MS-6802
User's Guide

Wireless 11b Card Bus CB11B

User's Guide

$C\,E\,\textcircled{!}$ $\mathcal{C}$ **N1996**

FCC-B Radio Frequency 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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Notice 1
The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2
Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

VOIR LA NOTICE D'INSTALLATION AVANT DE RACCORDER AU RESEAU.

FCC ID:I4L-MS6802
This device complies with part 15 of the FCC Rules
Operation is subject to the following two conditions.
(1) This device may not cause harm full interference
and (2) This device must accept any interference
received. Including interference that may cause
undesired operation

FCC Requirement

This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC registration Number, Ringer Equivalence Number (REN) and USOC jack type for this equipment. You must, upon request, provide this information to your telephone company.

An FCC compliant telephone cord and modular jack is provided with this equipment. This equipment is designed to be connected to the telephone network or premise wiring use a compatible modular jack which is Part 68 compliant. See installation instructions for details.

The REN is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN of all devices connected to on line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your calling area. If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify you in advance, but if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations or procedures that could affect the proper functioning of your equipment. If they do, you will be notified in advance to you an opportunity to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact MICRO-STAR INTERNATIONAL for information on obtaining service or repairs. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.
This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to stat tariffs.

This equipment complies with the FCC RF radiation exposure limits set forth for uncontrolled environment. This device and its antenna must not be colocated or operating in conjunction with any other antenna or transmitter.

Revision History

Revision	Revision History	Date
V 1.0	First Release	Feburary 2003

Important Safety Precautions

Always read and follow these basic safety precautions carefully when handling any piece of electronic component.

1. Keep this User's Manual for future reference.

2. Keep this equipment away from humidity.

3. Lay this equipment on a reliable flat surface before setting it up.

4. The openings on the enclosure are for air convection hence protects the equipment from overheating.

5. All cautions and warnings on the equipment should be noted.

6. Never pour any liquid into the opening that could damage or cause electrical shock.

7. If any of the following situations arises, get the equipment checked by a service personnel:

    - Liquid has penetrated into the equipment
    - The equipment has been exposed to moisture
    - The equipment has not work well or you can not get it work according to User's Manual
    - The equipment has dropped and damaged
    - If the equipment has obvious sign of breakage

8. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60^0C OR BELOW -20^0C, IT MAY DAMAGE THE EQUIPMENT.

Table of Contents

1. INTRODUCTION

1.1 What is Wireless 11b Card Bus CB11B

Wirelss 11b Card Bus CB11B, compliant with IEEE802. 11b, is a high-efficiency wireless adapter for wireless networking at home, in office or in public places. The data transfer rate can be auto-negotiated to 1, 2, 5. 5Mbps or up to 11Mbps and is compatible with any existing IEEE802.11b devices.

With the Wirelss 11b Card Bus CB11B, you can roam between conference room and office without being disconnected the LAN cables; in addition, sharing files and printers can be easy tasks.

The Wirelss 11b Card Bus CB11B is available to Microsoft Windows operating systems (Windows XP/2000/ME/98SE) and can be integrated into networking with either Ad-hoc mode (without an Access Point) or Infrastructure mode (with an Access Point).
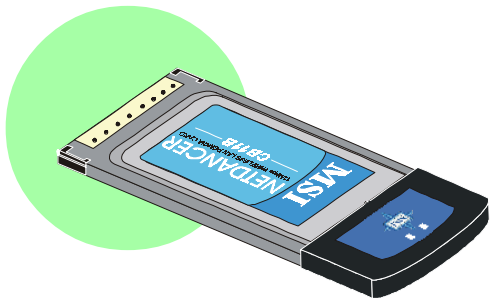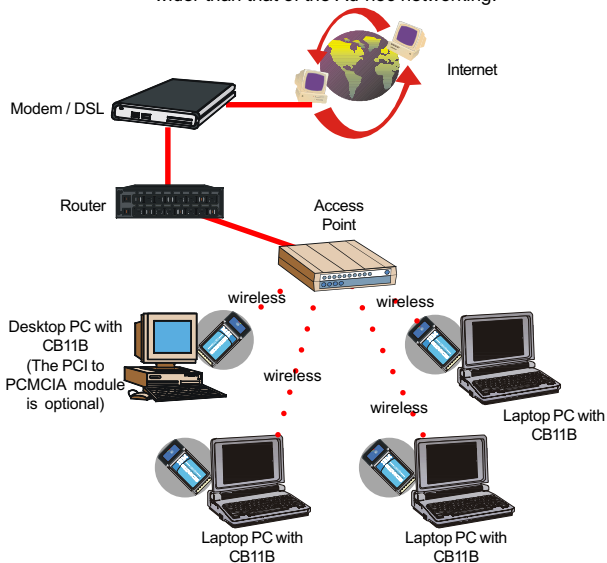
1.2 How Wirelss 11b Card Bus CB11B works

Ad-hoc Networking Mode --- An Ad-hoc (or "spontaneous") network is a local area network or other small network, especially one with wireless or temporary plug-in connections, in which some of the network devices are part of the network only for the duration of a communications session. Users on the network can share files, print to a shared printer, and access the Internet with a shared modem. In this kind of network, new devices can be quickly added; however, users can only communicate with other wireless LAN computers that are in the wireless LAN workgroup, and are within range.
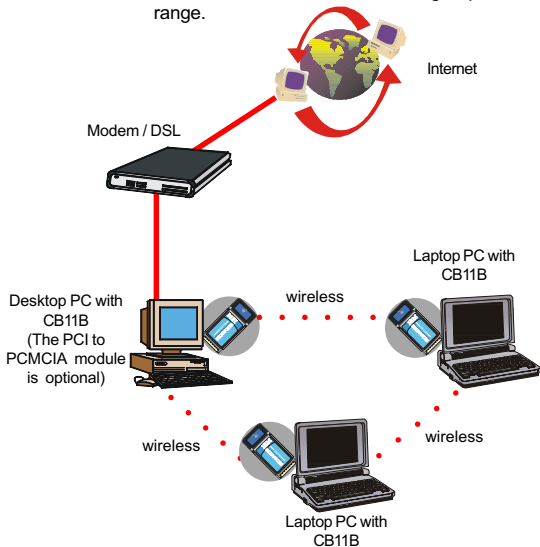
Infrastructure Networking Mode--- Infrastructure networking differs from Ad-hoc networking is that it includes an access point. In an Infrastructure networking, the access point can manage the bandwidth to maximize bandwidth utilization. Additionally, the access point enables users on a wireless LAN 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. The scale and range of the Infrastructure networking are larger and wider than that of the Ad-hoc networking.

