802.11b
&
AC97 Soft
Modem
User Manual

Contents

2. Introduction

Thank you for purchasing your Wireless LAN, 802.11b Combo MiniPCI Card. This manual will assist you with the installation procedure.

The package you have received should contain the following items:

- 802.11b Combo MiniPCI Card
- User manual
- Diskette containing AC97 Soft Modem driver, Wireless LAN Management utility and driver software.

Note: if anything is missing, please contact your vendor

The diskette contains drivers and utility software; this is used for managing the 802.11b Combo MiniPCI card and needed component is included for AC97 Soft Modem.

3. Wireless LAN Basics

Wireless LAN (Local Area Networks) systems offer a great number of advantages over a traditional, wired system. Wireless LANs (WLANs) are more flexible, easier to setup and manage and often more cost effective than their wired equivalence.

Using radio frequency (RF) technology. WLANs transmit and receive data over the air, minimizing the need for wired connections. Thus, WLANs combine data connectivity with user mobility, and, through simplified configuration, enable movable LANs.

With wireless LANs, users can access shared information without looking for a place to plug in and network managers can set up or augment networks without installing or moving wires. Wireless LANs offer the following productivity, convenience and cost advantages over traditional wired networks.

• Mobility – Wireless LAN systems can provide LAN users with access to real-time information anywhere in their organization. This mobility supports productivity and service opportunities not possible with wired networks.

• Installation Speed and Simplicity – Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

• Installation Flexibility – wireless technology allows the network to go where wires cannot go.

• Reduced Cost-of-Ownership – While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long- term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

• Scalability – Wireless LAN systems can be configured in a variety of topologies to meet the needs of 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 that allows roaming over a broad area.

4. Installation and Overview

Here are some steps you will perform in establishing your wireless network connection:

• Install Access Point at first. AP is needed in case of Infrastructure network mode.
• Install software using the Installation Diskette.
• Install network protocol(s) required to communicate on your network. Most likely you will need the TCP/IP protocol.

Here are some steps you will perform in installing your driver for AC97 Soft Modem.

• Install driver using the Installation Diskette.

4.1 Installation Procedure of 802.11b Combo WLAN MiniPCI Card

Please follow the following steps one by one in order to install the utility and driver software successfully.

1. Insert the card into MiniPCI slot.
2. Power on your computer and allow Windows to load fully.
3. When Windows first detects the PCI Network Controller, click cancel.
4. Insert the given Installation Diskette and then double click on the Setup.exe file to run setup.
5. Click Finished, then it will start to load the utility software.
6. Click next in the welcome window.
7. Accept the license agreement.
8. Click Finished in the Setup Complete window and reboot.
9. Windows will then prompt the required driver.
10. Click the option for to search for the best driver for your device.
11. Do not check any boxes for to search for locations, if any boxes are checked, uncheck it. Then click Next and install driver.
12. The Wireless LAN PCI Card Properties widow will prompt. You can configure your options now or later. Click OK when finished.
13. Check for the 802.11b Combo WLAN MiniPCI Card by right clicking on My Computer using the mouse. Select the Device manager and then Network Adapters. If you find the sign on the adapter, it shows the installation is not successful. Select the adapter and click on Remove. Restart your computer after uninstalling the driver to make the changes effective. And refer to manual.
14. Right click on the Network Neighborhood using the mouse.
15. Select Properties from the pop up menu. The network box appears and you see the three main tables: Configuration, Identification, and Access Control.
16. Click on the Configuration tab and then click on the Add button. Select Network Component Type box appears. Click on the Protocol the click the Add button.
17. Select Network Protocols box appears. From the list of manufactures, click on Microsoft. From the list of network protocols list, select NetBEUI, then click OK.
18. The NetBEUI protocol is now installed. After clicking on OK return back to Network Component Type box.
19. Repeat the step 15 and 16 to add IPX/SPX protocol.
20. Repeat the step 15 and 16 to add TCP/IP protocol.
21. Click on the TCP/IP option for setting the IP address for your computer. You can select either Static OR DHCP setting. If you use the static IP setup then enter the IP value, Subnet masking, DNS, Domain / Workgroup name, and Gateway address values. After setting these parameter appropriately, click OK to return to Network Component Type and you can select the File and Printer Sharing options as well as the Access to your computer other users connected to that network by setting the computer sharing options. Click on OK.
22. Screen message do want to restart your Computer will pop up. Select Yes. It will shut down your computer and will restart.

Important: Restart your computer to make the changes effective before you reinstall the driver.

4.2 Installation Procedure of AC97 Soft Modem

Please follow the following steps one by one in order to install the driver software successfully.

