

# *NetComm*® NETCOMM VELOCITY™ SERIES Wireless N USB Adapters



USER GUIDE

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# **Introduction**

Get To Know Your Product

## Introduction

### Your NetComm Velocity Series Wireless N USB Adapter

Congratulations on your purchase of the NetComm 900n Series USB Adapter

The NetComm 900n Series USB Adapters (NP900n, NP901n, NP910n and NP902n) use the latest wireless technology, 802.11n. This dramatically improves wireless signal, and throughput for your network when compared to existing wireless 802.11g technology. The incredible speed of the NetComm 900n Series USB adapters makes light work of heavy traffic networking activities, while at the same time allowing greater freedom for the user with wireless signal being transmitted over a greater range.

Adding a NetComm 900n Series USB adapter to your Notebook or Computer, provides an excellent solution for media-centric activities such as streaming video, gaming, and enhances the Quality of Service (QoS) without any performance penalty.

It extends network coverage by up to 300% and boosts transmission throughput by up to 600% when compared to existing 11g products. For more security-sensitive applications, the NetComm 900n Series supports Hardware-based IEEE 802.11i encryption/decryption engine, including 64-bit/128-bit WEP, TKIP, and AES. Also, it supports Wi-Fi alliance WPA and WPA2 encryption.

\* Theoretical wireless signal rate based on IEEE standard of 802.11a, b, g chipset used. Actual throughput may vary. Network conditions and environmental factors lower actual throughput rate.

## Features

Features	Advantages
High Speed Data Rate of Up to 150/300Mbps*	Capable of handling heavy data payloads such as MPEG video streaming
IEEE 802.11n Compliant and backward compatible with 802.11b/g	Backward compatibility allows you to upgrade your network at the rate you want, providing you with a progressive upgrade path
WPA/WPA2 (IEEE 802.11i), WEP 64/128 Support	Peace of Mind Security for your wireless network
2 Transmitting and 2 Receiving antennas (NP901n and NP902n). 1 Transmitting and 2 Receiving antennas (NP900n) 1 Transmitting and 1 Receiving antennas (NP910n)	Greater Speed and Range
Wireless Multimedia Enhancements Quality of Service support (QoS) / enhanced power saving for Dynamic Networking.	Data such as voice and media streaming will get priority, giving you clearer sound and crisper images.
2 Detachable Antennas (NP902n only)	Flexible with SMA connector design

## Package Contents

Open the package carefully, and make sure that none of the items listed below are missing. Do not discard the packing materials, in case of return; the unit must be shipped back in its original package.

NP910n	NP900n	NP901n	NP902n
NP910n USB Adapter	NP900n USB Adapter	NP901n USB Adapter	NP902n USB Adapter
CD-ROM with User Manual and Utility			
Quick Start Guide (Printed)			
			1 USB cable (1m)
			2 detachable antennas
			1 removable hook



### NP910n/NP902n LED Description

LED	Description
Off	There is no driver/utility loaded
Blinking slowly	An active connection is available
Blinking rapidly	Data communication is in progress

### NP900n/NP901n LED Description

LED	Description
Link	Blinks when transmitting or receiving data
Power	On when receiving power through the USB port

## System Requirements

To begin using the 900n Series USB Adapter, your PC/Notebook must meet the following minimum requirements:

- Operating System – Microsoft Windows Vista/XP/2000 or Mac
- USB socket x 1 (USB 1.0 can be used. USB 2.0 will allow maximum speed)
- 256MB system memory or larger
- 750MHz CPU or higher configuration

# **Installation (XP AND VISTA)**

Connecting Your Device

# Installation (Windows XP and Vista)

Important: Install the 900n Series Adapter utilities before inserting the 900n Series Adapter into your computer

Insert the support CD into your CD/DVD drive. The Utility should auto run.

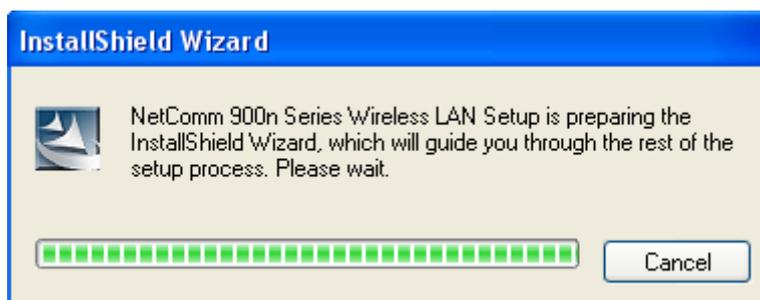
If this does not happen, follow the steps below.

- Click [Start]
- Open [My Computer]
- Double click on you CD/DVD drive
- Double click on the NetComm 900n Series Utility icon

In the CD drive folder, you will see the following file.

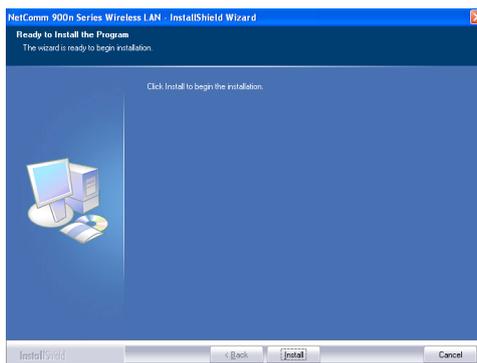


Open the file and you can briefly see the following...

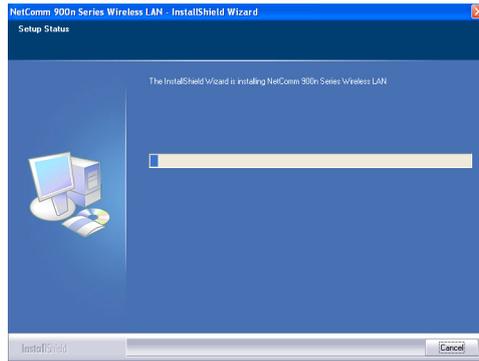


NOTE: If operating with Windows Vista a warning message will open up, asking if you are sure you would like to continue with the installation. Do Not click no as this will cancel the installation.

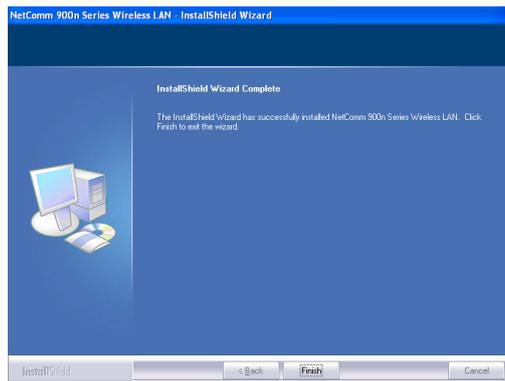
Click Install to begin the installation of the utility.