Internet

Modem / DSL

Router

Access Point

wireless

wireless

Desktop PC with CB11B
(The PCI to PCMCIA module is optional)

wireless

wireless

Laptop PC with CB11B

Laptop PC with CB11B

Laptop PC with CB11B

1.3 Specifications

❏ **Form Factor**   CardBus

❏ **Standard**   IEEE 802.11b

❏ **Frequency Range**   2.4GHz to 2.4835 GHz,
                           Direct Sequence Spread
                           Spectrum (DSSS)

❏ **Data Rate**   11, 5.5, 2, 1 Mbps, Auto
                           Fall-Back

❏ **Operating Channels**   US & Canada:11 channels,
                           Europe: 1 to 13 channels,
                           France: 4 channels,
                           Spain: 2 channels,
                           Japan: 14 channels

❏ **Modulation**   DBPSK @ 1 Mbps,
                           DQPSK @ 2Mbps,
                           CCK @ 5.5 and 11 Mbps

❏ **Media Access Protocol** CSMA/CA with ACK (Half-
                           Duplex)

❏ **Antenna**   Internal diversity with
                           connectors

❏ **Security / Encryption** 64-/128-bit WEP key

❏ **Range**

Open Space	11 Mbps @ 150m (490ft),
	5.5 Mbps @ 250m (820ft),
	2 Mbps @ 300m (985ft),
	1Mbps @ 350m (1150ft)

❏ **Operation voltage**   3.3V

❏ **Power Consumption**

Tx	450mA
Rx	290mA

❏ **Standby**   N/A

❏ **Operating Temperature**   0 to 70

❏ **Operating Humidity**   0 to 95% (non-condensing)

❏ **Operating system**   Windows 98/ME/2K/XP,

❏ **Dimensions (W x D x H)**   54 X 115 X 5 mm

❏ **Weight**   45g

1.4 System requirements

Before Installing the Wireless 11b Card Bus CB11B, you PC should meet the following:

Laptop PC with cardbus slot or desktop PC with PCMCIA slot module.

Windows® 98SE/ME/2000/XP operating system.

Minimum 5M bytes free disk space for installing the driver and utilities.

CD-ROM drive, double speed or higher

1.5 Package content

Unpack the package and check all the items carefully. If any item contained is damaged or missing, please contact your local dealer as soon as possible. Also, keep the box and packing materials in case you need to ship the unit in the future. The package should contain the following items:

Wireless 11b Card Bus CB11B

User's Guide

CD title including drivers and utilities

1.6 Layout

Power LED --- Solid green, indicates that the Wireless 11b Card Bus CB11B is powered on.
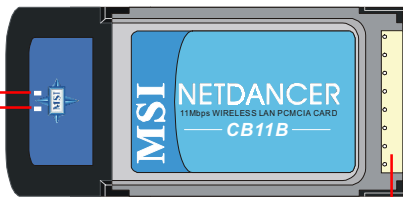
Golden Finger

Status LED --- Blinking green, indicates that the Wireless 11b Card Bus CB11B is receiving or transferring data.

2. HARDWARE INSTALLATION

The installation drawing below is suitable for most laptop computers. For more information about the cardbus slot, please refer to your laptop computer manual.

The installation of Wireless 11b Card Bus CB11B to the desktop computer will not be introduced here, because an optional PCI to PCMCIA module will be needed.
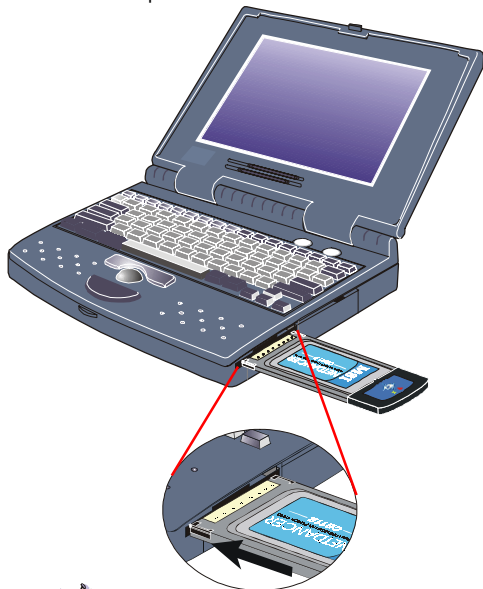
Do not hold the Wireless 11b Card Bus CB11B on the golden finger because it may cause interference or damage.

3. SOFTWARE INSTALLATION

This part provides the procedures to install drivers and the utilities. Each installation procedure comes with a drawing and instruction. Follow the instruction step by step to finish the installation. During the installation, Windows® 98SE/ME/2000/XP may need to copy Windows system files from the Windows® 98SE/ME/2000/XP installation disk/CD. Therefore, please prepare a copy of the Windows® 98SE/ME/2000/XP installation disk/CD at hand before installing the driver if possible.

2.1 Installing on Windows® 98SE/ME/2000/XP

The card should be inserted into your computer while installing the driver.

