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X-Modem  
Ethernet ADSL Modem

# USER GUIDE

adsl nation

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# Technical Support

TO OBTAIN TECHNICAL SUPPORT. PLEASE RETAIN PROOF OF PURCHASE AND THE WARRANTY INFORMATION.

To get product support or obtain product information and documentation, go to <http://www.adslnation.com/support>.

If you would like to contact technical support by telephone, please call  
08456 125 9426 (calls charged at local rate)  
01865 761114 (calls charged at operators standard national tariff)  
Technical support is available 9am - 6pm weekdays.

ADSL Nation LTD.

E-mail: [support@adslnation.com](mailto:support@adslnation.com)

[www.adslnation.com](http://www.adslnation.com)

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## Introduction

Congratulations ! You are now the owner of an ADSL Nation X-Modem.

From now on your internet experience will be transformed due to the high speed that ADSL technology and the X-Modem delivers.

This manual will guide you through setting up your X-modem and provide a reference point for all the features of your modem.

## Safety Instructions

The X-Modem is intended for internal desktop use only.

### Climate Conditions

- The maximum ambient temperature must not exceed 40 °C (104°F).
- The modem must not be mounted in a location exposed to direct sunlight or excessive heat radiation.
- Ensure the modem is not subjected to water or condensation.

### Cleaning

Unplug the modem from the mains outlet and wipe with a damp cloth. Do not use chemical cleaning products or solvents as it may damage the surface of the modem.

### Water and moisture

Do not use this product near water.

### Overloading

Do not overload mains outlets and extensions as it can result in fire or electric shock.

## What's in the Box

The following items are supplied with your X-Modem:

X-Modem

Desktop Stand

UK Power Supply Unit

RJ11 - RJ11 Cable often referred to as the telephone cable.

RJ45 Cat 5 Ethernet cable.



## X-Modem and LiveIP Technology

The X-modem's built-in Ethernet connectivity eliminates the need for specialist drivers allowing the modem to be connected to an Ethernet equipped computer for instant use.

The X-Modem works on any ADSL service that uses PPPoA or PPPoE that provides a single static or dynamic IP address. The one exception is AOL, due to the proprietary AOL client software.

In the default configuration the X-Modem's employs advanced LiveIP technology to provides the single public IP address issued by the ISP to a computer. This makes the X-Modem the perfect solution for people who wish to maintain a publicly available live connection to the internet. Wireless Broadband Routers and Firewall Appliances usually come equipped with Ethernet interfaces. The X-Modem can be used to connect many of these devices to your ADSL service. Please note some broadband routers are not compatible with LiveIP. Please check our web site [www.adslnation.com](http://www.adslnation.com) for the latest compatibility information.

The X-modem also includes an optional gateway mode to enable the modem to be installed on a network or used with devices that are not compatible with the LiveIP technology used in the X-Modem's default modem mode.

# X-Modem Overview



## Front View

The front panel of the X-modem includes five LED indicators to help determine the modem status.

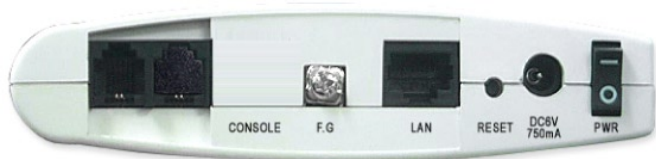
**DATA:** flashes when data to indicate data is being sent or received from the modem.

**LINK:** Illuminates when the an ADSL signal has been detected on the line. A flashing link LED indicates that the modem is probing for an ADSL signal.

**100M LAN:** Illuminated when a 100Mb Ethernet connection has been established on the modem's Ethernet port.

**10M LAN:** Illuminated when a 100Mb Ethenet connection has been established on the modem's Ethernet port.

**POWER:** Shows that power is being received by the modem.



## Rear View

**LINE:** Telephone jack (RJ-11) to connect to your Telephone Wall Socket (ADSL line).

**F.G:** An Earth connection for use in earthed comms cabinet. Not used for normal home/office use.

**LAN:** 10 / 100 Base-T Ethernet jack (RJ-45) to connect to your Ethernet Network card.

**RESET:** To reset your Modem to factory default settings. (All Customised settings that you have saved will be lost!)

**DC 6V:** To connect to your Power Outlet via the Power Adapter that comes with your package.

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## Before Installing

### Gather Configuration Information from your ISP.

When configuring the X-Modem to work with a standard BT Wholesale provided ADSL line the only configuration information required is the username and password. For Karoo installations and non UK installations please refer to the advanced settings section of this guide.

Note: Your ISP should have provided you with a summary sheet of all the information needed to connect your computer to the Internet. If you cannot locate the information, you'll have to contact your ISP. BT Broadband provide a Login name only and do not issue a passwords.

