

GM-900 GSM/GPRS modem

Application manual

for module version S900 B09 and higher
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► Features:

- USB interface
- GSM data transfer
- GPRS data transfer
- BELL 103/v.21 communication

► Applications:

- Remote programming of T.E.L.L. devices
- Remote programming of (Paradox, DSC, Crow etc.) alarm control panels adapted to GSM network with GSM Adapter *Mini*, GSM Line Pro5 or GPRS Adapter communicator

Table of contents

1	Basic functions of the GM-900 modem.....	3
2	Software applied during the use of the modem	3
3	Software installation.....	3
4	Putting the modem into operation.....	3
5	BELL 103 remote programming using GSM data transfer	4
5.1	Necessary devices and programs	4
5.2	Settings necessary for the GSM Line Pro5 module.....	4
5.3	Settings necessary for the GSM Adapter Mini module	4
5.4	Settings necessary for the GPRS Adapter module.....	4
5.5	Preparations for remote programming.....	5
5.6	Troubleshooting.....	6
5.6.1	Setting the Espload program	6
5.6.2	Setting the WinLoad program.....	7
6	Remote programming of T.E.L.L. devices	8
7	LED signals	11
8	Technical specification.....	11
9	Package contents	11

1 Basic functions of the GM-900 modem

- Remote management of GSM Pager2, GSM Pager3, GSM Pager3 Z6, GSM Gate Control, GSM/GPRS ProCom, GSM/GPRS easyAID devices as well as GSM Ultimate alarm control panel manufactured by T.E.L.L. Ltd., using GSM data call (CSD service).
- Remote management of Paradox, DSC, Crow etc. alarm control panels connected to GSM Adapter *Mini*, GSM Line Pro5 or GPRS Adapter communicator, using BELL 103/v.21 communication on GSM data call.

2 Software applied during the use of the modem

- Remoter programs applicable for devices manufactured by T.E.L.L.
- VirtualModem.exe (on CD enclosed)
- Programming software recommended for Paradox, DSC, etc. Alarm control panels (Espload, WinLoad, BabyWare, DLS, etc.)

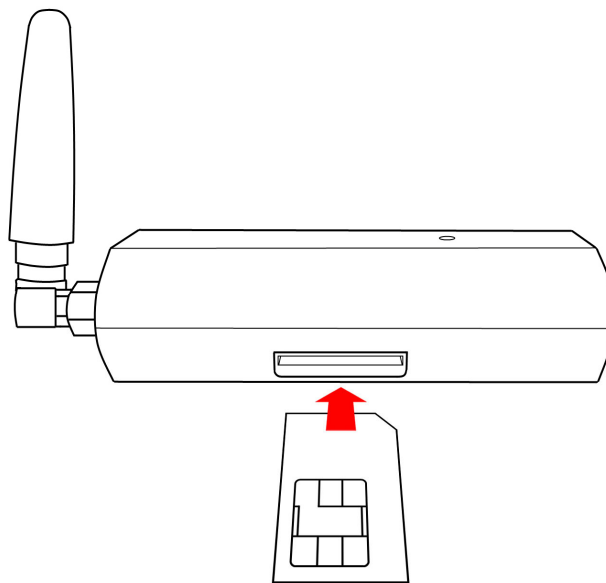
3 Software installation

The drivers and software necessary for the use of the modem can be installed from the included CD. The installation starts immediately when inserting the CD. Select the GSM-900 Modem option in the installation wizard. In case that for some reason the installation does not start automatically, run **setup.exe** application from the CD.

The VirtualPort driver to be installed by setup.exe **runs on 32 and 64-bit Windows XP and Windows 7** operating systems.

4 Putting the modem into operation

- To establish the GSM data communication it is necessary both in the GM-900 modem and in the device wished to program the use of SIM cards on which the GSM data call (CSD service) is enabled.
- Disable PIN code request on the SIM card, then push it into the modem until it clicks, as shown in the figure below:



Removing the SIM card: push the overhanging part of the SIM card towards the modem until it clicks, then release and pull out the card from the slot.

