

MSI PC54GBT (MS-6852)
Wireless 11g + Bluetooth
Combo PCI Card

User's Guide

FCC Caution

1. The 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.
2. FCC RF Radiation Exposure Statement: The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
3. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
4. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Copyright Notice

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Revision History

Revision	History	Date
V 1.0	First Release	August 2004

Important Safety Precautions

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

1. Keep this *User's Guide* 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°C OR BELOW -20°C, IT MAY DAMAGE THE EQUIPMENT.**

How to Use This Guide

This User's Guide provides instructions and illustrations on how to install and use your **MSI PC54GBT** - the Wireless 11g + Bluetooth Combo PCI Card.

- ❶ Chapter 1, **Introduction**, provides a general information on the product you bought, including its application, specification, and requirements.
- ❷ Chapter 2, **Hardware Installation**, tells you how to install the product into your system.
- ❸ Chapter 3, **Software Installation**, guides you through the installation of the product's driver and utility.
- ❹ Chapter 4, **Wireless Network Utility**, describes the MSI Wireless Network Utility that lets you configure your product to connect the network quickly and easily.
- ❺ Chapter 5, **Networking Basic**, helps you to build your network and share resources over the network.

Please note that the setting diagrams or values in this guide are **FOR YOUR REFERENCE ONLY**. The actual settings and values depend on your system and network. If you are not sure about these information, please ask your network administrator or MIS staff for help.

Technical Support

- ❶ Visit the MSI website for FAQ, technical guide, driver and software updates, and other information: <http://www.msi.com.tw/>.
- ❷ Contact our technical staff at: support@msi.com.tw.

1

Introduction

>>> 1.1 MSI PC54GBT - Wireless 11g + Bluetooth Combo PCI Card

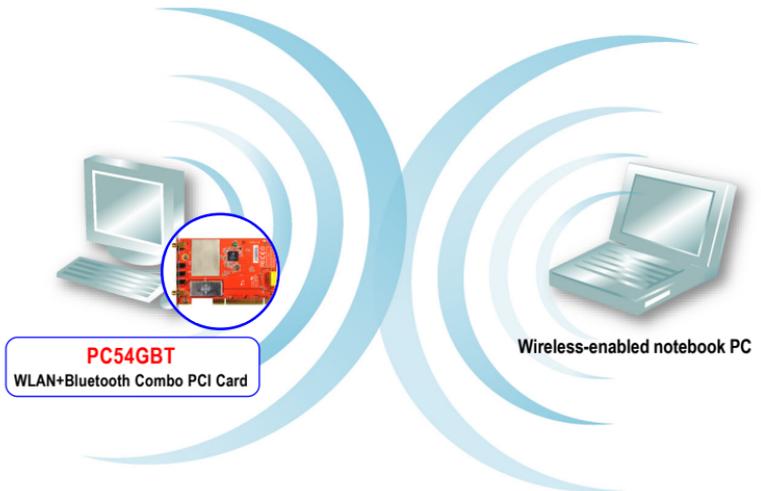
Compliant with IEEE802.11g, the **Wireless 11g + Bluetooth Combo PCI Card - MSI PC54GBT** is a high-efficiency device for wireless networking at home, in office or in public places. The data rate can be up to 54 Mbps and auto-negotiated to 48, 36, 24, 18, 12, 9, 6Mbps (IEEE 802.11g), or 11, 5.5, 2, 1Mbps (IEEE802.11b). With PC54GBT, you can roam between conference room and office without being disconnected the LAN cables; in addition, sharing files and printers can be easy tasks.

PC54GBT is also a bluetooth device, which can serve as a transmitter when you are establishing a Bluetooth connection. It is the solution for the seamless integration of Bluetooth technology into personal computers, enabling short-range wireless connections between desktop/notebook PCs, Bluetooth-enabled peripheral devices (such as printers, faxes, etc), portable handheld devices, and connectivity to the Internet.

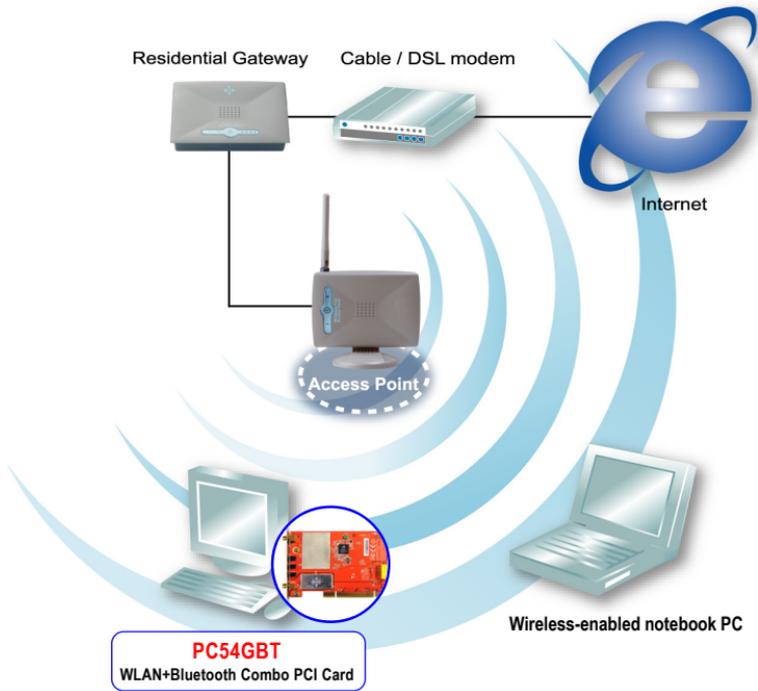
PC54GBT is available to Microsoft Windows operating systems (Windows® XP/2000/ME) and can be integrated into networking with either **Ad-hoc mode** (computer-to-computer, without an Access Point) or **Infrastructure mode** (computer-to-access point, an Access Point is required).

1.2.1 In WLAN Environment

- **Ad-hoc Mode :** An Ad-hoc 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 in 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 this wireless LAN workgroup, and are within range.



- ❏ **Infrastructure Mode** : The difference between Infrastructure network and Ad-hoc network is that the former one includes an Access Point. In an Infrastructure network, 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.



1.2.2 In Bluetooth Connection

The term “Bluetooth” refers to a worldwide standard for the wireless exchange of data between two devices. In order to exchange data, two Bluetooth devices must establish a connection. Before a connection is established, one device must request a connection with another. The second device accepts (or rejects) the connection. The originator of the request is known as the client. The device that accepts (or rejects) the request is known as the server. Many Bluetooth devices can act as both client and server. Every Bluetooth device that provides a service must be prepared to respond to a connection request. Bluetooth software is always running in the background on the server, ready to respond to connection requests.



