Wireless Pocket USB

User Manual

Rev. 1.1

April 2004

FCC Information to User

Model: Wireless Pocket USB
FCC ID: RC6AWU-901W

FCC Caution

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. 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.

FCC Guidelines for Human Exposure

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This EUT is incompliance with SAR for general population /uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C.

Regulatory Compliance Information

This section includes user requirements for operating this product in accordance with National laws for usage of radio spectrum and operation of radio devices. Failure of the end-user to comply with the applicable requirements may result in unlawful operation and adverse action against the end-user by the applicable National regulatory authority.

FCC Requirements for Operation in the United States

Radio Frequency Interference Warnings & Instructions

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 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 or more of the following methods:

• Reorient or relocate the receiving antenna
• Increase the separation between the equipment and the receiver
• Connect the equipment into an electrical outlet on a circuit different from that which the radio receiver is connect

• Consult the dealer or an experienced radio/TV technician for help.
Modifications made to the product could void the user's right to operate the equipment.

Europe - EU Declaration of Conformity

CE 0678 !	This device is a 2.4 GHz low power RF device intended for home and office use in EU and EFTA member states. In some EU / EFTA member states some restrictions may apply. Please contact local spectrum management authorities for further details before putting this device into operation.

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards: EN300 328, EN301 489-1/17, EN60950

Requirements For Operation in the European Community

Countries of Operation and Conditions of Use in the European Community

The user should run the utility program provided with this product to check the current channel of operation and confirm that the device is operating in conformance with the spectrum usage rules for European Community countries as described in this section. This device is intended to be operated in all countries of the European Community.

Operation Using 2.4 GHz Channels in France

The following radio channel usage limitations apply in France.
The radio spectrum regulator in France, Autorité de regulation des telecommunications (ART), enforces the following rules with respect to use of 2.4GHz spectrum in various locations in France. Please check ART's web site for latest requirements for use of the 2.4GHz band in France: http://www.art-telecom.fr/eng/index.htm.
When operating in the following metropolitan regions (départements) in France, this device may be operated under the following conditions:
• Indoors using any channel in the 2.4-2.4835 GHz band (Channels 1-13)
• Outdoors using channels in the 2.4-2.454 GHz band (Channels 1-7)
When operating outside of the following regions (départements) in France such as Guadeloupe, Martinique, St Pierre et Miquelon, Mayotte, this product can be operated under the following conditions:
• Indoors using any channel in the 2.4-2.4835 GHz band (Channels 1-13)
• Outdoors using any channel in the 2.4-2.4835 GHz band (Channels 1-13)
When operating outside of the following regions (départements) in France such as Réunion and Guyana, this product can be operated under the following conditions:
• Indoors using any channel in the 2.4-2.4835 GHz band (Channels 1-13)
• Outdoors using channels in the 2.420-2.4835 GHz band (Channels 3-13)

Please refer to the ART web site for further details.

Metropolitan Regions:

01	Ain	36	Indre	69	Rhône
02	Aisne	37	Indre et Loire	70	Haute Saône
03	Allier	39	Jura	71	Saône et Loire
05	Hautes Alpes	41	Loir et Cher	72	Sarthe
08	Ardennes	42	Loire	75	Paris
09	Ariège	45	Loiret	77	Seine et Marne
10	Aube	50	Manche	78	Yvelines
11	Aude	54	Meurthe et Moselle	79	Deux Sèvres
12	Aveyron	55	Meuse	82	Tarn et Garonne
16	Charente	57	Moselle	84	Vaucluse
19	Corrèze	58	Nièvre	86	Vienne
2A	Corse Sud	59	Nord	88	Vosges
2B	Haute Corse	60	Oise	89	Yonne
21	Côte d'Or	61	Orne	90	Territoire de Belfort
24	Dordogne	63	Puy de Dôme	91	Essonne
25	Doubs	64	Pyrénées Atlantique	92	Hauts de Seine
26	Drôme	65	Hautes Pyrénées	93	Seine St Denis
27	Eure	66	Pyrénées Orientales	94	Val de Marne
32	Gers	67	Bas Rhin		
35	Ille et Vilaine	68	Haut Rhin		

Table of Contents

Chapter 1 Introduction 6
1.1 Preface 6
1.2 Key Features 6
1.3 Kit Contents 6
1.4 System Requirements 6
1.5 LED Definition 6
1.6 Two Basic Operating Modes 7
1.7 Location and Range 7
Chapter 2 Basic Installation 8
2.1 Install the Pocket USB 8
2.2 Install the Driver and Software Utility 8
2.3 Uninstall the Driver and Software Utility 8
Chapter 3 Quick Start to Join in an Open Wireless Network 10
Chapter 4 Software Utility - WLAN Configuration Utility 11
4.1 Overview 11
4.1.1 Tabs Overview 11
4.1.2 Buttons Overview 12
4.2 General Tab 12
4.2.1 Connection Section 12
4.2.2 Radio Transmitter Section 13
4.2.3 Link Status Section 13
4.3 Profiles Tab 13
4.3.1 Auto-Selection Profiles and Additional Profiles Sections 14
4.3.2 Buttons 14
4.4 Current Statistics Tab 14
4.4.1 Received and Sent Sections 15
4.4.2 Signal Section 15
4.4.3 Activity Section 15
4.4.4 Buttons 15
4.5 About Tab 16
4.5.1 Device Section 16
4.5.2 Configuration Utility Section 16
4.6 Preferences Button 17
4.6.1 General Section 17
4.6.2 Country Code Section 17
4.6.3 Auto Power Save Configuration Section 17
4.6.4 Buttons 17
4.7 View Site Button 18

4.7.1 Available AP's 18
4.7.2 Buttons 18
4.8 Profile 19
4.8.1 General Tab 19
4.8.2 Security Tab 20
Chapter 5 Configuration 22
5.1 Connect to an Access Point in Infrastructure Mode 22
5.2 Connect to an Ad Hoc Station 22
5.3 Start a New Ad Hoc Wireless Network 22
Chapter 6 Troubleshooting 23

Chapter 1 Introduction

1.1 Preface

The miniature Wireless Pocket USB gives you ultimate mobility in your office or while you are traveling. It frees you from traditional Ethernet wiring and helps you connect to an existing wireless network for sharing your broadband cable or DSL Internet access. It is designed for computers running Microsoft® Windows® 98SE, ME, 2000 and XP operating systems. It is USB 2.0 compliant and is backwards compatible with USB 1.1. Its auto-sensing capability allows high packet transfer at up to 54 Mbps for maximum throughput or dynamic range shifting to lower speeds due to distance or operating limitations in an environment with a lot of electromagnetic interference. The Pocket USB complies with 2.4GHz IEEE 802.11b/g standards and can protect data integrity with enterprise-level security.

