



Installation Manual

INAT PC-H1

PC-H1

Manual Version 1005-003e

PC-H1



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INHALT

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CHAPTER 1:



INTRODUCTION



1 INTRODUCTION

1.1 Scope of Supply

The following components are part of the scope of supply:

<p><i>CDROM with</i></p> <ul style="list-style-type: none"> <i>* INAT PC-H1 , consisting of</i> <i>H1 driver</i> <i>H1 interface</i> <i>Libraries</i> <i>Test Programs</i> <i>* Online Manuals</i> 	
<p><i>Quick Start</i></p>	

1.2 General

With the PC-H1 Driver Package you may bind industrial PC's and other PC's into an H1 network. The INAT PC-H1 Driver needs no special hardware. It is working with every ethernet adapter (ISA, PCI, PCMCIA, PC/104) and with 100 Mbps Fast Ethernet Adapter.

H1 protocol works parallel with already existing protocols such as TCP/IP or NetBEUI. The creation of driver packages and programs is very easy because the PC-H1 disposes about a simple programming interface and a language independent library for the following operating systems:

- **Windows 98 / ME / NT / 2000 / XP / 2003**
- **Linux**

The complete reference of the INAT H1 interface, information about the H1 Layer 4 communication and the S5 and S7 Layer 7 interface are summarized in the „PC-H1 Programmer's Reference Manual“.

CHAPTER 2:

INSTALLATION



2 INSTALLATION

2.1 Software Installation unter Windows

Installation of the software varies depending on your configuration and operating system.

IMPORTANT NOTES!

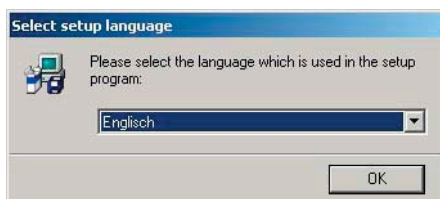
Before the start of the software installation be sure, that a correctly installed ethernet adapter is running on your PC. If not, you have to install a standard ethernet adapter first. Follow the installation guide of the adapter.

Don't forget to license your PC-H1 driver (see chapter "Licensing" page 27). Otherwise the driver works only for 10 hours after every restart of your computer!

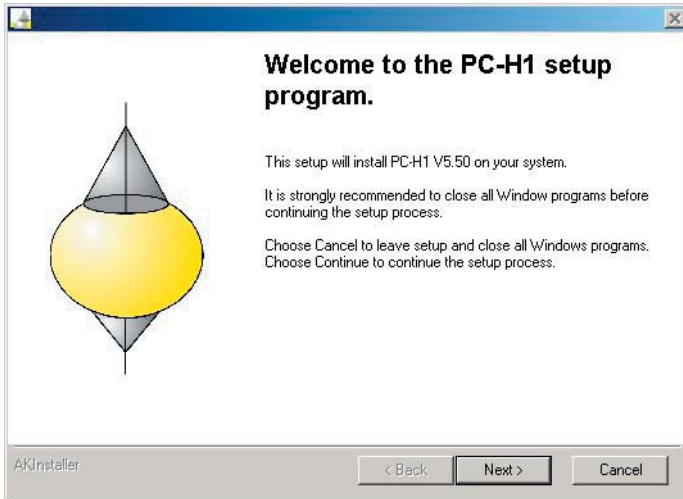
- Insert the CDROM „PC-H1“.
- If autostart is not activated, open the file start.exe or index.html.
- If autostart is activated, the following window appears automatically.



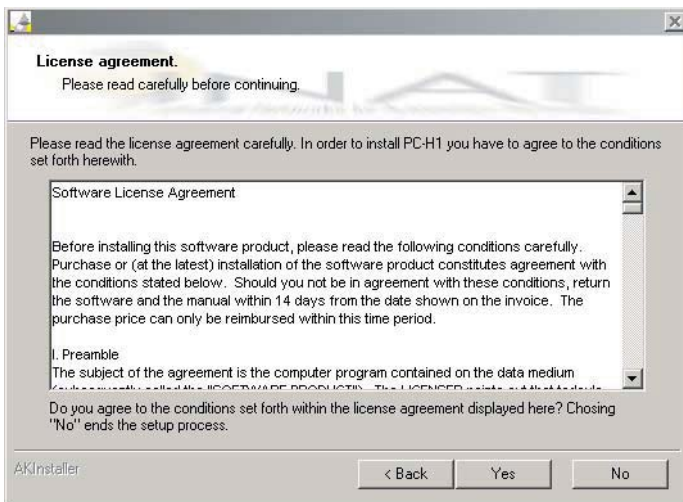
- Select „Installation“
- Start pch1.exe.
- Select the Setup language and press „OK“