Bluetooth-enabled Devices

>>> 1.3 Specifications

Hardware Specifications

Form Factor

32-bit PCI v2.2

Operating Voltage

3.3V

Compliant Standards

- IEEE 802.11g/b
 - USB 1.1
-

Operational Environment

- Operational Temperature: 0 ~ 60°C
 - Storage Temperature: -20 ~ 100°C
 - Humidity: 10 ~ 90% (Non-Condensing)
-

Weight and Dimension

- Weight: 11.5g
 - Dimension: 120 x 83.2mm
-

WLAN Specifications

Raw Data Rates and Modulation Types

- IEEE802.11b (Auto-Fallback)
CCK: 11 and 5.5Mbps
DQPSK: 2Mbps
DBPSK: 1Mbps
 - IEEE802.11g (Auto-Fallback)
OFDM: 54, 48, 36, 24, 18, 12, 9, 6Mbps
-

Frequency and Channels

- 2.4 ~ 2.4835 GHz
 - 14 channels
-

Communication Protocol

- DSSS (Direct Sequence Spread Spectrum) with ACK
 - Half-Duplex
-

Access Method

- Infrastructure Mode: Station-To-LAN Architecture
 - Ad-Hoc Mode: Station-To-Station Architecture
-
-

Transmitter Output Power16dBm

Wireless CoverageTBD

**Bluetooth
Specification****Connection Interface**USB connector

ThroughputAround 723 Kbps (data channels)

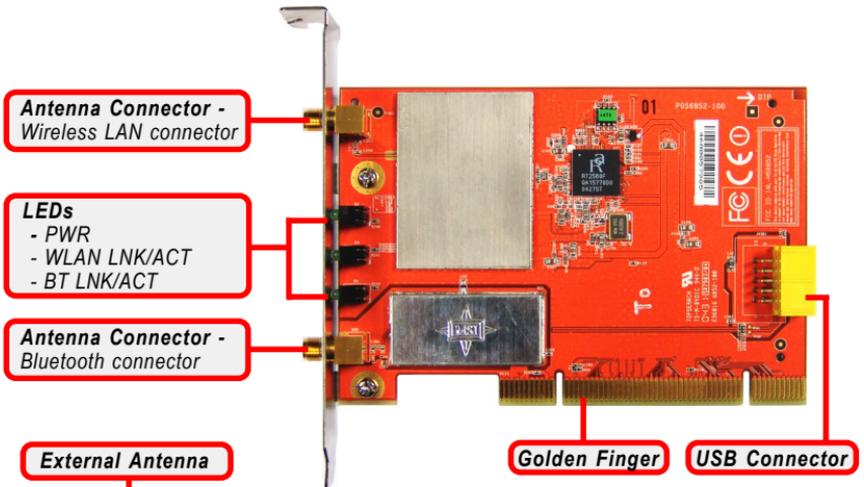
Operating Voltage5V from USB interface

Spread SpectrumFHSS (Frequency Hopping Spread Spectrum)

Frequency2.4 ~ 2.4835 GHz

Output Power4dBm (max.)

>>> 1.4 Product View

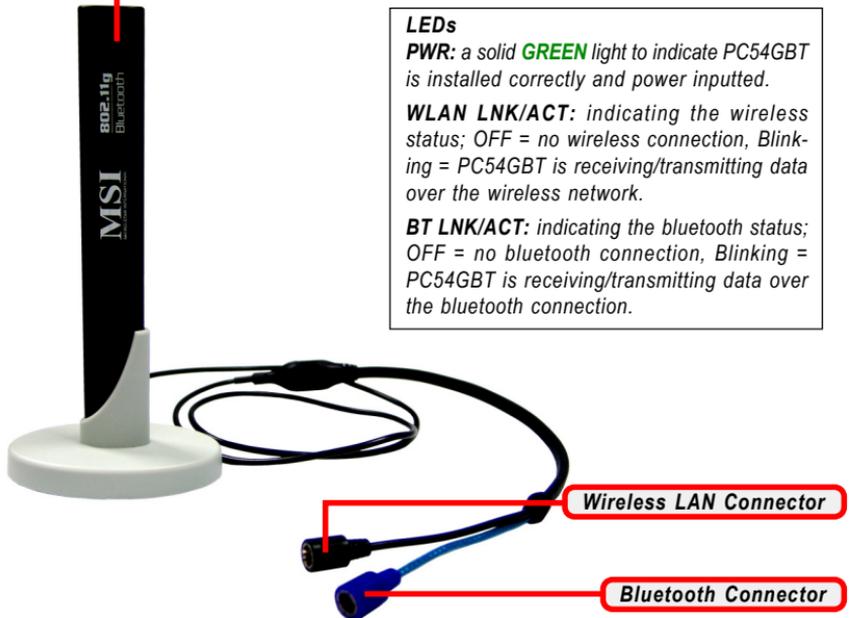


LEDs

PWR: a solid **GREEN** light to indicate PC54GBT is installed correctly and power inputted.

WLAN LNK/ACT: indicating the wireless status; OFF = no wireless connection, **Blinking** = PC54GBT is receiving/transmitting data over the wireless network.

BT LNK/ACT: indicating the bluetooth status; OFF = no bluetooth connection, **Blinking** = PC54GBT is receiving/transmitting data over the bluetooth connection.



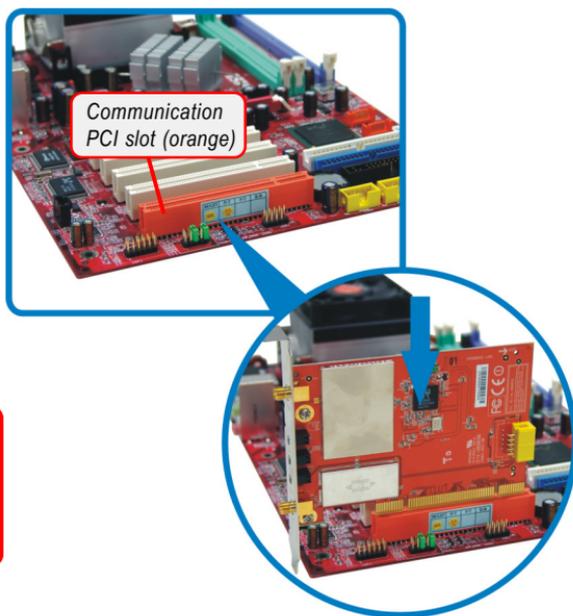
2

Hardware Installation

The following diagrams provide you a basic installation for your PC54GBT. For more information about the PCI slot, please refer to the user's manual of your mainboard.

STEP 1 Turn off the computer and disconnect the power cable. Then, remove the computer's chassis to locate the communication PCI slot (the **ORANGE** one) on your mainboard.

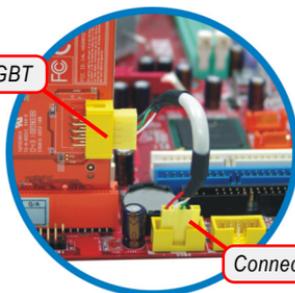
STEP 2 Put the PC54GBT directly over the PCI slot and press it into the slot firmly. Connect one end of the USB cable to PC54GBT and the other end to the mainboard.



NOTE: DO NOT hold your PC54GBT on the golden finger while installing; doing this may cause interference or damage.

- STEP 3** Connect the one end of the provided USB cable to PC54GBT, and the other end to the USB connector on the mainboard.

