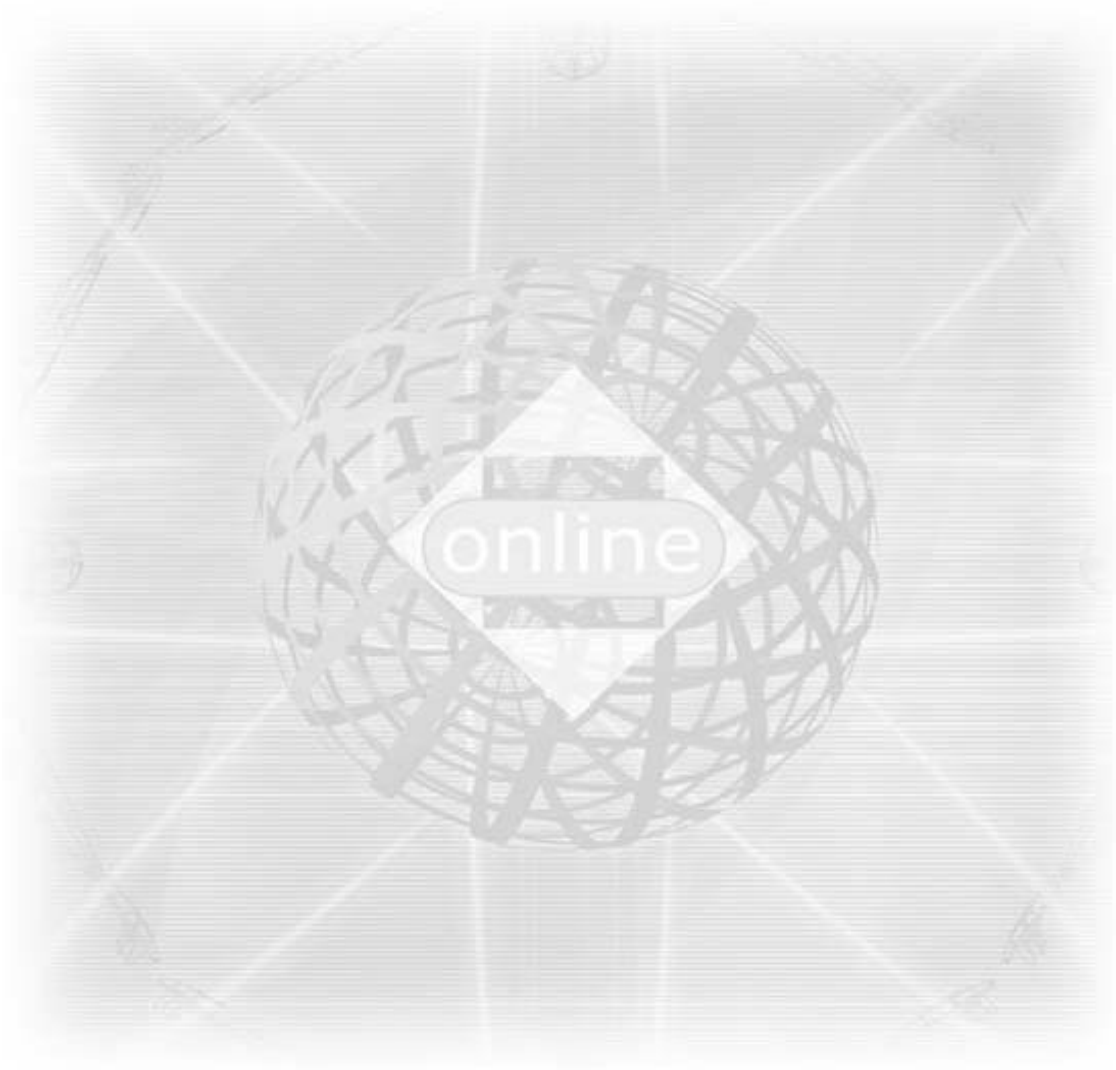


Wireless LAN CF Card

User's Manual For OEM Instruction



Ver. 1.4

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Manufacturer assumes no responsibility for errors contained herein or for direct, indirect, special, incidental or consequential damages with the furnishing, performance, or use of this manual or equipment supplied with it, even if manufacturer or its suppliers have been advised of the possibility of such damages.

Electronic Emission Notices

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.
- (2) This device will accept any interference received, including interference that may cause undesired operation.

FCC Radio Frequency 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user need to correct the interference at his area. If the equipment causes interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Plug the equipment into an outlet that is on a different circuit from the television or radio.
- Change the direction of the television or radio antenna until the interference disappears.
- Move the equipment to one side or the other of the television or radio.
- Move the equipment farther away from the television or radio.
- Manufacturer could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement

This device and its antennas must operate with a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End users must be provided with specific operating instructions for satisfying RF exposure compliance.

This product has been certified in France, Germany, Italy, Spain, Sweden, UK, and US.

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 (including the antenna) made to this device that are not expressly approved by 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, or the substitution or attachment of connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, 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.

Modular Approval

This device is intended only form OEM integrators under the following conditions:

The antenna must be installed such that 20cm is maintained between the antenna and users, and

The transmitter module may not be co-located with any other transmitter or antenna.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID:PB6 - 04021 can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users.

The final end product must be labeled in visible area with the following:

“Contains TX FCC ID: PB6 - 04021”

End Product Manual Information

The user manual for end users must include the following information in a prominent location

“IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.”

LIMITED WARRANTY

This product is warranted by manufacturer to be free from defects in material and workmanship for one (1) year from the date of purchase, unless otherwise stated.

During this period if this product is found to be defective in material or workmanship, manufacturer or one of its authorized service facilities will at its option either repair or replace this product without charge, subject to the following conditions, limitations and exclusions:

1. This warranty extends to the original consumer purchaser only and is not assignable or transferable.
2. This warranty shall not apply to any product which has been subjected to misuse, abuse, abnormal use, negligence, alteration or accident, or has had its serial number altered or removed.
3. This warranty does not apply to any defects or damage directly or indirectly caused by or resulting from the use of unauthorized replacement parts and/or service performed by unauthorized personnel.
4. This warranty does not apply to the software driver that accompanies this product.

This warranty is made expressly in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability of fitness for a particular purpose, and all other obligations on the part of Manufacturer provided, however, that if the disclaimer of implied warranties is ineffective under applicable law, the duration of any implied warranties arising by operation of law shall be limited to one (1) year from the date of purchase or such longer period as may be required by applicable law.

Manufacturer hereby disclaims any and all liabilities for consequential and incidental damages arising out of or in connection with any breach of this warranty or any other claim with respect to this product, including but not limited to claims of negligence, strict liability in tort or breach of contract.

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1. INTRODUCTION

Wireless LAN is local area networking without wires, which uses radio frequencies to transmit and receive data between PC' s or other network devices. Wireless LAN is able to configure independent networks and infrastructure networks The former is suitable for small or temporary peer-to-peer configurations, and the later is offering fully distributed data connectivity via micro cells and roaming.

The WLAN CF Card is designed to meet the mobility, performance, security, interoperability, management, and reliability requirements of IEEE 802.11b high data rate standard. It is easy to install the WLAN CF Card on various devices with CF Type I card slot or PCMCIA TYPE II card slot using PCMCIA to Compact Flash adapter. It is able to communicate with other IEEE 802.11b compatible products to create a wireless LAN in your office or home.

