NetComm®

ADSL Modem PLUS 4

NB1300 PLUS 4

Ethernet/USB ADSL Modem with Integrated Router & 10/100 4-Port Switch

ADSL



Plus 4-Port 10/100 Switch

NAT Firewall Protection

MICRO FILTER INSIDE

Use your existing phone line

Connect and share a high-speed ADSL connection

User Guide

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Overview

Package Contents

The following items should be contained in your NB1300Plus4 ADSL Modem Router Package:



❒ One ADSL ModemPlus4 Port Switch (NB1300+4)



❒ Package Contents Note and a User Guide



❒ Power Adaptor (9VAC/800mA)



❒ Telephone Line Cable (RJ11) and 605 to RJ11 Adaptor



❒ Ethernet Network Cable (RJ45)



❒ USB Cable



❒ Microfilter



❒ NetComm Communications CD-ROM

Check the contents of your package and, if any parts are missing or damaged, please contact your Dealer.

Connecting your NB1300Plus4

The NB1300Plus4 can be connected via a USB cable or an Ethernet cable or both. The reason for this is that the USB connection is simply an ethernet simulation, as far as your computer is concerned the USB connection is an Ethernet connection, hence DHCP and other protocols will work the same as for Ethernet.

Connecting your NB1300Plus4 ADSL Modem via Ethernet

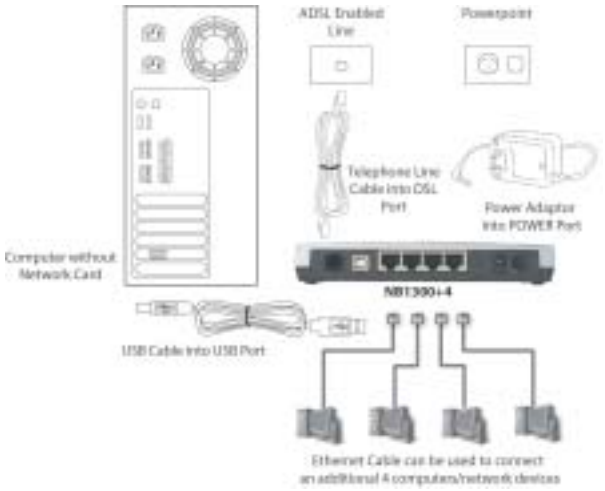
1. Connect your NB1300Plus4 to either a computer directly or a network hub or switch using cat5 ethernet cables. You need to ensure you are using the correct type of ethernet cable - i.e. straight through or crossover.



2. Connect the power pack to the NB1300Plus4 ADSL Modem and switch on the power switch.
3. Ensure that the connected port has a LAN led light on the NB1300Plus4.
4. Ensure that the computer you intend to use has an IP address in the same subnet as the NB1300Plus4 ADSL Modem. (e.g. the NB1300Plus4's default IP is 192.168.1.1 - your computer should be on 192.168.1.100 or similar.) If you have DHCP enabled on your computer, the NB1300Plus4 will assign your computer a suitable IP address.
5. Ensure that your computer has a LAN link light.
6. Connect one end of the ADSL phone line to the NB1300Plus4 ADSL Modem and the other end to the wall socket.
7. Additional network devices or computers can be connected to the remaining LAN ports.

Connecting your NB1300Plus4 ADSL Modem via USB

1. Connect the power pack to the NB1300Plus4 ADSL Modem and switch on the power switch.



2. Install the USB driver (Windows 98/Me/2000/XP only - for Macintosh see page 34.)

   When you install the USB driver on your computer it creates a Virtual Ethernet Adapter, which can be configured in the same way as a Network Interface card with DHCP or static IP address. To install the USB driver please follow the steps below;

   a. Boot your machine into Windows 98/Me/2000/XP.
   b. Insert your NetComm NB1300Plus4 CD ROM into your CD-ROM drive.
   c. Plug power up to your NB1300Plus4 and switch ON.
   d. Plug a USB cable from the back of the unit into a spare USB socket on your computer.
   e. The Windows “Add New Hardware Wizard” should appear. Click Next to continue.
   f. Ensure the option “Search for the best driver….” is chosen and click Next.
   g. When prompted where you would like to look for the drivers choose “Specify location” and untick any other boxes. Then click the browse button to select the CD-ROM drive which you inserted you NetComm CD-ROM into. Then choose the ‘USBdriver’ folder.

3. Connect one end of the ADSL phone line to the NB1300Plus4 ADSL Modem and the other end to the wall socket.

4. In addition to using the USB connection, you my connect up to 4 additional network devices or computers.

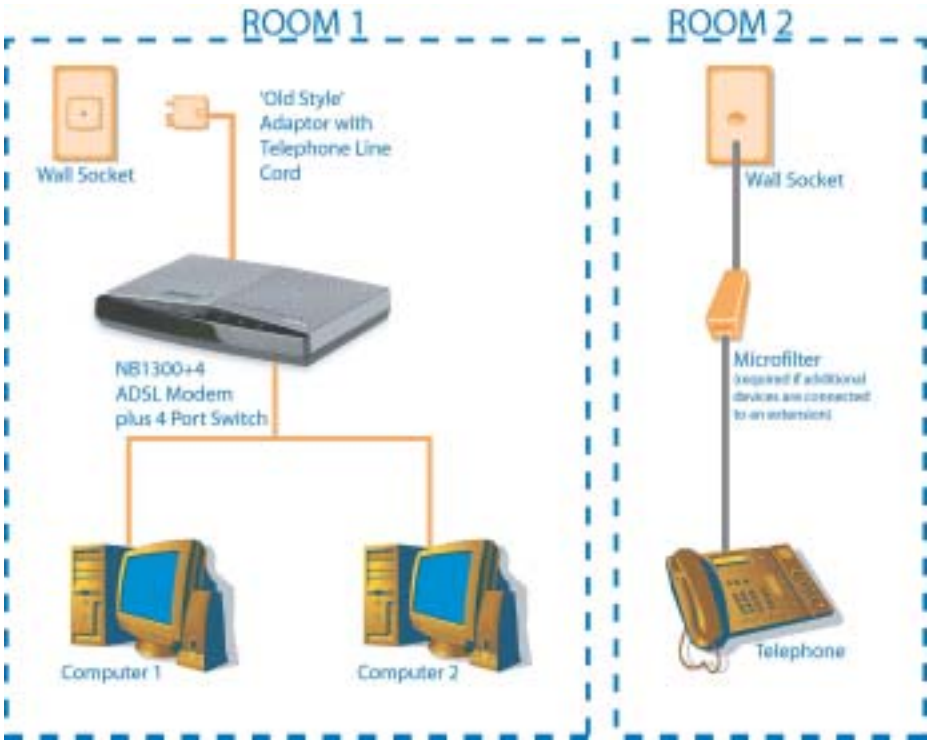
Do I need a Micro filter?

Micro filters are used to prevent common telephone equipment, such as phones, answering machines and fax machines, from interfering with your ADSL service. If your ADSL enabled phone line is being used with any other equipment other than your ADSL Modem then you will need to use one Micro filter for each phone device.

Splitters may be installed when your ADSL line is installed or when your current phone line is upgraded to ADSL. If your telephone line is already split you will not need to use a Microfilter - check with your ADSL service provider if you are unsure.

Each micro filter is connected in-line with your telephone or fax machine so that all signals pass through it. Telephones and/or facsimiles in other rooms that are using the same extension will also require Microfilters. The following diagram gives an example of connecting your ADSL Modem/Router using a Microfilter.

A suitable Microfilter can be purchased from NetComm or your Service Provider, if required.



LED Indicators

The LED Indicators are located on the front of the unit, they are green in colour. The meanings are as follows:



Label	Meaning	Status	Indicates:
PWR	Power	On	Power is on
		Off	Power is off
		Flashing	Unit is powered up correctly when pulsing steadily. ON or OFF during reboot or when unit switched OFF. If ON or OFF permanently then there is an error. Try powering unit OFF then ON after a minute.
LNK	WAN Link	Flashing	Link being attempted by router and when receiving or sending data on the WAN port (ADSL line)
		On	Link established
		Off	No link
LAN 1/2/3/4	**LAN Port 1/2/3/4**	Flashing	Flashes when data is being sent or received on the LAN connection
		On	Indicates a link to your LAN or Network card is active
		Off	Indicates no link to LAN

Using Easy Config

Loading an ISP profile into your NB1300Plus4

NetComm's Easy Config software is supplied to help you to configure your NB1300Plus4 for a quick connection to the Internet. You can use one of the default profiles provided or you can use a profile that is provided by your Internet Service Provider (e.g. via Email, floppy disk or CD-ROM).

A number of examples are supplied in the next section to assist you in selecting the appropriate connection configuration to connect your NB1300Plus4 to your Network or Computer.

Note: Before continuing you must connect your ADSL Modem. Refer to the sections on Connecting your ADSL Modem via Ethernet or via USB for instructions.

1. Switch your router ON and wait for the 'RDY' light to start pulsing.
2. Reset your router to factory defaults by using a pen to depress the reset button on the back of the unit. Ensure you depress the button for 5 seconds.

   Note: Refer to the section on resetting your NB1300Plus4 for more information.

3. Start your Windows PC and connect your router to your computer as per the Quick Start Guide. This can be done either via Ethernet or USB Refer to the sections on connecting your ADSL Modem via Ethernet or via USB for instructions.
4. Launch NetComm's Easy Config software (Double click EzCfg.exe or launch.bat) from the CD-ROM or from your downloaded copy. Note: The ISP profile you wish to load into your NB1300Plus4 should be in the same directory as the EzCfg.exe file)



5. Choose your ISP Profile from the drop down box.
6. Type in your ISP User Name in full as given by your ISP.
7. Type in your ISP Password as supplied by your ISP.

   Note: Your password characters will be represented by stars.

8. Click the Configure My Router button and follow the on-screen prompts. The software will ask you to ensure your router is powered on, click OK to continue.
9. When prompted you should power off your router and then power it back on again. You can close Easy Config at this point by clicking the Exit button.

   Note: It may also be beneficial to reboot your computer but this is usually not required.

10. Once your NB1300Plus4 has booted (RDY light pulses) wait one minute and you should now be able to connect to the Internet. You can run Easy Config again just to check your connection status.

Factory Defaults

The following table lists the Factory Defaults of your NB1300Plus4 ADSL Modem:

Field	Setting Details
LAN IP address:	192.168.1.1
LAN Subnet Mask:	255.255.255.0
DHCP Server:	Enabled
User Name:	admin
Password:	password
Main Function:	Router (Bridge Disabled)
WAN connection type:	PPPoE LLC
VPI:	8
VCI:	35

Note: These defaults may change with firmware updates and factory changes, please consult the NetComm website to check for the latest defaults.

Resetting to factory defaults

If you forget your passwords, lock out HTTP or FTP access or simply can't remember what IP address you have set the NB1300Plus4 on you will probably need to perform a factory defaults reset.

To perform a factory defaults reset you must have physical access to the unit then follow these steps;

1. Make sure the NB1300Plus4 is powered on and the RDY light is flashing.
2. Locate the Reset button hole on the back of the unit.
3. Gently press in and hold the button for 5 seconds with a suitably thin appliance (E.g. straightened paper clip) seconds after release the RDY light will turn off.
4. Watch the RDY light and wait for it to stabilise and start pulsing again (in approximately 1 minute.

Note: Do not switch off or press reset again until the NB1300Plus4 has completed its reset and the RDY light is flashing.

5. Your router should now be set to factory defaults (192.168.1.1, 'admin' & 'password')

Configuration Types

This section is supplied to help you connect your NB1300Plus4 ADSL Modem quickly to your network or Windows computer. The following are the most common configurations for using your NB1300Plus4 ADSL Modem.

- **ADSL Modem - Ethernet**

  This is when you plug the modem directly into the Ethernet port of a computer and then run Internet connection software (often supplied by your ISP) on the computer to establish a connection to the Internet. This method means that the computer connected to the Ethernet port of the NB1300Plus4 is exposed to the Internet and is given a public IP address.

- **ADSL Modem - USB**

  This is when you plug the modem directly into the USB port of just one computer. You then must run Internet connection software (often supplied by your ISP) on the computer to establish a connection to the Internet. This method means that the computer connected to the USB port of the NB1300Plus4 is exposed to the Internet and is given a public IP address.

- **ADSL Gateway Router - Ethernet**

  This is when the NB1300Plus4 is connected to your network switch or hub and shares the Internet connection to all computers on the network. The NB1300Plus4 will log on to your ISP on behalf of your computers and it will shield your computers from direct Internet attack by using Network address Translation (NAT).

- **ADSL Gateway Router - USB**

  If you do not have an Ethernet port on your computer you can use your USB port like an Ethernet port to connect to the NB1300Plus4. This "simulated" Ethernet port is only for connecting to the NB1300Plus4 and is only available for Windows 98SE, Windows 2000, Windows XP and machintosh OSX.. The NB1300Plus4 will log on to your ISP on behalf of your computer and it will shield your computer from Internet attack by using NAT.

Refer to the instructions in one of the following sections for the configuration you wish to use. If you wish to configure the NB1300Plus4 in a different way to the examples shown, please consult a Network Specialist and the Advanced Configuration section for more information.

