IEEE 802.11b
Wireless USB Adapter

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 much less than the electromagnetic energy emissions from wireless devices like for example 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

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, of the substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing 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 interference, and

2. This device must accept any interference, including interference that may cause undesired operation of this device.

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.

When nearby persons has to be kept to ensure RF exposure compliance, in order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm.

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 can radiate 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 distance 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.

Export restrictions

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

Safety Information

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

CAUTION: To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

CE Mark Warning

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.

TABLE OF CONTENT

INTRODUCTION

Congratulations on your purchase of this IEEE 802.11b WLAN USB Adapter.

This manual helps to get familiar with the WLAN USB 1.1 Adapter. This manual contains detailed instructions in operation of this product. Please keep this manual for future reference.

With a WLAN (IEEE 802.11b) USB 1.1 Adapter, a desktop or laptop computer can communicate with another computer in a wireless way. Easy-to-use utilities are bundled with WLAN USB Adapter for configuration, monitoring, and diagnosis purposes.

WLAN USB Adapter can wirelessly transmit and receive data, minimizing the need for wired connections, at a speed of up to eleven megabit per second. With WLAN USB Adapter, you can locate your PC wherever you want without wires and cables.

WLAN USB Adapter provides users with an access to real-time information anywhere in their organization. The mobility provides productivity and service, which are not available under wired networks. The WLAN USB Adapter configuration is easy to change 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 WLAN USB Adapter and its features.

Unpacking and Setup. Helps you get started with the basic installation of the WLAN USB Adapter.

Hardware Installation. Describes the LED indicators of the Adapter.

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

Technical Specifications. Lists the technical (general, physical and environmental) specifications of the WLAN USB Adapter.

UNPACKING AND SETUP

This chapter provides unpacking and setup information for the WLAN USB Adapter.

Unpacking

Open the box of the WLAN USB Adapter and carefully unpack it. The box should contain the following items:

◆   One 802.11b WLAN USB Adapter

◆   One Driver & Utility CD-ROM

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

Setup

The setup of the WLAN USB Adapter can be performed using the following steps:

◆   Visually inspect the USB connector and make sure that it is fully plugged in to the system's USB port.

◆   Make sure that there is a well environment that there is no much intrusion to have a better connection.

HARDWARE INSTALLATION

LED Indicator

PWR (POWER)

The PWR indicator lights green when the WLAN USB Adapter is receiving power, otherwise, it is off.

LNK (LINK)

The LNK indicator lights green when the WLAN is connected to a network successfully. Otherwise the LNK indicator blinks green while the WLAN is scanning the wireless device.

Check the installation

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

1. Once the device is connected to the USB port, the PWR LED of the WLAN USB Adapter will light up indicating a normal status.
2. When connected to the USB port and the driver was installed, the LNK LED will start blinking, it means that the device is starting to scanning a 802.11b wireless device near the WLAN USB Adapter.
3. While the WLAN USB Adapter linked up to the Access Point or to other Wireless LAN station, the LNK LED will always light up.

SOFTWARE INSTALLATION

This section will lead you to install the driver and utility of the WLAN USB Adapter.

Windows 98/ME/2000/XP Utility and Driver Installation

1. Insert the Wireless USB Adapter Driver & Utility CD-ROM into computer's CD-ROM Drive and it will automatically run a setup menu and install the driver and the utility. In some specific setting on Windows system, you may need to proceed the software manually, go to your Windows Start menu and choose **Run**, type "D:\Autorun.exe" in the dialog box (D:\ will depend on where your CD-ROM drive is located) and click **OK**.

2. If you need to install the driver manually, refer each Windows OS to the following CD-Rom directory path:

   ✓ Windows XP: D:\Drivers\Windows XP\netvusbr.inf
   ✓ Windows 2000: D:\Drivers\Windows 2000\netvusbr.inf
   ✓ Windows Me: D:\Drivers\Windows Me\netvusbr.inf
   ✓ Windows 98: D:\Drivers\Windows 98\netvusbr.inf

Note: (D:\ will depends on where the CD-ROM drive is located).

3. Then select *Install Software* on the menu to install the driver and the Wireless Configuration Utility.

The installation program will help you to setup the Wireless Configuration Utility.

