



NB9, NB9W
ADSL2+ VoIP Modem Router

Please note that documentation and features of this product are subject to change, please visit the support downloads section of the NetComm website - <http://www.netcomm.com.au/Support/index.php> to obtain the latest versions of these documents. Alternatively you can visit the NetComm Knowledge Base for answers to common questions – <http://kb.netcomm.com.au/kb/>

WARNING

For your safety the Antenna must be fitted before any cables are connected to the unit, and all cables should be removed before the Antenna is removed. All replacement Antennas should be of a type approved by NetComm.

VERY IMPORTANT NOTE:

1. The NB9/NB9W is equipped with an automatic 'back-up' telephone line which will connect you to the emergency operator when 000 is dialled on the handset. For this feature to function correctly, you need a functioning telephone line and that line needs to be correctly connected to the NB9/NB9W's line port. NetComm will not be liable to any person for any expenses, losses, damages or costs if the emergency operator cannot be reached for any reason beyond NetComm's control, including but not limited to the non-existent or incorrect connection of the telephone line to the NB9/NB9W; faults in line cords, plugs or other cabling/exchange faults; lightning strikes disabling the NB9/NB9W line circuits; the user disabling the LifeLine support in the NB9/NB9W advanced features; problems with the user's handset or damage caused to the NB9/NB9W by it; the user not having a valid account with the telephone service providers for a regular telephone service; and the '000' service being congested or not operational.
2. NetComm will not be liable to any person for any expenses, losses, damages or costs from a user inadvertently using the PSTN Service to make calls.

SECTION 1 OVERVIEW

Thank you for purchasing the NetComm NB9/NB9W ADSL2+ VoIP Router. NetComm is proud to introduce this entirely new class of all-in-one device incorporating ADSL2+, VoIP and Wireless in a single compact unit. The NB9/NB9W is truly a 'broadband communications gateway' that, when attached to the appropriate ISP services, will enable multiple broadband communications streams to run concurrently into your home or office. Data and voice services can be delivered and distributed to multiple PCs at the same time, while the data packets can be managed via 'Quality of Service' (QoS) controls to ensure that priority is given to voice traffic, or to the traffic of your choice.

The VoIP 'terminal adaptor' capability enables you to connect existing telephones to the device to make inexpensive or free VoIP phone calls to any destination, while simultaneously providing internet connectivity for multiple computers.

Let's look at some of the capabilities offered by the NB9/NB9W in brief:

ADSL Broadband

The NB9/NB9W offers the next generation of broadband ADSL technology with ADSL2/2+, which boosts ADSL's performance significantly, improves interoperability, and supports new applications, services and deployment conditions.

VoIP (Voice over Internet Protocol)

The NB9/NB9W connects one or two analogue telephones to a VoIP service as well as providing a pass through connection for your existing landline. The two Phone (FXS) ports even allow two separate VoIP numbers with a VoIP Service Provider (VSP). The PSTN Line (FXO) port provides telephone back-up should your VSP, ADSL service or power to the NB9/NB9W fail.

Wireless (NB9W only)

In addition to fast, standard 802.11g-based wireless, the NB9W incorporates Broadcom's state-of-the-art XPress and Afterburner technology* to radically improve the performance of wirelessly-connected devices.

** Your wireless device must have a suitable wireless card to take advantage of these technologies.*

QoS

With the addition of bandwidth-hungry applications to the SOHO/Home network the NB9/NB9W has not overlooked one of the most important features for a home Internet gateway – Quality of Service (QoS) The QoS implementation in the NB9/NB9W is extremely sophisticated allowing you to prioritise data on your network according to rules you make.

NB9/NB9W Package Contents

Your NB9/NB9W contains the following items:

- NB9 or NB9W ADSL2+ Modem Router
- 15VDC 1.6 Amps power supply
- RJ-11 ADSL Line connection cable
- RJ-45 10/100 Ethernet cable
- Removable Antenna
- User Guide (on CD)
- Quick Start Guide

Selected terminology used in this manual

POTS	A telephone line used for a standard phone-line and service will be referred to as POTS (=Plain Old Telephone Service)
Pass-through Line	The line that connects the NB9/NB9W to a POTS line may be referred to as a pass-through line
RJ11	Telephone cables may be referred to as RJ11 which is the format of the connection plug used for telephones
Ethernet	Local area network traffic will be carried by standard Category 5 cable referred to as Ethernet
RJ45	Ethernet cables may also be referred to as 'RJ45' which is the format of the connection plug used for network devices
LAN	Local Area Network
WLAN	Wireless Local Area Network
VSP	VoIP Service provider

Do I need a micro filter?