- Connect the enclosed GSM antenna to the modem.

- Start the programming software you wish to use and for connection type select the modem connection option.
- Connect the modem to one of the PC's USB ports, then wait until the modem connects to GSM network (check the LED signals). **Do not connect any other TELL USB device to the PC while using the modem!**
- The antenna supplied with the modem provides good transmission under normal reception circumstances. In case of weak reception circumstances the use of a different GSM antenna with a higher gain level may be necessary. The modem is provided with standard SMA-F antenna connector.

5 BELL 103 remote programming using GSM data transfer

5.1 Necessary devices and programs

- GSM Line Pro 5 , (with v1.10 or higher firmware version), GSM Adapter *Mini*, or GPRS Adapter
- Programming software for GSM Line Pro 5 (v1.03 BELL), GSM Adapter *Mini*, GPRS Adapter
- GSM modem (T.E.L.L. GM-900 or GT64)
- VirtualModem.exe program (version v1.10 or higher)
- The programming software of the alarm control panel, e.g. Espload, WinLoad , BabyWare, DLS, etc. (using most recent versions is recommended)
- The SIM cards used for the modem and the device should both support GSM data call (CSD service) either ways (initiate and receive).

5.2 Settings necessary for the GSM Line Pro5 module

- In the v1.03 BELL version of the GSM Line Pro5 programming software, in the "Set module parameters / Edit parameters" window a "Bell 103" tab can be found. On this site it can be enabled to accept all incoming data calls for programming or only the ones coming from the specified phone numbers.
- If callback option is set in the alarm control panel, then here should be specified the phone number to be called back and "Enable BELL103 callback" option should be also enabled.
- Upload these new settings to the module.

5.3 Settings necessary for the GSM Adapter *Mini* module

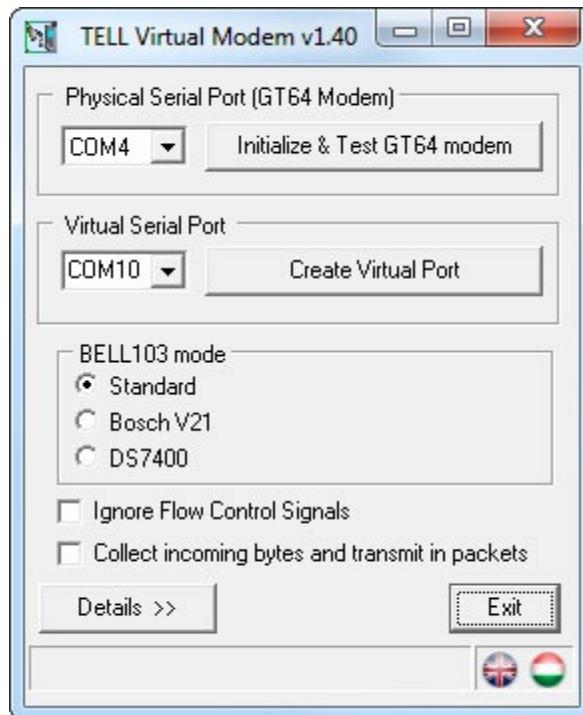
- In the GSM Adapter *Mini*'s programming software, in the "Parameter settings" window a "BELL 103" tab can be found. On this site can be enabled to accept all incoming data calls for programming or only the ones received from the specified phone numbers.
- If callback option is set in the alarm control panel, then here should be specified the phone number to be called back and "Enable BELL103 callback" option should be also enabled.
- Upload these new settings to the module.

5.4 Settings necessary for the GPRS Adapter module

- In the GPRS Adapter's programming software, in the "Parameter settings" window a "BELL 103" tab can be found. On this site can be enabled to accept all incoming data calls for programming or only the ones received from the specified phone numbers.
- Upload these new settings to the module.

5.5 Preparations for remote programming

- Insert the SIM card into the GM-900 modem.
- Connect the modem to the USB port of the PC.
- Start the **VirtualModem.exe** program.



