802.11n Wireless

LAN PCI Adapter

WLN-1206

CAMEO

User's Guide

Federal Communication Commission Interference Statement

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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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

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

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

經型式認證合格之低功率射頻電機,非經許可,公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用,並改善至無干擾時方得繼續使用。前項合法通信,指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

EN60950-1: 2006+ A11:2009+A1:2010

Safety of Information Technology Equipment

EN 62311: (2008)

Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz - 300 GHz)

EN 300 328 V1.7.1: (2006-10)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

EN 301 489-1 V1.8.1: (2008-04)

Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements

EN 301 489-17 V2.1.1 (2009-05)

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

|	
cs Česky [Czech]	*[Jméno výrobce]* tímto prohlašuje, že tento *[typ zařízení]* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da Dansk [Danish]	Undertegnede *[fabrikantens navn]* erklærer herved, at følgende udstyr *[udstyrets typebetegnelse]* overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de Deutsch [German]	Hiermit erklärt *[Name des Herstellers]*, dass sich das Gerät *[Gerätetyp]* in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab *[tootja nimi = name of manufacturer]* seadme *[seadme tüüp = type of equipment]* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, *[name of manufacturer]*, declares that this *[type of equipment]* is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es Español [Spanish]	Por medio de la presente *[nombre del fabricante]* declara que el *[clase de equipo]* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *[name of manufacturer]* ΔΗΛΩΝΕΙ ΟΤΙ *[type of equipment]* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr Français [French]	Par la présente *[nom du fabricant]* déclare que l'appareil *[type d'appareil]* est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it Italiano [Italian]	Con la presente *[nome del costruttore]* dichiara che questo *[tipo di apparecchio]* è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *[name of manufacturer / izgatavotāja nosaukums]* deklarē, ka *[type of equipment / iekārtas tips]* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.

Lietuvių [Lithuanian]	Šiuo *[manufacturer name]* deklaruoja, kad šis *[equipment type]* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart *[naam van de fabrikant]* dat het toestel *[type van toestel]* in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *[isem tal-manifattur]*, jiddikjara li dan *[il-mudel tal-prodott]* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
hu Magyar [Hungarian]	Alulírott, *[gyártó neve]* nyilatkozom, hogy a *[... típus]* megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *[nazwa producenta]* oświadcza, że *[nazwa wyrobu]* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	*[Nome do fabricante]* declara que este *[tipo de equipamento]* está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	*[Ime proizvajalca]* izjavlja, da je ta *[tip opreme]* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*[Meno výrobcu]* týmto vyhlasuje, že *[typ zariadenia]* spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	*[Valmistaja = manufacturer]* vakuuttaa täten että *[type of equipment = laitteen tyyppimerkintä]* tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar *[företag]* att denna *[utrustningstyp]* står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

TABLE OF CONTENT

INTRODUCTION

Congratulations on your purchase of this 802.11n Wireless LAN PCI Adapter.

This manual contains detailed instructions regarding the operation of this product. Please keep this manual for future reference.

With the 802.11n Wireless LAN PCI Adapter, a desktop or laptop computer can communicate with another computer wirelessly. An easy-to-use utility is bundled with the 802.11n Wireless LAN PCI Adapter for configuration, monitoring, and diagnostic purposes.

The 802.11n Wireless LAN PCI Adapter can provides wireless speed wireless speed up 300Mbps RX PHY Rate,150Mbps TX PHY Rate.

The 802.11n Wireless LAN PCI Adapter provides users with access to real-time information anywhere in their organization. The mobility of the 802.11n Wireless LAN PCI Adapter provides productivity and service, which are not available under wired networks. The 802.11n Wireless LAN PCI Adapter can easily adapt from peer-to-peer networks, suitable for a small number of users, to full infrastructure networks of thousands of users that allow roaming around a broad area.

Overview of this User's Guide

Introduction. Describes the 802.11n Wireless LAN PCI Adapter and its features.

Unpacking and Setup. Helps you get started with the basic installation of the 802.11n Wireless LAN PCI Adapter.

Hardware Installation. Describes the LED indicator on the Adapter.

Software Installation. Describes how to setup the driver and the utility setting.

Technical Specifications. Lists the technical (general, physical and environmental) specifications of the 802.11n Wireless LAN PCI Adapter.

UNPACKING AND SETUP

This section provides unpacking and setup information for the Wireless N PCI Adapter.

Unpacking

The box should contain the following items:

◆ One IEEE 802.11n Wireless LAN PCI Adapter

◆ One Driver & Utility CD-ROM

If any item is found missing or damaged, please contact your local reseller for replacement.

Setup

Before installation, check the following:

◆ Make sure your computer is running at least a 300MHz or above processor with 256MB RAM or above

● Visually inspect the PCI Adapter and make sure that it is fully plugged in to the PCI slot.

◆ The operating system on your computer must be the following: Windows 2000 (Service Pack 4), XP (Service Pack 2), Windows Vista

◆ A 802.11n or 802.11b/g access point.

◆ Make sure the environment has minimal interference and obstructions.

IDENTIFYING EXTERNAL COMPONENTS

LED

Link

The Link LED indicator lighted green when the 802.11n Wireless LAN PCI Adapter is connected to wireless network successfully.

ACT (Activity)

The ACT LED indicator blinking green when the 802.11n Wireless LAN Adapter is transmitting or receiving data.

