

WNC-0601

300Mbps Wireless PCI Card

User Manual

V3.0

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Chapter 1 Product Introduction

Thank you for choosing this LevelOne wireless adapter!

The LevelOne WNC-0601 is a 11N wireless PCI card with up to 300Mbps wireless transmission rate. It complies with the latest IEEE802.11n standard, and is compatible with 802.11b/g wireless devices. It is able to quickly process file transfer, video, multi-media and other applications that require higher bandwidth. It supports WPS encryption method to quickly implement wireless encryption and secure network; Soft AP is supported for fast wireless network establishment, and WPS encryption supported for you to quickly encrypt and secure your wireless network.

In conclusion, WNC-0601 is is easy-to-use, and of robust signal, long transmitting distance.

1.1 Package Contents

- ➢ WNC-0601
- Quick Installation Guide
- CD Manual/Driver/Utility

The above list is for your reference only, the actual contents may differ according to the product you purchase.

1.2 LED Indicator Description

There is one status LED indicator on the side of the wireless network adapter. It lights up and stays ON when working correctly, and flashes when transferring data.

1.3 Product Features

- Supports soft AP feature
- > Detects wireless network and adjusts transmitting rate automatically
- Provides two working modes: Client Infrastructure and Ad-Hoc
- Supports WEP data encryption and WPA-PSK/WPA2-PSK encryption methods
- Supports WPS (Wi-Fi Protected Setup) encryption to secure your wireless network
- Complies with Windows 7 /XP/ 2000/Vista.

1.4 Product Usage

The WNC-0601 Wireless PCI card offers a fast, reliable and extendable solution for wireless access.

It is mostly used in the following circumstances:

1. Enables staff members who require greater mobility in the office to have access to wireless networks anywhere inside their company.

2. Enables wireless communication for companies or places which are not suitable for wired LAN installation because of budget or building environment restrictions, such as historical buildings, rentals, or places for short-term usage.

3. Suits businesses or individual who often changes network topology.

4. Suits company or individual who would like to avoid using expensive cables or renting lines etc.

1.5 Before Installation

1. Please peruse this user guide before you install and use the product.

2. Please close or uninstall the configuration programs of other manufacturers' before you install the configuration programs of WNC-0601 to avoid possible UI conflict.

3.In order to avoid possible network conflict between this LevelOne network adapter and those of other manufactures, we recommend you to first disable the network adapters of other manufacturer when installaing the driver.

1.6 Disable other manufacturers' wireless network adapters



1. Right click "My Computer" and select "Manage"

2. On the Computer Management screen , select "Device Manager" - "Network adapters", and right click the network adapter you want to disable and click "Disable"



3. Click the "Yes" button on the dialogue box to disable the network adapter.

802.11	n USB Wireless LAN Card
⚠	Disabling this device will cause it to stop functioning. Do you really want to disable it?
	<u>Y</u> es <u>N</u> o

1.7 Product Maintenance

- 1. Please keep the product away from water and humid environment to guarantee its normal performance
- 2. Protect it against hazardous substances (such as acids, alkalis etc).
- Please don't directly expose the adapter to the sunlight or excessive heat.
- 4. Please contact LevelOne tech support if any problems occur.

Chapter 2 Installation Guide

This chapter will guide you through the process of installing the network adapter software package, with the included software CD. The package integrates driver and configuration software. Thus, when you are installing the driver, the configuration software will be installed automatically as well. The software installation steps and operating guide in this user guide are explained under Windows XP, Installation steps for other operating systems are similar.

2.1 Hardware Installation

2.1.1 Install the PCI card

Please insert the Wireless PCI card into the PCI slot of your computer when it is turned off and then start it (Please make sure the PCI adapter's "gold fingers" are clean. If the PCI adapter can not be identified after being inserted into the mainboard slot, or the adapter can not scan signals after the driver being installed, please shut down your computer and clean the adapter , and then re-install).



2.2. When The "Found New Hardware Wizard" system dialogue pops up, we recommend that you select **"Cancel"** and use the included Setup Wizard software CD for fast installation.



2.3 Insert the included CD into the CD drive of your computer to auto-run the program. (If it doesn't auto-run, please double click "**Setup.exe**" in the CD,). When the below screen appears click "**Utility**" button.