LOGIN NAME: \_\_\_\_\_  
example john.smith@btinternet.com

PASSWORD: \_\_\_\_\_

Note: The login name could be called a user name or account name by your ISP. The login name and password are case sensitive. You must type them exactly as given by the ISP.

### Computer requirements

The computer that you want to connect to the X-modem to must have an available RJ-45 Ethernet port (or adapter) and TCP/IP networking installed.

Note: TCP/IP networking is already installed on most Microsoft Windows and MacOS computers.

### Microfilters

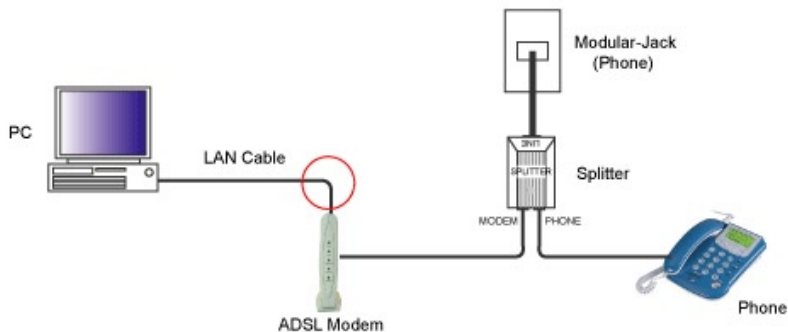
Ensure you have enough ADSL microfilters for your line. At least one microfilter will be required to connect the modem and any existing telephone equipment to. If other telephone equipment is used on the line it must also be connected to a microfilter.

A microfilter prevents high frequency noise from appearing at the telephone and potentially decreasing voice quality. Second, it prevents the telephone equipment from interfering with the modem. For more information on microfilters please visit [www.adslnation.com](http://www.adslnation.com)

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## Connecting the X-Modem to a Computer/Notebook

To connect the X-Modem to your Computer/Notebook, you need to have an Ethernet port available on your Computer/Notebook. Most Computers/Notebooks have labels describing the Ports. For the Ethernet Port, you will see either ETHERNET, ETH, RJ45 or <--> labelled near the Port.



## Connecting to the ADSL Line

Connect the RJ11 (phone) cable provided the ADSL to the ADSL/Modem port of the ADSL Microfilter and then connect the opposite end of the cable to the Line port on the X-Modem.

Plug the microfilter in to the telephone socket and connect any telephone equipment to the phone port on the Microfilter.

Note: You will need to ensure that all telephone equipment on the same line as your X-Modem is also connected to a Microfilter. If you do not have enough microfilters remove any unfiltered telephone equipment. Microfilters can be found in most computer shops or available to order on-line at [www.adslnation.com](http://www.adslnation.com).

Connect the power to the modem, if an ADSL signal is detected the LINK LED will illuminate and remain solid green. If the LINK LED continues to flash the modem is unable to locate a usable ADSL signal. This may be because the line has not been enabled for ADSL or that a fault condition has occurred such as an unfiltered telephone device causing interference on the line. The ADSL light must be illuminated solid green before proceeding with the set-up procedure.



## Configuring Windows XP Networking

The default network configuration on the computer should already be suitable for connection to the X-Modem. However if you are uncertain or any network settings have been changed they will need to be configured as follows.

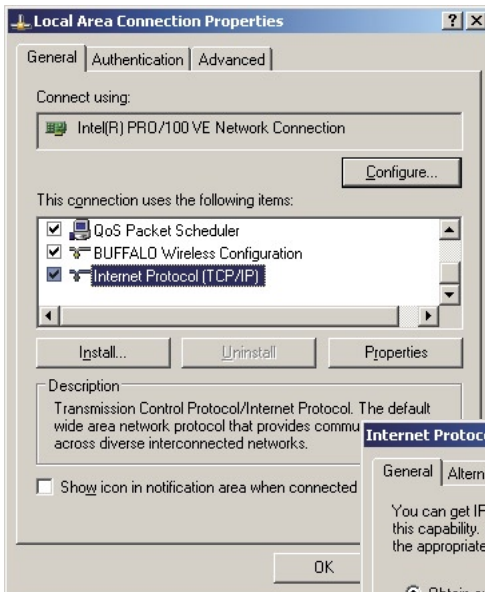
(Instructions are based on default XP Start menu option)

From the Windows desktop, click Start > All Programs > Accessories > Communications > Network Connections.