Check the installation

The LEDs of the Wireless LAN Adapter are clearly visible and the status of the network link can be seen instantly:

1. Once the device is plugged to the station's PCI slot, the LED of the Wireless LAN Adapter will light up indicating a normal status.

2. When the device plugged to the station's PCI slot and the driver was installed, the Link will start alternate blinking, it means that the device is starting to scan the wireless devices near the Wireless LAN Adapter.

3. While the Wireless LAN Adapter linked up and transmitting data to the Access Point or to other Wireless LAN station, the ACT LED will lighted green.
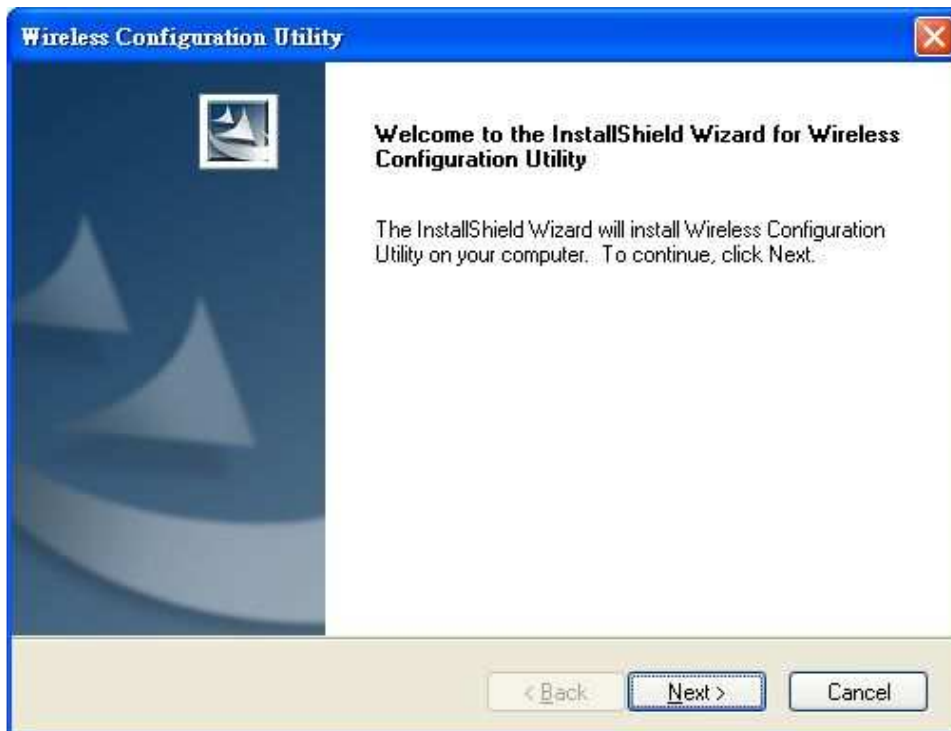
SOFTWARE INSTALLATION

This section describes how to install the driver and utility for the 802.11n Wireless LAN PCI Adapter.

Windows Based Utility Installation
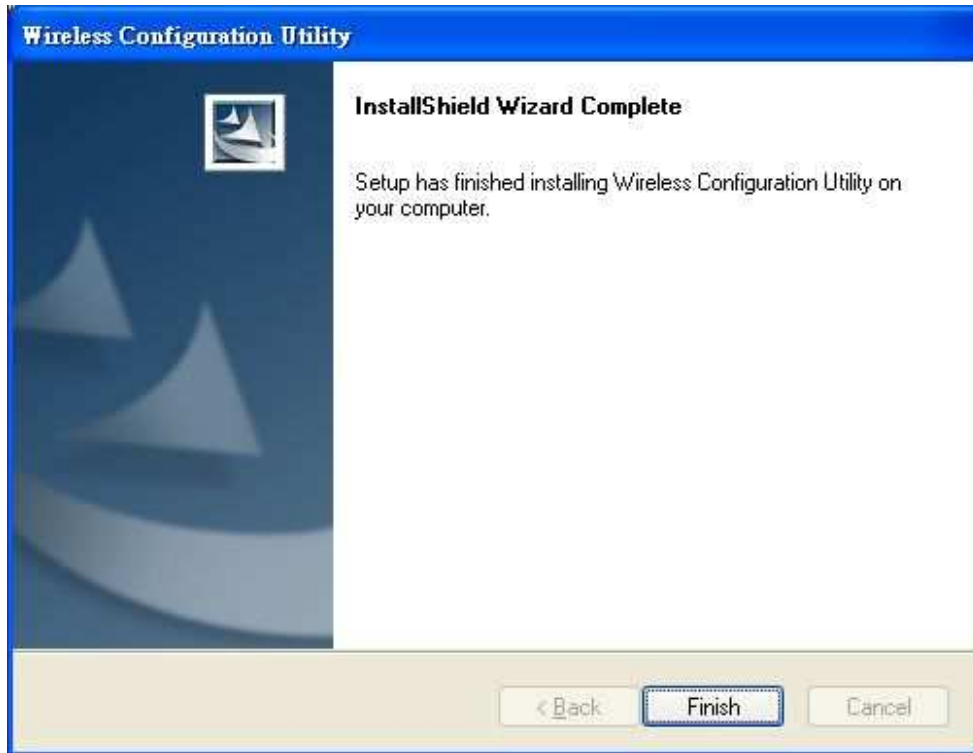
1) Insert the Utility and Driver CD-ROM into your computer's CD-ROM Drive and then click **Install Utility**.
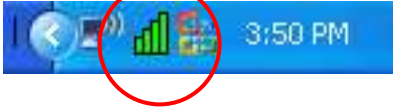

2) Follow the InstallShield Wizard Instructions

3) Click **Finish** to restart the computer.