2.4 Select "I accept the terms of the license agreement" and click "Next".



2.5 Two set up types are provided: one is "Install driver and LevelOne WLAN Config Tool", the other is "Install driver only". We recommend you to use the

default installation method. click "Next"





2.6. Click "Install" to install the driver and configuration software.

2.7 Click "Finish" to complete the installation.

Whic-0601 - InstallShield Wiz	ard		
	InstallShield Wizard Complete	stully installed WNC-0601.	Click Finish to exit the wizard
II levelone			
trakatlähikkör ol	< Back	Finish	Cancel

Chapter 3 How to use the Windows Built-in Wireless Configuration

This chapter explains to users who don't install LevelOne configuration program how to use Windows Built-in Wireless Configuration to connect to the wireless network .

Use of the Windows Built-in Wireless Configuration requires enabling Windows Wireless Configuration service(the default is enabled).

3.1 Wireless Network Connection under Windows XP

1. Right click "My Network Places" on the desktop and select "Properties".



2. Open the network connection.Right click "Wireless Network Connection" and select "View Available Wireless Networks" as shown below.

	1
View Available Wireless Networks Status	4
-	
Repair	
Bridge Connections	
Create <u>S</u> hortcut	1
<u>D</u> elete	
Rena <u>m</u> e	
P <u>r</u> operties	
	_

3. On the right of the screen displayed are the currently scanned wireless networks. If the one you want to connect has not been scanned, click "Refresh Network List" to update the network list.

Select the wireless network you want to connect, and click "Connect" or double click this wireless network. Input the key in the key dialogue box (the key input is case-sensitive) then click "Connect".

Network Tasks	Choose a wireless network
🚭 Refresh network list	Click an item in the list below to connect to a wireless network in range or to get more information.
Set up a wireless network for a home or small office	(()) LevelOne & Security-enabled wireless network (WPA) 2100
Related Tasks	This network requires a network key. If you want to connect to this network, click Connect.
Change the order of preferred networks	Wireless Network Connection
Change advanced settings	The network 'LevelOne' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network. Type the key, and then cick Connect.
	Network key:
	Confirm network key:
	Connect Cancel
	Connect

NOTE: If the wireless device you are connecting to is not encrypted, the key dialogue box will not pop up.

4.When it shows "Connected" as the picture below, then you can enjoy wireless access to Internet now.



5. You can modify wireless network key from "Change advanced settings".



6. Select "Wireless Networks" and choose the one you want to modify, and then click "Properties".

eneral	Wireless Networks	Advanced
oniorai	 Operation and the second se Second second sec	Tis Tarlood
🗹 Use	e Windows to configur	e my wireless network settings
X	able networks:	
		terrer and the data dependent of the terrer black of
		from, or find out more information range, click the button below.
		View Wireless Networks
		VIEW WITEIESS NEtWORKS
Auto belo		vailable networks in the order listed
Auto belo	matically connect to a w:	
Auto belo	matically connect to a w:	atic) Move up

7. Modify the key in the appearing dialogue box.

Association Aut	antication	Connection
Add	encouon	Connection
Network name (S	SID):	LevelOne
Wireless netwo	rk key	
This network r	equires a ke	ey for the following:
Network Auth	entication:	WPA-PSK
Data encryptic	in:	AES
Network key:		•••••
Confirm netwo	k key:	8000000
Key index (adv	anced):	1 (2)
The key is	provided for	r me automatically
This is a com access point		mputer (ad hoc) network; wireless ed
access points	are not us	OK Car

3.2 Wireless Network Connection under VISTA

1. Click the Wireless Connection icon in the lower right corner of your desktop and select "Connect to a network" as shown below.



2 Select the wireless network you wish to connect and click "Connect" or double click the wireless network to connect. Click the Refresh icon in the upper right corner to update the network list if you don't find the specified wireless network.

	ect to a network network to co	nnect to	
Sho	w All	•	49
8	LevelOne	Security-enabled network	î llte.
<u>.</u>	LevelOne	Unsecured network	llte.
			-
	onnection or netwo work and Sharing C		
			Connect

3. If the wireless network that you are connecting has enabled security mode, you'll be prompted to enter the network key .Click "Connect" after you enter the correct key.

🔰 🍄 Connect to a	network			
Type the net	work security key c	or passphrase for	r LevelOne	
The person who	setup the network can g	ive you the key or pas	isphrase.	
Security key or p	assphrase:			
•••••	12			
🕅 Display chara	ters			
If you h	ave a <u>USB flash drive</u> wit <mark>l</mark>	n network settings for	r Tenda, insert it now.	
			Connect	Cancel

 The following screen will appear after successfully connected to the wireless network.