*Note: If the NB1300Plus4 has already been used, we strongly recommend you reset and flush all settings of the unit by pressing and holding the RESET button on the rear of the modem for 10 seconds. Wait for the **RDY** light to begin pulsing before continuing.*

*We also recommend you change your Router's password from the factory default **before** connecting it to a network or the Internet. Refer to the "Admin Password" section in the "Security" Menu.*

ADSL Modem - Ethernet Configuration

Use this configuration if you:

- Have been told to use the “ADSL Modem” Easy Config Profile, or
- Want to connect this device to another router, or
- Want to use your ISP’s software to log on to the Internet directly (not sharing) and your computer will use a Public IP address, and
- DO NOT need the NB1300Plus4 to share your Internet service (You can still use windows ICS to share your Internet Service), and
- Do not require your computer to be protected (via NAT) from the Internet, e.g. you may be running Personal firewall software or a Secondary router.



ADSL modem (Transparent Bridge) - This is when you plug the modem directly into the Ethernet port of a computer and then run Internet connection software (often supplied by your ISP) on the computer to establish a connection to the Internet. This method means that the computer connected to the Ethernet port of the NB1300Plus4 is exposed to the Internet and is given a public IP address.

Before continuing, ensure you have the following items and information ready:

- A computer with a Network Interface Card installed or a router (such as the NetComm NB3100 Compact).
- An Ethernet network cable.
- A telephone line with ADSL service enabled.
- User Name, Password, VPI, VCI, encapsulation and DNS server settings for your ADSL account (ask your ISP if unsure). These are not needed for the NB1300Plus4, but are required for the computer or router that it will be connected to.

Note: The following procedure presumes your NB1300Plus4 is set to a factory default IP address 192.168.1.1.

Step 1: Connecting your computer to the NB1300Plus4

Note: This unit should only be connected to the Telecommunications Network through a line cord which meets the requirements of ACA TS008.

a. Using an ethernet network cable, connect an Ethernet port of the NB1300Plus4 into the Ethernet port of the computer you wish to use to configure the unit.



b. Connect the power and switch the NB1300Plus4 on.

c. Ensure the LAN link on the NB1300Plus4 is active.

d. Configure your Computer to use any IP address in the range of 192.168.1.2 to 192.168.1.254.

e. Additional network devices may be connected to the remaining ethernet ports.

Note: When the NB1300Plus4 is used in Bridge mode it is a fairly passive device and most Internet configuration required (such as User Name, Password, etc.) is done on the computer or another router.

Step 2: Configuring the NB1300Plus4

After connecting all the ADSL Router cables you can either configure your NB1300Plus4 using the Easy Config software provided (Refer to page 25) or complete the following manual configuration instructions:

a. Power on the ADSL Router and launch a web browser, such as Internet Explorer or Netscape Navigator, browse to the address http://192.168.1.1.

b. Enter the correct user name and password to access the Configuration tool. The default user name and password are as below.

User Name : admin
Password : password

*Note: You must click the **Submit** button on every page that you make changes on and when you have made all your changes click the **Save Setting and Reboot** button from the bottom of the menu.*

c. Click on the **One Page Setup** link under the **Basic menu**.



You will need to Change your WAN and VC settings as provided by your ISP. The following lists an example of the most common ISP settings used in Australia. The fields that require changing from the default settings are highlighted.

Field	Setting Details
Service name:	*Blank* ❖
User Name:	*Blank* ❖
Password:	*Blank* ❖
Disconnect timeout:	0 ❖
Mode/Wan Connection Type:	1483 Bridged IP LLC
VPI:	8 ❖
VCI:	35 ❖
Static IP Address:	192.168.241.101 ❖
Subnet Mask:	255.255.255.0 ❖
Default Gateway:	0.0.0.0 ❖
Bridge mode:	Enabled

❖ ***Default Setting.*** *Although in most cases you will not be required to alter these default settings for your NB1300Plus4, your ISP may identify specific settings to enable connection to their service. Please refer to your ISP or Network Administrator for further information.*

4. Click **Submit** and then click the **Save Setting and Reboot** button from the bottom of the menu. Wait for the configuration to complete.

Step 3: Configuring your Computer/Router to use the NB1300Plus4

ISP Software Method

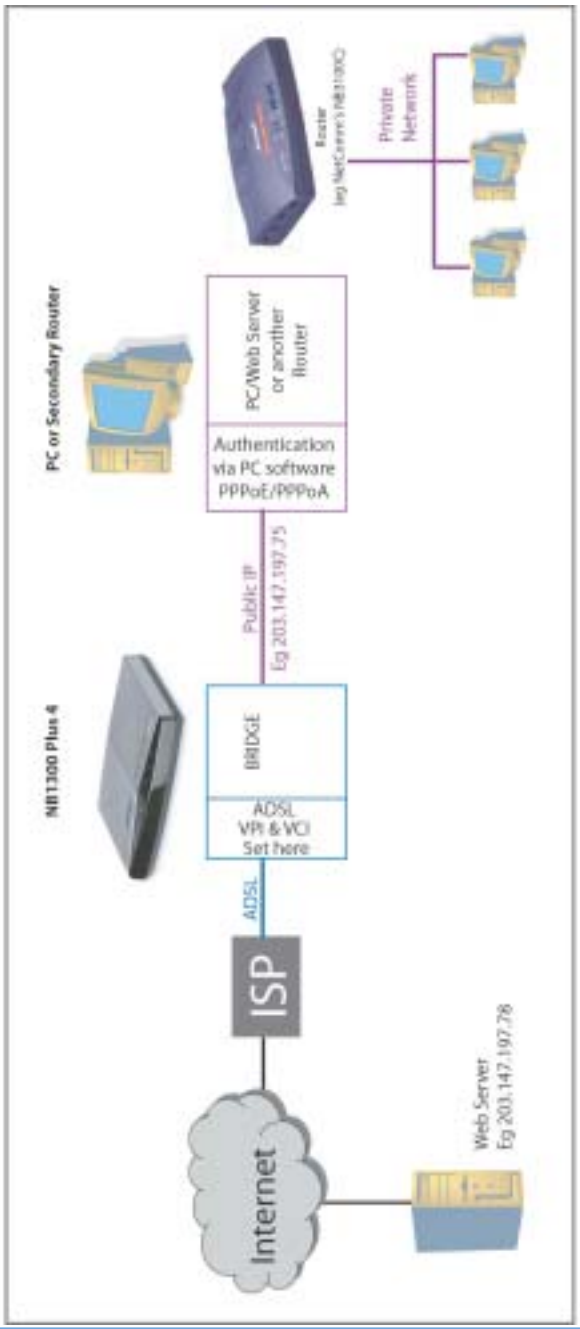
Install software on your computer (usually provided by your ISP) and enter a User Name and Password. This software usually adds a PPP service to your computer.

Please refer to your ISP for more information on how to configure your software to work with the NB1300Plus4 ADSL Modem when used as a bridge.

Second Router Method

If you are using a *second* router in conjunction with the NB1300Plus4 as a Bridge, you should unplug the NB1300Plus4 from the computer and plug the NB1300Plus4 into WAN port of the secondary router. Consult the second router's documentation for information on how to configure your user name and password.

Note: Depending on the second router, you may need to use a "straight through" UTP cable instead of a "crossover" UTP cable to join the NB1300Plus4 to the WAN port of the other router.


Router
Private Network
PC or Secondary Router
PC/Web Server or another Router
Authentication via PC software PPPoE/PPPoA
Public IP
Eg 203.147.197.75
NB1300 Plus 4
BRIDGE
ADSL VPI & VCI Set here
ADSL
ISP
Internet
Web Server
Eg 203.147.197.78
In Bridge mode, the Router is performing the following functions:
Packets are forwarded
MAC Address is sometimes passed on
Media conversion only - not Routing
Transparent Bridge (aka ADSL Modem)
Authentication by third party device/software/server/firewall etc
Ethernet
ADSL

ADSL Modem - USB Configuration

Use this configuration if you:

- Have been told to use the “ADSL Modem” Easy Config Profile, or
- Want to connect this device to another router, or
- Want to use your ISP’s software to log on to the Internet directly (not sharing) and your computer will use a Public IP address, and
- DO NOT need the NB1300Plus4 to share your Internet service (You can still use windows ICS to share your Internet Service), and
- Do not require your computer to be protected (via NAT) from the Internet, e.g you may be running Personal firewall software or a Secondary router.



ADSL modem (Transparent Bridge) to be connected to a router **-** This is when you plug the modem directly into the USB port of just one computer. You then must run Internet connection software (often supplied by your ISP) on the computer to establish a connection to the Internet. This method means that the computer connected to the USB port of the NB1300Plus4 is exposed to the Internet and is given a public IP address.

Note: In this configuration you should not use the 4 port switch.

Before continuing, ensure you have the following items and information ready:

- A computer with a Network Interface Card installed or a router (such as the NetComm NB3100).
- A USB cable.
- A telephone line with ADSL service enabled.
- User Name, Password, VPI, VCI, encapsulation and DNS server settings for your ADSL account (ask your ISP if unsure). These are not needed for the NB1300Plus4, but are required for the computer or router that it will be connected to.

Note: The following procedure presumes your NB1300Plus4 is set to a factory default IP address 192.168.1.1.

Step 1: Connecting your computer to the NB1300Plus4

Note: This unit should only be connected to the Telecommunications Network through a line cord which meets the requirements of ACA TS008.

a. Place the CD-ROM provided into your CD-ROM drive.



b. Connect the USB cable from the NB1300Plus4 into a spare USB port on your computer. If you are using Macintosh OSX, please refer to the Macintosh USB Configuration section on page 34.

c. Windows will detect the new hardware and launch a New hardware Wizard. When prompted to search for drivers choose “Specify location”.

d. Browse the drive letter of your CD-ROM drive and locate the “USB driver” folder. E.g. **D:\USB driver** where D: is the drive letter of your CD-ROM.

e. Continue with the driver search by clicking **OK** and the Found Hardware Wizard will locate the USB driver and prompt you to install it.

f. Once the driver is installed, it is configurable as a regular Ethernet adapter and will be set to automatically accept an IP address from the NB1300Plus4. You can manually set its IP address to any free address in the range of 192.168.1.2 –254 as required.

Note: When the NB1300Plus4 is used in Bridge mode it is a fairly passive device and most Internet configuration required (such as User Name, Password, etc.) is done on the computer or another router.

Step 2: Configuring the NB1300Plus4

After connecting all the ADSL Router cables you can either configure your NB1300Plus4 using the Easy Config software provided (Refer to page 9) or complete the following manual configuration instructions:

a. Power on the ADSL Router and launch a web browser, such as Internet Explorer or Netscape Navigator, browse to the address http://192.168.1.1.

b. Enter the correct user name and password to access the Configuration tool. The default user name and password are as below.

User Name : admin
Password : password

*Note: You must click the **Submit** button on every page that you make changes on and when you have made all your changes click the **Save Setting and Reboot** button from the bottom of the menu.*

c. Click on the **One Page Setup** link under the **Basic menu**.



You will need to Change your WAN and VC settings as provided by your ISP. The following lists an example of the most common ISP settings used in Australia. The fields that require changing from the default settings are highlighted.

Field	Setting Details
Service name:	*Blank* ❖
User Name:	*Blank* ❖
Password:	*Blank* ❖
Disconnect timeout:	0 ❖
Mode/Wan Connection Type:	1483 Bridged IP LLC
VPI:	8 ❖
VCI:	35 ❖
Static IP Address:	192.168.241.101 ❖
Subnet Mask:	255.255.255.0 ❖
Default Gateway:	0.0.0.0 ❖
Bridge mode:	Enabled

❖ ***Default Setting.*** *Although in most cases you will not be required to alter these default settings for your NB1300Plus4, your ISP may identify specific settings to enable connection to their service. Please refer to your ISP or Network Administrator for further information.*

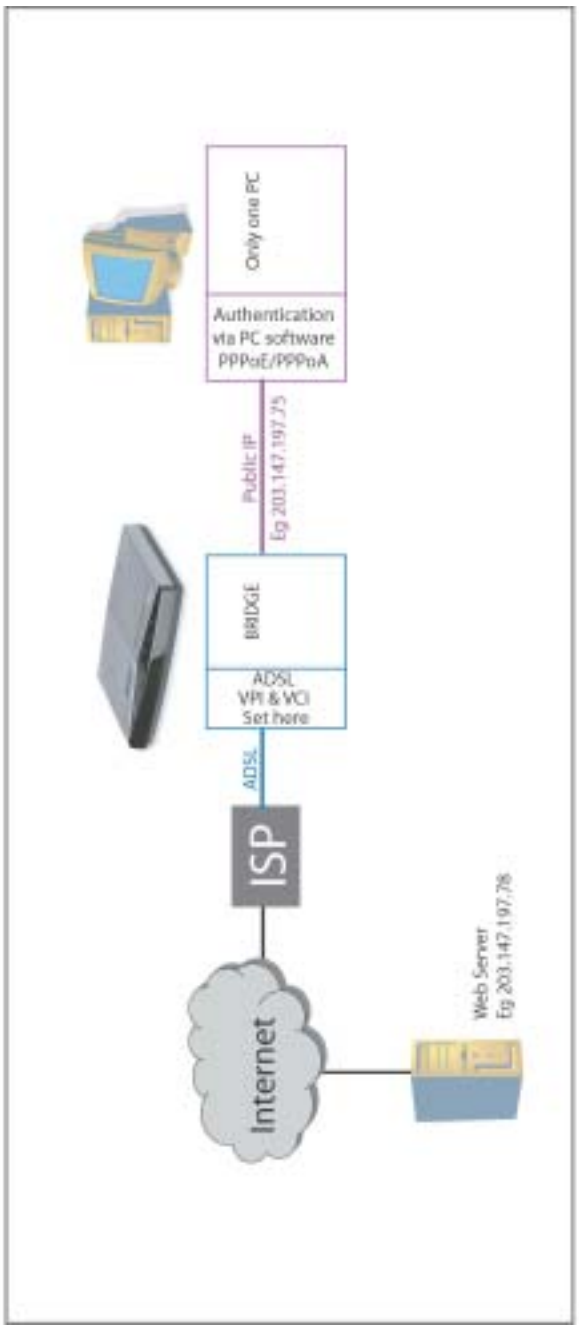
4. Click **Submit** and then click the **Save Setting and Reboot** button from the bottom of the menu. Wait for the configuration to complete.