4) Plug the Wireless N PCI Adapter into an available PCI slot on your computer.

WIRELESS UTILITY SETTING

The user can configure the wireless settings using the Wireless Adapter Configuration Utility. Double-click the utility icon that appears in the taskbar.

The Wireless Adapter Configuration Utility is divided into six sections: Link Info, Configuration, Site Survey, Profile, WPS and About.

Link Information

This is the default screen after launching the Utility program.
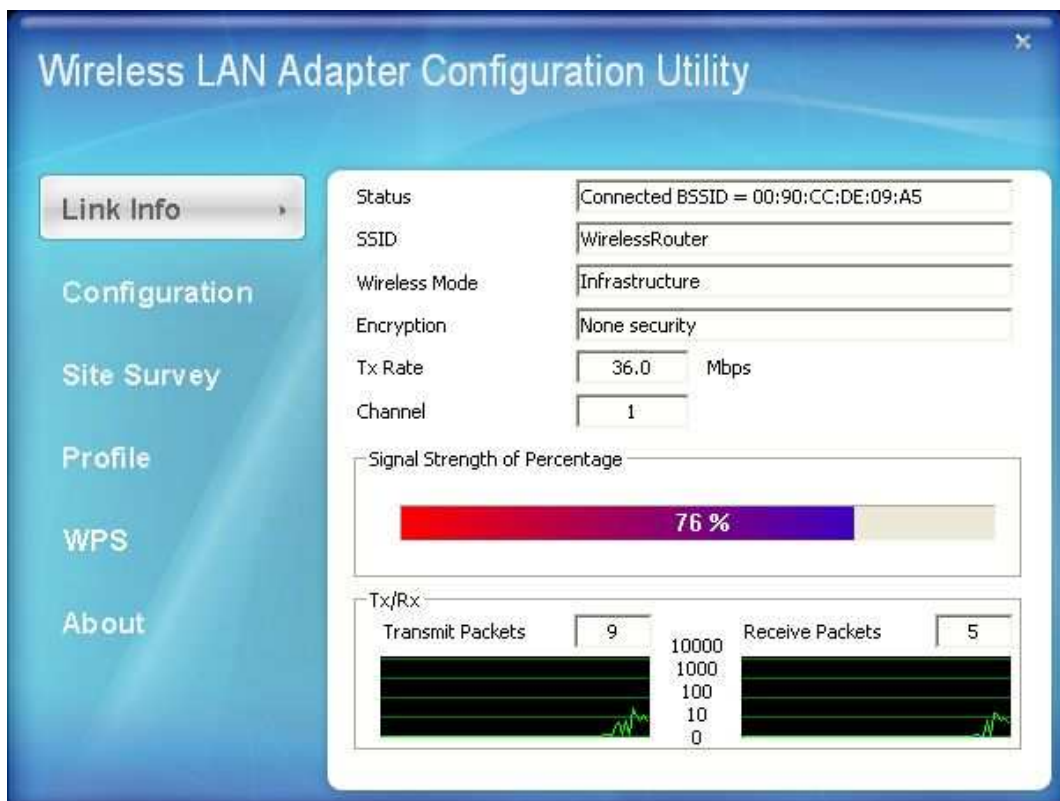
Status: Shows the associated BSSID, which can be used to identify the wireless access point.

SSID: Shows the current SSID, which must be the same on the wireless client and AP in order for communication to be established.

Wireless Mode: Shows the current wireless mode used for wireless communication.

Encryption: Shows the current encryption mode used on the wireless network.

**TxRate:** Shows the current data rate used for transmitting.

Channel: Shows the current channel for communication.

Signal Strength of Percentage: Shows the wireless signal strength of the connection between the Wireless LAN Adapter with the Access Point.

Tx/Rx: Shows the statistics of data transfer, and the calculation is based on the number of packets transmitted and received. It also shows the link quality of the Wireless LAN Adapter with the Access Point when operating under Infrastructure mode.

