SPEED TOUCH HOME

User Manual

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Short Title CD−UG Speed Touch Home

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1 Welcome to the Speed Touch Home

Welcome to the Alcatel **Speed Touch**™ Asymmetric Digital Subscriber Line (ADSL) modem.

From now on, your online experience will be greatly enhanced due to the high speed Internet access that ADSL technology delivers.

Over the past five years, the Alcatel ADSL has evolved from the drawing boards to operational products. This technological breakthrough coincides with an ever increasing demand for better Internet access.

This ***Speed Touch***™***Home*** *User Manual* will be your partner in exploiting the features of this highly advanced product.

Prior to connecting the **Speed Touch**™**Home**, read the Safety Instructions (See Appendices D and E).

For readability, the **Speed Touch**™**Home** will be referred to as **STHome** in this User Manual.

1.1 Conventions

The following words and symbols mark special messages throughout this document:

WARNING: Text written in this manner indicates that failure to follow directions could cause bodily harm or loss of life.

CAUTION: Text written in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

Note Text written in this manner indicates that the following presents clarifying information, specific instructions, commentary, or interesting information.

1.2 Trademarks

The following trademarks are used in this document:

- Speed Touch™ is a trademark of the Alcatel Company
- Windows™ and Internet Explorer™ are trademarks of Microsoft Corporation
- Netscape® and Netscape Navigator® are registered trademarks of Netscape Communications Corporation
- Ethernet™ is a trademark of Xerox Corporation
- UNIX® is a registered trademark of UNIX System Laboratories, Inc.

1.3 Disclaimer

All examples throughout this document refer to :

- "Net 10" IP addresses for local network configurations
- VPI 8 to identify the Virtual Channel (VC) on the ADSL line.

However, your ADSL provider, or Internet Service Provider (ISP) might prefer other values.

2 Speed Touch Tour

Your **Speed Touch™Home** is an ADSL modem used for Internet access or remote Local Area Network (LAN) access via the ADSL line.

This chapter aims to familiarize you with the **STHome**.

Topics covered in this chapter include:

- Delivery Check
- **STHome** at a Glance:
  - ADSL Exposed
  - Front and Rear Panel
  - Front LEDs Description.
- System Requirements
- Packet Services.

2.1 Delivery Check

Prior to installation, inspect the **Speed Touch™Home** for damage.

Make sure the box contains all the components:

- The **Speed Touch™Home**
- Power supply adapter with 2m (6.56ft.) connecting cable
- 2m Ethernet/ATMF straight-through cable (RJ45/RJ45), referred to as the LAN cable in this document
- 2m (RJ11/RJ11, RJ14/RJ14) cable, referred to as the ADSL cable
- This User Manual, either in hard copy format, or on CD-rom.

Figure 1 Delivery Check

In the event of damaged or missing items, contact your local product dealer for further instructions.

2.2 Speed Touch Home at a Glance

2.2.1 ADSL Exposed

ADSL is brand-new modem technology, used by the **Speed Touch™Home**, unlocking the potential bandwidth of the widely available public analog, or digital telephone network.

ADSL is short for *Asymmetric Digital Subscriber Line*. This somewhat cryptic name is best explained in straightforward terms:

- **Line**: ADSL uses the ordinary existing copper line, known as "local loop", that runs between your home or office premises and one of the telephone operators' main switching exchanges, known as a central office.
- **Subscriber**: That's you. Because this is what service providers or operators call their customers or end users.
- **Digital**: ADSL is used to transmit digital signals, just like those that make up computer files.
- **Asymmetric**: ADSL can transmit data much faster from the Internet towards the end user than the other way around. It is rather like having a major highway in one direction and a one-lane road in the other.

Because Plain Old Telephone Service (POTS) and Integrated Services Digital Network (ISDN), and ADSL occupy distinct frequency spectra (See figure 2), ADSL service can coexist with these conventional telephone services.

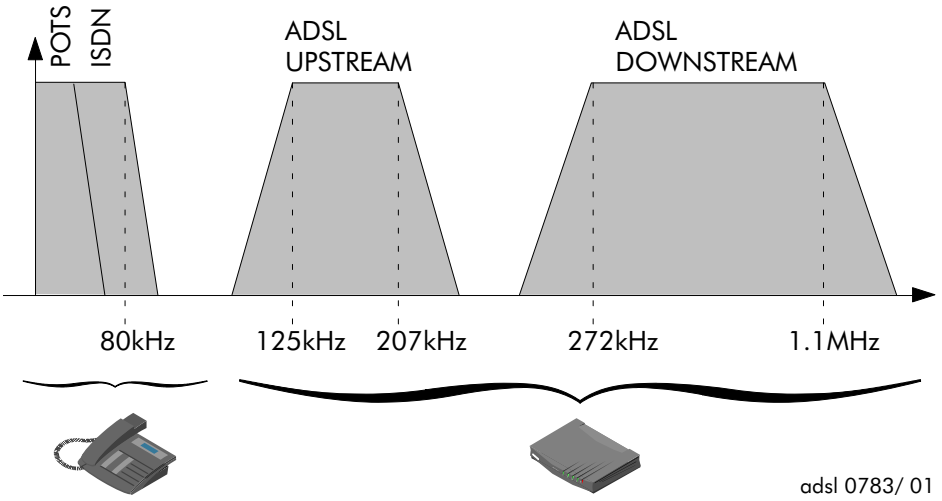


Figure 2 POTS, ISDN and ADSL Frequency Spectra

2.2.2 Front Panel and Rear Panel

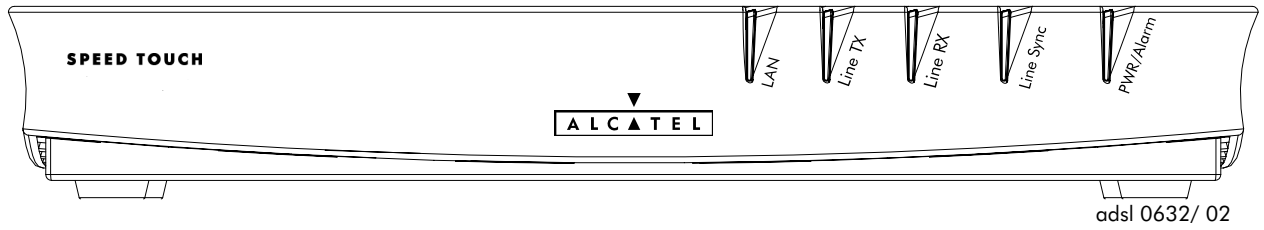


Figure 3 Front Panel of the STHome with 5 Light Emitting Diodes (LEDs)

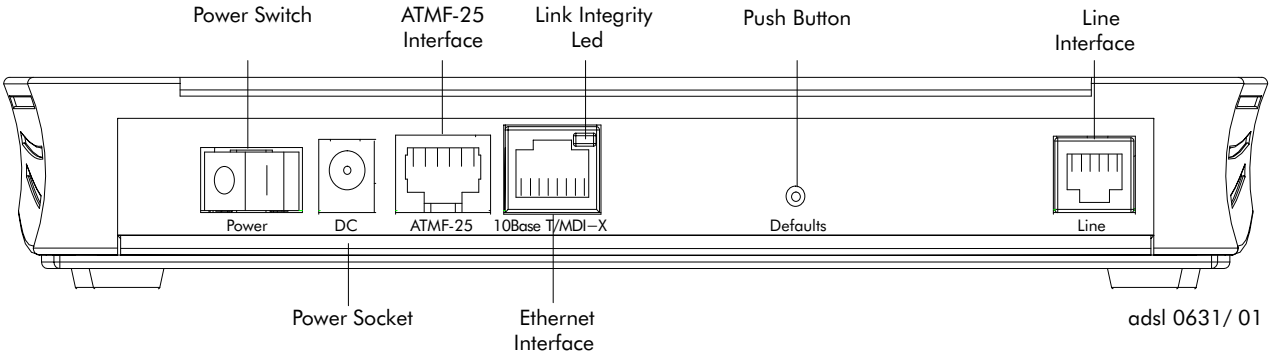


Figure 4 Rear Panel of the STHome

2.2.3 LEDs

Following table explains the functions of the front LEDs:

Table 1 STHome LED Status Overview

LED Name	LED Color	LED State	Explanation
LAN	Green	Flashing	Data is flowing from/to the Ethernet interface
		Off	No activity on the Ethernet interface
Line TX	Green	Flashing	ATM cells are being sent over the ADSL line
		Off	No transmission activity
Line RX	Green	Flashing	ATM cells are being received via the ADSL line
		Off	No reception activity
Sync	Green	On	ADSL line synchronization achieved
		Flashing	During initialization of the ADSL line
PWR/Alarm	Green	On	Power on, normal operation
	Red	Flashing	Power on, Power On Self Test (POST) pending
		On	Power on, POST failed

2.2.4 Ethernet and ATMF-25

The **Speed Touch™Home** is available in two versions: Ethernet only and Ethernet + ATMF-25 (See figures 5 (a) and (b)).

Ethernet will be your natural choice for networking. The ATMForum 25.6 interface provides excellent protocol transparency and Native Asynchronic Transfer Mode (ATM) application support.

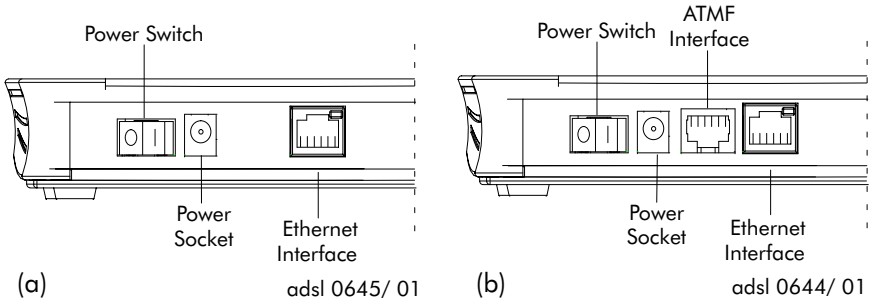


Figure 5 Rear panel with Ethernet Interface (a), or both ATMF-25 and Ethernet (b)

2.3 System Requirements

ADSL ADSL service must be enabled on your telephone (POTS, or ISDN) line.

Ethernet
- A Personal Computer (PC)/workstation with an Ethernet 10Base-T PC-Network Interface Card (NIC)
- For local networking, a 10Base-T hub and the necessary connection cables.

ATMF-25
- A PC/workstation with an ATMF-25 PC-NIC
- For advanced networking, an ATM switch supporting ATMF-25.

Operating System
- If the **STHome** is used in *Bridging* mode, it does not put any requirements on the Operating System (OS).
- When the **STHome** is used in *PPPoA-to-PPTP Relaying* mode, the OS must support local tunneling based on PPP/PPTP.
- In case the *ATMF-25 interface* is used, see the manual of your ATMF-25 PC-NIC for additional requirements.

Local Configuration
- Commend Line Interface (CLI): Telnet Application
- HTTP/HTML: A Web browser.

2.4 Packet Services

2.4.1 IEEE 802.1D Transparent Bridging

The **Speed Touch™Home** *Transparent Bridging* packet service offers complete protocol transparency and has inherent configuration simplicity. Yet it provides excellent forwarding performance.

2.4.2 PPPoA-to-PPTP Relaying

In contrast to Bridging, *PPPoA-to-PPTP Relaying* supports a session concept. It offers identification, authentication and encryption. Similar to Bridging, PPPoA-to-PPTP Relaying is multiprotocol and offers complete Transmission Control Protocol (TCP)/Internet Protocol (IP) transparency.

2.4.3 ATM

The **STHome** ADSL modem relies on ATM technology for its wide area communications.

On top of ADSL, both Bridging and PPPoA-to-PPTP Relaying use ATM virtual channels. The Virtual Path Identifier (VPI)/Virtual Channel Identifier (VCI) are 2 numbers that together uniquely identify a Virtual Channel (VC).

The remote organization, i.e. ADSL provider, ISP, or corporate has to provide following information about the ATM layer:

- The type of packet service that is enabled, i.e. Bridging, or PPPoA-to-PPTP Relaying.
- The ATM/AAL5 encapsulation method, i.e. LLC/SNAP, or VC MUX, per packet service
- The VPI/VCI values per packet service.

Additionally, the remote organization may provide you with:

- A User Account, i.e. user name and password.

  Additional User Accounts might be required for access to specific secured servers.

Note If **STHome** default settings differ with the provided information, change the settings accordingly.

3 Connecting the Speed Touch Home

This chapter describes how to connect your **Speed Touch™Home**.

Topics covered in this chapter include:

- Connecting the Ethernet port
- Connecting the ATMF-25 port
- Concurrent Use of both ports
- ADSL Connectivity
- **STHome** Power Supply.

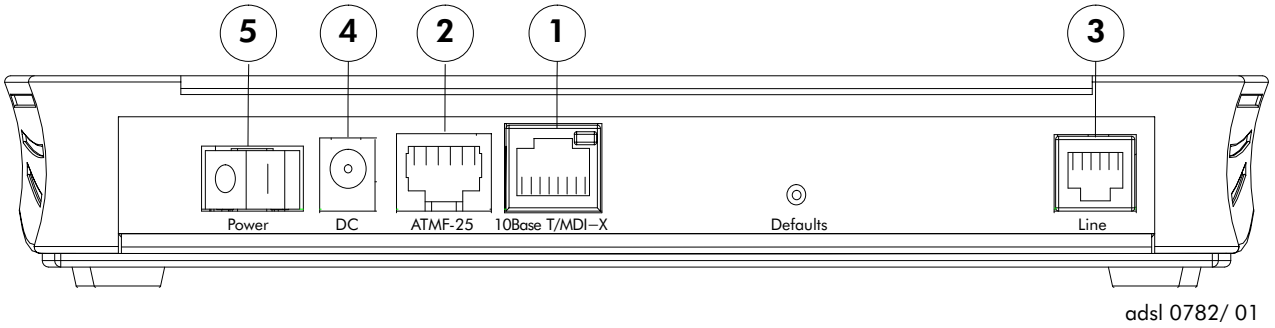


Figure 6 Rear View for connecting the STHome

Following connectors, switches and cables are involved:

- (1) The 10Base-T/MDI-X Ethernet port
- (2) The (optional) ATM Forum-25 port
- (3) The ADSL line port
- (4) The power receptacle
- (5) The power switch
- The ADSL cable
- The LAN cable
- The power adapter.

Follow the numbers on figures 6, or 9 to complete the connection procedure for the **Speed Touch™Home**.

3.1 Connecting the Ethernet port

The Ethernet port available on the **STHome** is a 10Base-T Half Duplex interface of type MDI-X. The **STHome** can either be

- *Connected to a single PC.*

  Use the *LAN cable* to connect the Ethernet port (1) to the Ethernet port on your PC.

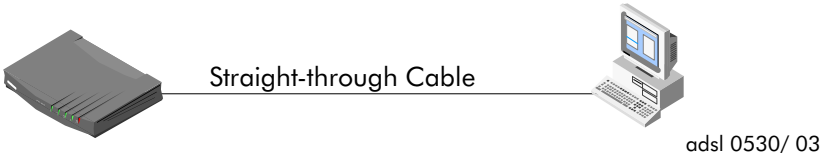


Figure 7 Single PC Configuration

- *Connected to a workgroup hub.*

  Use a *crossover LAN cable* to connect the *Ethernet port* (1) to a MDI-X Ethernet port of your hub.

  Use *straight-through LAN cables* to make the connections between the MDI-X hub ports and the PC's or workstation's MDI Ethernet ports.

