

DSL TURBO 900

Version 1.0



Ethernet ADSL *High Speed* Modem

User's Manual

(Configured for Broadband Service)

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

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Chapter 1

Introducing DSL TURBO 900

This section gives a brief introduction of DSL TURBO 900 features and its specifications.

1.1 Overview

Congratulations on your purchase of DSL TURBO 900!

DSL TURBO 900 is an External Bridge Modem that uses the latest communication technology, **ADSL** (Asymmetric Digital Subscriber Line) to offer 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.

DSL TURBO 900 is capable of data rate in both Full-Rate and G.Lite, with **Full Rate transmission at up to 8 Mbps downstream, 640 Kbps upstream¹** and **G.Lite transmission at up to 1.5 Mbps downstream, 512 Kbps upstream¹**. Major features include the following:

ADSL Protocols Support

To ensure the broadest customer reach, DSL TURBO 900 features multiple data encapsulation formats for DSL transport over ATM PVCs, including the widely supported ADSL protocol **RFC 1483 (Ethernet Over ATM)**.

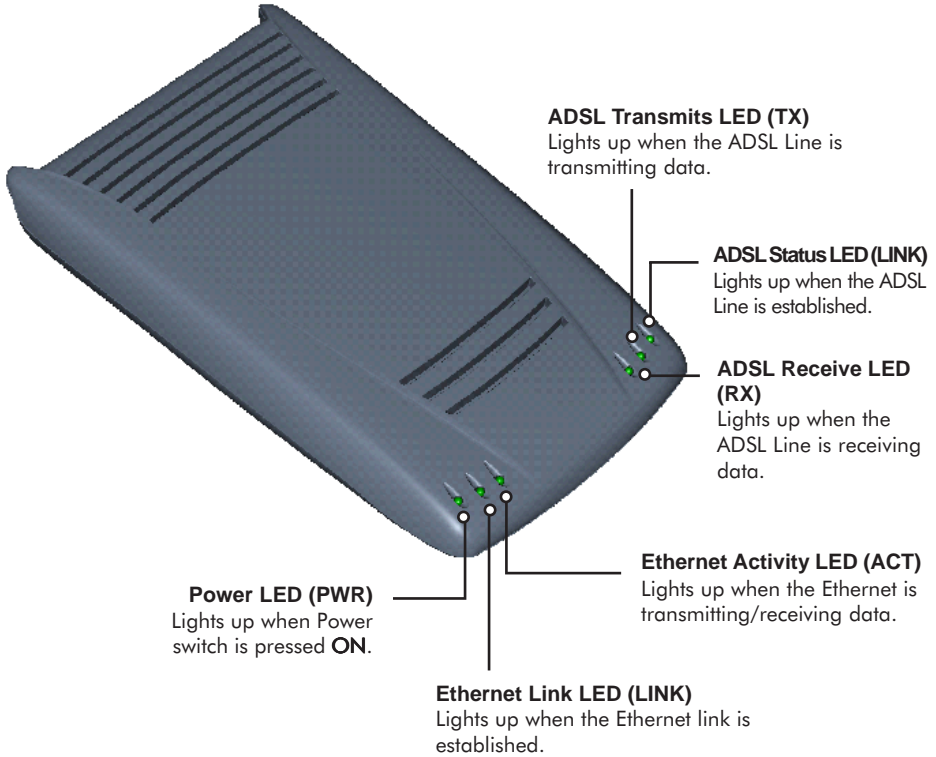
Compatibility (Interoperability)

Multimode ADSL support: ANSI T1.143 Issue 2, ITU-T G.992.1 (G.dmt) and G.992.2 (G.Lite). DSL TURBO 900 uses discrete Multi-tone (DMT) line encoding scheme which is also used by major ADSL equipment manufacturers, thus further guarantees interoperability with network service providers worldwide.

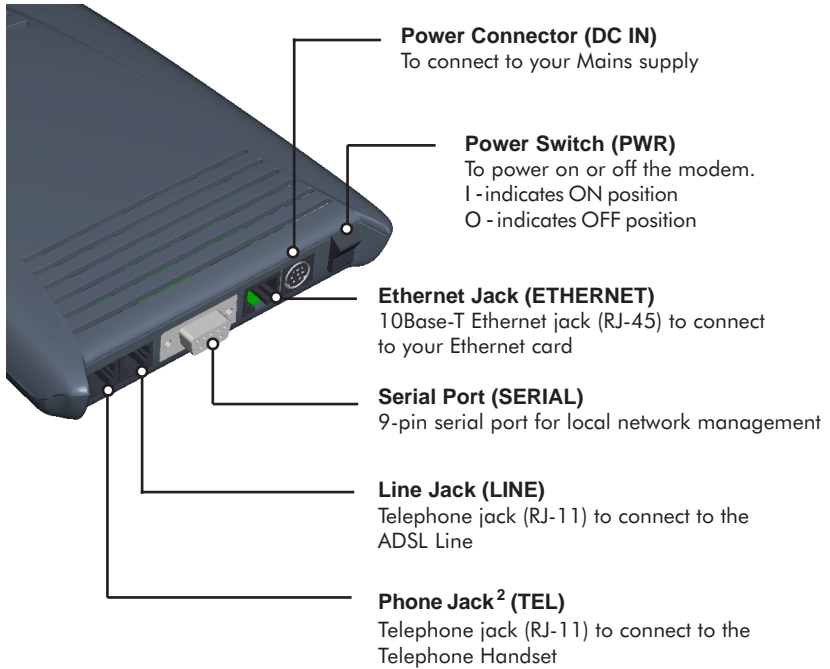
¹ The actual downstream and upstream rates will depend on the service package offered by your Internet Service Provider.

