



802.11g Wireless PCI Adapter

WL-8317

User Manual

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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 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 or more of the following measures:

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

FCC Caution

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

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency

exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE)

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8,2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

WEEE regulation



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal

waste and have to collect such WEEE separately.

Revision

User's Manual for PLANET 802.11g Wireless PCI Adapter

Model: WL-8317

Rev: 1.0 (November. 2007)

Part No. EM-WL8317

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Chapter 1 Introduction

Complying with the IEEE802.11b/g standard, the WL-8317 provides simple, reliable, and high-speed wireless connectivity for the desktop users. The WL-8317 is capable of offering up to 54Mbps at 2.4GHz frequency bands.

Support of WPA and WPA2 (Wi-Fi Protected Access) with AES encryption keeps your wireless communications away from unauthorized access and ensures secure data transfer. Backward compatible with 802.11b standard, the WL-8317 is easier to join existing network and protect your original investments. The WL-8317 also takes advantage of flexibility and convenience of PCI interface.

1.1 Features

- IEEE 802.11b/g standard compliant
- Provides up to 54Mbps data rate at 2.4GHz
- Data rate auto-fallback mechanism increases connection reliability
- Supports 64/128-Bit WEP, WPA, WPA2 functions for high level of security.
- Support of Ad-Hoc / Infrastructure mode
- Support of most popular operating systems including Windows 98SE / ME / 2000 / XP / Vista
- Wireless connectivity without the hassles and cost of running cables
- Supports PCI v2.2 interface
- Seamless integration with existing LAN through any IEEE 802.11b/g compliant Access Point.

1.2 Specification

Interface	Complaint with PCI v2.2 standard
Standards Conformance	Compliant with IEEE 802.11b/g
Data Transfer Rate	11b : 1 / 2 / 5.5 / 11Mbps (auto sensing) 11g : 6 / 9 / 12 / 18 / 24 / 48 / 54Mbps (auto sensing)
Operating Mode	Infrastructure Mode, Ad-Hoc Mode
Security	WEP 64/128-Bit, WPA, WPA2
Modulation	802.11b: CCK (11 Mbps), DQPSK (2 Mbps), DBPSK (1 Mbps); 802.11g: OFDM
Channels	11 Channels (USA) 13 Channels (Europe)

	14 Channels (Japan)
Media Access Protocol	CSMA / CA
Transmit Power	802.11b: 15dBm typically 802.11g: 13dBm typically
Sensitivity	54Mbps: Typical -72dBm @ 10% PER 11Mbps: Typical -85dBm @ 8% PER
LED Indicators	ACT/LNK
Operating System	Windows 98SE / Me / 2000 / XP / Vista
Environmental & Mechanical Characteristics	
Dimensions	133 x 121 x 21.6 mm
Unit Weight	50g
Power	5V
Certifications	FCC ,CE
Operating Temp	0°~40° C
Storage Temp	-10°~70° C
Operating Humidity	10% to 95%, Non-Condensing
Storage Humidity	5% to 95%, Non-Condensing

1.3 Package Contents

Before installation, please check the items of your package. The package should include the following items:

- 1 x WL-8317
- 1 x Driver and User's manual CD
- 1 x Quick Installation Guide
- 1 x External Dipole Antenna

If any of the above items is missing, contact your supplier for support.

1.4 Minimum System Requirements

Before installation, please check the following requirements with your equipment.

- Pentium Based (above) IBM-compatible PC system with one vacant PCI slot
- CD-ROM drive
- Windows 98SE/Me/2000/XP/Vista Operating System
- At least 10MBytes of free disk space for utility and driver installation

1.5 Installation Considerations

Beware of the walls and ceilings. Each wall or ceiling can reduce your wireless cover range from 3-90 feet. Properly position your Access Points, Residential Gateways, and computers so that the number of walls or ceilings residing between Access Points and clients is minimized. Building materials make a difference – A solid metal door or aluminum studs may have a negative effect on signal coverage range. Try to properly position Access Points and computers with wireless adapters so that there would be less obstacles existing between them. Keep your wireless LAN devices away from microwaves, cordless phones and child incubators. It is likely that the latter will cause interferences to the operation of your wireless LAN devices.