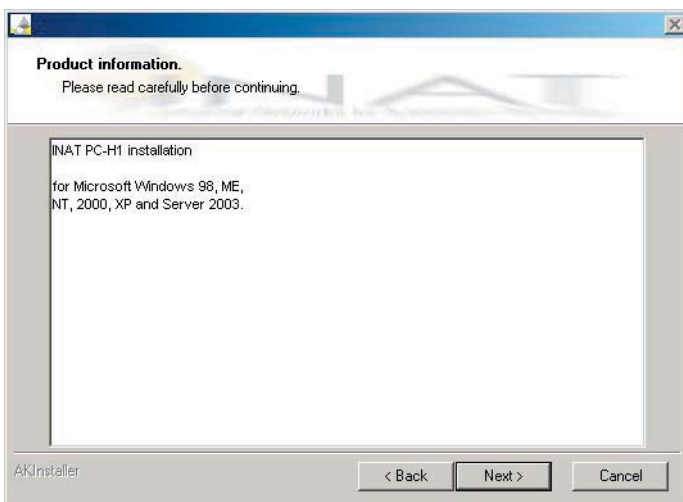
- The start dialogue window for PC-H1 setup appears



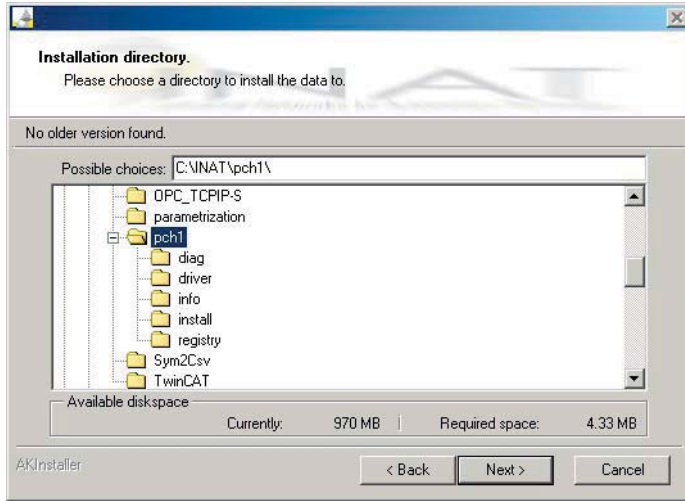
- Select „Next“
- The license agreement appears



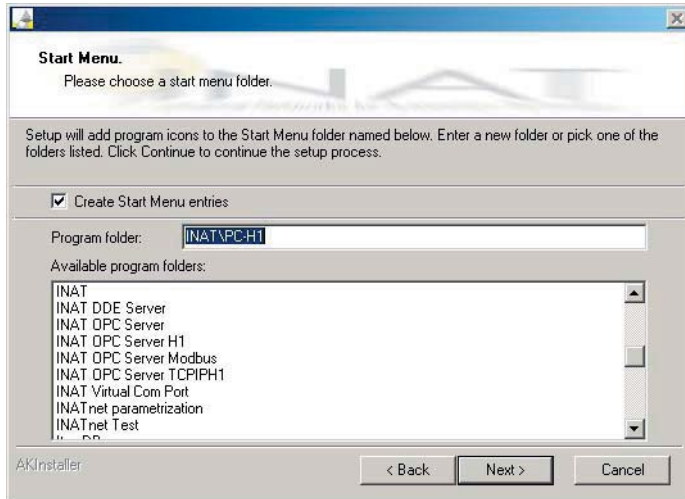
- Agree to the conditions set forth by clicking „Yes“