### LAN or High-Speed Internet



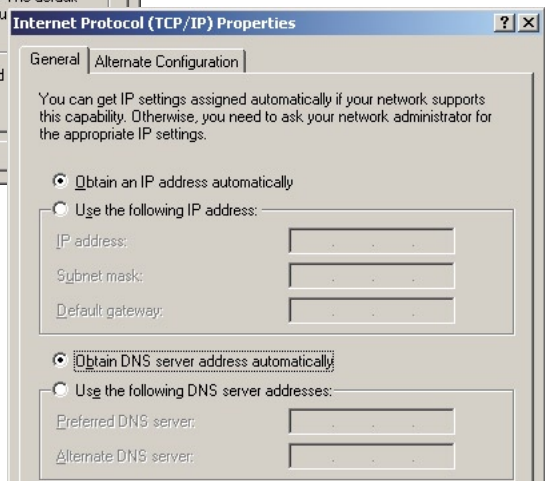
Right-click on the Local Area Connection icon that reflects the model of your Ethernet Network Card that is connected to the X-Modem and click Properties.



Ensure that the field Connect Using shows the model of your Ethernet Network Card that is connected to your ADSL Ethernet Modem. Select Internet Protocol (TCP/IP) and click Properties.

Select the option Obtain an IP address automatically and Obtain DNS server address automatically. Click OK and close to apply.

Ensure that your Modem is powered on and restart your system.

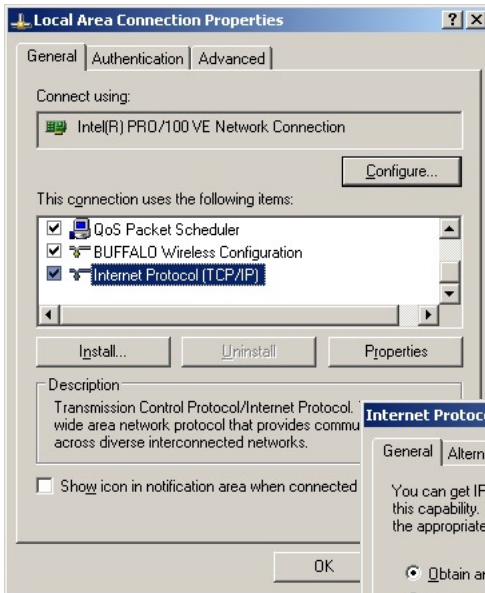


## Configuring Windows 2000 Networking

The default network configuration on the computer should already be suitable for connection to the X-Modem. However if you are uncertain or any network settings have been changed they will need to be configured as follows.

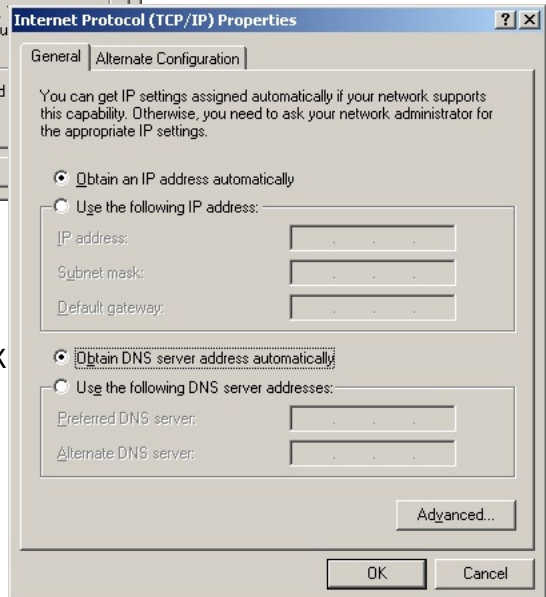
Click the Start > Settings and choose "Network & Dial-up Connections".

At the Network and Dial-up Connections window. Right-click on the Local Area Connection icon that reflects the model of your Ethernet Network Card that is connected to the X-Modem and click Properties.



Ensure that the field Connect Using shows the model of your Ethernet Network Card that is connected to your ADSL Ethernet Modem. Select Internet Protocol (TCP/IP) and click Properties.

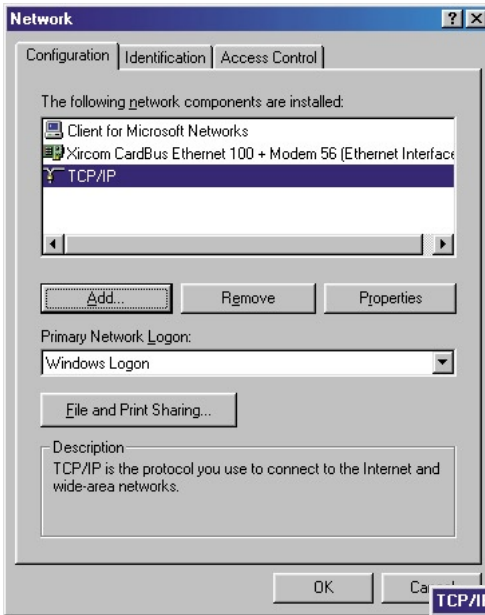
Select the option Obtain an IP address automatically and Obtain DNS server address automatically. Click OK an OK again to close. Ensure that your Modem is powered on and restart your system.