1.2 DSL TURBO 900 Features

1.2.1 Front View



1.2.2 Rear View



² This optional connection provides easy access to your Telephone set while working near the modem.

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Chapter 2

Before You Begin

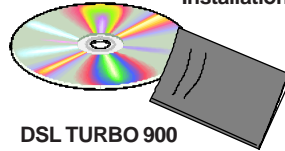
This chapter contains information that you need to know before setting up your modem. It is important that you go through them.

2.1 Package

Ensure that you have the following items in your DSL TURBO 900 package. For any missing items, please contact your dealer immediately.



DSL TURBO 900

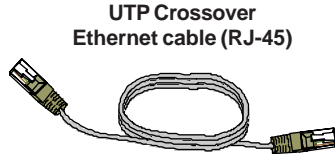


**DSL TURBO 900
Installation CD**

**DSL TURBO 900
User's Manual**



Power adapter



**UTP Crossover
Ethernet cable (RJ-45)**



Power cable



Telephone cable (RJ-11)

2.2 Minimum System Requirements³

Make sure that your computer meets the following requirements before you start your setup.

- Pentium® MMX 233MHz (or equivalent) with Ethernet card installed
- 30MB free hard disk space⁴ for system files and modem driver (Windows CD-ROM may be required during installation, depending on your system configurations.)
- Operating System: Windows® 98 / 98 Second Edition / Me

2.3 Operating Environment

For optimum performance, ensure that DSL TURBO 900 operates within the following operating environment.

2.3.1 Temperature

Operating : 10° to 45° Celsius
50° to 113° Fahrenheit

Non-Operating : -25° to 70° Celsius
-13° to 158° Fahrenheit

2.3.2 Humidity

Operating : 30% to 80% Relative Humidity (Non-Condensing)
Non-Operating : 10% to 95% Relative Humidity (Non-Condensing)

³ The information listed are minimum system requirements needed to install your ADSL modem. Please check and ensure that your system also meets the minimum system requirements set by the ISP you subscribed to. Your system should meet the higher requirements of the two.

⁴ Additional free hard disk space may be required for your Internet Service Provider (ISP) installation program and browser installation. Please check with your ISP.

2.4 Safety Precaution

- Switch off the modem and adapter when the modem is not in use.
- During times of lightning/thunderstorms, do not use the modem.
- Keep the modem away from water and direct sunlight.
- Do not introduce any foreign material to the modem through the ventilation slits (e.g. by dropping foreign items or poking into the slits).

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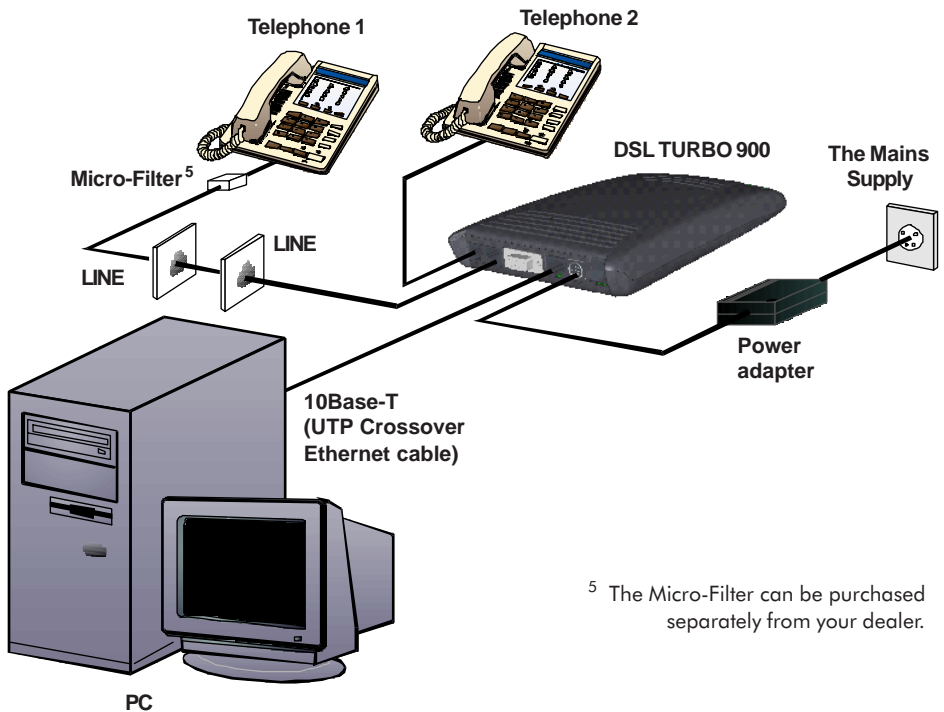
Chapter 3

Setting Up DSL TURBO 900

This chapter contains information on setting up DSL TURBO 900. Verification steps are also included to ensure correct connections.