- Select „Next“



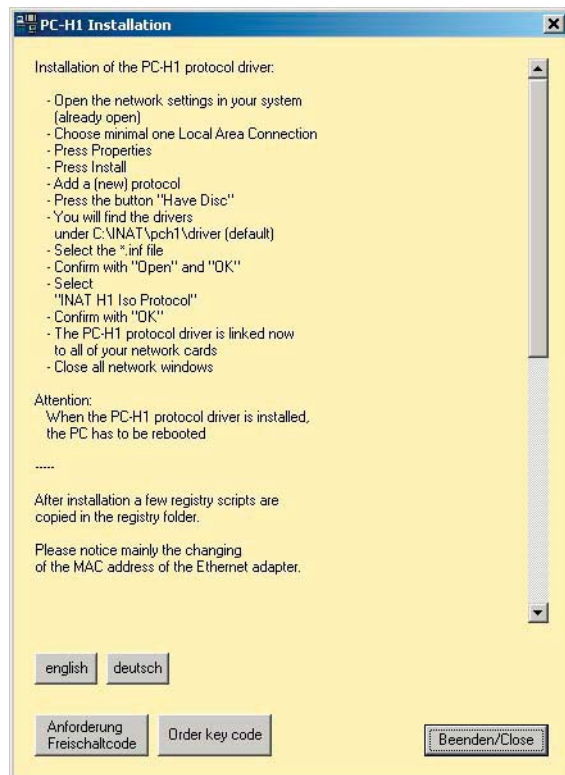
- Select the directory, where the files shall be stored.
Default **C:\INAT\pch1**
- Select „Next“



- Select the start menu folder.
- Select „Next“
- Installation is complete after a few seconds.

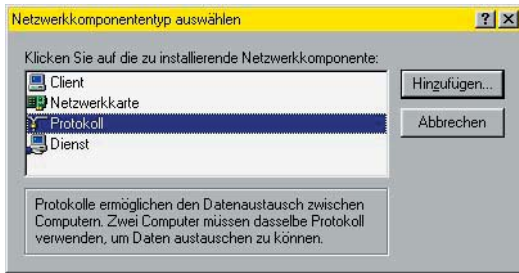
2.1.1 Installation of the PC-H1 protocol driver

- After installation of PC-H1, the „network settings“ window opens together with the description below:

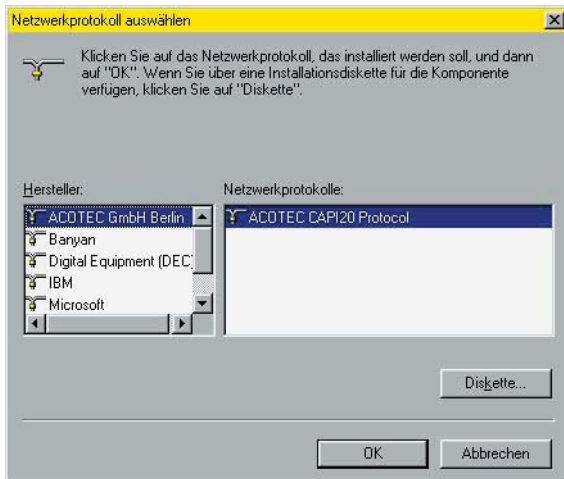


2.1.1.1 Windows 98 / ME Installation

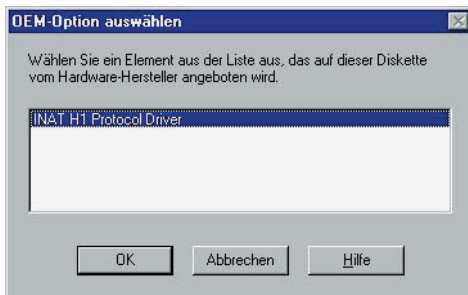
- The window „Network“ appears.