1. Insert the card into MiniPCI slot.
2. Power on your computer and allow windows load fully.
3. When Windows first detects the PCI Card, click cancel.
4. Insert the given Installaton diskette and then double click the setup.exe file to run setup.
5. Click next in the welcome window.
6. Click the option for to search for the best driver for your device.
7. Do not check any boxes for to search for locations, if any boxes are checked, uncheck it. Then click Next and install driver.
8. Insert Disk Window will prompt for 'LTSMvxd.cat' file to copy. Click Skip File button and click finish.
9. Click finish again to complete the installation.
10. Check for the AC97 Soft Modem by right clicking on My Computer using the mouse. Select the Device manager and then Network Adapters. If you find the sign on the adapter, it shows the installation is not successful. Select the adapter and click on Remove. Restart your computer after uninstalling the driver to make the changes effective. And refer to manual.

Important: Restart your computer to make the changes effective before you reinstall the driver.

5. Troubleshooting

802.11b Combo WLAN MiniPCI Card

If you still encounter some problems while installing the WLAN MiniPCI Card utility and driver software or you want to confirm whether your software is installed properly or not, we have listed the procedure for checking the various components after you have installed the software. In section below, we have listed the various problems that you may encounter during the installation and have also listed the possible solution.

Procedure to check the various properties of card after installation under Windows:
Please check the followings if you encounter some problem while installing the WLAN MiniPCI utility and driver software.

Right click on My Computer and the select Properties. Select the Device Manager and expand the Network Adapter. You will find 802.11b MiniPCI Card if it is installed successfully.   If you see the sign the resources are conflicting. Double Click the MiniPCI Card and then on the General tab, you can see the status of MiniPCI card.

      i)   Check if your Notebook supports 3.3V Card.
      ii)   Check if your Notebook has a free IRQ. If not, make an IRQ free by assigning the same IRQ to some devices, for example COM1; COM2 can be assigned same IRQ values.
      iii)   Check that you have inserted the proper driver.

AC97 Soft Modem

If you still encounter some problems while installing the AC97 Soft Modem driver software or you want to confirm whether your software is installed properly or not, we have listed the procedure for checking the various components after you have installed the software. In section below, we have listed the various problems that you may encounter during the installation and have also listed the possible solution.

Procedure to check the various properties of card after installation under Windows:
Please check the followings if you encounter some problem while installing the AC97 Soft Modem driver software.

Right click on My Computer and the select Properties. Select the Device Manager and expand the Modem. You will find AC97 Soft Modem if it is installed successfully.   If you see the sign the resources are conflicting. Double click the AC97 Soft Modem and then on the General tab, you can see the status of AC97 Soft Modem.

6. Technical Specification of 802.11b

Hardware compatibility
- IBM-compatible computer with a PC Card Type II

Driver support
NDIS 3.1
- Windows 95
- Windows 98
- Windows NT4.0
- Windows 2000
- Windows Me

Standards supported
- IEEE802.11 standard for Wireless LAN
- All major networking standards (including TCP/IP, IPX)

Environmental
Operating temperature:
- -10 degree Celsius to 50 degree Celsius (Operating) –20 to 70 (storing)
- Max. Humidity 0.95 % Non-condensing

Power specifications
Operating voltage:
- +5 V, +3.3V DC +- 5 %
- Nominal Temp Range: 15 dBm
- Extended Temp Range: 14 dBm min.
- Transmit Power, 2.7 v to 3v: 14 dBm min.

Radio specifications
Range:
- per cell indoors approx. 35-100 meters or more
- per cell outdoors up to 100- 300 meters

Frequency range:
- 2.4 – 2.4835 GHz, direct sequence spread spectrum

Number of Channels:
- Europe: 13 (3 non-overlapping)
- US: 11 (3 non-overlapping)
- France: 4 (1 non-overlapping)

Antenna system:
- Internal patch antenna supporting diversity (built in notebook).

Mobility:
- Seamless roaming across cell boundaries with handover

Specific features

Supported bit rates:
- 11 Mbps
- 5.5 Mbps
- 1   Mbps
- 2   Mbps

Data encryption:
- 40 bit WEP Encryption, 128-bit key length

Utility software:
- Link Config User setup & diagnostics tool

Key Management:
- Automatic Dynamic Key Allocation (ADKA) through public key

Physical Dimensions

- Type III MiniPCI Combo

Regulatory Compliance Notices Class B Equipment

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 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 or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Actiontec Electronics, Inc may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only

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.

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

For questions regarding your product, or the FCC declaration, contact:
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Sunnyvale, CA 94086
United States