

Aztech DSL901E External ADSL Bridge & Router Modem



User Guide
Version 1.0

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Version 1.0

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Product warranty does not apply to damage caused by lightning, power surges or wrong voltage usage.

Safety Guidelines

Adhere to the following safety guidelines when using your unit to reduce the risk of fire, electric shock and injury.

- ⓘ Understand all instructions in the manual. Follow all instruction labels found on the unit.
- ⓘ Except for the power adapter supplied, the unit should not be connected to other adapters/power supplies.
- ⓘ Never spill liquid of any kind on the unit.
- ⓘ Do not place the unit on an unstable stand or table. The unit may drop and become damaged.
- ⓘ Do not expose the unit to direct sunlight.
- ⓘ Do not place any hot devices close to the unit as it may degrade or cause damage to it.
- ⓘ Do not put any heavy object on top of the unit
- ⓘ Do not use liquid cleaners or aerosol cleaners. Use a soft, dry cloth for cleaning.

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Chapter... 1

Introducing DSL901E

This section gives a brief introduction of DSL901E features and its specifications.

Congratulations on your purchase of the DSL901E External ADSL Bridge & Router Modem!

ADSL, which stands for **Asymmetric Digital Subscriber Line**, is the latest communication technology that offers faster and uninterrupted Internet access. It allows use of real-time, interactive multimedia and broadcast-quality for services such as video-on-demand, collaborative computing and distance learning.

DSL901E is capable of data rate in both Full-Rate and G.Lite, with **Full Rate transmission at up to 8 Mbps downstream, 640 Kbps upstream** and **G.Lite transmission at up to 1.5 Mbps downstream, 512 Kbps upstream**.

DSL901E is an embedded solution that is OS independent. It can be connected to any computer with an Ethernet card. It has an **Ethernet connection** that allows direct interface to any existing IEEE 802.3 LAN network, providing instant broadband Internet access to LAN networks with minimum hassle.

To ensure the broadest customer reach, the DSL901E features multiple data encapsulation formats for DSL transport over ATM PVCs, including the widely supported ADSL protocols **RFC 1483 (MPoA)**, **RFC 1577 (IPoA)** and **RFC 2364 (PPPoA)**.

Fully compliant with ANSI T1.143 Issue 2, ITU-T G.992.1 (G.dmt) and G.992.2 (G.Lite) featuring Discrete Multi-tone (DMT) line encoding used by major ADSL manufacturers, the DSL901E further guarantees interoperability with network providers worldwide.

1.1 Documentation

DSL 901E User Manual (READ THIS MANUAL FIRST!)

This user manual is a printed guide that comes with your router package. Each router model has its own manual. You may refer to it for **setting up and connecting your router**. It also contains the sections on **Frequently Asked Questions** and **Troubleshooting Guide**.

DSL Router Commander Software Manual ¹

The software manual is a softcopy guide that contains information on **DSL Router Commander**, a User Interface (UI) that provides a simple way of configuring your network.

DSL 900/9000 Router Series Technical Manual ¹

The technical manual is a softcopy guide that contains **console commands and advanced router configurations** that are mostly intended for experienced users.

ATMOS Command Reference ¹

The reference manual is a softcopy guide that contains most of the **console commands and its functions**. For advance configurations, you may refer to it for their descriptions.

1.2 Manuals/UI/Firmware Updates

To ensure that our users have the best of the product, continuous efforts are made to improve our software. Our manuals, User Interface (UI) and firmware are also being updated as and when required. To make sure that you do not miss out any new updates, please visit <http://www.aztech.com> for downloads.

¹ These manuals can be found on your **DSL 900/9000 Router Series CD-ROM** that comes with your router package.

1.3 Minimum System Requirements

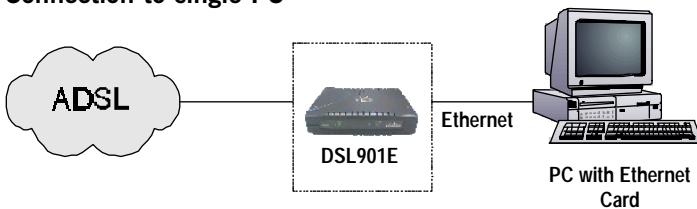
- Pentium® MMX 233MHz (or above) with Ethernet card (installed with TCP/IP Protocol)
- 32MB RAM
- 10MB of free hard disk space
- A Serial Port
- A CD-ROM Drive
- For Multiple PCs
 - Ethernet Hub with Straight Ethernet cables
- For Single PC
 - Crossover Ethernet Cable

1.4 Network Connections

DSL901E may operate as a **Bridge modem** or **Router**.

