Important Info for SNMP connections to DCC

Caution: This is a Provisional document!!!!

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1. SNMP CONNECTION CONFIGURATIONS

1.1 GENERAL

The DCC-8 and the 24-DCC/32-DCC with firmware F43240.xxx supports TCP/IP protocol over V.24 instead of the DCMIP protocol used in the previous firmware packages.
This means that the Connection Set-up in the Connection Manager must be adapted to the new protocol environment for the DECT Manager.
Also in Windows 95/NT, adaptations must be made to make the protocol running over V.24 or, in case of the DCC-8, over Ethernet.

On top of the TCP/IP protocol stack, SNMP (Simple Network Message Protocol) is used.

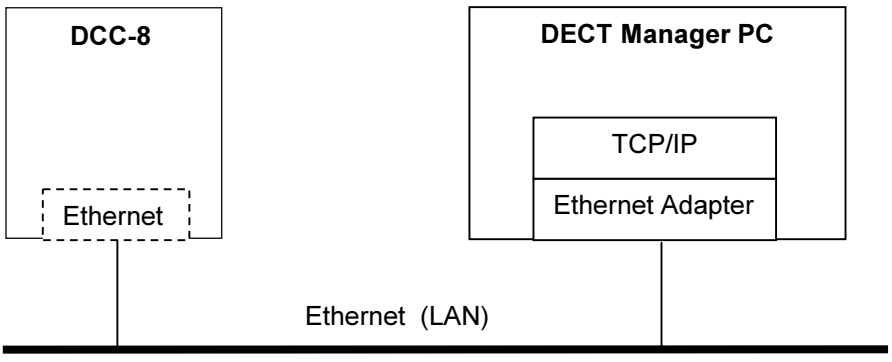
The following sections in this document describe how to set-up a connection.

Due to the different protocol, retrieving performance data from the DCC has been changed as well. This is described in chapter 5.

1.2 BASIC CONNECTION CONFIGURATIONS

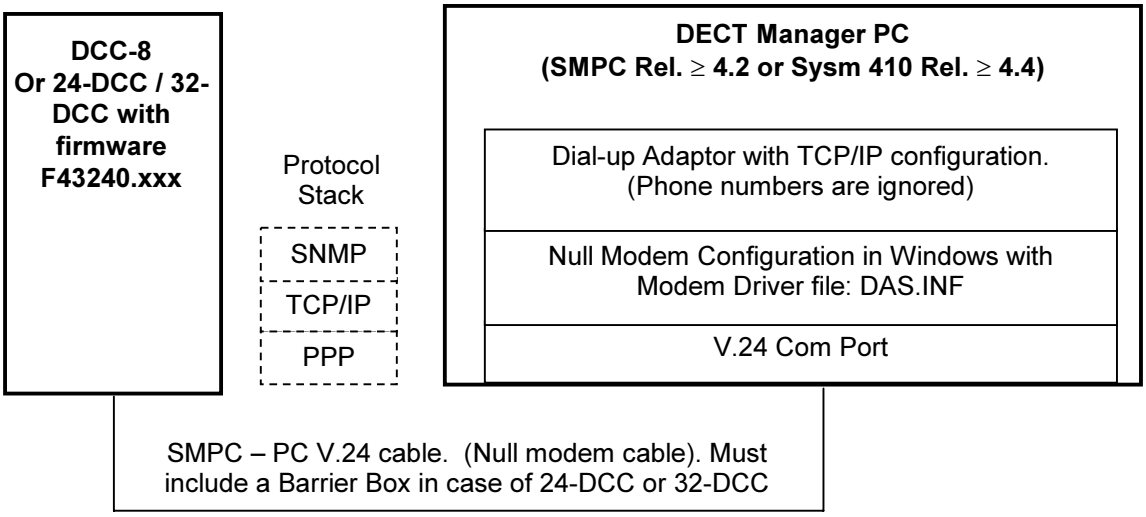
1.2.1 DCC-8 Connection via Ethernet

The connection via Ethernet is a straightforward connection. Make sure that the IP addresses at both sides are part of the same subnet.



1.2.2 Direct V.24 Connection between 32-DCC / DCC-8 and DECT Manager

The direct V.24 connection between the 24-DCC (firmware F43240.xxx), 32-DCC (firmware F43240.xxx) or DCC-8 and the DECT Manager PC carries SNMP over TCP/IP. The configuration and the protocol stack are depicted in the following figure.



To set up a Null modem configuration in the Windows environment, you need to set-up:

- **Modem Configuration**
  This modem configuration is done in the same way as for a real modem. You must assign a modem in the Windows “Control Panel”. As modem driver you must use the DAS.INF file. This file is not delivered with Windows, but available on the CD that contains the SMPC installation software. However, it is a plain text file. This means that you can create this file yourself with the information that you find in *Appendix A*
  To create the Null modem configuration, consult section 2.1.1 for Windows 95 or section 3.1.1 for Windows NT.

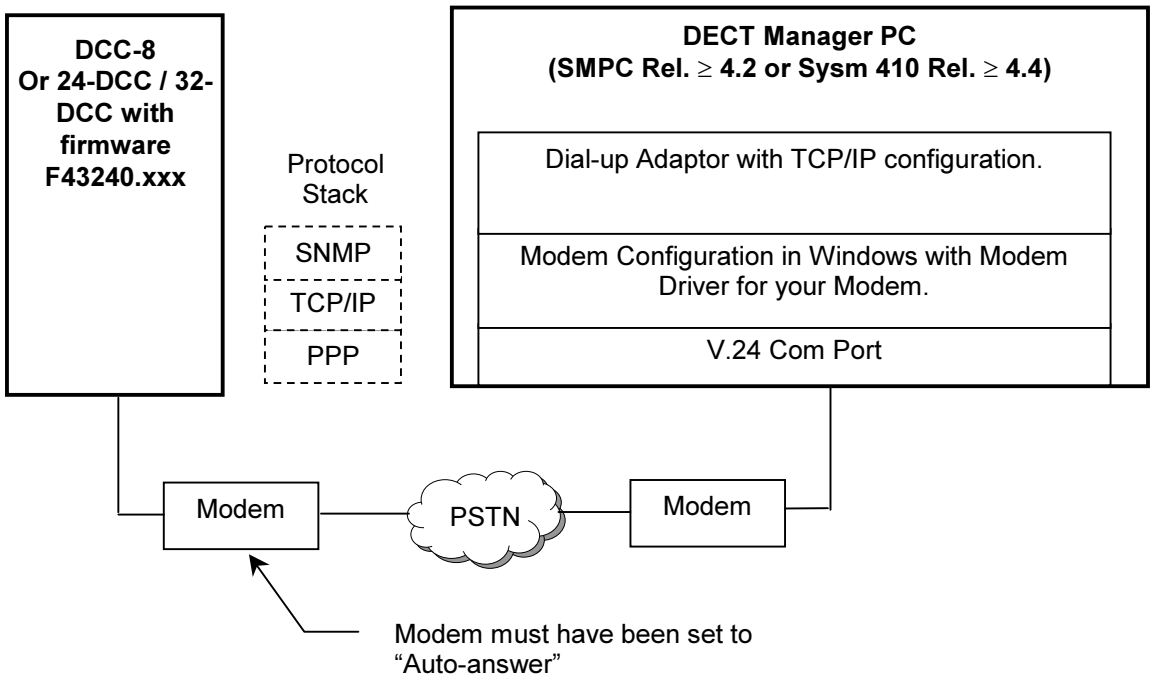
- **Dial-up Adapter.**
  The Dial up adapter is a standard Windows Dialup adapter. You will find this adapter in the icon “My Computer”.
  To set up the Dial-up Adapter, consult section 2.1.2 and section 2.1.3 for Windows 95 or section 3.1.2 and section 3.1.3 for Windows NT.

  Note that if you are using W95 and the icon is not available, you must install the Windows Dial-up software by means of “Control Panel”, Add/Remove Programs”, then tab “Windows Programs” then “Communications”, button “Details”. Check the box “Dial-up Networking”. When you close the Control panel, the system asks for the Win95 software.

Note: *Before you start-up the SMPC Configurator to set up a connection between the DECT Manager and the DCC, you must establish a connection by means of the Dial-up Adapter.*
After "closing down" the DECT Manager, you must close down the connection that you have made via the dial-up adapter.

1.2.3 Modem Connection between 32-DCC / DCC-8 and DECT Manager

The modem connection between the 24-DCC (firmware F43240.xxx), 32-DCC (firmware F43240.xxx) or DCC-8 and the DECT Manager PC uses SNMP over TCP/IP. The configuration and the protocol stack are depicted in the following figure.



To set up a Null modem configuration in the Windows environment, you need to set-up:

- **Modem Configuration.**
  You must assign your modem in the Windows "Control Panel". As modem driver you must use the modem driver file that you get with the modem.

- **Dial-up Adapter.**
  You will find this adapter in the icon "My Computer".
  To set up the Dial-up Adapter, consult section 2.1.2 and section 2.1.3 for Windows 95 or section 3.1.2 and section 3.1.3 for Windows NT.

Mind that you need to fill-in the phone numbers correctly!!

Note that if you are using W95 and the icon is not available, you must install the Windows Dial-up software by means of “Control Panel”, Add/Remove Programs”, then tab “Windows Programs” then “Communications”, button “Details”. Check the box “Dial-up Networking”. When you close the Control panel, the system asks for the Win95 software.

Note: *Before you start-up the SMPC Configurator to set-up a connection between the DECT Manager and the DCC, you must establish a connection by means of the Dial-up Adapter.*
After “closing down” the DECT Manager, you must close down the connection that you have established via the dial-up adapter.