Step 3: Configuring your Computer/Router to use the NB1300Plus4

Install software on your computer (usually provided by your ISP) and enter a User Name and Password. This software usually adds a PPP service to your computer.

Please refer to your ISP for more information on how to configure your software to work with the NB1300Plus4 ADSL Modem when used as a bridge.

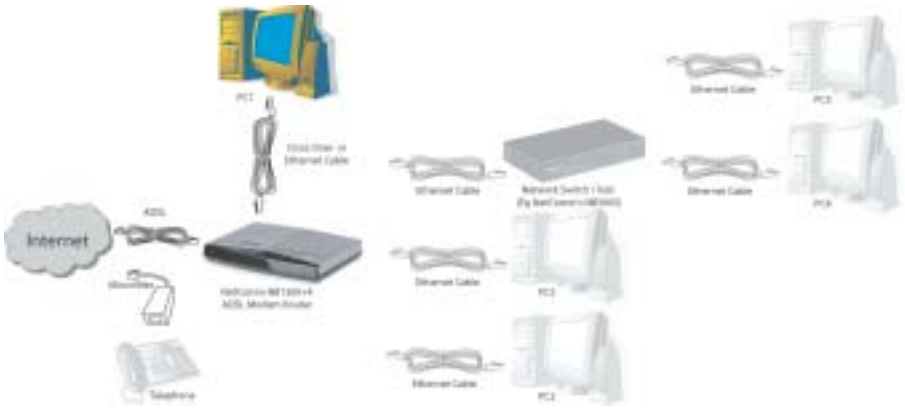
Operational Diagram for ADSL Modem Configuration



ADSL Gateway Router - Ethernet Configuration

Use this configuration if you:

- Have been told to use Easy Config “ISP Profile 1, 2, 3, 5 or 6 ”, or
- Were told by your ISP to use this Configuration with another Easy Config profile, or
- Have at least one computer with an Ethernet Networking socket, and / or
- Want to share your Internet Service with more than one computer.
- Want your computers to be protected by the NB1300Plus4 (via NAT).
- You want your computers to use Private IP addresses.



Ethernet Gateway (performing Network Address Port Translation) **-** This is when the NB1300Plus4 is connected to your network switch or hub and shares the Internet connection to all computers on the network. The NB1300Plus4 will log on to your ISP on behalf of your computers and it will shield your computers from direct Internet attack by using Network address Translation (NAT).

Before continuing, ensure you have the following items and information ready:

- A Windows 98, ME, NT, 2000 or XP client machine with a Network Interface Card installed.
- Either a Network Hub and two UTP cables OR one Crossover UTP cable.
- A telephone line with ADSL service enabled.
- User Name, Password, VPI, VCI, encapsulation and DNS server settings for your ADSL account (ask your ISP if unsure) .

Note: The following procedure presumes your NB1300Plus4 is set to a factory default IP address 192.168.1.1.

Step 1: Connecting your computer to the NB1300Plus4

Note: This unit should only be connected to the Telecommunications Network through a line cord which meets the requirements of ACA TS008.



a. Connect your NB1300Plus4 to either a computer directly or a network hub or switch using cat5 ethernet cables. You need to ensure you are using the correct type of ethernet cable - i.e. straight through or crossover.

b. Connect one end of the ADSL phone line to the NB1300Plus4 ADSL Modem and the other end to the wall socket.

c. Connect the power pack to the NB1300Plus4 ADSL Modem and switch on the power switch.

d. Ensure that there is a LAN link light on the NB1300Plus4.

e. Ensure that the computer you intend to use has an IP address in the same subnet as the NB1300Plus4 ADSL Modem. (e.g. the NB1300Plus4's default IP is 192.168.1.1 - your computer should be on 192.168.1.100 or similar.) If you have DHCP enabled on your computer, the NB1300Plus4 will assign your computer a suitable IP address.

f. Ensure that your computer has a LAN link light.

Step 2: Configuring the NB1300Plus4

After connecting all the ADSL Router cables you can either configure your NB1300Plus4 using the Easy Config software provided (Refer to page 9) or complete the following manual configuration instructions:

a. After connecting all the ADSL Router cables, powering on the ADSL Router, and launching a web browser, such as Internet Explorer or Netscape Navigator, browse to the address http://192.168.1.1.

b. Enter the correct user name and password to access the Configuration tool. The default user name and password are as below.

User Name : admin
Password : password

*Note: You must click the **Submit** button on every page that you make changes on and when you have made all your changes click the **Save Setting and Reboot** button from the bottom of the menu.*

c. Click on the **One Page Setup** link under the **Basic menu**. You do not need to change the LAN settings unless you need the NB1300Plus4 to work with an existing network on a subnet other than 192.168.1.x.



You will need to Change your WAN and VC settings as provided by your ISP. The following lists an example of the most common ISP settings used in Australia. The fields that require changing from the default settings are highlighted.

Field	Setting Details
Service name:	Any name to describe your ISP
User Name:	Your ISP will provide a case sensitive **User Name** in a format similar to your email address. Contact your ISP for details
Password:	Enter your **Password** as supplied by your Service Provider (characters are usually all lower case)
Disconnect timeout:	0 ❖
Mode/Wan Connection Type:	PPPoE LLC or PPPoA (Your ISP should advise which WAN Type)
VPI:	8 ❖
VCI:	35 ❖
Static IP Address:	192.168.241.101 ❖
Subnet Mask:	255.255.255.0 ❖
Default Gateway:	0.0.0.0 ❖
Bridge mode:	Disabled ❖

❖ ***Default Setting.*** *Although in most cases you will not be required to alter these default settings for your NB1300Plus4, your ISP may identify specific settings to enable connection to their service. Please refer to your ISP or Network Administrator for further information.*

d. Click **Submit** and then click the **Save Setting and Reboot** button from the bottom of the menu. Wait for the configuration to complete.

Standard configuration of your NetComm NB1300Plus4 ADSL Modem is now complete. You should be able to access the Internet through the unit, when it is set to be your gateway on your computer/s. Refer to Step 3 for more information.

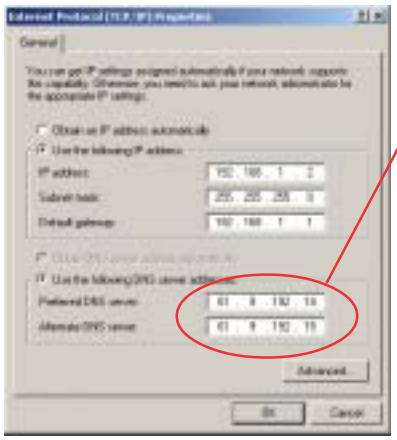
Step 3: Configuring your Computer to use the NB1300Plus4

To use the NB1300Plus4 ADSL Modem to access the Internet, your computer must have an IP Address that is in the same LAN subnet as the NB1300Plus4 ADSL Router and use the NB1300Plus4 ADSL Router's IP address as its gateway.

Most applications call for the Primary and Secondary DNS server entries to be made on each computer. These can be automatically assigned by another DHCP server or by enabling the DHCP server on the NB1300Plus4 ADSL Modem, and entering the DNS values in the DNS section of the NB1300Plus4.

The following example shows how a computer could be set up when the NB1300Plus4 ADSL Modem is configured with no DHCP service for this example. The NB1300Plus4 ADSL Modem would be set to a LAN IP Address (Gateway) of 192.168.1.1 with a Subnet Mask of 255.255.255.0

Open the **Control Panel** and double click on the **Network** icon. Scroll down to select **TCP/IP-> *Ethernet Card*** and click on the **Properties** button.

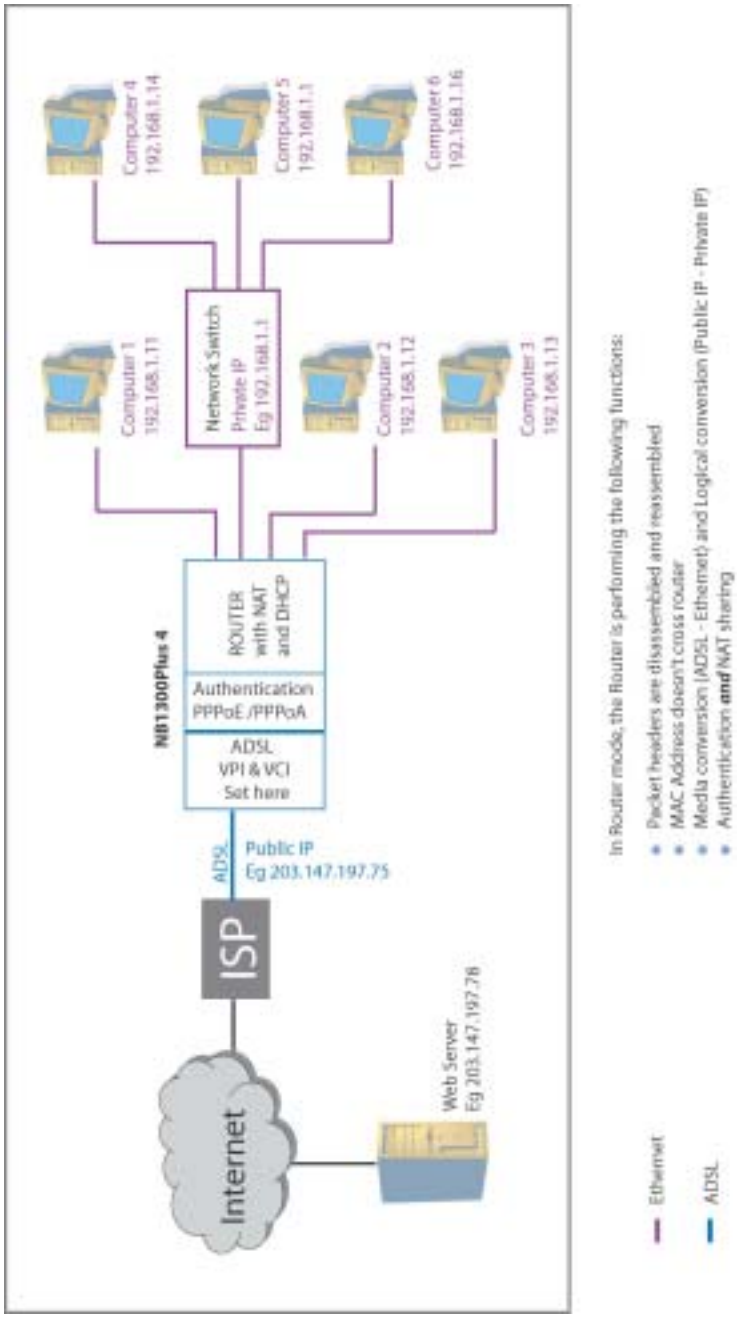


Your DNS numbers are specific to your ISP and should be notified along with your User Name and Password.

Note: When using Internet Explorer as a web browser, click on the "Tools" menu and select "Internet Options". Select the "Connections" tab and click on the "LAN Settings" button. Tick the "Automatically detect settings" checkbox and make sure the "Use a Proxy server" checkbox is unchecked.



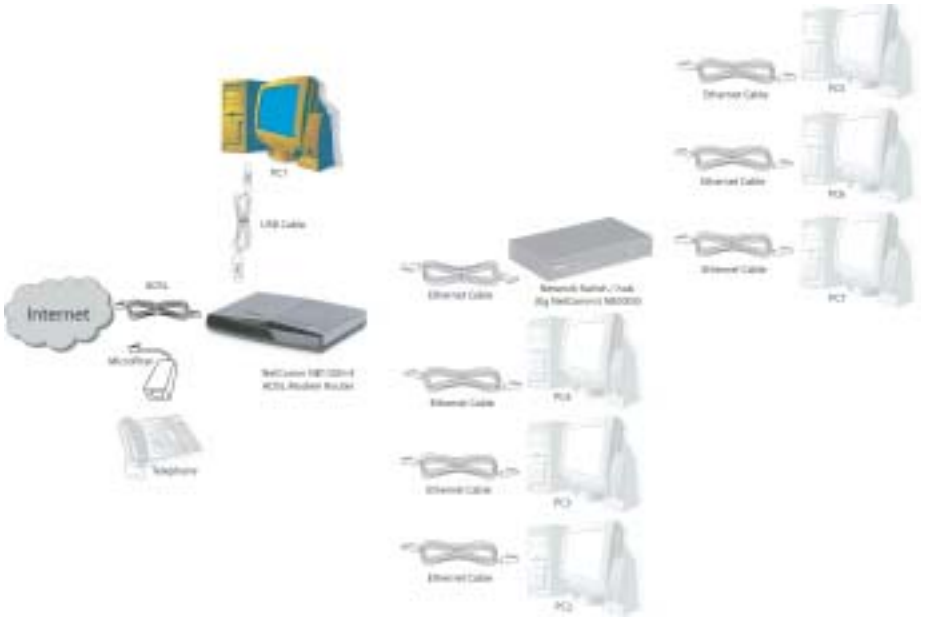
Operational Diagram for Ethernet Gateway Configuration



ADSL Gateway Router - USB Configuration

Use this configuration if you:

- Have been told to use Easy Config “ISP Profile 1, 2, 3, 5 or 6 ”, or
- Were told by your ISP to use this Configuration with another Easy Config profile.
- Wish to use the NB1300Plus4 with a computer that does not have an Ethernet socket. This computer will use a Private IP address and will be protected from the Internet by the NB1300Plus4 (via NAT).
- Already use the NB1300Plus4 with an Ethernet network but wish to connect a Computer that does not have an Ethernet socket. (You do not need to reconfigure the NB1300Plus4 please refer to the “Connecting your NB1300Plus4 via USB cable” section in this guide)



USB Gateway Configuration (Multiple public IPs to Multiple internal IPs) **-** If you do not have an Ethernet port on your computer you can use your USB port like an Ethernet port to connect to the NB1300Plus4. This "simulated" Ethernet port is only for connecting to the NB1300Plus4 and is only available for Windows 98SE, Windows 2000, Windows XP and machintosh OSX.. The NB1300Plus4 will log on to your ISP on behalf of your computer and it will shield your computer from Internet attack by using NAT.

