

InternationNETCOMM VELOCITY™ SERIESWireless N USB Adapters





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Introduction

Get To Know Your Product

NetGomm

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	CD-ROM with User Manual and Utility	CD-ROM with User Manual and Utility	CD-ROM with User Manual and Utility
Quick Start Guide (Printed)	Quick Start Guide (Printed)	Quick Start Guide (Printed)	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...

InstallS	hield Wizard
2	NetComm 900n Series Wireless LAN Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.
	Cancel

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 ...

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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].

Sustem	Bestore	Automa	tic Undates	Bemote
General	Comp	uter Name	Hardware	Advance
Device Ma	anager			
Ż	The Device M on your comp properties of a	tanager lists all uter. Use the D any device	the hardware devic evice Manager to c	es installed change the
		.,	Device M	lanager
Drivers				
	Driver Signing compatible wi how Windows	lets you make th Windows. W connects to W	sure that installed o indows Update lets /indows Update for	drivers are : you set up : drivers.
 	Driver Signing compatible wi how Windows Driver	l lets you make th Windows. W connects to W Signing	sure that installed o indows Update lets /indows Update for Windows	drivers are syou set up drivers. Update
Hardware	Driver Signing compatible wi how Windows Driver Profiles	lets you make th Windows, W s connects to W Signing	sure that installed o indows Update lets /indows Update for Windows	drivers are s you set up drivers. Update
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Hardware	Driver Signing compatible wi how Windows Driver Profiles Hardware pro different hardw	l lets you make th Windows. W connects to W Signing files provide a w ware configurati	sure that installed o indows Update lets (indows Update for) Windows vay for you to set u ons. Hardware	trivers are syou set up drivers. Update p and store Profiles
Hardware	Driver Signing compatible wi how Windows Driver Profiles Hardware pro different hardw	l lets you make th Windows. W s connects to W Signing files provide a w ware configurati	sure that installed of indows Update lets (indows Update for) Windows way for you to set u ons. Hardware	trivers are you set up drivers. Update p and store Profiles

- 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]

🖌 🕞 💌 🚱 🕨 Control Panel 🕨	lystem and Maintenance
Control Panel Home	Creack your computer's Windows experience shoek base score -
System and Maintenance Security	Windows Update Turn automatic updating on or off Check for updates View installed updates
Network and Internet Hardware and Sound Programs	Power Options Require a password when the computer wakes Change what the power buttons do Change when the computer steeps
User Accounts and Family Safety Appearance and Personalization	Change how Windows searches
Clock, Language, and Region Ease of Access Additional Options	Problem Reports and Solutions Check for new solutions Choose how to check for solutions View problem history
Classic View	Performance Information and Tools Check your computer's Window Experience Index base score Use tools to improve performance
	Device Manager
Recent Tasks	Nindows Anytime Upgrade
View network status and tasks Update device drivers View hardware and devices	Administrative Tools Free up disk space @ Defragment your hard drive @ Create and format hard disk partitions @ View event logs @ Schedule tasks

- 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].

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eral Ac	dvanced				
nect us	sing:				
802.	.11n USB V	Vireless LAN	Card	Confid	ure
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3 AI	EGIS Proto etwork Mor	col (IEEE 8L nitor Driver	(2.1x) v3.7.5	U	
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• 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.

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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]

nka	Network and Sharing Ce	oter		
ew computers and devices onnect to a network lanage wireless networks et up a connection or network lanage network connections iagnose and repair	NETCOMM-PC (This computer)	11	gb	View full map
	Acress	Local and Internet		Contornate
1	Connection	Wireless Network Co	nnection 2 (11ab)	View status
		att Signal strength: I	Excellent	Disconnect
111	3 Sharing and Discovery			
1	Network discovery	⊖ Off		
	File sharing	⊖ Off		
	Public folder sharing	e Off		۲
	Printer sharing	Off (no printers in	nstalled)	
110	Password protected sharing	• On		
ee also				

Click on [Adapter Properties]



• Select [Internet Protocol (TCP/IP)]

Click [Properties]

Unding		
Connect using:		
🔮 802.11n USB 1	Wireless LAN Card #2	
		Configure
This connection uses	the following items:	
Client for Mic	crosoft Networks	
QoS Packet	Scheduler	
File and Prin	ter Sharing for Microsoft	Networks
M - Internet Prot	ocol Version 6 (TCP/IP	v6)
A Internet Prot	ocol Version 4 (TCP/IP	v4)
Ink-Layer T	opology Discovery Map	per I/O Driver
🗹 🔺 Link-Layer T	opology Discovery Res	ponder
Install	Uninstall	Properties
Description		
TCP/IP version 6.	The latest version of the	e internet protocol
	nunication across divers	e interconnected
networks.		