1.1 Features

- Compliant with 11 Mbps 802.11b high-speed specification.
- Data rate 11/5.5/2/1 Mbps automatic fallback under noisy environment.
- Advanced Power Management for battery saving.
- Build PCB patch diversity antennas.
- Supports MS Windows 98/Me/2000/XP/CE, and Linux.
- Interoperable with IEEE 802.11b compliant equipment.
- Supports full mobility and seamless roaming from cell to cell.
- Plug-and-play installation and easy client management with utility software
- Supports point-to-point and point-to-multipoint access.
- Direct Sequence Spread Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection.
- Wireless connection without the hassles and cost of cabling.
- Greater flexibility to locate or move networked PC' s.

1.2 Applications

- Home networking for device sharing - Remote access to corporate network information email, file transfer and terminal emulation.
- Frequently changing environments - Retailers, manufacturers and banks that frequently rearrange the workplace and change location.
- SOHO (Small Office and Home Office) users - SOHO users need easy and quick installation of a small computer network functions.
- Inter-building connection - The wireless building-to-building network installs quickly, requires no monthly lease fees, and provides the flexibility to reconfigure easily.
- Typical applications include hard-to-wire buildings, campuses, hospitals/medical offices, warehouse, security huts, exhibition centers, etc.
- Temporary LANs for special projects or occasions - Auditors require workgroups at customer sites. Trade shows, exhibitions, retailers, airline, and shipping companies need additional workstations for a peak period of data traffic.

1.3 Wireless LAN System

1.3.1 802.11 Ad-Hoc Configuration

An 802.11 Ad-Hoc wireless LAN is a group of computers, each equipped with one WLAN CF Card, connected as an independent wireless LAN. Computers in a specific 802.11 Ad-Hoc wireless LAN must be configured at the same radio channel. 802.11 Ad-Hoc wireless LAN is applicable to a departmental scale for a branch or SOHO operation.

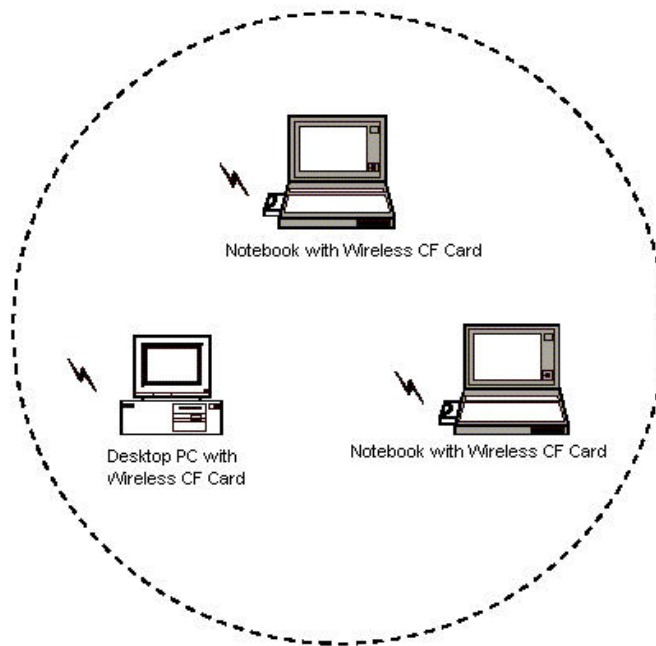


Figure 1-1 802.11 Ad-Hoc Configuration

1.3.2 Infrastructure Configuration

An integrated wireless and wired LAN is called an infrastructure configuration. A group of WLAN CF Cards and an Access Point (AP) is called a Basic Service Set (BSS). Each WLAN CF Card in this BSS can be linked to any computer in the wired LAN infrastructure via the AP.

Infrastructure configuration not only extends the accessibility of a WLAN CF Card to the wired LAN, but also doubles the effective wireless transmission range between two WLAN CF Cards.

BSS ID is, in essential, the ID of each independent WLAN CF Card. All WLAN CF Cards configured without roaming options in this independent BSS must be configured with BSS ID of that AP. You may need to check BSS ID of your AP by using its vendor supplied program.

Infrastructure configuration is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

Two APs can be used as a point-to-point link between two LANs. LAN interconnection is applicable to a wireless backbone between buildings.

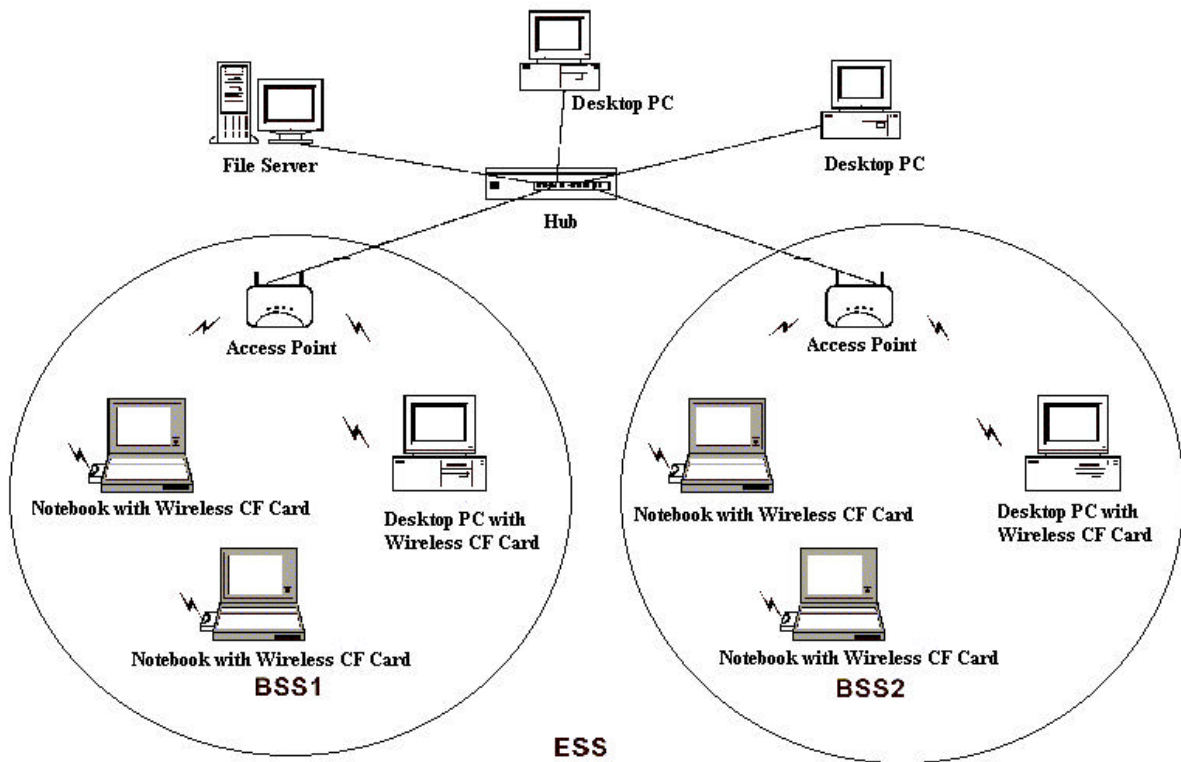


Figure 1-2 Infrastructure Configuration

The infrastructure configuration supports roaming capability for mobile workers. More than one BSS can be jointly configured as an Extended Service Set (ESS). On account of a continuous connection to the network, users within this ESS can roam freely. All WLAN CF Cards and APs within one ESS must be configured with the same ESS ID.

