



User's Manual



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Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the manufacturer's instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Manufacturer's Disclaimer Statement

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Table of Contents

Chapter 1: Introduction.....	1
1-1 Features and Benefits.....	1
1-2 Applications.....	2
1-3 System Requirements.....	2
Chapter 2: Installing the CompactWLAN Card	3
2-1 Install the Setup Utility.....	3
2-2 Install Pretec CompactWLAN 802.11b Card.....	3
Chapter 3: Using Pretec CompactWLAN 802.11b Card.....	6
3-1 Using the Wireless LAN Configuration Utility.....	6
3-2 Setup Notes for Sharp Zaurus SL-5500 Users	11
Caveat.....	11
Appendix A: Network Configuration	12
Appendix B: Network Topology.....	12

Chapter 1: Introduction

The Pretec CompactWLAN 802.11b is a standard CompactFlash Type I card using wireless LAN technology. It provides you the easiest and fastest way to access your wireless and wired network. Its compact size and ease-of-use make the Pretec CompactWLAN 802.11b ideal for use in any network environment in which available space is limited. A data rate of 11 Mbps gives fast-speed access to a corporate network or the Internet in a wireless environment. Once active, the Pretec CompactWLAN 802.11b card is able to communicate with any 802.11 and 802.11b compliant devices.

1-1 Features and Benefits

1. Supports 1, 2, 5.5 and 11 Mbps data rate.
2. Working range up to 100 m (328 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 cost of cabling.
7. Supports major Windows CE-based PDAs such as Handheld PC, Pocket PC, Pocket PC 2002, and BE-300/500.
8. Native support in the Linux-based Sharp Zaurus SL-5500
9. Support high security WEP encryption (64-bit and 128-bit)
10. Supports Plug and Play.
11. Easy installation.

1-2 Applications

Pretec CompactWLAN offers a fast, reliable, cost-effective solution for wireless client access to the network in applications such as:

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 deploy.

3. Frequently changing environments

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

4. Temporary LANs for special projects or peak time

Trade shows, exhibitions, and construction sites where a temporary network will be practical. Retailers, airline, and shipping companies need additional workstations during peak period, such as auditors requiring workgroups at customer sites.

5. Database access for mobile workers

Doctors, nurses, retailers, accessing their 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. High security connection

The secure wireless network can be installed quickly and provide flexibility.

1-3 System Requirements

The Pretec CompactWLAN 802.11b card has been confirmed to support the following PDAs:

- Casio: E-115/125, E-200, EG-800, BE-300, BE-500
- Compaq: iPaq 3600/3700/3800/3900, Aero
- HP: Jornada 540 and 560-Series (PPC) and 720 (HPC)
- Sharp: Zaurus SL-5500 (Linux/Embedix)

For the latest compatibility data, please visit website at <http://www.pretec.com>.

Chapter 2: Installing the CompactWLAN Card

This chapter describes the installation of the Pretec CompactWLAN Card-802.11b driver for the Handheld/Pocket PC.

2-1 Install the Setup Utility

1. Establish a connection between host PC and PDA using *Microsoft Active Sync*.
2. Insert Pretec Wireless Installation CD. Run "Setup.exe"
3. Setup will start automatically.
4. An *InstallShield Wizard* window appears. Click **Next** to proceed.
5. Follow on-screen instructions to install the Setup Utility. Click **Finish** to complete the installation. Restart your PDA.

2-2 Install Pretec CompactWLAN 802.11b Card

1. Insert the CompactWLAN into your PDA. The PDA will auto-detect the CompactWLAN and bring up the configuration utility (Fig. 1).
2. Check the IP settings of your CompactWLAN. You may either set it to obtain an IP address from your DHCP server or assign it a fixed IP address. Click the **IP Status** button to check your current IP settings (Fig. 2).

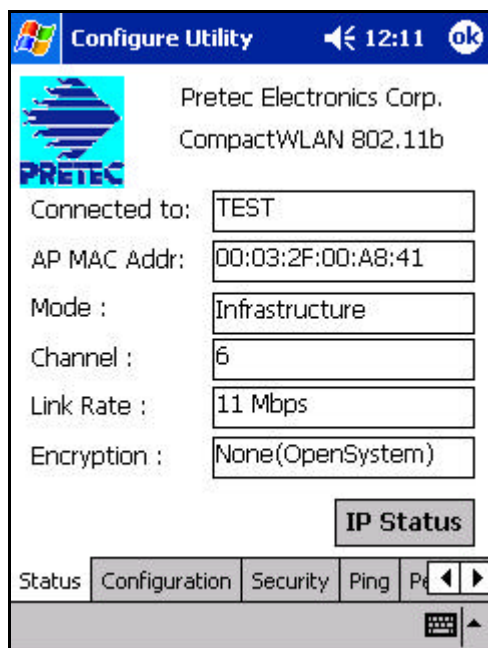


Fig. 1

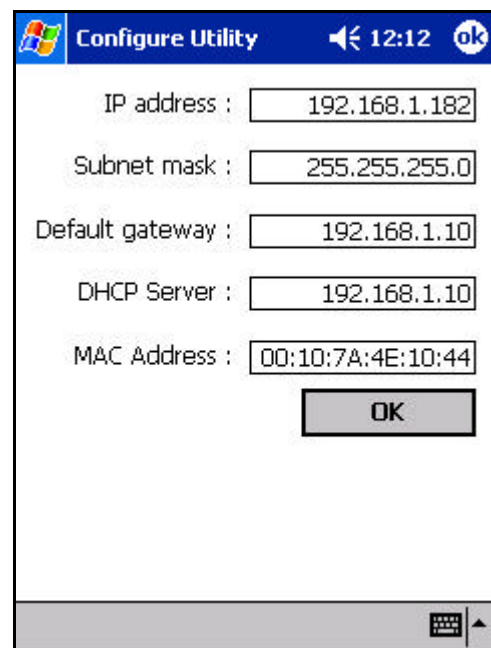


Fig. 2

3. Once the CompactWLAN Configure Utility is set up properly, the card will scan for a LAN Access Point, signified by a green, blinking LED. The LED will stay steady once the CompactWLAN has successfully linked with an LAN Access Point. To configure the CompactWLAN, proceed to the next chapter "*Using Pretec CompactWLAN 802.11b Card*".

Chapter 3: Using Pretec CompactWLAN 802.11b Card

This chapter gives you a detailed description about setting up the CompactWLAN using the Configuration Utility in a Pocket/Handheld PC.

3-1 Using the Wireless LAN Configuration Utility

The CompactWLAN is ready-to-use within any network that has a LAN Access Point. By default, it is set to operate within a typical **Infrastructure Wireless LAN**. The Configure Utility provides you with an easy interface to make changes and perform user-level diagnostics on your CompactWLAN.

1. Once the CompactWLAN is inserted into your PDA, the Configuration Utility will automatically appear (Fig. 3)

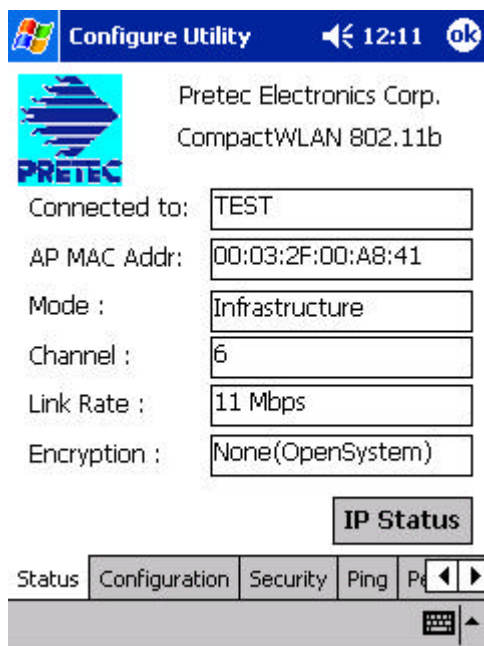


Fig. 3



Fig. 4

2. If the Configuration Utility does not appear, you may manually start it by going to the **Program** group and clicking the “**CompactWLAN**” icon (Fig. 4).
3. When the Configuration Utility window appears, it will provide the following selection items for you to configure and monitor the CompactWLAN

Status

The **Status** tab displays the detected settings of the Wireless LAN CF Card (Fig. 5).

Connected to - Displays the name of the Wireless Access Point.

AP MAC Addr - Displays the MAC Address of your Wireless Access Point.

Mode – Displays the selected network mode (**Infrastructure**, **Ad-Hoc**, or **802.11 Ad-Hoc**)

Channel - Displays the current channel that the CompactWLAN is using

Link Rate - Displays the data transmission speed between the CompactWLAN and an Access Point.

Encryption – Displays the Security mode being used

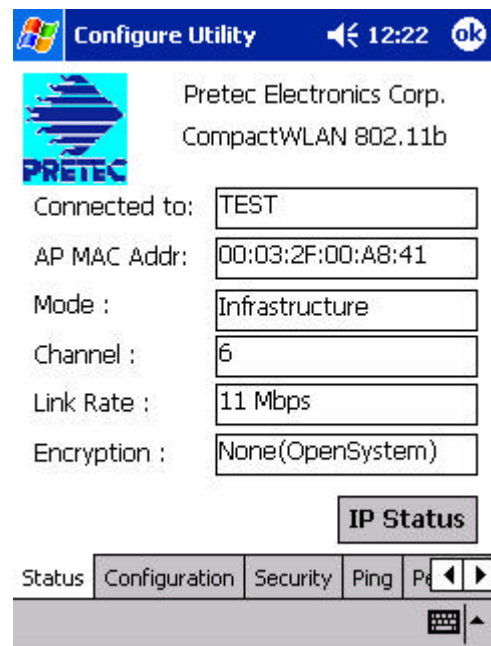


Fig. 5

Configuration

The **Configuration** tab contains several adjustable parameters for the operation of the CompactWLAN. Click the **Apply** button to allow the changes take effect (Fig. 6)

Network Mode

The CompactWLAN can operate in 3 network modes. If you need to access a company network or Internet via an Access Point, select “**Infrastructure**”. To set up a group of wireless stations for file and printer sharing, select “**Ad-Hoc**” or “**802.11 Ad-Hoc**” (without Access Point).

If **Ad-Hoc** is selected, you need

to set each wireless station to the same channel. For **802.11 Ad-Hoc**, the same ESSID are required to the wireless stations.

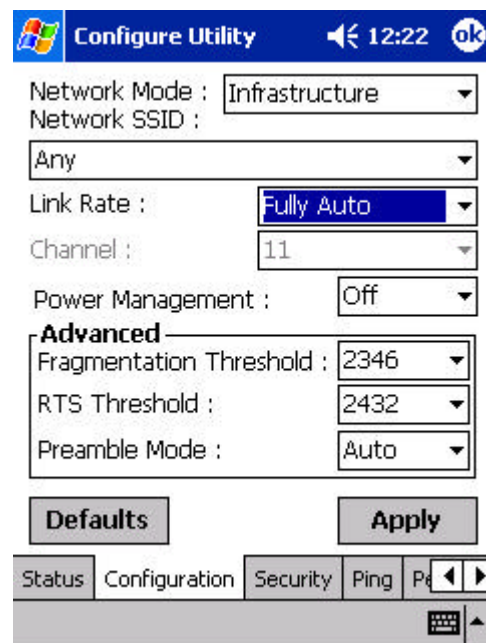


Fig. 6

Network SSID

The SSID is a unique ID given to the Access Point. Wireless clients associating to Access Points must have the same SSID. The default value **Auto Detect** will cause the CompactWLAN to associate with any Access Point that gives the fastest response. You may also specify an SSID (Access Point) with which you desire to connect. Specifying an SSID for your CompactWLAN is recommended because it will prevent you PDA from unintentionally connecting to a different wireless network. The SSID can be set up to *32 characters* and is case sensitive.

Link Rate

The CompactWLAN provides various data rate options for you to select. Data rate options include Auto, 1, 2, 1 or 2, 5.5, and 11 Mbps. In most networking scenarios, the default **Fully Auto** setting will prove to be the most efficient. This setting will allow your CompactWLAN to operate at the maximum possible data rate under any condition. When the signal strength drops below a certain level, the CompactWLAN will automatically switch to a lower data rate. When the signal strength improves, the CompactWLAN will automatically readjust the data rate until it has reached the optimal speed. Linking at a lower data rate trades off speed for connection reliability.

Packet Fragmentation

Packet sizes larger than the specified value will be split into fragments before transmission.

Power Management

When Power Management is enabled, the CompactWLAN will go into Power Management mode to minimize power consumption.

(NOTE: When Power Management is enabled, the Access Point must also support Power Management for the link to be maintained.)

RTS/CTS Medium Access

Turn on only if your Access Point supports RTS/CTS Medium Access.

Ping

This tool allows you to ping any IP address and specify data size, timeout length, and attempt count. It is a useful diagnostics utility to check connections (Fig. 7 below)

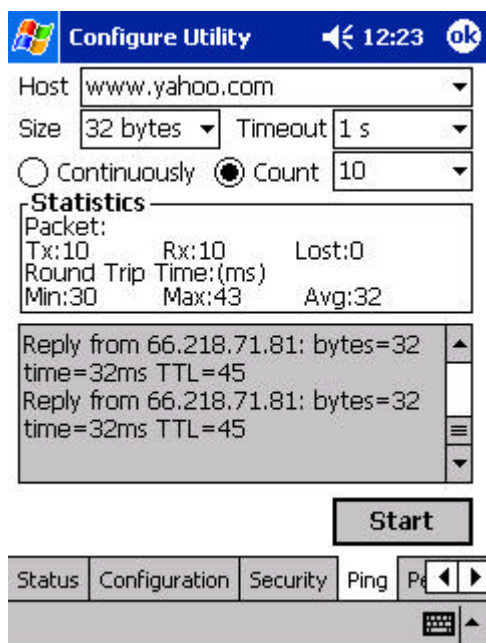


Fig. 7

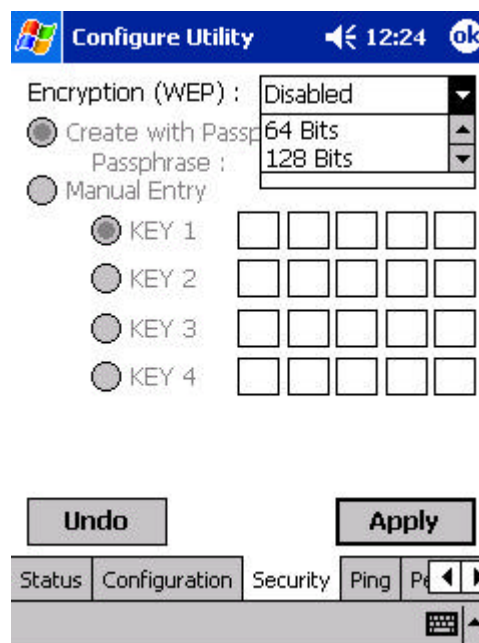


Fig. 8

Security

To prevent unauthorized wireless stations from accessing data transmitted over the network, the CompactWLAN offers highly secure data encryption, known as WEP (Wired Equivalent Privacy). If you desire to use WEP encryption to secure your data, select encryption level, 64 or 128-bit, from the selection list and enter your own encryption key data (Fig. 8 above).

The two levels of WEP encryption are described as follows:

64 Bits: Requires wireless stations to use data encryption with a 64-bit algorithm when communicating with the Access Point, which must also have WEP 64 enabled.

128 Bits: A higher level of encryption that, again, must match the Access Point setting.

For either encryption level, enter a Passphrase, from which a set of keys are automatically generated, or enter the key data manually. The key data can be anything you choose, but must match the keys set on the Access Point. Tap the **Apply** button to make the setting take effect.

AP Browser

The **AP Browser** tab displays all Access Points within range (Fig. 9)

About

The **About** tab displays version information (Fig. 10)

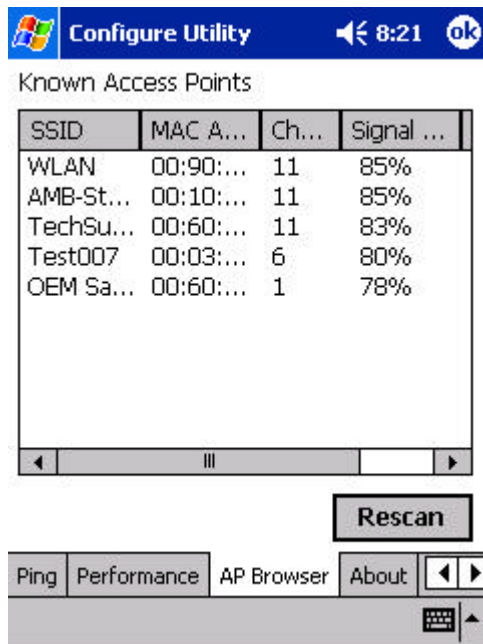


Fig. 9



Fig. 10

3-2 Setup Notes for Sharp Zaurus SL-5500 Users

The CompactWLAN has been tested to be natively compatible with the Linux/Embedix-based Sharp Zaurus SL-5500. No software installation is needed, simply follow the instructions given at the following links from the MyZaurus.com website (www.myzaurus.com).

Setting up the Wireless LAN: http://www.myzaurus.com/tips_wirelessLAN.asp

(followed by)

Setting up the Network: http://www.myzaurus.com/tips_Network.asp

Caveat

- In the event that your PDA powers off while the CompactWLAN is active: remove the card, perform a soft reset on the PDA, re-insert the card, and re-establish the link.
- If your connection to an Access Point is lost, you can reset and force a connection request by going to the Configure Utility program, the **Configuration** tab, checking the parameters, and then tapping the **Connect** button to force a re-scan.
- If your device roams to a new AP that is in a different subnet, you may need to remove and re-insert the CompactWLAN to release the previous IP address and force a new one to be assigned, in a DHCP Access Point environment.

Appendix A: Network Configuration

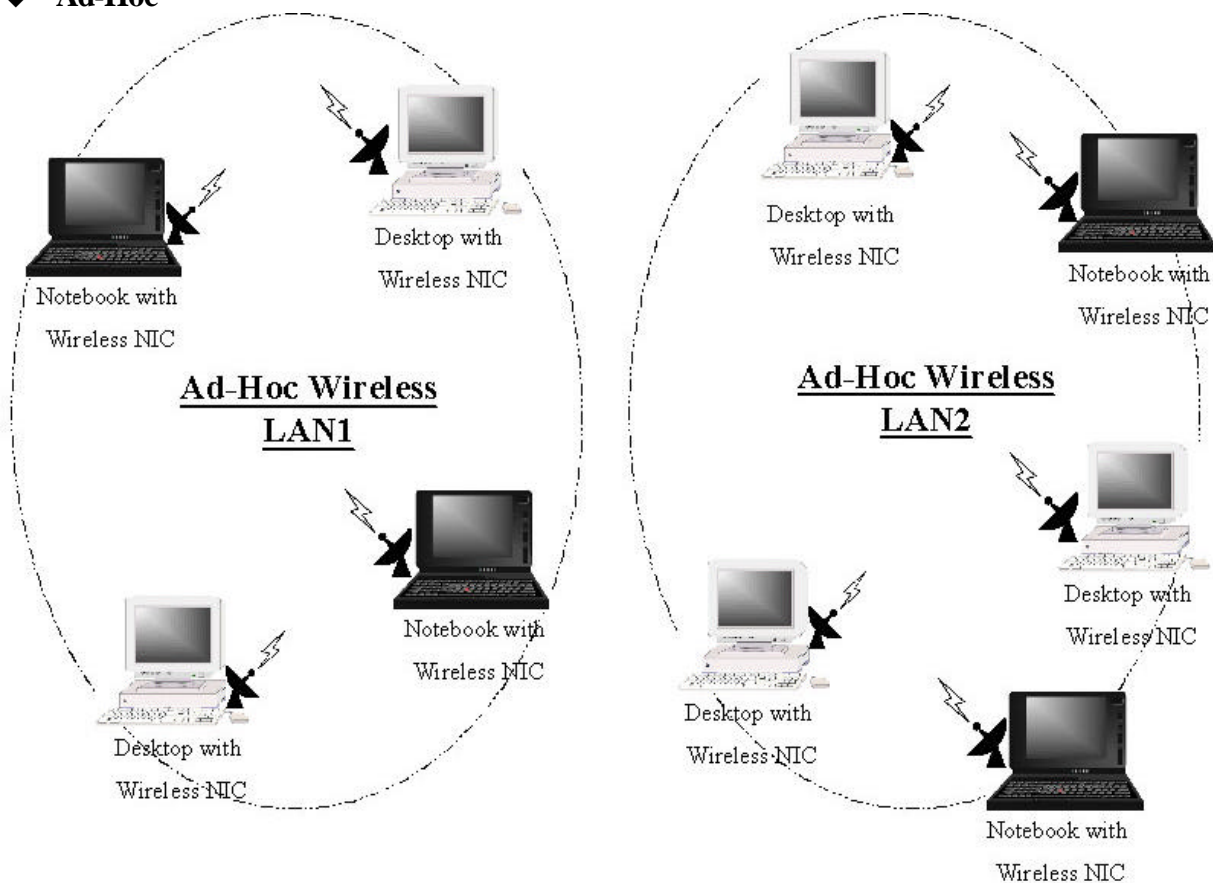
The Pretec CompactWLAN 802.11b card supports the same network configuration options of the legacy Ethernet LANs as defined by IEEE 802 standard committee.

The Pretec CompactWLAN 802.11b card can be configured as:

- ◆ Ad-Hoc for departmental or SOHO LANs
- ◆ Infrastructure for enterprise LANs
- ◆ LAN interconnection for point-to-point link as a campus backbone.

Appendix B: Network Topology

◆ Ad-Hoc

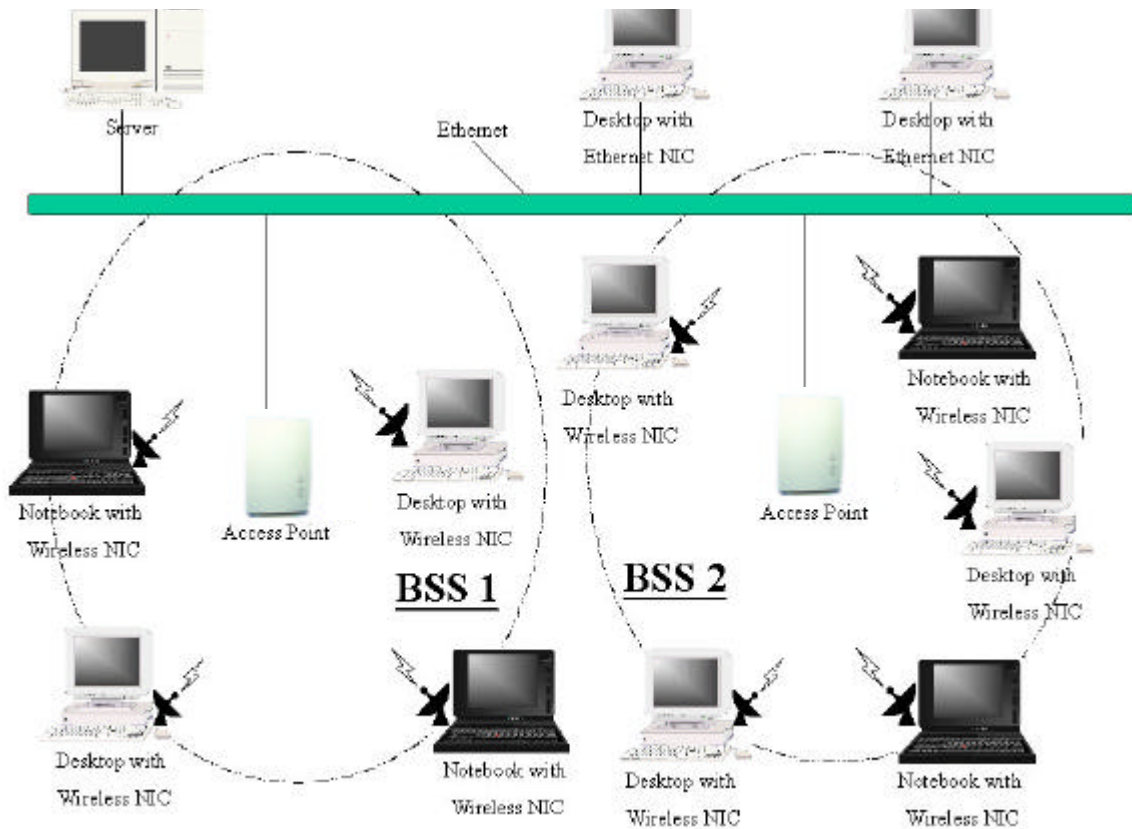


Example of Ad-Hoc Wireless LAN

An Ad-Hoc wireless LAN is a group of computers, each equipped with one wireless adapter, connected as an independent wireless LAN. Computers in a specific Ad-Hoc wireless LAN must be configured at the same radio channel.

Ad-Hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

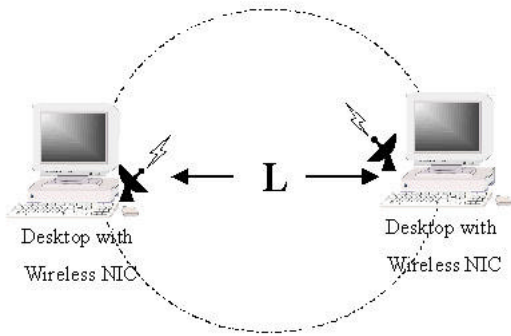
◆ Infrastructure



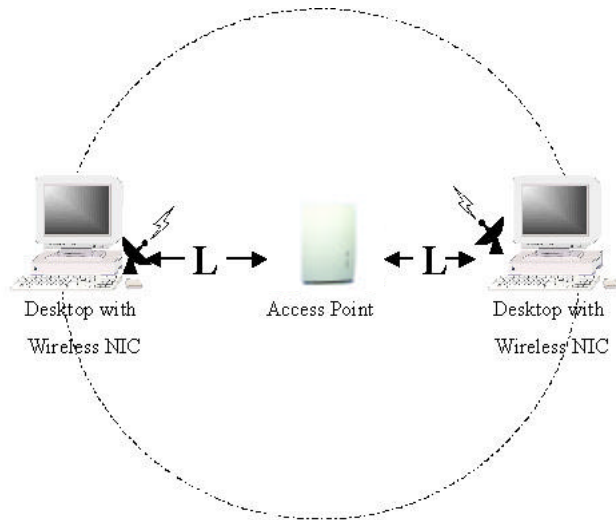
Example of Infrastructure Wireless LAN

The Pretec CompactWLAN provides access to a wired LAN for wireless workstations. An integrated wireless and wired LAN is called an Infrastructure configuration. A group of wireless LAN PC users and an Access Point construct a Basic Service Set (BSS). Each wireless-equipped PC in this BSS can talk to any computer in the wired LAN infrastructure via the Access Point.

Infrastructure configuration will extend the accessibility of a wireless station to the wired LAN. Multiple Access Points will allow roaming and it will increase the transmission range. The Access Point is also able to forward data within its BSS. The effective transmission range in an infrastructure LAN is **doubled**.



Ad-Hoc



Infrastructure

The Effective Transmission Range