NetComm®
Broadband Solutions

Quick Start Guide

NB1
ADSL2+ Modem Router

Contents

Overview

Thank you for purchasing the NetComm NB1 ADSL/ADSL2 Modem Router. NetComm brings you the Next Generation of ADSL technology with ADSL-2*, which boosts ADSL's performance, improves interoperability, and supports new applications, services and deployment conditions.

NetComm's implementation of ADSL-2* and ADSL-2+* ensures that the NB1 operates with existing ADSL services while delivering optimal performance in all modes of operation. Powered by the latest ADSL-2* TI chipset, NetComm's NB1 increases downstream data rates by up to 50% (12Mbps) and 100% (25Mbps) for ADSL2 Plus* mode ensuring that you can surf the net or download your files quicker than ever before.

Security is a key issue with Broadband users and NetComm's NB1 does not leave you exposed. Employing the latest Active Firewall technology, the NB1 checks every packet of data that comes in ensuring your defences are rock-solid against hackers, unauthorised entries, probes and even Denial of Service attacks. What's more, the NB1 is equipped with a VPN pass-through feature allowing you to use a standard VPN client for Point-to-Point communication even while your Firewall is active.

The NB1 delivers the connection versatility needed to cater for today's ADSL users. You can simply attach the NB1 to a single PC via the Ethernet port. Alternatively, should you wish to share your Internet connection, the NB1 is equipped with an in-built Router which will support multiple PCs with the addition of device such as a NetComm 5- or 8-port Network Switch.

The NB1's Port Forwarding and UPnP functions have made it easier for today's Internet users to configure and setup the myriad of Network Port Rules needed by Internet applications such as On-Line Gaming, Peer-To-Peer file sharing and Messenger services to operate. NB1 has a number of pre-configured rules for several games, just click on the game you wish to play on-line and the rest is done for you.

Added to this, the NB1 introduces a QoS (Quality of Service) feature that gives you control over which types of outgoing data are given priority by the router. With QoS you can tailor your router settings to ensure that you can keep gaming or browsing even though your upstream bandwidth may be saturated by applications such as Peer-To-Peer file sharing.

* Your ISP must support and provide you with an ADSL-2 or ADSL-2+ service for these features to be available. This product will operate as a standard ADSL Modem Router when an ADSL-2 service is not available.

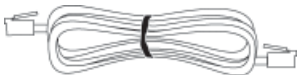
This reference manual assumes that the reader has an installed Ethernet card in the computer to be connected and has basic to intermediate computer and Internet skills. However, basic Computer Networking, Internet, and Firewall technology information is available from the NetComm Web site. See www.netcomm.com.au.

Note that due to the fact that the NB1 is an adaption of the NB5 multi-port router, several functions belonging to the NB5 including LAN Groups are still represented by screens in the NB1 firmware. These screens to not have a corresponding function in this model which will be noted in the manual where applicable.

NB1 Package Contents

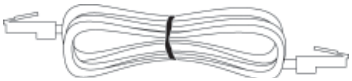
Your NB1 Package contains the following items:

- The NB1 Modem Router



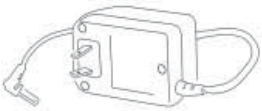
- Telephone Cable (RJ-11)

- Driver and Manual CD



- CAT-5 UTP Straight Ethernet Network Cable (RJ-45)

- NB1 Quick Start Guide and Package Contents Note



- Power Adaptor (AC 15V)

If any of the above items are damaged or missing, please contact your dealer immediately.

Minimum System Requirements

Before continuing with the installation of your NB1, please confirm that you comply with the minimum system requirements.

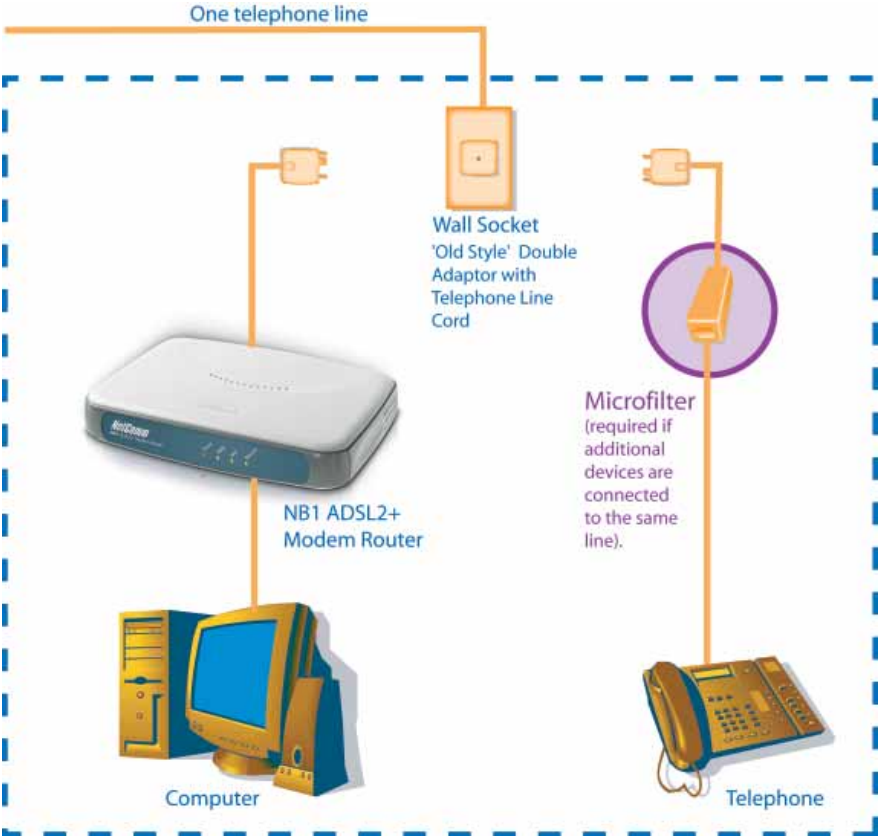
- Pentium® MMX 233MHz
- A CD-ROM Drive
- Ethernet card installed with TCP/IP Protocol
- OS independent for Ethernet
- Web Browser support:
  - Microsoft Internet Explorer 5.0 (or later versions)
  - Netscape® Navigator 4.0 (or later versions)
  - Most popular browsers