• 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.

ernet Protocol Version 6 (TCP	P/IP√6) Properties	-?-(
eneral		
You can get IPv6 settings assig Otherwise, you need to ask you	ned automatically if your network supports this capa ur network administrator for the appropriate IPv6 se	bility. ttings.
Obtain an IPv6 address au	utomatically	
O Use the following IPv6 add	dress:	
IPv6 address:		
Subnet prefix length:		
Default gateway:		
Obtain DNS server addres	s automatically	
O Use the following DNS serv	ver addresses:	
Preferred DNS server:		
Alternate DNS server:		
	(Advanced
		Cancel

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 M 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 M icon and the below menu will open.

Launch Config Utilities	
Use Zero Configuration as Configuration utility	
Exit	

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, vill 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.

Connect to a network	
Turn on activity animation	
Fund of Hourication of New Networks	
Diagnose and repair	
Network and Sharing Center	(•) 11:56 A

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

Sh	ow All	•	
÷	11gb	Connected	lter
•	NetCommNP800Series	Security-enabled network	lite.
÷	ken_test V320W	Security-enabled network	llte

• 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.

Sho	w All	•	64
	All Dial-up and VPN Wireless		lite.
2	NetCommNP800Series	Security-enabled network	lite.
5	ken_test V320W	Security-enabled network	liter
-			

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

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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.

P	Network.	Advanced	Stat	istics	WW	Ŵ	O WPS	Radio On/Off	About	
Sorted by :	" O	SSID	🥝 Char	nel	AP List :	gnal		Show	/ dBm	
			1 2	Ъg	10	IO%				
11gb			¢1	Вġ	9 10	10%				
default			¢1	Вġ	10	10%				
HS1100			1 2	Вġ	10	10%				
NetCommNF	800Series		1 1	BÖ	10 10	10%				
NetCommOf	ficeHotspot		¢3	Bg	5	5%				
NtcOffice			¢°	Вġ	P 7	6%				

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

Auth. \ Encry. 802	1X.					
Authentication >>	Open	•	Encryption >>	WEP	•	802.1X
WPA Preshared Key >>						
Wep Key						
🙆 Key#1	Hexadecimal	•				Show Password
Key#2	Hexadecimal	-				_
Key#3	Hexadecimal	• [
Ø Key#4	Hexadecimal	-				-

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.

Authentication >>	WPA-PSK	-	Encryption >>	AES 🔻	
VPA Preshared Key >>					
Wep Key					
Ø Key≭1		~			Show Password
Ø Key#2		~			
Ø Key#3		-			
C Kestel		-			

• 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

	WPA	Encrypt	tion >> AES	J - L	
WPA Preshared Key >>					
Wep Key					
🙆 Key#1		Ψ.			Show Password
Key#2		-			_
Key#3		-			_
G Key#4	Hexadecimal	-			-
		CK	Cancel		
th) Epony 9021	Y				
th. \ Encry. 8021	X Turor	Authentication >>	Fab.WCCHab	~ -	Session Resumption
th. \ Encry. 8021 EAP Method >> PEAP	X Tunne	I Authentication >>	EAP-MSCHAP (12 🔻	Session Resumption
th. \ Encry. 8021 EAP Method >> PEAP ID \ PASSWORD	X Turne Client Certific	l Authentication >> ation Server (EAP-MSCHAP Certification	12 v	Session Resumption
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th. \ Encry. 8021 EAP Nethod >> PEAP ID \ PASSWORD Authentication ID / Passwi Identity >> Turnel ID / Password Turnel ID >>	X Turne Client Certific ard Authent Tunne Pa	Hauthentication >> ation Server (iteation ID	EAP-MSCHAP	/2 watin Name >> Show Password	Session Resumption

• 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.

Profile Name >> PROF1	Network Type >>	Infrastructure	-
SSID >> default	Tx Power >>	Auto	•
		Auto	~
Power Save Hode >> 🥥 Off 🧼 🙆 On			
RTS Threshold		2347	
Fragment Threshold 256	2346	2346	

• 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].

