Wireless Bluetooth USB Dongle User’s Guide

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FCC Statement

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential Installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/ TV technician for help.

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

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

Licensed Software

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Chapter 1

Introduction

INTRODUCTION TO BLUETOOTH

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.
A client Bluetooth device runs a software program that requests a connection to another device as part of its normal operation. For example, the program may request a connection to a remote computer, a printer, or a modem.
Becoming a Bluetooth client normally requires an action by the device operator, such as an attempt to browse a remote computer, print a file, or dial out on a modem.
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.

INTRODUCTION TO THE WIRELESS BLUETOOTH USB DONGLE

The Bluetooth USB Dongle is specifically designed to plug into an available USB port connecting to a desktop or laptop. It is the best solution for quick and easy connection and access to your Ethernet Local Area Network (LAN) and other shared resources without cables or wires.

We provide both low power (class 2/3) and high power (class 1) Bluetooth USB Dongle. Each Bluetooth Dongle is bundled with Widcomm Bluetooth Software. The significant difference between the high power and low power is the transmission range. The transmission range of class 1 (high power) is up to 50 meters; however, the class 2/3 (low power) is about 10-20 meters. You can choose a suitable Bluetooth USB Dongle depends on your working

environment.

The PC configured as the Bluetooth server can support up to 7 Bluetooth client devices with IP addresses automatically assigned when they connect. The bundled Bluetooth Software also provides Internet sharing and security access between the server and clients.
After finishing these steps outlined in this manual, you will have the ability to share information, Network Access and take the full advantage of a “connected” environment.

Chapter 2

Contents of Package

After opening the box, check what's in the box, and then refer to the Quick Installation Guide for the fastest way to get up and running with the wireless Bluetooth USB Dongle.

What ships in the box

The following items should be found in the Bluetooth USB Dongle box:

- Bluetooth USB Dongle

Class 2/3
Low Power

Class 1
High Power

- Utility CD (containing Bluetooth Software and Manual)
- Quick Installation Guide

Chapter 3
Installing Bluetooth Software

3.1 Uninstalling previous version of Bluetooth software

If you are installing the Bluetooth software for the first time, please skip this section. Any previous versions of the Bluetooth software must be uninstalled before installing an upgraded version.

Note:
Before start to uninstall the previous version of BTW software, please unplug the wireless Bluetooth Dongle from computer's USB port first.

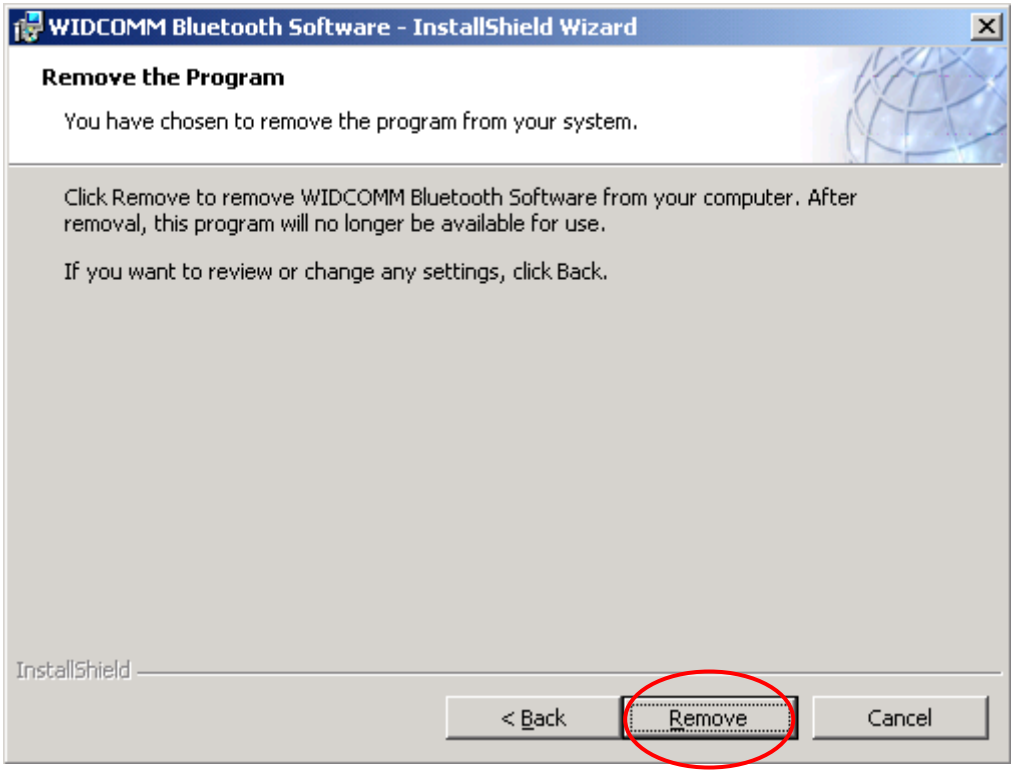
Please uninstall the software by completing these steps:

1)Close any open programs and insert the utility CD into your CD-ROM Drive.

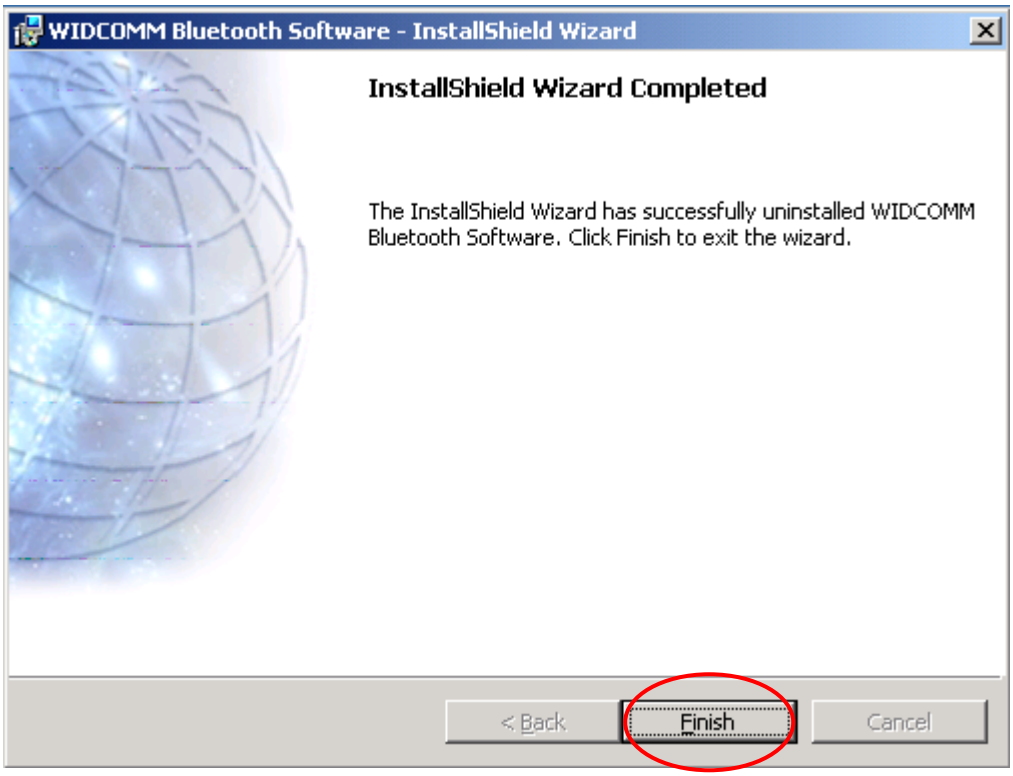
2) The Autorun function should start and will automatically detect that the previous version of BTW software has been installed on you PC. (If the Autorun function does not automatically start, please open the Installation CD to find the Setup.exe file and double click the Setup.exe icon to continue.)

3) The Welcome screen informs that the InstallShield Wizard will guide you to Modify, Repair or Remove the software. Click on the **Next** button to continue.

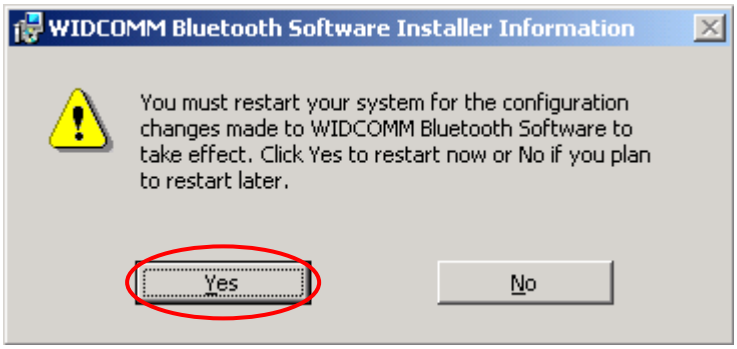
4)Click on the **Remove** button from “Remove the Program” screen.



5) When the files have been removed, you will be presented with a screen informing of its completion. Click on the **Finish** button.



6). Click on the **Yes** button to reboot your PC.



You have completely uninstalled the previous version of the Bluetooth software. You may go further to install the upgrade version as described in the following section.

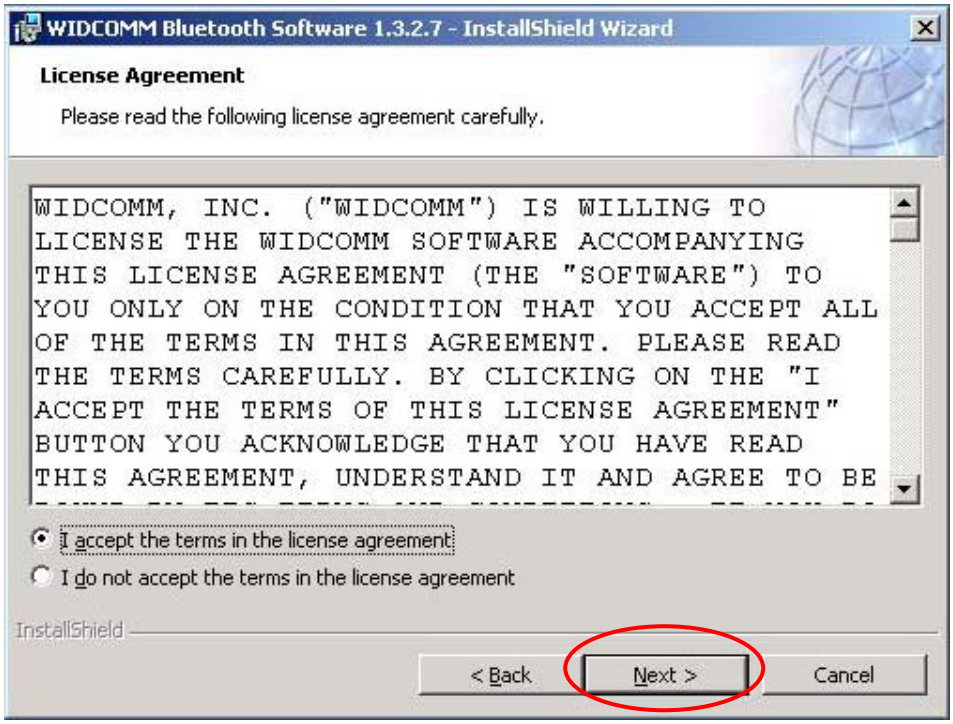
3.2 Installing the Bluetooth software (First-time installation)

Note:
Plug in the USB Dongle firmly to an available USB port only when you are prompted during the installation process.

If you have connected the Bluetooth Dongle to your computer, please remove it, cancel any hardware wizard that may show up, and start here.

1) Close any open programs and insert the utility CD into your CD-ROM Drive. The Autorun function will automatically guide you to start the software installation. (If the Autorun function does not automatically start, please open the Installation CD to find the Setup.exe file and double click the Setup.exe icon to continue.)
2) The *Welcome* screen informs you that the *WIDCOMM Bluetooth Software Setup* program is ready to begin. Click on the **Next** button.

3) In the License Agreement screen, click on the radio button to the left of *I accept the terms in the license agreement.* Click on the **Next** button.

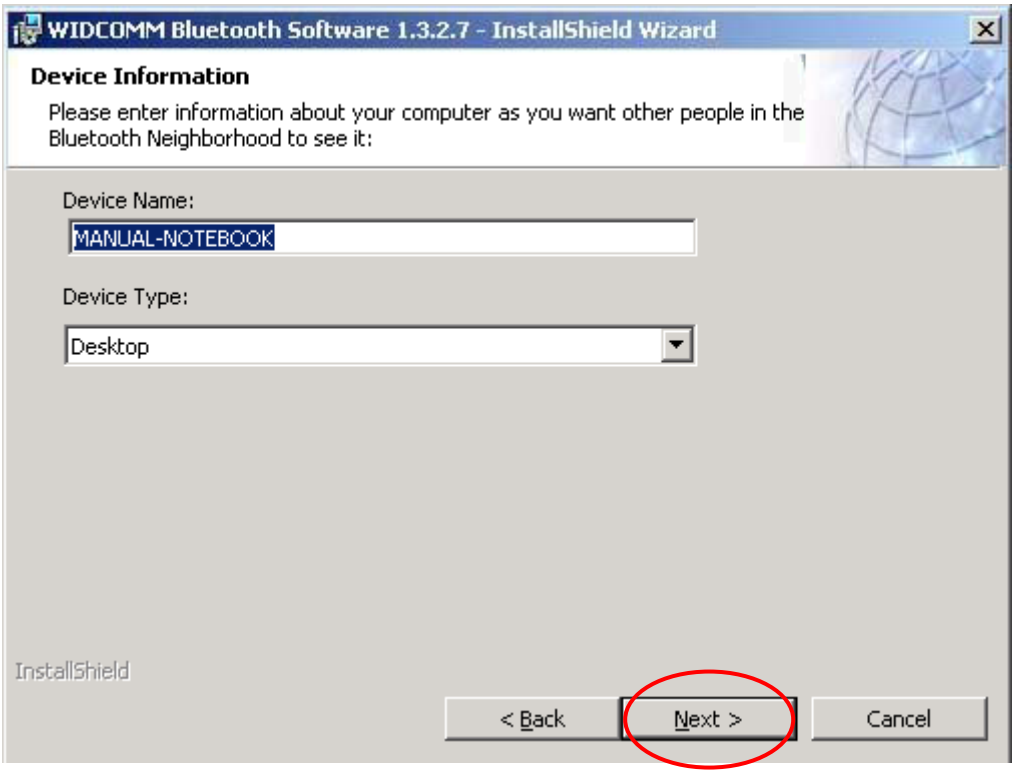


4) In the *Device Information* screen: (The screen won't be displayed if you re-installed the BTW software.)

   a. Enter a device name

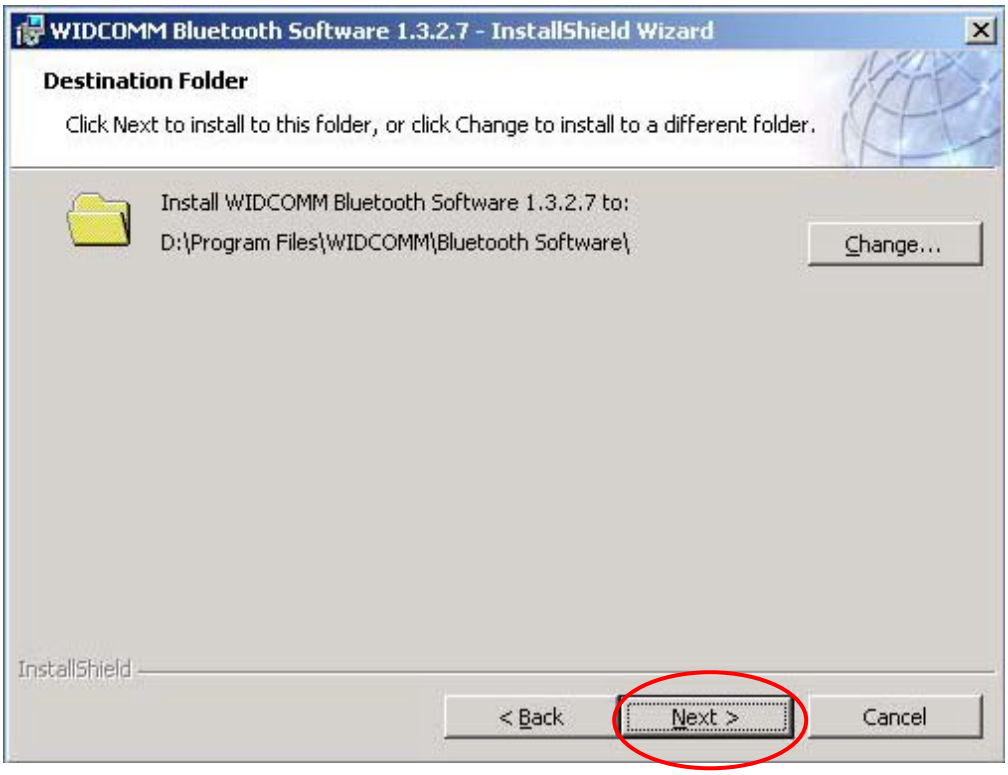
   b. Select a device type

   c. Click on the **Next** button.

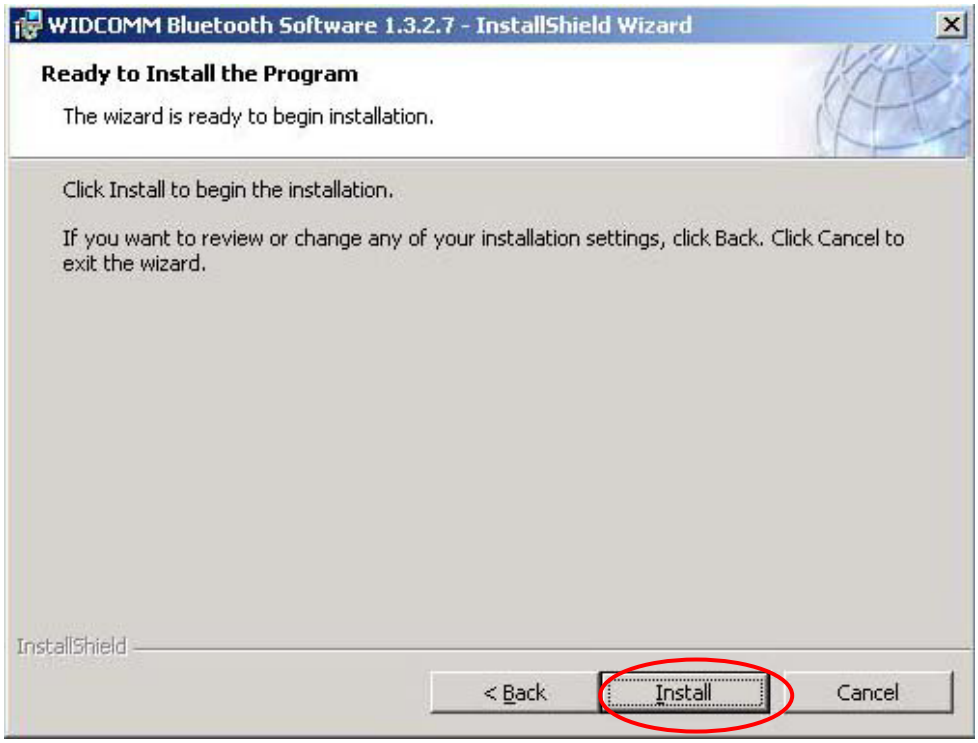


5) In the *Destination Folder* screen you are asked to confirm the *Destination Folder* for the application software. If you would like, you may change the destination folder to

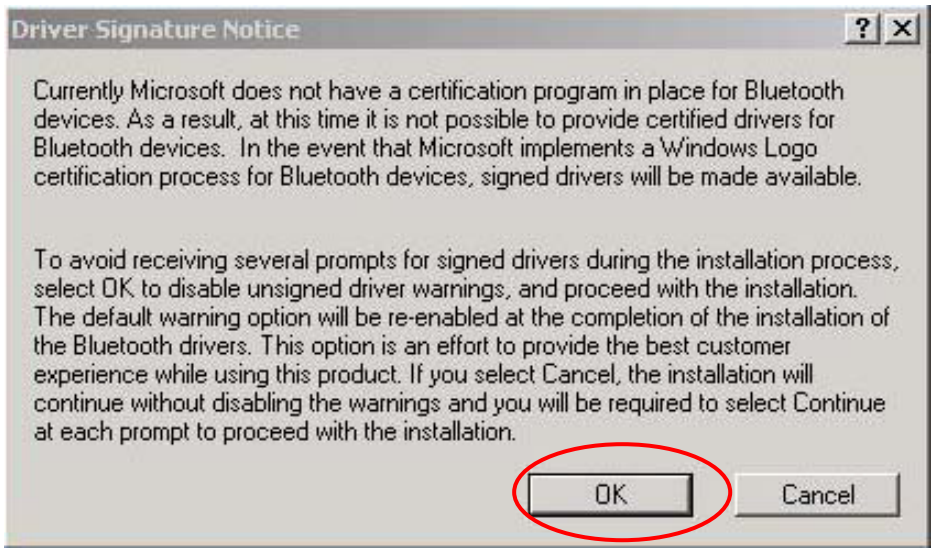
another location as the directory.



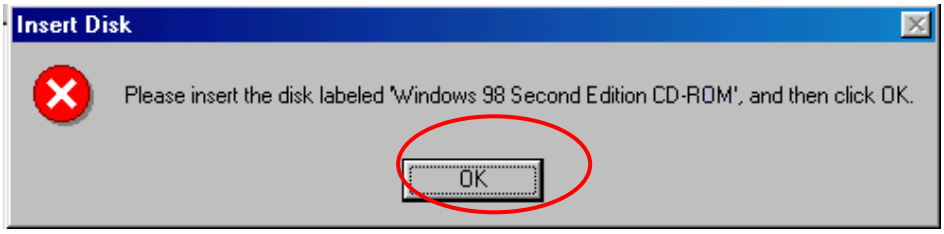
6) The *Ready to Install the Program* screen informs you that the driver is ready for installation. Click on the **Install** button to continue.

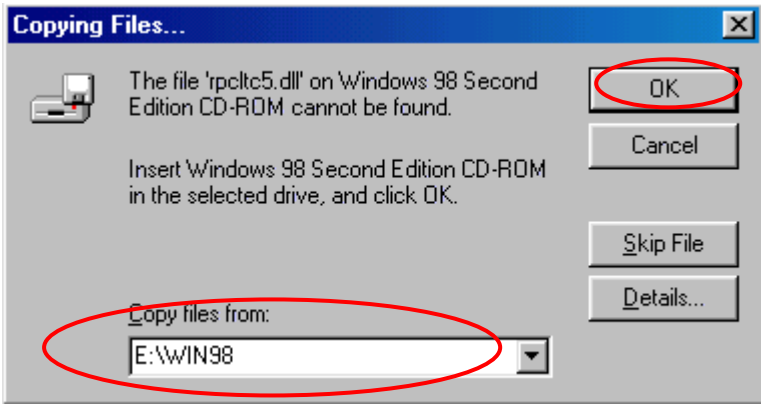


a. ***For Windows 2000 & XP users,*** *please click on* ***OK*** *button from the following "Driver Signature Notice" dialog box to proceed with drive installation.*



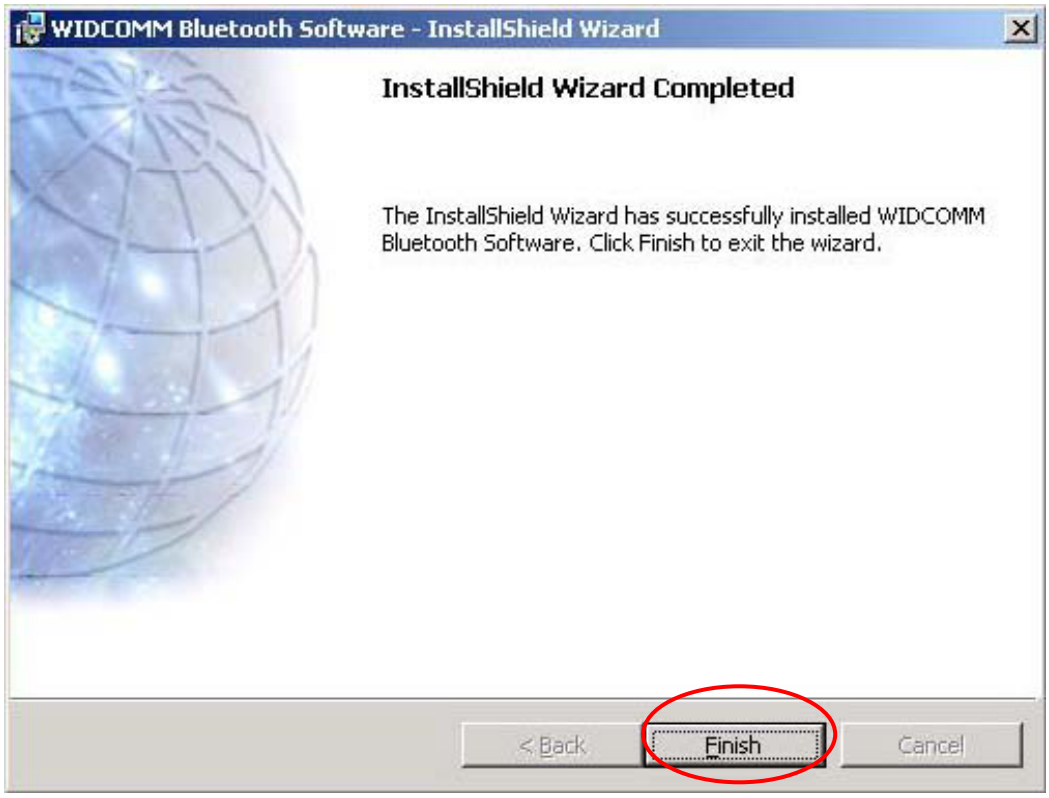
b. ***Windows 98 Users,*** you will be asked to specify the directory of Windows 98 source files path during installation. Please enter the location of the Windows98 setup files and follow the on-screen description.