Be noted that the Windows XP have its own Wireless Utility; you can either use the utility of Windows XP or the provided utility.
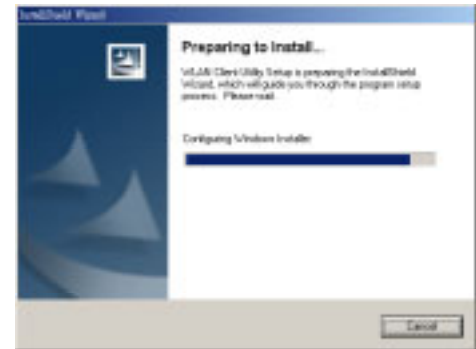
Note: When install the software before plugging the WLAN USB Adapter into the computer; it will install the driver automatically to the Windows system.

4. Follow the procedure of the installation program.

5. After finish the installation, plugged in the Wireless USB Adapter, you will see the icon on right side bottom of the Windows task bar, it may appears two colors that means as follow:
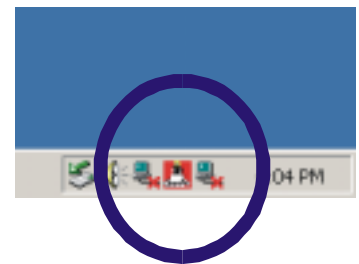
➢ Blue Color icon : means the WLAN USB Adapter is connecting with another wireless device or AP successful.

➢ Red Color icon : means the WLAN USB adapter is not connecting to any wireless station or AP.

Wireless Configuration Utility Setting

With the Wireless Configuration Utility, users can configure all the functions of the Wireless USB Adapter. Double-click the utility icon that appears in the taskbar.

The Wireless Configuration Utility includes seven tabs: Monitor, Statistics, Site Survey, Encryption, Advanced, Profiles and Info.

Monitor

As you enter the Monitor screen, you will see the current setting in light gray color.

Click the "Change" button if you want to change any setting, after changing the setting, remember to click the "Submit" button to activate the new setting.
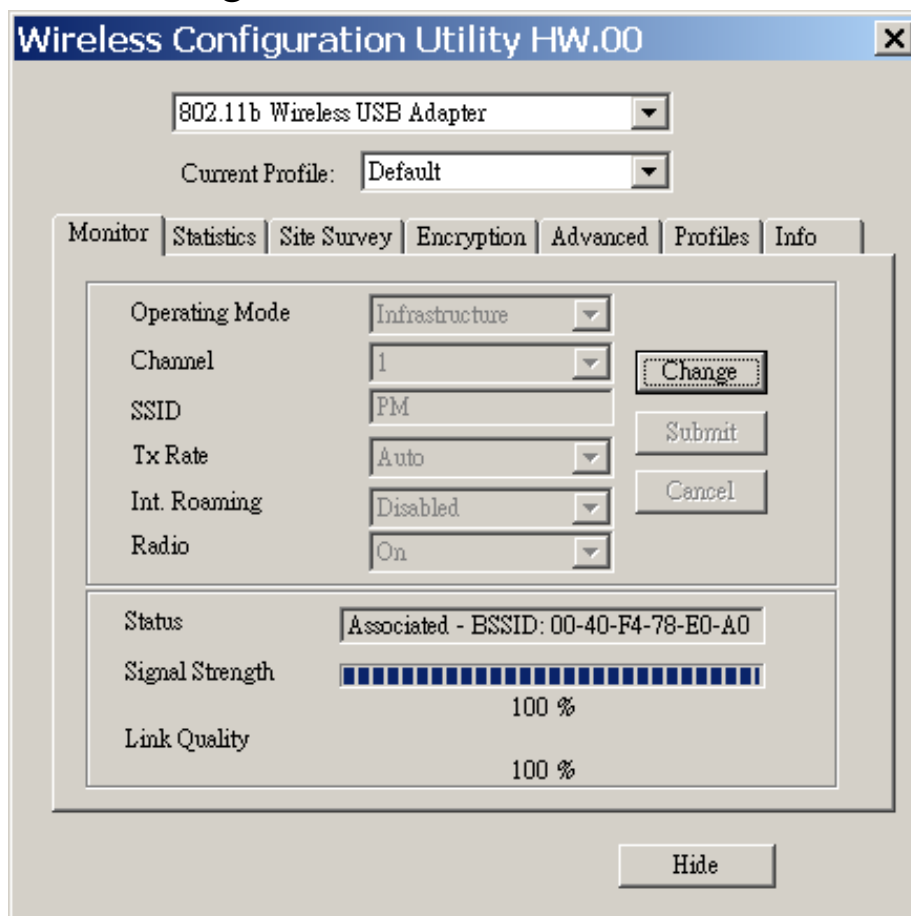
➢ **Operating Mode:**

There are two operating mode for the Wireless USB Adapter, Infrastructure mode and Ad-Hoc mode. If you choose Infrastructure mode, the WLAN USB Adapter will connect to an Access Point, and if you choose Ad-Hoc mode, then the Wireless USB Adapter will connect to a wireless station directly.