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.

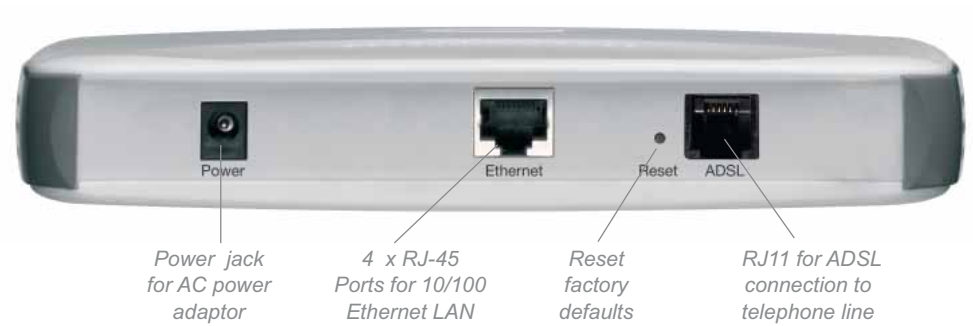


LED Indicators

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

Label	Status	Indicates
Power	On	Power is on.
	Off	Power is off.
ADSL	On	A valid ADSL connection.
	Flashing	An active WAN session.
PPP	Flashing	Trying to authenticate with ISP's PPP server.
	On	PPP link is up.
	Off	No PPP link available.
Ethernet	Flashing	Flashes when data is being sent or received on the Ethernet (LAN) connection.
	On	Indicates a link to your LAN or Network card is active.
	Off	Indicates no link to your LAN.

Back Panel Ports



Rear Panel of the NB1

Power	Connect the Power Adaptor that comes with your package.
Ethernet	1 x 10/100 Base-T Ethernet jack (RJ-45) to connect to your Ethernet Network card or Ethernet Hub / Switch.
Reset	To reset your ADSL Router to factory default settings. (All customised settings that you have saved will be lost!) Please refer to the section below on how to use the reset function.
ADSL	Telephone jack (RJ-11) to connect to your Telephone Wall Socket (ADSL line).

Restoring Factory Defaults

This feature will reset the Modem to its factory default configuration. Occasions may present themselves where you need to restore the factory defaults on your modem. Typical situations are:

- You have lost your username and password and are unable to login to the modem.
- You have purchased the modem from someone else and need to reconfigure the device to work with your ISP.
- You are asked to perform a factory reset by a member of the NetComm Support staff.

In order to restore your modem to its factory default settings, please follow these steps:

- Ensure that your Modem is powered on (for at least 10 seconds).
- Use a paper clip or a pencil tip to depress the reset button for ten seconds and release. At this point, the reset is in progress. Do not power off the unit at this point.
- When indicator lights return to steady green, reset is complete. The default settings are now restored. The entire process takes about 45 seconds to complete.
- Once you have reset the modem to its default settings you will be able to access the device's configuration web interface using http://192.168.1.1 with username 'admin' and password 'admin'.

Default Settings

LAN (Management)

Field	Setting Details
Static IP Address:	192.168.1.1 *
Subnet Mask:	255.255.255.0 *
Default Gateway:	blank

WAN (Internet)

Field	Setting Details
User Name:	username@isp
Password:	****
Protocol:	PPPoE
VPI:	8 *
VCI:	35 *
IP Address:	192.168.1.1 *
Subnet Mask:	255.255.255.0 *
Default Gateway:	0.0.0.0 *

