Bluetooth Application Note

FCC 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 radio interference in a commercial environment. This equipment can generate, use and radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are necessary to correct the interference.

CE Declaration of Conformity

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022/A1 Class B, and EN 50082-1. This meets the essential protection requirements of the European Council Directive 89/336/EEC on the approximation of the laws of the member states relation to electromagnetic compatibility.

Index

1.Bluetooth software installation and basic operations

For CF Bluetooth card please install the driver before installing Bluetooth software, the driver can be located in BTCF of the driver CD.

For USB Bluetooth adapter please install   Bluetooth software before inserting the USB adapter.

Installing Bluetooth software for Windows

(1) Place installation CD into PC and setup should launch automatically.

If setup does not launch, use Windows Explorer to navigate to the appropriate CD-ROM drive and run **"Bsetup"**.
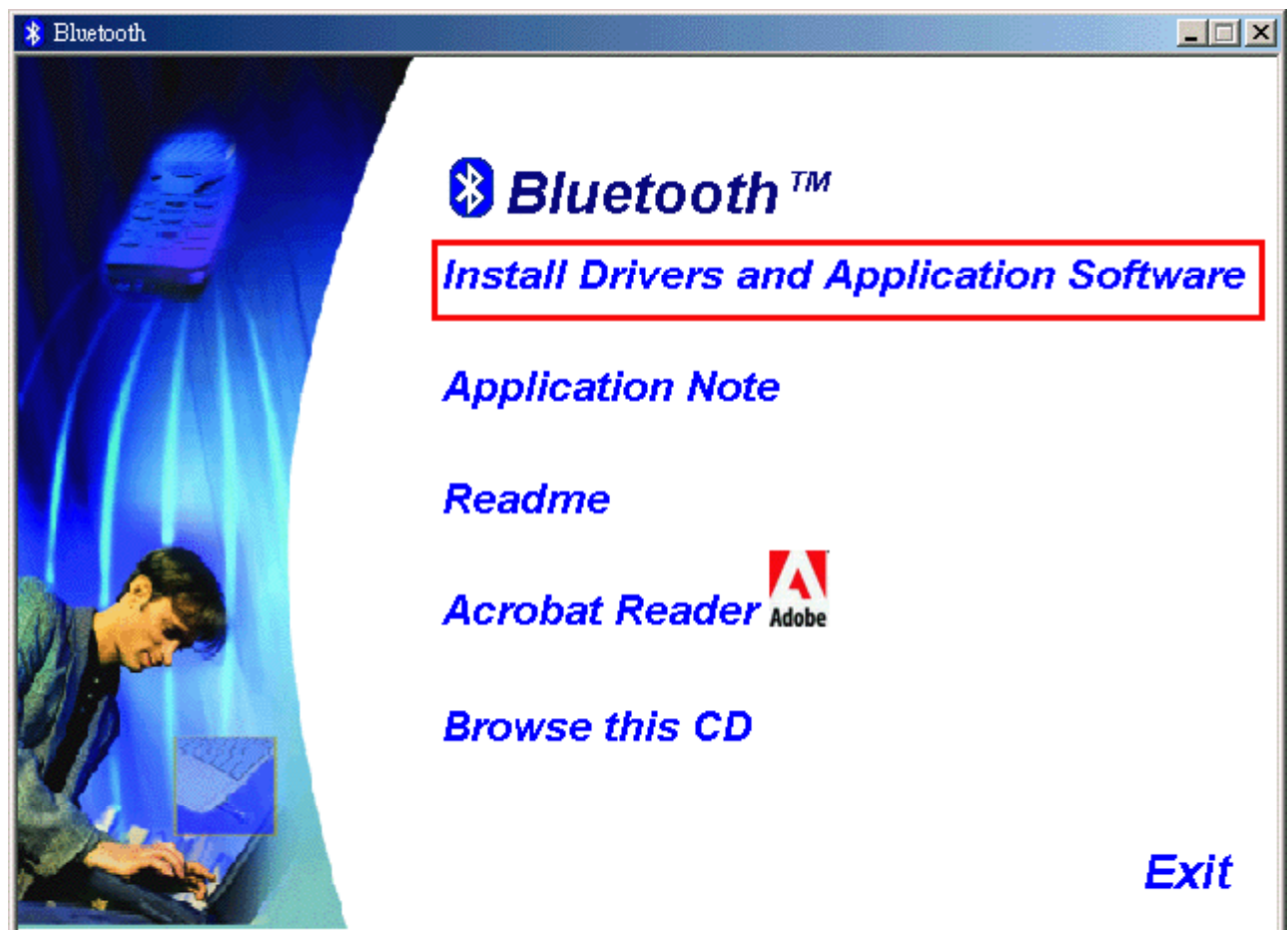
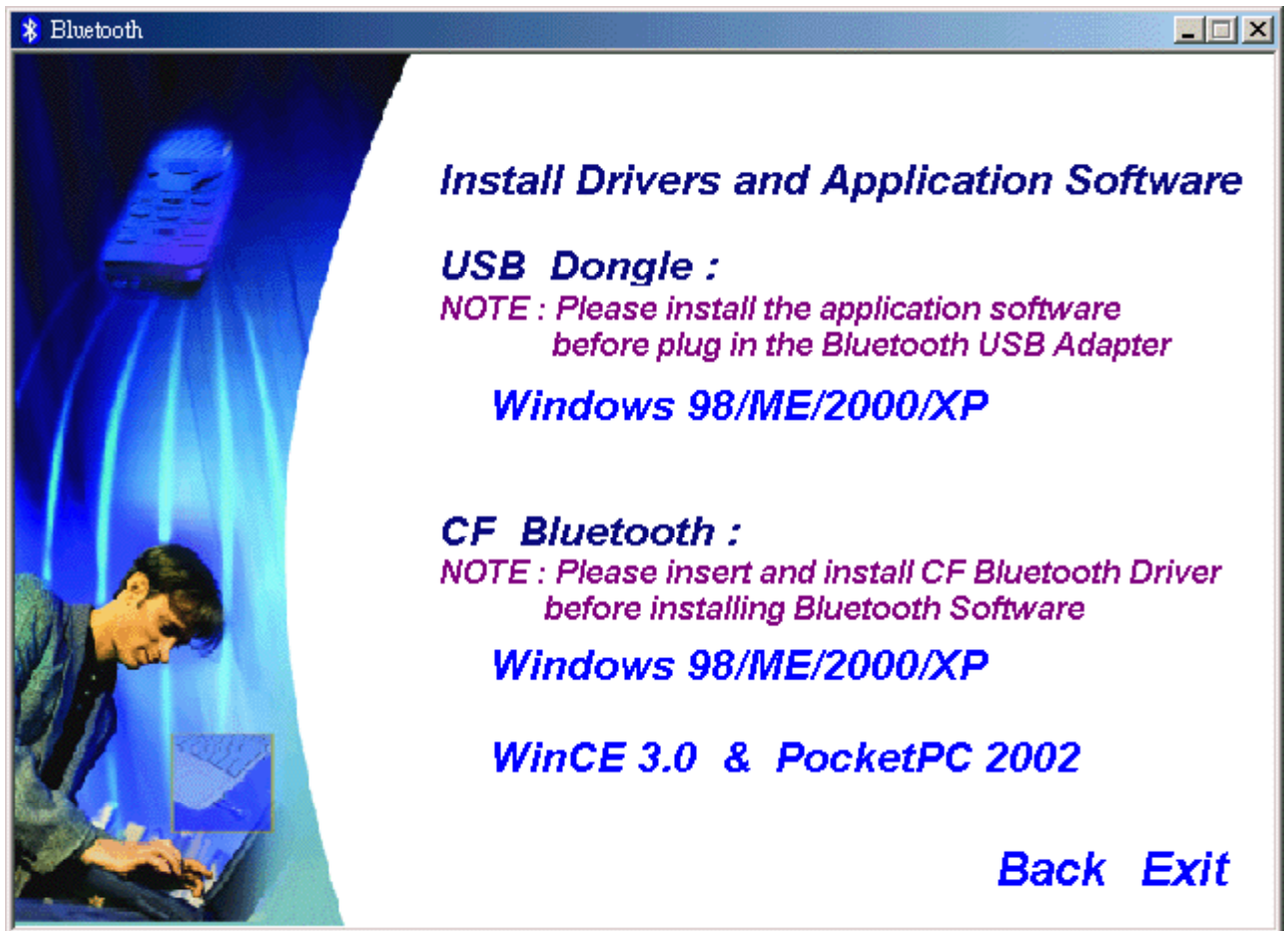(2) Please select your device and O.S..

(3) Complete these steps to install Bluetooth software:

(4) Exit all applications.

(5) InstallShield Wizard setup dialog box will automatically be displayed. If the setup program doesn't startup automatically, manually start the setup program by double clicking Bsetup.exe.
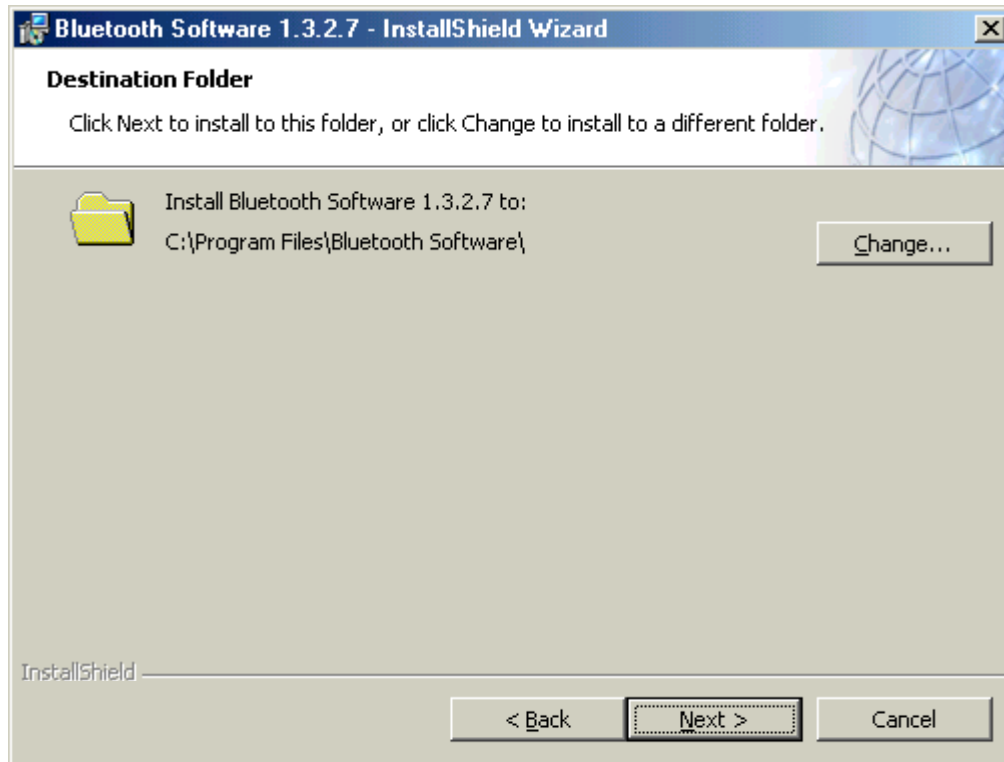
(6) Follow the instructions on screen:

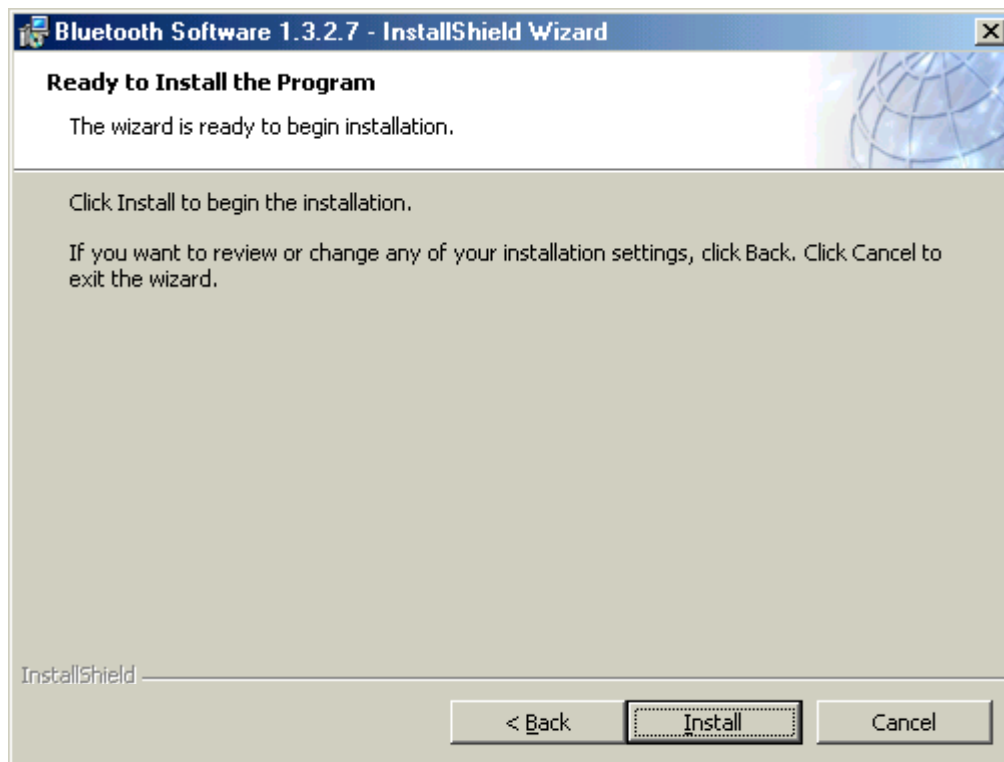(7) On the *Welcome* screen, click the **Next** button.

(8) When the *License Agreement* screen is displayed, read the License Agreement, then click the radio button to the left of **"I accept the terms in the license agreement"** and click the **Next** button.
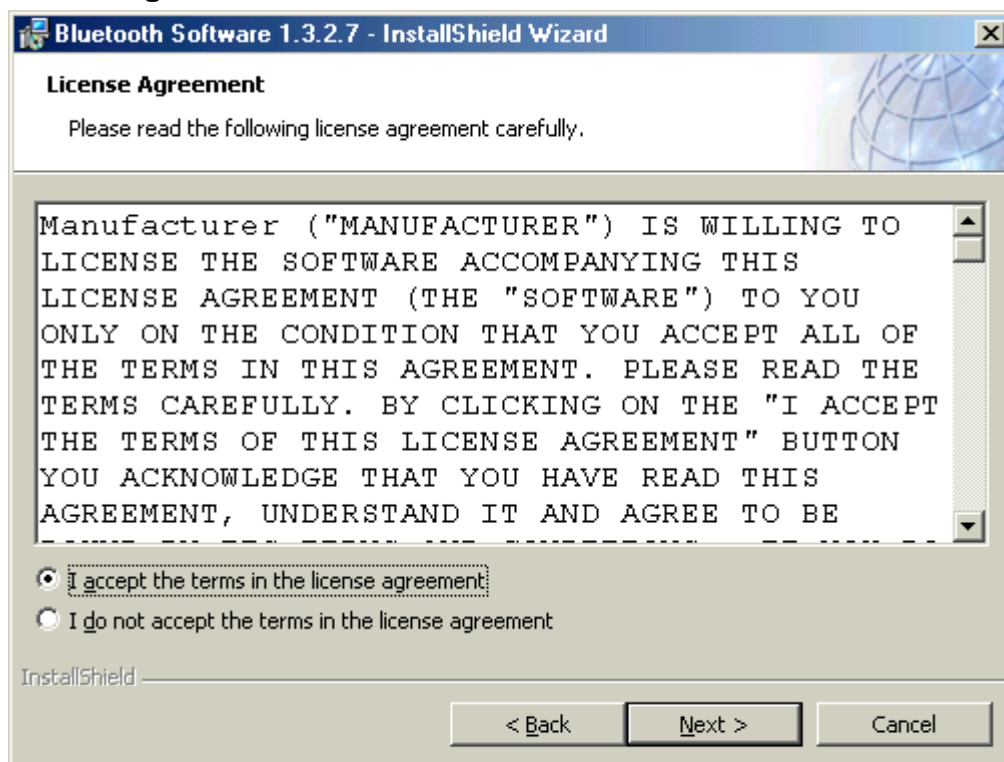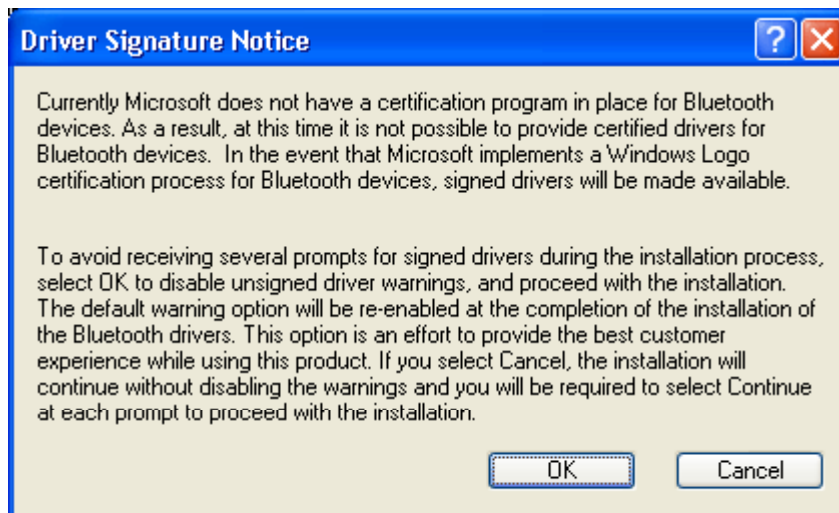

(9) You can choose the destination folder in your system, If you do not want to change the destination folder please click **Next**.

Bluetooth Software 1.3.2.7 - InstallShield Wizard

Destination Folder
Click Next to install to this folder, or click Change to install to a different folder.

Install Bluetooth Software 1.3.2.7 to:
C:\Program Files\Bluetooth Software\

Change...

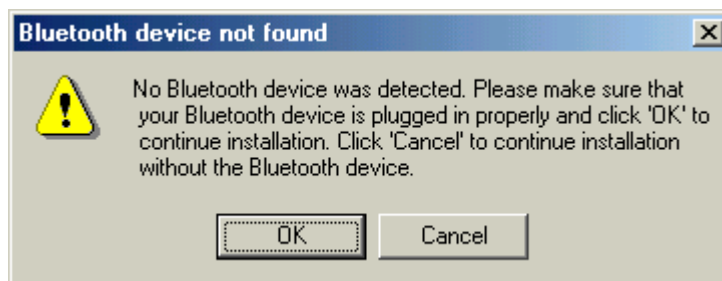InstallShield

< Back   Next >   Cancel

(10) On the *Destination Folder* screen, click the **Change** button to browse to a new destination folder for the Bluetooth software. Otherwise, click the **Next** button to accept the default folder.

Bluetooth Software 1.3.2.7 - InstallShield Wizard

Ready to Install the Program
The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

InstallShield

< Back   Install   Cancel

(11) The system is ready to install the Bluetooth software. If you need to review or change any settings, click the **"Back"** button. Click the **"Cancel"** button to exit the Wizard. Otherwise, click the **"Install"** button.

Driver Signature Notice

Currently Microsoft does not have a certification program in place for Bluetooth devices. As a result, at this time it is not possible to provide certified drivers for Bluetooth devices. In the event that Microsoft implements a Windows Logo certification process for Bluetooth devices, signed drivers will be made available.

To avoid receiving several prompts for signed drivers during the installation process, select OK to disable unsigned driver warnings, and proceed with the installation. The default warning option will be re-enabled at the completion of the installation of the Bluetooth drivers. This option is an effort to provide the best customer experience while using this product. If you select Cancel, the installation will continue without disabling the warnings and you will be required to select Continue at each prompt to proceed with the installation.

OK   Cancel

(12) For Windows 2000/XP users, system will popup a **"Driver Signature Notice"**, please click the **"OK"** button.

Bluetooth device not found

No Bluetooth device was detected. Please make sure that your Bluetooth device is plugged in properly and click 'OK' to continue installation. Click 'Cancel' to continue installation without the Bluetooth device.

OK   Cancel

(13) During the installation, system will detected your Bluetooth device please make sure your Bluetooth device is plugged in properly and click "**OK**" to continue installation, or you can click "**Cancel**" to continue installation without the Bluetooth device.
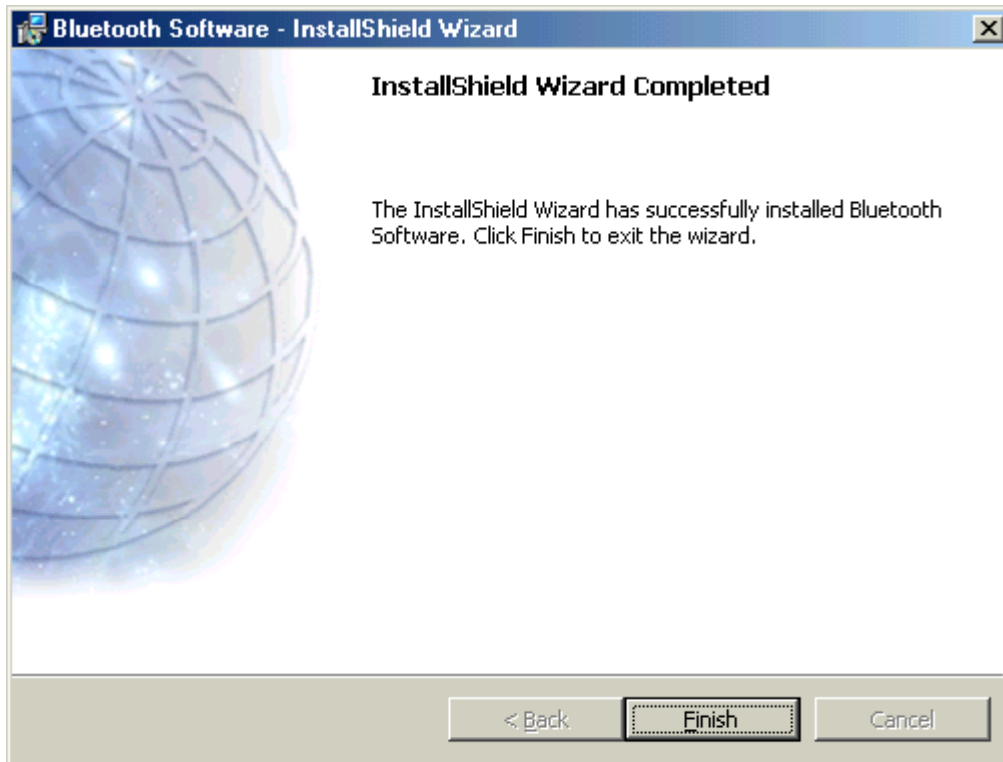
(14) Installation completed please click "**Finish**".
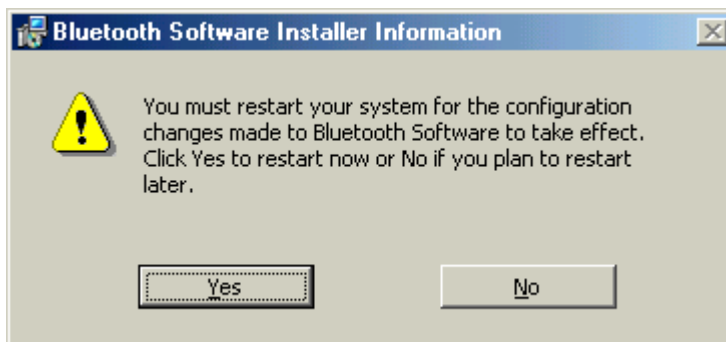
(15) Click **"Yes"** to restart your computer. If you plan to restart later, click
"No".