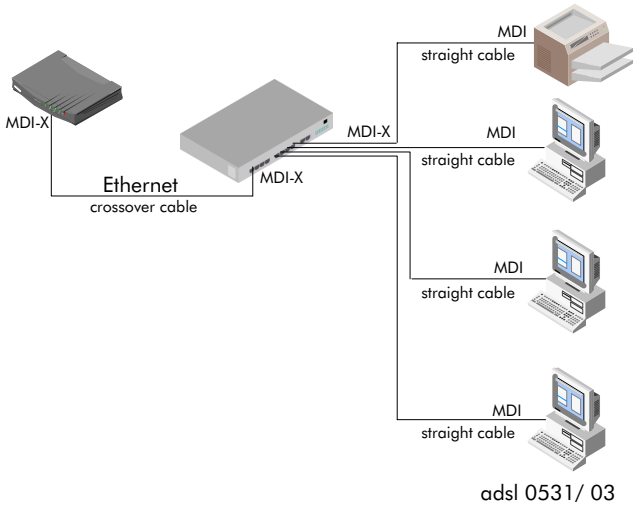


Figure 8 Multiple PC Configuration

CAUTION

10Base-T Half Duplex Interfacing

Make sure the 10Base-T port(s) of your PC(s) are configured for either Auto Negotiation or Half Duplex.

Never configure the PC-NIC 10Base-T Ports for Full-Duplex !

Assuming the **Speed Touch™Home** and the PC or hub are properly powered on, the Link Integrity LEDs on both PC and/or hub ports and **STHome** should be continuously green.

This indicates that the link is properly connected. If not, check the cable layouts according to Appendix A.

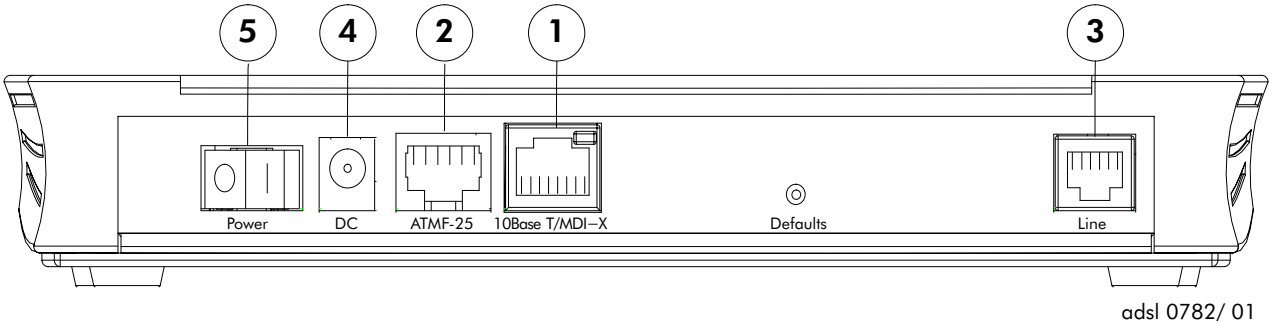


Figure 9 Rear View for connecting the STHome

3.2 Connecting the ATMF port

The (optional) *ATMF port* (2) is an ATM Forum 25.6 Mbit/s compliant interface of type ATM *Network* Equipment.

- Connect the PC (with an ATMF PC-NIC card of type ATM *End* Equipment) directly to the ATMF port (2) via the *LAN cable*.
- To connect multiple PCs to the ATMF port, an ATM switch is required. Use a *crossover* cable between ATMF port (2) and the ATM switch, since both are of type "Network Equipment".

Note The Ethernet and ATMF-25 ports of the **Speed Touch™Home** are designed for concurrent use.
There is no performance penalty on this simultaneous use except for the sharing of upstream and downstream ADSL bandwidth.

3.3 Connecting the ADSL port

Prior to connecting the **Speed Touch™Home**, you MUST contact your ADSL provider. He will inform you whether the ADSL service is already enabled. If not, he will advice you on how to proceed.

Firstly an appropriate central splitter, or distributed filters must be installed in order to prevent the ADSL channel from disturbing the phone channel and vice versa.

Depending on your local telephone service either POTS/ADSL, or ISDN/ADSL splitter/filters must be installed.

In all cases contact your ADSL Service Provider about splitter/filters installation !

Public telephone lines carry voltages that can cause electric shock. Only install splitter/filters yourself if these are qualified for that purpose. Other splitter/filters may **only** be installed by **qualified service personnel**.

- Plug the ADSL cable into the *'Line'* port (3) .
- Plug the other end into the wall socket terminating ADSL service.

Speed Touch™Home POTS vs. ISDN Model

Two models of the **STHome** exist: a POTS model, for connecting to an analog POTS line, and an ISDN model for connecting to a digital ISDN line.

Use only the **STHome** model which is appropriate for your local telephone service.

3.4 Connecting the Power Adapter

The **STHome** is delivered with a modular external power adapter.

See Appendix A for connector layout and output specifications.

Proceed as follows to connect the power adapter :

- Plug the power adapter's coaxial jack into receptacle (4) .
- Plug the power adapter into the mains outlet.
- Turn on the **STHome** with the power switch (5).
- Check the front panel LEDs (See section 2.2.2).

  The LED marked "PWR/Alarm" initially flashes red, indicating that the **STHome** is performing the POST.
- If the self test was successful, the "PWR/Alarm" indicator shows continuous green.
- At this point, the **STHome** is ready for ADSL service.

4 IEEE 802.1D Transparent Bridging

The **Speed Touch™Home** IEEE802.1D Bridging packet service offers complete protocol transparency and has inherent configuration simplicity. Yet it provides excellent forwarding performance.

The topics covered in this chapter include:

- Getting Started with Bridging
- Bridging Configuration
- Using Bridging.

4.1 Getting Started with Bridging

1. Connect your **Speed Touch™Home** and PC(s) as described in Chapter 3.
2. Configure *Public* IP addresses on your PC(s) according to the preferred method of your service provider: either static, or dynamic.
3. At this point you are online and applications can be started, e.g. a Web browser.

4.2 Bridging Configuration

Remote Organization

Must support RFC1483 Bridged PDU Encapsulation on ATM.

Additionally it provides you with:

- the VPI/VCI values for Bridging service
- In case of Internet access, your ISP may:
  - Provide static IP parameters to be configured on your PC
  - Require you to use DHCP on your PC.

Note : *Connectivity to multiple remote organizations*
Additional sets of these parameters need to be supplied.

Bridging & Dynamic Host Configuration Protocol (DHCP)

DHCP is by default disabled for the **STHome**.

This to avoid conflicts with the DHCP server of your ISP.

Bridge Port Configuration

The **STHome** comes with a preconfigured Bridge port ***Br1***. As this port is put in forwarding state, frames can be transmitted and received without any configuration action.
If needed you can configure up to 4 additional ports via the **STHome** local web pages. See Chapter 7 for more information.

4.3 Using Bridging

From this point on, using Bridging is rather straight-forward. Start your Web browser and you are on the Internet. However, the remote organization might present you with a welcome screen asking for a User Name and Password prior to granting access to secured servers or the Internet.

5 PPPoA-to-PPTP Relaying for Microsoft Windows

In contrast to Transparent Bridging (See Chapter 4), which provides "Always-On" type of connections, PPPoA-to-PPTP Relaying supports a session concept. It offers identification, authentication and encryption. Similar to Bridging, PPPoA-to-PPTP Relaying is multiprotocol and offers complete TCP/IP transparency.

An important advantage of PPPoA-to-PPTP relaying is that it avoids the complexity of a router, yet – to a certain extent – provides identical features

This chapter covers configuring and using the PPPoA-to-PPTP Relaying (PPP/PPTP) mode of the **Speed Touch™Home**.

Topics covered in this chapter include:

- Getting started with PPPoA-to-PPTP Relaying
- Requirements for using PPPoA-to-PPTP Relaying
- Configuring Dial-Up Networking
- Using PPPoA-to-PPTP Relaying
- Upgrade Procedures for Windows 95 Users
- Advanced PPPoA-to-PPTP Relaying
- Configuring and using PPTP Tunneling with Windows NT.

5.1 Getting Started with PPPoA-to-PPTP Relaying

Initial Configuration

1. Connect your **Speed Touch™Home** and PC(s) as described in Chapter 3.
2. Determine your PC's OS. If:
   - Windows 98 (or later) : Continue with step 4.
   - Windows 95 : Continue with step 3.
   - Windows NT : Go to section 5.7.
3. Download and install the Dial-Up Networking Upgrade for Windows 95 as described in section 5.5.
4. Configure a *Private* IP address on your PC, e.g. 10.0.0.1.
5. Configure your PPP/PPTP Dial-Up connection icon(s) as described in section 5.3.

Use

6. Establish the connection by double clicking the icon of the appropriate PPP/PPTP connection (See section 5.4.1).
7. You are now connected: start your application, e.g. a Web browser.

5.2 Requirements

Remote Organization

Must support RFC2364 PPP over AAL5.

Additionally, it provides you with:

- The VPI/VCI values for PPP service
- A User Account for access to its network or the Internet.

Note : *Connectivity to multiple remote organizations*
Additional sets of these parameters need to be supplied.

STHome

Comes with 4 preconfigured PPP/PPTP connections. Up to 12 concurrent VCs are supported; all can be assigned to PPP/PPTP. The actual number might be restricted by the ADSL provider.

Your Computer

Must support Point-to-Point Protocol (PPP) and Point-to-Point Tunneling Protocol (PPTP).

TCP/IP

Prior to establishing PPTP tunnels, IP addresses must be properly configured in both machines, i.e. the PC and **STHome**, initiating and terminating the PPTP tunnel.

Therefore, configure either a static IP address, or enable the DHCP-client in your PC(s) and the DHCP server in your **STHome**.

5.3 Configuring Dial-Up Networking for Microsoft Windows 9x (or later)

To configure a new connection on a Microsoft Windows 9x (or later) platform, to your headquarters or an ISP, proceed as follows:

1. Activate the 'Make New Connection' application by double-clicking 

in the 'Dial-Up Networking' folder.

2. The *'Welcome to Dial-Up Networking'* window appears (this window appears only during first time use of the 'Make New Connection' application). Click Next >.

3. The *'Make New Connection'* window appears (see figure 10).

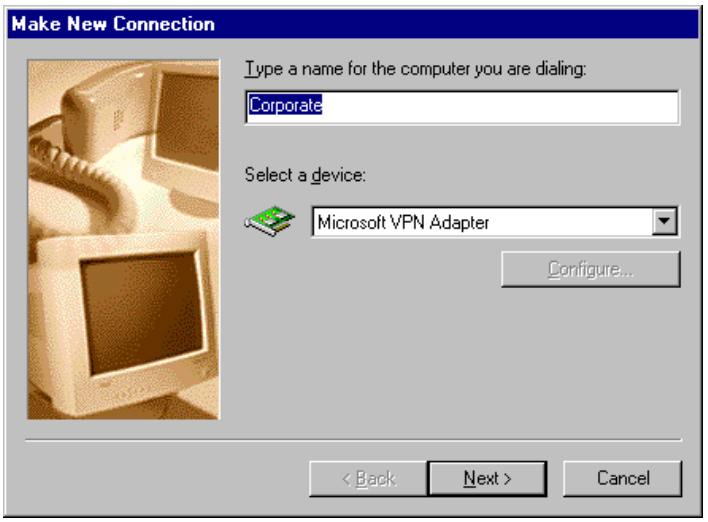


Figure 10 Make New Connection Window

In the first input field, type the name or alias of the organization you are connecting to. This name will appear below the newly created icon at the end of this procedure.

In the 'Select a Device' listbox, you must select the *'Microsoft Virtual Private Network (VPN) Adapter'* for PPTP tunneling.

Note **Windows 95 Users** : If Dial-Up Networking has not been upgraded, you cannot select the *'Microsoft VPN Adapter'*. Upgrade according section 5.5.

Click Next >.

4. The *'VPN Server'* window appears (See figure 11).
Enter the hostname or IP address of your **Speed Touch™Home**.
Its default IP address is 10.0.0.138,
the default DNS hostname is "SpeedTouch".

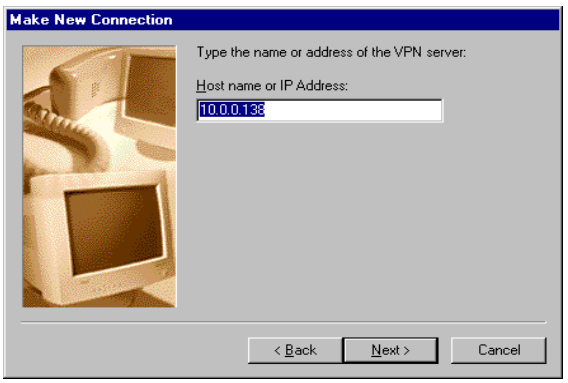


Figure 11 VPN Server Window

Click Next > .

5. A window appears announcing that you have successfully installed a new Dial-Up Networking Connection.
Click Finish to end. A new icon with the name of the connection that you have just created, will be added to your Dial-Up Networking folder.

6. Right-click the Dial-Up icon and select *'Properties'*.

7. The *'Properties'* window appears. Select the *'Server Types'* tab.

8. Disable the protocols that you will not use, e.g. IPX/SPX, NETBEUI.

Now your connection is configured.

9. For your convenience, you can create a shortcut to the icon.
Drag the newly created '*Corporate*' icon to your desktop; confirm your action with Yes and the shortcut will appear.

Note **Creating multiple icons for multiple destinations**
For every destination you can create a unique icon. This can be accomplished by repeating the steps – starting with step 3. – for each destination.

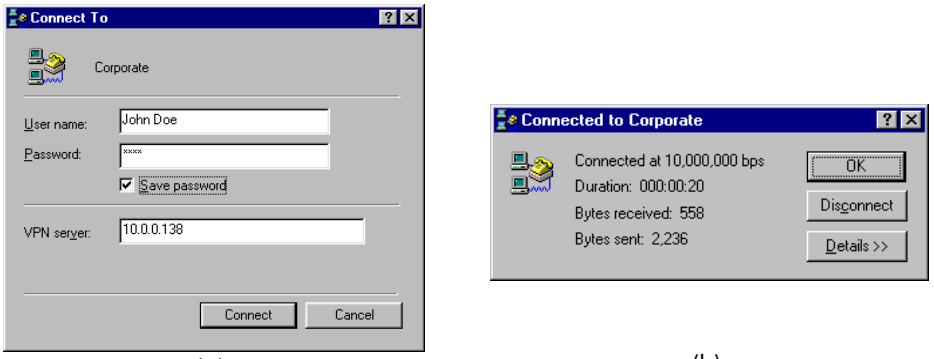
Note See section 5.6 for advanced PPP/PPTP Relaying concepts.

5.4 Using PPPoA-to-PPTP Relaying for Microsoft Windows 9x (or later)

5.4.1 Establishing a PPP/PPTP Connection

After configuring the connection, establish the connection as follows:

1. Double-click either the appropriate icon in the 'Dial-Up Networking' folder or its shortcut on the desktop.
2. The '*Connect To*' window appears (See figure 12(a)).



(a) (b)

Figure 12 'Connect To' (a) and 'Connected To' (b) Window

Fill in 'User name' and 'Password' and click Connect.

3. The '*Connecting To*' window appears shortly before being minimized in the System Tray.
4. You can now open your application, e.g. a Web browser.

Note While connected you can pop up the '*Connected To*' window (See figure 12(b)) by double-clicking the minimized icon in the System Tray.

Note To avoid entering your password each time, you can save it by ticking 'Save Password' (✓). The next time you establish this connection, both User Name and Password are displayed automatically. Make sure though you have logged in when booting Microsoft Windows 9x (or later).

5.4.2 Releasing a PPP/PPTP Connection

To release a PPP/PPTP connection, proceed as follows:

1. If minimized, double-click the connection icon in the System Tray.
2. In the '*Connected To*' window (See figure 12(b)), click Disconnect.