Modem Access

Field	Setting Details
User Name:	admin
Password:	admin

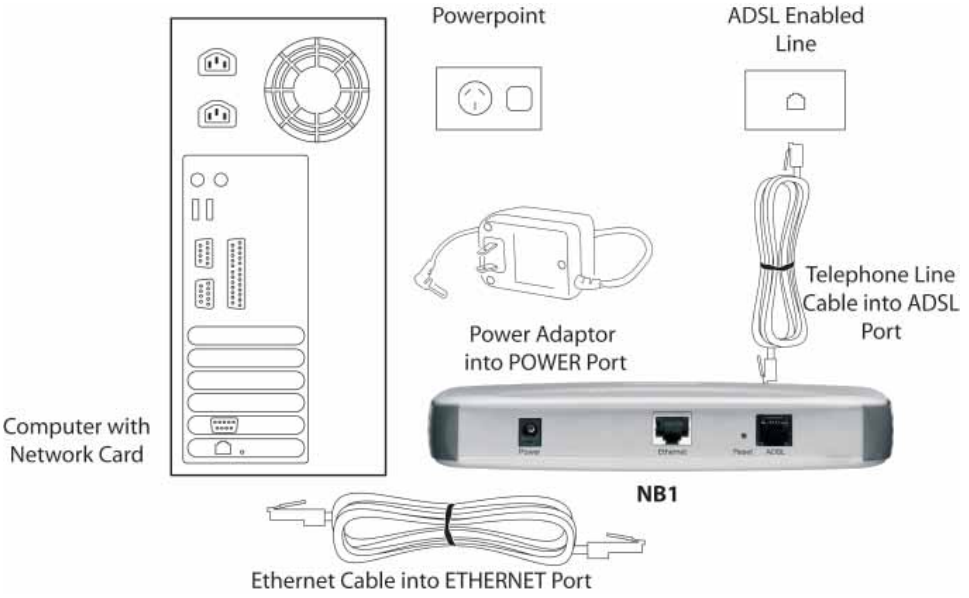
* **Default Setting.** Although in most cases you will not be required to alter these default settings for your NB1, your ISP may identify specific settings to enable connection to their service. Please refer to your ISP or Network Administrator for further information.

Connecting your NB1

The NB1 is connected via an Ethernet cable.

To connect to your NB1, you will need to have an available Ethernet Port present on your Computer/Notebook or on your network hub or switch.

1. Connect your NB1 to either a computer directly or a network hub or switch using a CAT5 ethernet cable.
2. Connect the power pack to the ADSL Modem and switch on the power switch.
3. Ensure that there is a ETHERNET link light on the NB1.



4. Ensure that the computer you intend to use has an IP address in the same sub-net as the NB1 ADSL Modem. (e.g. the NB1'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 NB1 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 NB1 ADSL port and the other end to the ADSL-enabled line wall socket.

Configuring your NB1

You will need to log directly into the configuration page of the modem and configure the basic settings for your Internet connection. Your ISP should provide you with the necessary information to complete this step.

The settings that you most likely need to change to access the Internet are grouped onto a single EasyConfig page.

To configure your modem follow the steps below:

Note: Ensure that your PC is setup as a DHCP client. Refer to the Computer Hardware Configuration section for instructions on how to set this up with different Operating Systems.

1. Insert the CD into your CD-ROM drive. An autorun screen will appear. Click on **Configure Modem.**

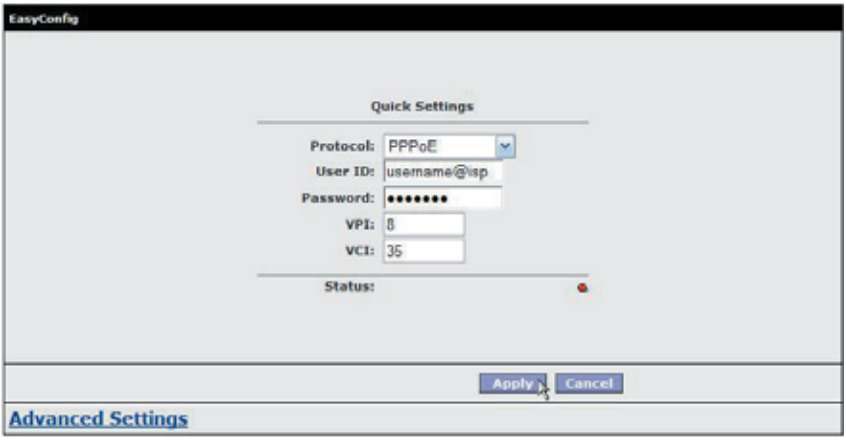
   (Alternatively, if the CD-ROM is not available, you can open a web browser and type http://192.168.1.1 in the location bar to access the modem's EasyConfig setup screen directly.)

2. The login page will be displayed. Enter the modem's username and password.

   The default username is **admin**.
   The default password is **admin**.

   Click on **Log In**.

3. The EasyConfig page will be displayed.



4. Check with your ISP what Protocol your modem needs to use to connect to the Internet. If unsure, leave the default selection of PPPoE.
5. In the User ID field, enter the Username that your ISP has provided. In the password field, enter the password that your ISP has given you.

Note: If your ISP has provided you with Static addressing details you will need to access the Advanced Settings of your modem to configure these. Please refer to the section on Advanced Settings in the User Guide on the CD ROM for instructions.

6. The default VPI / VCI settings for most connections is 8 / 35 in Australia. Do not change these unless your ISP has instructed you to do so.
7. Click on the Apply button to save the settings you have entered. The modem will automatically reboot. Refresh the web page after 20 seconds.
8. If the settings you entered were correct and you have an ADSL connection established the Status light will change to green.
9. You should now be able to access the Internet with a web browser, email client or other Internet application.
10. If the status light remains red after 45 seconds and you have refreshed your web page several times, check the following:
    - ADSL Link light on your modem is solid green; If not, you do not have an ADSL connection established. Contact your ISP who will assist in resolving this.
    - If you have a solid green light on your modem for the ADSL Link, but you can't access the Internet, check that the username / password you entered are correct and try again;
    - If the above two suggestions don't resolve the issue, please contact your ISP;

TIP: To test your Internet connection while the modem is attempting to apply the settings, you can open a DOS prompt (Start > Run > cmd) and execute a continual ping command to a public server's IP address on the Internet. Once you receive a reply from the server you know that you are connected. This can take up to 30 seconds. e.g: c:/ ping 210.0.111.111 -t

Computer Hardware Configuration

This section provides instructions for configuring the TCP/IP (Network) settings on your computer to work with your Modem. These steps are only required if you are having trouble accessing your Modem.

