WireFree WL-2400
Wireless LAN ISA Adapter

FCC Information

This equipment has been tested and found to comply with the limits for a Class A digital devices 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 communication.

Operation of this equipment in residential area is likely to cause harmful interference in which case the user will be required to correct the interference at this own expense.

The user should not modify or change this equipment without written approval from company name. Modification could void authority to use this equipment.

For the safety reason, people should not work in a situation which RF Exposure limits be exceeded. To prevent the situation happening, people who work with the antenna should be aware of the following rules:

1. Install the antenna in a location where a distance of 6.5 cm from the antenna may be maintained.

2. While installing the antenna in the location, please do not turn on the power of wireless card.

3. While the device is working, please do not contact the antenna.

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Limited Warranty

About This Manual

The purpose of this manual is for the setup of the product WireFree WL-2400, the Wireless LAN Adapter. This manual, revised as version 2.0 in 1999, includes procedures which help you to avoid unforeseen problems.

Revision

User's Guide for WireFree ISA PnP Wireless LAN Adapter.

Part No. EMWL2400-1

Contents

Chapter 1 About WL-2400 ISA Card

The WL-2400 IEEE 802.11 ISA Card is a standard PC card that fits into any standard ISA slot in a desktop computer. As a Plug-and-Play device, Windows 95/98 will automatically recognize the card and begin the installation process. When installed, WL-2400 can communicate with other WireFree products to create a wireless network in your office or home. The ISA Card ships with a desktop antenna which connects to the back of the card with a antenna cable.

1-1 Features and Benefits

1. Supports up to 2Mbps data rate: T-1 line alternative/replacement that dramatically cuts costs.

2. Working range up to 800 ft. in an open environment.

3. Supports point-to-point and point-to-multipoint access.

4. Seamless connectivity to wired Ethernet and PC network LAN's augments existing networks quickly and easily.

5. Direct Sequence Spread Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection.

6. Wireless connection without the hassles and cost of cabling.

7. Supports a wide range of LAN NOS (Win95/98, NT, Novel, NetWare, DOS)

8. Supports Plug and Play.

9. Easy installation.

10. Omni-directional antenna included.

11. Greater flexibility to locate or move networked PC's

1-2 Applications

WireFree products offer a fast, reliable, cost-effective solution for wireless client access to the network in applications like these:

1. **Remote access to corporate network information**
   E-mail, file transfer and terminal emulation.

2. **Difficult-to-wire environments**

Historical or old buildings, asbestos installations, and open area where wiring is difficult to employ.

3. Frequently changing environments

Retailers, manufacturers and banks who frequently rearrange the workplace and change location.

4. Temporary LANs for special projects or peak time

Trade shows, exhibitions and construction sites need temporary setup for a short time period.   Retailers, airline and shipping companies need additional workstations for a peak period.   Auditors require workgroups at customer sites.

5. Access to database for mobile workers

Doctors, nurses, retailers, white-collar workers need access to database while being mobile in the hospital, retail store or office campus.

6. SOHO (Small Office and Home Office) users

SOHO users need easy and quick installation of a small computer network.

7. Inter-building connection

The wireless building-to-building network installs quickly, requires no monthly lease fees, and provides the flexibility to reconfigure easily.

1-3 Product Kit

WireFree WL-2400 includes the following items.   Please go through each listed item below.   If any listed item is not included, please contact your local dealer.

A. WireFree WL-2400 / ISA Adapter
- WL-2400 / ISA Interface Adapter………………………………… x 1
- Antenna (dipole, omni-directional)………………………………… x 1
- Driver & Utility Diskette………………………………………………x 1
- Quick Installation Guide………………………………………… x 1

Chapter 2 Hardware Installation

2-1 System Requirements

In order to use a WL-2400 ISA card, your computer must have the following:

1. A computer with an ISA Type II slot, and an ISA card and socket services compliant with revision 2.10 of the ISA specification (or higher).
2. Windows 95 or Windows 98 (with a Windows installation CD-ROM, diskettes for use during installation)
3. MS-DOS 3.0 or higher.
4. Minimum 500 Kbytes free disk space for installing driver and utility program.

2-2 Hardware Installation for WL-2400

The installation of WL-2400 wireless LAN ISA adapter includes the following steps:

Step1: Insert the WL-2400 ISA Adapter
1. If the power of your computer is on, please turn it off.
2. Open the chassis of your computer.
3. Insert your WL-2400 adapter carefully and firmly into any empty ISA slot and then close the computer chassis.
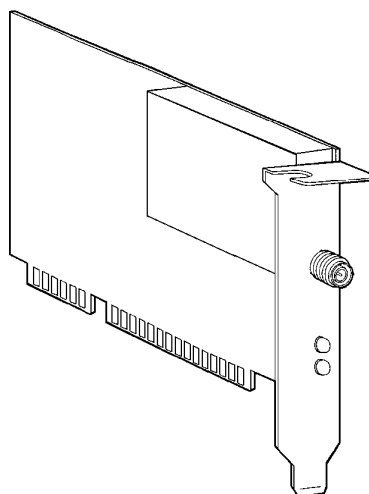
Red LED: Power
Green LED: Tx/Rx

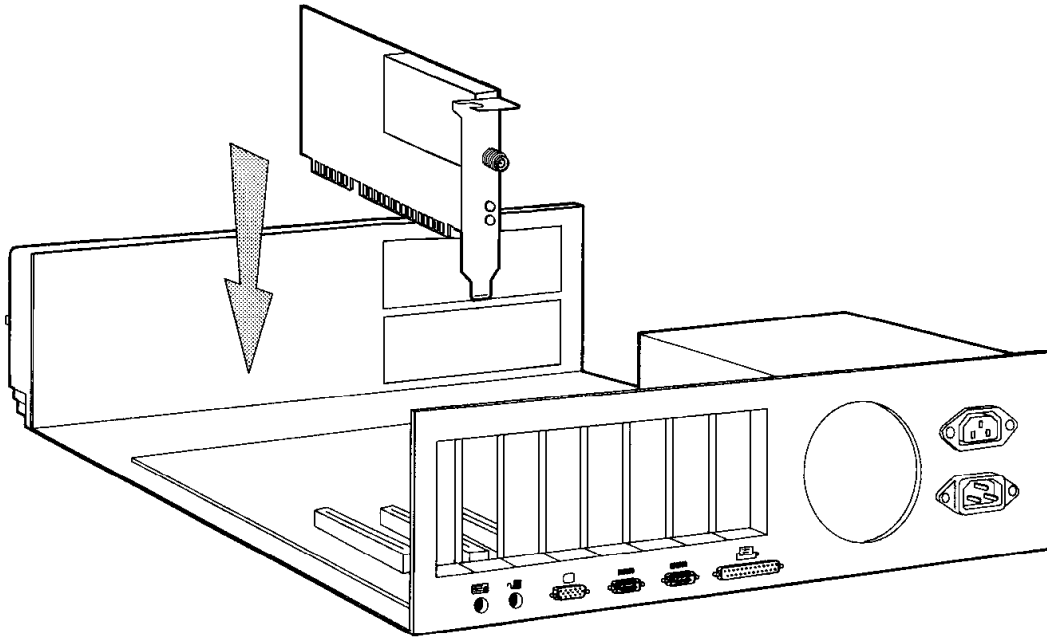*Fig2.1   WireFree WL-2400 ISA Adapter*

Fig2.2 Insert WL-2400 into your computer

Step2: Attach the Antenna

Screw in the antenna connector clockwise to attach on the WireFree/WL-2400 interface adapter.　Place your antenna in a suitable position that might get the best Tx/Rx performance.　Normally, the higher the position is, the better the performance will be.
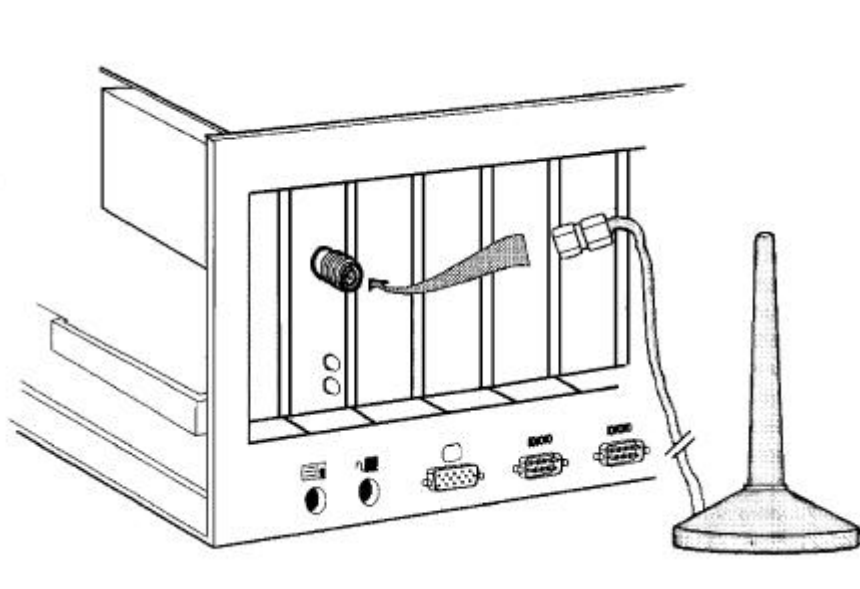

Fig2.3. Attach the Antenna to the WL-2400

Step3: Power on Your Computer

Turn on the power of your PC then continue the installation steps in the next chapter - "**Software Installation**".

NOTE: The WireFree WL-2400 wireless LAN adapter is a jumperless plug-and-

play ISA adapter. The IRQ and I/O Port of the adapter will be configured automatically by the **Plug-and-Play BIOS** or **Windows 95**.

