

Remote Control SIPROTEC 4 with LOGEM 928 / LGH 28.8D

19,2kB / 8N1

Overview

The following is a guide for the application of an analogue office modem LOGEM 928 and an analogue substation modem LOGEM LGH 28.8 D (7XV5810) for remote control with a description of the relevant settings.

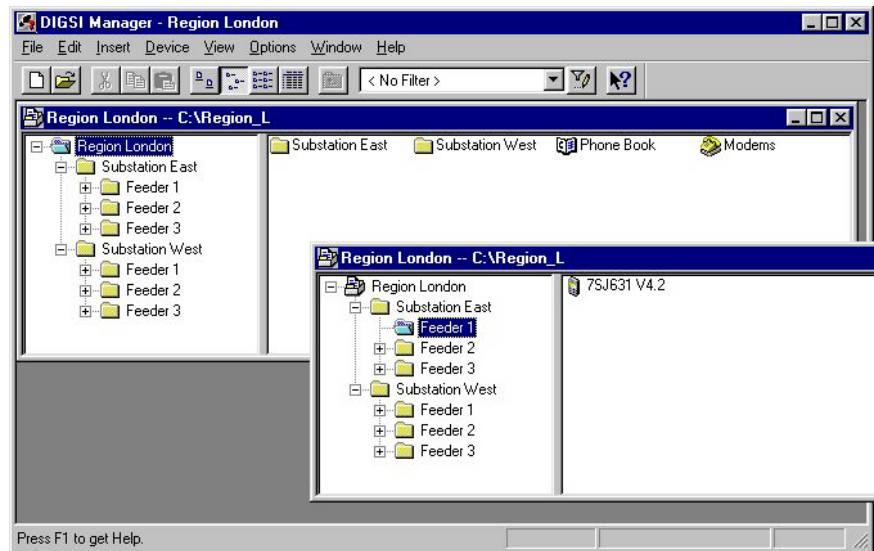
This guide follows on to the document “Central Control of SIPROTEC 4 Devices”, which described the central control application, and tests, with 19200 Baud and a data frame 8N1.

Create Project and Substation

The project with substation folders, bay folders and protection devices has already been created and tested successfully.

Installing modems

Prior to the creation and setting of the modems in DIGSI 4, the modem driver must be installed in Windows. The modem driver can be delivered with the modem or be downloaded from the internet. In this case the modem driver was installed from Windows 98. How this is done can be found in the windows or modem documentation. The pre settings were not changed.



Creating a phone book

The phone book is located in the project. An address (telephone number) must be available centrally in this phone book for each modem. After double-clicking on the icon “Phone book”, the phone number of the office and station modem can be entered with their names, using the button “New” (refer to the screen shot below). The country and area codes (without 0) must be entered.

This is a screenshot of the 'Properties - Address' dialog box. It contains the following fields:

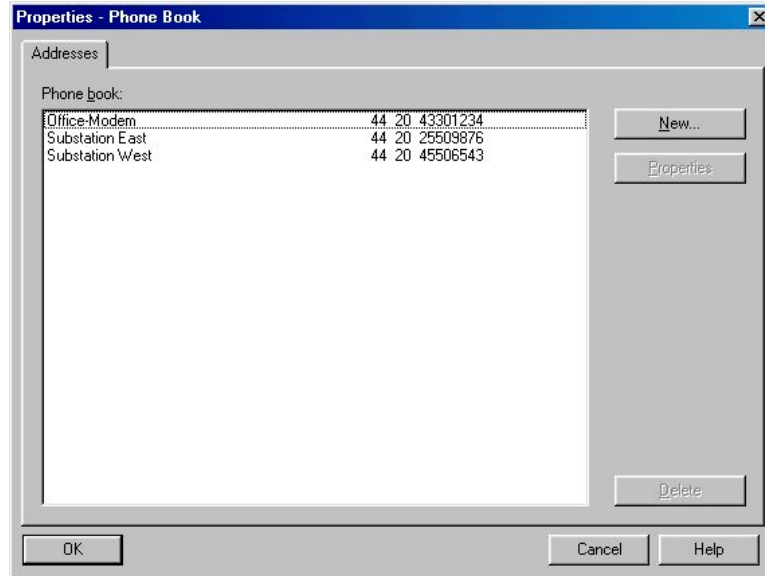
- Name: Office-Modem
- National code: 44
- Area code: 20
- Number: 43301234