Before setting up an ESS for roaming, it would be helpful to achieve good performance by choosing a feasible radio channel and right places for APs.

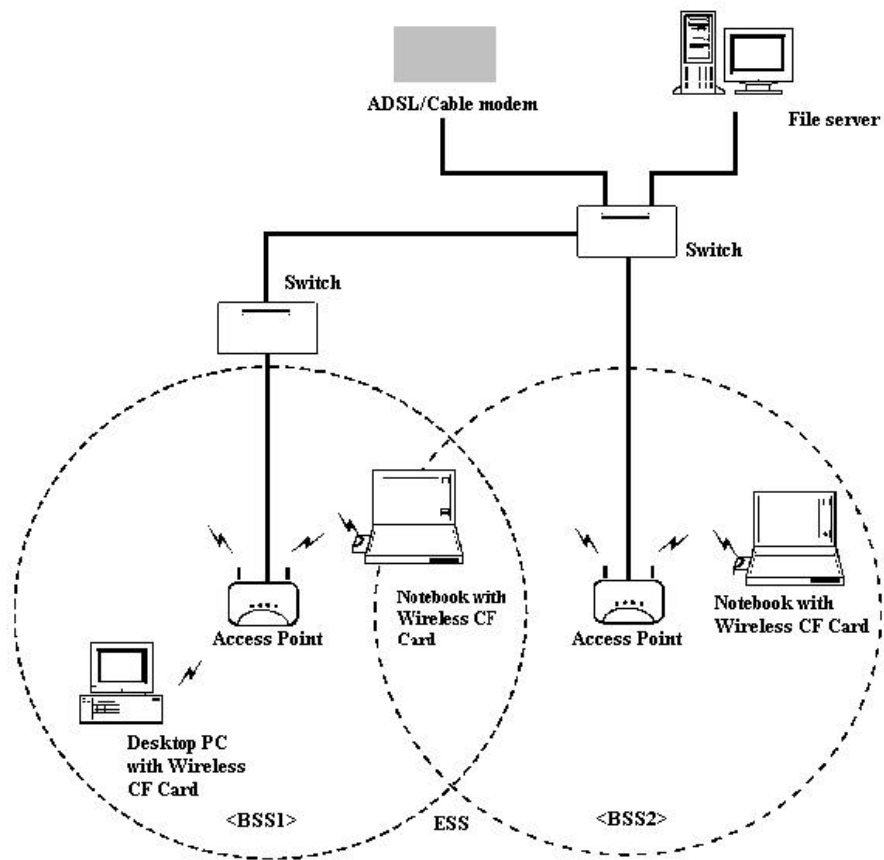


Figure 1-3 Seamless Roaming

2. INSTALLATION

Use the procedures described in this chapter to install your WLAN CF Card under MS Windows 98/Me/2000/XP, and Linux.

(Note that unplug the WLAN CF Card from your device before upgrading the new driver/utility, otherwise you may have trouble during installation process.)

2.1 Product Kit

Before starting installation, please make sure the WLAN CF Card package you purchased includes the following items:

- 1) WLAN CF Card.
- 2) CD-ROM (including Driver/Utility and User's Manual).
- 3) Quick Start Guide.

If anything is missing, please contact your vendor.

2.2 PC's Minimum Requirements

To install the WLAN CF Card successfully, your PC (notebook, desktop, or PDA) should meet the following minimum requirements:

- 1) A CF or PCMCIA slot compliant with Release 2.1 of the PCMCIA specification.
- 2) Windows 98, Me, 2000, XP or Linux operating system.
- 3) Minimum 10 Mbytes free disk space for installing the driver and the utility program.

2.3 Installing the Utility and Driver

Depending on the operating system you use, please select one of the sections (2.3.1~2.3.4) and follow the steps to install the Utility and Driver. Then go to Section 3 to continue the procedure.

Note: Please do not plug your WLAN CF Card until the setup procedure has been completed.

2.3.1 Under MS Windows 98/Me/2000/XP

Please follow the steps below to install the utility and driver.

- 1) Insert the supplied CD-ROM in the CD-ROM drive.
- 2) The InstallShield Wizard should start automatically. If Autorun is disabled in your Windows settings, you will need to go to the Windows "Start" button, choose "Run" and type "D:\setup.exe" in the text box, where D is the drive letter of your CD-ROM drive.
- 3) Follow the InstallShield Wizard to install the driver and utility.
- 4) Reboot your PC after completing the installation process. (Recommended)
- 5) Plug your WLAN CF Card. The "Add New Hardware Wizard" automatically loads the driver, and then a new application (the Configuration & Monitor Utility) icon will be displayed in the task bar.
- 6) Go to Section 3 for Configuration.

Note: In the MS Windows 2000/XP installation procedure, an extra window prompts you to select the options whether you would like to install the “Digital Signature Not Found” or not. You can safely select “YES”.

2.3.2 Under MS Windows CE (3.0)

Please follow the steps below to install the utility and driver.

- 1) Insert the supplied CD-ROM in the CD-ROM drive.
- 2) Click “Start” button, choose “Run”, and type “D:\wince\3.0\setup.exe” in the text box, where D is the drive letter of your CD-ROM drive.
- 3) Follow the InstallShield Wizard to install the driver and utility.
- 4) Insert the WLAN CF card. When the CF card is installed, complete the installation process. A pop-up window that has two the TCP/IP options will automatically appear as shown in Figure 2-1.

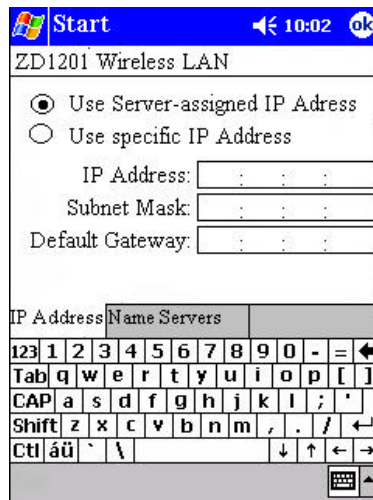


Figure 2-1 A typical Screen with TCP/IP Options

- 5) 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, and then a unique IP Address will be automatically assigned to your PC card. Select the second option and assign a unique IP Address to your PC card in any other case.
- 6) Go to Section 3 for Configuration.

2.3.3 Under MS Windows CE (4.2)

File description

There are 5-directory under /wince/4.2:

- ARM_INTEGRATOR_AP_ARMV4IRel
- INTEL_DBPXA250_DEV_PLATFORM_ARMV4IRel
- INTEL_DBPXA250_DEV_PLATFORM_ARMV4Rel
- SAMSUNG_SMDK2410_ARMV4IRel
- SAMSUNG_SMDK2410_ARMV4Rel

Each of them is represented the type of processor for your Pocket PC. If you do not know your processor type, contact your local dealers.

Zd1201c.dll - NDIS driver

WS01CPH.bin - Firmware binary file

Installation

Connect the sync cable (USB or serial connector) from the device connector of Pocket PC to your computer.

Copy the zd1201c.dll and WS01CPH.bin from CD to your Pocket PC directory \Windows.

Insert the CF card into the Compact Flash card slot, a pop-up window will be prompted requesting the driver name, and then input the string "zd1201c".

If the driver is loaded successfully, the other pop-up window will be shown up to let you setup the wireless LAN settings. Alternatively, you can double click the small network icon at the right hand site corner of screen.

