
Basic unit	1
Antenna	1
Serial data cable	1
Mains cable with AC/DC adapter	1
Setup CD	1

2   Technical specifications

Communications standard	
GSM 900/1800 (1900) Phase 2/2+ Dual Band Modem	
GSM services	
Telephony	Emergency Calls FR/ERF/HR DTMF
SMS	MO, MT, Cell Broadcast Return Call Message
Data	300 ... 14400BPS, transparent/ non-transparent, V.21, V.22, V.23, V.22 bis V.26ter, 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, Advice of Charge, USSD	
Electrical parameters	
Power supply	DC 5 V +/- 20 %
Current consumption	GSM 900: • 120 mA/5 V Power Mode 1 (idle) • 570 mA/5 V Power Mode 2 (Power Level 5; max.) • 500 mA/5 V Power Mode 3 (Power Level 7)

Electrical parameters	
Current consumption	GSM 1800: • 120 mA/5 V Power Mode 1 (idle) • 400 mA/5 V Power Mode 2 (Power Level 3; max.) • 340 mA/5 V Power Mode 3 (Power Level 7)
Sensitivity	GSM 900: <-104 dBm GSM 1800: <-100 dBm
Interfaces	
D-Sub 9pin (female)	RS 232
RJ45 8pin (shielded)	Audio (headset / handset) Power output, Control signals
Power input	AC/DC adapter (FRIWO type 7238/05)
Falcom dual-band antenna or SMB-Connector for other GSM antenna	
SIM card reader	small SIM card
Ambient temperature	
Mains supply	-20 °C bis +55 °C
Storage temperature	-20 °C bis +70 °C
General specifications	
Dimensions (L x W x H)	• 114 x 52 x 27 (without antenna) • 118 x 52 x 56 (with Falcom dual-band antenna)
Weight	92 g

Accessories
GSM 900/1800 (1900) antenna dual-band antenna with SMB plug connector
Serial data cable (0,5 m with D-sub 9 plug connector, see chapter 8.6)
Mains supply cable with AC/DC adapter (type FRIWO FW 7238/05)
Setup CD for Windows 95/98/CE and Windows 2000 with current driver and driver application as well as GSM-Communicator application software
Headset (optional) with RJ45 8pin audio plug connector
Modem registrations
GSM ETSI Phase 1 und 2
CE label acc. CE 168X

3   Security

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

Your GSM 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.

GENERAL

Your modem utilises the GSM standard for cellular technology. GSM is a newer radio frequency («RF») technology than the current FM technology that has been used for radio communications for decades. The GSM 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.

EXPOSURE TO RF ENERGY

There has been some public concern about possible health effects of using GSM modem. 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.

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.

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.

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!

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.

VEHICLE ELECTRONIC EQUIPMENT

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

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.

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.

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.

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.

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.

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 Ω 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.

4   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.

5   Technical description

5.1   Parts and brief description
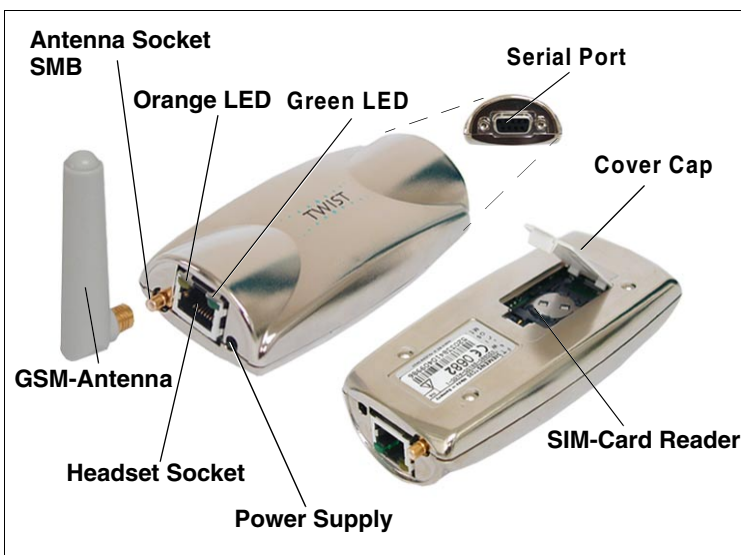
Fig. 1:   Falcom TWIST GSM-Modem

With the Falcom TWIST GSM-Modem, connections can be made to the GSM 900/1800 (1900) mobile radio network via the computer and the supplied GSM-Communicator.
After connecting the modem, 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

All technical components required to establish the above communication links are integrated in the Falcom TWIST GSM-Modem.

The serial port is connected to the computer by the data cable.

Power is supplied to the modem from the power supply socket.

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 or you can use the application software contained in the GSM-Communicator.

Plug the headset (optional) in the headset socket.

Fig. 2:   Headset

The orange LED indicator lights up after the modem has been connected to the power supply. The modem is not registered in the mobile radio network of the network operator.

The green LED indicator on the modem flashes for 5 seconds after the PIN number has been entered, and then switches itself off.

The green LED indicator flashes while a data or speech link is being made, and lights continuously when the receiver answers. The green LED indicator switches off after the connection has been terminated.

To use data and fax transmission, suitable software must be installed in the computer (e. g. Microsoft Fax 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 accessory, we recommend using a remote GSM aerial to prevent interference radiation.

6   Start-up

6.1   Basic installation

Install the modem as follows:

1. Exit Microsoft Windows 9x or Windows 2000 and switch off the computer.
2. Insert the GSM antenna in the SMB socket of the modem.

Fig. 3:   Installing the GSM antenna

3. Connect the data cable to the 9-pole COM1 or COM2 port (depending on which COM is available) of the computer and tighten the screws hand-tight with a screwdriver (see Fig. 4).