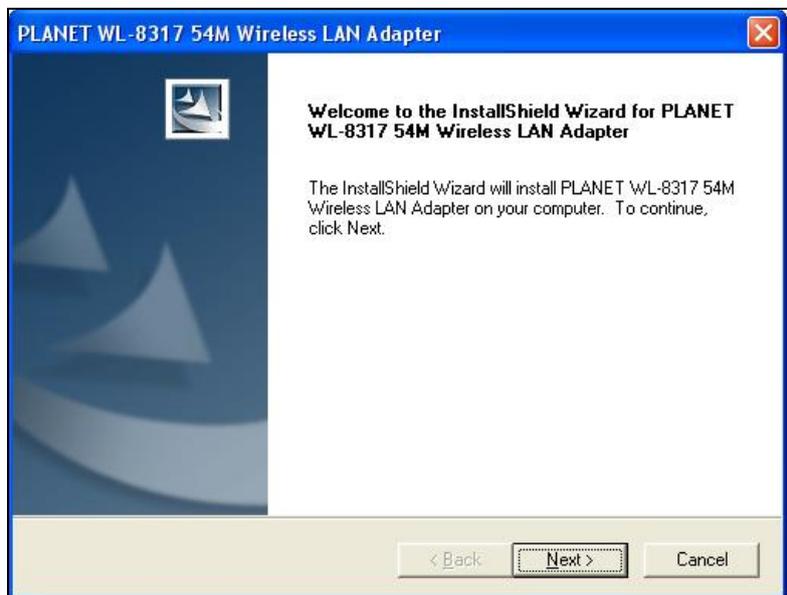
Chapter 2 Installation Procedure

Before you proceed with the installation, please notice following descriptions.

Note1: The following installation operates under Windows XP. The procedure also applies to Windows 2000 and Vista.

Note2: If you have installed other Wireless PC Card driver & utility before, please uninstall them first.

1. Turn off your computer and remove its cover.
2. Insert the WL-8317 to an available PCI slot firmly.
3. Secure this card to the rear of the computer chassis and put back the cover.
4. Secure the antenna to the antenna connector on the WL-8317.
5. When system startup, Windows O.S will detect WL-8317 and show you “the Found New Hardware Wizard”. Please click “Cancel” first.
6. Insert the bundled CD into the CD-ROM driver. The Wizard should run automatically to display the menu screen.
7. Select suitable utility link according to your system. In this example, Windows 98/ME/2000/XP utility is selected.



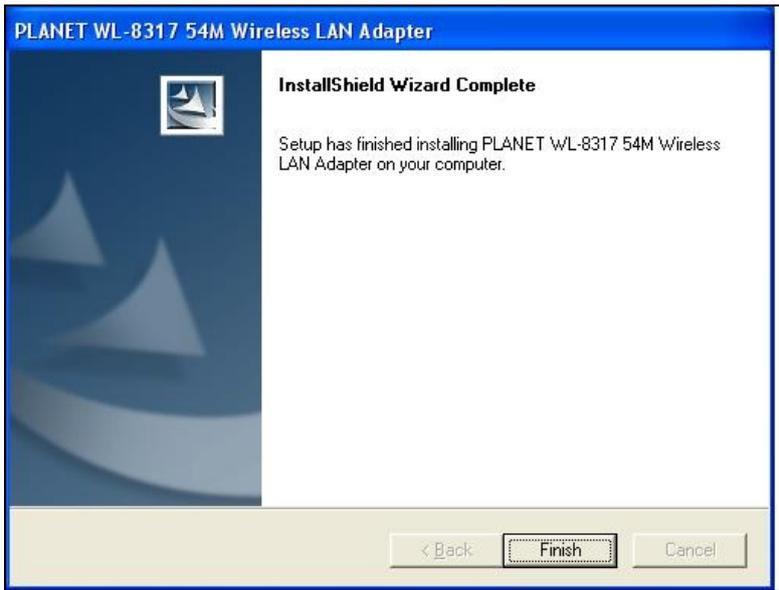
8. When the “Software Installation” screen appears, click “Continue Anyway” to proceed.



9. When the utility is installed, the driver will be loaded as well. The screen will appear to inform that you are installing PLANET WL-8317. Please click "Continue Anyway" to continue.