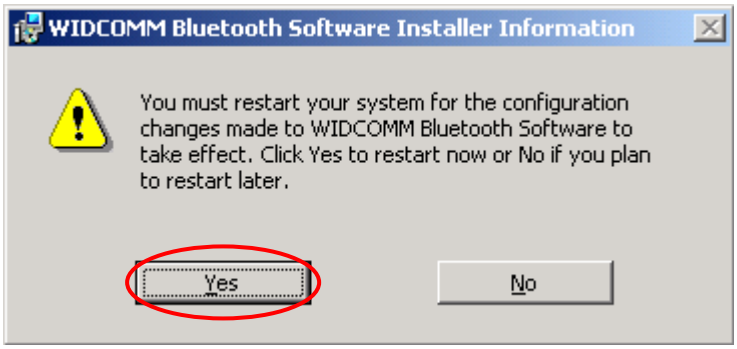


7) Plug the Bluetooth Dongle to an available USB port firmly and click **OK** to continue with software installation.

8) When the files have been copied, you will be presented with a screen informing of its completion. Click on **Finish** button to finish the installation process.



9). Click on **Yes** button to reboot your PC.

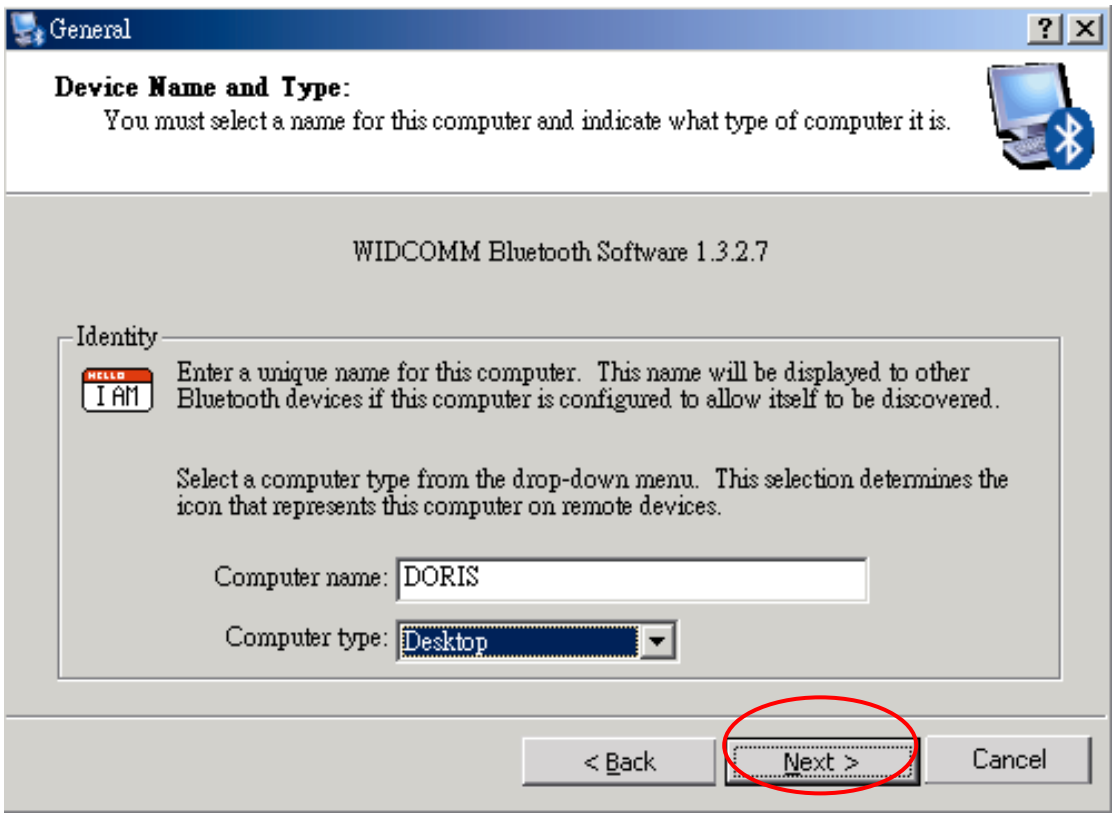


3.3 Start Using Bluetooth

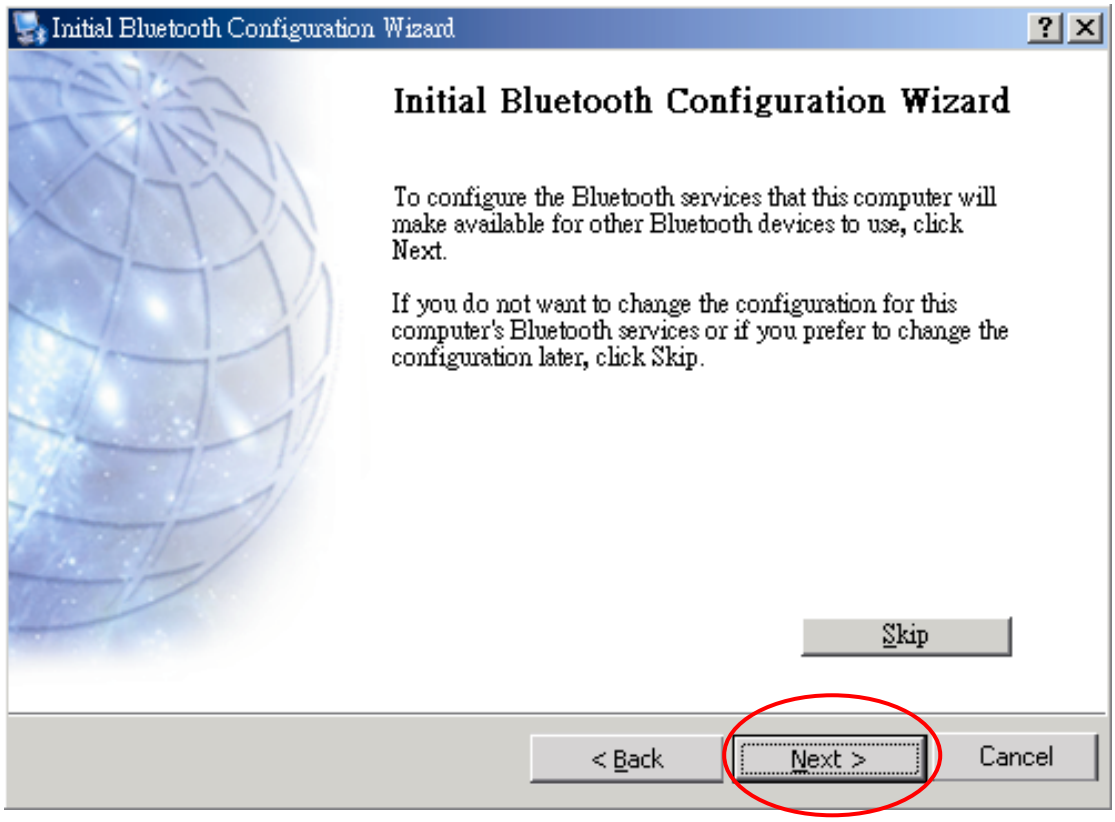
After you have the Bluetooth software installed and reboot your PC for the first time, please right-click on the Bluetooth icon on the system tray and highlight **Starting Using Bluetooth**. The wizard to will help you quickly configure your Bluetooth Dongle step by step. If you don't want to follow the wizard, you just click **Start Using Bluetooth** and configure Bluetooth Dongle later.

Steps

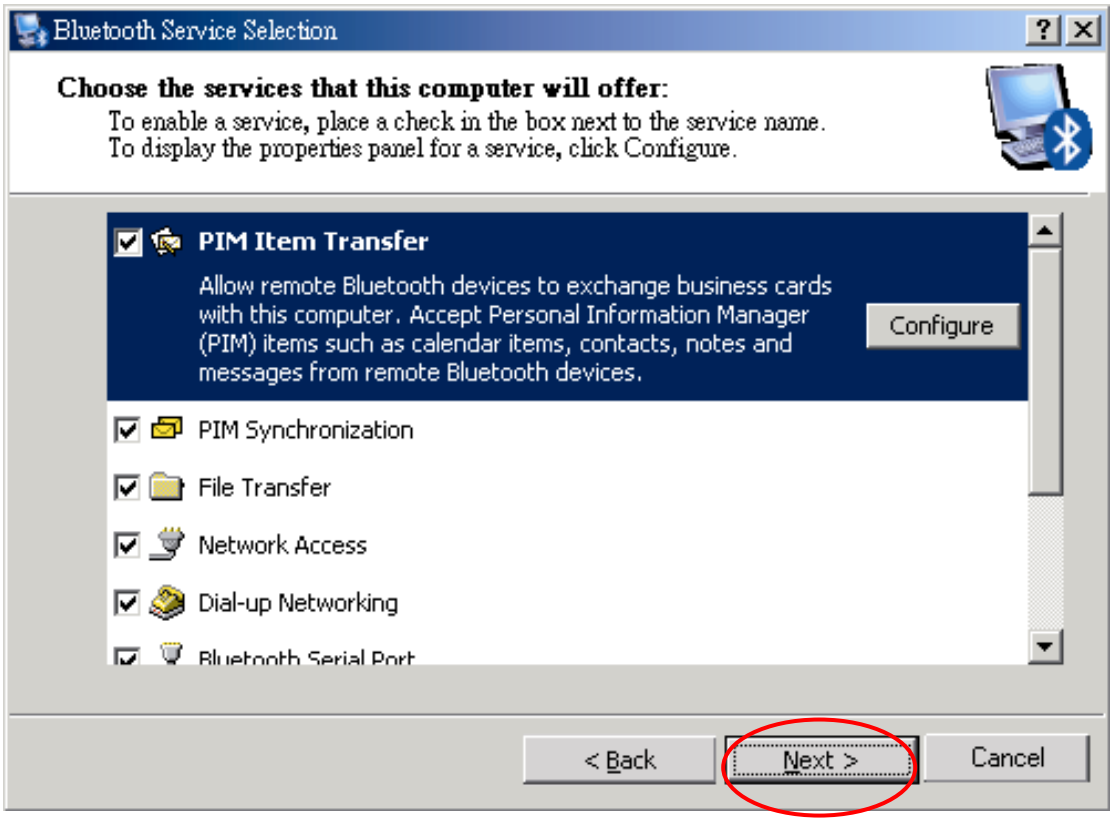
- Check the box if you want to access the Bluetooth Software from the three options. Click **Next**.
- Input your computer's name and select its type. Click **Next**.

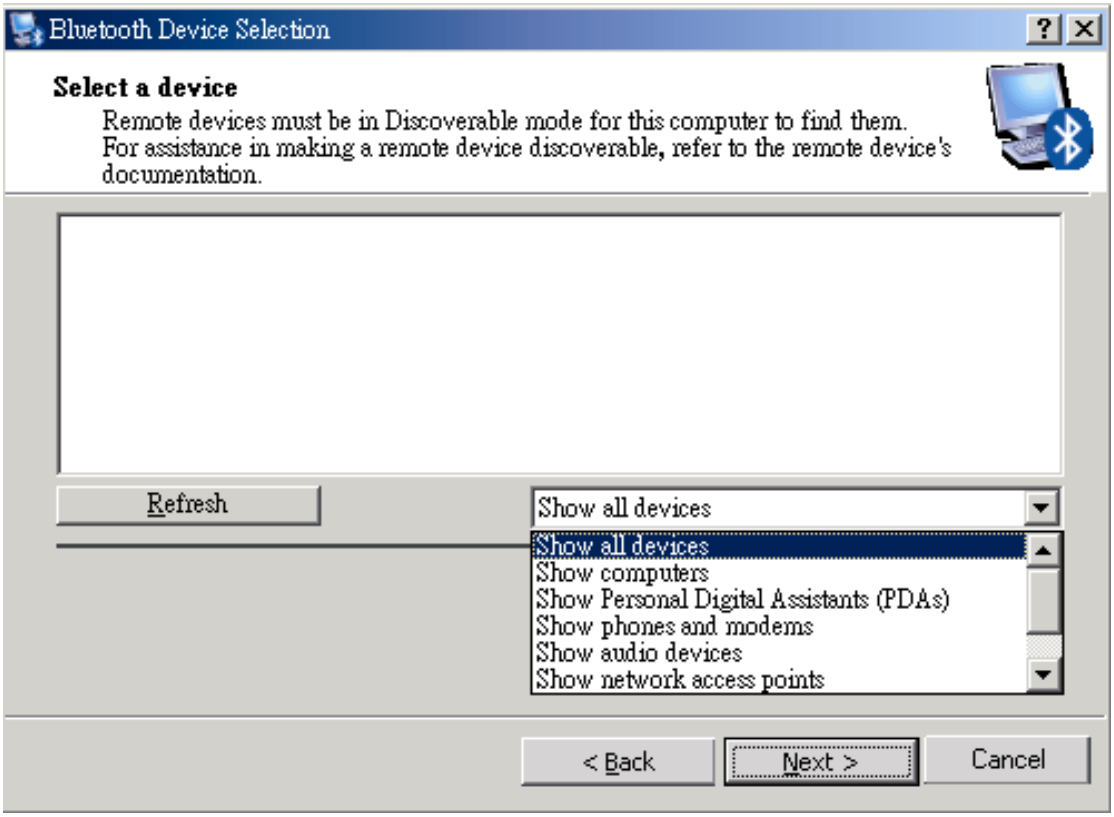


- Click **Next** button will guide you to make the Bluetooth services of your computer available to other Bluetooth devices. If you click **Skip**, and then you can configure these Bluetooth Services later via **Bluetooth Configuration Panel**.

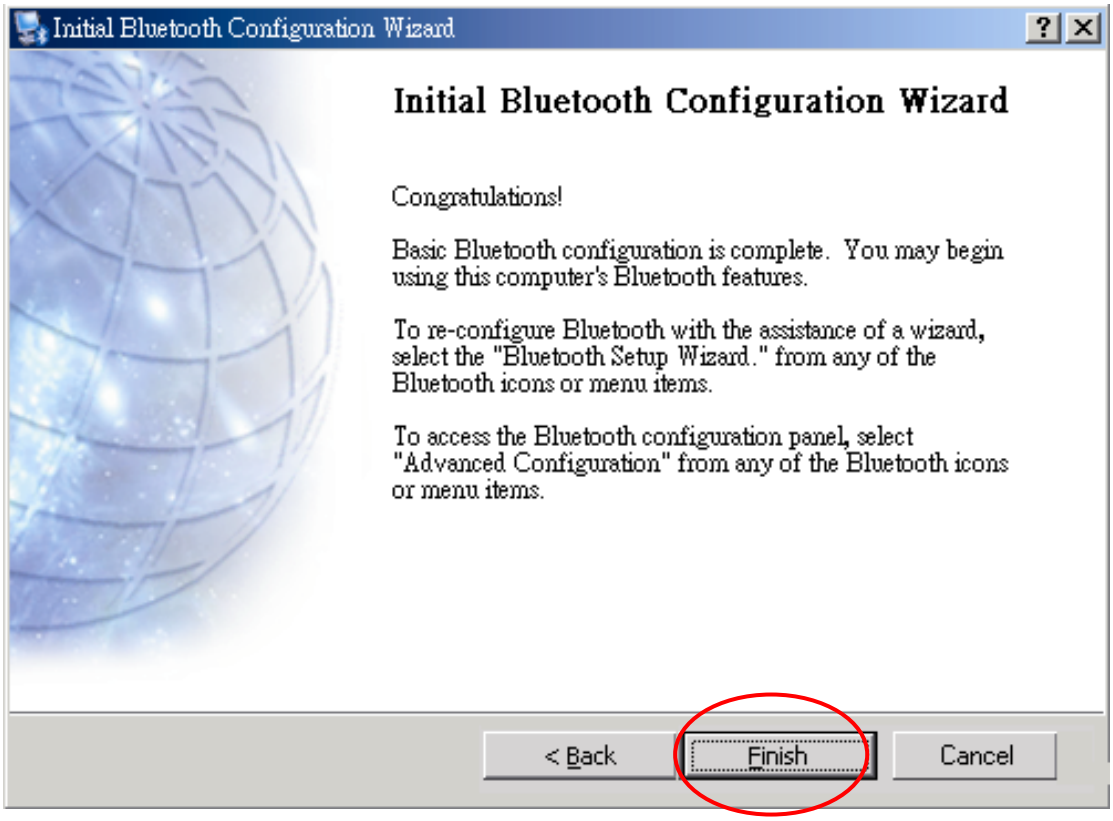


◆ Decide which Bluetooth service that your computer will offer and check the box of it to enable it. You can also click **Configure** button to modify each service's property.





◆ Click **Finish** button to complete the basic Bluetooth configuration.



If you want to re-configure the Bluetooth services, you can right-click the Bluetooth icon on the system tray and highlight **Bluetooth Setup Wizard**.

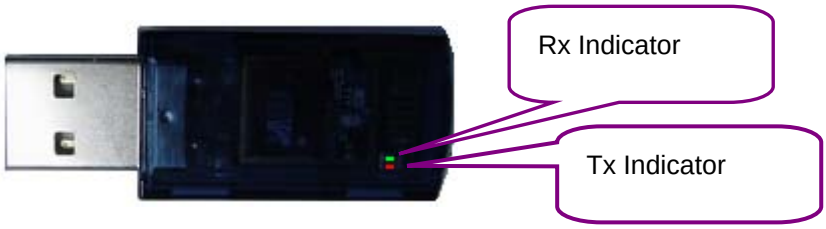
Chapter 4

Setup Diagnostics

4.1 Hardware Diagram

The Bluetooth USB Dongle is plug-and-play. During the software installation process, you will be prompted to plug in the USB dongle to an available USB port. When you plug in the USB Dongle to the USB port, the green Rx LED and the red Tx LED on the USB dongle should light up. See the diagram below. The Bluetooth Dongle LEDs illuminate during connection or data transfer to indicate that the dongle is functioning. Refer to the following table.

Status / LED	Receiving	Transmitting	Ready
Rx Indicator	Green (quick flash)	Solid Green	Solid Green
Tx Indicator	Solid Red	Red (quick flash)	Red (blinking)

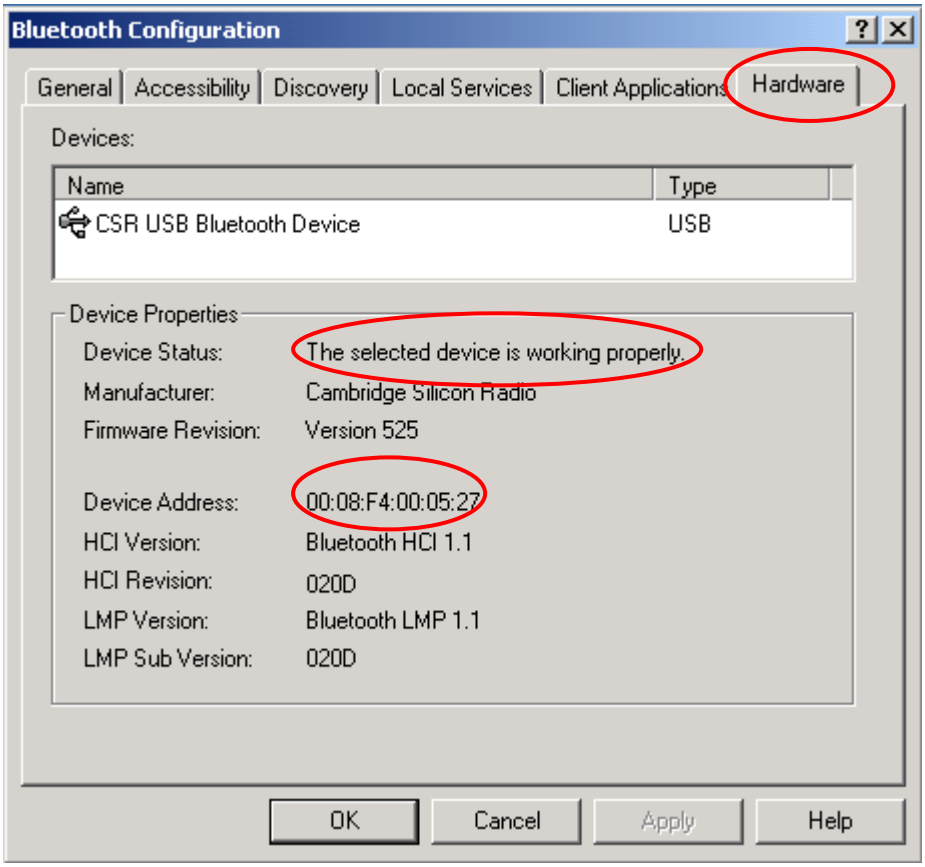


4.2 Verifying Hardware and Software Installation

Once you have the Bluetooth software installed and plug in the Bluetooth USB dongle, the Bluetooth icon will be displayed on the system tray. To check that the wireless Bluetooth USB dongle drivers and software are loaded properly:

- Right-click on the Bluetooth icon on the system tray and select "**Advanced Configuration**" from the shortcut menu.

- The Bluetooth Configuration window will be displayed. Click the **Hardware** tab. Please refer to the following picture and check if the Device Status field reports “The device is working properly.” and the “Device Address” is correctly displayed. If yes, it means that the Bluetooth dongle drivers and software have been installed successfully.



Chapter 5

Introduction To Bluetooth Software

The wireless Bluetooth USB Dongle is bundled with Widcomm Bluetooth Software as the management software. The Bluetooth Software is the solution for the seamless integration of Bluetooth technology into personal computers. The software provides the user an easy interface to manage the Bluetooth Dongle.

5.1 INTRODUCTION TO BLUETOOTH SOFTWARE

Most Bluetooth-enabled devices have the capability to act as:

- A Bluetooth server—these devices provide one or more services, such as access to the Internet, to other Bluetooth devices.
- A Bluetooth client—these devices use the service(s) provided by Bluetooth servers.

Bluetooth devices that can act as both server and client can often do both at the same time. The Bluetooth software provides:

- Clients with the means:
  - To locate other Bluetooth devices in the immediate vicinity (inquiry)
  - Discover the services that those devices offer (discovery)
  - Connect to, use, and disconnect from those services.
- Servers with the means to include/exclude individual services in the list of services they provide to clients.
- Extensive security, including:
  - Authorization
  - Authentication
  - Encryption.

To determine the services provided by a Bluetooth device:

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 a device 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.

5.2 BLUETOOTH DEVICE IDENTITY

Every Bluetooth device has a unique 48-bit binary Bluetooth Device Address (BDA) burned into its EEPROM. This address cannot be changed by the end-user.
A device's BDA is usually displayed in hexadecimal format; 00:D0:B7:03:2E:9F is a valid BDA. You can find the BDA from the **Bluetooth Configuration Panel -> Hardware tab -> Device Address**.
Each Bluetooth device also has an operator-configurable, user-friendly name to help distinguish it from other Bluetooth devices. The user-friendly name may be up to 99 alphanumeric characters in length and may contain spaces. **My Personal Computer** is a valid user-friendly name.

5.3 BLUETOOTH TRAY

The Bluetooth tray resides in the Windows system tray , which is normally located in the lower-right corner of the screen. The Bluetooth tray provides fast access to most Bluetooth operations.

From the Bluetooth tray you can:

- **Access My Bluetooth Places**—double-click the **Bluetooth** icon, or right-click the **Bluetooth** icon and then select **Explore My Bluetooth Places**.

- **Access the Bluetooth Setup Wizard**. This wizard will help you:
  - ✓ Configure how this computer accesses a service on another Bluetooth device
  - ✓ Locate remote Bluetooth devices
  - ✓ Configure the way that this computer provides services to remote Bluetooth devices
  - ✓ Set the name and type of this Bluetooth device, e.g., "Peter's PC" and "Desktop."

- **Access the Bluetooth Configuration Panel**—right-click the **Bluetooth** icon, and then select **Advanced Configuration**.
- **Access the Quick Connect option**—right-click the **Bluetooth** icon, select **Quick Connect**, and then select the type of service to which you wish to connect.
- **Start/Stop Bluetooth on this computer**.

5.4 ACCESS MY BLUETOOTH PLACES

My Bluetooth Places is part of **Windows Explorer**. There are *multiple ways* to access My Bluetooth Places:

- In the Windows system tray,
  - Right-click the Bluetooth icon and select **Explore My Bluetooth Places.** Or

  - Double-click the **Bluetooth icon** on the system tray.
- On the desktop, double-click My Bluetooth Places icon.
- Open Windows Explorer and select My Bluetooth Places in the Folders pane or from the Address shortcut menu.

5.5 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.

Enabled	Disabled	Connected
Blue with White	Blue with Red	Blue with Green

Figure 1: Bluetooth Icon

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			

Figure 2: Device 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			

Figure 3: Service Icons for Windows 9x, Me and 2K

Note:

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

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			

Figure 4: Device 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.			

Figure 5: Service Icons for Windows XP

NOTE:

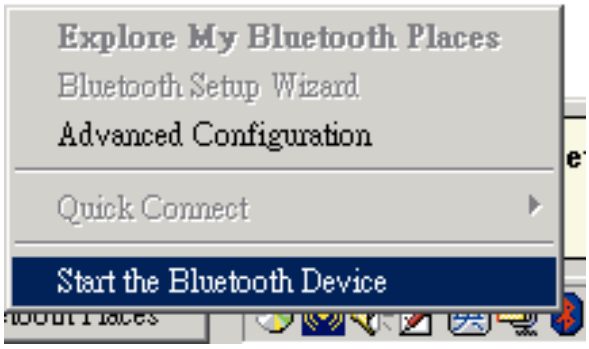
Services may be unavailable because they are in use or because the necessary hardware is not installed.

Chapter 6

Basic Operations

6.1 START OR STOP BLUETOOTH

- **To start Bluetooth:** In the Windows system tray, right-click the Bluetooth icon and select "**Start the Bluetooth Device**". The Bluetooth icon is blue in color with a white insert when Bluetooth is running.

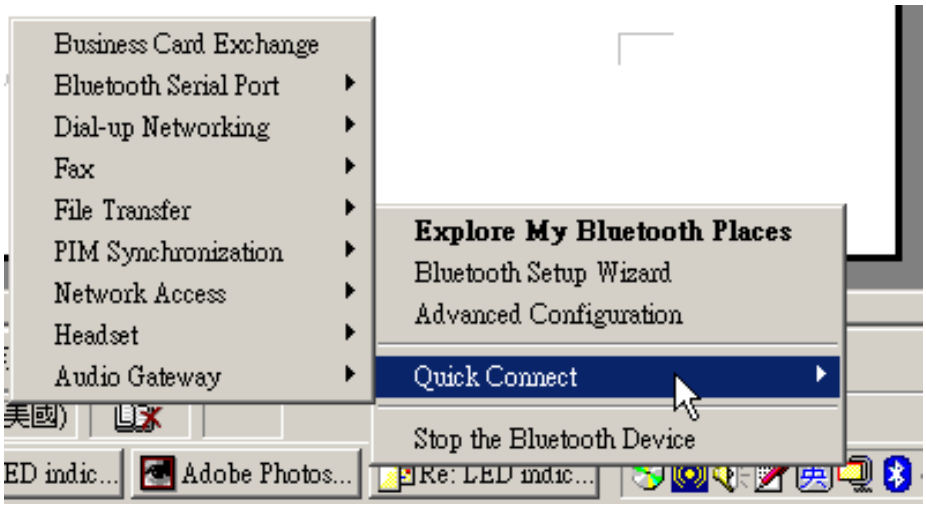


- **To stop Bluetooth:** In the Windows system tray, right-click the Bluetooth icon and select "**Stop the Bluetooth Device**".