Windows® XP PCs

1. In the Windows task bar, click the **Start** button, and then click **Control Panel**.
2. Click on **Network & Internet Connections** icon. (Category mode only).
3. Click the **Network Connections** icon.
4. In the LAN or High-Speed Internet window, right-click on the icon corresponding to your network interface card (NIC) and select **Properties**. (Often, this icon is labelled **Local Area Connection**).
5. The Local Area Connection dialog box displays with a list of currently installed network items. Ensure that the check box to the left of the item labelled **Internet Protocol (TCP/IP)** is checked. Select **Internet Protocol TCP/IP** and click on **Properties**.
6. In the Internet Protocol (TCP/IP) Properties dialog box, click the radio button labelled **Obtain an IP address automatically**. Also click the radio button labelled **Obtain DNS server address automatically**.
7. Click **OK** twice to confirm your changes, and close the **Control Panel**.

Windows 2000 PCs

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network and Dial-up Connections** icon.
3. In the **Network and Dial-up Connections** window, right-click the **Local Area Connection** icon, and then select **Properties**.
4. In the **Local Area Connection Properties** dialog box, select Internet Protocol (TCP/IP), and then click Properties
5. In the **Internet Protocol (TCP/IP) Properties** dialog box, click the radio button labelled Obtain an IP address automatically. Also click the radio button labelled Obtain DNS server address automatically.
6. Click **OK** twice to confirm and save your changes, and then close the **Control Panel**.

Windows Me PCs

1. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Click on **View All Control Panel Options.**
3. Double-click the **Network** icon.
4. The **Network Properties** dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 10.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click **Add**...
6. In the **Select Network Component Type** dialog box, select **Protocol**, and then click **Add**...

7. Select Microsoft in the **Manufacturers** box.
8. Select Internet Protocol (TCP/IP) in the **Network Protocols** list, and then click **OK**. You may be prompted to install files from your Windows ME installation CD or other media. Follow the instructions to install the files. If prompted, click **OK** to restart your computer with the new settings.

   Next, configure the PC to accept IP information assigned by the modem:
9. Follow steps 1 – 4 above..
10. In the **Network Properties** dialog box, select TCP/IP, and then click Properties. If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
11. In the **TCP/IP Settings** dialog box, click the radio button labelled **Obtain an IP address automatically**.
12. Click **OK** twice to confirm and save your changes, and then close the **Control Panel**.

Windows 95, 98 PCs

First, check for the IP protocol and, if necessary, install it:

1. In the Windows task bar, click the **Start** button, point to **Settings**, and then click **Control Panel**.
2. Double-click the **Network** icon.
3. The **Network** dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled. Skip to step 9.
4. If TCP/IP does not display as an installed component, click Add… The **Select Network Component Type** dialog box displays.
5. Select Protocol, and then click Add… The **Select Network Protocol** dialog box displays.
6. Click on Microsoft in the **Manufacturers** list box, and then click TCP/IP in the **Network Protocols** list box.
7. Click **OK** to return to the **Network** dialog box, and then click **OK** again. You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
8. Click **OK** to restart the PC and complete the TCP/IP installation.

   Next, configure the PCs to accept IP information assigned by the Modem:
9. Follow steps 1 – 3 above.
10. Select the network component labelled **TCP/IP**, and then click **Properties**. If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.
11. In the **TCP/IP Properties** dialog box, click the **IP Address** tab.
12. Click the radio button labelled **Obtain an IP address automatically**.
13. Click **OK** twice to confirm and save your changes. You will be prompted to restart Windows.
14. Click **Yes**.

Note: For detailed information regarding the advanced features of this product, refer to the Advanced Settings sections.

Appendix A: Specification

ADSL/ATM SUPPORT

- ANSI T1.413 issue 2
- ITU-T G.992.1 (G.dmt) and G.992.2 (G.lite) compliant
- ADSL2/2+, G.992.3/G.992.5
- Rate Adaptive modem at 32 Kbps steps
- Dynamic Adaptive Equalisation to improve Carrier's service area
- Bridge Tap Mitigation support
- Turbo DSL support improving packet throughout performance by 3 times
- ATM Layer with Traffic shaping QoS Support (UBR, CBR, VBR-rt, VBR-nrt)
- AAL ATM Attributes - AAL5
- Multiple PVC up to 8 support
- Spectral compatibility with POTS
- F5 OAM Loopbacks/Send and Receive

ENCAPSULATION SUPPORT

- RFC2684 Bridged and Routed LLC and VC Mux Support
- RFC2364 PPPoA Client Support
- RFC2516 PPPoE Client Support
- RFC2225/RFC1577 Classical IP Support
- Transparent Bridge Support
- PAP/CHAP/MS-CHAP for Password Authentication Support

