



M3

X-Modem M3
Ethernet ADSL Modem

USER GUIDE

adsl nation

Technical Support

TO OBTAIN TECHNICAL SUPPORT. PLEASE RETAIN PROOF OF PURCHASE.

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
0845 125 9426 (calls charged at approximately 3p per minute depending on network)
01865 761114 (calls charged at operators standard national tariff)
Technical support is available 9am - 6pm weekdays.

ADSL Nation LTD.

E-mail: support@adslnation.com

www.adslnation.com

©2005 by ADSL Nation LTD. All rights reserved.

ADSL Nation and X-Modem are trademarks or registered trademarks of ADSL Nation LTD. in the United Kingdom and/or other countries.

Other brand and product names are trademarks or registered trademarks of their respective holders.

Information is subject to change without notice.

INSTALLATION

A large, vertical rectangular area with a light gray to dark gray gradient, occupying the right side of the page below the title.

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 M3

RJ45 Cat 5e Ethernet cable.



UK Power Supply Unit

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

Quick Start Guide

CD-ROM containing this Manual.

X-Modem and LiveIP 2 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.

In the default configuration the X-Modem employs advanced LiveIP 2 technology that provides the single public IP address issued by the ISP to your computer. This makes the X-Modem the perfect solution for people who wish to maintain a publicly available live connection to the internet. LiveIP technology makes the X-Modem an ideal companion to Wireless Broadband Routers and Firewall Appliances equipped with Ethernet interfaces.

In order to ensure the X-modem is flexible enough to be used in a wide variety of situations we also include an optional gateway mode to enable the modem to be installed on a network.

X-Modem M3 Overview

Front Panel

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

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

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

DATA: Flashes when data is being sent and recieved.

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

Rear Panel

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

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!)

POWER: To connect to your Power Outlet via the supplied Power Adaptor.

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 password.

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.

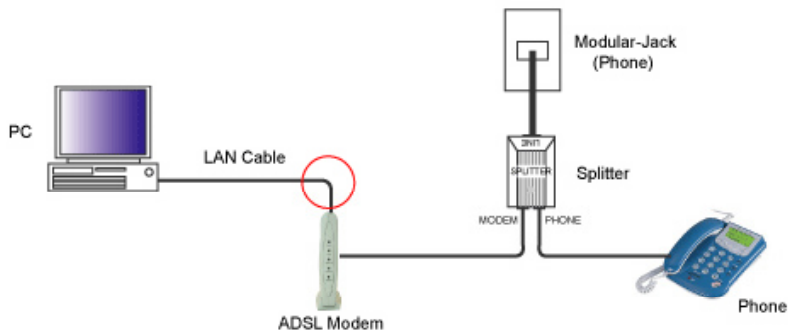
Microfilters

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

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.

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.

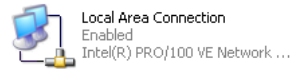
Configuring Windows XP Networking

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.

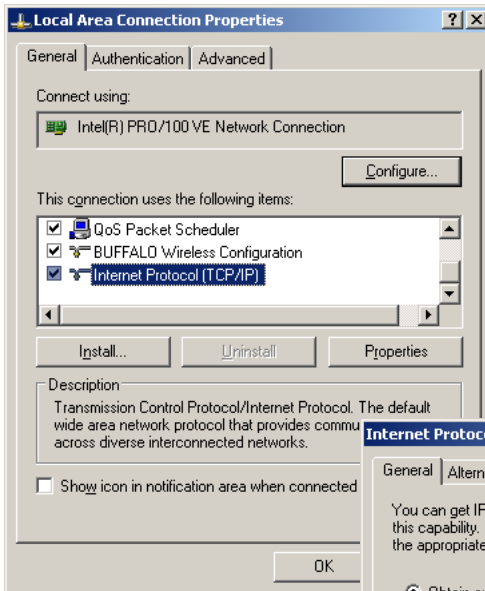
(Instructions are based on default XP Start menu option)

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

LAN or High-Speed Internet



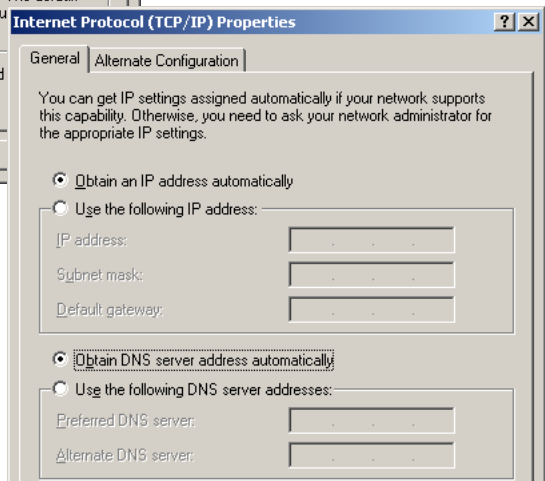
Right-click on the Local Area Connection icon that reflects the model of your Ethernet Network Card that is connected to the X-Modem and click Properties.