3.1 Setup Overview

The following gives an overview of DSL TURBO 900 setup.



⁵ The Micro-Filter can be purchased separately from your dealer.

3.2 Connecting DSL TURBO 900

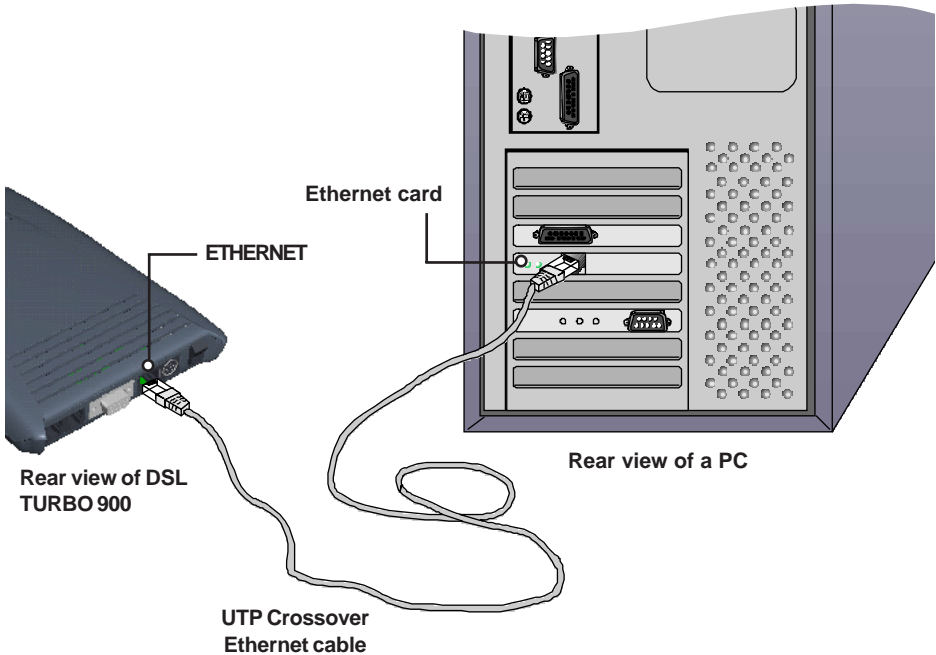
Please carry out the following steps to connect your modem to your computer.



Power off your computer and any connected devices before installing your modem!

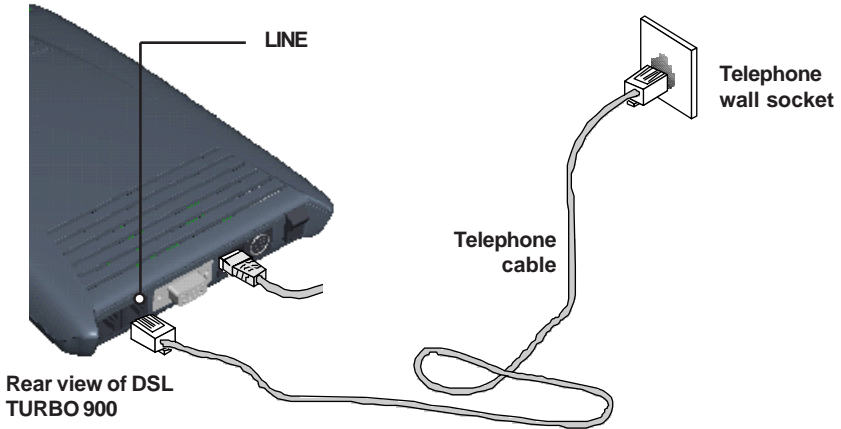
3.2.1 Connecting the UTP Ethernet Cable

Connect one end of the *Ethernet cable* to the *ETHERNET* jack on DSL TURBO 900 and the other end to the *Ethernet card on your PC*.