NETWORK SUPPORT

- Port Forwarding rules for Popular Games/Applications
- Static IP, Dynamic RIP Routing Support
- IP/TCP/UDP/ICMP/ARP/RARP Application Support
- Network Address Translation (NAT)
- Port Mapping/Forwarding
- IGMP Multicast
- SNTP
- NAT Application Level Gateway for Popular Applications
- DHCP Server/Relay/Client
- DNS Relay Agent
- DMZ Support
- Single session IP Sec and PPTP/L2TP VPN pass-through support
- PPP Always on with configurable timeout

VoIP

- SIP version 1 & 2, H.323, MGCP
- QoS support for voice packets

SECURITY

- NAT for Basic Firewall and sharing
- Packet Filtering Firewall Support
- Stateful Packet Inspection Support
- Protection against Denial of Service attacks
- Password Authentication to Modem

MANAGEMENT SUPPORT

- Web-based HTTP management GUI (LAN or Remote)
- TFTP/FTP Support For Firmware Upgrade
- Web-based Firmware Upgrade (Local)
- Soft Factory Reset Button via Web GUI
- Diagnostic Test (DSL, OAM, Network, Ping Test)
- Telnet/CLI (Read Only)
- SNMP
- Syslog Support

HARDWARE

- Texas Instrument TNETD7300 Single Chip Network Processor/AFE/Line Driver Chipset
- Dying Gasp Support
- A-Tick approval N367

PLATFORM SUPPORT

- For Ethernet – OS Independent: includes Windows®, Mac, Linux and UNIX

LED INDICATORS

- 1 x PPP LED
- 1 x Power LED
- 1 x ADSL Link Status LED
- 1 x Ethernet Link/Activity Status LED

Appendix B: Cable Connections

This cable information is provided for your reference only. Please ensure you only connect the appropriate cable into the correct socket on either this product or your computer.

If you are unsure about which cable to use or which socket to connect it to, please refer to the hardware installation section in this manual. If you are still not sure about cable connections, please contact a professional computer technician or NetComm for further advice.

RJ-45 Network Ports

RJ-45 Network Ports can connect any networking devices that use a standard LAN interface, such as a Hub/Switch Hub or Router. Use unshielded twisted-pair (UTP) or shield twisted-pair (STP) cable to connect the networking device to the RJ-45 Ethernet port. Depending on the type of connection, 10Mbps or 100Mbps, use the following Ethernet cable, as prescribed.

10Mbps: Use EIA/TIA-568-100-Category 3, 4 or 5 cable.

100Mbps: Use EIA/TIA-568-100-Category 5 cable.

Note: To prevent loss of signal, make sure that the length of any twisted-pair connection does not exceed 100 metres.

RJ-45 Connector Pin Assignment	Normal Assignment
1	Input Receive Data +
2	Input Receive Data -
3	Output Transmit Data +
6	Output Transmit Data -
4,5,7,8	Not used

Figure 1

Figures 3 and 4 illustrate the use of straight-through and crossover twisted pair cables along with the connector.

RJ-45 plug attached to cable

Figure 2

Straight and crossover cable configuration

There are two types of the wiring: Straight-Through Cables and Crossover Cables. Category 5 UTP/STP cable has eight wires inside the sheath. The wires form four pairs. Straight-Through Cables has same pinouts at both ends while Crossover Cables has a different pin arrangement at each end.

In a straight-through cable, wires 1,2,3,4,5,6,7 and 8 at one end of the cable are still wires 1~8 at the other end. In a crossover cable, the wires of 1,2,3,6 are reversed so that wire 1 become 3 at the other end of the cable, 2 becomes 6, and so forth.

To determine which wire is wire 1, hold the RJ-45 cable tip with the spring clip facing towards the ground and the end pointing away from you. The copper wires exposed upwards to your view. The first wire on the far left is wire 1. You can also refer to the illustrations and charts of the internal wiring on the following page.

Straight-Through Cabling

Figure 3

Wire	Becomes
1	1
2	2
3	3
6	6

Cross-Over Cabling

Figure 4

Wire	Becomes
1	3
2	6
3	1
6	2

Note: To prevent loss of signal, make sure that the length of any twisted-pair connection does not exceed 100 metres.

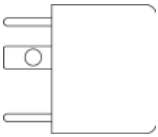
RJ11 connector and cable

An RJ-11 connector is the small, modular plug used for most analog telephones. It has six pin slots in the head, but usually only two or four of them are used.

RJ-11 Connector Pin Assignment	Normal Assignment
1	Not Connected
2	Not connected
3	Line
4	Line
5	Not Connected
6	Not Connected

Figure 5

605 to RJ-11 adapter



The 605 to RJ-11 adaptor is provided to comply with the older 610 Telstra wall socket. The 605 to RJ-11 adapter may be used to convert the supplied RJ-11 cable, if the older connection is required.