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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

NetComm 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.

Progress >> 100%
PBC - Get WPS profile successfully.

• 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.

Progress >> 100% PIN - Get WPS profile successfully.



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.

∦ N	letComm Wi	ireless Utility							
Р	rofile	⊥⊥ Network	Advanced	Statistics	www.	Ø WPS	Radio On/Off	About	
<i>//</i> N	letComm Wi	ireless Utility							×
P	rofile	LLL Network	Advanced) Statistics	Con NAMA	() WPS	Radio On/Off	About	
	Sorted by >>	0		Channel	Signal AP List >>		Show		
100	Rescan	Add	to Profile	Connect					T

About

The About tab displays version information of

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

🖊 NetComm	Wireless Utility	r						
Profile	Network	Advanced	Statistics	www.	Ø WPS	Radio On/Off	About	
		(c) Copyright 2	008, NetComm Lin	ited. All rights r	eserved.			
		Utility Version >>	2.1.5.1		Date >>	07-25-2008		
		EEPROW Version >:	1.2.0.0	Firmwa	Date >> are Version >>	06-10-2008		
		Phy_Address >:	00-02-6F-	51-5D-EE				
			ww	W.NETCOMM.CO	W.AU			

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.

NetComm 900n Series Wireles	s LAN - InstallShield Wizard	
	Uninstall Complete	
	InstallShield Wizard has finished uninstalling NetComm 900n Series Wireless LAN.	
InstallShield	< Back	Cancel

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.

00	🥪 Install USB Wireless Utility – Leopard
	Standard Install on "Macintosh HD"
Introduction	
Destination Select	This will take 2.1 MB of space on your computer.
Installation Type	Click Install to perform a standard installation of
Installation	this software for all users of this computer.
e Summado	and an
	Go Back Install



Click "Continue Installation" to complete the setup.



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

$\bigcirc \bigcirc \bigcirc \bigcirc$	😜 Install USB Wireless Utility – Leopard
Introduction Destination Select Installation Type Installation Summar	Installing USB Wireless Utility - Leopard Installing USB Wireless Utility - Leopard Installing installroot Running Installer Script
	Go Back Continue

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

29	System Preferences
1	TextEdit
0	Time Machine
K	USBWirelessUtility
×	Utilities

Start using the Utility

Profile	Link St	tatus	Site	Survey	Statisti	cs Ad	vanced	About
				AP Lis	st			
	SSID	BS	SID	Signal	Channel	Authen	Encryp	NetworkType
_				-				

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

Pre	ofile Link St	atus	Site Si	irvey	Statisti	cs Ad	lvanced	About
				- AP Lis	st			
	SSID	BS	SID	Signal	Channel	Authen	Encryp	NetworkTyp
	3G9W_Wirele	00-1/	-2B-6E	65	1	Unknow	WEP	Infrastruct
	11gb	00-03	-79-11	100	1	WPA-PS	TKIP	Infrastruct
	default	00-03	-79-11	100	1	Unknow	Not Use	Infrastruct
	default	00-10	-7D-7I	20	1	Unknow	Not Use	Infrastruct
	Wireless_Mot	00-D0)-41-Al	100	6	Unknow	WEP	Infrastruct
	NetCommOff	00-60	-64-14	70	3	Unknow	Not Use	Infrastruct
	NetCommNP	00-02	-6F-51	100	11	Unknow	Not Use	Infrastruct
¥	NetCommNP	00-A/	A-BB-CO	100	11	Unknov	Not Us	Infrastruct
	NtcOffice	00-60	-64-19	76	6	Unknow	WEP	Infrastruct
	Wireless	00-60	-64-23	100	6	Unknow	Not Use	Infrastruct
	IRN	00-60	-B3-22	55	6	Unknow	Not Use	Infrastruct

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.

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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

ncryption Ty	/pe	WEP			
PA Pre-Sha	red Key				
WEP SETTING B	ох				
● Key#1	Hexadeci	mal]
○ Key#2	Hexadeci	mal	-		
○ Key#3	Hexadeci	mal			
○Kev#4	Hexadeci	mal	-		

- [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]

Encryption Type		AES			 •
VPA Pre-Sha	red Key				
WEP SETTING B	ох				
• Key#1	Hexade	cimal	*		
◯ Key#2	Hexade	cimal	•		
◯ Key#3	Hexade	cimal	*		
○Kev#4	Hexade	cimal	-		

• 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.