## Configuring Windows 98/ME Networking

From your Windows desktop, right-click on the Network Neighbourhood icon.

Select Properties.

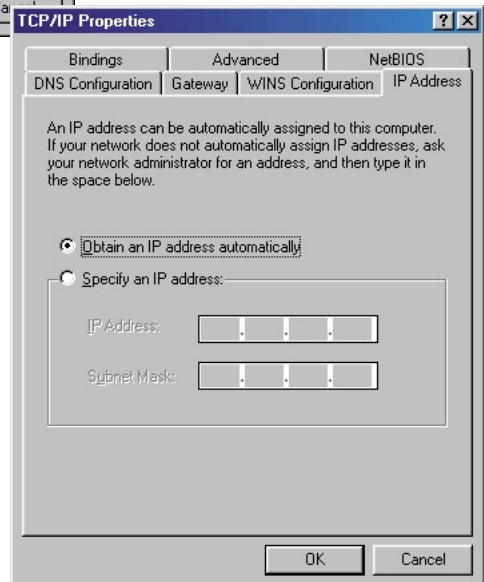


From the Configuration tab, select TCP/IP-> if multiple instances of TCP/IP are shown select the one that refers to the model of your Ethernet Network Card that is connected to the X-Modem.

Click Properties.

Click the option Obtain an IP address automatically and click OK to save the settings.

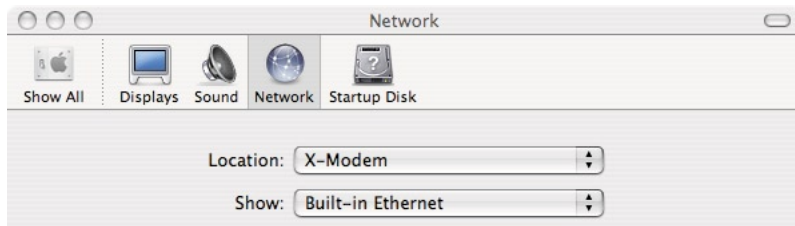
Ensure that your X-Modem is powered on. Restart your system.



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## Configuring Mac OS X Networking

Open the System Preferences utility and click on the network icon.



Select New Location from the Location drop down list and name it X-Modem. Now select Built-In-Ethernet from the Show drop down and click Apply Now. All default settings are correct.

Ensure that your X-Modem is powered on. Restart your system.

## Configuring Mac OS 9 Networking

Open the TCP/IP control panel. You can find it in the Apple Menu under the folder "Control Panels."

Make sure your network card is selected usually "built-in Ethernet" and set configure using DHCP.

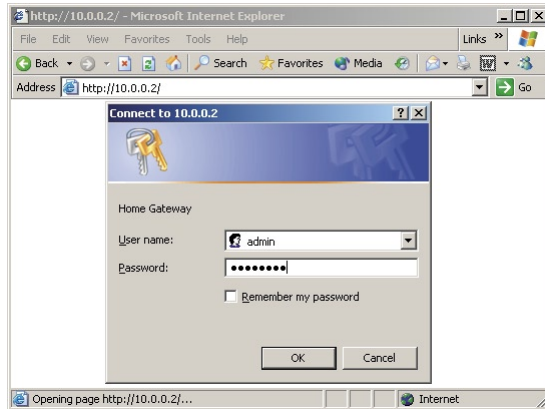
Close the window and save changes if prompted.

Ensure that your X-Modem is powered on. Restart your system.

## Connecting to the X-modem

The X-Modem provides a web-based (HTML) graphical user interface allowing users to manage the modem using a standard browser such as Netscape Navigator or Microsoft Internet Explorer.

To connect to the X-Modem, open your web browser and enter the X-Modem default IP address `http://10.0.0.2` in to the browsers address bar.



When prompted enter the default login User Name and Password.