Configuration (The Platform must contain "Wireless LAN 802.11," "Automatic Configuration" and "802.1x.")

After double click the network icon, you will see at least two pages. One is "IP Information," the other is "Wireless Information."

Wireless Information Page:

- a. Show the SSID currently found
- b. Connection status
- c. Signal Strength

Select the SSID, press "Connect," a window will pop up to let you setup the WEP encryption. For more settings, you have to check Microsoft documentation.

IP Information Page:

The IP information will be indicated in this page, you may press "Renew" button to get the new IP.

2.3.4 Under Linux

Please follow the steps below to install the utility and driver.

- 1) Copy the pcmcia.sh and setup.sh files from CD to a directory (anywhere you like).

```
e.g. #mount /dev/cdrom
      #cd /dev/cdrom/Linux
      #cp pcmcia.sh /usr/src
      #cp setup.sh /usr/src
```

- 2) Unpack the zdapdrv-date.tar.gz package (anywhere you like).

```
#tar xvzf zdsta-3904.tar.gz
```

- 3) In the zdsta-1.0.4_mdk3 directory, run:

```
# make config
```

[Notice]

The following questions will be prompted when you execute “make config”. If the default answer is the same with your system configuration, you can just press the “Enter” to select the default answer.

- *Build PCMCIA Card Services (_cs) driver? (y/n): y*
- *Build native PCI (_pci) driver? (y/n): n*
- *Linux source directory [/usr/src/linux]: /usr/src/linux-w.x.y-z*

(Note: The w, x, y, and z are represented your Linux kernel version. After enter the source directory, you may have the following warning messages.)

WARNING: .config not present in kernel source tree. This will screw up modversions detection and build optimizations. Is this a RedHat kernel? Workarounds enabled. For an optimized build, copy over the relevant file from /usr/src/linux-2.4/configs/ to /usr/src/linux-2.4/.config

If the warning messages are shown, it stands for that there is no “.config” file in your Linux kernel source directory. You may solve this problem by the following methods. Copy the relevant configuration file from the /usr/src/linux-2.4/configs/ to /usr/src/linux-2.4/.config (The /usr/src/linux-2.4/ is the Linux kernel directory of your system.).

e.g.

```
#cd /usr/src/linux-2.4/configs
#cp kernel-2.4.18-i686.config /usr/src/linux-2.4/.config
```

Alternatively, change the directory to the Linux kernel directory and type “make config” or “make menuconfig” to generate the .config file. Under the Xwindows environment (including GNOME and KDE), you can type “make xconfig” under the Linux kernel directory to generate

the `.config` file.

- `Pcmcia-cs source dir [/usr/src/pcmcia-cs-3.1.34]:/usr/src/pcmcia-cs-3.1.34`
- `PCMCIA script directory []: /etc/pcmcia`
- `Alternate target install root directory on host[]:`
- `Module install directory [/lib/modules/2.4.18-4]:`
- `Prefix for build host compiler? (rarely needed) []:`

```
# make all
```

```
# make install
```

4) Plug your Wireless CF Card into your device.

5) PCMCIA NOTE

If you are installing the PCMCIA driver after the installation run:

```
#/etc/rc.d/init.d/pcmcia restart
```

6) Getting Start

```
#chmod +x pcmcia.sh
```

```
#chmod +x setup.sh
```

```
[Under Infrastructure Mode]
```

```
#!/pcmcia.sh start
```

```
#!/setup.sh opensystem (or ./setup.sh sharedkey)
```

[Notice]

*Before issue this command, you have to modify the “**setup.sh**” file in order to perform the option of “opensystem” and “sharedkey.” Please go to the section 3.3.*

```
#!/pcmcia.sh sitesurvey
```

[Notice]

If you want to perform the site survey function, this command can be indicated how many APs are in your network.

```
[Under Ad-HOC Mode]
```

```
#!/pcmcia.sh start
```

```
#!/setup.sh opensystem (or ./setup.sh sharedkey)
```

[Notice]

*Before issue this command, you have to modify the “**setup.sh**” file in order to perform the option*

of “opensystem” and “sharedkey.” Please go to the section 3.3.

```
#ifconfig wlan0 192.169.1.222 (Ad-HOC mode use only)
```

```
#ifconfig -a (check the IP of your CF card)
```

```
#!/pcmcia.sh sitesurvey
```

[Notice]

If you want to perform the site survey function, this command can be indicated how many APs are in your network.

3. CONFIGURATION

The Configuration & Monitor Utility is a powerful application that helps you to configure the WLAN CF 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 configuration parameters while the card is operating. This application also offers more configuration options.

3.1 Under MS Windows 98/Me/ 2000/XP

The Configuration & Monitor Utility appears as an icon in the task bar of Windows while the card is running (see Figure 3-1). You can open it by double-clicking on this icon.



Figure 3-1 Configuration & Monitor Utility Icon

Status -- A typical screen of the application in infrastructure mode is shown in Figure 32. There are some configurations that can be set shown on the screen (Status, Encryption, Site Survey, Advance, Profile and Info). You may see Signal Strength, Link Quality and Tx/Rx in Figure 32. By clicking “Change” button, you can change operating mode from Infrastructure to Ad-Hoc as you want. (Figure 3-3)

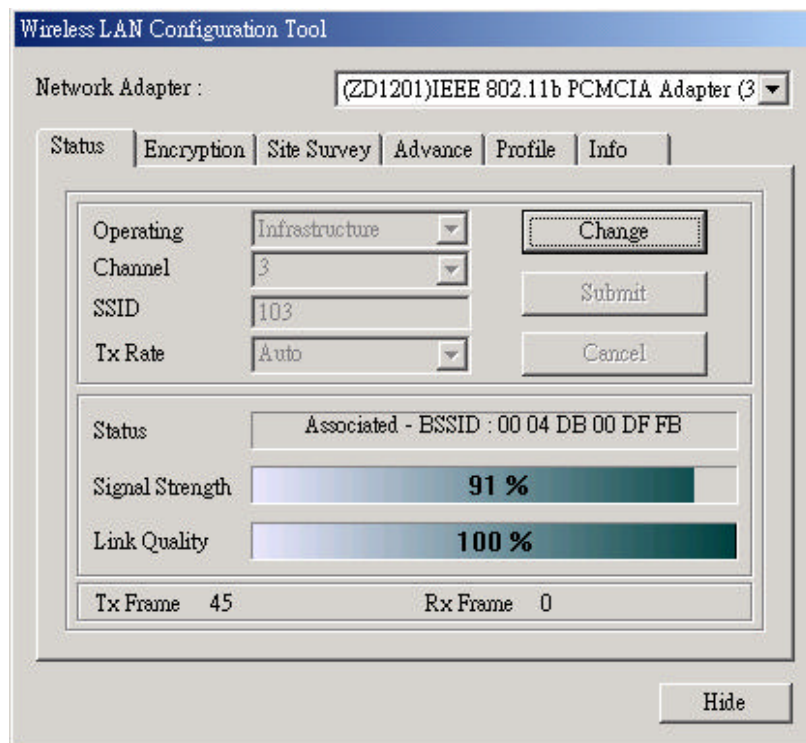


Figure 3-2 Monitor Utility in Infrastructure Mode.

After changing the Operating mode, Channel, SSID, and Tx Rate, click “Submit” button to save the settings you have set.

