

802.11n Wireless

USB 2.0 Adapter

WLN-1502

Cameo

User's Guide

Regulatory notes and statements

Wireless LAN, Health and Authorization for use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far less than the electromagnetic energy emissions from wireless devices such as mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- On board of airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

The installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device. The Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from the failure to comply with these guidelines.

USA-FCC (Federal Communications Commission) statement

This device complies with Part 15 of 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.

FCC Radio Frequency Exposure statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65 and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized.

FCC 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 radiates radio frequency energy. If not installed and used in accordance with the instructions, it 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 and correct the interference by one or more of the following measures:

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

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

Export restrictions

This product or software contains encryption code that may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license.

Safety Information

Your device contains a low power transmitter. When the device is transmitted it sends out radio frequency (RF) signal.

CE Mark Warning

Hereby, Cameo, declares that this device is in compliance with the essential requirement and other relevant provisions of the R&TTE Directive 1999/5/EC.

This device will be sold in the following EEA countries : Austria, Italy, Belgium, Liechtenstein, Denmark, Luxembourg, Finland, Netherlands, France, Norway, Germany, Portugal, Greece, Spain, Iceland, Sweden, Ireland, United Kingdom, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Slovakia, Poland, Slovenia Bulgaria, Romania.

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-17 and EN 55024 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328-2 has been conducted. These are considered relevant and sufficient.

CE in which Countries where the product may be used freely:

Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

France: French regulations prohibit the use of all channels except channels 10 through 13.



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INTRODUCTION

Congratulations on your purchase of this 300Mbps IEEE 802.11n draft 2.0 USB Adapter.

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

With the 300Mbps IEEE 802.11n draft 2.0 USB Adapter, a desktop or laptop computer can communicate with another computer wirelessly. An easy-to-use utility is bundled with the Wireless USB Adapter for configuration, monitoring, and diagnostic purposes.

The 300Mbps IEEE 802.11n draft 2.0 USB Adapter can wirelessly transmit and receive data, at a speed of up to 300 megabits per second.

The 300Mbps IEEE 802.11n draft 2.0 USB Adapter provides users with access to real-time information anywhere in their organization. The mobility of the 300Mbps IEEE 802.11n draft 2.0 USB Adapter provides productivity and service, which are not available under wired networks. The 300Mbps IEEE 802.11n draft 2.0 USB 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 300Mbps IEEE 802.11n draft 2.0 USB Adapter and its features.

Unpacking and Setup. Helps you get started with the basic installation of the 300Mbps IEEE 802.11n draft 2.0 USB 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 300Mbps IEEE 802.11n draft 2.0 USB Adapter.

UNPACKING AND SETUP

This section provides unpacking and setup information for the 300Mbps IEEE 802.11n draft 2.0 USB Adapter.

Unpacking

The box should contain the following items:

- ◆ One 300Mbps IEEE 802.11n draft 2.0 USB 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
- Make sure the USB ports are is USB 2.0 port
- The operating system on your computer must be the following: Windows 2000 (Service Pack 4), XP (Service Pack 2), Windows Vista
- A draft 802.11n or 802.11b/g access point.
- Make sure the environment has minimal interference and obstructions.

IDENTIFYING EXTERNAL COMPONENTS

LED

When the LED is blinking, the WLAN Adapter is transmitting or receiving data on the Wireless Ethernet network.

Check the installation

The LED of the 300Mbps IEEE 802.11n draft 2.0 USB Adapter is clearly visible and the status of the network link can be seen instantly:

1. When connected to the USB port and the driver were installed, the LINK LED will start blinking, and it means that the device is starting to scan a wireless device near the 300Mbps IEEE 802.11n draft 2.0 USB Adapter.
2. While the 300Mbps IEEE 802.11n draft 2.0 USB Adapter linked up to the Access Point or to other Wireless LAN station, the LINK LED will always light up.

SOFTWARE INSTALLATION

This section describes how to install the driver and utility for the 300Mbps IEEE 802.11n draft 2.0 USB Adapter.