Buttons for 'OK', 'Cancel', and 'Help' are located at the bottom.This is a screenshot of the 'Properties - Address' dialog box. It contains the following fields:

- Name: Substation East
- National code: 44
- Area code: 20
- Number: 25509876

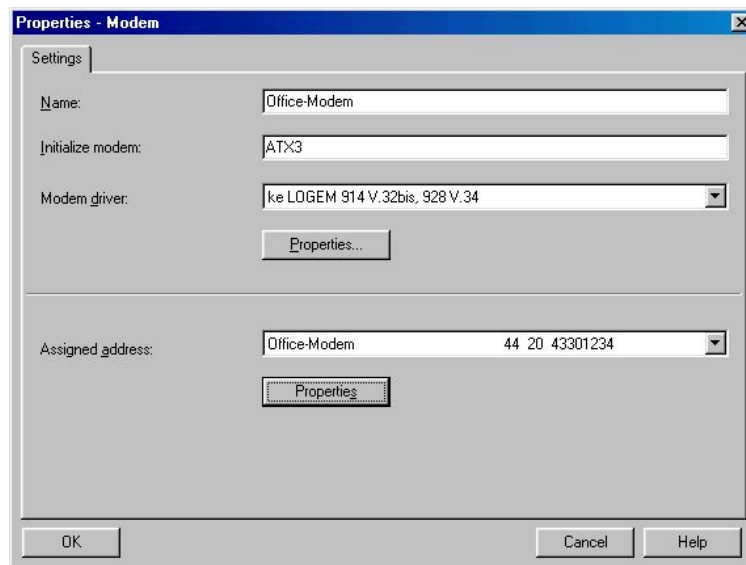
Buttons for 'OK', 'Cancel', and 'Help' are located at the bottom.

If all the windows were closed with „OK“, the settings can be checked in the overview. After closing this window with “OK”, all the settings are saved in the phone book.



Creating the Office Modem in DIGSI 4

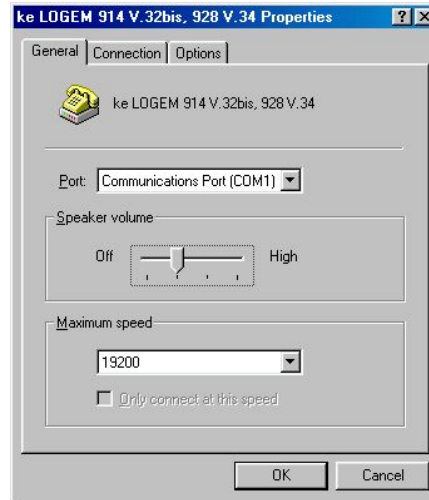
If the modem driver for LOGEM 928 has been installed successfully with standard settings and the phone book has been filled out, the office modem can be created in DIGSI 4 with its settings. After double-clicking on the icon “Modems”, the office modem can be created with the button “New”. A name is assigned to the modem, e.g. office modem. ATX3 is only entered for “Initialise Modem” if the call is made from a private exchange. The already installed modem driver is selected from „Modem Driver“. The „Assigned address“ is selected from the phone book.