The PPP/PPTP connection no longer exists.

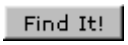
5.5 Downloading and Installing Dial-Up Networking Upgrade for Microsoft Windows 95

This section explains how to download and install the *Windows Dial-Up Networking 1.3 Performance and Security Upgrade for Windows 95*.

To download the *Windows Dial-Up Networking 1.3 Performance and Security Upgrade for Windows 95* from the Internet:

1. Browse to the Microsoft website at location 'http://www.microsoft.com' by entering this address in the URL field of your Web browser.
2. Click the *'Downloads'* button in the Microsoft homepage's taskbar. You will be guided to Microsoft's *'Download Center'* .

   In this web page, select 

   as Operating System. Click 

.
3. In the result list, look for the following title: Dial-Up Networking Performance & Security Upgrade and select it by clicking.

Note You can also use Microsoft's Search Tool to locate the Upgrade. Therefor, search for *'MSDUN13.EXE'*.

4. A *'Read me first'* web page pops up, informing how the download will progress.
5. After download, a 'Save As...' window pops up, asking you to specify a location for the MSDUN13.exe file to be downloaded.
6. Clicking 

executes the download.
7. Go to the location where you stored MSDUN13.exe and double-click it for installation of the upgrade.

After installation you have the fully updated Dial-Up Networking application, required to use PPPoA-to-PPTP Relaying.

You are now ready to configure the PPP/PTP connections as described in section 5.3.

5.6 Advanced PPPoA-to-PPTP Relaying

5.6.1 Local Tunneling

The **Speed Touch™Home** allows local tunneling from behind an IP router. This requires a few special settings in both the **STHome** and your PCs.

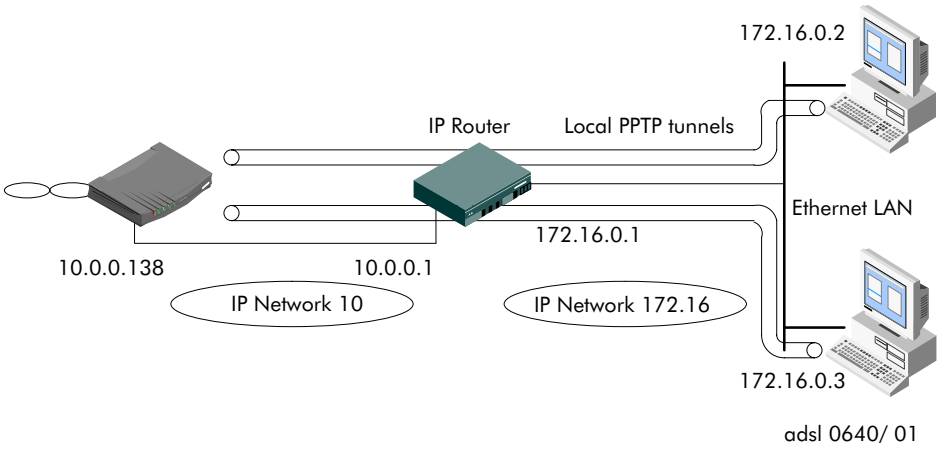


Figure 13 PPPoA-to-PPTP Advanced Network

- **STHome**

  Add a default route for the **STHome** via the *'Routing'* web page (See section 7.1.6 for more information). In the example of figure 13, the route to be added is:
  - Destination: 0.0.0.0/0
  - Source: any
  - Gateway: 10.0.0.1
- PCs:

  For each PC you must add a route to their internal routing table. This route must point to the **STHome**. For PCs equipped with Microsoft Windows OSs, proceed as follows:

1. Select *'Start'* from the Windows System Tray.
2. Select *'Programs'*.
3. Select *'MS-DOS'* prompt.
4. In the DOS window, execute the command:

   `route add <Destination IPaddress> <Gateway IPaddress>`

   In the example: `route add 10.0.0.138 172.16.0.1`

To verify IP connectivity, you can ping the **STHome**. If it responds, setting up PPTP tunnels is possible.

5.6.2 Advanced PPP/PPTP Connections

By default, the **Speed Touch™Home** is configured for 4 PPP/ATM connections. The **STHome** is capable of managing up to 12 PPP/ATM channels simultaneously. This can be achieved by deleting all other packet service entries.

However, check with your ISP, and/or corporate to ensure that these connections are cross-connected in the Wide Area Network (WAN) and end-to-end connectivity is assured.

Single Destination

Two situations are possible:

- *Single ATM channel to a single destination*

  In this scenario, the ISP supplied one ATM channel for connectivity. It is most applicable when a single PC is connected to the **STHome**.

- *Multiple ATM channels to a single destination*

  In this scenario, the ISP supplied multiple ATM channels, all directing to the same destination. This implies that several PCs can connect to this destination at the same time (as long there is an idle channel left). Therefore, this is most applicable with a **STHome** connected to a LAN.

Multiple Destination

Multiple remote organizations might be connected to your **STHome**, e.g., your ISP(s) and your corporate.

In this case, the **STHome**'s ATM channels will be split over both locations. For example, 6 ATM channels could be provisioned to your ISP and 6 channels to your corporate.

By naming these ATM channels in the **STHome** phonebook, and subsequently referencing these PPP/PPTP entries in the Dial-Up application, a destination selection can be performed.

Therefor:

- Add specific PPP/PPTP phonebook entries, e.g. *SPECIFIC*, in addition to the default *'RELAY_PPPx'* entries. See section 7.1.5 for more.
- In step 4. of the steplist in section 5.3, you add the specific PPP/PPTP entry name next to the Domain Name System (DNS) hostname, or IP address of your **STHome** in the *'VPN Server'* field. In the example of entry *SPECIFIC*, this would be. `10.0.0.138` *SPECIFIC*, or `SpeedTouch` *SPECIFIC*.

If you establish this PPP/PPTP connection, the Dial-Up application will use this particular entry, i.e. *SPECIFIC*, to connect to the Remote Access Services (RAS) server.

5.7 Configuring and Using PPTP Tunnelling on Platforms running Microsoft Windows NT

This section describes how to create and setup PPP/PPTP Dial-Up connections on a Windows NT platform.

Note Make sure that *'Microsoft Service Pack 3'* has been installed on your PC before you start creating PPTP tunnel sessions.

5.7.1 Installing PPTP on a Windows NT Platform

Before you create PPTP tunnels, you must install the PPTP networking protocol as follows:

1. Double-click *'Network'* in *'Control Panel'*.
2. The *'Network'* Window appears. Select the *'Protocol'* tab and click Add.
3. The *'Select Network Protocol'* Window appears.
   Select the *'Point-to-Point Tunneling Protocol'* from the list.
   Click OK.
4. Setup now needs to copy some Windows NT files and prompt you for the proper path.
   Specify the path and click Continue.
   The installation will load all necessary PPTP files.
5. The *'PPTP Configuration'* window appears (See figure 14), asking how many VPNs you want to enable for access to the RAS server.

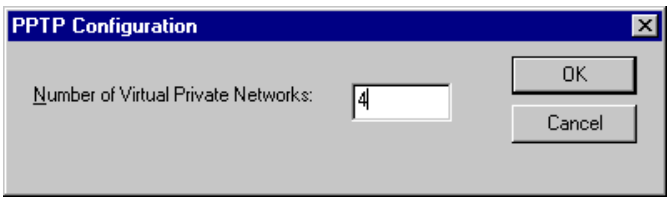


Figure 14 'PPTP Configuration' Window

Choose *'4'* (as an example) to create a maximum number of four remote PPTP concurrent connections to the RAS server.

Click OK to continue.

6. A setup message appears.
Clicking OK initiates configuration of RAS.

Note You have now completed the first part of the installation, adding PPTP as a remote protocol. The remaining steps of the installation configure RAS for PPTP.

7. The '*Remote Access Setup*' Window appears (See figure 15) and lists a modem that is already setup.
To add the new VPN ports to 'RAS', click Add.

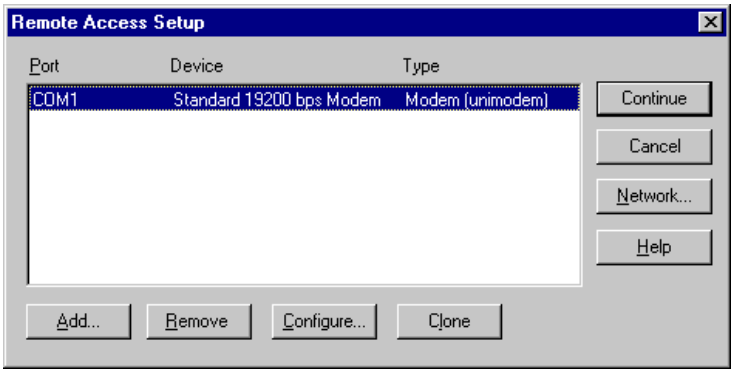


Figure 15 'Remote Access Setup' Window

8. The '*Add RAS Device*' window appears (See figure 16). Each port must be added individually. To do so double-click on the correct port and click OK.

Repeat steps 7. and 8. until all VPN ports are listed in the '*Remote Access Setup*' window.

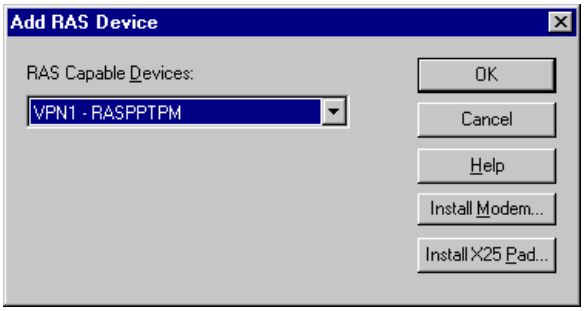


Figure 16 'Add RAS Device' Window

9. At this point, by default the ports are configured for dial-in only. To change this, select a port and click Configure... in the '*Remote Access Setup*' window.

10. The '*Configure Port Usage*' window appears (See figure 17).

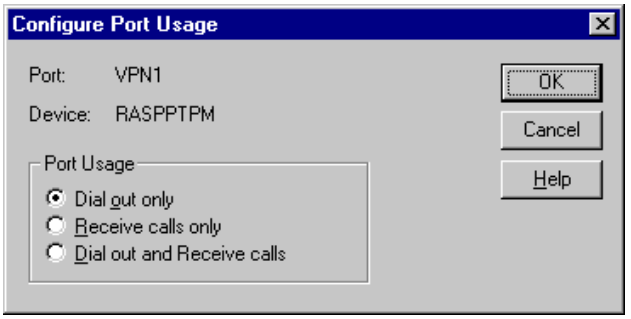


Figure 17 'Configure Port Usage' Window

Select the '*Dial-out only*' option and click OK.

11. Steps 9. and 10. can be performed for each port (if necessary), then proceed with step 12.

12. In addition you can also define which PPTP tunneled protocols you will allow through the VPNs. To do so highlight each port and click Network....

In the '*Network Configuration*' window enable or disable the protocols you require, and click OK.

Note You can enable or disable IP, IPX or NETBEUI sessions for each port.

13. Click Continue and finally Close.

The PC will inform you it needs to be restarted in order to effect the changes. Click Yes to restart.

5.7.2 Creating a New PPTP Phonebook Entry

The following procedure tells how you can create a tunnel session for use with the Corporate LAN or dial-up transport. A tunnel session contains the IP address of a PPTP server and your user account information for that server. You can create as many tunnel definitions as you need for different accounts or different PPTP servers.

To create a PPTP tunnel session to your headquarters or a PPTP server:

1. Double-click *'Dial-Up Networking'* in *'My Computer'*.
2. The *'Dial-Up Networking'* window appears (See figure 18).

   The Phonebook entry selection box lists all existing PPTP tunnels if there already exist. Click New... to create a new tunnel.

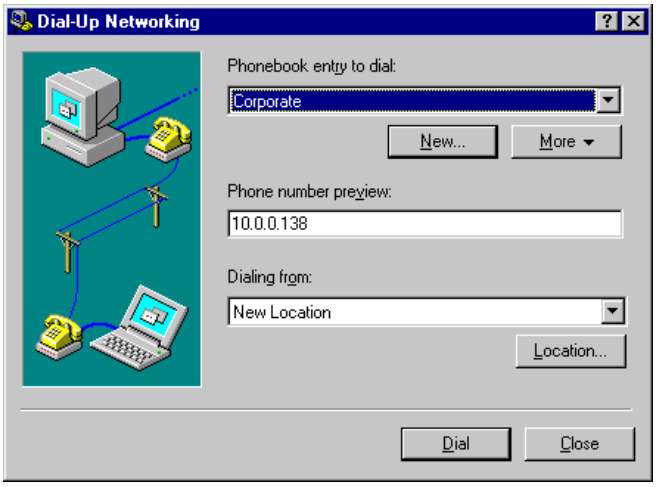


Figure 18 'Dial-Up Networking' Window

3. The *'New Phonebook Entry Wizard'* window appears (See figure 19).

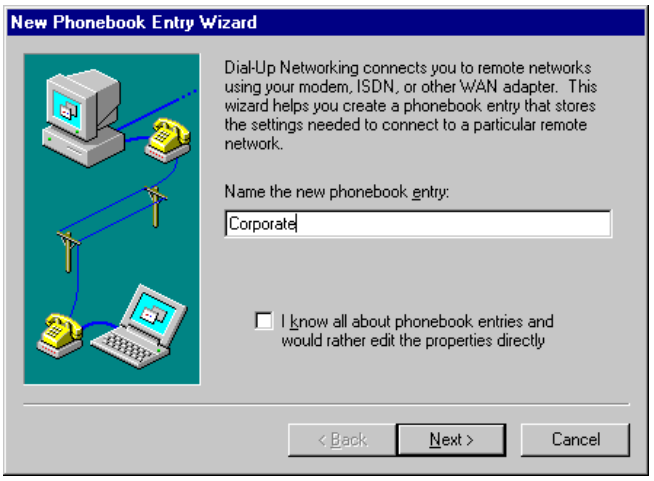


Figure 19 'New Phonebook Entry Wizard' Window

4. Enter a name for the tunnel you are creating (the PPTP tunnel will be saved in the phonebook under this name).

   Click Next >.

5. The *'Server'* window appears (See figure 20).

Activate all the options that apply to your tunnel.

Click Next > .

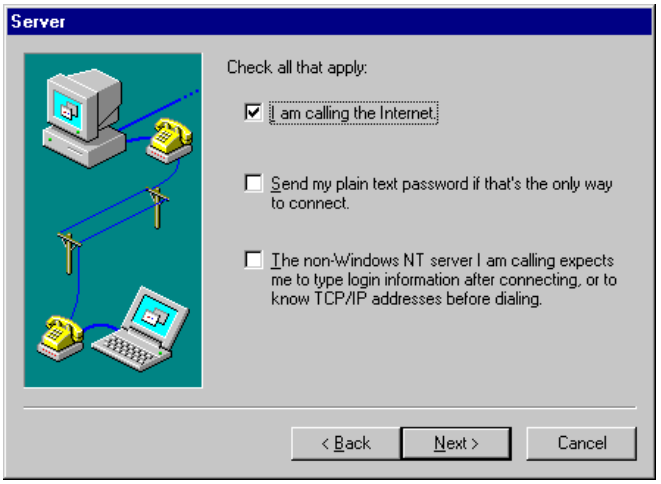


Figure 20 'Server' Window

6. The *'Phone Number'* window pops up. Enter the 'Phone Number' of the dial-up server you are calling, i.e. the IP address, or DNS hostname of the **Speed Touch™Home**.

The default **STHome** IP address is 10.0.0.138.
Its default DNS hostname is "SpeedTouch".

7. Click Next > .

Note **Multiple Numbers :** You can assign more then one 'phone number', i.e. IP addresses, or DNS hostnames, to each entry. This might be useful if you have a pool of numbers to connect to. To do so click *'Alternates...'*.