(16) After reboot and Windows comes back up again, insert your USB
Bluetooth adapter into the PC's USB port, if you haven't done so during the
installation, and the system will install the driver for your device automatically.

(17) Do not reboot. Your device is now ready to be used.

(18) **To start Bluetooth:** in the Windows system tray, right-click the Bluetooth
icon and

select "**Start Bluetooth Device**". The Bluetooth icon is blue in color with a
white insert

when Bluetooth is running.
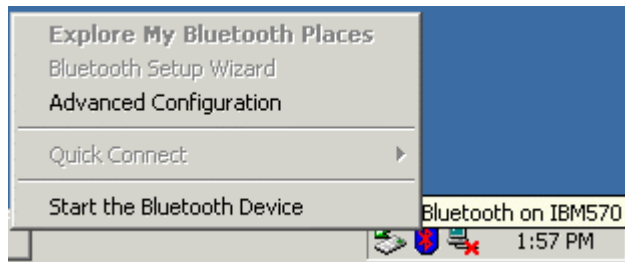
(19) **To stop Bluetooth:** in the Windows system tray, right-click the Bluetooth icon and select

"**Stop Bluetooth Device**". The Bluetooth icon is blue in color with a red insert when

Bluetooth is stopped.
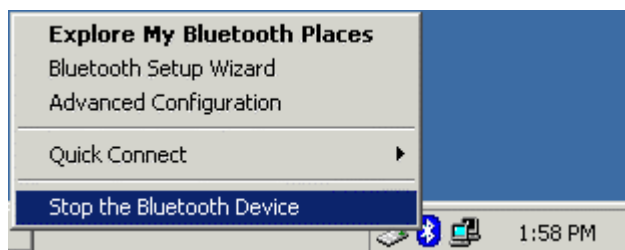
Create a connection from the Bluetooth icon in the system tray
In the Windows system tray, right-click the Bluetooth icon, select Quick Connect and
then the Bluetooth service that you wish to use.
If this computer has created a connection to the desired type of service in the
past, the options on the shortcut menu are:

- The name(s) of any device(s) with which prior connections to this type of service have been established. Select a name from the list to re-establish connection.
- Other Devices-Select this option to search for additional devices that potentially provide the desired service, select a device from the list, and then click Connect.

If this computer has never created a connection to this type of service, the only option on the shortcut menu is "Find Devices". Select this option to search for devices that potentially provide the desired service, select a device from the list, and then click Connect.

Create a connection using the Bluetooth Setup Wizard
(1) From Bluetooth Explorer

- Right-click My Bluetooth Places and select Bluetooth Setup Wizard or
- From the Bluetooth menu, select Bluetooth Setup Wizard

From the Windows system tray: right-click the Bluetooth icon and select **Bluetooth Setup Wizard**.
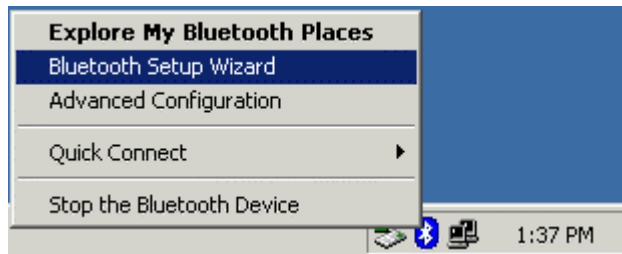
(2) The "Initial Bluetooth Configuration Wizard" will pop up. Click "Next" to the next page.
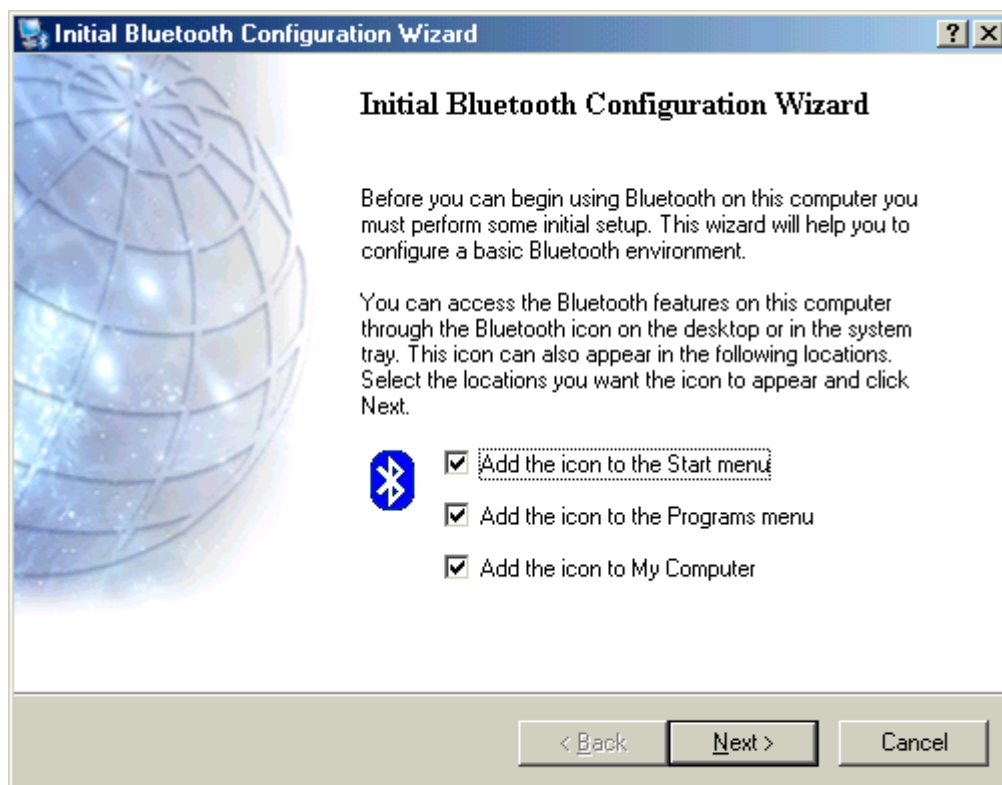
(3) Follow the wizard's on-screen instructions to configuration your Bluetooth device.
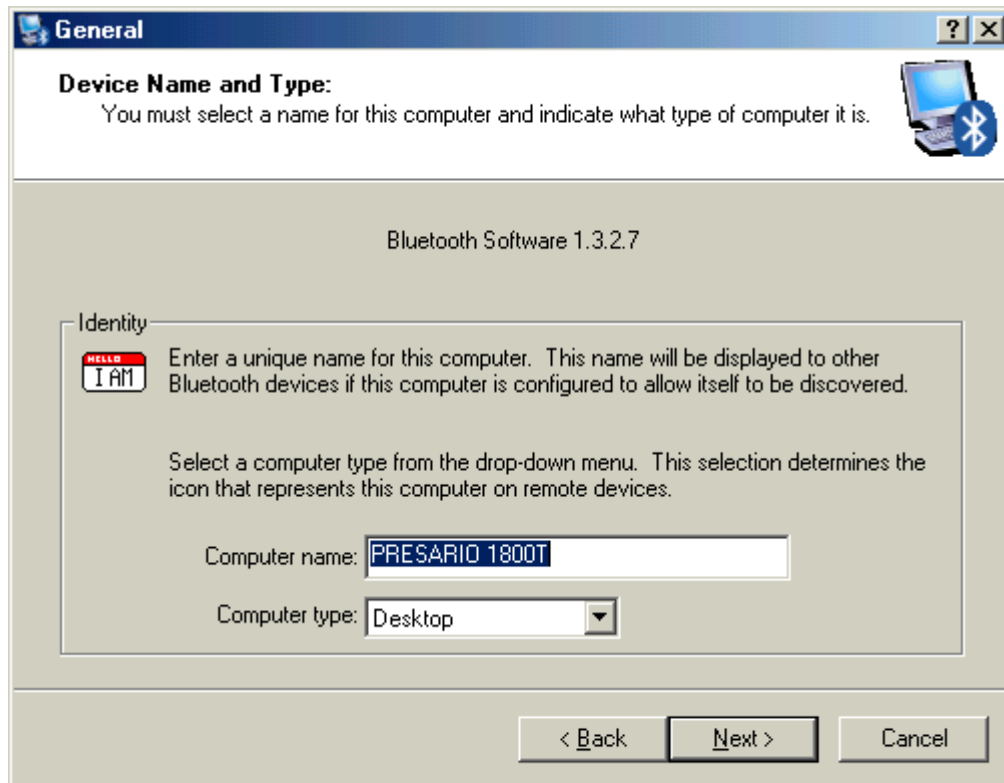
(4) Click "Next" to configure the Bluetooth service, you may skip the process by clicking "Skip".
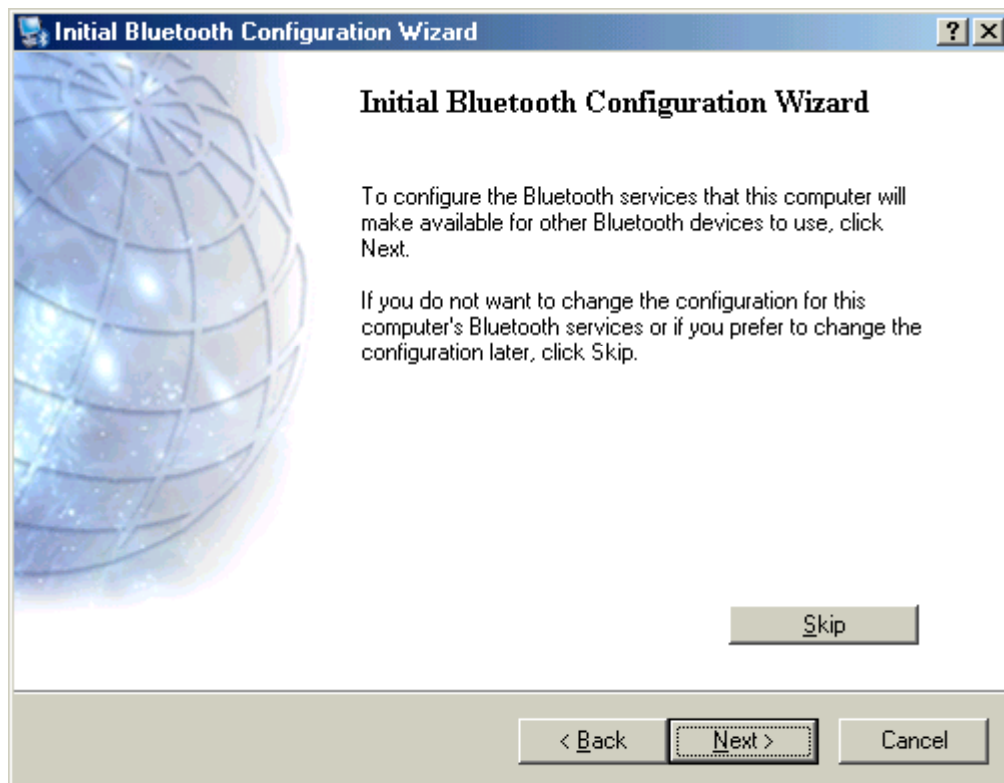
(5) Click "Next" to the next page.
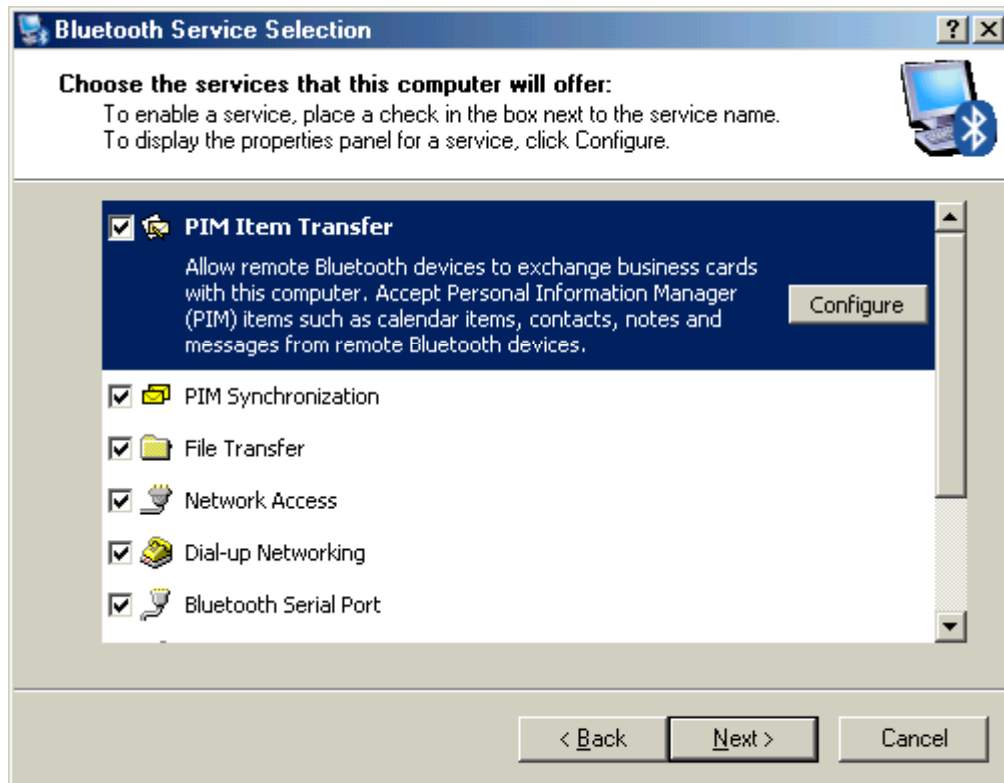
The services supported by Bluetooth are:

- **Bluetooth Serial Port-**a wireless connection between two devices. This connection can be used by applications as though a physical serial cable connected the devices.
- **Dial-up Networking-**allows a device to use a modem that is physically attached to another Bluetooth device.
- **Fax-**allows a device to send a fax using a remote Bluetooth cell phone, modem, or computer.
- **File Transfer-**allows a device to perform file system operations on another Bluetooth device; browse, open, copy, etc.
- **Headset-**allows a Bluetooth headset to be used as the audio input/output mechanism for another Bluetooth device, such as a computer or cell phone.
- **PIM Item Transfer-**allows two Bluetooth devices to exchange Personal Information Manager data such as business cards, calendar items, email messages, and notes.
- **PIM Synchronization-**allows two Bluetooth devices to synchronize Personal Information Manager data.
- **Network Access-**allows a device to access a Local Area Network via a second Bluetooth device that is physically connected to the network or allows

a remote device to become part of an ad hoc network provided by the Bluetooth server.

- **Audio Gateway-**allows the microphone/speakers on Bluetooth device (typically a computer) to be used as the audio input/output mechanism for a remote Bluetooth device, such as a cell phone.

All Bluetooth servers do not necessarily provide all of these services. For example, network gateways may provide only the Network Access service.
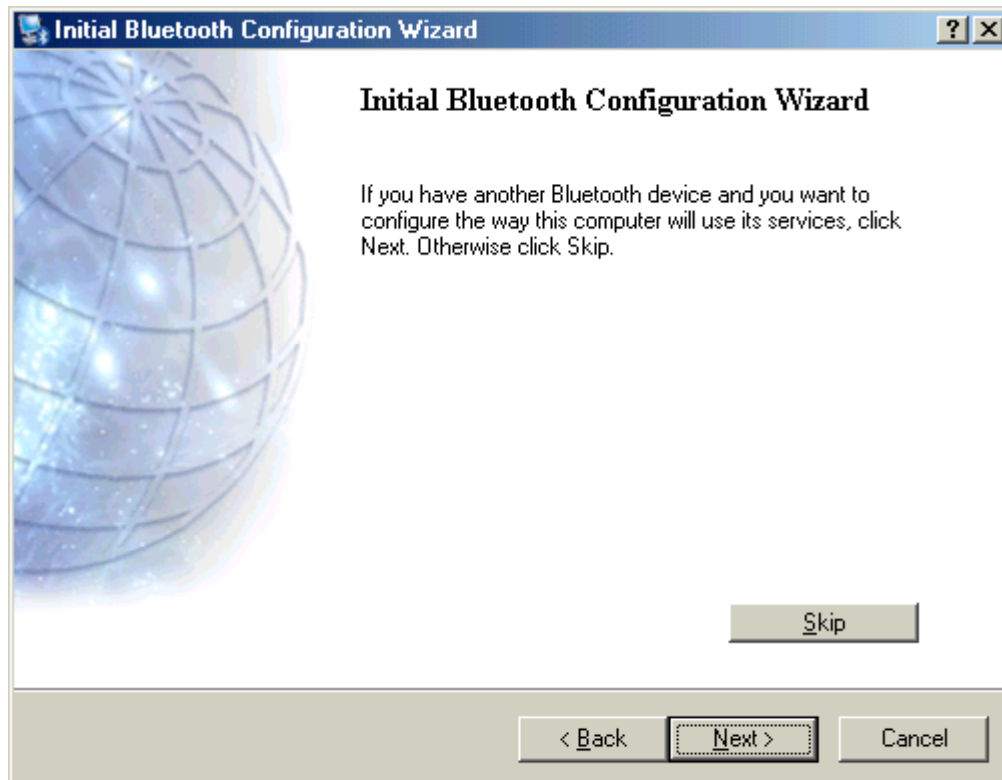
FIND A SERVICE

The process of determining the services that a device provides is called Service Discovery.

You can follow the wizard's on-screen instructions to find a service to use or click **"Skip"** button to skip this step.

To initiate a Service Discovery, in the Folders pane of My Bluetooth Places, right-click a device name and select Discover Available Services from the shortcut menu. Bluetooth services are those things that this computer can do for remote Bluetooth devices. For example, if this computer allows a remote Bluetooth device to send a fax using a fax modem that is physically attached to this computer, then this computer is providing the Bluetooth fax service. Some services are hardware dependant; this computer cannot provide the fax service unless it has a physical fax modem, for example. Some Bluetooth services use virtual hardware. The Bluetooth Serial Port service, for example, does not use a physical port on this computer. Instead,

it creates virtual serial ports that Windows applications can see and use as if they were actual physical ports. Each Bluetooth service that this computer is capable of providing can be started automatically when Bluetooth starts. Each service can be setup to require security measures before allowing a remote Bluetooth device to connect. Bluetooth services require a Bluetooth application on the remote device; services and applications usually have coinciding names; i.e., there is a Bluetooth Fax Service and a Bluetooth Fax Application.

To check if you Bluetooth device is up and working properly

From the Bluetooth menu, select "**Advanced Configuration**".
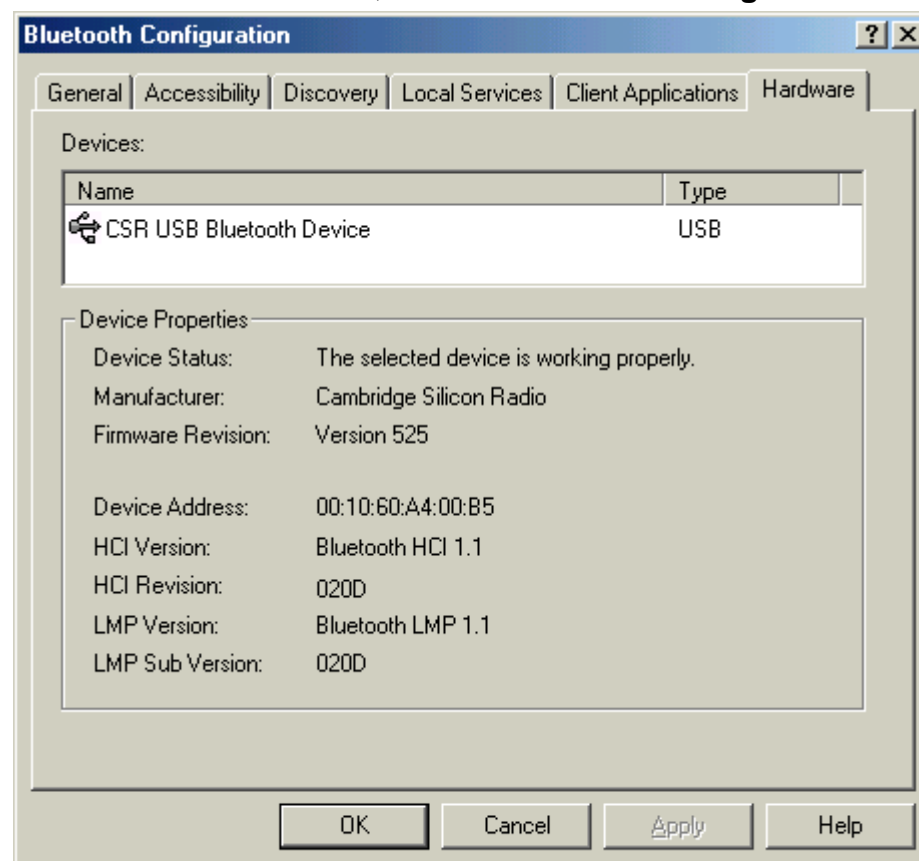
Under the **"Hardware"** tab, verify the Bluetooth address is present along with the driver and firmware version info.