Note: DO NOT install the USB adapter in the computer until instructed to do so.

1. Insert the Utility & Driver CD-ROM into your CD-ROM drive and then click **Install Utility**. Then click on Vista or XP/2000 operating system.
2. Follow the **InstallShield Wizard** Instructions.
3. Plug the 300Mbps IEEE 802.11n draft 2.0 USB Adapter into an available USB slot on your computer
4. Driver will install automatically
5. Remove the Utility & Driver CD-ROM from your computer's CD-ROM drive.

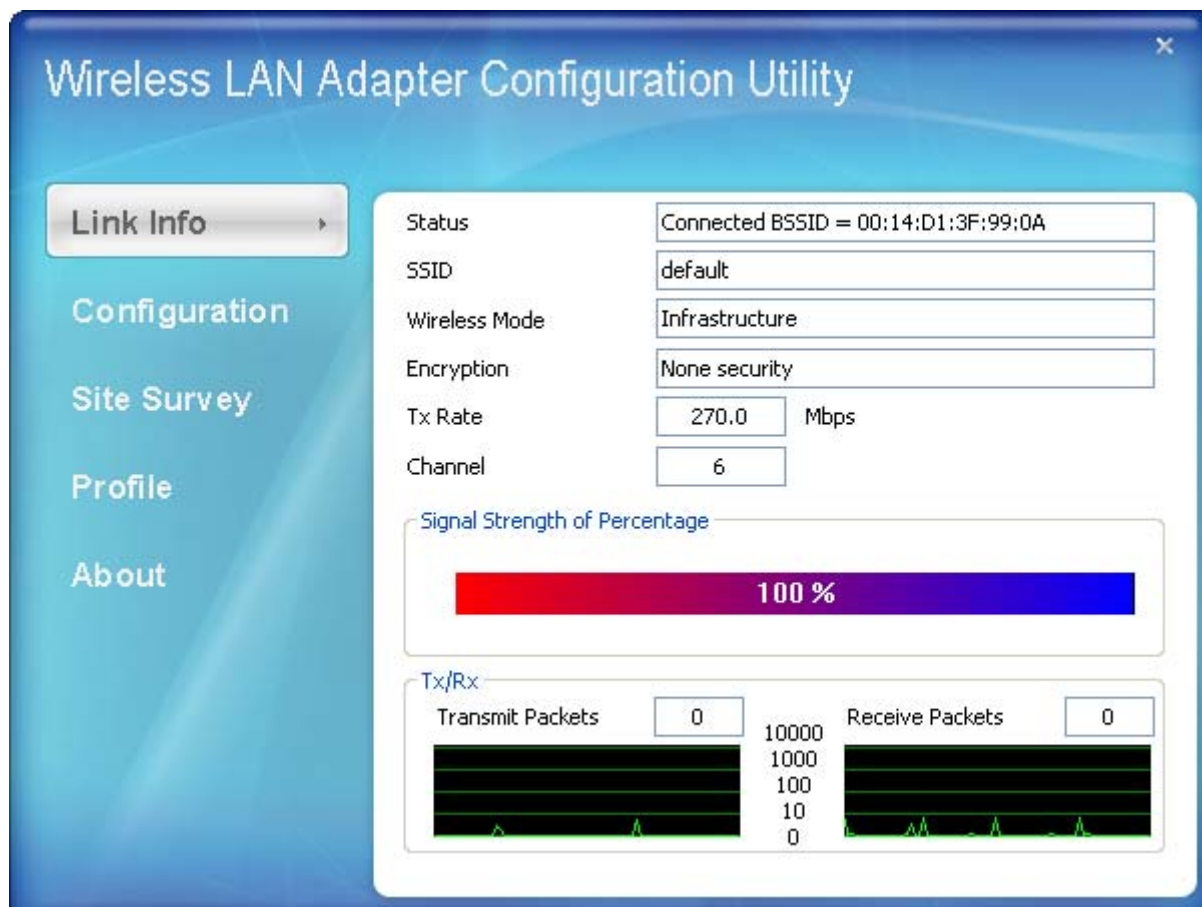
Wireless Utility Setting

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



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 USB 2.0 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 USB 2.0 Adapter with the Access Point when operating under Infrastructure mode.