1.2.4 Retrieving Performance Data via the TCP/IP Connection

Retrieving performance data is different compared to the previous firmware versions of the DCCs. There are two ways to retrieve two different types types of performance data:

- **Via a Telnet session**.
  The type of performance data that you get is used for third line maintenance (development). You retrieve the data “on the fly” (when generated) and you can store it in a file. This data is the same as the data that was found in the PMTBC, PMMBC and PMTERM files in the previous types of DECT Managers.

  For instructions, how to retrieve the data, consult section 5.1 and 5.2 in this manual.

- **Via the “Performance Data Retrieval” Tool (PDRUI)**.
  This data is typical performance data of the users (e.g. number of calls) and equipment (channel occupation). The information is stored in .XML files. You can use these files as input for the new Performance Manager. This allows you to generate nice overviews of the daily performance.

  For instructions, how to retrieve the data, consult the next release of this document, probably available on NSO net, under FAQs.

Note: *From technical point of view, it is possible to get files from the DCCs via an FTP (File Transfer Protocol) session that you have set-up manually. However, doing this, you inhibit the DECT Manager from accessing the DCC via FTP, because a DCC can handle only one FTP client at the time. Therefore it is strongly recommended that you do not set-up an FTP session manually.*

Note: *In case you are using a V.24 connection, be aware that you must establish a connection via the dial-up adapter first, before starting-up the Telnet session or the Performance Data Retrieval Tool. During the period that the Performance Data Retrieval Tool is scheduled to retrieve data (at specified intervals), you must make sure that there is a connection active (via Dial-up adapter) to retrieve the data. The connection is NOT set-up automatically, neither closed down automatically.*
After "closing down" the Telnet Session or when you don't need to retrieve data anymore, you must also close down the connection that you have made via the dial-up adapter.

1.3 IP PARAMETERS, HOSTNAME, PASSWORD

Use the SMPC Configurator or the CM Database Configurator to create a connection configuration in the Connection Manager Database. In the "Connection Wizard – Connection type" window, you must select the option "Networked connection to ISPBX for DAS-iS" for Ethernet connections, for Direct V.24 connection via Dial-up adapter and for Modem Connections via Dial-up adapter.
Creating a connection set-up to the DECT System (DCC), you need to enter the following parameters:

Hostname:	xxx.xxx.xxx.xxx	IP address of the DCC board. (Consult the iSMobile CE Manual for the IP address (Chapter "IP Parameters).
Username:	dasuser	This is the fixed username. It is case sensitive, and must be entered in lowercase.
Password:	a	This can be any given password. Everything is accepted, you just cannot leave this field empty.

Note: *If you are connected to the LAN you dial out via a Proxy server, you need to have extra information about the settings in the Proxy server. Your local IT Manager have to supply the settings.*

2. SETTING UP A DIRECT V.24 “PPP” CONNECTION UNDER WINDOWS 95

2.1 GENERAL

This chapter describes the step-by-step procedure to set up a PPP connection on a Windows 95 PC. Such a connection is necessary when you need to set up a Null Modem connection to a DCC board with V.24 interface and firmware package F4324x.xxx or higher or a DCC-8 with V.24 connection.

The procedure in this chapter assumes that the DCC is already up and running and that the V.24 null modem cabling is already installed.

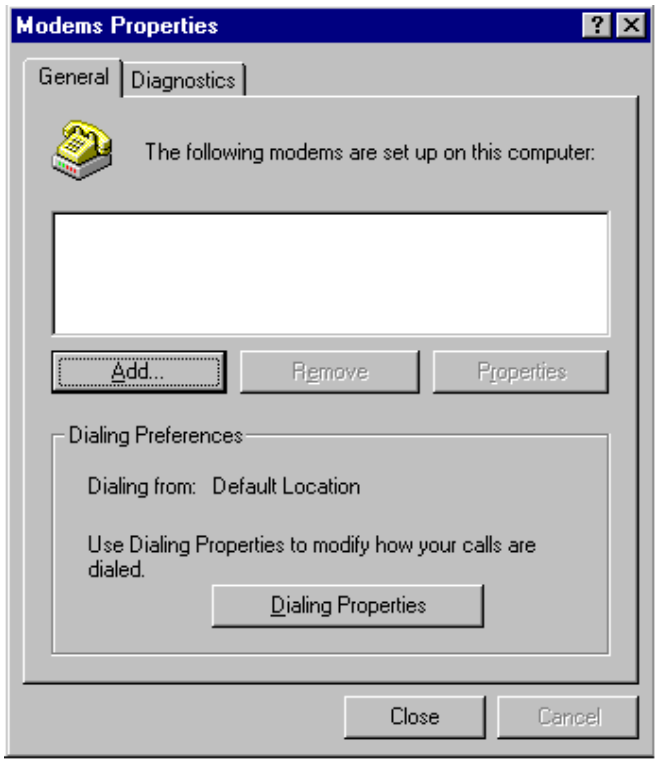
Dial-up Networking

Dial-Up networking is used to connect to the DCC board. Windows 95 needs a modem installed in order to use Dial-Up Networking. Instead of two modems (the most common way to set up a PPP link), we use a crossover cable called a null modem cable.

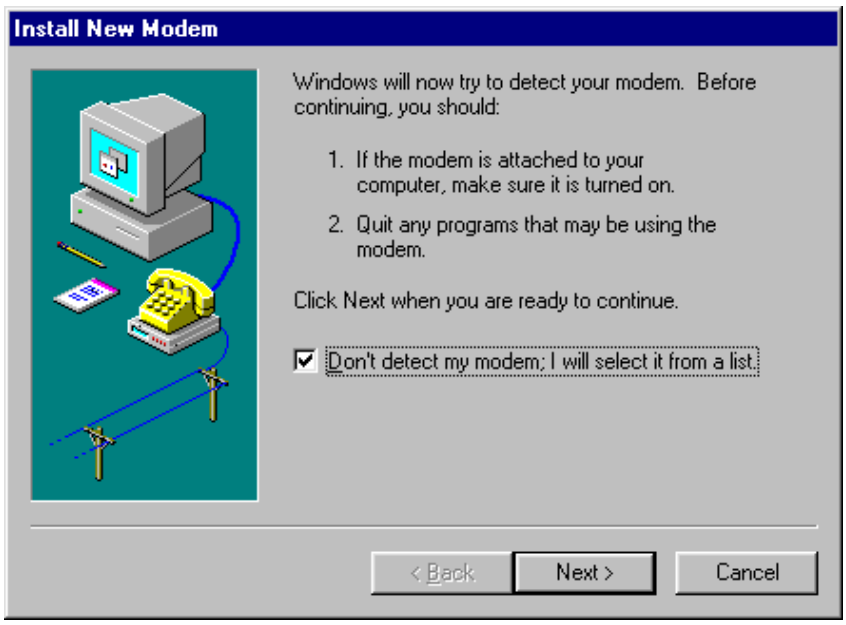
The trick is to use a driver installation file that installs the regular Windows 95 modem driver, but which also tells Windows *not* to use the regular AT commands for handshaking. The driver installation file that accomplishes this is described in Appendix A, and is called: DAS.inf.

2.2 INSTALLING THE MODEM

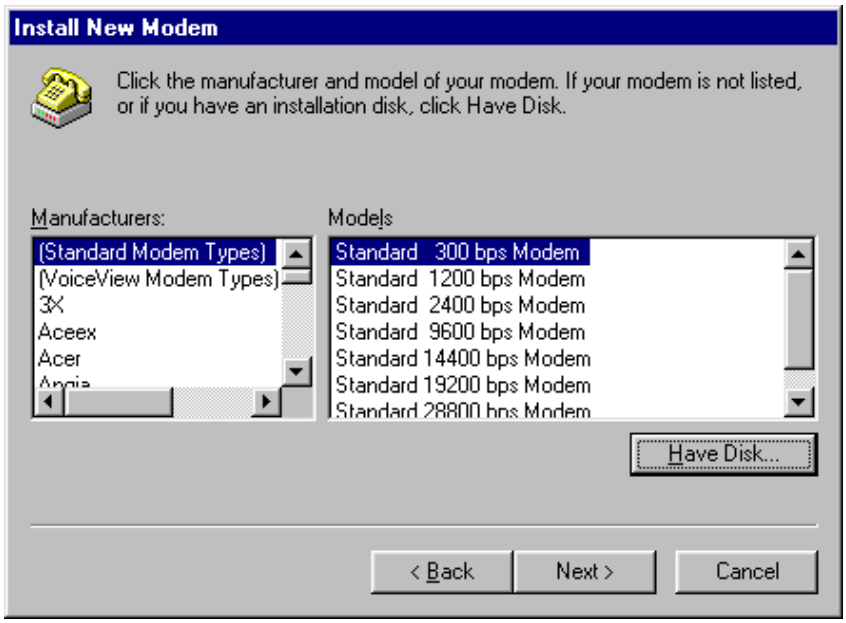
Double click on the ‘My Computer’ icon, the ‘Control Panel’ icon, and then on the ‘Modem’ icon. The following window should appear:



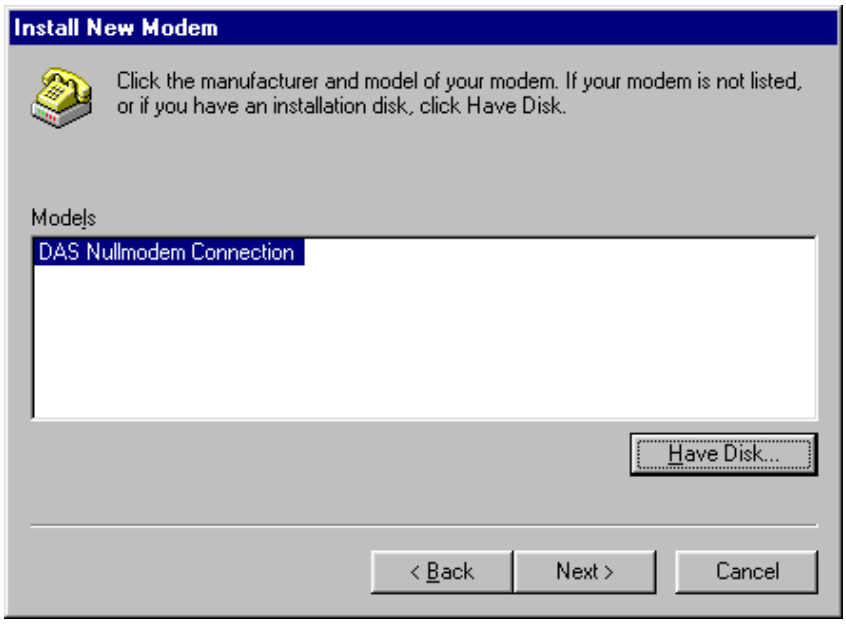
If there are other modems already installed, they will be listed in this window. Clicking once on the ‘Add’ button will lead to the following window:



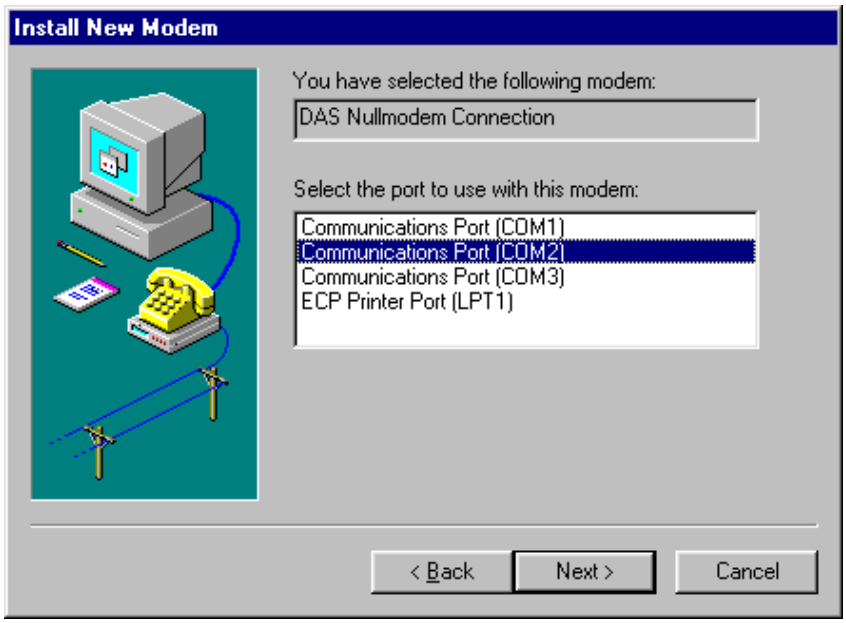
Now, it is very important to check the box ‘Don’t detect my modem; I will select it from a list.’, because automatically scanning for a null-modem will never work (since it won’t respond to any of the normal AT commands). Having done this, click on the ‘Next’ button.



Make sure that you have the null-modem driver file DAS.inf on a floppy (make sure that it ends on .INF, because otherwise the installation program will not recognise it as a driver installation file), insert the floppy, and click on the ‘Have disk’ button. The ‘Install From Disk’ window that follows this should show ‘A:\’ in the ‘Copy manufacturer’s files from:’ selection box. If this is the case, click on the ‘OK’ button. The following window should appear:



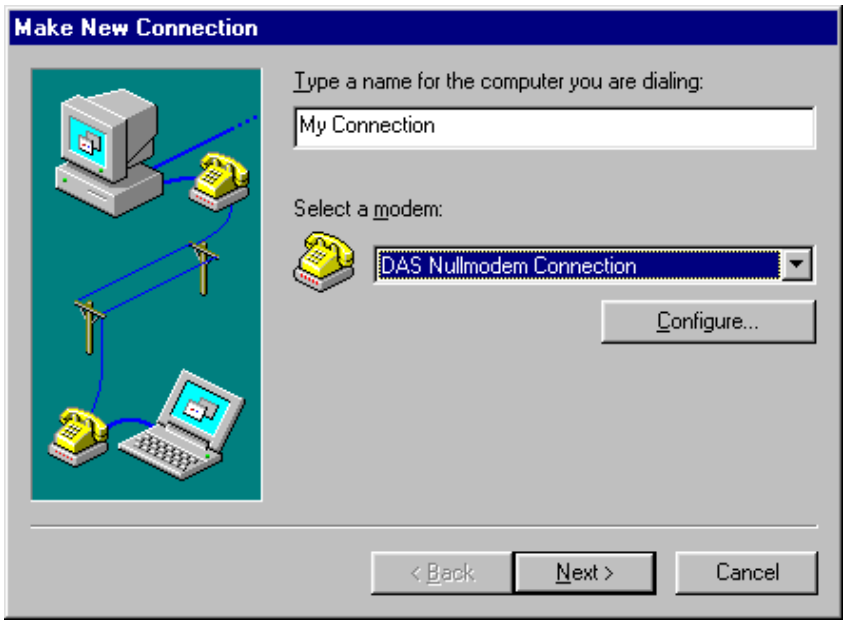
Since there is really nothing to choose here, just click on ‘Next’:



Choose the communications port that you connected the null modem cable to, and click on the ‘Next’ button. This will take a while (depending on the speed of your machine). The last window in this sequence you can click away with the ‘Finish’ button. Close the ‘Modems Properties’ window with the ‘Close’ button.

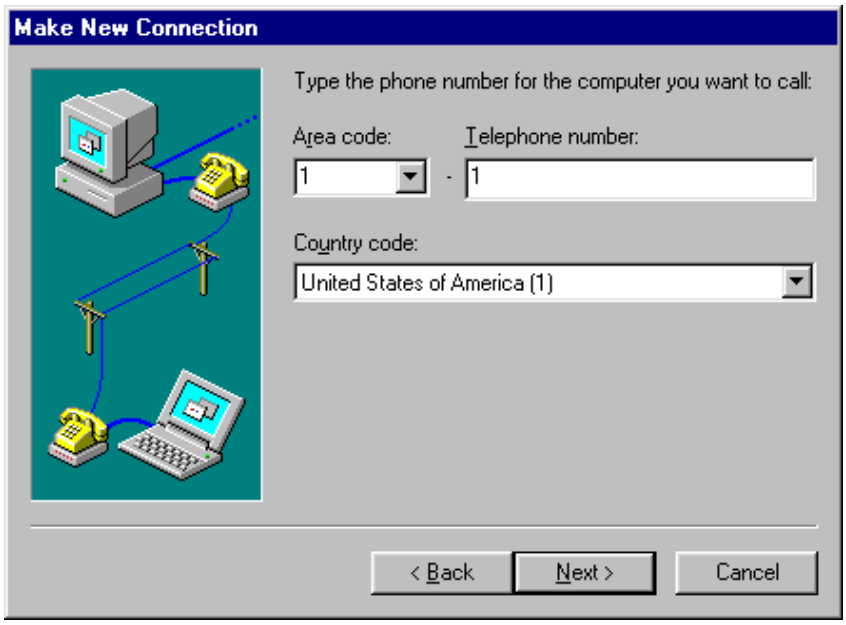
2.3 ADDING A DIAL-UP NETWORKING CONNECTION.

Double click on the ‘Dial-Up Networking’ icon in the ‘My Computer’ window, then double click on the ‘Make New Connection’ icon. The following window should appear:



Note: *If you use a real modem with remote connection, you should select your modem instead of Null modem in the procedure. You also need to fill in the telephone number in case of a remote connection.*

If another modem was already installed before, select the 'DAS Nullmodem Connection'. Click the 'Next' button for the following window:

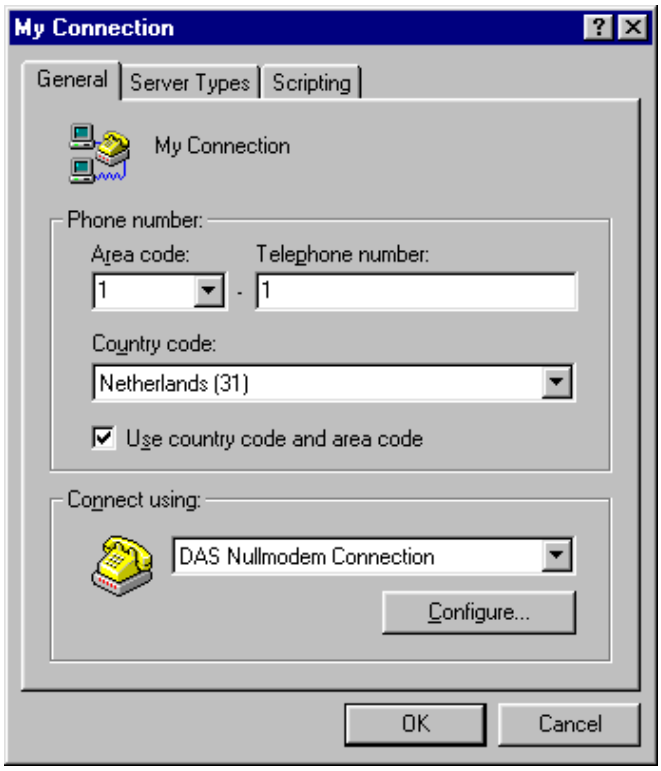


The fields 'Area code' and 'Telephone number' in this window don't matter if you have a Null modem connection (i.e. the driver doesn't use them), but some value must be entered to satisfy Windows 95. The last window in this sequence can again be clicked away with the 'Finish' button.