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.

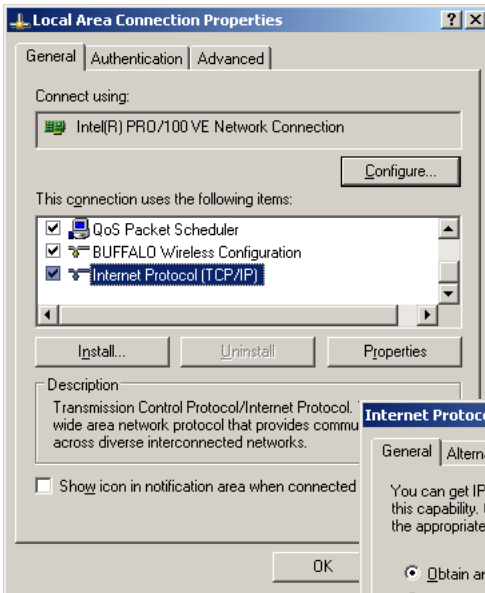


Configuring Windows 2000 Networking

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.

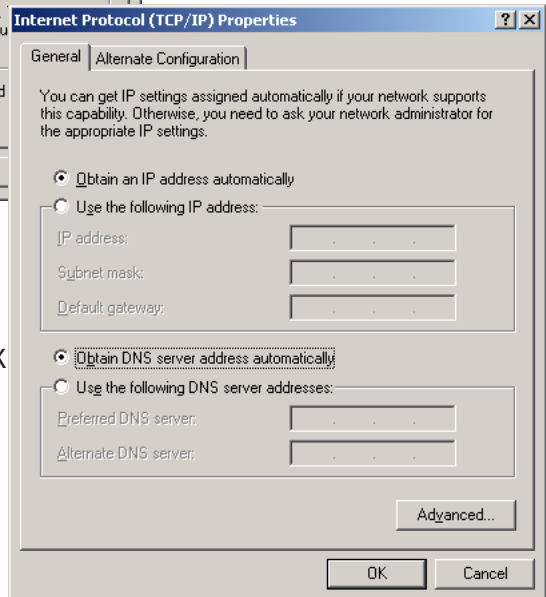
Click the Start > Settings and choose “Network & Dial-up Connections”.

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.

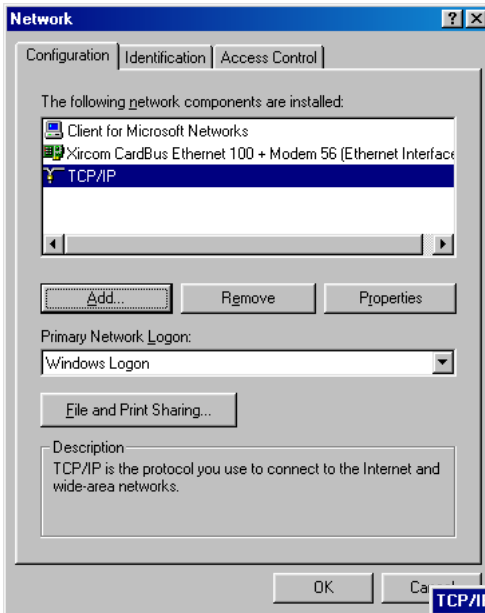
Select the option Obtain an IP address automatically and Obtain DNS server address automatically. Click OK an OK again to close. Ensure that your Modem is powered on and restart your system.



Configuring Windows 98/ME Networking

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

Select Properties.

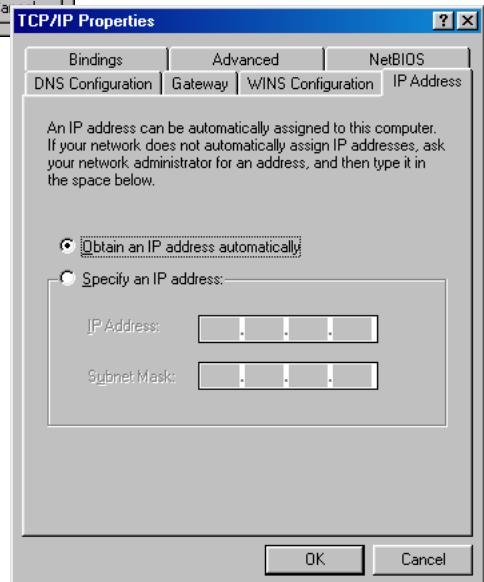


From the Configuration tab, select TCP/IP-> if multiple instances of TCP/IP are shown select the one that refers to the model of your Ethernet Network Card that is connected to the X-Modem.