Configuration

This screen is where you set the basic wireless settings for the Wireless N PCI Adapter.
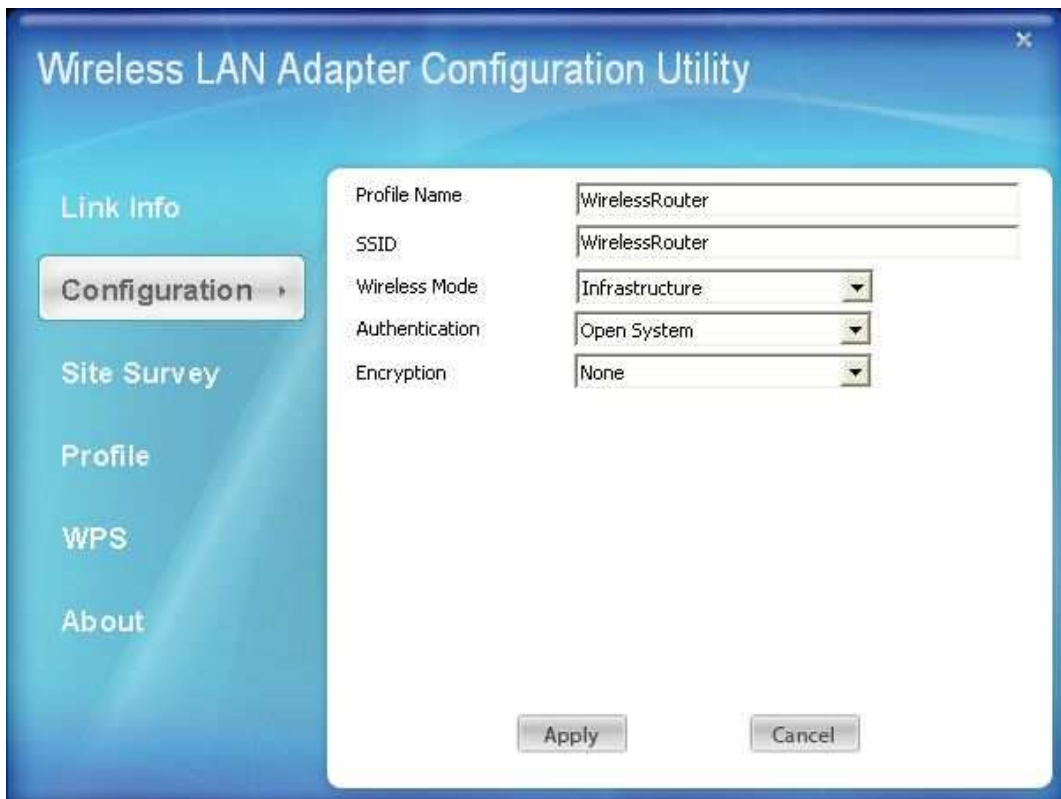
Profile Name: Shows the Profile Name.

SSID: Service Set Identifier, which is a unique name shared among all clients in a wireless network. The SSID must be identical for each client in the wireless network.

Wireless Mode: There are two modes available for selection

- Infrastructure – to establish wireless communication with the LAN and other wireless clients through the use of Access Points.

● Ad-Hoc – to establish point-to-point wireless communication directly with other wireless client devices.

Authtication: The following options are available: Open System, Shared Key, WPA-PSK, WPA2-PSK, WPA EAP-TLS, WPA2 EPA-TLS . Select Open System, Shared Key for WEP data encryption feature.

Open or Shared Key

Open System and **Shared Key** require the user to set a WEP key to exchange data with other wireless clients that have the same WEP key.

● Default Key: select one of the 4 keys to use.

● Network Key: choose the encryption way, either in HEX or ASCII formats, and enter the password in the blank space.

● Key Length: select 64 or 128 bits as the length of the keys
Key Format: HEX or ASCII

WPA-PSK / WPA2-PSK

If using the **WPA-PSK/WPA2-PSK** authentication method, please select the *Encryption* type for TKIP or AES then enter the Passphrase key. The minimum length is 8 characters.

WPA EAP-TLS
If using the **WPA/WPA2 EAP-TLS** authentication method, please select the *Encryption* type for TKIP or AES then select the *WPA/WPA2 Certificate* from drop down list.

Site Survey

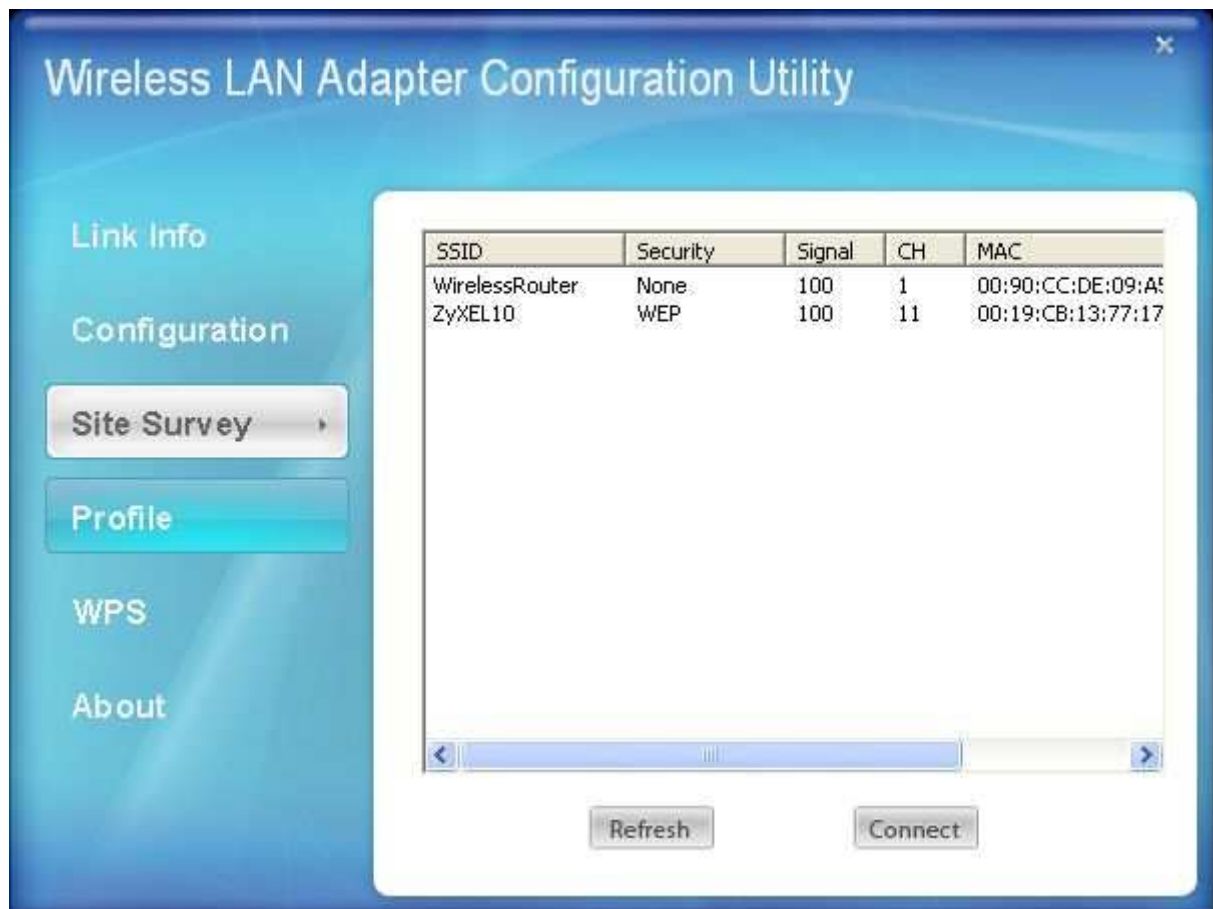This screen allows the user to scan for available wireless networks (wireless clients and Access Points). It also allows the user to establish wireless communications with an available wireless network.