Connect to PC54GBT

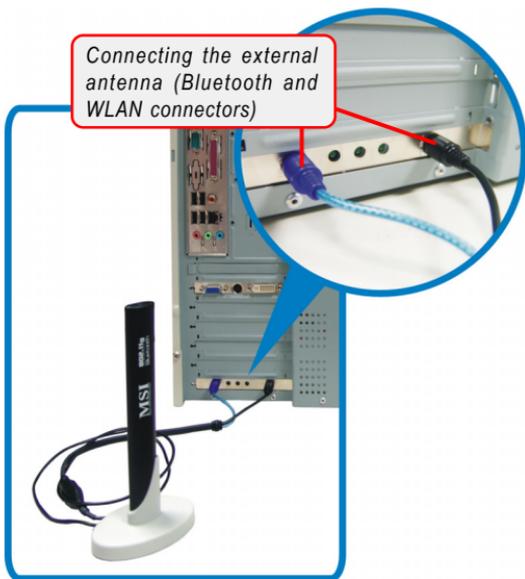


Connect to mainboard

- STEP 4** Replace the computer's chassis after securing the PC54GBT with a bracket screw.

- STEP 5** Connect the external antenna to the connectors (Bluetooth and WLAN) on the PC54GBT's bracket.

Connecting the external antenna (Bluetooth and WLAN connectors)



If you are not skilled at installing the PCI adapter, please ask the vendor or an experienced technician for help.

3

Software Setup

This chapter describes the procedures of installing the driver and utility. Follow the instruction step by step to finish the installation. **Before installing the driver and utility for your PC54GBT, please confirm that MSI Digicell™ program is installed in your system already*.**

* The MSI Digicell program should be included in your MSI mainboard package.

If you use Windows® 98SE/ME, please prepare the Windows® Setup CD at hand before installing the driver; because the system will ask you to insert the Setup CD to copy files during the installation.

Please **NOTE** that your PC54GBT should be installed into your computer before installing the driver and utility. Then, the operating system will detect a new device and start to configure the new device. Click **Cancel** here to start installation from the InstallShield Wizard.



Click

STEP 1

Insert the software CD into your CD-ROM drive, and the Setup program should launch automatically.

If the Autorun program doesn't launch automatically, click **Start** at the taskbar and select **Run...** Type **E:\setup.exe** (where **E** is your CD-drive) in the Open box and click **OK** to launch the Setup program manually.

The main screen of Setup program will appear as below.

**STEP 2**

1. Click the **Install WLAN Driver** button.
2. The welcome screen of InstallShield Wizard appears. Click **Next**.
3. Read and accept the License Agreement; then, click **Next**.
4. Click **Install** and the program will copy the necessary files to the system. The progress indicator shows the installing status.
5. Click **Finish** when the WLAN driver installation is completed.

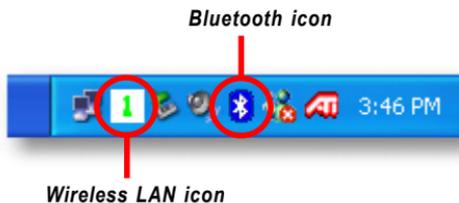
STEP 3

1. Click the **Install Bluetooth Driver** button.
2. The welcome screen of InstallShield Wizard appears. Click **Next**.
3. Read and accept the License Agreement; then, click **Next**.
4. Click **Next** to install the driver in the default destination folder.
5. Click **Install** and the program will copy the necessary files to the system. The progress indicator shows the installing status.
6. Click **Finish** when the bluetooth driver installation is completed.

STEP 4

Click the **Exit** button.

The Wireless LAN icon and Bluetooth icon will appear in the status bar.



4

Wireless Network Utility

After installing the driver, PC54GHT provides a convenient and powerful utility that allows you to set up, configure, and know your networking status easily and clearly.

>>> 4.1 Introduction

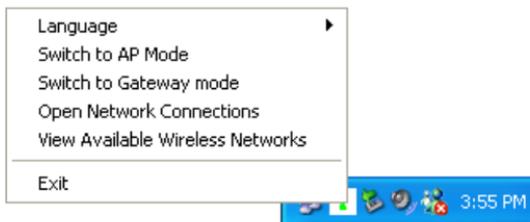
4.1.1 The MSI Wireless LAN icon

-  - Not connected to the network.
-  - Connected to the network.
-  - Receiving/transmitting data from/to the network.

When you move the mouse over the icon, it shows the current connection information.



-  **Right-clicking** the icon will bring up a sub-menu containing more settings:



Language

You can select language according to your operating system.

Switch to AP Mode (optional)

If your MSI wireless LAN adapter supports Software AP function, you can see this item in the sub-menu, and which allows you to use your MSI wireless adapter as a virtual access point. For details, refer to the *MSI Software AP/Gateway User's Guide*.

Switch to Gateway Mode (optional)

If your MSI wireless LAN adapter supports Software Gateway function, you can see this item in the sub-menu, and which allows you to use your MSI wireless adapter as a virtual gateway. For details, refer to the *MSI Software AP/Gateway User's Guide*.

Open Network Connections

Select to open the Network Connections window.

View Available Wireless Networks

Launch the utility to configure your network settings.

Exit

Close the program.

- ❏ **Clicking** the icon will launch the utility as shown below to configure your network settings.

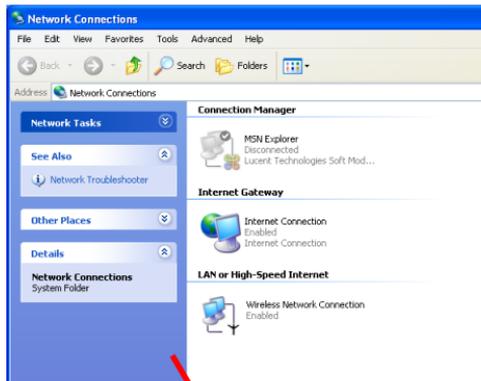


4.1.2 Changing the Control Setting (for Windows XP only)

If you use Windows XP, the wireless LAN is controlled by the operating system (default). To take full advantage of your MSI wireless adapter, it is recommended to use the MSI Wireless Network Utility to control your wireless LAN.

To change the control setting:

1. Right-click the MSI Wireless LAN icon and select the **Open Network Connections** option.
2. In the **Network Connections** window, double-click the Wireless Network Connection icon to bring up the following dialog window.

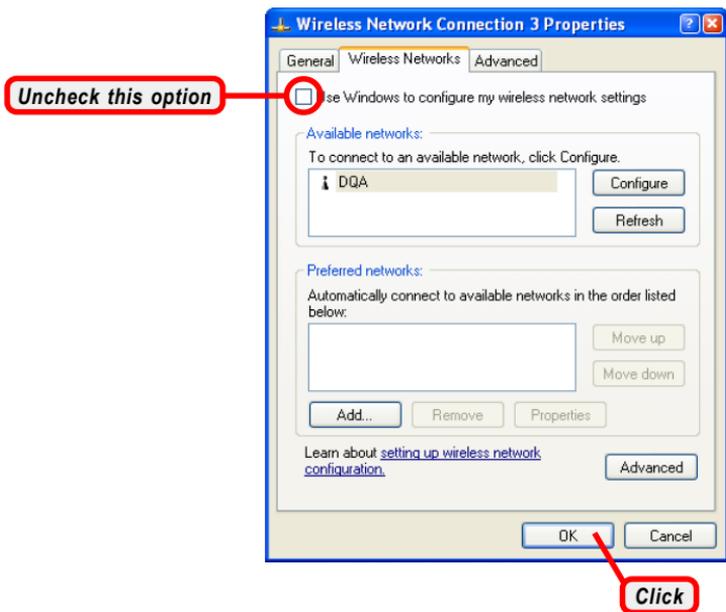


Double-click



Click

3. Click **Advanced**, and the **Properties** window will appear as below.



4. Uncheck the **Use Windows to configure my wireless network settings** option. Then, click **OK**.
5. Now, you can use MSI Wireless Network Utility to configure your network.