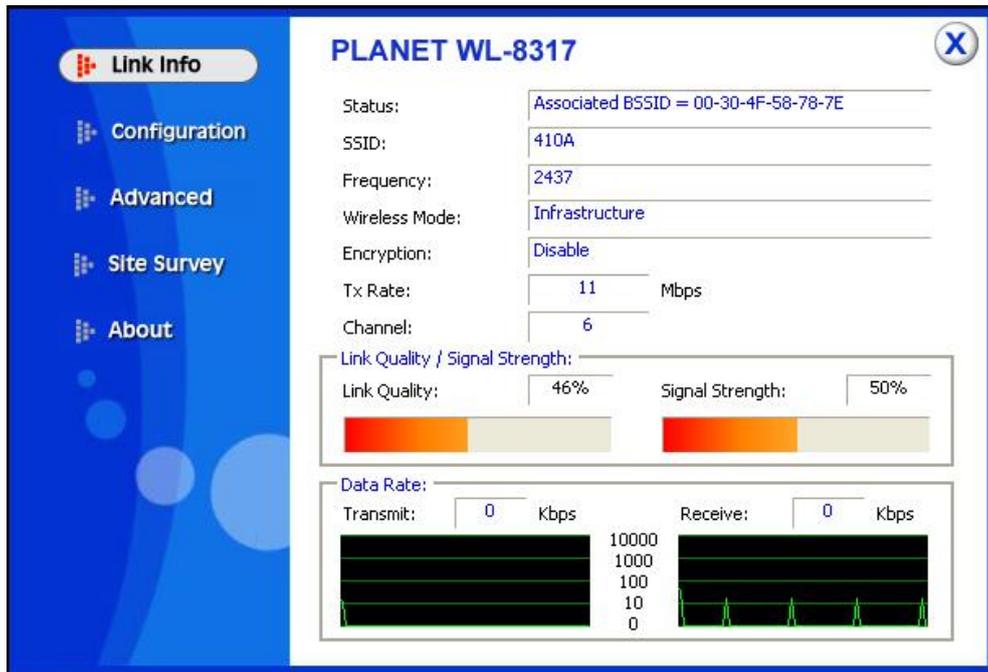
10. Follow the Install Shield Wizard steps, and click "Finish" when done.



Chapter 3 Configuration Utility

The Configuration Utility is a powerful application that helps you configure the WL-8317 and monitor the link status and statistics during the communication process.

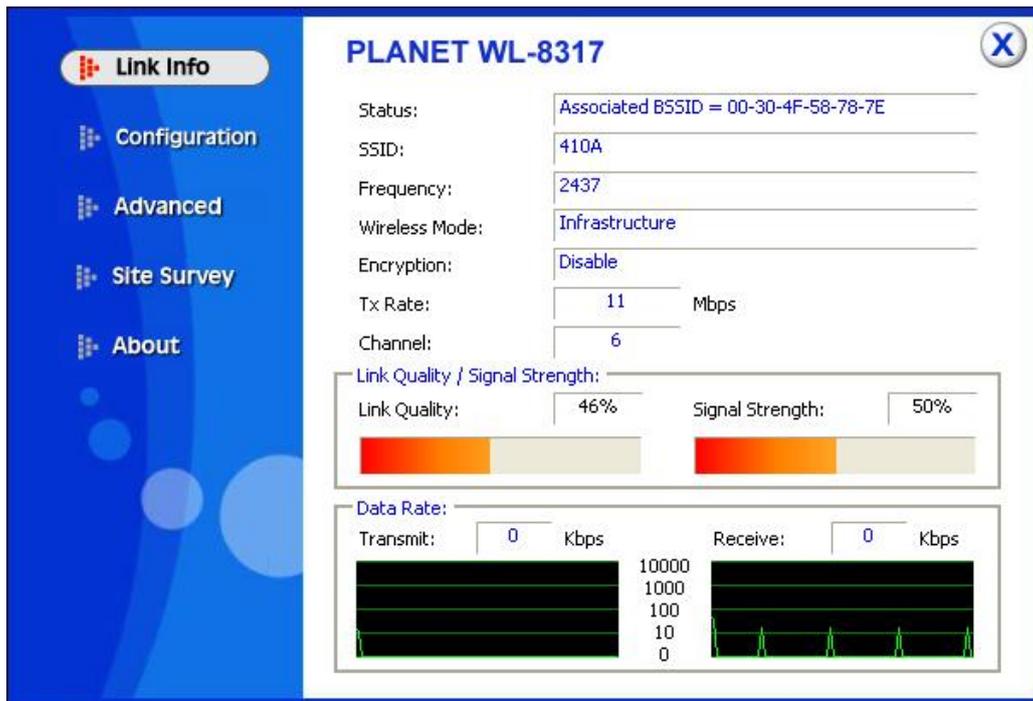
When the WL-8317 is installed, the configuration utility will be displayed automatically. This card will auto connect to wireless device which has better signal strength and no security setting



If the Configuration Utility does not appear, you can double-click the  on your system desktop to start it. Another way to start the Configuration Utility is to click on Start > Programs > 802.11 Wireless LAN > PLANET WL-8317 54M Wireless LAN Adapter > WL-8317.