### Default login details

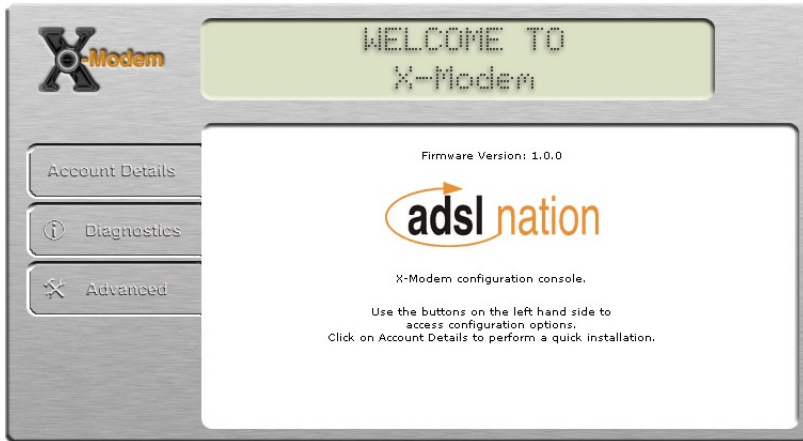
User Name: admin

Password: password

Note: The user name and password prompt may take up to 1 min. the first time the modem is accessed. If the prompt does not appear please check your browsers proxy settings to ensure that no proxy servers are configured.

## Quick Set-up Procedure

In order to make the installation process quick and easy the X-Modem comes pre-configured for use on a standard BT phone line in the UK. If your phone line is not provided by BT some settings may need to be adjusted.



Click the Account Details button on the welcome to X-Modem screen.



Enter your account details as provided by your Internet Service Provider and click save and then submit.

The X-Modem will now reboot. After rebooting is complete you will automatically be connected to the internet.

## Testing The Connection

When the modem has been configured with the ISP account details and rebooting has completed the connection can be tested.

Note: after reboot it may take up to 2 min for the modem to negotiate a connection to the ISP depending on the quality of the phone line.

To test the connection click the Diagnostics button, after a short pause test results will begin to appear.

Diagnostic Test		
Checking LAN Connection		
Testing Ethernet LAN connection	: PASS	<a href="#">HELP</a>
Checking ADSL Connection		
Testing ADSL Synchronization	: PASS	<a href="#">HELP</a>
Checking Circuit 0 for Network Connection		
Test ATM OAM Segment Loop Back	: PASS	<a href="#">HELP</a>
Test ATM OAM End-to-End Loop Back	: PASS	<a href="#">HELP</a>
Test Ethernet connect to ATM	: PASS	<a href="#">HELP</a>
Test simple ppp session 0 PPP Layer connection	: PASS	<a href="#">HELP</a>
Test simple ppp session 0 IP connect to PPP	: PASS	<a href="#">HELP</a>
Testing Internet Connection		
Ping default gateway 212.104.130.141	: PASS	<a href="#">HELP</a>
Ping primary DNS	: N/A	<a href="#">HELP</a>
Query DNS for www.adslnation.com	: SKIPPED	<a href="#">HELP</a>
Ping www.adslnation.com	: SKIPPED	<a href="#">HELP</a>

If no Fail results are reported the modem has successfully connected to the internet. Further details are available about the meaning of each test by clicking the help link by each test.

Note: The most common test to fail is the "Test simple PPP session layer connection. This means that when the modem attempted to login to the ISP it was rejected. Double check your account details are correct, remember that both the username and password are case sensitive. Make sure that you have the full username including the part after the @ symbol. Also it is common practice for passwords to contain numbers so what looks like the letter l could be the number 1.

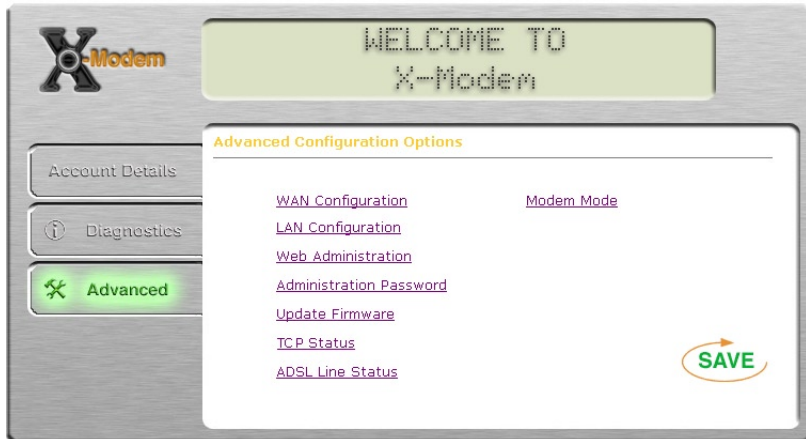
Now that the line tests are complete the connection can be verified by visiting a web site such as <http://www.adslnation.com>

Congratulations you are now on-line !