If you install the WL-2400 wireless LAN adapter into a computer neither with **Microsoft Windows 95** nor the **Plug-and-Play BIOS**, you should load plug-and-play configuration manager (such as **Intel Plug and Play Configuration Manager, CM**) to configure the WL-2400 wireless LAN adapter automatically. Otherwise, you should use the `WLJMP.EXE` program (also included in the WireFree WL-2400 Driver & Utility diskette) to setup the adapter manually before the network driver or utility is running.

WLJMP is an MS-DOS command. You can simply issue the command in the DOS prompt:

```
WLJMP -irq <IRQ Number> -port <IO Port Address>
```

The `<IRQ Number>` can be 10, 11, or 12. The `<IO Port Address>` is from 0x280 to 0xFFC0 stepped by 0x40, such as 0x280, 0x2C0, 0x300, 0x340, 0x380, 0x3C0, …, 0xFFC0.

You should provide the **IRQ Number** and **I/O Port Address** manually depend on the configuration of your computer. Wrong (conflicting) setting may cause the system hung-up.

NOTE: If you had setup wrong IRQ or I/O-port parameters when issued WLJMP command, or you want to change the parameter, you **must** power off your computer and reboot your computer then issue WLJMP command again. Otherwise, the IRQ and I/O-port parameters cannot be modified simply by running WLJMP again.

Chapter 3 Software Installation

3-1 Setup WireFree for Windows 95 / 98

1. Turn off your computer, insert the WL-2400 ISA adapter into ISA slot.

Add New Hardware Wizard

This wizard searches for new drivers for:

WISA Wireless LAN PnP Adapter

A device driver is a software program that makes a hardware device work.

< Back   Next >   Cancel

2. Windows 95/98 will automatically detect the new hardware and will prompt you to install the driver needed.

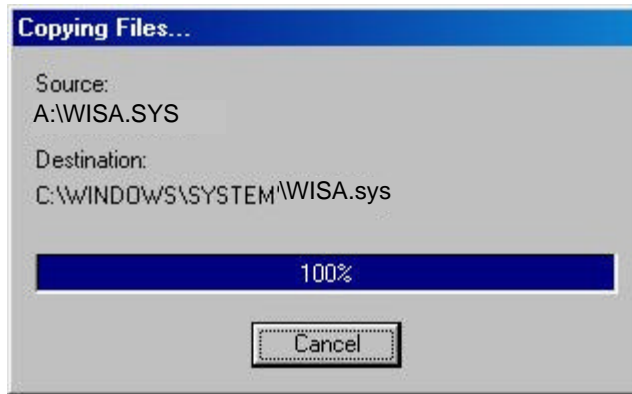3. Select "**Search for the best driver for your device**".

Add New Hardware Wizard

What do you want Windows to do?

○ Search for the best driver for your device. (Recommended).

○ Display a list of all the drivers in a specific location, so you can select the driver you want.

< Back   Next >   Cancel

4. Select the location of driver from "Specify a location", insert the CD-ROM labeled "**WireFree Driver & Utility**" into CD-ROM drive in your computer, have the path "**E:\WL2400**" and then click **Next**. (assume the CD-ROM driver letter is E)
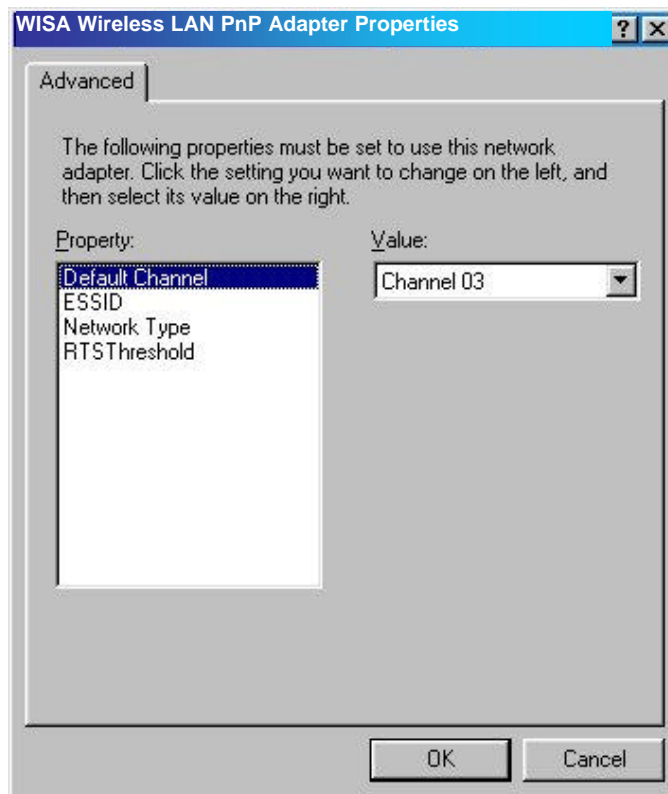

5.Windows 95/98 found "WireFree WL-2400 PnP ISA Adapter", and then click **Next**.

6. It will copy files from disk to the system.
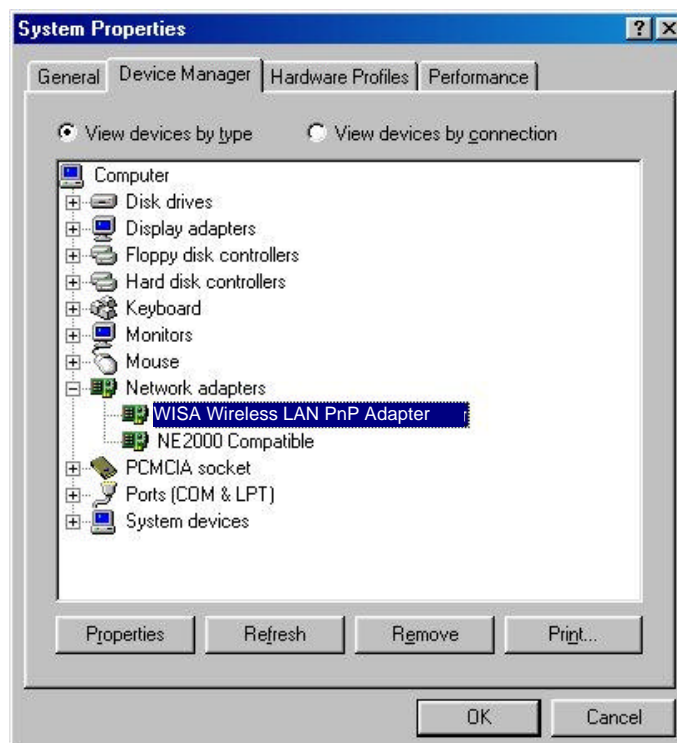
7. Set parameters for WL-2400.

8. Click **Finish** to complete the hardware installation.

Add New Hardware Wizard

WISA Wireless LAN PnP Adapter

Windows has finished installing the software that your new hardware device requires.

< Back   Finish   Cancel

9. Restart the computer.

System Settings Change

To finish setting up your new hardware, you must restart your computer.

Do you want to restart your computer now?

Yes   No

10. Open the **Control Panel** folder, double-click **System** and Adapters to see if there is any error message appears.   If no, that means your WL-2400 works well.


System Properties

General | Device Manager | Hardware Profiles | Performance |

● View devices by type   ○ View devices by connection

- Computer
  - Disk drives
  - Display adapters
  - Floppy disk controllers
  - Hard disk controllers
  - Keyboard
  - Monitors
  - Mouse
  - Network adapters
    - WISA Wireless LAN PnP Adapter
    - NE2000 Compatible
  - PCMCIA socket
  - Ports (COM & LPT)
  - System devices

Properties   Refresh   Remove   Print...

OK   Cancel

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3-2 Setup WireFree for Windows NT 3.51 or 4.0

1. Login as Administrator.

2. From the desktop, select **Control Panel**, double-click **Network**, go to the **Interface Card** tab, and then click the **Add** button.
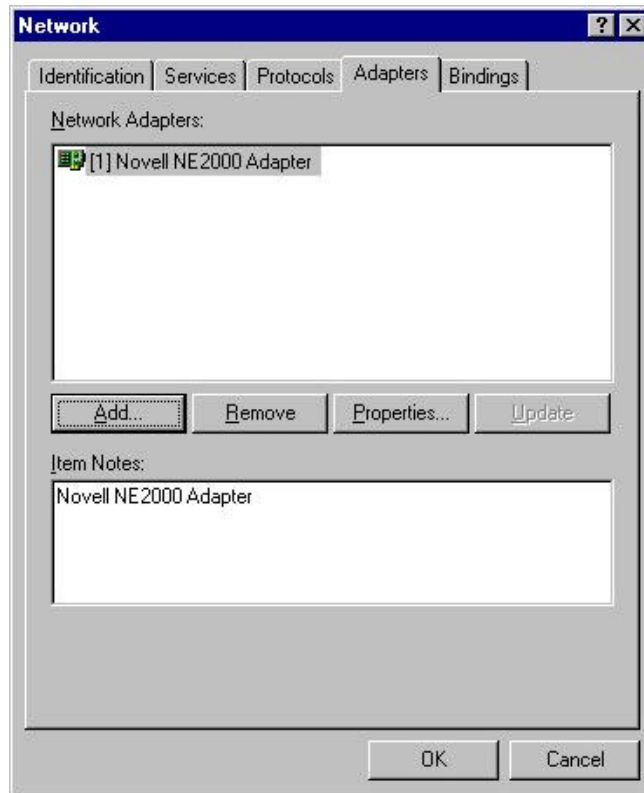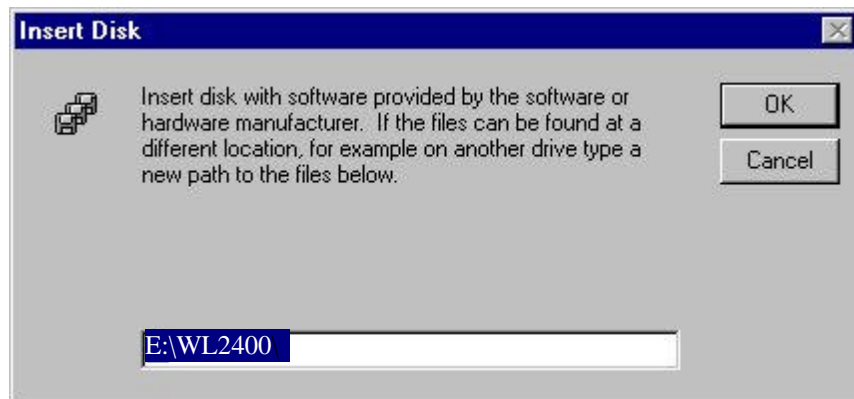