3.1 Link Info

The **Link Info** displays signal strength and link information, Internet Protocol (TCP/IP).



This screen contains current link information of WL-8317.

Status: Shows the BSSID associated with, which can be used to identify the wireless network.

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

Frequency: Shows the current frequency used for wireless network.

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

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

Tx Rate: Shows the current data rate used for transmitting.

Channel: Shows the current channel for communication.

Link Quality: Shows the link quality of WL-8317 with the Access Point when operating in Infrastructure mode.

Signal Strength: Shows the wireless signal strength of the connection between the WL-8317 and the Access Point.

Data Rate: Shows the statistics of data transfer, and the calculation is based on the number of packets transmitted and received.

3.2 Configuration

The screenshot shows the configuration window for the PLANET WL-8317. The left sidebar contains a menu with 'Link Info', 'Configuration' (highlighted), 'Advanced', 'Site Survey', and 'About'. The main configuration area includes the following fields and options:

- SSID: 410A
- Wireless Mode: Infrastructure
- AdHoc Band: Auto
- Channel: 6
- Power Save: Continuous Access Mode
- Preamble Type: Short & Long Preamble
- Tx Rate: 54 Mbps
- Support Band: 11B (checked), 11G (checked)

At the bottom of the window are 'Apply' and 'Cancel' buttons.

In this screen, you can configure the wireless settings of WL-8317. After configuration, please press "Apply" to save settings or "Cancel" to set again.

- ◆ **SSID:** The SSID must be identical for each clients and nodes in the wireless network.
- ◆ **Wireless Mode:** Click pull-down button and select the work mode below.
 - **Ad-Hoc:** This mode indicates the peer-to-peer operation. All communication is done from client to client without the use of an Access Point.
 - **Infrastructure:** This operation mode requires the presence of an Access Point. All communication is done via the Access Point.
- ◆ **Ad-Hoc Band:** There are three options available for selection
 - **11B:** Allows user to set the 802.11b standard wireless network.
 - **11G:** Allows user to set the 802.11g standard wireless network.
- ◆ **Channel:** Shows the number of the radio channel used for the networking.
- ◆ **Tx Rate (11B/G):** Shows the Data Transfer Rate. If Auto Mode is selected, the device will choose the best transfer rate automatically.
- ◆ **Power Mode:** Shows Power Management modes. There are two optional selections for this mode.
 - **Continuous Access Mode:** WL-8317 will always set in active mode.
 - **Maximum Power Save:** WL-8317 will enter power saving mode when it is idle.
 - **Power Save:** WL-8317 consumes the moderate level of power.
- ◆ **Preamble:** There are two options can be selected: Short & Long Preamble, Long Preamble. Preamble is a sequence of bits transmitted at 1Mbps that allows the PHY

circuitry to reach steady-state demodulation and synchronization of bit clock and frame start. Two different preambles and headers are defined: the mandatory supported Long Preamble and header, which interoperate with the 1 Mbit/s and 2 Mbit/s DSSS specification (as described in IEEE 802.11), and an optional Short Preamble and header (as described in IEEE 802.11b). At the receiver, the Preamble and header are processed to aid in demodulation and delivery of the PSDU. The Short Preamble and header may be used to minimize overhead and, thus, maximize the network data throughput. However, the Short Preamble is supported only from the IEEE 802.11b (High-Rate) standard and not from the original IEEE 802.11. That means that stations using Short-Preamble cannot communicate with stations implementing the original version of the protocol.

- ◆ **Support Band:** The supported bands of WL-8317 are 11B, and 11G. With all options selected, WL-8317 can keep the highest flexibility when making connection to AP. If you fix the WLAN band for both AP and WL-8317, it can skip the initial negotiation time.

3.3 Advanced

The screenshot shows the 'Advanced' configuration page for PLANET WL-8317. The left sidebar contains navigation options: Link Info, Configuration, **Advanced**, Site Survey, and About. The main content area is titled 'PLANET WL-8317' and includes a close button (X). The configuration fields are as follows:

- Auth Mode:** Disable (dropdown)
- Encryption:** WEP-Key (dropdown)
- WEP Key Table:**

WEP Key	Network Key	Key Length
1	[Empty]	64bits (dropdown)
2	[Empty]	64bits (dropdown)
3	[Empty]	64bits (dropdown)
4	[Empty]	64bits (dropdown)
- Default Key:** Key 1 (dropdown)
- Format:** Hex (dropdown)

Buttons for 'Configuration', 'Apply', and 'Cancel' are located at the bottom of the configuration area.