Available Network – displays the wireless networks (wireless clients and access points) that are within range.

Select any one of the wireless networks by **double-clicking** on it or clicking on the "**Connect**" button.

Click the "**Refresh**" button to scan for available networks.

Profile

Profile – The user can create and manage the created profiles for home, work or public areas. By double-clicking on one of the created profile, the setting will adjust to the specific setting such as SSID, channel, and encryption as saved by that particular profile.

Add: Adds a profile. The following screen will appear. The user can enter the necessary information required for accessing Access Points or Wireless Router

Remove: Deletes the selected profile

Edit: Edit an exist profile. The screen will back to profile. Edit the SSID and select the Wireless Mode, Authentication and Encryption then click *Apply* to save the profile. When the Profile name was changed, a new profile will be added in the list.

Connect: Selected a profile from list then click the *Connect* to connecting to the wireless network with the profile setting.
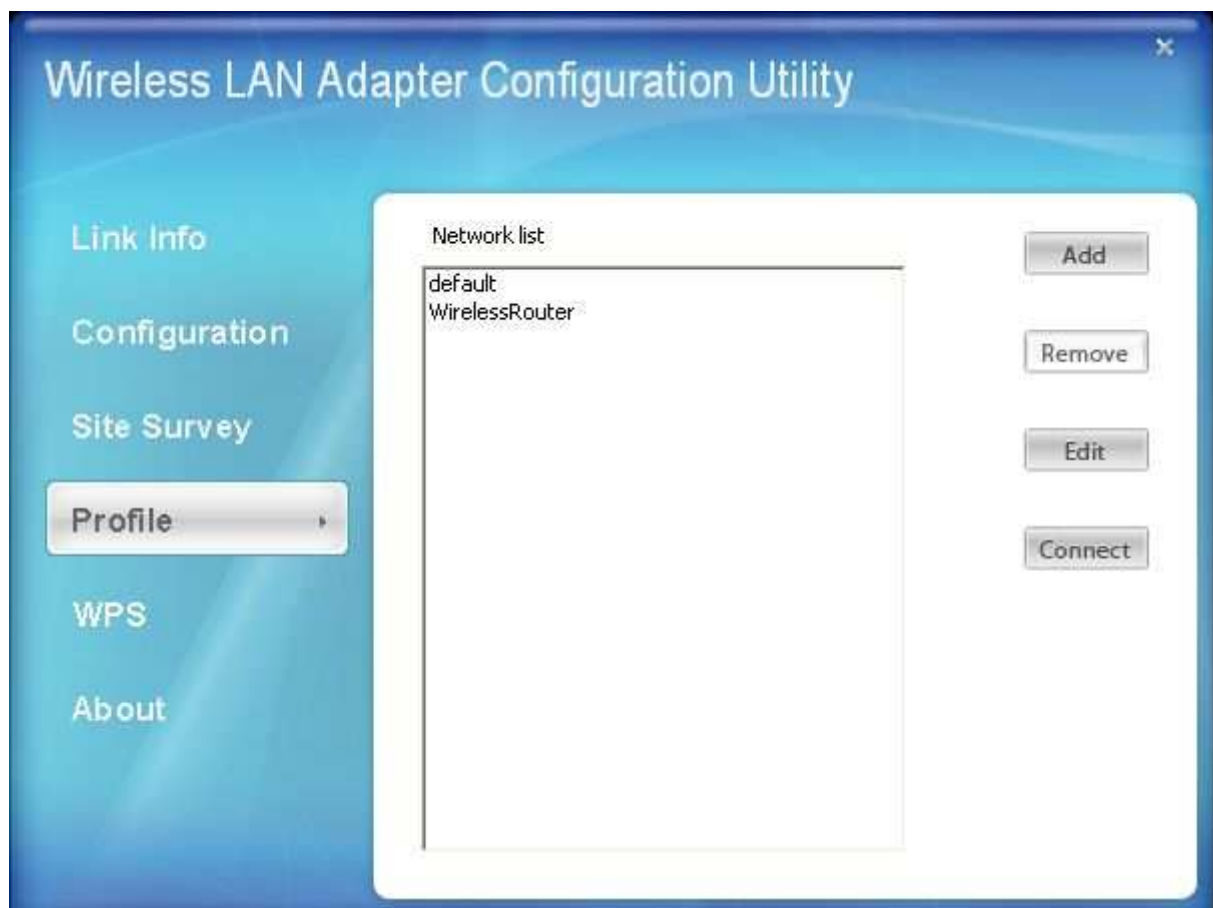
WPS