5. If you want to change the wireless network key, just right click the wireless network's SSID and then select "Properties".

Show All	•	
LevelOne	Connected	Disconnect
		Status
LevelOne	Security-enabled network	Properties
		Diagnose
LevelOne	Unsecured network	

6. You can modify the key from the appearing dialogue box.

evelOne Wireless Net	vork properties	• ×
Connection Security		
Security type:	WPA-Personal	
Encryption type:	AES	-
Network security key		1
	Show characters	
	ОК	Cancel

3.3 Wireless Network Connection under Windows 7

 Click the wireless connection in the lower right corner of the computer's desktop to view the available wireless networks. Select the wireless network you wish to connect and click "Connect" or double click the wireless network to connect. If you don't find the specified one, please click the refresh icon in the upper right corner to update the list.



2. If the wireless network you are connecting is encrypted, you'll be prompted to enter the key. Click "Ok" after you enter the correct key.

Type the networ	k security key	
Security key:	•••••• W Hide characters	
	OK	Cancel

3. It shows "Connected" after successfully connected. You can disconnect it, view its status or modify the wireless network properties by right click the wireless network



Chapter 4 Client Wireless Utility

When you are installing the driver, select "Install driver and WLAN Config Tool" and the adapter driver and client utility will be installed. All functions of this adapter can be configured via LevelOne's utility interface (in the following text it is abbreviated as UI).

Select "Start"—"All Programs" —"LevelOne"— "WNC-0601", or click the "WNC-0601" shortcut on your PC's desktop to start UI.

4.1 Station mode (Client Mode)



Station mode (Client Mode) Overview

It is a common solution to use the wireless network adapter as a client to receive signals.

Main interface for station mode



The function buttons on the top (From L to R)are respectively Site Survey, Link Information, Profile, Advanced, About, and MiniSize. While the left column displays Turn On/Off RF, Security /No security, and Signal status.

4.1.1 Site Survey



The "Site Survey" screen displays currently scanned wireless signals and you can click one to connect the signal. Select one and you may view the AP's MAC address, wireless mode (B/G/N), authentication type, and encryption type, or WPS authentication and signal strength.

Before you connect to a wireless network, please click the "Rescan" button to update the wireless network list and select the one you wish to connect, then click the "Connect" icon.

boss		2			()	63%
Broadcom	りりりり	11	6 8	Q		18%
IT	Ø.	6			\$	37%
sap2	Ŷ	6	09	-	\$	57%
SSID0 SSID1	Ŷ	2 12	09	0		2% 73%

For the networks that are not encrypted, you can directly click "Connect". However, for the encrypted wireless networks,a "Profile" dialog will pop up and you must select the corresponding authentication type and encryption type,and then click the "Next" button to input the correct key.Please note that this type of connection will not create a profile ,thus next time connect to this network you still need to select it manually.

Authentication	WPA2-P5K	
Encryption	AES	
* *	Profile	
'PA Preshared Key	******	

The detailed explanations about the authentication and encryption are as follows:

WEP: Supports 10/26-bit Hex characters and 5/13-bit ASCII.

WPA-PSK: Supports 8-63-bit ASCII and 8-64-bit Hex characters.

WPA2-PSK : Supports 8-63-bit ASCII and 8-64-bit Hex characters.

WPA-PSK/WPA2-PSK : Supports 8-63-bit ASCII and 8-64 -bit hex characters.

▲ NOTE:

The Hex characters consist of numbers 0~9 and letters a-f.

ASCII characters consist of any Arabic digitals/letters and characters.

4.1.2 Link Information



After successfully connected to one wireless network, you can view its detailed information by clicking the "Link Information" on the main interface.

 "Link Status" screen displays the detailed information of the connected AP including its SSID,MAC address, authentication type, encryption type, network type and channel.

🏋 👂 SSID	Broadcom		
👔 🗼 Rate	6.5 Mbps	👂 IP Address	192,168,1,115
👔 🦻 Channe	11 (2462 MHz)	s Mask	255.255.255.0
~	Link Informat	ion	
Status	Link Informat		
Status		90-4C-09-00-29	
Status	Broadcom <> 00-	90-4C-09-00-29	
Status Extra Info	Broadcom <> 00- Link is Up [Tx Powe	90-4C-09-00-29	
Status Extra Info Authentication	Broadcom <> 00- Link is Up [Tx Powe Open None	90-4C-09-00-29	

2. "Throughput" screen displays the signal strength of each of the wireless adapter's antennas and the link quality.