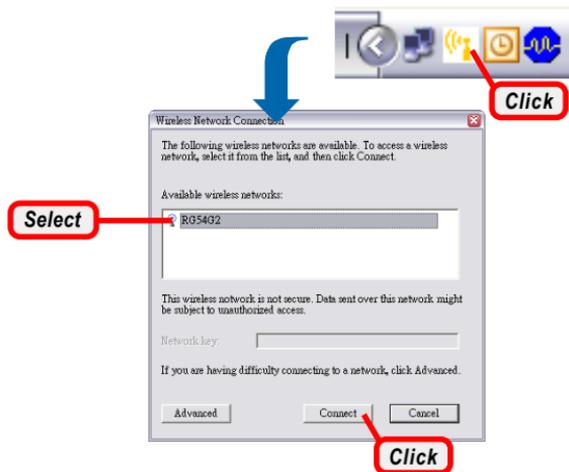
>>> 4.2 Networking

Since PC54GBT is installed in your computer, you have to configure the settings for communication to start working in your network environment.

- 4.2.1 Infrastructure Mode - Authentication (802.1x authentication)**
Using 802.1x Authenticate is to provide: when the wireless network you are configuring requires that you authenticate using your personal credentials, check Authenticate using profile, and select the profile to use for authentication from the drop-down list at the right. You must have already configured a profile appropriate for authenticating onto this network. When you check Authenticate using profile, MSI utility performs an 802.1X authentication using your password, certificate, or by other means, as is configured in the selected profile.

Connecting to the Access Point:

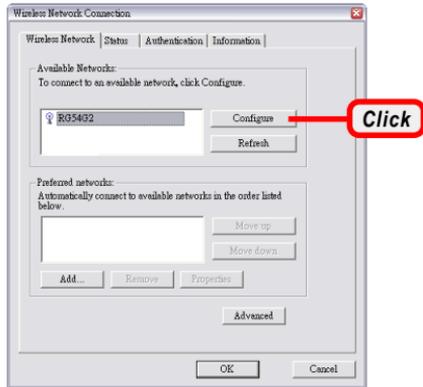
1. Click the MSI Wireless LAN icon to bring up the **Wireless Network Connection** window.



2. In the list of Available wireless networks, select (highlight) the network you want, and then click **Connect**.

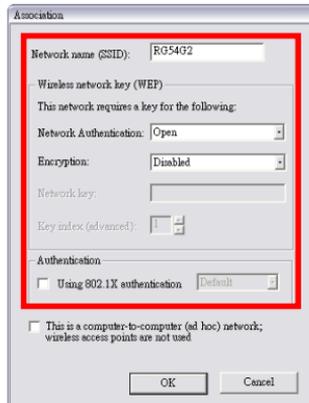
Q If you want to configure the network settings:

1. Click **Advanced** in the Wireless Network Connection window.
2. The Available Networks field contains a list of available Access Points in your network. Select (highlight) one network you want, and then click **Configure** to set up the selected network. You can click **Refresh** to search the available Access Points in the network again.

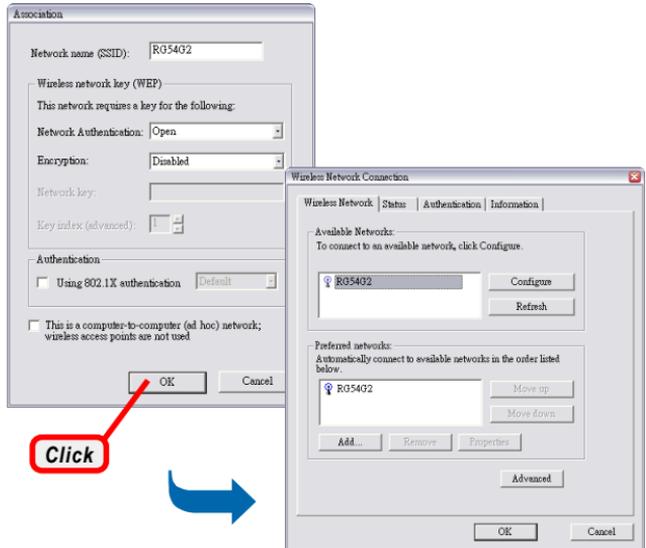


3. Setup the Network Key (if needed) in the Wireless Network Key (WEP) field according to the network's settings.

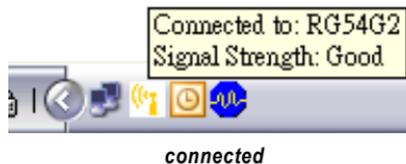
Only the network administrator can change the SSID and WEP settings in the Association window; if you have problem of accessing the network, please ask the administrator for help.



- Click **OK**. The selected network will appear in the Preferred Networks field. If it contains two or more networks in the list, you can use **Move up/Move down** to set the priority.



- Click **OK** to complete the configuration, and an icon indicating connected to the network will appear in the status area.



4.2.2 Ad-hoc Mode

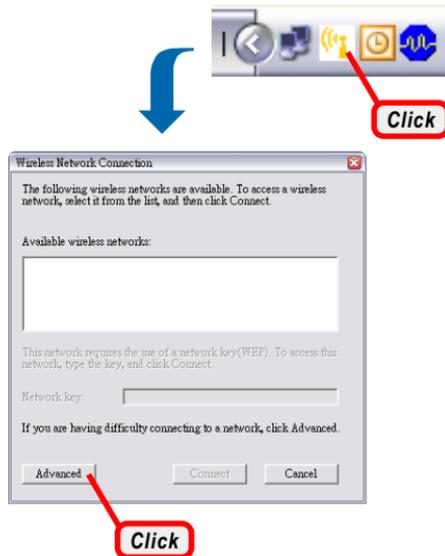
Ad-hoc mode allows your computer to communicate directly with any computer installed with compatible wireless adapter.

If you want to use the network in Ad-hoc mode:

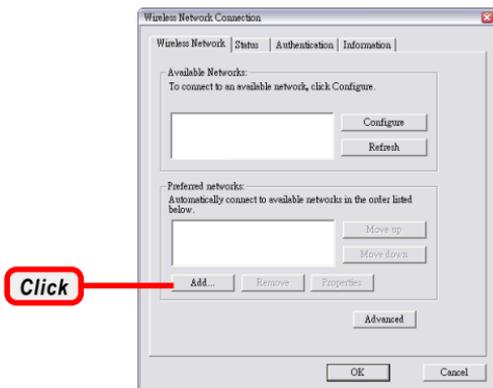
- All the computers connected should be set to Ad-hoc mode.
- The computers have the same SSID (network name) setting.