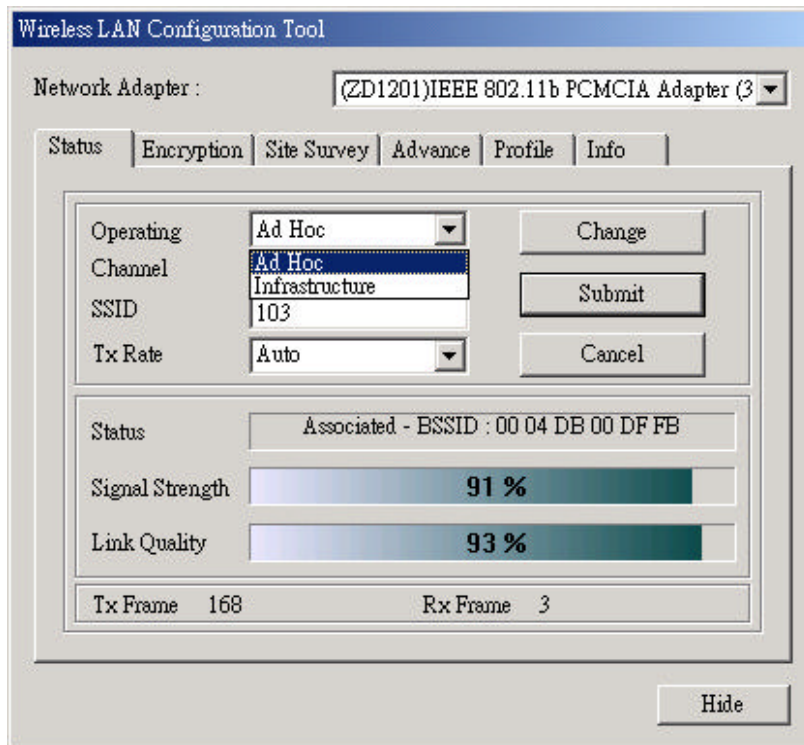


Figure 3-3 CF-Card setting

Site Survey – Click “Site Survey” button, and then click “Re-Scan” in order to search the APs. By clicking the “Hide” button, you may veil the configuration tool in Windows tool bar. The information of SSID, channel, signal, WEP and type will be displayed on screen for users to select one of the best sites to connect.

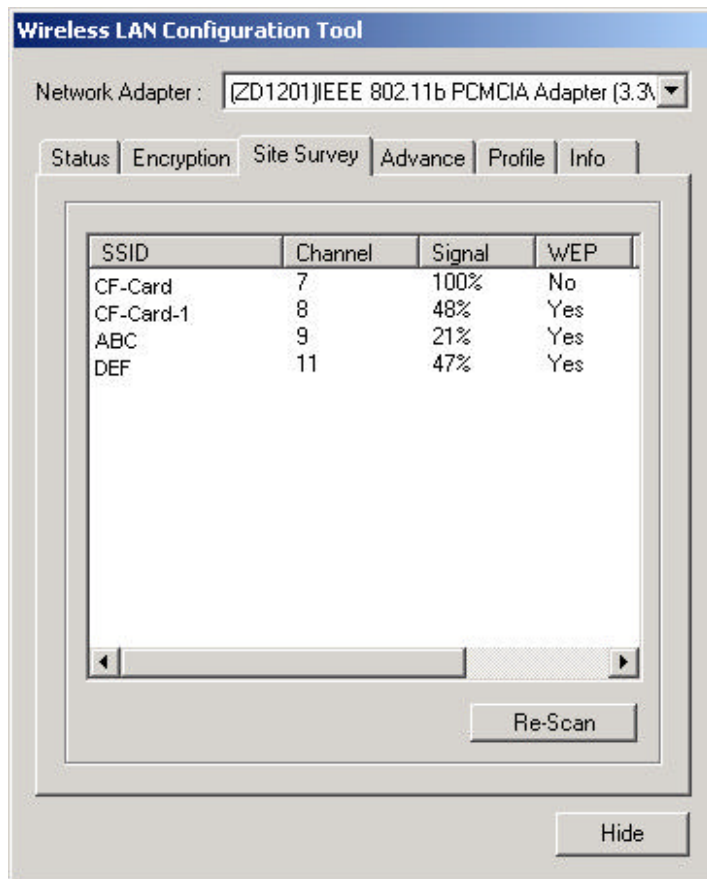


Figure 3-4 Site Survey

Double clicking one of AP such as CF-Card, a pop-up Window, “Use Previous WEP setting”, will be shown on screen (Figure 3-5). It means that you have specified a WEP encryption network. If you want to use the previous WEP settings, click “Yes” button. If you have the new WEP key settings, go to “Encryption” to modify the configuration settings.

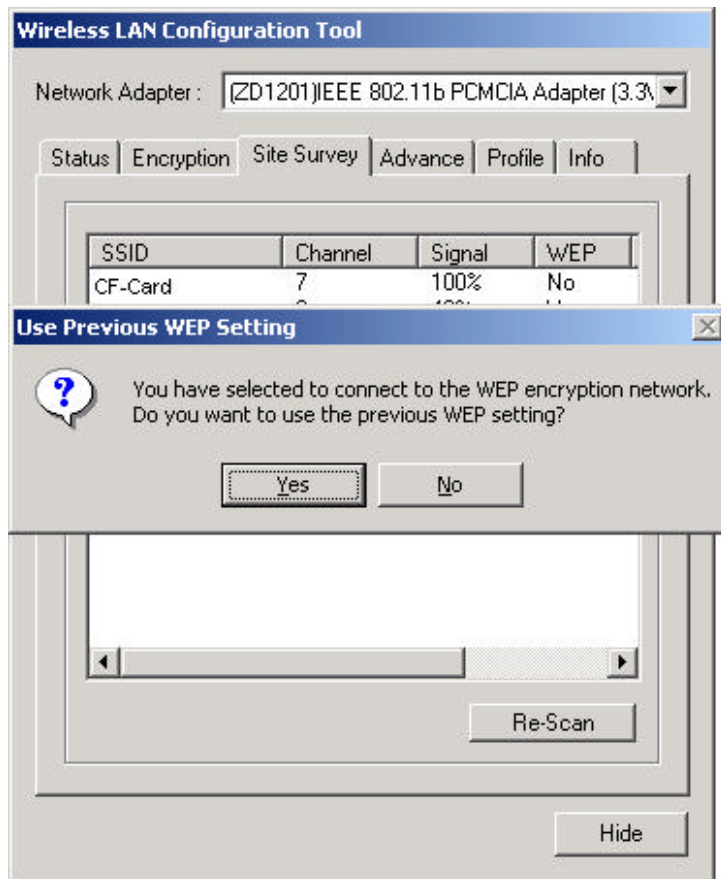


Figure 3-5 WEP key Settings

Encryption -- By clicking "Encryption" in the manual, you can set four different WEP keys and specify which one of them to be used. Choose any of the available WEP keys (1 to 4) as shown in Figure 36. Keep in mind that the WEP keys must be in HEX format. Press the "Submit" button at the bottom of the screen to take effect your changes. The following example is a setting for 64-bit key length in shared key mode, and the WEP key in "Key#1" is encrypted.