Additional security can be achieved by using any of the following encryption methods: WEP (Wired Equivalent Privacy), WPA (Wi-Fi Protected Access), and WPA-PSK (Pre Shared Key).

When “Open System”, “Shared Key”, or “Auto” is selected in “Encryption” field, WEP encryption is activated. Please enter the appropriate parameters to these fields.

- ◆ **Auth. Mode:**
 - **Auto:** With this setting, stations can communicate with the Access Point either with or without

data encryption. It will detect the AP that it connected is using which Authentication mode and use the same mode to communicate.

- **Open System:** With this setting, the station in the WLAN can receives and transmits data from Access Point (null authentication).
- **Shared Key:** With this setting, allows communication only with other devices with identical WEP settings.
- ◆ **WEP Key options:**
 - **Default Key:** There are 4 keys available for the WEP function. Please select one of them for WEP to operate.
 - **Network Key:** You can define the WEP (Wired Equivalent Privacy) Key values by yourself.
 - **Key Length** – Please select which WEP key mode you want to use. There are three modes, each mode has two kind of key length and that is decide on the **Key Format** you selected. 64bit (5ASCII / 10HEX.), 128bit (13ASCII / 26HEX).
- ◆ **Key Format** – You can select WEP key format to **HEX** (Hexadecimal code, 0-9, A-F) or **ASCII** (American Standard Code for Information Interchange, 0-9, a-z, A-Z).

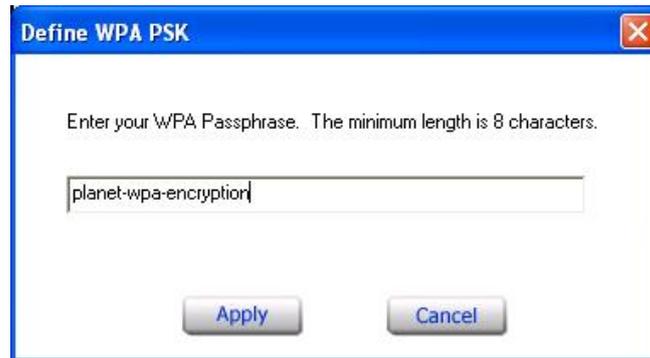
When “WPA” or “WPA2” is selected in “Encryption” field, please click “Configuration” button for advanced settings.

Note: please make sure the user certification is already installed in the computer, then select “WPA” or “WPA2” option. Otherwise, the utility will hang due to unable to locate valid certification.



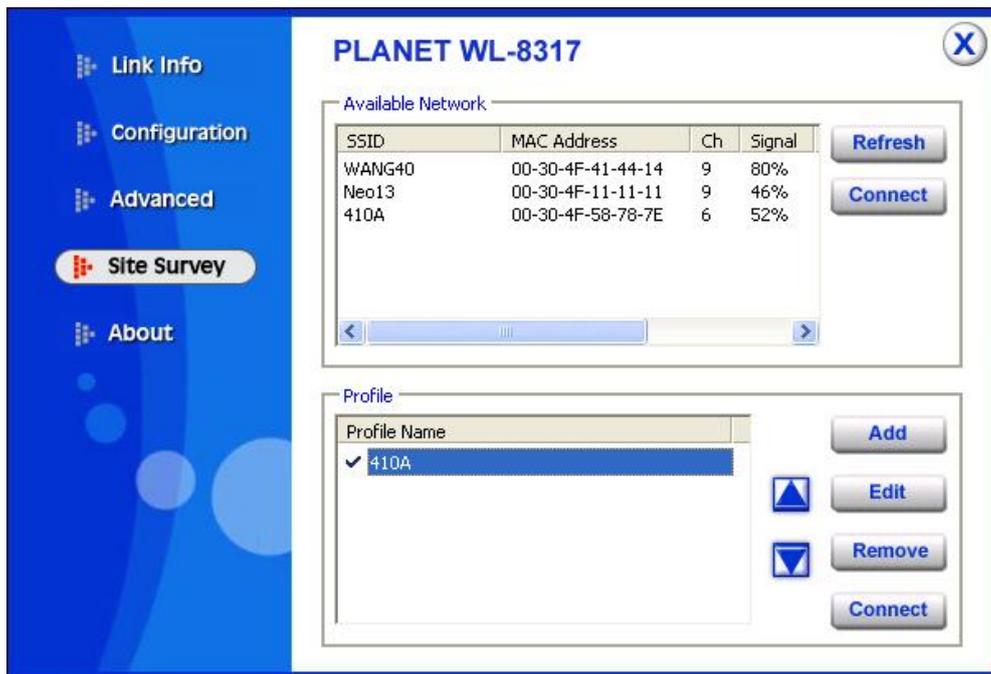
WPA / WPA2 uses 802.1x and Extensible Authentication Protocol (EAP) as the basis of its authentication mechanism. Thus your computer needs to install a certification for the RADIUS server first. Please consult with your network administrator for getting the certification and the appropriate parameters of the above screen.