To configure the settings:

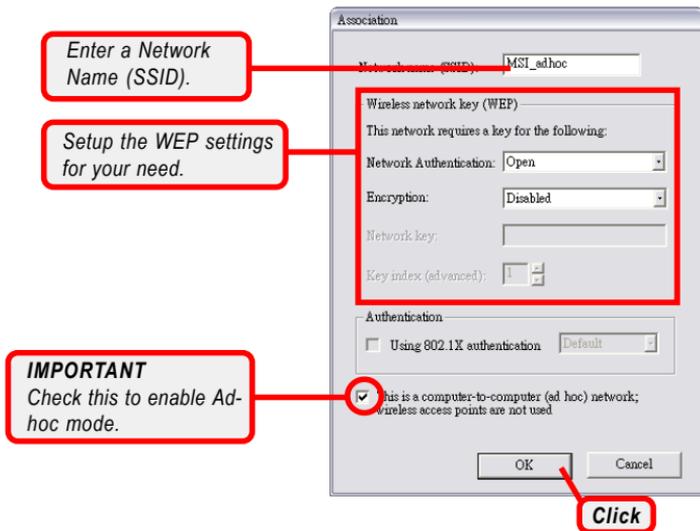
1. Click the MSI Wireless LAN icon to bring up the **Wireless Network Connection** window. Then, click **Advanced**.



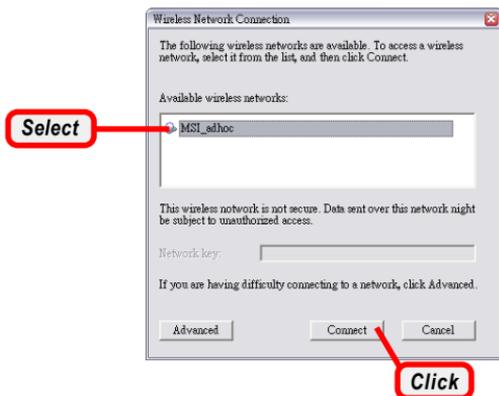
2. You can build up the Ad-hoc network by clicking **Add...** in the Preferred Networks field.



3. Set up the Network Name (SSID) and Network Key (if needed) for the network. Then, check the **This is a computer-to-computer [ad hoc] network; wireless access points are not used** option and click **OK** to enable the Ad-hoc mode.



4. The computer building this Ad-hoc network in *step 3* is the designated administrator of the network. Any computer can access the network by selecting **Connect** in the Wireless Network Connection window.



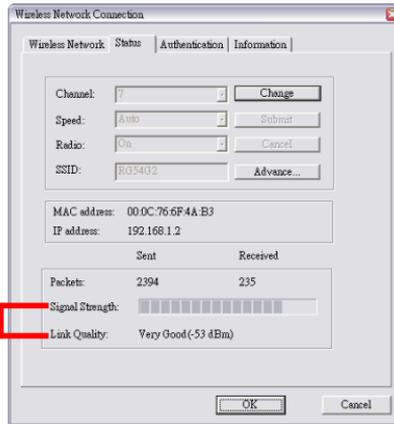
5. Click **OK** to complete the configuration, and an icon indicating connected to the network appears in the status area.



>>> 4.3 Status

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

Signal Strength:
shows the received signal strength level.
Link Quality:
shows the measured signal level and connection status.



Channel

Specifies 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. 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

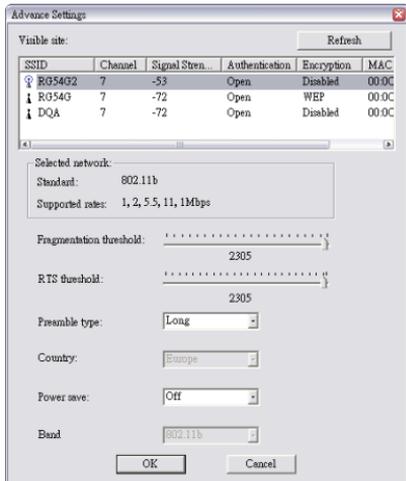
Set to **On** to activate the radio.

SSID

Means Service Set Identifier, a 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.

Click **Advance**, and you can get more information about the LAN traffic status and more detailed settings.

It is not recommended to change these settings if you are not familiar with the advanced configuration.



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 Threshold

You may set the length threshold.

Preamble Type

You may set the length of preamble in this field. The available options are:

- **Long:** It is set to 144 bits.
- **Short:** It is set to 72 bits.
- **Auto:** The card supports an auto-detection feature, it will automatically select the **Preamble Type** depending on the Access Point Preamble Type if this option is selected.

Country

Display the country that you are in (read only).

Power save

The card will turn into power save mode when idle.

Band

Display the information of current band.

>>> 4.4 Authentication

The **Authentication** page is to provide users to build different authentication type, the authentication type includes **MD5-Challenge**, **TLS** and **PEAP**.



Profile

You can **Add/Delete/Save** the settings of your configuration.

Authentication type

According to your network configuration, select one authentication type from the pull-down menu:

- **MD5-Challenge**: *Only one-way authentication and does not facilitate generation of key, use a login name that matches the form of the user name as it is stored in the authentication database. Enter the User name and Password that provided by the server.*
- **TLS**: *TLS requires that both user and authentication server have certificates for mutual authentication. While TLS is cryptographically strong, it requires that the corporation that deploys it maintain a certificate infrastructure for all of its users*
- **Protected EAP**: *PEAP is a suitable protocol for performing secure authentications against Windows domains and directory services.*

>>> 4.5 Information

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



5

Networking Basics

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

>>> 4.1 Checking the Network Elements

The following elements are required for all computers if you want to connect to a network:

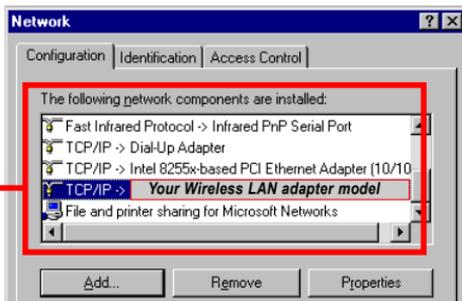
- **Client for Microsoft Network**
- **TCP/IP**
- **File and printer sharing for Microsoft Networks**

To check the required elements are installed in the system, you can:

Under Windows 98SE/ME

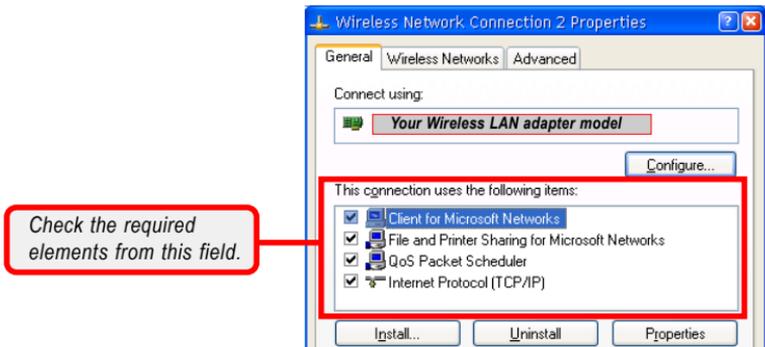
1. Click **Start** and choose **Settings**; then, click **Control Panel** to open the **Control Panel** window.
2. Double-click the **Network** icon.
3. The **Network** window appears to show the current network settings of the system.