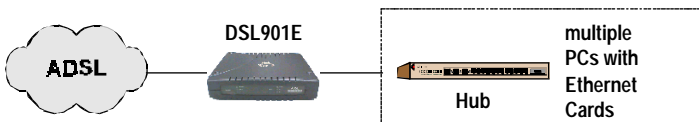
1.4.1 Bridge Modem

Connection to single PC



1.4.2 Router

Connection to multiple PCs in a LAN



Chapter...2

Before You Begin

This chapter contains information that you need to know before setting up DSL901E. It is important that you go through them.

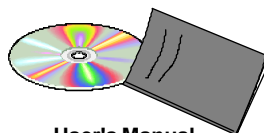
2.1 Package

Ensure that you have the following items in your DSL901E package. For any missing items, please contact your dealer immediately.

DSL901E



DSL901E CD



User's Manual

Power adapter



UTP Crossover

Ethernet cable (RJ-45)



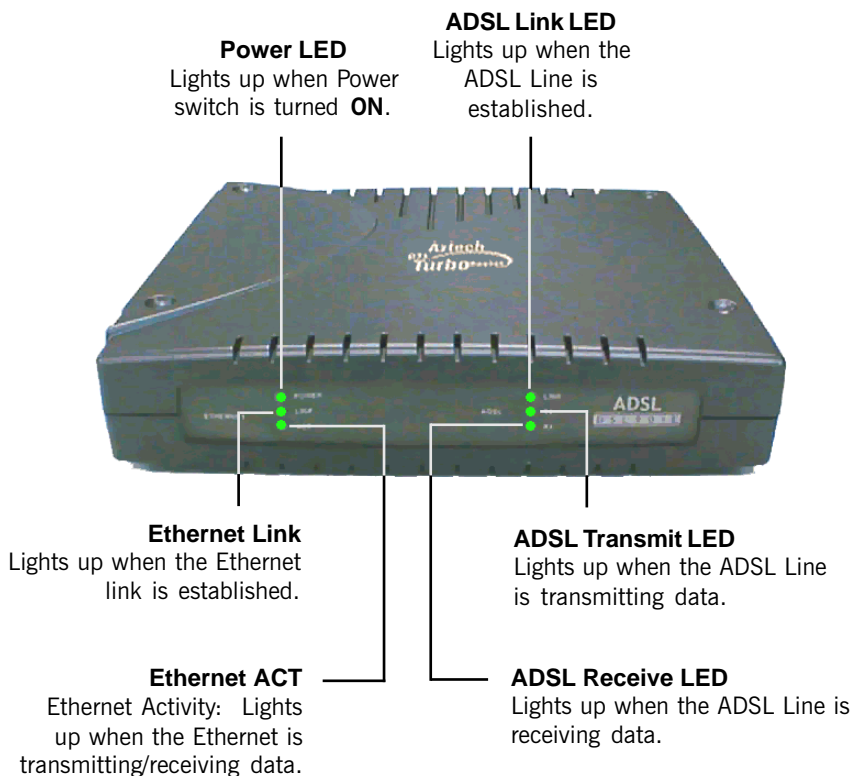
Power cable



Telephone cable (RJ-11)

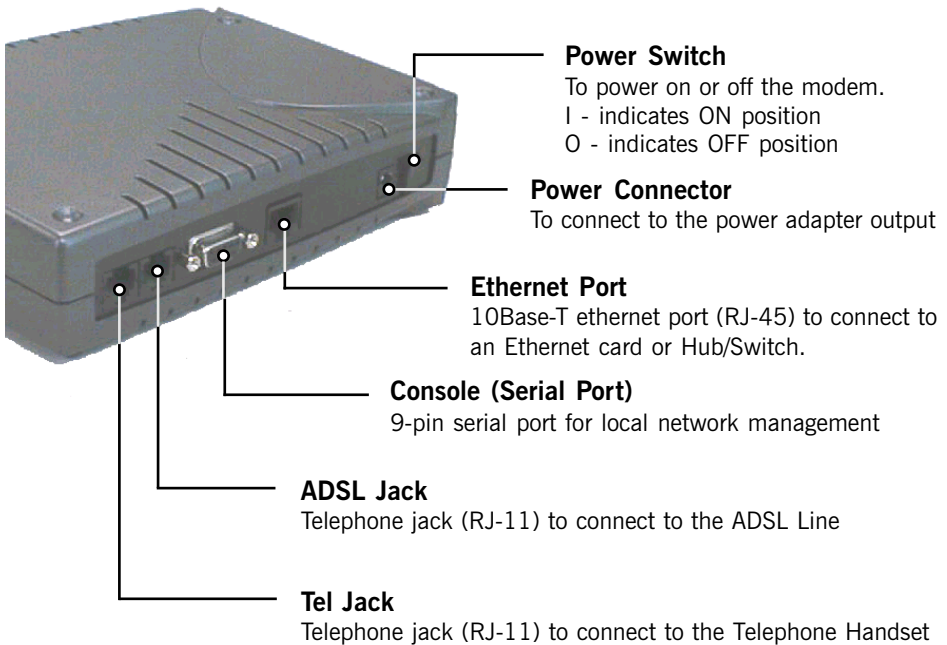
2.2 Overview for DSL901E

2.2.1 Front View



When the **Power Switch** is on, the Power LED will light up. Once the modem is initialized, the **ADSL Link LED** will start blinking, trying to establish a connection. Upon successful connection, the ADSL Link LED will remain lit.