The Bluetooth icon is blue in color with a red insert when Bluetooth is stopped.

6.2 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**".

6.3 CREATE A CONNECTION USING THE BLUETOOTH SETUP WIZARD

- From Bluetooth Explorer

  Right-click **My Bluetooth Places** and select **Bluetooth Setup Wizard**

  Or

  From the Bluetooth menu, select **Bluetooth Setup Wizard**

  Or

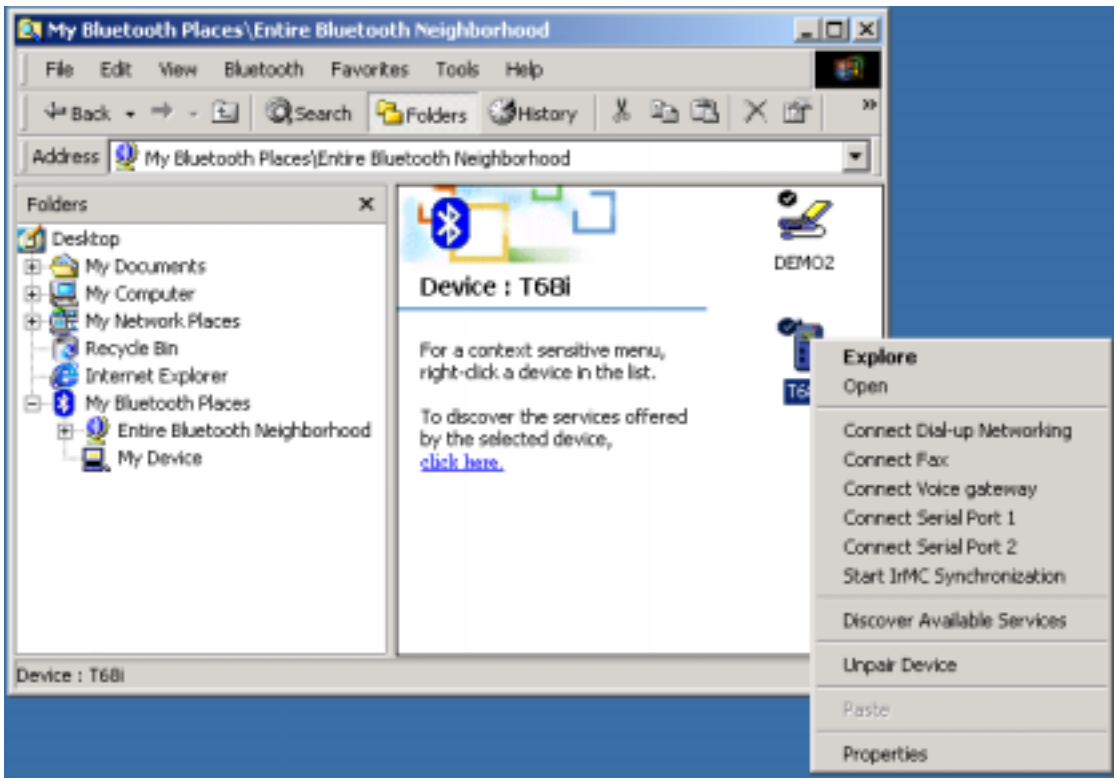
- From the Windows system tray: right-click the Bluetooth icon and select **Bluetooth Setup Wizard**. The Bluetooth Setup Wizard will be displayed.

You can click the radio button of each item and follow the wizard's on-screen instructions.

6.4 CREATE A CONNECTION FROM BLUETOOTH EXPLORER

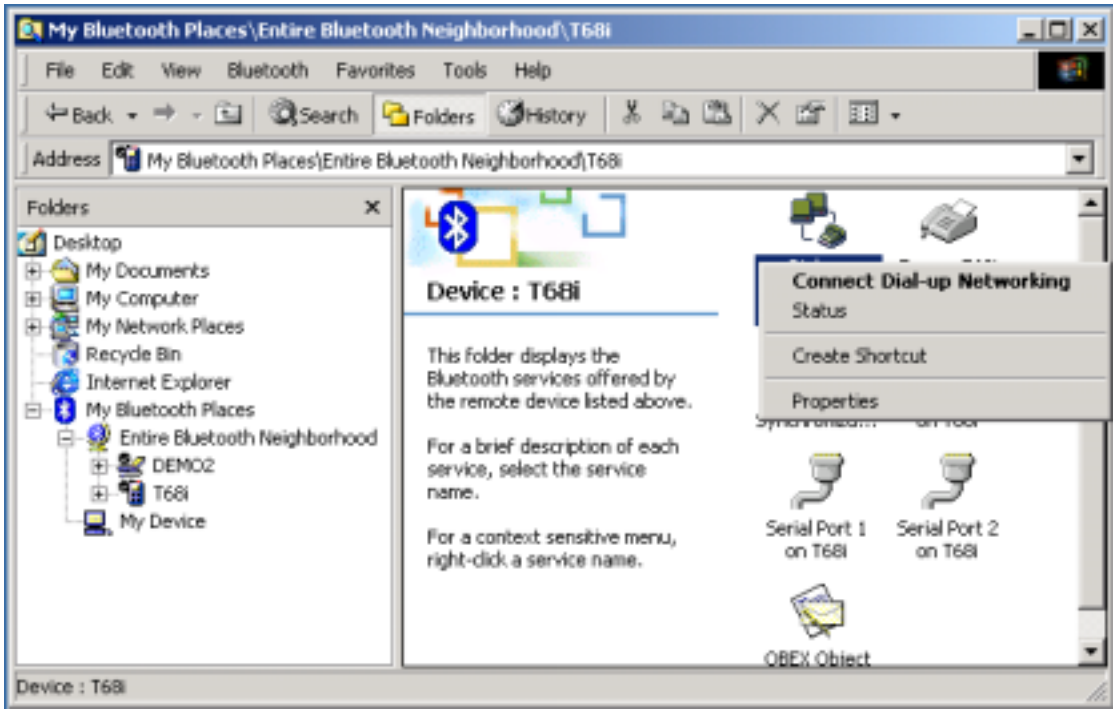
From Bluetooth Explorer

- Right-click a device name and select "**Connect to…**" the desired service.



or

- In the Folders pane, select a device, and then, in the right pane, right-click a service provided by that device and select "**Connect**."



NOTE:

Only available services are displayed in the menus.

6.5 FIND BLUETOOTH DEVICES

Search for Devices looks for Bluetooth devices in the vicinity and displays the devices that it finds in My Bluetooth Places.

To start a search for devices, in the Folders pane of My Bluetooth Places, select **Entire Bluetooth Neighborhood**, and then, from the **Bluetooth** menu, select **Search for Devices**.

NOTE:
The Bluetooth menu is only visible when My Bluetooth Places is active.

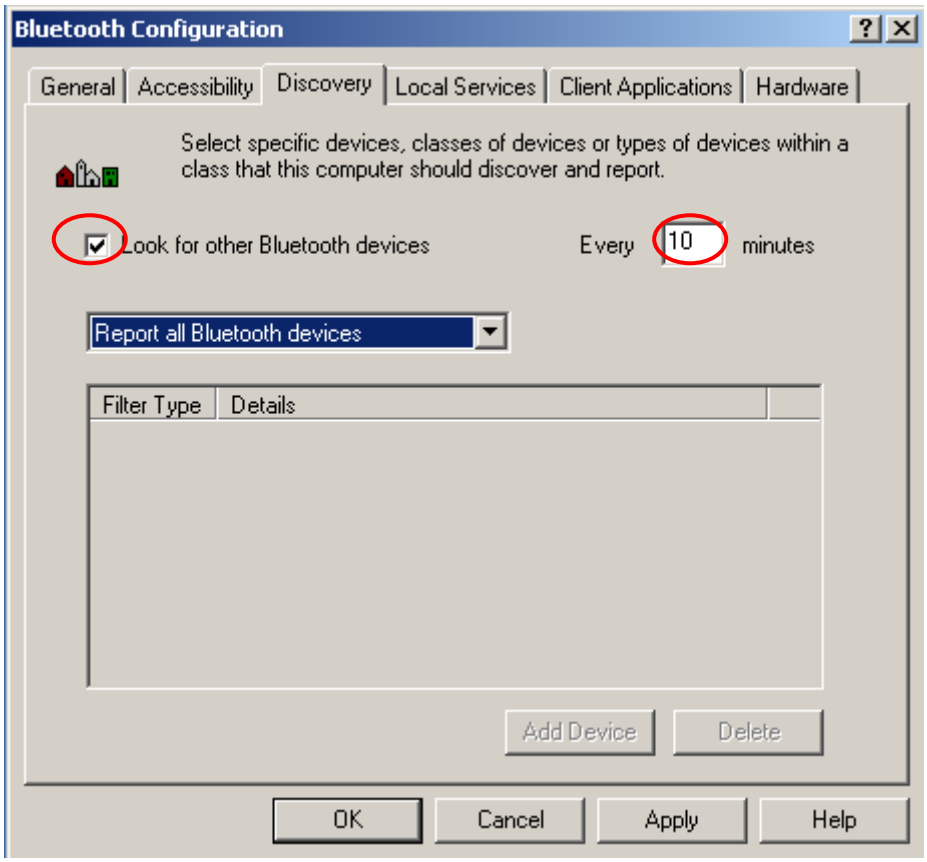
6.5.1 Periodic Search for Devices

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.

You may follow the following steps to enable this function:

- Right-click the Bluetooth icon on the system tray and select "**Advanced Configuration**" from the shortcut menu.

- From the Bluetooth Configuration screen, click "**Discovery"** Tab. Check the box of "**Look for other Bluetooth devices**" and input the interval.



Some devices within connection range may not show up in the list of devices found because:

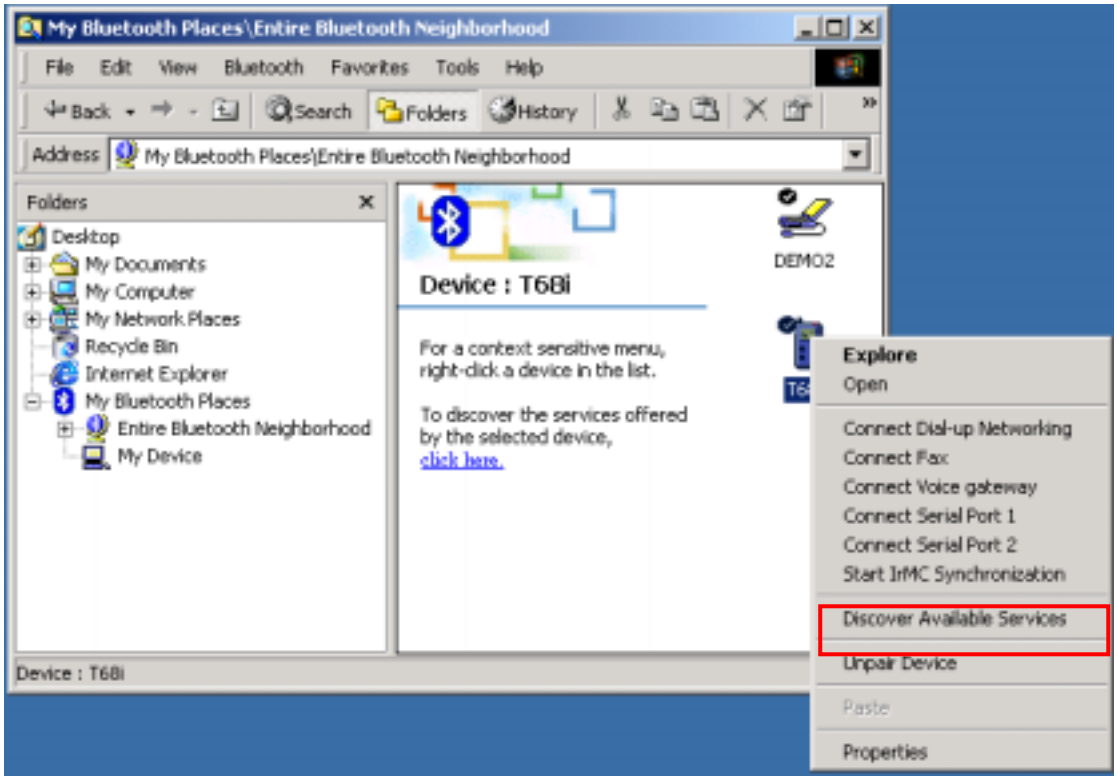
- Your device is configured to report only specific types or classes of devices (Bluetooth Configuration Panel > Discovery tab, on your device).
- The unlisted device is configured to be non-discoverable (Bluetooth Configuration Panel > Accessibility tab, on the un-listed device).

6.6 FIND A SERVICE

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

Discovery.

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.

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.

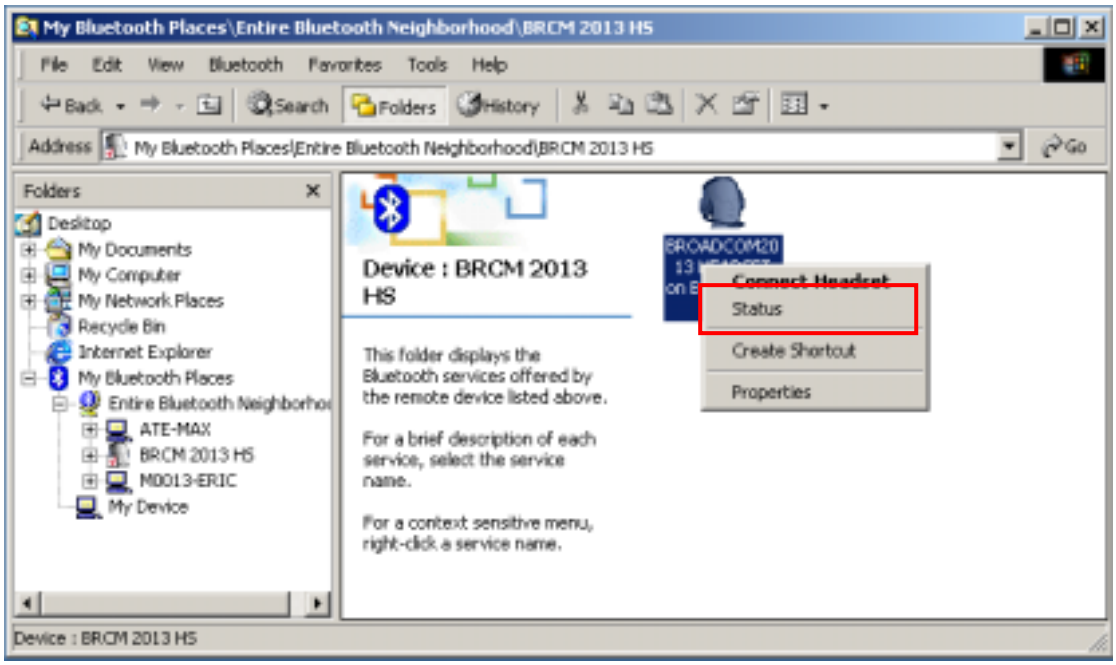
- **Dial-up Networking**—allows a device to use a modem that is physically attached to another Bluetooth device.
- **Fax**—allows a device to send a fax using a remote Bluetooth cell phone, modem, or computer.
- **File Transfer**—allows a device to perform file system operations on another Bluetooth 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.

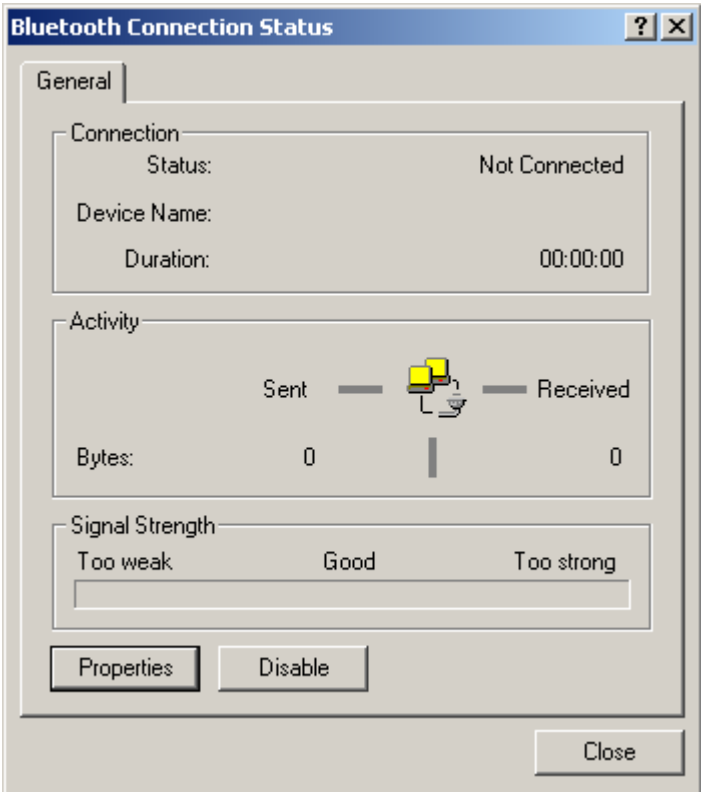
All Bluetooth servers do not necessarily provide all of these services. For example, network gateways may provide only the Network Access service.

6.7 BLUETOOTH CONNECTION STATUS

The Bluetooth Connection Status dialog box displays information about the state of a connection and provides a means to disconnect an active connection.

Display the Connection Status dialog box: in My Bluetooth Places, from the Folders pane, select a device, and then, in the right pane of My Bluetooth Places, right-click a service name and select **Status** from the shortcut menu.





The Information provided is:

- **Status**: “Connected” or “Not Connected”
- **Device Name**: the name of the device to which this computer is connected.
- **Duration**: the length of time that this connection has been established, displayed in hours, minutes and seconds. Depending on the service, the connection may

time out (automatically disconnect) after a specific period of inactivity.

- **Activity**: the number of bytes sent and received over the connection.
- **Signal Strength**: a graphic indicator that ranges from Too Weak through Good to Too Strong.

NOTE:
To change the power transmission level of this computer: from the **Bluetooth Configuration Panel**, **Hardware** tab, click the **Advanced** button, and then change the setting in the Maximum Power Transmission drop-down list. The **Advanced** button is not available in all countries.

The controls in the Bluetooth Connection Status dialog box are

- **Properties** button: displays the Bluetooth Properties dialog box for this connection.
- **Disconnect** button: closes this connection.
- **Close** button: closes the Bluetooth Connection Status dialog box.

6.8 SEND TO BLUETOOTH

This feature is used to send information to another Bluetooth device. Data types include:

- Files from Microsoft Explorer
- Documents from Microsoft Office applications, including:
    - Word
    - Excel
    - Access
    - PowerPoint.
- Microsoft Outlook items, including:
    - Contacts
    - Appointments
    - Tasks
    - Messages
    - Notes.

To use Send to Bluetooth

1. In the application:

    a) Microsoft Explorer—select one or more files to be transferred. Folders cannot be transferred.

b) Microsoft Office—only the document in the active window can be transferred.

c) Microsoft Outlook—select one or more items to be transferred.

2. From the application's **File menu**, select **Send To**, and then select **Bluetooth** from the shortcut menu.

3. Select a device from the shortcut menu to send the data

or

Select **Other...,** choose a device from the list, and then click **OK** to send the data.

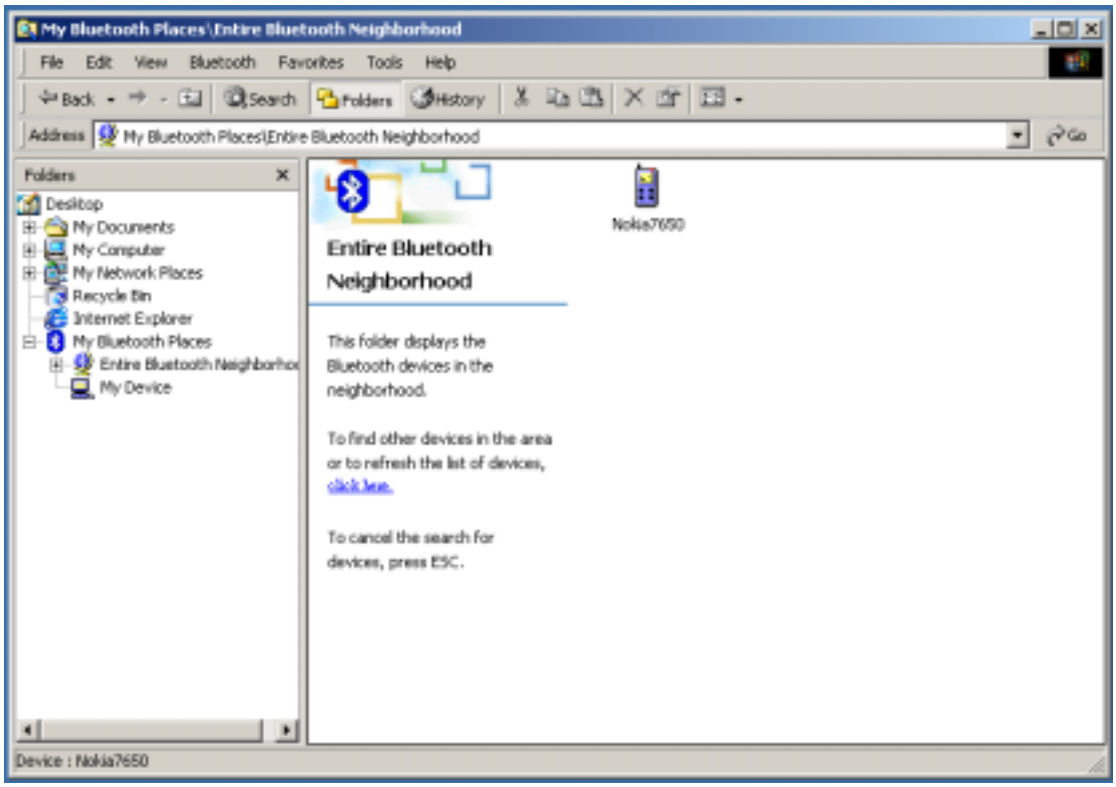
6.9 PAIRING BLUETOOTH DEVICES AND ACCESS THE INTERNET

You have to pair Bluetooth devices to establish the connection between them if the secure connection is enabled. The example illustrated here is the pairing procedure between a Bluetooth-enabled notebook and a cellular phone with Bluetooth and GPRS functions. After the pairing process is complete, your Bluetooth-enabled notebook can access the Internet through your GPRS cellular phone. The following procedures will guide you how to configure your notebook and cellular phone.

Steps 1 – Pairing

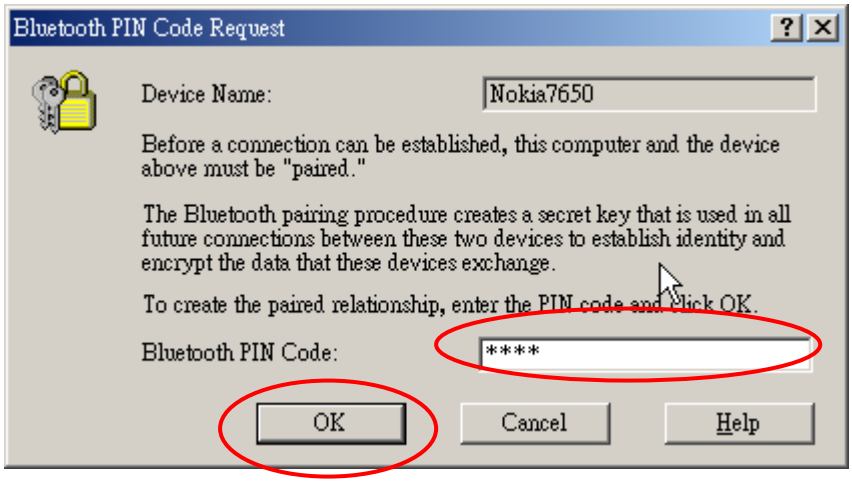
- Double click the Bluetooth icon resides on the system tray.
- From the Bluetooth Explorer, click **Bluetooth** menu and select **Search for devices**.

The Bluetooth devices in range should be shown on the right pane. In this example, the cellular phone –Nokia7650 with Bluetooth and GPRS function is displayed on the right pane.



- Right-click the cellular phone icon and select **Pair Device** from the shortcut menu.

- The following Bluetooth PIN Code Request dialog box will be pop-up. Please enter the Bluetooth PIN Code and click **OK**.