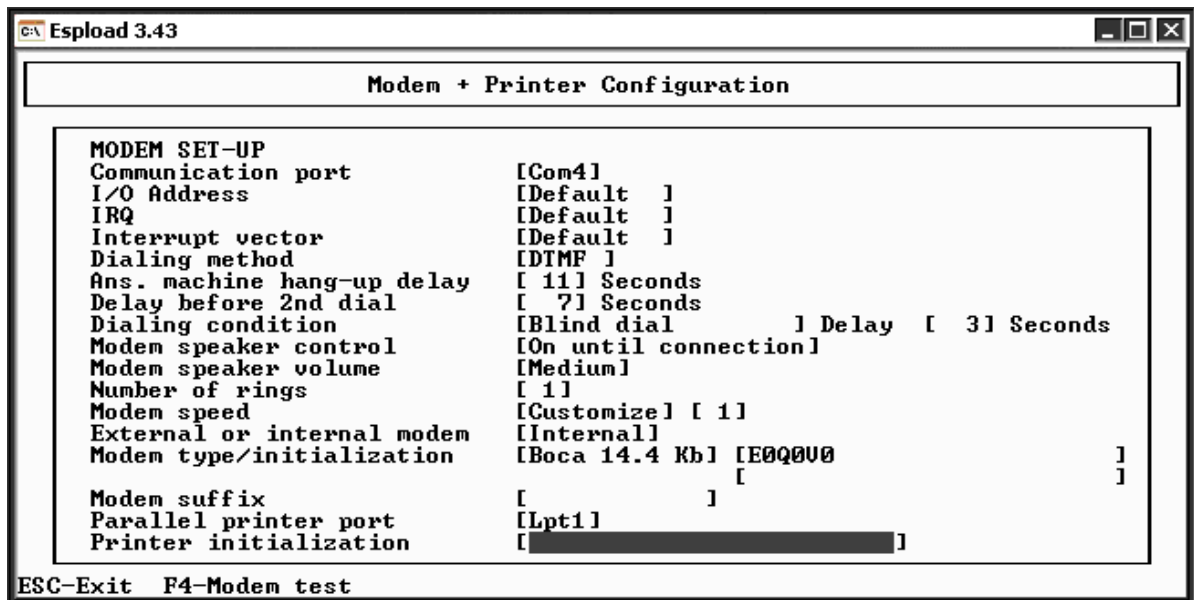
- The program installs the necessary virtual serial port automatically at the first start.
- You can select the preferred language by clicking on the flag icons in the lower right corner.
- Select the serial port to which the GSM modem is connected (physical serial port).
- Check the connection between the PC and the modem by clicking the "Initialize & Test GT64 modem" button.
- Select a previously unused COM port ordinal number for the virtual port to be created.
- When using DOS based remote programming software (e.g. Espload), select COM4 or below.
- Press the "Create Virtual Port" button.
- The communication of some alarm control panels differ from the normal BELL103 standard. For this, the Bosch V21 and DS7400 options were added. In case of trying to program an alarm panel of this sort and are encountering connection problems permanently, then select the corresponding BELL103 mode (Bosch V21 or DS7400).
- Start the programming software of the alarm control panel (e.g. Espload).
- Select the created virtual serial port for modem serial port at the modem settings section in the alarm control panel's programming software.
- For modem type any of the modems can be selected as experienced so far. (In case of still detecting fault, select another modem type. E.g. set the Espload or WinLoad programs as shown on the figures below.)
- Thereafter you can proceed with the programming using the remote programming software the same way as using a hardwired BELL 103 modem.
- The VirtualModem program is essential to run all along the remote programming procedure. Delete the created virtual port by pressing "Delete port button" and close the program only after closing the programming software of the alarm control panel.