1.2 Key Features

- Operate at 2.4GHz unlicensed frequency with data transmission rate up to 54Mbps
- IEEE standards support: IEEE 802.11b, 802.11g
- Advanced security features including WEP 64-bit, 128-bit
- USB 2.0 interface compliant with USB 1.1
- Full-featured WLAN management software utility
- Compatible with Windows 98SE, ME, 2000 and XP

1.3 Kit Contents

- Wireless Pocket USB
- Set-up CD with user manual & software utility
- neck strap
- USB 2.0 cradle with 5 feet (1.5 meters) integrated cable

1.4 System Requirements

A computer must be at least equipped with the following requirements:

- available USB port
- CD-ROM drive
- Microsoft® Windows® 98SE, ME, 2000 or XP operating system
- Pentium® II 450MHz or faster processor
- 64 Mbytes RAM
- 50 Mbytes free hard disk space

1.5 LED Definition

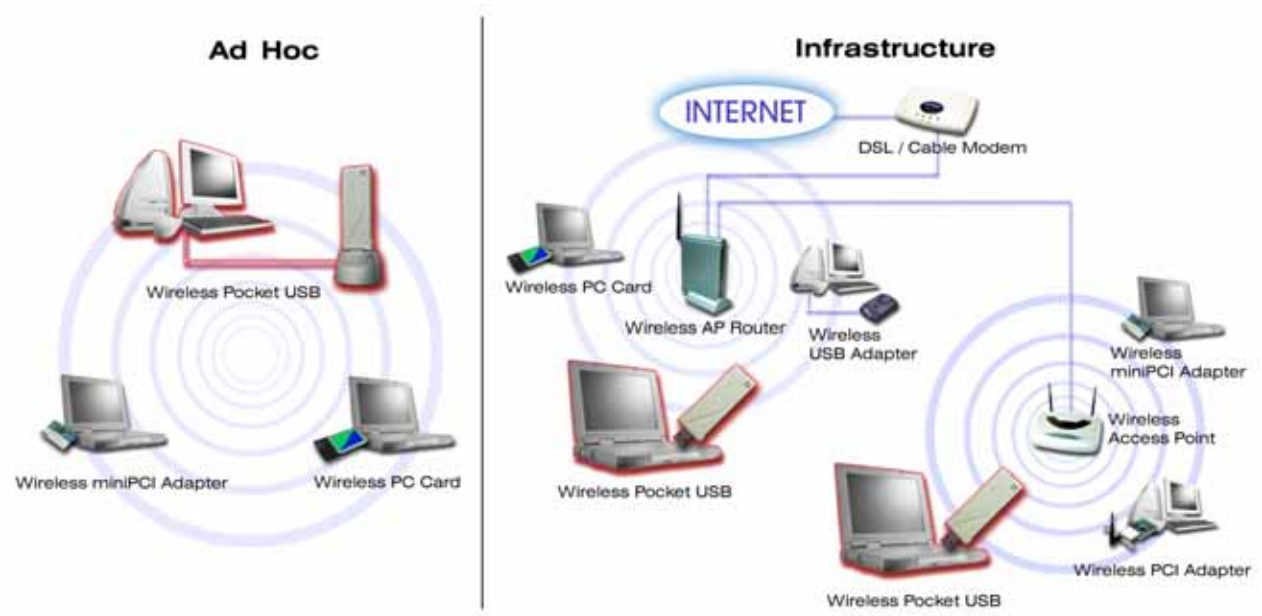
- Act : flash when transmitting or receiving data
- Link: lit when wireless connection established

1.6 Two Basic Operating Modes

The Pocket USB can operate in the following two basic modes:

1. Infrastructure Mode: An 802.11 networking framework in which devices and computers communicate with each other by first going through an access point (AP). For example, this mode is used when computers in a house connect to an Access Point that is attached to a router that lets multiple computers share a single Cable or DSL broadband Internet connection.
2. Ad Hoc Mode: An 802.11 networking framework in which devices or computers communicate directly with each other, without the use of an AP. For example, Ad Hoc Mode is used when two Windows computers are configured with file and print sharing enabled and you want to exchange files directly between them.

Both of these configuration options are available with the Wireless Pocket USB and are instructed in this user manual.



1.7 Location and Range

Computers can connect over wireless networks indoors at a range that vary significantly based on the physical location of the computer with the Pocket USB. For best results, avoid potential sources of interference, such as: large metal surfaces, microwaves ovens or 2.4GHz Cordless phones. In general, wireless devices can communicate through walls. However, if the walls are constructed with concrete, or have metal, or metal mesh, the effective range will decrease between the devices.

Chapter 2 Basic Installation

2.1 Install the Pocket USB

1. Turn on your PC, log in the operating system, and locate an available USB 2.0 port.
2. Connect this Pocket USB with your PC via the USB 2.0 cable or the USB 2.0 cradle or simply directly plug it into your PC.

2.2 Install the Driver and Software Utility

1. Insert the packaged CD into your CD-ROM drive. The CD will automatically start to install the driver and utility into your PC.

2. For Windows XP users, you will be asked to use the Windows XP Wireless Zero Configuration or the software utility provided. This manual instructs the later.

3. The installation completes after a little while. You will see the Pocket USB system tray icon on the lower right portion of the Windows task bar.