   Connect the other end of the data cable to the serial port of the modem and tighten the screws hand-tight with a screwdriver (see Fig. 5).
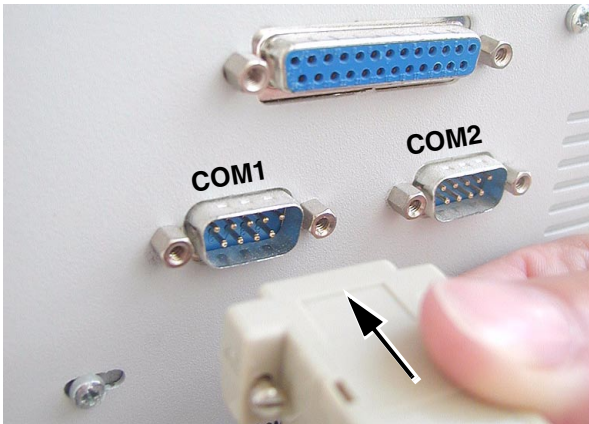
Fig. 4:   Connecting the data cable to the computer

Fig. 5:   Connecting the data cable to the modem

4. Open the cover cap on the underside of the modem.

Fig. 6:   Loading the SIM card step 1

5. Turn the securing plate as far as it will go with the aid of the cover cap.

Fig. 7:   Loading the SIM card step 2

6. Flap the holder upwards.
   Slide the SIM card into the SIM card holder with the contact
   surface facing down and the flattened side at the top left.
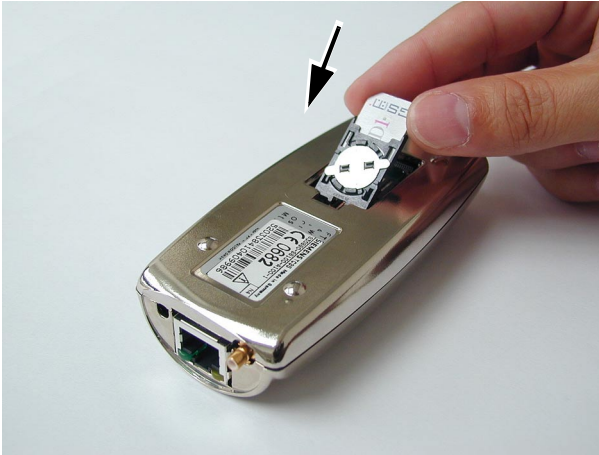
Fig. 8:   Loading the SIM card step 3

7. Press the holder down and secure it with the securing plate.
   Close the opening with the cover cap.

8. The SIM card is removed as follows:
   ❐ Open the cover cap on the underside of the modem (see Fig. 6).
   ❐ Turn the securing plate as far as it will go with the aid of the cover
       cap (see Fig. 7).
   ❐ Flap the holder up and pull the SIM card out.
   ❐ Close the opening with the cover cap.

⚠️   The SIM card must be inserted before connecting the
          modem to the power supply, and must not be removed
          until after the power supply to the modem has been
          deactivated!

9. Attach the power cable to the modem.
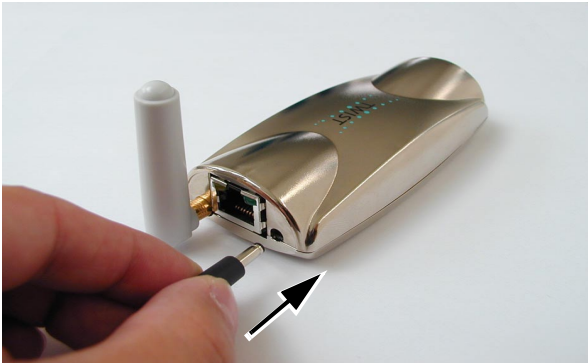
Fig. 9:   Connecting the modem to the power supply

10. Provide the power supply via the AC/DC adapter (type FRIWO FW 7238/05).

Fig. 10: Power supply with AC/DC adapter

11. Insert the headset (optional) with the RJ45 8pin audio plug connector in the headset socket of the modem.

Fig. 11: Connecting the headset

12. Install the driver and the driver application for the modem:

❐ Load the installation CD in the CD drive.
❐ Double-click the setup.exe file in the A2D-Driver102 folder.
❐ Click **[Next]**.
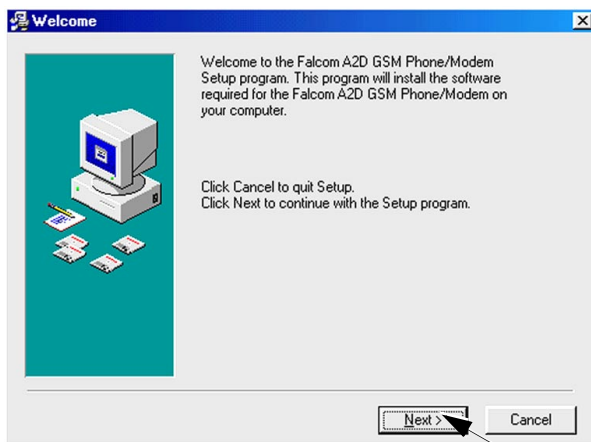
Fig. 12: Driver/driver application step 1

❐ Select **Browse...** to define the required program path.
Then click **[Next]**.
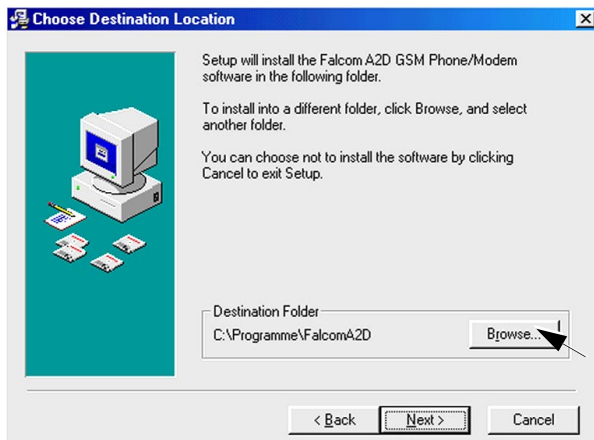
Fig. 13: Driver/driver application step 2

❐ Then click **[Next]**.
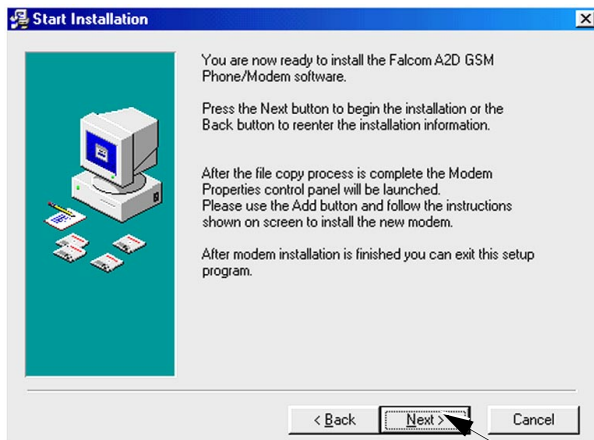
Fig. 14: Driver/driver application step 3