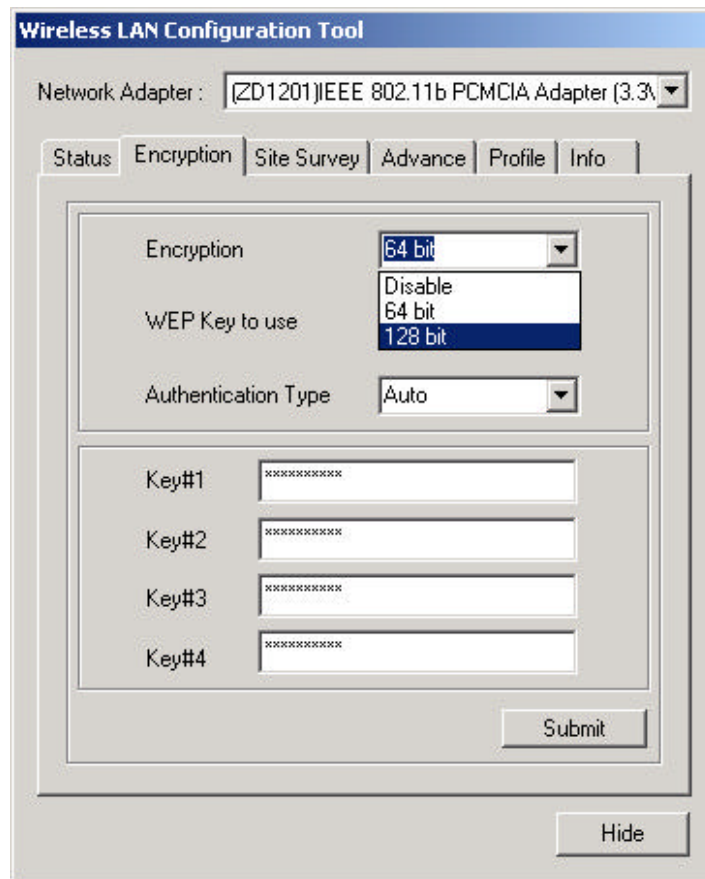


Figure 3-6 Encryption

Advance -- By clicking the “Advanced setting” bottom, you can change advanced configuration settings, such as the Power Saving Mode, Fragmentation Threshold, and RTS/CTS Threshold (Figure 3-7). Figure 3-7 shows the recommended configuration for the advanced settings.

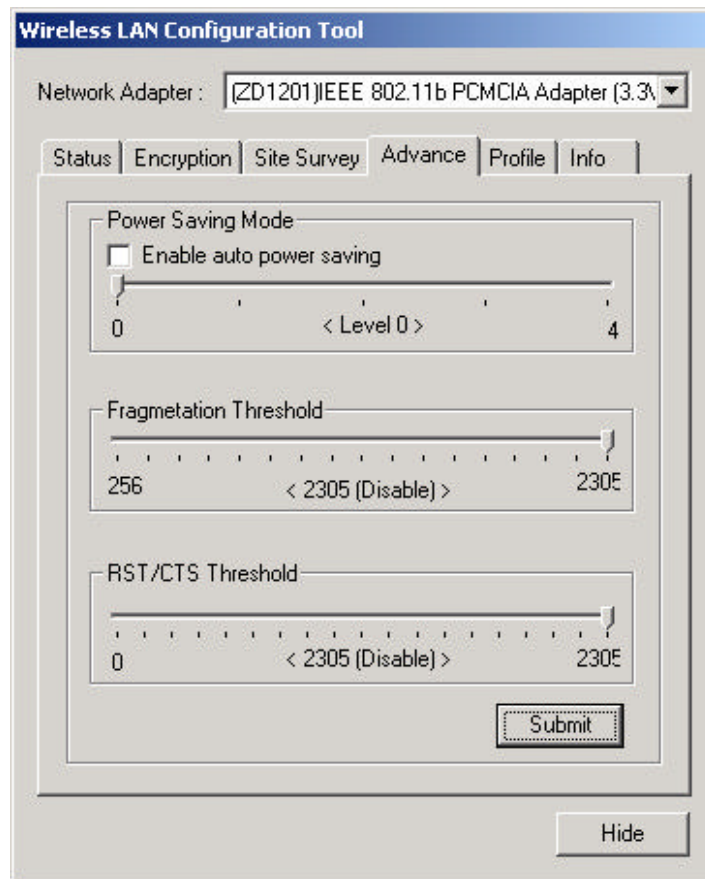


Figure 3-7 Advance Settings

Note: The WLAN CF Card has an auto-detection feature therefore it automatically selects the Preamble Type depending on the Access Point Preamble type. Move the slide bars to enable the parameters of Fragmentation and RTS/CTS Threshold with your mouse and then use right and left arrow keys of your keyboard to select an exact number.

Profile -- Select the default profile name for default settings or enter a name such as “new-profile” in left hand site edit box, and then click “Save” to save the current settings (Figure 38). Select the “Load” to get the profile you need.

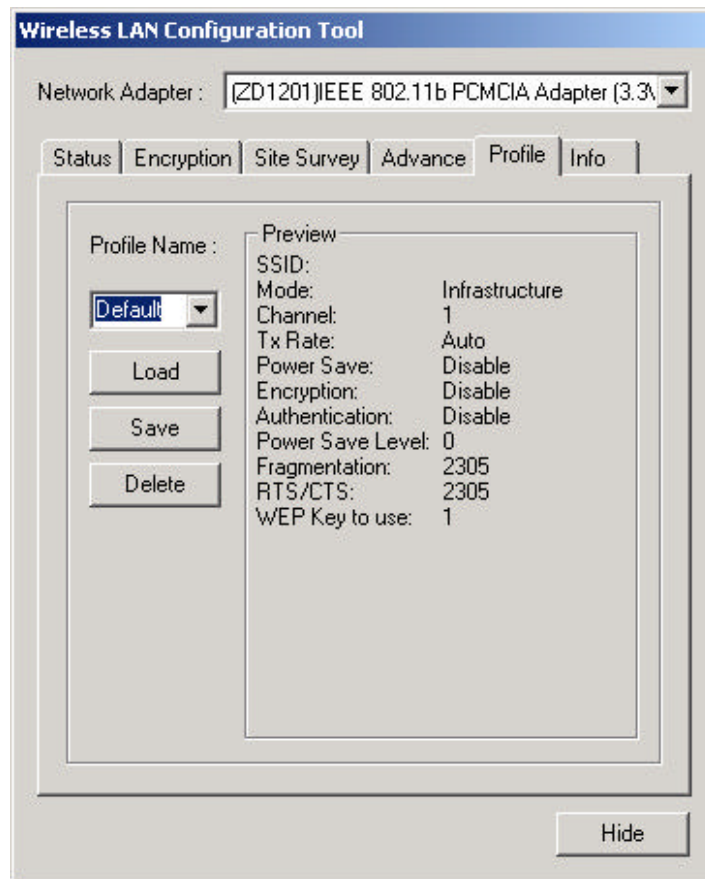


Figure 3-8 Profiles Settings

Info -- By clicking "Information" button, you can check the basic information about the versions of Driver, Firmware, Utility and MAC Address.