Await instructions as you see the setup progress as shown below...



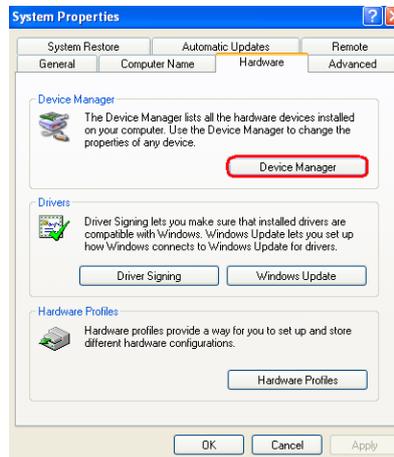
Click finish to complete the installation.



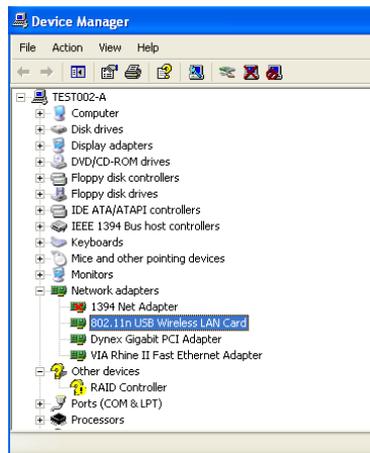
Please insert the 900n Series USB Adapter in your notebook/PC's available USB socket

## Verify installation (XP)

- Open [Control Panel]
- Double-click [System].
- Select [Hardware] tab
- Click [Device Manager].



- Select [Network Adapters]
- Select and double-click [802.11N USB wireless LAN card]

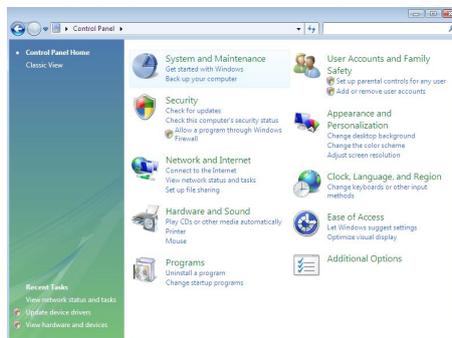


- Verify the device status of the 802.11N USB wireless LAN card
- [This device is working properly]
- Click [OK]

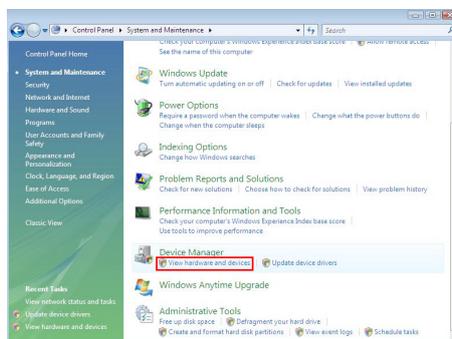


## Verify installation (Vista)

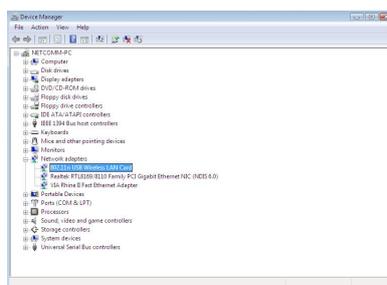
- Enter [Start Menu]
- Open [Control Panel]
- Click on [System and Maintenance]



- Under the Device Manager heading, click [View Hardware and Devices]



- Click on [Network Adapters]
- Select and double click [802.11n wireless LAN Card]

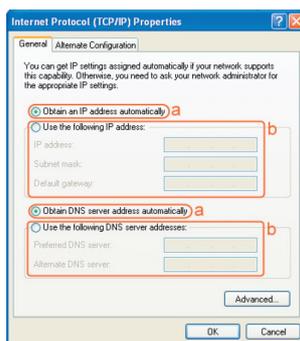
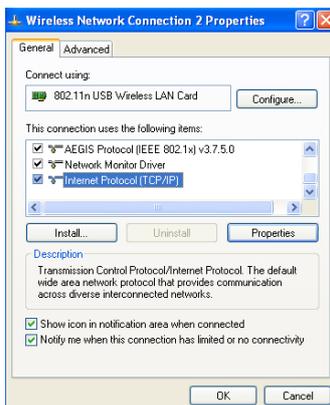


- Verify the status of the 802.11n USB Wireless LAN Card. (This device is working properly)
- Click [OK]



## Setup Network Configuration (XP)

- Enter [Start Menu]
- Select [Control panel]
- Select [Network Connections].
- Right-click [Wireless Network Connection], under the LAN heading
- Select [properties]
- Select [Internet Protocol (TCP/IP)]
- Click [Properties].



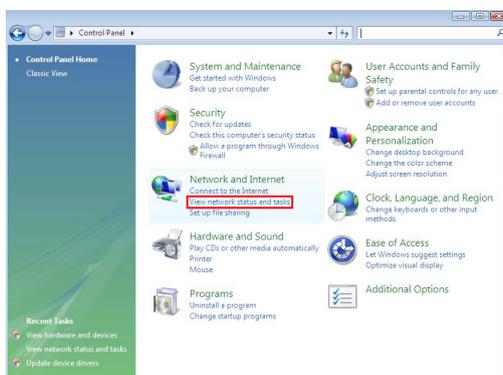
- Select the [General] tab.

Most Access Points/Routers will support DHCP\*, therefore select (a) to obtain addresses automatically. If you are unsure, select option (a).

\* Dynamic Host Configuration Protocol (DHCP) is a protocol used by networked devices to obtain the parameters necessary for operation in an Internet Protocol network. This protocol reduces system administration workload, allowing devices to be added to the network with little or no manual configurations.

## Setup Network Configuration (Vista)

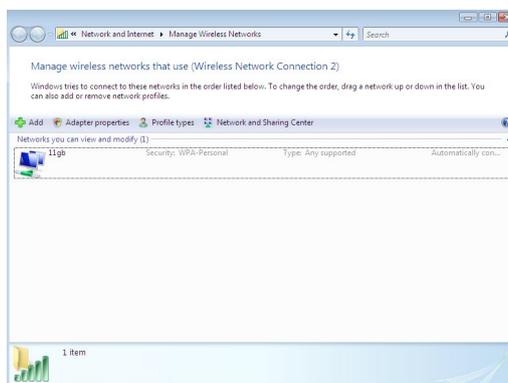
- Enter [Start Menu]
- Select [Control Panel]
- Click directly into [View Network Status and Tasks] from under the [Network and Internet] heading.