Appendix C: Glossary

10BASE-T	A designation for the type of wiring used by Ethernet networks with a data rate of 10 Mbps. Also known as Category 3 (CAT 3) wiring. See also data rate, Ethernet.
100BASE-T	A designation for the type of wiring used by Ethernet networks with a data rate of 100 Mbps. Also known as Category 5 (CAT 5) wiring. See also data rate, Ethernet.
ADSL	Asymmetric Digital Subscriber Line. The most commonly deployed type of DSL for home users. The term asymmetrical refers to its unequal data rates for downloading and uploading (the download rate is higher than the upload rate). The asymmetrical rates benefit home users because they typically download much more data from the Internet than they upload.
analog	Of data, having a form is analogous to the data's original waveform. The voice component in DSL is an analog signal. See also digital.
ATM	Asynchronous Transfer Mode A standard for high-speed transmission of data, text, voice, and video, widely used within the Internet. ATM data rates range from 45 Mbps to 2.5 Gbps. See also data rate.
authenticate	To verify a user's identity, such as by prompting for a password.
binary	The "base two" system of numbers, that uses only two digits, 0 and 1, to represent all numbers. In binary, the number 1 is written as 1, 2 as 10, 3 as 11, 4 as 100, etc. Although expressed as decimal numbers for convenience, IP addresses in actual use are binary numbers; e.g., the IP address 209.191.4.240 is 11010001.10111111.00000100.11110000 in binary. See also bit, IP address, network mask.
bit	Short for "binary digit," a bit is a number that can have two values, 0 or 1. See also binary.
bps	bits per second
bridging	Passing data from your network to your ISP and vice versa using the hardware addresses of the devices at each location. Bridging contrasts with routing, which can add more intelligence to data transfers by using network addresses instead. The My ADSL Modem can perform both routing and bridging. Typically, when both functions are enabled, the device routes IP data and bridges all other types of data. See also routing.
broadband	A telecommunications technology that can send different types of data over the same medium. DSL is a broadband technology.
Broadcast	To send data to all computers on a network.

CO	Central Office A circuit switch that terminates all the local access lines in a particular geographic serving area; a physical building where the local switching equipment is found. xDSL lines running from a subscriber's home connect at their serving central office.
DHCP	Dynamic Host Configuration Protocol DHCP automates address assignment and management. When a computer connects to the LAN, DHCP assigns it an IP address from a shared pool of IP addresses; after a specified time limit, DHCP returns the address to the pool.
DHCP relay	Dynamic Host Configuration Protocol relay. A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the My ADSL Modem's interfaces can be configured as a DHCP relay. See DHCP.
DHCP server	Dynamic Host Configuration Protocol server. A DHCP server is a computer that is responsible for assigning IP addresses to the computers on a LAN. See DHCP.
digital	Of data, having a form based on discrete values expressed as binary numbers (0's and 1's). The data component in DSL is a digital signal. See also analog.
DNS	Domain Name System. The DNS maps domain names into IP addresses. DNS information is distributed hierarchically throughout the Internet among computers called DNS servers. When you start to access a web site, a DNS server looks up the requested domain name to find its corresponding IP address. If the DNS server cannot find the IP address, it communicates with higher-level DNS servers to determine the IP address. See also domain name.
domain name	A domain name is a user-friendly name used in place of its associated IP address. For example, www.globespan.net is the domain name associated with IP address 209.191.4.240. Domain names must be unique; their assignment is controlled by the Internet Corporation for Assigned Names and Numbers (ICANN). Domain names are a key element of URLs, which identify a specific file at a web site, e.g., http://www.globespan.net/index.html. See also DNS.
download	To transfer data in the downstream direction, i.e., from the Internet to the user.
DSL	Digital Subscriber Line A technology that allows both digital data and analog voice signals to travel over existing copper telephone lines.
Ethernet	The most commonly installed computer network technology, usually using twisted pair wiring. Ethernet data rates are 10 Mbps and 100 Mbps. See also BASE-T,100BASE-T, twisted pair.

Filtering	To screen out selected types of data, based on filtering rules. Filtering can be applied in one direction (upstream or downstream), or in both directions.
filtering rule	A rule that specifies what kinds of data a routing device will accept and/or reject. Filtering rules are defined to operate on an interface (or multiple interfaces) and in a particular direction (upstream, downstream, or both).
Firewall	Any method of protecting a computer or LAN connected to the Internet from intrusion or attack from the outside. Some firewall protection can be provided by packet filtering and Network Address Translation services.
FTP	File Transfer Protocol - A program used to transfer files between computers connected to the Internet. Common uses include uploading new or updated files to a web server, and downloading files from a web server.
GGP	Gateway to Gateway Protocol. An Internet protocol that specifies how gateway routers communicate with each other.
Gbps	Abbreviation for Gigabits (GIG-uh-bits) per second, or one billion bits per second. Internet data rates are often expressed in Gbps.
GRE	Generic Routing Encapsulation. TCP/IP protocol suite, transport layer encapsulation protocol.
hop	When you send data through the Internet, it is sent first from your computer to a router, and then from one router to another until it finally reaches a router that is directly connected to the recipient. Each individual "leg" of the data's journey is called a hop.
hop count	The number of hops that data has taken on its route to its destination. Alternatively, the maximum number of hops that a packet is allowed to take before being discarded , See also TTL.
host	A device (usually a computer) connected to a network.
HTTP	Hyper-Text Transfer Protocol HTTP is the main protocol used to transfer data from web sites so that it can be displayed by web browsers. See also web browser
ICMP	Internet Control Message Protocol An Internet protocol used to report errors and other network-related information. The ping command makes use of ICMP.
IGMP	Internet Group Management Protocol An Internet protocol that enables a computer to share information about its membership in multicast groups with adjacent routers. A multicast group of computers is one whose members have designated as interested in receiving specific content from the others. Multicasting to an IGMP group can be used to simultaneously update the address books of a group of mobile computer users or to send company newsletters to a distribution list.

