

Wireless 802.11b 11Mbps Series

User's Manual

KWL-210 PCMCIA Card

● KWL-220/240 USB / Mini-USB Adapter

KWL-230 Compact Flash Card

Version: B2 (July. 2002)

Warning:

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.



Caution:

- 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.
- 2. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.
- 3. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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1 Introduction

The PCMCIA card, USB adapter and Mini-USB adapter is a Wireless LAN Card with a rate of 1, 2, 5.5, and 11 Mbps operating in the ISM band using Direct Sequence Spread Spectrum (DSSS) transmission, implementing the IEEE 802.11b standard. For these card currently provides Device Drivers for MS Windows® 95/98/2000/XP, Windows® NT 4.0, and Windows CE. Linux Drivers will be supported soon.

Also provides tools for the configuration and firmware upgrade of the cards. These tools, as well as the installation procedure for the MS Windows 95/98/2000/XP, MS Windows® NT4.0, operating systems are described in this document.

Two pieces of software are needed, in order to install the adapter in a PCMCIA card or USB adapter/Mini-USB adapter slot of a PC and operate under an operating system. The first one is the driver, which provides the necessary mechanisms to the operating system in order to use the adapter as any other networking adapters. The driver communicates with the firmware using exchange of commands (Set MIB, Get MIB, Scan, Sync, etc.). The other piece of software needed is the code written on the MAC chip, which is responsible for the implementation of the IEEE 802.11b, and for the interface with driver.

1.1 Package Contents

Before you do anything, open your package and verify it includes:

- A PCMCIA Card / USB/ Mini-USB Adapter/ CF Wireless LAN Card
- Firmware, Drivers, User's manual, and Software Tools CD

1.2 System Requirements

- Operating System: MS Windows 95/98/2000/XP, Windows NT 4.0 with Service Pack 4 or later
- Desktop PC or notebook PC with CD-ROM drive
- SA to PCMCIA or PCI to PCMCIA controller in case of desktop PC
- PCMCIA Type II or Type III card slot in case of notebook PC
- USB 1.1
- CF Card of Pocket PC

Note: Your PCMCIA controller must support 3.3V PC cards. Some old PCs may not support 3.3V cards.

1.3 Firmware Features

The IEEE 802.11b firmware supports:

Distributed Coordination Function

CSMA/CA

Backoff Procedure

NAV Management

ACK Procedure

Retransmission of unacknowledged frames

- RTS/CTS Handshake
- Duplicate Detection and Recovery
- Beacon Generation (Ad-hoc mode)
- Probe Response (Ad-hoc mode)
- Fragmentation and Reassembly
- Wired Equivalent Privacy Algorithm (WEP-40 bits)
- Authentication Algorithm (Open System, Shared Key)
- Auto Rate Fallback
- TSF Synchronization
- Short Preamble

1.4 Driver Features

The drivers for the Wireless LAN Card support:

- Roaming
- Preferred AP
- Dynamic Configuration
- Site Survey
- Preamble Type Detection
- Firmware Upgrade

2 Quick Installation

This section provides a quick step by step guide on how to install your Wireless LAN Card. Please follow the steps described below and refer to the appropriate sections for further details:

- Power on the computer
- Please make sure that you don't insert your PCMCIA Card /USB adapter yet.
- Install the drivers and application:
 - Insert the given Installation CD into your CD-Rom drive. Select the Utilities & Drivers folder.
 - 2. Locate the executable file "setup.exe" and double click it.
 - 3. Follow the installation instructions from the InstallShield Wizard by pressing the "Next" button.
 - 4. Choose the appropriate of installation, according to your needs, (Application Only, Application & PCMCIA Drivers, Application & USB Drivers or Application & PCMCIA & USB Drivers).
 - 5. Provide the destination path of where the application will be installed. To set the path of your choice select "Browse" and then "Next".
 - 6. Finish the installation.
- Insert your PCMCIA card or USB adapter.
- The "Add New Hardware Wizard" automatically loads the Drivers.
- Refer to sections 3, 4 and 5 for more details on the installation and configuration under Windows 95/98/2000/XP and Windows NT respectively. Section 6 gives detailed instructions on how to use the Configuration Utility while section 7 given detailed instructions on how to use the Firmware Upgrade Utility.

Note: If you select the "Application Only" Installation option the installation procedure will only install the Utility while selecting any other option it will also install the latest drivers for your wireless card without prompting you.