If such information is not present, please unplug then plug in the USB adapter to initiate the driver.

For CF Bluetooth card, please reboot the system with the CF Bluetooth card securely inserted in the PCMCIA slot.

Repeat the installation steps for other USB adapters or CF card on other PCs.

Periodic Search for Devices

Bluetooth can be configured to automatically search for devices on a regular basis (Bluetooth Configuration Panel > Discovery tab). One of the advantages of Bluetooth is the mobility that the wireless connections allow. However, mobility means that devices may move in or out of connection range during the time between the automatic updates performed by Bluetooth. To be certain that the displayed list of devices in the neighborhood is current, or if automatic periodic inquiry is not enabled, force an update of the device list using the technique described in Search for Devices, above.
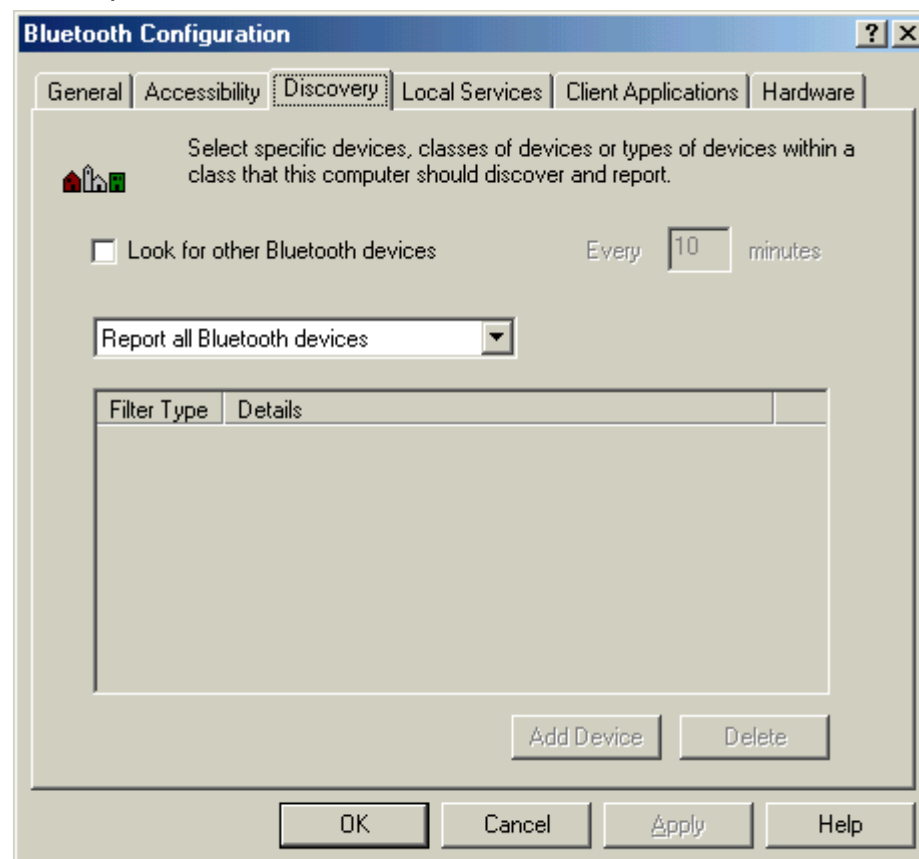
1.1 Icons used for Bluetooth devices and services

Bluetooth icons provide at-a-glance feedback about a device or service's status by changing appearance.

The Bluetooth icon in the Windows system tray provides feedback about Bluetooth status.

Basic Bluetooth Icon

Bluetooth Icon Indicates Bluetooth Status		
Enabled	**Disabled**	**Connected**
Blue with White	Blue with Red	Blue with Green

Device Icons for Windows 9x, Me and 2K

Device Icons for Windows 9x, Me and 2K			
Name	**Normal**	**Connected**	**Paired**
Audio Gateway			
Desktop			
Headset			
Laptop			
Modem			
Network Access Point			
Personal Digital Assistant			
Printer			
Telephone			
Unknown			

Service Icons for Windows 9x, Me and 2K

Service Icons for Windows 9x, Me and 2K			
Name	Normal	Connected	Not Available*
Audio Gateway			
Dial-up Networking			
Fax			
Headset			
Network Access			
PIM Item Transfer			
PIM Synchronization			
Public Folder			
Serial Port			

*Services may be unavailable because they are in use or because the necessary hardware is not installed.

Device Icons for Windows XP

Device Icons for Windows XP			
Name	Normal	Connected	Paired
Audio Gateway			
Desktop			
Headset			
Laptop			
Modem			
Network Access Point			
Personal Digital Assistant			
Printer			
Telephone			
Unknown Device			

Service Icons for Windows XP

Service Icons for Windows XP			
Name	Normal	Connected	Not Available*
Audio Gateway			
Dial-up Networking			
Fax			
Headset			
Network Access			
PIM Item Transfer			
PIM Synchronization			
Public Folder			
Serial Port			
*Services may be unavailable because they are in use or because the necessary hardware is not installed.			

NOTE: Only available services are displayed in the menus.

2. Network sharing setting for Windows

The Network Access service permits a Bluetooth enabled PC (client) to access the Internet via another Bluetooth enabled PC (Server) that already has Ethernet connection.

Windows network sharing setting

PC to PC (Windows 2000 or Windows XP)

1. To enable Internet Connection Sharing on the server PC
2. Click on **Start menu-->Settings -->Network and Dial-up Connections** and find your Local Area Connection (LAN) that is connected to the Internet.
3. Right click the active LAN connection to open the **"Properties"** dialog box.
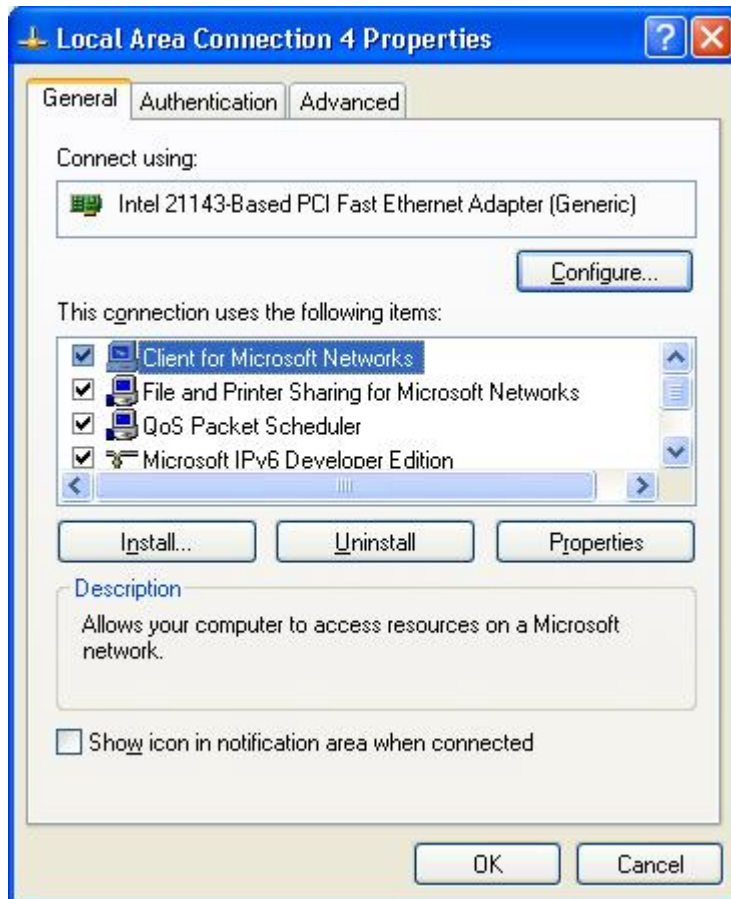
4. Click on **"Advanced"** tab and select the **"Internet Connection Sharing"**, checkbox to enable Internet sharing.
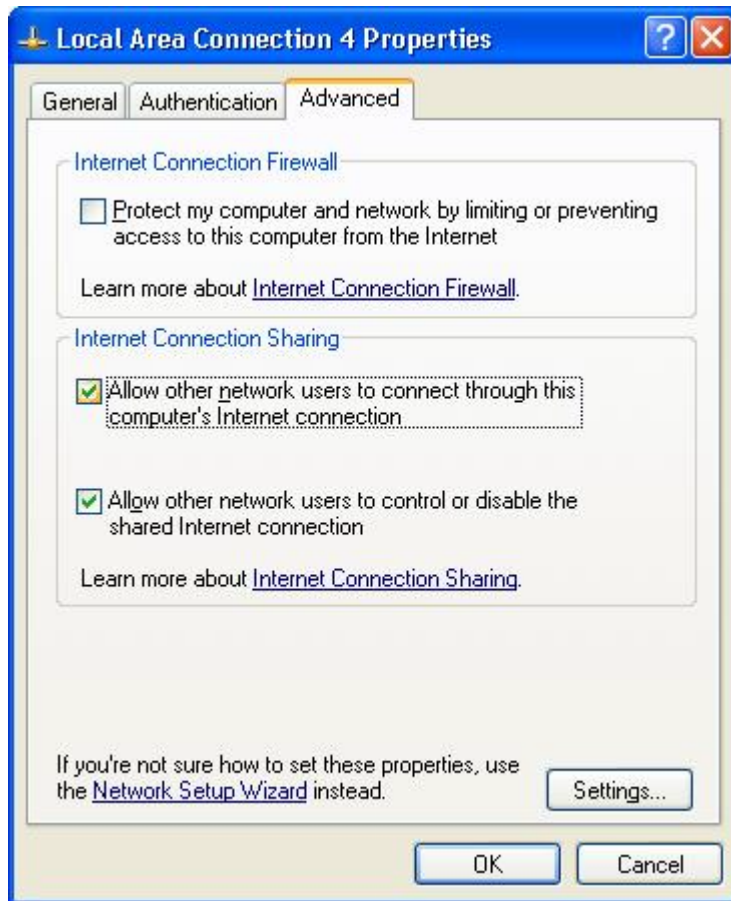
5. Click on **"Settings..."** button and select the services you wish to provide other Bluetooth devices. Click **"OK"** to save the changes.
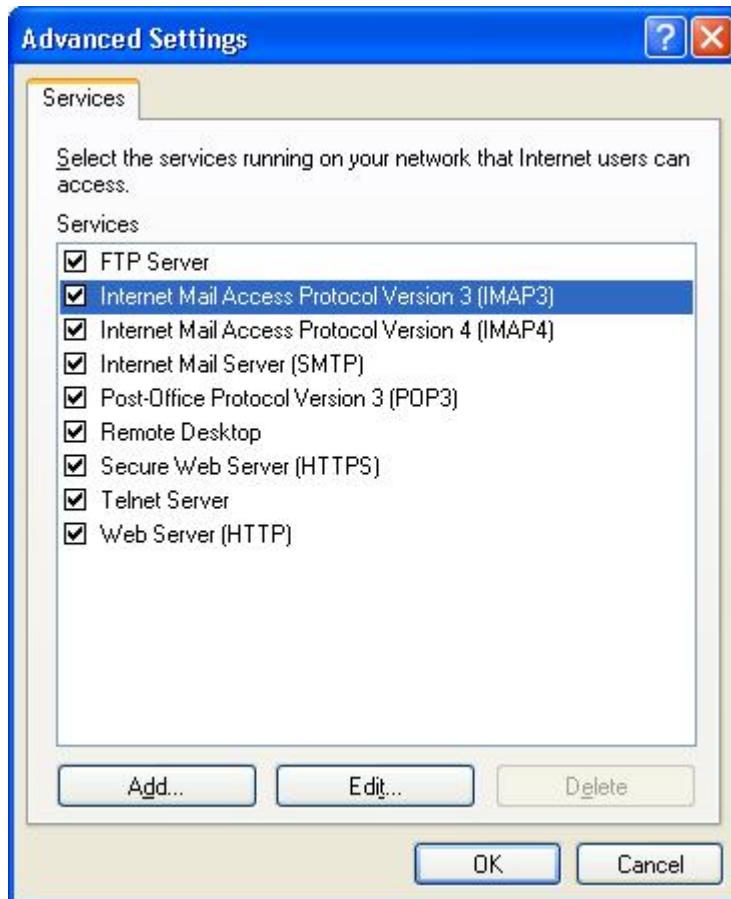
6. Go back to the **"Network and Dial-up Connections"** window, right click the **"Bluetooth LAN Access Server Driver"** and select **"Properties"**.