❐   Click **[Next]**.
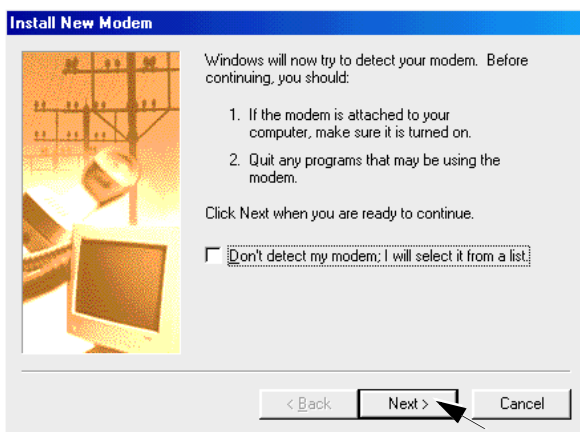
Fig. 15: Windows modem installation step 1

❐   Windows starts the automatic modem identification.
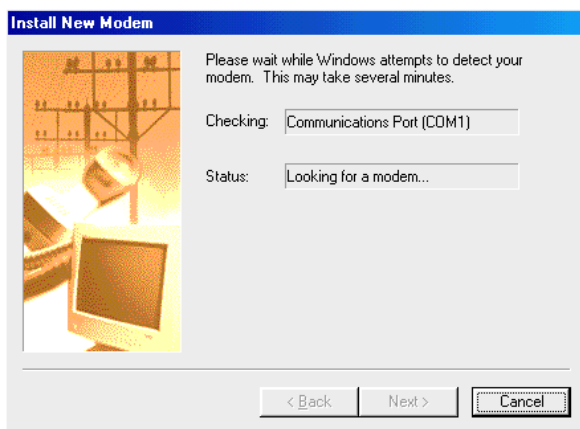
Fig. 16: Windows modem installation step 2

❒ Click **[Next]**.
  You can change the type of the installed modem with
  [Change].

Fig. 17: Windows modem installation step 3

❒ Click **[Finish]**.
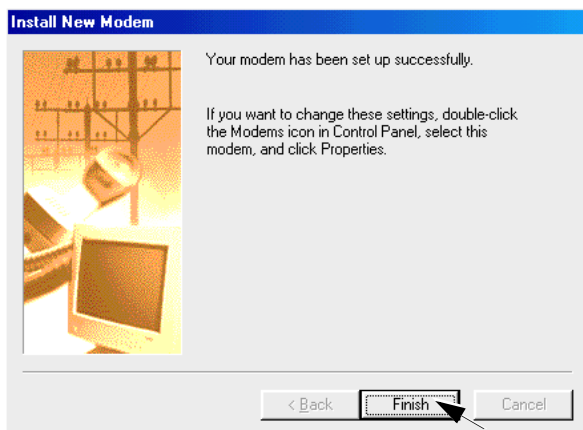
Fig. 18: Windows modem installation step 4

❒ Click **[OK]**.
If you want to change the modem properties, use the buttons in the displayed dialog screen.
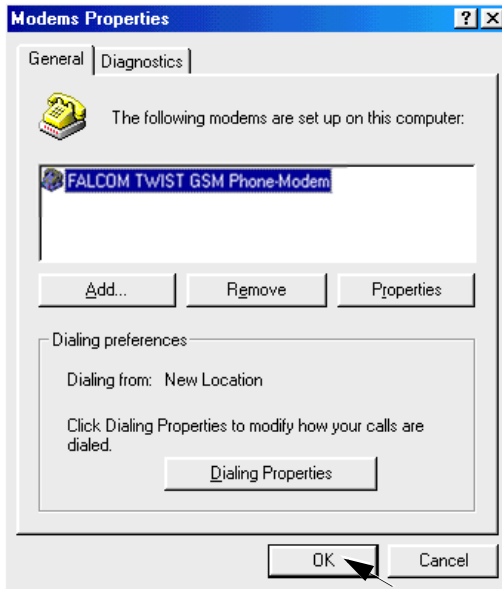
Fig. 19: Windows modem installation step 5

❐   Click **[Finish]**.
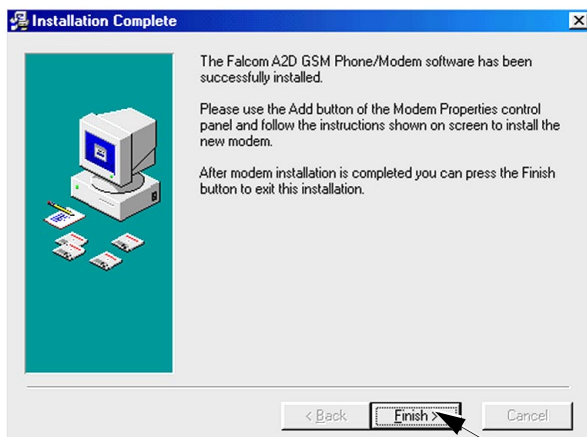
Fig. 20: Driver/driver application completion window

When the driver and the driver application have been successfully installed, an icon is displayed on the task bar (see Fig. 21) and a window prompts you to enter the personal identification number (PIN) opens (see Fig. 22).

The PIN is a security number (mostly comprising four digits), which protects the SIM from unauthorized use.

Fig. 21: Task bar with icon
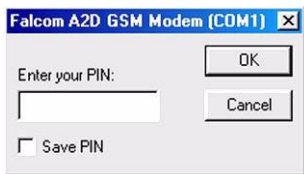
Fig. 22: The Enter PIN window

Save PIN   Saves the PIN in the system.

> Saving the PIN is a safety feature to protect the computer 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 with the PUK (super PIN) number supplied by the provider.

The green LED indicator on the modem flashes for 5 seconds after the PIN number has been entered, and then switches itself off.

Mouse-click the task bar icon to open the display window with information about the status of the modems (see Fig. 23).

6.1.1   Display window

The display window menu contains the following functions:
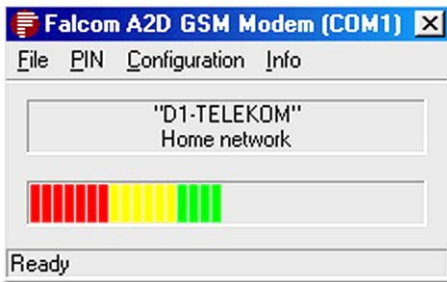
Fig. 23: Display window

6.1.1.1   File menu item

The **File** menu items contains the **close** function.
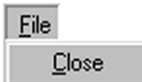
Fig. 24: File menu item

The **close** function closes the display window and pits it in the task bar.