- From the taskbar on the left hand side click on [manage wireless networks]

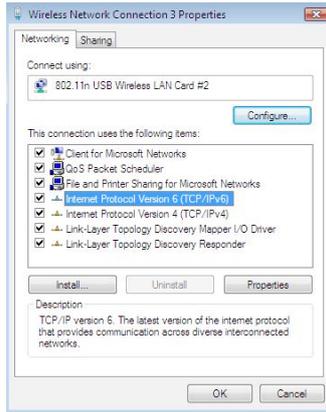


- Click on [Adapter Properties]



- Select [Internet Protocol (TCP/IP)]

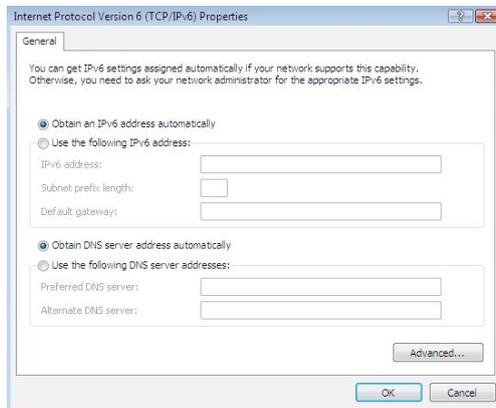
- Click [Properties]



- Under the [General] tab.

Most Access Points/Routers will support DHCP\*, therefore select [Obtain an IP address automatically] and [Obtain DNS Server address automatically]. If you are unsure, select these options.

\* Dynamic Host Configuration Protocol (DHCP) is a protocol used by networked devices to obtain the parameters necessary for operation in an Internet Protocol network. This protocol reduces system administration workload, allowing devices to be added to the network with little or no manual configurations.



# **Wireless Network**

The Home Of All Your Wireless Settings

# Wireless Network

## Prerequisite:

1. Your home/office environment should have a wireless LAN that is available for your use.
2. You should readily have the security keys (if required) to connect those Wireless LAN's

Configuration utility will first automatically link with the Wireless AP if there is no security key required. If the connection is successful, a message will appear on taskbar.

The following steps guide you to initially setup a wireless network connection.

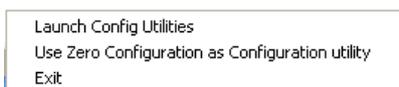
Notice the NetComm configuration utility on the taskbar



Hovering the mouse cursor briefly over the  icon will show status as follows. The current status indicates that Config utility has automatically connected to an Access Point (default).

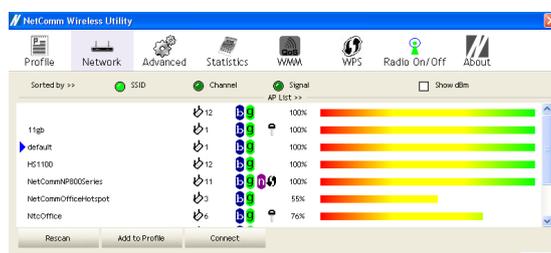


Right click on the  icon and the below menu will open.



NOTE: If using Windows Vista, the menu will not include [Use Zero Configuration as Configuration Utility]

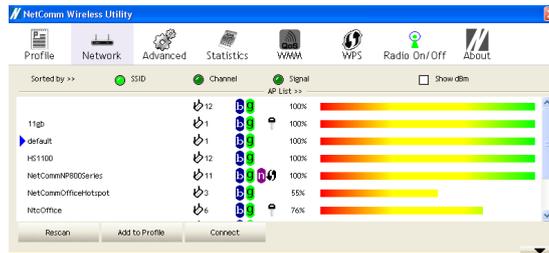
Click on [Launch Config Utilities]. Notice it has many tabs for configuration



Please note that making a connection when operating on Windows XP is different to making a connection when operating on Windows Vista. Instructions for connecting on both are listed below.

## MAKING A CONNECTION USING WINDOWS XP

To make a connection, select one AP/SSID (eg: Default) and click [Connect]. When the connection is successful,  will appear in front of the linked AP.



If the connection fails, [Disconnected] will appear. If the AP has set up the encryption, please setup the same before you click [OK].

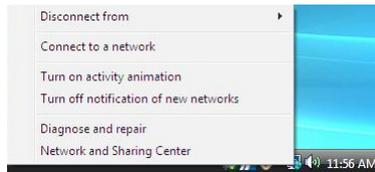
Click on the Network tab. Press Rescan. You will see several AP's listed under SSID

They denote individual access points. Click on the one you want to connect with. Notice that if there is a security key needed, there will be an image of a key in the AP List.

If there is a security key required, obtain it and click connect. If you need to input a security key, refer to chapter 9 to understand setting up network security.

## MAKING A CONNECTION USING WINDOWS VISTA

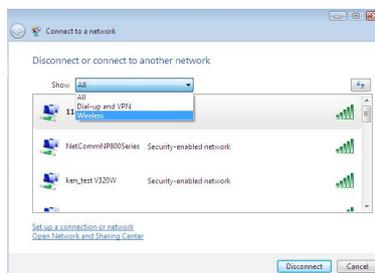
- On the bottom right corner of your screen, in the taskbar, will be an image of a computer screen. This is your zero configuration manager. Right click on this image and a menu will appear, as shown below.



- Click on [Connect to a network]. This will bring up a screen as shown below



- All of the networks available to you can be seen listed on the screen. Select one to connect to. You can select to see available networks listed by connection type. To ensure you connect to the appropriate network you can select to view all available wireless networks.



## Applying Network Security Settings

If your Access Point/Router has a network security key, your NetComm 900n Series security settings must match the settings on your wireless Access Point/Router to get a connection. The details of the network security settings are described below.

**WEP** – Wired Equivalent Privacy (WEP) is a less secure, but more widely adopted wireless security protocol. Depending on the security level (64- or 128-bit), the user will be asked to input a 10- or 26-character hex key.