3 Installation Procedures Under Windows 95/98/ Me/2000/XP

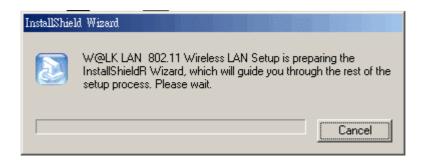
Use the procedures described in this section to install and configure the Wireless LAN Card under MS Windows 95/98/Me/2000/XP.

3.1 Installing the Application and Drivers Under Windows 95/98/Me/ 2000/XP

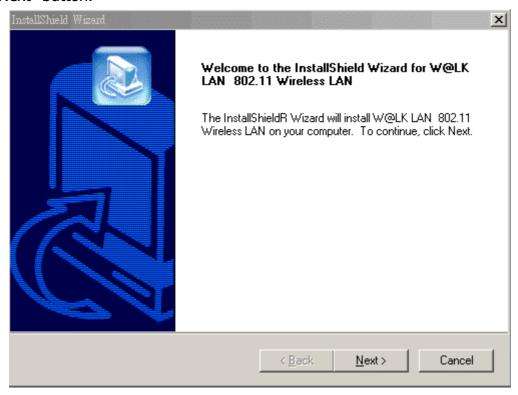


Please do not insert your PCMCIA card until the Application setup has been completed. The setup procedure described below installs both the drivers, the Configuration & Monitor Utility, and the Firmware Upgrade Utility.

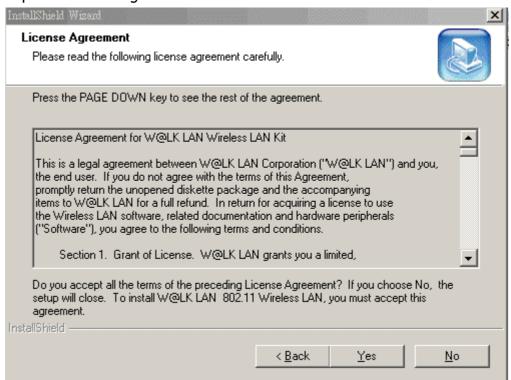
1. Insert the Firmware and Software Tools CD your CD-ROM drive and locate the executable file "setup.exe".



2. Follow the installation instructions from the InstallShield Wizard by pressing the "Next" button.



3. Accept the license agreement.

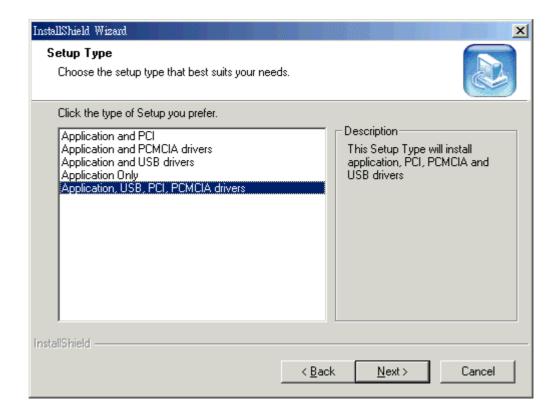


4. The installer will install the needed files to a folder named "C:\....\w@LK LAN\W@LK LAN 802.11 Wireless LAN". If you wish to change this, Click "Browse" and select a folder. Click "Next" to continue.



5. During the setup process, the window of Figure 3-1 will be going to install. If you have no plans to install an USB WLAN adapter onto the specific computer, then select the "Application & PCMCIA Drivers" option. On the other hand, if you have already installed a USB adapter, cancel this setup and after you have uninstalled the old USB driver and application, re-run this setup and select the "Application, PCMCIA & USB Drivers" option. Finally, if you have plans to install an USB WLAN adapter in the future, select the "Application, PCMCIA & USB Drivers" option.

Note: The window of Figure 3-1 will not appear during the Installation under Windows 95 since Windows 95 does not support USB.



Application & PCMCIA Drivers:

By selecting this installation option, you will install the Applications (Configuration & Monitor Utility and Firmware Upgrade Utility) and the latest PCMCIA drivers. If the PCMCIA drivers have been previously installed and they have not been uninstalled prior to the new installation the new drivers will overwrite the old ones without prompting you.

Application & USB Drivers:

By selecting this installation option, you will install the Applications (Configuration & Monitor Utility and Firmware Upgrade Utility) and the latest USB drivers. If the USB drivers have been previously installed and they have not been uninstalled prior to the new installation the new drivers will overwrite the old ones without prompting you.

