

# **PCMCIA 11M**

# Wireless LAN Card

User Manual

Rev 1.0

# Regulatory Compliance

## 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 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, (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.

# Statement Needed to be Shown on End Product

Since this module is installed inside the end product, the end product should be affixed a label on visible area showing that this product contain a RF module, and also its FCC ID.

## IMPORTANT NOTE:

### FCC Radiation Exposure Statement:

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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 Labeling**

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 points, routers, wireless ADSL modems, and similar equipment). The final end product must be labeled in a visible area with the following: “ Contains TX FCC ID: MIBR50702-02 ”.

## **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.”

## **Wireless LAN card user manual**

### **About this manual**

This manual describes how to install and operate your Wireless LAN card. Please read this manual before you install the product.

This manual includes the following topics:

- Product description, features and specifications
- Hardware installation procedure
- Software installation procedure
- Trouble shooting procedures

# Introduction

This high-speed Wireless LAN card provides you with an innovative wireless networking solution. The Card is easy to set up and use. With this innovative wireless technology, you can share files and printers on the network—without inconvenient wires! Now you can carry the LAN in your pocket!

## Features

- Wire-free access to networked resources from anywhere beyond the desktop
- Low interference & high susceptibility guarantee reliable performance
- Delivers data rate up to 11 Mbps
- Dynamically shifts between 11, 5.5, 2, and 1 Mbps network speed, based on signal strength, for maximum availability and reliability of connection
- External dipole antenna
- Uses 2.4GHz frequency band, which complies with worldwide requirement
- Supports most popular operating systems: Window 95/98/2000/NT 4.0/ME
- Ensures great security by providing the Wired Equivalent Privacy (WEP) defined in the IEEE 802.11 standard

# What is Wireless LAN?

Wireless Local Area Network (WLAN) systems offer a great number of advantages over traditional wired systems. WLANs are flexible and easy to setup and manage. They are also more economical than wired LAN systems.

Using radio frequency (RF) technology, WLANs transmit and receive data through the air. WLANs combine data connectivity with user mobility. For example, users can roam from a conference room to their office without being disconnected from the LAN.

Using WLANs, users can conveniently access shared information, and network administrators can configure and augment networks without installing or moving network cables.

WLAN technology provides users with many convenient and cost saving features:

- **Mobility:** WLANs provide LAN users with access to real-time information anywhere in their organization, providing service opportunities that are impossible with wired networks.
- **Ease of Installation:** Installing is easy for novice and expert users alike, eliminating the need to install network cables in walls and ceilings.
- **Scalability:** WLANs can be configured in a variety of topologies to adapt to specific applications and installations.

Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users roaming over a broad area.

# LAN Modes

Wireless LANs can be configured in one of two ways:

<b>Ad-hoc Networking</b>	<p>Also known as a peer-to-peer network, an ad-hoc network is one that allows all workstations and computers in the network to act as servers to all other users on the network. Users on the network can share files, print to a shared printer, and access the Internet with a shared modem. However, with ad-hoc networking, users can only communicate with other wireless LAN computers that are in the wireless LAN workgroup, and are within range.</p>
<b>Infrastructure Networking</b>	<p>Infrastructure networking differs from ad-hoc networking in that it includes an access point. Unlike the ad-hoc structure where users on the LAN contend the shared bandwidth, on an infrastructure network the access point can manage the bandwidth to maximize bandwidth utilization.</p> <p>Additionally, the access point enables users on a wireless LAN to access an existing wired network, allowing wireless users to take advantage of the wired networks resources, such as Internet, email, file transfer, and printer sharing.</p> <p>Infrastructure networking has the following advantages over ad-hoc networking:</p> <ul style="list-style-type: none"><li>• <b>Extended range:</b> each wireless LAN computer within the range of the access point can communicate with other wireless LAN computers within range of the access point.</li><li>• <b>Roaming:</b> the access point enables a wireless LAN computer to move through a building and still be connected to the LAN.</li><li>• <b>Wired to wireless LAN connectivity:</b> the access point bridges the gap between wireless LANs and their wired counterparts.</li></ul>

## Notes on wireless LAN configuration

When configuring a wireless LAN (WLAN), be sure to note the following points:

- Optimize the performance of the WLAN by ensuring that the distance between access points is not too far. In most buildings, WLAN cards operate within a range of 100 ~ 300 feet, depending on the thickness and structure of the walls.
- Radio waves can pass through walls and glass but not metal. If there is interference in transmitting through a wall, it may be that the wall has reinforcing metal in its structure. Install another access point to circumvent this problem.
- Floors usually have metal girders and metal reinforcing struts that interfere with WLAN transmission.

This concludes the first chapter. The next chapter deals with the hardware installation of the Wireless LAN card.



# Specifications

<b>Standards Compliance:</b>	IEEE802.11b WLAN Standard, PCMCIA 2.1 and JEIDA 4.2 Standard
<b>Socket Interface:</b>	68-pin 16-bit PCMCIA socket connector
<b>Frequency:</b>	2.4 to 2.4835GHz (Industrial Scientific Medical Band)
<b>Antenna:</b>	External Dipole Antenna
<b>Roaming:</b>	802.11 compliant
<b>Data Rate:</b>	11Mbps / 5.5Mbps / 2Mbps / 1Mbps
<b>Modulation Technique:</b>	Direct Sequence Spread Spectrum BPSK / QPSK / CCK
<b>Coverage Area:</b>	Indoor : 50m @ 11Mbps, 80m @ 5.5Mbps or lower Outdoor : 150m @ 11Mbps, 300m @ 5.5Mbps or lower
<b>Power:</b>	DC +3.3V /+5V, 220mA (3.3V)
<b>Output Power:</b>	14dBm (typical)
<b>Receiver Sensitivity:</b>	11Mbps: -82~ -85dbm; 5.5Mbps: -85~ -88dbm 2Mbps: -88~ -91dbm; 1Mbps: -91~ -93dbm
<b>Operating Environment:</b>	Temperature: 0 to 55 °C Humidity: 10% to 90%
<b>Dimensions:</b>	115 x 54 x 11.5mm
<b>Weight:</b>	47g