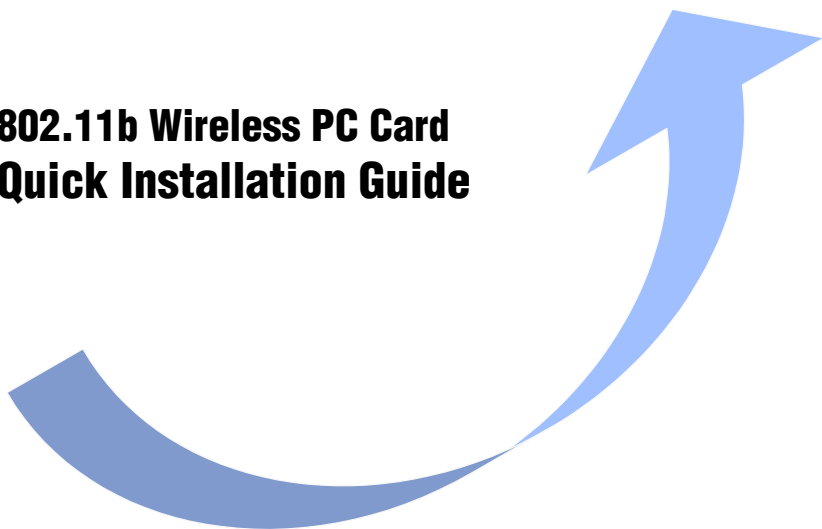


802.11b Wireless PC Card Quick Installation Guide



Quick Installation Guide

802.11b Wireless PC Card

11 Mbps Wireless PC Card

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WN3301G-P1
E062002-R01

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Introduction

The Wireless PC Card is an 11 Mbps wireless network adapter that seamlessly integrates with existing Ethernet networks to support applications such as mobile users or temporary conferences. This solution offers a high data rate and reliable wireless connectivity with considerable cost savings over wired LANs (which include long-term maintenance overhead for cabling). Just install enough wireless Access Stations to cover your network area, plug wireless cards into your devices, and start networking.

Using this card in conjunction with the Access Station, you can create an instant network that integrates seamlessly with 10 Mbps Ethernet LANs. Moreover, moving or expanding your network is as easy as moving or installing additional Access Stations – no wires!

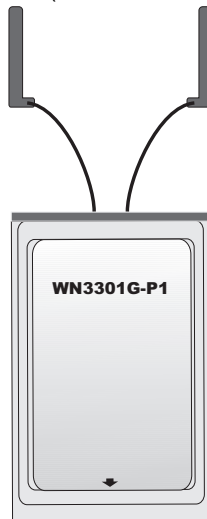
Package Checklist

The Wireless PC Card package includes:

- 1 Wireless PC Card (WN3301G-P1)
- 1 driver and utility CD
- This Quick Installation Guide

Hardware Description

The Wireless PC Card supports 1, 2, 5.5 and 11 Mbps half-duplex connections to Ethernet networks. This card is fully compliant with 2.4 GHz DSSS CSMA/CA wireless networking as defined in IEEE 802.11b. It can be installed in any device with a Type II PCMCIA slot. It supports Windows 95 (OSR2.1 or above) /98/NT/2000.



Features

- 1, 2, 5.5 and 11 Mbps data rate.
- Wireless connection without the hassles and cost of cabling
- Greater flexibility to locate or move networked PCs
- Integrates with or replaces wired LANs at dramatically lower cost than wired alternatives
- Seamless connectivity to wired Ethernet LANs augments existing networks quickly and easily
- Easy installation
- Working range up to 30 m (100 ft) at 11 Mbps, up to 100 m (300 ft) at 5.5 Mbps and lower (indoor communication)
- Direct Sequence Spread-Spectrum (DSSS) technology provides robust, interference-resistant and secure wireless connection
- Supports a wide range of systems (Win95 OSR2.1 or above/98/NT/2000)
- Plug-and-Play
- Provides a user-friendly interface for configuration
- Enhances your network security with WEP data encryption
- Built-in antenna