- Select protocol and the the button „Add“



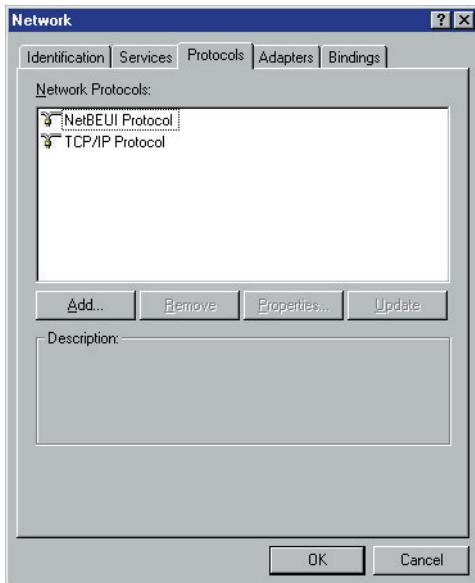
- Select the button „Have Disk“
- Select C:\INAT\pch1\driver.
- Confirm with the „OK“ button.
- Select „INAT H1 Protocol“ from the list of protocols and confirm with „OK“:



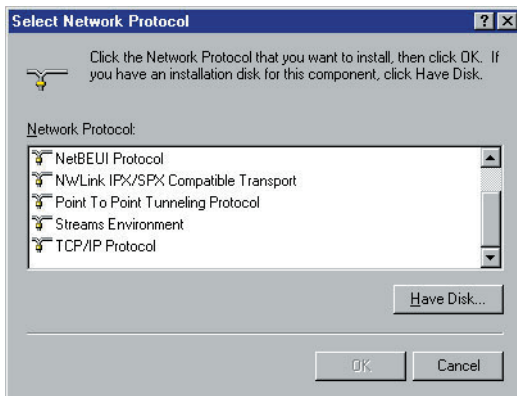
- Confirm the „Network“ window with „OK“.
- Start your computer again and make sure that all programs are loaded without error messages when the system boots.

2.1.1.2 Windows NT Installation

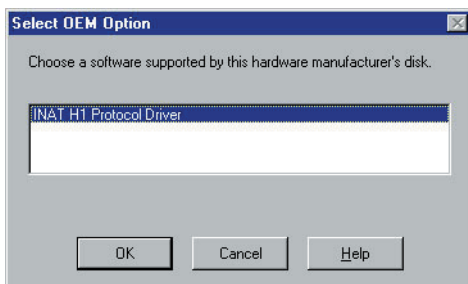
- The window Network appears



- Click the Protocols tab and click the Add button
- The Select Network Protocol window is displayed



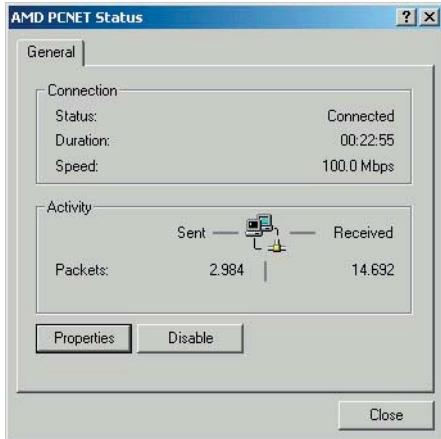
- Click the Have Disk button and enter c:\INAT\pch1\driver.
- Select INAT H1 Protocol Driver from the list of protocols



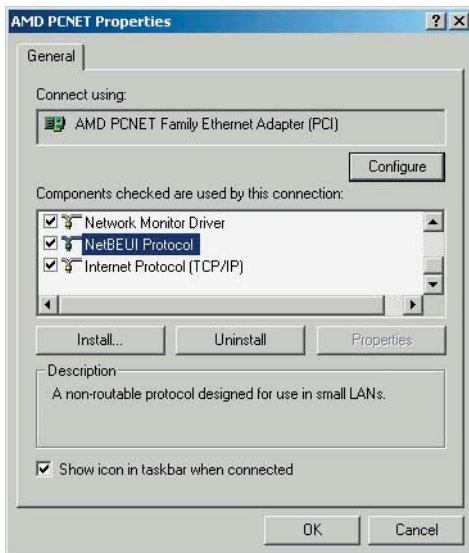
- Confirm with „OK“.
- Confirm the „Network“ window with „OK“.
- Start your computer again and make sure that all programs are loaded without error messages.