6.1.1.2   PIN menu item

The **PIN** menu item contains the functions **Enter PIN** and **Delete PIN**.

Fig. 25: PIN menu item

The function **Enter PIN** prompts the user to enter his personal identification number and confirm the entry.
The function **Delete PIN** deletes the PIN in the registration of Microsoft Windows. After the PIN is deleted, it can be entered again with every new start of the application.

> The **Delete PIN** function is only active when **Save PIN** has been selected in the PIN prompt window (see Fig. 22).

6.1.1.3   Configuration menu item

The **Configuration** menu item provides the functions **SMS Settings**, **Options** and **Reinitialization**.

Fig. 26: Configuration menu item

The number displayed in the **SMS Settings** 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. 27: SMS Settings

In the **Options** function window (see Fig. 28) the modem check function is set in the field **Check modem status**. The status can be checked for:

❏   the mobile network in which the user has logged in
❏   whether the user has logged in
❏   the field strength of the mobile network

The time of inactivity after which the modem is switched off is set in the **Turn off modem automatically if it is not used** field in the **Options** window (see Fig. 28).
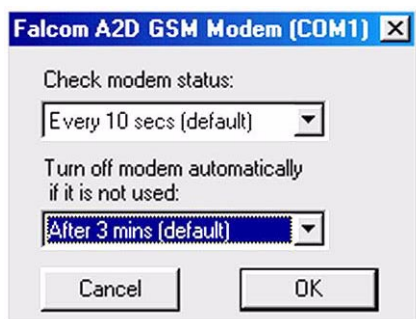
Fig. 28: Options

With the **Reinitialization** item in the **Configuration** menu, the
initialization of the modem is repeated.
All default settings of the modem are restored. Press **Ja** to continue or
Nein to quit this option (see Fig. 29).
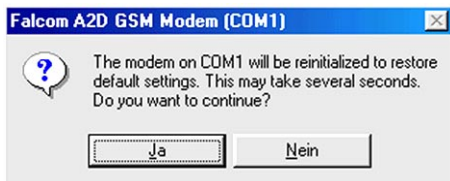
Fig. 29: Reinitialization 1

If you press **Ja** a window opens in which the successful reinitialization
of the modem is confirmed (see Fig. 30).
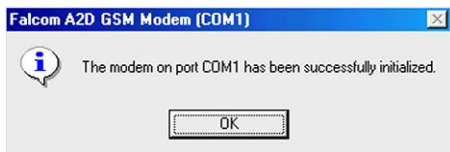
Fig. 30: Reinitialization 2

6.1.1.4   Info menu item

The **Info** menu item contains the **About** function.
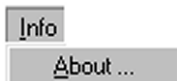
Fig. 31: Info menu item

Clicking **About** displays information on the supplier and the version of
the driver application.

7   GSM-Communicator

All important user functions of the user software of the modem can be accessed from the control surface.

The following telecommunication functions are provided by the user software:

❑ making and receiving calls
❑ sending and receiving short messages

The program parameters can be customized in the **Falcom.ini** file (see chapter 8.1).

⚠ The structure of the Falcom.ini file must not be changed! The Falcom.ini file is the most important initialization file of the GSM-Communicator user software. The file is generated automatically in the path defined by you at the first program start and contains the default settings for the program.
If a fault occurs in the Falcom.ini file, it can be deleted and is generated again when the program is started next.

7.1   Installation of the GSM-Communicator

7.1.1   Minimum system requirements

❑ Pentium 133 - 64 MB RAM
❑ Microsoft Windows 9x, Windows 2000
❑ 1 unused serial port

Before installing the software, please check if your computer has the necessary requirements.

7.1.2   Installation

❐   Load the installation CD in the CD drive of your computer.
❐   Double-click setup.exe in the GSM-Communicator 305 folder.

❐   Click **[Next]**.

Fig. 32: GSM-Communicator step 1

❐   Click **[Next]** again.
     Define the program path in the **Folder** field.
     With **Browse...** you can select the installation path you require in
     the **Folder** field.
     You can interrupt the installation with a click on **Cancel** and go
     back one step with a click on **Previous** (see Fig. 33).
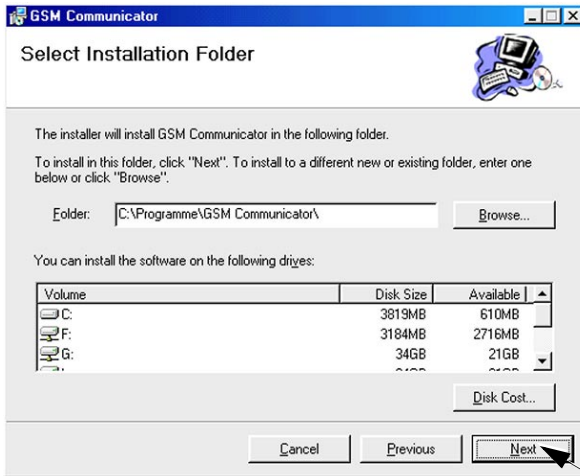
Fig. 33: GSM-Communicator step 2

❐ With a click on **Disk Cost...** (see Fig. 33) the system checks if
   sufficient free memory is available on the drives (see Fig. 34).
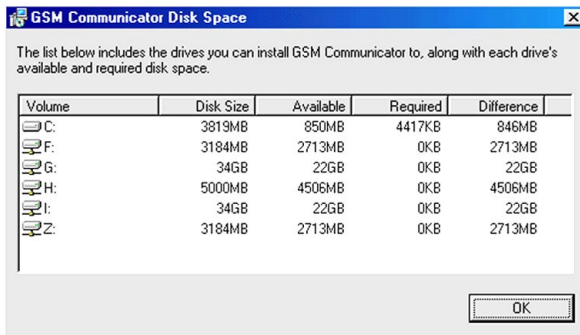
Fig. 34: GSM-Communicator Disk Space