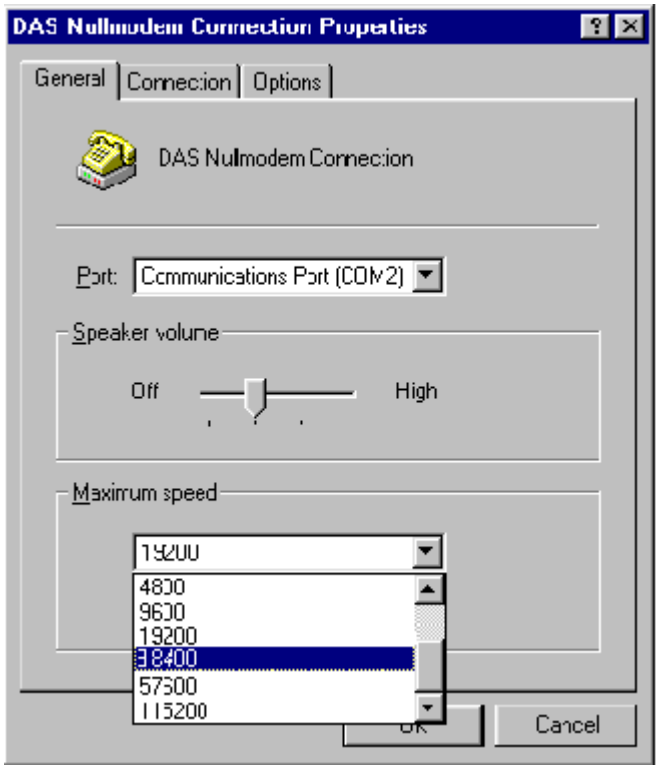
(Note, that if you use a modem with correct modem drivers, then you must enter the destination telephone number!!!)

2.4 CONFIGURING THE CONNECTION

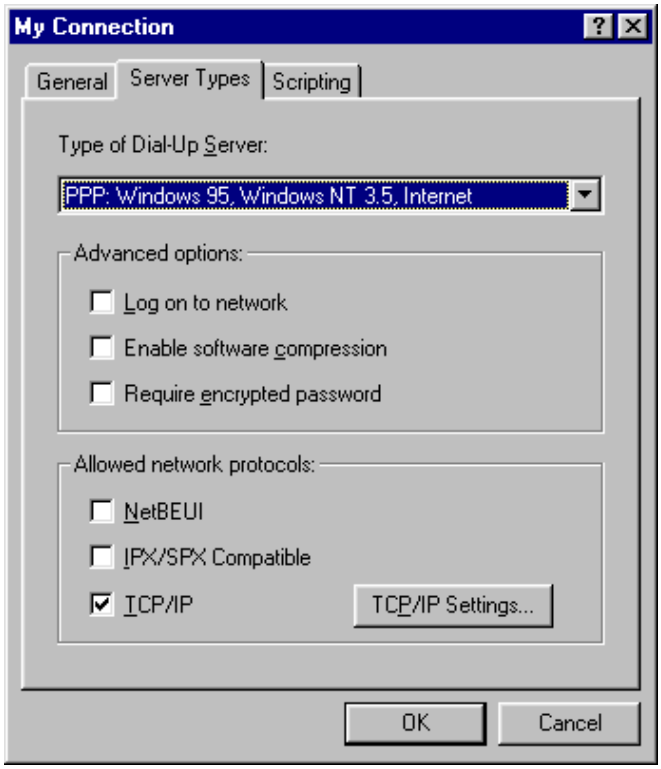
Click on the 'Properties' on the popup-menu that appears by clicking (with the right-hand button) on the 'My Connection' icon in the 'Dial-Up Networking' window. The following window should appear:



Click on the ‘Configure’ option to set the modem speed to 38400 baud.

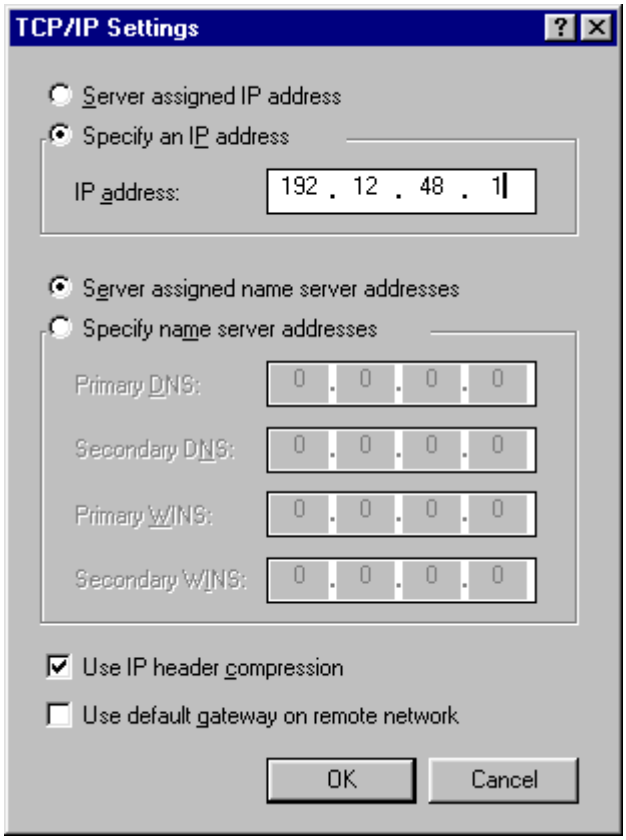


Click on the ‘OK’ button to return to the ‘My Connection’ window. Now click on the ‘Server Type’ tab in order to configure the PPP link:



Make sure the settings are exactly like the window shown here, so *only* TCP/IP. The DCC boards do not support NetBEUI or IPX/SPX, if you select these, the PPP handshake will fail.

Now all that is left is configuring the IP protocol that we are going to use over the PPP link. Click on the ‘TCP/IP Settings’ button:



The only thing you need to do here is to specify an IP address for the Windows 95 side of the PPP link. Now click on ‘OK’ for all windows that are left open, and you’re set up for direct cable PPP.

Now consult chapter 4 for more information about IP settings in your computer.

3. SETTING UP A DIRECT V.24 “PPP” CONNECTION UNDER WINDOWS NT

3.1 GENERAL

This chapter describes the step-by-step procedure to set up a PPP connection on a Windows NT PC. Such a connection is necessary when you need to set up a null modem (PPP) connection to a DCC board with V.24 interface and firmware package F4324x.xxx or higher or a DCC-8 with V.24 connection.

This chapter assumes that the DCC is already up and running and that the V.24 null modem cabling is already installed.

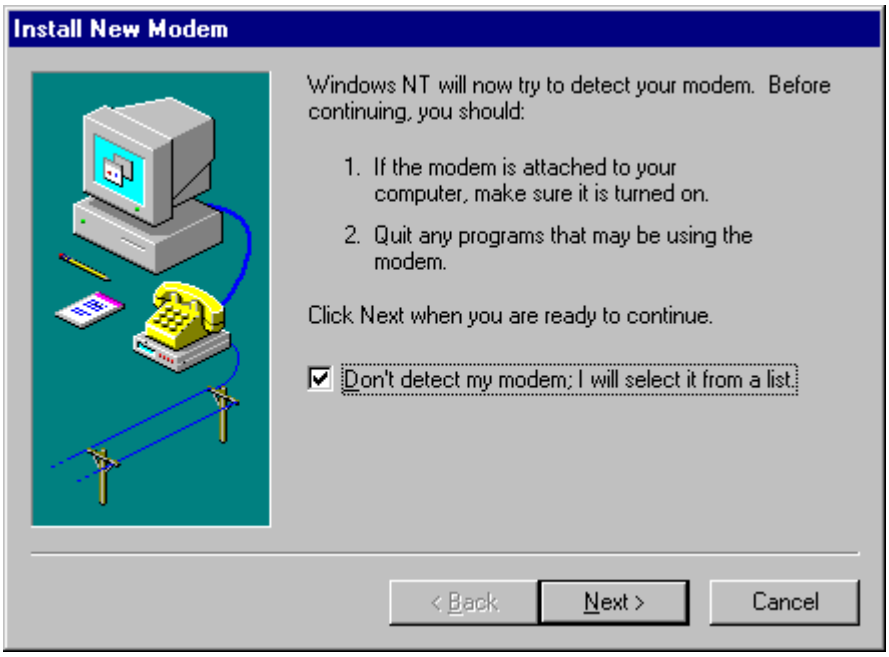
Dial-up Networking

Dial-Up networking is used to connect to the DCC board. Windows NT needs a modem installed in order to use Dial-Up Networking. Instead of two modems (the most common way to set up a PPP link), we use a crossover cable called a null modem cable.