2.3 Uninstall the Driver and Software Utility

1. Open *Control Panel*.

2. Double click *Add or Remove Programs*.

3. Select the *Change or Remove Programs*, and select the *Wireless Pocket USB* from the list.

4. Click the *Change/Remove* button.

5. Click the *Next* button, and then click *OK*.

Chapter 3 Quick Start to Join in an Open Wireless Network

1. Double click the *Pocket USB system tray icon* to open the software utility - WLAN Configuration Utility.

2. Click the *View Site* button.

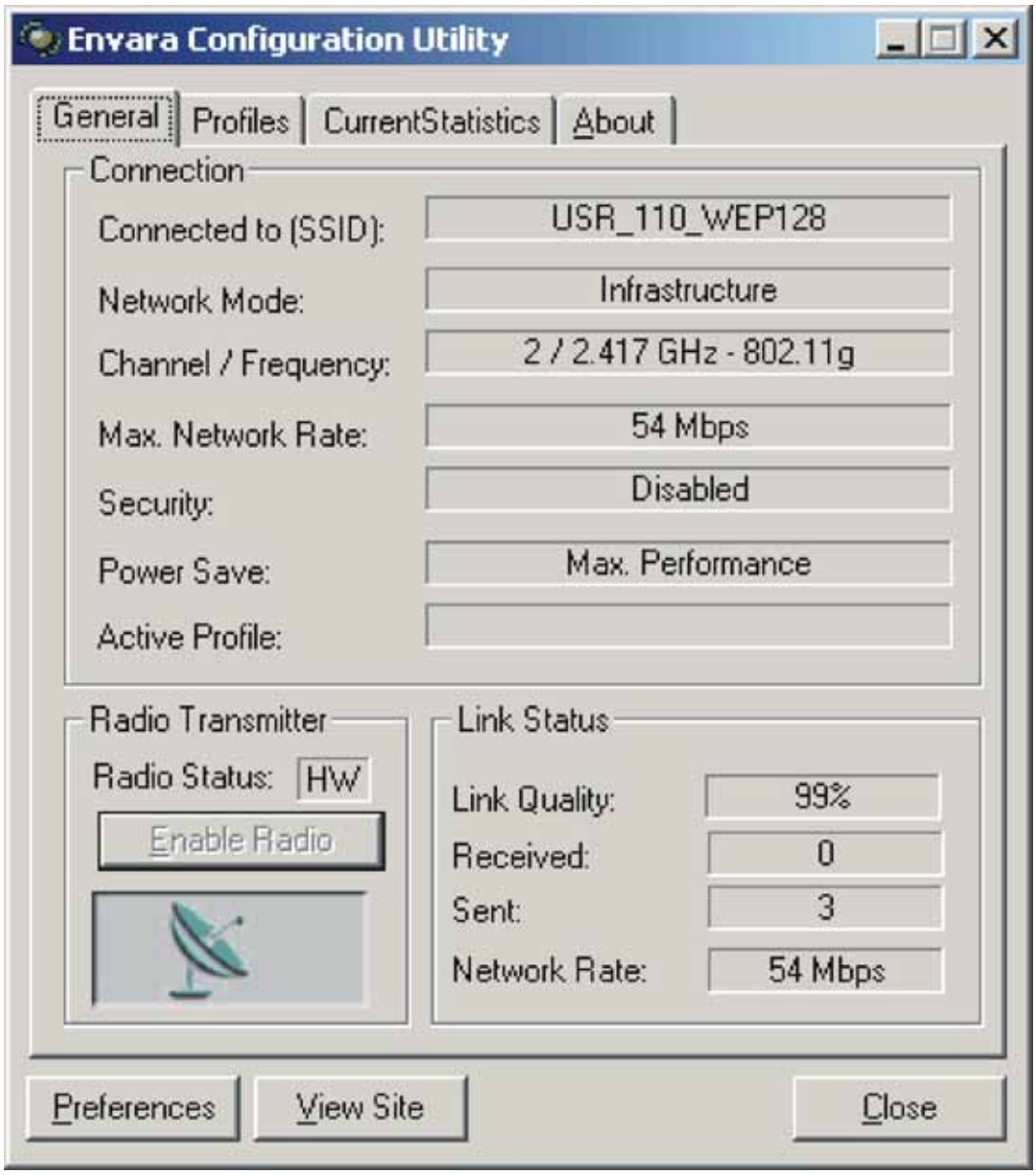
3. Click the *Network View* button.

4. Select a wireless network and click the *Connect* button. A Connected icon will appear.

5. Refer to Chapter 5 for more configuration details.

Chapter 4 Software Utility - WLAN Configuration Utility

4.1 Overview



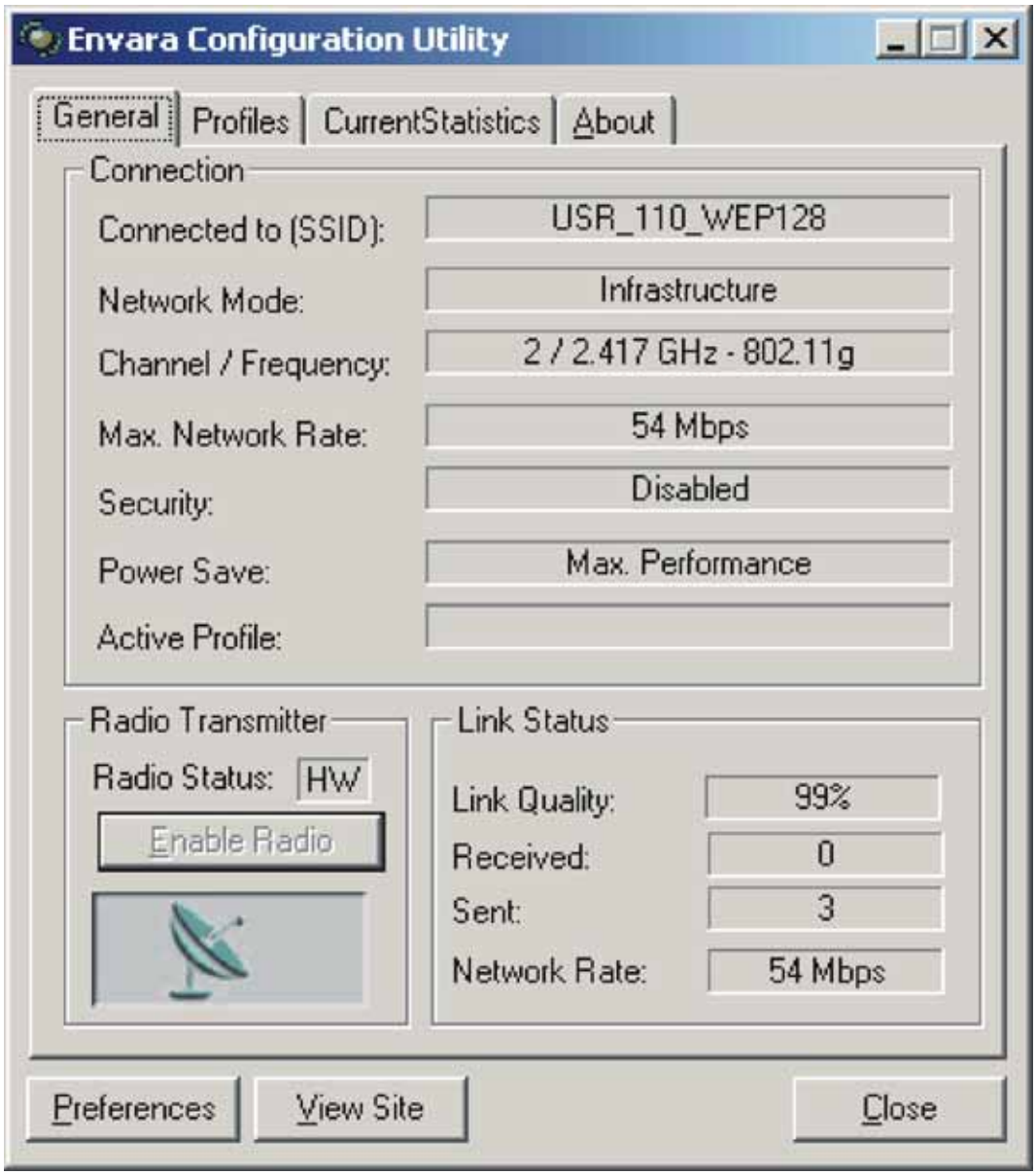
4.1.1 Tabs Overview

- General: A status screen that tells you information of the Pocket USB and link status of the current network.
- Profiles: A set of preset system parameters, or “snapshots”, of the available APs within a wireless network. You can record these “snapshots”. They are manually created by connecting to an AP, and then saving the system parameters as a specific profile. It significantly minimizes access time to the same wireless network while Pocket USB is initializing.
- Current Statistics: Monitor the Pocket USB's current traffic activity and its signal quality when connected to a wireless network.
- About: Hardware information of the Pocket USB and its software elements.

4.1.2 Buttons Overview

- Preferences: Define and configure basic operation parameters and display extra options. Note that some options are not supported currently.
- View Site: Initiate a survey of the current available wireless networks and display these APs, the Ad Hoc stations, and their associated information.
- Close: Exist the utility.

4.2 General Tab



4.2.1 Connection Section

- Connected to (SSID): SSID name of the currently connected network.
- Network Mode: Infrastructure (BSS) mode or Ad Hoc (IBSS) mode.
- Channel/Frequency: Current channel and its corresponding frequency.