2.2.2 Rear View



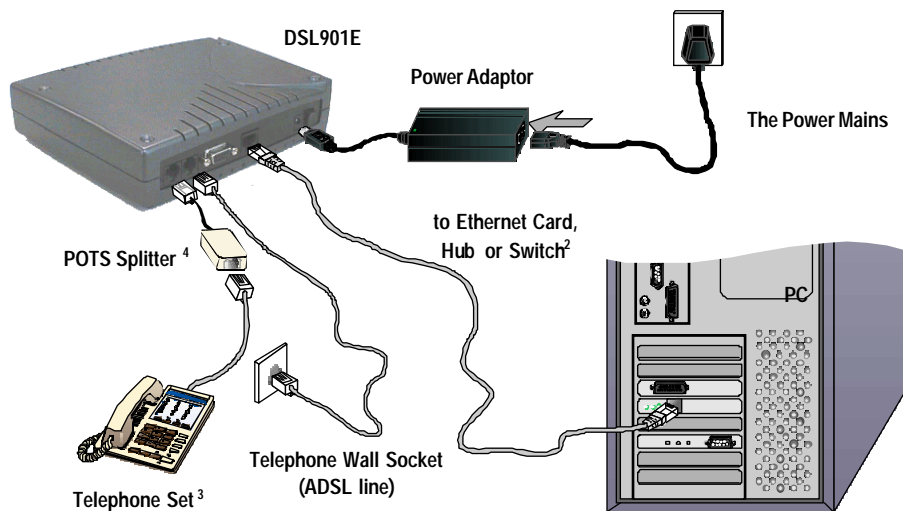
Chapter...3

Connecting DSL901E

This chapter contains information on the hardware setup of DSL901E



Power off your computer and any connected devices before connecting DSL901E!



*2 For connection to a PC Ethernet card, please use a cross Ethernet UTP cable.
For connection to a Hub or Switch, you may use a normal (straight) Ethernet UTP cable.*

3 This optional connection provides easy access to your Telephone set while working near the modem.

*4 A POTS splitter may or may not be required between the TEL jack and your telephone set.
Check with your Internet Service Provider.*

Chapter...4

Setting Up the Ethernet Card

You need to configure the Ethernet Card on your PC in order to run DSL Router Commander⁵ and the DSL Test from your PC.



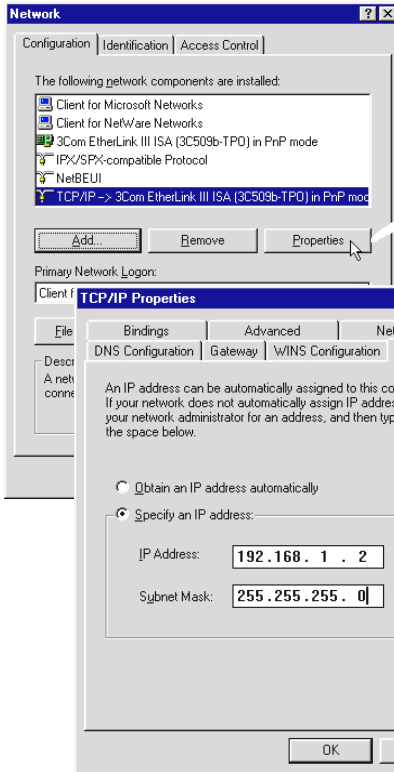
1. The screen shots and screens information illustrated in this manual serve only as a guide. The exact information you see on your system may vary, depending on your system configurations. For dissimilarities, follow closely to the instructions as prompted on your PC screen.
2. All IP addresses and Subnet Mask indicated in this manual serve only as examples for your better understanding. You are required to replace these values with those given by your ADSL Service Provider/System Administrator.

4.1 Configuring the Ethernet Card

- i) Power on your DSL901E.
- ii) From your Windows desktop, right-click on the **Network Neighborhood** icon. Select **Properties**.

5 DSL Router Commander is a user friendly tool that allows you to setup your DSL901E network configurations with ease.

- iii) From the **Configuration** tab, select **TCP/IP -> 3Com EtherLink III ISA [3C509b-TPO] in PnP mode**⁶ and click **Properties**.