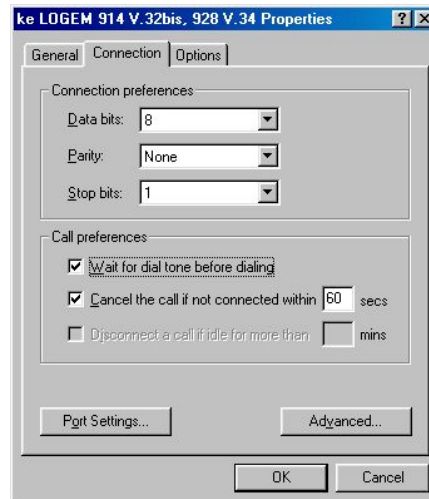
Properties of office modem

The connection was already chosen during the installation of the modem.

In “General” the “Maximum speed” must be set to 19200.

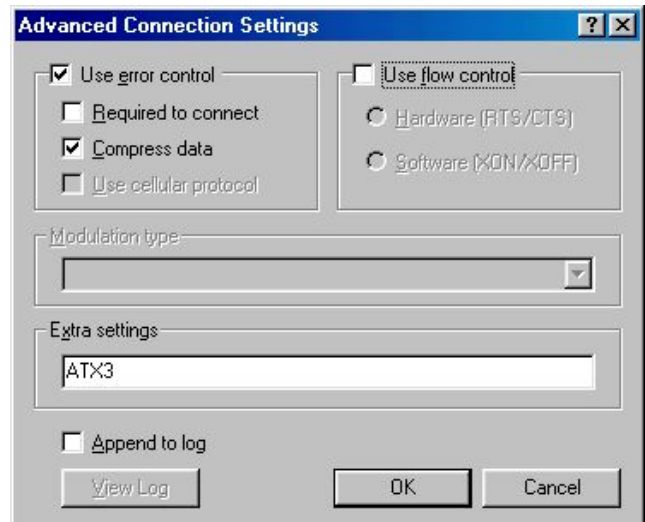


In “Connection” no changes are made. The data frame remains at 8 None 1 (8N1).



In „Advanced Connection Settings” the “Error control” and “Compress data” may remain switched on.

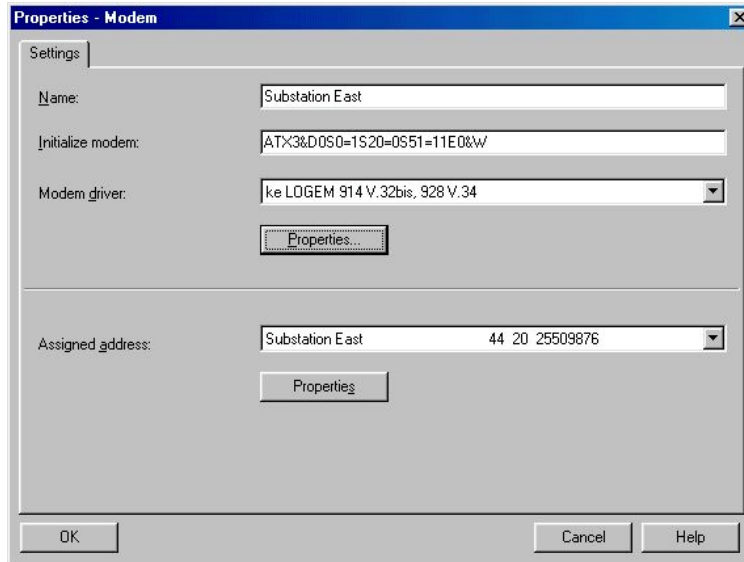
The data “Flow control” must be switched off.



In „Extra settings“ the modem initialisation string ATX3 is automatically entered from DIGSI 4 “modem properties”. If this is not the case, the settings are not accepted by DIGSI 4. In this case a different modem driver may be required.

Create Substation Modem in DIGSI 4

By double-clicking the icon “Modems” the substation modem is created the button “New”. A name is allocated for the modem, e.g. Distributor East. In the modem initialisation, ATX3 is only entered when the call is made from a private exchange.