- Max. Network Rate: Maximum link rate (54 Mbps for 802.11g or 11 Mbps for 802.11b).
- Security: Encryption scheme.
- Power Save: Power save scheme for the host of Pocket USB (Max performance / Max battery life / Auto).
- Active Profile: Current connected profile.

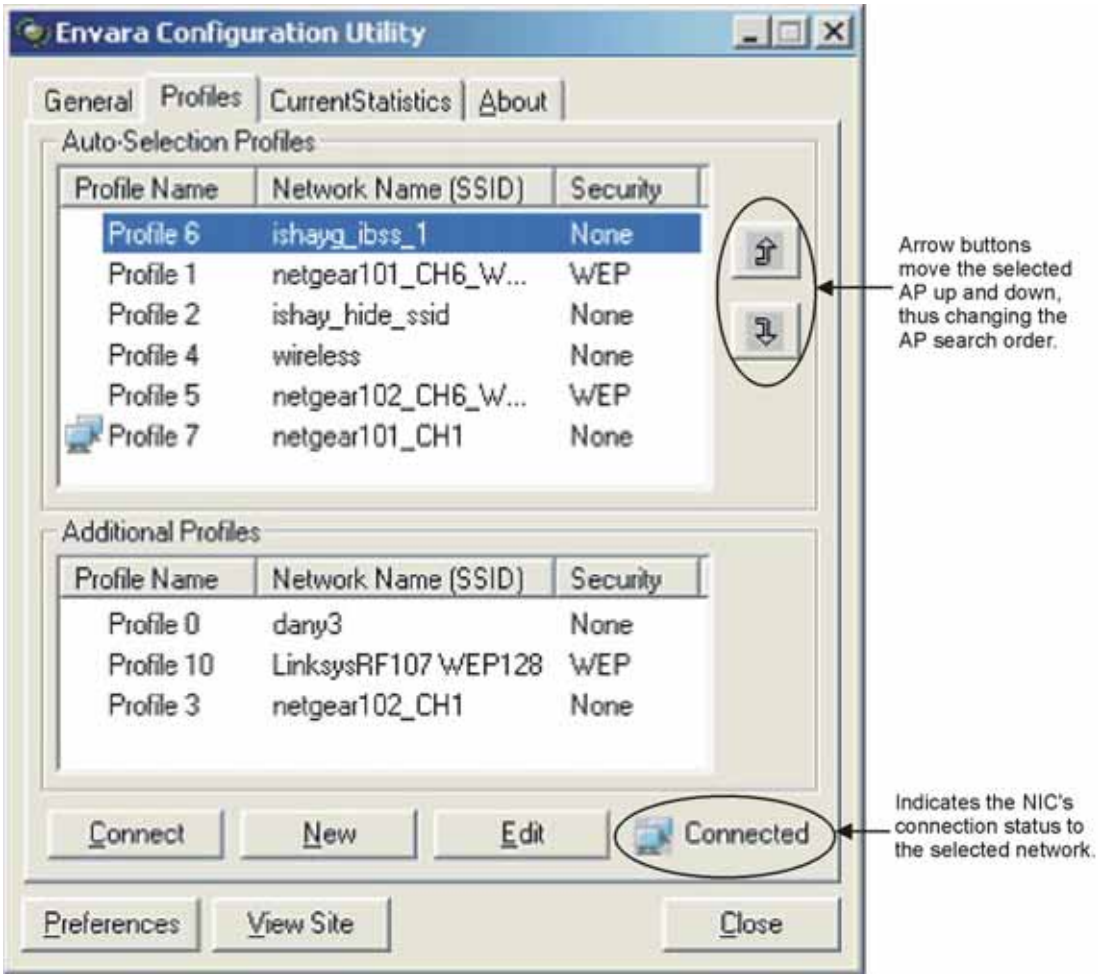
4.2.2 Radio Transmitter Section

- Radio Status: The transmitter's status (On (Transmission enabled) or Off (Transmission disabled)).
- Enable Radio: Enable or disable radio transmission to toggle the control radio transmission.

4.2.3 Link Status Section

- Link Quality: Throughput Level where 100% equals the maximum connection quality.
- Received: Current receive rate (measured in Kbytes per second).
- Sent: Current transmit rate (measured in Kbytes per second).
- Network Rate: The selected link rate varying between 1 - 54 Mbps.

4.3 Profiles Tab



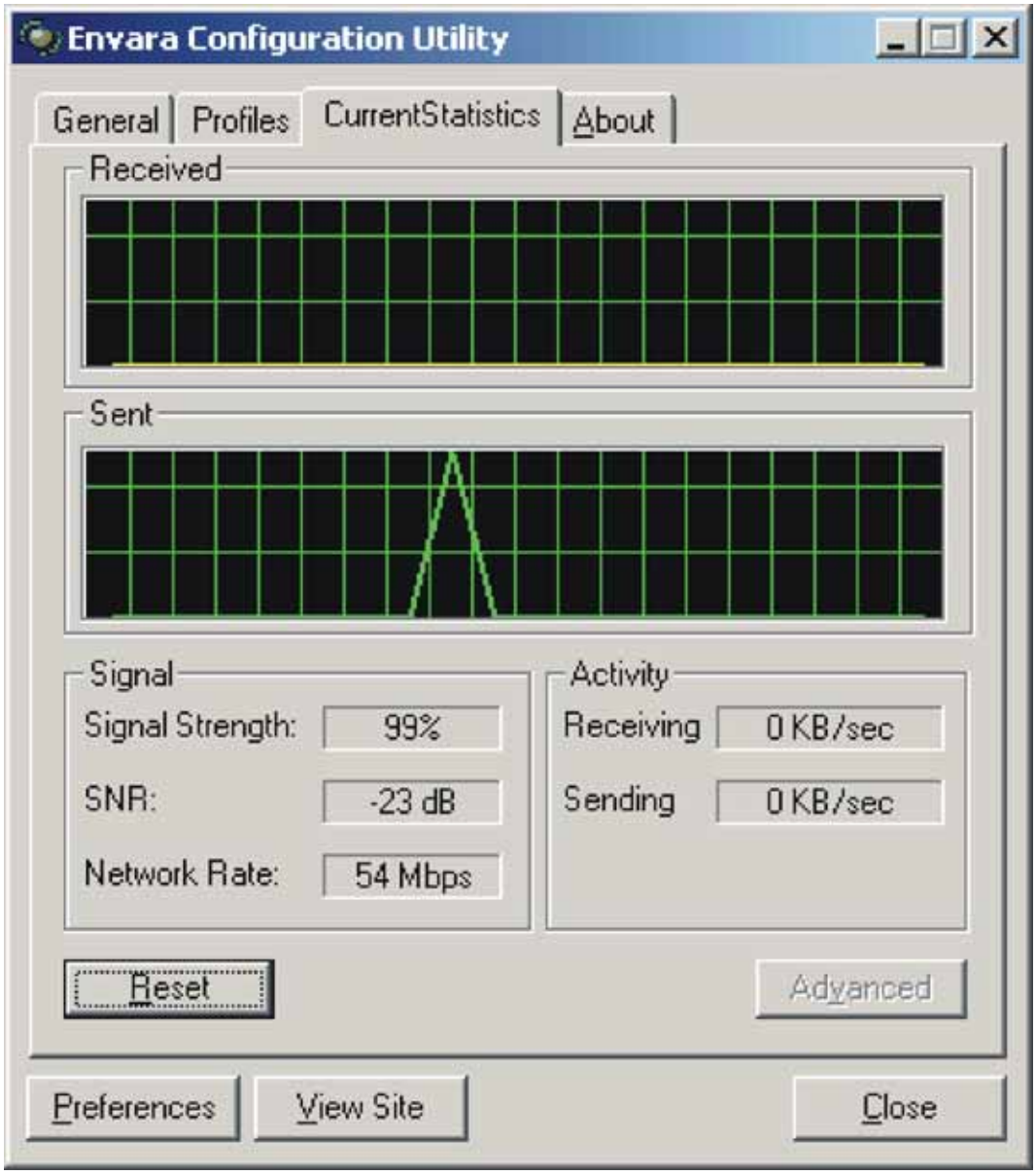
4.3.1 Auto-Selection Profiles and Additional Profiles Sections