in-line filter	See Microfilter
Internet	The global collection of interconnected networks used for both private and business communications.
intranet	A private, company-internal network that looks like part of the Internet (users access information using web browsers), but is accessible only by employees.
IP	See TCP/IP.
IP address	Internet Protocol address The address of a host (computer) on the Internet, consisting of four numbers, each from 0 to 255, separated by periods, e.g., 209.191.4.240. An IP address consists of a network ID that identifies the particular network the host belongs to, and a host ID uniquely identifying the host itself on that network. A network mask is used to define the network ID and the host ID. Because IP addresses are difficult to remember, they usually have an associated domain name that can be specified instead. See also domain name, network mask.
ISP	Internet Service Provider A company that provides Internet access to its customers, usually for a fee.
LAN	Local Area Network A network limited to a small geographic area, such as a home, office, or small building.
LED	Light Emitting Diode An electronic light-emitting device. The indicator lights on the front of the My ADSL Modem are LEDs.
MAC address	Media Access Control address The permanent hardware address of a device, assigned by its manufacturer. MAC addresses are expressed as six pairs of characters.
mask	: See network mask.
Mbps	Abbreviation for Megabits per second, or one million bits per second. Network data rates are often expressed in Mbps.
Microfilter	In splitterless deployments, a microfilter is a device that removes the data frequencies in the DSL signal, so that telephone users do not experience interference (noise) from the data signals. Microfilter types include in-line (installs between phone and jack) and wall-mount (telephone jack with built-in microfilter). See also splitterless.
NAT	Network Address Translation A service performed by many routers that translates your network's publicly known IP address into a Private IP address for each computer on your LAN. Only your router and your LAN know these addresses; the outside world sees only the public IP address when talking to a computer on your LAN.
NAT rule	A defined method for translating between public and private IP addresses on your LAN.

network	A group of computers that are connected together, allowing them to communicate with each other and share resources, such as software, files, etc.A network can be small, such as a LAN, or very large, such as the Internet.
network mask	A network mask is a sequence of bits applied to an IP address to select the network ID while ignoring the host ID. Bits set to 1 mean "select this bit" while bits set to 0 mean "ignore this bit." For example, if the network mask 255.255.255.0 is applied to the IP address 100.10.50.1, the network ID is 100.10.50, and the host ID is 1. See also binary, IP address, subnet
NIC	Network Interface Card An adapter card that plugs into your computer and provides the physical interface to your network cabling, which for Ethernet NICs is typically an RJ-45 connector. See Ethernet, RJ-45.
packet	Data transmitted on a network consists of units called packets. Each packet contains a payload (the data), plus overhead information such as where it came from (source address) and where it should go (destination address).
ping	Packet Internet (or Inter-Network) Groper A program used to verify whether the host associated with an IP address is online. It can also be used to reveal the IP address for a given domain name.
port	A physical access point to a device such as a computer or router, through which data flows into and out of the device.
POTS	Plain Old Telephone Service Traditional analog telephone service using copper telephone lines. Pronounced pots. See also PSTN.
POTS splitter	See splitter.
PPP	Point-to-Point Protocol A protocol for serial data transmission that is used to carry IP (and other protocol) data between your ISP and your computer. The WAN interface on the My ADSL Modem uses two forms of PPP called PPPoA and PPPoE. See also PPPoA, PPPoE.
PPPoA	Point-to-Point Protocol over ATM One of the two types of PPP interfaces you can define for a Virtual Circuit (VC), the other type being PPPoE. You can define only one PPPoA interface per VC.
PPPoE	Point-to-Point Protocol over Ethernet One of the two types of PPP interfaces you can define for a Virtual Circuit (VC),the other type being PPPoA. You can define one or more PPPoE interfaces per VC.
protocol	A set of rules governing the transmission of data. In order for a data transmission to work, both ends of the connection have to follow the rules of the protocol.

remote	In a physically separate location. For example, an employee away on travel who logs in to the company's intranet is a remote user.
RIP	Routing Information Protocol The original TCP/IP routing protocol. There are two versions of RIP: version and version II.
RJ-11	Registered Jack Standard-11 The standard plug used to connect telephones, fax machines, modems, etc. to a telephone jack. It is a 6-pin connector usually containing four wires.
RJ-45	Registered Jack Standard-45 The 8-pin plug used in transmitting data over phone lines. Ethernet cabling usually uses this type of connector.
routing	Forwarding data between your network and the Internet on the most efficient route, based on the data's destination IP address and current network conditions. A device that performs routing is called a router.
rule	See filtering rule, NAT rule.
SDNS	Secondary Domain Name System (server) A DNS server that can be used if the primary DSN server is not available. See DNS.
SNMP	Simple Network Management Protocol The TCP/IP protocol used for network management.
splitter	A device that splits off the voice component of the DSL signal to a separate line, so that data and telephone service each have their own wiring and jacks. The splitter is installed by your telephone company where the DSL line enters your home. The CO also contains splitters that separate the voice and data signals, sending voice to the PSTN and data on high-speed lines to the Internet. See also CO, PSTN, splitterless, microfilter.
splitterless	A type of DSL installation where no splitter is installed, saving the cost of a service call by the telephone company. Instead, each jack in the home carries both voice and data, requiring a microfilter for each telephone to prevent interference from the data signal. ADSL is usually splitterless; if you are unsure if your installation has a splitter, ask your DSL provider. See also splitter, microfilter.
subnet	A subnet is a portion of a network. The subnet is distinguished from the larger network by a subnet mask which selects some of the computers of the network and excludes all others. The subnet's computers remain physically connected to the rest of the parent network, but they are treated as though they were on a separate network. See also network mask.
subnet mask	A mask that defines a subnet. See also network mask.
TCP	See TCP/IP.