3. Windows NT will present a list of all its supported adapters. Select **OTHERS**, or click **Have Disk** to continue.
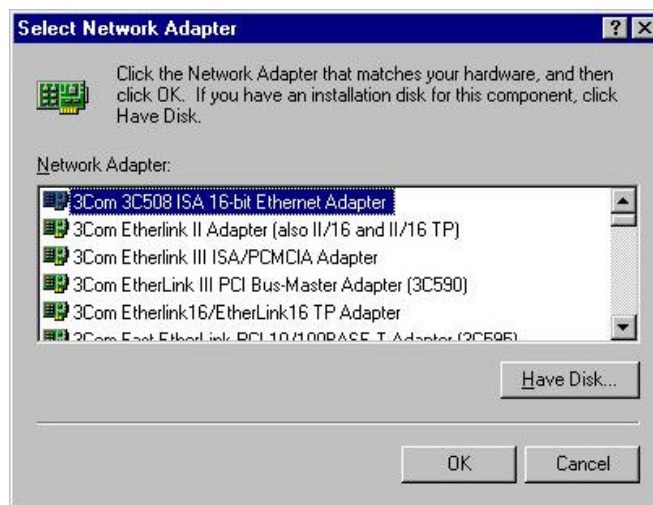

4. Windows NT will ask for the drive/path containing the WireFree WL-2400 Windows

NT drivers. Insert the WL-2400 Driver and Utility diskette into the CD-ROM drive, and then type **E:\WL2400** (Assume the CD-ROM drive letter is E)

5. Windows NT will attempt to locate an INF file in the specified path. If you have entered the path name correctly, Windows NT should copy the appropriate drivers to the Windows NT system. You need to recognize the selection.
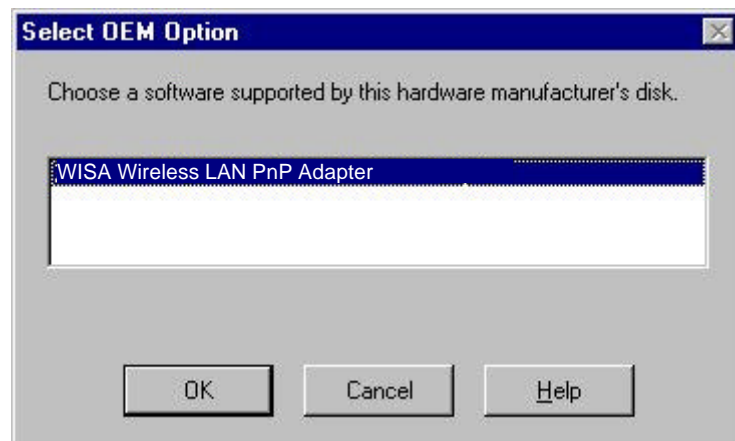

6. A "**WireFree/WL-2400 Wireless LAN Adapter Setup**" dialog box will show up. Please select the "**Default Channel**" , "**Network Case**" , "**RTSThreshold**" and "**ESSID**" manually. Your WL-2400 adapter will thereafter work on this configuration under Windows NT. Press **OK** to continue.
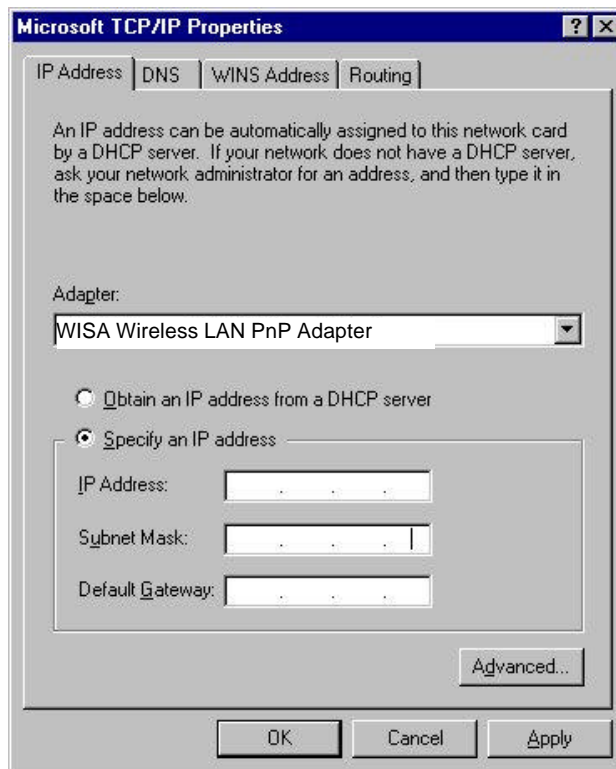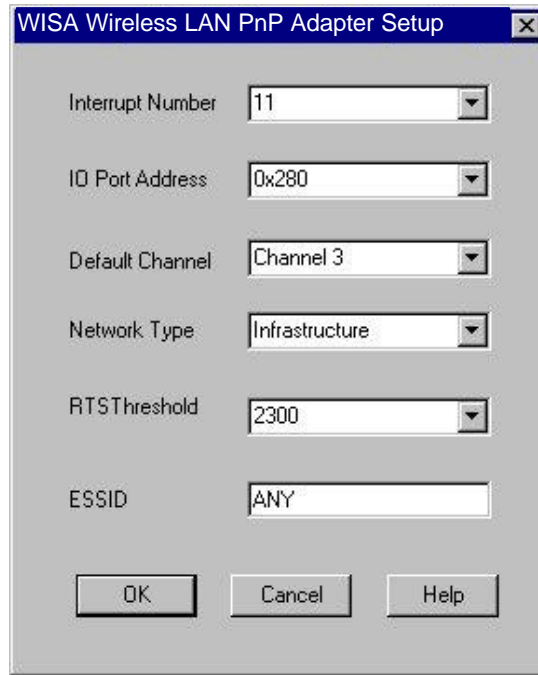
7.   At this point, the drivers would have been properly copied and the installation would proceed to the next step --- "**Network Setup**".

8.   Restart the system.

9. To ensure whether the WL-2400 adapter works fine or not, go to **Control Panel** and Double-click **Devices**.
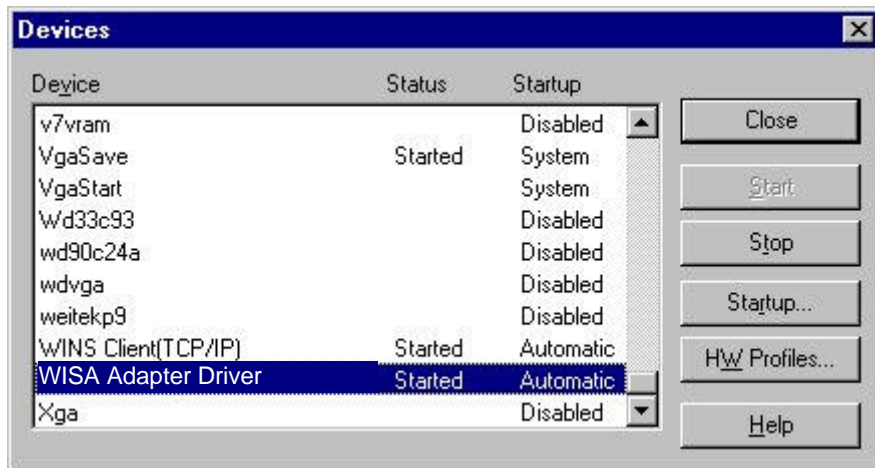
3-3 Setup WireFree for NetWare Client –Using ODI Driver (DOS / Windows 3.x)

For DOS and Windows 3.x NetWare Clients, WireFree provides the ODI driver. The ODI driver program allows you to run Novell NetWare's IPX protocol stack in your workstation. The WireFree ODI driver supports the Port, Node Address, Protocol and Frame options for creating your own **NET.CFG** file. For more information on these keywords, please refer to Novell's "NetWare ODI shell for DOS – NET.CFG options."

Install a **NetWare 3.x/4.x ODI DOS and Windows 3.x Workstation (using NetWare Client Install)**

1. Install the NetWare ODI Client Driver files into your workstation, if not yet installed. Follow the installation procedure described in the NetWare installation manual.

2. The suggested way to install a NetWare Client (workstation) is to use the **NetWare Client Install** program to install all necessary files. Please follow its prompted screens to accomplish the installation procedure and select the WireFree ODI driver as the network driver.