3.2.2 Connecting the Telephone cable (RJ-11)

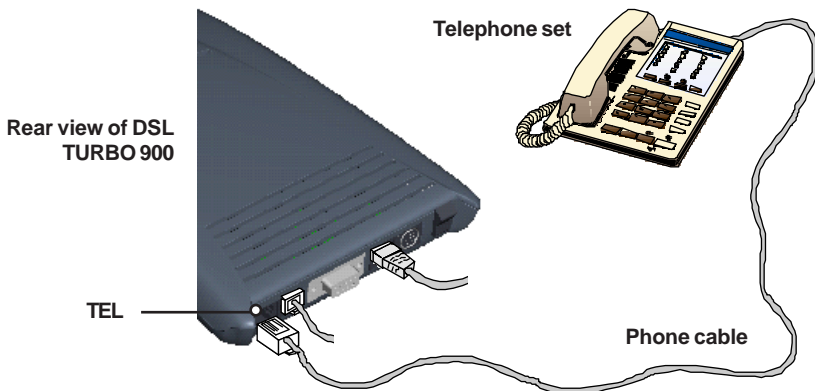
Connect one end of the **telephone cable** to the **LINE** jack on DSL TURBO 900 and the other end to your **Telephone wall socket**.



3.2.3 Connecting to a Telephone Set

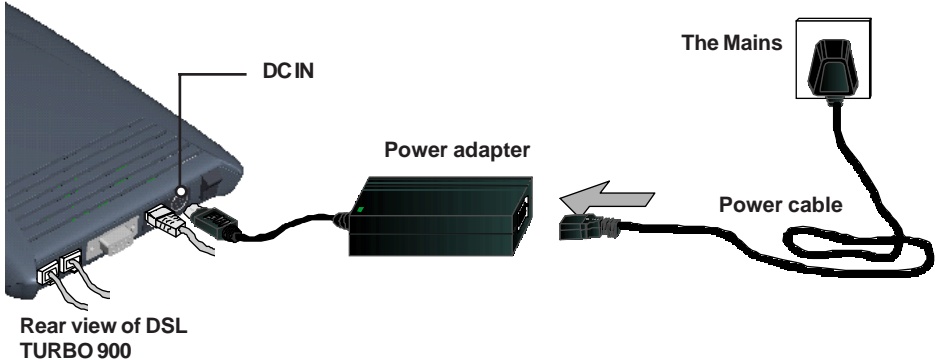
*This connection is optional. The **TEL** jack provides easy access to your Telephone set while working near the modem.*

Connect the **Phone cable** to the **TEL** jack on DSL TURBO 900.



3.2.4 Connecting to The Mains

Connect the connector of the **Power adapter** to the **DC IN** on DSL TURBO 900. Attach the jack of the **Power cable** to the **Power adapter** as shown, and the Power plug to **The Mains**.



3.3 Verifying Your Connections

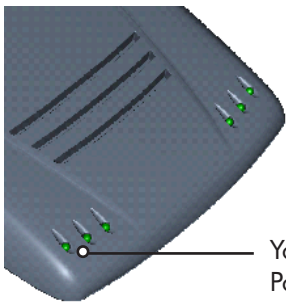
To verify the connections that you have done,

Power on DSL TURBO 900 by:

- i) On the Switch at the The Mains, connected to the power adapter.
- ii) On the Switch at the rear of DSL TURBO 900.

Observe the following LEDs on your modem:

3.3.1 Power LED (PWR)

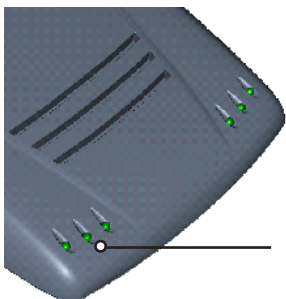


You should see this Power LED lights up.

If your **Power LED** does not light up, check that:

- i) the **Mains Supply** is powered on and the **Power switch** on the modem is at 'I' position.
- ii) the connection is carried out as described in **section 3.2.4 - Connecting to The Mains**.

3.3.2 Ethernet Link LED (LINK)

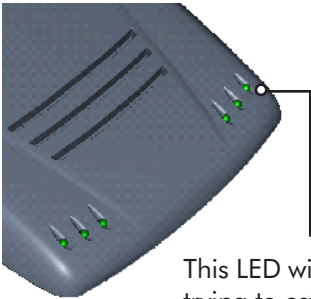


You should see this Ethernet Link LED lights up.

If your **Ethernet Link LED** does not light up, check that:

- i) the connection is carried out as described in **section 3.2.1 - Connecting the UTP Ethernet Cable**.

3.3.3 ADSL Status LED (LINK)



This LED will start blinking, trying to establish a connection. Once the connection is established, this LED will remain lit.

If your **ADSL Status LED** does not light up, check that:

- i) the **Mains Supply** is powered on and the **Power switch** on the modem is at 'I' position.
- ii) the connection is carried out as described in **section 3.2.2 - Connecting the Telephone cable (RJ-11)**.

If the mentioned 3 LEDs all light up, it means that your modem are successfully connected.

3.3.4 Phone connection

If you have connected a **Telephone set** to DSL TURBO 900, pick up the handset of the Telephone. You should hear the normal dial-tone.

If you do not hear the normal dial-tone of a telephone, check that the connection is done as described in **section 3.2.3 - Connecting to a Telephone Set**. If your connections are correct, it may be due to a faulty phone cable that you are using.