2.1.1.3 Windows 2000 Installation

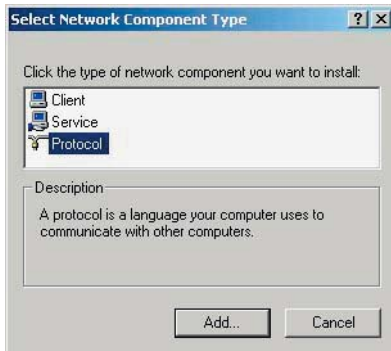
- The window „Network and dial-up connections“ appears.
- Select the button LAN connection



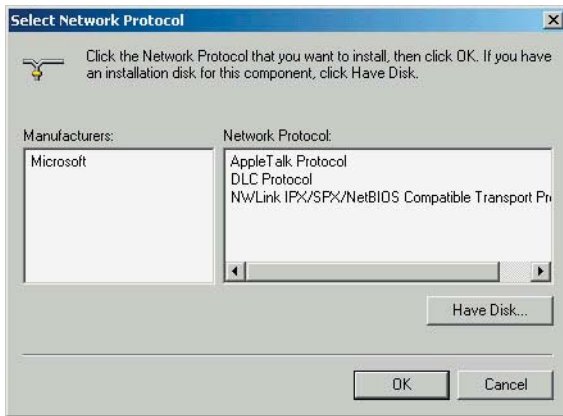
- Select the „Properties“ button.



- Select the button „Install..“.



- Select „Protocol“ and click the „Add“ button. The following window appears:



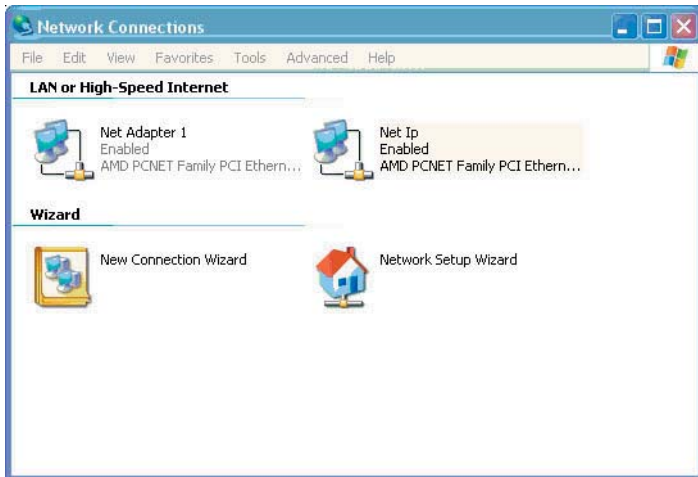
- Select „Have Disk“. The following window appears



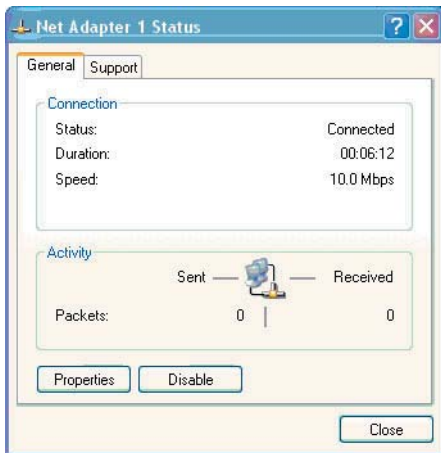
- Select „Browse“ button.
- Select C:\INAT\pch1\driver.
- Select H1Prot.inf.
- Confirm with „Open“.
- Confirm the next window with „OK“.
- In the next window select „H1 ISO Protocol“ and confirm with „OK“.
- The H1 driver will be installed.
- Start your computer again and make sure that all programs are loaded without error messages when the system boots.

2.1.1.4 Windows XP Installation

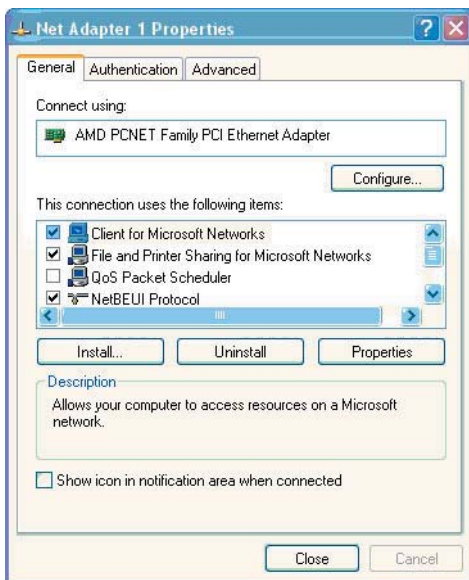
- The window „network connections“ appears:



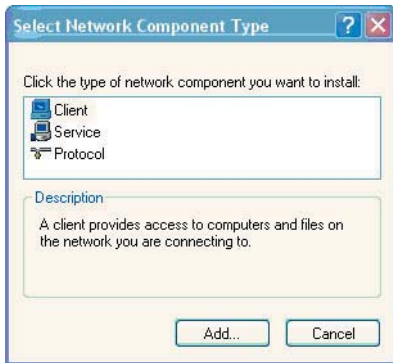
- Double-click the network adapter that you want to configure. The following window appears



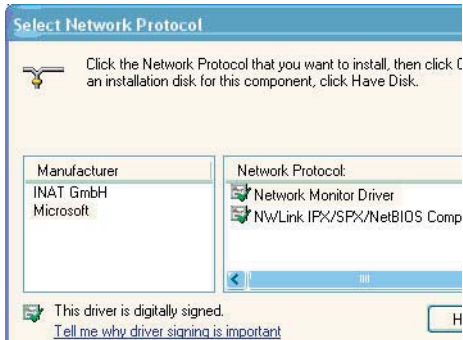
- Click Properties.



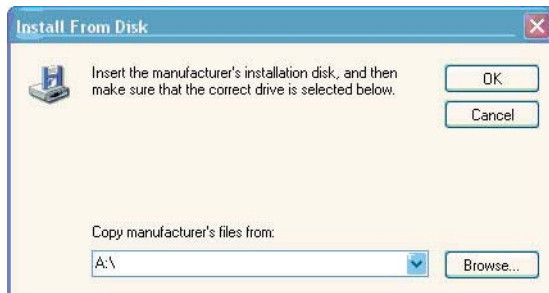
- Click „Install“.



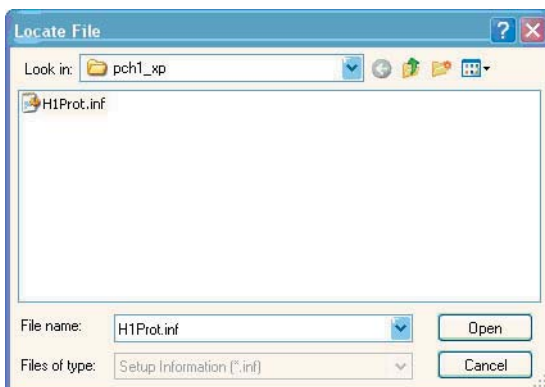
- Select Protocol and click Add



- Click „Have Disk...“



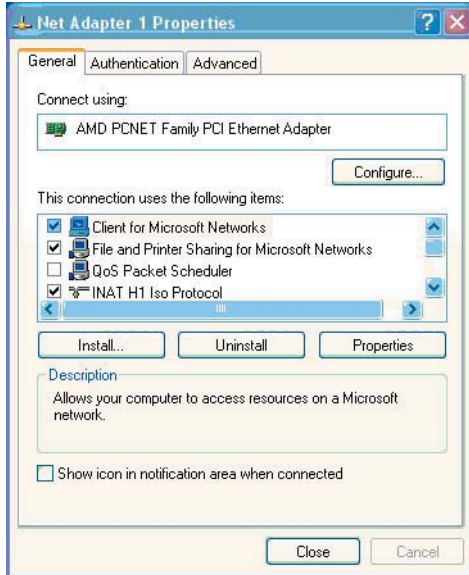
- Browse to the path of the PC-H1 installation directory, which typically is c:\INAT\pch1\driver).



- Click Open.
- Select INAT H1 Iso Protocol and click OK.
- In the window „Net Adapter properties“ the H1 protocol is indicated now

!!! IMPORTANT NOTE !!!

*The QoS Packet Scheduler has to be deactivated!
In the window „Net Adapter properties“ there must not be a tick in front of the
element QoS Packet Scheduler (see right side)*



- Start your computer again, and make sure that all programs are loaded without error messages when the system boots.