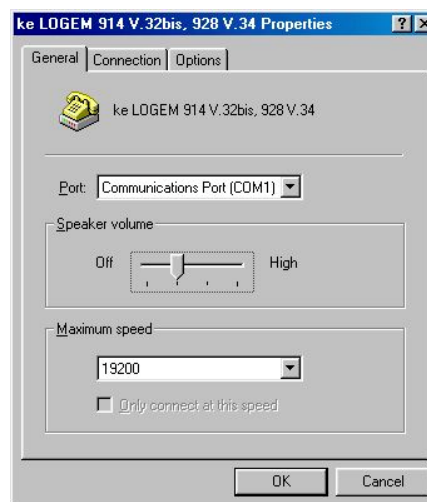
The other commands have the following meaning:

- X3 Calling from private exchange
- &D0 Control signal DTR is ignored as not supported by protection device
- S0=1 Pick-up call after first ring tone
- S20=0 Ignore signals during establishment of connection
- S51=11 Fixed Baud rate to the protection device (19200 Baud)
- E0 Echo off
- &W Settings are stored in non-volatile memory

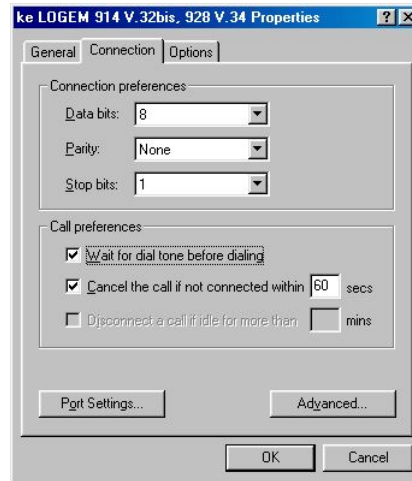
The previously installed modem driver (the same as used for office modem) is selected under “Modem driver”. The “Assigned address” is selected from the phone book.

Properties Substation Modem

In “General” the “Maximum speed” must be set to 19200.



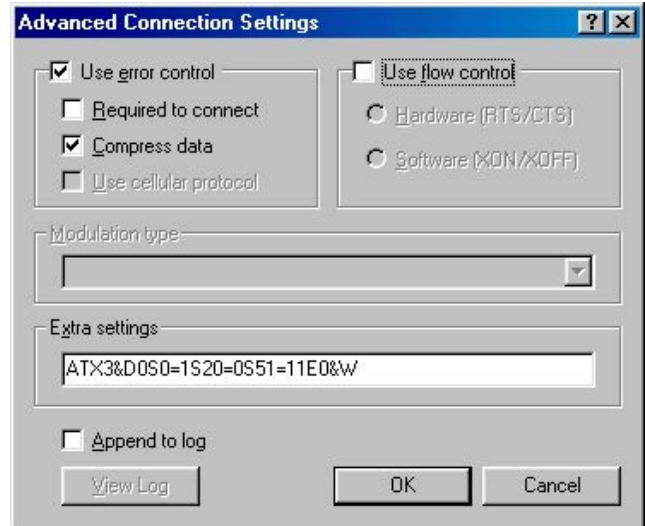
In „Connection“ no changes are made.
The data frame remains at 8 None 1 (8N1).



In „Advanced Connection Settings“
the “Error control” and “Compress data”
may remain switched on.