7. Under **"General"** tab, click on **"Internet Protocol (TCP/IP)"** and **"Properties"**.

8. Under **"General"** tab, assign a virtual IP as shown in the picture
below. Then click **"OK"** to save the changes.
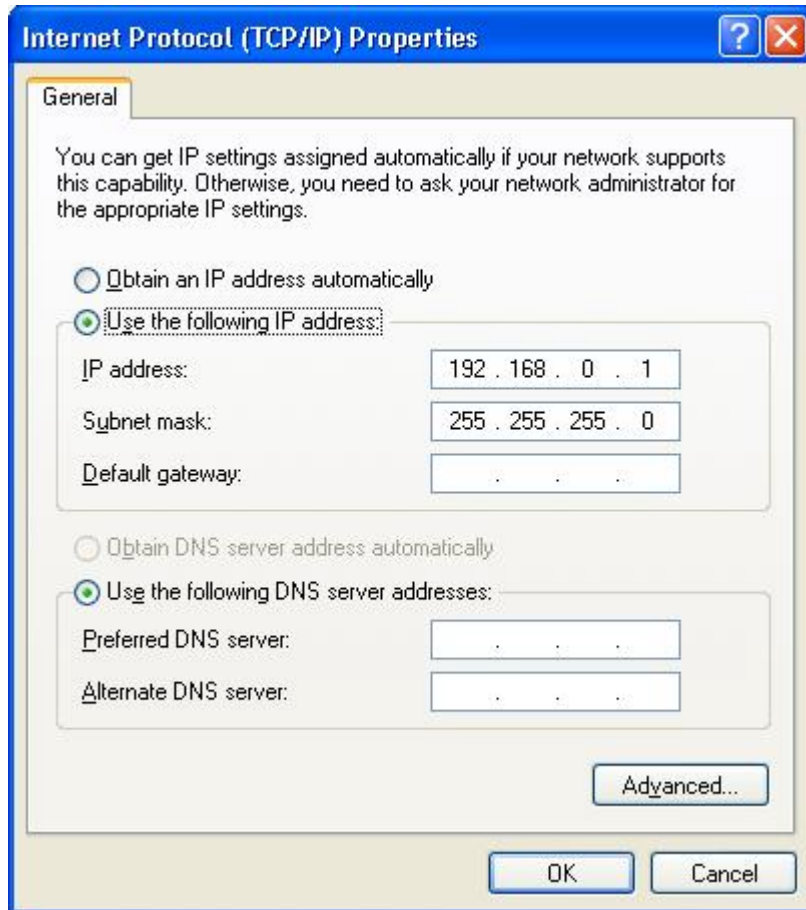
9. This allows the server PC to act as a DHCP server towards the client PCs.
NOTE: For Win98SE and WinMe, please download and install WinRoute on the Server PC to allow DHCP service.
10. On the client PC, launch the Bluetooth software stack by clicking the **"My Bluetooth Places"** icon located on the desktop.
11. Double click the **"Entire Bluetooth Neighborhood"** icon to search for other Bluetooth devices nearby.
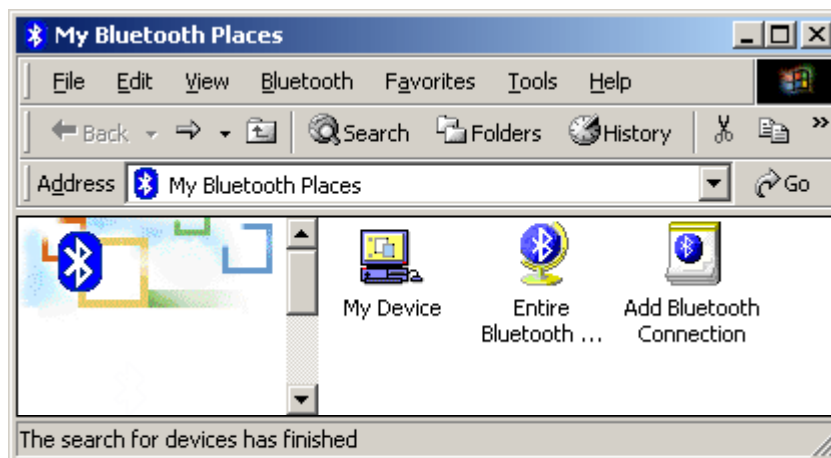
12. After searching is completed, locate the computer name of the server PC and double click it to discover the Bluetooth services it has to offer. (i.e. Bluetooth Serial Port, Dial-up Networking, File Transfer, Network Access, etc.).
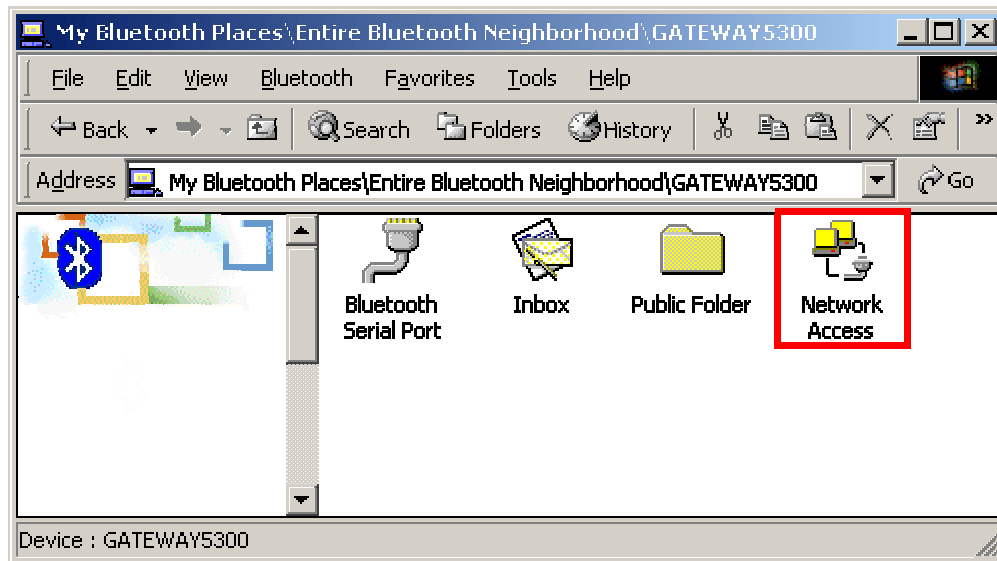
13. Click on the "Network Access" icon to connect to the shared Internet connection on the server PC.
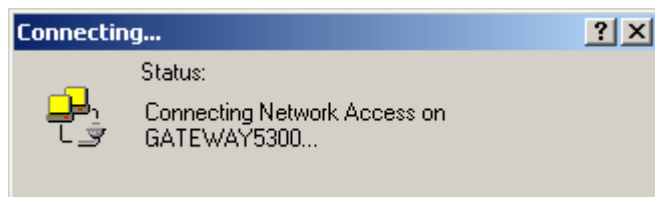
14. Click OK without entering any username or password. If one is already present, click OK anyway and it will still connect.
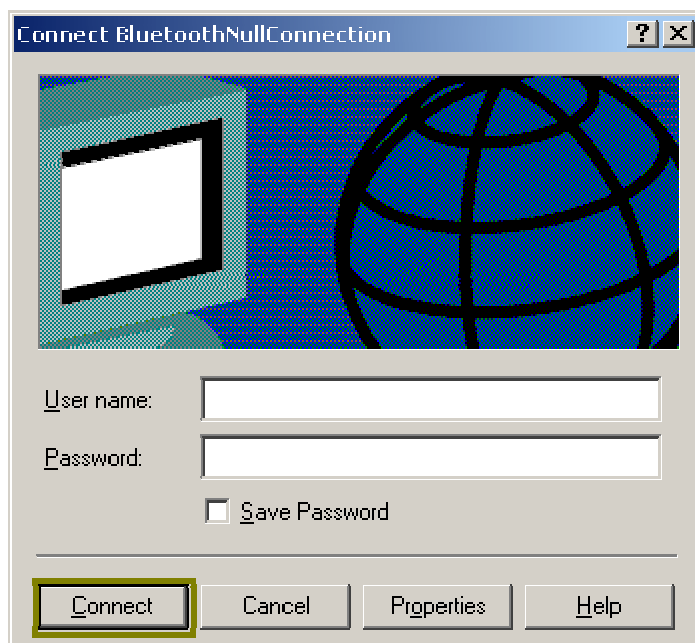
15. Now you can access the Internet via Bluetooth.

Note: If your PC accesses the Internet via a proxy server, remember to configure the proxy setting of you browser program in the client PC. Consult your MIS personnel if you're not sure what to set.