**WPA** – Wi-Fi Protected Access (WPA) is the new standard in the wireless security. However, not all wireless cards and adapters support this technology. Instead of a hex key, WPA uses only pass phrases, which are much easier to remember. It can be broken down into the categories listed below

**WPA-PSK** – Wi-Fi Protected Access - Pre Shared Key (WPA-PSK) is a simplified but still powerful form of WPA most suitable for home Wi-Fi networking

**WPA2-PSK** – The advanced protocol of WPA-PSK

**WPA (WPA-EAP)** – Wi-Fi Protected Access - Extensible Authentication Protocol (WPA-EAP) is a more complex form of WPA, more suitable for enterprise Wi-Fi networking

**WPA2 (WPA2-EAP)** – The advanced protocol of WPA-EAP

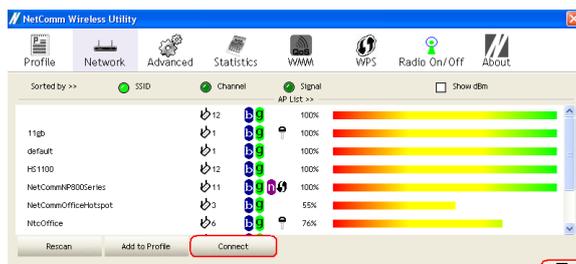
## a. Setting WEP/WPA WAN Settings

### Windows XP

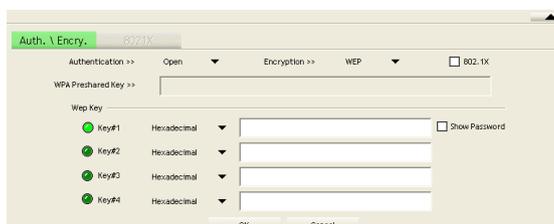
If the Access Point you want to connect to has security authentication, select it from the list and press [Connect].

### Windows Vista

If the Access Point you want to connect to has security authentication, select it from the list and press [Add to Profile]. (Adding Profiles is covered in the next chapter). This will open the drop down menu and you will be able to enter the security information as shown in the below images. Alternatively, you are able to select a wireless network from the Zero Configuration Manager (See Chapter "Connecting to your Wireless Network") and enter the security information there when prompted.

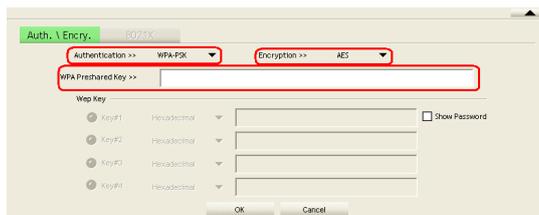


Press the arrow on the right of the page. You will see a window pop up as shown below.

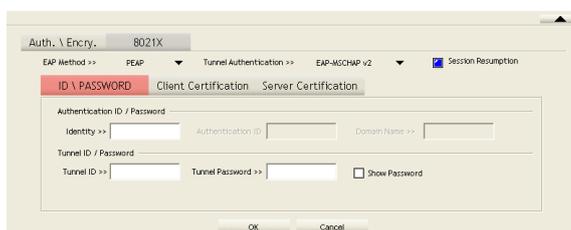


### Follow steps below:

- [Authentication Type]: Indicates the authentication type of the AP/Router. Please confirm the setting of the AP/Router.
- [Encryption]: Select the same encryption as the AP/Router
- For WEP Encryption, key in AP encryption keys (64/128bits) in the box Key1~Key4. Please accept the auto selected setting of [Hex]/ [ASCII]
- For WPA-PSK and WPA2-PSK encryption, enter the selected AP's password in [WAP Preshared Key] box.



- For WPA and WPA2 encryption if the AP/Router has [802.1x Setting] function, click it for advanced settings. Please consult your network administrator for details or check the user manual of the Wireless Access Point



- Press [OK] to finish setting.

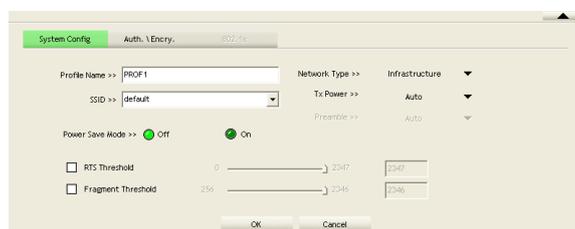
## Adding Profiles

By adding an SSID as a profile, a user is able to reconnect onto the same wireless network at a later date, without having to re-enter the configuration. Adding profiles has practical implications for users who connect to multiple wireless networks at regular occurrences. Someone who connects their laptop to a wireless router at home, is part of a different wireless network at work and also connects to a hotspot at their favourite café on the weekend is a prime example of someone who could benefit from adding profiles.



Profiles can be added by following the steps below.

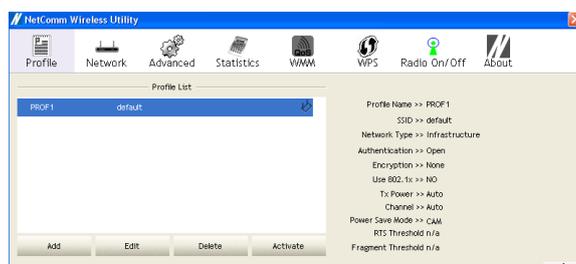
- Select one AP in the SSID column that you want to add as a profile, eg: default
- Click [Add to Profile] and the page shown below will appear.



- Setting items in the [system configuration] tab:
  - Profile Name: Enter the connected AP profile, eg: PROF1.
  - SSID: Click the drop-down menu and select one AP. You can also enter the AP manually.
  - PSM: PSM stands for Power Saving Mode. Select between “off” and “on”. “Off” is the default setting. Only select “on” under infrastructure network type.
  - Network Type: [Infrastructure] or [Ad Hoc] type. We recommend you select [Infrastructure].
  - Tx power: The amount of power used by a radio transceiver to send the signal out. User can choose power value from the drop down menu.
  - [RTS Threshold] and [Fragment Threshold]:
    - Fragment Threshold specifies the maximum size of packet during the fragmentation of data to be transmitted. If you set this value too low, it will result in bad performance.
    - RTS Threshold specifies the size of the data packet to be sent. Small values cause RTS packets to be sent more often. It will enable the system to recover from interference or collisions quicker but it consumes more of the available bandwidth.

We recommend you to use the default value 2312. Users can adjust threshold numbers by sliding the bars or key in the values directly.

- Click [OK] and the set AP will appear in the [Profile] tab.



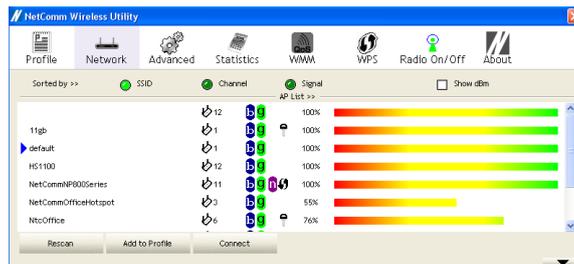
- [Add]: Click [Add] to add a new profile.
- [Delete]: to delete a profile, select one profile name and click [Delete].
- [Edit]: to edit the setting of a profile, select the profile and click [Edit].
- [Activate]: to activate the selected profile, select the profile and click [Activate].