Click Properties.

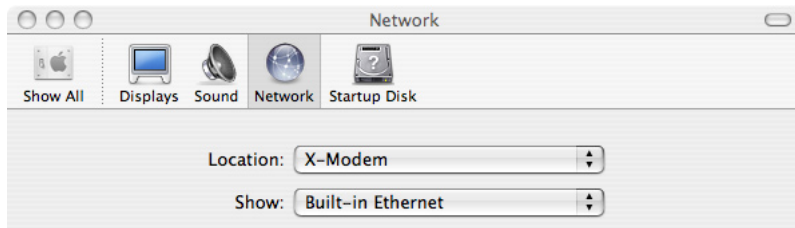
Click the option Obtain an IP address automatically and click OK to save the settings.

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



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.

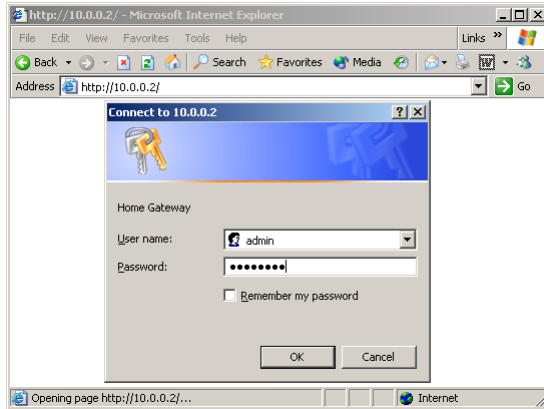
Close the window and save changes if prompted.

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

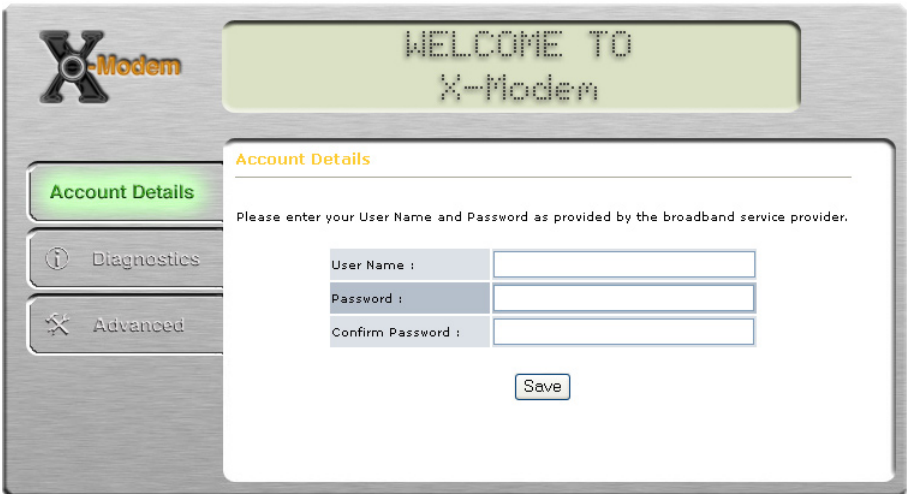
Note: The user name and password prompt may take up to 1 minute the first time the modem is accessed. If the prompt does not appear please check your browsers proxy settings to ensure that no proxy servers are configured.

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 advanced 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 minutes 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

Test Complete		
Checking LAN Connection		
Testing Ethernet LAN connection	PASS	HELP
Checking ADSL Connection		
Testing ADSL Synchronization	PASS	HELP
Checking Circuit 0 for Network Connection		
Test ATM OAM Segment Loop Back	PASS	HELP
Test ATM OAM End-to-End Loop Back	PASS	HELP
Test Ethernet connect to ATM	PASS	HELP
Test PPPoPvc 0 PPPOE connection	UNKNOWN	HELP
Test PPPoPvc 0 PPP layer connection	PASS	HELP
Test PPPoPvc 0 IP connect to PPP	PASS	HELP
Testing Internet Connection		
Ping default gateway	PASS	HELP
Ping primary DNS	PASS	HELP
Query DNS for www.adslnation.com	PASS	HELP
Ping www.adslnation.com	PASS	HELP