(If you do not see a TCP/IP networking protocol, re-install your Ethernet card.)

- iv) Select the **IP Address** tab.

Select the option '**Specify an IP address**'.

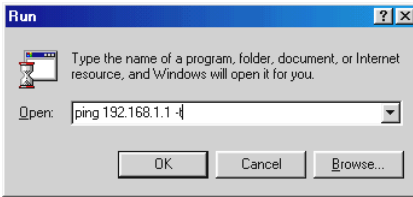
Enter the **IP Address** as **192.168.1.2** and **Subnet Mask** as **255.255.255.0**. Click **OK** to save the settings.

When prompted to restart, click **Yes**.

⁶ This guide uses **3Com EtherLink III ISA** Ethernet Card as an example. Select the Ethernet Card listed in your system.

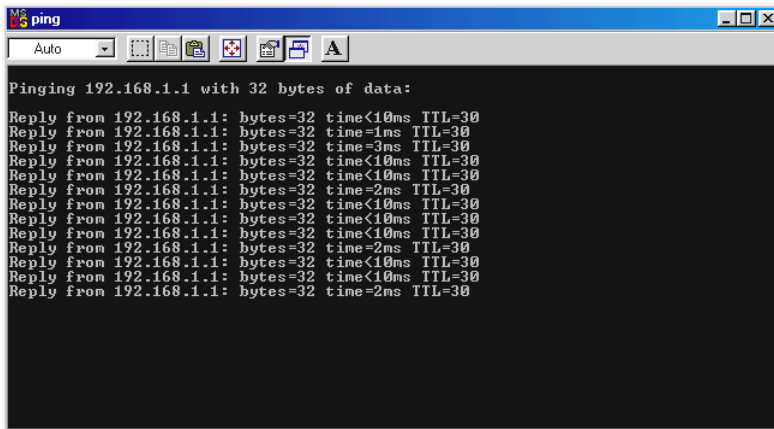
4.2 Verifying the Link Between the Ethernet Card and DSL901E

- i) From your Windows taskbar, click **Start** > **Run**.
- ii) In the text box, enter **ping 192.168.1.1 -t** and click **OK**.



(The factory default IP Address for DSL901E is set at **192.168.1.1**. Replace this address with the one assigned by your System Administrator, if necessary.)

- iii) If the connection between your Ethernet card and DSL901E has been established, you should see text listing similar to the following.



Close the window. You may now proceed to run DSL Router Commander. (If you see **'Request timed out'** listing, it means that the link between your Ethernet Card and DSL901E has not been established. Refer to **Appendix B - Troubleshooting Guide, 'I get 'Request timed out' response when I ping to DSL901E'**.)

Chapter...5

Installing WinPoET Dialer⁷



The screen shots and screens information illustrated in this manual serve only as a guide. The exact information you see on your system may vary, depending on your system configurations. For any dissimilarities, follow closely to the instructions as prompted on your PC screen.

1. Place the **DSL901E Installation CD** into your CD-ROM drive.
2. Ensure that you have powered on DSL901E.
3. For Windows® 98/98 Second Edition/95 users, Windows may prompt for your Windows CD-ROM during WinPoET installation. Please have the CD-ROM by your side.
4. From the **DSL901E Installation CD**, double-click on the **WinPoET** folder to open it. Double-click on **WinPoET.exe** to install **WinPoET Dialer**.

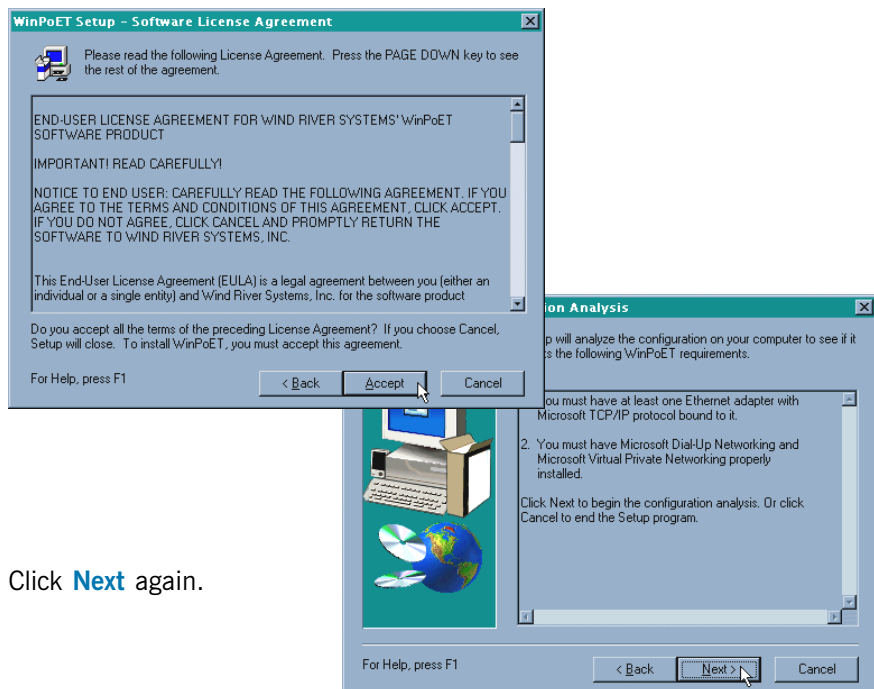
⁷ WinPoET is a dial-up client that allows you to connect to the Internet.
(see **Chapter 6 - Connecting to the Internet** for details)