5.6 Troubleshooting

- In case the remote programming does not start for some reason, then in the VirtualModem program the GT64 modem can be reinitialized by pressing the "Initialize & Test GT64 modem" button.
- Using the details window, the physical and the virtual port's operation can be checked. The details window can be opened by pressing "Details >>" button.
- Make sure the SIM card inserted in the GSM Line Pro5, GSM Adapter Mini or GPRS Adapter module supports GSM data call service /CSD/ (ask the GSM service provider).
- If you wish to use a virtual port application from a different manufacturer on the PC and problems are detected during its operation, then the virtual port installed by "VirtualModem.exe" may be removed using "VSRemove.exe" program.
- If errors occur frequently during data communication, then set the modem answer timeout to a higher value in the alarm control panel's programming software.

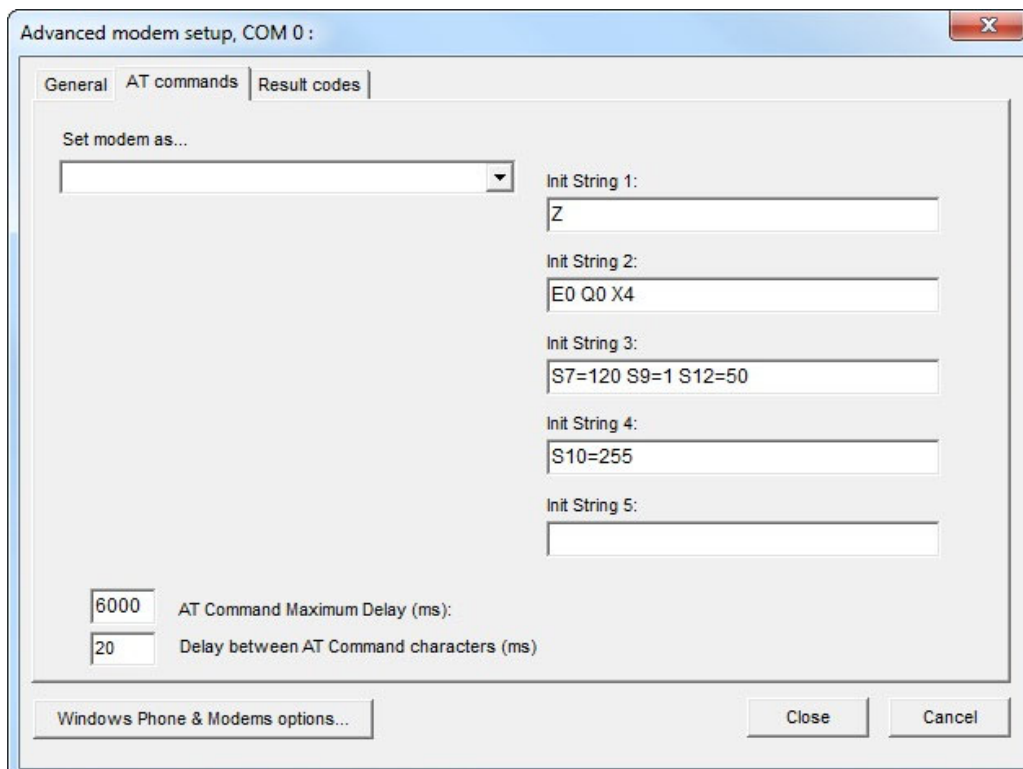
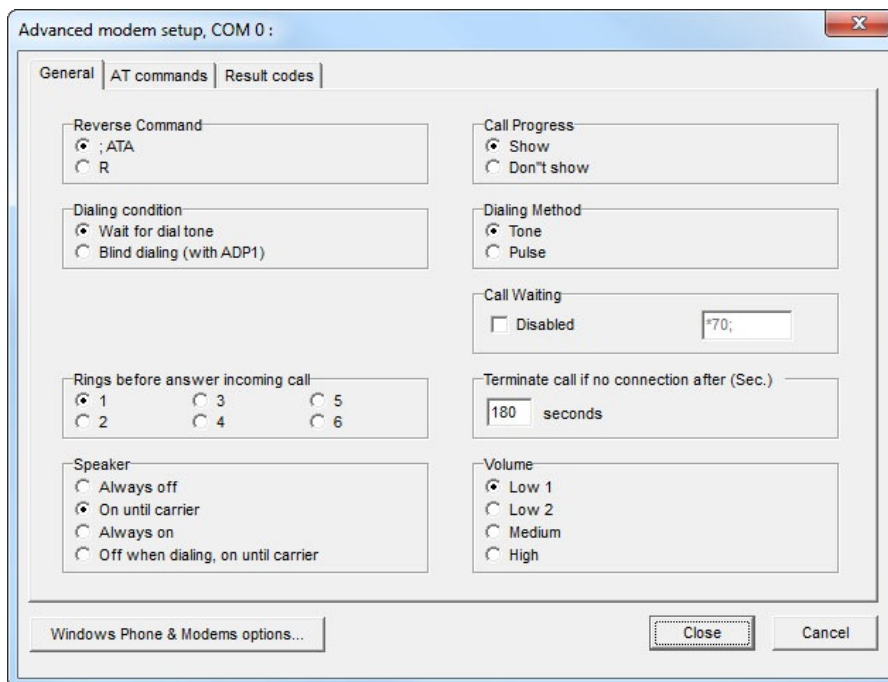
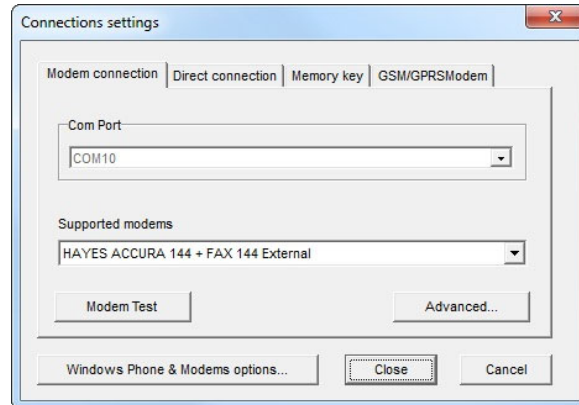
5.6.1 Setting the Espload program