Micro filters are used to prevent interference between phones and fax machines, and your ADSL service. If your ADSL-enabled phone line is being used with any equipment other than your ADSL Modem then you will need to use one Micro filter for each phone device in use. Telephones and/or facsimiles in other rooms that are using the same line will also require Microfilters. A suitable Microfilter can be purchased from NetComm or your Service Provider, if required.

Multi-purpose Gateways and In-line Splitters

The multi-purpose ADSL/VoIP gateway uses a different micro filter configuration to an ADSL modem/router. With the NB9/NB9W, an in-line splitter is placed between a telephone outlet and the NB9/NB9W. One RJ11 cable is then connected from the splitter's **PHONE** port to the NB9/NB9W **LINE** port. Another is connected from the splitters **ADSL** or **MODEM** port to the NB9/NB9W ADSL port. This is to allow the 'pass-through' line to connect via the POTS if necessary. (See diagram on page 9)

SECTION 2 MINIMUM SYSTEM REQUIREMENTS:

Different aspects of the NB9/NB9W have different requirements, so let's look at them in turn. We'll start with your computer, which ought to match the following requirements if you are to enjoy the benefits of a high-speed ADSL connection and use of VoIP and Wireless Networking.

PC Requirements:

- Any computer running Windows 98/2000/Me/XP/Vista or Macintosh OSX
- Ethernet or Wireless Network card
- CD-ROM drive
- Web browser e.g.
 - Internet Explorer 5.1 (or better)
 - Netscape Navigator
 - Mozilla FireFox 1.0.4

ADSL Requirement:

- ADSL broadband connection to an ISP (Internet Service Provider)
- ADSL In-line Splitter/Filter (Please refer to **Do I need a micro filter?** for more information)

Note: Connection at ADSL2 or 2+ rate depends on the service offered by your ISP; the device will operate at standard ADSL rates in the absence of the 2 or 2+ service. Consult your ISP for details.

VoIP Requirements:

- One or two telephone handsets for VoIP service
- Account with a VoIP Service Provider (VSP) including relevant account details

Note: The NB9/NB9W serves as an Analogue Terminal Adaptor so any touch-tone phone may be used for VoIP services.

Wireless Requirements (for NB9W only):

- Wireless Network Interface Card (NIC) for each intended computer

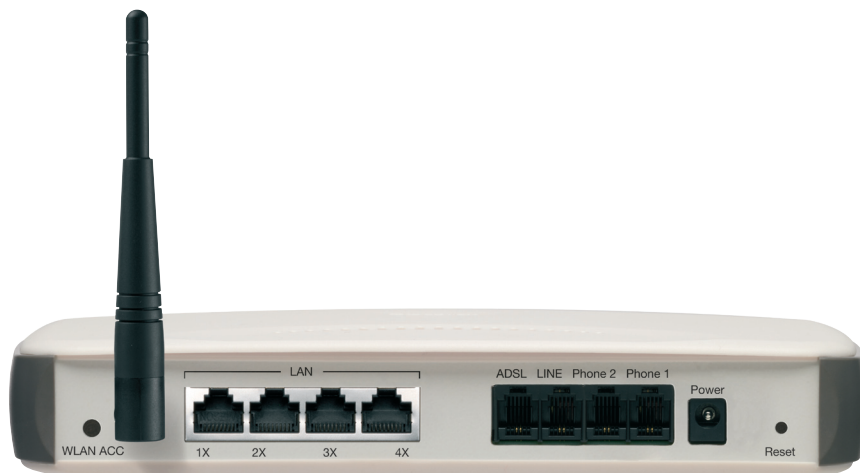
SECTION 3 GETTING TO KNOW THE NB9/NB9W

It is recommended that you take a moment to acquaint yourself with the indicator lights, ports and default settings of the NB9/NB9W prior to commencing with installation.