Installation Procedure:
1. Insert the driver CD into your CD-ROM drive, and then the setup program should start automatically. If it doesn't start, click the *Start* button at the Taskbar and then select *Run*. Enter *E:\setup.exe* if E is your CD-drive. Then click the driver option to continue.
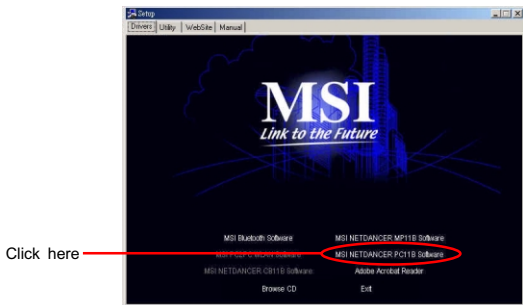
Click here

2. Then click **Next** to read the License Agreement and click **Yes** to agree with and continue, or **No** to end the installation. Enter user's information and then click **Next**.
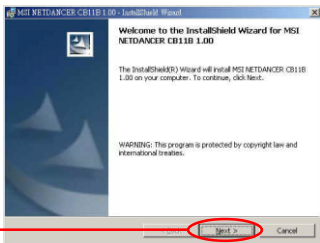
Click here
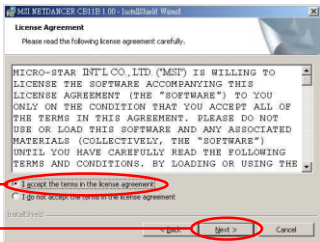
Check here

Click here
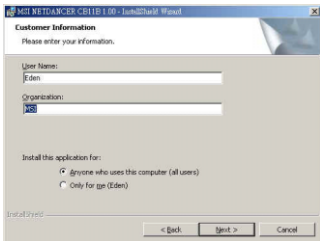
3. Click *Install* to start installation, then click *Finish* to continue as you are notified the installation has been completed.

Click here

Click here
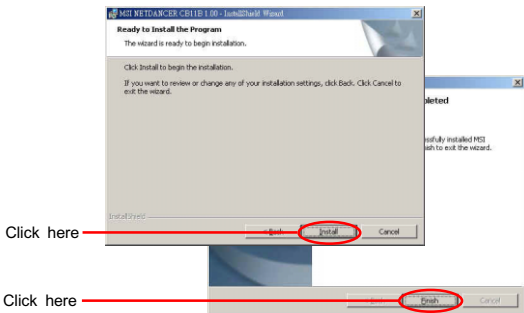
4. *InstallShield Wizard* may ask you to restart your computer. Choose *Yes* to restart your computer.

Click here
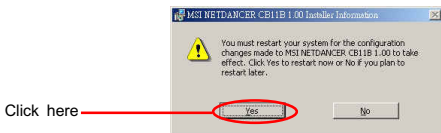
5. After restarting your PC, you will find a icon indicated *MSI Wireless LAN* on your taskbar. Just double-click on it for configuration.

MSI Wireless LAN icon

Note

4. MSI WIRELESS NETWORK UTILITY

4.1 In wireless network tab

If you are going to use the wireless network in Infrastructure mode, please follow the steps:

1. Double click the *MSI Wireless LAN* icon on the task bar to lunch the network configuration window.

Double click the MSI Wireless LAN icon

2. The window appears. Click *Advanced.*

Enter network key if the wireless administrator has set a network key in advance
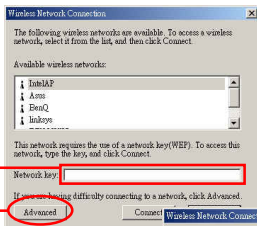
Click here
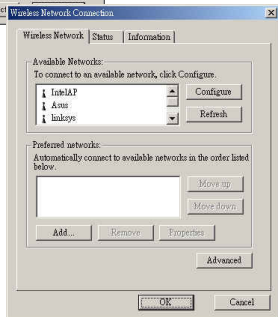
3. All available networks will show in the *Available Networks* list, and you can click *Refresh* button to refresh or search for the available networks. Click *Configure* to configure the existing networks.
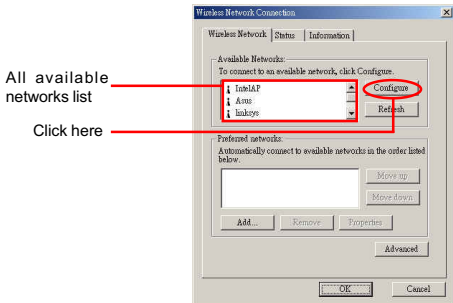
All available
networks list

Click here

4. As an administrator, you can change the network name (SSID) and network key which is encoded by 5/13 characters (10/26 hex-adecimal digital).

Network name
(SSID)

Network key
settings
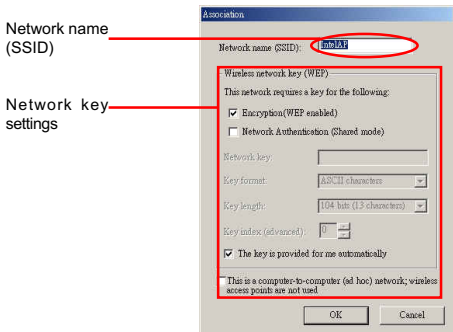
5. You may also choose the networks you prefer from the ***Available Networks*** list and use the ***Move up/ Move down*** to set the priority of your preferred networks.

Preferred network list
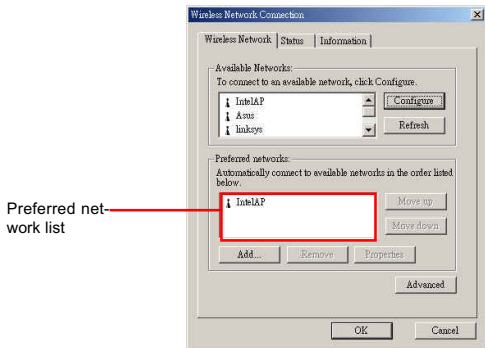
6. Click ***OK,*** and you can use the wireless network in Infrastructure mode.