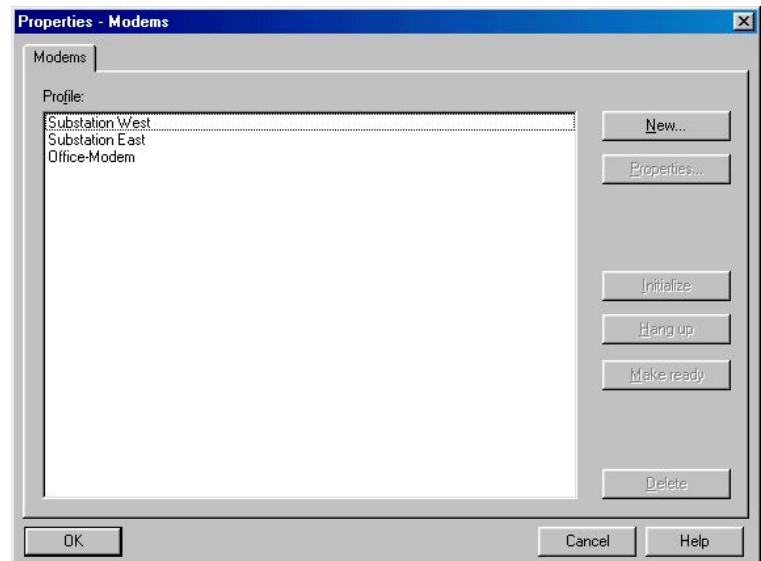
The data “Flow control” must be switched off,
as it is not supported by the protection device.

In „Additional the modem initialisation string
ATX3&D0S0=1S20=0S51=11E0Q1&W is
automatically entered from the DIGSI 4 “Modem
Properties”. If this is not done, the settings are not
accepted by DIGSI. A different modem driver may
then be required.



The modem properties can be checked in
the overview, and changes may be made
if required once they have all been
created.

The substation modem can also be
initialised from here (see next chapter).



Initialising substation modem

The substation modem must, for the purposes of initialisation, be connected to the DIGSI PC with a standard modem cable. All the DIL switches of the modem must be in the factory pre-set position „OFF“.

Prior to initialisation, the modem should be taken through the reset procedure.

- Switch off auxiliary supply
- Push and hold reset button and switch on auxiliary
- Wait until LED „M2“ lights up

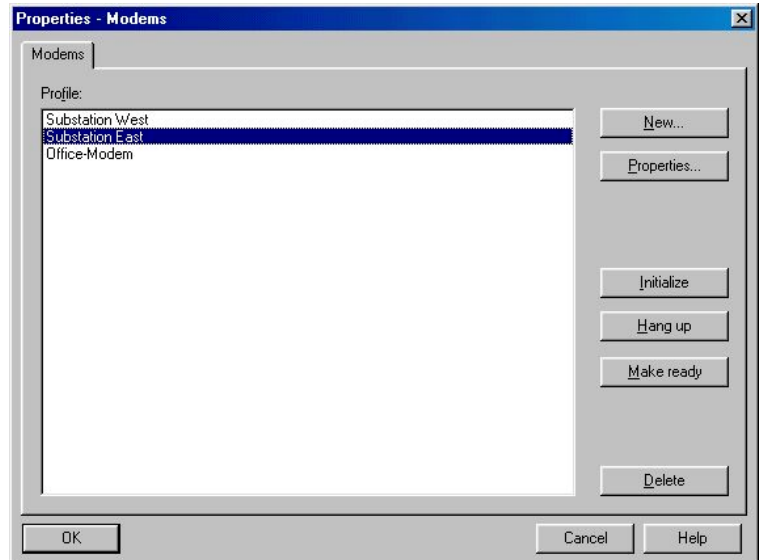
Select the desired modem in the window “Modem Properties”, and initialise by selecting the button “Initialise”.

Should error messages appear in the window “Report”, this is because no feedback from the modem is received in response to the ATQ1 command.

The settings are now stored in the modem and will not be lost after interruption of auxiliary power supply.

To check whether all settings were accepted by the modem, the windows program „Hyper Terminal“ (with settings 19200, 8N1), can be used by entering the command AT&V. Your entries are not shown in the window, as the echo is switched off by ATE0. If the initialisation with DIGSI 4 was not successful, the commands may also be entered subsequently with “Hyper Terminal”.