This completes the connections for DSL TURBO 900. Please proceed to the next chapter to install both WinPoET Dialer (for dial-up to Internet) and DSLTEST utility (for testing the functionality of DSL Turbo 900).

Chapter 4

Installing WinPoET Dialer⁶ & DSLTEST⁷



The screen captures in this manual are included for your easy installation. The exact screens or screens information you see on your system may vary, depending on your system configurations. For any dissimilarities, follow closely to your online instructions.

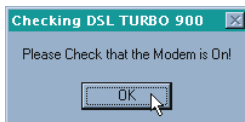
1

Place the **DSL TURBO 900 Installation CD** in your CD-ROM drive. At the following prompt, click **OK**.



2

Ensure that you have powered on DSL TURBO 900 before clicking **OK** at the prompt.



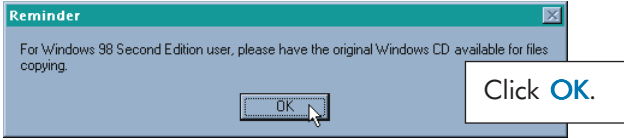
⁶ WinPoET is a dial-up client that allows you to connect to the Internet. (see **Chapter 6 - Connecting to the Internet** for details)

⁷ DSLTEST (Aztech DSLTEST for DSL TURBO 900) is a diagnostic utility that allows you to test your Ethernet Card, DSL TURBO 900 and your connection to the Internet. (see **Appendix C - Troubleshooting Guide, 'I am not able to connect to the Internet'** for details.)

4. Installing WinPoET Dialer & DSLTEST

3

For Windows® 98 Second Edition users, Windows will prompt for your Windows CD-ROM during WinPoET installation. Please have the CD-ROM by your side.



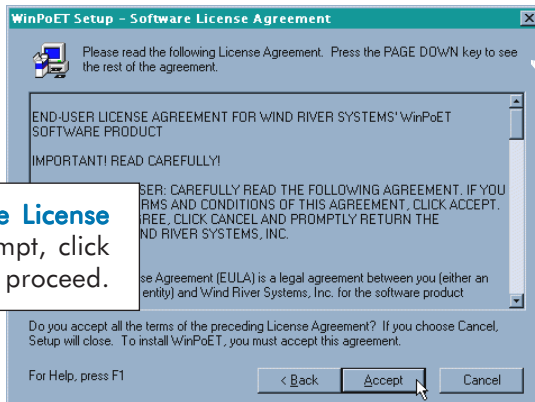
4

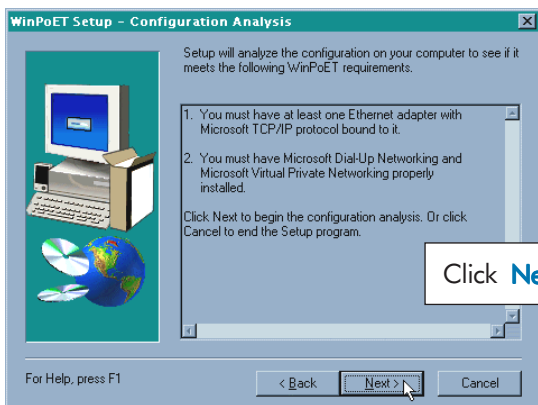
The setup program will commence. The following **Welcome** window will be prompted.



5

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

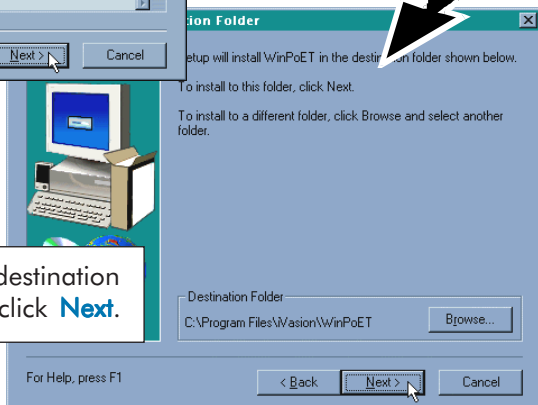




6

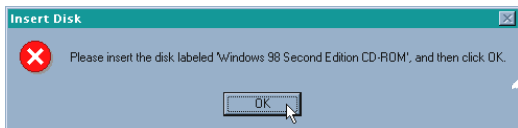
Click **Next** again.