## Network

The Network tab is where all of the basic connection information can be found. In the main window, you can find listed;

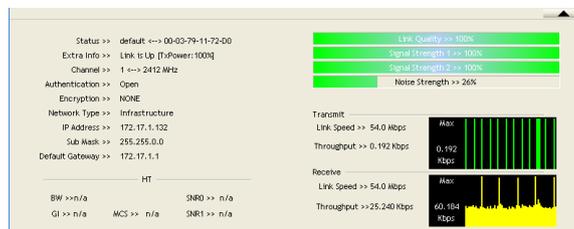
- All of the available wireless networks that your NetComm 900n Series USB Adapter has in range
- The channel at which the Access Point is running.
- The speed at which the Access Point is operating. This will be listed as b, g and/or n. To get maximum performance out of your NetComm 900n Series USB Adapter, connect to an access point with greater speed.
- Encryption Keys. If an Access Point requires a security setting, it will be represented by an image of a key.
- The strength of the wireless signal from the Access Point.

This information is able to be sorted by SSID name, Channel or Wireless Signal, simply by selecting from these options at the top of the page



At the bottom of the page is an arrow, which when pressed will provide details on the link status of your chosen Access Point

- Status: Displays the linked AP name and MAC address. When [Disconnect] appears in this box, the connection is failed.
- Extra Info: link status and strength.
- Channel: Current channel in use.
- Link Speed: Show current transmit rate and receive rate.
- Throughput: Display transmit and receive throughput value.
- Link Quality: Display connection quality based on signal strength and TX/RX packet error rate.

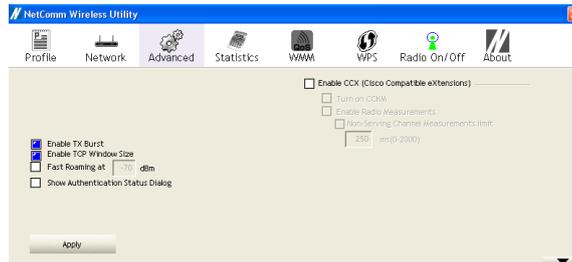


- Signal Strength 1 & 2: Receive signal strength, user can choose to display as percentage or dBm format
- Noise Level: Display noise signal strength.

# **Advanced**

High Level Configuration Options

## Advanced Settings



NOTE: When operating on Windows Vista, the CCX (Cisco Compatible Extensions) option does not exist.

**Enable TX Burst:** NetComm's 900n Series USB Adapters come with proprietary frame burst mode. When it is checked, transmission throughput will be improved. (Only works when AP supports this function)

**Enable TCP Window Size:** When checked, the reception speed will improve.

**Fast Roaming at \_\_\_ dBm:** Will enter roaming mode when dBm reaches defined level.

**Enable CCX:** Open CCX (supports Cisco Compatible Extensions function). Check it after making sure the Wireless AP supports it.

**Turn on CCKM:** Open CCKM function (Cisco Key Management).

**Enable Radio Measurements:** Open the function of CCK Monitor AP Channel.

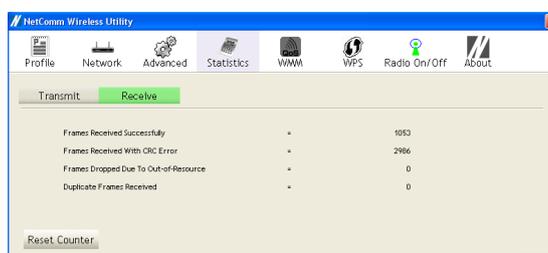
**Non-Serving Channel Measurements:** Select and start to monitor the channels on which the AP is not transmitting

**[Apply]:** Click this when finished changing the settings

## Statistics

Statistics page displays the detailed information about Wireless LAN TX/RX.

- Transmit Statistics: Statistics of transmitted frames.
- Receive Statistics: Statistics of received frames.
- [Reset Counters]: Click [Reset Counter] to zero the statistic numbers of  transmitting and receiving data and start over.



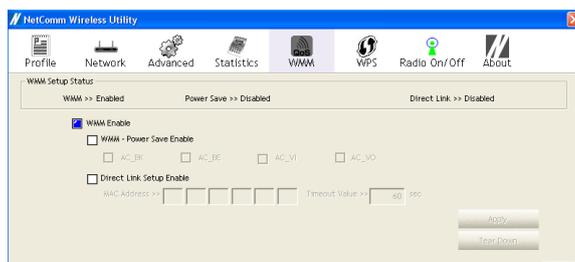
Show histogram for network connection on WAN, LAN & WLAN. Auto refresh keeps information updated frequently.

## WMM

Wi-Fi Multimedia (WMM) is a Wi-Fi certification that provides basic Quality of service (QoS) features to wireless networks. WMM prioritizes traffic to improve the users experience according to four Access Categories (AC) – voice (AC\_VO), video (AC\_VI), best effort (AC\_BE), and background (AC\_BK). It is suitable for simple applications that require QoS, such as Voice over IP (VoIP) on Wi-Fi phones.

Click **WMM Enable** to turn on the WMM capability.

Click **WMM – Power Save Enable** and this can improve the power savings by at least 15% as far as the NP900n Series power consumption is concerned.

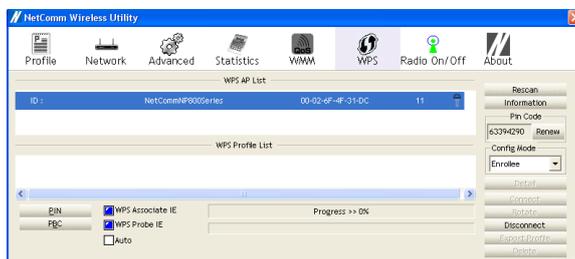


## WPS Configuration

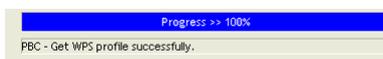
Wi-Fi Protected Setup (WPS) configuration function - provides easy procedures to set up wireless security. Wi-Fi Protected Setup gives SOHO users a variety of setup options. It uses familiar methodologies such as typing in a Personal Identification Number/numeric code (PIN method), and pushing a button (Push-Button Configuration, or PBC) to enable users to automatically configure network names and strong WPA2 (Wi-Fi Protected Access 2) data encryption and authentication.

To connect and configure your PC to your AP/Router with WPS follow the steps below.

- First open the Netcomm Wireless Utility and navigate to the WPS Tab.



- Press Rescan to scan through any available wireless network that has the WPS feature around your area.
- Once the network has been chosen, select either PIN or PBC to connect the network.
- For connecting the network through PBC, first push the WPS button on your Router, and then press the PBC button in the Utility. It should enable you to connect the network.