Configuration

This screen is where you set the basic wireless settings for the Wireless LAN USB 2.0 Adapter



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.

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

Open or Shared Key

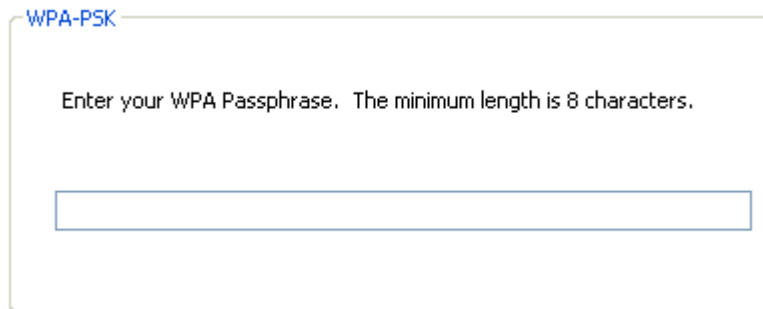
Open System and **Shared Key** require the user to set a WEP key to exchange data with other wireless clients that have the same WEP key.

- 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**

The image shows a configuration window for WEP. It has a title 'WEP' in blue. Below the title, there are three columns: 'Default Key', 'Network Key', and 'Key Length'. Under 'Default Key', there are four radio buttons labeled 1, 2, 3, and 4. Radio button 1 is selected. Under 'Network Key', there are four empty text input fields. Under 'Key Length', there are four dropdown menus, each currently showing '64bits'. At the bottom, there is a 'Key Format' label and a dropdown menu currently showing 'HEX'.

WPA-PSK/WPA2-PSK

If **WPA-PSK/WPA2-PSK** is selected the below window appears. Please enter a WPA Passphrase.

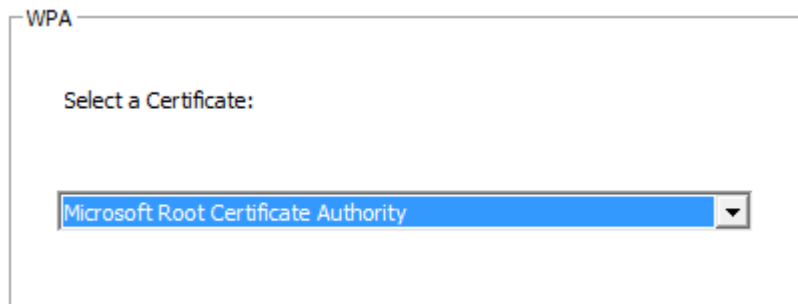


WPA-PSK

Enter your WPA Passphrase. The minimum length is 8 characters.

WPA-PSK/WPA2-PSK

If **WPA/WPA2** is selected, configuration is enabled. Please click the “**configuration**” button. Select a certification for drop down list.