Application, PCMCIA & USB Drivers:

By selecting this installation option, you will install the Applications (Configuration & Monitor Utility and Firmware Upgrade Utility) and the latest PCMCIA & USB drivers. If the PCMCIA & USB drivers have been previously installed and they have not been uninstalled prior to the new installation the new drivers will overwrite the old ones without prompting you.

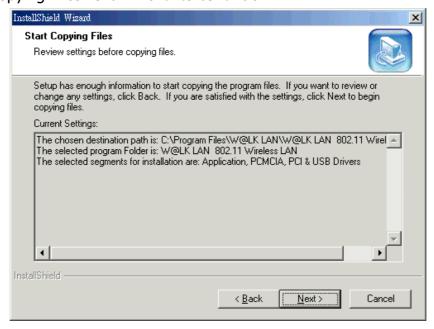
Application Only:

By selecting this installation option, you will only install the Applications (Configuration & Monitor Utility and Firmware Upgrade Utility).

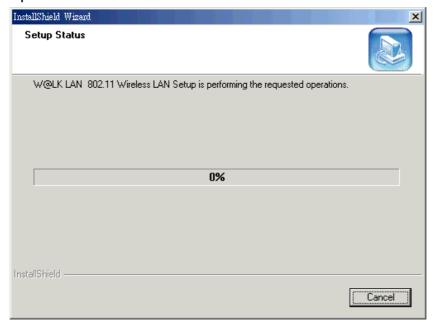
6. The installer will create a program folder called W@LK LAN 802.11 Wireless LAN. If you wish to change this, enter a name or select from the list below. Click "Next" to continue.



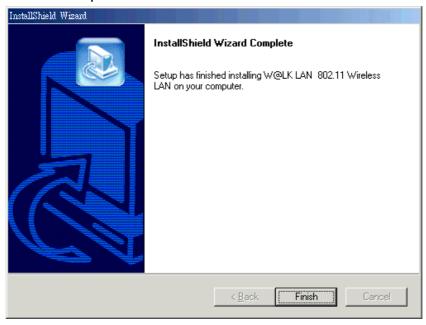
7. Start Copying Files: Click" Next" to continue.



8. Start Setup



9. Click "Finish" to complete the installation.



3.2 Uninstall Procedure Under Windows 95/98/Me/XP

In order to uninstall the Configuration & Monitor Utility from Windows 95/98/Me/XP, you must select the "Uninstall Configuration & Monitor Utility" option:

Start -> Programs ->802.11 Wireless LAN -> Uninstall Configuration & Monitor Utility. It is recommended to stop the PCMCIA card or USB adapter and "Exit" the application prior to starting the unistallation procedure. If during the uninstall procedure you receive an error message, please insert the CD which contains the setup program and try to uninstall the Utility again.

The above procedure uninstalls the Configuration & Monitor Utility, but not the card itself. In order to uninstall the Wireless LAN Card from Windows 95/98/Me/XP, you must double click on the "Network" option in the "Control Panel":

Start -> Settings -> Control Panel, Select the "PCMCIA FastVNET (3.3V)" card or "USB FastVNET(AR)" adapter from the list and press the "Remove" button. The system will prompt you to re-boot. Press "Yes" to re-boot.

3.3 Uninstall Procedure Under Windows 2000

The procedure in order to remove the Monitor & Configuration Utility is the same with the one described for Windows 95/98/Me/XP.

In order to uninstall Wireless LAN Card from Windows 2000 you must select it in the Device Manager of Windows 2000 and press "Uninstall". The "Uninstall" procedure can be performed only if Wireless LAN Card is plugged-into your computer.

If for any reason you cannot apply this procedure, you can uninstall the device using the following one:

- Open "Control Panel"
- 2. Double click "Add/Remove Hardware" icon to start the "Wizard"
- When the "Add/Remove Hardware Wizard" starts click "Next"
- 4. Select "Uninstall/Unplug a device" and click "Next"
- 5. Select "Uninstall a device" and click "Next"
- 6. Check the "Show hidden devices" checkbox and locate the device in the device list
- 7. Select the device and click "Next"
- 8. Select "Yes, I want to uninstall the device" and click "Next"
- 9. Click "Finish"
- 10. The device is removed from your system configuration.

4 Installation Procedures Under Windows NT 4.0

Use the procedures described in this section to install and configure the Wireless LAN Card under MS Windows NT 4.0.