- For connecting the network through PIN, enter the PIN code from the utility in the AP and activate AP with PIN enabled. Press the PIN button in our Utility. It should enable you to connect the network.



## Radio On/Off

To disable your wireless network, click on the [Radio On/Off] tab. This will cease radio transmission between your NetComm 900n Series USB Adapter and your wireless Access Point/Router. To enable your wireless network, simply click on the [Radio On/Off] tab again.

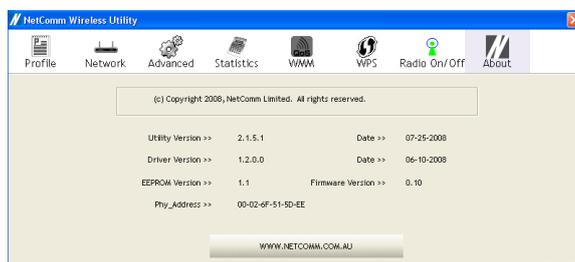
The status can be easily checked by the colour of the symbol in the [Radio On/Off] tab. Green indicates that your wireless network is enabled, while red indicates that your wireless network is disabled.



## About

The About tab displays version information of

- Utility Version
- Driver Version
- EEPROM Version
- Firmware Version
- MAC address of the PHY



## Uninstalling NetComm Utility/Driver

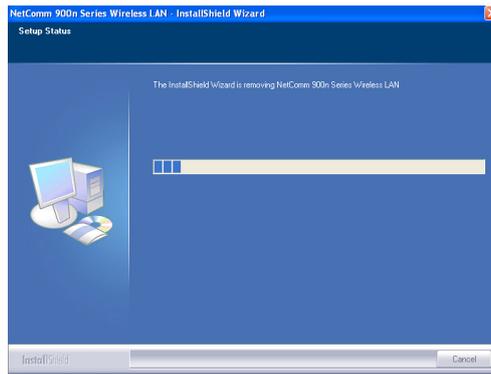
To Uninstall the NetComm 900n Series Utility follow the steps below

- Open the [Start] menu
- Select [All Programs]
- Select [NetComm Wireless]
- Select [Uninstall – NetComm 900n Series Wireless USB Adapter]

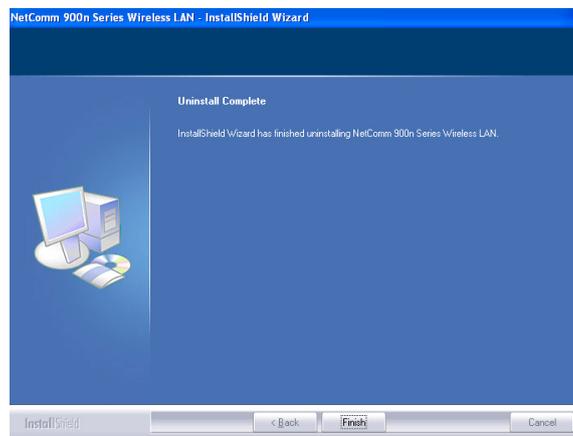


You can see the wizard preparing for uninstallation. Click on [Yes], to continue the uninstallation process.





Removing the utility is in progress. At any time you may press cancel to abort uninstallation.



NOTE: You will need to restart your computer to ensure a clean removal of the NetComm Utility.

## **Appendix**

Important Additional Information

# Appendix: Installation and functionality for Mac

## (IMac)Basic

Important: Install the 900n Series Adapter utilities before inserting the 900n Series Adapter into your computer

Insert the support CD into your CD/DVD drive and follow the steps below

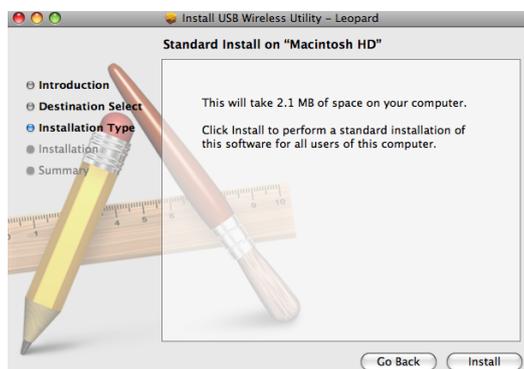
- Open the CD drive folder.
- Depending on your OSX Version you will need to install the appropriate file. Either 10.3, 10.4 or 10.5. Open the appropriate folder called USBWireless 10.x
- Double click the file called USBWireless-Leopard.pkg



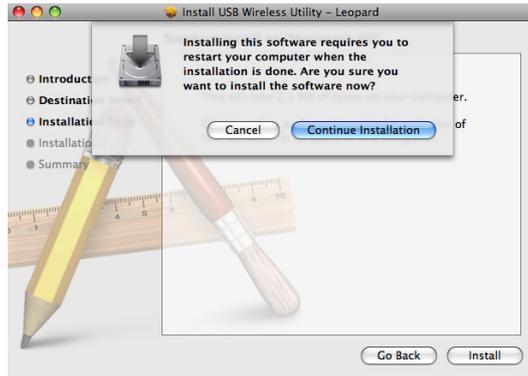
Open the file and the window shown below will appear



Click "Continue" then "Install" to begin the installation of the utility.



Click “Continue Installation” to complete the setup.



Await instructions as you see the setup progress as shown below...



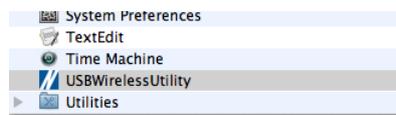
Click “Restart” to complete the installation.

Please insert the 900n Series USB Adapter in your notebook/PC's available USB socket

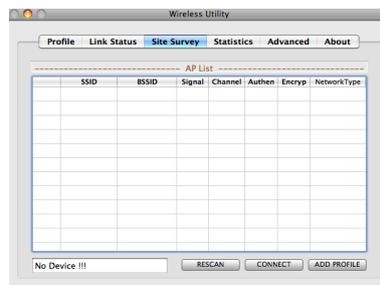
## Verify Installation (IMac)

- Open [Spotlight]
- Enter [Application].

Select USBWirelessUtility as shown



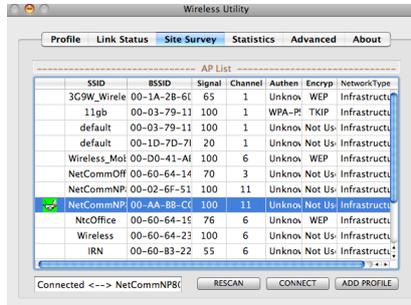
Start using the Utility



## Connecting to a Network

### Prerequisite:

1. Your home/office environment should have a wireless LAN that is available for your use.
2. You should readily have the security keys (if required) to connect those Wireless LAN's



To make a connection, select one AP/SSID (eg: NetComm NP800 Series) and click [Connect]. When the connection is successful, will appear in front of the linked AP.