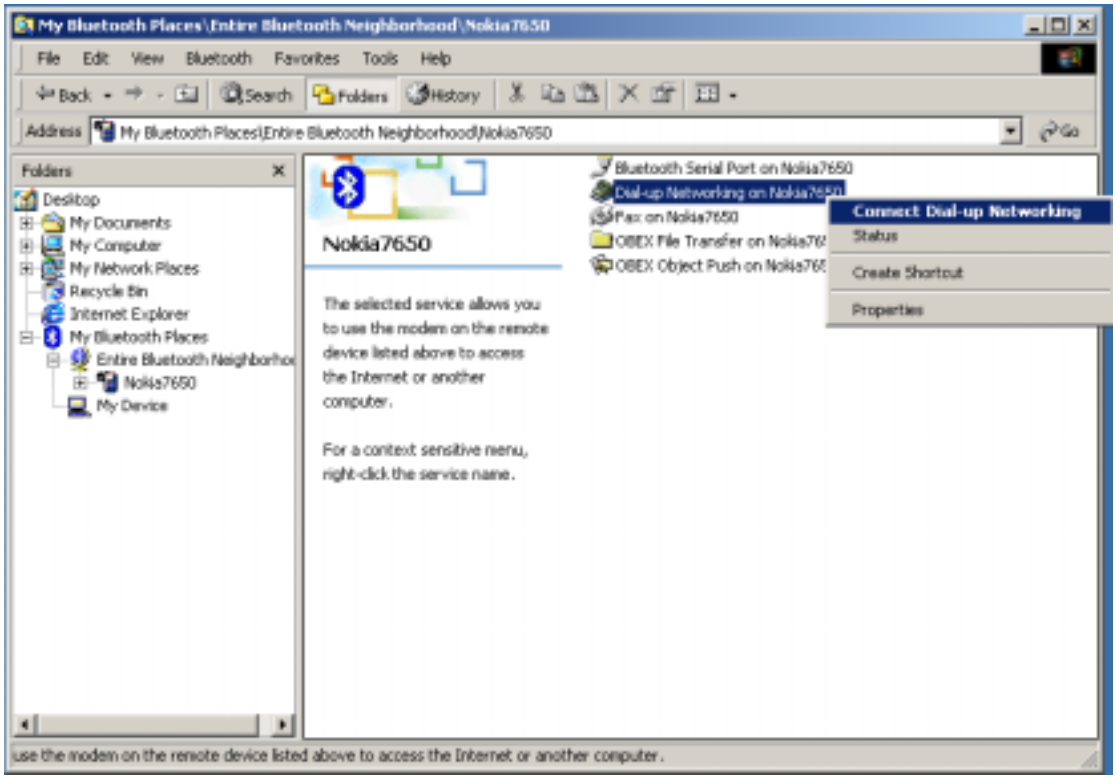


- Meanwhile, the remote device - cellular phone screen will prompt a message for you to enter the Bluetooth PIN code. The Bluetooth PIN code you type here should be the same between these paired devices.
- The system starts to pair these two devices and the process will take a few seconds. If the pairing process is complete, there will be a check on the top of the cellular phone icon.

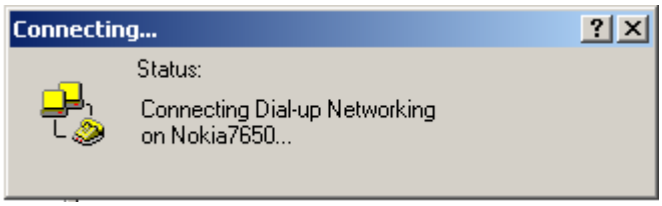
Steps 2 – Connect to the Internet

The following procedures will guide you how to connect to Internet from your notebook through your cellular phone.

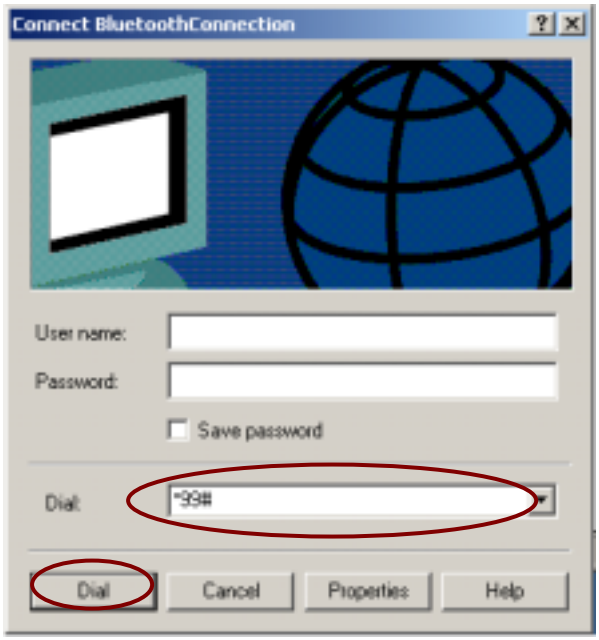
- Double-click the cellular phone icon to find services it provides and right-click the **Dial-up Networking**. Select "**Connect Dial-up Networking**" from the shortcut menu.



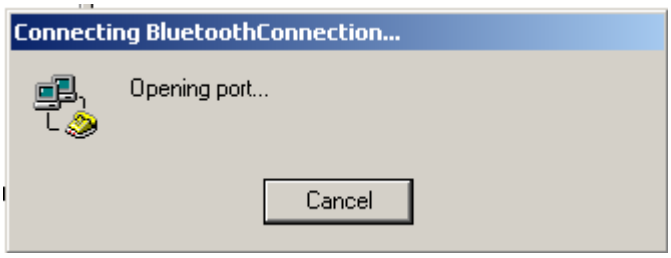
- The following screen shows that the system starts to connect to the cellular phone.



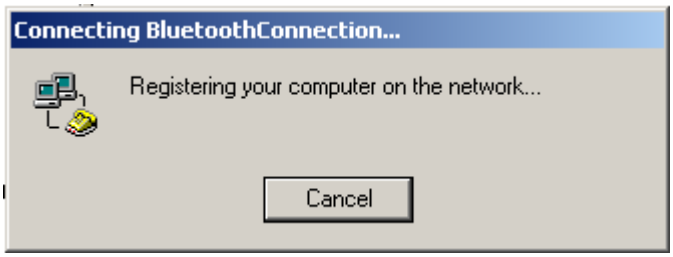
- Please type the number your GPRS cellular phone provides and click **Dial**.



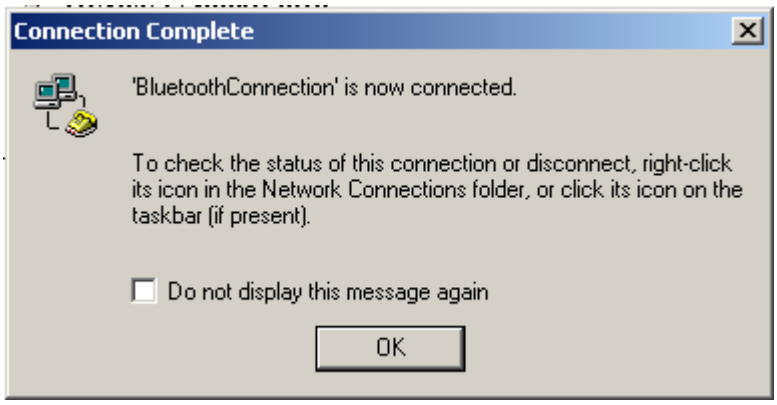
- The following screen will be shown on your notebook screen indicating the connection process.



- Meanwhile, the remote device - your cellular phone, will prompt a request message indicating the notebook is requesting the service. Please click **OK** to accept the request.
- The following screen will be present on your notebook indicating the connection process.



- If the connection is established successfully, then the following screen will be displayed. Now, you can open an Internet Browser and surf the Internet from your notebook.



Chapter 7

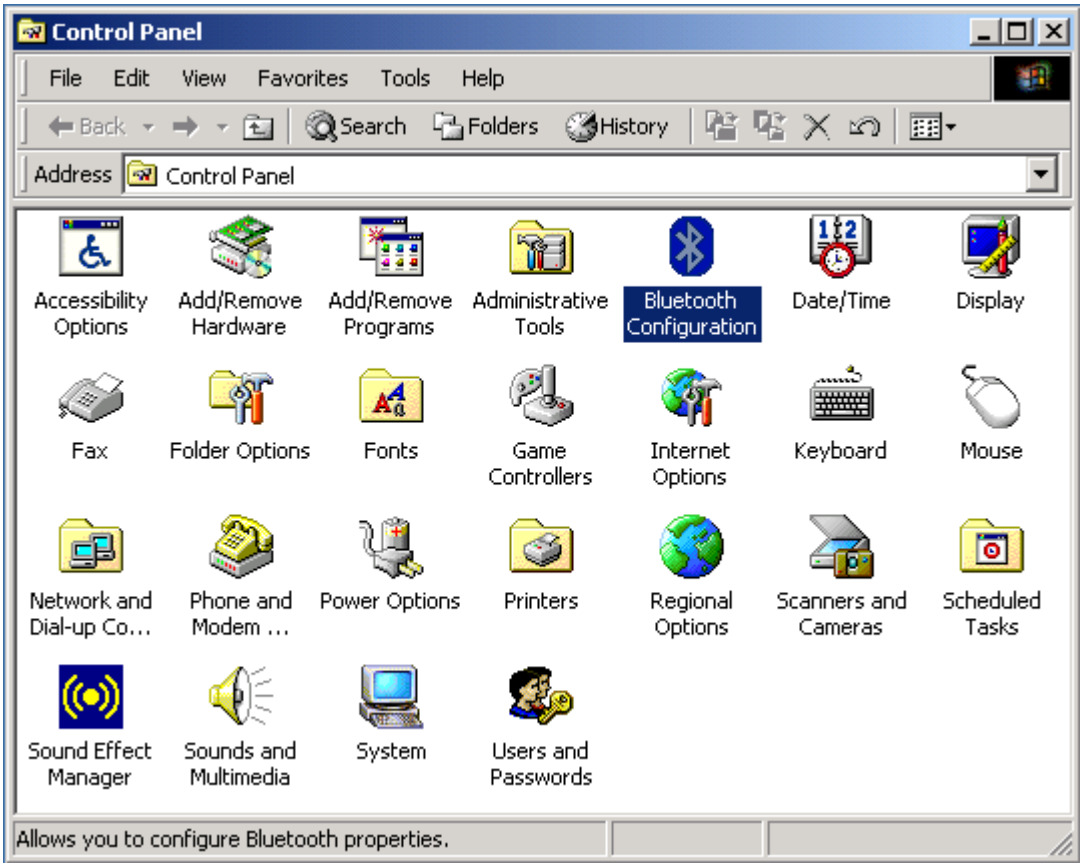
Configuration Panel

7.1 ACCESS THE BLUETOOTH CONFIGURATION PANEL

The Bluetooth Configuration Panel provides access to settings for Bluetooth services, client applications, hardware, security, discovery, accessibility, default paths, event notification and other Bluetooth related items.

To Open the Bluetooth Configuration Panel

- From the Windows **Control Panel**, select **Bluetooth Configuration**.

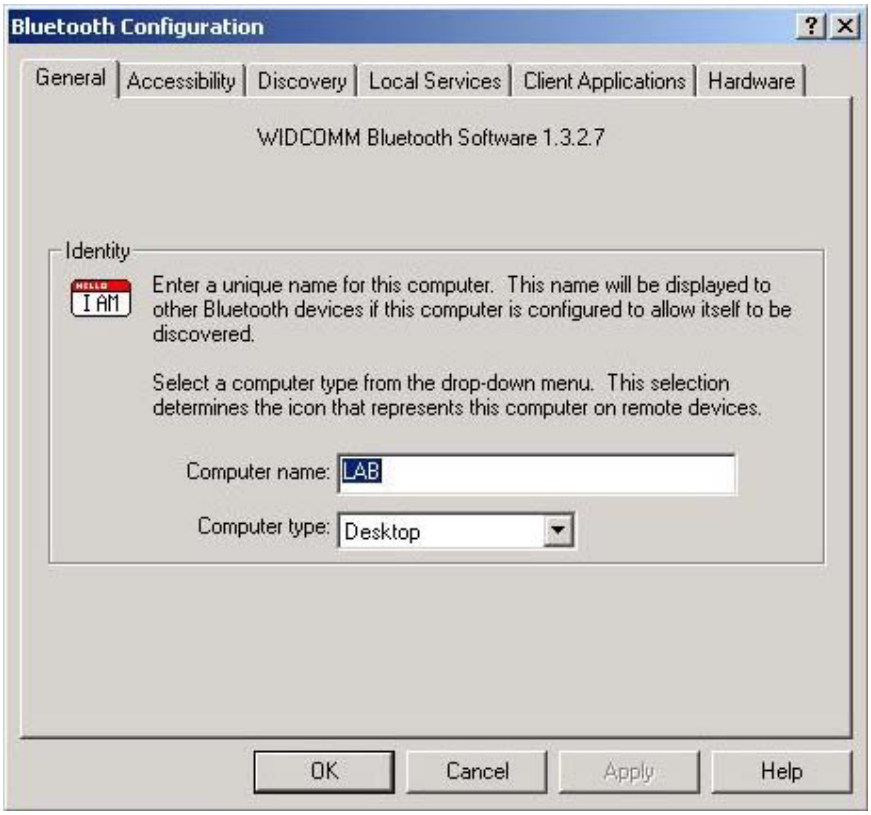


Or

- . In the Windows System Tray, right-click the **Bluetooth** icon, and select **Advanced Configuration** from the shortcut menu.

7.2 GENERAL CONFIGURATION SETTINGS

The settings on the General tab of the Bluetooth Configuration Panel determine information that is displayed to remote devices.

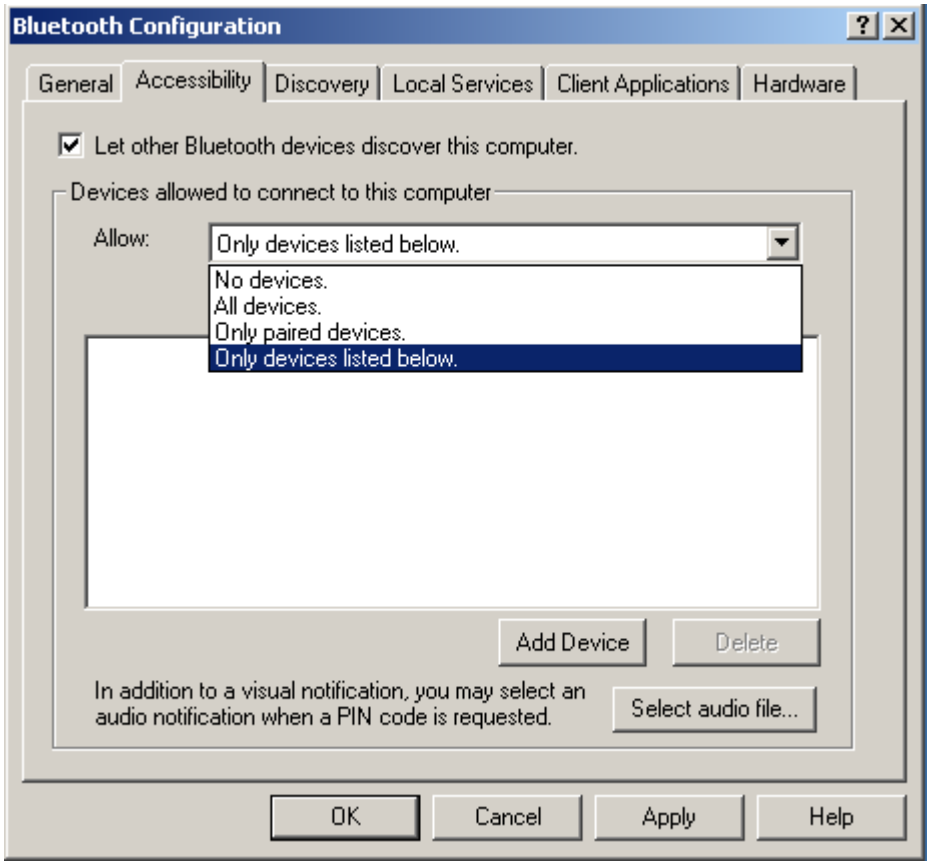


Identity

- **Computer Name-**enter a unique name to identify this computer to other Bluetooth devices in the vicinity; this field cannot be left blank.
- **Computer type-**select either Desktop or Laptop from the shortcut menu to set the type of icon remote devices will use to represent this computer.

7.3 ACCESSIBILITY SETTINGS

The Accessibility tab of the Bluetooth Configuration Panel lets you specify whether remote devices may access this computer, which remote devices have access, and whether an audio warning is played when a Personal Identification Number (PIN code) is required.



Allow other devices to discover this computer

Select "**Let other Bluetooth devices discover this computer**" to permit remote Bluetooth devices to find and report this computer. If "**Allow No devices**" (below) is selected, this option is not available.

Control the types of devices that are allowed to connect to this computer

From the "Devices allowed to connect to this computer" shortcut-menu, select:

- **No devices**—no remote devices are permitted to initiate a connection with this computer. However, this computer can still initiate connections with remote Bluetooth devices.
- **All devices**—all remote devices are permitted to connect to this computer. Connections are subject to additional security restrictions, such as authentication and authorization, that may be required by the individual services provided by this computer.

- **Only paired devices**—only devices that have been paired with this computer are allowed to connect to it.
- **Only devices listed below**—only the listed devices are allowed to connect to this computer (see Accessibility, adding and deleting devices).

Choose an audio notification file

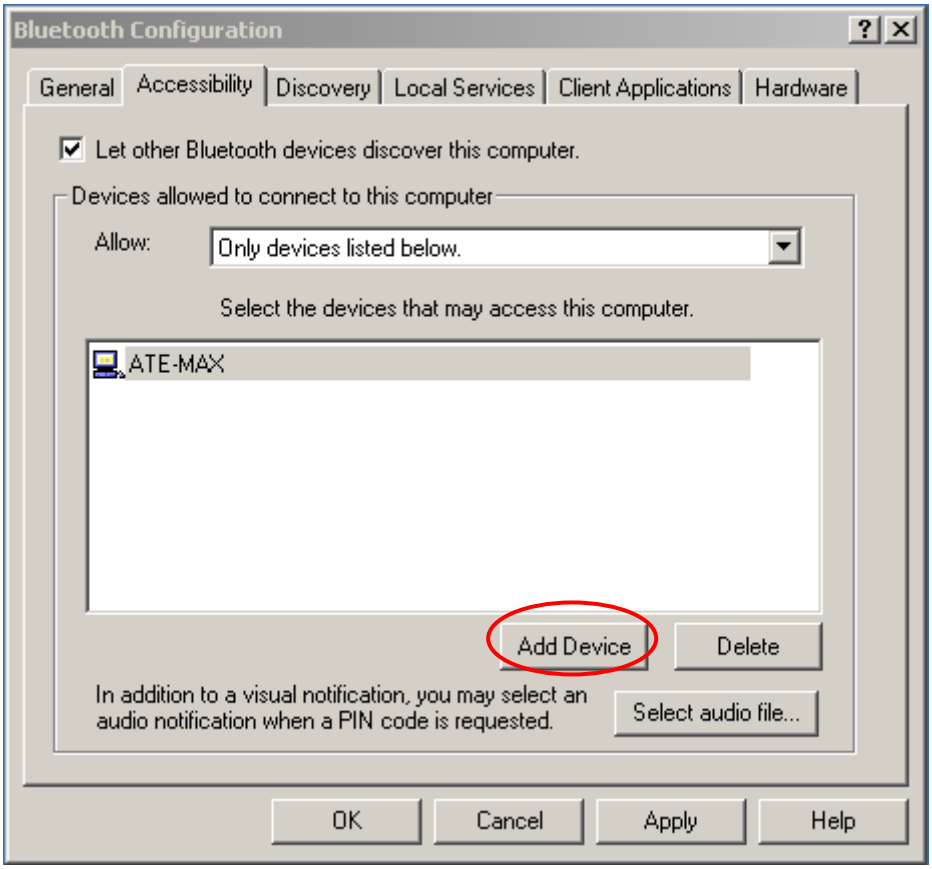
When Secure Connection is enabled for any of the Bluetooth Services on this computer a PIN code is required before that service can be accessed. To chose a notification sound that will play when a remote device attempts to access a service that requires a secure connection, click **Select audio file...** and select the sound (*.wav) file to be played.

Limit access to this computer to specific remote devices

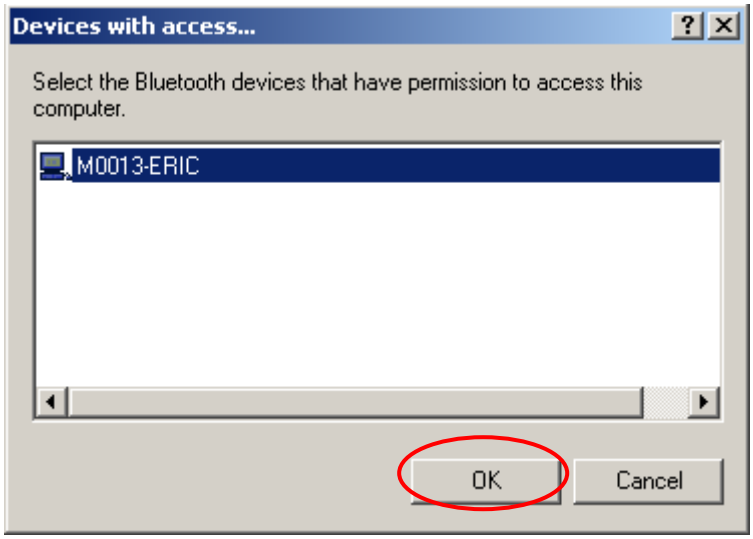
From the Bluetooth Configuration Panel, Accessibility tab, in the Allow shortcut menu, select "**Only devices listed below**".

Add a device to the list

1. Click **Add Device.**



2. In the **Devices with access... dialog box** select the desired device(s) and click **OK**.

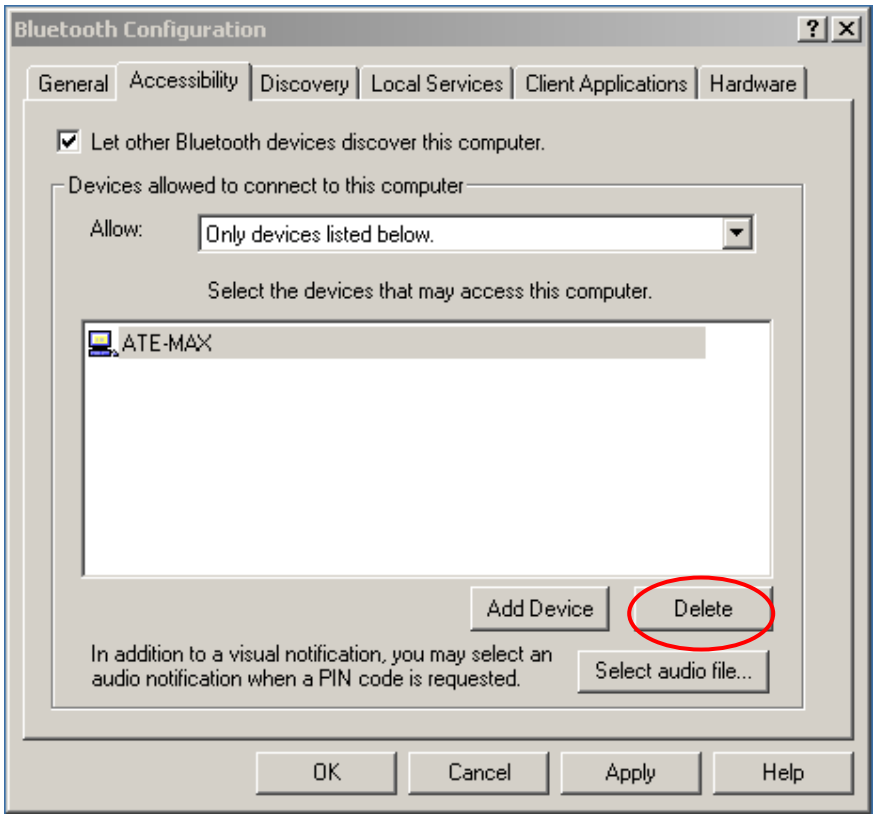


NOTE:

Multiple devices may be selected using SHIFT + click and/or CTRL + click.

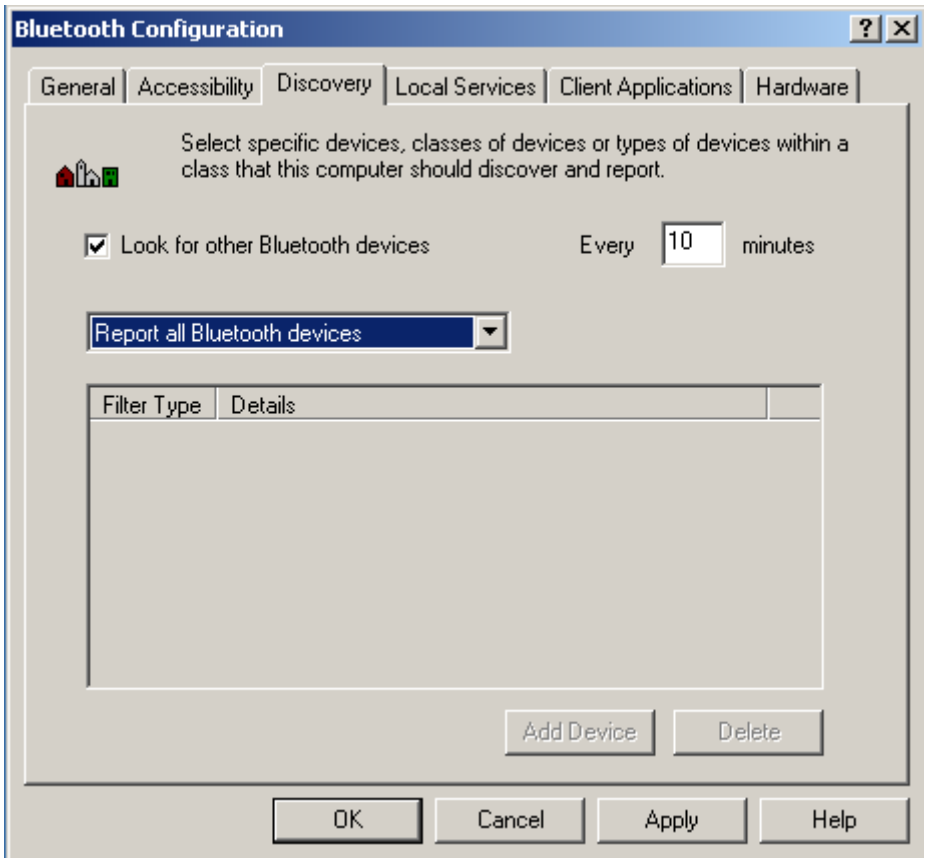
Delete a device from the list

In the list of devices allowed to access this computer, select the device to be removed from the list, and then click **Delete**.



7.4 DISCOVERY SETTINGS

The settings on the Discovery tab of the Bluetooth Configuration Panel determine whether this computer looks for other Bluetooth devices automatically, how often it looks and what type of devices it looks for.



Periodic Search for Devices

When “Look for other Bluetooth devices” is selected, Bluetooth automatically searches for devices every X minutes. X is an whole number between 1 and 60. To change the time between auto inquiries, highlight the existing time and enter the new time.

NOTE:
When My Bluetooth Places is first opened it performs an initial automatic search for devices even if “Look for other Bluetooth devices” is not enabled.

Determine the devices that will be reported

Bluetooth can screen out devices that you do not need access to.