- Profile Name: List all profiles you named.
- Network Name (SSID): The name of each AP or Ad Hoc station.
- Security: The security mechanism adopted by each AP or Ad Hoc station.

4.3.2 Buttons

- Arrow: Change the search order by moving the selected AP or Ad Hoc station up and down.
- Connect: Connect the Pocket USB to the selected network.
- New: Define a new profile. Refer to 4.8 Profile.
- Edit: Alter an existing profile.

4.4 Current Statistics Tab



4.4.1 Received and Sent Sections

4.4.2 Signal Section

- Signal Strength: The receive signal strength level (measured in percentage).
- SNR: Signal/Noise Ratio (measured in dB). This ratio measures the link quality. The higher the ratio, the better the quality. Signal means the successfully received signal; noise means the unexpectedly received noise.
- Network Rate: The selected link rate varying between 1 - 54 Mbps.

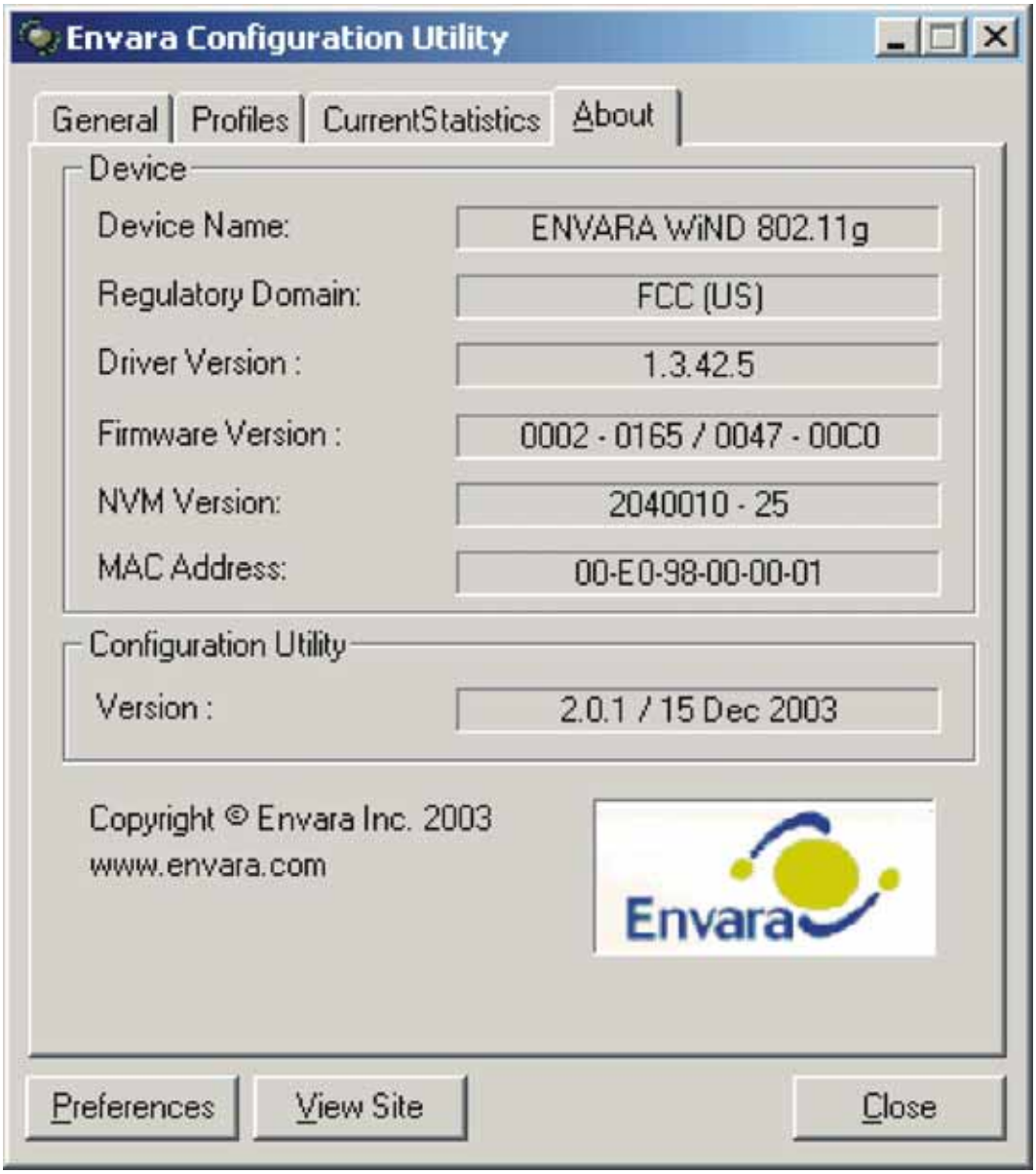
4.4.3 Activity Section

- Receiving: Current receive rate (measured in Kbytes per second).
- Sending: Current transmit rate (measured in Kbytes per second).

4.4.4 Buttons

- Reset: Restart the displayed statistics.
- Advanced: This button is currently disabled.