➢ **Channel:**

It shows radio channel numbers that used for WLAN networking.

The channel number can be set only under the Ad-Hoc operation mode. In Ad-Hoc mode stations, each station must have the same channel numbers and SSID.

In Infrastructure mode, the Wireless USB Adapter will automatically detect the channel number of the Access Point.

➢ **SSID:**

The SSID differentiates one WLAN group name from another, so all access points and all devices attempting to connect to a specific WLAN group name must use the same SSID. A device will not be permitted to join the BSS unless it can provide the unique SSID.

Remain the SSID blank, it will detect the strongest signal from the AP.

➢ **Tx Rate:**

You can choose one of the transmission rates as follows, 11Mbps, 5.5Mbps, 2Mbps, 1Mbps, and Auto. The Auto will automatically detect the suitable linking transfer rate and auto fall back when the signal is not too strong to transmit data, it will auto fall back from 11Mbps to 5.5Mbps, 2Mbps and 1 Mbps.

➢ Int. Roaming:

When enable the International Roaming function, it allows users of Wireless USB Adapter to travel to a foreign country to use their channels.

➢ Radio:

This function is to turn on or off the Wireless USB Adapter.

➢ Other information:

This dialog box shows the Status, Signal Strength and Link Quality of the Wireless USB Adapter.

The Status will show the information when you set to different operating mode as below:

Ad-Hoc Mode: the status bar will show "Ready" and other end linked BSSID, the Signal Strength and the Link quality will not be active.
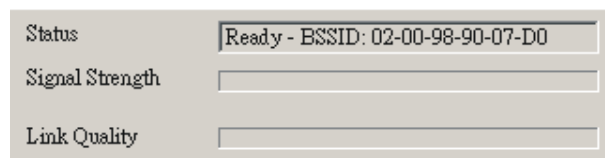
Infrastructure Mode: the status bar will show "Associated" and the linked Access Point BSSID, the Signal Strength and Link Quality will be shown in the screen below under the Status of your Wireless USB adapter.
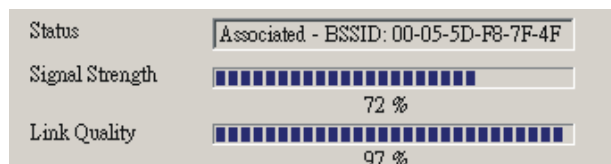

When the both stations don't have the same setting on Encryption, one Encryption's WEP Key is enable and the other is disable, then the status bar will show " Enable Encryption to join this BSS" or " Disable Encryption to join this BSS".

Statistics

The following screen shows various statistics of the Data transmitting and receiving status.

You can click the Clear button to reset statistics counter.
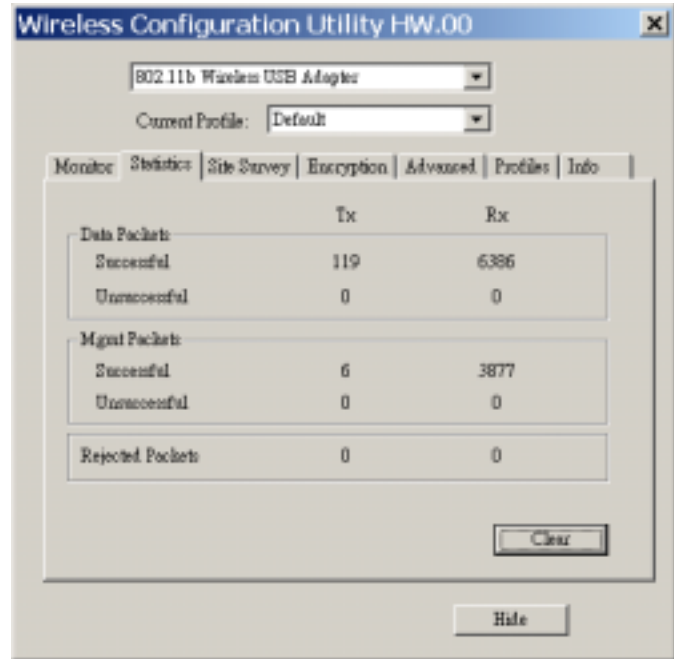

Site Survey

The screen shows all the information of Access Point and the Ad-Hoc wireless stations around your Wireless USB Adapter. The information of the Site Survey includes BSSID, SSID, Signal, the Channel used, the Encryption status and the operating type mode.