3. To select the ODI driver of the WireFree wireless LAN adapter, copy the files to nwclient directory.

        WISA.COM
        WISA.INS

4. The NetWare Client Install program copies the necessary files for NetWare Client. Please continue its installation procedure to completion. Upon completion, a new **NET.CFG** file will be created in your NWCLIENT directory. Typically, this file contains the following lines:
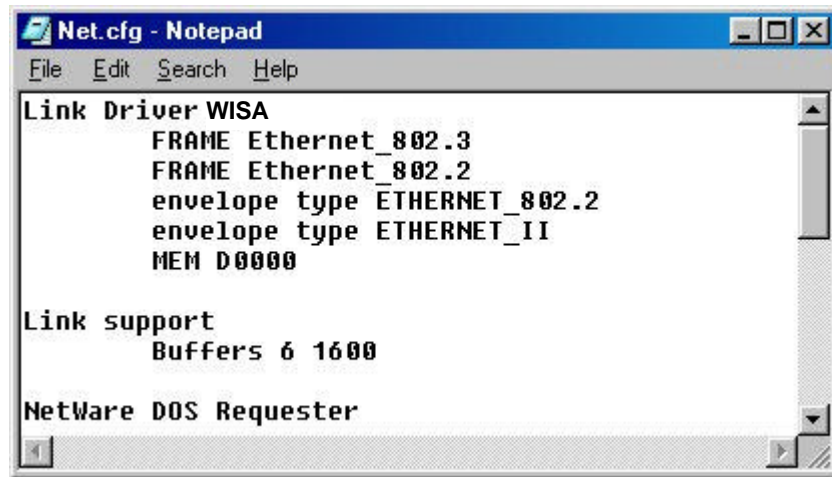
Fig3.1 Configure NET.CFG

Link Driver WISA   ; or WPCMCIA for PCMCIA
 FRAME Ethernet_802.3
 FRAME Ethernet_802.2

5.   A typical **STARTNET.BAT** for the ODI workstation performs the following commands:

SET NWLANGUAGE=ENGLISH	; Set NetWare 4.X to English
	; Language
LSL	; Link Support Layer Module (provided by
	; Novell)
WL2400	; Hardware Specific Module (For PCMCIA, uses
	; WL2400; for PC104)
IPXODI	; IPX Protocol Stack Module (provided by Novell)
VLM	; DOS Support Module (provided by Novell)
L:	; Change current drive to connected device
	; (L:, for example)
LOGIN	; Issue login command to login to file server

You may run **STARTNET.BAT** to access (logon) the Novell NetWare server.
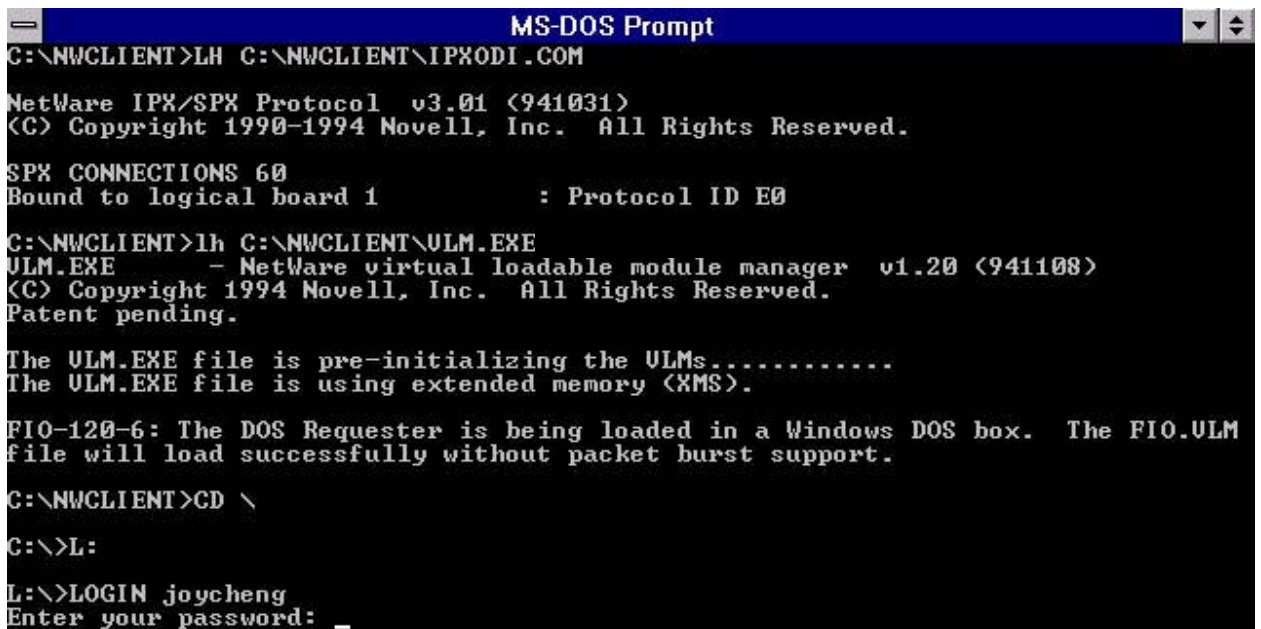
Fig3.2 Configure STARTNET.BAT

Fig3.3 Login NetWare Server.

3-4 Setup WireFree for DOS TCP/IP Applications

1. For the entire legacy TCP/IP applications in DOS environment, please install WireFree Packet Driver.

2. First, setup the configurations of WL2400. Type "A:\PACKET\PKTCFG.COM"

Fig3.4 Configure WL2400

3. Please select the "Wireless LAN LLC protocol type" , "Wireless LAN Net work type" , "ESSID" and "Default Channel" manually. Press "F10" after setting properly.
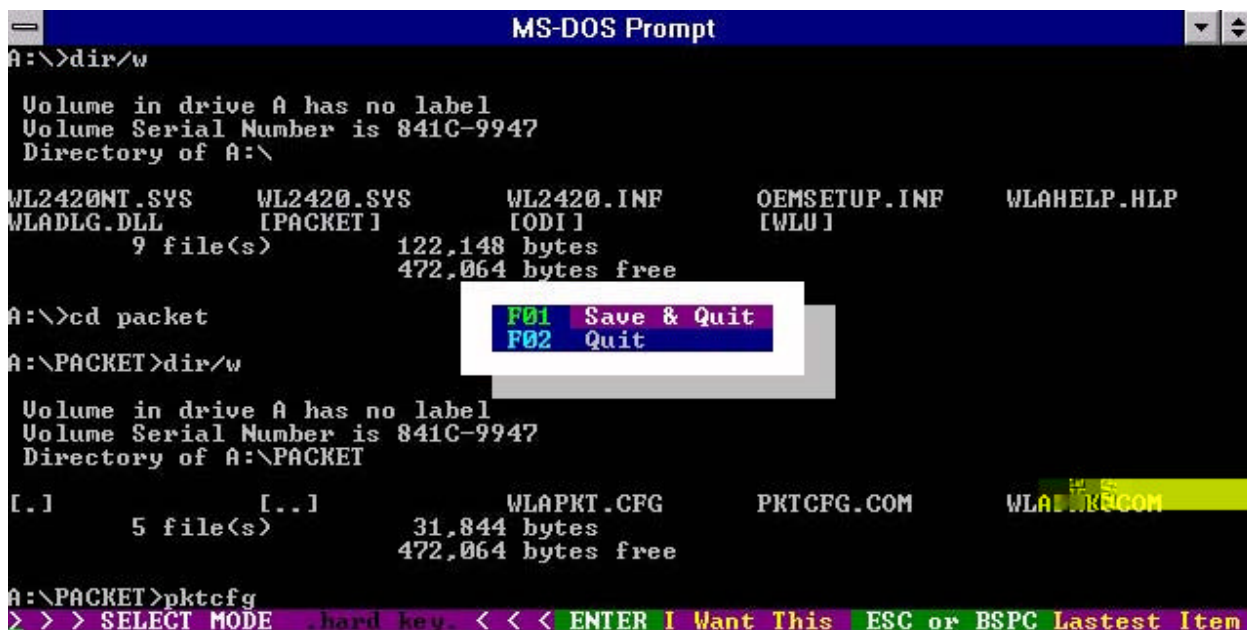

Fig3.5 Save current parameters.

4. To install Packet Driver for WL2400, load "WLAPKT.COM" from DOS command prompt.
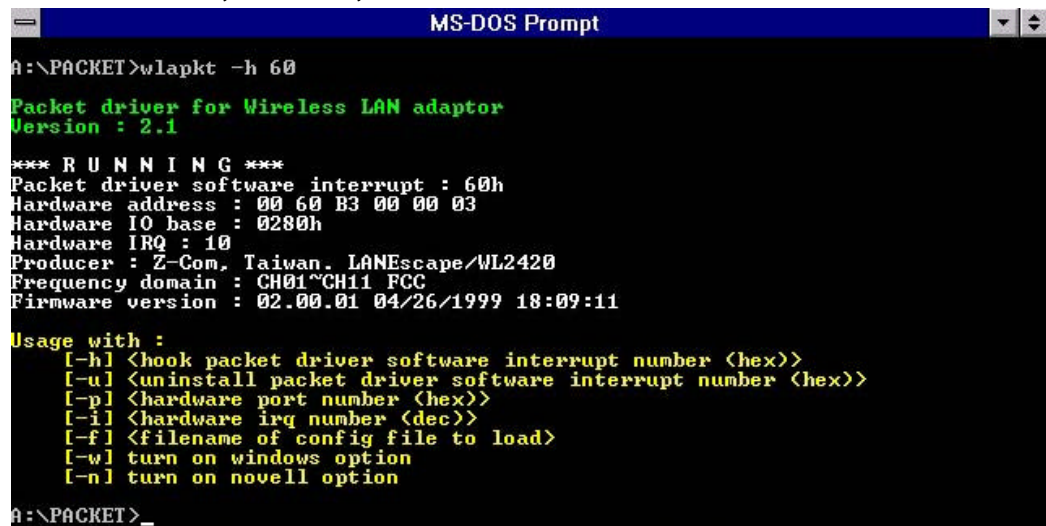
Syntax: WLAPKT.COM [-h] <packet_int_no>

Options:

[-u]	Uninstall packet driver.
<packet_int_no>	The software interrupt vector number used by the packet driver program, which can be from 96 (0x60) to 128 (0x80).
Example:	To load packet driver for the WL2400 card, which will be found first by the driver, on packet interrupt vector 0x60:

`A:\PACKET\WLAPKT.COM -h 60`

Fig3.6 Packet driver works properly.