Before continuing, ensure you have the following items and information ready:

- A Windows 98SE, ME, 2000 or XP client machine.
- A telephone line with ADSL service enabled.
- User Name, Password, VPI, VCI, encapsulation and DNS server settings for your ADSL account (ask your ISP if unsure).

Note: Please be aware that connection via USB is only supported in Windows 98SE, Windows Me, Windows 2000 and Windows XP. For Windows 95, NT, Linux and Macintosh you should use the Ethernet port of your NB1300Plus4.

Step 1: Connecting your computer to the NB1300Plus4

Note: This unit should only be connected to the Telecommunications Network through a line cord which meets the requirements of ACA TS008.

a. Place the CD-ROM provided into your CD-ROM drive.

b. Connect the USB cable from the NB1300Plus4 into a spare USB port on your computer. If you are using Macintosh OSX, please refer to the Macintosh Installation section.



c. Windows will detect the new hardware and launch a New hardware Wizard. When prompted to search for drivers choose “Specify location”.

d. Browse the drive letter of your CD-ROM drive and locate the “USB driver” folder. E.g. **D:\USB driver** where D: is the drive letter of your CD-ROM.

e. Continue with the driver search by clicking **OK** and the Found Hardware Wizard will locate the USB driver and prompt you to install it.

f. Once the driver is installed, it is configurable as a regular Ethernet adapter and will be set to automatically accept an IP address from the NB1300Plus4. You can manually set its IP address to any free address in the range of 192.168.1.2 –254 as required.

Note: You may be asked if you wish to continue without a digital signature if so choose YES to continue. This request may occur up to four (4) times depending on your operating system.

Step 2: Configuring the NB1300Plus4

After connecting all the ADSL Router cables you can either configure your NB1300Plus4 using the Easy Config software provided (Refer to page 9) or complete the following manual configuration instructions:

a. Power on the ADSL Router and launch a web browser, such as Internet Explorer or Netscape Navigator, browse to the address http://192.168.1.1.

b. Enter the correct user name and password to access the Configuration tool. The default user name and password are as below.

User Name : admin
Password : password

*Note: You must click the **Submit** button on every page that you make changes on and when you have made all your changes click the **Save Setting and Reboot** button from the bottom of the menu.*

c. Click on the **One Page Setup** link under the **Basic menu**. You do not need to change the LAN settings unless you need the NB1300Plus4 to work with an existing network on a subnet other than 192.168.1.x.



You will need to Change your WAN and VC settings as provided by your ISP. The following lists an example of the most common ISP settings used in Australia. The fields that require changing from the default settings are highlighted.

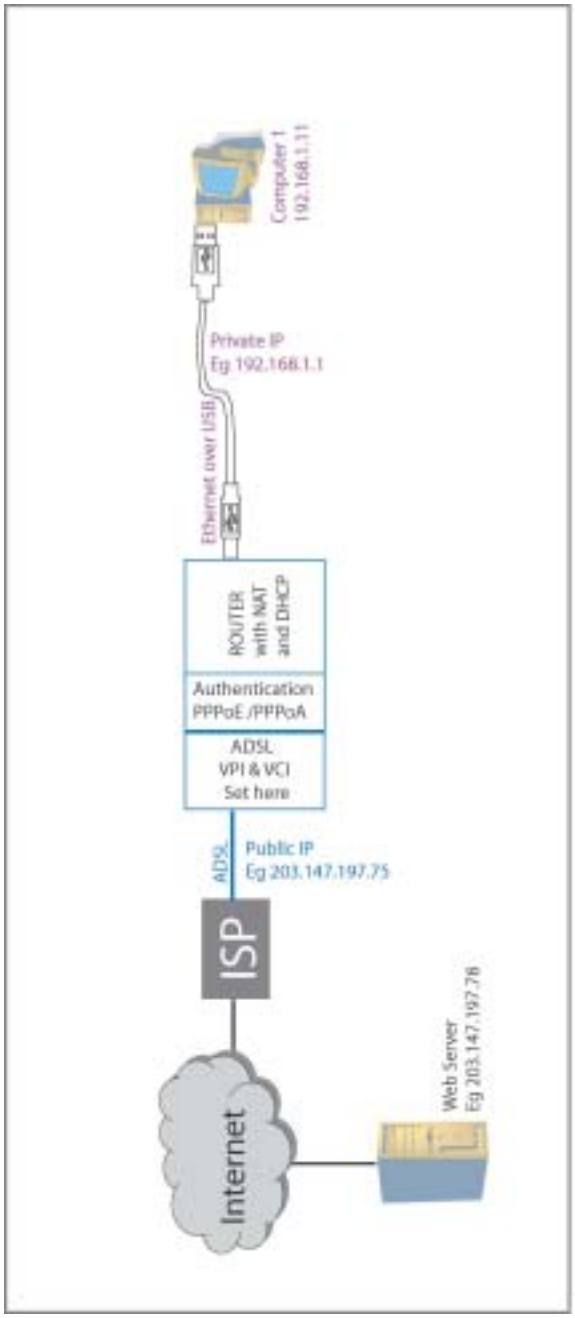
Field	Setting Details
Service name:	Any name to describe your ISP.
User Name:	Your ISP will provide a case sensitive **User Name** in a format similar to your email address. Contact your ISP for details.
Password:	Enter your **Password** as supplied by your Service Provider (characters are usually all lower case).
Disconnect timeout:	0 ❖
Mode/Wan Connection Type:	PPPoE LLC or PPPoA
VPI:	8 ❖
VCI:	35 ❖
Static IP Address:	192.168.241.101❖
Subnet Mask:	255.255.255.0❖
Default Gateway:	0.0.0.0 ❖
Bridge mode:	Disabled ❖

❖ ***Default Setting.*** *Although in most cases you will not be required to alter these default settings for your NB1300Plus4, your ISP may identify specific settings to enable connection to their service. Please refer to your ISP or Network Administrator for further information.*

d. Click **Submit** and then click the **Save Setting and Reboot** button from the bottom of the menu. Wait for the configuration to complete.

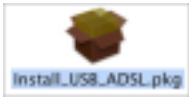
Step 3: Configuring your Computer to use the NB1300Plus4

Most applications call for the Primary and Secondary DNS server entries to be made on each computer. These can be automatically assigned by another DHCP server or by enabling the DHCP server on the NB1300Plus4 ADSL Modem, and entering the DNS values in the DNS section of the NB1300Plus4.


Computer 1
192.168.1.11
Private IP
Eg 192.168.1.1
Ethernet over USB
ROUTER
with NAT
and DHCP
Authentication
PPPoE /PPPoA
ADSL
VPI & VCI
Set here
ADSL
Public IP
Eg 203.147.197.75
ISP
Internet
Web Server
Eg 203.147.197.78
In Router mode, the Router is performing the following functions:
Packet headers are disassembled and reassembled
MAC Address doesn't cross router
Media conversion (ADSL - Ethernet) and Logical conversion (Public IP - Private IP)
Authentication and NAT sharing
Ethernet
ADSL

Macintosh OS X USB Configuration

1. Close any running applications.
2. Execute the Install_USB_ADSL.pkg program.



3. OS X will then request you enter the passphrase for a user that has administration access to the computer. Enter the details and click on OK.



4. Click on Continue.



5. Select the drive that contains OS X and then click on Continue.



6. Click on Upgrade or Install to continue.



7. Installation of this software requires that you restart your computer when installation is complete. Click on Continue Installation to continue.



8. Click on Restart.
9. Connect the USB cable from the NB1300 into a spare SUB port on your computer.



10. Open System Preferences from the Dock.



11. Click on Network to display this window. Click on OK.



12. Select the Ethernet Adaptor (en1) from the Show box. Select the TCP/IP tab and select Using DHCP.



13. Click on Apply Now. Close the Network window and System Preferences.

Advanced Configuration for your NB1300Plus4

How to make changes

The NB1300Plus4 utilises a Web based interface for configuration, this means that you do not need to load drivers (unless using USB) and configuration is always performed via a Web browser (such as Internet Explorer or Netscape Navigator).

For each configuration page there is a Submit button to store the changes for that page before you move on to the next page. Once you have made and submitted all your required changes you must click the Save Settings and Reboot button.

Clicking this button will permanently store all your changes and implement them by performing a reboot. Please wait up to 30 seconds for your router to reboot and resynchronize the ADSL link (Showtime). The Reboot process is complete when the RDY light starts pulsing steadily again.

Note: DO NOT power the unit off or press the reset button again during the reboot process

Multiple Virtual Circuits

The NB1300Plus4 is capable of being configured to maintain multiple virtual circuits – that is multiple routed connections or PPP sessions down the same ADSL copper cable. Most ADSL connections will only support one PPP session please confirm your line's / accounts capabilities with your ISP. All configurations made in the one-page setup are made to Virtual Circuit Zero (VC0). You can configure the other VCs individually by opening the Advanced WAN page and selecting which VC you want to edit at the bottom of the page then pressing the Submit button. All fields on that page will be presented in terms of the Virtual Circuit number just chosen.

USB or Ethernet?

The NB1300Plus4 can be connected via a USB cable or an Ethernet cable or both. The reason for this is that the USB connection is simply an ethernet simulation, as far as your computer is concerned the USB connection is an Ethernet connection, hence DHCP and other protocols will work the same as for Ethernet.

1. After connecting all the ADSL Router cables, powering on the ADSL Router, and launching a web browser, such as Internet Explorer or Netscape Navigator, browse to the address http://192.168.1.1.
2. Enter the correct user name and password to access the Configuration tool. The default user name and password are as below.

   User Name : admin
   Password : password



*Note: You must click the **Submit** button on every page that you make changes on and when you have made all your changes click the **Save Setting and Reboot** button*

The configuration page is split into two sections, Simple mode (default) and Advanced mode. When you log into the router it will be in simple mode. This provides enough configuration for the majority of connections.

Main Menu - (Simple)

The following is displayed in the left hand panel when you first log into the NB1300Plus4:



Basic Menu

One Page Setup

The One Page setup page is designed to make the most commonly required configuration fields available all in one place. For most installations you will only need to use the one-page setup to configure the unit. One-Page setup fields all apply to Virtual Circuit zero only (see section on Multiple Virtual Circuits elsewhere in this manual for more information).



LAN:

This the Local Area Network IP address of the NB1300Plus4, by default this is set to 192.168.1.1 this can be changed to reflect your network requirements, i.e. 172.16.1.1 or 10.0.0.1

For simple networks it is suggested that the default addresses be used.

WAN:

This is the field that you configure your ISP details, enter the details provided by your ISP into these fields:

Service name - This is the name you wish to call the connection, it is recommended that you use your ISP's name to avoid confusion at a later date. For example if you use Ozemail as your ISP then enter 'OzEmail' in the service field. Your ISP does NOT set this field.

Username - This is the Username provided by your ISP. Please check with your ISP as to the format to use, some ISPs use your full Username (i.e. user@ISP.com.au) and some just use the username only.

Password - This is the password provided by your ISP for your Internet connection. It is usually only required for connection types that use PPP.

Disconnect timeout - If no activity is recorded on the network the NB1300Plus4 will disconnect the line after this many seconds, the maximum is 32767 seconds (about 10 hours).

WAN Type: This is the connection type set by your ISP, you can select from the following options:

- o PPPoA VC-Mux
- o PPPoA LLC
- o 1483 Bridged IP LLC or VC-Mux (For Transparent bridge also enable Bridge mode)
- o 1483 Routed IP LLC or VC-Mux
- o Classical IP over ATM
- o PPPoE - VC-Mux, LLC, None

If your connection is not working with the suggested configuration try using one of the other settings.

VC Settings:

These are the settings for the line itself, these are supplied by your ISP.

- ❑ VPI - usually 8 unless specified otherwise by your ISP
- ❑ VCI - usually 35 unless specified otherwise by your ISP
- ❑ Static IP Address - 0.0.0.0 or 192.168.241.101 unless specified by your ISP
- ❑ Subnet mask - 255.255.255.0 unless specified by your ISP.
- ❑ Default Gateway - 0.0.0.0 unless specified by your ISP.