If the AP has set up an encryption, you will need to know the details to connect to that AP. Notice that if there is a security key needed, it will be listed in the Encryp column. "Not Used" indicates that no encryption is required. Otherwise, the type of encryption will be listed.

Pressing Rescan will allow you to see all available AP's listed under SSID.

## Applying Network Security Settings

If your Access Point/Router has a network security key, your NetComm 900n Series security settings must match the settings on your wireless Access Point/Router to get a connection. The details of the network security settings are described below.

**WEP** – Wired Equivalent Privacy (WEP) is a less secure, but more widely adopted wireless security protocol. Depending on the security level (64- or 128-bit), the user will be asked to input a 10- or 26-character hex key.

**WPA** – Wi-Fi Protected Access (WPA) is the new standard in the wireless security. However, not all wireless cards and adapters support this technology. Instead of a hex key, WPA uses only pass phrases, which are much easier to remember. It can be broken down into the categories listed below

**WPA-PSK** – Wi-Fi Protected Access - Pre Shared Key (WPA-PSK) is a simplified but still powerful form of WPA most suitable for home Wi-Fi networking

**WPA2-PSK** – The advanced protocol of WPA-PSK

**WPA (WPA-EAP)** – Wi-Fi Protected Access - Extensible Authentication Protocol (WPA-EAP) is a more complex form of WPA, more suitable for enterprise Wi-Fi networking

**WPA2 (WPA2-EAP)** – The advanced protocol of WPA-EAP

To connect to an Access Point that has security settings follow the steps below.

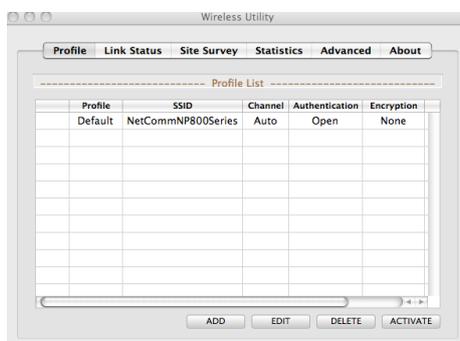
- Select the SSID from the list on the utility.
- Click on connect
- The following page will open

- [Authentication Type]: Indicates the authentication type of the AP/Router. Please confirm the setting of the AP/Router.
- [Encryption]: Select the same encryption as the AP/Router
- For WEP Encryption, key in AP encryption keys (64/128bits) in the box Key1~Key4. Please accept the auto selected setting of [Hex]/ [ASCII]

- For WPA-PSK and WPA2-PSK encryption, enter the selected AP's password in [WAP Preshared Key] box.

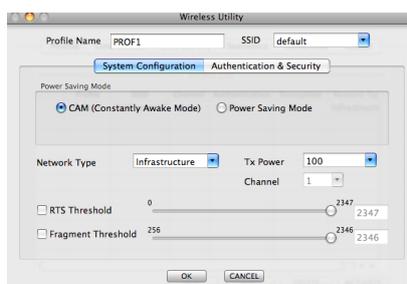
## Adding Profiles

By adding an SSID as a profile, a user is able to reconnect onto the same wireless network at a later date, without having to re-enter the configuration. Adding profiles has practical implications for users who connect to multiple wireless networks at regular occurrences. Someone who connects their laptop to a wireless router at home, is part of a different wireless network at work and also connects to a hotspot at their favourite café on the weekend is a prime example of someone who could benefit from adding profiles.



Profiles can be added by following the steps below

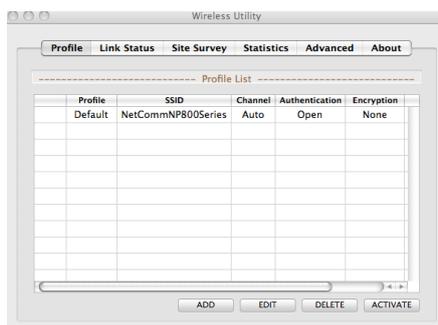
- Select one AP in the SSID column from the Site Survey tab that you want to add as a profile, eg: NetCommNP800Series
- Click [Add to Profile] and the page shown below will appear.



- Setting items in the System Configuration tab
  - Profile Name: Enter the connected AP profile, eg: PROF1.
  - SSID: Click the drop-down menu and select one AP. You can also enter the AP manually.
  - Power Saving Mode: Select between “CAM” (Constantly Awake Mode) and “Power Saving Mode”. “CAM” is the default setting. Only select “Power Saving Mode” under infrastructure network type.
  - Network Type: [Infrastructure] or [Ad Hoc] type. We recommend you select [Infrastructure].
  - Tx power: The amount of power used by a radio transceiver to send the signal out. User can choose power value from the drop down menu.
  - [RTS Threshold] and [Fragment Threshold]:
    - Fragment Threshold specifies the maximum size of packet during the fragmentation of data to be transmitted. If you set this value too low, it will result in bad performance.
    - RTS Threshold specifies the size of the data packet to be sent. Small values cause RTS packets to be sent more often. It will enable the system to recover from interference or collisions quicker but it consumes more of the available bandwidth.

We recommend you to use the default value 2312. Users can adjust threshold numbers by sliding the bars or key in the values directly.

- Click [OK] and the set AP will appear in the [Profile] tab.



- [Add]: Click [Add] to add a new profile.
- [Edit]: to edit the setting of a profile, select the profile and click [Edit].
- [Delete]: to delete a profile, select one profile name and click [Delete].
- [Activate]: to activate the selected profile, select the profile and click [Activate].

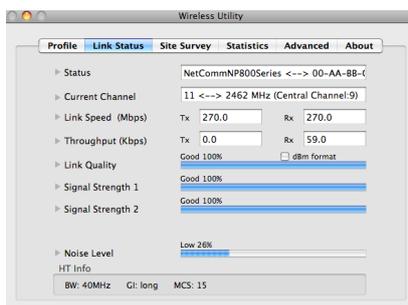
### Remove an address from the list

If you want to remove a MAC address from the “Current Access Control List “, select the MAC address that you want to remove in the list and then click “Delete Selected”. If you want to remove all the MAC addresses from the list, just click the <Delete All> button. Click <Reset> will clear your current selections.

Click <Apply> at the bottom of the screen to save the above configurations.