-	Link Info	rmation	
Link Quality		U	59 %
Signal Strength 1			-81 dBm
Transmit Link Speed	6.5 Mbps	Receive Link Speed	5.5 Mbps

3."Statistics" screen is used to count the total Rx and Tx data packets, including transmitted, retransmitted and fail to receive ACK after all retries.You can click the "Reset Counter" button to clear the count.

Transmit O Receive		Reset Counter
ransmitted Successfully	=	637
Retransmitted Successfully	-	632
ail To Receive ACK After All Retries	-	64

4.1.3 Profile

Except the above common connection type, you can also connect to the wireless network by adding a profile on the "Profile" screen. The Profile screen is used to save the wireless network parameters. When the adapter is successfully connected to a network, the profile name of this network will automatically be added here, which helps the adapter to quickly connect to the wireless network next time. However, there's one exception that when you have set the hidden SSID, namely the SSID can not be scanned, then you must manually connect by adding the profile name. The main interface is as shown below.

+ - 🏹	🖉 🖻 🕖	Profile List		×
PROF1	Level One			\$
Profile Inform	ation			_
Profile Inform Profile Name	ation PROF1	Authentication	Open	((q))

Add: create a new profile

Delete: delete the existing profile

Edit: modify the existing profile

Import: import the previously configured profile.

Export: export the configured profile.

Add WPS Profile: WPS setting requires that the connecting wireless device support WPS function. WPS helps you to fulfill wireless encryption fast as well as secure your wireless network. For detailed setting steps, refer to appendix2.

There are two network types for your option when clicking the "Add" button to add wireless adapter connection: Infrastructure and Ad-Hoc.

» > SSID	Broadcom		
🔹 👂 Rate	6.5 Mbps	> IP Address	192.168.1.115
Channel	11 (2462 MHz)	> Mask	255.255.255.0
A 44	Profile		
🗢 🌩 Profile Name	Profile PROF1		
Profile Name SSID			

Infrastructure is an application mode that integrates the wired and wireless LAN architectures. It is different from Ad-Hoc in that in this mode the computer installed with the wireless network adapter has to fulfill the wireless communication via AP or wireless router. It can be devided into two modes: "wireless AP + wireless network adapter" and "wireless router + wireless network adapter".

Ad-Hoc is a special wireless mobile network application mode. All nodes in the network are equal. Usually it is used to share resources by connecting the opposing computer's wireless adapter.

1. Infrastructure Profile Management

When you are connecting the wireless adapter to an AP or a wireless router, please select the Infrastructure mode.

Click the "Add" button and select the network type as"

Infrastructure", and enter the profile name and SSID or you can find the SSID you wish to connect from the drop-down list.

** > SSID	Broadcom		
👔 🕻 Rate	13.0 Mbps	> IP Address	192.168.1.115
S Channel	11 (2462 MHz)	> Mask	255.255.255.0
+ +	Profile		
← → Profile Name	Profile PROF1		
← → Profile Name SSID			
	PROF1	ure - Connect to	AP

Click the next button to select the authentication type and encryption type such as WPA-PSK and AES, and then input the key and click next.

Authentication	WPA2-PSK	
Encryption	TKIP	
+ +	Profile	
WPA Preshared Key	********	

After a profile is successfully added, the profile name can be seen on the profile list, you can edit , import or export the profile, click "Active" to finish the connection, now you can also view the detailed connection status on the "Link Information" screen.

+ - 🔀	🖉 🖻 📀			
PROF1	LevelOne		V	Ø
Profile Inform	ation			
Profile Inform Profile Name	ation PROF1	Authentication	WPA2-PSK	((9))

NOTE:

If the SSID broadcast function of the wireless router or AP you wish to connect is disabled, then the wireless adapter can not scan the SSID, thus you need to connect by creating the corresponding profile.