Example for Espload program configuration:



5.6.2 Setting the WinLoad program

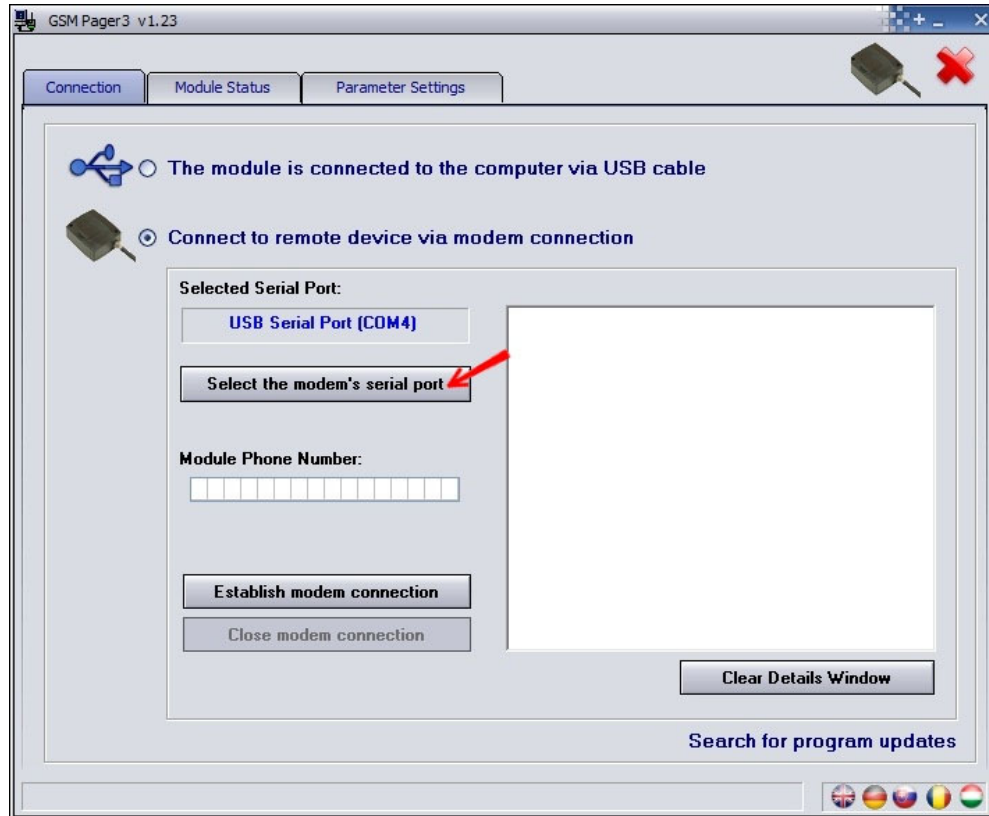
Example for WinLoad program configuration:



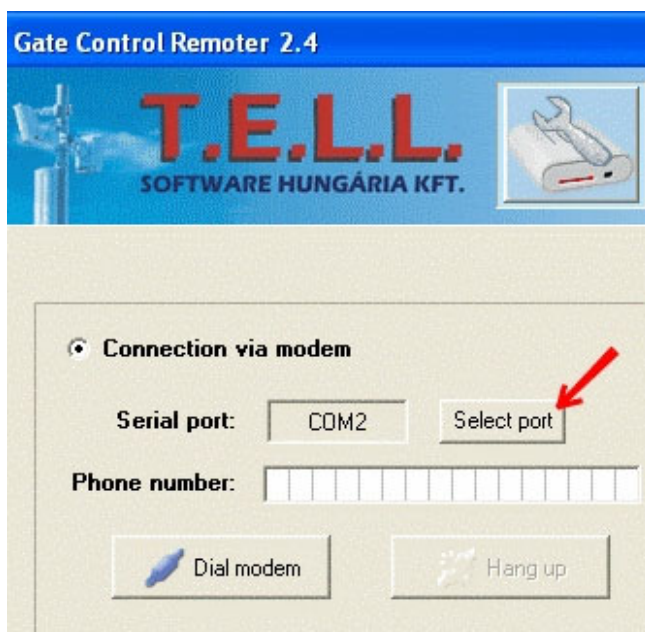
6 Remote programming of T.E.L.L. devices

1. For remote programming of TELL devices DO NOT USE the VirtualModem.exe program! This is expressly necessary only for remote programming over BELL103 of alarm control panels connected to line adapter modules.
2. Open the remoter program recommended for the specific device
3. Select the serial port where the GM-900 or GT64 modem is connected:

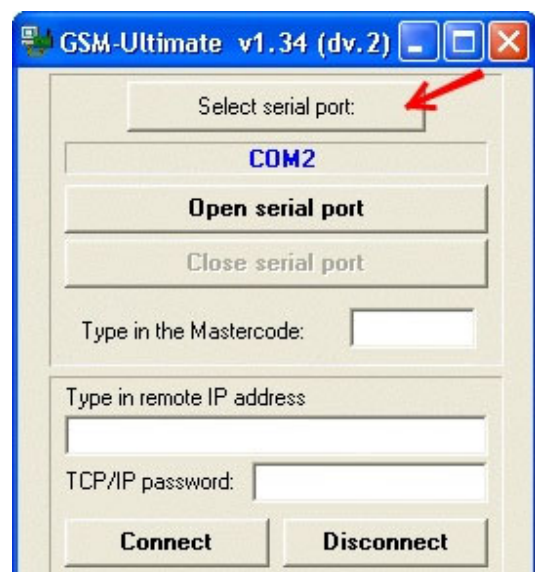
Example: For GSM Pager3



For GSM Gate Control:



For GSM Ultimate and GSM Pager2:

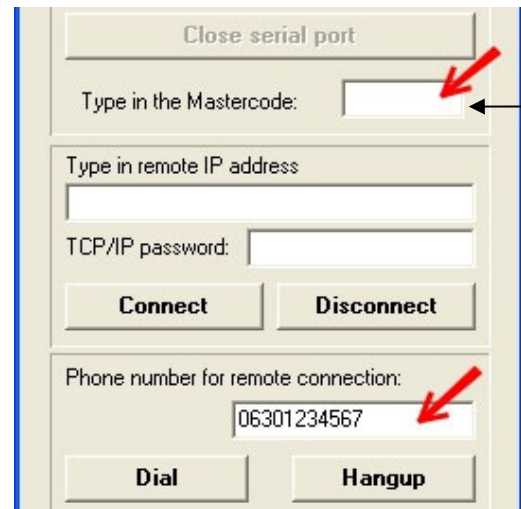


- In the corresponding fields of the software enter the phone number and if necessary, the access code of the device you wish to program:

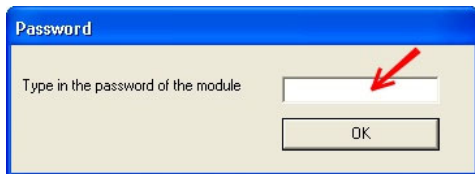
Example: For GSM Pager3:



For GSM Ultimate and GSM Pager2:



Code must be entered before connecting

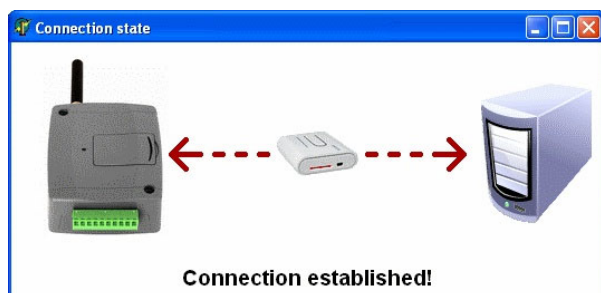


→ The window appears after connection has established and the code must be entered at that moment

For GSM Gate Control:



Code must be entered while connecting



- Click on dialer button or modem connection establisher button. You can follow the modem connection progress in the details window which, in case of GSM Ultimate may be opened by pressing the ">>" button in the main window.

Example: For GSM Pager3:

```

Techn -- DTR --> 0
Techn -- DTR --> 1
Techn -- AT
Techn -- Waitstr: Str:"OK" Timeout:3000
Techn -- "OK" Received in 200ms
Port opened
Techn -- ATSO=0
Techn -- Waitstr: Str:"OK" Timeout:500
Techn -- "OK" Received in 200ms
Techn -- AT&D1
Techn -- Waitstr: Str:"OK" Timeout:500
Techn -- "OK" Received in 200ms
Techn -- ATD06301234567
Dialing 06301234567
Techn -- "
CONNECT 9" Received
CONNECTED ←
  
```

Clear Details Window

For GSM Ultimate:

```

Serial connection details
-----> ATH
ATH
OK
-----> AT
AT
OK
-----> AT+CFUN=1
AT+CFUN=1
OK
-----> ATZ
ATZ
OK
-----> AT
AT
OK
-----> ATH
ATH
OK
-----> AT&D2
AT&D2
OK
ATD06301234567
CONNECT 9600 ←
PwDOK
PwDOK
PwDOK
  
```

In case of GSM Gate Control connection progress is shown by the program step by step automatically.

- After the connection has established, all the functions of the remoter program can be accessed/used the same way as the remote device would be connected to the PC through physical serial port.
- When you finished programming, the communication can be terminated by closing the connection.

7 LED signals

Continuous green	Startup in progress
Green blinks fast	Connecting to GSM network
Green blinks slowly (~3 sec. interval)	Connected to GSM network, ready

8 Technical specification

Supply voltage:	5V DC
Nominal current consumption:	30mA
Maximum current consumption:	500mA
Operating temperature:	-10°C...+60°C
Transmission frequency:	GSM 900MHz / 1800MHz and GSM 850MHz / 1900MHz
Dimensions:	77x37x21 mm
Net weight:	70g
Gross weight (packed):	165g

9 Package contents

- GM-900 modem with USB cable
- GSM 900MHz /1800MHz antenna
- CD, application manual, warranty card