WiFi Protected Setup (WPS) is an optional certification program from the Wi-Fi Alliance that is designed to ease the task of setting up and configuring security on a wireless network. There are two methods used in the WPS as below instruction.

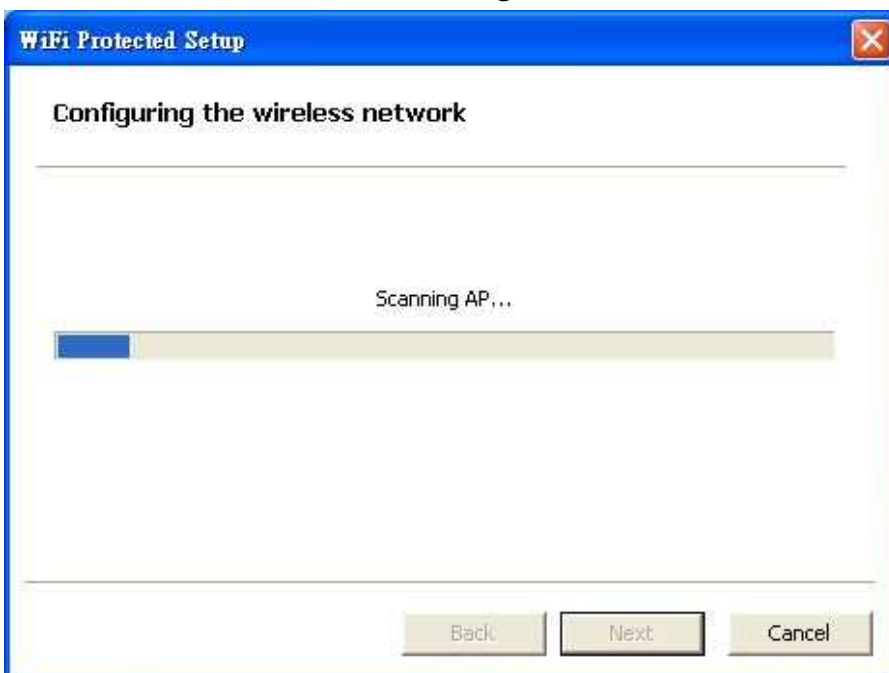### **Push the button on my access point**
Using the WPS configuration with the "Push the button on my access point" method, the configuration steps as below:

1) Selected the "Push the button on my access point".
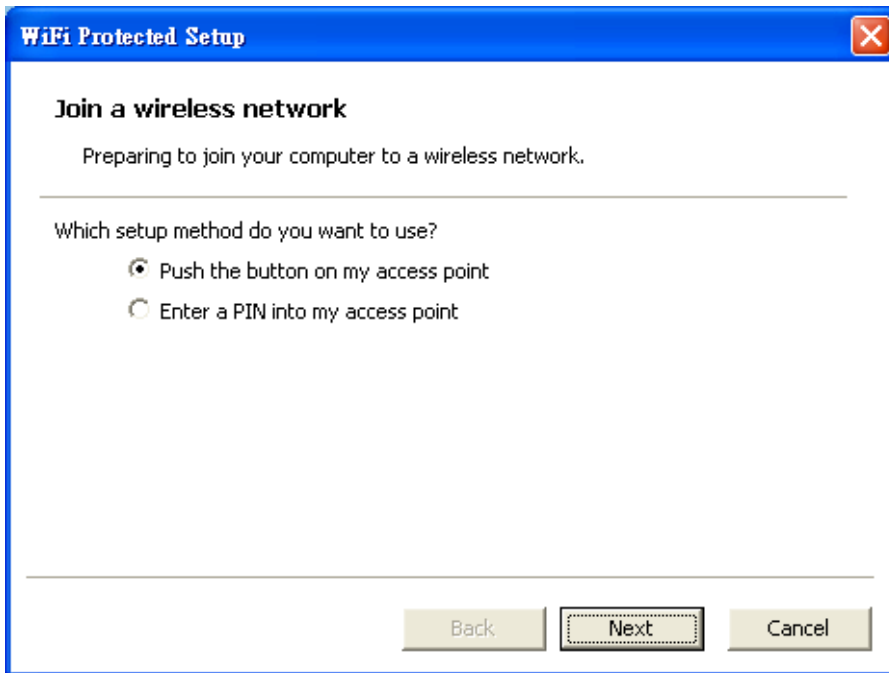
2) Push the WPS configuration button on your wireless access point or router.

3) Cliek the *Next* button start the WPS configuration.