If no **FAIL** results are reported the modem has successfully connected to the internet. Any tests that report N/A, UNKNOWN or SKIPPED can be ignored as they are tests that are not required. 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>

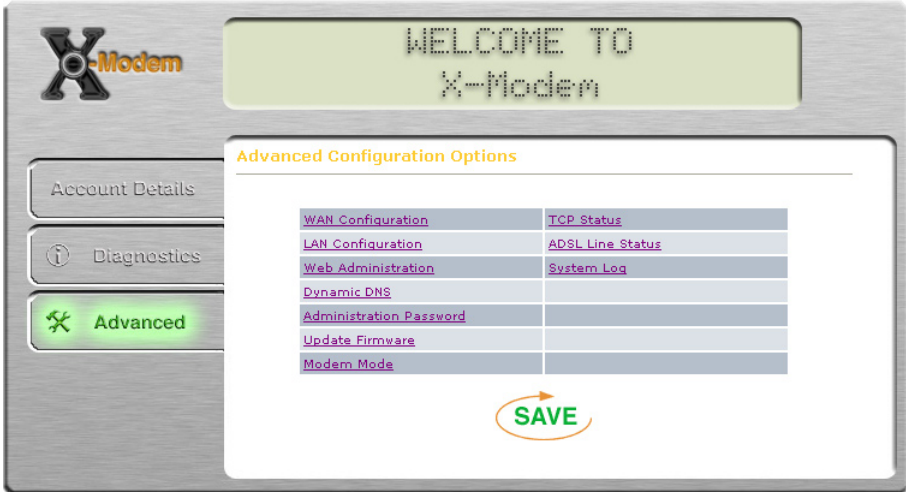
Congratulations you are now on-line !

ADVANCED



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.



WELCOME TO
X-Modem

Advanced Configuration Options

WAN Configuration	TCP Status
LAN Configuration	ADSL Line Status
Web Administration	System Log
Dynamic DNS	
Administration Password	
Update Firmware	
Modem Mode	

SAVE

Any modifications made in the advanced 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

WAN Settings

VPI	VCI	ENCAPSULATION
<input type="text" value="0"/>	<input type="text" value="38"/>	<input type="text" value="PPPoA VC-Mux"/>
PPP Bridge	<input type="text" value="Disabled"/>	
Disconnect Timeout	<input type="text" value="0"/>	seconds
MRU	<input type="text" value="1500"/>	
MTU	<input type="text" value="1458"/>	
MSS	<input type="text" value="1398"/>	
Authentication	<input type="text" value="Auto"/>	
<input checked="" type="checkbox"/> Automatic Reconnect		

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 VPI=0, VCI=38 are suitable for all BT Wholesale lines if your telecoms provider is not BT your ISP should supply these values.

Note: Karoo (Kingston Communications) users should use VPI=1, VCI=50.

Encapsulation

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

PPP Bridge

This setting can only be used with PPPoE encapsulation and allows the modem to forward all PPP traffic to a PPPoE compatible host. This setting should normally be disabled in the UK as PPPoE is not generally used.

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

LAN Port Settings

Ethernet Mode	<input type="text" value="10 Half"/>
IP Address	<input type="text" value="10.0.0.2"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>

Ethernet Mode

Used to manually set the Ethernet port speed and duplex modes. 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. The default on the modem is set manually to 10Mb Half Duplex to avoid problems with speed detection.

Note: As ADSL services can deliver a maximum of 8Mb there is little point in changing the modem from the 10Mb setting.

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

Web Administration

HTTP Server Access	
<input type="radio"/> All	
<input checked="" type="radio"/> Restricted	
<input checked="" type="checkbox"/> LAN	
<input type="checkbox"/> WAN Specify IP	<input type="text" value="10.0.0.10"/>
Subnet Mask	<input type="text" value="255.0.0.0"/>
HTTP Server Port	<input type="text" value="80"/>
HTTP Password Protection	Enabled <input type="button" value="v"/>

Access Restrictions

To prevent access to the modem settings by unauthorised people on the internet the web administration interface by default is restricted to the local network only. In some situations it may be desirable to allow access to the modem from the internet for remote monitoring purposes.

Click “All” to allow remote access to the modem from anywhere on the internet. If using this setting please choose a strong password for your modem as the only thing preventing access to the modem will be the password.

If you know the IP address or range of IP addresses of the remote computer, then it is advisable to keep the restricted setting. Check the WAN check box and enter the IP and Subnet mask details to allow remote access to a single IP or range of addresses.

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.

HTTP Password Protection

Requires a password to access the web administration interface. This setting should remain enabled to avoid unauthorised access to the modem.