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## Advanced Configuration Options

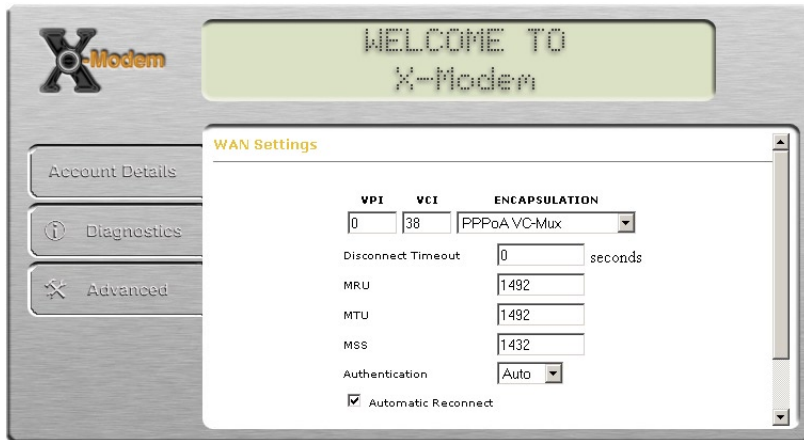
In most circumstances it will not be necessary to change any of the settings under the advanced options. Users of ADSL outside the UK or lines not provided by BT may have to change some settings here.



Any modifications made in the advances options will require saving before changes take effect. To save any changes click on the save button. The Advanced screen can be returned to at any time by clicking the advanced button.



## WAN Configuration



### VPI / VCI

The X-Modem sends data packets over ATM virtual circuits. ATM allows for permanent connections (PVCs) and switched connections (SVCs). Each PVC is identified by its Virtual Path and Connection Identifiers (VPI/VCI). The VPI/VCI uniquely specifies a path to a remote site and is placed in the ATM cell header that is used to route each cell through the network. The default values 0/38 are suitable for all BT Wholesale lines if your telecoms provider is not BT your ISP should supply these values. Karoo users should use VPI=1, VCI=50.

### Encapsulation

Determines the method used to communicate with the ISP. Default setting is PPPoA VC-Mux Karoo users should use PPPoA LLC. You must use the encapsulation type as instructed by the ISP.

### MRU/MTU/MSS/

Advanced TCP/IP options that determine the optimum data packet size.

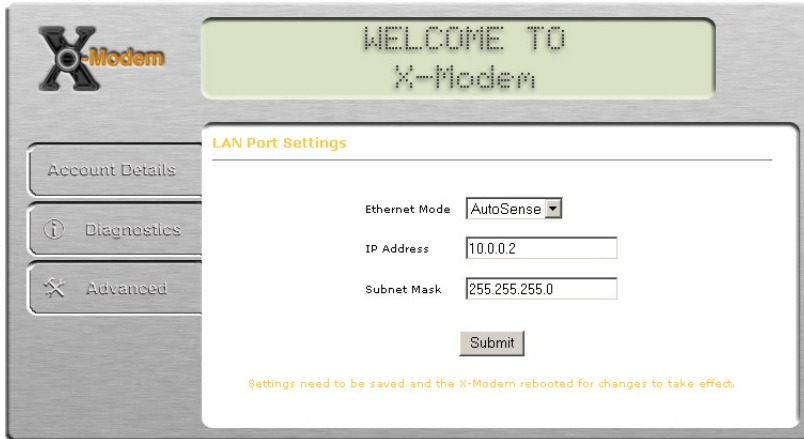
### Authentication

If the ISP requires a manual authentication method it should be set here, otherwise the Auto setting should be used.

### Auto Reconnect

With this option set the modem will attempt to reconnect if the connection to the service is lost. Default setting = on.

# LAN Configuration



The screenshot shows the X-Modem web interface. At the top left is the X-Modem logo. A green banner at the top right says "WELCOME TO X-Modem". On the left side, there are three menu buttons: "Account Details", "Diagnostics", and "Advanced". The main content area is titled "LAN Port Settings" and contains the following fields:

- Ethernet Mode: A dropdown menu set to "AutoSense".
- IP Address: A text input field containing "10.0.0.2".
- Subnet Mask: A text input field containing "255.255.255.0".

Below these fields is a "Submit" button. At the bottom of the form, a yellow note reads: "Settings need to be saved and the X-Modem rebooted for changes to take effect."

## Ethernet Mode

Used to manually set the Ethernet port speed and duplex modes. The default setting attempts to determine a speed that matches the computer. If the speed and duplex settings are already known then they should be set here.

Note: Some auto detecting network cards (NIC's) are unable to properly detect speed and duplex settings when both computer and modem are configured for auto negotiation. If a connection can not be made to the modem then the computers network adaptor should be set manually to 10Mb Half Duplex and the modem will automatically detect the network adaptor settings.