LED INDICATORS			
LED	Colour	Mode	Function
POWER	Green	On	The router is powered up
		Off	The router is powered down
ADSL	Green	On	The ADSL Link is established
		Off	The ADSL Link is not established
	Green	Blink	The ADSL line is training or traffic is passing through
LINE	Green	On	FXO (Pass through) Line is off hook
		Off	FXO Line is on hook
PHONE1	Green	On	FXS (VoIP) Phone 1 is off hook
		Off	FXS Phone 1 is on hook
PHONE2	Green	On	FXS Phone 2 is off hook
		Off	FXS Phone 2 is on hook
LAN 1x ~4x	Green	On	Ethernet link is established
		Off	Ethernet link is not established
	Green	Blink	Data transmitting/receiving over Ethernet
NB9W only			
WLAN	Green	On	Wireless module is ready
		Off	Wireless module is not installed
	Green	Blink	Data transmitting/receiving over Wireless
WLAN ACC	See User Guide		WLAN Access Control

Back Panel Ports



Port Name	Function
WLAN ACC (for NB9W only)	WLAN Access Control.
Antenna (for NB9W only)	Wireless LAN antenna.
4 x LAN	4 x 10/100 Base-T Ethernet jack (RJ-45) to connect to your Ethernet Network card or Ethernet Hub / Switch.
ADSL	Telephone jack (RJ-11) to connect to your Telephone Wall Socket (ADSL line).
Line	Telephone jack (RJ-11) to connect to your Telephone Wall Socket (note you will require an in-line splitter to split your telephone line if one wall point is used for both your ADSL and telephone service).
Power	Connect the power adaptor that comes with your NB9/NB9W.
Reset	Reset button. Depress for 10 seconds to return your NB9/NB9W to its default settings.

SECTION 4 DEFAULT SETTINGS

The following are the default LAN (Local Area Network) and WAN (Wide Area Network).

LAN (Management)

- Static IP Address: 192.168.1.1;
- Subnet Mask: 255.255.255.0;
- Default Gateway: blank;

WAN (Internet)

- Empty: Once you have run through 'ADSL Quick Setup' you will have a saved WAN connection;
- Default connection type: PPPoE (most common for Australian ISPs);
- VPI / VCI: 8 / 35;

Modem Access

- Username: admin
- Password: admin

Restore Factory Default Setting

Restore Factory Defaults will reset the NB9/NB9W to its factory default configuration. Occasions may present themselves where you need to restore the factory defaults on your NB9/NB9W such as:

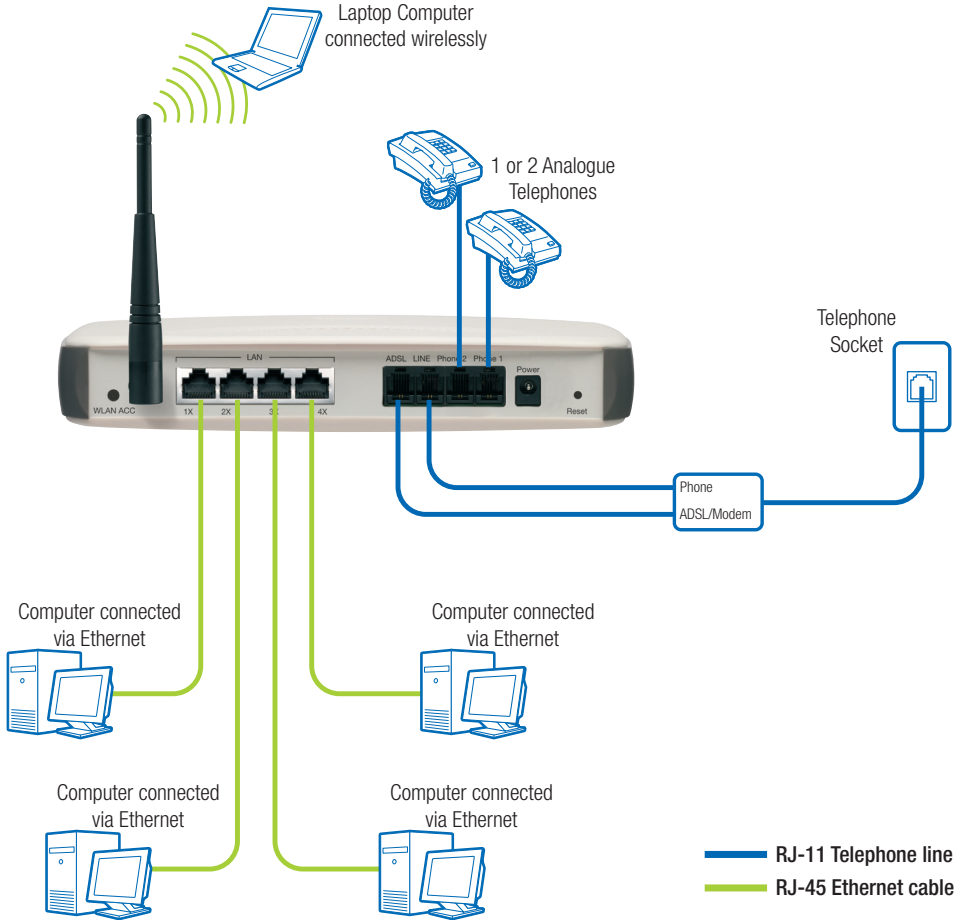
- You have lost your username and password and are unable to login to your NB9/NB9W's web configuration page;
- You have purchased your NB9/NB9W from someone else and need to reconfigure the device to work with your ISP;
- You are asked to perform a factory reset by NetComm Support staff