Chapter 4 Network Configuration

4-1 Installation of "WLU" utility

1. Insert **WireFree WL 2400 Driver & Utility Diskette** into floppy drive, and then execute A:\WLU\setup.exe
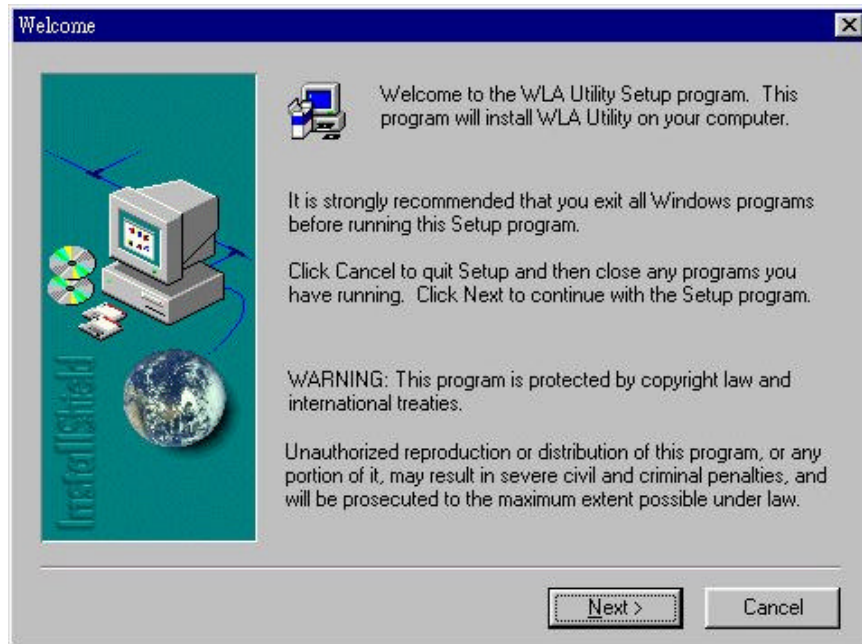

Fig4.1 Step1 of Wireless LAN Utility setup.
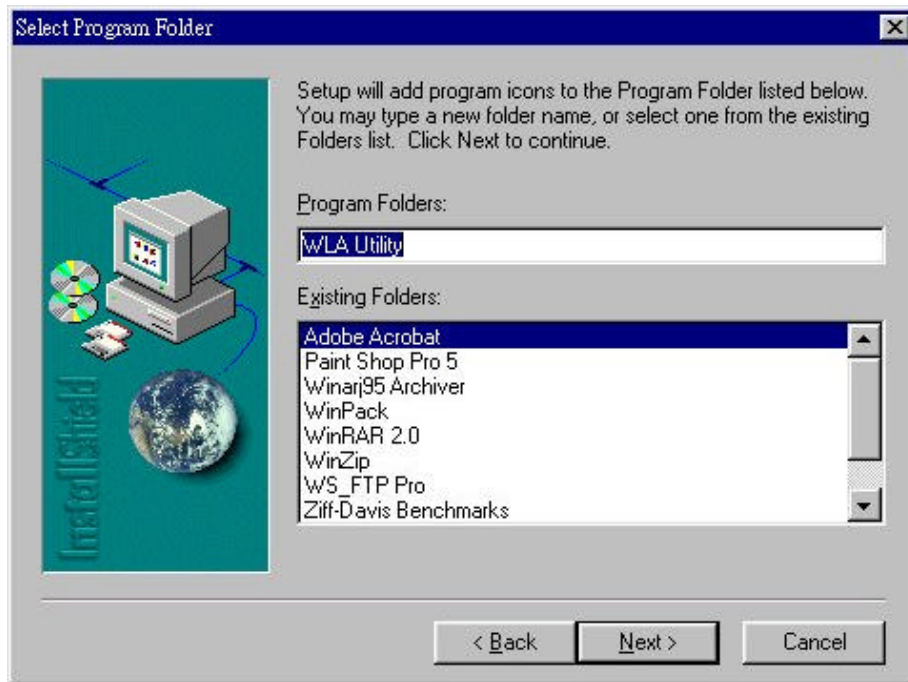

Fig4.2 Step2 of Wireless LAN Utility setup.
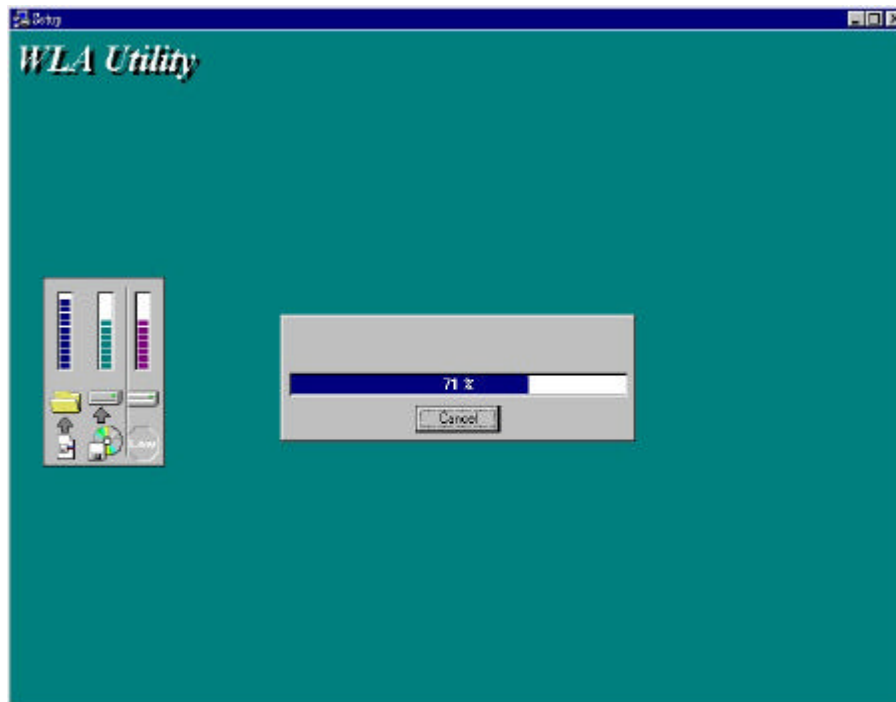
Fig4.3 Step3 of Wireless LAN Utility setup.

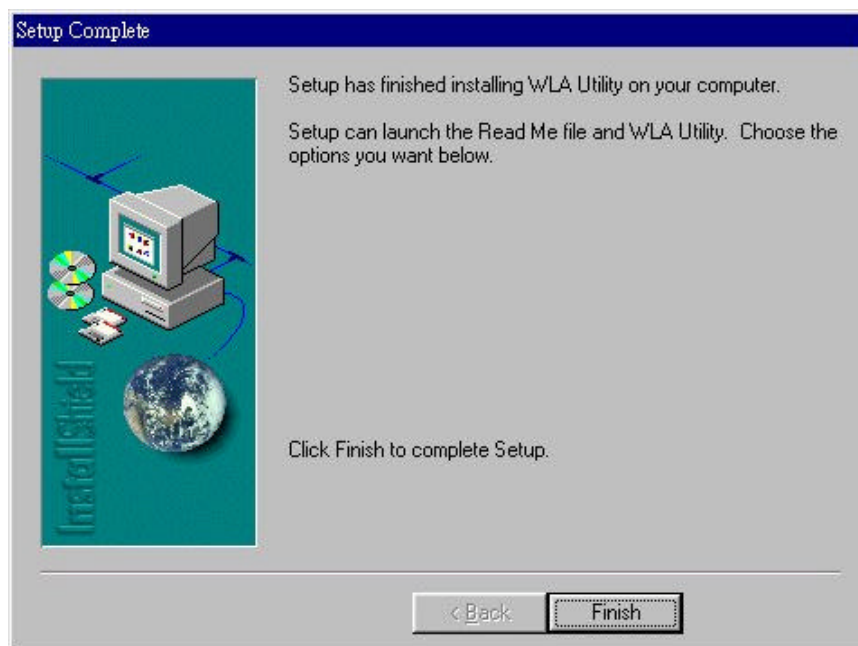*Fig4.4 Step4 of Wireless LAN Utility setup.*

Fig4.5 Step5 of Wireless LAN Utility setup.

4-2 Navigating The WireFree Utility

To set up your wireless network environment, please follow these steps:

Step 1: Configure the adapter - Select "Network Configuration" in the main menu screen and follow the instructions.

Step 2: Diagnose the operation - Using "Diagnostics Tools" in the main menu screen and follow the instructions.

A. Main Menu

A WireFree wireless LAN adapter hardware information window will show on the top of the screen while Main Menu screen is displayed. In this window, you will see current adapter configuration information, that is, the MAC address, firmware version, frequency domain, BSS joined, current channel and ESS ID of the adapter that you installed in your desktop or notebook computers.

The Main Menu screen shows all main functions of the WireFree Utility:

☐ **[Network Configuration]** - WireFree Utility provides a screen for you to configure parameters of the WireFree wireless LAN adapter for your wireless network environment.

☐ **[Diagnostics Tools]** - The WireFree Utility provides several diagnostic tools for you to diagnose the operation of your wireless network environment.

☐ **[Firmware Upgrade] -** WireFree Utility provides the function of upgrading the firmware in the wireless adapter.

☐ **[Exit]** - End the execution of WireFree Utility.