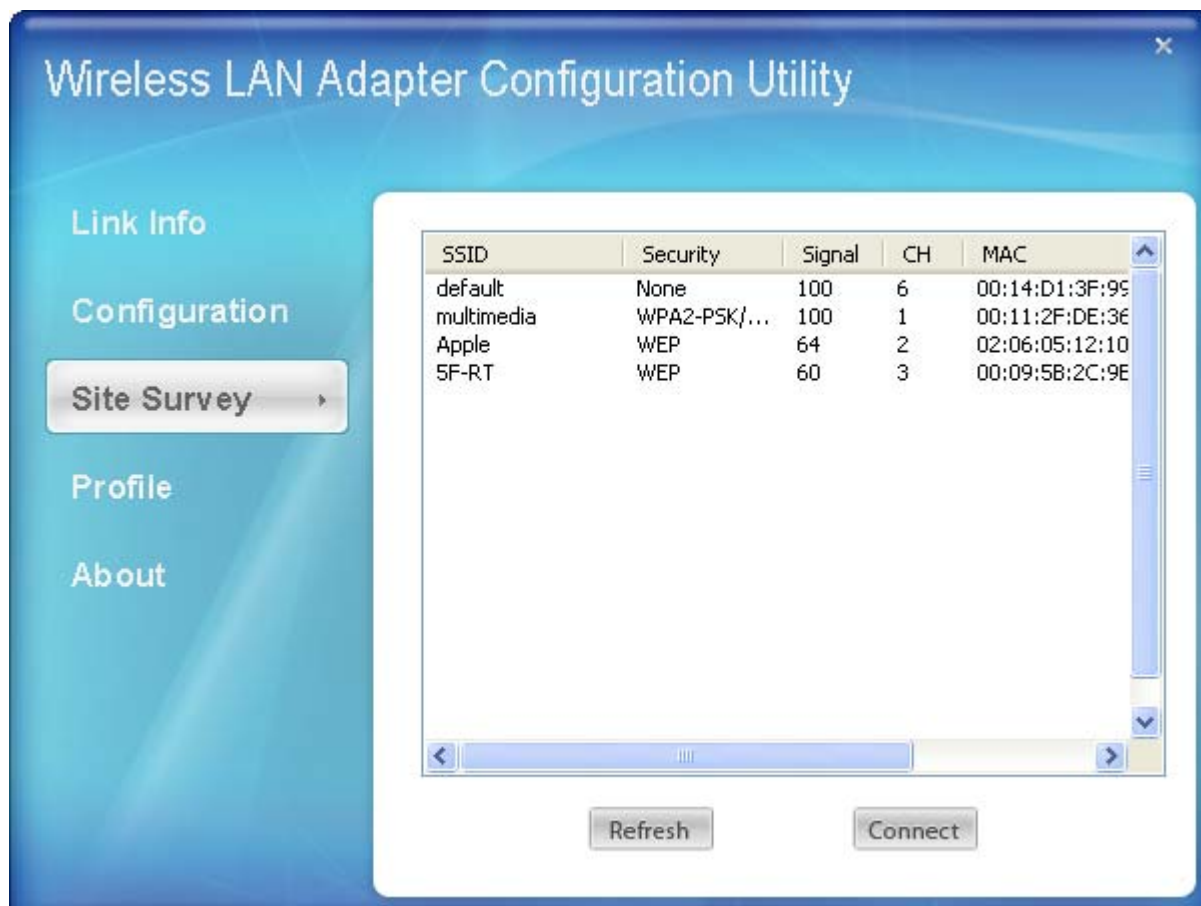
WPA

Select a Certificate:

Microsoft Root Certificate Authority

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.