2.1.1.5 Windows 2003 Installation

- Select LAN with a double-click



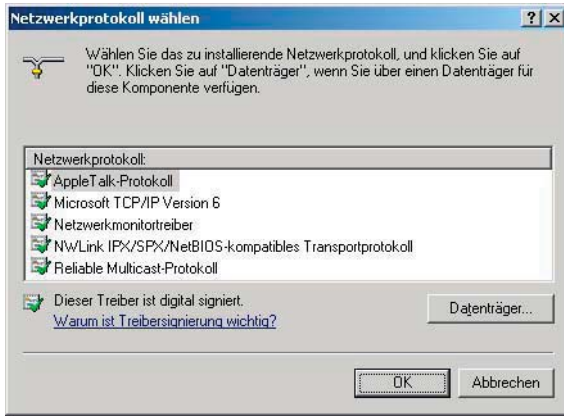
- Select „Properties“.



- Select „Install...“



- Mark „Protocol“ and click „Add...“



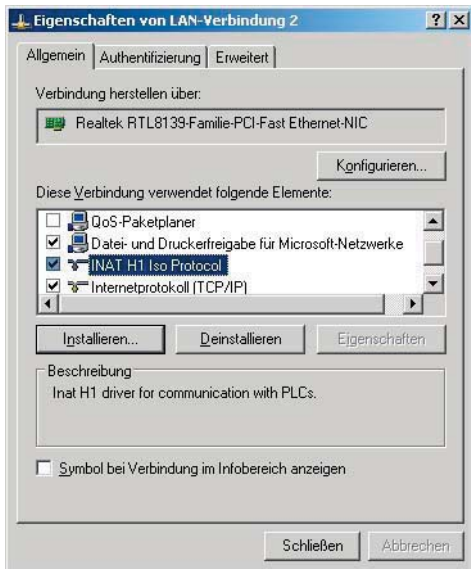
- Select „Have Disk...“



- Browse to the path of the PC-H1 installation directory, which typically is c:\inat\pch1\driver).
- Select INAT H1 Iso Protocol and click OK.



- In the window „Net Adapter properties“ the H1 protocol is indicated now



!!! IMPORTANT NOTE !!!

*The QoS Packet Scheduler has to be deactivated!
In the window „Net Adapter properties“ there must not be a tick in front of the
element QoS Packet Scheduler (see right side)*

- Start your computer again, and make sure that all programs are loaded without error messages when the system boots.

2.2 Linux Installation

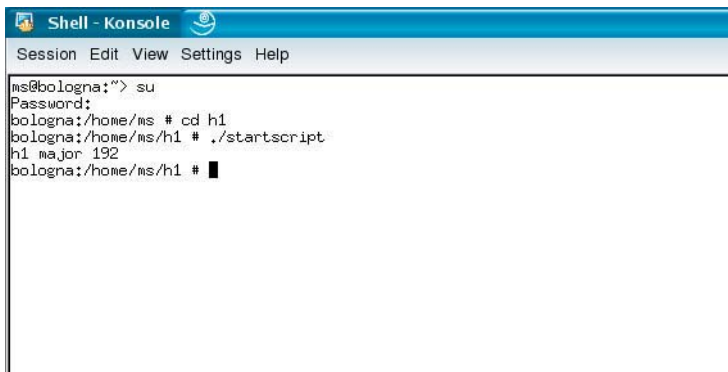
PC-H1 for Linux is available for the following kernels:

- Kernel 2.4.18
- Kernel 2.4.19
- Kernel 2.6.4

NOTE!

For Installation Root Rights are required

- On the CDROM download\software\pc_h1, you will find the following file: **pch1_linux.tar**
- Unpack the file.
- The H1 drivers for the different Linux kernels are located in the directory „Linux“
- Common files as well as files for programming are located in the directory „Common“
- Create a new directory.
- All required files have to be copied to that directory: bothe files in the directory „Common“ as well as the H1prot.lx file in the directory „Linux“
- Start the Shell - Konsole.
- Register as root!
- Go to the directory, where the files are saved (in this example the files have been saved in directory h1).



```

ms@bologna:~$ su
Password:
bologna:/home/ms # cd h1
bologna:/home/ms/h1 # ./startscript
h1 major 192
bologna:/home/ms/h1 # █
  
```

- Enter ./startscript (mind the point in front of the backslash)
- H1 driver is installed and started.