Double-click the BSSID to choose the SSID that you want to connect with.

You can click the Scan button to find new wireless devices.
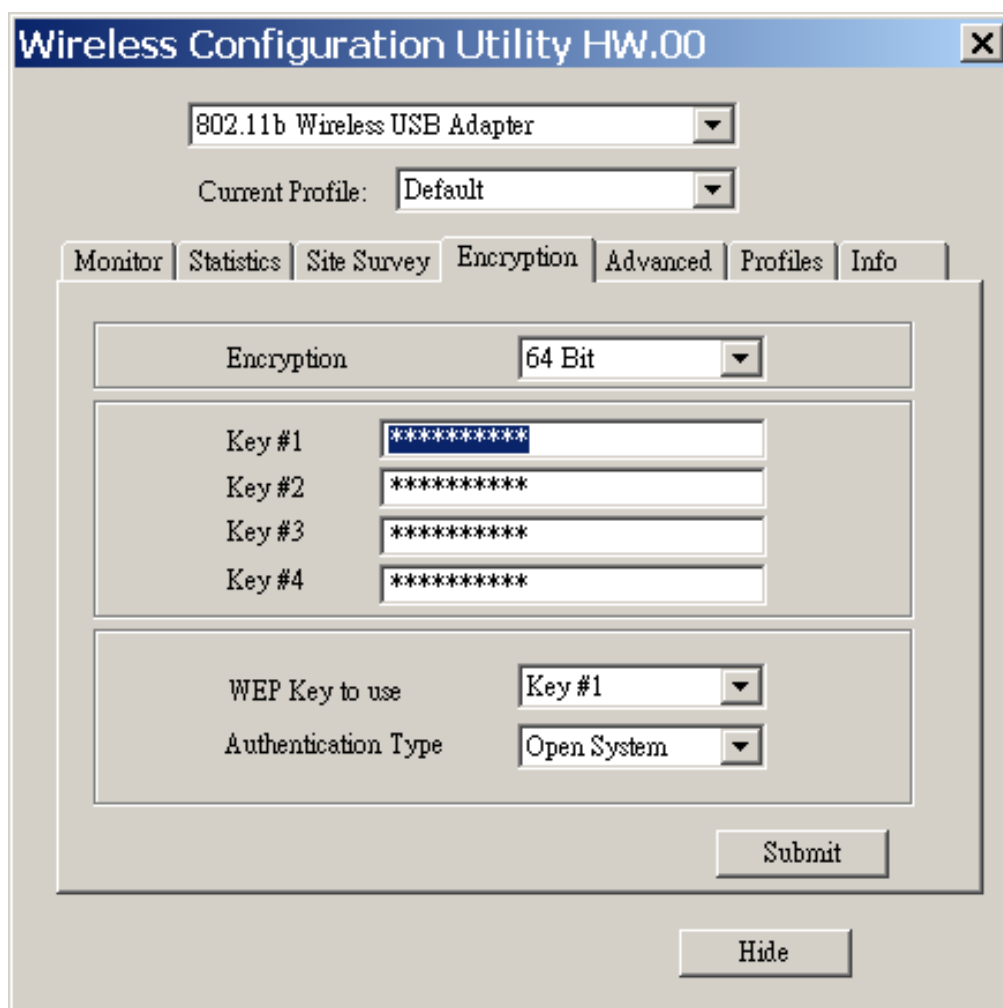
Encryption