Dynamic DNS

Dynamic DNS Update Configuration



Settings take effect immediately, no reboot is required

Apply

Enabled	<input type="checkbox"/>
Username	<input type="text"/>
Password	<input type="password"/>
Host Name 0	<input type="text"/>
Host Name 1	<input type="text"/>
Host Name 2	<input type="text"/>
Host Name 3	<input type="text"/>
Host Name 4	<input type="text"/>

Dynamic DNS

The free Dynamic DNS service allows you to alias a dynamic IP address to a static hostname. Dynamic DNS allows your computer to be more easily accessed from various locations on the Internet by automatically updating the DNS details every time your IP address changes.

For more information visit <http://www.dyndns.com>

You must first register a free account at dyndns.com and add any host names you require via their web site. To enable the X-Modem to make automatic updates simply click “Enable” and enter your dyndns.com account details and the full host names. For example “xmodem.dyndns.org”

Administration Password

Administration Password

The Administration password should be at least 8 characters. Do not use '&' in the password.

Admin Password

Retype Password

Password Protection

Access to the X-Modem web administration interface is protected by a password. To prevent unauthorized access, the default password should be changed to a password of your choice.

Note: For the strongest security use a combination of letters and numbers in the new password.

Update Firmware

Firmware Update (2.0.0)

IMPORTANT: Only perform a firmware update if absolutely necessary.

Start Update

Click "Start Update" to start a Firmware Update.
The X-Modem will enter firmware update mode,
Internet connectivity will be disabled.

After Start Update is selected,
it will take a few seconds before you can select the file to be installed.

You **MUST** either select a valid file or cancel the update procedure.

Firmware Updates

ADSL Nation may make firmware updates available to download from our web site. Download the update **BEFORE** proceeding with update.

Detailed instructions are provided with firmware updates. Click Start Update to begin update procedure. The modem will switch to firmware update mode.

Firmware Update (2.0.0)

Cancel Update

Select File to be installed
or click "Cancel Update" to cancel the update process.

Internet connectivity will not be restored until update is completed or cancelled.

Note: When the modem is in update mode the internet connection is terminated. If the update button has been clicked in error the firmware update must be cancelled to resume normal operation.

Modem Mode

Modem Mode

Modem Mode 

Modem

The default X-Modem configuration is modem mode. In modem mode the modem uses LiveIP 2 technology that collects the IP address from the ISP and passes it to the computer. In modem mode the modem 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.

Gateway

Gateway mode switches off the LiveIP feature and enables NAT (Network Address Translation). Gateway mode allows the X-modem to be directly connected to a network as NAT is used 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)

Port Forwarding

ID	Public Port - Start	Public Port - End	Private Port	Port Type	Host IP Address	
1	25	25	25	TCP	10.0.0.25	Delete
2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>	Add

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 25 the standard smtp port to a computer with the IP address 10.0.0.25 20 Special ports can be added to the port forward screen.

To add a port simply fill out the boxes.

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

Public Port End: The last number that the external client will be connecting to, to access the service. Where a single port is required the Start and End port numbers are the same.

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.

Note: When using port forwarding rules it is advisable to manually configure the TCP-IP settings on the host computer rather than rely on DHCP to ensure that the IP address always remains the same.

TCP Status

TCP Status

Reset Counters

General		
	Transmit	Receive
Total Packets	273	235
Data Packets	156	38
Data Bytes	115141	13884
Out of Order Packets	N/A	36
Out of Order Bytes	N/A	0

Discarded Packets	
Bad Checksum	0
Bad Header Offset	0
Too Short	0

Connections	
Initiated	0
Accepted	39
Established	38
Closed	18

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

Showtime Firmware Version:	3.50
Line State:	SHOWTIME
Modulation:	G.dmt
Startup Attempts:	1
Max Tx Power:	-38 dBm/Hz
CO Vendor:	ALCATEL_NETWORK
Elapsed Time:	0 days 0 hours 0 minutes 44 seconds

	Downstream	Upstream	
SNR Margin	27.6	31.0	dB
Line Attenuation	40.9	24.0	dB
Errored Seconds	0	0	
Loss of Signal	0	0	
Loss of Frame	0	0	
CRC Errors	0	0	
Data Rate	2272	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 10db. Poor SNR values is often due to poor quality microfilters, we recommend that only the highest quality filters are used to optimise the SNR.

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.

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 the telephone cable 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.

Support

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

If you would like to contact technical support by telephone, please call 0845 125 9426 (calls charged at local rate)

01865 761114 (calls charged at operators standard national tariff)

Technical support is available 9am - 6pm weekdays.