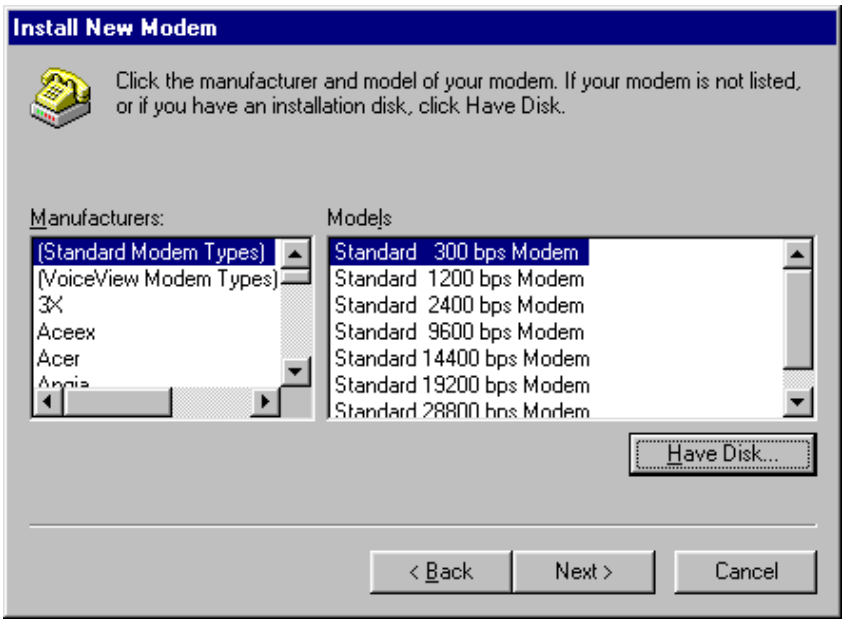
The trick is to use a driver installation file that installs the regular Windows 95/NT modem driver, but which also tells Windows *not* to use the regular AT commands for handshaking. The driver installation file that accomplishes this is described in Appendix A and is called `DAS.inf`.

3.2 INSTALLING THE MODEM

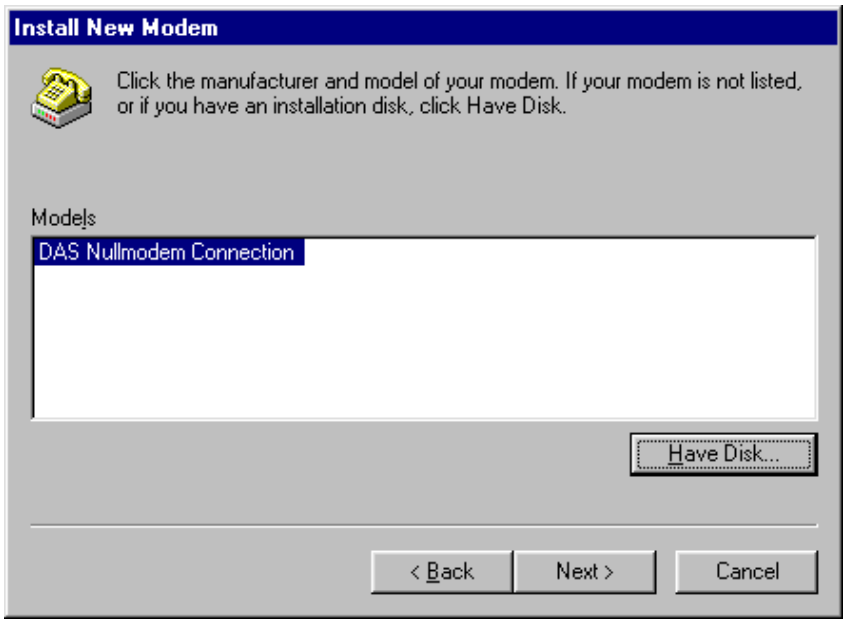
Double click on the ‘My Computer’ icon, the ‘Control Panel’ icon, and then on the ‘Modems’ icon. If there are other modems already installed, they will be shown on the 'Modems Properties' window, otherwise the window 'Install New Modem' will be shown. If you already have other modems installed, click the 'Add…' button.



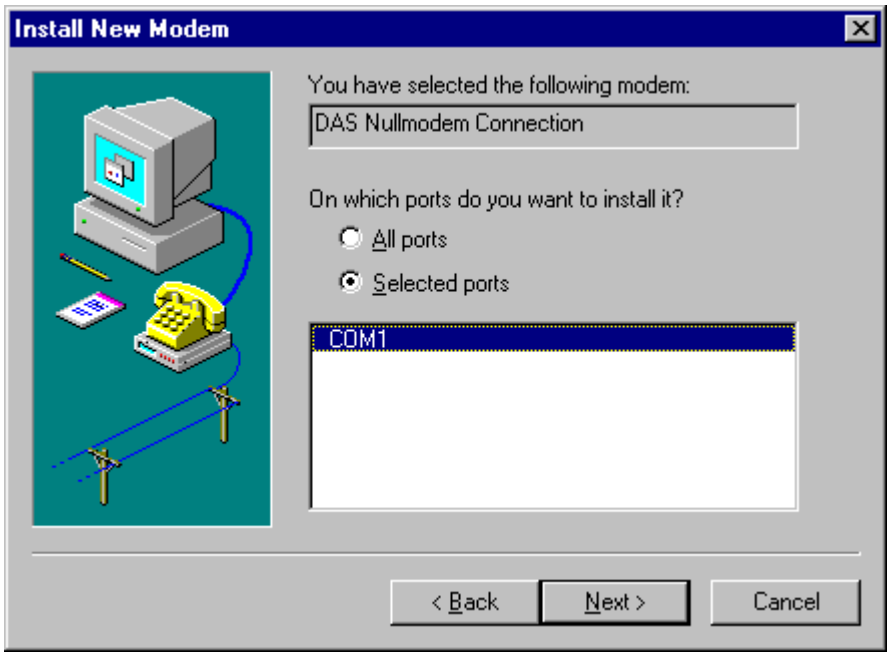
Now, it is important to check the box ‘Don’t detect my modem; I will select it from a list.’, because automatically scanning for a null-modem will never work (since it won’t respond to any of the normal AT commands). Having done this, click on the ‘Next’ button.



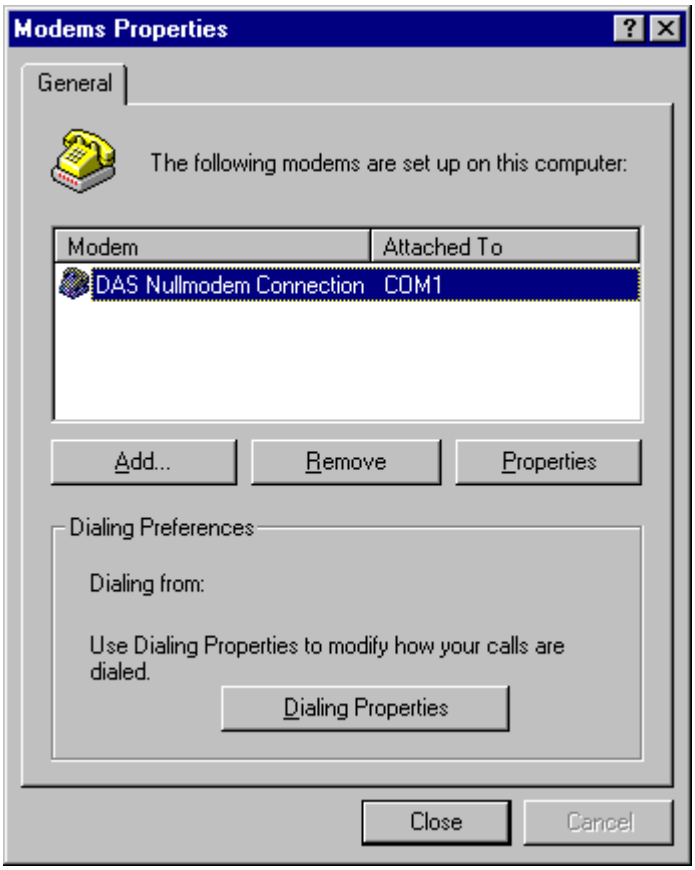
To continue, you must have the file `DAS.inf` on a floppy (make sure that it ends on .INF, because otherwise the installation program will not recognise it as a driver installation file), insert the floppy, and click on the ‘Have disk’ button. The ‘Install From Disk’ window that follows this should show ‘A:\’ in the ‘Copy manufacturer’s files from:’ selection box. If this is the case, click on the ‘OK’ button. The following window should appear:



Since there is really nothing to choose here, just click on ‘Next’:



Choose the communications port that you connected the null modem cable to, and click on the ‘Next’ button. This will take a while (depending on the speed of your machine). The last window in this sequence you can click away with the ‘Finish’ button.



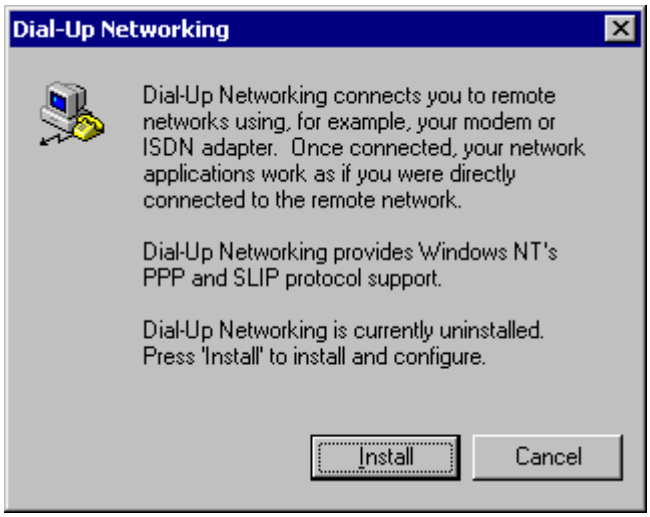
Close the ‘Modems Properties’ window with the ‘Close’ button.