If you are going to use the wireless network in Ad-hoc mode, please follow the steps:

1. Double click the **MSI Wireless LAN** icon on the task bar to lunch the network configuration window.

Double click the MSI
Wireless LAN icon

2. The window appears. Click **Advanced.**

Click here
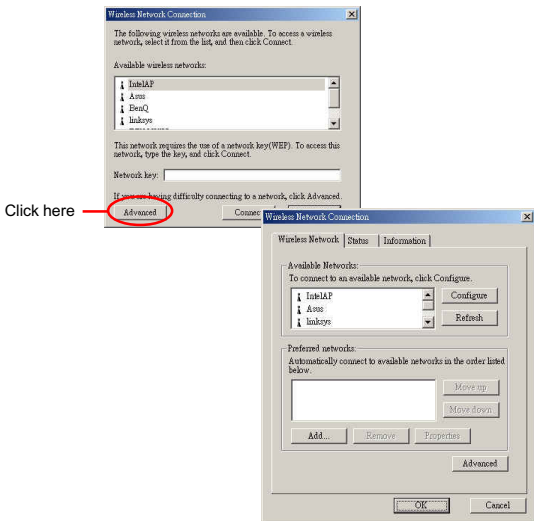
3. Click *Add* to add a new network.
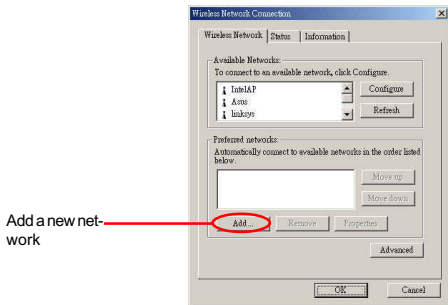
Add a new net-
work

4. As an administrator, you can change the network name (SSID) and network key which is encoded by 5/13 characters (10/26 hex-adecimal digital).

Enter a network name(SSID) for this ad-hoc network

Check *Encryption* and cancel *This key is provided for me automatically* to enable web key settings. Also refer to 4.2 Encryption.

Check here to en-
able Ad-hoc net-
work
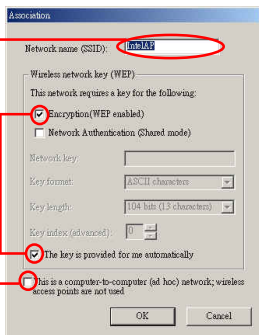
5. Click *OK* to finish the Ad-hoc network for the first computer (administrator).

6. Any one who wants to use the Ad-hoc network should repeat step 1 to 3. In step 3, you will see the network set by the first computer (administrator); then choose it and click *OK*. You can use the wireless network in Ad-hoc mode.

4.2 Encryption

In this window, you can set up 4 sets of WEB keys which can be 5 characters (10 hexadecimal digitals) or 13 characters (26 hexadecimal digitals) and specify one of them to use.
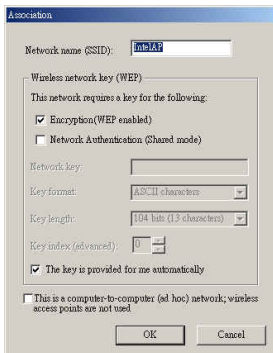
> Network key --- Enter a key for the network.
> Key format --- You can decide the network key to be encoded by ASCII characters or hexadecimal digitals.
> Key length --- In ASCII characters format, it can be 5 or 13 characters. In hexadecimal digitals format, it would be 10 or 26 digitals.
> Key index --- There can be up to 4 sets of WEB keys, from 0 to 3.

4.3 In status tab

In **Status** tab, you can further configure the network settings.

Click here ──────
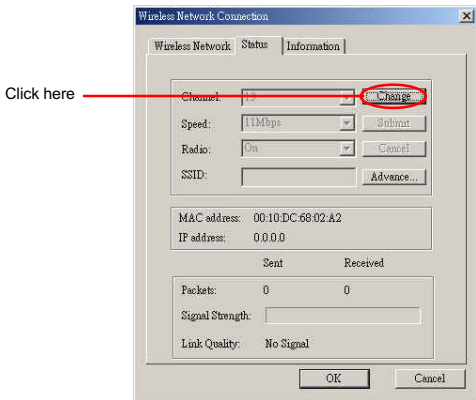
Channel:
Specify the operating radio frequency channel in "Ad-hoc" mode, which should be set to the same channel as the other points in the wireless network.

Speed:
This field sets the current transmitting rate. There are four fixed rates: **1 Mbps, 2 Mbps, 5.5 Mbps,** and **11 Mbps**. The speed should be set to *Auto* rate to optimize performance and range, which will adjust the transfer speed for best performance and longest range automatically.

Radio:
Set to **On** to activate the radio.

SSID:
Means Service Set Identifier, an unique name shared among all points in a wireless network. It must be identical for all points in the network. Then the card will be able to connect to an access point with the same SSID.

Status:
It shows status information about the radio link.
➤Signal Strength --- This bar shows the received signal strength level. The higher the blue bar is, the more power the radio signal is received by the the card.
➤Link Quality --- This bar shows the measured signal level and connection status. The higher the blue bar is, the better the radio signal is received by the card.

Click *Advance*, you can get some information about the LAN traffic status and more detailed settings.
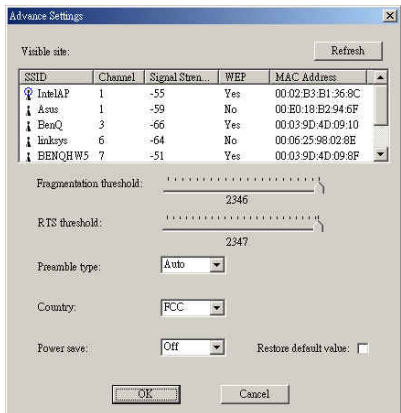
Fragmentation Threshold:
You may set the length of the fragment in this field. Please note that each fragment should not be larger than the Fragmentation Threshold.