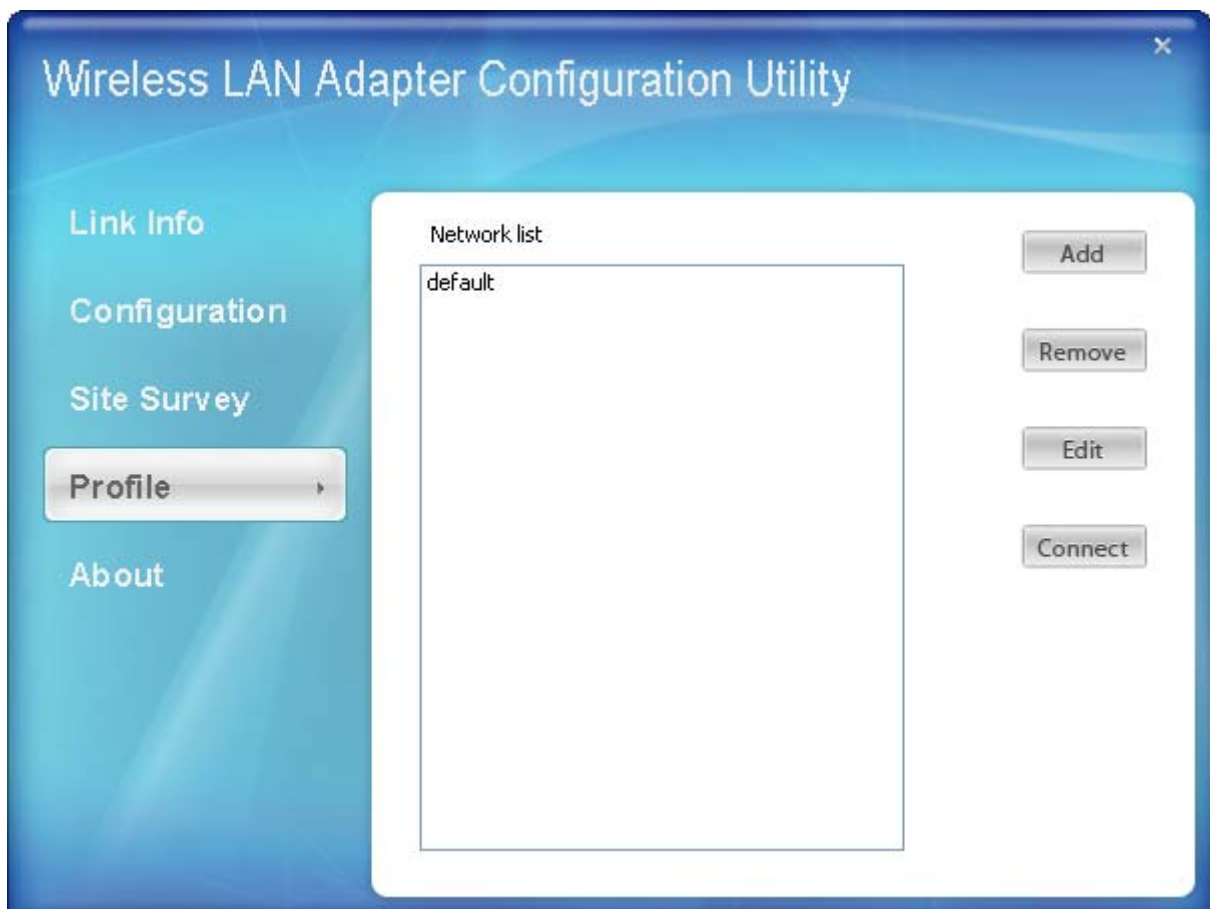
Profile

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.