CHAPTER 3:

LICENCING



3 LICENCING

3.1 Windows Licencing

Step 1

- Identify the MAC address of your network adapter. Schritt 2

Step 2

- Send it to INAT GmbH to receive your personal key code
 - via email: keycode@inat.de
 - via phone: +49 911 544 27 0
 - via fax: +49 911 544 27 27

Step 3

- You will receive a key code as soon as possible.

Step 4

- Open the file H1free.dat with a ASCII editor.
- With the installation the file H1free.dat will automatically be copied to the root directory of your PC. You will find them:

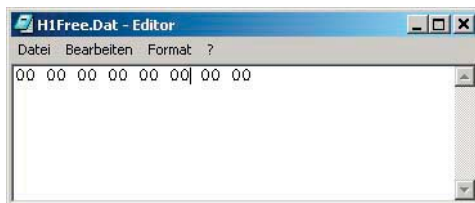
Windows 2000 / NT / XP / 2003

C:\winnt\system32\drivers

Windows 9x / ME

C:\H1free.dat

The file is copied directly to the root directory



Step 5

- Replace the dummy code with the eight key code bytes seperated by blanks.
 - Example: 00 02 10 24 28 53 F9 50*
- More key codes (for more ethernet adapters of this station) can be edited in this file, too.

NOTE!

Every row, edited in the file H1free.dat has to be finished with a space followed by a carriage return

Step 6

- Reboot your system.

3.2 Linux Licencing**Step 1**

- Identify the MAC address of your network adapter. Schritt 2

Step 2

- Send it to INAT GmbH to receive your personal key code
 - via email: keycode@inat.de
 - via phone: +49 911 544 27 0
 - via fax: +49 911 544 27 27

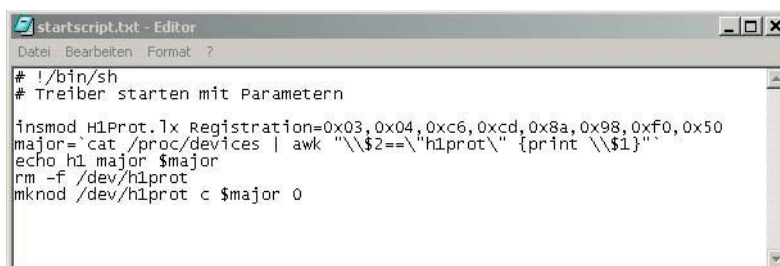
Step 3

- You will receive a key code as soon as possible.

Step 4

- Edit the startscript with the eight key code bytes. Each byte of the keycode has to be entered after the value „0x“. In the example the key code is:

03 04 c6 cd 8a 98 f0 50



```

startscript.txt - Editor
Datei Bearbeiten Format ?
# !/bin/sh
# Treiber starten mit Parametern
insmod H1Prot.1x Registration=0x03,0x04,0xc6,0xcd,0x8a,0x98,0xf0,0x50
major=$(cat /proc/devices | awk "\\$2==\"h1prot\" {print \\$1}")
echo h1 major $major
rm -f /dev/h1prot
mknod /dev/h1prot c $major 0
  
```

CHAPTER 4:

REGISTRY SCRIPTS



4 REGISTRY SCRIPTS

In the directory c:\INAT\pch1\registry you will find three Registry Scripts:

- H1ChanceAddress
- H1DoNotChangeAddress
- 200H1Connections

They can be used with the operating system Windows NT / 2000 / XP / 2003.

4.1 Change MAC address

Under Windows NT / 2000 / XP / 2003 you are able to change the runtime Mac (Ethernet) address. Therefore two Registry Scripts are available. With these scripts with a simple doubleclick, you can decide if changing the address shall be allowed or not. Open the folder registry (Start > Programme > INAT > PC-H1 > H1 Registry Scripts). Here you have to choose:

*H1ChangeAddress oder
H1DoNotChangeAddress*

NOTE:

The entry will be activated after a restart of the computer!!!

4.2 Change number of connections

The registry entry „200H1Conenctions“ increases the maximum number of H1 connections from 64 (default) to 200. Open the folder registry (Start > Programme > INAT > PC-H1 > H1 Registry Scripts) and select

200H1Connections

NOTE:

The entry will be activated after a restart of the computer!!!

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