Bridge:

Enabling bridge mode will place the unit into Transparent bridge mode (like a Ethernet ADSL modem) to use this mode you should also set your WAN type to a Bridging option (e.g RFC 1482 Bridge using LLC).

Show Advanced Settings

Select this option to display the advanced settings of the NB1300Plus4 (See further for details of Advanced settings)

Advanced configurations should only be used if you are familiar with the operation of your network and ISP settings or if you are directed to do so by NetComm support or your ISP.

Status

The status pages show what the status is of current connections and settings, this section describes what fields are displayed. See 'Main Menu - advanced' for details on how to change these settings.

Router

The Router page shows the firmware versions and WAN and LAN interface status.



Firmware Version: This field displays the NetComm firmware version number on the router.

Customer Software Version: This field displays the software interface version on the router. Firmware updates can be downloaded from the NetComm website when available.

WAN:

These fields display the current IP address, Subnet Mask and MAC address for the WAN (ADSL) interface. This address is supplied by your ISP either automatically or using a static assigned address.

LAN:

These fields display the IP address, Subnet Mask and MAC address for the LAN interface.

Number of Ethernet Devices Connected to the DHCP Server: This field displays the number of DHCP clients connected to the NB1300Plus4. It also shows the IP address and MAC address of the attached DHCP clients.

ADSL

The ADSL Status page shows the ADSL physical layer status.



ADSL Line Status: This field displays the ADSL connection process and status.

ADSL Modulation: This field displays the ADSL modulation status for G.dmt or T1.413.

ADSL Annex Mode: This field displays the ADSL annex modes for Annex A or Annex B.

ADSL Startup Attempts: This field displays the ADSL connection attempts after loss of showtime.

Elapsed Time: This field displays the time of the modem has been in operation.

SNR Margin: Amount of increased noise that can be tolerated while maintaining the designed BER (bit error rate). The SNR Margin is set by Central Office DSLAM. If the SNR Margin is increased, bit error rate performance will improve, but the data rate will decrease. Conversely, if the SNR Margin is decreased, bit error rate performance will decrease, but the data rate will increase.

Line Attenuation: Attenuation is the decrease in magnitude of the ADSL line signal between the transmitter (Central Office DSLAM) and the receiver (Client ADSL Modem), measured in dB. It is measured by calculating the difference in dB between the signal power level received at the Client ADSL modem and the reference signal power level transmitted from the Central Office DSLAM.

Errored Seconds: The error during Showtime (ADSL link), whenever, a given sec contains CRC error, that second will be declared error second.

Loss of Signal: This field displays the count of event of ADSL signal loss.

Loss of Frame: This field displays the count of event of ADSL frame loss.

CRC Errors: This field displays the number of transmit data frames containing CRC errors.

Data Rate: This field displays the ADSL data rate.

Latency: This field displays the latency modes for fast or interleave.

PPP

The PPP Status page shows the status of PPP for each PPP interface. See PPP:



These fields display the following information on each PPP interface:

- Connection Name (user defined)
- Interface (PVC)
- Mode (PPPoE or PPPoA)
- Status (Connected or Not Connected)
- Packets Sent
- Packets Received
- Bytes Sent
- Byte Received.

Connect and Disconnect: Each PPP session can be individually controlled, simply enter the desired connection number into the 'Connection #' field and select either connect or disconnect from the drop down menu and click on the 'Execute' button.

Advanced



One Page Setup

See 'Main menu - Simple' for full details of the One Page Setup.

Hide Advanced settings

Select this option to hide the advanced settings of the NB1300Plus4. Pressing this will display the Simple settings.

Administration

The links under the Administration column are associated to the pages that represent the configurations of system and interfaces.

Note: When the configurations are changed, please go to the Save Settings page to save the new setting and reboot the board.

WAN

The WAN configuration page allows the user to set the configuration for the WAN/ADSL ports.



Per VC Settings/Change Adapter: Under Per VC Setting, it provides the configurations for VPI/VCI, Static IP Address Subnet Mask, and Gateway. The Static IP Address, Subnet Mask and Gateway are used for Static IP configuration. Current NetComm firmware supports eight PVCs. To switch between the PVCs, please choose one of the virtual circuit numbers and click on the Submit button to switch over.

Note: for newer firmware you click on the Change Adapter button and select the VC you wish to View/Edit.

MAC Spoofing: MAC Spoofing is developed to solve the scenario when the ISP only recognizes one MAC address. Copy the ISP-recognized MAC address here.

ATM:

Service Category: UBR and CBR are supported from the ATM.

Bandwidth: Bandwidth setting takes effect only when the CBR is selected. The maximum available bandwidth is from the upstream data rate of ADSL status page.

Encapsulation: Bridge IGMP

IGMP relay/proxy specification and environment: Support IGMP proxy/relay function for ADSL modem, based on the following requirement and case:

- On CO side, there must be at least one IGMP querier (router) present. IGMP querier will send IGMP query packet. The ADSL modem is responsible to relay these IGMP query to Ethernet.
- End-user multicast application device send IGMP report while receiving IGMP query or being activated by user, the ADSL modem should be responsible to proxy (that is, change source IP to ADSL modem's WAN IP) the IGMP report to ADSL WAN side, include all PVCs. The same case is for IGMP leave packet.
- Not necessary to relay multicast routing between two ADSL PVCs or two interfaces in LAN side.
- Special purpose multicast packet (such as RIP 2 packet) should run without interference.

Note: Before the IGMP mode is enabled; please go to the Miscellaneous Configuration page to enable the IGMP proxy. Otherwise, the IGMP selection will not be valid.

Q: Where can I download the free software to test IGMP.

A: Please go to this link http://manimac.itd.nrl.navy.mil/MGEN/.

PPP: The current release supports multiple PPP sessions per PVC. The PPP configuration in the WAN configuration page is for the first PPP session for each PVC. The predefined PPP Account Name (Account ID) is "Simple PPP Account 0" for PVC0 and predefined PPP Connection Name is "Simple PPP Session 0" for PVC0. For the other PVC X, the predefined account name and connection name will be Simple PPP Account X and Simple PPP Session X. X is the PVC number from 1 to 7.

It can support up to total of 16 PPP sessions, and each PVC can support up to 8 PPP sessions. The multiple PPP sessions may be configured with any combination over 8 PVCs.

For the multiple PPP sessions, please go to PPP Configuration page (Section 6.3).

Service Name: The service name of PPP is required by some ISPs. If the ISP does not provide the Service Name, please leave it blank.

Disconnect Timeout: The Disconnect Timeout allows the user to set the specific period of time to disconnect from the ISP. The default is 0, which means never disconnect from the ISP.

DHCP Client: Use Table 6-1 to configure a valid setting for each PVC.

MRU: Maximum Receive Unit indicates the peer of PPP connection the maximum size of the PPP information field this device can be received. The default value is 1492 and is used in the beginning of the PPP negotiation. In the normal negotiation, the peer will accept this MRU and will not send packet with information field larger than this value.

MTU: Maximum Transmission Unit indicates the network stack of any packet is larger than this value will be fragmented before the transmission. During the PPP negotiation, the peer of the PPP connection will indicates its MRU and will be accepted. The actual MTU of the PPP connection will be set to the smaller one of MTU and the peer's MRU. The default is value 1492.

MSS: Maximum Segment Size is the largest size of data that TCP will send in a single IP packet. When a connection is established between a LAN client and a host in the WAN side, the LAN client and the WAN host will indicate their MSS during the TCP connection handshake. The default value is 1432.

Automatic Reconnect: When it is checked, it will maintain the PPP connection all the time. If the ISP shut down the PPP connection, it will automatically reconnect PPP session.

Authentication: When AUTO option is chosen, the PAP mode will run first then CHAP. If you are having connection problems with PPPoA or PPPoE connections it is recommended that you try forcing either PAP or CHAP modes.

Host name: Required by some ISPs. If the ISP does not provide the Host name, please leave it blank.

Q1: If the PPP is disconnected after the Disconnect Timeout and how can I reconnect it?

A: You have to go to the PPP Status under Admin Privileged column, choose the correct PVC and Connect option, and then click Execute to restart a new PPP secession. Alternatively you can click the CONNECT button at the bottom of the OnePage setup.

When should I change my MTU settings?

MTU settings should be changed to suit your ISPs recommendations if you are experiencing the following symptoms;

- General emails send but emails with attachments fail
- Can achieve a connection but some web pages wont load or can't download files.
- Windows Update starts but fails to complete.
- Your ISP recommends you change the setting.

What should I change my MTU settings to?

MTU settings should be set to 1492 to start with, if you still have problems try lowering them to 1456, 1400 or even as low as 750 to see if the problem improves. Your ISP is the best person to contact to find out what MTU setting to use.

Note: MTU above 1492 is likely to cause problems and is not likely to improve data throughput.

LAN/DHCP

The LAN configuration page allows you to set the configuration for the LAN port.



Advanced

LAN IP Address & Subnet Mask: The default is 192.168.1.1 and 255.255.255.0 you can change it to another private IP address, such as 172.168.0.1, and 255.255.255.0. - For most configurations it is recommended to leave it as default.

DHCP Server: System Allocated: The DHCP address pool is based on LAN port IP address plus 12 IP addresses. For example, the LAN IP address is 192.168.1.1; the DHCP address pool is at the range of 192.168.1.2 to 192.168.1.14.

User Defined: The DHCP address pool is at the range of User Defined Start Address and User Defined End Address. The maximum pool size can be 253 IP addresses: 255 total IP addresses - 1 broadcast address - 1 LAN port IP address.

DHCP Gateway Selection: The default setting for the DHCP Gateway Selection is "Automatic". The user can select the "User Defined" to specify "User Defined Gateway Address". The DHCP server will issue the "User Defined Gateway Address" to the LAN DHCP clients.

Lease time: The Lease time is the amount of time of a network user will be allowed to connect with DHCP server. If all fields are 0, the allocated IP addresses will be effective forever.

User mode: Under the Single User mode, the DHCP server only allocates one IP address to local PC. Under the Multiple User mode, the DHCP server allocates the IP addresses specified bye the DHCP address pool.

Ethernet Mode Setting: The Ethernet Mode configuration page allows the user to set the LAN port into Auto Sense, 100 Mbps Full Duplex, 100 Mbps Half Duplex, 10 Mbps Full Duplex or 10 Mbps Half Duplex.

DNS

The DNS Configuration page allows you to set the configuration of DNS proxy.

The NetComm firmware supports DNS proxy. For the DHCP requests from local PCs, the DHCP server will set the LAN port IP as the default DNS server. Thus, all DNS query messages will come into LAN port first. The DNS proxy on the ADSL modem recorded the available DNS servers, and forward DNS query messages to one of DNS server.



Disable DNS Proxy: The LAN port does not process the DNS query message. For the DHCP requests from local PCs, the DHCP server will set the user-configured preferred DNS sever or alternate DNS server whichever is available as the DNS server. Then all DNS query messages will be directly sent to the DNS servers.

Use Auto Discovered DNS Servers Only: The DNS proxy will store the DNS server IP addresses obtained from DHCP client or PPP into the table. And all DNS query messages will be sent to one of the dynamically obtained DNS servers.

Use User Configured DNS Servers Only: The DNS proxy will use the user-configured preferred DNS server and alternate DNS server. And all DNS query message will be sent to one of DNS servers. Enter the DNS IP in the Preferred DNS Server and Alternate DNS Server fields.

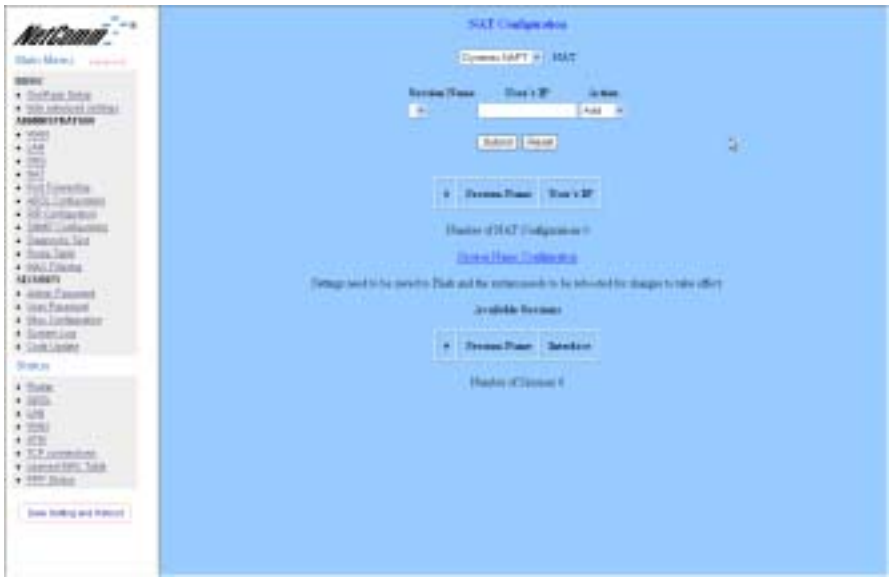
Auto Discovery + User Configured: The DNS proxy's table has all the IP addresses of dynamically obtained and user configured DNS servers.

User Configuration: Place your primary and secondary DNS addresses here.

NAT

The NAT Configuration page allows the user to set the configuration for the Network Address Translation. The default setting is Dynamic NAPT. It provides dynamic

Network Address Translation capability between LAN and multiple WAN connections, the LAN traffic is routed to appropriate WAN connections based on the destination IP addresses and Route Table. This eliminates the need for the static NAT session configuration between multiple LAN clients and multiple WAN connections.