This function is used to protect wireless communication from eavesdropping. A secondary function of WEP is to prevent
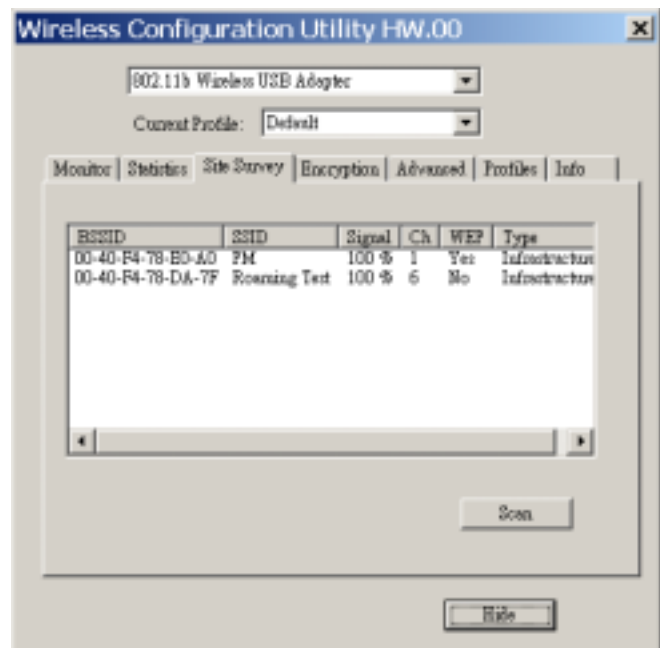
unauthorized access to a wireless network, and it can be achieved by using the Encryption function.

➢ Encryption type:

The Encryption has two types, 64bit and 128bit, select the bit that you want to use.

➢ WEP Key #1 ~ #4:

You can type the key that you want to use from Key#1 to Key #4, and the key that you type will be the encryption between the station that you connected with, if you select 64bit, you must type 10 values in the following range (0~F, hexadecimal). Besides, if you select 128bit, you must type 26 values (0~F, hexadecimal).

➢   WEP Key to use:

There are four WEP key (Key1~Key4) to use, you can key the four WEP Key previously, then select the key where the station that you want to connect for Encryption.

➢   Authentication Type:

Open System: with the same WEP key between the stations, the stations don't need to be authenticated, and this algorithm is mostly used.

Shared Key: with the same WEP key between the stations in this Authentication algorithm, this type will use packets with encryption by transferring a challenge text which will be acknowledge by both side of the stations. In order to choose which authentication algorithm will be used, you must know which one the station supports this algorithm first.

! Caution: WEP Key needs to be the same with the stations where you want to join. If the Link between the stations is good and the WEP key is different, you cannot process the data transmitting between the stations.

After the settings are completed, click the Submit button to save the setting.

Advanced

The screen shows the advanced setting of the Wireless Configuration Utility, and it includes Preamble Type, Fragmentation Threshold, and RTS / CTS Threshold. The default setting of Preamble Type is Long.

The usage of the preamble is to limit the packet size of the data to transmit. It is recommended to choose the short preamble when the link quality is bad, it is to prevent the wasting time of resending a long packet that is lost.

Fragmentation Threshold is a way of transmitting the packets that will be fragmented. Choose a setting within a range of 256 to 2346 bytes. It is recommended to fragment the packet when the link quality is bad, it is to prevent the wasting time of resending a long packet that is lost.