Check the required elements from this field.



Under Windows 2000/XP

1. Click **Start** and choose **Control Panel** to open the **Control Panel** window.
2. Double-click the **Network Connection** icon to open the **Network Connection** window.
3. Right-click the **Wireless Network Connection** icon and click **Properties** from the shortcut menu.
4. The **Wireless Network Connection Properties** window appears to show the current network settings of the system.



>>> 4.2 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.

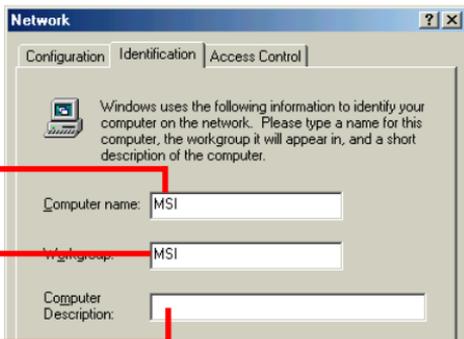
Under Windows 98SE/ME

1. Open the **Network** window as described in previous section, and choose **Identification** tab.
2. Type a name for the computer In the **Computer name** box. This will be the name of this computer used by other computers on your network to communicate with. Please **NOTE** that each computer's name must be unique on a particular network to avoid confusion.
3. Type the workgroup name that the computer will belong to in the **Workgroup** box. All the computers on your network should have an identical Workgroup name.
4. The **Computer Description** box is optional. You may enter a description that helps to identify this computer on your network. Then, click **OK**.
5. Repeat the procedure above for each computer on your network to ensure that they all have unique Computer Name and identical Workgroup.

Enter a name for your computer (less than 15 characters without space.

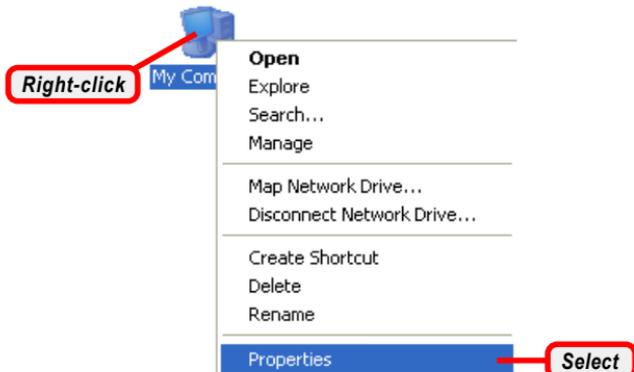
Your computer will belong to this workgroup.

Enter some information for reference.

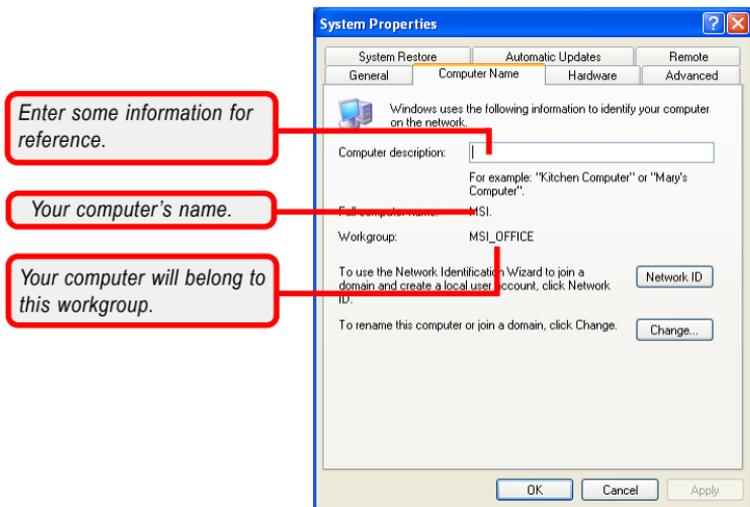


Q Under Windows 2000/XP

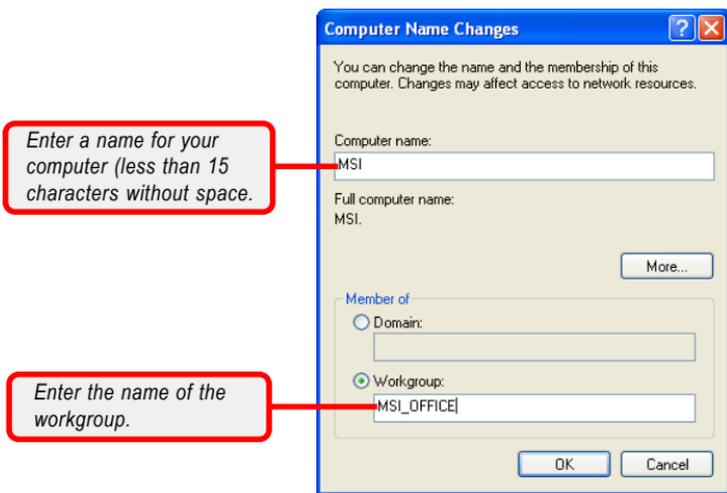
1. Right-click **My Computer** icon on your Windows desktop, and click **Properties** from the shortcut menu.



2. The **System Properties** window appears; choose **Computer Name** tab.



- To rename the computer and join a workgroup/domain, click **Change**.
- The **Computer Name Changes** window appears as below. Enter a **Computer Name**, select Workgroup and enter the name of your workgroup. Please **NOTE** that each computer's name must be unique on a particular network to avoid confusion.



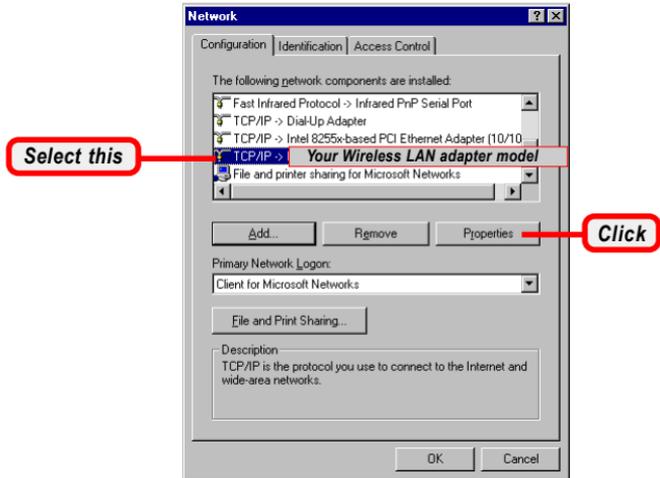
- Click **OK** to save changes.