4.5 About Tab



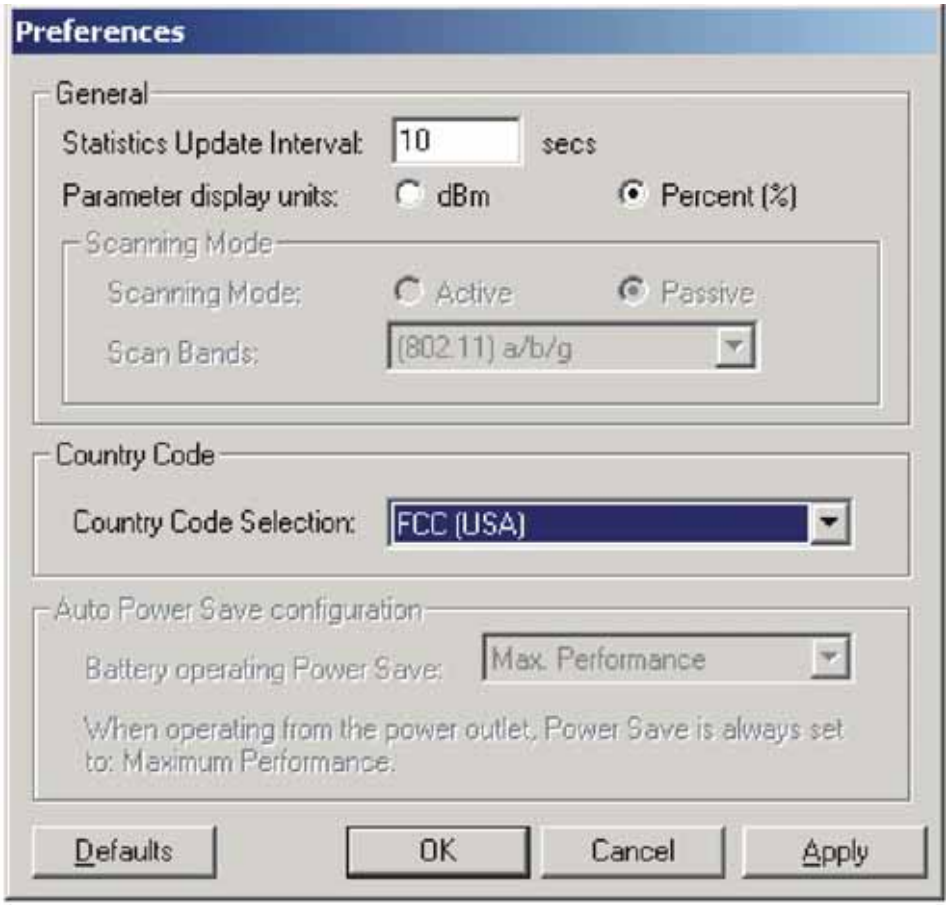
4.5.1 Device Section

- Device Name: Name of the Pocket USB.
- Regulatory Domain: The applicable region for the Pocket USB.
- Driver Version: Driver version of the Pocket USB.
- Firmware Version: Firmware version of the Pocket USB.
- NVM Version: EEPROM version of the Pocket USB.
- MAC Address: MAC address of the Pocket USB.

4.5.2 Configuration Utility Section

- Version: Version number and date of the WLAN Configuration Utility.

4.6 Preferences Button



4.6.1 General Section

- Statistics Update Interval: Define the throughput sample rate in seconds.
- Parameter Display Units: Define the display unit's of the signal strength in dBm or %.
- Scanning Mode: Configure the scanning mode to either active or passive. In Active mode the Pocket USB initiates channel allocation, while in Passive mode it searches for available channels.

4.6.2 Country Code Section

- Country Code Selection: Define the regulatory domain and specify its allowed channel frequencies.

4.6.3 Auto Power Save Configuration Section

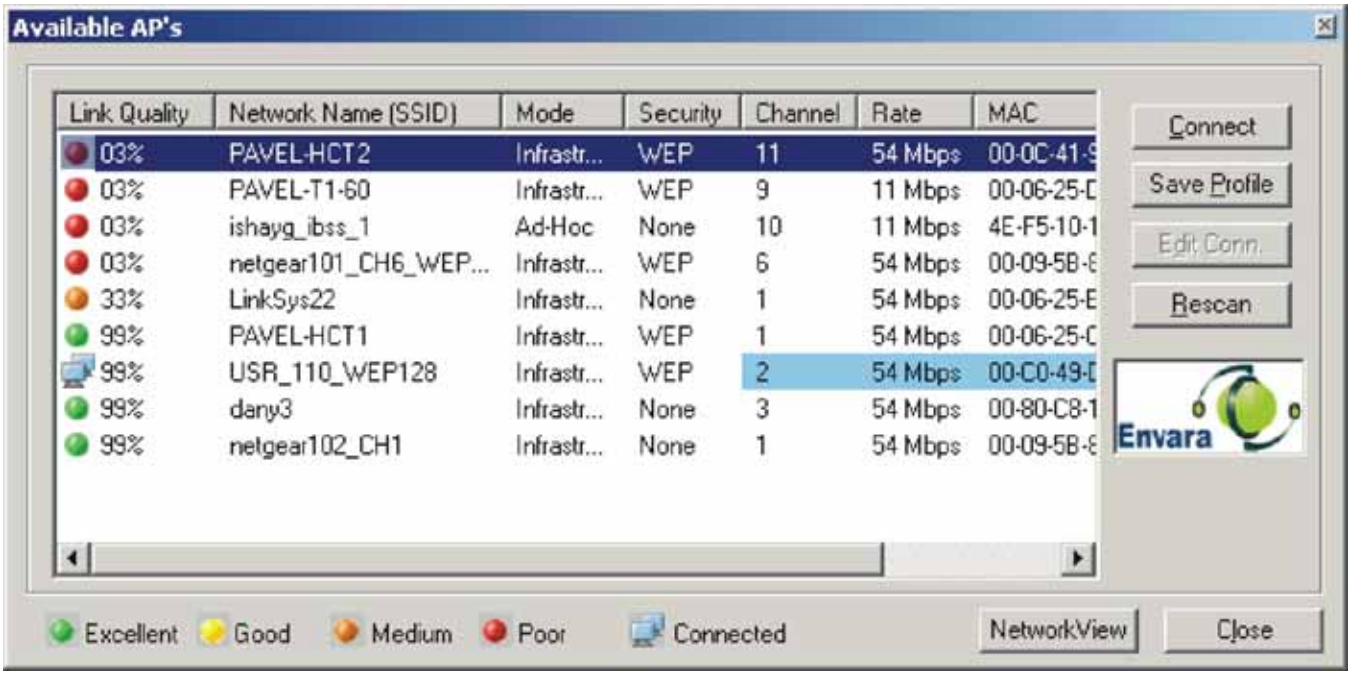
- Battery Operating Power Save: Define the power save scheme including Max Performance (Little or almost no power save options is enabled.) and Max Battery Life (Power Save option is enabled.).

4.6.4 Buttons

- Defaults: Reset all preferences to their default settings.
- OK: Confirm the current settings and exit.
- Cancel: Remain the prior settings and exit.

- Apply: Confirm the current settings.