TCP/IP	Transmission Control Protocol/Internet Protocol The basic protocols used on the Internet. TCP is responsible for dividing data up into packets for delivery and reassembling them at the destination, while IP is responsible for delivering the packets from source to destination. When TCP and IP are bundled with higher-level applications such as HTTP, FTP, Telnet, etc., TCP/IP refers to this whole suite of protocols.
Telnet	An interactive, character-based program used to access a remote computer. While HTTP (the web protocol) and FTP only allow you to download files from a remote computer, Telnet allows you to log into and use a computer from a remote location.
TFTP	Trivial File Transfer Protocol. A protocol for file transfers, TFTP is easier to use than File Transfer Protocol (FTP) but not as capable or secure.
TTL	Time To Live A field in an IP packet that limits the life span of that packet. Originally meant as a time duration, the TTL is usually represented instead as a maximum hop count; each router that receives a packet decrements this field by one. When the TTL reaches zero, the packet is discarded.
twisted pair	The ordinary copper telephone wiring long used by telephone companies. It contains one or more wire pairs twisted together to reduce inductance and noise. Each telephone line uses one pair. In homes, it is most often installed with two pairs. For Ethernet LANs, a higher grade called Category 3 (CAT 3) is used for 10BASE-T networks, and an even higher grade called Category 5 (CAT 5) is used for 100BASE-T networks. See also 10BASE-T, 100BASE-T, Ethernet.
upstream	The direction of data transmission from the user to the Internet.
USB	Universal Serial Bus A serial interface that lets you connect devices such as printers, scanners, etc. to your computer by simply plugging them in. The My ADSL Modem is equipped with a USB interface for connecting to a standalone PC.
VC	Virtual Circuit A connection from your ADSL router to your ISP.
VCI	Virtual Circuit Identifier Together with the Virtual Path Identifier (VPI), the VCI uniquely identifies a VC. Your ISP will tell you the VCI for each VC they provide. See also VC.
VPI	Virtual Path Identifier Together with the Virtual Circuit Identifier (VCI), the VPI uniquely identifies a VC. Your ISP will tell you the VPI for each VC they provide. See also VC.

WAN	Wide Area Network Any network spread over a large geographical area, such as a country or continent. With respect to the My ADSL Modem, WAN refers to the Internet.
Web browser	A software program that uses Hyper-Text Transfer Protocol (HTTP) to download information from (and upload to) web sites, and displays the information, which may consist of text, graphic images, audio, or video, to the user. Web browsers use Hyper-Text Transfer Protocol (HTTP). Popular web browsers include Netscape Navigator and Microsoft Internet Explorer. See also HTTP, web site, WWW.
Web page	A web site file typically containing text, graphics and hyperlinks (cross-references) to the other pages on that web site, as well as to pages on other web sites. When a user accesses a web site, the first page that is displayed is called the Home page. See also hyperlink, web site.
Web site	A computer on the Internet that distributes information to (and gets information from) remote users through web browsers. A web site typically consists of web pages that contain text, graphics, and hyperlinks. See also hyperlink, web page.
WWW	World Wide Web Also called (the) Web. Collective term for all web sites anywhere in the world that can be accessed via the Internet.

Appendix D: Registering your NetComm Product

All NetComm Limited ("NetComm") products have a standard 12 month warranty from date of purchase against defects in manufacturing and that the products will operate in accordance with the specifications outlined in the User Guide. However some products have an extended warranty option (please 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

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:	(+612) 9424-2010
Web:	www.netcomm.com.au

Note: NetComm Technical Support for this product only covers the basic installation and features outlined in the Quick Start Guide. For further information regarding the advanced features of this product, please refer to the configuring sections in this User Guide or contact a Network Specialist.

Appendix E: Legal & Regulatory Information

Customer Information

ACA (Australian Communications Authority) requires you to be aware of the following information and warnings:

(1) This unit shall be connected to the Telecommunication Network through a line cord which meets the requirements of the ACA TS008 Standard.

(2) This equipment has been tested and found to comply with the Standards for C-Tick and or A-Tick as set by the ACA . These standards are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio noise and, if not installed and used in accordance with the instructions detailed within this manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur with the installation of this product in your home or office. If this equipment does cause some degree of interference to radio or television reception, which can be determined by turning the equipment off and on, we encourage the user to try to correct the interference by one or more of the following measures:

- Change the direction or relocate the receiving antenna.
- Increase the separation between this equipment and the receiver.
- Connect the equipment to an alternate power outlet on a different power circuit from that to which the receiver/ TV is connected.
- Consult an experienced radio/TV technician for help.

(3) The power supply that is provided with this unit is only intended for use with this product. Do not use this power supply with any other product or do not use any other power supply that is not approved for use with this product by NetComm. Failure to do so may cause damage to this product, fire or result in personal injury.

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 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.

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