RTS/CTS Threshold:
You may set the length threshold.

Preamble Type:
You may set the length of preamble in this field. Setting options: *Long, Short, Auto*.
➤Long --- It is set to 144 bits.
➤Short --- It is set to 72 bits.
➤Auto ---The card supports an auto-detection feature, it automatically selects the *Preamble Type* depending on the Access Point Preamble Type if this option is selected.

Country:
Select the country that you are in.

Power save:
The card will turn into power save mode when idle.

Changing the settings here is not recommended unless you are familiar with those advanced configurations.

4.4 In information tab

In *Information* tab, you can get some information about the manufacturer, hardware and software.

4.5 Using Windows® XP as Access Point

Windows® XP provides a feature in the *Control Panel* to help to link two networks.

1. In the *Control Panel*, select *Network Connections* and the window below will appear.
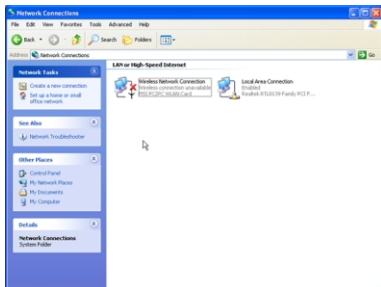
2. Select *Wireless Network Connection* and *Local Area Connection* simultaneously, and right click to select *Bridge Connections*.
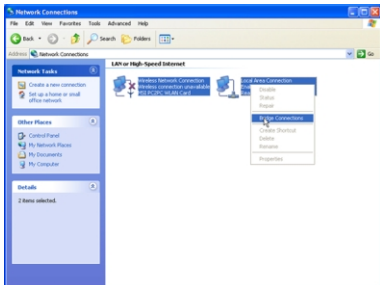
3. Then go to **Start -> Run**. Enter **cmd** in the **Open** box, the click **OK.** A DOS prompt window appears.
4. Then type **net bridge show adapter.**
5. Then type **netsh bridge set adapter X forcecompatmode=enable**, where **X** is your ethernet identifier.
6. Then type **netsh bridge set adapter Y forcecompatmode=enable**, where **Y** is your wireless identifier.

7. Right click the *Wireless Network Connection* icon in the right bottom of system bar, choose *View Available Wireless Network ---> Advanced.* You will get *Wireless Network Connection Properties* window. Click *Add* to add a new wireless network connection.

Click here → Add
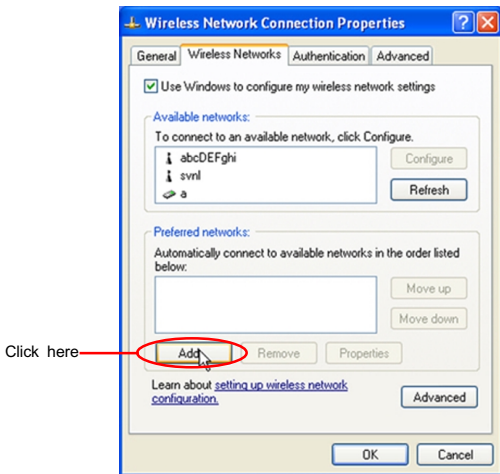
8. Enter a name for this new network in the ***Network name (SSID):***, and put a check mark next to ***This is a computer-to-computer (Ad-hoc) network; wireless access point are not used.*** In this case, this computer will function as an access point, while other computers can use this network name (which is "***aaa***" in the picture below) to connect to. Once they connect successfully, they could access the ethernet LAN via ***Network Neighborhood.***

Click here ——

Check here ——
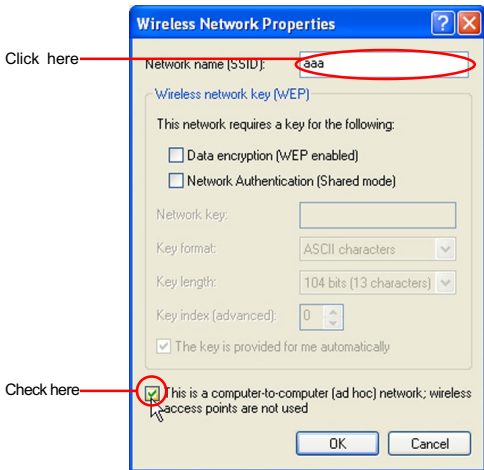
Please also refer to Windows® XP help files for more information.

5. NETWORK CONNECTION

This part describes how to prepare for connection to network and some basic outline of networking basics, including sharing files, printing from an computer on the network, or accessing the Internet on multiple computers with one connection.

The following in *Control Panel -> Network -> Configuration* is required for all computers if you want to connect to a network:

➤Check *Client for Microsoft Network* is installed.
➤Check *TCP/IP -> MSI NetDancer Wireless Network Adapter* is installed.
➤Check *File and printer sharing for Microsoft Networks*.

5.1 Computer Identification

Please verify that each computer has a unique name and common workgroup name, if you had previously given your Windows 98SE/ME/2000/XP computers names.

1. On your Desktop, right-click the icon *My Network Places* select *Properties* from the context menu.
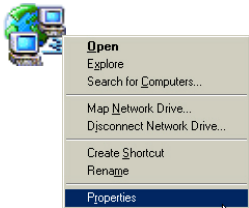
2. Click the *Identification* tab in the dialog box.

Enter a name for your computer

Your computer will belong to this workgroup

Enter some information for reference
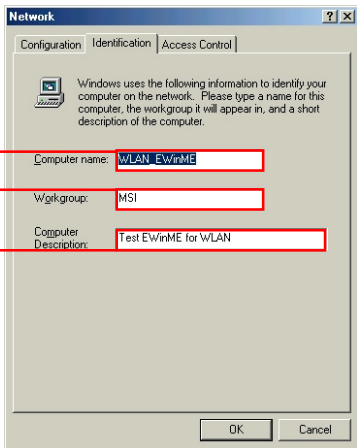
3. In the *Computer name* box, type a unique, identifying name for this particular computer. This will be the name of this computer used by other computers on your network to communicate with. Each computer's name must be unique on a particular network to avoid confusion. Please note that the computer's name should not be more than 15 characters without space.