5. The setup program will commence. The following **Welcome** window will be prompted.

Click **Next**.

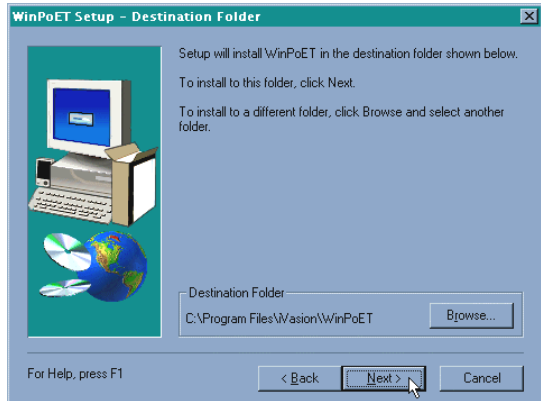


6. At the **Software License Agreement** prompt, click **Accept** to proceed.

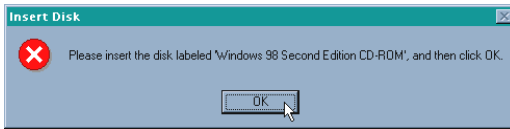


7. Click **Next** again.

8. Accept the default destination location and click **Next**.

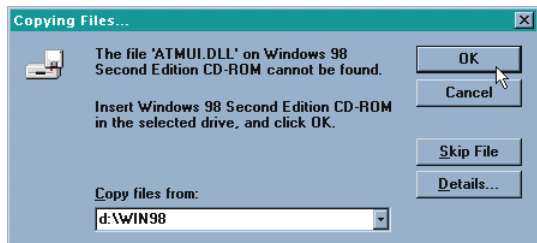


9. For Windows® 98/98 Second Edition/95 users, at the following prompt, replace the **DSL 901E Installation CD** in your CD-ROM Drive with your **Windows CD-ROM** and click **OK**.

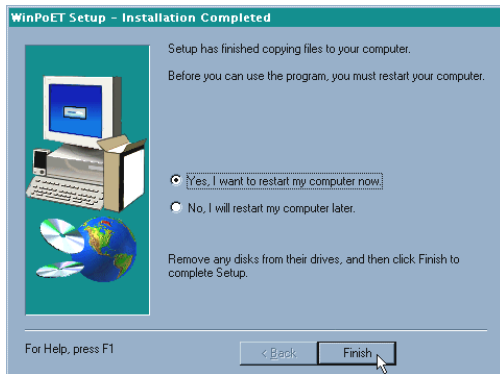


10. In the text box, type in **d:\win98** or **d:\win95** and click **OK**.

(Assuming your CD-ROM drive is labelled D. Else, substitute with the correct drive letter.)



11. Click **Finish** to restart your system.



12. Upon your system restarting, you should see the following icon on your Windows desktop.



WinPoET: Double-click to establish your Internet connection.
See **Chapter 6 - Connecting to the Internet.**


Proceed to **Chapter 6 - Connecting to the Internet** to establish your Internet connection.

Chapter...6

Connecting to the Internet

This chapter guides you on how to establish your connection for broadband service.

6.1 Establishing the Connection for broadband service

1. To connect to the Internet, double-click on the dial-up icon  from your Windows desktop.


(This icon was generated during the installation of WinPoET software. If you do not see the icon from your Windows desktop, re-install your WinPoET Dialer as described in [Chapter 5 - Installing WinPoET Dialer](#))

2. Enter your **user-id@isp** and **password** as given by your Internet Service Provider.

Select **Save password** if you do not want to re-enter the password the next time you connect. Click **Connect**.



If you are not able to establish your Internet connection, please refer to [Appendix B - Troubleshooting Guide on 'I am not able to connect to the Internet.'](#)

Upon successful connection, you should be able to see an icon () displayed at the corner of your Windows taskbar.