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

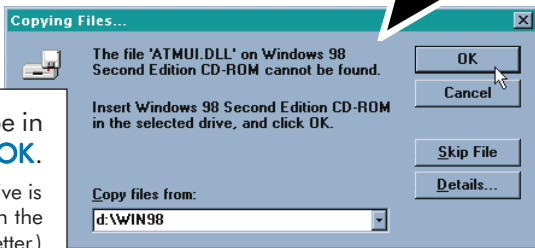


8

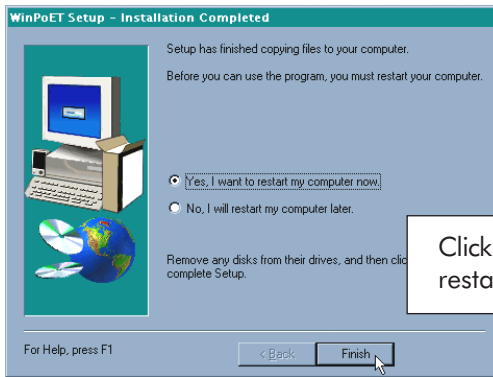
For Windows® 98 Second Edition users, at the following prompt, replace the **DSL TURBO 900 Installation CD** in your CD-ROM Drive with your **Windows CD-ROM** and click **OK**.



In the text box, type in 'd:\win98' and click **OK**.
(Assuming your CD-ROM drive is labelled D. Else, substitute with the correct drive letter.)



9



Click **Finish** to restart your system.

Upon system restarts, you should see the following icons on your Window desktop.



WinPoET: Double-click to establish your Internet connection. See **Chapter 5 - Connecting to the Internet**.



DSLTEST: Double-click to run the diagnostic utility if you are not able to establish your Internet connection. See **Appendix C - Troubleshooting Guide on 'I am not able to connect to the Internet'**.

Proceed to **Chapter 5 - Configuring Your Ethernet Card (optional)** if you are running DSLTEST.

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

Chapter 5

Configuring Your Ethernet Card (optional)

This chapter guides you on how to configure the Ethernet Card on your computer to work with DSLTEST for DSL TURBO 900.



Proceed with the following configurations only if you are running the DSLTEST utility for DSL TURBO 900.

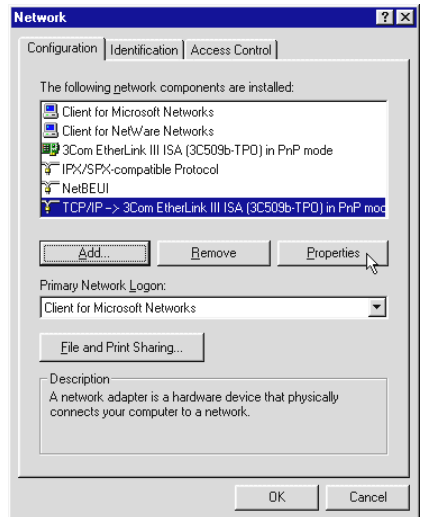
1
2

Power on your computer. From your Windows desktop, right-click on **Network Neighborhood**. Select **Properties**.

From the **Configuration** tab, select your TCP/IP protocol.

(The example shown here is **TCP/IP-> 3Com EtherLink III ISA [3C509b-TPO] in PnP mode**).

Click **Properties**.

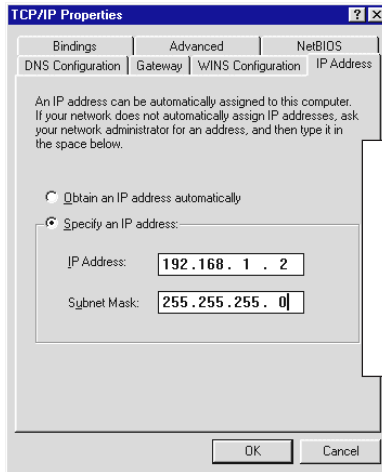


(If you do not see the indicated networking protocol, re-install your Ethernet card.)

5. Configuring Your Ethernet Card (optional)

3

Select the **IP Address** tab.



Click the option '**Specify an IP address**'.
Enter the **IP Address** as **192.168.1.2** and the **Subnet Mask** as **255.255.255.0**.
Click **OK**.

This completes your Ethernet Card configuration. Your DSLTEST utility is now ready for use. Please refer to **Appendix C - Troubleshooting Guide, 'I am not able to connect to the Internet.'** for details.

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 **WinPoET** 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 4 - Installing WinPoET Dialer & DSLTEST.**)

2

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

Select **Save password** if you want the password to be 'remembered' by your system. (You do not have 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 C - Troubleshooting Guide on 'I am not able to connect to the Internet.'

5. Connecting to the Internet

3

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


6.2 Ready to Go!

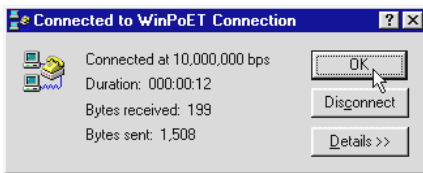
You are now connected to the Internet.

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

You may start surfing!

6.2.1 Checking the Session Connection time

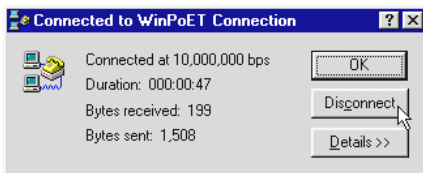
Upon successful dial-up, you should be able to see an icon () displayed at the corner of your Windows taskbar. Double-click on the icon. Check your connection time by looking at the [Duration](#).