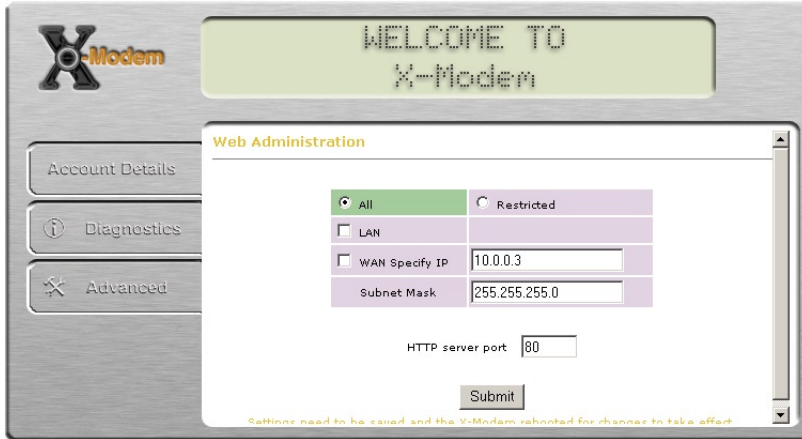
## IP Address

The IP address used to manage the modem, also used as the network default gateway when the X-Modem is used in gateway mode.

## Subnet Mask

Used to determine the size of the local network. The default setting should be left at 255.255.255.0 unless the modem is being used in gateway mode and special mask configuration is required.

## Web Administration



WELCOME TO  
X-Modem

Web Administration

All  Restricted

LAN

WAN Specify IP

Subnet Mask

HTTP server port

Submit

Settings need to be saved and the X-Modem rebooted for changes to take effect

### Access Restrictions

Access to the modem's web administration can be restricted to a local computer or network. If access restrictions are enabled in modem mode it will be necessary to disconnect the modem from the line to gain access to the web interface.

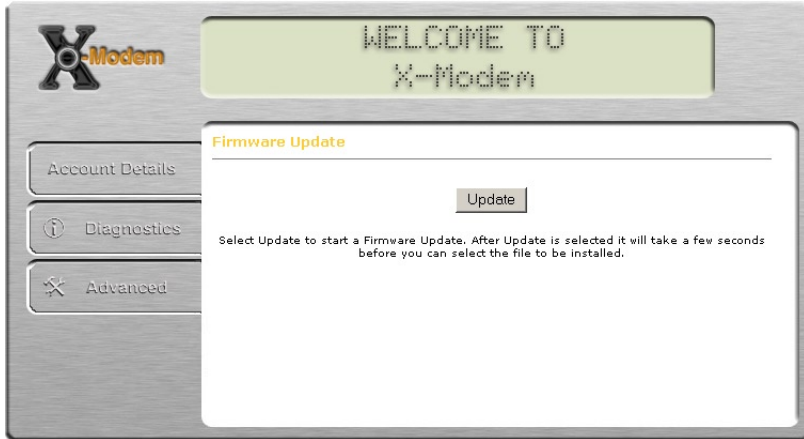
### HTTP Port

The port used by the built-in web server to serve the web administration interface. The port must be changed if access to a public web server hosted on the computer attached to the X-Modem is required.

Note: When changing the http port the modem will not be able to report that saving the configuration has been successful. To access the web interface on a new port it will be necessary to append the new port to the web address for example `http://10.0.0.2:8080` for port 8080.

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## Update Firmware



### Firmware Updates

ADSL Nation may make firmware updates available to download from our web site.

Detailed instructions are provided with firmware updates.

Note: If the update button has been clicked in error the firmware update must be cancelled to resume normal operation.

## TCP Status

### TCP-IP Status

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Reset Counters

Total Packets Sent	1989
Data Packets Sent	1561
Data Bytes Sent	557174
Total Packets Received	1467
Packets Received in-sequence	150
Bytes Received in-sequence	52684
Out of Order Packets	77
Out of Order Bytes	0
Packets discarded for bad checksum	0
Packets discarded for bad header offset	0
Packets discarded because too short	0
Connections Initiated	0
Connections Accepted	157
Connections Established	148
Connections Closed	142

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## TCP/IP Network Statistics

Diagnostic information provided for troubleshooting networking. You may be asked for information from this status window when talking to ISP or ADSL Nation support staff.

# ADSL Line Status

## ADSL Line Status

Line State: **SHOWTIME**  
Modulation: **G.dmt**  
Startup Attempts: **2**  
Max Tx Power: **-38 dBm/Hz**  
DSLAM Vendor: **ALCATEL\_NETWORK**  
Elaspsed Time: **0 days 0 hours 15 minutes 28 seconds**

	Downstream	Upstream	
SNR Margin	28.8	31.0	dB
Line Attenuation	45.4	26.0	dB
Errored Seconds	3	0	
Loss of Signal	1	1	
Loss of Frame	0	0	
CRC Errors	0	0	
Data Rate	576	288	kbps
Latency	FAST	FAST	

**SNR Margin:** Signal to Noise Ratio indicates the amount of usable signal compared to unwanted noise. The higher the value the better quality the connection, a connection may not be possible if the SNR value drops below 16db.