8. The *'New Phonebook Entry Wizard'* window appears. This window tells you that the new tunnel creation is successful.

Click Finish . The tunnel definition is saved and added to the Phonebook entries list.

5.7.3 Logging on to a VPN Server through a PPTP Tunnel Session

When the tunnel session to your VPN server has been created, proceed as follows to log on:

1. Double-click *'Dial-Up Networking'* in *'My Computer'*.
2. The *'Dial-Up Networking'* window appears (See figure 18). Select the tunnel you want to set up in the phonebook selection box and click Dial.
3. The *'Connect to'* window appears (See figure 21). Enter your password for the VPN server.

   For saving your password, tick *'Save Password'* (✓).

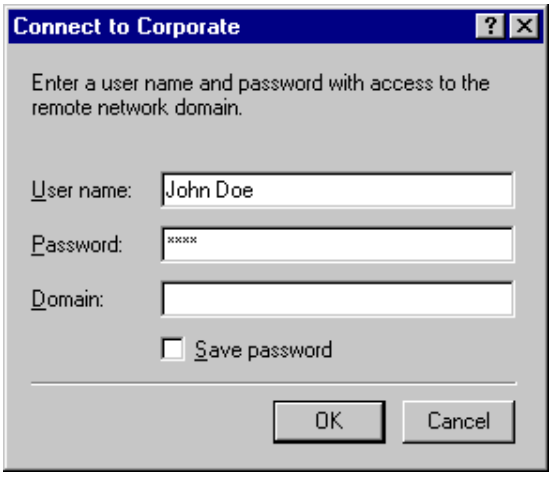


Figure 21 'Connect T' Window

4. Enter the optional information in the *'Domain'* box. This is only required by some Microsoft NT VPN servers. Click OK.
5. The *'Connecting To Corporate'* window appears. This window informs you of the status of the connection process. Once the connection is established, it is minimized.

5.7.4 Tearing Down a PPTP Tunnel

To uninstall a PPTP tunnel, proceed as follows :

1. Click the appropriate connection icon.
2. Click Disconnect.

The network connection to your ISP has been disconnected.

6 Lost Speed Touch Home

Non accessibility to your **Speed Touch™Home** may occur if wrongly configured, or simply by forgetting its IP address.

Due to the flexible nature of the **STHome**, you may end up in a situation where restoring all of the original defaults is the only solution.

The **STHome** has tools to cope with these situations:

Setting the IP address

To set the IP address, without involving other configurational settings:

- *Ping-of-Life™*.

Restoring Original Defaults

To restore **STHome**'s original settings, three methods are provided:

- Two software methods:
  - Browse-to-Defaults

    With remaining **STHome** system password, and IP settings
  - *Ping-to-Defaults™*

    With a reset of **STHome** system password, and IP settings included.
- One hardware method: Push-to-Defaults.

6.1 Resetting Speed Touch Home's IP Address

6.1.1 Ping-of-Life

The *Ping-of-Life*™ is a method to reset the IP address of the **Speed Touch**™**Home** without changing other settings.

The principle is fairly simple, a special ping packet will deliver an IP address to your **STHome**.

The steps to be performed are:

- Pre-configure the intended IP address and a special Medium Access Control (MAC) group address in the ARP cache of one of your PCs.
- Cycle power the **STHome**, and allow the POST to end (this takes about 30 seconds).
- Ping this same IP address within 60 seconds.
- If everything goes well, your **STHome** has assimilated this IP address.
- Make this IP address permanent by saving the settings via the **STHome** local web pages.

Note Most TCP/IP packages support the ***arp*** and ***ping*** command. The *Ping-of-Life*™ can be executed from any PC on your local network.

IP Addresses and Subnet Masks

Make sure that the intended **STHome** IP address and your PC have the same IP (sub)network number.

If not, the ping will be submitted with the MAC address of the default router instead of the special MAC Group address.

The procedure for Microsoft Windows platforms is described below. Small differences may occur for other platforms.

1. Turn off the **Speed Touch™Home**.
2. Open a DOS window.
3. In this DOS window, execute the command:

   `arp –a`

   This command allows you to overview the current entries in the ARP cache.
4. Now add a static entry to the PC's ARP cache, according to the syntax below:

   `arp –s <STHome IP address> 01–90–D0–80–01–01`

   `<STHome IP address>` is a placeholder for the IP address to be assigned to the **Speed Touch™Home**.

   In the subsequent example, **`10.0.0.145`** will be used.

   The MAC address **`01–90–D0–80–01–01`** is a special MAC Group address from Alcatel on which the **STHome** will react.

   In the example the command would be:

   `arp –s 10.0.0.145 01–90–D0–80–01–01`
5. Verify if this step was successful by executing

   `arp –a`

   In the entries list, the **`arp –s`** entry should be added.
6. Turn on the **STHome** and wait for 30 seconds to allow the POST to end.
7. Ping the IP address you just entered in the ARP cache within 60 seconds:

   `ping <STHome IP address>`

   For this example the command is:

   `ping 10.0.0.145`
8. If successful, the **Speed Touch™Home** has configured this IP address and will reply to the ping.
9. You may clear the entry in the ARP cache by issuing the following command:

   `arp –d <STHome IP address>`

   Leaving the entry in the ARP cache does not harm the general operation.

In figure 22 all these steps are shown as an example of resetting **STHome**'s IP address to 10.0.0.145.

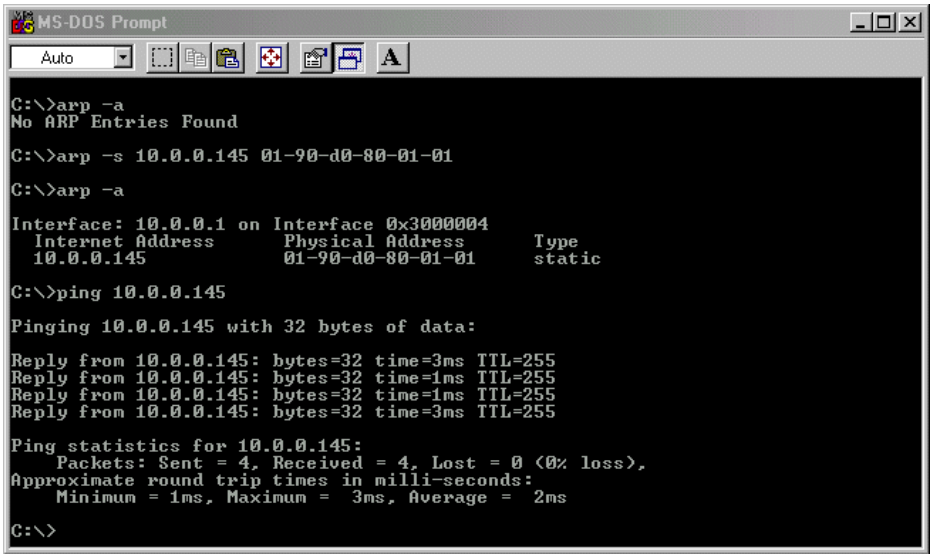


Figure 22 Example of a Ping-of-Life Procedure

10. Browse to the **STHome** local web pages and click Save all to make the new IP address permanent.

TIP

'Ping –t' command

After you performed step 5. of the previous procedure, you can avoid waiting 30 and then 60 seconds by proceeding as follows:

1. Ping the IP address with the command:
   `ping -t <STHome IP address>.`
2. Turn on the **STHome**.
3. After the POST, the **STHome** will reply to the ping.
4. Terminate the continuous ping by pressing CTRL-C.
5. Browse to the **STHome** local web pages and click the *'Save All'* button to make the new IP address permanent.

Note

If your PC is equipped with multiple PC-NICs, make sure that the procedure is applied to the one connected to the **STHome**. Therefore modify the arp-syntax as follows:

`arp -<a, s, d> <STHome IP address>`
`-N <interface IP address>`

In this syntax, **`<Interface IP address>`** identifies the particular PC-NIC.

6.2 Set to Manufacturing Defaults

The following procedures will reset **most, if not all** of the **Speed Touch™Home**'s configurable values back to their defaults.

CAUTION

Restoring Original Settings

Be careful when using the Browse-to-Defaults, Ping-to-Defaults™, or the Push-to-Defaults procedures as these destroy changes you previously made to the **STHome** internal settings.

A reset to defaults via a *Ping-to-Defaults*™, or via a Push-to-Defaults, also implies the **STHome**'s IP address is reset to 10.0.0.138. As a consequence, IP connectivity with the **STHome** could be lost. In that case you must execute a *Ping-of-Life*™.

6.2.1 Browse-to-Defaults

The first method to restore the original settings, except the system password and Ethernet IP parameters, is the *Browse-to-Defaults*.

Proceed as follows to reset the **STHome** via the web pages:

1. Browse to the **STHome** web pages as described in section 7.1.2. The following *Welcome* web page pops up:

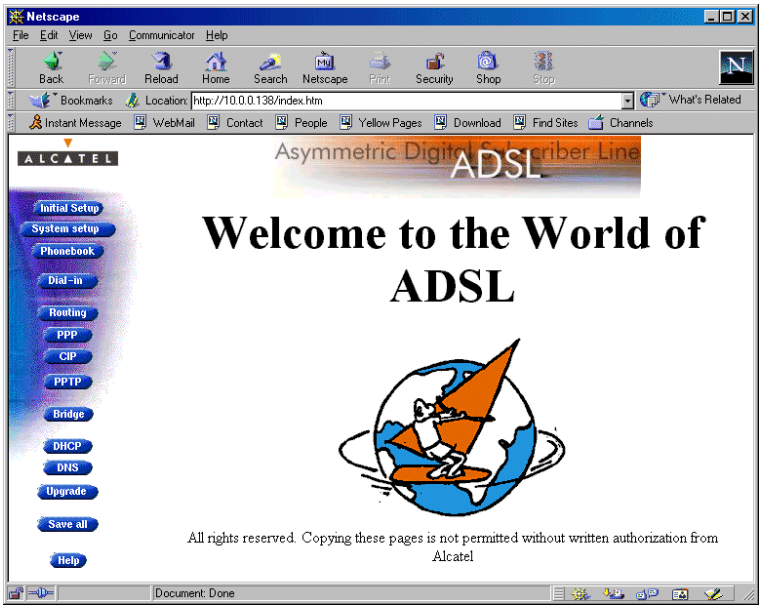


Figure 23 Welcome Web Page

2. In the menu frame ,click System setup to pop up the following *'System Setup'* web page:

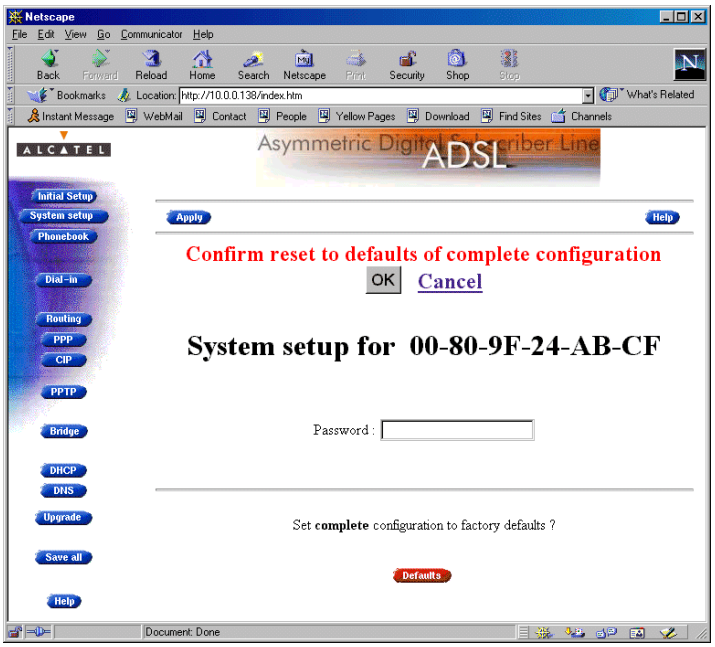


Figure 24 'System Setup' Web Page

3. If you are sure to reset the **STHome** to its original defaults, click Defaults .

4. The **STHome** will ask to confirm the reset (See figure 24). Click OK.

5. Make the reset permanent by clicking Save all in the menu frame.

6. Press the reload button of your Web browser.

After reset, all original configurations of the **STHome** are restored, except the **STHome** system password, and its Ethernet IP address(es) you may have configured before. That way, **STHome** IP connectivity remains.

6.2.2 Ping-to-Defaults

In case you cannot browse to the **STHome** web pages, and a Browse-to-Defaults is impossible, a method to restore the original defaults is the *Ping-to-Defaults*™.

The procedure is identical to that used for the *Ping-of-Life*™, except that another MAC address is used, i.e. **01-90-D0-80-01-FF**.

Proceed as follows:

1. Turn off the **STHome**.
2. Add the following to the ARP cache:

   ```
   arp -s <IP address within subnet> 01-90-D0-80-01-FF
   ```

   This **<IP address within subnet>** can be any address within your subnet as long as it is not used by any other member of your local network.
3. Turn on the **STHome** and wait for the POST to end.
4. Ping this same IP address :

   ```
   ping <IP address within subnet>
   ```
5. You **must** clear the entry in the ARP cache by issuing the following command :

   ```
   arp -d <IP address within subnet>
   ```

Note The IP address used to perform a Ping-to-Defaults™ is not assimilated by your **STHome**. The **STHome** will restart with the original defaults, including the default IP address 10.0.0.138.

6. If needed, reconfigure the **STHome**'s IP address.

6.2.3 Push-to-Defaults

The small push button entitled "Defaults" is located on the rear panel of the **STHome**.

Proceed as follows to revert **all** of the **STHome** configurable values back to their original settings:

1. Make sure the **STHome** is turned on.
2. Use a pencil to press the push button at the back of the **STHome**.
3. Release the button. Via the flashing front panel LEDs, you will notice that the **STHome** will restart.
4. Finally, it will come online with default settings.
5. If needed, reconfigure **STHome**'s IP address.

7 Speed Touch Home Local Configuration

The **Speed Touch™Home** can be configured in 2 different ways:

- Using a Web Browser
- Through a Command Line Interface via Telnet.

7.1 Web Interface

The **Speed Touch™Home** comes with integrated local configuration capabilities. This feature is based on the "HTTP server/Web browser" concept. It allows configuration of your **STHome** via HTML pages, from a Web browser on any local PC attached on the LAN.

7.1.1 Configuring your Web Browser

To configure your **STHome**, make sure your Web browser is **not using a Proxy server**. The procedure to disable Proxy settings depends on the browser that you are using.

After configuring your **STHome**, do not forget to reset your Web browser to its original settings !

7.1.2 Speed Touch Home's Web Interface Principles

To access the **STHome**'s web pages proceed as follows:

1. Start the Web browser on your PC or workstation.
2. Contact the **STHome** by entering its IP address or DNS hostname in the URL field.
   The default **STHome** address is 10.0.0.138,
   the hostname is "SpeedTouch".
3. The *'Welcome to the World of ADSL'* web page pops up:

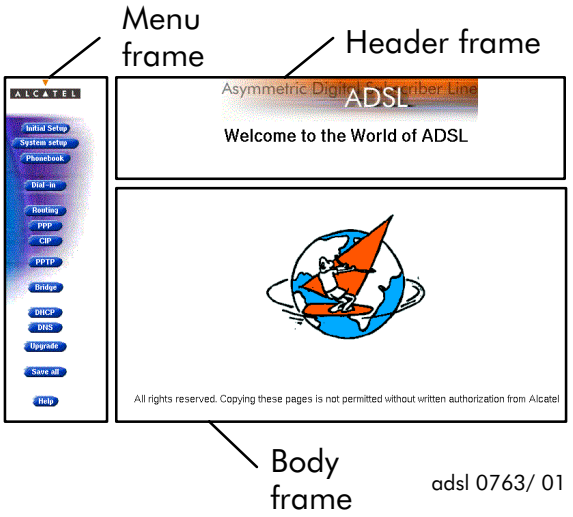


Figure 25 'Welcome' Web Page

STHome's web pages can be divided into three sections:

- A vertical pane, referred to as ***Menu frame*** hereafter
- A horizontal bar, referred to as ***Header frame*** hereafter
- The user field, referred to as ***Body frame*** hereafter

Header frame

The **Header frame** is present in all of the **Speed Touch™Home** web pages.