When the Dynamic NAPT is chosen, there is no need to configure the NAT Session and NAT Session Name Configuration.

The NAT option only maps single WAN IP address to the local PC IP address. It is peer to-peer mapping. (1x1) For each WAN interface, only one local PC IP address can be associated with each WAN interface. Click the link Session Name Configuration to add the session name for WAN interface.

The NAPT option maps the single WAN IP addresses to many local PCs IP addresses. (1xN). It is the multiple-mapping mechanism. For each WAN Interface, more than one local PC can be associated with one WAN Interface. Click the link Session Name Configuration to add the session name for WAN interface.

Session Name: This field allows the user to enter his/her own session Name to distinguish different NAT session for different interfaces among different PPP sessions and different PVCs.

Interface: This field allows the user to choose specific WAN Interface (PVC or PPP Session) for NAT Session.

NAT Session Name Status: This table displays at the bottom of this page to show all the NAT Session Names with its WAN Interface.

Number of NAT Configurations: This filed displays the total number of NAT Sessions Name is entered.

Click the link *Go back to NAT Configuration* to return to the NAT configuration page. Select the NAT option. Select the Session Name and assign the PC IP address, and choose the Add action. Click the Submit button and go to the Save Settings to save this configuration.

NAT allows only one entry (User IP) per session.

NAPT allows many entries (User IPs) per session.

Session Name: This field allows the user to select the session from the configured NAT Session Name Configuration.

User's IP: This filed allows the user to assign the IP address to map the corresponding NAT/NAPT sessions.

Session Name Status will be displayed at the middle of this page to show the corresponding Session Name with its IP address.

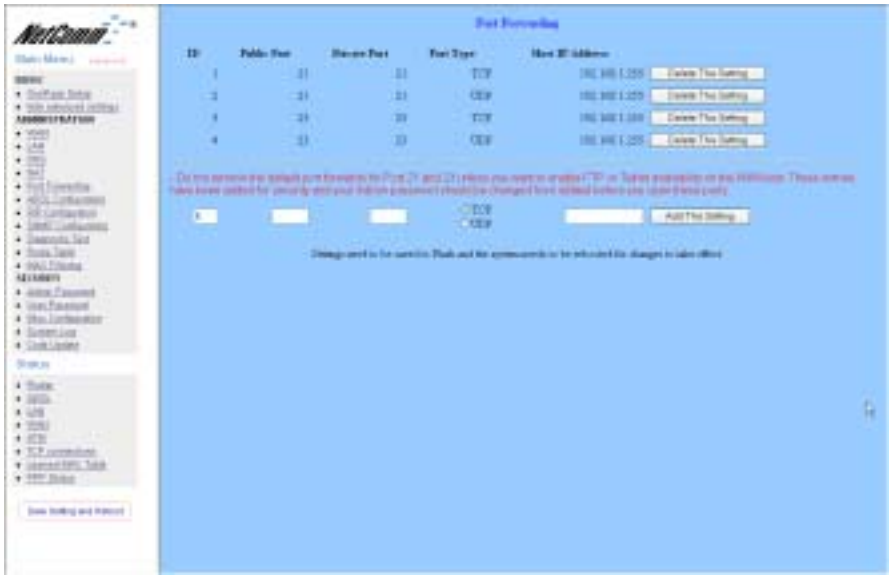
Number of NAT Configurations: This filed displays the total number of NAT Sessions is entered.

Available Sessions Status will be displayed at the end of this page to show all the Session Names with its WAN Interface.

Number of Session: This filed displays the total number of NAT Sessions Name is entered.

Port Forwarding

The Port Forwarding Configuration page allows the user to set the configuration for Port Forwarding. By default all UDP/TCP ports are protected from intrusion. If any specific local PCs need to be mapped to the UDP/TCP port on WAN side, please input the mappings here.



Public Port: This field allows the user to enter the port number of the Public Network.
Private Port: This field allows the user to enter the port number of the Private Network.

Note: In most cases, the private port number is same as public port number.

Host IP Address: This field allows the user to enter the private network IP address for the particular server.

Well Known Ports:

Port	Protocol
21	FTP
23	Telnet
25	SMTP
43	Whois
53	DNS
69	TFTP
70	Gopher
79	Finger
80	HTTP
110	POP3
115	SFTP
161	SNMP
162	SNMP traps

ADSL Configuration

The ADSL Configuration page allows the user to set the configuration for ADSL protocols.



Trellis: This field allows the user to enable or disable the Trellis Code. By default, it is always enabled.

Handshake Protocol: This field allows the user to select the ADSL handshake protocol.

Wiring Selection: This field allows the user to enter the wiring selection for the RJ-11. Tip/Rip is the default for the board without the inner/outer pair relay

Bit Swapping: This field allows the user to enable or disable the upstream bit swapping.

RIP Configuration

The RIP Per Interface Configuration page allows the user to set the configuration for each Interface (PVCs, PPP Sessions, USB and LAN).



Interface: This field allows the user to choose the Interface (PVCs, PPP Sessions, USB and LAN), for the RIP to be configured.

Enable: This field allows the user to Enable (Yes) or Disable (No) the specified interface for RIP.

Supplier: This field allows the user to select the Supplier Mode (RIP Transmit).

- Disabled: The supplier transmit is disabled.
- V1 BC: The supplier transmits in RIPv1 Broadcast.
- V2 BC: The supplier transmits in RIPv2 Broadcast.
- V2 MC: The supplier transmits in RIPv2 Multicast.

Listener: This field allows the user to select the Listener Mode (RIP Receive)

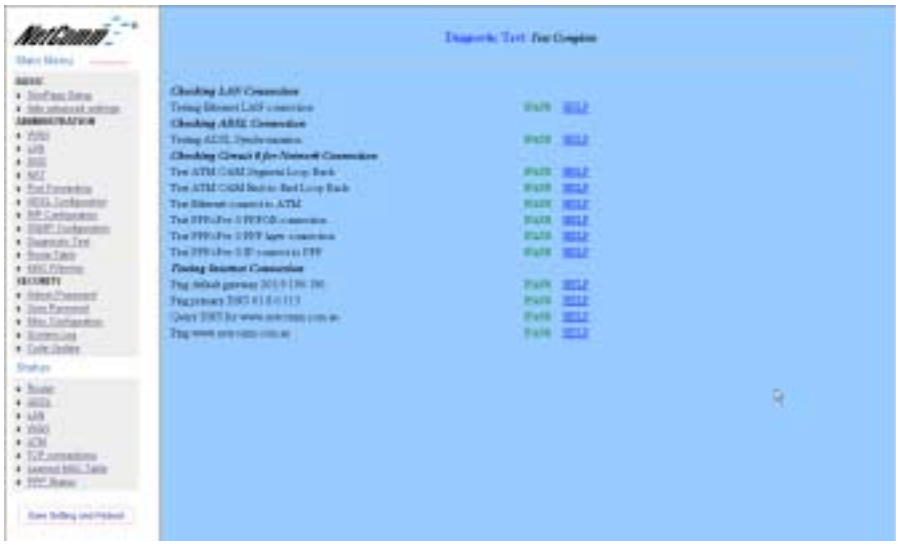
- V1: The listener receives the RIPv1 only.
- V2: The listener receives the RIPv2 only.
- V1+V2: This listener receives the both RIPv1 and RIPv2.

Supplier and Listener are based on section 4.1 "Compatibility Switch" in RFC 1723.

Current RIP Settings: This field displays the each interface's RIP status.

Diagnostic Test

The Diagnostic Test page shows the test results for the connectivity of the physical layer and protocol layer for both LAN and WAN sides.



Testing Ethernet LAN Connection: This test checks the Ethernet LAN interface connection.
Testing ADSL Synchronization: This test checks the ADSL showtime. If this test returns FAIL, all other tests will be skipped.
Test ATM OAM Segment Loop Back: This test sends ATM OAM F5 Segment loop-back request cells to the CO. This test will pass if response cell is received. Some service providers might not support this test. If this test fails consistently and the ADSL modem does not seem to be working, make sure the VPI and VCI are configured correctly.
Test ATM OAM End-to-End Loop Back: This test sends ATM OAM F5 End to End loop-back request cells to the CO. This test will pass if response cell is received. Some service providers might not support this test. If this test return FAIL consistently and the ADSL modem does not seem to be working, make sure the VPI and VCI are configured correctly.
Test Ethernet Connect to ATM: This test checks the ATM AAL5 module is loaded correctly.
Test PPPoE Connection: This test checks the PPPOE connection.
Test PPP Layer Connection: This test checks the PPP authentication.
Test IP Connect to PPP: This test checks a valid IP address assigned from the service provider. Please note that on some ADSL services this test may fail despite the fact that you have connected correctly.
Ping Primary DNS: This test checks the primary DNS can be reached through ping request. For example, Query DNS for www.netcomm.com.au
This performs a quick connectivity test to the NetComm website.

Note: on some ADSL services this test may fail despite you have connected correctly.

Route Table

The Route Table page displays routing table and allows the user to manually enter the routing entry. The routing table will display the routing status of Destination, Netmask, Gateway, and Interface. The interface br0 means the USB interface; lo0 means the loopback interface; and ppp1 means the PPP interface. The Gateway is the learned Gateway



Advanced

MAC Filtering

The MAC Filtering configuration page allows the user to set the configuration of IP filtering. Enable and disable MAC filtering by selecting the 'Yes' or 'No' radio buttons.



Source MAC: When the bridge filtering is enabled, enter the Source MAC address, select Block and click Add. Then all incoming WAN and LAN Ethernet packets matched with this source MAC address will be filtered out. If the Forward is selected, then the packets will be forwarded to the destination PC.

Destination MAC: When the bridge filtering is enabled, enter the Destination MAC address, select Block and click Add. Then all incoming WAN and LAN Ethernet packets matched with this destination MAC address will be filtered out. If the Forward is selected, then the packets will be forwarded to the destination PC.

Type: Enter the hexadecimal number for the Ethernet type field in Ethernet_II packets. For example, 0800 is for IP protocol.

0800 - IP Protocol

A5FF - Ethernet

Security

Admin Password

The Admin Password Configuration page allows the user to set the password for administrator.

The Admin password is the same as the FTP password and must be at least 8-characters long for the FTP function to work.



User Name: admin

Password (default): password

User Password

The User Password Configuration page allows the Admin user to set the password for the general user. When logged in as a general user you can view the basic status of the NB1300Plus4 but you can not make critical changes to the unit.



User Name: admin

Password (default): password

Misc Configuration

The Miscellaneous Configuration allows the user to set all the miscellaneous configurations.



HTTP Server Access: This field allows the user to configure the Web pages can be accessed from.

All: When this field is checked, it allows both WAN and LAN access to the Web pages.

Restricted LAN: This field allows the Web pages access from LAN side.

Restricted WAN Specified IP & Subnet Mask: This field allows the Web access from WAN side with a specify IP and subnet mask.

HTTP Server Port: This field allows the user to specify the port of the Web access. For example, when it is changed to 1001, the HTTP server address for the LAN/WAN access is http://192.168.1.1:1001.

FTP server: This field allows the user to enable or disable the FTP connection. If you want FTP access from the WAN side you must ensure there are no port forwards for port 21.

TFTP server: This field allows the user to enable or disable the TFTP connection.

DMZ: A DMZ (De-Militarized Zone) is added between a protected network and an external network, in order to provide an additional layer of security. When there is a suspected packet coming from WAN, the firewall will forward this packet to the DMZ host.

DMZ Host IP: The IP address of the DMZ host at LAN side.

DHCP Relay: If it is enabled, the DHCP requests from local PCs will forward to the DHCP server runs on the WAN side of a network. To have this function working properly, please disable the NAT to run on router mode only, disable the DHCP server on the LAN port, and make sure the routing table has the correct routing entry.

DHCP Target IP: The DHCP server runs on WAN side.

IGMP Proxy: Here is the global setting for IGMP Proxy. If it is enabled, then the enabled IGMP Proxy on WAN PVCs will be working. Otherwise, no WAN PVC can have IGMP Proxy working on it.

PPP connect on WAN access: If it is enabled, the PPP session will be automatically established when there is a packet wants to go out the WAN.

PPP Half Bridge: When the PPP Half Bridge is enabled, only one PC is able to access the Internet, and the DHCP server will duplicate the WAN IP address from the ISP to the local client PC. Only the PC with the WAN IP address can access the Internet. This function should only be used if one computer will be allowed to connect to the internet (E.G a Software firewall computer or Proxy server)

Q: What is the difference between PPP connect on WAN access and the Automatic Reconnect?

A: Some ISPs terminated the PPP session due to the inactivity. For the PPP connect on WAN access, the PPP will be automatically reconnected when an URL is entered in the browser (packet interested in going out the WAN). For the Automatic Reconnect, it will reconnect the PPP session whenever it is terminated by ISP.

System Log

The System Log page shows the events triggered by the system.



To clear the System Log simply click on the 'Clear Log' button.

To save the System Log, right click in the Log field and select "Select All" then right click again and select "Copy" then paste it to your text editor (Notepad is good).