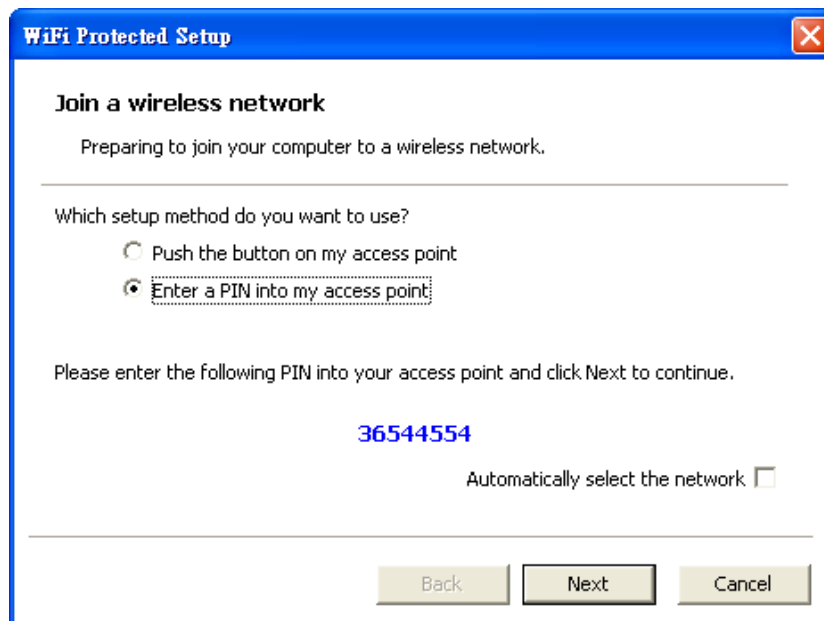4) If the WPS configuration was successful, the follow window will show on.

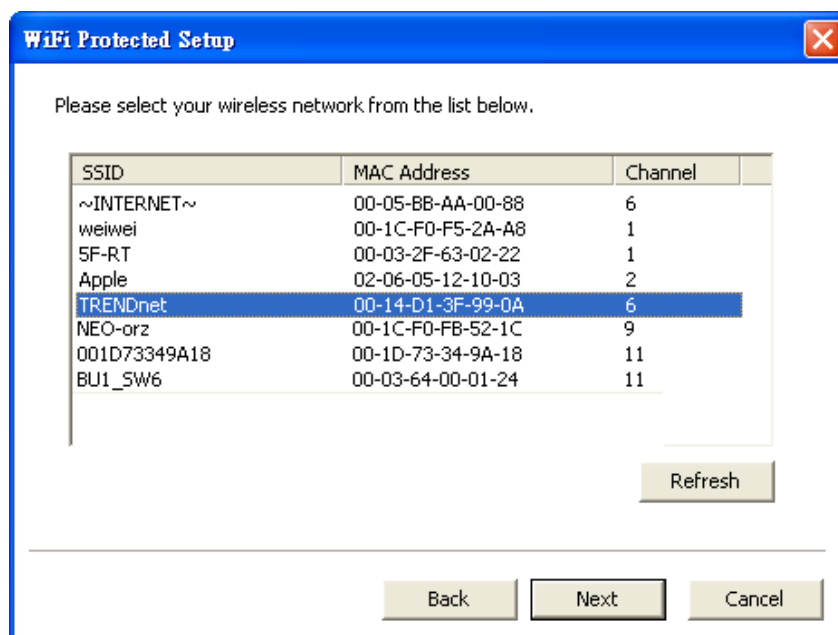5) If the WPS configuration was failed, the follow window will show on.

Enter a PIN into my access point

Using the WPS configuration with the "Enter a PIN into my access point" method, the configuration steps as below:

1) Selected the "Enter a PIN into my access point", the PIN will be show on the button of the windows.

2) Enter the PIN code into the WPS "Clint PIN number" of you wireless access point or router then click the *Start PIN* button, the wireless access point or router will start the WPS configuration process.

3) Selected a wireless access point or router which one will be connecting then click the *Next* button start the WPS configuration. If the "Automatically select the network" was checked, the setup step will be skip.
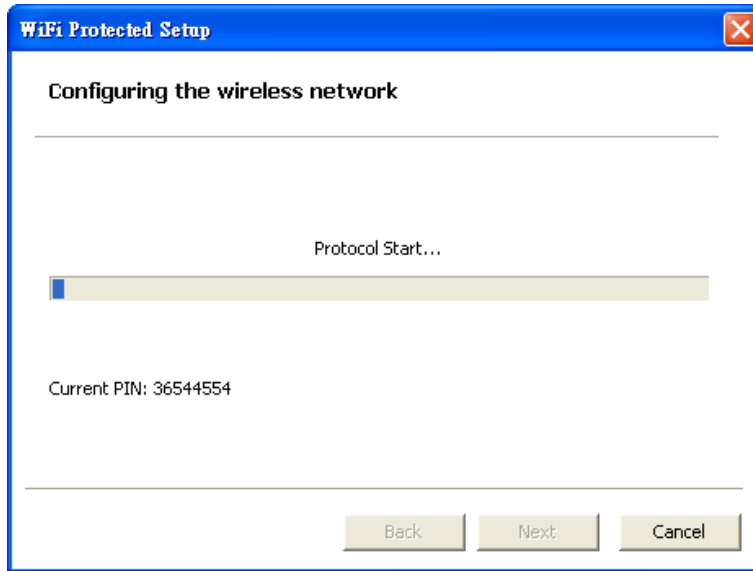
4) If the WPS configuration was successful, the follow window will show on.

5) If the WPS configuration was failed, the follow window will show on.