Applications

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

- ***Remote access to corporate network information***
E-mail, file transfer and terminal emulation
- ***Difficult-to-wire environments***
Historic or old buildings, asbestos installations, and open areas where wiring is difficult to employ
- ***Frequently changing environments***
Retailers, manufacturers and banks who frequently rearrange the workplace and change location
- ***Temporary LANs for special projects or peak times***
Trade shows, exhibitions and construction sites which need a temporary setup for a short time period. Retailers, airline and shipping companies which need additional workstations for peak periods. Auditors who require workgroups at customer sites

- **Access to database for mobile workers**

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

- **SOHO (Small Office and Home Office) users**

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

System Requirements

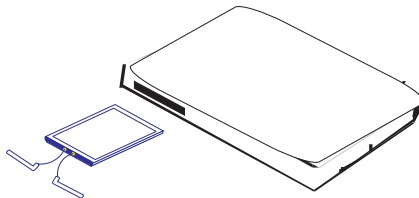
Before you install the Wireless PC Card, check your system for the following requirements:

- A computer with a PCMCIA Type II slot, and a PCMCIA card and socket services compliant with revision 2.10 of the PCMCIA specification
- Windows 95/98/NT/2000 (Prepare the Windows installation CD-ROM for use during installation.)
- A minimum of 1500 Kbytes of free disk space for installing the driver and utility program
- Other IEEE 802.11b-compliant devices installed in your service area

Installation

Warnings:

- Network cards are sensitive to static electricity. To protect the card, always touch the metal chassis of your device before handling the card.
1. Turn on your device and boot your operating system.
 2. Find an available Type II or Type III PCMCIA slot in your device.
 3. With the PC Card's 68-pin connector facing the PCMCIA slot and the "Model:WN3301G-P1" label facing up, slide the card completely into the PCMCIA slot as shown below.



Note: The PCMCIA slot allows you to "hot swap" PC Cards any time, even when the power of your system is on.

Wireless PC Card

4. For Windows 95 (OSR2.1 or above)/98/NT/2000, PCMCIA card and socket services compliant with revision 2.10 of the PCMCIA specification are required. Please check the documents of your PCMCIA driver before installing the software driver for the WN3301G-P1.
5. Install the appropriate network driver for your operating system. Drivers can be found on the driver CD. See "Driver Installation" on the next page for more information.
6. Install the configuration program for your wireless PC card. The SETUP.EXE file can be found on the utility CD. See "Configuration and Diagnostic Utility" on page 16 for more information.

Driver Installation

The driver and utility CD that comes with the package contains all the software drivers available for the Wireless PC Card.

Windows 95/98/2000 Installation

1. Insert the PC Card into a standard Type II or III PCMCIA slot in your device.
2. Windows 95/98/2000 will automatically detect the new hardware and prompt you to install the driver needed. Click "Next" to find the driver.



3. Insert the Driver and Utility CD, enter the drive letter of your CD drive, specify the the location of the driver, and click "Next."

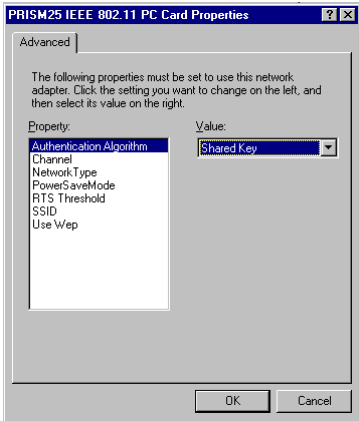


Wireless PC Card

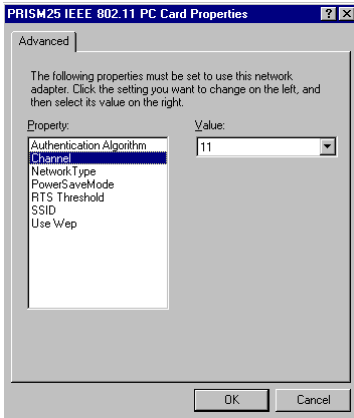
4. Click “Next” to copy files from the CD-ROM.



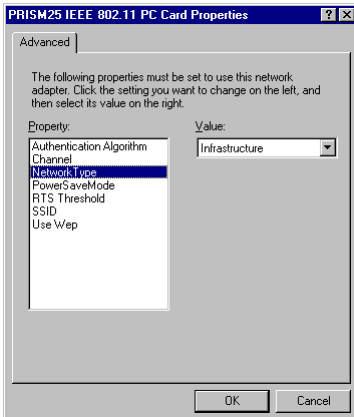
5. To communicate with the 11 Mbps Wireless devices set the “Authentication Algorithm” to “Shared Key.” Products from some other vendors use the setting “Open System.” Use the same setting as the other devices in your network.



6. To set up an Ad-hoc wireless LAN (refer to page 13), set “Channel” to the same radio channel as that used by the other wireless clients in your group. However, if you are connecting to a network via an Access Station (Infrastructure mode), then the card will automatically set to the same channel as that used by the Access Station. (Access Station default: 11.)

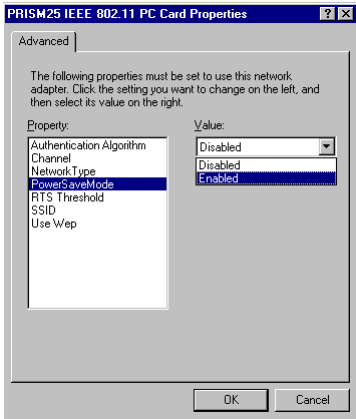


7. Set “Network Type” to “802.11 AdHoc” or “Infrastructure” depending on the type of network you want to connect to (see page 13).



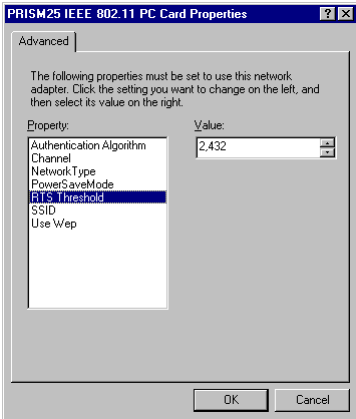
Wireless PC Card

8. You may enable the “PowerSaveMode” for reducing power loading. (Default: Disabled)

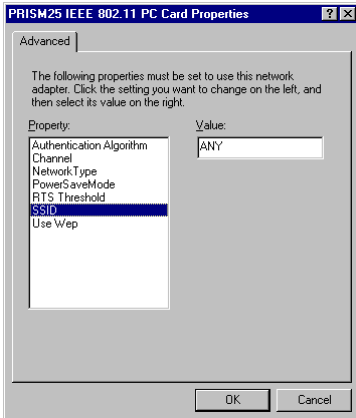


9. The IEEE 802.11b wireless standard defines a Collision Avoidance scheme which requires a wireless node to first send a Request To Send (RTS) signal and wait for a Clear to Send (CTS) response before transmitting.

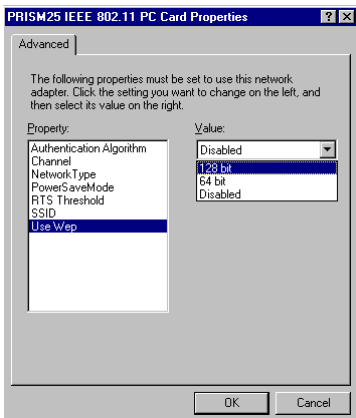
For small wireless networks, it is not necessary to add this extra delay. You should disable the RTS Threshold (by setting it to 2432.) However, for large wireless networks, or for networks that carry a lot of traffic, this protocol can avoid retransmissions and improve effective throughput. Set the RTS Threshold to the same as that used by the other devices in your network. (The Access Station default is "2432"; that is disabled.)



10. A service set consists of all the stations in a wireless network. (See “Network Configuration and Planning” on page 13.) All of these stations should have their SSID set to the same value to identify stations within this network. (Default: ANY)



11. For more secure data transmission, set the “Use Wep” to “128-bit” or “64-bit” to ensure wireless network security. The advanced Wired Equivalent Privacy (WEP) is implemented in this card to prevent unauthorized access. The 128-bit setting gives a higher level of security but the setting must be the same for all clients in your wireless network. (Default: Disabled)



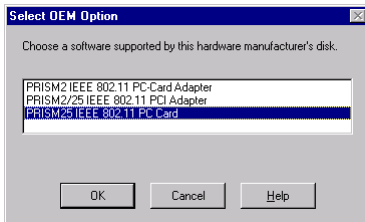
12. If you want to add more protocols after installation, go to the control panel and double click on “Network.”
13. Select the “Configuration” tab and click “Add” to install the network protocols you want to use, such as IPX/SPX, NetBEUI or TCP/IP.

Wireless PC Card

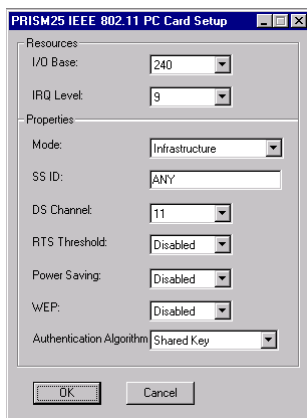
14. If you install TCP/IP, be sure to set the appropriate Gateway, DNS Server, and Domain for your network.
15. Click "File and Print Sharing..." to share files or printers.
16. If you install an IPX/SPX-compatible protocol, then you also need to install the Client for NetWare Networks.
17. Click on the "Identification" tab in the Network dialog box, and specify your computer name and network workgroup.
18. Restart your computer.

Driver Installation for Windows NT 4.0

1. Insert the PC Card into a standard Type II or III PCMCIA slot in your device.
2. From the desktop, select "Control Panel," double-click "Network," click "Adapters," and then click the "Add" button in the Network dialog box.
3. Windows NT will present a list of all its supported adapters. Click "Have Disk" to continue.
4. Windows NT will ask for the drive/path containing the WN3301G-P1 Windows NT drivers. Insert the WN3301G-P1 Driver Disk into the CD drive, enter the drive letter of your CD drive, type the location of the driver, and then click "OK."
5. Windows NT will attempt to locate the SYS and INF files 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 acknowledge the selection by clicking "OK."



6. The Adapter Setup dialog box will appear. Configure the card as described below, and click “OK.”



I/O Base - Default: 240 (Check for available resources under Windows NT Diagnostics.)

IRQ Level - Default: 9 (Check for available resources under Windows NT Diagnostics.)

Mode - Set to “802.11 AdHoc” or “Infrastructure,” depending on the type of network you want to connect to (see page 13).

SS ID - A service set consists of all the stations in a wireless network. (See “Network Configuration and Planning” on page 13.) All of these stations should have their SSID set to the same value to identify stations within this network. (Default: ANY)

DS Channel - If you are setting up an Ad-hoc wireless LAN (see page 13), set the channel number to the same radio channel as that used by the other wireless clients in your group. However, if you are connecting to a network via an Access Station, then the channel will be automatically set to that used by the Access Station. (Access Station default: 11)

RTS Threshold - Set the RTS threshold to the same as that used by the other devices in your network. (For details see page 8) (Default: Disabled)

Power Saving - You may enable the “PowerSaveMode” for reducing power loading. (Default: 2432; that is Disabled)

WEP - For more secure data transmission, set the "Use Wep" to "128 bit" or "64 bit" to ensure wireless network security. The advanced Wired Equivalent Privacy (WEP) is implemented in this card to prevent unauthorized access. The 128-bit setting gives a higher level of security, but the setting must be the same as the other clients in your wireless network. (Default: Disabled)

Authentication Algorithm - Set this to the same as the other devices in your network. The devices use "Shared Key." Devices from some other vendors use "Open System."

7. After driver installation, the system will prompt you to restart the computer. Click "NO" if you want to continue installation for your network protocols and options.
8. Select the Services tab and Click "Add..." to install the network protocols you want to use, such as IPX/SPX, NetBEUI or TCP/IP. If you install TCP/IP, be sure to set the appropriate Gateway, DNS Server, and Domain for your network.
9. If you install an IPX/SPX-compatible protocol, then you also need to install the Client for NetWare Networks.
10. Click on the "Identification" tab on the Network dialog box, and specify your computer name and network workgroup.
11. Restart your computer.

Network Configuration and Planning

The Wireless Solution supports a stand-alone wireless network configuration, as well as an integrated configuration with 10 Mbps Ethernet LANs.

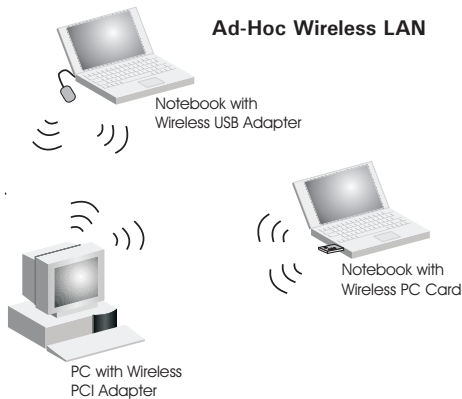
The WN3301G-P1 can be configured as:

- Ad-hoc for departmental or SOHO LANs
- Infrastructure for enterprise LANs

Network Topologies

Ad-hoc Wireless LAN

An Ad-hoc wireless LAN consists of a group of computers, each equipped with one wireless adapter, connected via radio signals as an independent wireless LAN. Computers in a specific Ad-hoc wireless LAN must therefore be configured to the same radio channel. An Ad-hoc wireless LAN can be used for a branch office or SOHO operation.

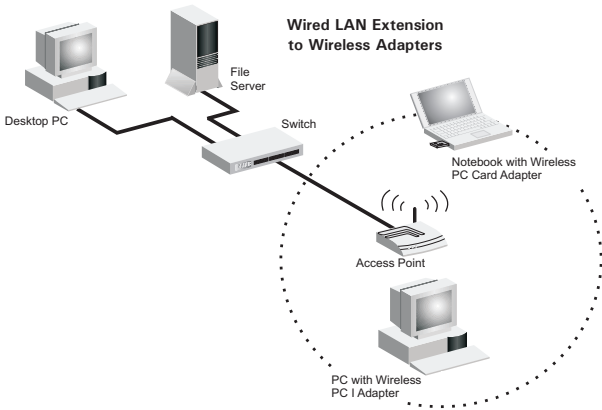


Infrastructure Wireless LAN

The WN3301G-P1 can also provide wireless workstations with access to a wired LAN. An integrated wired and wireless LAN is called an Infrastructure configuration. A Basic Service Set (BSS) consists of a group of wireless PC users, and an Access Station that is directly connected to the wired LAN. Each wireless PC in this BSS can talk to any computer in its wireless group via a radio link, or access other computers or network resources in the wired LAN infrastructure via the Access Station.

The infrastructure configuration not only extends the accessibility of wireless PCs to the wired LAN, but also extends the effective wireless transmission range for wireless PCs by passing their signal through one or more Access Stations.

A wireless infrastructure can be used for access to a central database, or for connection between mobile workers, as shown in the following figure.



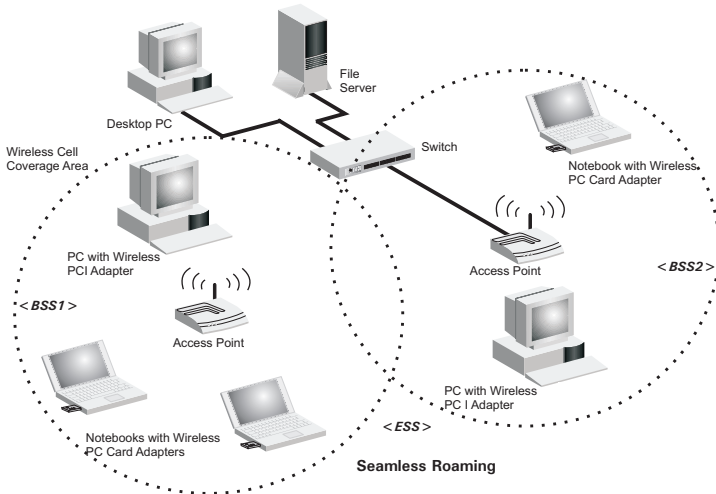
Setting the Communication Domain

Stationary Wireless PCs

The Basic Service Set (BSS) is the communication domain for each Access Station. For wireless PCs that do not need to support roaming, set the domain identifier (SSID) for the wireless card to the SSID of the Access Station you want to connect to. Check with your administrator for the SSID of the Access Station you should connect to.

Roaming Wireless PCs

A wireless infrastructure can also support roaming for mobile workers. More than one Access Station can be configured to create an Extended Service Set (ESS). By placing the Access Stations so that a continuous coverage area is created, wireless users within this ESS can roam freely. All wireless adapters and Access Stations within a specific ESS must be configured with the same SS ID and to the same radio channel.



Before setting up an ESS for roaming, you need to choose a clear radio channel and ideal location for the Access Stations to maximize performance. (Refer to “Using the Wireless LAN Utility” on page 16 for detailed information on installation and usage.)

Configuration and Diagnostic Utility

The Wireless PC Card provides free optional management software for quick network configuration and easy diagnostics. The Drive and Utility CD, that comes with the package, contains a user-friendly interface for configuring the card.

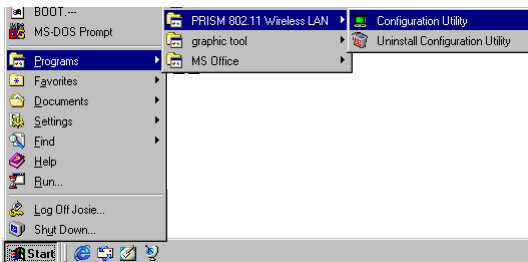
Utility Installation

To install this utility:

1. Insert the Utility setup CD into your CD drive.
2. Select “run...” from the Windows “Start” menu bar.
3. Click on “Browse...” to locate the “setup” file of this program.
4. Then click on “OK” to run the setup program.
5. Follow the on-screen instructions to finish installation.

Using the Wireless LAN Utility

Once the installation is completed, the configuration utility can be accessed by selecting the “Configuration Utility” icon from the “PRISM 802.11b Wireless LAN” folder.



This configuration software includes the following functions:

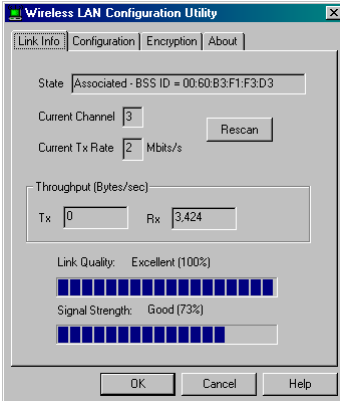
Link Information - Allows you to monitor network status.

Configuration - Allows you to configure parameters for the wireless adapter.

Encryption - Provides RC4 security control.

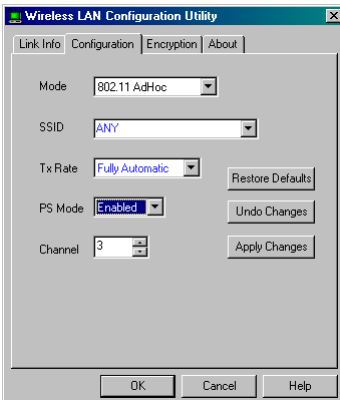
Link Information Screen

When you start the wireless LAN utility, the hardware information window for the WN3301G-P1 is shown on the first tab of the utility windows as shown below. Click on the “Link Information” tab to monitor the network status of the wireless adapter, including the BSS ID, current channel, transmission rate used, data throughput, link quality, and signal strength.

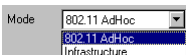


Configuration Screen

The Configuration screen allows you to check and modify the configuration of the adapter. The user-configurable parameters are shown in the following figure:



Mode - Set the station operation mode to “802.11 AdHoc” for network configurations that do not have any Access Stations, or to “Infrastructure” for configurations with Access Stations. (Default: “Infrastructure”)

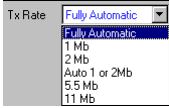


Wireless PC Card

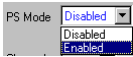
SSID - Input an SSID number if the roaming feature is enabled. (Default: "ANY")

A small rectangular window with a label 'SSID' on the left and a dropdown menu on the right. The dropdown menu is open, showing a list of options with 'ANY' selected at the top.

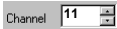
Tx Rate - Indicates the communication rates. Select the appropriate transmission speed to match your wireless LAN settings. (Default: Fully Automatic)

A small rectangular window with a label 'Tx Rate' on the left and a dropdown menu on the right. The dropdown menu is open, showing a list of options: 'Fully Automatic', '1 Mb', '2 Mb', 'Auto 1 or 2Mb', '5.5 Mb', and '11 Mb'. 'Fully Automatic' is selected at the top.

PS Mode - You can enable the Power Saving Mode to reduce power loading. (Default: Disabled)

A small rectangular window with a label 'PS Mode' on the left and a dropdown menu on the right. The dropdown menu is open, showing a list of options: 'Disabled' and 'Enabled'. 'Disabled' is selected at the top.

Channel - If you are setting up an Ad-hoc wireless LAN (see page 13), set the channel number to the same radio channel as that used by the other wireless clients in your group. However, if you are connecting to a network via an Access Station, then the channel is automatically set to that used by the Access Station which the PC Card connects to. The Access Station default is 11.

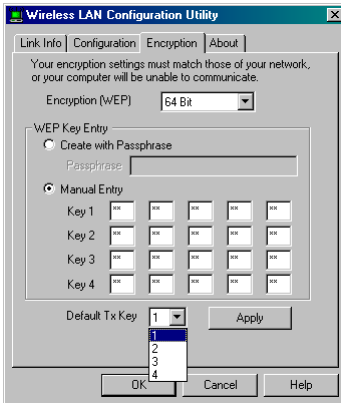
A small rectangular window with a label 'Channel' on the left and a text input field on the right. The input field contains the number '11'.

Encryption Screen

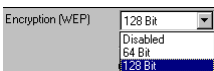
The WEP (Wired Equivalent Privacy) implemented in the Wireless 3301G-P1 PC Card is based on an RC4 encryption algorithm. The security keys provided to ensure data confidentiality are four 10-bit keys for the 64-bit Wep setting and one 26-bit key for the 128-bit Wep setting. This WEP security protects your wireless LAN against eavesdropping and unauthorized access by hackers or unexpected intruders. If the WEP is in use, the WEP key is required for connecting to an Access Station or listening to messages that pass through the air.

To use the WEP function, take the following steps:

1. Click on the “Encryption” tab to set up the WEP security keys.
2. Select “128 bit” or “64 bit” for the “WEP” field.
3. Enter your passphrase to create the security keys.
4. Then click on the “Apply” button to save the WEP keys.
5. For 64-bit encryption select one encrypted key (from Key 1 to Key 4) as your default key.



WEP - For more secure data transmission, select the “128 Bit” or “64 Bit” setting to use WEP security. The 128-bit setting gives a higher level of security, but the setting must be the same as that of other devices in your network. The advanced Wired Equivalent Privacy (WEP) is implemented in this card to prevent unauthorized access. However, for normal use we recommend disabling WEP to improve performance. (Default: Disabled)



Troubleshooting

Adapter Installation Problems

If your computer cannot find the Wireless PC Card or the network driver does not install correctly, check the following:

- Make sure the adapter is securely seated in the PCMCIA slot. When you insert the wireless adapter into the device's slot, a beep should be heard if the adapter is properly inserted. Check for any hardware problems, such as physical damage to the card's connector.
- Try the card in another PCMCIA slot. If this also fails, test your computer with another WN3301G-P1 wireless card that is known to operate correctly.
- When operating under Windows NT, make sure a PCMCIA card and socket services driver is installed in your computer. Also check for resource conflicts using the Windows NT Diagnostics utility.
- Make sure your computer is using the latest BIOS.
- If there are other network adapters in the computer, they may be causing conflict. Remove all other adapters from the computer and test the wireless adapter separately.
- Check for a defective computer or PCMCIA connection by trying the adapter in another computer that is known to operate correctly.
- If it still does not work, take out the wireless adapter. Delete CW10.sys from c:\windows\system. Then go to "Control Panel" and delete the adapter from your network configuration menu. Restart your PC and reinstall the card as described on page 5.

Network Connection Problems

If the Link LED on the PC Card does not light, or if you cannot access any network resources from the computer, check the following:

- Make sure the correct software driver is installed for your operating system. If necessary, try reinstalling the driver.
- Make sure the computer and other network devices are receiving power.
- The Access Station you want to attach to may be defective. Try using another Access Station.
- If you cannot access a Windows or NetWare service on the network, check that you have enabled and configured the service correctly. If you cannot connect to a particular server, be sure that you have access rights and a valid ID and password.
- If you cannot access the Internet, be sure you have configured your system for TCP/IP.

If your wireless station cannot communicate with a computer in the Ethernet LAN when configured for Infrastructure mode, check the following:

- Make sure the Access Station which the station is associated with is powered on.
- If you still can't connect, change the Access Station and all the stations within the BSS to another radio channel.
- Make sure the SSID is the same as that used by the access point for a station with roaming disabled, or the same as that used by the Access Stations in the extended service set (ESS).

Compliances

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from the one which the receiver is connected to.
- Consult the dealer or an experienced radio/TV technician for help.

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION STATEMENT:

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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

1. The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2. The transmitter module may not be co-located with any other transmitter or antenna.

As long as the 2 conditions above are met, further transmitter testing will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

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 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 Labelling

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 (for example Access Stations, routers, wireless ASDL modems, and similar equipment). The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: HEDACCWN3301G".

Manual Information That Must be Included

The users 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 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

CSA Statement (Canada)

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radio-électriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par l'Industrie.

VCCI Class B Compliance (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（V C C I）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。

取り扱い説明書に従って正しい取り扱いをして下さい。

CE Mark Declaration of Conformance for EMI and Safety (EEC)

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

- RFI
 - Limit class B according to EN 55022:1998
- Emission:
 - Limit class B for harmonic current emission according to EN 61000-3-2:1995
 - Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3:1995
- Immunity:
 - Product family standard according to EN 55024:1998
 - Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge: ± 4 kV, Air Discharge: ± 8 kV)
 - Radio-frequency electromagnetic field according to EN 61000-4-3:1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
 - Electrical fast transient/burst according to EN 61000-4-4:1995 (AC/DC power supply: ± 1 kV, Data/Signal lines: ± 0.5 kV)
 - Surge immunity test according to EN 61000-4-5:1995 (AC/DC Line to Line: ± 1 kV, AC/DC Line to Earth: ± 2 kV)
 - Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996 (0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m)
 - Power frequency magnetic field immunity test according to EN 61000-4-8:1993 (1 A/m at frequency 50 Hz)
 - Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994 (>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)
- LVD:
 - EN 60950 (A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

Product Specifications

General Specifications

Functional Criteria

Data Rate	1, 2, 5.5, 11 Mbps
Transmission Mode	Half duplex
Network Connection	IEEE 802.11b - Wireless LAN,
Operating Range	Up to 30 m (100 ft) at 11 Mbps, Up to 100 m (300 ft) at 5.5 Mbps or lower (indoor)

Radio Signal

Signal Type	Direct Sequence Spread-Spectrum (DSSS)
Operating Frequency	USA, Canada and Europe (ETSI): 2.400-2.4835 GHz, Japan: 2.400-2.497 GHz
Sensitivity	-76 dBm (typical)
Modulation	CCK, BPSK, QPSK
Output Power	+15 dBm

Physical Characteristics

Power Consumption	3.3 V, 380 mA transmit, 290 mA receive (normal)
Dimensions	Type II PC Card + antenna 12.8 x 5.3 cm (5.04 x 2.09 in.)
Antenna	Antenna diversity
LED Indicator	Power, Link, Activity
Host Interface	PCMCIA, Type II

Standards Conformance

Wireless Standard	IEEE 802.11b
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Environmental

Temperature	Operating: 0 to 50 °C (32 to 122 °F) Storage: 0 to 70 °C (32 to 158 °F)
Humidity	5 to 80% (noncondensing)
Vibration/Shock/Drop	IEC 68-2-34, IEC 68-2-27, IEC68-2-32

Certification

CE Mark	EN50081-1, EN55022 Class B EN50082-1, IEC 61000-4-2/3/4/6/11
Emissions	FCC Part 15(B), ETS 300-328, VCCI

Software Drivers

NDIS Drivers

Windows 95 OSR2.1 or above version

Windows 98

Windows 2000

Windows NT 4.0

WN3301G-P1
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