❐ Now click **[Next]**.
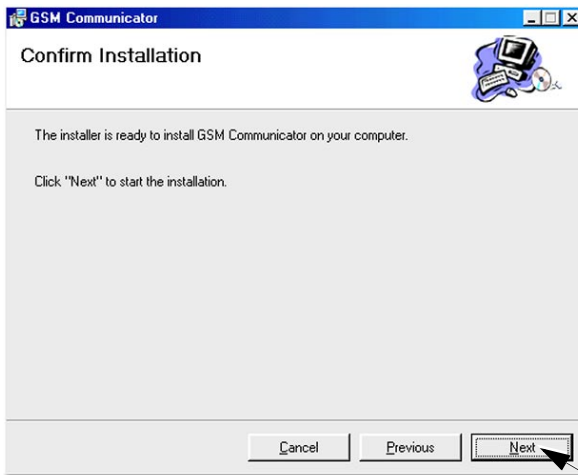
Fig. 35: GSM-Communicator step 3

❒ Now click **[Close]**.
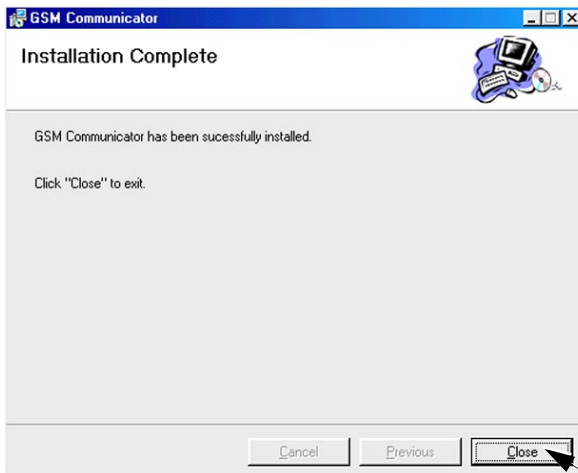
Fig. 36: GSM-Communicator step 4

❐   When the installation is complete, the program can be run from
    the start menu or the link to the desktop can be enabled.

> If the system files require updating, you are prompted to
> start the computer again.
> After starting the computer, click Setup.exe for a new
> installation.
> After successful installation the program can be run from
> the start menu or the link to the desktop can be enabled.

7.2   Initialization

When the program starts a **prompt window** is displayed asking you to
check the SIM card and all connectors (see Fig. 37).

> The SIM card must be located in the SIM card reader and
> the modem must be connected to the power supply.

Fig. 37: Prompt window

Mouse-click the **OK** button in the **prompt window** (see Fig. 37) to open the **configure Port** window (see Fig. 38). This window is only displayed on the first start of the GSM-Communicator user software or when the Falcom.ini file is generated.

Enter the COM port to which you want to connect the modem to the computer in the **configure Port** window.
Confirm the selected COM port with **OK**.
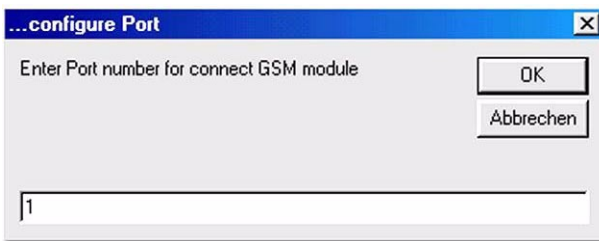
Fig. 38: configure Port window

The **configure internet** window then appears (see Fig. 39). The appropriate Internet start address must be entered in this window. This entry is confirmed with the **OK** button.
The **configure internet** window is only opened the first time the GSM-Communicator user software is started.
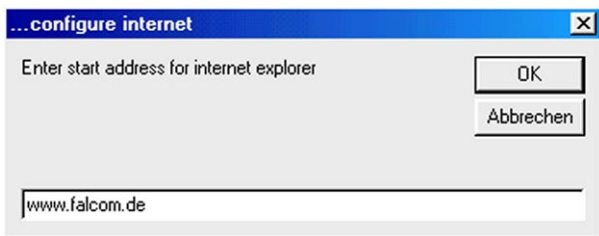
Fig. 39: configure internet window

If the connection is not made for more than 15 seconds, the program quits after displaying a fault message.

7.3   Main menu

The main menu contains all modem functions for which icons are provided (see Fig. 40).
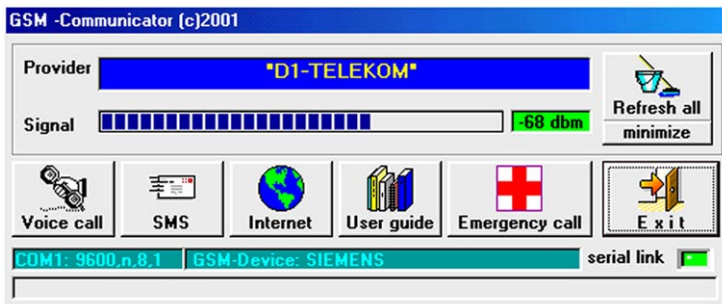
Fig. 40: Main menu window

Provider	Name of the mobile network
Signal	Mobile signal strength in dbm
Voice call	Menu for making voice call
SMS	Menu for short messages
Internet	Connections to the internet
User guide	Provides information for the user
Emergency call	Dials the emergency number
Exit	Closes a window
Refresh all	Reinitializes the modems with PIN prompt and checks of field strength, registration in the mobile radio network and the mobile radio network provider

minimize   Minimizes the window and places it on
                                     the taskbar

The signal field strength is displayed when the mouse
pointer is located over the icon in the task bar.

serial link   Indicates the connection status of the
                                     modem with the computer
           Green   Connected to the serial data cable

           Blinking red   Connection to the computer is interrupted,
                                     program displays an error message and is
                                     canceled after 5 seconds

COM1: 9600,n,8,1   **COM1**   serial port

                                     9600, n, 8, 1 Parameter anchored in the
                                                        communication protocol of
                                                        the GSM modem

After a one-time log-in the **Emergency call** button is
enabled when the program is started without the SIM
card.
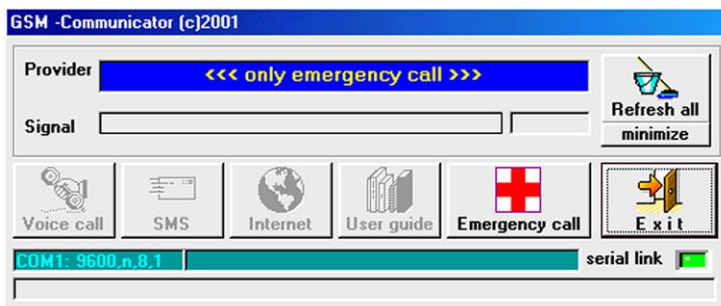
Fig. 41: Main menu without SIM card

The emergency call number (default 112) can be changed in the Falcom.ini file (see chapter 8.1).