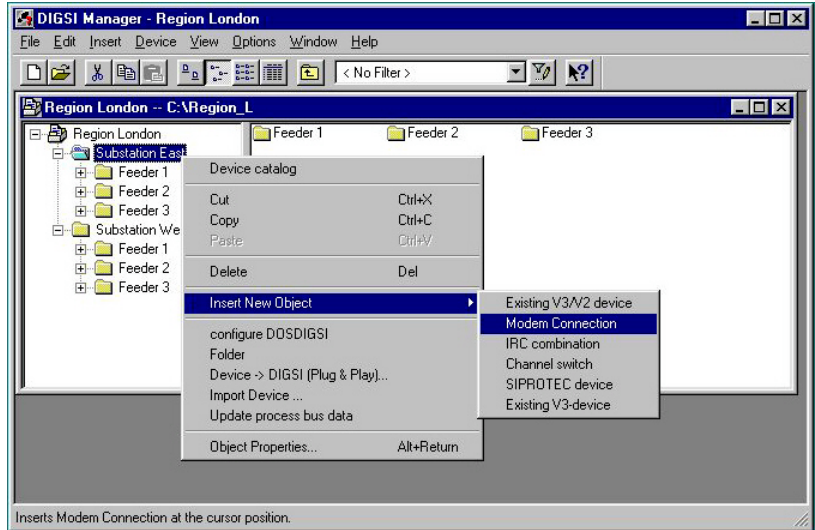
The substation modem is now connected via star coupler or other converter to the protection devices and is in service.



Selecting Modem Connection

For the substation, e.g. Distributor East, the modem connection must be selected. This is done to determine which modems and corresponding settings with allocated phone numbers will be used for establishing a connection.

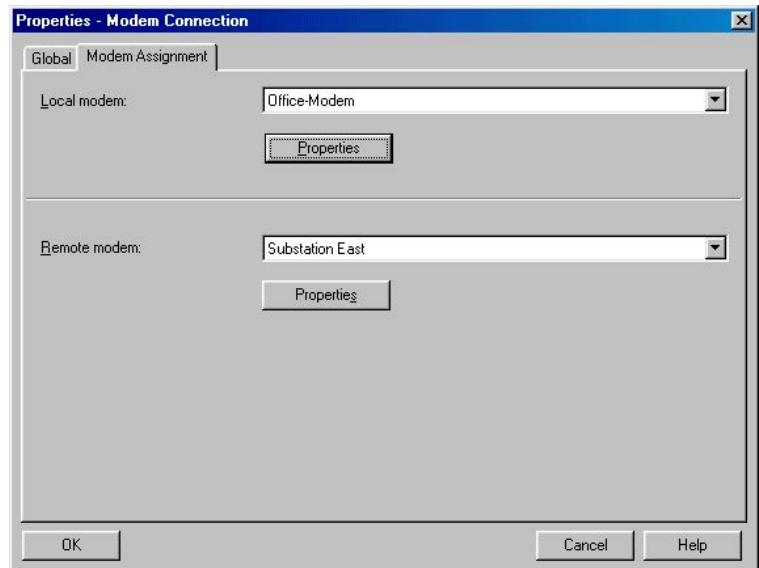
A “modem connection” must be entered in the substation folder with the right hand mouse button, for this purpose.



If the modem connection has been created for this substation, the modems can be selected in “Properties Modem Connection”.



All settings in DIGSI 4 are now complete and the office modem may now be connected with the operating PC via a modem cable, which is usually supplied with the modem.