Prof	file Li	nk Status	Site Survey	Statist	ics Advanc	ed Abou
			Profile	List		
	Profile		SSID	Channel	Authentication	Encryption
	Default	NetCom	mNP800Series	Auto	Open	None
-)) 4

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.

Profile Name PRO	DF1	SSID defa	ult 🗾
System	m Configuration	Authentication & Se	curity
Power Saving Mode			
CAM (Constar	ntly Awake Mode)	O Power Saving M	lode
Network Type	Infrastructure	Tx Power	100
		Channel	1 -
RTS Threshold	٥		O ²³⁴⁷ 2347
Fragment Thresho	old 256		O ²³⁴⁶ 2346

• 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.

Pro	file	Lin	ik Status	Site Survey	Statis	tics A	dvance	d Abo
				Profile	EList			
	Pro	file		SSID	Channel	Authen	tication	Encryptio
	Defa	ault	NetCom	mNP800Series	Auto	Op	en	None

- [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

- O O Wireless Utility Profile Link Status Site Survey Statistics Advanced About -> 00-AA-BB-I ► Status NetCommNP800Ser ▶ Current Channel 11 <--> 2462 MHz (Central Channel:9) Link Speed (Mbps) Throughput (Kbps) Good 100% 🗌 dBm format ▶ Link Quality Good 100% ▶ Signal Strength 1 Good 100% Signal Strength 2 Low 26% ▶ Noise Level HT Info BW: 40MHz GI: long MCS: 15
- 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.

C

Pro	ofile Link St	atus	Site St	irvey	Statisti	cs Ad	vanced	About
				- AP Lis	st			
	SSID	BS	SID	Signal	Channel	Authen	Encryp	NetworkType
	3G9W_Wirele	00-1/	-2B-6[65	1	Unknov	WEP	Infrastruct
	11gb	00-03	-79-11	100	1	WPA-PS	TKIP	Infrastruct
	default	00-03	-79-11	100	1	Unknov	Not Us	Infrastruct
	default	00-10	0-7D-7I	20	1	Unknov	Not Us	Infrastruct
	Wireless_Mol	00-D0)-41-Al	100	6	Unknov	WEP	Infrastruct
	NetCommOff	00-60	-64-14	70	3	Unknov	Not Us	Infrastruct
	NetCommNP	00-02	-6F-51	100	11	Unknov	Not Us	Infrastruct
¥	NetCommNP	00-A/	A-BB-CC	100	11	Unknov	Not Us	Infrastruct
	NtcOffice	00-60	-64-19	76	6	Unknov	WEP	Infrastruct
	Wireless	00-60	-64-23	100	6	Unknov	Not Us	Infrastruct
	IRN	00-60	-B3-22	55	6	Unknov	Not Us	Infrastruct
) + +

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Statistics

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

Profile	Link Status	Site Survey	Statistics	Advanced	About
Transmi	t Statistics				
rames Trar	smitted Successfu	illy		-	979
rames Trar	smitted Successfu	lly Without Retry			630
rames Tran	smitted Successfu	Ily After Retry(s)		-	349
rames Fail	To Receive ACK Af	ter All Retries		-	0
RTS Frames	Successfully Recei	ve CTS		-	0
RTS Frames	Fail To Receive CT	s			0
Receive	Statistics				
rames Reco	eived Successfully			-	131
rames Rece	eived With CRC Err	or			0
rames Droj	oped Due To Out-	of-Resource			0
Duplicate Fr	ames Received			-	0

- 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

Prome	Link Status	Site Survey	Statistics	Advanced	Abou
	Wireless Mode	2.4G		\$	
	TX Rate	Auto	\$		
	🗹 Enable TX Bi	ırst			

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

Profile	Link	Status	Site Survey	Statistics	Advanced	About
Wire	less Utili	ty				
Wire	eless Utili ersion:	ty 1.5.1.0	I	Date: 2008-	09-02	
	eless Utili ersion: Driver	ty 1.5.1.0	I	Date: 2008-	09-02	
	eless Utili ersion: Driver ersion:	1.5.1.0 1.1.7.0		Date: 2008- Date: 2008-	09-02	
	eless Utili ersion: Driver ersion: C Address	1.5.1.0 1.1.7.0		Date: 2008- Date: 2008- EEPROM	09-02 07-25	

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

NetGomm

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°Cto 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



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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**.

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

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.