**Line Attenuation:** Indicates the amount of signal lost due to the natural resistance in the phone line. The lower the value the better quality the connection. A connection may not be possible if Attenuation exceeds 60db.

**Loss of Signal:** If the ADSL connection is lost due to the modem being disconnected from the line or a fault condition it will be recorded here. An excessive number of signal losses indicates a problem with the line.

**Loss of Frame:** When data fails to be sent across the ATM network the frame may be lost. A small number of frames may be reported lost if the line quality is poor. An excessive number of lost frames indicates a fault condition.

**CRC Errors:** Data is checked for integrity as it is transmitted, some CRC errors are normal due to interference on the line. An excessive number of crc errors indicates a potential problem with interference.

**Data Rate:** The speeds in kilobytes that the modem has negotiated with the exchange equipment.

**Latency:** The delay introduced on the line sometimes referred to as ping.

## Modem Mode



## Modem

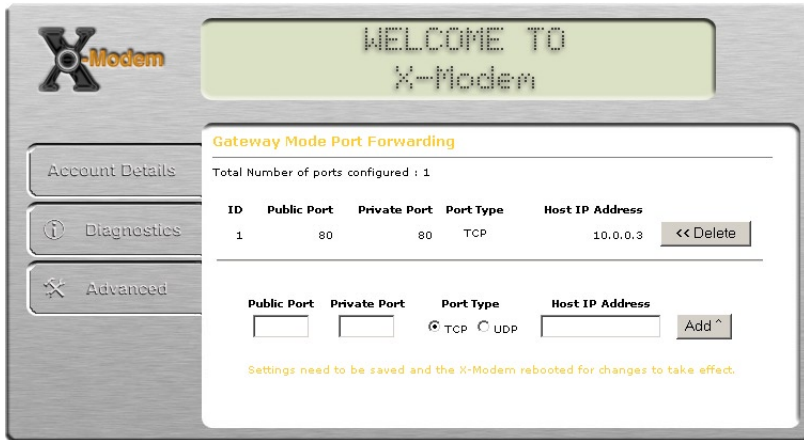
The default X-Modem configuration is modem mode. In modem mode the modem collects the IP address from the ISP and passes it to the computer. In modem mode the can not be connected directly to a network it must be connected directly to the computer. If the ADSL connection is to be shared on a network the X-Modem must be connected to a separate broadband gateway.

Note: Not all computing devices can be connected directly to the X-Modem in modem mode. The Microsoft X-Box and Sony Playstation 2 can only be connected directly to the X-Modem in Gateway mode.

## Gateway

Gateway mode allows the X-modem to be directly connected to a network as it uses Network Address Translation to share the connection. When the modem is configured in gateway mode a new option is added to the advanced option list called port forwarding.

## Port Forwarding (Gateway Mode Only)



## Special Applications

When the X-Modem is configured in gateway mode Network Address Translation is enabled that prevents incoming connections from the Internet entering the local network. This is usually a desirable situation as it provides a basic firewall facility to protect the network. However some special applications may require that an incoming connection is allowed.

The Port Forwarding option allows selection of a special port to be redirected from the modem to a specified IP address. The example shows how to forward port 80 the standard http web port to a computer with the IP address 10.0.0.3. 20 Special ports can be added to the port forward screen.

To add a port simply fill out the boxes.

**Public Port:** The port number that the external client will be connecting to to access the service.

**Private Port:** The port number that the service is running on on the local machine. Usually both Public & Private ports are the same.

**Port Type:** Set the required type of port, usually TCP.

**Host IP Address:** IP address of local computer hosting service.



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## Frequently Asked Questions

**Q:** 'The page cannot be displayed' is prompted when I launch my browser.

**A:** Ensure that you are using the Ethernet Network cable that comes with your X-Modem package to connect to the Modem. Restart your computer and try to launch your browser again. If the problem persists, please contact our support line.

**Q:** The ADSL Link light keeps on blinking consistently.

**A:** Ensure that your ADSL line has been activated by the Service Provider. Ensure that you have connected the telephone cable as properly connected and that all telephone equipment is filtered. If the problem persists, first try removing all telephone equipment and test the modem on it's own. If the light still continues to flash please contact the ADSL Service Provider.

**Q:** The ADSL link light is on. But I am unable to connect to the internet.

**A:** Run the diagnostics, Ensure that you have entered the correct username and password, enter and re-submit the username and password.

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