6.2 Ready to Go!

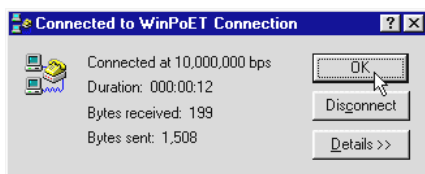
You are now connected to the Internet.

Launch your Internet Browser ([Internet Explorer](#) / [Netscape Navigator](#) / [Netscape Communicator](#) and so on).

You can start surfing!


6.2.1 Checking the Session Connection time

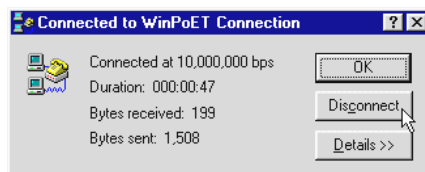
If your connection to the Internet is established, you should see an icon () displayed at the corner of your Windows taskbar. Double-click on the icon. The **Duration** shows the connection time.



(The connection speed indicates the speed that the ADSL modem can achieve. Your actual connection speed will depend on the subscription plan that you have signed-up with your Internet Service Provider.)

6.2.2 Disconnecting from the Internet

If your connection to the Internet is established, you should see an icon () displayed at the corner of your Windows taskbar. Double-click on the icon and click **Disconnect**.



(The connection speed indicates the speed that the ADSL modem can achieved. Your actual connection speed will depend on the subscription plan that you have signed-up with your Internet Service Provider.)

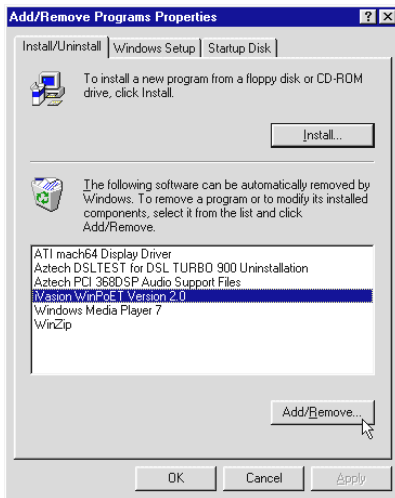
Chapter...7

Uninstalling WinPoET Dialer



For Windows® 98/98 Second Edition/95 users, Windows will need your Windows CD-ROM to complete the uninstallation of WinPoET software. Please have the CD-ROM by your side before proceeding.

1. From your Windows taskbar, click **Start** > **Settings** > **Control Panel**. Double-click on the **Add/Remove Programs** icon.
2. To uninstall **WinPoET Dialer**, select **iVasion WinPoET Version 2.0** and click **Add/Remove**.



Follow the on-screen instructions to complete the uninstallation.

Frequently Asked Questions

This section provides answers to the commonly asked questions on your ADSL modem.



Why is Asymmetric Digital Subscriber Line (ADSL) called Asymmetric?



It is called asymmetric because more bandwidth is reserved for receiving data than for sending data. This is useful because many users of the Internet receive much more data than they send.



What are the benefits of ADSL over analog modems ?



Besides the high-speed advantage, ADSL connection is always on. There is no longer a need to log on and off, no more busy signals and no more waiting for the connection to established - it is always there. On top of these, you can use the phone even when the data connection is on. You do not need to switch between surfing the Net and talking over the phone.



Will my modem constantly connect near the maximum speed ?



At ADSL speeds, the limitations depend on the performance or load of the Internet Service Provider that you are trying to reach, as well as the line condition specific to your location.



Can I use my router during thunderstorm ?



ADSL routers can be damaged by thunderstorms. Our product warranty does not apply to damage caused by lightning. If your area is frequent in thunderstorms, you are advised to use a surge protector. Certain surge protectors have been reported to reduce download speed, so you are advised to test your speed before and after installation to make sure that it adds no problems to your line.



Do I need to install additional telephone lines in order to use ADSL?



No, you do not need to do so. ADSL and standard voice telephones operate at a different set of frequencies. The difference in frequencies allows both IP (Internet) traffic and voice traffic to co-exist on a same physical phone line.



Will my old PC be fast enough for ADSL?



Yes. But if you start to use the ADSL line to view video-on-demand or other memory- and processor-hungry functions, you may well decide that your PC is too slow. However, there are still many sites that can be accessed by slower PCs.



How can I send/receive fax as well as surf the Internet at the same time ?



To send/receive fax, you may connect your fax machine to the **TEL** jack of your router (same as the way you connect to the telephone set as illustrated in [Chapter 3 - Connecting DSL901E](#)).



Do I need to use a POTS splitter when using ADSL ?



Your router may or may not have a built-in POTS splitter at the TEL jack. Check with your Internet Service Provider.

