

**QTK2000-F017A/ Askey Computer Corp.**  
**FCC ID: H8NWLC010D53**  
**Confirmation Number: EA97641**

# **ASKEY PC Card**

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## **User's Manual**

**ASKEY COMPUTER CORP.**  
**RM 335, BLDG, 53, 195-69 SEC, 4, CHUNG HSING RD.**  
**CHUTUNG, HSINCHU, TAIWAN 310, R.O.C.**

## Federal Communication Commission Interference Statement

### FCC Certification Information:

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 of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into 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.

FCC Caution: To assure continued compliance, use only shielded interface cables when connecting to computer to 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.

### FCC DoC Information:

DoC Responsible Party: Askey Computer Corp  
47849 Fremont Blvd.  
Fremont, CA. 94538, USA  
Tel: (510) 440-8694  
Fax: (510) 440-8725  
Attn: Pi Yang Chiang

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.

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# Chapter 1 Concepts

## 1.1 Basic Concept of the product

Congratulations on your purchase of the Askey PC Card! The Askey PC Card is a wireless network interface card (NIC) for any computer equipped with a Personal Computer Memory Card International Association (PCMCIA) Type II or Type III slot. ASKEY PC Card conforms to the PCMCIA release 2.x standard and is designed to meet the IEEE 802.11 wireless LAN (WLAN) standard ratified in June 1997. As a result of the completion of the standard, the interoperability of the wireless LAN products among multiple manufacturers will be guaranteed.

Wireless LANs are a complementary extension to existing wired LANs, offering complete mobility while maintaining continuous network connectivity to both corporate and home Intranets. They add a new level of convenience for LAN users. This is accomplished through the use of a device known as the Access Point (AP). By utilizing the Access Point in the office, you can easily establish mobile network connections to the enterprise Intranet or Internet. Moreover, you can bring your ASKEY PC Card home to make your home-networking dream come true! A home-dedicated Access Point, with built-in internet gateway capability, allows your family to share a Modem and one ISP account simultaneously with no excessive, tedious ties! Connected anywhere, at any time, your family will feel closer by the invisible magic of ASKEY PC Card!

# Chapter 2 Settings

## 2.1 Necessary Devices and Conditions for Using

### 2.1.1 Conditions for Electromagnetic Wave

#### FCC Registration

ASKEY PC Card has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. However there is no guarantee that interference will not occur in a particular situation. Operation of ASKEY PC Card is subject to the following two conditions:

1. ASKEY PC Card may not cause harmful interference.

2. ASKEY PC Card must accept any interference received including interference that may cause undesired operations.

ASKEY PC Card generates and uses radio frequency (RF) energy and, if not installed and used in strict accordance with the manufacturer's instructions, interference to radio and television reception may result. Interference can be determined by turning ASKEY PC Card off and on while monitoring radio or television reception.

### **2.1.2 PC Requirement**

- Pentium or higher microprocessor
- 16 MB RAM
- One PCMCIA Type II or Type III slot
- One CD-ROM drive
- One hard disk drive and at least 5MB available disk space

### **2.1.3 Operating System Requirement**

- Microsoft Windows 95 or 98

### **2.1.4 Notice of Use**

1. limitation of number of stations
  - In Ad Hoc : no maximum limit
  - In Infrastructure : 16 stations maximum
2. limitation of distance
  - minimum distance: 10 cm
  - maximum distance: 100 m outdoor, 30-50 m indoor

3. setting position

It is better to keep the ASKEY PC Card away from the microwave oven and the large metal object.

## **2.2 Hardware Installation**

### **Installation of the ASKEY PC Card**

The exact installation procedure for the ASKEY PC Card varies depending on the model of your computer. Refer to the manual that accompanied your computer for additional instructions. The ASKEY PC Card can be inserted into a computer that is either powered ON or OFF, following these steps:

1. Hold the ASKEY PC Card such that the 68-pin connector is next to the PCMCIA Type II or Type III slot of your computer with the printed label facing up.
2. Insert the ASKEY PC Card into the slot in the computer and slide it in until it is firmly seated.

*NOTE: Do not force the ASKEY PC Card into the slot, or severe damage to the computer may*

occur. It may be easier to attach the antenna cable to the ASKEY PC Card prior to inserting the ASKEY PC Card into the computer.

## 2.3 Software Installation

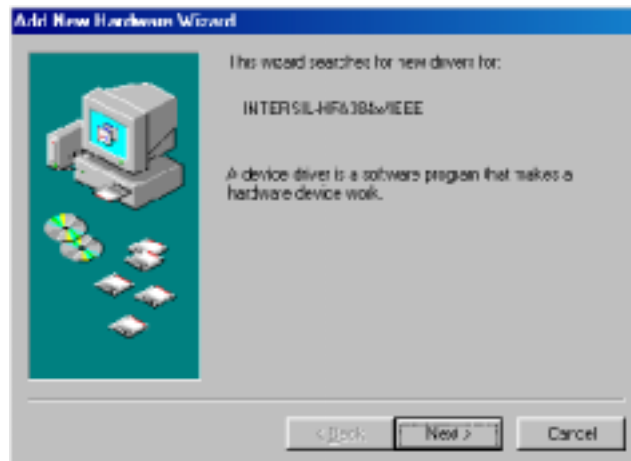
### 2.3.1 Installation of Device Driver

1. Insert the ASKEY PC Card, Windows system will find the new hardware.

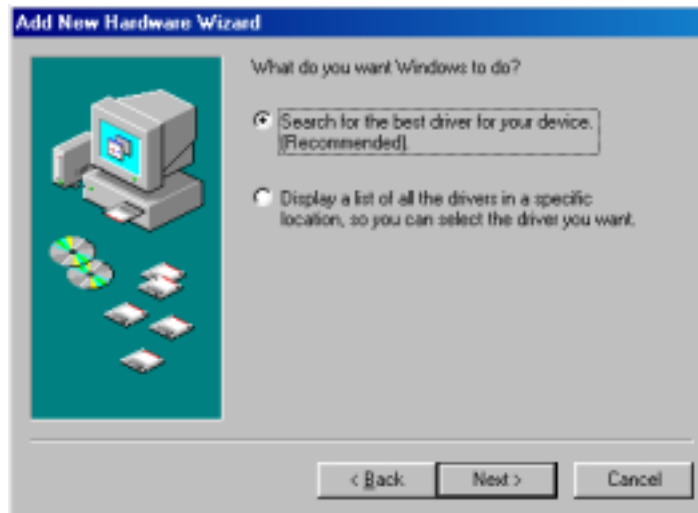


**NOTE:** If the Windows system does not show this message, please check the PCMCIA socket setting, You could try another PC card in order to could make sure operation normally.

2. Windows system searches for the device driver.



3. Select the first one choice “Search for a better driver than the one your device is using now”. Press the “Next” button.



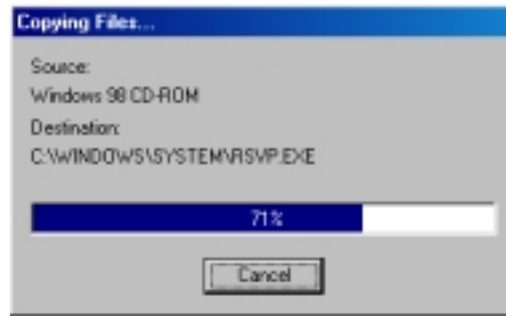
4. Choose “CD-ROM drive”, where the driver is located.



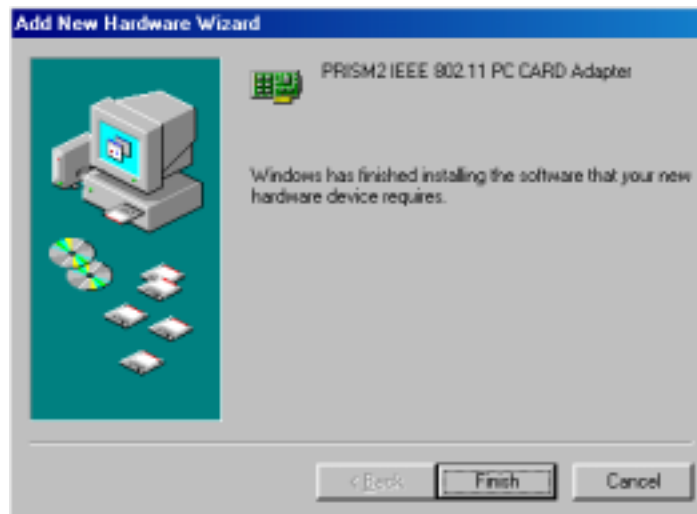
5. Windows system finds the device driver. Press the “Next” button.



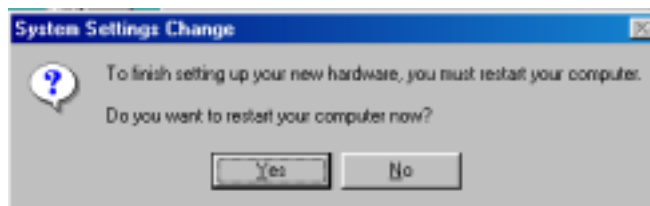
6. Windows system copies necessary files to the system folder.



7. Device driver installation is complete.



8. Choose "No". Restart your computer later.



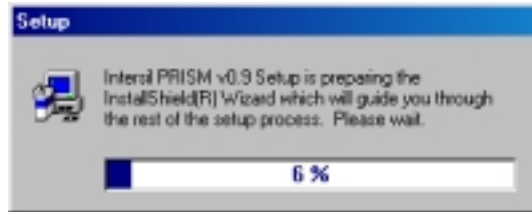
## 2.3.2 Installation of configuration Utility

1. Choose setup Language

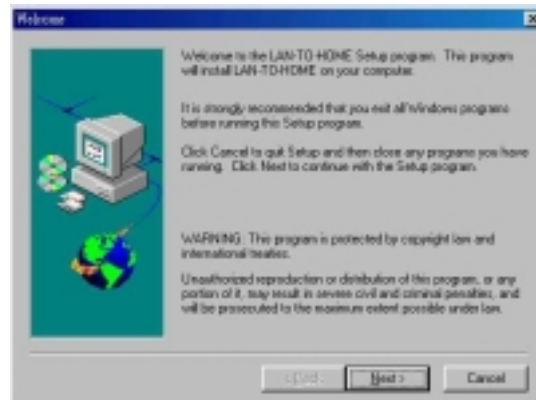




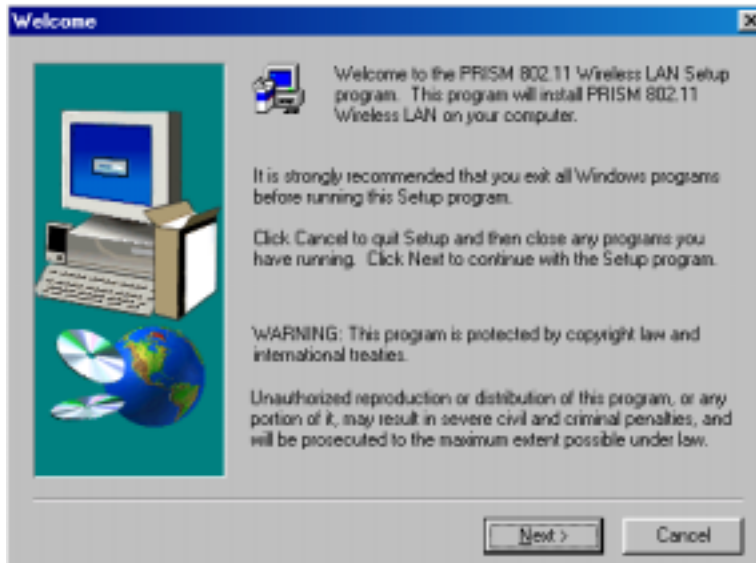
2. Execute "Setup.exe" in the appending CD. Windows system is preparing the Install Shield Wizard.



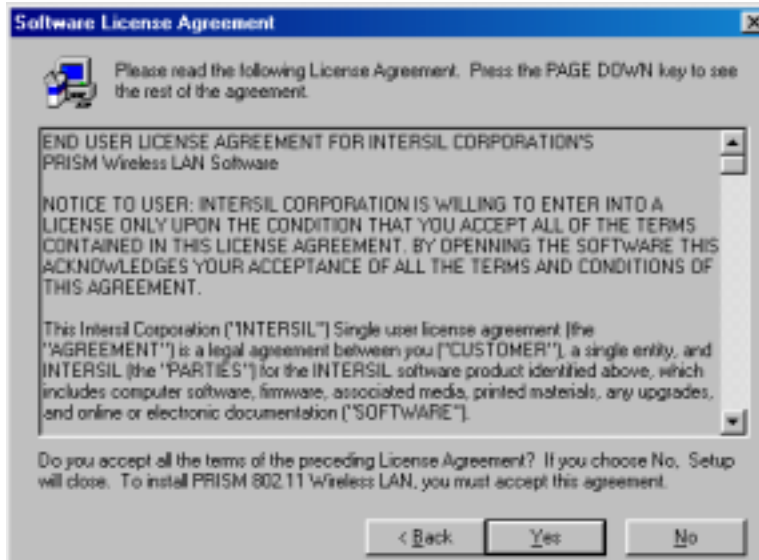
3. Welcome window is opened.



4. Choose installation folder



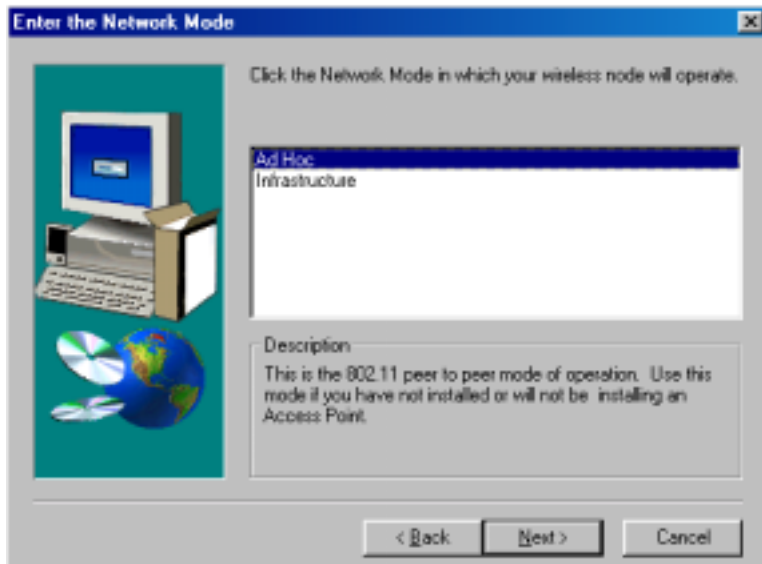
5. Choose “Yes” icon to accept the software agreement



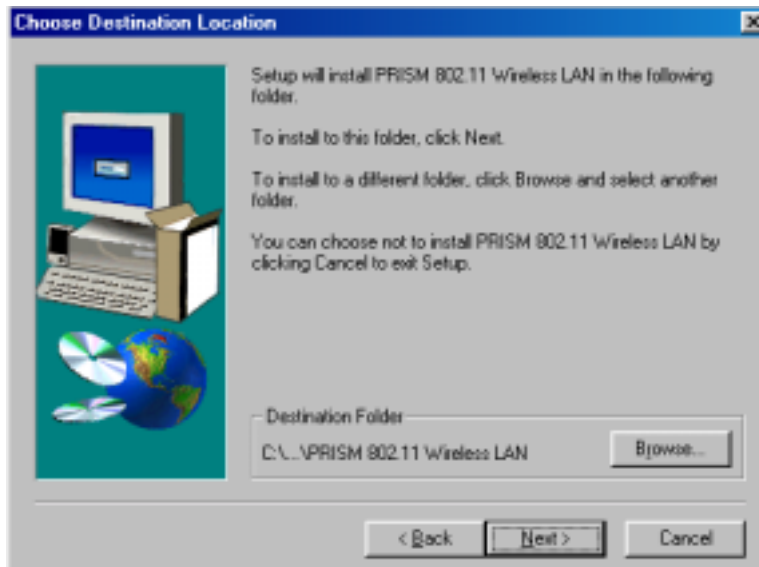
6. Enter the system ID you want



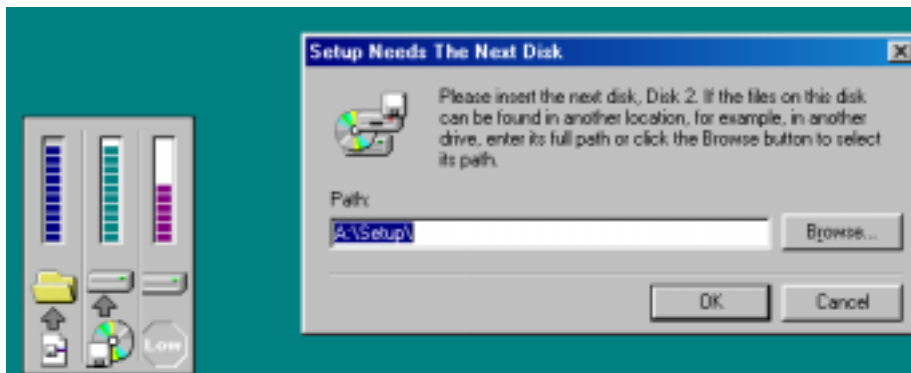
7. Select Ad Hoc or Infrastructure network mode



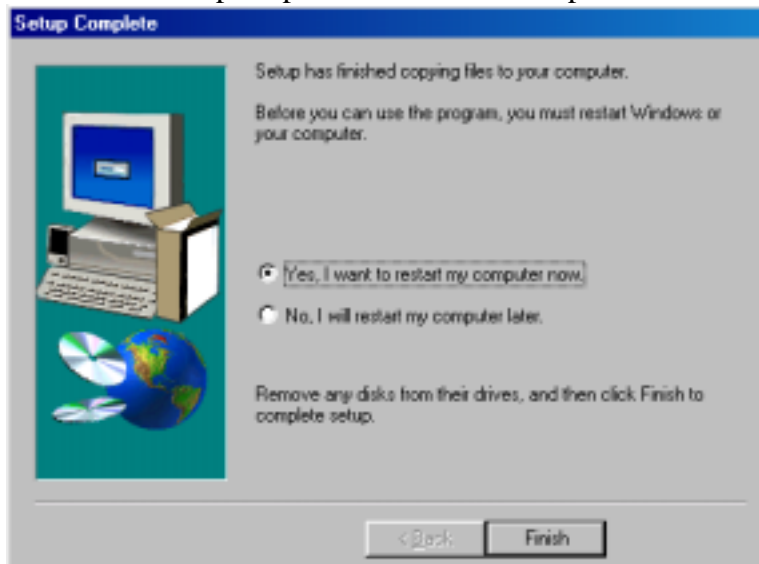
8. Put the driver files into the default or specified directory location. The select "Next" icon



9. Insert the next disk



10. Select "Finish" and "Yes" when prompted to restart the computer



### 2.3.3 Remove the ASKEY PC Card From the Computer

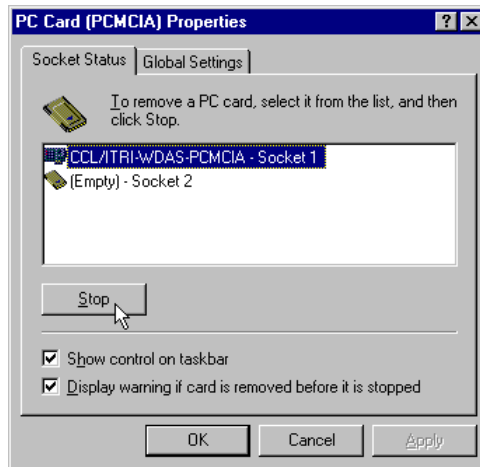
Although the PCMCIA software architecture supports automatic configuration and "hot insertion" (PC Cards to be inserted into a socket when power is on) capability, it does not mean that you can

definitely remove the PC Card without prior notice. The following procedure may save you a trouble whenever you want to remove the ASKEY PC Card from the computer and Windows system is still running.

1. Double-click the small PC Card icon on the right-handed side of the Windows system taskbar. Or double-click the “PC Card (PCMCIA)” icon from the Control Panel window.



2. From the PC Card (PCMCIA) Properties window, choose the “Socket Status” page. A list of the PC Cards currently plugged in your computer is displayed.



3. To remove the ASKEY PC Card, select it from the list and then Click the “Stop” button.
4. You can be sure that the ASKEY PC Card can now be safely removed when you see the following window.



5. Click the “OK” button to close the window.

# Chapter 3 Glossary

## **AP (Access Point)**

An internetworking device that seamlessly connects wired and wireless networks. Access Points combined with a distributed system support the creation of multiple radio cells that enable roaming throughout a facility.

## **Ad Hoc**

A network composed solely of stations within mutual communication range of each other (no access point).

## **Channel**

An instance of medium use for the purpose of passing protocol data units that may be used simultaneously, in the same volume of space, with other instances of medium use (on other channels) by other instances of the same physical layer, with an acceptably low frame error ratio due to mutual interference.

## **Ethernet**

The most widely used LAN access method, which is defined by the IEEE 802.3 standard. Ethernet is normally a shared media LAN meaning all devices on the network segment share total bandwidth. Ethernet networks operate at 10Mbps using CSMA/CD to run over 10-BaseT cables.

## **Gateway**

A network component that acts as an entrance to another network.

## **IEEE 802.11**

IEEE 802.xx is a set of specifications for LANs from the Institute of Electrical and Electronic Engineers (IEEE). Most wired networks conform to 802.3, the specification for CSMA/CD based Ethernet networks or 802.5, the specification for token ring networks. 802.11 defines the standard for wireless LANs encompassing three incompatible (non-interoperable) technologies: Frequency Hopping Spread Spectrum (FHSS), Direct Sequence Spread Spectrum (DSSS), and Infrared.

## **Infrastructure**

A wireless network centered about an access point. In this environment, the access point not only provides communication with the wired network but also mediates wireless network traffic in the immediate neighborhood.

## **IP (Internet Protocol)**

The TCP/IP standard protocol that defines the IP datagram as the unit of information passed across an Internet and provides the basis for connectionless packet delivery service. IP includes the ICMP control and error message protocol as an integral part. It provides the functional equivalent of ISO OSI Network Services.

## **IP Address**

An IP address is a 32-bit number that identifies each sender or receiver of information that is sent across the Internet. An IP address has two parts: the identifier of a particular network on the Internet and an identifier of the particular device (which can be a server or a workstation) within that network.

**ISM Bands (Industrial, Scientific, and Medicine Bands)**

Radio frequency bands that the Federal Communications Commission (FCC) authorized for wireless LANs. The ISM bands are located at 902 MHz, 2.400 GHz, and 5.7 GHz.

**ISP (Internet Service Provider)**

An organization that provides access to the Internet. Small ISPs provide service via modem and ISDN while the larger ones also offer private line hookups (T1, fractional T1, etc.).

**LAN (Local Area Network)**

A communications network that serves users within a defined geographical area. The benefits include the sharing of Internet access, files and equipment like printers and storage devices. Special network cabling (10 BaseT) is often used to connect the PCs together.

**NIC (Network Interface Card)**

A network adapter inserted into a computer so that the computer can be connected to a network. It is responsible for converting data from stored in the computer to the form transmitted or received.

**PCMCIA (Personal Computer Memory Card International Association)**

The Personal Computer Memory Card International Association (PCMCIA), develops standards for PC cards, formerly known as PCMCIA cards. These cards are available in three types, and are of about the same length and width as credit cards. However, the different width of the cards ranges 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 various functions, including memory storage, landline modems and wireless modems.

**Radio Frequency (RF) Terms: GHz, MHz, Hz**

The international unit for measuring frequency is Hertz (Hz), equivalent to the older unit of cycles per second. One megahertz (MHz) is one million-Hertz. One gigahertz (GHz) is one billion-Hertz. The standard US electrical power frequency is 60 Hz, the AM broadcast radio frequency band is 0.55-1.6 MHz, the FM broadcast radio frequency band is 88-108 MHz, and wireless 802.11 LANs operate at 2.4 GHz.

**SSID (Service Set ID)**

SSID is a group name shared by every member of a wireless network. Only client PCs with the same SSID are allowed to establish a connection.

**Station**

Any device contains 802.11 conformant wireless medium access ability.

**TCP (Transmission Control Protocol)**

The standard transport level protocol that provides the full duplex, stream service on which many applications protocols depends. TCP allows a process or one machine to send a stream of data to a process on another. Software implementing TCP usually resides in the operating system and uses the IP to transmit information across the network.

# Chapter 4 Hardware Specification

## Card Hardware Specification

Frequency Band	2412-2462 MHz			
Numbers of Selectable Sub-Channels (Japan)	11			
Modulation Technique	Direct Sequence Spread Spectrum (CCK, DQPSK, DBPSK)			
Spreading	11-chip Barker sequence			
Bit Error Rate	Better than $10^{-5}$			
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK			
Interface	PC Card 95 Standard (PCMCIA V2.1, 3.3V Only)			
Dimensions	115.8 mm (L) * 54 mm (W) * 10.7 mm (H)			
Visible (2 LEDs)	One Red LED for Power Indication, One Green LED for Tx/Rx			
Antenna	One Internal On-board Antenna (External Dipole Antenna Not Available)			
Range in meters (100 bytes user data)	11 Mbit/s	5.5 Mbit/s	2 Mbit/s	1 Mbit/s
Open Office	160m	270m	400m	550m
Semi Open Office	50m	70m	90m	115m
Closed Office	25m	35m	40m	50m
Receiver Sensitivity dBm	-82	-87	-91	-94
Delay Spread (at FER of <8%)	65ns	225ns	400ns	500ns
Output Power	Approximately less than 1.1 Buv/m (Max Peak Measured Power)			
	Average: 250mA	Receiver mode: 150mA	Transmit mode: 300mA	
Temperature Range (operational)	0-55 95% max. Humidity (no condensation allowed)			
Compatibility	Windows 95/98/2000			
Standards	IEEE 802.11b			
Regulation (Japan)	MPT Radio Regulations			
Warranty	1 year			