In order to restore your NB9/NB9W to its factory default settings, please follow these steps:

- Ensure that your NB9/NB9W 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 your NB9/NB9W 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';

SECTION 5 CONNECTING THE NB9/NB9W

Follow the steps in this section to configure ADSL, VoIP, Wireless, only one, or any combination of these. The diagram below shows you how to connect the NB9/NB9W to your PC, ADSL and POTS service.



5.1 Connecting the Cables

Note: If you wish to link to the NB9W wirelessly at the outset, see Establishing a Wireless Connection below.

1. Connect your PC using Ethernet cable to one of the LAN ports of your NB9/NB9W;
2. Connect the POTS pass-through line ;
 - i. Connect telephone wall-socket to port on in-line splitter called **LINE**;
 - ii. Connect one end of an RJ11 (telephone) cable to **PHONE** port of the in-line splitter and connect the other end to the **LINE** port on NB9/NB9W;
3. Connect the ADSL service - connect one end of a second RJ11 (telephone) cable to the **ADSL/Modem** port of the in-line splitter and connect the other end to the ADSL port of the NB9/NB9W;
4. Connect the power cable to the Power socket and plug into a power source;
5. Switch your NB9/NB9W on at the powerpoint;
6. Switch on your PC.

Make sure the LAN LED (light) on your NB9/NB9W is on, which indicates that network function is active.

Note that the pass-through service is provided as a back-up and that calls made through this line are not the same VoIP calls and will be subject to normal telecommunications charges.

The next section explains how to establish your ADSL connection to the Internet.

5.2 Establishing an ADSL connection via PPPoE

Having physically connected your NB9/NB9W, the next step is to establish your ADSL connection to the Internet, via your ISP.

Nearly all Australian ISPs connect their clients via a standard method called PPPoE (Point-to-Point Protocol over Ethernet). Your NB9/NB9W has a 'Quick Setup' page configured for easy access via PPPoE, so all you need to do is enter the Username and Password issued by your ISP, click the 'Save & Reboot' button and connection will follow. This sequence will be explained here.

Note: If you are not using a PPPoE connection type, please consult the User Guide (on CD) for details on changing your connection type. If unsure, follow the steps in this section first.

At this point you must have your NB9/NB9W connected according to Section 5.1, with your PC connected to the NB9/NB9W via Ethernet cable (or wireless link for NB9W only). You must also have your ISP-supplied username and password on hand.

1. For Windows users, insert the accompanying CD into your CD-ROM drive. An autorun screen should appear. Click the 'Configure NB9/NB9W' button;

Note: If you do not have a CD-ROM or are running a non-Windows OS, you can access the NB9/NB9W Configuration page by opening a web browser and entering <http://192.168.1.1> into the Address / Location field. If you are not able to access the login screen by this means, go to the section titled 'Computer Hardware Configuration' in the User Guide (on CD) for instructions and come back here when this is completed. Otherwise, proceed to next.

2. Enter the username 'admin' and password 'admin' and click 'OK';
3. The following web page is displayed:

4. Enter your PPPoE Username and PPPoE Password and click the Save & Reboot. The NB9/NB9W will apply all of the settings in approximately 2 minutes.