However, if you are sharing the ADSL line with other telephone line extensions, you will need to have a POTS splitter connected between the other telephone set and the telephone wall socket connecting to it.

Troubleshooting Guide

This section provides a step-by-step solutions to problems that you may encounter when setting up or using your ADSL modem.



I am not getting any connection. The modem Power LED lights up and the ADSL Link LED keeps blinking (The ADSL Link LED does not remain light up.)



Power off your modem and check the following:

- i) Ensure that the Power adapter is tightly fitted into the **DC IN** of your router.
- ii) Check that the Telephone cable (RJ-11) is connected to **LINE** jack on your router and not to the **TEL** jack.
- iii) Power on your modem.

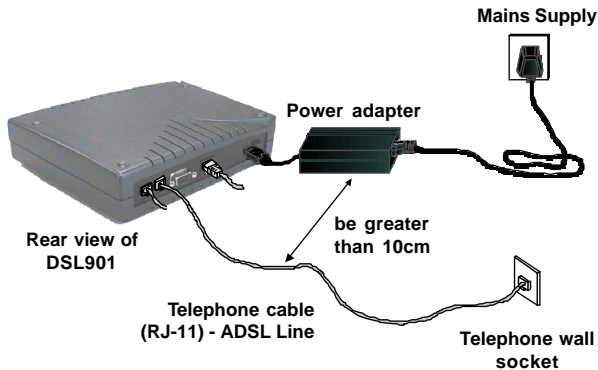
If the problem still persists, please check with your ADSL Service Provider.



I am getting poor ADSL speed performance from DSL901E.

- i) Ensure that the **ADSL line** is at least 10cm away from the **Power adapter** (see the following for illustration).
- ii) Place your router away from devices or appliances such as monitors, exposed computer systems (with chassis covers removed) or another router which exhibit magnetic fields that may cause interferences to your router line.
- iii) Ensure that **POTS splitters** are used for phone sockets that are sharing the same ADSL line.

If your router speed or performance is still unsatisfactory, please contact your Internet Service Provider.



I am prompted with 'Bad configuration file, please review' error message after entering config confirm command.



The error message is prompted when system detected some errors in commands that you have entered. To review the commands, type `config`. An example of the listing is as shown.


```

DSL901E(R) - HyperTerminal
File Edit View Call Transfer Help
192.168.1.1 dhcpserver> config
----
Current DHCP server configuration
----

allow unknown-clients;
subnet 192.168.1.0 netmask 255.255.255.0
{
range 192.168.1.2 192.168.1.100;
option subnet-mask 255.255.255.0;
option routers 192.168.1.1;
option domain-name-servers 165.21.83.88,165.21.100.88;
}

```

Go through the commands to locate the error(s).

To correct the error(s), you may type either **config delete** to remove the last entered command line or **config flush** to remove ALL entered command lines. Re-enter the correct commands.

Complete the configuration settings with **home**, **config save** and **restart**.



I get 'Request timed out' response when I ping to DSL901E.

```

ping
Auto
Pinging 192.168.1.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Request timed out.

```

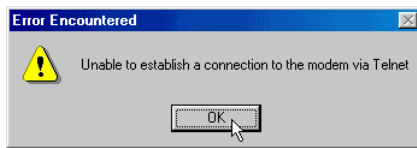


Check that you have entered the correct IP Address for your Ethernet Card as specified by your System Administrator (see [Chapter 4 - Setting Up the Ethernet Card](#)). It should be in the same subnet as DSL901E.

Restart your system for the IP Address to take effect and try to ping again.



The following error message was prompted when I tried to log in to DSL Router Commander.



This happens when the link between your Ethernet card and DSL901E has not been established. Please refer to [section 4.2 - Verifying the Connection Between the Ethernet Card and DSL901E](#).



My WinPoET dialer seems to hang at the status 'Connecting to communications device.'



Verify the following:

- i) your modem is connected to the ADSL line
- ii) the Mains Supply at the power adapter is powered on
- iii) the Switch on your modem is at the 'I' position.
- iv) the Ethernet cable is connected from your modem to your Ethernet card

(see [Chapter 3 - Connecting DSL901E](#))

For any re-connections made, allow some time for system to re-establish the Internet link. If the connection still fail, please proceed with the question, 'I am not able to connect to the Internet.' for further tests.



I am not able to connect to the Internet.

Carry out the following test to verify your connections.



1. Please ensure that you have proceeded with [Chapter 4 - Configuring Your Ethernet Card](#) before running the DSLTEST. If one of the tests failed, subsequent tests will be skipped. Please proceed to fix the problem first before running the test program again.