4.1 Installing the Driver Under Windows NT 4.0

First of all, in order to obtain the necessary privileges for the driver installation, you need to log on as Administrator to Windows NT 4.0. Since Windows NT 4.0 do not support "Plug & Play", you must enable the detection of PC cards by the operating system by following the following procedure:

- 1. Click Start->Settings->Control Panel
- 2. Double-click the "Devices" icon
- 3. Select "PCMCIA" from the list and click the "Startup" button
- 4. Set the Startup type to "Boot" and click "OK"
- 5. Click "Close" on the "Devices" window

In order to let the operating system know about your new card, you must enable the Network support by following the next steps:

- 1. Click Start->Settings->Control Panel
- 2. Double-click the "Network" icon
- 3. In the "Network Settings" window you will be prompted to install Windows NT Networking in case no network has been installed yet. Click "Yes" and follow the instruction on the screen. If networking had been already installed, you will see a dialog with several tabs. In the "Adapters" tab click the "Add" button. Windows NT Networking Setup will determine the type of network adapter card that you are going to use.
- 4. When prompted to select a driver, locate the driver provided with your Firmware, Drivers, and Software Tools CD.
- 5. During the installation, a dialog box appears asking for the I/O Base and IRQ resource information. In order to find out which values to use, go to :
 - Start->Programs ->Administrative Tools -> Windows NT Diagnostics -> select the "Resources" tab -> press the "IRQ" button.
 - Select one free IRQ from the list. Next, press the button "I/O Port" and choose a 0x20 free I/O space. Add these values into the dialog box. If at any point after the installation you want to change these values, go to the Control Panel

- -> Network, select the Adapters tab, press the Properties button, and fill in the new values.
- 6. Next Window will start copying the files. In case there is a version conflict between one or more of the files being copied and the files in your system, you should normally keep the latest version.
- 7. Finally, when the installation has been completed, you will need to restart your computer.

Note: If the card is not working properly, after a restart procedure, you should make sure that your system has free resources even it may shows them as being available.

4.2 Configuration Under Windows NT 4.0

In order to configure the card, please use the Configuration and Monitor Utility described in a different section of this document. This application lies on the system tray of your machine, as long as the card is inserted into your system, and permits you to change the parameters of the card "on the fly".

4.3 Uninstall Procedure Under Windows NT 4.0

In order to uninstall the Wireless LAN Card from Windows NT 4.0, you must double click on the "Network" option in the "Control Panel":

- 1. Start -> Settings -> Control Panel.
- 2. Select the "PCMCIA FastVNET (3.3V)" or "USB FastVNET(AR)" adapter from the list and press the "Remove" button.

5 Installation and Configuration Procedures Under Windows CE

Use the procedures described in this section to install and configure the Fast-VNET PCMCIA Card and CF Card under MS Windows CE.

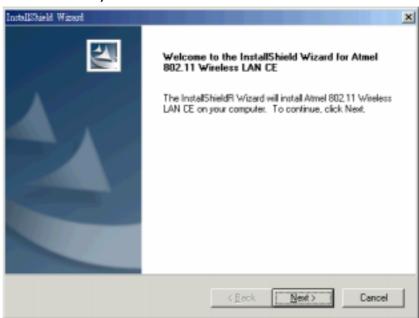
The MS-Windows CE operating system is most commonly used on hand-held computing devices such as the Pocket PC and Personal Digital Assistants (PDA). During the installation, you may be prompted to load operating systems files from the Windows CE installation disk. Please keep this disc handy.

Note: Please do not insert your PCMCIA Card / CF Card until the Application setup has been completed.

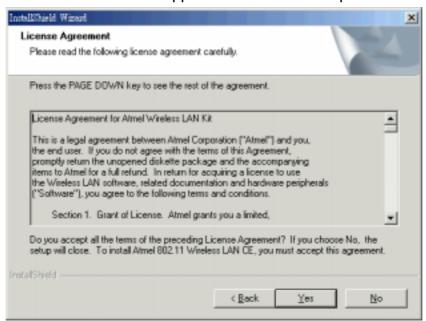
5.1 Installing the Application and Drivers Under Windows CE

The setup procedure that installs the drivers under Windows CE is described below:

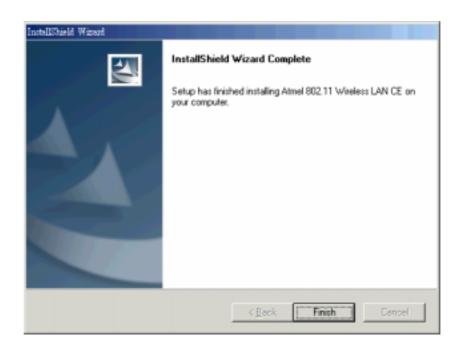
1. After successfully forming a connection between host PC and PDA device with ActiveSync Program, insert the CD-ROM into the CD-ROM drive and run the setup utility –"Setup.exe" for Windows CE operating system. The InstallShield Wizard will launch automatically. Click Next to continue.