4.7 View Site Button

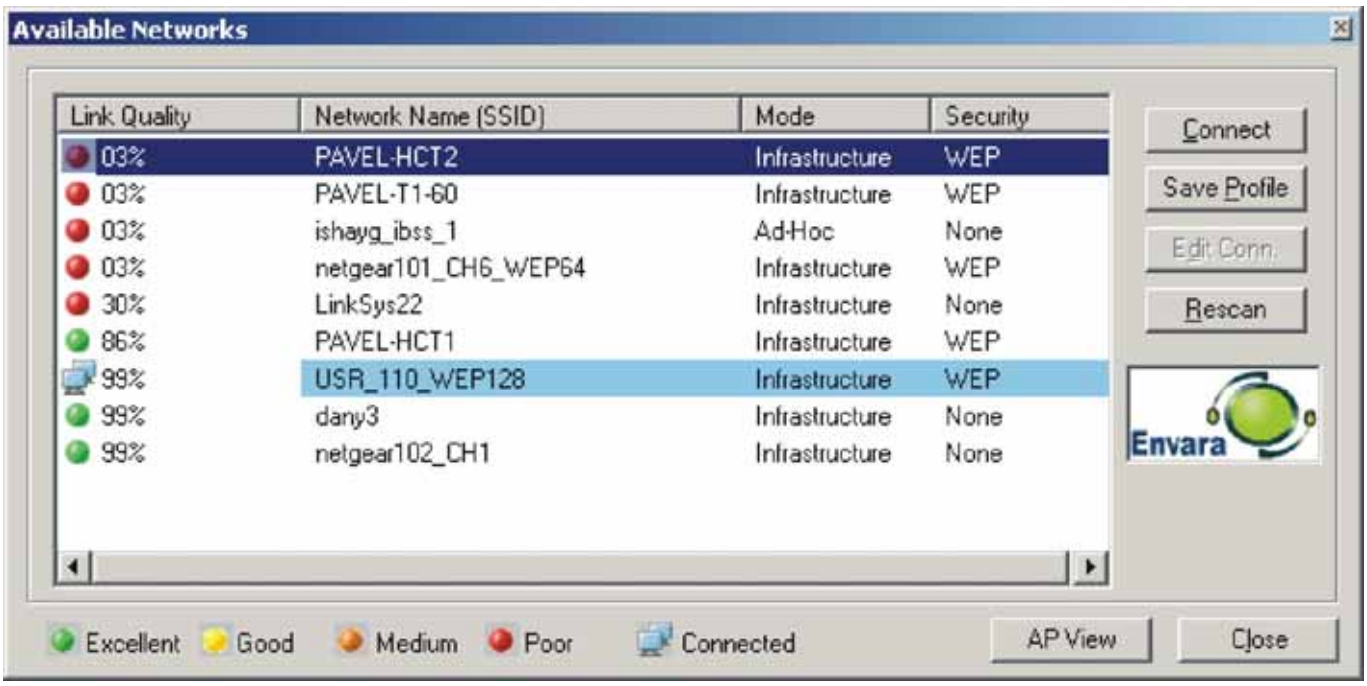


4.7.1 Available AP's

- Link Quality: Use icon and % to indicate each associated AP's link quality.
  - ≥ 80% excellent throughput
  - 50% ~ 80% good throughput
  - 10% ~ 50% fair throughput
  - < 10% poor throughput
  - Connected to this specified AP
- Network Name (SSID): The name of each AP or Ad Hoc station.
- Mode: Infrastructure (BSS) mode or Ad Hoc (IBSS) mode.
- Security: The security mechanism adopted by this network.
- Channel: Current channel adopted by this network.
- Rate: The link rate adopted by this network.
- MAC: MAC address of each AP or Ad Hoc station.

4.7.2 Buttons

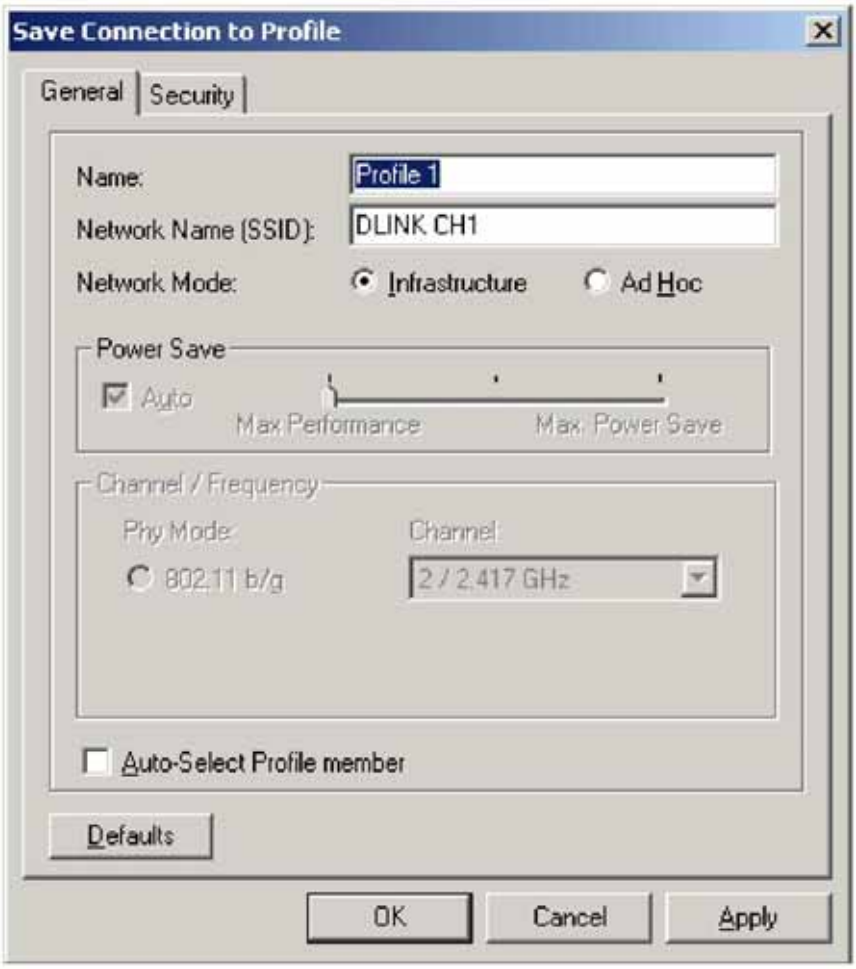
- Connect: Connect to the selected network.
- Save Profile: Save the selected network connection status into a profile. Refer to 4.8 Profile.
- Edit Conn.: Alter current connection's parameters. Refer to 4.8 Profile.
- Rescan: Update associated networks.
- Network View: Switch from the Available AP's dialog box to the Available Networks dialog box.



- Close: Exit.