1. To set up proxy, right click **"Internet Explorer"**, select **"Properties"**, select **"Connections"** tab. Select **"BluetoothNull Connection"** and click on **"Settings..."**.
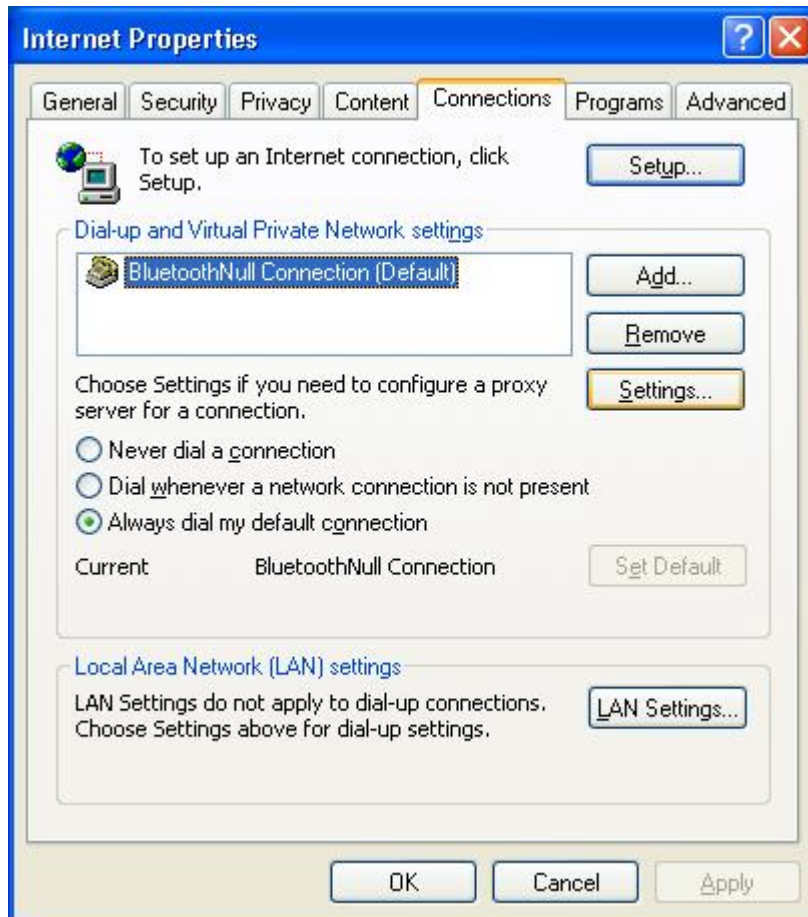
2. Select the **"Proxy server"** checkbox and enter the proxy address of you company and Port number.
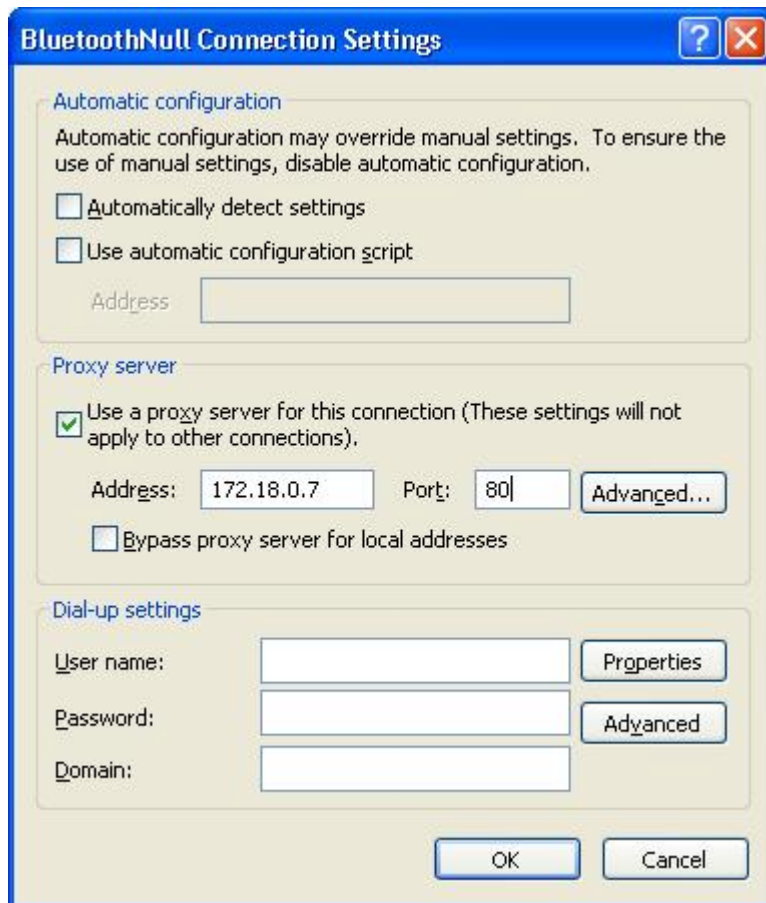
3. File transfer setting for Windows

The File Transfer service allows one Bluetooth device to perform file operations on the default File Transfer directory (and the folders and files it contains) of another Bluetooth device.

File transfer setting for Windows

PC to PC

1. After successful USB adapter setup on two PCs, launch the Bluetooth software stack on both PCs by clicking the **"My Bluetooth Places"** icon located on the desktop.
2. On one PC only, double click on **"Entire Bluetooth Neighborhood"** icon to search for other Bluetooth devices nearby.
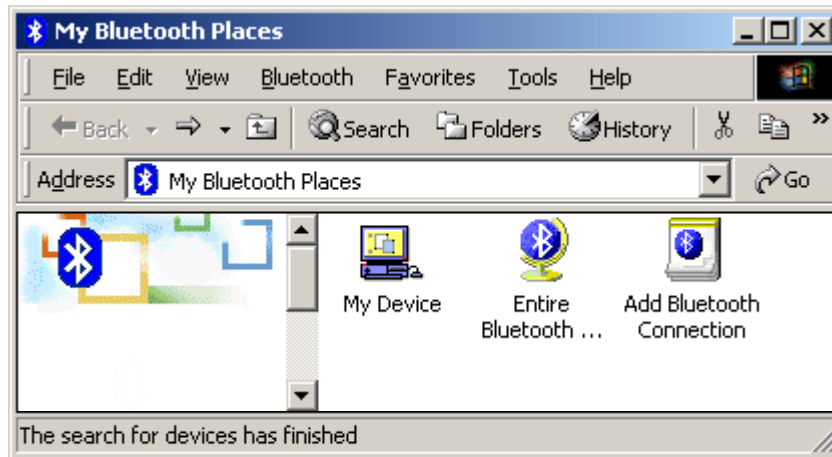
3. After searching is completed, locate the name of PC that you wish to transfer the file to and double click it to discover the Bluetooth services it has to offer (i.e. Bluetooth Serial Port, Dial-up Networking, File Transfer, Network Access, etc.).
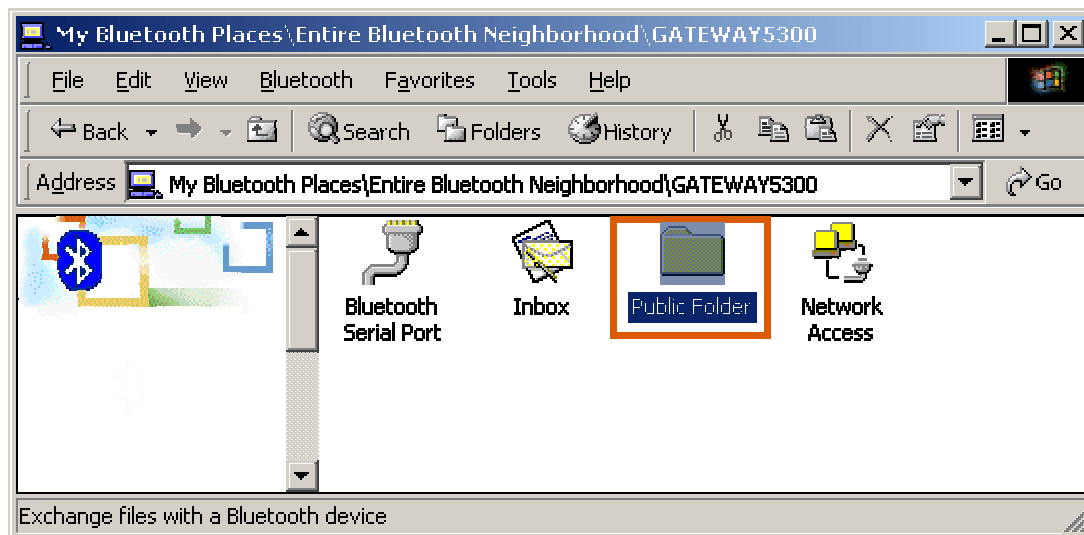
4. Double click the **"Public Folder"** icon to open the Bluetooth shared folder on the other PC.

5. Locate the file you wish to transfer to that PC and drag it into the **"Public Folder"** window.

6. At this time, a window will pop up to indicate that a file transfer connection is being established, and then file transfer will begin.
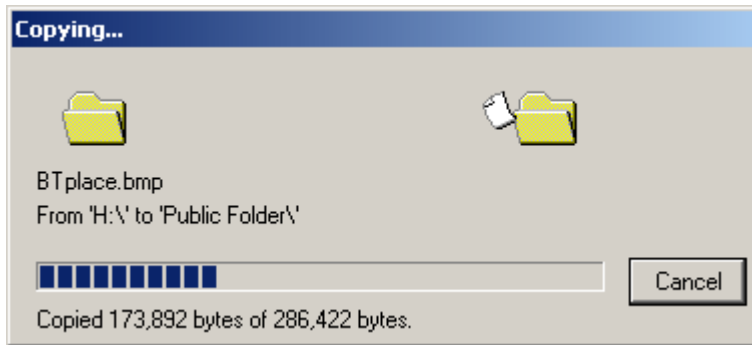
7. The file will be opened once the transfer is completed, if the **"Start Automatically"** checkbox is selected.
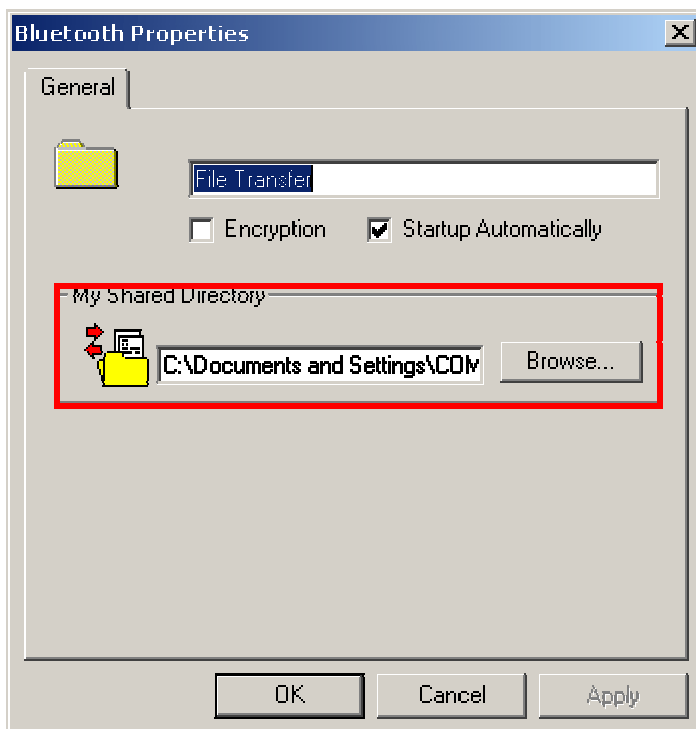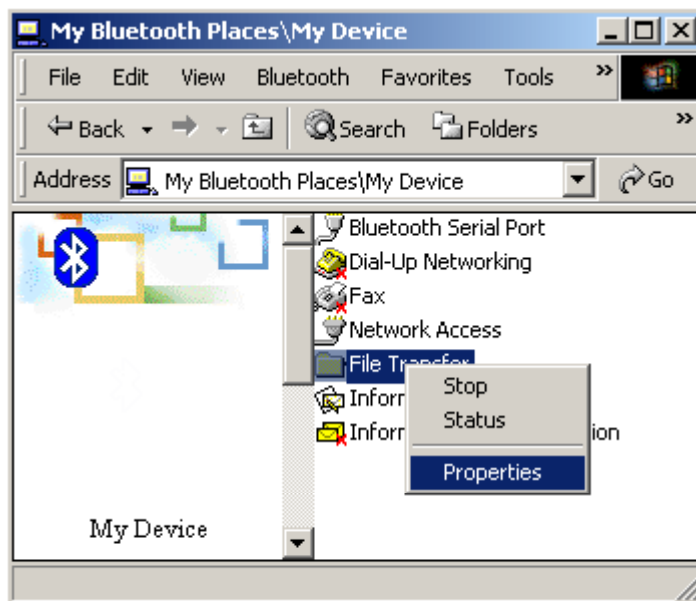
4. Dial-up networking setting for Windows

The Dial-up Networking service permits a Bluetooth client to use a modem that is physically connected to a different Bluetooth device (the server). After the Bluetooth wireless connection is established the client can use the server's modem as if it were a local device on the client.
To establish a Dial-up Networking session.