2. An InstallShield Wizard window appears. Click "Yes" to proceed.



3. Click "Finish" to complete the installation.



5.2 Using Configuration & Monitor Utility

Now you will be able to insert the W@LAK LAN PCMCIA card and to continue with the Application setup.

When the W@LK LAN's PCMCIA card /CF Card installed, a window showing two WIN TCP/IP options will automatically appear, see Figure 5-1.

Note: If the PCMCIA card is removed a message of "No Wireless card is not present" appears at the bottom of the screen.

Figure 5-1.

Typical screen wit TCP/IP options



Use the first option if you have plans to connect to an Access Point (become associated) that is connected to a network, where a DHCP Server is available, then a unique IP Address will be automatically assigned to your PCMCIA card. In any other case, select the second option and assign a unique IP Address to your PCMCIA Card/CF Card.

When the application is opened the following options (tabs) are available:

- Status
- Encryption
- Advanced
- Version

Status

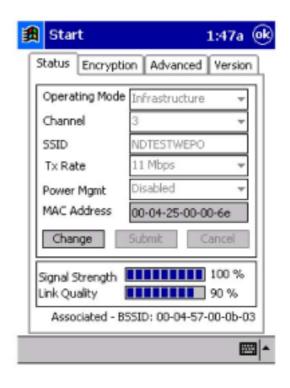
A typical screen of the application in Ad-hoc Mode is shown in Figures 5-2. The configuration parameters are shown at the top of the screen in (Operation Mode, Channel, SSID, TxRate, Power Management Mode and MAC Address of the PCMCIA card). In order to change the configuration parameters press the "Change" button, make your changes and then press "submit" in order to save your changes.

Figure 5-2.
A typical screen of the Monitor
Utility in Ad-hoc Mode



Another typical screen of the application in Infrastructure Mode is shown in Figure 5-3. Again the configuration parameters are shown at the top of the screen. In the middle of the screen there is information about the Signal Strength and the Link Quality of your connection. In the bottom of the screen you can see the status of the communication (the BSSID of the Access Point to which the card is associated). In order to change and save the configuration parameters follow the same steps as described in the Ad-Hoc Mode.

Figure 5-3.
A typical screen of the Monitor
Utility in Infrastructure Mode



Encryption

By choosing this option in any of the two operational modes, you can set four different WEP keys and specify which one of them to use. First, either enable or disable encryption from the appropriate "Encryption" field (see Figure 5-4 below). If you decide to use encryption, you can choose any of the available WEP keys (1 to 4). You also have the option to select the WEP mode (Mandatory/Optional). If you select "Mandatory", then not only WEP will be used, but also any other station needs to use WEP encryption in order to establish a communication with your station. This requirement is in line with the IEEE 802.11b standard. If, on the other hand, you choose "Optional", then your station can communicate with every other station regardless if they use WEP or not. Please keep in mind that the WEP keys must be in HEX format. Finally, you have the option to select whether *Open Syste*m, *Shared Key*, or Auto authentication will be used. In order to take effect the changes you wish to make, press the "Submit" button at the bottom of the screen.

Figure 5-4. Encryption



Advanced

By Choosing the *Advanced* option in any of the two modes, you can change advanced configuration settings, such as the Preamble Type, Fragmentation Threshold, and RTS/CTS Threshold (Figure 5-5). Figure 5-4 shows the recommended configuration for the advanced settings. The PCMCIA card has an auto-detection feature therefore when selecting "Auto" for the preamble Type.

Figure 5-5.
Advanced Settings



Version

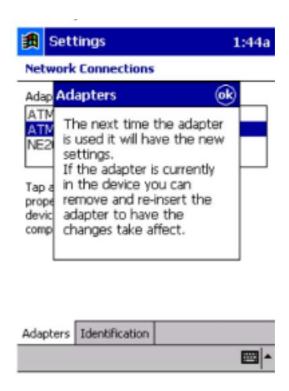
By choosing this option, you can view basic information about the Utility like the Driver, Firmware and Application Version (see Figure 5-6). Use the "ok" button (in the top right corner) in order to exit the application.