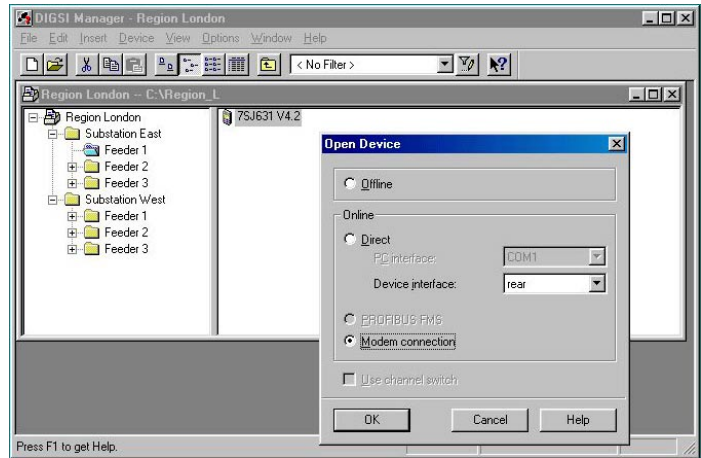


Establishing a Modem Connection

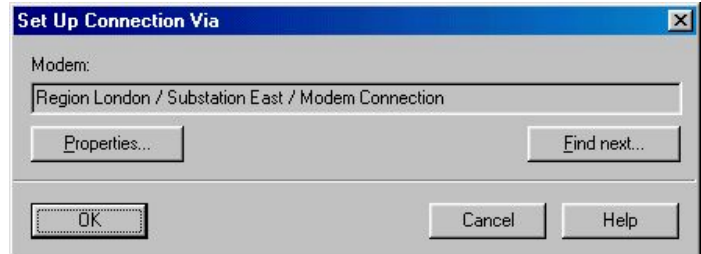
The modem connection may be established by double click on “Modem Connection” and subsequent selection of the device or by direct selection of the protection device.

In „Online“ „Direct“ the PC interface that is connected to the office modem must be selected. In “Device Interface” the “ rear” service interface.

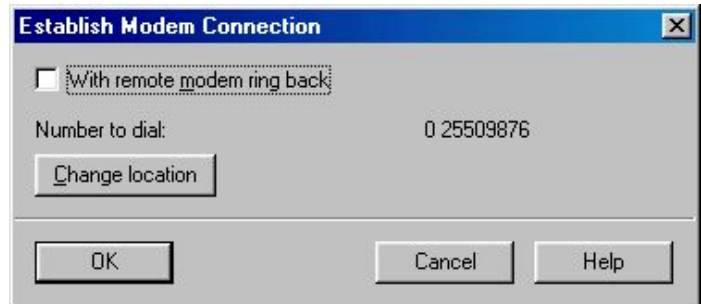
Subsequently, “Modem connection” is marked and the connection started by selecting “OK”.



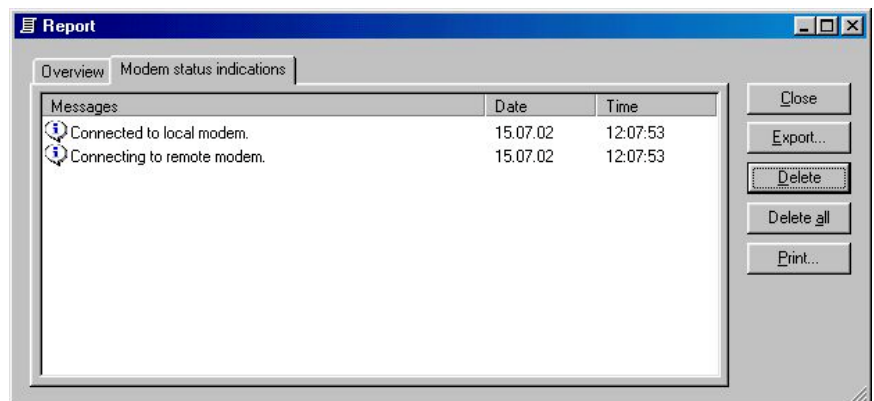
DIGSI 4 selects the modem connection that is available in the project closest to the device. If this is the correct one it is conformed with “OK”.



The next window shows the “number to dial”, which can again be checked. If too many leading zeros are shown, these may be removed by “Change location”. If this is not successful, check the complete number entry in the phone book. (refer create phone book).



The dialling procedure may be checked in a “Report” window. If the modem connection has been established, the connection to the device is automatically made.



Have fun!