>>> 4.3 Configuring a Dynamic/Fixed IP Address

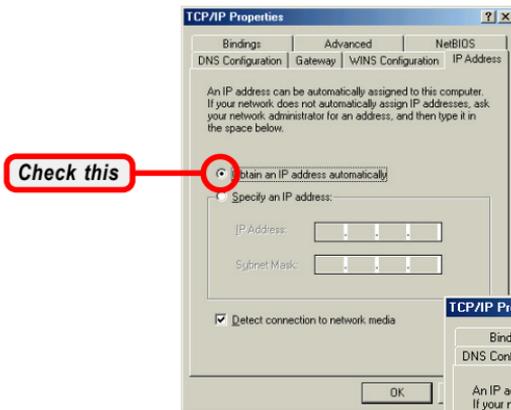
When the drivers are installed, the default setting here is set to obtain IP dynamically through a DHCP server. If you want to change the settings, please follow the steps below:

Q Under Windows 98SE/ME

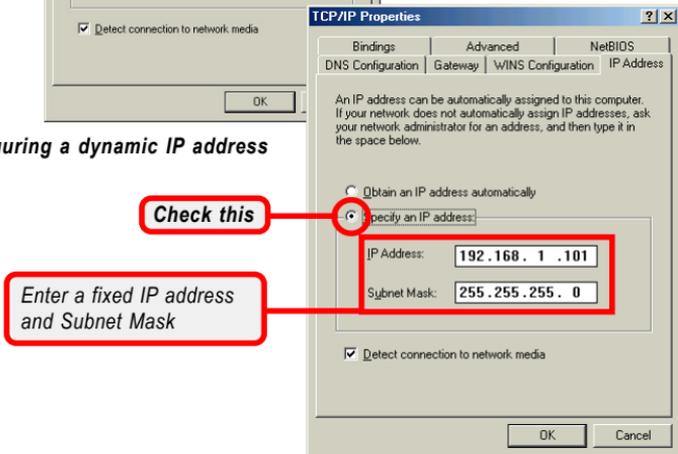
1. Go to **Start -> Settings -> Control Panel**.
2. Double-click the **Network** icon.
3. The Network window appears as below. Select **TCP/IP -> (your Wireless LAN adapter model)**, and click **Properties** to bring up the **TCP/IP Properties** window.



- 4.a To configure a dynamic IP address, choose **IP Address** tab and check the **Obtain an IP Address Automatically** option.
- 4.b To configure a fixed IP address, choose **IP Address** tab and check the **Specify an IP Address** option. Then, enter an IP address into the empty field. Suggested IP Address Range is **192.168.1.1** to **192.168.1.253**, and suggested Subnet Mask is **255.255.255.0**.



4.a Configuring a dynamic IP address

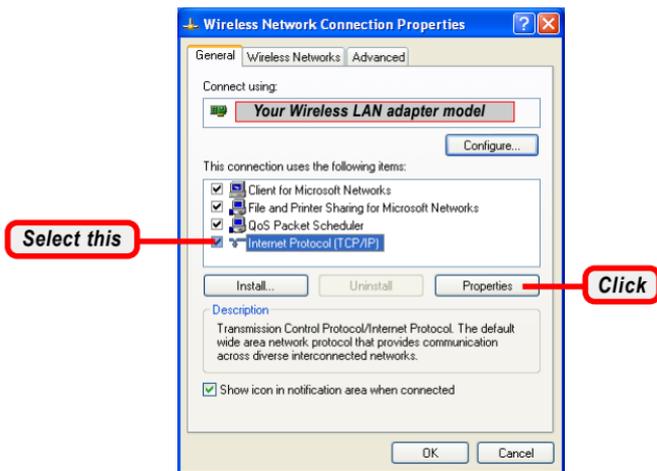


4.b Configuring a fixed IP address

5. Click **OK**. Then, click **Yes** when prompted to reboot the computer.

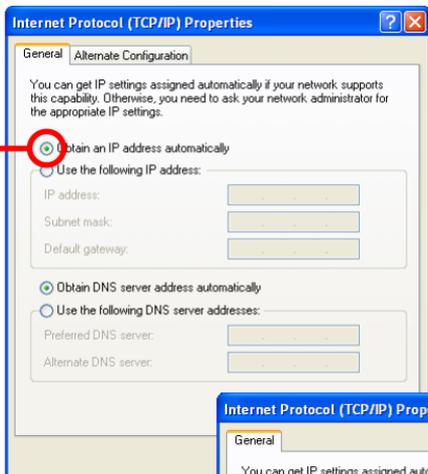
Q Under Windows 2000/XP

1. Click **Start** and choose **Control Panel** to open the **Control Panel** window.
2. Double-click the **Network Connection** icon to open the **Network Connection** window.
3. Right-click the **IEEE802.11g Wireless PCI Adapter** icon and click **Properties** from the shortcut menu.
4. When the **Wireless Network Connection Properties** window appears, choose **General** tab and select **Internet Protocol [TCP/IP]**, and click **Properties** to bring up the **Internet Protocol [TCP/IP] Properties** window.



- 5.a To configure a dynamic IP address, check the **Obtain an IP Address Automatically** option.
- 5.b To configure a fixed IP address, check the **Use the following IP address** option. Then, enter an IP address into the empty field. Suggested IP Address Range is **192.168.1.1** to **192.168.1.253**, and suggested Subnet Mask is **255.255.255.0**.

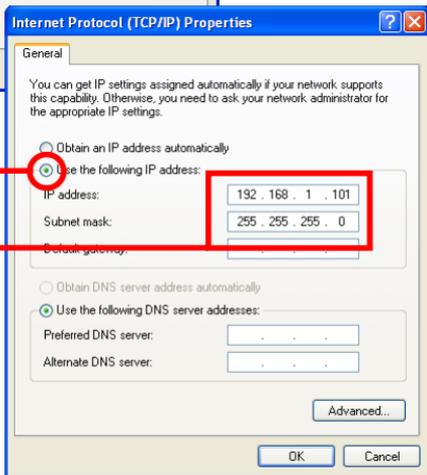
Check this



5.a Configuring a dynamic IP address

Check this

**Enter a fixed IP address
and Subnet Mask**



5.b Configuring a fixed IP address

6. Click **OK** to complete the configuration.

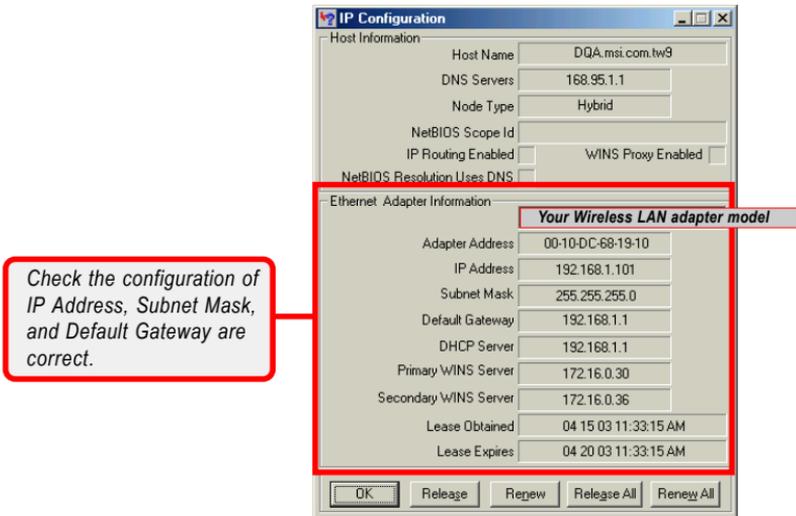
>>> 4.4 Checking TCP/IP Address

Under Windows 98SE/ME

1. Go to **Start -> Run...**
2. Type *winipcfg* in the Open box and click **OK**.



3. The **IP Configuration** screen will appear, click **More Info** to bring up a screen containing detail information of your wireless network adapter.