It contains **STHome** configuration subject related command buttons.

Next to the generic 

button, the 

button is present on all header frames. If you click this button, the changes you made, will take effect.

Menu frame

The **Menu frame** is generic for all **STHome**'s local web pages. Each button represents a **STHome** configuration subject.

To return to the *Welcome* web page.

Pops up the *'Initial Setup'* web page, allowing you to configure user defined IP parameters for the **STHome** (See section 7.1.3).

Pops up *'System Setup'* web page, allowing you to set a password for restricting access to the **STHome** (See section 7.1.4), and to perform a Browse-to-Defaults (See section 6.2.1).

Pops up the *'Phonebook'* web page, allowing you to consult or store connectivity information (See section 7.1.5).

Pops up the *'Routing'* web page, allowing you to configure specific IP settings (See section 7.1.6).

Pops up the *'PPTP'* web page, allowing you to set the PPTP parameters (See section 7.1.7).

Pops up the *'Bridge'* web page, allowing you to set the Bridging parameters (See section 7.1.8).

Pops up the *'DHCP'* web page, allowing you to configure **STHome**'s DHCP server/client model (See section 7.1.9).

Pops up the *'DNS'* web page, allowing you to configure **STHome**'s DNS server (See section 7.1.10).

Upgrade — Pops up the *'Upgrade'* web page, allowing you to upgrade the **Speed Touch™Home** software from the local network. (See section 7.1.11)

Save all — To save all the changes made in permanent memory.

Help — To access the online help web pages.

On most web pages, **Action** fields are found.
Two actions can be performed via these fields:

- **Add** (Add)
- **Delete** (Delete)

7.1.3 Initial Setup Web Page

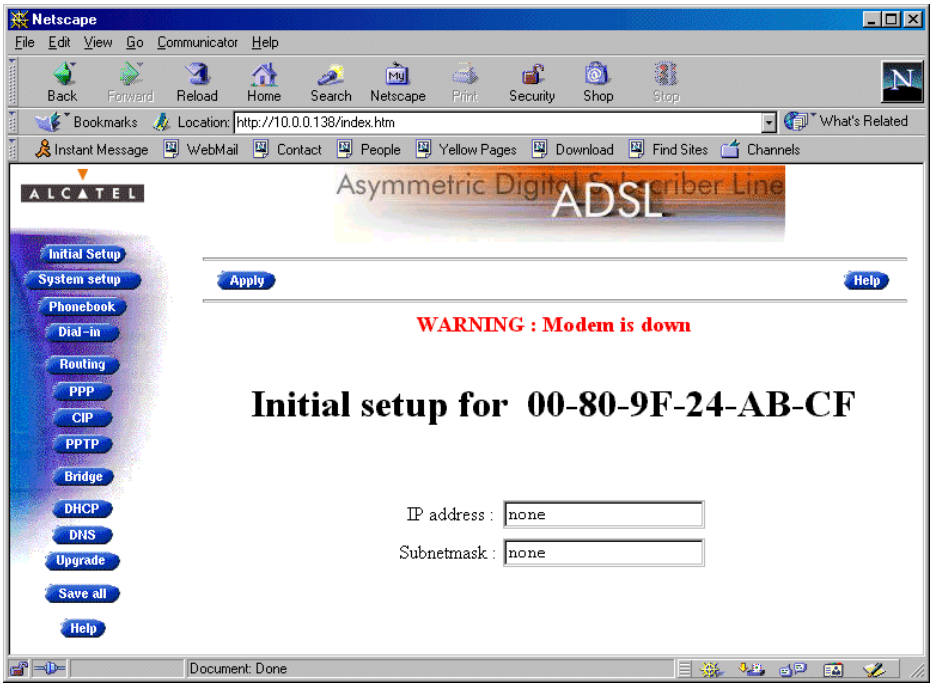


Figure 26 'Initial Setup' Web Page

The **STHome** relies heavily on the TCP/IP protocol for its internal operation. IP requires a minimum set of parameters for its proper operation, an IP address, and a Netmask.

These IP parameters, which are for local communication only, can be configured manually via this *'Initial Setup'* web page, or dynamically via the *'DHCP'* web page (See section 7.1.9 for more).

As the **STHome** IP layer supports logical multi-homing (one interface supporting multiple IP addresses), the manually configured IP address and the dynamically required IP address can be both active at the same time.

The *'Initial Setup'* web page contains the following fields:

- **Speed Touch™Home MAC address**

  The unique MAC address of the **STHome** is displayed as "Initial setup for xx-xx-xx-xx-xx-xx". It is used to identify your **STHome** on the LAN.

- **IP address**

  In this field you can configure a user defined IP address for the **STHome**. This IP address will show up as ***"User"*** in the *'Routing'* web page.

- **Netmask / Subnet Mask**

  For applying subnetting in your local network, fill out a suitable Subnet Mask.

  The default Netmask per IP address class is listed in Appendix B.

7.1.4 The System Setup Web Page

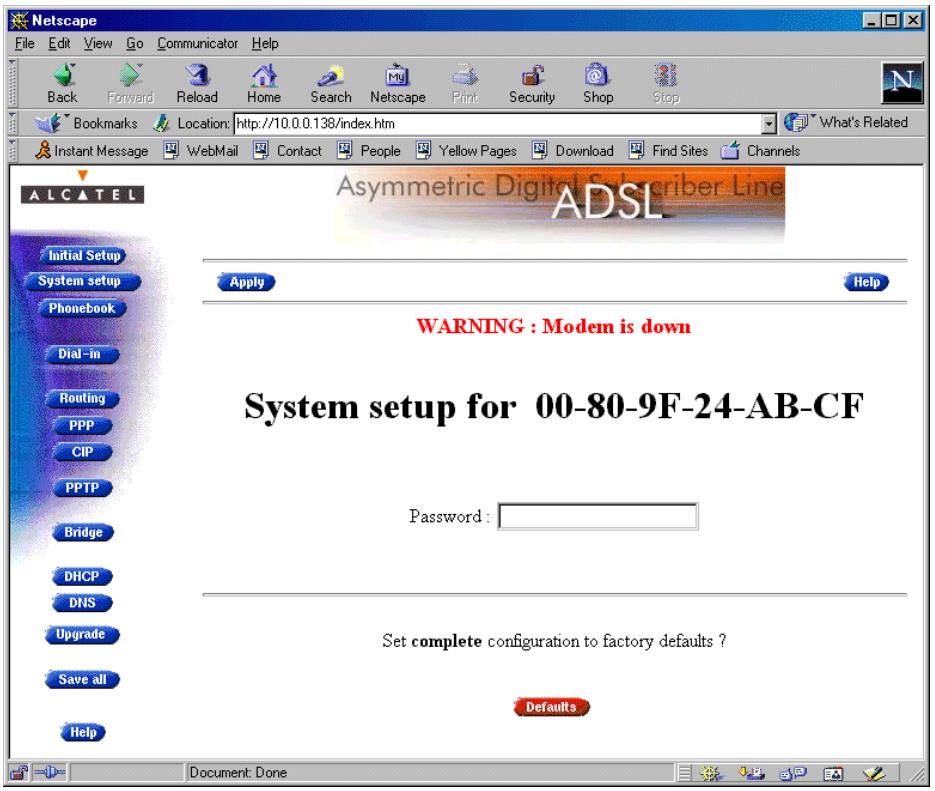


Figure 27 'System Setup' Web Page

The *'System Setup'* web page allows you to protect your **STHome** settings by configuring a system password, and allows you to perform a *Browse-to-Defaults*.

Setting a System Password

Just type it into the *'Password'* field (asterisks will appear in the input field), click Apply and Save all .

The next time that you wish to access the **Speed Touch™Home** web pages, the Web browser will request a password:

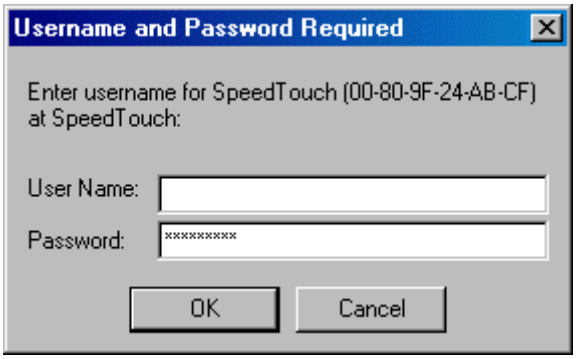


Figure 28 Authentication Window

Supply the system password in the appropriate field to acquire full control over the **STHome** again. A user ID is not required.

Lost System Password

In case you forget the **STHome** system password, a *Ping-to-Defaults™*, or *Push-to-Defaults* must be performed.

See sections 6.2.2 and 6.2.3 for more.

Browse-to-Defaults

The *'System Setup'* web page contains also a Defaults button which allows you to restore all original settings, except the **STHome** system password, and the **STHome** Ethernet IP parameters.

See section 6.2.1 for more.

7.1.5 The Phonebook Web Page

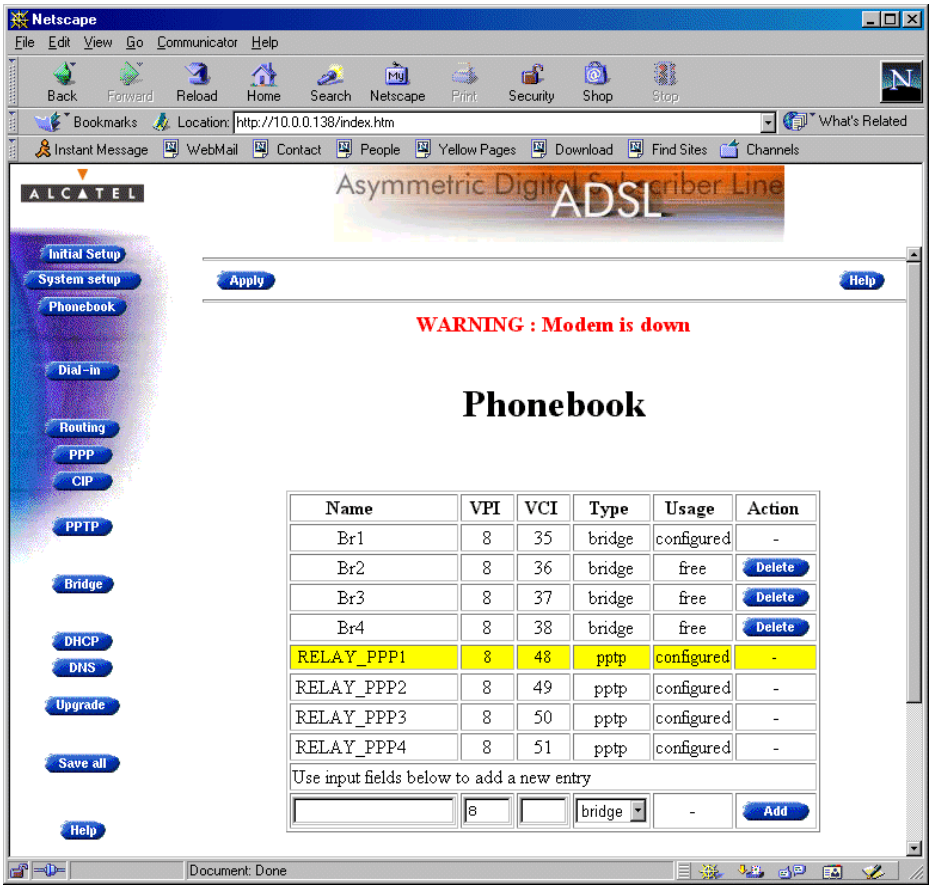


Figure 29 'Phonebook' Web Page

Definition The **Speed Touch™Home** *'Phonebook'* is like any ordinary phonebook: "A repository for names and numbers".

In contrast to a standard phonebook though, it contains additional connectivity information.

The main function of the **STHome** *'Phonebook'* is to present an instant overview of all possible connection entries and their status.

Entries in the *'Phonebook'* can be added or changed at will. However, connections that are in use or configured cannot be deleted.

The **STHome** *'Phonebook'* contains the following columns:

- **Name**

  Shows the names or aliases of the virtual connections. Any name can be given to an entry.

Note PPPoA-to-PPTP Relaying *'Phonebook'* Entries **may not start with capital 'P' or capital 'T'**.

- **VPI/VCI**
  List the VPI/VCI values of the ATM VCs that are terminated on the Ethernet port.
  The **Speed Touch™Home** VPI values can range from 0 up to 15; its VCI values from 32 up to 511.
- **Type**
  Represents the packet service that is supported on the VC: either "*bridge*", or "*pptp*".
- **Usage**
  Is a read only column, which indicates the state of the VC, e.g. configured, free.

Using the Phonebook

Cross-connects, notified by the **STHome**, are highlighted by a yellow bar, e.g. in figure 29, VPI/VCI 8/48, dedicated to *'Relay_PPP1'*.

See Appendix C for more information on AutoPVC.

Configuration

As *'Phonebook'* entries do not consume **STHome's** communications resources, you are free to store all your favoured connections for reference at a later date.

7.1.6 The Routing Web Page

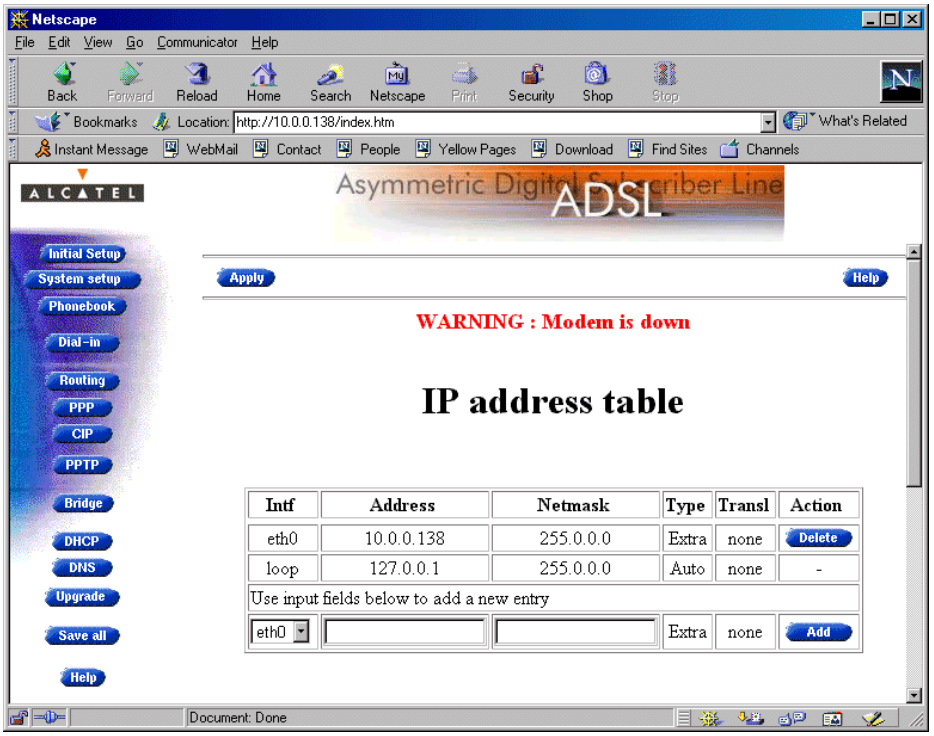


Figure 30 'Routing' Web Page

The *'Routing'* web page allows you to configure specific IP settings for your **STHome** and your local network.