1. From the DSL901E Installation CD, double-click on **DSLTEST**

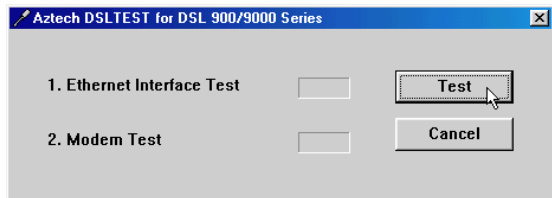


icon from the Dsltest folder.

2. Click **Test**. (Table C-2 gives the description of the tests.)

The tests listed will commence. You should get a **PASS** for all the tests.

The following **Table** shows the types of possible results.



Result	Description
PASS	The test is successful.
FAIL	You will be prompted on the error. Click OK, fix the error and click Test again.
SKIP	The test is not carried out as the previous test has failed.

Ethernet Interface Test:

This will test whether your Ethernet Card is installed and configured properly. Error messages will be prompted to highlight the area of the failure, if any.

Modem Test:

This is to test the ADSL line connection. This test corresponds to the **ADSL Link LED**. The lighting up of LED and passing of the Modem Test both show successful physical ADSL link.



During the installation of WinPOET, an error message, 'No Microsoft TCP/IP stack installed. Please install the Microsoft TCP/IP stack in Control Panel, Network.' is prompted. (For Windows® 95 users only)



You need to install Microsoft TCP/IP before installing WinPOET. Please do the following.

- i) From your Windows desktop, right-click on **Network Neighborhood** icon. Select **Properties**.
- ii) From the **Configuration** tab, check for **TCP/IP** listed.

If your system is not installed with TCP/IP, please carry out the following instructions:

- iii) Select your Ethernet Card and click **Add**.
- iv) At the **Select Network Component Type** prompt, select **Protocol** and click **Add...**
- v) At the **Manufacturers** field, select **Microsoft**. At the **Network Protocols** field, select **TCP/IP**. Click **OK**.
- vi) You will be prompted for your Windows 95 CD. Insert your Windows 95 CD in your CD-ROM Drive and click **OK**.

Follow any on-line instructions. If you are prompted with DHCP prompt, asking if you want to see future DHCP messages, click **No**.

Technical Specifications

This section contains the specifications for DSL901E.

C.1 Main Features

C.1.1 ADSL and ATM

- Controller-based External ADSL Modem
- UTOPIA Specifications Level I and Level II compliant
- ANSI T1.413 issue 2, ITU-T G.992.1 (G.dmt) and G.992.2 (G.lite) compliant
- Using Discrete Multi-Tone (DMT) line encoding scheme
- Full Rate transmission at up to 8 Mbps downstream and 640 Kbps upstream
- G.lite transmission at up to 1.5 Mbps downstream and 512 Kbps upstream
- Rate Adaptive modem at 32 Kbps steps
- Up to 18,000 ft loop reach
- Flash ROM upgradable for future feature enhancement
- RFC1483 Ethernet encapsulation over ATM support
- RFC1483 IP encapsulation over ATM support
- RFC1577 IP over ATM support
- RFC2364 PPP over ATM support
- RFC2516 PPP over Ethernet Relay support

- Up to 8 Multiple PVCs
- OAM (I.610) F4/F5 Loopback, Send, and Receive

C.1.2 Networking

- IEEE 802.1d Transparent Bridge
- Static, RIP1, RIP2 routing support
- NAT – IP Masquerading
- DHCP Server
- DNS Relay Agent
- IP Port Forwarding
- PPTP Access Concentrator
- Telnet server for Remote management
- TFTP Server and Client for software update
- SNMP version 1 Agent

C.2 Platform Support

OS Independent (supports any platform with an ethernet card installed)

C.3 External Connectors

- 1 x RJ11 Telephone socket for ADSL line
- 1 x RJ11 Telephone socket for Telephone Handset
- 1 x RJ45 for 10Base-T Ethernet (MDI Type)
- 1 x DC Jack Power Connector (Centre is '+')
- 1 x On/Off SPDT Power Switch
- 9 pin Serial Port for local management

C.4 LED Indicators

- 1 x Power LED
- 1 x ADSL Link Status LED

- 1 x ADSL Transmit LED
- 1 x ADSL Receive LED
- 1 x Ethernet Link Status LED
- 1 x Ethernet Activity LED

C.5 Environmental

C.5.1 Supply Voltage

- DC supply 5V
- Power Dissipation 6W maximum

C.5.2 Temperature

Operating : 0° C to 40° C or 32° F to 104° F
Non Operating : -40° C to 80° C or -40° F to 176° F

C.5.3 Relative Humidity

Operating : 10% - 70% (non-condensing)
Non Operating : 10% - 85% (non-condensing)

C.6 System Requirements

Pentium MMX 233MHz (or above) with Ethernet NIC



The specifications herein are subject to change without prior notifications.