## Link Status

Under the Link Status tab, all information regarding the connectivity of the NetComm 900n Series USB Adapter is visible

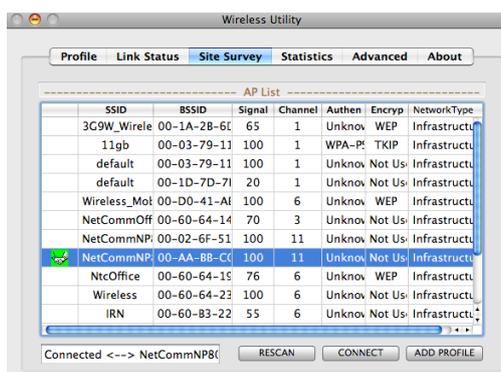


- **Status:** Displays the linked AP name and MAC address. When [Disconnect] appears in this box, the connection is failed.
- **Current Channel:** Current channel in use.
- **Link Speed:** Shows current transmit rate and receive rate.
- **Throughput:** Displays transmit and receive throughput value.
- **Link Quality:** Displays connection quality based on signal strength and TX/RX packet error rate.
- **Signal Strength 1 & 2:** Receive signal strength.
  - Noise Level: Display noise signal strength.

## Site Survey

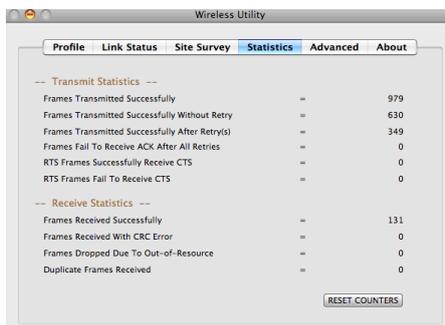
The Site Survey tab is where all of the basic connection information can be found. In the main window, you can find listed;

- All of the available wireless networks that your NetComm 900n Series USB Adapter has in range
- The BSSID, or MAC address of all the available Access Point's
- The strength of the wireless signal from the Access Point.
- The channel at which the Access Point is running.
- Authentication/Encryption Keys. If an Access Point requires a security setting, it will be listed as what type of setting is required.
- Network type. Lists whether the network is set as Infrastructure or Ad-Hoc.



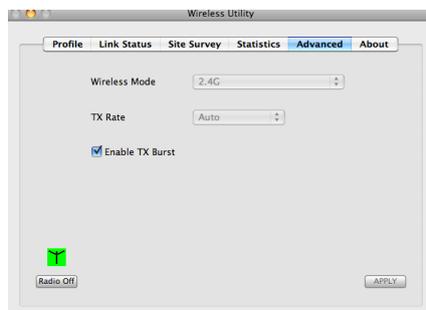
## Statistics

The statistics page displays the detailed information about wireless Transmit and Receive Statistics



- Transmit Statistics: Statistics of transmitted frames.
- Receive Statistics: Statistics of received frames.
- [Reset Counters]: Click [Reset Counter] to zero the statistic numbers of transmitting and receiving data and start over.

## Advanced Settings



The Wireless Mode and TX Rate are fixed as they are automatically set by the utility.

Enable TX Burst: NetComm's 900n Series USB Adapters come with proprietary frame burst mode. When it is checked, transmission throughput will be improved. (Only works when AP supports this function)

To disable your wireless network, click on the [Radio Off] button. This will cease radio transmission between your NetComm 900n Series USB Adapter and your wireless Access Point/Router. To enable your wireless network, simply click on the same button, this time it will read [Radio On].

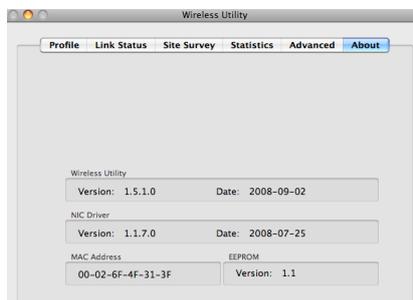
The status can be easily checked by the colour of the radio symbol.

Green indicates that your wireless network is enabled, while red indicates that your wireless network is disabled.

## About

The About tab displays version information of

- Utility Version
- Driver Version
- MAC address of the PHY
- EEPROM Version



# Appendix B – Specifications

## Data Rates

1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54, 72, 84, 150 and 300Mbps (with 2-stream on both ends)

## Standards / Compliance

IEEE802.3, IEEE802.3u, IEEE802.11b, IEEE802.11g, 802.11n 2.0

## Regulation Certifications

FCC Part 15, ETSI 300/328/CE

## Operating Voltage

5 V ± 0.25V

## Status LEDs

NP900n/NP901n – Power and Link

NP910n/NP902n - Link

## Drivers

Windows 2000/XP/Vista

## RF Information

### Frequency Band

U.S., Europe and Japan product covering 2.4 to 2.484 GHz, programmable for different country regulations

## Media Access Protocol

Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)

## Operating Channels

11 for North America, 14 for Japan, 13 for Europe and Australia

## Receive Sensitivity (Typical)

- 2.412~2.472G(IEEE802.11b)
  - 91dBm @ 1Mbps
  - 90dBm @ 11Mbps
- 2.412~2.472G(IEEE802.11g)
  - 90dBm @ 6Mbps
  - 74dBm @ 54Mbps
- 2.412~2.472G(IEEE802.11N)
  - 90 dBm @ MCS 8
  - 65 dBm @ MCS 15

## Available transmit power

- 2.412~2.472G(IEEE802.11b)
  - 18dBm @1~11Mbps
- 2.412~2.472G(IEEE802.11g)
  - 15 dBm @6Mbps
  - 14 dBm @54Mbps
- 2.412~2.472G(IEEE802.11N)
  - 15dBm

## Antenna Configuration

NP900n – 1T2R

NP901n – 2T2R

NP902n – 2T2R detachable

NP910n – 1T1R

## Networking

### Topology

Ad-Hoc, Infrastructure

**Security**

WPA/WPA2 (AES, 64,128-WEP with shared-key authentication)  
Cisco CCS V1.0, V2.0 and V3.0 compliant

**Physical****Form Factor**

USB 2.0/1.1

**Environmental****Temperature Range**

Operating: 0°C to 50°C  
Storage: -10°C to 75°C

**Humidity (non-condensing)**

5%~95% Typical

**Package Contents**

One Wireless-N USB Adapter  
One CD-ROM with User's Manual and Utility  
Quick Start Guide  
One USB base with cable attached (NP901n)  
One USB cable (1.0M) (NP902n)  
Two SMA antennas (NP902n)  
One removable hook (NP902n)

**Related Products**

NetComm NP800n Series Wireless N Routers.

- NP800n
- NP801n
- NP802n
- NP803n
- NP804n

# NetComm



# Dynalink

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## 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.netcommlimited.com](http://www.netcommlimited.com).

## Technical Support

If you have any technical difficulties with your product, please refer to the support section of our website.

[www.netcomm.com.au/support](http://www.netcomm.com.au/support)

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.