The *'Routing'* web page contains the following tables:

IP Address Table

The *'IP Address table'* summarizes all IP addresses configured on any of the **Speed touch™Home** interfaces.

The *'IP Address table'* contains the following columns (See figure 30):

- **Intf**

  Indicates the interface (Intf) to which the IP parameter set was assigned to.

  It can take several values depending on the packet services that are active. The Ethernet (eth0) and the Loopback (loop) are always present.

- **Address**

  Shows the IP address of the interface.

- **Netmask**

  Shows the Netmask of the interface.

- **Type**

  Indicates the origin of the IP parameters and can take following values:

  - Auto: The parameters were acquired automatically through DHCP (for more information see the *'DHCP'* web page), or are typical standard IP addresses (loop).
  - User: An additional IP parameter set was added through the *'Initial Setup'* web page.
  - Extra: An additional IP parameter set was added through the bottom row of the *'IP Address table'*. The default IP address 10.0.0.138 is also of this type.
  - Temp: This (additional) IP parameter set was added via a *Ping-of-Life™*.

- **Transl**

  Has no meaning for the **STHome** and will always show *'None'*.

To add an IP address, specify the IP address and Netmask in the bottom row of the *'IP Address table'*, and click Add .

IP Route Table

Although the **Speed touch™Home** has no real IP routing functionality, it has the flexibility to access machines in other networks than its own. The *'IP route table'* recalls these specific routes

Similar to the *'IP address table'*, a number of routes are preconfigured.

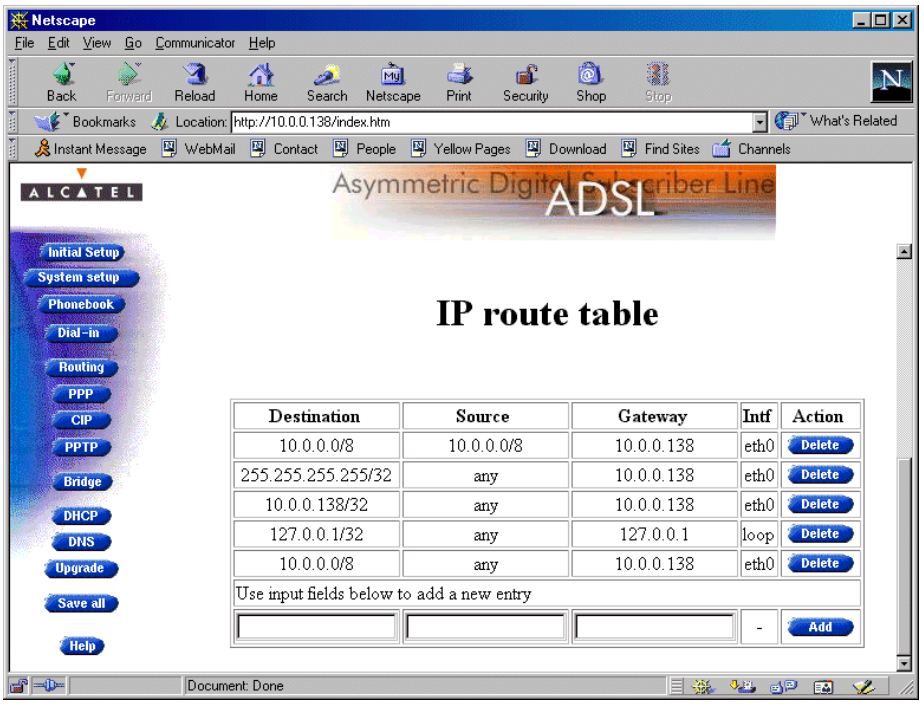


Figure 31 'Routing' Web Page, IP Address Table

In special circumstances, routes can be manually added to the routing information base, via the bottom row of the *'IP Route table'*.

In order to add a route the following fields must be filled out:

- **Destination IP prefix**
- **Source IP prefix**
- **Gateway IP address**
- **Intf**

Note An IP prefix is the combination of an IP address and (Sub)Netmask: e.g. 10.0.0.138/32.

The criteria for a route to be valid are:

- The destination and source entries must contain correct prefixes
- The gateway must be directly connected

Note Deleting an IP address in the *'IP address table'* automatically removes all related routes in the *'IP route table'*.

7.1.7 The PPTP Web Page

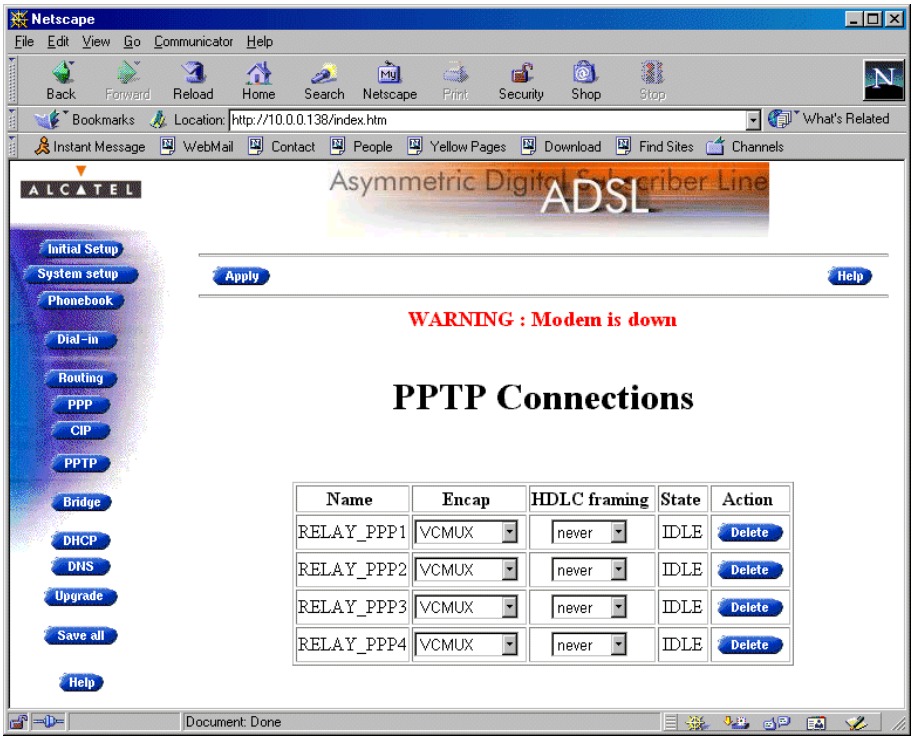


Figure 32 'PPTP Connections' Web Page

The *'PPTP Connections'* table contains the following columns:

- **Name**

  Indicates the *'Phonebook'* name of the PPTP entry.

- **Encaps**

  Encapsulation/Decapsulation refers to the encapsulation/decapsulation of PPP packets in/from AAL5/ATM.

  The **Speed Touch™Home** is compliant with RFC2364 "PPP Over AAL5" and supports both the LLC/SNAP method and the VC MUX method. By default the encapsulation/decapsulation method is set to VC MUX.

- **HDLC Framing**

  PPP packets arriving via a PPTP tunnel and PPP packets encapsulated on ATM connections differ in format. The PPP format on AAL5 follows RFC 1661 "Point-to-Point Protocol" (See figure 33) whereas the PPP format within a tunnel follows "Point-to-Point Tunneling Protocol" (See figure 34).

The latter format has two additional bytes in front of the packet (FF 03) inherited from another encapsulation, i.e. RFC 1662 “PPP in HDLC-like framing”.

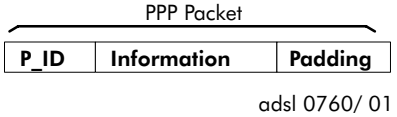


Figure 33 PPP ATM Format (RFC 2364:PPP over AAL5).

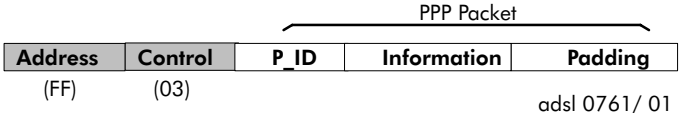


Figure 34 PPP/PPTP Tunnel Format.

In order to cope with these PPP packet differences, the **Speed Touch™Home** adapts to the different formats on a ’per connection’ base.

Additionally, the **STHome** offers following configuration possibility if interoperability problems should arise.

The PPP/AAL5 format configuration options are:

- **never**
  The **STHome** will make sure that FF−03 will never be found in front of a PPP packet encapsulated on an AAL5/ATM connection, independent of the actual format of the PPP packets in the tunnel. This is the **default** setting and follows RFC 2364.
- **always**
  The **STHome** will make sure that FF−03 is always in front of a PPP packet encapsulated on an AAL5/ATM connection. Although not supported by RFC 2364, some equipment may rely on this format.
- **keep**
  The **STHome** will not change the PPP packet arriving via a tunnel, that is, it will keep the two bytes in front of the packet when it encapsulates the packet.

This configuration possibility applies only to the **upstream** direction! In the **downstream** direction, the **STHome** will always make sure that FF−03 is in front of the packet prior to put it in a PPTP tunnel.

▶ **State**

The **STHome** allows multiple users to connect simultaneously.

From the moment a PPP/PPTP connection is established, the state field of this connection changes from *’IDLE’* to *’In Use (xxx.xxx.xxx.xxx)’*. The number in brackets is the IP address of the PC currently using the connection.

7.1.8 The Bridging Web Page

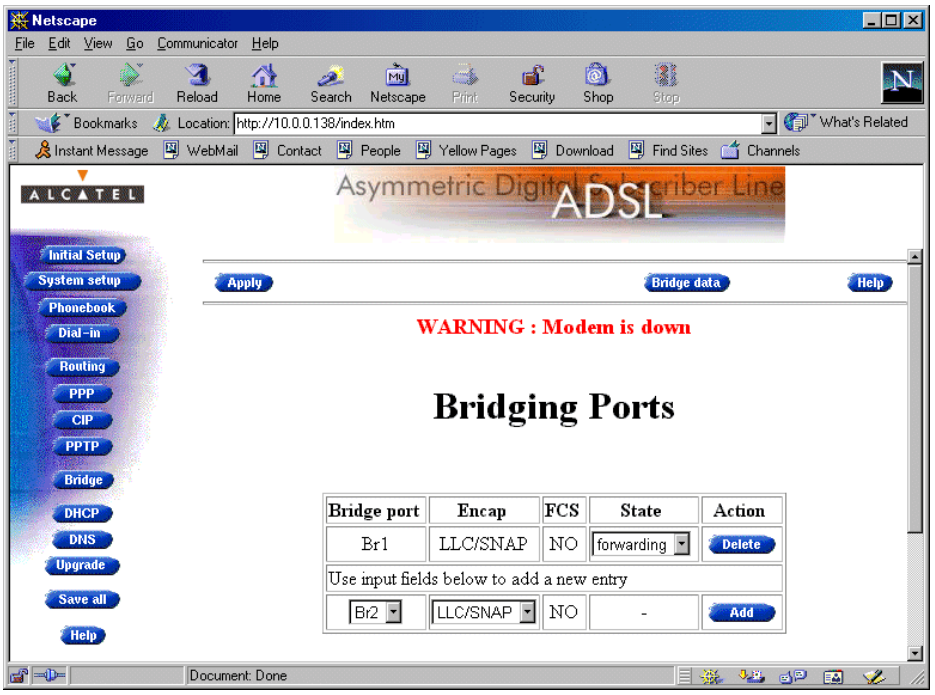


Figure 35 'Bridging' Web Page

The **Speed Touch™Home** contains an IEEE 802.1D compliant Transparent Bridge that can be reconfigured via this web page.

In principle for Bridging nothing needs to be configured for proper operation as it is Plug & Play. However, should interoperability problems occur, you can easily change the default settings according to the information supplied by your ISP, or corporate.

The *'Bridging'* web page contains the following tables

Bridge Ports Table

The *'Bridging Ports'* table contains the following four columns:

- **Bridge Port**
  A Bridge port is the logical equivalent of an interface. By default the **STHome** supports one local port (Ethernet interface) and up to four remote (ATM/ADSL) ports. Only remote ports are shown.
- **Encaps**
  Encapsulation/Decapsulation refers to the encapsulation/decapsulation of Ethernet V2.0 or IEEE 802.3 frames into/from AAL5/ATM.
  The **Speed Touch™Home** is compliant with RFC 1483 "Multiprotocol Encapsulation over ATM Adaptation Layer 5" and supports both the LLC/SNAP method, and the VC MUX method for Bridged Ethernet V2.0/IEEE 802.3 PDUs.
  By default the encapsulation method is set to LLC/SNAP.

- **FCS**

  Is part of the RFC 1483 Encapsulation method and indicates whether the last four bytes of the MAC frames (Medium Access Control frames, commonly referred to as Ethernet or IEEE 802.3 frames), will be preserved or not.

  By default the FCS of MAC frames to be bridged, will not be preserved.

- **State**

  This field allows you to change the state of the individual LAN ports. The following possibilities are available:

  - **forwarding** :Traffic can flow through this port.
  - **disabled** : No traffic can flow through this port.
  - **learning** : The port is in learning state.

Note By default only one Bridge port (Br1) is in forwarding state. The 3 other Bridge ports (Br2, Br3 and Br4) are set to 'Disabled'.

Aging Box If the aging time of a MAC entry has expired, this entry will be removed from the database. This aging time can be found in the *'Aging'* box
The default value of 300s (5 minutes) needs only to be modified in exceptional cases. The permitted range is from 10 seconds to 12 days.

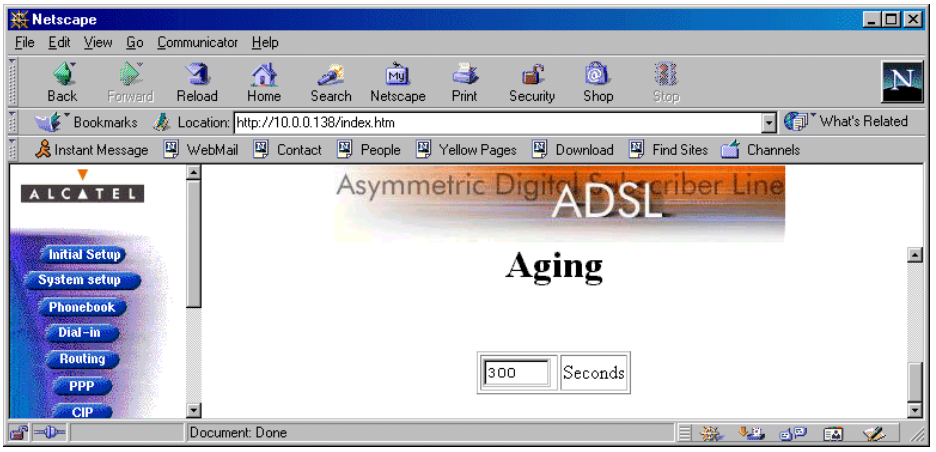


Figure 36 'Aging' Box in the 'Bridging' Web Page

Bridge Data Page

Click Bridge data to review all of the MAC addresses in the Bridging database.

The MAC addresses are spread over 3 tables:

- *'Permanent MAC Addresses'* Table

  Among others, this table contains **Speed Touch™Home**'s own MAC address.

- *'Static MAC Addresses'* Table

  Currently no static MAC addresses are configured.

- *'Dynamic MAC Addresses'* Table

  This table contains the MAC addresses that are learned and aged by the Bridge.