Figure 5-6. Version Information



Note: The new settings will take affect when the adapter will be used again, see Figure 5-7.

Figure 5-7.
Screen of Settings Affect



6 Configuration & Monitor Utility

The Configuration & Monitor Utility is a powerful application that helps you to configure the Wireless LAN Card and monitor the statistics of the communication. Unlike the standard method of configuring the card via the operating system utilities (e.g. Control Panel), this application permits the dynamic modification of the configuration parameters while the card is operating. It also offers some more configuration options. Offers the Configuration & Monitor Utility for Windows 95/98/Me/2000/XP, and Windows NT 4.0.

Note: Please keep in mind that the Configuration & Monitor Utility can be used to change the above configuration parameters when the cards are active. When the cards are not in use, please use the Control Panel method.

6.1 How to Install the Configuration & Monitor Utility

In order to setup the Configuration & Monitor Utility run the program "setup.exe," which you will find in your installation CD and follow the instructions as they appear on the screen (see section 3). As soon as a link is established, the application will start running and will appear as an icon on the system tray. You can locate the application under:

Start -> Programs -> 802.11 Wireless LAN -> Configuration & Monitor Utility.

6.2 Using the Configuration & Monitor Utility

The Configuration & Monitor Utility appears as an icon on the system tray of Windows every time the card is running (see Figure 6-1). You can open it by double-clicking on this icon. While the station is in infrastructure mode and not associated to an Access Point, the color of the icon is red. As soon as the station associates itself to an Access Point (see page 24 "Site Survey"), the icon color automatically turns to blue. In Ad-Hoc mode the color is always blue, except when the card is resetting and initializing where it turns to red during the reset and initialization procedure.

Figure 6-1.
The icon of the Configuration & Monitor Utility



When the application is opened the following options (tabs) are available:

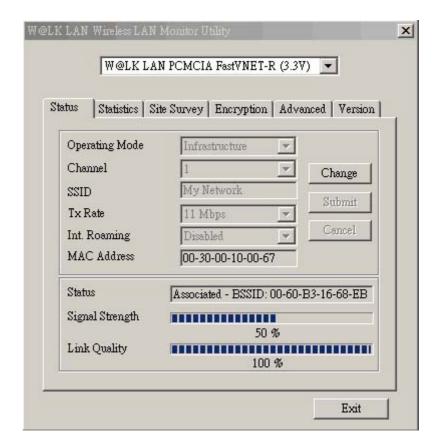
- Monitor
- Statistics
- Site Survey
- Encryption
- Advanced
- Version

Note: Please Note that at the very top of the Monitor and Configuration Utility of the application (Figure 6-1), you can either select PCMCIA FastVNET(3.3V) or USB FastVNET(AR) adapter when available.

Monitor

A typical screen of the application in Infrastructure Mode is shown in Figure 6-2. The configuration parameters are shown at the top of the screen (Operation Mode, Channel, SSID, TxRate, Power Management Mode and MAC Address of the PCMCIA card). In the middle of the screen there is information about the status of the communication (the BSSID of the Access Point to which the card is associated, Signal Strength, and Link Quality). In order to change the configuration parameters press the "Change" button, make your changes and then press "Submit" in order to save your changes.

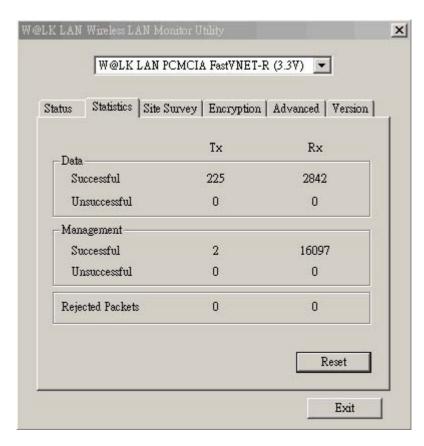
Figure 6-2.
A Typical Screen of the Monitor Utility in Infrastructure Mode.



Statistics

This option shows you to view the available statistic information (Data packets, Management Packets and Rejected packets). In order to renew or update this list of statistics, press the "Clear" button. In order to exit press the "Exit" button at the bottom of the screen.