7.3.1   Voice call

The **Voice call** button (see Fig. 40) accesses the functions for making and receiving calls.

When the function **Voice call** is enabled for the first time, the system inquires of a headset (optional) is connected.

Fig. 42: Headset prompt

Then the voice call control surface is displayed.
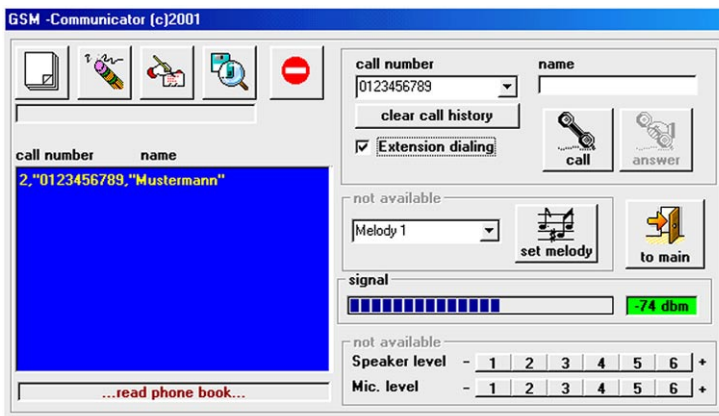
Fig. 43: Voice call window

	Makes a new entry in the SIM card phone book
	Deletes the selected entry from the SIM card phone book
	Changes selected entry in the SIM card phonebook.
	Finds an entry in the SIM card phonebook.
	Stops editing the phone book entry

call number name	Field displays the position, call number and the name of the entry on the SIM card
call number	Field displays the call number or shortcode in the SIM card phone book
name	Field displays the name related to the call number
call	Makes the telephone connection (all dialed numbers are stored in the call history)
clear call history	Deletes all numbers from the call history
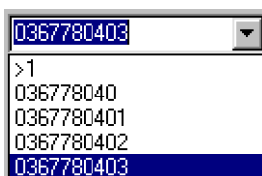
Fig. 44: call history

answer	Receives an incoming call
hang up	Ends a call, Button becomes active when a telephone connection has been made.
Extension dialing	Activates or deactivates the DTMF tone dialing during a voice connection
Ringer melody (is not available for the Falcom TWIST)	Selects one of 10 different ringer melodies (value 0 in the Falcom.ini file deactivates in the ringer melody)
set melody (is not available for the Falcom TWIST)	Confirms the selected ringer melody
Signal	Signal strength of the mobile phone in dbm
change level (is not available for the Falcom TWIST)	Field displays the microphone sensitivity setting and the loudspeaker volume level
to main	Returns to the main menu

The **call number** field always displays the last dialed number (see Fig. 43).

The SIM card phone book entries can be viewed with a click on **call number name** (see Fig. 43).

A number is dialed by direct input in the **call number** field or from the displayed phone list.
Double-clicking the selected number enters the **call number** field as well as **name** field automatically with the entry from the phone book.

Clicking the tab in the **call number** field automatically displays a list of numbers dialed last and memory locations and if selected adds these to the field.
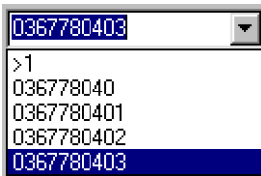
Fig. 45: Select from call history

Clicking **call** (see Fig. 43) makes the connection with the dialed number.
When the **Extension dialing** option in the **call number** field (see Fig. 43) is active, the **DTMF Dialer** window opens after the connection is made (see Fig. 46).
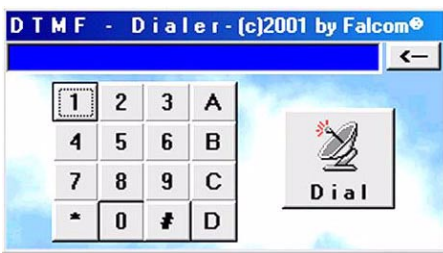
Fig. 46: DTMF Dialer window

In the **DTMF Dialer** window it is possible to send required DTMF tones while a call is being made.
This function is also available via the computer keyboard and must be confirmed with the enter key. (e. g. "Welcome to D2, if you want to know your current credit, press 1").

You can edit DTMF tones with the ⟨— button in the field above (see Fig. 46).

If a call is incoming, the **Voice call** opens (see Fig. 43) automatically and a red field is displayed in the bottom part of the window.

Fig. 47: Incoming call

This function is only active after starting the user software.

7.3.2   Phone book

The **phone book** window contains all functions for editing the phone list. The phone numbers stored in the SIM card phone book are displayed in the **call number name** field. It is possible to edit or delete existing entries or add new entries to the SIM card phone book.
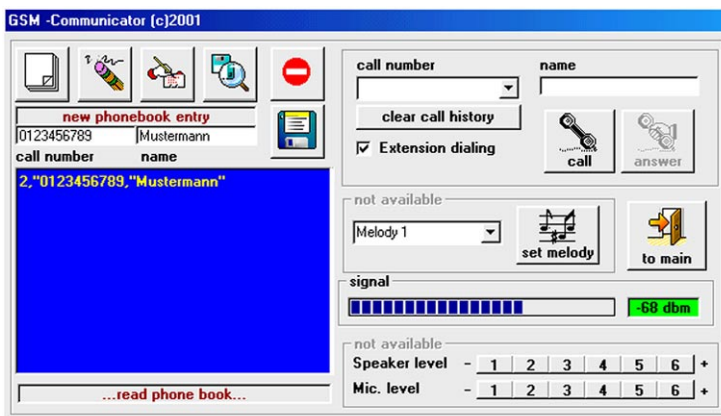
Fig. 48:   Phone book

A two-part text field appears below the function keys (see Fig. 43) when the **new phonebook entry** (see Fig. 48) button is pressed.
The telephone number (e. g. 0123456789) and name (e. g. Mustermann) are entered in this field.
The name may not exceed 16 characters.
At the same time, the **save entry to SIM card** button appears below the **cancel** button to enable the new entry to be stored on the SIM card.
The new entry is stored at the first free position in the phonebook memory of the SIM card.