4. Type the workgroup name which this computer will belong to in the *Workgroup* box. All the computers on your network should have an identical Workgroup name.

5. The *Computer Description* box is optional. You may enter a description that helps to identify this computer on your network. Then click *Close*.

6. Repeat this process for each computer on your network to ensure that they all have unique "Computer Name" and identical "Workgroup".

5.2 How to install TCP/IP

By default, Windows® 98SE/ME/2000/XP will install TCP/IP automatically.

1. Go to *Start -> Settings -> Control Panel*.
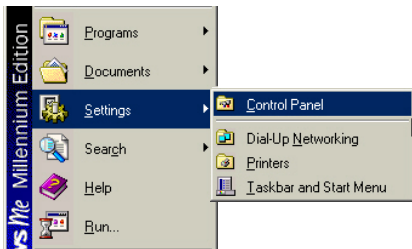
2. Double-click *Network* icon.
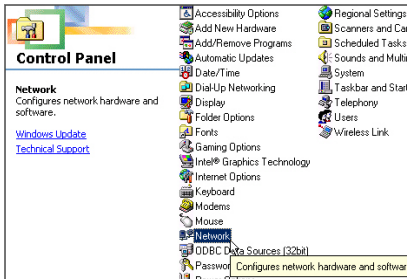
3. If you do see the ***TCP/IP*** network as the following screen, plese select ***MSI NetDancer Wireless Network Adapter*** and click ***Add.***
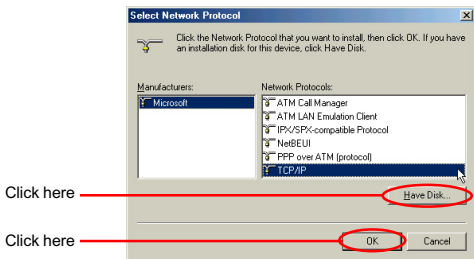
Click here

4. Select ***Protocal***, and click ***Add.***

Click here
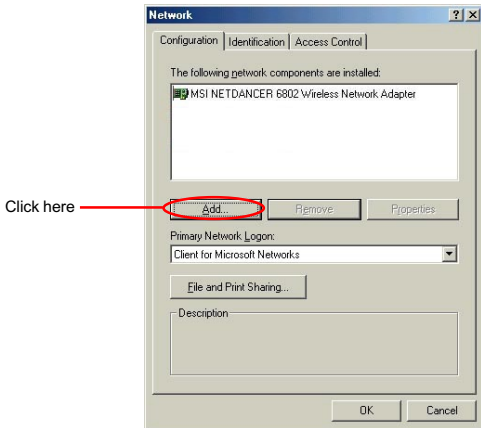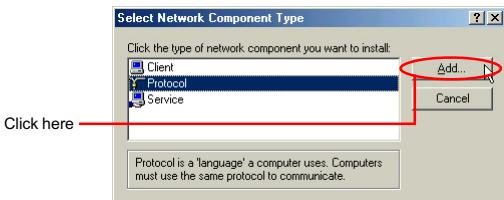
5. Select ***Microsort,*** then scroll down to select ***TCP/IP.*** Click ***Have Disk*** to install TCP/IP from a spicified drive (for Windows® 98SE/ME) or click ***OK*** (for Windows® 2000/XP).

Please prepare a copy of the Windows® 98SE/ME/2000/XP installation disk/CD at hand if needed.

Click here

Click here

Now ***TCP/IP*** installation is finished.

5.3 Configuring a dynamic IP address

When the drivers are installed, the default setting here is set to obtain IP dynamically through a DHCP server. If you'd like check or change the settings, please follow the steps below:

1. Go to ***Start -> Settings -> Control Panel***.
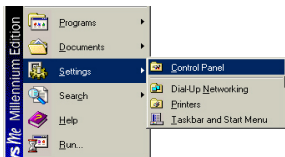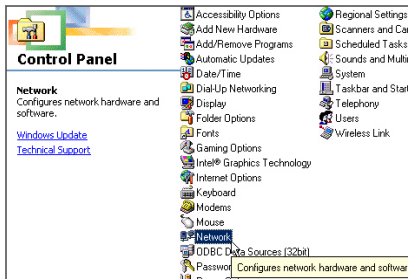
2. Double-click *Network* icon.
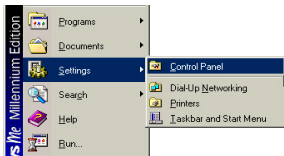

3. Select *TCP/IP* and then click *Properties.*

Click here ———
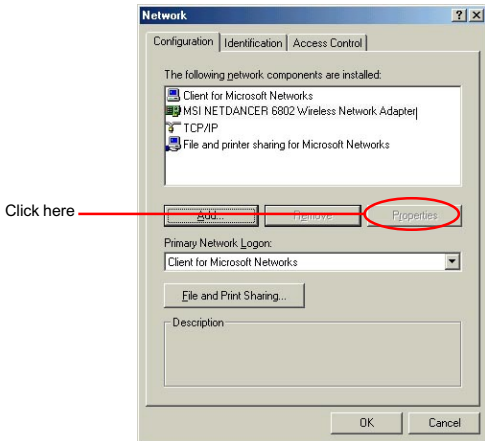
4. When the *TCP/IP Properties* window appears, choose *IP Address* tab and check *Obtain an IP Address Automatically.*
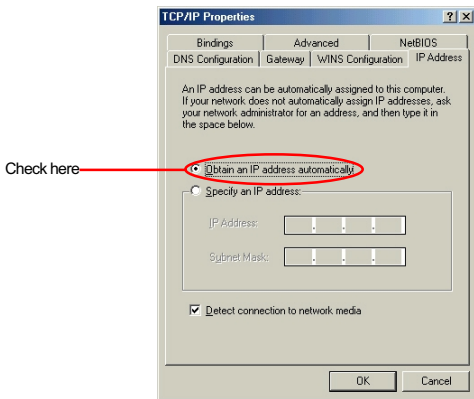
Check here ⎯⎯⎯⎯

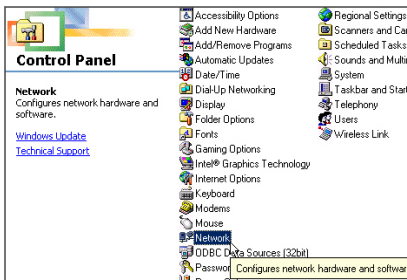5. When the *Network properties* window comes back up, click *OK*. Then click *Yes* to reboot the computer.