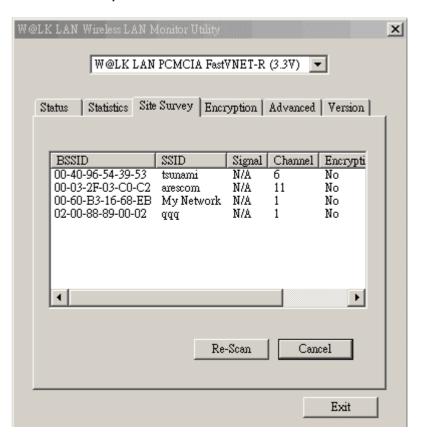
Figure 6-3.Static Information
Available



Site Survey

By choosing the *Site Survey* option in any of the two modes, you can scan all the channels in order to find all the Access Points or Ad- Hoc networks within the range of your card. In Figure 6-4, the card can see two Access Points and one Ad-Hoc network. The list includes information about the BSSID and SSID of the Access Point(s), the signal strength, the channel where the Access Point(s) operates, and whether or not WEP encryption is used. In order to update this list, press the "Re-Scan" button. If you want to associate with any of the Access Point(s) listed, double click on your choice (on the BSSID field), and the system will take you back to the *Monitor* tab showing you the parameters of the connection newly established.

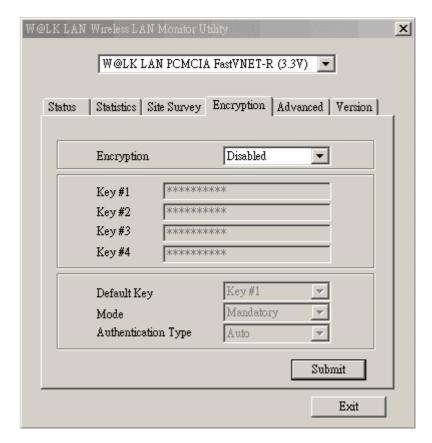
Figure 6-4.
Site Survey Option



Encryption

By choosing this option in any of the two modes, you can set four different WEP keys and specify which one of them to use. First, either enable or disable encryption from the appropriate "Encryption" field (see Figure 6-5 below). If you decide to use encryption, you can choose any of the available WEP keys (1 to 4). You also have the option to select the WEP Mode (Mandatory/Optional). If you select "Mandatory", then not only WEP will be used, but also any other station needs to use WEP encryption in order to establish a communication with your station. This requirement is in line with the IEEE 802.11b standard. If, on the other hand, you choose "Optional", then your station can communicate with every other station regardless if they use WEP or not. Please keep in mind that the WEP keys must be in HEX format. Finally, you have the option to select whether *Open System*, *Shared Key, or Auto* authentication will be used. In order to take effect the changes you wish to make, press the "Submit" button at the bottom of the screen.

Figure 6-5. Encryption

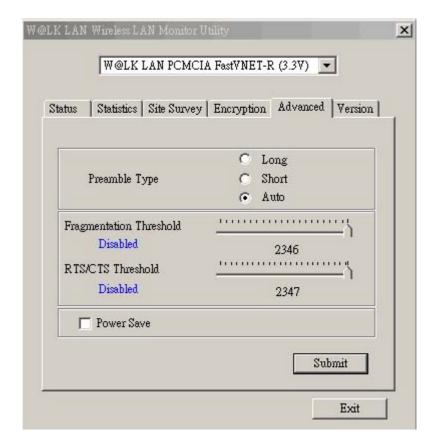


Advanced

By Choosing the *Advanced* option in any of the two modes, you can change advanced configuration settings, such as the Preamble Type, Fragmentation Threshold, and RTS/CTS Threshold (Figure 6-6). Figure 6-5 shows the default configuration for the advanced settings. Before selecting Short Preamble, make sure that the other stations and APs are also supporting this feature. The PCMCIA card has an auto-detection feature therefore when selecting "Auto" for the Preable Type it automatically selects the Preable Type depending on the Access Point Preamble Type.

Note: In order to enable the Fragmentation and the RTS/CTS Threshold parameters move the slide bar with your mouse and then use the right and left arrow keys of your keyboard in order to select an exact number.