7.1.9 The DHCP Web Page

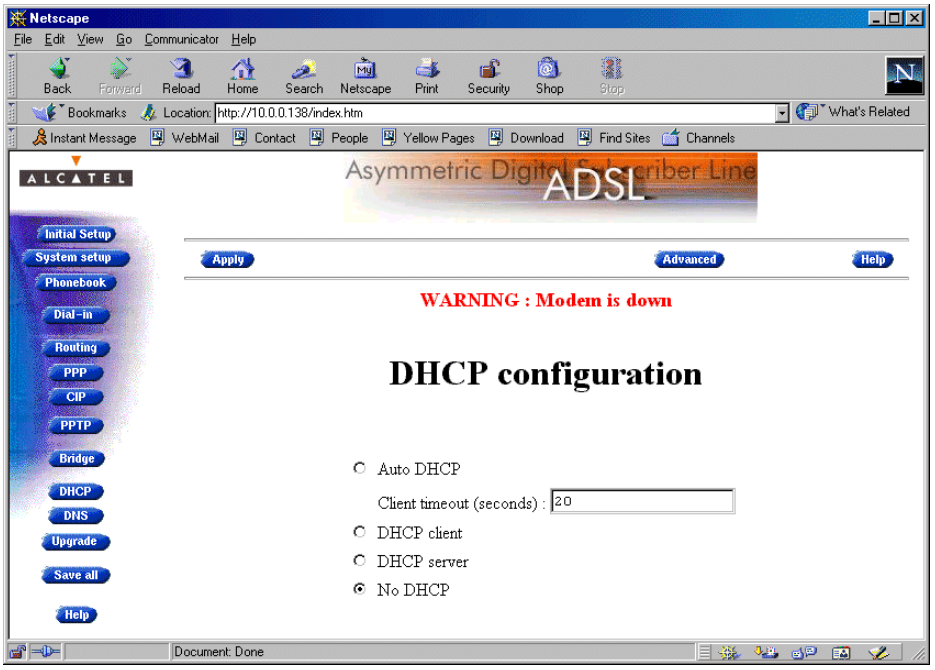


Figure 37 'DHCP' Web Page

The *'DHCP Configuration'* web page allows you to change the **STHome** DHCP server/client settings.

Depending on the size and complexity of your network a few DHCP configurations can be envisaged:

- Simple IP network: no DHCP, i.e. see static configuration earlier in this chapter.
- Medium sized network: **STHome** acting as DHCP server.
- Advanced local network: **STHome** acting as DHCP client.

The following configurations are possible:

- Auto DHCP

  Client timeout (seconds) : 20

  The **Speed Touch™Home** probes the local network to verify whether or not, it is the only active DHCP server. If there is another DHCP server on the network, the **STHome** slips into the role of DHCP client. If no response is given after *'Client-timeout'*, the **STHome** will act as DHCP server.

CAUTION

Automatic IP Addressing

Operating systems supporting Automatic IP addressing, might initially not establish IP connectivity with the **STHome**. This because the IP address they assimilated is not within the **STHome** range.

To prevent this problem, please power on your PC(s) after the STHome has come online.

- DHCP client

  For advanced networks, the role of DHCP server might be performed by an IP node other than the **STHome** on the local LAN. Typically such functions are attributed to home gateways: computers having better networking capabilities than the other hosts on the home LAN. Therefor, set the **STHome** as DHCP client.

- DHCP server

  For small home LANs it might be interesting to configure all your PCs as DHCP clients and the **STHome** as DHCP server. In this configuration each time a computer boots, it will obtain its IP configuration from the **STHome**. Therefor, set the **STHome** as DHCP server.

  Note: This setting might create side effects with Bridging.

- No DHCP

  DHCP is disabled. It is assumed that all members of the network have static IP addresses.

  Note: This is the **STHome** default DHCP mode.

If the **Speed Touch™Home** is configured for *'Auto DHCP'* or *'DHCP server'*, additional configuration might be necessary. Therefor, click Advanced to access the *'DHCP Server'* web page.

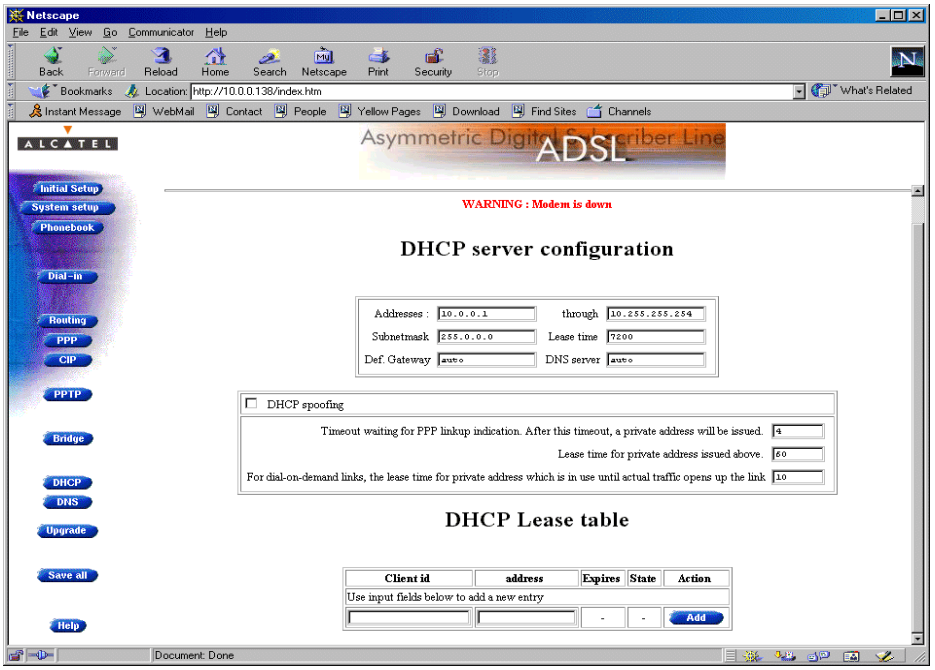


Figure 38 Advanced 'DHCP Server Configuration' Web Page

The *'DHCP Server'* web page contains the following tables

- *'DHCP Server Configuration'* Table

  Allows you to specify the **STHome** DHCP server properties. The available DHCP server options are:

  - *Addresses ... through ...*
    Allows you to set the range of IP addresses that the DHCP server can choose from.
  - *Subnet Mask*
    Is needed to specify the subnetting applied to the local network. The default yields no subnetting.
  - *Lease Time*
    Specifies the lease time IP addresses can be assigned to a device by DHCP.
  - *Default Gateway*
    Allows you to specify the IP address of the default gateway. By specifying *'auto'*, this will be the **STHome**.
  - *DNS Server*
    Allows you to specify the IP address of the DNS Server. By specifying *'auto'*, this will be the **STHome**.

- *'DHCP Spoofing'* Table

  Has no meaning for the **STHome** and will result in an error message if used.

- *'DHCP Lease Table'*

  Shows current leases and allows you to manually assign IP addresses to devices:

  - *Client ID*, the MAC address to which an IP address is leased
  - *Address*, the IP address that is leased to that client
  - *State,* indicates if the lease is on (device is up, running and using the lease), off (device is unreachable), or has expired (Timeout timer expired).

  To add a lease manually, fill in the appropriate MAC address, the IP address of your choice for this client MAC address, and click Add .

7.1.10 The DNS Web Page

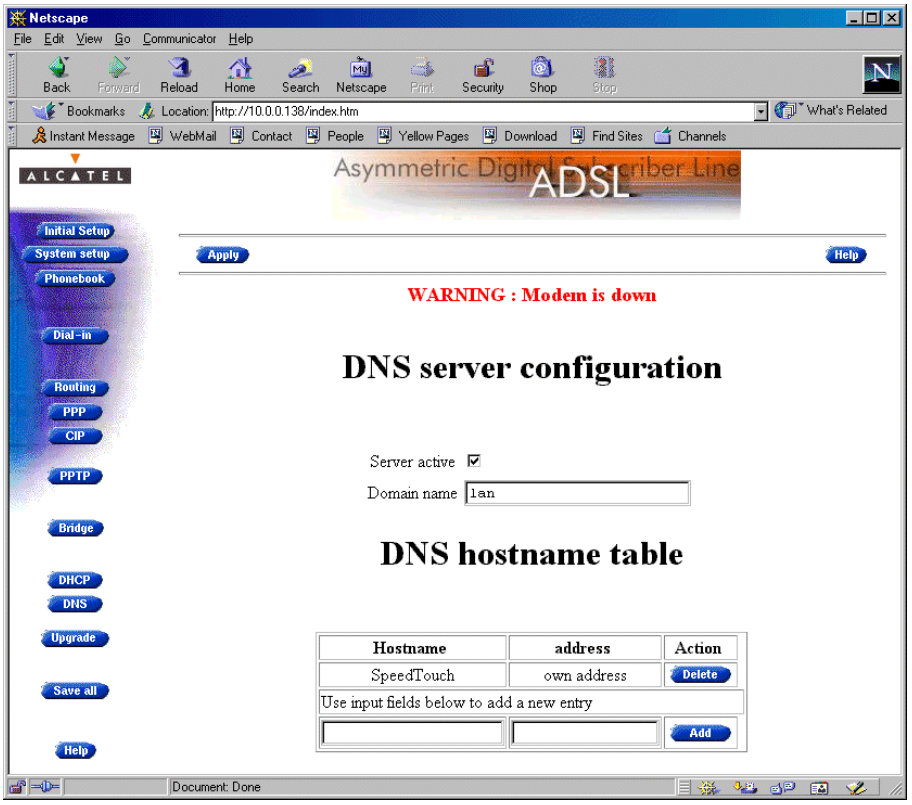


Figure 39 'DNS' Web Page

The *'DNS'* web page allows you to change the **STHome** DNS server settings.

The *'DNS'* web page contains the following fields

- *'DNS Server Configuration'* Field
  - *Server active*
    This option button activates or deactivates the **STHome** DNS server.
  - *Domain Name*
    In this field, you specify the domain name of your local network. This name is used by the DNS server to complete the device's DNS Name. By default the domain name is set to *'lan'*.
- *'DNS Hostname Table'*
  Should devices not reveal their hostname in the DHCP request, or even worse, not support DHCP, static entries can be added to the **STHome**'s local DNS database. To do so, add the hostname and corresponding IP address of these devices via the bottom row of the table. Care should be taken however to keep the database consistent.

7.1.11 The Upgrade Web Page

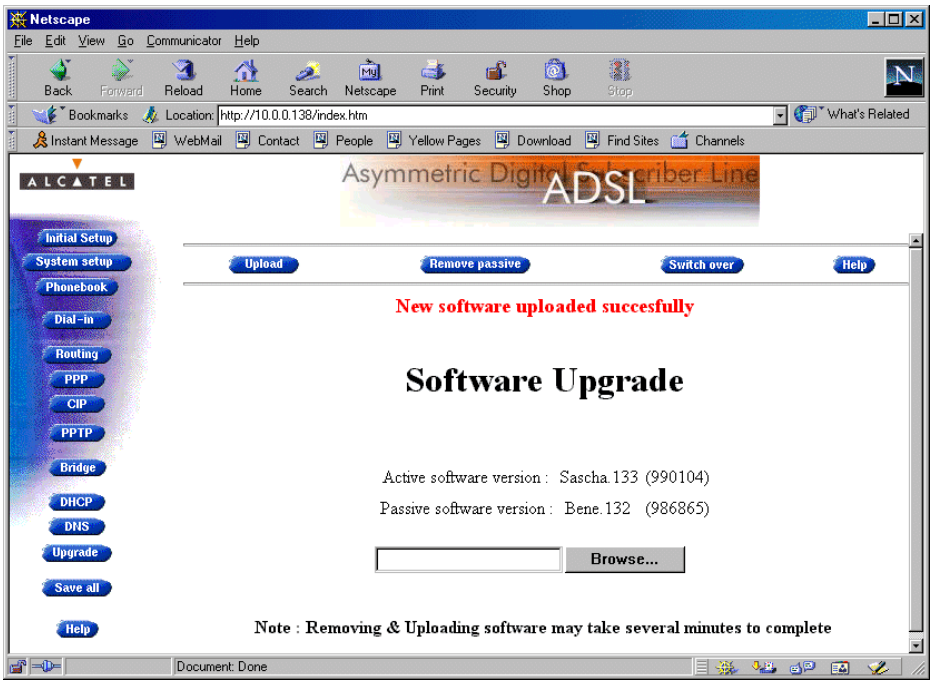


Figure 40 'Upgrade' Web Page

The *'Upgrade'* web page allows you to upload the new(er) software.

Prior to performing the upgrade, the software must be readily available on either a floppy, a CD-rom or resident on your hard disk.

The *'Upgrade'* web page contains the following fields:

- *Active Software Version*

  Indicates the software version that the **Speed Touch™Home** is currently using.

- *Passive Software Version*

  Indicates the software version resident in the **STHome**, but not used. This could be a newer version which is yet to be switched to active, but also a dormant older version.

- *Software Path* Field

  Allows you to specify the path to the **STHome** software upgrade package to be uploaded. You can also browse to it, using the Browse... button.

The header frame contains the following command buttons:

- Upload Starts the upload process: the software package indicated by the *'Software Path'* will be transferred to the **STHome** to become the passive software version.

  Note: Prior to start an upload:

  - A software package must be located in the *'Software Path'* field
  - The *'Passive Software Version'* field must be empty. To clear the *'Passive Software Version'* field, click Remove passive .

- Remove passive Remove the passive software version from the **STHome**.

- Switch over Switches active and passive software versions after a successful upload. Your **STHome** will reboot and come online again with the new version.

Automatic Software Upgrade

The **STHome** supports another software upgrade possibility: A new version of the software can be **downloaded** from the ADSL network to your **STHome**.

This feature is controlled by the ADSL provider. At some point in time he might decide to upgrade the software in your **STHome**. This download will happen almost unnoticed. However, you will be able to see a change in the software version if you browse to the **STHome**'s *'Upgrade'* page.

7.2 Command Line Interface via Telnet

Via the Ethernet interface of the **Speed Touch™Home** you can execute CLI commands from any PC on the LAN.

You must first gain access to the **STHome**, by opening a TCP/IP Telnet session.

1. Open a Telnet session and supply **STHome**'s IP address or DNS hostname.
2. The **STHome** will prompt you with `User:`. Press 'Enter'.
3. If required, fill in the password.
4. The CLI prompt **=>** appears.

From the prompt you can enter your commands. Typing `help` will show you the available commands.

CLI access is closed either via time out, or by closing Telnet.

8 Troubleshooting

Problem	Solution
Speed Touch™Home *modem does not work (no LEDs on top light up)*	Make sure the **STHome** modem is plugged in
	Make sure the **STHome** modem is turned on
ATMF connection does not work	Make sure the cable is securely connected to ATMF-25 connector and that you are using the correct cable type for your ATM equipment
Ethernet connection does not work	Make sure the cable is securely connected to 10Base-T connector and that you are using the correct cable type for your Ethernet equipment
Poor **Speed Touch™Home** *modem performance*	Make sure the **STHome** modem is installed as described in the instructions provided in this User Guide
	Make sure the **STHome** modem has adequate ventilation. Place the modem on an even, hard surface. Do not stack books or paper on the modem.
	Make sure in-house wiring is routed away from possible sources of interference, such as electrical wiring
Power/Sync LED is constantly green, but no traffic passes through	Restart the **STHome** modem
Power/Sync LED remains constantly Red	Restart the **STHome** modem

If the troubleshooting tips listed above have not resolved the problem, contact your local distributor for assistance.