2.Ad-Hoc Profile management

Using the Ad-hoc mode to establish a wireless network requires that each computer should be equipped with a wireless network adapter. By connecting these wireless adapters, computers are able to share the resources. The detailed setting steps are as follows:

1) Firstly you'll have to allocate a static IP to each wireless adapter to be connected in Ad-hoc mode.

a.Right click "My Network Places" on your computer's desktop and select "Properties".



b.Right click "Wireless Network Connection", and select "Properties"



c.Select "Internet Protocol(TCP/IP)" and click "Properties".

	ss Networks Advanced	
Connect using:		
兴 802.11n	USB Wireless LAN Card	Configure
This connection	uses the following items:	
V TNetwo	rk Monitor Driver	1
	Protocol (IEEE 802.1x) v3.	5.3.0
🗹 🐨 Interne	t Protocol (TCP/IP)	
<		
Install	Uninstall	Properties
Description		13
wide area ne	Control Protocol/Internet P twork protocol that provides e interconnected networks.	communication
Show icon ir	n notification area when cor	nnected
Notifu me wł	nen this connection has limit	ted or no connectivity
Troday mo m		

d. Please enter the IP address and subnet mask, and make sure this IP address is not used by other devices in the network.For example: if your wireless adapter's IP address is 192.168.0.1 , then set other wireless adapters' IP addresses within the range of 192.168.0.2—192.168.0.254.Click "Ok" to save the settings.

neral	
	d automatically if your network supports ed to ask your network administrator fo
🔿 Obtain an IP address autor	natically
Use the following IP addres	S.
IP address:	192.168.0.1
Subnet mask:	255. 255 . 255 . 0
Default gateway:	(a) (b) (c)
Obtain DNS server address	automatically
Use the following DNS service	ver addresses:
Preferred DNS server:	
Alternate DNS server:	A 32 40
	Advanced.

2) Create a new Ad-hoc profile

Click the "Add" button and enter the network name in the SSID field to identify the wireless network, and select Ad-hoc as the network type and then select the channel.

= + >	Profile	×
Profile Name SSID	PROF2	
Network Type Channel	C Infrastructure - Connect to AP C july difference - Connect to other computers	

Click the "Next" button to select the authentication type and encryption type and then input the correct key and click "Next".

Authentication	WPA-NONE	•
Encryption	ТКІР	
	TKIP AES	
÷ >	Profile	
PA Preshared Key	******	

After a profile is successfully added, the profile can be seen on the profile list ,select it and click the "Active" icon on the lower right corner.

V PROF1	LevelOne		8	0
VPROF2	Level One 2		8	4
Profile Inform	ation			
Profile Inform Profile Name	ation PROF1	Authentication	WPA2-PSK	((0))

And then search for the wireless network on other clients. Double click the wireless network you have configured and you'll be prompted for the key .After entering the key, click "Connect".

199 Wireless Network Connect	ion 4
Network Tasks	Choose a wireless network
😴 Refresh network list	Wireless Network Connection
Set up a wireless network for a home or small office	The network 'LevelOne' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network. Type the key, and then click Connect.
Related Tasks	Network key:
Learn about wireless	Confirm network key:
Change the order of preferred networks	Connect Cancel
Change advanced settings	LevelOne
	This network requires a network lay. If you want to connect to this network, disk Connect.
	Cornect

When the highlighted part shows "Connected", it indicates the connection is

successful.





This section is used to set the channel range. Please follow the laws and regulations in your country to setup the wireless channel range.

levelor	ne:	000)() ×
		♦ IP Address ♦ Mask	
2	Advanc	ed	×
Wireless Mode Select Your Cor 2.4GHz	2.4GHz Intry Region Code 1: CH1-13 0: CH1-11 1: CH1-13 2: CH10-11 3: CH10-13 4: CH14 5: CH1-14 6: CH3-9 7: CH5-13		
	Ар	ply	
4.1.5 About

This screen mainly displays the version information of the UI's different

programs	as well a	s Level one	e's copyright	statement.
----------	-----------	-------------	---------------	------------

Version Utility	4.0.0.0	Date	2011-01-13
Driver	3.1.5.0	Date	2010-05-27
SDK	1.0.6.0	Date	2010-06-14
Firmware	0.23	EEPROM	1,1
MAC Address	00-11-	6B·CO-FF-F3	

4.2 AP mode

When you want to use the wireless adapter's AP function, please right click the UI icon on the taskbar of your computer desktop and select "Switch to AP Mode".

	Launch Config Utility	
	Use Zero Configuration as Configuration Utility	
	Switch to AP Mode	
	Exit	6
_	L	×

In this mode, the wireless adapter acts as an AP to transmit wireless signal and create a wireless network, while allowing other wireless clients to access this network.

As shown in the diagram below: The PC in the left has already accessed to the

Internet by using a wired network adapter, meanwhile, you install a LevelOne wireless adapter (take a PCI wireless adapter as an example) and its UI on this computer, and set the adapter to AP mode.

By using the wireless adapters to scan the AP'S SSID to connect, the computers in the right can also access to the Internet after successfully connected



In this mode, the client utility differs from that in station mode, and the main interface is as shown below.