3.3 ADDING A DIAL-UP NETWORKING CONNECTION

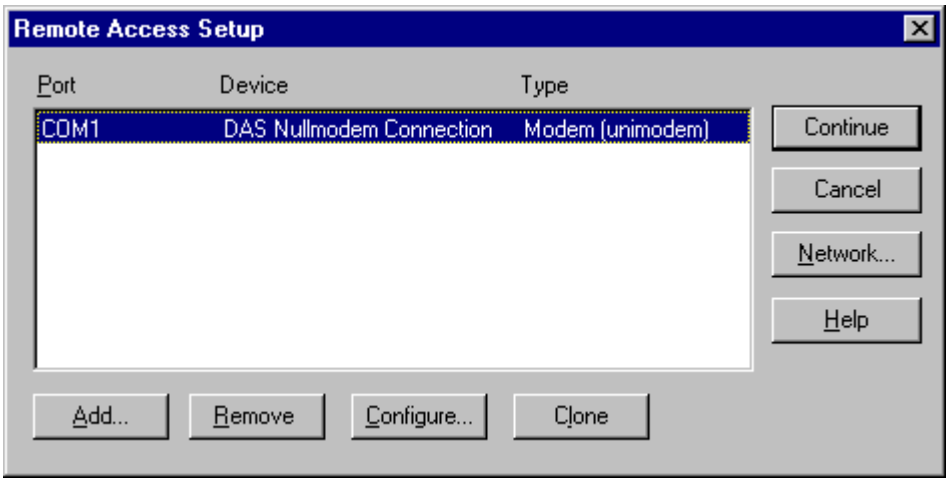
Double click on the ‘Dial-Up Networking’ icon in the ‘My Computer’ window. If Dial-Up Networking is not installed on your system, you must install it using the Windows NT installation CD-ROM.

Note: *It is advisable that you use the Windows NT CD-ROM and not a copy of it on hard disk.*

Note: *If you use a real modem with remote connection, you should select your modem instead of Null modem in the procedure. You also need to fill in the telephone number in case of a remote connection.*

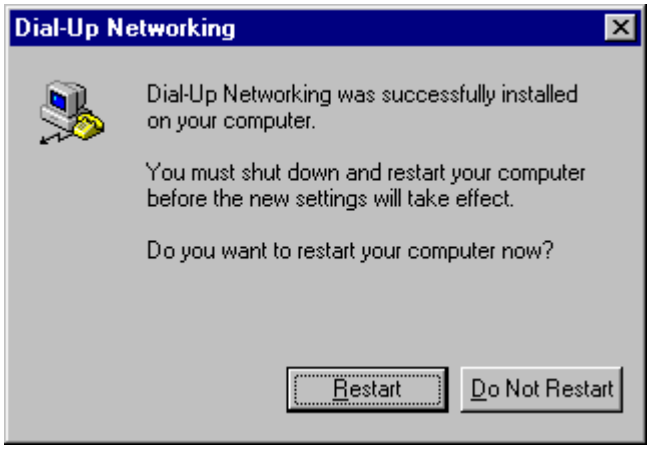


Click the 'Install' button and follow the installation instructions.
During the installation process, the 'Remote Access Set-up' window will be shown. Click the 'Continue' button to proceed.



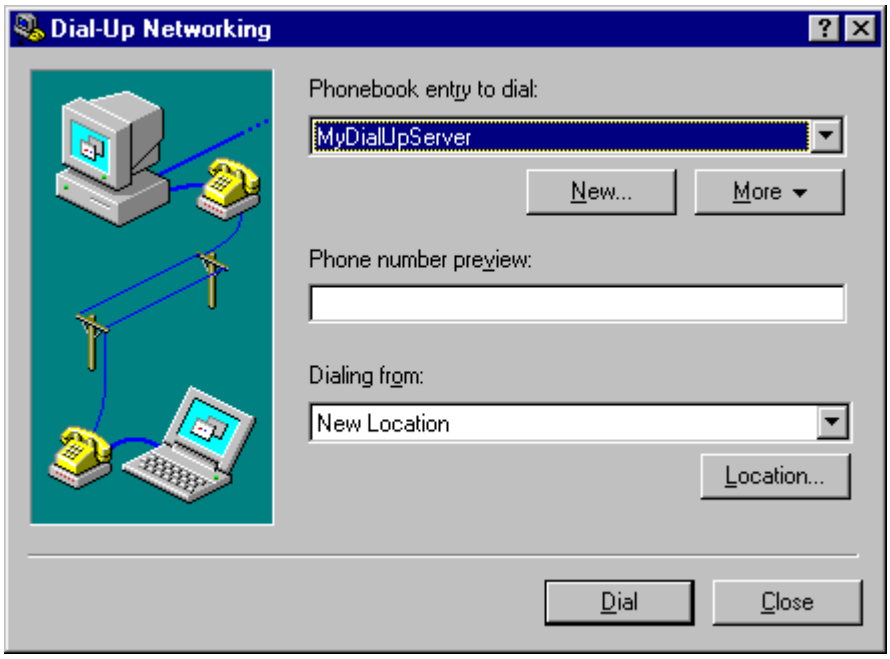
In the end of the installation, you will have to create a new phone book entry using the 'New Phonebook Entry Wizard', which will be started automatically. Type a name for the new phonebook entry and click the 'Next >' button for every step of the wizard. In the end click the 'Finish' button.

To apply all the changes you will have now to restart you PC.



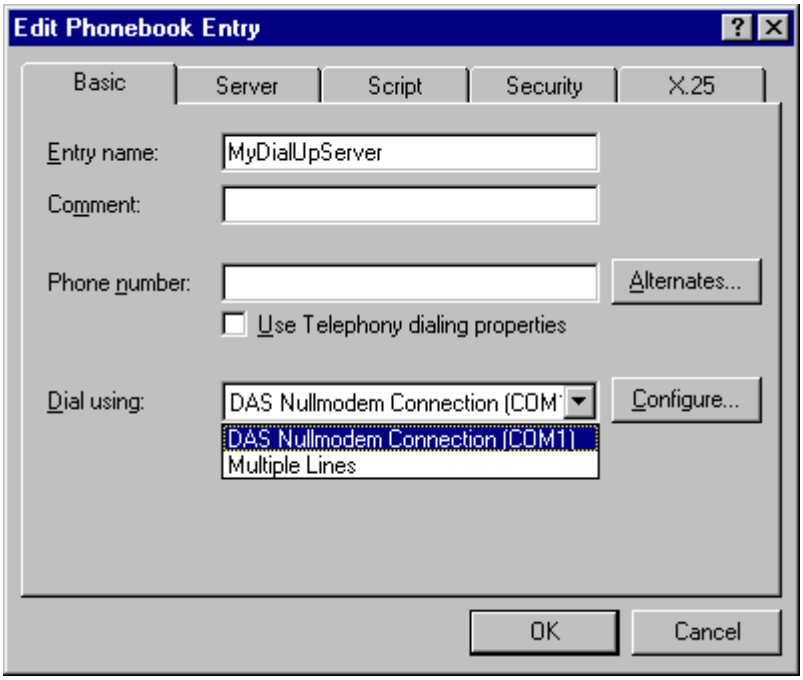
If Dial-Up Networking is already installed on your system, the 'Dial-Up Networking' window will be shown. Click the 'New…' button to create a new phonebook entry. Follow the wizard steps. The 'Remote Access Set-up' window will then be shown (see below).

(Note, that if you use a modem with modem driver, then you must enter the destination telephone number in the location button)

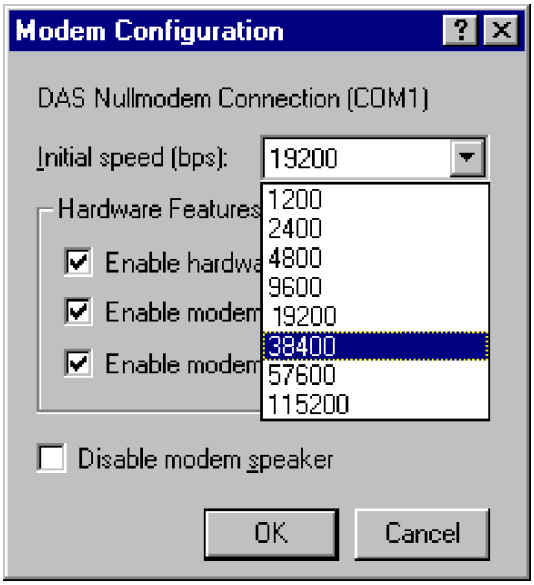


3.4 CONFIGURING THE CONNECTION

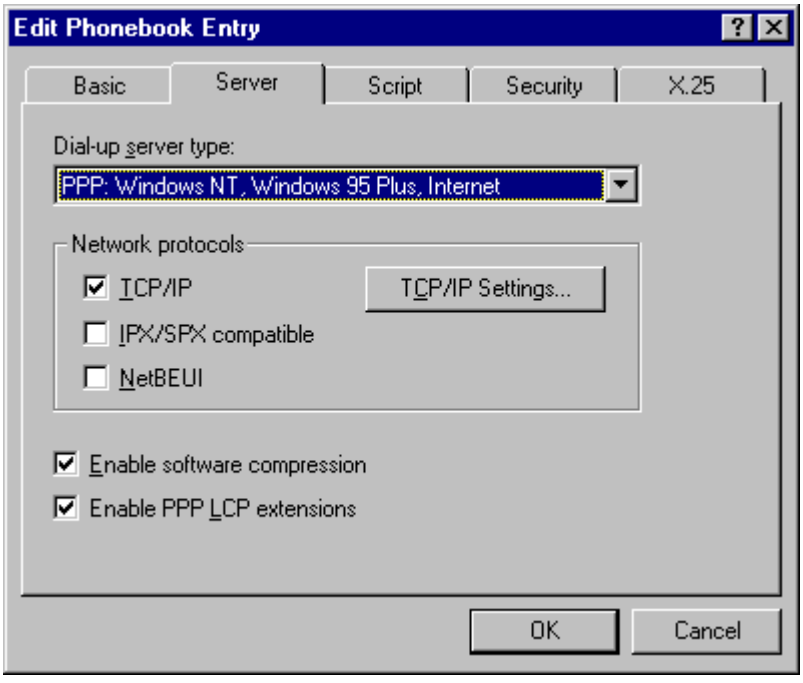
On the 'Dial-Up Networking' window select the phonebook entry that you have created and click the ‘More’ button. On the popup menu that is shown, select the option 'Edit Entry and Modem Properties'. The following window should appear:



From the list box select 'DAS Nullmodem Connection' and click the 'Configure…' button.