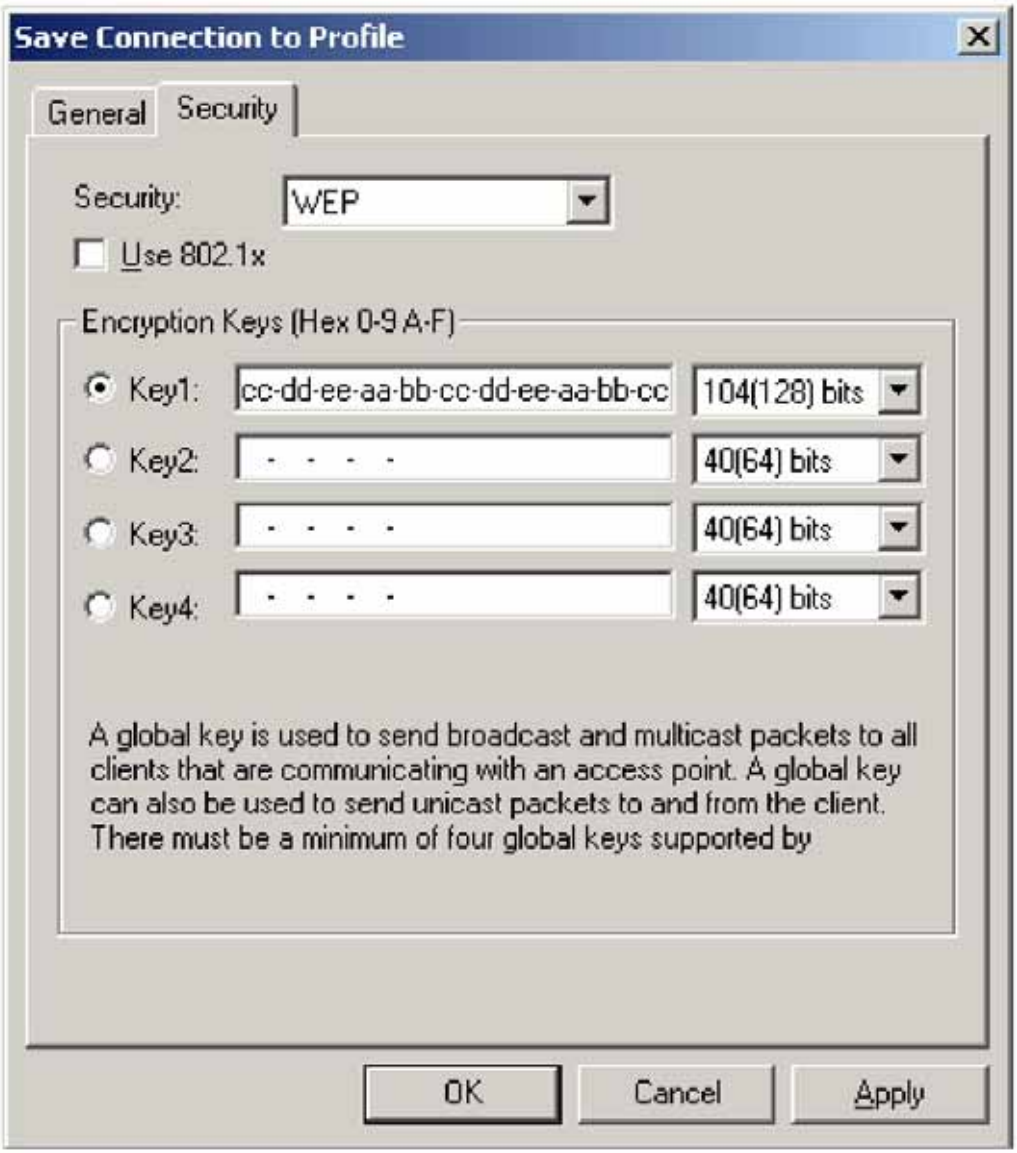
4.8 Profile

4.8.1 General Tab



- Name: Assign a name to this profile.
- Network Name (SSID): Name of the network you want to associate with.
- Network Mode: Select Infrastructure (BSS) mode or Ad Hoc (IBSS) mode adopted by this network.
- Power Save: Select the power save scheme for the host of Pocket USB (Max performance / Max battery life / Auto).
- Channel / Frequency: Select channel and frequency adopted by this network.
- Auto-Select Profile Member: Check this checkbox to add the displayed profile to the auto-selection profiles. Refer to 4.3.1 Auto-Selection Profiles.
- Defaults: Reset the current settings.

4.8.2 Security Tab



- Security: Define the network's encryption scheme.
- Use 802.1X: Click to support 802.1X authentication.
- Encryption Keys (Hex 0-9 A-F): Define up to four keys, 64 or 128 bits, as follows: At least

one key must be defined. Additional keys must be of same length as the first one. Keys are to be input in bytes, in hexagonal format and separated by “-“.

Chapter 5 Configuration

5.1 Connect to an Access Point in Infrastructure Mode

1. Refer to Chapter 3 Quick Start to Join in an Open Wireless Network to proceed step 1 ~ 2.
2. Select an AP that is in Infrastructure Mode and click the *Connect* button.

3. You will need to input security key when the selected AP is adopting wireless security algorithm such as WEP, WPA, etc.

4. If the security key matches, a Connected icon will appear.

5.2 Connect to an Ad Hoc Station

1. Refer to Chapter 3 Quick Start to Join in an Open Wireless Network to proceed step 1 ~ 2.
2. Select a station that is in Ad Hoc mode and click the *Connect* button.

3. You will need to input the security key when the selected station is adopting wireless security algorithm such as WEP, WPA-PSK, etc.

4. If the security key matches, a Connected icon will appear.

5.3 Start a New Ad Hoc Wireless Network

1. Refer to 4.8 Profile to define a new profile.
2. Enter one SSID and select Ad Hoc mode.

3. You can use WEP security algorithm and to do so, you will need to define at least a set of 64/128bits security key.

4. Select this profile and click *Connect*. You can start a new Ad Hoc wireless network if at least one station is connected with the Pocket USB.

Chapter 6 Troubleshooting

1. *Question: The product literature says this Wireless Pocket USB can operate at 54 Mbps. Why do I see no more than 11 Mbps speed on my WLAN Configuration Utility status?*

   Answer: There are two possibilities. Firstly, if you are connecting to a 802.11b network, the maximum 802.11b speed is 11 Mbps. Secondly, if your computer does not have a USB 2.0 port but rather a USB 1.1 port, the Pocket USB will be limited to the maximum speed of the USB 1.1 port. USB 1.1 port maximum speed is 14 Mbps whereas the maximum speed of a USB 2.0 port is 480 Mbps. PCs can be upgraded with optional add-on USB 2.0 adapters that provide one or more USB 2.0 ports. Note that when you are using extension USB cable to connect PC and the Pocket USB, the cable should be USB 2.0-compliant as well.
   Note: Even though you are using USB 2.0 controller, please make sure that you are using the correct driver for USB 2.0. For the Windows XP, you need to upgrade your system to Service Pack 1 in order to utilize the USB 2.0 port. For the Windows 2000, you need to upgrade your system to Service Pack 4 in order to utilize the USB 2.0 port.

2. Question: The Pocket USB's LEDs are not lit?

   Answer: Remove and reinsert the Pocket USB. Check the Windows device manager to see if this device is recognized and enabled. Reload the Pocket USB's software or try to install it in a different port on your system.

3. Question: I can connect to an access point, but I cannot connect to other computers on the network or the Internet?

   Answer: Check to make sure that the access point is physically connected to the Ethernet network. Make sure that the IP address and the Windows networking parameters are all configured correctly by the connected AP. Restart your cable/DSL modem, router and access point.

4. Question: Why my Pocket USB suddenly stops response, yet it was working well before?

   Answer: When changing the AP's configuration from non-WEP to WEP enabled while the Pocket USB is connected, the device will enter infinite scan mode. Try to edit current connection's parameter or un-plug the device to stop this phenomenon.

5. Question: Why do I see a blue screen after plugging out the Pocket USB?

   Answer: This phenomenon will probably happen during the Configuration Utility is running. Please close the Utility first and then unplug the device.

6. Question: The product literature says this Wireless Pocket USB can operate far to 328 feet (100 meters). Why can't it reach that range when I am using it?

   Answer: In optimal condition, this device can reach the maximum range. However, environmental factors such as other electric equipments and layout of building may adversely affect the effective range.

7. Question: How do I know if my Pocket USB has received a valid IP address from my Wireless Router/AP?

   Answer: For Windows 98/ME users, click *Start -> Run…*, and type *winipcfg*; for Windows 2K/XP users, click *Start -> Run…*, enter *cmd*, and type *ipconfig*.

8. Question: