ASKEY PC Card

User's Manual

ASKEY COMPUTER CORP.

RM 335, BLDG, 53, 195-69 SEC, 4, CHUNG HSING RD.

CHUTUNG, HSINCHU, TAIWAN 310, R.O.C.

FCC Compliance Statement

This equipment has been tested and found to comply with 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 residential installations. 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 interference to radio or television equipment 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
    -Move the equipment away from the receiver
    -Plug the equipment into an outlet on a circuit different from that to which the receiver is connected
    -Consult the dealer or an experienced radio/television technician for additional suggestions

Only equipment certified to comply with Class B should be attached to this equipment to continuing compliance with FCC emission limit, and must have shielded interface cables.

You are cautioned that any change or modifications to the equipment not expressly approved by the party responsible for compliance could void your authority to operate such equipment.

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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.

Chapter 3   Glossary

AP (Access Point)

An internetworking device that seamlessly connects wired and wirelesses 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.

Chapter 4   Hardware Specification

Card Hardware Specification

Frequency Band	2400-2483.5 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	2 Internal On-board Antennas, 1 External Dipole Antenna (Optional)			
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	17 dBm			
Power Consumption	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			