The options are:

- Report all Bluetooth devices
- Report only selected Bluetooth devices (see Discovery, Adding Specific Devices

and Discovery, Deleting Specific Devices).

Discover Specific Devices

The type of device(s) that this computer looks for and reports when it is searching for other Bluetooth devices can be limited.

Limit the remote devices reported

Bluetooth can report only specific devices, specific class(es) of device(s), or specific type(s) of device(s) within a class.

- Specific devices: an individual computer or Bluetooth cellular telephone are examples of specific devices.
- Specific class of device: “computer” is an example of a class of devices
- Specific type of device within a class: “laptop” is an example of a specific type of device within the “computer” class of devices.

The devices to be discovered can be mixed-and-matched; you can discover one or more specific devices, classes of devices and types of devices within a class at the same time.

Remove a device from the list of devices to be discovered

In the Bluetooth Configuration Panel, from the **Discovery** tab, select the device to be removed and click the **Delete** button.

NOTE:
If “Report only selected Bluetooth devices” is not selected the Delete button will not be available.

Temporarily override the discovery of specific devices

In the Bluetooth Configuration Panel, from the Discovery tab, select “Report all Bluetooth devices.” The specifically selected devices will be discovered along with all other devices.

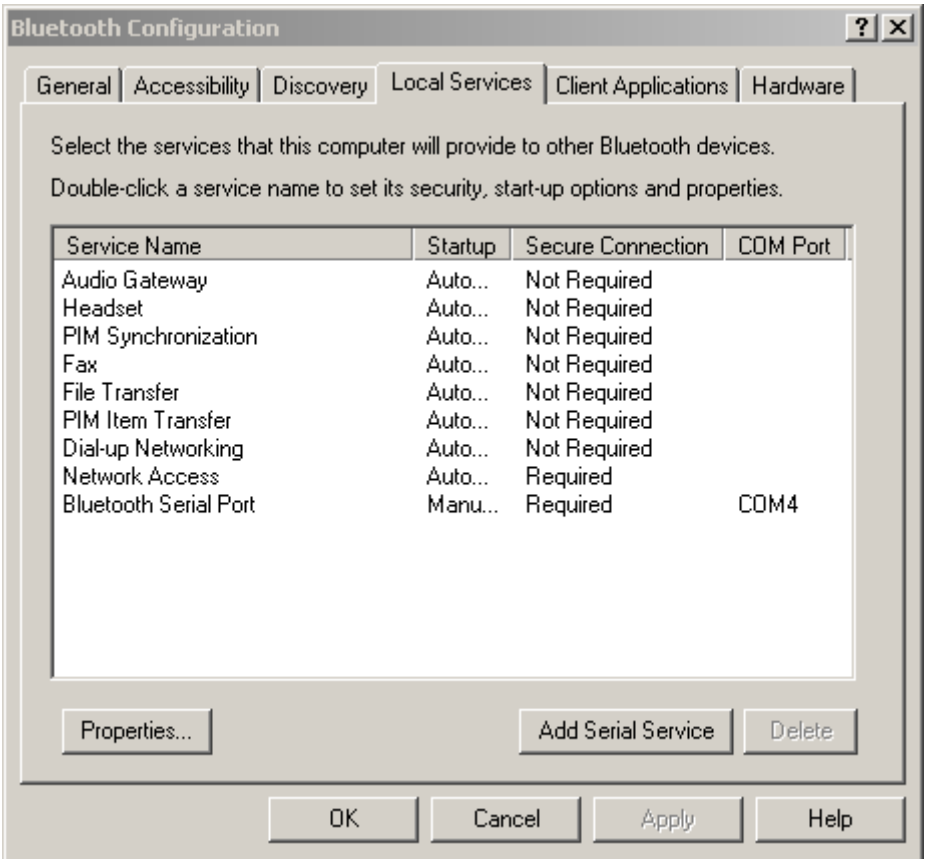
To re-enable specific device discovery re-select “Report only selected Bluetooth devices.”

NOTE:
When all devices are deleted an error message will appear if “Report all Bluetooth devices” is not selected.

7.5 BLUETOOTH LOCAL SERVICES

Common Configuration Settings

The settings on the Local Services tab of the Bluetooth Configuration Panel determine the configuration of the services provided by your computer to remote devices. Each service can be configured individually for security, name, and other settings. The Local Services tab also includes options to add and delete user-defined serial services.



These properties can be set individually for each Bluetooth service.

- **Service Name** - the default name of each service can be changed.
- **Secure Connection** - requires that remote devices provide proof of identity and that all data be encrypted.
- **Startup Automatically** - starts the service automatically when Bluetooth is started.
- **Notifications** - provides visual and/or audio notification that a remote device is attempting to connect (or has connected) to a service on this computer.

Bluetooth for Windows Local Service Names

- Audio Gateway
- Headset
- Bluetooth Serial Port

- Dial-Up Networking
- Fax
- File Transfer
- PIM Item Transfer
- PIM Synchronization
- Network Access

7.5.1 Audio Gateway

The Bluetooth Audio Gateway service allows this computer to use a remote Bluetooth device's microphone and speakers as this computer's input and output devices.
For example, if this computer has voice recognition capabilities, a Bluetooth headset might be used as the audio input device.

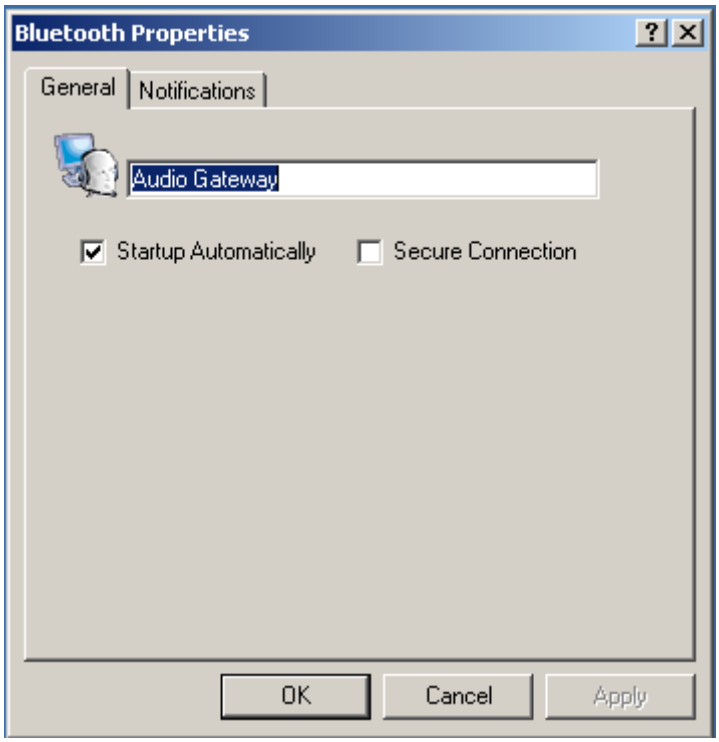
Hardware Requirements

◆ The Bluetooth radio on both this computer and the remote device must support audio.

◆ . The remote device handles both audio input and output for this computer; therefore, this computer does not require a sound card, microphone, or speakers.

Configure the Audio Gateway Service

Double-click the **Audio Gateway** service from the Local Service Tab.



Set the common configuration properties of the service from General and Notification Tabs, and then click **OK**.

7.5.2 Bluetooth Serial Port

The Bluetooth Serial Port service allows a remote Bluetooth device to establish a wireless serial connection with this computer. The wireless serial connection may be used by applications as though a physical serial cable connected the devices.
Bluetooth for Windows has one pre-configured Bluetooth Serial Port, but additional Bluetooth Serial Ports can be added when needed.

To establish a Bluetooth Serial Port connection

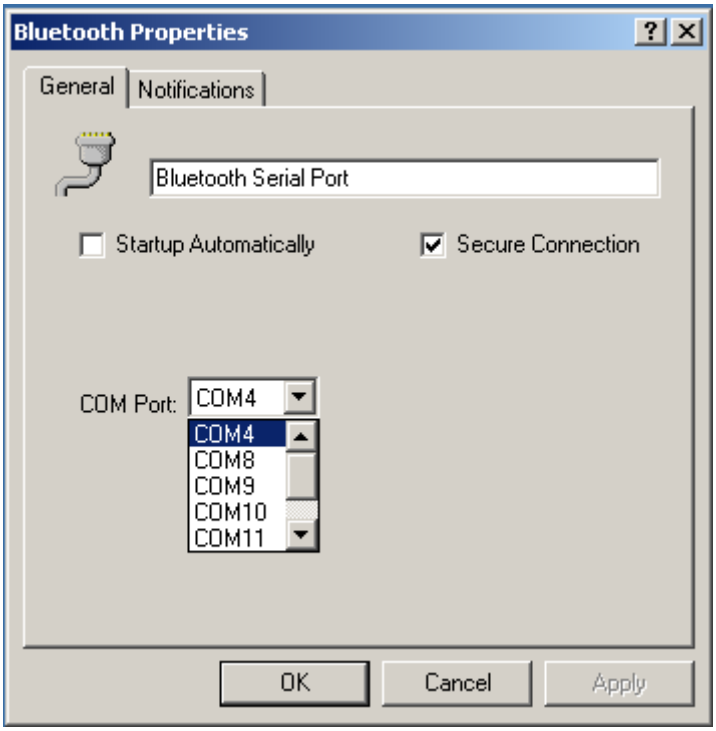
The connection must be initiated from the remote device by the Bluetooth Serial Port application.

Determine the communications port being used by this computer for the Bluetooth Serial Port

The COM port assigned to this service is the last item in the Bluetooth Serial Port service row. Configure the application on this computer that will use this service to send its data to this COM.

To add a port

1. From the Bluetooth Configuration Panel, Local Services tab, click **Add Serial Service**.



2. In the properties dialog box, modify the properties:

- Enter a unique name (less than 99 alphanumeric characters).
- Select secure connection, if desired.
- Select Startup Automatically, if desired
- From the COM Port shortcut menu select a communications port that is not assigned to any other service.

3. Click **OK**.

To remove a Bluetooth Serial Port

From the Bluetooth Configuration Panel, Local Services tab, select the port to be removed and then click **Delete**.

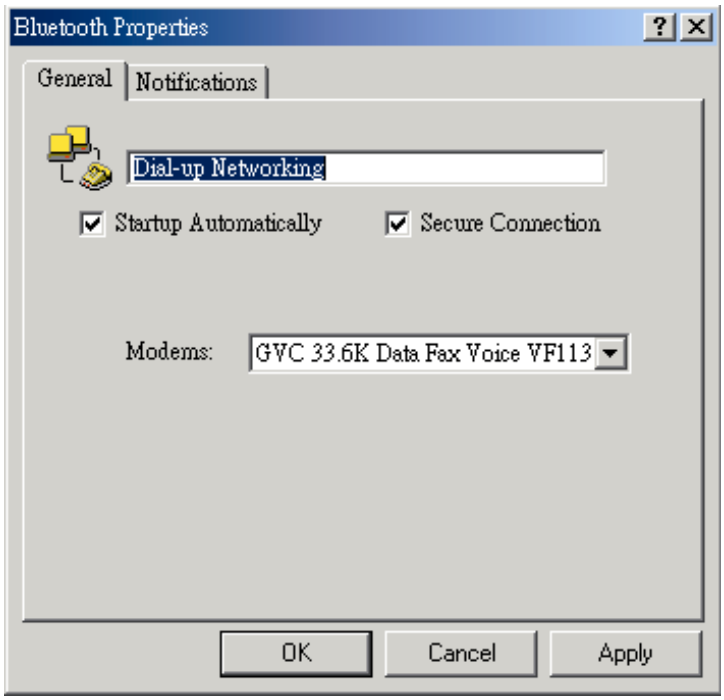
NOTE:
The Delete button is only available when a Bluetooth Serial Port is selected.

7.5.3 Dial-up Networking Service

The Bluetooth Dial-up Networking service makes it possible for a remote Bluetooth device to use a modem that is physically connected to this computer. The remote device can then access the Internet or log on to a remote network.

Configure the Dial-up Networking service:

From the Windows system tray, right-click the Bluetooth icon, select **Advanced Configuration** > **Local Services**, and then double-click the **Dial-up Networking service**.



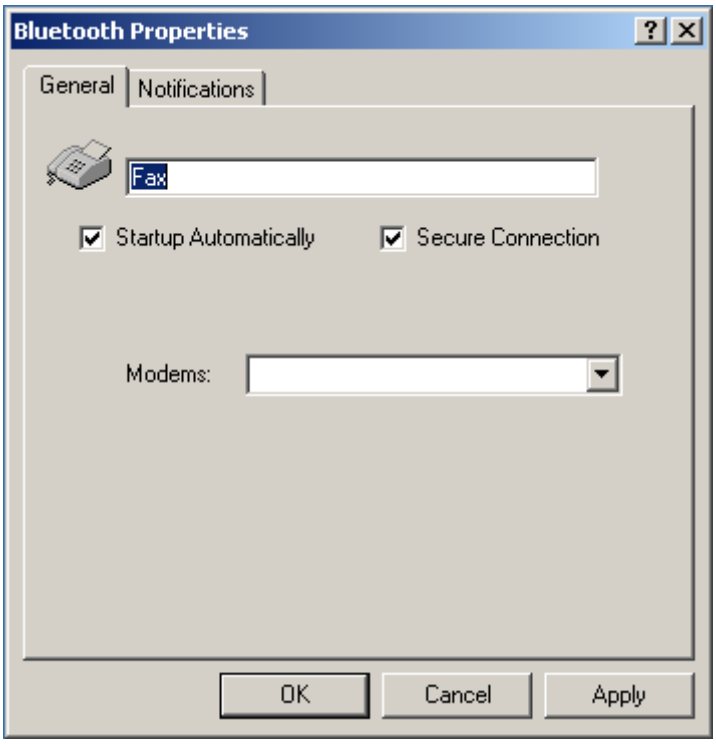
- Select the physical modem to be used from the Modems: drop-down menu.
- Set the common configuration properties of the service, and then click **OK.**

7.5.4 Fax Service

The Fax service allows a remote Bluetooth device to send a Fax via a modem that is physically attached to this computer.

Configure the Fax service:

From the Windows system tray, right-click the Bluetooth icon, select **Advanced Configuration** > **Local Services**, and then double-click the **Fax service**.

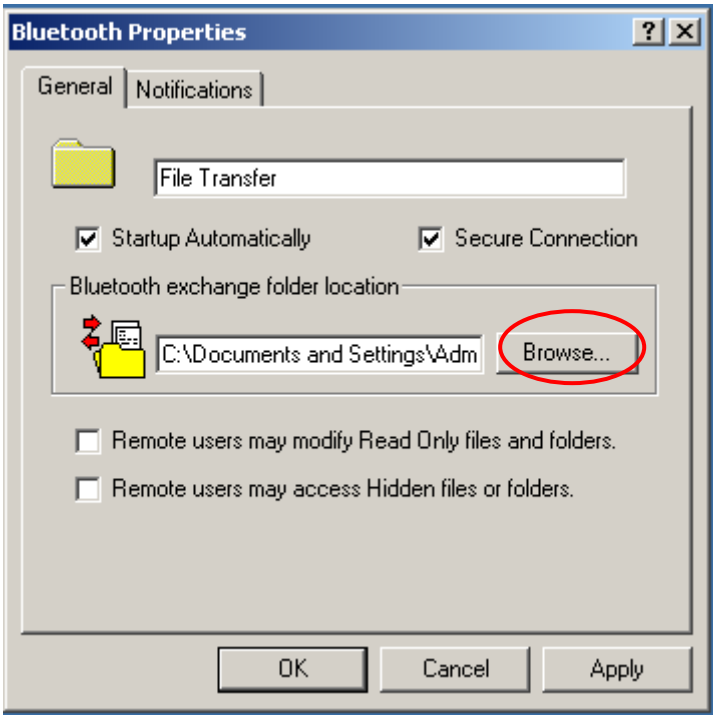


- Select the physical modem to be used from the Modems: drop-down menu.
- Set the common configuration properties of the service, and then click **OK**.

7.5.5 File Transfer Service

Configure the File Transfer Service

From the Windows system tray, right-click the **Bluetooth icon**, select **Advanced Configuration** > **Local Services**, and then double-click the **File Transfer Service**.



- **Bluetooth exchange folder location**: the directory configured in this section is the highest-level directory to which a remote Bluetooth computer has access. This directory and its sub directories are displayed in the remote device's My Bluetooth Places.

NOTE:
The Bluetooth Exchange Folder is shared by the PIM Item Transfer and the File Transfer services and can be configured from the Properties page of either of those services. When the Bluetooth Exchange Folder is re-configured for either of these services, the other service will be updated to use the new location.

- Click the **Browse** button and navigate to the directory that will be used as "Bluetooth exchange folder location.
- Set the common configuration properties of the service, and then click **OK**.

Basic File Transfer setup procedure

- Right-click the Bluetooth icon and select **Explore My Bluetooth Places**.
- Configure Explorer so that the Folders pane is visible (View > Explorer Bar > Folders).
- In the Folders pane, select Entire Bluetooth Neighborhood and then, on the menu bar, select Bluetooth > Search For Devices.
- In the Folders pane, expand Entire Bluetooth Neighborhood to show the devices in the vicinity.

- Copy to/from a remote device
- In the Folders pane of Explorer, from the Entire Bluetooth Neighborhood branch, select a device and expand that branch to view the Bluetooth Exchange Folder of the remote device.

NOTE:
"Public Folder" is not available, the remote device is not configured to allow remote file operations.

- Use drag-and-drop to copy any file or folder contained in the Public Folder of the remote device to the desired folder on this computer.
- You can also drag-and-drop files or folders from this computer to the Public Folder (and its sub-folders) of the remote device.

Other file operations

Right-click a file or folder in the remote device's Public Folder for a context sensitive menu. All potential menu options may not be available at all times.
Potential menu options include:

- Open—opens the selected file on this computer, using the default application for this type of file.
- Print—sends the selected file to this computer's default printer.
- Send To
- 3 ½ floppy (A)—the 3 ½ inch floppy drive on this computer
- Public Folder on My Device—the Public Folder on this computer.
- Rename—applies only to empty folders; file names and the names of folders that contain objects cannot be changed using this technique.
- Cut, Copy, Paste, Delete, Refresh, View & New—standard Windows functions.

7.5.6 Headset Service

The Bluetooth Headset Service allows this computer to provide audio input/output for remote Bluetooth devices.
For example, if the remote device is a Bluetooth telephone, this computer's microphone and speakers can be used as speakerphone input and output for that device.

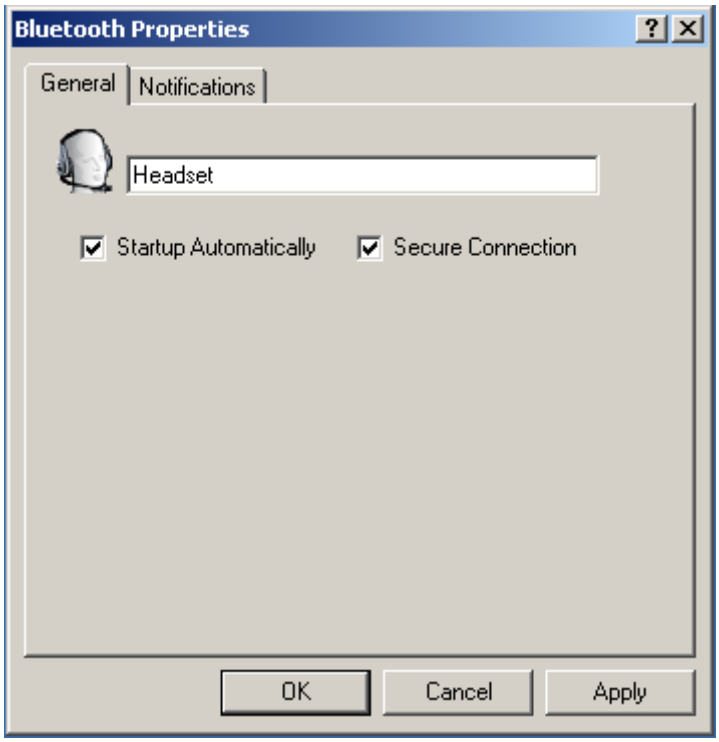
NOTE:
Please refer to Chapter 9 – Troubleshooting for Windows 98 limitation.

Hardware Requirements

- This computer must have a sound card, microphone, and speakers installed.
- The Bluetooth radio on both on this computer and the remote device must support audio.

Configure the Headset Service

- From the Windows system tray, right-click the **Bluetooth icon**, select A**dvanced Configuration > Local Services**, and then double-click the **Headset service**.



- Set the common configuration properties of the service, and then click **OK**.

7.5.7 Network Access

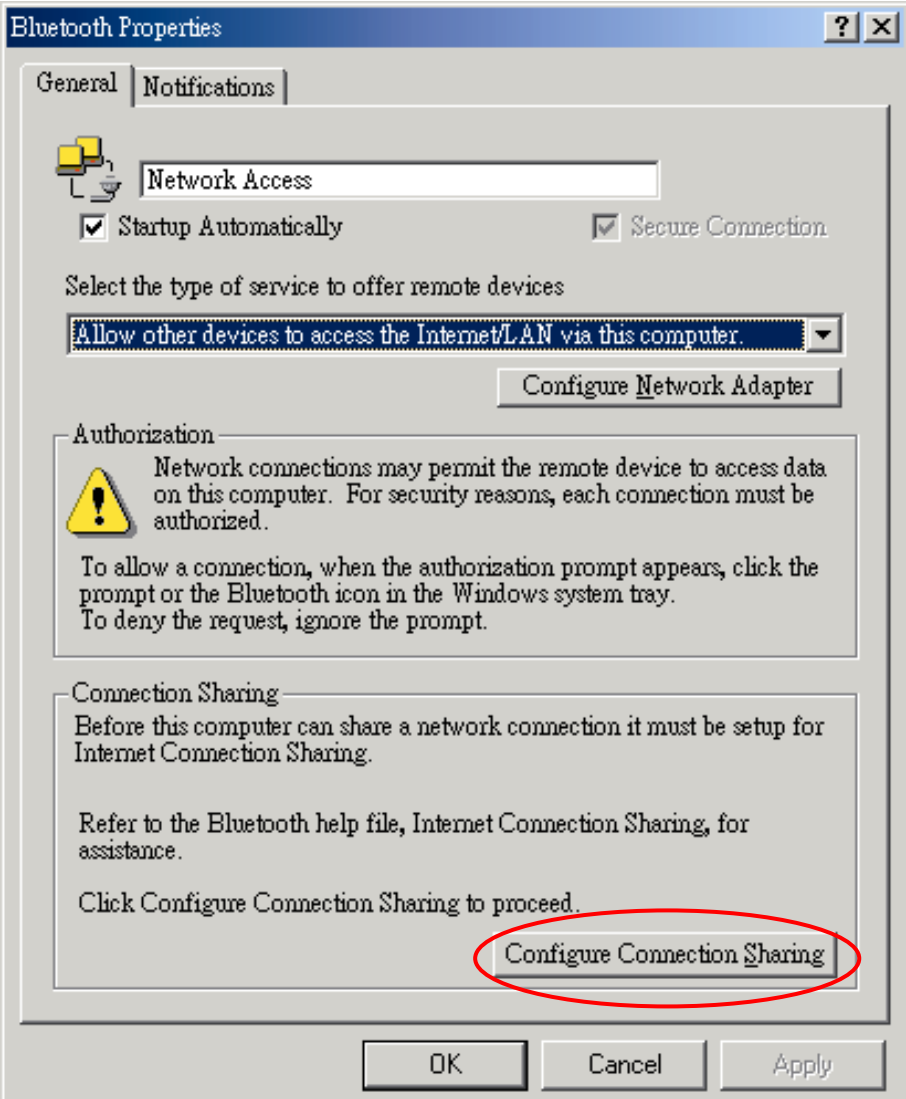
The Bluetooth Network Access service makes it possible for a remote Bluetooth device to use the Local Area Network connection that is physically attached to this computer. After this computer has been configured to provide the Network Access service to other Bluetooth devices, it will not be able to use the Bluetooth Network Access service provided by another Bluetooth device without being re-configured. Put another way, this computer cannot be both a Bluetooth Network Access server and a Bluetooth Network Access client at the same time.

7.5.7.1 Setup for Windows 2000 and Windows XP

Steps

◆ From the Windows system tray, right-click the Bluetooth icon and select Advanced Configuration from the shortcut menu.

◆ In the Bluetooth configuration panel, select the **Local Services tab**, **Network Access** and then click **Properties....**



◆ From the **Network Access**, General properties page, in the Type of service shortcut menu, select "**Allow other devices to access the Internet/LAN via this computer**," and then click **Configure Connection Sharing**.

◆ Right-click **Local Area Connection**, select **Properties** and then select the **Sharing** tab.

◆ Select **Enable Internet Connection Sharing for this connection**, click **OK**, and then click **YES** in the confirmation dialog box.