About

This screen displays information about the Wireless N PCI Adapter, such as the Driver and Utility version. When a new version of the utility becomes available for upgrade, users will be able to identify by version numbers.
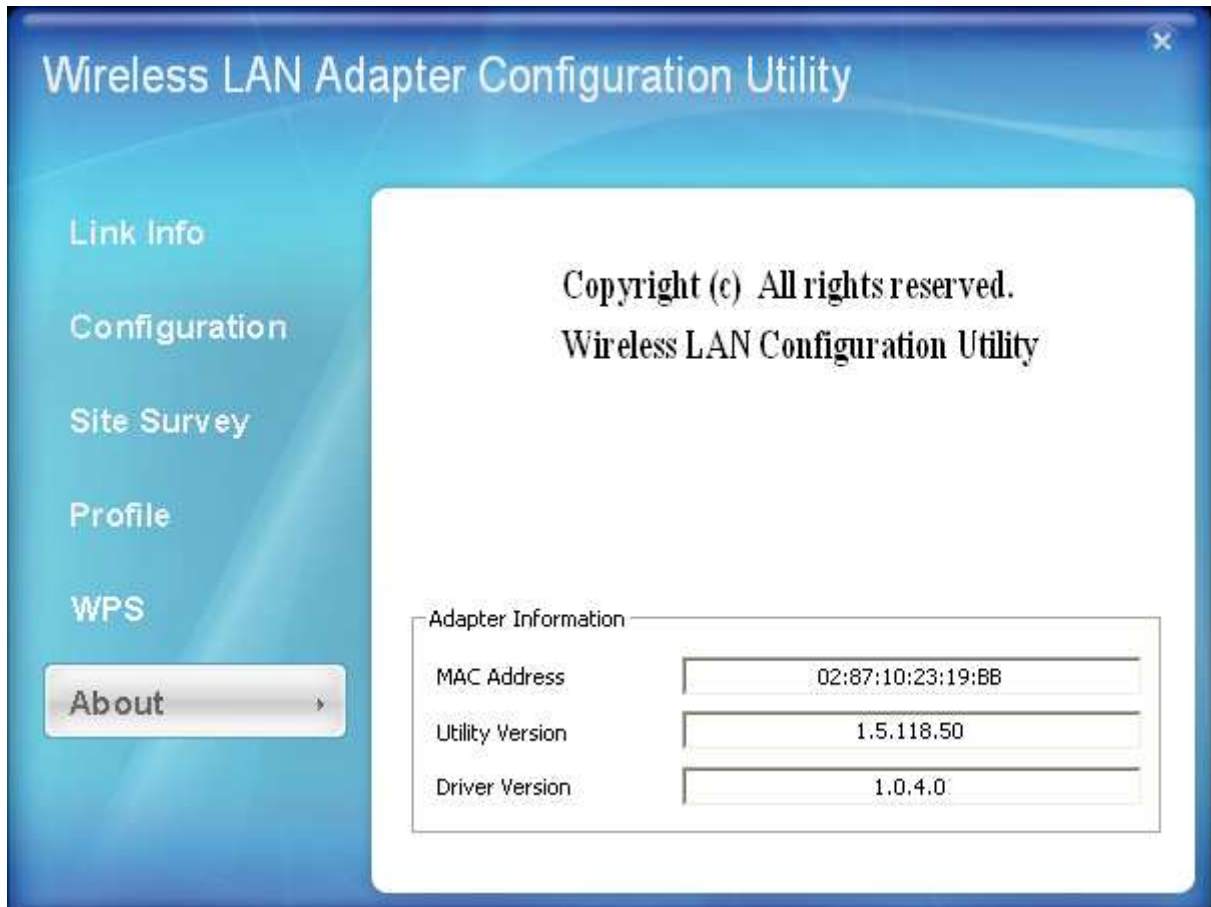
TECHNICAL SPECIFICATIONS

Hardware	
Interface	32-bit PCI bus
Standards	IEEE 802.11n, IEEE 802.11b and IEEE 802.11g
Antenna	One detachable 2dBi dipole antennas with reverse SMA connector
LED Indicator	Link /Activity
Supported OS	Windows XP, Vista, Win 7
Dimensions (LxWxH)	119.9x44.26x1.6 mm
Temperature	Operating: 0° ~ 40° C (32° ~ 104° F) Storage: -10° ~ 70° C (14° ~ 158° F)
Humidity	10% ~ 95% max (Non-condensing)
Certification	FCC Part 15.247 for US, ETS 300, 328 for Europe
Wireless	
Module Technique	DBPSK/DQPSK/CCK/OFDM (BPSK/QPSK/16-QAM/64-QAM)
Frequency	2.412 to 2.484 GHz (Industrial Scientific Medical Band) (2412~2462MHz for NCC)
Media Access Protocol	CSMA/CA with ACK
Data Rate (auto fallback)	1, 2, 5.5, 6, 11, 12, 18, 22, 24, 30, 36, 48, 54, 60, 90, 120, 135,150Mbps (auto sense)
Output Power	25dBm
Receiving Sensitivity	150Mbps: Typical - 61dBm @ 10% PER 54Mbps: Typical - 65dBm @ 10% PER 11Mbps: Typical - 84dBm @ 8% PER
Security	64/128-bits WEP Encryption, WPA-PSK, WPA2-PSK, WPA, WPA2
Channels	1~11 channels (FCC/NCC), 1~13 channels (ETSI)