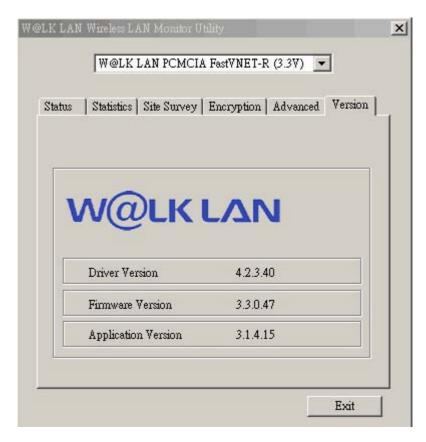
Figure 6-6.
Advanced Settings



Version

By choosing this option, you can view basic information about the Utility like the Driver, Firmware and Application Version. Use the "Exit" button in order to exit the application.

Figure 6-7.
Version Information



6.3 How to Uninstall the Configuration & Monitor Utility

In order to uninstall the Configuration & Monitor Utility, you must select the "Uninstall Configuration & Monitor Utility" option (Start -> Programs -> 802.11 Wireless LAN -> Uninstall Configuration & Monitor Utility). It is recommended to "Exit" the Configuration & Monitor Utility prior to starting the uninstallation procedure. Finally a window will appear prompting you to reboot and you must select "YES".

7 Specifications-PCMCIA / USB / Mini-USB

Specification/Products	PCMCIA	USB		
Standards	IEEE 802.11b			
Network Protocol	TCP/IP, IPX, NETBEUI			
Data Rate	11Mbps, 5.5Mbps, 2Mbps, 1Mbps			
Security	64bit / 128bit WEP Encryption support			
Device Drivers	Windows 98/ 2000 / ME / CE / XP			
Frequency	2.4~2.4835 GHz			
Operating Range	Free Space: 100~300m Indoor: 35~100m			
Channel	USA and Canada: 11 Most France: 4 European Countries: 13			
Channel Bandwidth	22 MHz			
Transmit power (Not Included Antenna Gain)	+16dBm (typ.) at ACPR,DSSS 1st Side Lobe<-30dBc,2nd Side Lobe<-50dBc			
	@11 Mbps -84.0 dBm, 8% FER.			
RX Sensitivity	@5.5 Mbps -87.0 dBm, 8% FER			
,	@2 Mbps -91.0 dBm, 8% FER			
		d 5 5 Mbps CCK		
Modulation Direct Sequence	@11 Mbps and 5.5 Mbps CCK @2 Mbps DQPSK			
Spread Spectrum	@1 Mbps DBPSK			
Power Consumption	Supply Voltage 3.3 V	Supply Voltage 5 V		
Continuous Transmit	435 mA (MAX.)	443 mA (MAX.)		
Continuous Receive	284 mA (Max.)	292 mA (Max.)		
Sleep	21 mA (MAX.)	11 mA (MAX.)		
Antenna	Internal	External		
- Titles in its	VSWR(Integrated Antenna) 1.3:1			
Interface	3.3V PCMCIA Interface Standard	5V USB 1.1 B-Type Standard		
Operating Temperature	0°C ~40°C			
Storage Temperature	-20℃~65℃			
Humidity	Max: 95%(Non-Condensing)			
Dimension	115x54x6 mm	110x71x24 mm		
Weight	40g	80g		

8 Specifications-CF Card

RF SPECIFICATIONS		
Frequency range	2.4~2.4835 GHz	
Channel bandwidth	22 MHz	
Tx Output Power	+16dBm(typ.) at ACPR,DSSS	
(not included antenna gain)	1st Side Lobe<-30dBc,2nd Side Lobe<-50d	
Rx Sensitivity		
@11 Mbps	-84.0 dBm, 8% PER	
@5.5 Mbps	-87.0 dBm, 8% PER	
@2 Mbps	-91.0 dBm, 8% PER	
@1 Mbps	-92.0 dBm, 8% PER	
MODULATION	Direct sequence spread spectrum	
@11 Mbps and 5.5 Mbps	CCK	
@2 Mbps	DQPSK	
@1 Mbps	DBPSK	
POWER CONSUMPTION		
Supply Voltage	3.3 V	
Continuous Transmit Mode	435 mA (MAX.)	
Continuous Receive Mode	284 mA (MAX.)	
Power Save Mode	21 mA (MAX.)	
ANTENNA		
VSWR (Integrated antenna)	2:1	
Antenna Gain	1.0 dBi (Typ.)	
INTERFACE	3.3V CF Interface Standard	
Supply Voltage Continuous Transmit Mode Continuous Receive Mode Power Save Mode ANTENNA VSWR (Integrated antenna) Antenna Gain	435 mA (MAX.) 284 mA (MAX.) 21 mA (MAX.) 2:1 1.0 dBi (Typ.)	

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