The RTS/CTS Threshold is a station initiates the process by sending a RTS frame, the other ends receives the RTS and responds with a CTS frame, the station must receive a CTS frame before sending the data frame. This is to prevent the collisions by each station. Choose a setting within a range of 1 to 1247 bytes. It is recommend to limit a long packet to prevent each station waiting too long to transmit a data.
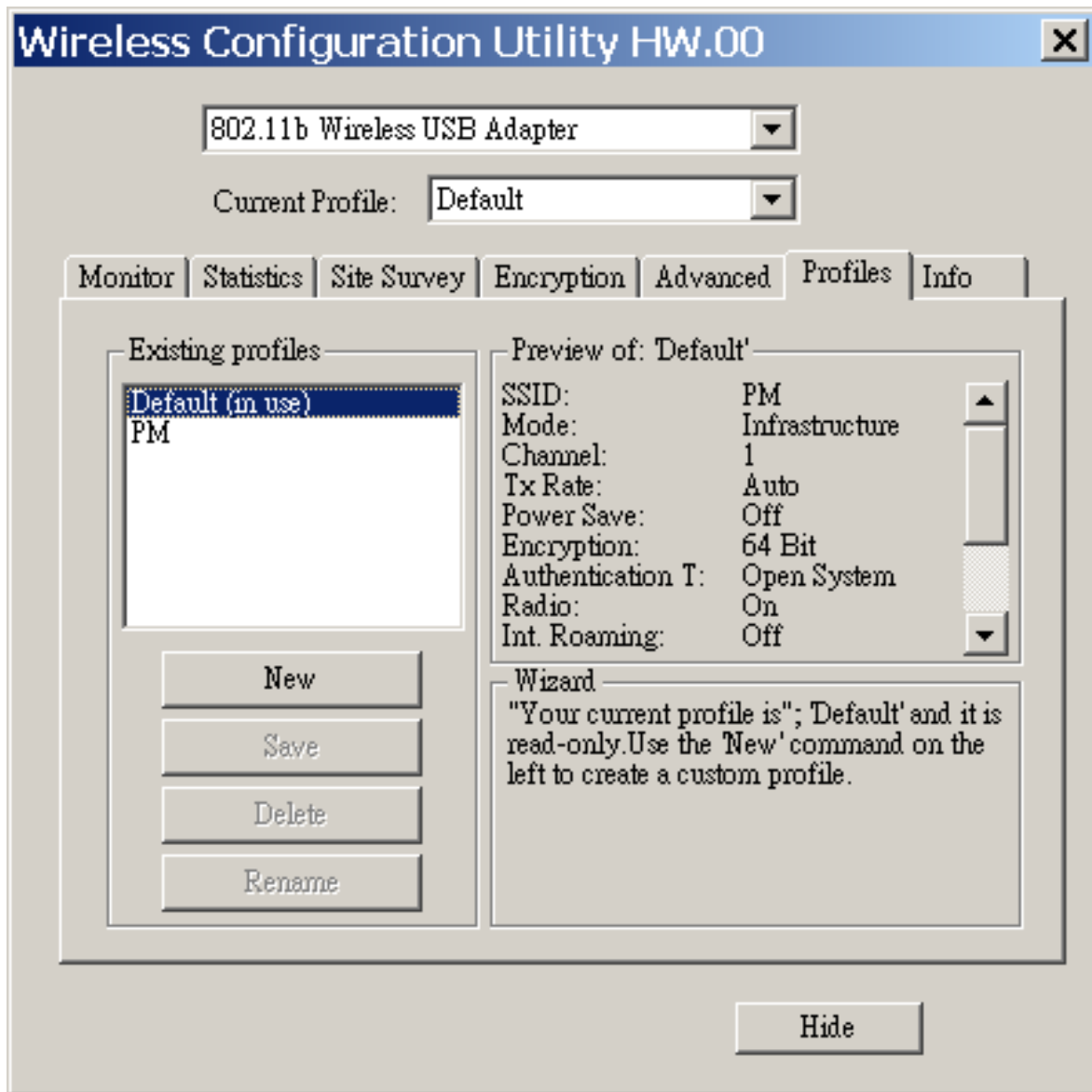

➢ Power Save

By enabling this mode as 802.11 Power Save to set your Wireless USB Adapter as power saving mode.

Click on Submit button to save all the settings.

Profile

The screen shows the existing profile information.

You can create your profile name, just click the "New" button and type the profile that you want to use, otherwise, it will be set to default. Once you change your setting on the Monitor, the current profile name will appear a "*" sign and the save button on the Profiles will active, then you can save the current setting in the profile name you choose.

Info.