Q Under Windows 2000/XP

1. Go to **Start -> Run...**
2. Type **cmd** in the Open box and click **OK**.



3. A DOS prompt window appears. Type **ipconfig/all** and press [Enter] to display IP information.

```
C:\WINDOWS\System32\cmd.exe
Windows IP Configuration

Host Name . . . . . : MSI
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Wireless Network Connection:

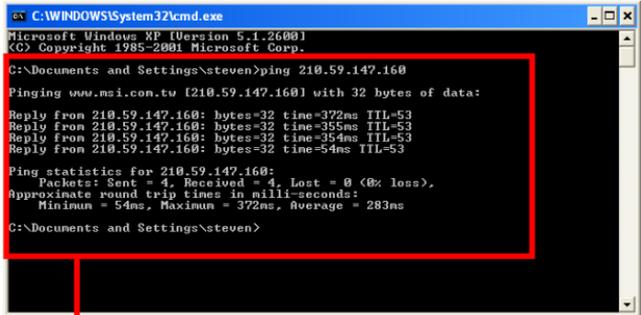
Connection-specific DNS Suffix . : Your Wireless LAN adapter model
Description . . . . . :
Physical Address. . . . . : 00-10-DC-68-19-10
Dhcp Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IP Address. . . . . : 192.168.0.101
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.0.1
DHCP Server . . . . . : 192.168.0.1
DNS Servers . . . . . : 192.168.0.1
Lease Obtained. . . . . : Saturday, April 19, 2003 4:22:53 PM
Lease Expires . . . . . : Saturday, April 26, 2003 4:22:53 PM

C:\Documents and Settings\Steven>
```

Check the configuration of IP Address, Subnet Mask, and Default Gateway are correct.

>>> 4.5 Checking Connection by Pinging

1. Go to **Start -> Run...**
2. Type *command* (Windows 98SE/ME) or *cmd* (Windows 2000/XP) in the Open box and click **OK**.
3. A DOS prompt window appears. Type *ping 210.59.147.160* (or any URL address), which is the IP address of the Gateway in this case, and press [**Enter**].

A screenshot of a Windows XP command prompt window. The title bar reads "C:\WINDOWS\System32\cmd.exe". The window content shows the execution of a ping command: "C:\Documents and Settings\steven>ping 210.59.147.160". The output indicates a successful connection to "www.msi.com.tw [210.59.147.160] with 32 bytes of data:", followed by four successful replies from 210.59.147.160 with varying response times (372ms, 355ms, 354ms, 54ms) and TTL=53. Ping statistics show 4 packets sent and received, 0% loss, and an average round trip time of 283ms. A red rectangular box highlights the output text, and a red line connects it to a callout box below.

```
C:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(G) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\steven>ping 210.59.147.160

Pinging www.msi.com.tw [210.59.147.160] with 32 bytes of data:
Reply from 210.59.147.160: bytes=32 time=372ms TTL=53
Reply from 210.59.147.160: bytes=32 time=355ms TTL=53
Reply from 210.59.147.160: bytes=32 time=354ms TTL=53
Reply from 210.59.147.160: bytes=32 time=54ms TTL=53

Ping statistics for 210.59.147.160:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 54ms, Maximum = 372ms, Average = 283ms

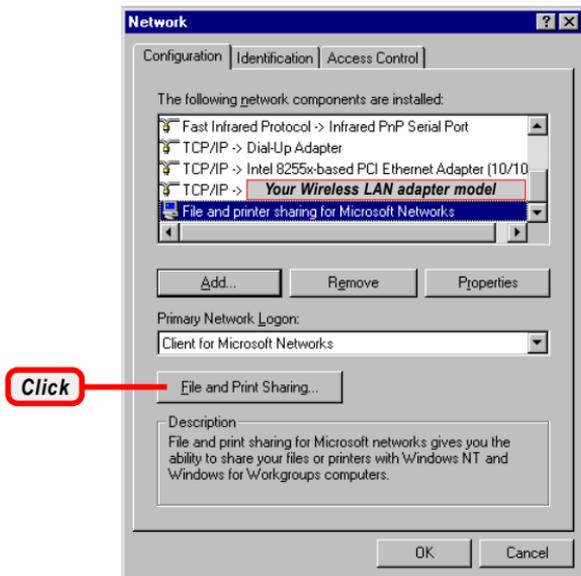
C:\Documents and Settings\steven>
```

You will get reply if the pinging is successful.

>>> 4.6 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. Follow the steps below to share specific files and folders with other computers on your network.

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



4. Select the **I want to be able to give others access to my files** option, and click **OK**.



5. Click **OK** in the Network dialog box.
6. Provide the Windows Setup CD or direct the path to the proper location of the installation files if prompted. Then, reboot if prompted.
7. 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/colleague needs to access occasionally. You can also share your CD-ROM drive for others to use if your other computers do not have one. 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.
8. Locate the disk drive or folder you want to share in Windows Explore or My Computer icon on your desktop.
9. Right-click the disk drive or folder and select **Sharing**.



10. Select the **Share As** option to set the parameters for sharing this particular disk drive or folder.



Share Name

This is used to identify the disk drive or folder you are sharing to other computers in the network, which can be helpful as more resources in your network for others.

Comment

This field is optional, which can be used to further describe the disk drive or folder for others in the network.

Access Type

This option allows you to designate how much someone else can do with this shared disk drive or folder. Setting options are:

- **Read-Only:** only allows others to look at or open the files in the disk drive or folder.
- **Full:** allows others to read, write, open, save, copy, move, and even delete files.
- **Depends on Password:** gives other computers access conditional on the password they provide.

Password

This option allows you to apply a level of security to your shared disk drive and folder. Any other computer (user) will be asked to enter the password you set here before accessing the disk drive or folder. Two passwords are used to give two levels of security (or access) to others in the network using the ***Depends on Password*** setting. Leaving the Password boxes empty will give everyone in the network access to the disk drive or folder.

11. Click **OK** to continue. You will be prompted to type the password(s) you provided for verification. Type the password(s) just as you typed them again.
12. Now you may access this disk drive or folder from another computer in your network. You may do so by double-clicking the **My Network Place** icon on your Windows desktop or inside Windows Explorer.
13. Navigate to the computer with the shared disk drive or folder (recognized by the Computer Name you provided), and double-click it. If you specified a password when sharing this disk drive or folder, you will be asked for the password.
14. You can access a disk drive or folder shared over the network from most Windows 98SE/ME/2000/XP applications. you can map these disk drives and folders 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 the **Map Network Drive** option. Now you are able to assign an available drive letter. Checking the **Reconnect at logon** option allows Windows to map this network drive each time when you start your computer.