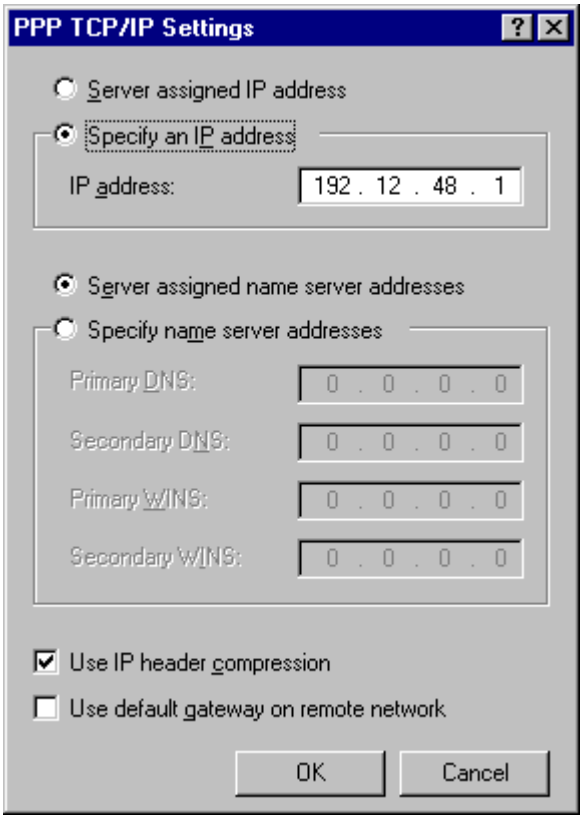


Select an Initial speed of 38400 bps.
Click on the ‘OK’ button to return to the ‘Edit Phonebook Entry’ window. Now click on the ‘Server’ tab in order to configure the PPP link:



Make sure the settings are exactly like the window shown here, so *only* TCP/IP. The DCC boards do not support NetBEUI or IPX/SPX, if you select these, the PPP handshake will fail.

Now all that is left is configuring the IP protocol that we are going to use over the PPP link. Click on the ‘TCP/IP Settings…’ button:

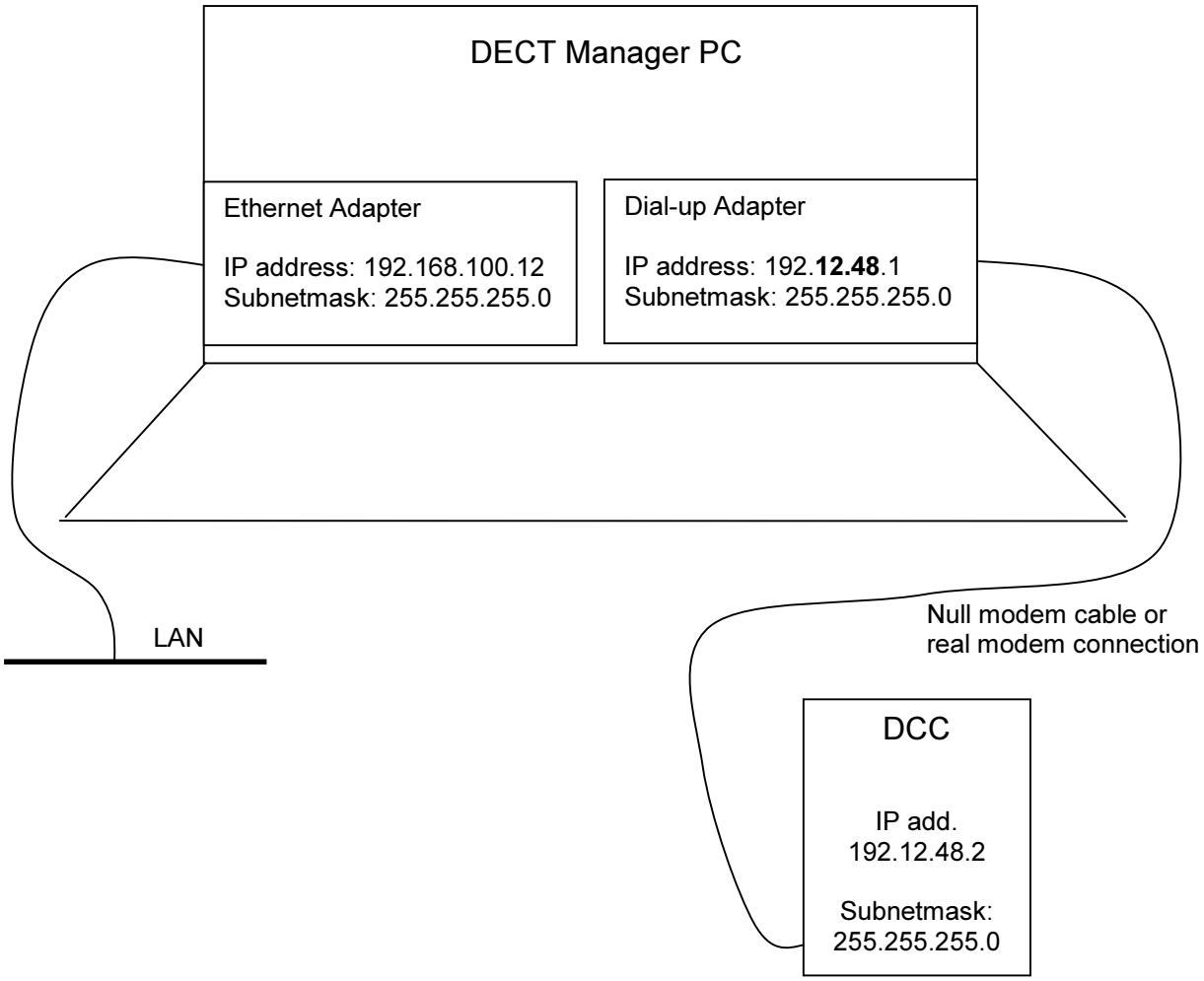


The only thing you need to do here is to specify an IP address for the Windows NT side of the PPP link. Now click on ‘OK’ for all windows that are left open, and you’re set up for direct cable PPP.

4. IP SETTINGS

If the computer is connected to an ethernet network with TCP/IP and you use the Dail-up adapter as well for TCP/IP, most likely you *cannot* start-up a connection between your DECT Manager and the iSMobile system!!! To avoid problems, you need to take the following into account:

- **IP Addresses must be in different subnet.**
  The IP address used for the Ethernet connection must be in a *different* subnet than the IP address used for you Dial-up adapter. In the following figure an example is depicted.