(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.)

6.2.2 Disconnecting from the Internet

Close your web browser. Double-click on the icon (). 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 & DSLTEST



For Windows® 98 Second Edition 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.

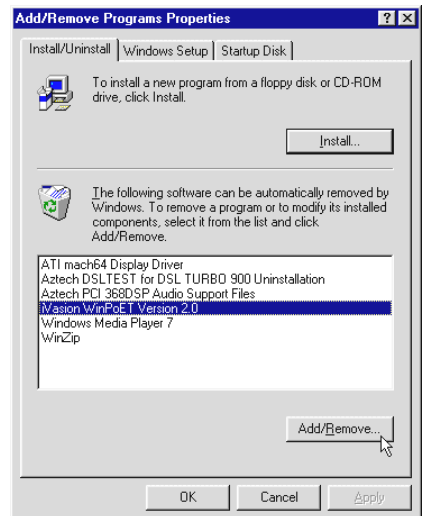
1

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**.

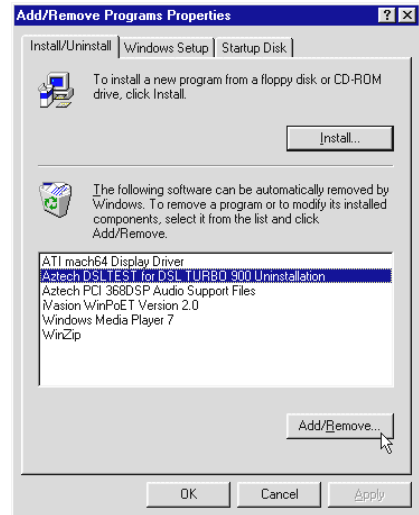
Follow your on-line instructions to complete the uninstallation.



3

To uninstall **DSLTEST**, select **Aztech DSLTEST for DSL TURBO 900 Uninstallation** and click **Add/Remove**.

Follow your on-line instructions to complete the uninstallation.



Technical Specifications

This chapter contains the technical specifications of DSL TURBO 900. The information may be more useful for technically inclined users.

A-1 Main Features

- 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 upstream¹
- G.lite transmission at up to 1.5 Mbps downstream and 512 Kbps upstream¹
- Rate Adaptive modem at 32 Kbps steps
- Up to 18,000 ft loop reach
- Flash ROM upgradable for future feature enhancement
- RFC1483 Bridged (Ethernet Over ATM) protocol stack support
- Remote management through Telnet console access
- TFTP Software update
- Spectral compatibility with POTs

¹ The actual downstream and upstream rates will depend on the service package offered by your Internet Service Provider.

A-1-1 ADSL Software Support

- ATM Transmission Convergence (TC) layer
- ATM Layer with Traffic shaping
- AAL ATM Attributes - AAL5
- RFC-1483 Bridged (Ethernet Over ATM)
- RFC-2516 PPP over Ethernet (Supported via Optional Software)
- PPTP Tunneling Protocol (when available)
- UNI 3.0, 3.1 and UNI 4.0 ATM Signaling (support for SVCS)

A-1-2 Platform Support

- Windows® 98, 98 Second Edition and Windows® Me (with an Ethernet Card installed)

A-2 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
- 1 x MiniDIN Power Connector
- 1 x On/Off Power Switch
- 9 pin Serial Port for local management

A-3 LED Indicators

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

A-4 Environmental

A-4-1 Temperature

Operating : 10° to 45 ° Celsius
50° to 113 ° Fahrenheit

Non-Operating : -25° to 70 ° Celsius
-13° to 158 ° Fahrenheit

A-4-2 Humidity

Operating : 30% to 80% Relative Humidity (Non-Condensing)
Non-Operating : 10% to 95% Relative Humidity (Non-Condensing)

A-5 System Requirements

Pentium® MMX 233MHz with Ethernet card installed.



The specifications herein are subject to change without prior notifications.

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Appendix

B

Frequently Asked Questions

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



What is ADSL ?



ADSL, Asymmetric Digital Subscriber Line, is a broadband communication technology designed for use on regular phone lines. It has the ability to move data over the phone lines at speeds up to 140 times faster than the analog modem available today.



Why is it 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 connect to Broadband Service everywhere I go?



No, you cannot. You can connect to this service only via ADSL phone line enabled for Broadband Service provided by your Internet Service Provider (ISP).



Can I run both dial-up modem and ADSL modem simultaneously ?



Yes, but it is not recommended. You may experience slowness during surfing as well as incurring additional cost of maintaining two active connections.



Do I need to use Micro-Filter when using ADSL ?



DSL TURBO 900 has a built-in Micro-Filter at the Phone jack. Thus no Micro-Filter is required between your Telephone set and the modem.

However, if you are sharing the ADSL line with other telephone line extensions, you will need to have a Micro-Filter connected between the Telephone set and the telephone wall socket as shown in **section 3.1 - Setup Overview**.