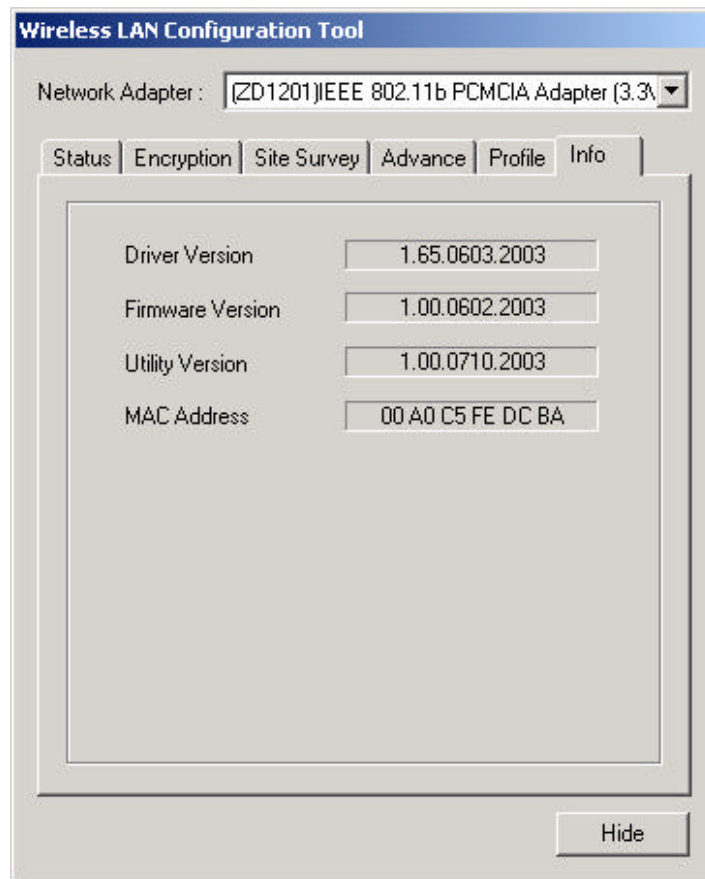


Figure 3-9 Information

3.2 Under MS Windows CE (3.0)

When the application is opened the following options are available if you press the menu button:

- General
- Scan
- Wep
- Monitor
- About

Scan/Wep/General -- Use the stylus to click Scan button, tap Scan again button, select the specific AP you want, and then click Apply to launch the wireless connections (Figure 3-10). If you have WEP key settings among APs, tap Wep button, tap the input panel icon, enable the Wep Enable button, and then input the keys (64-bit and 128-bit WEP encryption accepted) (Figure 3-11). After you finish the settings, tap Set WEP Key. Go the General to see the connection status (Figure 3-12).

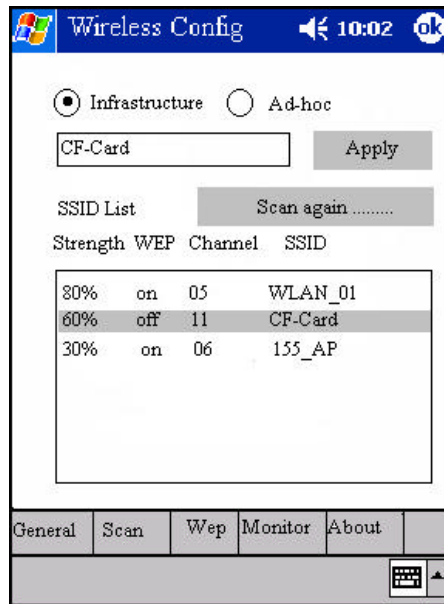


Figure 3-10 Scan

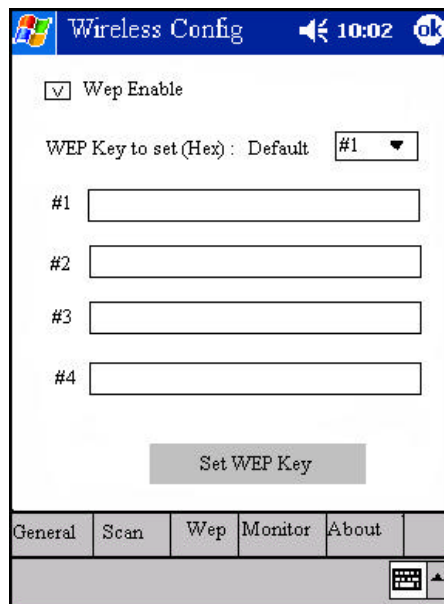


Figure 3-11 WEP

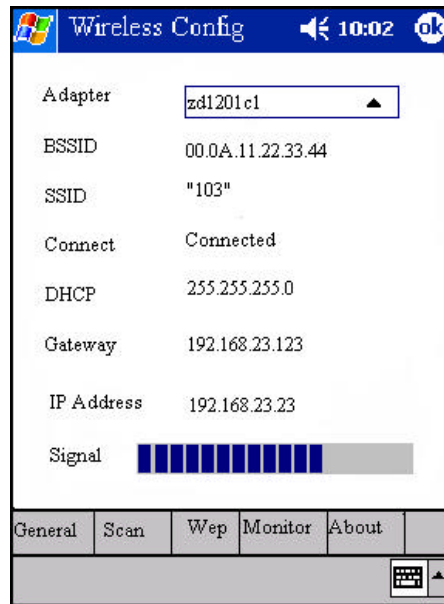


Figure 3-12 General

Monitor – To check the incoming and outgoing packets, tap the Monitor button (Figure 3-13).

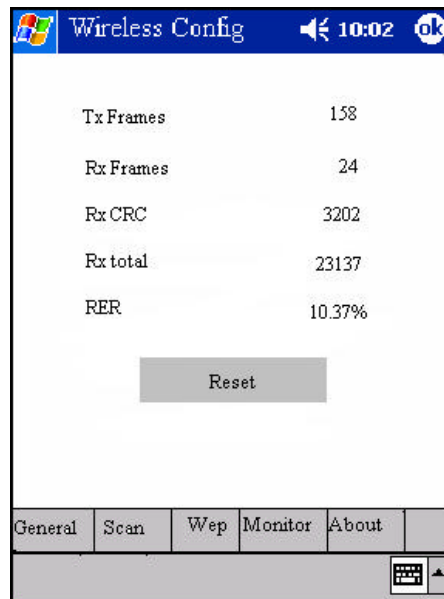


Figure 3-13 Monitor

About – Find information about Wireless LAN Card and your device (Figure 3-14).

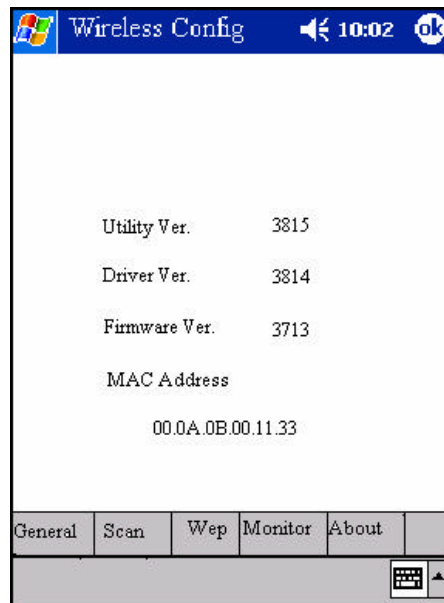


Figure 3-14 About

3.3 Under Linux

The `setup.sh` file can be modified to Ad-HOC or Infrastructure mode as following:

[Infrastructure mode in “opensystem” or “sharedkey”]

If your SSID is named “DJ” and you want to set to Infrastructure mode, please follow the example A. If your option is “sharedkey”, the key index number should be from 0 to 3. **00:11:22:33:44** is the password of your AP.

Please modify the red items in the shell script.