The screen shows the version of Driver, Firmware, MAC address and Application for Wireless USB Adapter Utility / Driver.
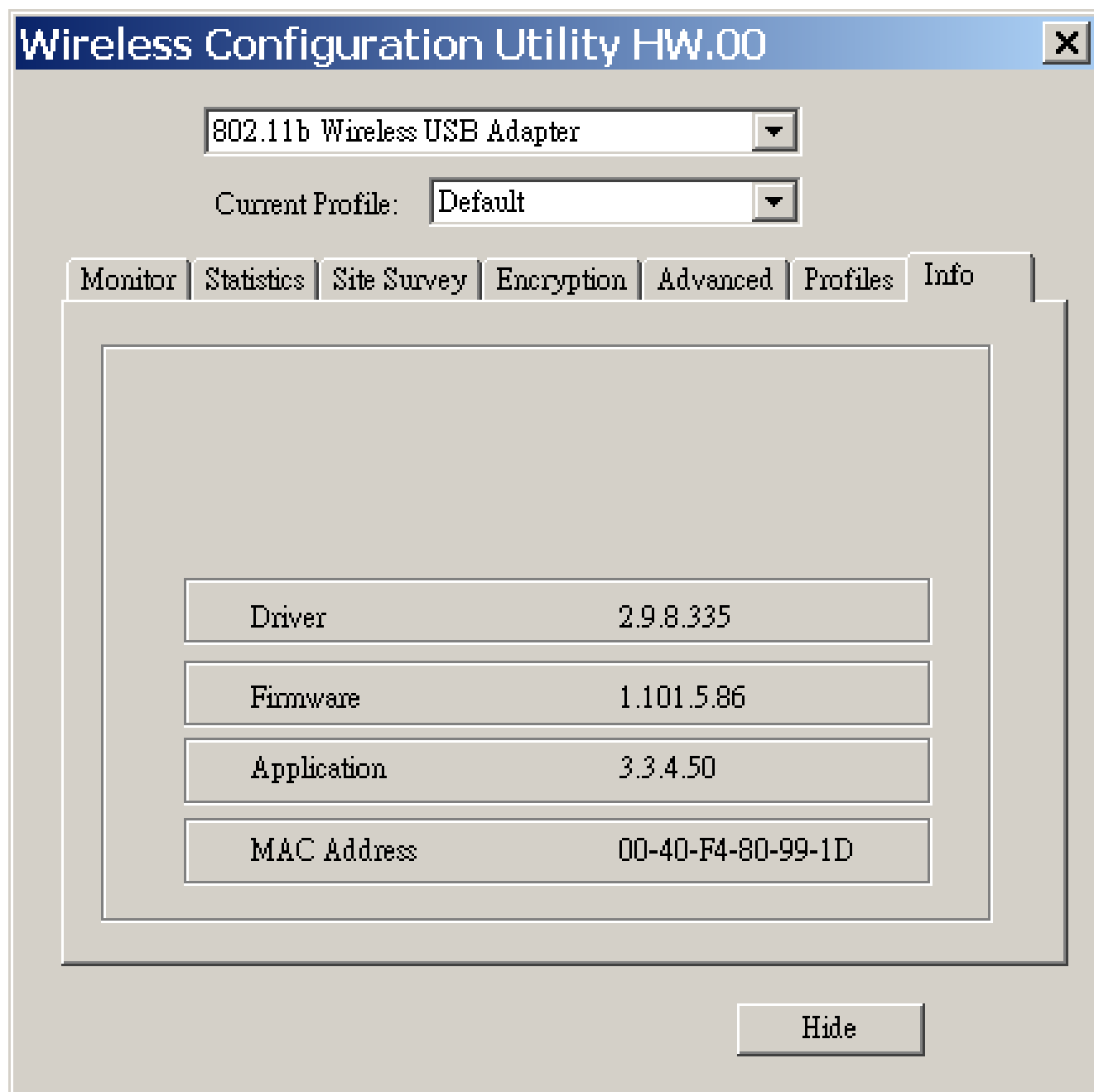
TECHNICAL SPECIFICATIONS

General	
Standards	IEEE 802.3 11b, USB 1.0, 1.1
Radio Technology	IEEE 802.11b Direct Sequence Spread Spectrum (DSSS)
Data Transfer Rate	1, 2, 5.5, 11Mbps (auto sense)
Receiver Sensitivity	11Mbps: Typical –80dBm @ 8% PER (Packet Error Rate) 2Mbps: Typical –90dBm @ 8% PER (Packet Error Rate)
Frequency Range	2400 ~ 2497 MHz ISM band (channels 1 ~ 14)
Modulation Schemes	DBPSK/DQPSK/CCK
Channels	11 channels (FCC), 13 channels (ETSI), 14 channels (Japan)
Media Access Protocol	CSMA/CA with ACK
Security	64/128-bits WEP Encryption
Diagnostic LED	PWR (Power) & LNK (Link status)
Antenna	Integrated dual diversity antennas
Modulation Schemes	DBPSK/DQPSK/CCK
Physical and Environmental	
Driver Support	Windows 98, Windows 2000, Windows ME, Windows XP
Continuous Current Consumption	250mA typ. for receive mode, 450mA typ. for transmit mode
Temperature	Operating: 0° ~ 55° C, Storage: -25° ~ 70° C
Humidity	10% ~ 95% RH, no condensation
Dimensions	86 x 61 x 14 mm (W x H x D)
Certifications	FCC Part 15.247 for US, ETS 300 328 for Europe,