Abbreviations

ADSL	Asymmetric Digital Subscriber Line
ATM	Asynchronic Transfer Mode
CLI	Commend Line Interface
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DTE	Data Terminal Equipment
IP	Internet Protocol
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
LAN	Local Area Network
MAC	Medium Access Control
NIC	Network Interface Card
OS	Operating System
PC	Personal Computer
POST	Power On Self Test
POTS	Plain Old Telephone Service
PPP	Point-to-Point Protocol
PPTP	Point-to-Point Tunneling Protocol
RAS	Remote Access Services
ROW	Rest Of the World
TCP	Transmission Control Protocol
VC	Virtual Channel
VCI	Virtual Channel Identifier
VP	Virtual Path
VPI	Virtual Path Identifier
VPN	Virtual Private Network
WAN	Wide Area Network

Appendix A Hardware Reference

A.1 Connector Pinout

Table 2 Connector Pinout

Connector	Pin No.	Signal Name	Function	Model Reference
LINE 123456 RJ 11/RJ 14 Front view	2	Wire A	Subscriber line wire A	2/5 model
	3	Wire A	Subscriber line wire A	3/4 model
	4	Wire B	Subscriber line wire B	
	5	Wire B	Subscriber line wire B	2/5 model
ATMF-25 12345678 RJ 45 Front view	1	Rx+	Receive data from DTE* (+)	
	2	Rx−	Receive data from DTE (−)	
	7	Tx+	Transmit data to DTE (+)	
	8	Tx−	Transmit data to DTE (+)	
10BASE-T MDI-X 12345678 RJ 45 Front view	1	Rx+	Receive data from DTE (+)	
	2	Rx−	Receive data from DTE (−)	
	3	Tx+	Transmit data to DTE (+)	
	6	Tx−	Transmit data to DTE (−)	
DC	Inner	$+9V_{DC}$	Power supply adapter connection (+)	
	Outer	GND	Power supply adapter connection (−)	

Note (*) : Data Terminal Equipment (DTE)

Note Connector pins not mentioned are not connected.

A.2 Power Supply Adapter

The **Speed Touch™Home** is equipped with one of the following power supply adapters listed in table 3. Due to the special characteristics of the output class II AC adapter, use only the **AULT Incorporated** types, or equivalents, listed in the table.

Table 3 Power Adapters for STHome

Model Reference	**AC/DC**	**Plugtype**	**AULTInc. Model** (or equivalent)
US model	120V/9V	North America wall plug	P48−091000−Axxxx
UK/Sing model	230V/9V	UK wall plug	F48−091000−Axxxx
ROW(*) model	230V/9V	Euro wall plug	D48−091000−Axxxx
Australia model	240V/9V	Australian wall plug	E48−091000−Axxxx
Korea model	220/9V	Korea wall plug	Q48−091000−Axxxx

Note (*) : Rest Of the World (ROW)

The supplied adapter has the following output specifications:

- $9V_{DC}$/1A unregulated output voltage
- Maximum 860 mV_{eff} ripple voltage
- Maximum 1A output current
- Limited power source (according to IEC/EN 60950, sub-clause 2.11 and UL1950).

A.3 Straight-through Cable Layout (LAN Cable)

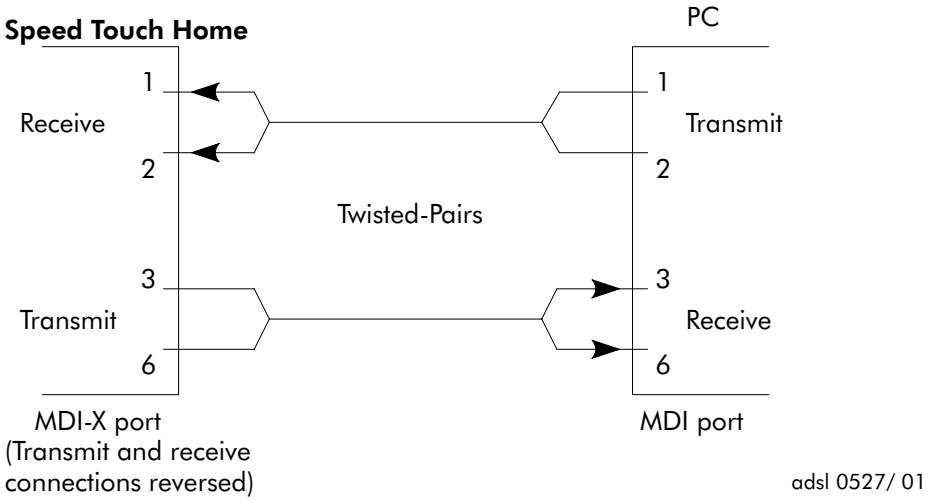


Figure 41 MDI-X Internal Crossover

A.4 Crossover Cable Layout

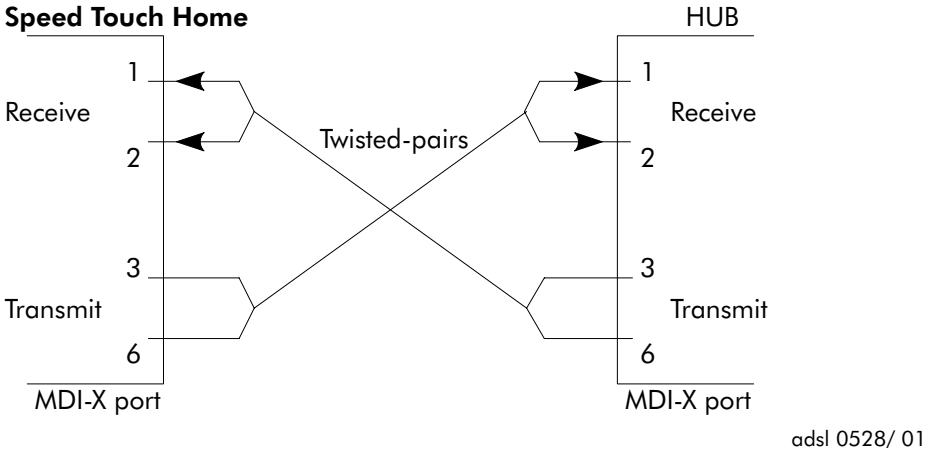


Figure 42 MDI-X to MDI-X External Crossover

Appendix B Speed Touch Home Default Settings

B.1 Global Speed Touch Home Default settings

IP Address 10.0.0.138

DNS Name SpeedTouch

DNS Domain Name lan

DHCP Mode No DHCP

B.2 IEEE 802.1D Transparent Bridging and Related Defaults

Phonebook Entries

Table 4 Default Bridging Phonebook Entries

Name	VPI Value	VCI Value	State
Br1	8	35	Configured
Br2	8	36	Free
Br3	8	37	Free
Br4	8	38	Free

ATM Encapsulation RFC1483 LLC/SNAP for Bridged PDUs (FCS not preserved)

Bridge Configuration 1 Port (Br1) set in forwarding state

Ageing Time 5 minutes

B.3 PPPoA-To-PPTP Relaying Defaults

Phonebook Entries

Table 5 Default Relaying Phonebook Entries

Name	VPI Value	VCI Value	State
RELAY_PPP1	8	48	Configured
RELAY_PPP2	8	49	Configured
RELAY_PPP3	8	50	Configured
RELAY_PPP4	8	51	Configured

ATM Encapsulation RFC2364 VC MUX for PPP PDUs

B.4 Global Default VPI/VCI Values

ATMF Interface

Table 6 ATMF VPI/VCI Values

VPI	VCI	Service Channel
0..5	0..511	End-user defined

Ethernet Interface

Table 7 Ethernet VPI/VCI Values

VPI	VCI	Service Channel
8	35	Bridging Service
8	36	Bridging Service
8	37	Bridging Service
8	38	Bridging Service
8	48	PPPoA/PPTP Relaying Service
8	49	PPPoA/PPTP Relaying Service
8	50	PPPoA/PPTP Relaying Service
8	51	PPPoA/PPTP Relaying Service
15	16	SNMP Agent Communication Channel
15	64	SW Download Channel

B.5 IP Address Classes and Default Netmasks Used by the STHome

Table 8 IP address Classes and Default Netmasks

IP Address Class	Default Net-mask	Example (Private IP)
A (1.x.x.x to 126.x.x.x)	255.0.0.0	10.x.x.x
B (128.0.x.x to 191.255.x.x)	255.255.0.0	172.16.x.x
C (192.0.0.x to 223.255.255.x)	255.255.255.0	192.168.x.x

Appendix C AutoPVC

AutoPVC

The default VCs listed in Appendix B, can be remotely modified via the *AutoPVC* feature of the **Speed Touch™Home**.

AutoPVC operates only in conjunction with Alcatel's DSLAMs, and offers the following functionality:

- User VCs that are to be terminated on the Ethernet port, can be notified by the **STHome**
- User VCs that need to be cross-connected between the ADSL port and the ATMF-25 port, can be remotely established.

Operation of AutoPVC

Basically the following steps are executed:

1. The ADSL operator configures VCs on the DSLAM
2. Via AutoPVC the VPI/VCI values are communicated to the **STHome**
3. AutoPVC messages are subsequently processed by the **STHome**, according to the criteria listed below.

Criteria 1

Any PVC, or VPI/VCI communicated via AutoPVC is added to the AutoPVC list on the *'Phonebook'* web page. If AutoPVC is not supported, this list is empty.

Criteria 2

If the VPI value is in the range from 0 up to 7, and the **STHome** is equipped with an ATMF-25 port, cross-connects will be configured between the ADSL port and the ATMF-25 port.

Criteria 3

An AutoPVC VPI value in the range from 8 up to 15 will be assigned to the Ethernet port. The VCs will be notified in the AutoPVC list on the *'Phonebook'* web page. It is up to the end user to assign it to a packet service. If there is an entry in the Phonebook, carrying a VPI/VCI value that is also present in the AutoPVC list, this entry will be highlighted by a yellow bar.

Criteria 4

An Ethernet only **STHome** version reacts identical as for Criteria 3, however the VPI range is now from 0 up to 15.

Examples

- If the ADSL provider configures Virtual **Path** (VP) 5 on the DSLAM, then the **STHome** cross-connects VPI 5 on the ADSL line to VPI 5 on the ATMF-25 port

- If the ADSL provider configures Virtual **Channel** (VC) 0/32 on the DSLAM, then the **STHome** cross-connects VPI/VCI 0/32 on the ADSL line to VPI/VCI 0/32 on the ATMF-25 port.

- Suppose the ADSL provider configures one of the **STHome**'s default **terminated VCs**, e.g. 8/35, on the DSLAM. VPI/VCI 8/35 will end up in the AutoPVC list, and the Bridging entry *Br1* will be highlighted in the Phonebook. In this way the user can distinguish the activated VC from dummy Phonebook entries.

Appendix D Safety

This Appendix provides basic Safety Information on your **Speed Touch™Home**.

Prior to using the **STHome**, read this Appendix carefully.

D.1 Safety Instructions

- **Read and understand all instructions**

  Follow all warnings and instructions marked on the product.

- **Climatic conditions**

  The **STHome** equipment is intended for:

  - **In-house stationary desktop use**; the maximum ambient temperature may not exceed 40°C (104°F).
  - It must **not** be mounted **in a location exposed to direct or excessive solar and/or heat radiation**.
  - It **must not** be **exposed to heat trap conditions and must not be subjected to water or condensation**.
  - It must be installed **in a Pollution Degree 2 environment**.

- **Cleaning**

  Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

- **Water and moisture**

  Do not use this product near water, for example, near a bathtub, wash bowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool.

- **Power supply adapter**

  The **STHome** comes with a portable power supply adapter.

  Due to the special characteristics of the output of the class II AC adaptor, only use the models or equivalent listed in the power adapter table in Appendix A.

- **Power sources**

  The powering of this product must adhere to the power specifications indicated on the marking labels. If you are insure of the type of power supply to your home, consult your product dealer or local power company.

  The **mains socket outlet** must be **close to the equipment** and easily accessible.

  The **Speed Touch™Home** equipment is **not** intended to be connected **to an IT-type** power system.

- **Power cord protection**

  Do not allow anything to rest on the power cord. Do not locate this product where the cord will be subject to persons walking on it.

- **Overloading**

  Do not overload wall (mains) outlets and extension cords as this increases the risk of fire or electric shock.

- **Servicing**

  To reduce the risk of electric shock, do not disassemble this product. None of its internal parts are user-replaceable; therefore, there is no reason to access the interior. Opening or removing covers may expose you to dangerous voltages. Incorrect reassembly could cause electric shock if the appliance is subsequently used.

  If service or repair work is required, take it to a qualified service dealer.

- **Damage requiring service**

  Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

  - When the power supply cord or plug is damaged or frayed.
  - If liquid has been spilled into the product.
  - If the product has been exposed to rain or water.
  - If the product does not operate normally.
  - If the product has been dropped or damaged in any way.
  - If the product exhibits a distinct change in performance.

- **Modem/Telephone use**

  Avoid using a modem/telephone (other than a cordless type) during an electric storm. There is a slight risk of electric shock caused by lightning.

  Do not use the telephone to report a gas leak in the vicinity of the leak.

  If **telephone service** is required on the same line, a **central splitter** or **distributed filter(s) must be installed** for optimal ADSL performance. Depending on your ADSL configuration and type of splitter/filters, installation must be carried out by **qualified service personnel**. Consult your telephone company or ADSL service provider for instructions.

STORE THESE INSTRUCTIONS CAREFULLY !

D.2 Safety Standards

The **Speed Touch™Home** complies with the following safety standards:

- EN 60950, 2nd ed. (1992), including amendments 1 (1993), 2 (1993), 3 (1995) and 4 (1997)
- IEC 60950, 2nd ed. (1991), including amendments 1 (1992), 2 (1993), 3 (1995) and 4 (1996)

The external interfaces on the rear panel are classified as follows:

- **Line**: TNV circuit, subjected to overvoltages (TNV-3)
- **10Base T/MDI-X**: SELV circuit
- **ATMF-25**: SELV circuit
- **DC**: Power receptacle

Appendix E Agency Regulatory Notices

E.1 FCC Class B Notice – United States only

Federal Communications Commission (FCC) Statements

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to guarantee this device doesn't harmfully interfere with, or harmfully be interfered by other devices.

Radio Frequency Interference Statement

Note: this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause interference to radio communications.

The limits are designed to provide reasonable protection against such interference in a residential situation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the affected radio or television.
- Increase the separation between the equipment and the affected receiver.
- Connect the equipment and the affected receiver to power outlets on separate circuits.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Alcatel may void the user's authority to operate this equipment.

E.2 Canadian DOC Class B Notice

Notification of Canadian RF Interference Statements

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communication.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicable aux appareils numérique de classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

E.3 European Community Declaration of Conformity

Products with the CE Marking comply with both EMC and Low Voltage Directives issued by the Commission of the European Community.

ALCATEL TELECOM

EC DECLARATION OF CONFORMITY

We ALCATEL BELL NV (Ltd liability company)
Francis Wellesplein 1
2018 Antwerp
Belgium

declare under our sole responsibility that the products

A1000 ADSL Speed Touch Home and A1000 ADSL Speed Touch Pro
(report ref. 3EC 16403 0001 QZZZA)

to which this declaration relates is in conformity with the following standard(s) or other normative document(s) provided that it is installed, maintained and used in the application for which it is made, with respect of the "professional practices" relevant installation standards and manufacturer's instructions:

EN 50082-1 & **EN 55022**:
- Installation in telecom areas.
- Normal priority of service.
- All interfaces are indoor cabling.
- Test report ETE-036 dd. 16.05.1999

EN60950 & **IEC950 (including A1,A2,A3,A4)**:
- Test report ET-S-206 dd. 25.06.1999

following the provisions of the 89/336/EEC, 73/23/EEC and 93/68/EEC Directives.

Certificate no: CERT/VQ1/99046

Antwerp 20-8-99
(place and date of issue)

M. De Prycker
President
Internet Access Division
(signature)

Figure 43 EC Declaration of Conformity