When it is switched to AP mode, the wireless adapter will automatically set its IP address as 192.168.123.1, and other clients that connected to this AP will automatically obtain the IP addresses of: 192.168.123.X (X is any integer from 2 to 254).The function buttons on the top (From L to R)are respectively Config AP, Advanced, Access Control List, Associate List, About, and MiniSize, while the left column displays Turn On/Off RF, Security /No security, and AP mode icon.

4.2.1 Config AP

This screen is used to set the AP's general parameters including SSID, wireless mode, channel, authentication type and encryption type, as shown in the picture below.

levelone		>
")" > SSID	LevelOne-F3	
	2.4GHz P 192.168.123.1 6 (2437 MHz) Mask 255.255.255.0	
	Config AP	>
SSID	LevelOne-F3	

Here the authentication type is set as "Open" and the encryption type "Not Use".

¶" 🧯		LevelOne-F3		
a 🕫	Mode			192,168,123,1
ũ, I	Channel	6 (2437 MHz)	Mask	255.255.255.0
+	+	Config AP		
•	*	Config AP		
WPA	➡ •PSK Key	Config AP		
	➡ PSK Key p Rekey Inter	[Kpackets

4.2.2 Advanced

This screen is used to set the advanced parameters of the wireless adapter when working in AP mode, such as No forwarding among wireless clients and TX power.

»)	> SSID	LevelOn	e-F3				
	> Mode	2.4GHz		5	ΠP	192,168,123,1	
L	Channel	6 (2437	MHz)	ŝ	Mask	255.255.255.0	
			vanced				
1	🔽 No forwardir			ents			
	♥ No forwardir Beacon Interval	ig among w		ents			
i		ig among w	ireless cli				

No forwarding among wireless clients: This feature isolates the communications among the wireless clients that are connected to the wireless adapter in AP mode.

TX power: To adjust the transmit power for the wireless adapter

4.2.3 Access Control List

Access Control is based on the wireless adapter' MAC addresses to allow or reject a specified client's access to this wireless network.

	Access Control List	×
Access Policy	Disable	
MAC Address	Disable Allow All Reject All	
Add		
Delete		
Remove All		
Apply		

Access Policy:

Disable: To disable the filter function.

Allow All: To permit all hosts whose wireless MAC addresses are included in the list to access the wireless network, other hosts whose wireless MAC addresses have not been added to the list will be prohibited by default.

Reject All: To prohibit all hosts whose wireless MAC addresses are included in

the list from accessing the wireless network, other hosts whose wireless MAC addresses have not been added to the list will be permitted by default.

MAC Address : To input the client's wireless MAC address you want to filter in the physical address field.

Add: to add the entered wireless client MAC address to the list.

Delete: to delete an existing MAC address in the list.

Remove All: to delete all clients' wireless MAC addresses in the list.

Add the MAC address of the client's wireless network adapter to the list and select "All Allow" in the access policy drop-down list, computers whose wireless MAC addresses are not included in the list will be rejected by default. Select "All reject", and only the host computers whose wireless MAC addresses are included in the list can not access the AP wireless network.

4.2.4 Associate List

When there's client connected to this AP and has successfully obtained the IP address ,then the client's MAC address, AID and Status can be seen on the list.

	Asso	ciate List		×
MAC Address	AID	Power S	Status	
•				•

4.2.5 AP Mode under Windows 7

1. Under Windows 7, wireless adapters are allowed to work in both STA and AP modes. Here, the wireless adapter acts not only as a client, but also an AP to send wireless signal, which equals to an amplifier. Right click the UI icon on the lower right corner of the computer desktop and select "Switch to STA+AP Mode".

	Launch Config Utility
Η	Switch to STA+AP Mode
	Exit

2. You can change the SSID on the Config AP screen and control the number of the connected clients by modifying the max number of peers. AP mode has only one encryption method which is WPA2-AES by default and cannot be modified.

le	velone	G	00901	
" <mark>1</mark> "	> SSID			
a	Mode		P IB	
	Channel		Mask 🕹	
		Advanced	j	
		Advanced	1	
	SSID	Softap-AB	Encryption AES	
WP		Softap-AB WPA2-PSK		
	Authentication	Softap-AB WPA2-PSK		

Appendix 1: Acronyms and Terms

WLAN Wireless Local Area Network

802.11 A family of specifications developed by the IEEE for WLAN technology.

802.11a An extension to 802.11 WLAN standards that provides up to 54 Mbps transmission in the 5 GHz UNI radio band.