A telephone number which has been highlighted is deleted from the SIM card phonebook with the **delete phonebook entry** button.
A subsequent safety question must be confirmed with **Yes** or **No**.

An existing entry in the SIM card phonebook can be changed with the **edit phonebook entry** button. The telephone number and name of the entry are displayed in the two-part field when the relevant entry is highlighted.
The entry is overwritten with the changed data by pressing the **save entry to SIM card** button.

Pressing the **find phonebook entry** button enables a search term or parts of a telephone number to be entered in the input field.
The SIM card phonebook is searched with the **OK** option. The first entry found is displayed in the **call number** and **name** fields in the top right of the application window.
This is followed by the **find next** option. This may be confirmed with either **OK** or **cancel**.

The **new phonebook entry** and **edit phonebook entry** functions are aborted with the **cancel** button.

The new or changed entries are stored in the SIM card phonebook with the **save entry to SIM card** button.

7.3.3   SMS

The SMS send and receive functions are accessed with the **SMS** button.
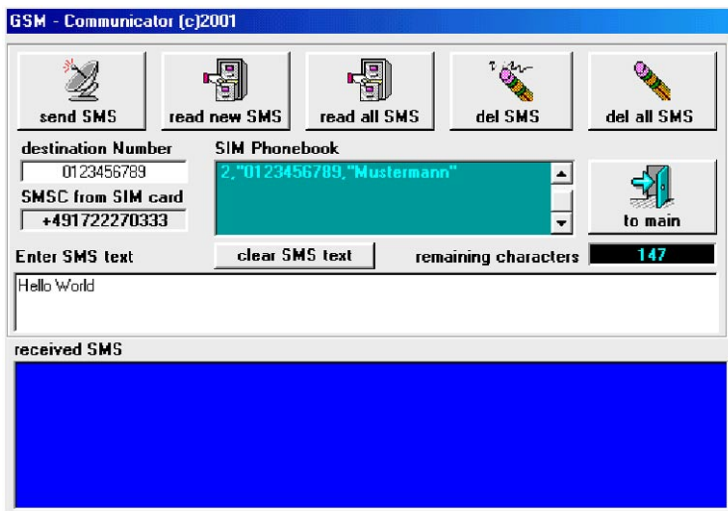
Fig. 49: SMS window

send SMS	Sends a short message
read new SMS	Reads and displays new short messages from the SIM card
read all SMS	Reads and displays all short messages from the SIM card
del SMS	Deletes a selected short message from the SIM card
del all SMS	Deletes all short messages from the SIM card
destination Number	Number of the recipient

SMSC from SIM Card	Number of the network provider's SMS Service Center address stored in the SIM card
SIM Phonebook	Field displays the position, call number and name of the entry on the SIM card
Enter SMS text	Field for SMS text entry
clear SMS text	Deletes SMS text
remaining characters	Number of remaining characters to complete the short message (max. 160 characters)
received SMS	SMS display field
to main	Returns to the main menu

A number is dialed by direct input in the **destination number** field or from the displayed phone list.

Double-clicking the selected number enters the **destination number** field automatically with the entry from the phone book.

When the text entry in the **Enter SMS text** field is completed, it is sent directly after clicking **send SMS**.

The address of the SMS Service Center stored in the SIM card is displayed in the **SMSC from SIM Card** field.

When a SMS is received, the **SMS window** (see Fig. 49) opens automatically, it contains the **incoming SMS** field in the r**eceived SMS** tab.

Clicking the **read new SMS** button displays all received and unread SMS.

Fig. 50: incoming SMS field

This function is only active after the user software is started.

7.3.4 Internet

To use the **Internet** function, an internet browser and a file transfer link must have been properly set up in the computer. If this is the case it is possible to link to the internet via the GSM modem (for file transfer link, see Windows Help).
The **Internet start address** window appears after the **Internet** button has been pressed. The Internet start address can be changed in this window.

stop the current AP software to internet connection

Enter internet address

www.yahoo.com   OK   cancel
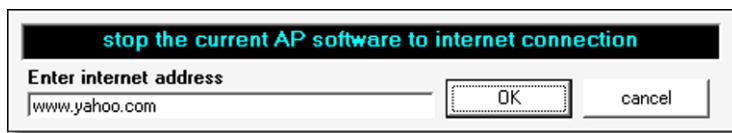
Abb. 51: Internet start address window

The Internet start address is defined in the Falcom.ini file. A changed Internet start address is transferred into the Falcom.ini file (see Fig. 51).

8   Annex

8.1   Falcom.ini file

    The structure of the Falcom.ini file must not be changed!

The structure of the Falcom.ini file is defined as follows (factory setting):

Value range: to number of COM
ports
[**Port]**
"1"   Serial connection of the modem to
                                       COM1

Value range: 0 ... 1
[SpeakerOutput]
"0"   Connection to RJ45 8pin audio
                                       connector activated

    Do not change the value for **[SpeakerOutput]**!

[SMS-CallNr]
" "   Last dialed SMS number

[VoiceCallNr]
"0123456789"   Last dialed call number

Value range: 3 ... 255
"[DTMFDurationTime-ms*100]"
"3"   Tone length for DTMF tones in
                                       milliseconds

Value range: 0 ... 1
"[DTMFDialActivated]"
"1"   DTMF dialing activated (value 0
                                     means deactivated)

[InternetStartAdress]
"www.falcom.de"   Start address when going to the
                                     internet

[EmergencyCallNumber]
"112"   Emergency call number

Value range: 30 ... 255
[CheckModemIntervalSec]
"30"   Automatic check of field strength
                                     and log-in within 30 seconds

Value range: 0 ... 10
[RingerMusic]
"1"   Selected ringer melody (value 0 =
                                     melody off)

Value range: 0 ... 1
[RingerOutput]
"0"   Output of the ringer melody through
                                     RJ45 8pin audio connector

⚠ The value for **[RingerOutput]** is automatically set by the
program!

8.2   AT-Commands for start-up of the Falcom TWIST GSM-Modem

The use of AT instructions of the Falcom TWIST GSM-Modem without the GSM-Communicator user software is only recommended to experienced users.

AT-Commands are input via an external terminal (e. g. the hyper terminal under Windows).

Usually when an AT-Command is input, it is confirmed with **[Enter]** on the keyboard. If an AT-Command is not confirmed with **[Enter]**, a mention is made in the a2dman.pdf manual.