(The Micro-Filters can be purchased separately from your dealer.)



Can I use my Broadband Service user ID to log in to 56K dial-up access on a normal telephone line using a 56K dial-up modem?



Yes, you can.

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**.
- ii) Check that the Telephone cable (RJ-11) is connected to **LINE** jack on your modem and not to the **TEL** jack.
- iii) Power on your modem.

If the problem still persist, please check with your Internet Service Provider.



I am getting poor ADSL speed performance from my modem.



- i) Ensure that the **ADSL line** is at least 10cm away from the **Power adapter**. (see **Figure C-1. Distance between your ADSL Line and Power adapter**)
- ii) Place your modem away from devices or appliances such as monitors, exposed computer systems (with chassis covers removed) or another modem which exhibit magnetic fields that may cause interferences to your modem line.
- iii) Ensure that **Micro-Filters** are used for phone sockets that are sharing the same ADSL line.

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

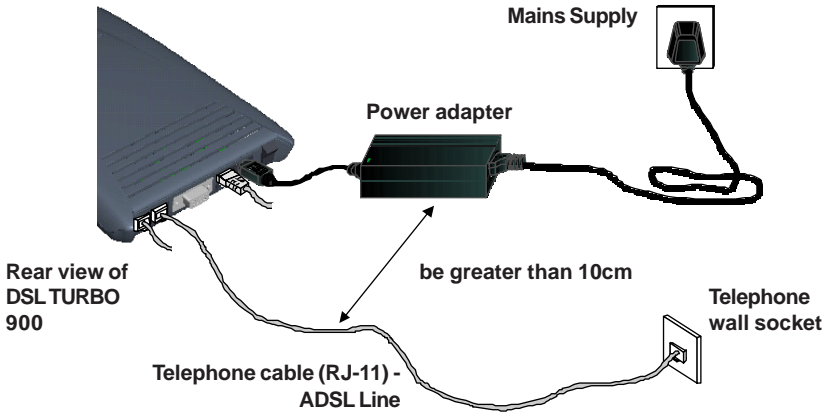


Figure C-1. Distance between your ADSL Line and Power adapter



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

(refer to **section 3.2 - Connecting DSL TURBO 900** for the mentioned connections)


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 next question, **'I am not able to connect to the Internet.'** for further tests.

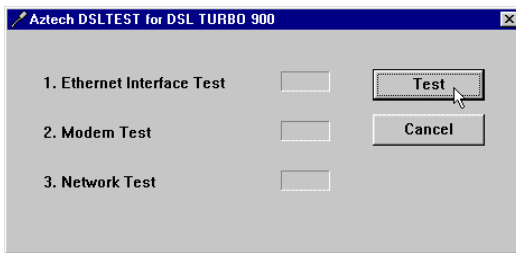


I am not able to connect to the Internet.



Carry out the following test to verify your connections.

1. From your Windows desktop, double-click on **DSLTEST**  icon.
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.

Should your test(s) fails, please refer to **Table C-2** for the solution.

| Test | Description | Result=FAIL |
|----------------|--|---|
| Interface test | To test if your driver is installed properly. | Re-install your modem driver. |
| Modem test | To check if your system is communicating with the modem. | Check with your Internet ADSL Service Provider. |
| Network test | To check if the Internet connection is ok. | |

Table C-2. Test Descriptions.



1. Please ensure that you have proceeded with **Chapter 5 - Configuring Your Ethernet Card (optional)** before running DSLTEST for DSL TURBO 900.
2. **If one of the test failed, subsequent tests will be skipped. Please proceed to fix the problem first before running the test program again.**

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Appendix D



Technical Support

Aztech Sales Enquiries

Hotline : (65) 741 7211 (Marketing and Sales Department)
Email : sales@aztech.com.sg
Fax : (65) 749 1198
Working Hours : Monday to Friday - 0900 to 1800
Saturday/Sunday/Public Holidays - Closed

Aztech Technical Support

(c/o AVS Computer Services Pte Ltd ⁸)

Hotline : (65) 742 9633
Email : service@avscs.com
Fax : (65) 742 9010
Working Hours : Monday to Friday - 0900 to 1800
Saturday/Sunday/Public Holidays - Closed

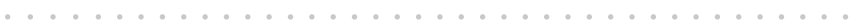
⁸ AVS Computer Services Pte Ltd is Aztech authorised Customer Service Center.

Technical Support Considerations

The majority of enquiries can be resolved efficiently. However, there may be cases when it is beyond our technical support to assist you. We may not be able to assist you in:

- **Hardware conflicts**

We will try to discover them and make suggestions but we are unable to repair them over the telephone.



- **Software conflicts**

Removal of other software and reinstalling our software may be the only solution.

- **O/S problem**

If you encounter problems like fatal exception or illegal operation, kindly refer to your PC vendor.

- **Modifications made to your software**

Our technical support officers are trained to support the software we provide as part of our service and they are knowledgeable about a wide range of other programs. However, we are unable to support software that has been modified.