The System Log records:

- DSL Layer
  - DSL Link detected
  - DSL Link connected
  - DSL Link disconnected
- ATM Layer
  - ATM detected
  - ATM connected
  - ATM disconnected
  - ATM setting up VPI/VCI
- PPP Layer
  - PPP authenticated
  - PPP invalid user name or password
  - PPP unable to connect with PPP server

Advanced

- IP Layer
  - IP protocol up
  - PPP IP address
  - PPP Gateway IP address PPP DNS Primary IP address
  - PPP DSN Secondary IP address

Code Update

The Code Update page allows the user to upload new firmware to the NB1300Plus4.



Advanced

To upload new firmware:

1. Download the latest firmware image from the NetComm website
2. Save the file to your Desktop or other location
3. Select the Browse button and locate the file saved in step 2
4. Click on the Update button to start the process
5. Once the upgrade has been completed the router will need to reboot.

Status

Router

The Router page shows the firmware versions and WAN and LAN interface status.



Firmware Version: This field displays the NetComm firmware version number.

Showtime Firmware Version: This field displays the NetComm firmware version number.

Graphical Interface Version: This field displays the Graphical User Interface version.

WAN: These fields display the IP address, Subnet Mask and MAC address for the WAN (ADSL) interface.

LAN: These fields display the IP address, Subnet Mask and MAC address for the LAN interface.

Number of Ethernet Devices Connected to the DHCP Server: This field displays the number of DHCP clients connected to the NB1300Plus4.

ADSL

The ADSL Status page shows the ADSL physical layer status.



ADSL Line Status: This field displays the ADSL connection process and status.

ADSL Modulation: This field displays the ADSL modulation status for G.dmt or T1.413.

ADSL Annex Mode: This field displays the ADSL annex modes for Annex A or Annex B.

ADSL Startup Attempts: This field displays the ADSL connection attempts after loss of showtime.

Elapsed Time: This field displays the time of the modem has been in operation.

SNR Margin: Amount of increased noise that can be tolerated while maintaining the designed BER (bit error rate). The SNR Margin is set by Central Office DSLAM. If the SNR Margin is increased, bit error rate performance will improve, but the data rate will decrease. Conversely, if the SNR Margin is decreased, bit error rate performance will decrease, but the data rate will increase.

Line Attenuation: Attenuation is the decrease in magnitude of the ADSL line signal between the transmitter (Central Office DSLAM) and the receiver (Client ADSL Modem), measured in dB. It is measured by calculating the difference in dB between the signal power level received at the Client ADSL modem and the reference signal power level transmitted from the Central Office DSLAM.

Errored Seconds: The error during Showtime (ADSL link), whenever, a given sec contains CRC error, that second will be declared error second.

Loss of Signal: This field displays the count of event of ADSL signal loss.

Loss of Frame: This field displays the count of event of ADSL frame loss.

CRC Errors: This field displays the number of transmit data frames containing CRC errors.

Data Rate: This field displays the ADSL data rate.

Latency: This field displays the latency modes for fast or interleave.

Advanced

LAN

The LAN page shows the information and status of LAN port, DHCP client table, Ethernet link and USB link.



LAN: These fields display the IP address, Subnet Mask and MAC address for the LAN interface.

Number of Ethernet Devices Connected to the DHCP Server:These fields display the number of connections to the DHCP server as well as the DHCP client table with the assigned IP addresses and MAC addresses.

Ethernet Link Status: This field displays the link up or down for the Ethernet.

USB Link Status: This field displays the link up or down for the USB.

WAN

The WAN Status page shows the information and status of WAN PVCs.



WAN: These fields display the IP address, Subnet Mask and MAC address for the WAN (ADSL) interface. Use the Virtual Circuit selection to selection different PVC for status display.

DHCP Release & Renew: This field allows the user to release and renew the WAN IP address in the WAN DHCP Client Enabled (dynamic) mode.

ATM

The ATM Status page shows all the statistics information of ATM cells.





TCP Status: The TCP Status page shows the statistics for all TCP connections.

Learned MAC Table

The Learned MAC Table page shows the current learned Bridge MAC table.



Aging Timeout: This field allows the user to enter the update period for the MAC table.

PPP

The PPP Status page shows the status of PPP for each PPP interface.



Advanced

PPP: These fields display the following information on each PPP interface:

- Connection Name (user defined)
- Interface (PVC)
- Mode (PPPoE or PPPoA)
- Status (Connected or Not Connected)
- Packets Sent
- Packets Received
- Bytes Sent
- Byte Received.

Connect and Disconnect: This field allows the user to manually connect/disconnect the PPP connection for each PPP interface. In another word, each PPP session can be connected and disconnected individually.

Save Settings and Reboot

The Save Settings and Reboot button allows the user to save the new configuration to the flash and reboot the system. When the configurations are changed via the Web pages, the new settings need to be saved into the flash, so it is necessary to go to this Save Settings page to save and reboot the system for the changes to be taken effect. After the Save and Reboot, you will be returned to the onepage setup.



*Note: **DO NOT** power the unit off or press the reset button again during the reboot process.*

Appendix A - Connection Instructions

Connect your NB1300Plus4 ADSL Modem via Ethernet

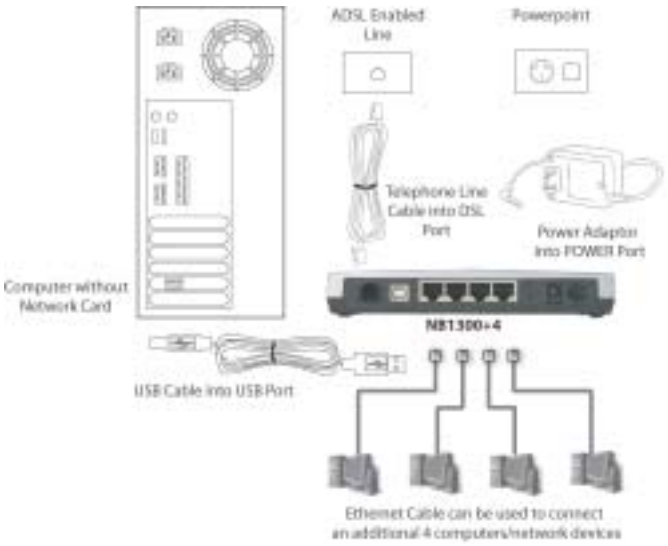
1. Connect your NB1300Plus4 to either a computer directly or a network hub or switch using cat5 ethernet cables. You need to ensure you are using the correct type of ethernet cable - i.e. straight through or crossover.



2. Connect the power pack to the NB1300Plus4 ADSL Modem and switch on the power switch.
3. Ensure that the connected port has a LAN led light on the NB1300Plus4.
4. Ensure that the computer you intend to use has an IP address in the same subnet as the NB1300Plus4 ADSL Modem. (e.g. the NB1300Plus4's default IP is 192.168.1.1 - your computer should be on 192.168.1.100 or similar.) If you have DHCP enabled on your computer, the NB1300Plus4 will assign your computer a suitable IP address.
5. Ensure that your computer has a LAN link light.
6. Connect one end of the ADSL phone line to the NB1300Plus4 ADSL Modem and the other end to the wall socket.
7. Additional network devices or computers can be connected to the remaining LAN ports.

Connect your NB1300Plus4 ADSL Modem via USB

1. Connect the power pack to the NB1300Plus4 ADSL Modem and switch on the power switch.



2. Install the USB driver (Windows 98/Me/2000/XP only, for Macintosh installation see appendix.)

   When you install the USB driver on your computer it creates a Virtual Ethernet Adapter, which can be configured in the same way as a Network Interface card with DHCP or static IP address. To install the USB driver please follow the steps below;

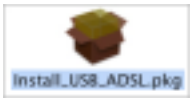
   a. Boot your machine into Windows 98/Me/2000/XP.
   b. Insert your NetComm NB1300Plus4 CD ROM into your CD-ROM drive.
   c. Plug power up to your NB1300Plus4 and switch ON.
   d. Plug a USB cable from the back of the unit into a spare USB socket on your computer.
   e. The Windows "Add New Hardware Wizard" should appear. Click Next to continue.
   f. Ensure the option "Search for the best driver…." is chosen and click Next.
   g. When prompted where you would like to look for the drivers choose "Specify location" and untick any other boxes. Then click the browse button to select the CD-ROM drive which you inserted you NetComm CD-ROM into. Then choose the 'USBdriver' folder.

3. Connect one end of the ADSL phone line to the NB1300Plus4 ADSL Modem and the other end to the wall socket.

4. In addition to using the USB connection, you my connect up to 4 additional network devices or computers.

Macintosh OS X USB Configuration

1. Close any running applications.
2. Execute the Install_USB_ADSL.pkg program.



3. OS X will then request you enter the passphrase for a user that has administration access to the computer. Enter the details and click on OK.



4. Click on Continue.



5. Select the drive that contains OS X and then click on Continue.



6. Click on Upgrade or Install to continue.



7. Installation of this software requires that you restart your computer when installation is complete. Click on Continue Installation to continue.



8. Click on Restart.
9. Connect the USB cable from the NB1300 into a spare SUB port on your computer.



10. Open System Preferences from the Dock.



11. Click on Network to display this window. Click on OK.



12. Select the Ethernet Adaptor (en1) from the Show box. Select the TCP/IP tab and select Using DHCP.



13. Click on Apply Now. Close the Network window and System Preferences.

Appendix B - Trouble Shooting

The following section gives details about troubleshooting issues for your NB1300Plus4 ADSL Modem. Problems are divided into different areas to assist you in finding the appropriate solution.

General Modem Operation

Before continuing, refer to the correct power up sequence to verify that your NB1300Plus4 ADSL Modem is operating.

Correct power up sequence

After you turn on your NB1300Plus4 ADSL Modem, the following sequence should occur:

1. When power is first applied, verify that both the Power LED and Ready LED are on.
2. The RDY LED will turn off after 5 seconds.
3. After approximately 10 seconds, verify that:
   - The RDY LED will flash which indicates that the modem is ready for use.
   - The LAN LED will only light when a ethernet cable is connected and a successful LAN connection is made.

If any of these conditions does not occur, refer to the appropriate section below.

PWR LED Not On

If the PWR and other LEDs are off when your ADSL modem is turned on:

- Make sure that the power cord is properly connected to your ADSL Modem and that the power supply adapter is also properly connected to a functioning power outlet.
- Check that you are using the 12 V AC power adapter supplied by NetComm for this product.

If the error persists, you have a hardware problem and should contact NetComm technical support.

Resetting the NB1300Plus4 ADSL Modem

To restore the factory default configuration settings without knowing the administration password or IP address, you must use the Default Reset button on the rear panel of the ADSL Modem.

1. Press and hold the Default Reset button for about 10 seconds.
2. Release the Default Reset button and wait for the Modem to reboot (which will take approximately one minute).
3. Once the RDY and WAN LEDs are flashing, the unit has finished rebooting and the factory defaults have been restored. Do not power off the modem or press reset again until these LEDs are flashing.

Web Based Interface

If you are unable to access the NB1300Plus4 ADSL Modem's Web Based Interface from a computer on your local network, check the following:

- Check the Ethernet connection between your computer and your NetComm ADSL Modem.
- Make sure your computer's IP address is on the same subnet as your ADSL Modem. If you are using the recommended addressing scheme, your computer's address should be in the range of 192.168.1.1 to 192.168.1.254.

Note: If your computer's IP address is shown as 169.254.x.x: Recent versions of Windows and MacOS will generate and assign an IP address if the computer cannot reach a DHCP server. These auto-generated addresses are in the range of 169.254.x.x. If your IP address is in this range, check the connection from the computer to your ADSL Modem and reboot your computer.

- If your ADSL Modem's IP address has been changed and you don't know the current IP address, reset your ADSL Modem's configuration to factory defaults. This will set the ADSL Modem's IP address to 192.168.1.1.
- Make sure your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click Refresh to be sure the Java applet is loaded.
- Try quitting the browser and launching it again.
- Make sure you are using the correct login information. The factory default login name is admin and the password is password. Make sure that **Caps Lock** is off when entering this information.

If your ADSL Modem does not save changes you have made in the Web Based Interface, check the following:

- When entering configuration settings, be sure to click the **Submit** button before moving to another menu or tab, or else your changes will be lost.
- Once all of the changes are made, click the **save settings** button to save your settings. The unit will then automatically reboot itself. Once completed, your modem is ready for use.

Click the **Refresh** or **Reload** button in your Web browser. The changes may have occurred, but the Web browser may be caching the old configuration settings. In this case clear your web browser cache and refresh again.

Internet / ISP Connection

ADSL link

If your ADSL Modem is unable to access the Internet, you should first determine whether you have an ADSL link with the service provider. The state of this connection is indicated with the WAN LED.

WAN LED is Yellow

If your WAN LED is yellow, then you have a good ADSL connection. You can be confident that the service provider has connected you line correctly and that your wiring is correct.

WAN LED is Blinking

If your WAN LED is blinking then your ADSL Modem is attempting to make an ADSL connection with the service provider. The LED should stop blinking and stay on within two minutes.

If the WAN LED does not stay on, disconnect all telephones on the line. If this solves the problem, reconnect the telephones one at a time, being careful to use a microfilter on each telephone. If the microfilters are connected correctly, you should be able to connect all your telephones.

If disconnecting telephones does not return the WAN LED to yellow, there may be a problem with your wiring. If the telephone company has tested the ADSL signal at your Network Interface Device (NID), then you may have poor quality wiring in your house.

Obtaining a WAN IP Address

If your ADSL Modem is unable to access the internet, and your WAN LED is yellow or blinking, you should determine whether your ADSL Modem is able to obtain a WAN IP address from the ISP.