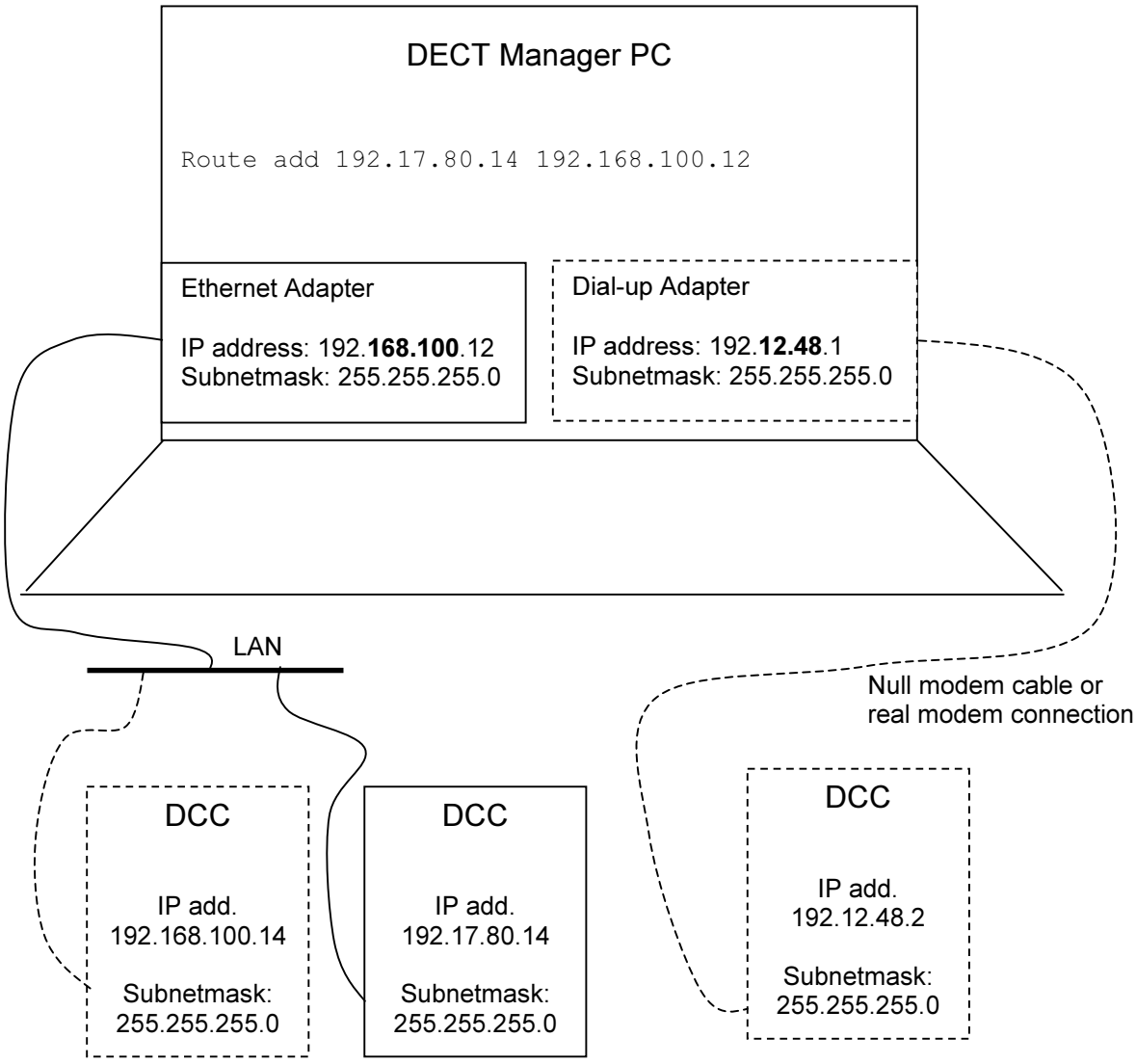
- **Using Ethernet and Dail-up adapter to access DCCs**
  As mentioned before, when you want to access DCC boards via V.24 and via ethernet, then the IP addresses of the DCC boards via ethernet and the DCC boards via the Dial-up adapter must be in a different subnet.
  However, when you want to access a DCC board that is in a different subnet address than the subnet address of your ethernet card, you need to assign a route to the DCC. The figure below gives an example.
  To add a route, execute the following steps *each time* you want to reach a DCC via Ethernet after you restarted your system.

1. Open a DOS Command box.

2. Enter the command:

```
c:\route add <destination IP address> <ethernet adaptor IP address><cr>
```

The following figure gives an example.



This example is applicable for ethernet. However, the same is also applicable in case you connect the null modem cable to different DCCs. If these DCCs are in different subnets, then you also need to use the “route add” command.

If you want to make the route permanent, you can add the parameter “ `-p` ” at the end of the command.

5. RETRIEVE PERFORMANCE DATA

5.1 Use Telnet Session

First read section 1.2.4 in this document.

Note that the performance data that you will retrieve via a telnet session is used for third line maintenance only (development level). It is not the performance data that you retrieve via the Performance Data Retrieval Tool! The performance data that you retrieve via the Performance Data Retrieval Tool, gives you information about the behaviour of you system, in terms of channel occupation etc.

Make sure that you have a connection to the DCC, either via Ethernet or via V.24. In case you have a V.24 connection, make sure that the connection is active.

Execute the following procedure to start up the telnet session:

Step 1. Start-up “Telnet” from the Programs menu.

Step 2. Set Local Echo on, via the menu “Terminal” - "Preferences".

Step 3. Set-up a connection via the menu “Connect Remote System”.

Step 4. Fill in the following:
- Host Name: IP address of the DCC
- Port: telnet
- TermType: vt100

Step 5. Click on the button “Connect”.

Now the connection is open and all characters that you type in are ***immediately*** sent to the DCC. *The Backspace key can not be used to make a correction.*

You need to enter commands to retrieve data. You find the available commands in the next section.

5.2 TelNet Commands

By means of a “telnet” session, you can retrieve performance data. The following table explains the commands that must be executed to retrieve data.

COMMAND	RESULT
`event on<cr>`	Turn event mode on. The prompt changes to: `event>`
`pdc <board address> 83 0 0 1<cr>`	Retrieve TBC performance data. Now the Firmware is displayed. When you make a call, performance data is displayed. However, this is used for third line trouble shooting only.
Switch logging on via the Terminal menu	Put the data into file.
`pdc <board address> 84 0 0 1<cr>`	Retrieve MBC performance data as well.
`pdc <board address> 83 0 0 0<cr>`	Switch retrieving TBC performance data off.
`pdc <board address> 84 0 0 0<cr>`	Switch retrieving MBC performance data off.
`event off`	Finish your telnet session. First switch performance data retrieval off, then switch off the Event mode. Now you can disconnect your Telnet session. If you have a dial-up connection, do not forget to “hang up” the connection

Remarks:

The board address is the backbone address in Hexadecimal:

- range 1, 2, 3, 4, 5, 6, 7, 8 for backbone section 0;
- range 9, A, B, C, D, E, F, 10 for backbone section 1;
- range 11, 12, 13, 14, 15, 16, 17, 18 for backbone section 2;
- range 19, 1A, 1B, 1C, 1D, 1E, 1F, 20 for backbone section 3.

DO NOT FORGET TO SWITCH PERFORMANCE DATA OFF

A. THE DAS.INF CONFIGURATION FILE

The Null modem driver file that you need to install is the DAS.inf file. This file is not available on CD-ROM. However, it is a normal text file, only the file extension is different. You can create the file yourself. Copy the text below into a plain text file. Give this file the file name DAS and file extension .inf (DAS.inf)

```
; DAS.INF
;
; Direct connection (nullmodem cable) for DAS systems
; Parts of this file are copyright (C) Microsoft corporation
; This file was derived from  MDMCBX4.INF by Kevin Wells
;
; History:
;   973110 MaVe, ct-1584, derived from MDMCBX4.INF
;   971712 MaVe, ct-1584, changed signature to $CHICAGO$

[Version]
Signature="$CHICAGO$"
Class=Modem
Provider=%Philips%

[Manufacturer]
%PBC%=PBC

[PBC]
%Nullmodem% = Nullmodem, UNIMODEM105DA558

[Nullmodem]
AddReg=All, Common, RegNullmodem, External

[All]
HKR,,FriendlyDriver,,Unimodem.vxd
HKR,,DevLoader,,*VCOMM
HKR,,PortSubClass,1,02
HKR,,ConfigDialog,,modemui.dll
HKR,,EnumPropPages,,"modemui.dll,EnumPropPages"

[External]
HKR,, DeviceType, 1, 01

[Common]
HKR, Init, 1,, "<cr>"
HKR, Monitor, 1,, ""
HKR, Monitor, 2,, ""
HKR, Answer, 1,, "None"
HKR, Hangup, 1,, ""
HKR,, Reset,, "None"
HKR, Settings, Prefix,, ""
HKR, Settings, Terminator,, "<cr>"
HKR, Settings, DialPrefix,, "D"
HKR, Settings, DialSuffix,, ""
HKR, Settings, CallSetupFailTimer,, ""
HKR, Settings, InactivityTimeout,, ""
HKR, Settings, SpeakerVolume_Low,, "L0"
HKR, Settings, SpeakerVolume_Med,, "L2"
HKR, Settings, SpeakerVolume_High,, "L3"
HKR, Settings, SpeakerMode_Off,, "M0"
HKR, Settings, SpeakerMode_Dial,, "M1"
HKR, Settings, SpeakerMode_On,, "M2"
HKR, Settings, SpeakerMode_Setup,, "M3"
HKR, Settings, FlowControl_Off,, "&K0"
HKR, Settings, FlowControl_Hard,, "&K3"
HKR, Settings, FlowControl_Soft,, "&K4"
HKR, Settings, ErrorControl_Off,, "&Q6S36=3S48=128"
HKR, Settings, ErrorControl_On,, "&Q5S36=7S48=7"
```

```
HKR, Settings, ErrorControl_Forced,, "&Q5S36=4S48=7"
HKR, Settings, Compression_Off,, "S46=136"
HKR, Settings, Compression_On,, "S46=138"
HKR, Settings, Modulation_CCITT,, "B0"
HKR, Settings, Modulation_Bell,, "B1"
HKR, Settings, SpeedNegotiation_Off,, "N0"
HKR, Settings, SpeedNegotiation_On,, "N1"
HKR, Settings, Pulse,, "P"
HKR, Settings, Tone,, ""
HKR, Settings, Blind_Off,, "X4"
HKR, Settings, Blind_On,, "X3"

[RegNullmodem]
HKR, Init, 1,, "CLIENT"
HKR, Init, 2,, "NoResponse"
HKR, Monitor, 1,, "Monitor"
HKR, Answer, 1,, "CLIENTSERVER"
HKR, Answer, 2,, "NoResponse"
HKR, Settings, DialPrefix,, ""
HKR,, Properties, 1, 80,01,00,00, ff,00,00,00, ff,00,00,00, 07,00,00,00,
0f,00,00,00, f7,03,00,00, 00,c2,01,00, 40,38,00,00
HKR, Responses, "CLIENTSERVER", 1, 02, 00, 00, 00, 00, 00, 00,00,00,00

[Strings]
Philips = "Philips Business Communications"
PBC = "PBC"
Nullmodem = "DAS Nullmodem Connection"
```