5.4 Configuring a static IP address
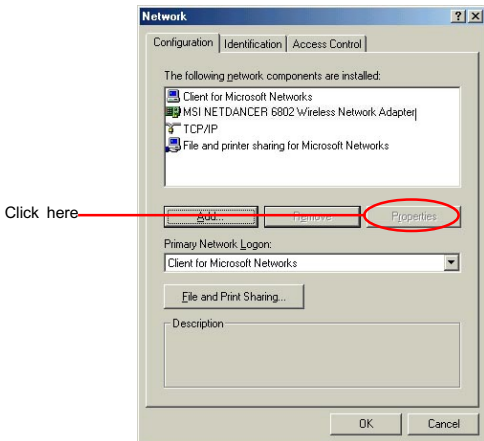
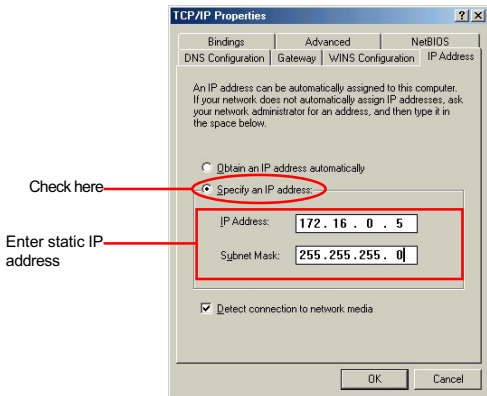1. Go to *Start -> Settings -> Control Panel*.

2. Double-click *Network* icon.

3. Select *TCP/IP* and then click *Properties.*

Click here

4. When the ***TCP/IP Properties*** window appears, choose ***IP Address*** tab and select ***Specify an IP Address.***

Check here

Enter static IP address

5. Enter an IP address into the empty field. Suggested IP Range is 172.16.0.2 to 172.16.0.254, and suggested Subnet Mask is 255.255.255.0 Then click ***OK.*** When the ***Network Properties*** window comes back up, click ***OK***. Then click ***Yes*** to reboot the computer.

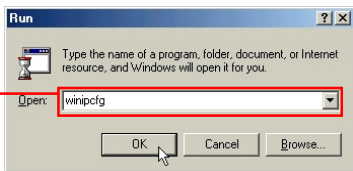IP Addresses must be signed uniquely to each network adapter .

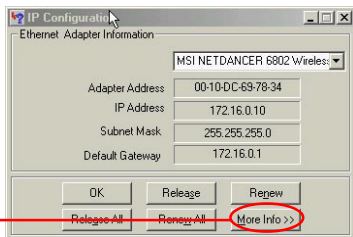## 5.5 Checking TCP/IP address

For Windows® 98SE/ME:

1. Go to *Start -> Run.*
2. Enter command in the *Open* box. Click *OK.*
3. A DOS prompt window appears.
4. Enter *winipcfg* in the *Open* box. Click *OK.*

Enter com-
mand here

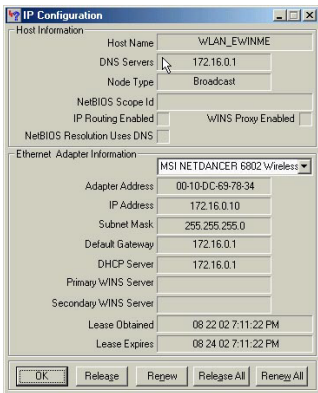5. The *IP Configuration* screen will be displayed, and
   the IP address will be displayed in the IP Address
   box. Please make sure the configuration of IP
   Address, Subnet Mask and Default Gateway is
   correct.

Click here

6. Click on **More Info** to display additional IP information.

For Windows® 2000/XP:

1. Go to **Start -> Run.**
2. Enter **command** in the **Open** box. Click **OK.**
3. A DOS prompt window appears.
4. Enter **ipconfig /all** to display IP information*.*

5.6 Checking the connection by pinging

1. Go to *Start -> Run.*
2. Enter *command* in the *Open* box. Click *OK.*
3. A DOS prompt window appears.
4. Type *ping 172.16.0.1*, which is the the IP address of the Gateway in this case , and press *Enter* key.


Then you'll get replies if the pinging is successful.

5.7 Sharing files

You may now open and save files on other computers once your computers are connected together on a network. You will also be able to specify particular folders or disk drives to "share" and even password to protect them. Please verify that each computer has a unique name and common workgroup name, if you had previously given your Windows® 98SE/ME/2000/XP computers names. Follw the steps below to share specific files and folders with other computers on your network.

1. On your Desktop, right-click the ***My Network Places*** icon and select ***Properties*** from the context menu.
2. You will configure your computers network settings in this dialog mostly. It is also available through the ***Network*** icon in the ***Control Panel***.
3. Click ***File and Print Sharing***.