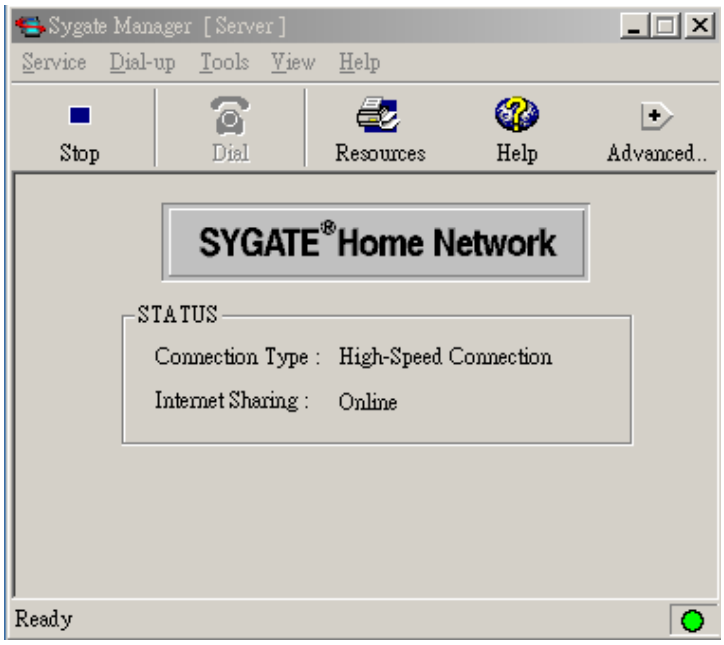
7.5.7.2 Network Access Server-side Setup for Windows 98SE &

Windows ME:

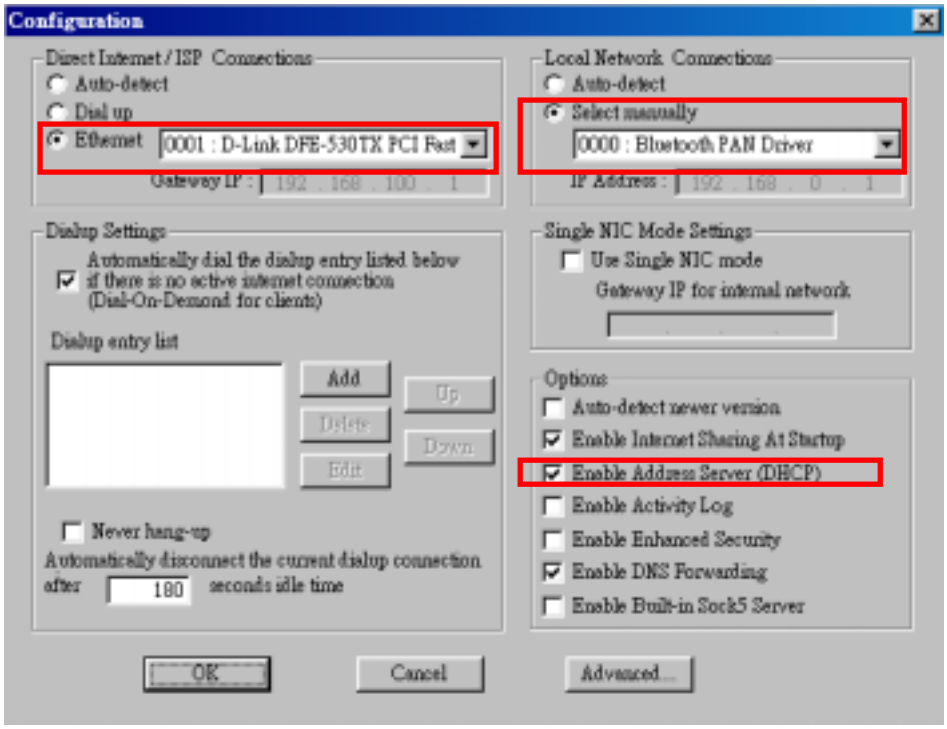
If the Bluetooth sever is running in Windows 98SE or Windows ME, you have to install an Internet Protocol Routing software. There are lots of trial versions of Internet Protocol Routing software in the Internet. For example: A downloadable trail version of Sygate Home Network is available on the Sygate Technologies Inc. The website is http://www.sygate.com/.

Installing and configuring the Sygate Home Network :

- Please follow the on-screen descriptions to install the Sygate Home Network. Note that check the box of **Server Mode** on the Installation Setting dialog box during installation.
- Click on the **OK** button from the *Sygate Network Diagnostics* screen.
- Click on the **Yes** button from the *Reboot* dialog box to restart your computer. After you reboot your PC, click on the **OK** button from the *Thank You For Trying Sygate* screen. The Sygate Manager screen will show up.



- Click on the **Advanced** button from the Sygate Manager screen and click on the **Configuration** icon. The Configuration screen will show up.



- In the right panel of the **Configuration** screen, check the radio button **Select manually** from Local Network connections and select the **0000:Bluetooth PAN Driver**. Be sure to check the **Enable Address Server (DHCP)** from the Options item.
- On the left side of the **Configuration** screen, check the radio button of **Ethernet** and select the LAN card the PC is using.

Now, you have successfully configured your PC or laptop to the Bluetooth server. So Bluetooth client devices in the vicinity can link to the Bluetooth server.

7.5.7.3 Share Printer via Network Access

After you configure a desktop or laptop as a Bluetooth server, the Bluetooth client can surf the Internet and print documents through the Bluetooth server. Follow the following steps to enjoy this convenient application.

Steps (Bluetooth Server)

- Open My Bluetooth Places.
- Pairing Device. (You can pair these two devices either from Bluetooth Server or Bluetooth client.)

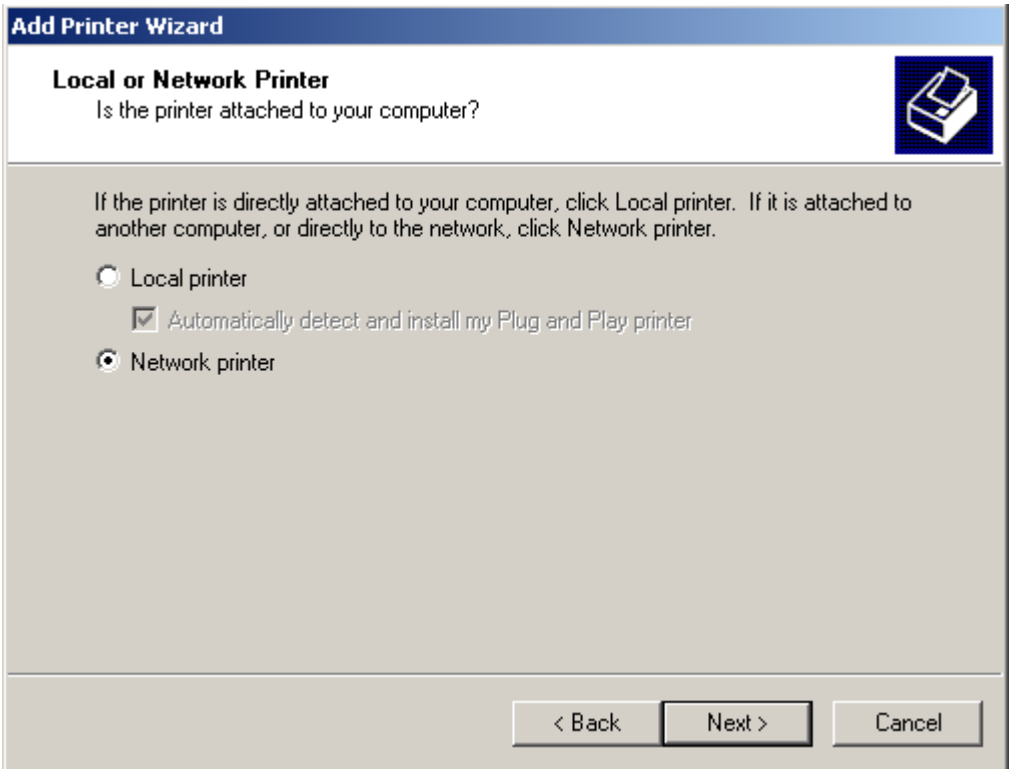
  From **Bluetooth** menu, click **Search for Devices**. On the right pane of Entire Bluetooth neighborhood, right-click the Bluetooth device you want to pair. Refer to Chapter 8 for pairing procedures.
- Enable the Network Access Sharing Function.

  Please refer to section 7.5.7.1 or 7.5.7.2 to enable this function.

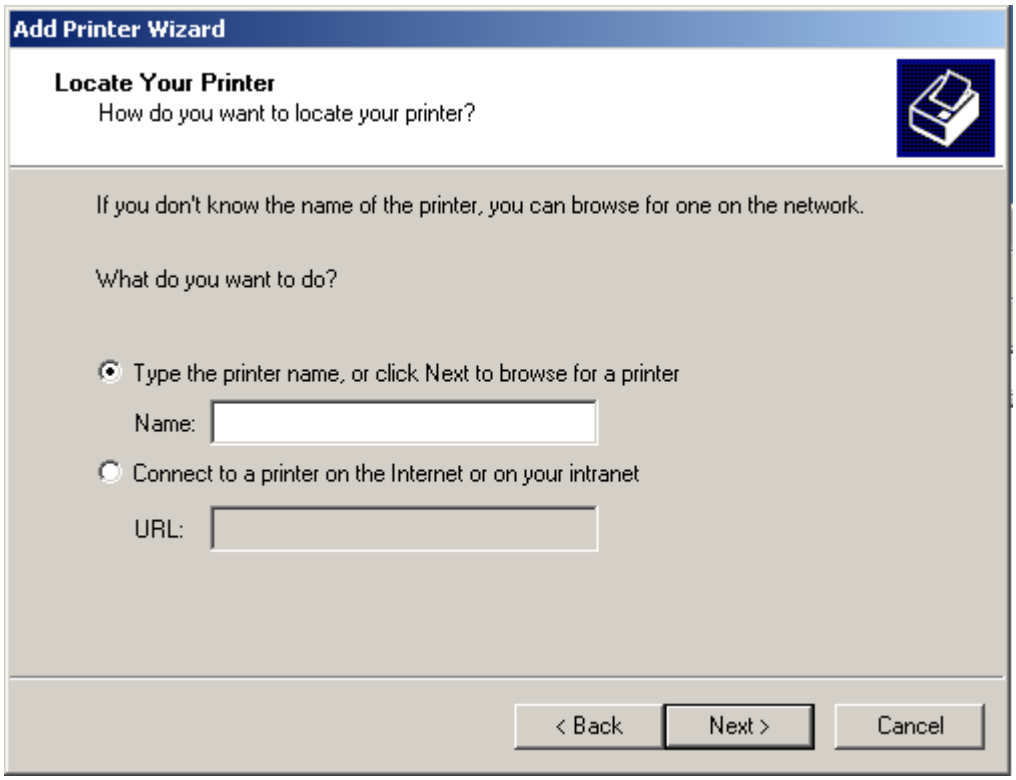
- **Share a printer**.
  From Windows Start menu -> Settings -> Printers, right-click the printer icon you want to share and select **Sharing** from the shortcut menu. Click the **Sharing** tab from the Printer Properties dialog box and click the radio button of "**Shared as**" to share this printer.
- **Enable Guest Account**.
  Right-click "My computer" icon on your desktop and select "**Manage**". From the "Computer Management" window, click the + icon in front of "Local Users and Groups" to extend sub-menus. Click **Users**, right-click **Guest** item and select "**Properties**". Click the **General** Tab from the Guest Properties dialog box and remove the check of "**Account is disabled**". Click **OK** to confirm your settings.

Steps (Bluetooth client)

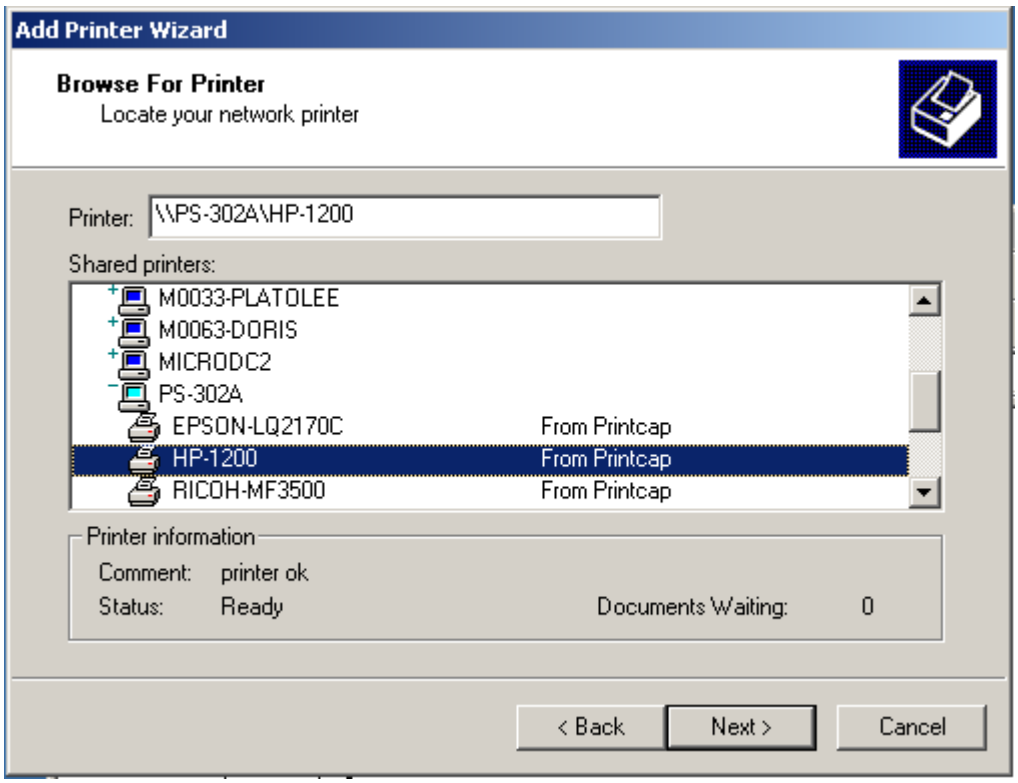
- Open My Bluetooth Places.
- Pairing device. (You can pair these two devices either from Bluetooth Server or Bluetooth client.)
  From **Bluetooth** menu, click **Search for Devices**. On the right pane of Entire Bluetooth neighborhood, right-click the Bluetooth device you want to pair. Refer to Chapter 8 for pairing procedures.
- Build a network access connection with the Bluetooth server.
  Right-click the pairing device and select "**Discover Available Services**".
  Double-click the Network Access icon.
- Add a network printer.
  From Windows Start menu -> Settings ->Printers, and double-click the Add Printer icon. Click Next. Click the radio button of Network printer and click Next.



- Click Next to find the printer.



- Select the Bluetooth server, select the shared printer and click Next.



- Click Finish button to complete the installation.

7.5.8 PIM Item Transfer

Overview

The PIM Item Transfer service allows Personal Information Manager items to be transferred between this computer and a remote Bluetooth device.

Four data types are supported:

- Business Cards
- Calendar Items
- Email Messages
- Notes

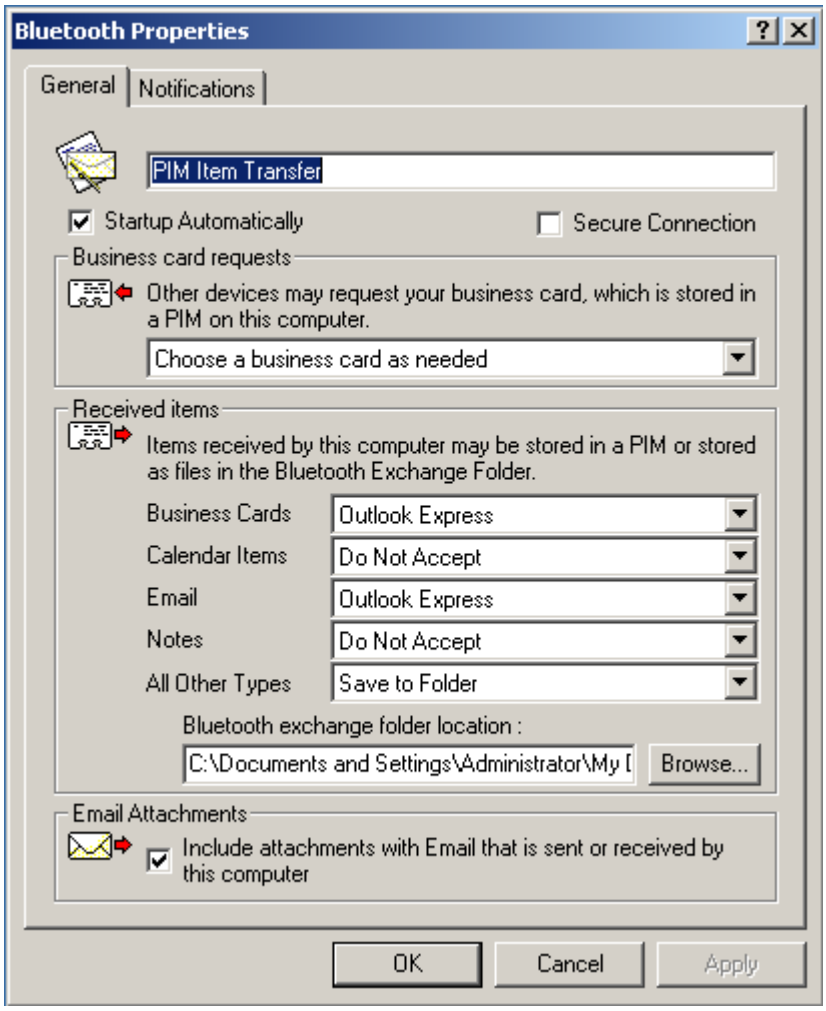
Each data type can be saved in any of the supported and installed PIMs.

NOTE:
PIMs which are not installed on this computer will not appear in the shortcut menus.

When the PIM that is associated with an individual data type is changed on the PIM Item Transfer page, that data type is also changed for the PIM Synchronization service.

Configure

From the Windows system tray, right-click the Bluetooth icon and select Advanced Configuration from the shortcut menu. In the Bluetooth configuration panel, select the **Local Services tab,** and double click **PIM Item Transfer**.



In addition to the configuration options common to all Bluetooth services, this service also has settings that determine:

- How business card requests are handled. The options are:
  - Never send my business card—ignore the request
  - Choose a business card as needed—when prompted, select a business card to be sent to the requester.
  - Always send the same business card—when a request is received always send the same business card. When this option is selected, a dialog box appears from within which an installed Personal Information Manager (if more than one is installed on this computer) and an existing business card can be selected.
  - Previously sent business cards—once a card is selected using the “Always

send the same business card" option, above, that card will be added to the shortcut menu as an option.

NOTE:
Previously sent business card additions to the menu are limited to ten, after which the oldest contact will be replaced.

◆ Where to store inbound data items, on an individual basis. Options include (not all options apply to all items):

- Do Not Accept
- Any of the installed PIMs on this computer
- Save to Folder
- The Bluetooth Exchange Folder location—the directory on this computer where inbound items that are not to be saved in a PIM will be kept.

NOTE:
This is also the folder where the File Transfer service stores inbound items. If this folder is reconfigured here, it will also be reconfigured in that service automatically.

◆ Whether to send/receive attachments with email. Check or clear this option, as appropriate.

Close a PIM Item Transfer connection

PIM Item Transfer connections close automatically when the data transfer is complete.

Default Business Card Selection

When the "Always send the same business card" option is selected, a dialog box appears to allow the selection of a default business card.
The first time the dialog box appears it provides a way to choose the Personal Information Manager that stores the default business card. Click the down-arrow in the PIM shortcut menu and select the PIM to be used.
On subsequent appearances of this dialog box, the PIM selection option is not available.

Change the selected PIM

On the PIM Item Transfer properties page, "Received items" section, there is a Business Cards shortcut menu. When a PIM was selected during initial setup the selected item in this menu was set to the same PIM. To change the PIM used for the default business card,

open this shortcut menu and select a new PIM.

NOTE:
A new default business card must be selected from the database of the newly selected PIM.

Choose a default business card

1. In the Select a Bluetooth Business Card dialog box that appears when “Always send the same business card” is selected, highlight the card.

NOTE:
Once a card is highlighted, if you “hover” the mouse pointer over that selection, a balloon appears with additional information about that contact.

2. Click **OK** to choose a highlighted business card and return to the PIM Item Transfer Properties page. The chosen contact now appears in, and is selected in, the “Business card requests” shortcut menu.
If the “Always send the same business card” option is selected again, and a different contact chosen, the properties page will display both contacts in the shortcut menu.

NOTE:
In addition to the default menu options, the shortcut menu can hold up to ten contact names.

7.5.9 PIM Synchronization

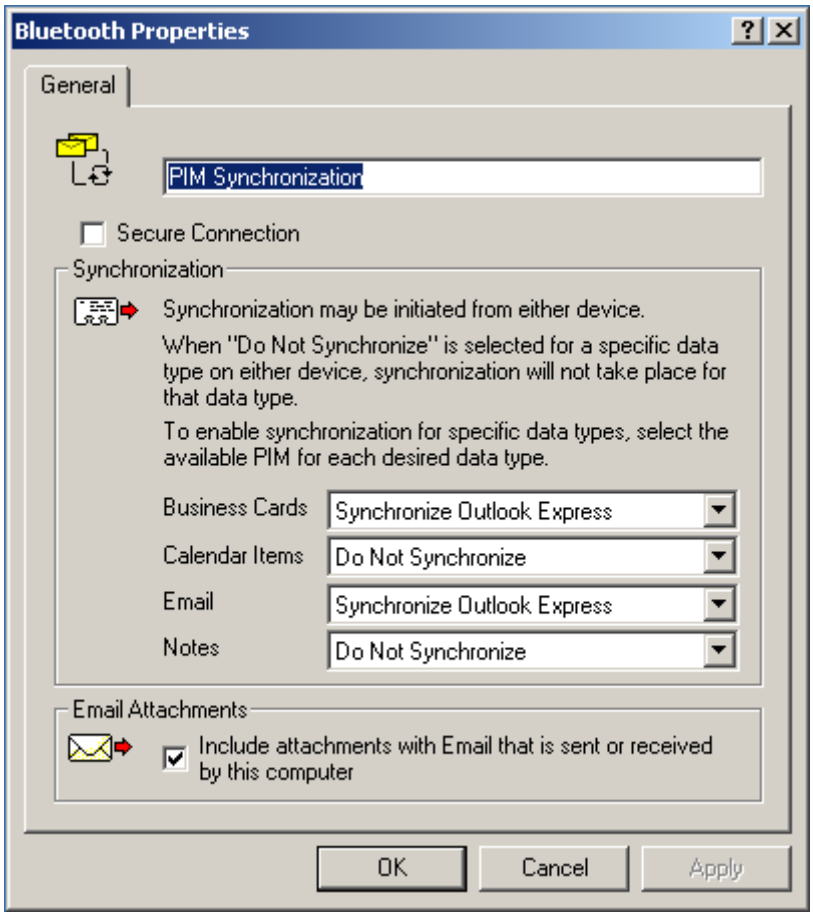
The PIM Synchronization service can be used by a remote device to synchronize its Personal Information Manager (PIM) database with the PIM database of this computer..
Four data types are supported:

- Business cards
- Calendar items
- Email messages
- Notes.

Configure

From the Windows system tray, right-click the Bluetooth icon and select Advanced Configuration from the shortcut menu. In the Bluetooth configuration panel, select the **Local**

Services tab, and double click **PIM Synchronization**.



Whether an individual item is accepted and where it is stored, when accepted, is configured in the PIM Item Transfer service. If that service is not configured to store a particular data type in Outlook, then that data type cannot be synchronized.

NOTE:
Data types that will be synchronized must be saved in the PIM database (this is configured in the PIM Item Transfer service); otherwise, that data type will not be available for selection (it will be grayed out) in the PIM Synchronization configuration settings.

Microsoft Outlook permits duplicate entries, so all duplicates may not be exchanged in the synchronization process.

NOTE:
Only Outlook's default contacts folder is synchronized. Items in sub-folders are not synchronized. Items that are moved from the default folder to a sub-folder will appear to have been deleted the next time synchronization takes place.

7.5.10 NOTIFICATION

Overview

There are three types of notification:

◆ . **Authentication request**, also called a PIN code request — this notification appears automatically in a balloon over the Windows system tray if a Personal Identification Code is required before a connection can proceed. An audio file can also be associated with the notification.

◆ . **Authorization request**, also called a connection request—this type of notification can be visual, audio, or both. It notifies you of attempts to access a Bluetooth service on this computer; the connection will not proceed until you click the balloon that appears over the Windows system tray. If the notification balloon is ignored, the connection request will time out and fail.

◆ . **Notification only**—this type of notification does not effect access in any way; it is solely for information purposes to let you know that a connection has been established.

Example

Both Authentication and Authorization request notifications are controlled by whether Secure Connection is enabled for an individual service.

An example of how notifications might work when a remote device attempts to access a service on this computer, if all notifications are enabled:

1. **Authentication**: a balloon notification (audio optional) appears to prompt for a PIN code. If the PIN code does not match the code entered on the remote device, the connection will not be allowed. Once the remote device has been authenticated this notification will not appear again, unless the paired relationship is broken and the devices must re-pair.

2. Authorization: a balloon notification appears and/or a sound file provides audio notification that a remote device is attempting to access a Bluetooth service on this computer. Click the balloon to proceed. A dialog box appears that offers the option of letting the connection proceed this time only or to always allow this particular remote device to use the service it is attempting to access.

3. Once a connection has been authorized, an additional visual and/or audio notification may appear (if enabled). This notification is for information only to inform the operator that a connection has been established.

After two devices are paired (step 1, above), the authentication notification will no longer appear when a connection is attempted.

If “Always allow…” is enabled during the authorization process (step 2, above), the authorization notification will not appear on future connection attempts.

Connection notification (step 3, above) only happens if it has been enabled on the Notifications tab of the individual service being accessed.

Service Access Notification

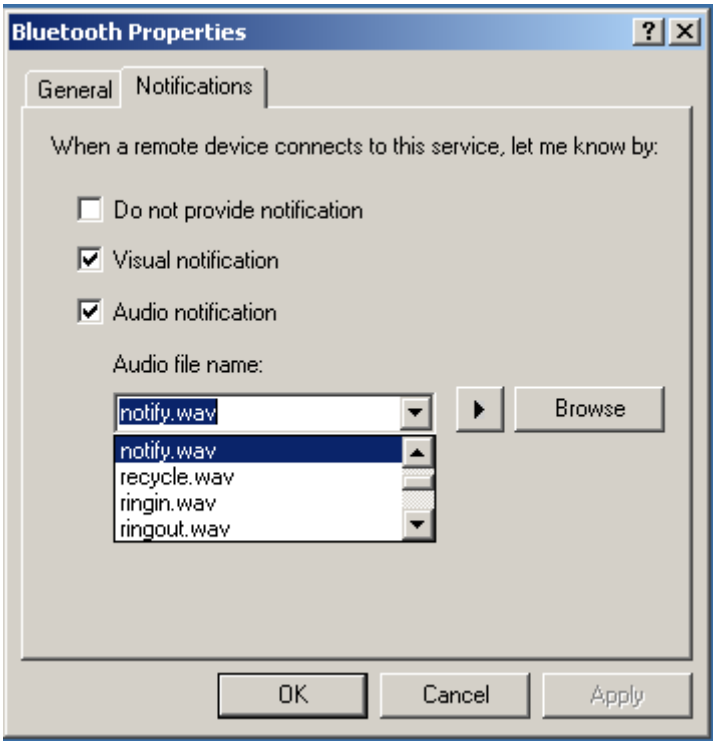
“Notifications” lets you associate a sound (Windows *.wav file) and/or a visual indication with access attempts by remote devices.

A different notification sound can be associated with each local Bluetooth service.