When “WPA-PSK” or “WPA2-PSK” is selected in “Encryption” field, please click “Configuration” button and key in the identical passphrase as configured in Access Point.



WPA-PSK / WPA2-PSK is a special mode of WPA for home users without an enterprise authentication server and provides the same strong encryption protection.

3.4 Site Survey



This screen shows the APs or Adapters which available for WL-8317 to connect. If you configure the SSID of WL-8317 as “Any”, it will show all available APs and Adapters at the same time.

Click “ Refresh “ to collect the BSSID and Channel information of all the wireless devices around you.

If you wish to connect to any device on the “**Available Network**” list, select the device on the list

and click “**Connect**”, then WL-8317 will connect to the selected device and create a profile for the selected device automatically.

You can configure profile with those buttons:

- **Add:** Add a new profile.
- **Remove:** Delete the profile you selected.
- **Properties:** Modify the profile you selected.

After press Add or Properties, the dialog box will appears for configuring profile.

3.5 About

It shows the current **Driver**, **Firmware** and **Utility** version.



Chapter 4 Troubleshooting

This chapter provides solutions to problems that may occur during the installation and operation of the PLANET WL-8317. Read the descriptions below to solve your problems.

Q1: After install the WL-8317 in Windows XP , the login dialog box appears every time when restarting PC.

A: It is the “Domain Login” function designed in Windows XP system. Enter the preset username and password allows user to recover network connection at this time. If the computer does not join any domain, you can click “OK” to ignore this box and access to the system.

Q2: The PLANET WL-8317 does not work properly.

A: 1. Reinsert the PLANET WL-U8317 into your PC’s PCI.
2. Right click on My Computer and select Properties. Select the device manager and click on the Network Adapter. You will find the Adapter if it is installed successfully. If you see the yellow exclamation mark, the resources are conflicting. You will see the status of the Adapter.

If there is a yellow question mark, please check the following:

- Make sure that your PC has a free IRQ (Interrupt Request, a hardware interrupt on a PC.)
- Make sure that you have inserted the right adapter and installed the proper driver.

If the Adapter does not function after attempting the above steps, remove the adapter and do the following:

- Uninstall the driver software from your PC.
- Restart your PC and repeat the hardware and software installation as specified in this User Guide.

Q3: I cannot communicate with the other computers linked via Ethernet in the Infrastructure configuration.

A: 1. Make sure that the PC to which the Adapter is associated is powered on.
2. Make sure that your Adapter is configured on the same channel and with the same security options as with the other computers in the Infrastructure configuration.

Q4: What should I do when the computer with the Adapter installed is unable to connect to the wireless network and/or the Internet?

A: 1. Check that the LED indicators for the broadband modem are indicating normal activity. If not,

there may be a problem with the broadband connection.

2. Check that the LED indicators on the wireless router are functioning properly. If not, check that the AC power and Ethernet cables are firmly connected.
3. Check that the IP address, subnet mask, gateway, and DNS settings are correctly entered for the network.
4. In Infrastructure mode, make sure the same Service Set Identifier (SSID) is specified on the settings for the wireless clients and access points.
5. In Ad-Hoc mode, both wireless clients will need to have the same SSID. Please note that it might be necessary to set up one client to establish a BSS (Basic Service Set) and wait briefly before setting up other clients. This prevents several clients from trying to establish a BSS at the same time, which can result in multiple singular BSSs being established, rather than a single BSS with multiple clients associated to it.
6. Check that the Network Connection for the wireless client is configured properly.
7. If Security is enabled, make sure that the correct encryption keys are entered on both the Adapter and the access point.