Click here ———
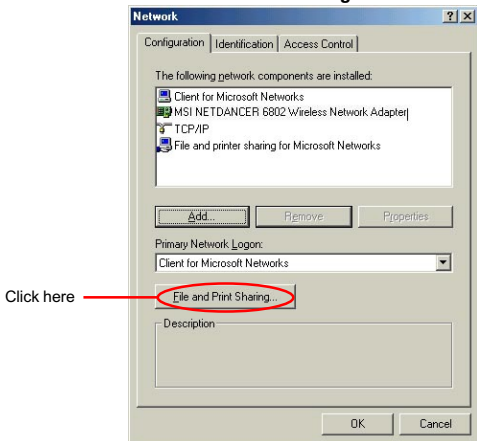
4. Check the box next to *I want to be able to give others acccess to my files*.

5. Then click *OK* on the *File and Print Sharing* dialog box.

Check here —
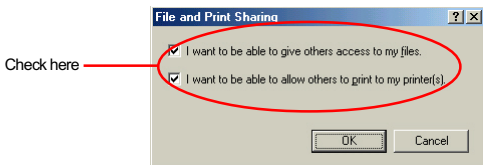
6. Click *OK* on the *Network* dialog box.

7. Provide the Windows® 98SE/2000/ME/XP CD or direct Windows to the proper location of the installation files if prompted. Then reboot if prompted.

8. Now you can identify a particular folder or disk drive to share, which means you can share a folder that both you and your family member/colleaque needs to access occassionally. You can also share your CD-ROM drive for others to use if your other computers do not have CD-ROM. Both of these processes are the same. Only the disk drives and folders that you specifically identify as shared will be accessible to other computers on your network.

9. Locate the disk drive or folder you want to share in Windows Explorer or the *My Computer* icon on your desktop.

10. Right-click the disk drive or folder and select *Sharing.*
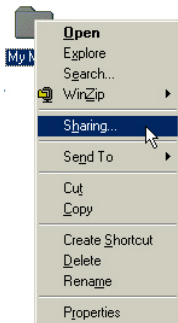
11. Select *Share As:* to set the parameters for sharing this particular disk drive or folder.
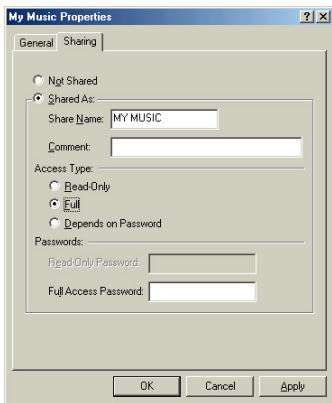
12. The *Share Name:* box is used to identify the disk drive or folder you are sharing to other computers on the network, which can be helpful as more resources on your network for others.
13. The *Comment:* box is optional, which can be used to further describe the disk drive or folder for others on the network.
14. *Access Type:* allows you to designate how much someone else can do with this disk drive or folder. *Read-Only* only allows others to look at or open the files on the disk drive or in the folder. *Full* allows others to read, write, open, save, copy, move, and even delete files on the disk or in the folder. *Depends on Password* gives other computers access conditional on the password they provide.

15. *Passwords:* allow you to apply a level of security to your shared disk drives and folders. Any other computer (user) will be asked to enter the password you designate before accessing the disk drive or folder. Two passwords are used to give two levels of security (or access) to others on the network using the *Depends on Password* setting. Leaving the *Password* boxes empty will give everyone on the network access to the disk drive or folder.

16. Click *OK* to continue. You will be prompted to enter the password(s) you provided for verification. Type the password(s) just as you entered them again.

17. Now you may access this disk drive or folder from another computer on your network. You may do so by double-clicking the *My Network Places* icon on your desktop or inside Windows Explorer.

18. Navigate to the computer with the shared disk drive or folder (recognized by the *Computer Name* you provided) and double-click. Now you should see the disk drive or folder, and double-click. If you specified a password when sharing this disk drive or folder, you will be asked for the password.

19. You can access a disk drive or folder shared over the network from most Windows® 98/ME/2000/XP applications. You can map these disk drives and folers to a drive letter on another computer to make this process easier. For example, on a computer where you are accessing a shared folder from another computer, inside Windows Explorer right-click and select *Map Network Drive.* Now you are able to assign an available drive letter. Checking *Reconnect at logon* allows Windows to map this network drive each time when you start your computer.
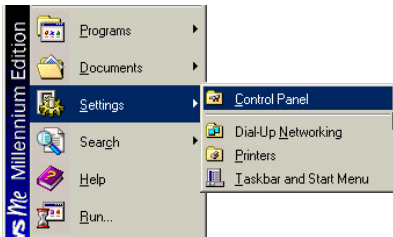
6. TROUBLESHOOTING

This part describes the problems and corresponding solutions of driver installation.

To check if the wireless network adapter drivers are loaded properly:
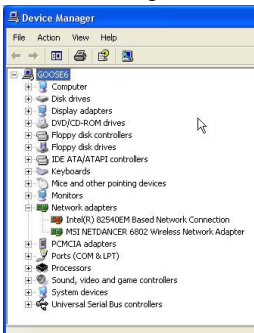
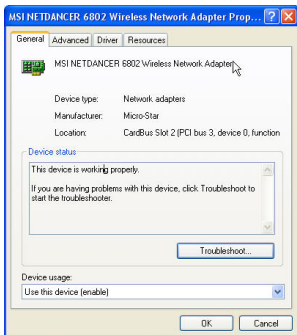1. Go to *Start -> Settings -> Control Panel*.

2. Double-click *System* icon.

3. Click the *Device Manager* Tab.

4. Click the *"+"* symbol in front of *Network Adapters*.
5. Highlight *MSI NetDancer Wireless Network Adapter.*
6. Click *Properties.*
7. Check under *Device Status* to see if the card is working properly.

7. TECHNICAL SUPPORT

Micro-Star International provides free technical support. If a problem arises with your system and no solution can be obtained from this user's manual, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

❑ Visit the MSI website for FAQ, technical guide, driver and software updates, and other information: ***http://www.msi.com.tw/***

❑ Contact our technical staff at: ***support@msi.com. tw***