(A)

```
#!/bin/sh
```

```
if [ $1 = "opensystem" ]; then
```

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11ExcludeUnencrypted=false
```

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11PrivacyInvoked=false
```

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=p2CnfPortType=1
```

```
#0 for IBSS mode (Ad-Hoc)
```

```
#1 for BSS mode (Infrastructure)
```

```
/sbin/wlanctl-ng wlan0 lnreq_autojoin ssid=DJ authtype=opensystem
```

else

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11WEPDefaultKeyID=0
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11ExcludeUnencrypted=true
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11PrivacyInvoked=true
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11WEPDefaultKey0=00:11:22:33:44
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=p2CnfPortType=1
#0 for IBSS mode (Ad-Hoc)
#1 for BSS mode (Infrastructure)
/sbin/wlanctl-ng wlan0 Inxreq_autojoin ssid=DJ authtype=sharedkey
```

fi

[Ad-HOC mode in “opensystem” or “sharedkey”]

If your SSID is named “DJ” and you want to set to Ad-HOC mode, please follow the example B. If your option is “sharedkey”, the key index number should be from 0 to 3. 00:11:22:33:44 is the password of your WEP key.

(B)

```
#!/bin/sh
```

```
if [ $1 = "opensystem" ]; then
```

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11ExcludeUnencrypted=false
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11PrivacyInvoked=false
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=p2CnfPortType=0
#0 for IBSS mode (Ad-Hoc)
#1 for BSS mode (Infrastructure)
/sbin/wlanctl-ng wlan0 Inxreq_autojoin ssid=DJ authtype=opensystem
```

else

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11WEPDefaultKeyID=0
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11ExcludeUnencrypted=true
```

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11PrivacyInvoked=true
```

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11WEPDefaultKey0=00:11:22:33:44
```

```
/sbin/wlanctl-ng wlan0 dot11req_mibset mibattribute=p2CnfPortType=0
```

```
#0 for IBSS mode (Ad-Hoc)
```

```
#1 for BSS mode (Infrastructure)
```

```
/sbin/wlanctl-ng wlan0 Inxreq_autojoin ssid=DJ authtype=sharedkey
```

```
fi
```

[IP Setting]

If you are using RedHat distribution Linux, edit the `/etc/sysconfig/network-scripts/ifcfg-wlan0` file in order to set up the IP address during the booting process. The following 2 examples indicate the usage of fixed IP and DHCP.

(Fixed IP)

```
DEVICE=' wlan0'
```

```
IPADDR=' 192.168.2.98'
```

```
NETMASK=' 255.255.255.0'
```

```
NETWORK=' 192.168.2.0'
```

```
BROADCAST=' 192.168.2.255'
```

```
ONBOOT=' yes'
```

```
GATEWAY=' 192.168.2.254'
```

(DHCP)

```
DEVICE=' wlan0'
```

```
BOOTPROTO=' dhcp'
```

```
ONBOOT=' yes'
```

[Set Channel]

```
#wlanctl-ng wlan0 dot11req_mibset mibattribute=p2CnfOwnChannel=Value
```

Notice: The Value should be in the range 1~14.

[Set RTSThreshold]

```
#wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11RTSThreshold=Value
```

Notice: The value should be in the range 0~2347

[Set FragmentThreshold]

```
#wlanctl-ng wlan0 dot11req_mibset mibattribute=dot11FragmentationThreshold=Value
```

Notice: The Value should be in the range 256~2346

[Set SSID]

```
#wlanctl-ng wlan0 dot11req_mibset mibattribute= p2CnfOwnSSID=<your ssid>
```

4. SPECIFICATIONS

General	
Standard compliance	Compliant IEEE 802.11b Standard
Security	WEP 64-bit, 128-bit, encryption MD5
Hardware	
RF Range	Frequency range: 2.4 ~ 2.4835GHz
Data rate	11Mbps / 5.5Mbps / 2Mbps / 1Mbps
Modulation	DSSS (Direct Sequence Spread Spectrum) DBPSK/DQPSK/CCK
Coding	1, 2Mbps: 11 chip/bit Barker Coding 5.5, 11Mbps: Complementary Code Keying
Number of channels	Europe: 13 (3 non-overlapping) US: 11 (3 non-overlapping) France: 4 (1 non-overlapping) Japan: 14 (3 non-overlapping)
Host Interface	CF type I
Transmit power	+15dBm (Typ.)
Receive sensitivity	-83dBm (Typ.) for 11Mbps; -86dBm (Typ.) for 5.5Mbps; -89dBm (Typ.) for 2Mbps; -91dBm (Typ.) for 1Mbps (@BER 10E-5)
Software	
Driver Support	MS Windows 98/Me/2000/XP/Linux/Windows CE
Utility	User setup and diagnostic tool
Mechanical	
Dimensions	60 x 43 x 7 mm 9 (w/o antenna)
Weight	18 grams
Environmental	
Temperature	0 ~ 55° C (operation), -20 ~ +65° C (storage)
Relative Humidity	95% (non-condensing)
Certificate	
EMC	U.S.: FCC Part 15, sections 15.247, 15.205, 15.209 Europe: ETS 300 328, ETS 300 826, CE Marked

5. GLOSSARY

The following glossary is for your reference only, and is not need for the installation of your Wireless LAN CF Card.

Wireless Access Point (AP) – Any entity that has station functionality and provides access to the distribution services via the wireless medium (WM) for associated stations.

Ad-Hoc – A network is composed solely of stations within mutual communication range of each other via the wireless medium (WM). An ad hoc network is typically created in a spontaneous manner. The principal distinguishing characteristic of an ad hoc network is its limited temporal and spatial extent. These limitations allow the act of creating and dissolving the ad hoc network to be sufficiently straightforward and convenient so as to be achievable by non-technical users of the network facilities; i.e., no specialized technical skills are required and little or no investment of time or additional resources is required beyond the stations that are to participate in the ad hoc network. The term ad hoc is often used as slang to refer to an independent basic service set (IBSS).

BSS (Basic Service Set) – An AP associated with several wireless stations.

ESS (Extended Service Set) – More than one BSS can be configured as an Extended Service Set. An ESS is basically a roaming domain.

Ethernet – A popular local area data communications network, originally developed by Xerox Corp., which accepts transmission from computers and terminals. Ethernet operates on 10 Mbps baseband transmission over shielded coaxial cable or over shielded twisted pair telephone wire.

Fragmentation Threshold – Indicates how much of the network resources is devoted to recovering packet errors. The value should remain at its default setting of 2,436. If you experience high packet error rates, you can decrease this value but it will likely decrease overall network performance. Only minor modifications of this value are recommended.

Infrastructure – The infrastructure includes the distribution system medium (DSM), AP, and portal entities. It is also the logical location of distribution and integration service functions of an extended service set (ESS). An infrastructure contains one or more APs and zero or more portals in addition to the distribution system (DS).

IEEE – Institute of Electrical and Electronic Engineering

LAN – Local Area Network

Roaming – A function that allows one to travel with a mobile end system (wireless LAN mobile station, for example) through the territory of a domain (an ESS, for example) while continuously connecting to the infrastructure.

RTS (Request To Send) Threshold –It should remain at its default setting of 2,347. A preamble is a signal used to synchronize the transmission timing between two or more systems. A series of transmission pulses are sent before the data to indicate that “someone is going to transmit data.” This ensures that systems receiving the information correctly when the data transmission starts.

SOHO – Small Office Home Office

SSID – Service Set Identifier

Wired Equivalent Privacy (WEP) – The optional cryptographic confidentiality algorithm specified by IEEE 802.11 is used to provide data confidentiality that is subjectively equivalent to the confidentiality of a wired local area network medium that does not employ cryptographic techniques to enhance privacy.