802.11b An extension to 802.11 WLAN standard that provides up to 11 Mbps transmission in the 2.4 GHz ISM radio band. 802.11b uses DSSS modulation.

802.11g An extension to 802.11 WLAN standard that provides up to 54 Mbps transmission in the 2.4 GHz ISM radio band. 802.11b uses OFDM modulation and is backwards compatible with 802.11b.

802.11n higher transmission rate, supports Multi-Input Multi-Output(MIMO) technology.

WEP Wired Equivalent Privacy. A security protocol for WLANs defined in the IEEE 802.11 standard.

WPA Wireless Protected Access , adopts rotating keys.

RSN Robust Security Network · A substitute for WPA, and it adopts 802.1x standard and advanced encryption

ICS Microsoft Internet Connection Sharing enables multi-computer to share access to Internet via one PC.

Appendix 2: How to Set WPS

WPS setting supports two modes :PBC and PIN. The detailed setting steps are as follows:

- 1.Wireless Connection in PBC Mode
- 1.1 Enable the router's WPS-PBC feature.

If your router provides WPS button, just press and hold it for about 1 second, then the WPS LED will be flashing for about 2 minutes, which indicates the router's WPS feature has been enabled. Otherwise, you can also log on to the router's web-based utility to enable the PBC mode in WPS settings screen(For detailed settings,please refer to your router's user guide).



- 1.2 Perform PBC connection on the UI of the wireless adapter
- 1) On the main interface of LevelOne's UI, click "Profile"—"Add WPS Profile".



2) On the Profile screen, select "Push-Button Configuration" (PBC) and then click the "Next" button, select "Start PBC" two minutes after the router enables the WPS function. The connection is established when the negotiating process finishes.

* *	
WPS AP List	🗾 🔲 Auto
WPS Method	Push-Button Configuration(PBC)
	C PIN / numeric code

Start PBC:

		0%	
WPS status	is not used		
1			
	Start PBC		

Negotiating process:

 •			_
		10 %	
-			
PBC -Scann	ING AP		
	Finish		
	0.010010		

A profile forms automatically after the connection is successfully established.

V PROF1	LevelOne			
Profile Inform	ation			_
Profile Inform Profile Name		Authentication	Open	(@))

1.3 Using the wireless adapter's WPS button to perform PBC connection.

If your wireless adapter provides a WPS button, you may use the button to perform PBC connection.

a). Run the adapter's UI and switch to STATION mode

b).Two minutes after the router's WPS-PBC is enabled, press the adapter's WPS button to connect in PBC mode.

c).You may view the PBC connection process on the UI's PBC screen.

2. Wireless Connections in PIN Mode

On the "Add WPS Profile" screen, select "PIN " as the WPS Method. You may select the wireless AP to be connected in WPS mode on the WPS AP drop-down List, or select "Auto "and then click the next button.

WPS AP List	IT 🔽 Auto
WPS Method	C Push-Button Configuration(PBC)
	PIN / numeric code

2.1 Enrollee Mode

The PIN code field lists the adapter's current PIN code, when you select "Enrollee" as the Config Mode, you need to copy this PIN code and input it in the PIN code field of the router's WPS setting screen.

Pin Code	52963964	Renew]
Config Mode	Enrollee	• W	PS Profile

First enter its WPS configuration screen, enable WPS settings and select PIN for WPS mode and then input 18686791 in the PIN code field, and then click the "Save" button. When the WPS indicator of the Router starts flashing, it indicates that WPS feature is enabled.

WPS Config		
	asily by choosing l	PIN or PBC method to do Wi-Fi
Protected Setup.		
WPS Settings:	O Disable	● Enable
WPS mode:	○PBC ⊙PIN	18686791
WPS Summary		
WPS Current Status:		Idle
WPS Configured:		No
WPS SSID:		Tenda
WPS Auth Mode:		Open
WPS Encryp Type:		None
WPS Default Key Index:		1
WPS Key(ASCII):		
AP PIN:		35475088
Save Reset OOB		

Click the next button on the Profile screen and click "Start PIN" to start the PIN code negotiation.

-		0%	
WPS status	; is not used		
	Start PIN		

2.2 Registrar Mode

On the "Add WPS Profile" screen, select the SSID of the AP that need to negotiate in WPS mode instead of selecting"Auto".Then select"PIN" as the WPS method and click the next button to display the folowing screen:

Pin Code	52963964	Renew
Config Mode	Enrollee	▼ WPS Profile
	Enrollee Registrar	

Select "Registrar" as the config mode and enter the router's PIN code, such as 35475088 that displays on the router's WPS screen in section 2.1, in the PIN code field here.