For feedback information to AT-Commands from the modem, see the a2dman.pdf manual.

You can access the manual at any time as follows:

1. Internet address **www.falcom.de**
2. Link **Service**
3. Link **Downloads**
4. Link **Falcom A2D**
5. Link **a2dman.pdf**

8.2.1   Transfer PIN

❐   AT+CPIN = "xxxx" **[Enter]**

The PIN must be transferred before any other command!

8.2.2   Activate saved default parameters

❐   ATZ **[Enter]**   Resets the parameters to the saved
                                        defaults

8.2.3   Change and save defaults

e. g.:

❐   AT+IPR = 2400 **[Enter]**   set baud rate to 2400 bps

❐   AT&W **[Enter]**   Save default parameters

8.3   AT-Commands for user

8.3.1   Data transfer

e. g.:

❐   AT+CPIN = "xxxx" **[Enter]** Transfer PIN

❐   AT+CREG? **[Enter]**   Log in mobile radio network
                                        (0,1 means logged in)

❐   ATD0367780420 **[Enter]**   Data Call

8.3.2   Setting the SMS Center

❐   AT+CSCA = "+491722270000" **[Enter]**

Set SMS Center D2 (D1 = +4917110760000)

8.3.3   Send SMS

e. g.:

❐   AT+CMGF = 1 **[Enter]**   +CMGF = 1 sets the modem to text
                                                                mode

❐   AT+CMGS = "+491711234567" **[Enter]**
    >Please contact your office^Z

Send SMS (^Z stands for Ctrl Z). In mobile radio networks like D2 in
Germany, calls can be made without the country code or the area code.
If the call uses the country code and the area code, these are sent from
a foreign network.

8.3.4   Receive SMS

If a SMS is received, it is stored in the Falcom TWIST modem and
announced to the periphery via the RS232 serial interface. The
periphery sends a request to the modem to transfer the message and
clear the message so the memory space can be released again.

❐   +CMTI: "SM",X   X represents the memory position of
                                             the received SMS

❐   AT+CMGR = X **[Enter]**   Read SMS at memory position X

❐   AT+CMGD = X **[Enter]**   Delete SMS at memory position X

8.3.5   Send voice call

e. g.:

❑   AT+CREG? **[Enter]**   Log in mobile radio network (0,1 means logged in)

❑   ATD0367780420; **[Enter]**   Voice call differs from data call only by a semicolon at the end.

As the transmission is digital, the ISDN service feature is transmitted to the ISDN devices at the receiving end.
If you dial an ISDN voice subscriber with a data call, there is no ringing tone.

8.4   General AT-Commands

 Scanning the field strength and the mobile radio networks can take a few seconds until the answer is received.

❐ ATZ;E **[Enter]**   Echo off

❐ ATZ;E1 **[Enter]**   Echo on

❐ AT+CSQ **[Enter]**   Output field strength, field strength in dBm = -112 dBm+(2*X)

The larger variable X, the higher the field strength. The field strength value of -104 dBm is the lowest value for voice connection. At this level noise could interfere the data connection and causes errors. The radio link protocol RLP corrects errors due to the radio transmission. If you are using the Z modem software, protocol security is ensured throughout the transmission line (wire-radio-radio-wire). Because Z modem transfers blocks of data, you can see from repeated blocks and the net transfer rate how efficiently RLP identified and corrected faults during transmission.

The GSM Modem signals +CR:Rel ASYNC during data transfer with RLP (see a2dman.pdf manual).

RLP is supported by D1 and D2 in Germany. Some mobile radio networks in other countries use only transparent mode without RLP. Please ask your network provider for the network parameters.

❒   AT+CREG? **[Enter]**   Reply 0,X
                                  X=2 = "logged out"
                                  X=1 = "logged in"
                                  X=0 = "unknown"
                                  (see a2dman.pdf manual)

❒   AT+COPS? **[Enter]**   Checks if the mobile radio network of
                                  the SIM card is available
                                  0,2,26201= D1 available

❒   AT+COPS = ? **[Enter]**   Displays all available mobile radio
                                  networks

8.5   Pin configuration of the 9-pole D-sub socket

Pin	Signal	Description
1	**DCD**	Data Carrier Detect
2	**TX**	Transmit Data (out)
3	**RX**	Receive Data (in)
4	**DTR**	Data Terminal Ready
5	**GND**	Signal Ground
6	**DSR**	Data Set Ready
7	**RTS**	Request To Send
8	**CTS**	Clear To Send
9	**RI**	Ring Indicator

8.6   Pin configuration of serial data cable

Male   Female

Pin1 ——————————— Pin1

Pin2 ——————————— Pin2

Pin3 ——————————— Pin3

Pin4 ——————————— Pin4

Pin5 ——————————— Pin5

Pin6 ——————————— Pin6

Pin7 ——————————— Pin7

Pin8 ——————————— Pin8

Pin9 ——————————— Pin9

8.7   Falcom TWIST GSM-Modem troubleshooting guide

The following table can help you solve problems with the Falcom TWIST GSM-Modem.

problem	cause	solution
orange LED does not light	• Mains adapter is not connected	• Connect mains adapter (AC/DC adapter type FRIWO FW 7238/05)
No calls or accept call function possible	• Poor transmission and reception • Network log-in unsuccessful • Antenna is not connected • Antenna is defective • No transfer of PIN	• Change to a position where the field is stronger • Make sure that the antenna is connected and not defective • Check whether the PIN number has been transferred
GSM-Communicator says „Only Emergency Call"	• No SIM card loaded in modem • No transfer of PIN	• Switch off the modem, Load the SIM card, Switch on the modem • Check whether the PIN number has been transferred
There are invalid signs on the terminal	• Wrong baud rate setting	• Set the terminal device and the modem to the same baud rate

problem	cause	solution
No communication possible with the modem	• Serial data cable is defective	• See pin configuration in annex or use the 9-pin serial data cable from Falcom
I cannot hear my partner when making a voice call	• No headset or handset connected	• Please use HA-4B, HA-88 or Falcom headset with RJ45 audio plug connector
My SMS does not get to destination	• Weak field • Service Center overloaded	• Change to a position where the field is stronger
No data link possible	• Selected call number is not a data number	• Please contact your provider

8.8   Service

IIf you have questions about technical details or technical problems,
please contact your dealer or distributor.

Contact **Falcom Wireless Communications GmbH**:

❒   **Web address:**   http:/ /www.falcom.de