Unless you have been assigned a static IP address, your ADSL Modem must request an IP address from the ISP. You can determine whether the request was successful using the browser interface.

To check the WAN IP address from the browser interface:

1. Launch your browser and select an external site such as www.netcomm.com.au
2. Access the Main Menu of the ADSL Modem's configuration at http://192.168.1.1
3. Under the **Router** menu, check that an IP address is shown for the WAN Port. I If nothing is shown, your ADSL Modem has not obtained an IP address from your ISP.

   If your ADSL Modem is unable to obtain an IP address from the ISP, the problem may be one of the following:

   - Your ISP may require a login program.
   - Ask your ISP whether they require PPP over Ethernet (PPPoE) or PPP over ATM (PPPoA) login.
   - If you have selected a login program, you may have incorrectly set the Service Name, User Name and Password. See "PPPoE or PPPoA", below.

- Your ISP may check for your computer's host name. Assign the computer Host Name of your ISP account to your ADSL Modem in the browser-based Setup Wizard.
- Your ISP only allows one MAC address to connect to Internet, and may check for your computer's MAC address. In this case, inform your ISP that you have bought a new network device, and ask them to use your ADSL Modem's MAC address.

PPPoE or PPPoA

The PPPoE or PPPoA connection can be debugged as follows:

1. Access the Main Menu of the ADSL Modem's configuration at http://192.168.1.1.
2. Under the **PPP** menu you can view the PPP configuration settings depending on your connection type.
3. If the PPP menu shows the PPP connection type as connected, the connection is up and working.
4. If there is no PPP connection listed in the menu, check your connection settings in the main menu.

If you cannot connect after several minutes, you may be using an incorrect Service Name, User Name or Password. There also may be a provisioning problem with your ISP.

Internet Browsing

If your ADSL Modem can obtain an IP address but your computer is unable to load any web pages from the Internet:

- Your computer may not recognize any DNS server addresses.

  A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses. Typically your ISP will provide the addresses of one or two DNS servers for your use. If you entered a DNS address during the modem's configuration, reboot your computer and verify the DNS address. Alternatively, you may configure your computer manually with DNS addresses, as explained in your operating system documentation.

- Your computer may not have the ADSL Modem configured as its TCP/IP gateway.

  If your computer obtains its information from the Modem by DHCP, reboot your computer and verify the modem's address.

Testing your TCP/IP Network Using a Ping Utility

Most TCP/IP terminal devices and ADSL Modems contain a ping utility that sends an echo request packet to a designated device. The device then responds with an echo reply. Troubleshooting a TCP/IP network is made very easy by using the ping utility in your computer.

Testing the LAN Path to Your ADSL Modem

You can ping the ADSL Modem from your computer to verify that the LAN path to your modem is working.

To ping the modem from a computer running Windows 95 or later:

1. From the Windows toolbar, click the Start button and select Run.
2. In the field provided, type Ping followed by the IP address of the ADSL Modem, as in this example:

   ```
   ping 192.168.1.1
   ```

3. Click OK.

   You should see a message like this one:

   ```
   Pinging <IP address> with 32 bytes of data
   ```

   If the path is working, you see this message:

   ```
   Reply from < IP address >: bytes=32 time=xx ms TTL=xxx
   ```

   If the path is not working, you see this message:

   ```
   Request timed out
   ```

If the path is not functioning correctly, you could have one of the following problems:

- Wrong physical connections
  - Make sure the LAN LED is on.
  - Check that the corresponding Link LEDs are on for your network interface card and for any hub ports that are connected to your computer and ADSL Modem.
- Wrong network configuration
  - Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer or workstation.
  - Verify that the IP address for your ADSL Modem and your computer are correct and that the addresses are on the same subnet.

Testing the Path from Your Computer to a Remote Device

After verifying that the LAN path works correctly, test the path from your computer to a remote device.

From the Windows run menu, type:

```
PING -n 10 <IP address>
```

where <IP address> is the IP address of a remote device such as your ISP's DNS server.

If the path is functioning correctly, replies as in the previous section are displayed. If you do not receive replies:

- Check that your computer has the IP address of your ADSL Modem listed as the default gateway. If the IP configuration of your computer is assigned by DHCP, this information will not be visible in your computer's Network Control Panel. Go to the **Run…** window and run **winipcfg**. Verify that the IP address of your ADSL Modem is listed as the default gateway.
- Check to see that the network address of your computer (the portion of the IP address specified by the netmask) is different from the network address of the remote device.

Appendix C - Glossary

ADSL: Asymmetric Digital Subscriber Line (ADSL), as its name indicates, is an asymmetrical data transmission technology with higher traffic rate downstream and lower traffic rate upstream. ADSL technology satisfies the bandwidth requirements of applications which demand asymmetric traffic, such as web surfing, file downloads, and telecommuting.

Bandwidth: The amount of data that can be transmitted in a fixed amount of time.

DHCP: Dynamic Host Configuration Protocol (DHCP) is a protocol for assigning dynamic IP Addresses to devices on a network. Dynamic Addressing means that a device can have a different IP Address each time it connects to the network.

DNS: Domain Name Server (DNS), translates domain names into IP Addresses. To help us recognize and remember domain names they are alphabetic in form, however, the Internet actually runs on numbered IP Addresses. DNS servers translate domain names into their respective IP Addresses.

Ethernet: One of the most common Local Area Network (LAN) standards. Ethernet uses a bus topology which supports a data transfer rate of 10 or 100 Mbps.

DMZ: In computer networks, a DMZ (demilitarized zone) is a computer host or small network inserted as a "neutral zone" between a company's private network and the outside public network. It prevents outside users from getting direct access to a server that has company data. A DMZ is an optional and more secure approach to a firewall and effectively acts as a proxy server as well.

Domain Name: A name that identifies one or more IP Addresses. For example, the domain name microsoft.com represents about a dozen IP Addresses. Domain names are used in URLs to identify particular Web pages. For example, in the URL http://www.pcwebopedia.com/index.html, the domain name is pcwebopedia.com.

Firewall: A security system used to enforce an access control policy between an organisation's networks and the Internet.

Gateway: A gateway is a network point that acts as an entrance to another network.

IPSec: Internet Protocol Security is a security standard for network transmission, which is often used for VPN connections. It provides authentication and packet encryption over the Internet.

LAN:	Local Area Network (LAN) is a computer network that spans a relatively small area. A system of LANs connected is called a wide area network (WAN).
MAC Address:	Media Access Control Address (MAC) is a hardware address that uniquely identifies each node of a network.
NAT:	Network Address Translation (NAT) is a routing protocol that allows global IP Addresses to be translated into multiple private IP Addresses for use on internal LAN networks. The explosion in the use of the Internet has created a critical problem for the Internet Assigned Numbers Authority (IANA) which is in charge of assigning IP Addresses to Internet users, ISPs etc. NAT is a technology that has been introduced to help maximize the utilization of assigned IANA and global IP Addresses.
PAP/CHAP:	Password Authentication Protocol and Challenge Handshake Authentication Protocol (PAP/CHAP). Most ISPs use either one for user identification. If your ISP doesn't support these two protocols, contact them for an authentication script.
PCI:	Peripheral Component Interconnect (PCI) is a specification introduced by Intel Corporation that defines a local bus system that allows up to 10 PCI-compliant expansion cards to be installed in the computer.
PPP:	Short for Point-to-Point Protocol, a communications protocol for transmitting information over standard telephone lines between devices from different manufacturers.
PPPoE:	Short for PPP over Ethernet, relying on two widely accepted standards, Ethernet and the Point-to-Point Protocol. PPPoE is a communications protocol for transmitting information over the Ethernet between devices from different manufacturers.
Router:	An Internet device that routes requests for information to other routers until the information's location is found and the data can be transmitted back to the origin of the request.
TCP/IP:	Short for Transmission Control Protocol and Internet Protocol, the suite of communications protocols that enable hosts on the Internet to connect and exchange streams of data.
MRU:	Maximum Receive Unit indicates the peer of PPP connection the maximum size of the PPP information field this device can be received. The default value is 1492 and is used in the beginning of the PPP negotiation. In the normal negotiation, the peer will accept this MRU and will not send packet with information field larger than this value.

MTU:	Maximum Transmission Unit indicates the network stack of any packet is larger than this value will be fragmented before the transmission. During the PPP negotiation, the peer of the PPP connection will indicates its MRU and will be accepted. The actual MTU of the PPP connection will be set to the smaller one of MTU and the peer's MRU. The default is value 1492.
MSS:	Maximum Segment Size is the largest size of data that TCP will send in a single IP packet. When a connection is established between a LAN client and a host in the WAN side, the LAN client and the WAN host will indicate their MSS during the TCP connection handshake. The default value is 1432.
UBR:	Short for Unspecified bit rate.
WAN:	Wide Area Network. A System of LANs connected by telephone lines and/or radio waves.

Registering your NetComm Product

To ensure that the conditions of your warranty are complied with, please go to the NetComm web site for quick and easy registration of your product at

www.netcomm.com.au

Alternatively, you can use a copy of the Warranty Registration Form on the following page and mail it to NetComm Limited, PO Box 1200, Lane Cove NSW 2066.

Contact Information

If you have any technical difficulties with your product, please do not hesitate to contact NetComm's Customer Support Department.

Email: support@netcomm.com.au

Fax: (02) 9424-2010

Web: www.netcomm.com.au

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Cut along the line

Warranty Registration Form

Date of Purchase .....

Name .....

Company .....

Address .....

..... Post Code .....

Tel No ( ) ..... Fax No ( ) .....

E-mail .....

The following information is vital for your warranty

Please make sure it's correct and complete.

Serial No .....

Model .....

Product Type:

- ☐ PC Card
- ☐ External
- ☐ Internal
- ☐ Other

! Make sure you fill this section in!

I intend to use this device at:

- ☐ Home
- ☐ School/College/University
- ☐ Business
- ☐ Government Office

Dealer's Name .....

Dealer's Address .....

..... Post Code .....

Tel No ( ) ..... Fax No ( ) .....

How did you find out about our products?

.....

.....

Product Warranty

The warranty is granted on the following conditions:

1. This warranty extends to the original purchaser (you) and is not transferable;
2. This warranty shall not apply to software programs, batteries, power supplies, cables or other accessories supplied in or with the product;
3. The customer complies with all of the terms of any relevant agreement with NetComm and any other reasonable requirements of NetComm including producing such evidence of purchase as NetComm may require;
4. The cost of transporting product to and from NetComm's nominated premises is your responsibility; and,
5. NetComm does not have any liability or responsibility under this warranty where any cost, loss, injury or damage of any kind, whether direct, indirect, consequential, incidental or otherwise arises out of events beyond NetComm's reasonable control. This includes but is not limited to: acts of God, war, riot, embargoes, acts of civil or military authorities, fire, floods, electricity outages, lightning, power surges, or shortages of materials or labour.
6. The customer is responsible for the security of their computer and network at all times. Security features may be disabled within the factory default settings. NetComm recommends that you enable these features to enhance your security.

The warranty is automatically voided if:

1. You, or someone else, use the product, or attempts to use it, other than as specified by NetComm;
2. The fault or defect in your product is the result of a voltage surge subjected to the product either by the way of power supply or communication line, whether caused by thunderstorm activity or any other cause(s);
3. The fault is the result of accidental damage or damage in transit, including but not limited to liquid spillage;
4. Your product has been used for any purposes other than that for which it is sold, or in any way other than in strict accordance with the user manual supplied;
5. Your product has been repaired or modified or attempted to be repaired or modified, other than by a qualified person at a service centre authorised by NetComm; and,
6. The serial number has been defaced or altered in any way or if the serial number plate has been removed.

Limitations of Warranty

The Trade Practices Act 1974 and corresponding State and Territory Fair Trading Acts or legalisation of another Government ("the relevant acts") in certain circumstances imply mandatory conditions and warranties which cannot be excluded. This warranty is in addition to and not in replacement for such conditions and warranties.

To the extent permitted by the Relevant Acts, in relation to your product and any other materials provided with the product ("the Goods") the liability of NetComm under the Relevant Acts is limited to, at the option of NetComm to:

- Replacement of the Goods; or
- Repair of the Goods; or
- Payment of the cost of replacing the Goods; or
- Payment of the cost of having the Goods repaired.

All NetComm ACN 002 490 486 products have a standard 12 months warranty from date of purchase. However some products have an extended warranty option (refer to packaging). To be eligible for the extended warranty you must supply the requested warranty information to NetComm within 30 days of the original purchase by registering on-line via the NetComm web site at www.netcomm.com.au.

NetComm reserves the right to request proof of purchase upon any warranty claim.

Connect and share a high-speed ADSL connection



KEY FEATURES

- Ethernet/USB ADSL Modem with full integrated Router
- 10/100 Ethernet and USB ports – usable simultaneously (now supports Mac OSX for USB)
- 10/100 4-Port Switch
- NAT Firewall security to protect your computers from Internet attack
- MicroFilter included so you can use your existing phone line
- Connect in 4 clicks with EasiConfig*
  *4 clicks refers to standard EasyConfig ISP profiles
- Fully ACA (A-Tick) & Telstra (IP1149) approved – compatible with all major ISPs and Operating Systems*
  *USB is only supported in Windows® 98/ME/2000/XP and Mac OSX

3 YEAR WARRANTY*

1 year warranty out of the box. Extra 2 years **FREE** with online registration at **www.netcomm.com.au** *Conditions apply, registration online

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Product Code: NB13WG4