* >	Profile	3
Pin Code	52963964 Renew	
Config Mode	Registrar 💌	'PS Profile

Now you can view the SSID ,authenticaiton type,and encrytion type that need to be negotiated by the WPS in registrar mode. These values can be modified but we recommend using the default. Here we use the defaut setting and then click the next buton.

SSID	ExRegNWC0FFF3	
BSSID	00-3A-35-11-9C-08	
Authentication	WPA2-PSK	•
Encryption	AES	-

You can view the negotiation key on the screen below ,but you are not recommended to modify it,just click the next buton.

• •	
WPA Preshared Key	***********
	Show Password

Then click "Start PIN" on the screen below to perform WPS connection.

		0%	
_		0%	
WPS status	is not used		
	Start PIN		

NOTE:

1.Under the WPS connection mode, when multiple routers simultaneously enable the WPS function, it may cause connection failure.

2.If the router connect to the adapter using the WPS, only one client can be connected at one time, and so if the router need to connect to multiple clients through WPS, you should repeat the WPS operation.

Appendix 3: FAQ

Q1: Microsoft ICS service is pending.

A1: If ICS service cannot be enabled after a long time, please re-switch from Station Mode to AP Mode ,if not successful , please restart the computer.

Q2: ICS is already bound by another network device.

A2: Microsoft ICS service can only combine one group of WAN and LAN. This message indicates ICS may have been enabled by other network adapters. Please manually cancel ICS and re-switch to AP mode.



Manually enable or cancel ISC.

Q3: Failed to enable ICS.

A3: Microsoft ICS service can only combine one group of WAN and LAN. This message indicates ICS may have been enabled by other network adapters.

1.Please manually cancel or restart and cancel ICS, then re-switch to AP mode.

2. This dialogue box appears because virtual wi-fi miniport adapter can only be used by one wireless network adapter at a time. Please disable any other non-LevelOne wireless network adapters and re-switch to AP mode.

Q4: Under Windows 7, when I switch from station mode to AP mode , the screen flashes" Disabling ICS , please wait......" and immediately return to station screen.

A4: This is because you have disabled "Microsoft Virtual WiFi Miniport Adapter", please re-enable it and then switch to AP mode.

Q5:Client cannot obtain IP when connected to soft AP of the wireless network adapter.

A5:Manually set an IP address at the same net segment as that of the AP and the gateway and DNS at the IP address of AP. Thus, communication can be achieved.

Q6: The SSID is not fully displayed on the wireless network list, what should I do?

A6: Keep the mouse on the displayed SSID for about 2 seconds, as the below picture shows, and you'll see the full SSID on the appearing box.

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Q7: Under Windows 2000 system, IP address can not be obtained when it is switched to AP Mode.

A7: Under Windows 2000 system, you have to manually configure sharing and then switch to AP. And an IP address of 192.168.0.1 will be obtained.

If you still have any problem, please contact our customer service or visit our website: http://www.levelone.eu/support.php

Q8: Sometimes the UI can not be moved by the mouse and also can not be minisized, why?

A8: When you are performing some configurations or connections ,the UI only activates the currently operating window,other windows are locked and can not be operated,but it will restore to normal when you close or finish the current configuration and connection.

Q9: How to exit the UI?

A9: Right click the system tray icon and click "Exit" on the appearing dialog.



Q10: Now that the LevelOne WNC-0601 wireless adapter's driver can be installed without the Software CD, why it still provide the CD?

A10: Some functions are missing for the drive integrated in the WNC-0601 adapter, and also the drive does not support the WPS button and AP mode, however, by installing the drive on the CD, the UI can be installed to fulfill these advanced features.

Q11: Why I can not normally use the Drive integrated in WNC-0601 under MAC operating system?

A11:WNC-0601 can only integrates the drive under Windows system, to use WNC-0601 under MAC system, please insert the WNC-0601 to the computer with MAC OS; the system will identify the adapter as a CD, pop this CD out, and then install the MAC drive included in the CD.

Appendix 4: Safety

FCC WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CE Marking Warning

Digital Data Communications, declares that this product (Model-no. WNC-0601) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

The CE-Declaration of Conformity can be downloaded at: http://www.levelone.eu/support.php



Eu Declaration or Declaration of Conformity