1. Click **Start**, point to **Programs** and run **WLA Utility**.
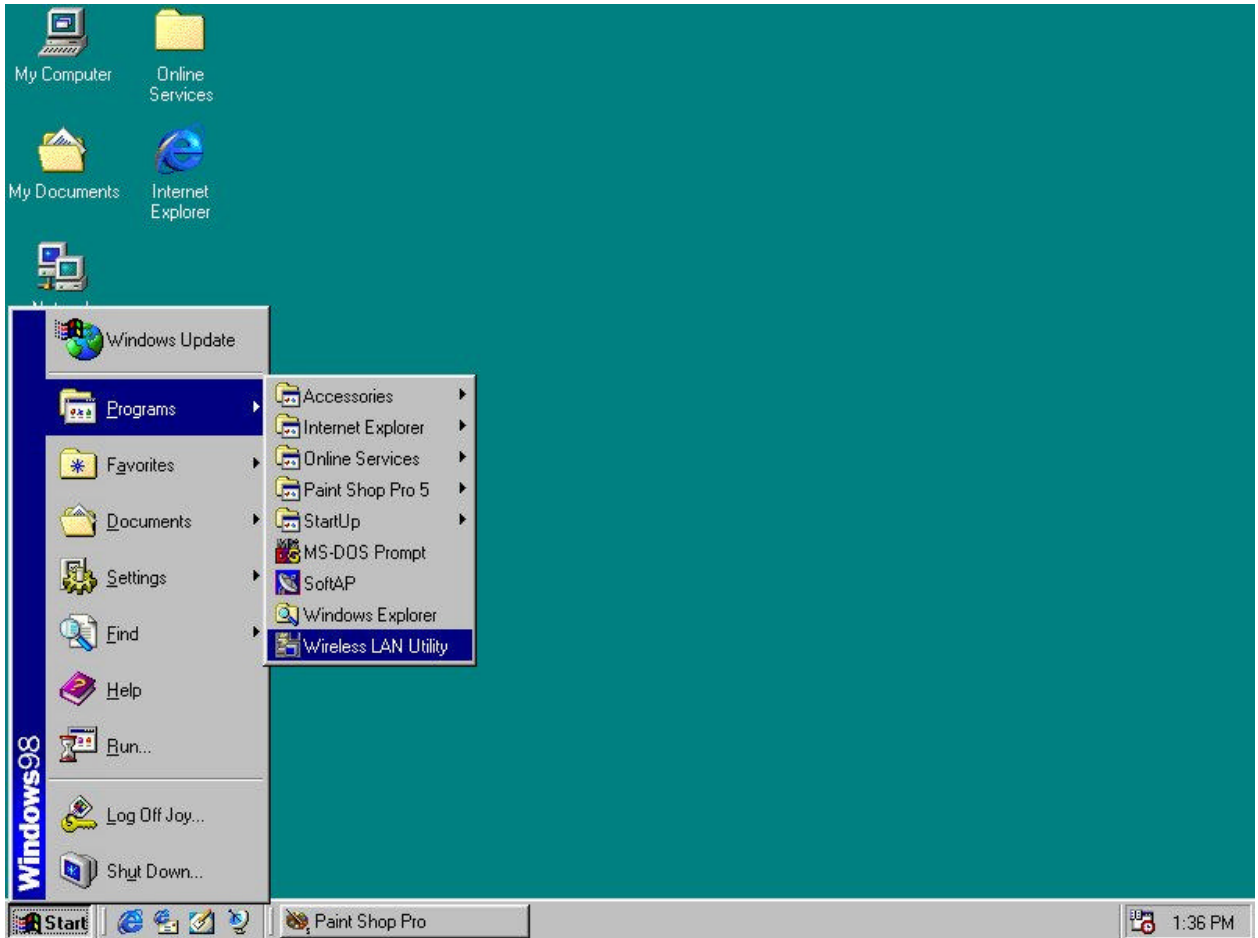
2. Main menu appears.
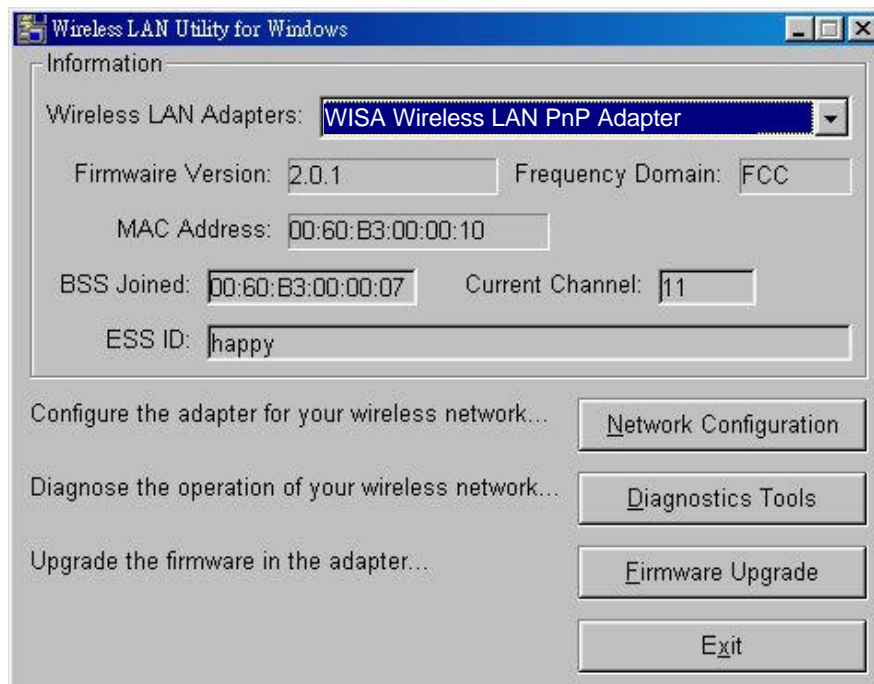
B. Network Configuration Screen

The Network Configuration screen allows you to check and modify current configuration of the WireFree wireless LAN adapter.   The user-configurable parameters are divided into three groups: **ESS ID** and **Network Type**.
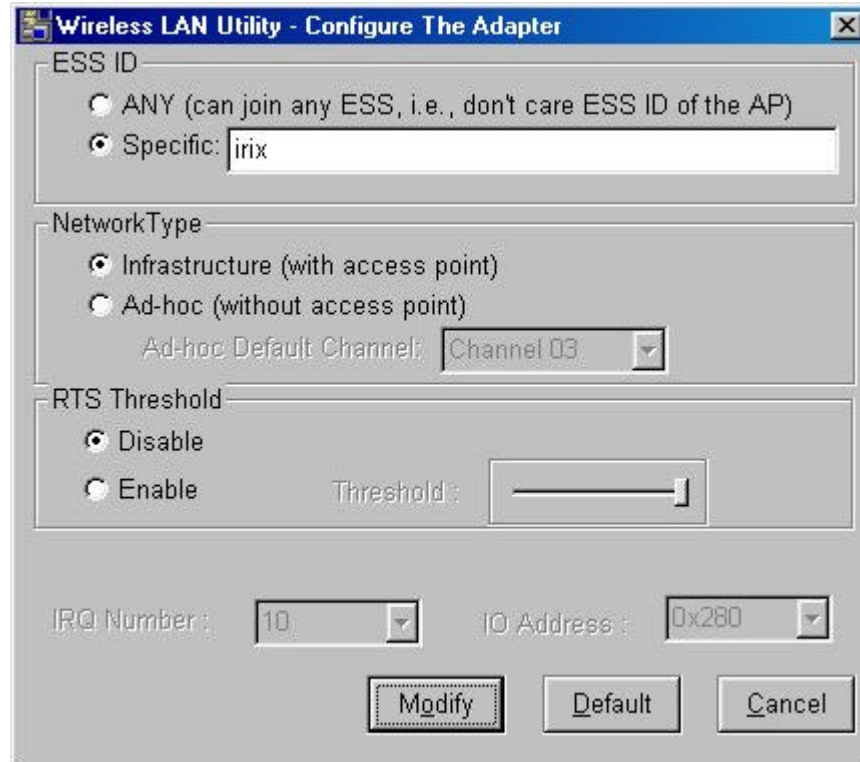
Fig4.6 Network Configuration

B-1. ESS ID PARAMETERS

ESS ID: Input a digit ESS ID while the roaming feature is enabled ("ANY" is default setting).

B-2. NETWORK TYPE PARAMETERS

Station Operation Mode: Set the station operation mode to **Ad-Hoc** (without Access Point) or **Infrastructure** (with Access Point, default setting). WAP-1000 Access Point.

Ad-Hoc Default Channel: Select the channel number as your operating radio channel.

B-3. RTS Threshold

If you aren't concerned with the "Hidden Node Problem", please select the "Disable" item

> **NOTE:** All parameters you modified on the wireless LAN adapter is kept in the flash ROM (non-volatile memory) on the adapter. The new parameters will take effect thereafter even though you boot your PC into any other operating systems or insert the adapter into another PC.

C. *Diagnostics Tools Screen*

The Diagnostics Tools screen shows all diagnostics tools in the WireFree Utility.   There are buttons for executing the following diagnostics tools:
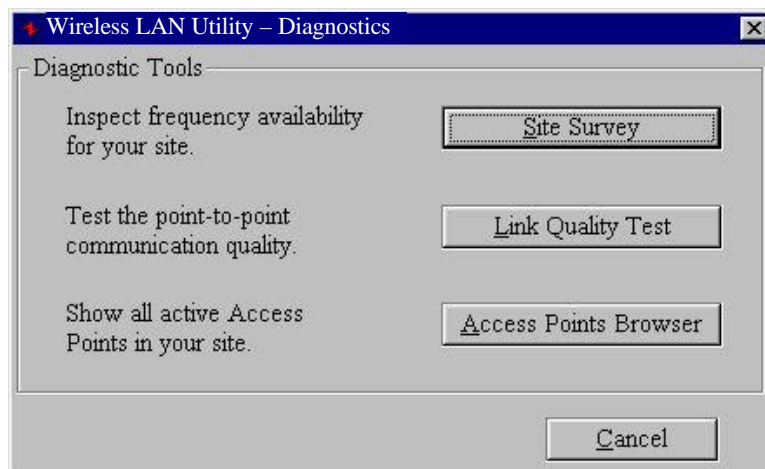
Fig4.7 Diagnostic Tools

- ☐ **[Site Survey]** - Inspect channel quality for your site.
- ☐ **[Link Quality Test]** - Test point-to-point communication quality.
- ☐ **[Access Point Browser]** - Show all active WireFree Access Points in your site.

The instructions of using each diagnostics tool are as follows:

- ● **Site Survey**

  When Site Survey screen is displayed, the channel quality of all 14 radio channels will be displayed.   These channel quality measurements are shown on each gauge for the 14 radio channels.   The **higher** bar means the radio channel having **better** quality (i.e., less interference).

  The channel quality is scanned channel-by-channel repeatedly.   You may see some of the gauges changing their height occasionally.   To determine the channel quality in a longer time span, you can refer to the average channel quality measurement from the small-shaped dot in each channel quality gauge.
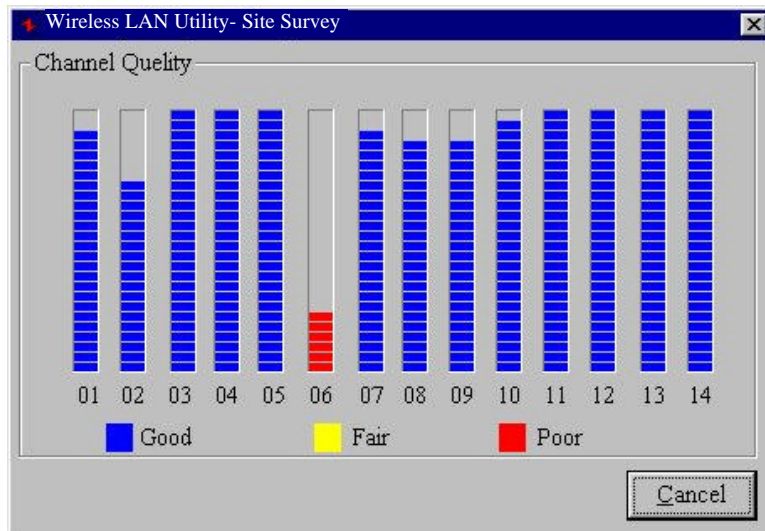
Fig4.8 Site Survey

● **Link Quality Test**

   Link Quality Test is a useful diagnostics tool for you to understand the point-to-point data transmission quality between two wireless LAN stations.   Or, if you use the Infrastructure wireless LAN configuration, you can test the transmission quality between your wireless LAN station and the WAP-1000 Access Point.

When Link Quality Test Screen is displayed, you may choose one of the roles that this wireless LAN station should perform.

1. **Act as Master test station:**

   You should input the destination slave test station address before press [**Start**] button.   The slave address can be found from the slave test station's screen.   The "Master Test Station" window will be displayed after pressing [**Start**] button.
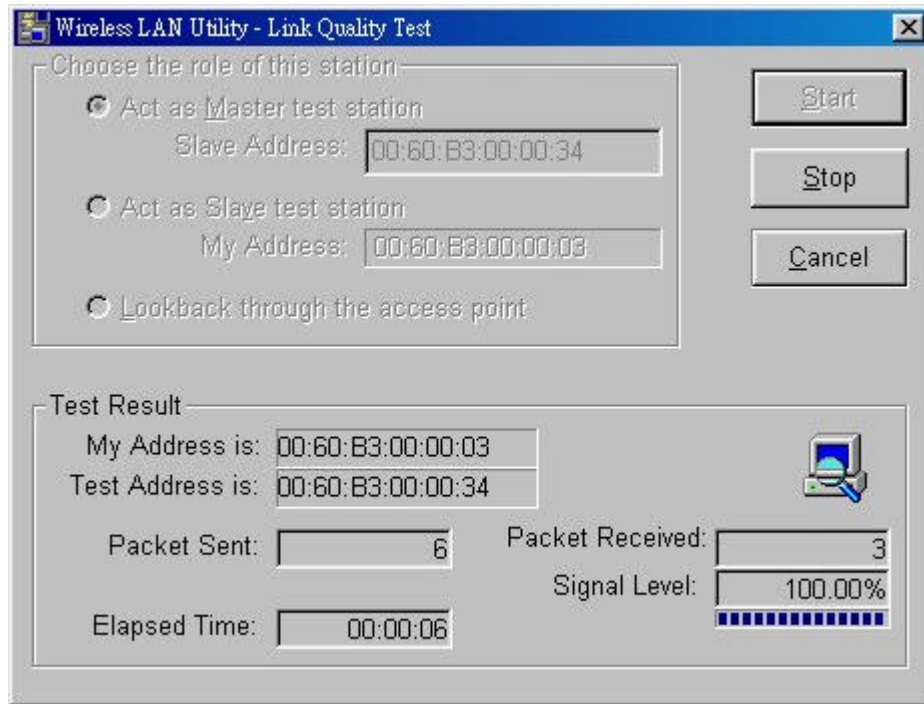
Fig4.9 Act as Master test station

The "Master Test Station" window contains the following status/ statistical information during the Link Quality Test session:

☐ **Slave / Test Address:** The physical address of the destination slave test station. (Self physical address will be displayed while performing Access Point loopback test.)

☐ **Packet Sent:** Total test packets have been sent.

☐ **Packet Received:** Total responding packets have been received.

☐ **Elapsed Time:** Total testing time.

☐ **Signal level:** The signal level when receiving last responding packet. The signal level is calculated as the percentage of its signal level measurement relative to the full signal level.

2. **Act as Slave test station:**

   You can press [**Start**] button to start the slave test station.   The "Slave Test Station" window will be displayed after pressing [**Start**] button.

   The "Slave Test Station" window) contains following status/statistical information during the Link Quality Test session:
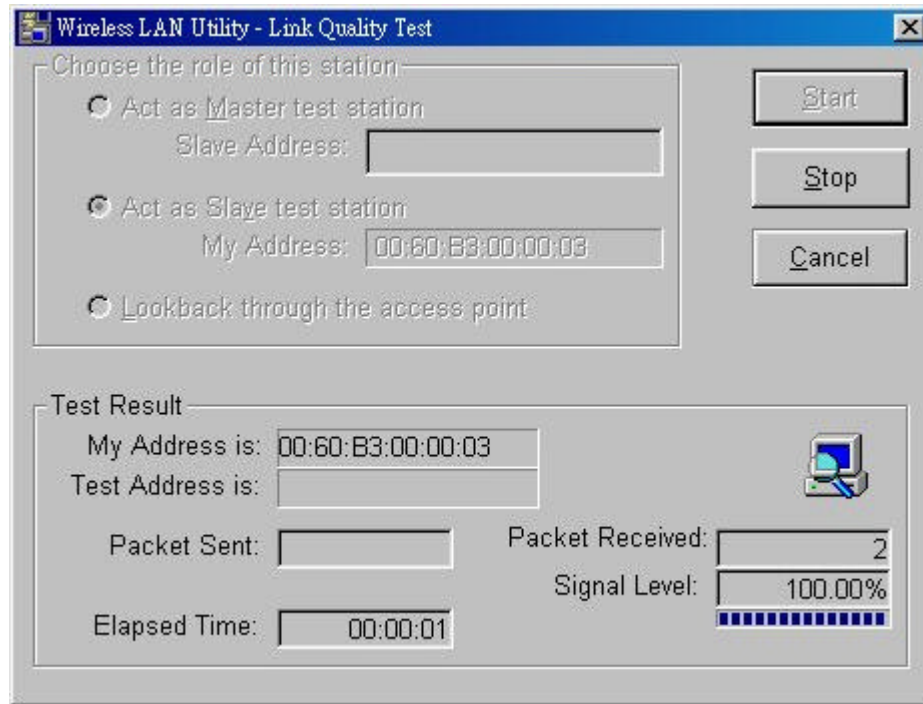
Fig4.10 Act as Slave test station

□ **My Address:** The slave test station's physical address.
□ **Packet Received:** Total test packets received.
□ **Elapsed Time:** Total testing time.
□ **Signal Level:** The signal level when receiving last test packet.   The signal level is calculated as the percentage of its signal level measurement relative to the full signal level.

3.   **Loopback through Access Point:**

If you use the infrastructure wireless LAN configuration, you can select the Access Point loopback test.   The loopback test is between this wireless station and the associated Access Point.
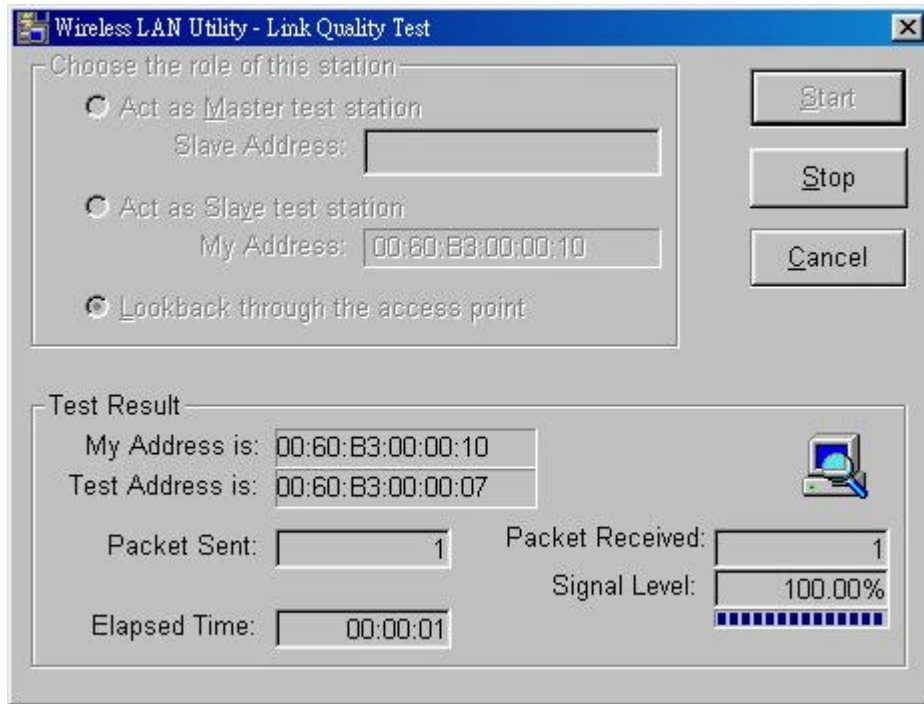
Fig4.11 Loopback through Access Point

☐ **Packet Sent:** Total test packets have been sent.

☐ **Packet Received:** Total responding packets have been received.

☐ **Elapsed Time:** Total testing time.

☐ **Signal level:** The signal level when receiving last responding packet. The signal level is calculated as the percentage of its signal level measurement relative to the full signal level.

The "Access Point Loopback Test" window will be displayed after pressing the [**Start**] button. This window contains same status / statistical information in the "Master Test Station" window. It works only in "Infrastructure Mode".

● **Access Point Browser**

Select the [Access Point Browser] in and you will see a screen shown as below. Choose **[Go],** all the active Access Points will be shown.

Fig4.12 Access Point Browser.

Each row of the Access Point information contains the following columns:

☐ **BSS_ID:** The BSS ID (MAC address) of the Access Point.

☐ **ESS_ID:** The ESS ID of the Access Point.

☐ **Channel**: The operating channel number of the respective access point.

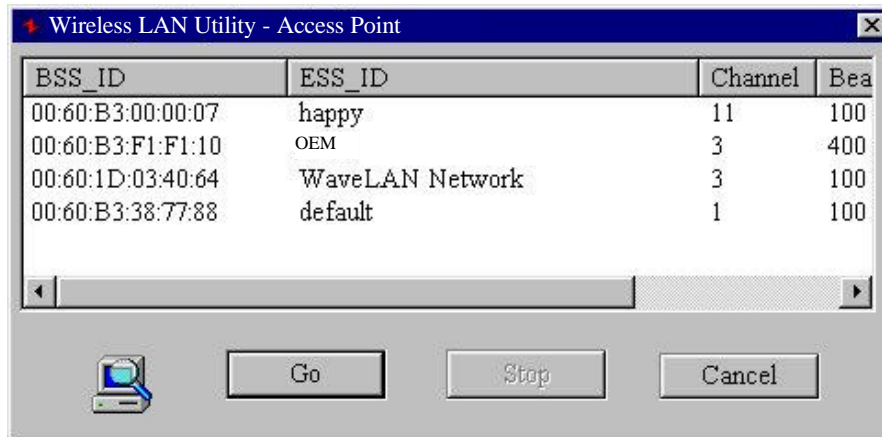☐ **Beacon:** Each Access Point broadcasts "beacon" periodically.   The wireless station will process these beacons to keep in touch with the network.   It counts the beacons cumulatively from the beginning of the Access Point Browser session.   This item only shows in the Single-Channel browser screen.

D. Firmware Upgrade

WireFree WL-2400 Utility provides the function of upgrading the firmware in the wireless adapter to newer version.   Choose the [**Firmware Upgrade**] button in Main Menu, and follow the directions on the screen.

> ☠ **CAUTION:** Improper operation of firmware upgrade **could damage** your adapter.
>
>   We strongly suggest that the firmware upgrade is done by experienced computer personnel and follows this instruction well to upgrade the firmware of your wireless LAN adapter.

● **Obtain The New Firmware**

The latest version of WireFree firmware can be obtained from Planet's home page at "www.planet.com.tw" or contact your local dealer for detail information.

● **Preparation**

Before doing firmware upgrade, please:

1. Close all running applications (especially, network applications), or, a reboot of your

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system is preferred.

2. Make sure the new firmware file is for your type of wireless LAN adapter (i.e., WL2400/ISA, WL3501/PCMCIA). Otherwise, the firmware upgrade tool will show up an "Invalid Firmware" message and refuse to do anything.

3. Memorize the path and filename to access the new firmware file. The firmware upgrade tool will ask you for that.

4. Always use the WLU program that works on your **current** version of firmware to do firmware upgrade. After firmware being upgraded, please read the documentation of the new firmware to determine if you need to upgrade your WLU program and drivers.

●   **How to Operate the Firmware Upgrade Tool**
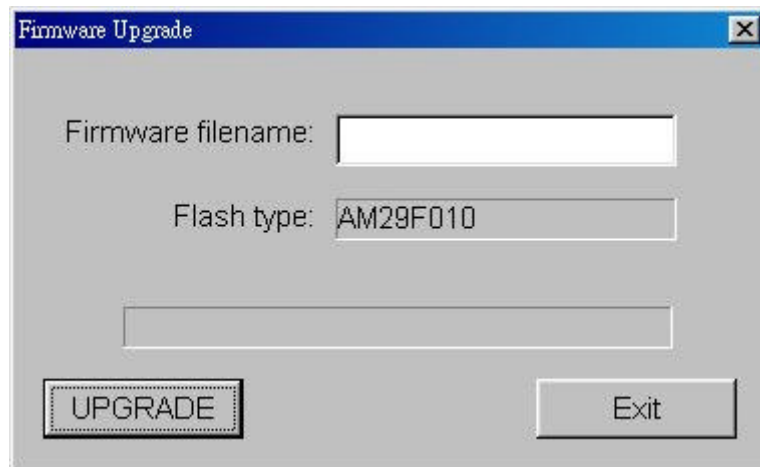
Fig4.13 Firmware Upgrade

☐   **Firmware filename:** The firmware of WL2400.
☐   **Flash type:** The type of current flash bios.

It will take about 5 seconds to finish the installation and verification. (If you access the new firmware file via a floppy drive, the process can take much longer than just 5 seconds.)

☠ **CAUTION:**   Don't power off, reset, or try anything to terminate the firmware upgrade while "Install New Firmware…" pop-up dialog box is in progress. Otherwise, your wireless LAN adapter will be damaged.

WLU (WireFree Utility) is an easy-to-use utility program with user-friendly graphical interface.   It helps you to set up your network environment, configure your WireFree wireless LAN adapter, and diagnose the operation of your wireless LAN.

The WireFree Utility is a Graphic User Interface (GUI) program.   For Microsoft
Windows 95, you start WLU after setup the utility program.

> **NOTE:** An error message will be displayed if the WireFree wireless LAN
> adapter is not installed correctly into your PC.
>
> **ERROR: Planet Wireless LAN adapter does not exist.**
>
> Make sure the installation of your WireFree wireless LAN adapter is
> OK and start WLU again.

Appendix A Troubleshooting

1. **Problem Solving**

    ● *WL2400 cannot be found by either Plug'n'Play or WLU*
       Probable Causes & Solution:
       a. The WL2400 is not properly inserted into the ISA slot.
       b. In a non-Plug'n'Play environment, you did not start any Plug'n'Play emulation program, such as CM, WLJMP.　Check Sec. 3-1 Hardware installation for WL2400.

    ● *WL3501 cannot work properly*
       Probable Causes & Solution:
       a. Insert the PCMCIA adapter into Notebook's slot again.　A beep should be heard if the adapter is properly inserted.
       b. Check the I/O cable that connects the RF module and the PCMCIA adapter.　The power LED should be turn on if the cable is properly connected.
       c. In a non-Windows 95 environment, make sure a PCMCIA card service driver installed in your computer.　Check Sec. 3-2 Hardware Installation for WL2400.

    ● *WL2400/WL3501 station cannot communicate with computer in the Ethernet when the Infrastructure mode is configured.*
       Probable Causes & Solution:
       a. Make sure the WAP-1000 which the station associated with is powered on.
       b. Make sure the station is configured with the same operating radio channel as the WAP-1000.
       c. Start the Site Survey Utility to make sure the operating radio channel is in good quality.　Otherwise, change the WAP-1000 and all the stations within the BSS to another radio channel.
       d. Make sure the station is configured with the same security option with the WAP-1000, either turn off or turn on with the same security key.
       e. Make sure the BSS ID is the same as the WAP-1000 for a roaming disabled station, or the ESS ID is the same as the WAP-1000 for a roaming enabled station.

2. **How to obtain further support**

    a. Use the "maintenance" function in the WAP-1000 Web Management to e-mail your question to Planet.

    b. Direct your questions to **support@planet.com.tw**

c. Planet's technical support hot-line is:

Tel: +886-2-22199518

Fax: +886-2-22199528

Direct any of your questions to sales support department.

d. Check Planet's Web site at **www.planet.com.tw** for FAQ and most updated information.

Appendix B   Specifications

Product	WireFree WL2400
Operating Frequency	2.412-2.462 GHz (FCC, Canada); 2.422-2.462 GHz (ETSI); 2.484 GHz (Japan)
RF Technology	Spread Spectrum Direct Sequence
Transceiver RF Output Power	50 mW
Data Rate	2 Mbps
Media Access Protocol	CSMA/CA, 802.11 Ready
No. of Channels	12 Channels
Range	800 ft.
Host Bus Interface	PnP ISA Bus
Driver	ODI, NDIS, Packet Driver
Regulatory Approval	FCC Part 15, CE Mark, ETS 300 328

Appendix C Glossary

Access Point - An internetworking device that seamlessly connects wired and wireless networks together.

Ad-Hoc - An Ad-Hoc wireless LAN is a group of computers each with wireless adapters, connected as an independent wireless LAN.

Backbone - The core infrastructure of a network.   The portion of the network that transports information from one central location to another central location where it is off-loaded onto a local system.

Base Station - In mobile telecommunication, a base station is the central radio transmitter/ receiver that maintains communication with the mobile radio telephone sets within range. In cellular and personal communications applications, each cell or microcell has its own base station; each base station in turn is interconnected with other cells' base.

BSS - Stands for "Basic Service Set."   An Access Point associated with several wireless stations.

ESS - Stands for "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.

Infrastructure - An integrated wireless and wired LAN is called an Infrastructure configuration.

PCMCIA - Personal Computer Memory Card International Association, which develops standards for PC cards, formerly known as PCMCIA cards, are available in three "types" which are about the same length and width as credit cards, but range in thickness from 3.3 mm (Type I) to 5.0 mm (Type II) to 10.5 mm (Type III).   These cards can be used for many functions, including memory storage, as landline modems and as wireless LAN.

Roaming - A function that one can travel with his 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 Threshold – Transmitters contending for the medium may not hear each other. RTS/CTS mechanism can solve this " Hidden Node Problem".