Associate a sound with service access

From the **Bluetooth Configuration Panel**, **Local Services** tab:

1. Double-click a service name and then select the **Notifications** tab.



2. Check the desired options; visual and sound may both be selected for a single event.

3. Choose a sound; click the **Browse** button and navigate to the sound file (*.wav) to be used for notification.

To preview the sound file, click the play ( ) button.

4. Click **OK** to close the service's property dialog box.

7.6 BLUETOOTH CLIENT APPLICATIONS

Overview

Some built-in Bluetooth applications provide full functionality for a specific task, such as locating other Bluetooth devices or synchronizing two Personal Information Managers. Other built-in Bluetooth applications provide a way for standard Windows applications to accomplish their tasks wirelessly. For example, a Bluetooth application may create a wireless serial connection between computers or provide wireless access to the Internet.

The difference between Bluetooth Applications and Bluetooth Services

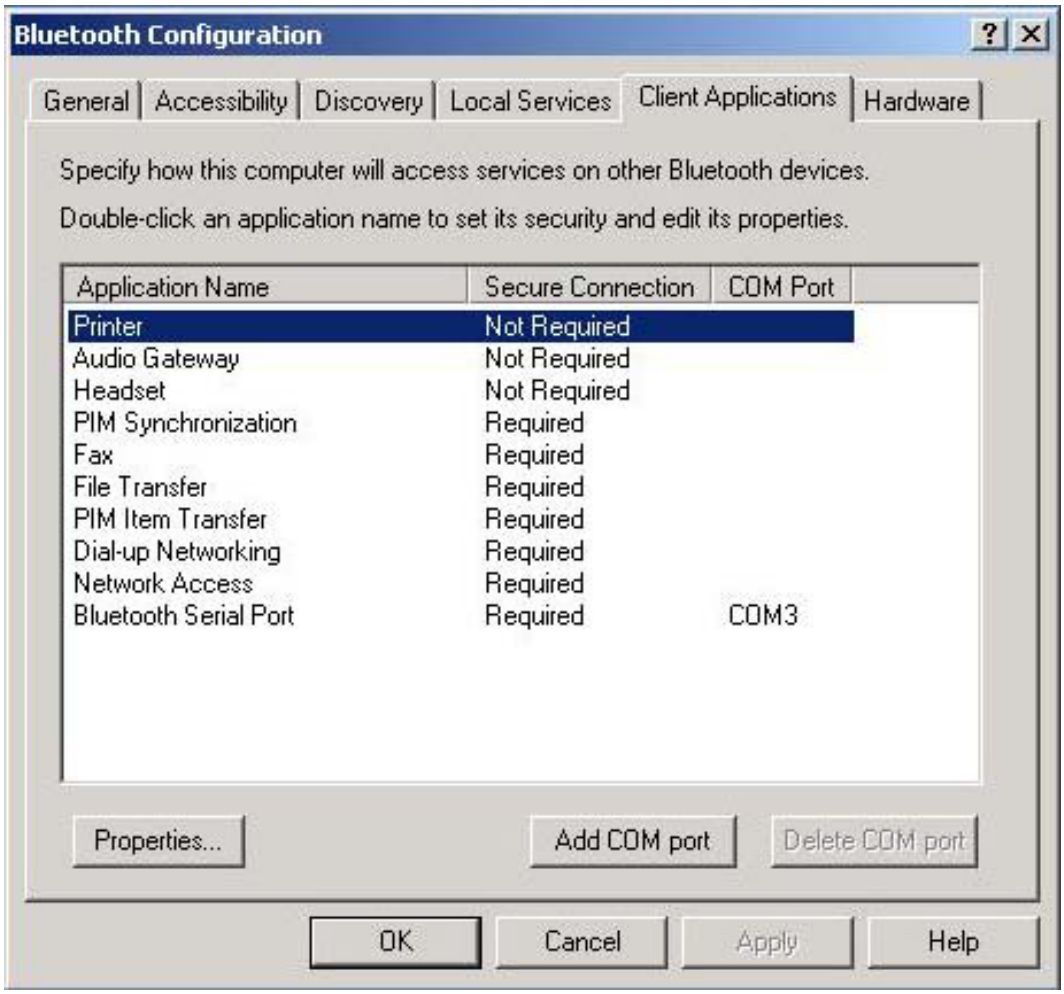
- . **Bluetooth Applications** are software programs on this computer that allow this computer to use the Bluetooth services that are provided by other devices. In the Bluetooth configuration panel, these programs are referred to collectively as "Client Applications."
- . **Bluetooth Services** are software programs on this computer that provide a service to other devices. In the Bluetooth configuration panel, these applications are referred to collectively as "Local Services."

Note:
Client Applications and Local Services usually have coinciding names; e.g., there may be a Fax service and a Fax application.

All of the built-in Bluetooth applications allow you to rename the application and to require a secure connection when using the application.

To access the configuration properties page for a built-in Bluetooth application

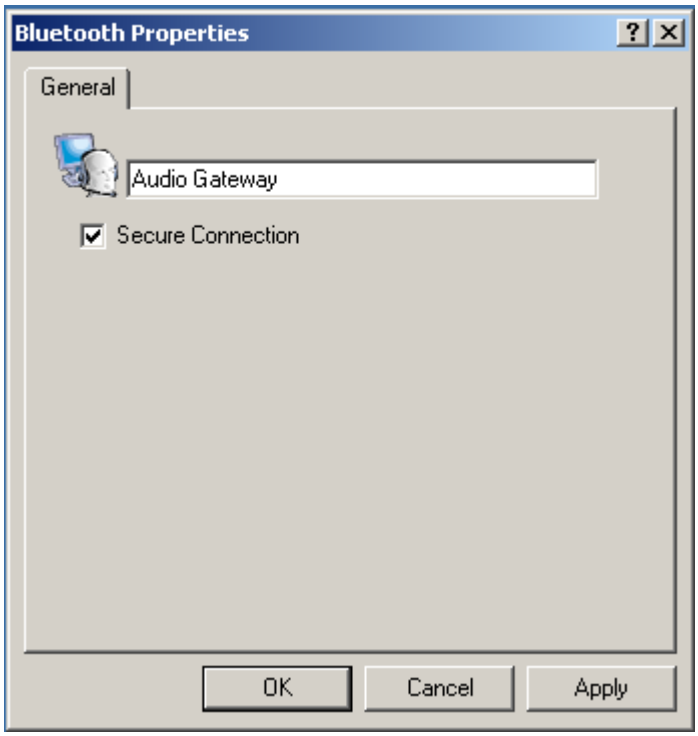
- In the Windows system tray, right-click the Bluetooth icon and select **Advanced Configuration** from the shortcut menu. In the Bluetooth configuration panel, **Client Applications** tab, highlight the application to be configured and then click **Properties** (or double-click the application).



7.6.1 Audio Gateway

Configure

The **Bluetooth Configuration Panel > Client Applications > Audio Gateway > General tab** provides options to configure:



：The application name—to change it, highlight the existing name and enter the new name.

：Enable or disable secure connection. To enable secure connection, place a checkmark in the box.

Close an audio gateway connection

If the connection was established via the Bluetooth icon in the Windows system tray; click the Bluetooth icon, select Quick Connect, Audio Gateway and then select the device that is providing the service (active connections have a checkmark in front of them).

or

No matter how the connection was created, In My Bluetooth Places, right-click the service name and select Disconnect.

7.6.2 Bluetooth Serial Port

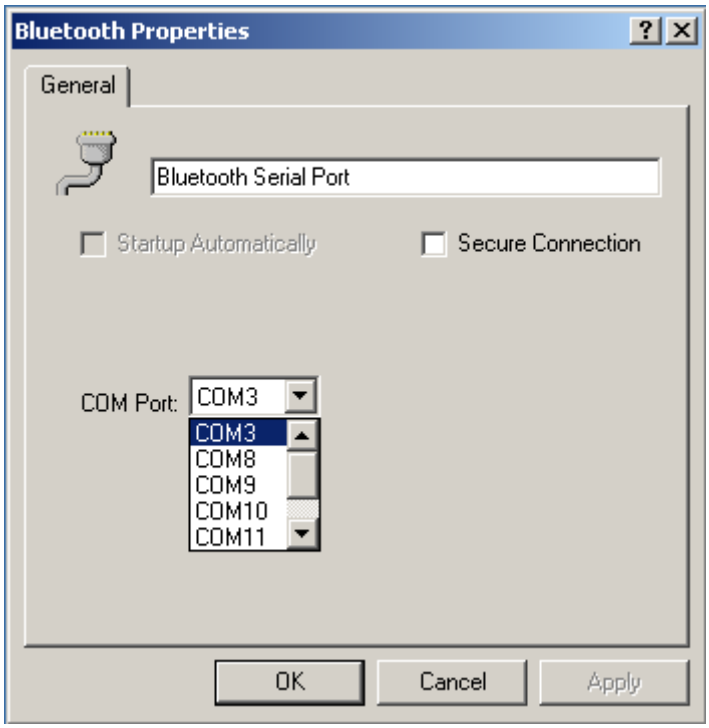
Overview

The Bluetooth Serial Port application allows this computer to establish a wireless serial connection with a remote Bluetooth device.

The applications on both this computer and the remote device must be configured to send and receive data to and from the respective communications port (COM port) assigned to the Bluetooth serial port. The wireless serial connection may then be used by the applications as though a physical serial cable connected the devices.

Configure

The Bluetooth Configuration Panel > Client Applications > Bluetooth Serial Port > General tab provides options to configure:



- . The application name—to change it, highlight the existing name and enter the new name.
- . Enable or disable secure connection. To enable secure connection, place a checkmark in the box.
- The communications port (COM port) to be used.

NOTE:
Unless you have a specific reason to do so, *DO NOT CHANGE* the default COM Port setting.

Close a Bluetooth Serial Port connection

- If the connection was established via the Bluetooth icon in the Windows system tray; click the Bluetooth icon, select **Quick Connect**, **Bluetooth Serial Port** and then select the device that is providing the service (active connections have a checkmark in front of them).

or

- . No matter how the connection was created, In My Bluetooth Places, right-click the service name and select **Disconnect**.

7.6.3 Dial-up Networking

Overview

The Bluetooth Dial-up Networking application allows this computer to use a modem that is physically connected to a remote device to access the Internet, log on to a remote network.

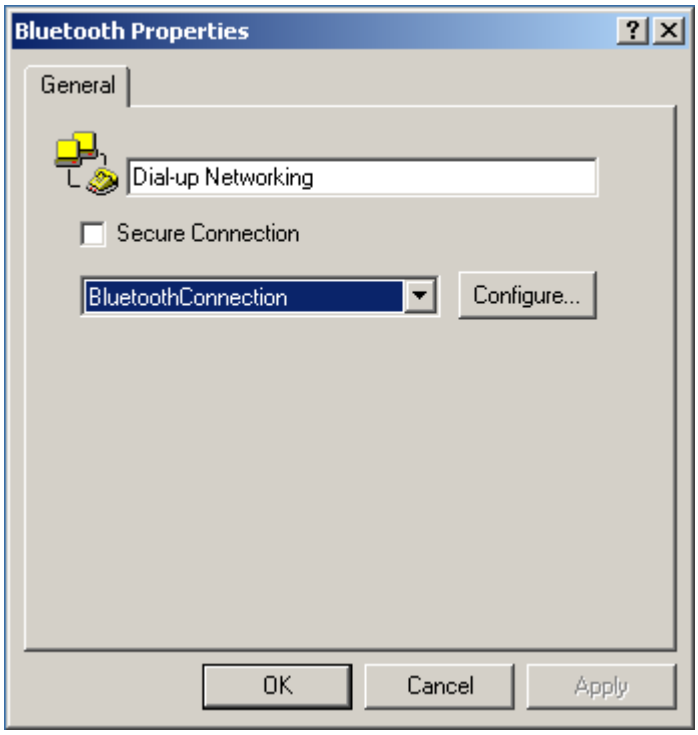
Open a connection to the Dial-up Networking service that is provided by another Bluetooth device using one of these techniques:

- . Windows system tray, Bluetooth icon
- . From Bluetooth Explorer
- . Using the Bluetooth Setup Wizard

After the Bluetooth dial-up networking connection is established it can be used the same way as any other networking connection. For example, you can open a browser and explore the World Wide Web, if the remote computer has Internet access.

Configure

The **Bluetooth Configuration Panel > Client Applications > Dial-up Networking > General tab** provides options to configure:



- The application name—to change it, highlight the existing name and enter the new name.
- Enable or disable secure connection. To enable secure connection, place a checkmark in the box.

◆ The Bluetooth virtual device to be used.

NOTE:
Unless you have a specific reason to do so, *DO NOT CHANGE* the default Bluetooth device or alter the device's configuration.

Close a Dial-up Networking connection

◆ If the connection was established via the Bluetooth icon in the Windows system tray; click the Bluetooth icon, select **Quick Connect**, **Dial-up Networking** and then select the device that is providing the service (active connections have a checkmark in front of them).

or

◆ No matter how the connection was created, In My Bluetooth Places, right-click the service name and select **Disconnect**.

7.6.4 Fax

Overview

The Bluetooth Fax service allows this computer to send a fax using a Fax/Modem that is physically connected to a remote device.

To Send a Fax

1. Open a connection to the Fax service that is provided by another Bluetooth device, using one of these techniques:

◆ - Windows system tray, Bluetooth icon

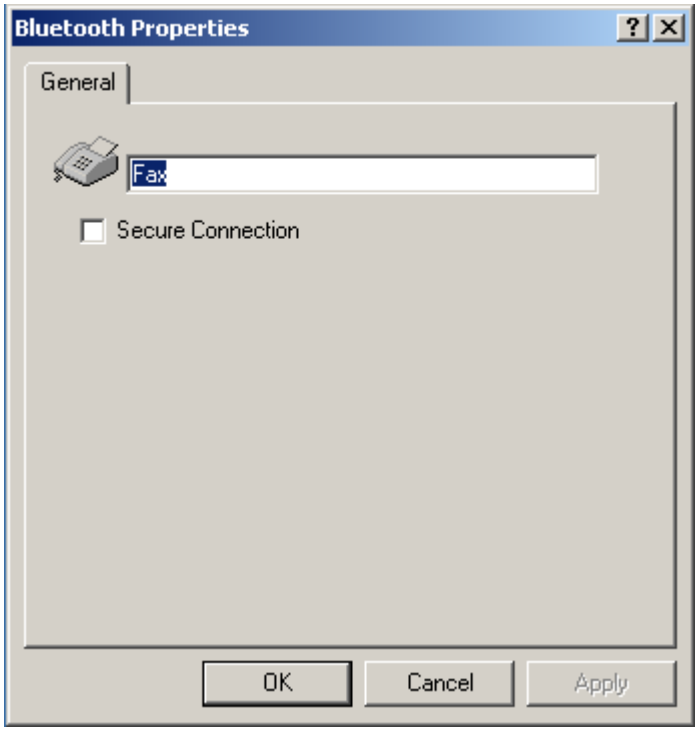
◆ - From Bluetooth Explorer

◆ - Using the Bluetooth Setup Wizard

2. Open or create the document to be faxed and select the "**Print**," "**Send to Fax Recipient**" or similar command that is available in most applications.

Configure

The **Bluetooth Configuration Panel > Client Applications > Fax > General tab** provides options to configure:



- The application name—to change it, highlight the existing name and enter the new name.
- Enable or disable secure connection. To enable secure connection, place a checkmark in the box.

Close a Fax Connection

Fax connections close automatically when the Fax transmission is complete.

7.6.5 Headset

Overview

The Headset application allows this computer to use a Bluetooth headset (or any other device that offers the Bluetooth headset service) as the audio input and output device for this computer.

Possible uses include:

- If this computer has on-board telephone hardware, a Bluetooth headset might be used as the audio input/output device to make/receive telephone calls.
- If this computer has voice recognition capabilities, a Bluetooth headset might be used as the audio input device.

Any other scenario that requires audio input/output can potentially take advantage of a Bluetooth headset to replace a hardwired microphone and/or speakers.

Create a Headset connection

Establish a connection using one of these techniques:

- Windows system tray, Bluetooth icon
- From Bluetooth Explorer
- Using the Bluetooth Setup Wizard

NOTE:
Most Bluetooth headsets "ring" when a connection is attempted; answer the ring to complete the connection and begin using the headset as the audio input/output device for this computer.

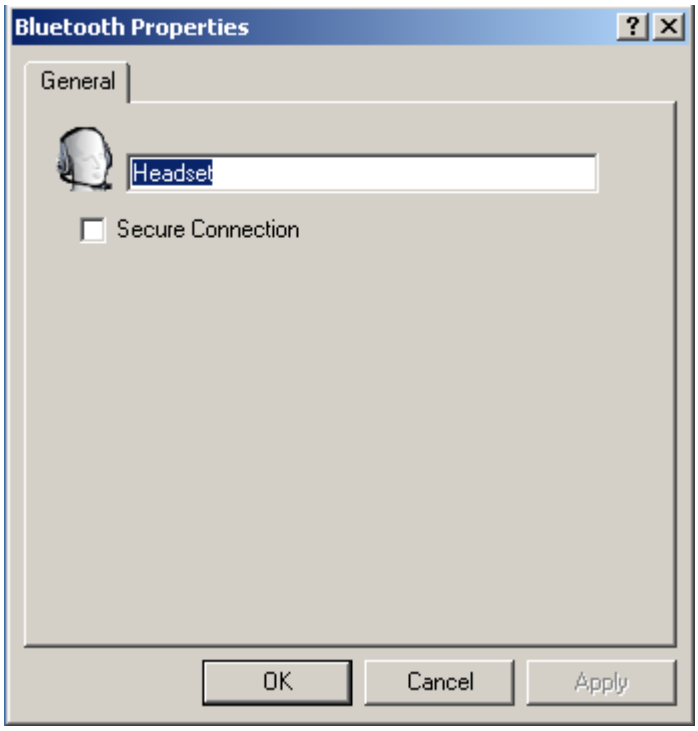
- If the connection was established via the Bluetooth icon in the Windows system tray; click the **Bluetooth** icon, select **Quick Connect, Headset** and then select the device that is providing the service (active connections have a checkmark in front of them).

or

- No matter how the connection was created, in My Bluetooth Places, right-click the service name and select **Disconnect**.

Configure

The **Bluetooth Configuration Panel > Client Applications > Headset > General tab** provides options to configure:



- The application name—to change it, highlight the existing name and enter the

new name.

◆ . Enable or disable secure connection. To enable secure connection, place a checkmark in the box.

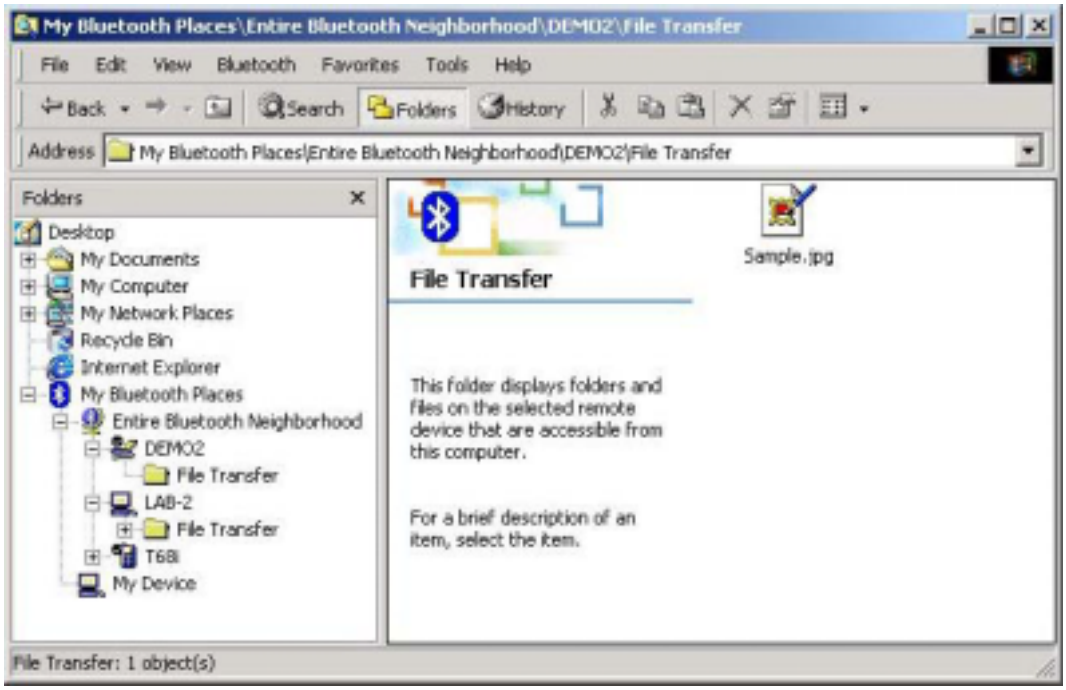
7.6.6 File Transfer

Overview

The Bluetooth File Transfer application allows this computer to perform file operations on the Bluetooth Exchange Folder (and the folders and files it contains) of a remote device.

Copy to/from a remote device

In the Folders pane of Explorer, from the **Entire Bluetooth Neighborhood** branch, select a device and expand that branch to view the Bluetooth Exchange Folder of the remote device.



NOTE:
If "Public Folder" is not available, the remote device is not configured to allow remote file operations.

Use drag-and-drop to copy any file or folder contained in the Public Folder of the remote device to the desired folder on this computer.

You can also drag-and-drop files or folders from this computer to the Public Folder (and

its sub-folders) of the remote device.

Other file operations

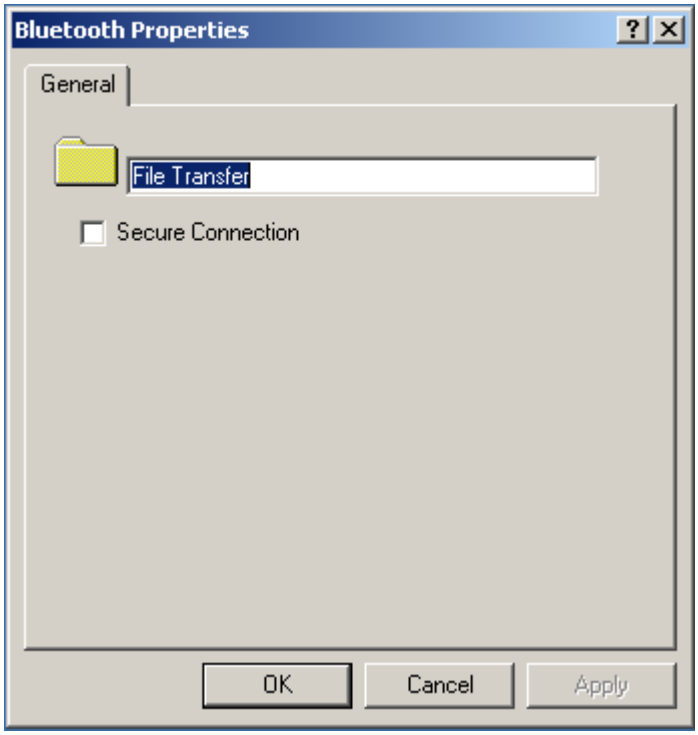
Right-click a file or folder in the remote device's Public Folder for a context sensitive menu. All potential menu options may not be available at all times.

Potential menu options include:

- Open—opens the selected file on this computer, using the default application for this type of file.
- Print—sends the selected file to this computer's default printer.
- Send To
- 3 ½ floppy (A)—the 3 ½ inch floppy drive on this computer
- Bluetooth Exchange Folder—the Bluetooth Exchange Folder on this computer.
- Rename—applies only to empty folders; file names and the names of folders that contain objects cannot be changed using this technique.
- Cut, Copy, Paste, Delete, Refresh, View & New—standard Windows functions.

Configure

The **Bluetooth Configuration Panel > Client Applications > File Transfer > General tab** provides options to configure:



- The application name—to change it, highlight the existing name and enter the

new name.

- Enable or disable secure connection. To enable secure connection, place a checkmark in the box.

7.6.7 Network Access

Overview

The Bluetooth Network Access application makes it possible for this computer:

- . To connect to a Local Area Network via a physical connection on a remote Bluetooth device.

or

- . To connect to an ad hoc network provided by a remote Bluetooth device.

The type of network connection that is available is determined by the configuration of the remote Bluetooth device.

Create a Network Access connection

Establish a connection using one of these techniques

- . Windows system tray, Bluetooth icon
- From Bluetooth Explorer
- . Using the Bluetooth Setup Wizard

Close a Network Access connection

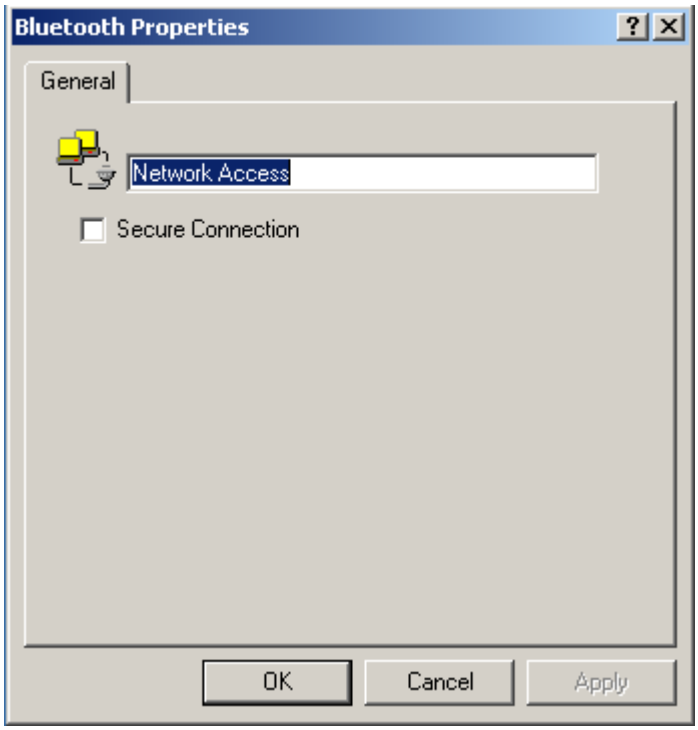
- . If the connection was established via the Bluetooth icon in the Windows system tray; click the **Bluetooth** icon, select **Quick Connect**, **Network Access** and then select the device that is providing the service (active connections have a checkmark in front of them).

  or

- No matter how the connection was created, in My Bluetooth Places, right-click the service name and select **Disconnect**.