NetComm™ Integrated Access Device

DSL Router Reboot
The DSL Router has been configured and is rebooting.
Close the DSL Router Configuration window and wait for 2 minutes before reopening your web browser. If necessary, reconfigure your PC's IP address to match your new configuration.

Basic
Home
ADSL Quick Setup
Voice
Wireless
Management
Advanced
Status

5. After several minutes, you should then see the Basic>Home page indicating your ADSL service is connected. Proceed to configure VoIP and Wireless, if required.

NetComm™ Integrated Access Device

Basic > Home

Software Version:	C211-S306NCM-T05_R05
Bootloader (CFE) Version:	1.0.37-0.7
Wireless Driver Version:	3.131.35.0.cpe2.3
ADSL Version:	A2p8021g.d19b

This information reflects the current status of your DSL connection.

Line Rate - Upstream (Kbps):	64
Line Rate - Downstream (Kbps):	1536
LAN IP Address:	192.168.1.1
Wan IP Address:	Show
Default Gateway:	203.194.30.202
Primary DNS Server:	203.194.56.150
Secondary DNS Server:	203.194.27.57

Uptime Status (HH:MM:SS):

Operating System:	Mon Aug 6 14:58:34 2007
ADSL Sync Established:	Mon Aug 6 14:41:58 2007
PPP Session Established:	Mon Aug 6 14:41:58 2007
Last Time Modem Rebooted:	Mon Aug 6 14:41:58 2007
Last Time ADSL Sync Established:	none
Last Time PPP Session Established:	none

Basic
Voice
Wireless
Management
Advanced
Status

5.3 Establishing your Wireless Connection (for NB9W only)

Wireless networking provides an alternative connection to using Ethernet cable. Wireless access is enabled by default on your NB9W with the following default settings:

- Wireless network name (SSID): 'wireless';
- Security: WEP (64-bit) HEX key: 'a1b2c3d4e5';

Note: For advanced wireless settings of your NB9W refer to the User Guide included on your NB9/NB9W CD ROM.

If you have a wireless Ethernet card on your PC, you can connect to your NB9W by following these steps:

1. Connect the NB9W as in the diagram on page 9;
2. Enable the wireless connectivity of your PC;
3. Search for available wireless networks;
4. The default name (SSID) of the NB9W's wireless network, 'wireless', will appear;
5. Connect to the SSID 'wireless' and when prompted, enter the default HEX password which is A1B2C3D4E5;
6. Proceed with 'Establishing an ADSL connection via PPPoE' above.

5.4 Setting up your VoIP account

Once you have successfully connected to the Internet you are ready to setup your VoIP account to start making telephone calls over the Internet. This section will deal with setting up a single VoIP account with standard settings.

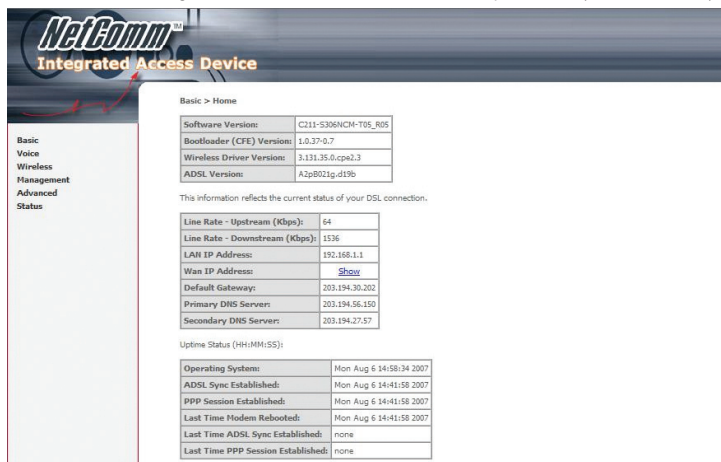
Note: Make sure you get all your necessary VoIP account details from your VSP (VoIP Service Provider) before you begin. These details are not your ADSL User Name and Password.

Your VoIP checklist includes:

- VoIP/DID Phone Number;
- VoIP account username (known as 'Auth. ID' in your NB9/NB9W);
- VoIP account password (known as 'Auth. Password' in your NB9/NB9W);
- SIP Proxy Server IP address;
- SIP Proxy Port;
- SIP Proxy Domain;
- Register Expire Time.

Once you have the above settings (crucial ones being VoIP/DID Phone Number, Auth. ID, Auth. Password and SIP proxy) you are ready to start setting up your VoIP service on your NB9/NB9W.