Remove: Deletes the selected profile

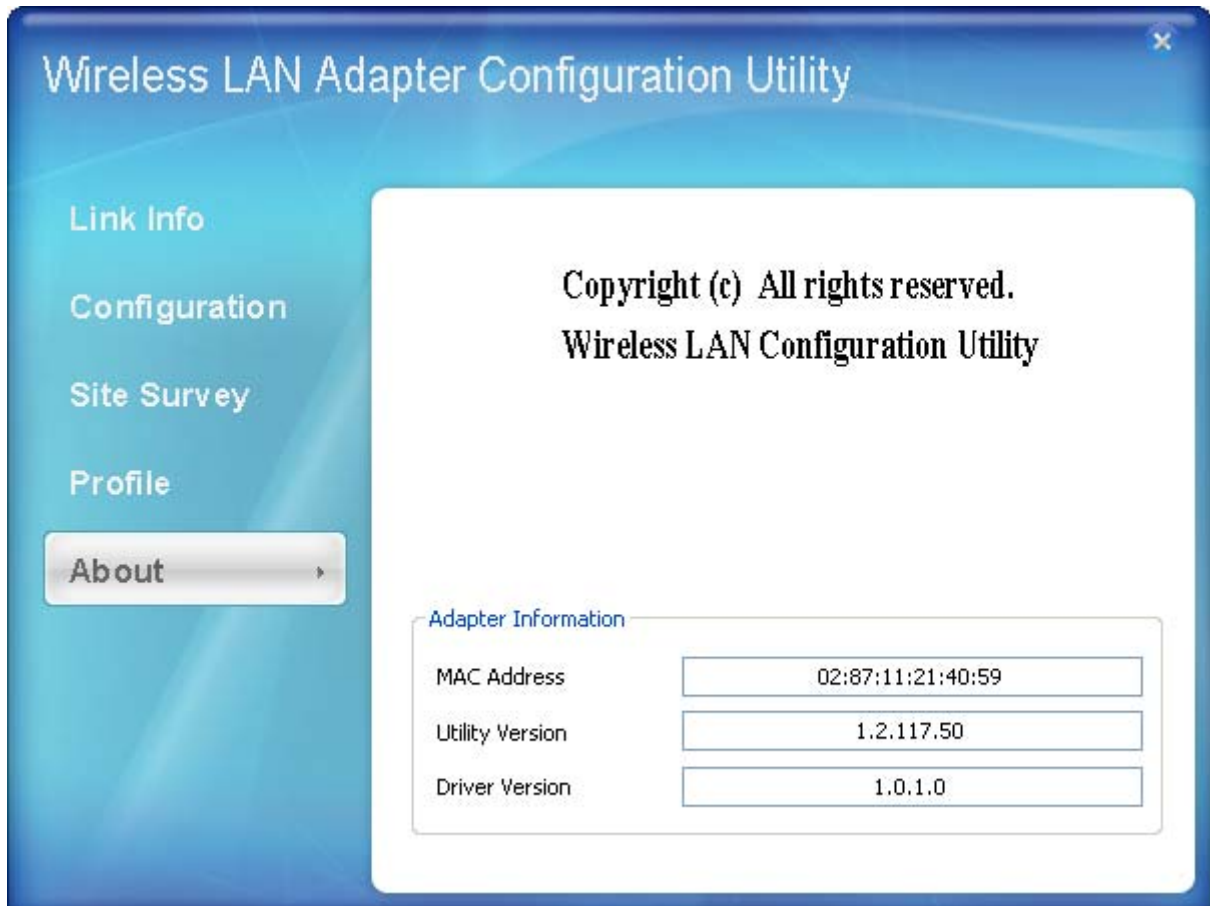
Add: Adds a profile. The following screen will appear. The user can enter the necessary information required for accessing Access Points or Wireless Router

Connect: The current connected profile information.



About

This screen displays information about the Wireless LAN USB 2.0 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	USB 2.0 Compliant
Standards	IEEE 802.11n draft v2.0, IEEE 802.11b and IEEE 802.11g
Antenna	Integrated PIFA Antennas
LED Indicator	Activity
Power Consumption	Receive Mode: 260mA Transmit Mode: 420 mA
Supported OS	Windows 2000, XP, Vista
Dimensions (LxWxH)	86.5 x 30 x 13 mm
Weight	15 g (0.5 oz.)
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	802.11b: CCK (11 and 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps) 802.11g/802.11n: OFDM
Frequency	2.412 to 2.484 GHz (Industrial Scientific Medical Band)
Media Access Protocol	CSMA/CA with ACK
Data Rate (auto fallback)	802.11b: 11Mbps, 5.5Mbps, 2Mbps, and 1Mbps 802.11g: 54Mbps, 48Mbps, 36Mbps, 24Mbps, 18Mbps, 12Mbps, 9Mbps and 6Mbps 802.11n: up to 300Mbps
Output Power	17dBm (typically) @ 802.11b 14dBm (typically) @ 802.11g 13dBm (typically) @ 802.11n
Receiving Sensitivity	300Mbps 10% PER @ -65 dBm (typical) 54Mbps 10% PER @ -72 dBm (typical) 11Mbps 8% PER @ -86 dBm (typical)
Security	64/128-bit WEP (Hex/ASCII), WPA/WPA2, WPA-PSK/WPA2-PSK
Channels	1~11 Channels (FCC); 1~13 Channels (ETSI)