Configure

The **Bluetooth Configuration Panel > Client Applications > Network Access > General** tab provides options to configure:



◆ The application name—to change it, highlight the existing name and enter the new name.

◆ Enable or disable secure connection. To enable secure connection, place a checkmark in the box.

7.6.8 PIM Synchronization

Overview

The PIM Synchronization Application is used to synchronize the Personal Information Manager (PIM) database of this computer with the PIM database of a remote Bluetooth device.

The supported PIMs are:

◆ . Microsoft Outlook

◆ . Microsoft Outlook Express

◆ . Lotus Notes.

The supported data types are:

◆ . Business cards

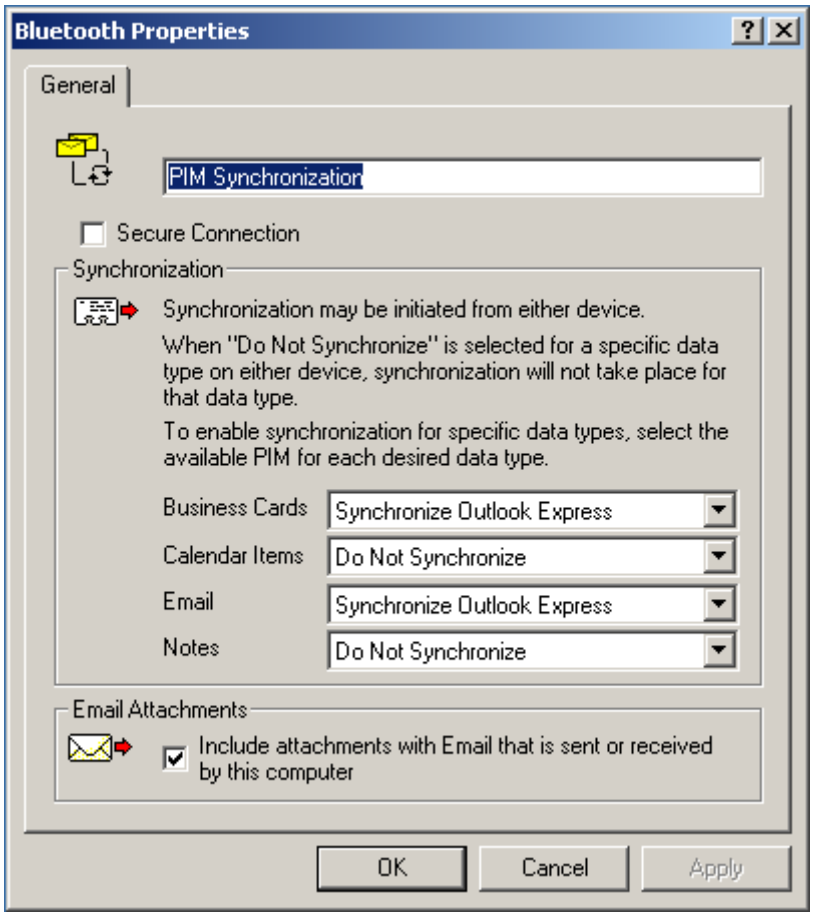
◆ . Calendar items

◆ . Email (with or without attachments)

◆ . Notes.

Configure PIM Synchronization

The **Bluetooth Configuration Panel > Client Applications > PIM Synchronization > General tab** provides options to configure:



- The application name—to change it, highlight the existing name and enter the new name.
- Enable or disable secure connection. To enable secure connection, place a checkmark in the box.
- The PIM items to be synchronized and the PIM on this computer with which those items should be synced.

NOTE:
If synchronization is enabled for a specific item type, but is not enabled for that item type on the remote device, synchronization *WILL NOT* take place for that item.

- The data item types which can be synchronized are:
  - Business cards
  - Calendar items
  - Email (with or without attachments-see below)
  - Notes

Possible synchronization options for each of these data item types include:

- **Do Not Synchronize**-this item type will not be synchronized.
- **Synchronize Microsoft Outlook**-this item type will be synced with its matching entry in Microsoft Outlook, regardless of the PIM that contains this entry on the remote device. If a matching Outlook entry does not exist, it will be created.
- **Synchronize Outlook-Express**-this item type will be synced with its matching entry in Express, regardless of the PIM that contains this entry on the remote device. If a matching Express entry does not exist, it will be created
- **Synchronize Lotus Notes**-this item type will be synced with its matching entry in Lotus Notes, regardless of the PIM that contains this entry on the remote device. If a matching Notes entry does not exist, it will be created.

NOTE:
All choices are not available for all items. For example, “Notes” items can only be synchronized in Microsoft Outlook, therefore Lotus Notes and Outlook Express do not appear as options in the “Notes” item shortcut menu.
Personal Information Managers that are not installed on this computer do not appear as options in the shortcut menus.

- Email attachments. The only option is include or do not include attachments with email that is sent or received on this computer using this service.

7.6.9 PIM Item Transfer

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.

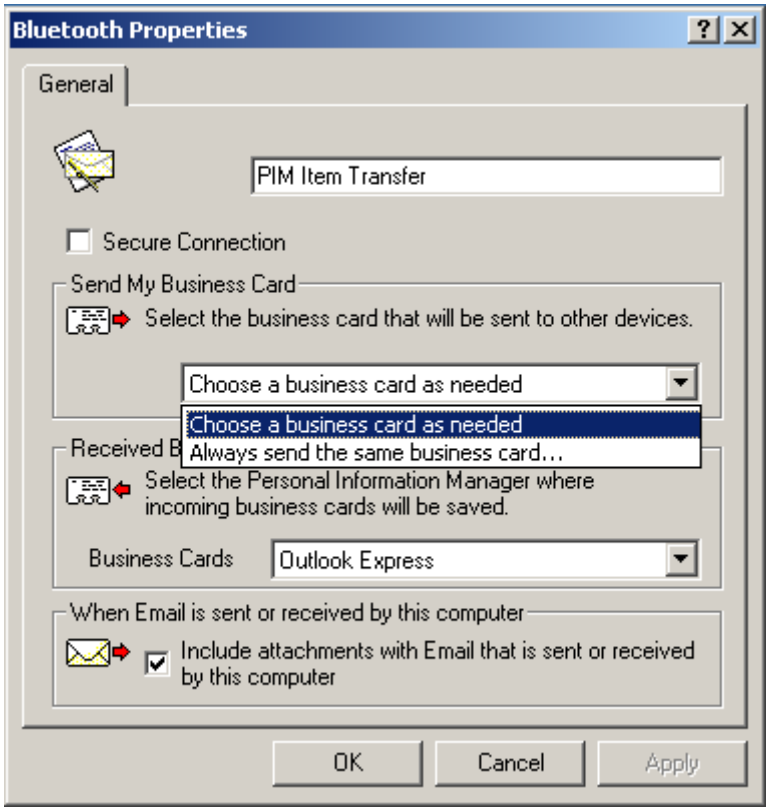
In addition to the business card options listed above, you can also send Notes (*.vnt), Email (*.vmg) and Calendar (*.vcs) items from this menu.

3. From within a supported Personal Information Manager, select one or more items and then, from the PIM's File menu, select **Send to Bluetooth**.

Whether sent items are accepted by the remote device is determined by how the remote device's PIM Item Transfer service is configured.

Configure PIM Item Transfer

The **Bluetooth Configuration Panel > Client Applications > PIM Item Transfer > General** tab provides options to configure:



- The application name—to change it, highlight the existing name and enter the new name.
- Enable or disable secure connection. To enable secure connection, place a checkmark in the box.
- How your business card is handled when it is requested by a remote device. The Send My Business Card options are:

  Choose a business card as needed - each time a remote device requests your business card you must select a card from your PIM. If you ignore the request the remote

device will receive a timeout notice.

Always send the same business card - when this option is selected a dialog appears that allows you to set a default business card, which will be sent automatically when requests are received.

- Where to store received business cards. The Received Business Cards options are:
  - Microsoft Outlook
  - Outlook Express
  - Lotus Notes

> **NOTE:**
> The selected Received Business Cards option does not influence the settings on other PIM-related property pages.
> For example, even if the PIM Item Transfer *service* business card option on this computer is configured to “Do Not Accept,” the PIM Item Transfer *application* will still accept business cards that the application has specifically requested via its “Receive” or “Exchange” functions.

◆ Email attachments. The only option is include or do not include attachments with email that is sent or received on this computer using this service.

Close a PIM Item Transfer Connection

This application closes the open connection automatically when its task is complete.

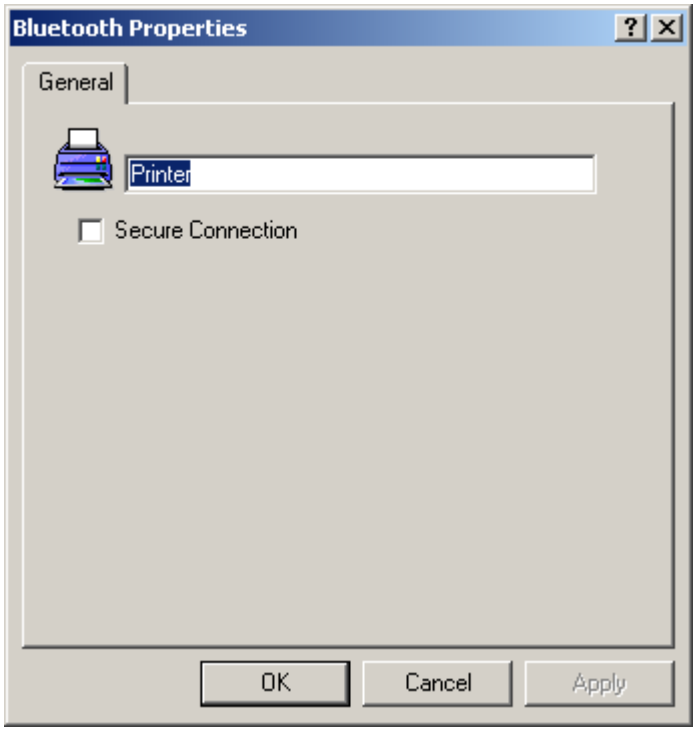
7.6.10 Printer

Overview

The Bluetooth Printer application allows this computer to use a Bluetooth printer.
Once a Bluetooth printer has been properly installed it can be used from this computer in the same way as any other printer would be.

Configure

The **Bluetooth Configuration Panel > Client Applications > Printer > General tab** provides options to configure:



- . The application name—to change it, highlight the existing name and enter the new name.
- Enable or disable secure connection. To enable secure connection, place a checkmark in the box.

Install a Bluetooth Printer

Option One:

1. Perform a search for devices and then, from **Entire Bluetooth Neighborhood**, right-click a **Bluetooth printer**, select **Add Printer** from the shortcut menu and follow the on-screen instructions.

2. When the wizard asks you to select a printer make and model, do so.
If your printer is not in the list of options, click **Have Disk…,** insert the driver disk for the printer, and then navigate to the drive and directory that contains the driver initiation file (*.inf) for the printer.

3. To complete the installation, follow the on-screen instructions.

Option Two:

1. From the Windows **Control Panel**, select **Printers** > **Add Printer** > **Next** > **Local printer** > **Next**

2. On the Select the Printer Port screen of the wizard:

   a) Select Create a new port.

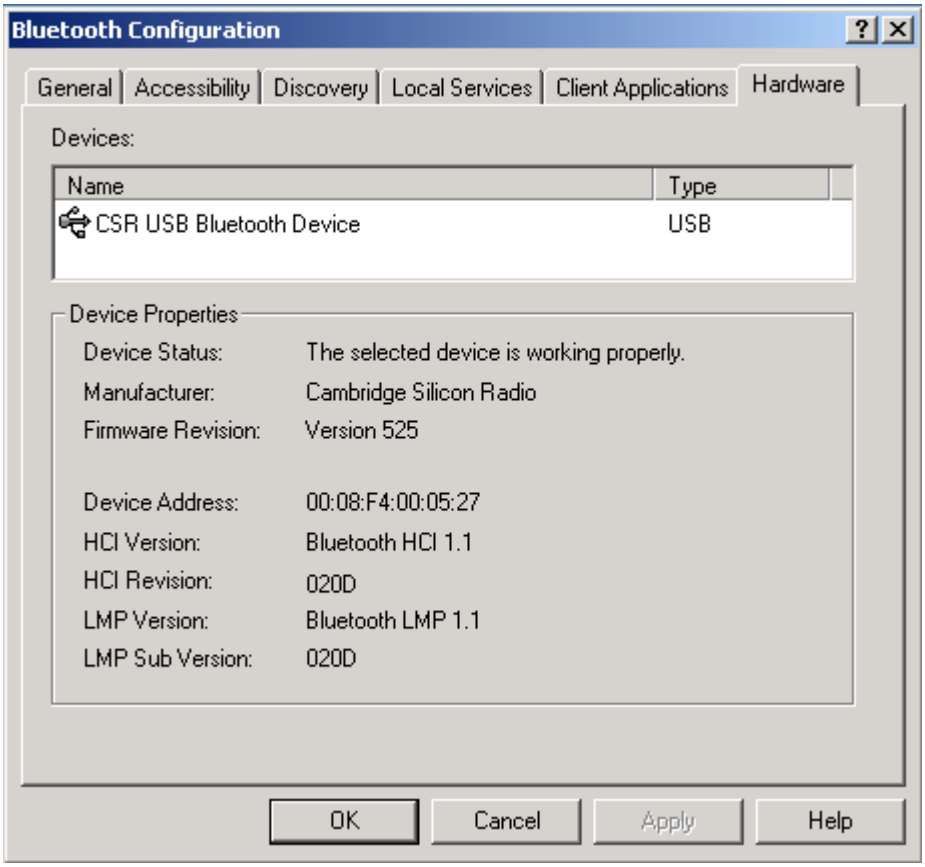
   b) In the Type shortcut menu, select **Bluetooth Printer Port**, and then click **Next**

3. On the next screen, select the printer by name, and then click **Connect**.
4. Install the driver: when asked to select a printer make and model, do so.
If your printer is not in the list of options, click **Have Disk…**, insert the driver disk for the printer, and then navigate to the drive and directory that contain the driver initiation file (*.inf) for the printer.
5. To complete the installation, follow the on-screen instructions.

To delete a printer, click **Start** > **Settings** > **Printers**, right-click the printer to be deleted, and then select **Delete** from the shortcut menu.

7.7 HARDWARE SETTINGS

The Hardware tab of the Bluetooth Configuration Panel provides basic information about the Bluetooth hardware installed on this computer and access to the Advanced Settings dialog box, if required:



Devices:

- **Name**: the name of the device, e.g., *CSR USB Bluetooth Device*
- **Type**: the type of device, e.g., *USB.*

Device Properties:

- **Device status**: indicates that the device is operating properly or that there is a problem/conflict.
- **Manufacturer**: the name of the company that manufactured the device selected in the Devices section of this dialog box.
- **Firmware Revision**: the manufacturer's firmware version number.
- **Device Address**: the Bluetooth Device Address (BDA or BD_Addr) assigned to this device when it was manufactured.
- **HCI Version**: the version number of the Bluetooth Specification that the Host Controller Interface complies with.
- **HCI Revision**: the revision number of the Bluetooth Specification that the Host Controller Interface complies with.
- **LMP Version**: the version number of the Bluetooth Specification that the Link Manager Protocol complies with.
- **LMP Sub Version**: the sub-version number of the Bluetooth Specification that the Link Manager Protocol complies with.
- The Advanced button: displays the Advanced Settings dialog box, which allows you to select the country code and transmission power settings. *This option is not available on all systems.*

7.7.1 Advanced Settings

When available, this dialog box is reached from the Hardware tab of the Bluetooth Configuration Panel.

NOTE:
Depending on the country in which the hardware is sold and/or in which it will be used, the Advanced button may not be present.

From this dialog box you can set the:

- Country Code:

North America, Europe (except France), and Japan, France and China

- Maximum Transmission Power:

High

Medium

Low.

Click **Apply** to implement the changes. A dialog box appears with notification that the Bluetooth device attached to this computer must be reset before the change(s) will take effect.

Click Yes to reset the Bluetooth device now—all open Bluetooth connections will be closed.

Click No to save the changes—the changes will be applied the next time the Bluetooth device is reset or restarted.

Chapter 8

Security

8.1 AUTHENTICATION

Authentication is used to verify identity; it requires a passkey or link key from the remote device. When a remote device attempts access, a visual and/or audio warning notifies the local operator.

If the notification is ignored, access is denied after a preset timeout.

When devices are “paired,” those devices automatically exchange a Link Key and Authentication is carried out without operator intervention.

8.2 AUTHORIZATION

Authorization is Yes-or-No security that requires operator intervention to avoid having the connection time out and fail.

Authorization is limited to:

- **Yes**, you may connect (click the balloon to proceed)
- **No**, you may not connect (ignore the balloon prompt and the connection will fail).

8.3 ENCRYPTION

Encrypting data translates it into an unreadable format using a secret key or password. Decrypting the data requires the same key or password that was used to encrypt it.

8.4 LINK KEY

A unique, internally generated, access code based on a passkey, the Bluetooth Device Address and an internally generated random number. Link Keys are generated automatically when devices Pair.

After a link key is generated, manual entry of the passkey is not required.

8.5 PAIRING DEVICES

Pairing allows you to avoid entering access information each time a connection is attempted. Paired devices share a unique Link Key, which they exchange each time they

connect. You can initiate the pairing from your own PC or accept a request for pairing from the other device.

NOTE:
The mate of a pair always appears in My Bluetooth Places, even if the mate is not turned on or is out of connection range.

Paired devices remain paired even when

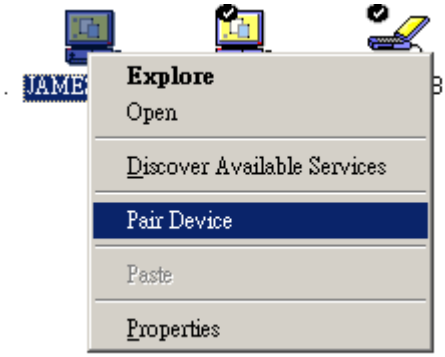
- One of the devices is not on
- A service connection is interrupted or the service stopped
- One or both devices are rebooted.

To Pair with another device

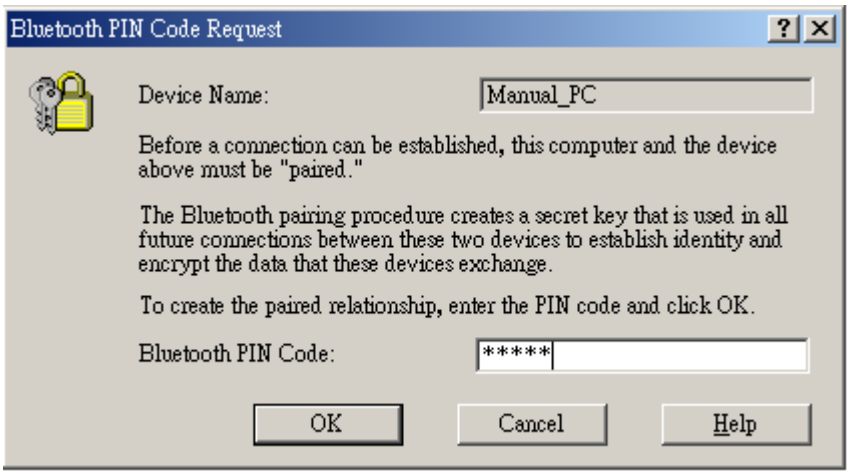
If Secure Connection is enabled, devices will pair automatically the first time they connect (a passkey must be successfully exchanged).

To pair with a device manually:

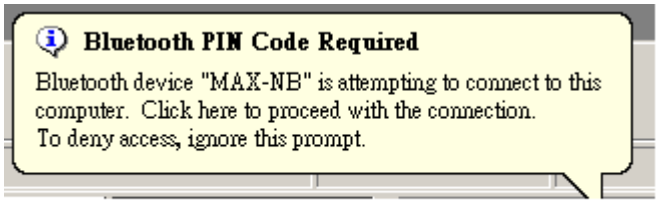
- In the Folders pane of My Bluetooth Places, right-click a device, select **Pair Device** from the shortcut menu.



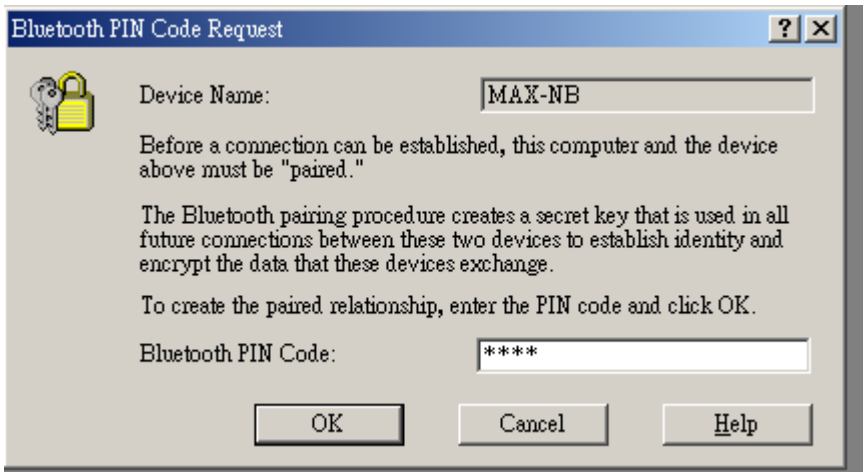
- You will be asked to enter the Bluetooth PIN code.



- Meanwhile, there will be a bubble message shown on the remote device's system tray to indicate you to enter the PIN code. Click this bubble message.

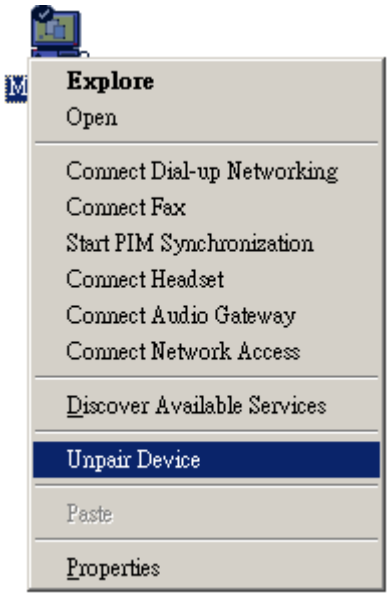


- Enter the PIN code. The Bluetooth PIN code should be the same between paired devices.



Remove Pairing

In the Folders pane of My Bluetooth Places, right-click a paired device and select **Unpair Device** from the shortcut menu.



8.6 PASSKEY

An alphanumeric string up to 16 characters in length. Passkeys are also called Personal Identification Numbers, or PIN codes.
A passkey may be required if the Secure Connection option is enabled for a Bluetooth service or application.

8.7 SECURE CONNECTION

A passkey or link key is required each time a connection is attempted.
All data exchanged over the Bluetooth connection is encrypted.
Depending on other configuration options, authorization may also be required.

8.8 SECURITY REQUEST DIALOG BOX

A Bluetooth passkey request and/or Bluetooth Authorization request balloon may appear over the Windows system tray when a connection is attempted if Secure Connection is enabled. Click the balloon to proceed.

Chapter 9

Troubleshooting

CANNOT CONNECT TO A PAIRED DEVICE

Paired devices are always displayed in My Bluetooth Places, even if the remote device is out of range or not powered up.

Verify that the remote member of the pair is within radio range, and powered up, and then attempt the connection again.

CANNOT DISCOVER SERVICES ON AN UN-PAIRED REMOTE DEVICE

The remote device may not be powered up or may be out of range.

- Verify that the remote device is powered up.
- Verify that the remote device is in Connectable mode (Bluetooth Configuration Panel > Accessibility tab).
- Perform a Search for Devices to verify that the device is within range.

DIAL-UP NETWORKING SERVICE DOES NOT START

The Dial-up Networking service will not start unless a properly configured modem is attached to the server.

- Verify that the modem is usable as a local device on the computer to which it is attached.
- In the Bluetooth Configuration Panel, Local Services tab, double-click the Dial-up Networking service:
- Click the down arrow in the Modem field and select the modem that will be used to dial out
- Click the OK button
- Click the OK button to close the Bluetooth Configuration Panel.

DETERMINE THE BLUETOOTH DEVICE ADDRESS (BDA) OF MY HARDWARE DEVICE

In the Bluetooth Configuration Panel, on the Hardware tab, in the Devices section, select the device you want to determine the address of. In the Device Properties section of the dialog box, the fourth entry, Device Address, is the BDA of the selected Bluetooth device.

DETERMINE THE VERSION OF THE HOST CONTROLLER INTERFACE

(HCI)

In the Bluetooth Configuration Panel, on the Hardware tab, in the Device Properties section, the fifth entry provides Bluetooth Specification compliance information for the Host Controller Interface.
The sixth entry contains the Specification Revision information for the Host Controller Interface, if appropriate.

DETERMINE THE VERSION OF THE LINK MANAGER PROTOCOL (LMP)

In the Bluetooth Configuration Panel, on the Hardware tab, in the Device Properties section, the seventh entry provides Link Manager Protocol version number information.
The eighth entry contains the Link Manager Protocol sub-version number information, if appropriate.

FIND INFORMATION ABOUT THE BLUETOOTH HARDWARE ATTACHED TO MY COMPUTER

In the Bluetooth Configuration Panel, select the Hardware tab.

TEST A NETWORK ACCESS CONNECTION

If the client is hardwired to the LAN, unplug the hardwired connection to ensure that the test checks the wireless connection rather than the hardwired connection.
If the server has access to the Internet, open a browser on the client and connect to the World Wide Web.
You may also Ping the server from the DOS prompt.

UNKNOWN PORT MESSAGE WHEN USING A BLUETOOTH SERIAL PORT

The “Unknown Port” error message usually means an attempt was made to connect a port that was in use.
Additional Bluetooth Serial Ports can be added if they are required.

BLUETOOTH HEADSET DOESN’T ALWAYS FUNCTION UNDER WIN 98

Windows 98 cannot convert audio files with the extension m3u (e.g., myfile.m3u) into the Pulse Code Modulation (PCM) audio format used by Bluetooth headsets; this is a limitation of Windows 98.
Other versions of Windows (2000, ME and XP) can translate m3u audio files into the PCM format.
Possible solutions are:

- Upgrade to a newer version of Windows
- Use an m3u-to-mp3 conversion utility to convert the file(s) into a format that is supported by Windows 98. (Conversion utilities are available as freeware or shareware on the Internet.)