1. If you are not already logged into your NB9/NB9W, open a web browser and navigate to <http://192.168.1.1> and login with the NB9/NB9W username & password (admin / admin);



The screenshot shows the NetComm Integrated Access Device web interface. The top navigation bar includes 'Basic', 'Voice', 'Wireless', 'Management', 'Advanced', and 'Status'. The 'Basic' menu is selected, and the 'Home' sub-menu is active. The main content area displays system information and DSL connection status.

Basic > Home	
Software Version:	C211-5306VCM-T05_805
Bootloader (CFE) Version:	1.0.37-0.7
Wireless Driver Version:	3.131.35.0.cps2.3
ADSL Version:	A2p8021q.d19b

This information reflects the current status of your DSL connection.

Line Rate - Upstream (Kbps):	64
Line Rate - Downstream (Kbps):	1536
LAN IP Address:	192.168.1.1
WAN IP Address:	Show
Default Gateway:	203.194.30.202
Primary DNS Server:	203.194.56.150
Secondary DNS Server:	203.194.27.57

Uptime Status (HH:MM:SS):

Operating System:	Mon Aug 6 14:58:34 2007
ADSL Sync Established:	Mon Aug 6 14:41:58 2007
PPP Session Established:	Mon Aug 6 14:41:58 2007
Last Time Modem Rebooted:	Mon Aug 6 14:41:58 2007
Last Time ADSL Sync Established:	none
Last Time PPP Session Established:	none

2. Click on the 'Voice' menu to access the VoIP setup page;

Note: Settings will vary from those shown below depending on your VoIP provider

Voice -- SIP configuration

Enter the SIP parameters and click Apply to save the parameters and apply the voice application.

Interface name:

Local selection:

Preferred codec:

Preferred ptime:

Use SIP Proxy.

SIP Proxy:

SIP Proxy port:

Register Expire Time:

SIP domain name:

Use SIP Outbound Proxy.

Enable SIP tag matching (Uncheck for Vonage Interop).

Remote server for SIP log messages.

DispName:
1
2

VoIP Phone Number:

Auth. ID:

Auth. Password:

3. Interface Name: Don't change the 'Interface name' setting;
4. Priority Codec: The priority codec is set to 'G729' which means your NB9/NB9W will firstly choose this codec when communicating with your SIP proxy from your VSP (VoIP Service Provider);
5. Ptime: The 'ptime' is the time delay (milliseconds) between voice packets sent. Do not change this value unless your VSP has asked you to;
6. SIP Proxy: Check the 'use SIP proxy' checkbox the enter the SIP Proxy IP address (issued by your VSP);
7. SIP Proxy Port: The default is port 5060, but your VSP may ask you to change this;
8. SIP Proxy Domain: In most cases this is the same value as the SIP Proxy IP address (check with your VSP if unsure);
9. Register Expire Time: Default is 60 seconds. Don't change this value unless your VSP instructs you to;
10. DispName: This is the user-defined 'extension number' that will display on the other phone connected to the NB9/NB9W;
11. VoIP Phone Number: issued by VSP
12. AuthID: same as above
13. Auth. Password: VoIP password issued by VSP
14. Once VoIP settings have been entered, click on Apply and Save all VoIP Parameters.

Apply and Save All VoIP Parameters

15. Once your SIP client has started, click on the 'Basic > Home' to see what the status of your Voice service is:

This information reflects the current status of your VoIP connection.

Phone 1 Current Status:	Register to the SIP Proxy Succeed
Phone 2 Current Status:	Register to the SIP Proxy Succeed

16. Pick up your telephone, make sure you have dial tone and can make a call.

Note: If you experience any failure in setting up your VoIP, please refer to the User Guide included on your CD ROM for more information.

Product Warranty

NetComm products have a standard 12 months warranty from date of purchase. However some products have an extended warranty option, via registering your product online at the NetComm website www.netcomm.com.au. Refer to the User Guide for complete product warranty conditions, limitations of warranty and other legal and regulatory information.

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

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 the User Guide or contact a Network Specialist.

NetComm[®]
www.netcomm.com.au

NetComm Limited ABN 85 002 490 486
PO Box 1200, Lane Cove NSW 2066 Australia
E – sales@netcomm.com.au **W** – www.netcomm.com.au