Dial-up networking setting for Windows

Connections are initiated from the client:

1. On the client, in the Folders pane of **"My Bluetooth Places"**, select **"Entire Bluetooth Neighborhood"**.
2. In the right pane of **"Entire Bluetooth Neighborhood"**, right-click anywhere *except on a device name* and select Refresh from the pop-up menu.
3. In the Folders pane of **"My Bluetooth Places"**, right-click the server that will provide the Dial-up Networking Service and select Discover Available Services from the pop-up menu to update the available services list. The available services will be displayed in the right pane of **"My Bluetooth Places"**.
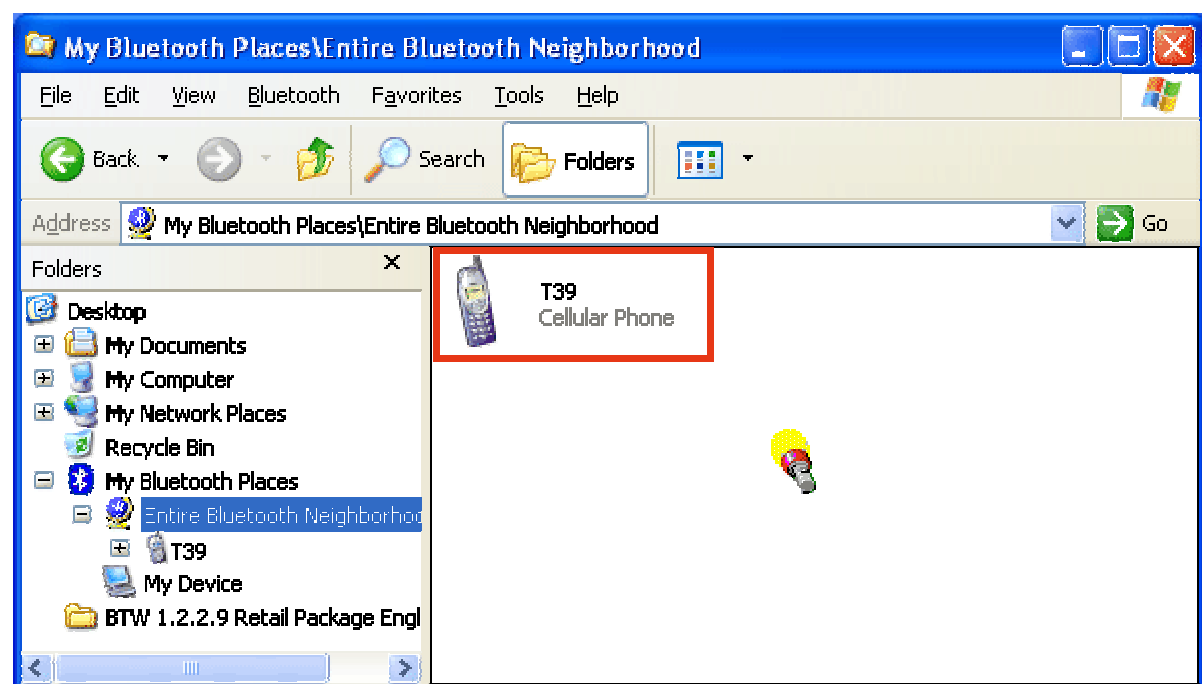
4. In the right pane of **"My Bluetooth Places"**, double-click **"Dial-up Networking"**.
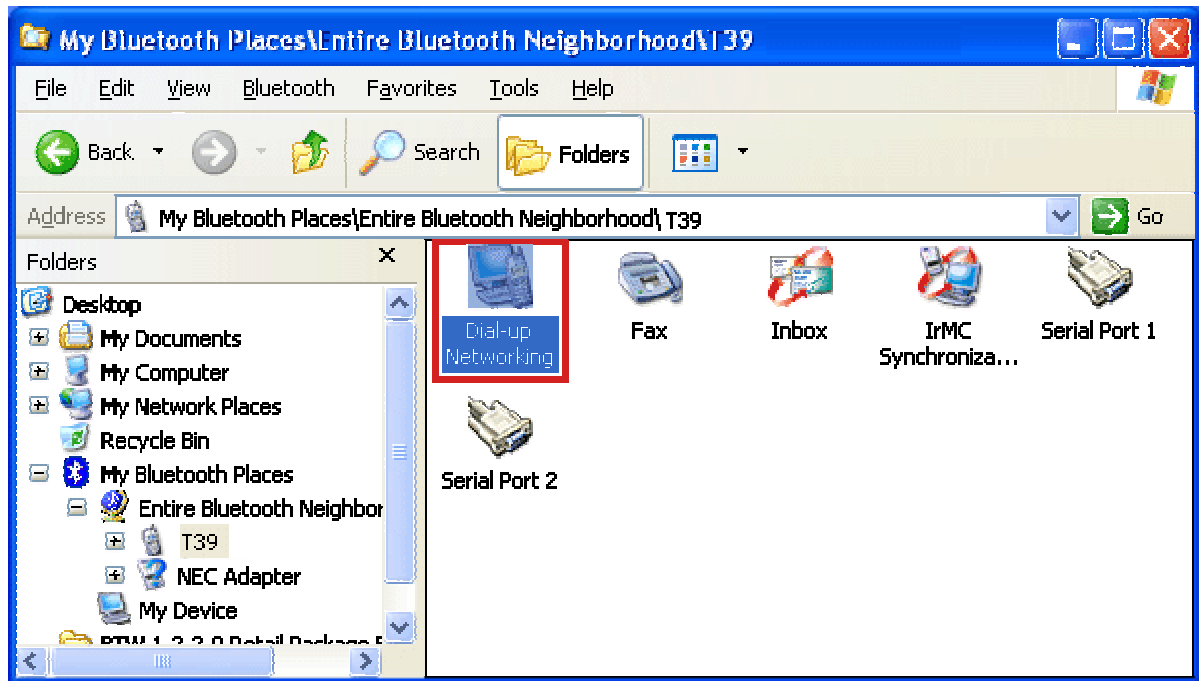
5. In the Connect To dialog box, type in your user name, password, and the phone number to be dialed, and then click the "Dial" button.

6. Select the "Save password" checkbox and the dialog box will not appear for subsequent connections to the same phone number. You can now open a web browser and connect to the Internet.

Note: When using the GPRS Dial up function, you do not have to type in the user name or password.

To close a Dial-up Networking connection

1. On the client, in the Folders pane of **"My Bluetooth Places"**, select
(highlight) the device that is providing the Dial-up Networking service.
2. In the right pane of **"My Bluetooth Places"**, right-click **"Dial-up
Networking"** and then select **"Disconnect Dial-up Networking"** from the
pop-up menu.
5. FAX setting

The Fax service allows a Bluetooth client to wirelessly send a fax using a device that is physically attached to a Bluetooth server.

FAX setting for Windows

To send a Fax

Connections are initiated from the client:

1. On the client, in the Folders pane of **"My Bluetooth Places"**, select **"Entire Bluetooth Neighborhood"**.
2. In the right pane of **"Entire Bluetooth Neighborhood"**, right-click anywhere except on a device name and select Refresh from the pop-up menu.
3. In the Folders pane of **"My Bluetooth Places"**, right-click the server that will provide the Fax service and select **"Discover Available Services"** from the pop-up menu to update the available services list. The available services will be displayed in the right pane of **"My Bluetooth Places"**.
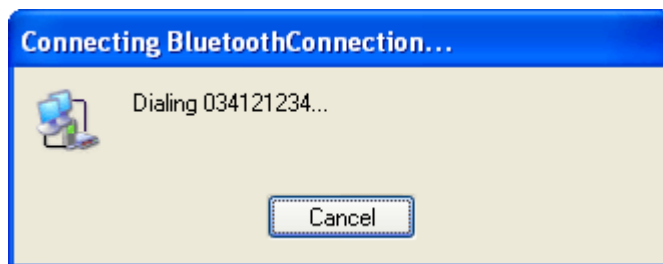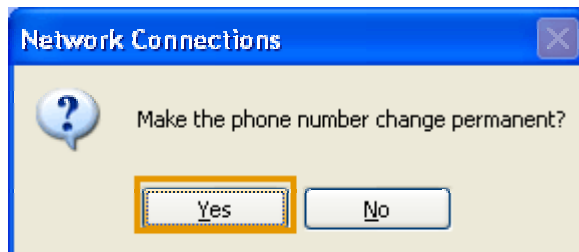4. In the right pane of **"My Bluetooth Places"**, double-click Fax. After the Fax connection is established, open or create the document to be faxed and use the **"Print"** or **"Send to Fax Recipient"** option available in most applications. The Fax connection closes automatically when the transmission is completed.

6. PIM Item Transfer setting

Overview
The Bluetooth PIM Item Transfer application allows this computer to send and receive Personal Information Manager items to-and-from a remote Bluetooth device. Item transfer can be accomplished several ways:
To send, receive or exchange business cards:
1. From Windows Explorer, My Bluetooth Places, right-click the PIM Item Transfer service on a remote device and select the appropriate option.
or
In the Windows system tray, right-click the Bluetooth icon, select Quick Connect Business Card Exchange, select a device from the list, select the appropriate option from the shortcut menu, and then click OK.
2. From Windows Explorer, My Bluetooth Places, highlight the PIM Item Transfer service on a remote device, and then, from the Bluetooth menu on the Windows menu bar, select the appropriate action.
In addition to the business card options listed above, you can also send Notes (*.vnt), Email (*.vmg) and Calendar (*.vcs) items from this menu.