



TRENDNET



User's Guide

TBW-101UB
TBW-102UB

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1. Introduction

This TBW-101UB/TBW-102UB USB Bluetooth v2.0+EDR Dongle add Bluetooth technology to your existing USB computers or notebook. Simply plug it into the USB port of your machine for seamless connectivity with other Bluetooth devices, such as phones, computers, peripherals and other devices. The dongle features the industry's most extensive range of profiles available, ensuring a common application between two Bluetooth-enabled devices.

The dongle is fully compliant with the Bluetooth v2.0 specification and backward-compatible with Bluetooth version 1.1 or 1.2 standards. Moreover, it supports the new Bluetooth Enhanced Data Rate (EDR), providing raw bandwidth of 3Mbps for wireless applications. It also adopts dedicated interference avoidance technology to reduce possible disruption from nearby Wi-Fi® products, which operate in the same 2.4 GHz radio frequency as Bluetooth.

Features

- Compliant with Bluetooth v2.0 Specification with EDR (Enhanced Data Rate) support
- Backward compatible with Bluetooth v1.1 and v1.2 devices
- Up to 3Mbps Access Data Rate and Low Power consumption
- Compatible with Windows 98SE/ME/2000/XP & MCE (Media Center Edition) Operating Systems
- Built-in 128-bit encryption of secured data communications
- Enable computers to connect Bluetooth-enabled devices such as printers, headset, audio/video, basic images, PDAs, and mobile phone.
- Compliant with Class I (TBW-102UB) or Class II (TBW-101UB) Bluetooth Operations
- Communicates wirelessly up to 100 meters/328 feet (Class I) or 10 meters/32.8 feet (depends on the environment)
- Trouble-free Plug & Play installation
- 2-Year Warranty

Package Contents

- TBW-101UB or TBW-102UB
- Multi-Language Quick Installation Guide
- Driver & Utility CD-ROM
- USB Type A male to female cable

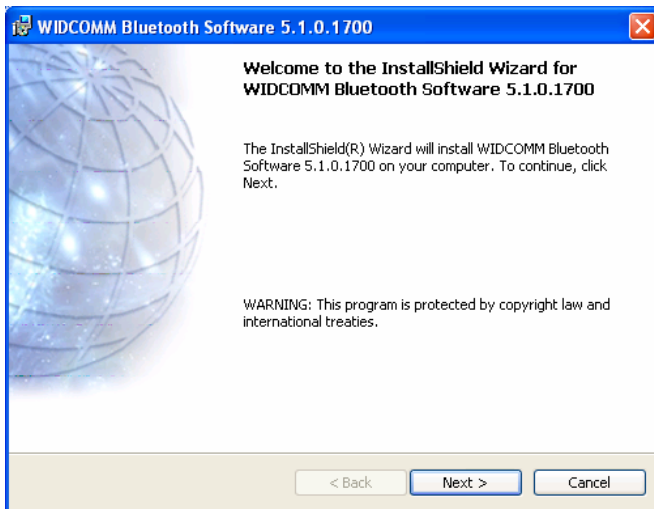
System Requirements

- CUP: 300MHz or above
- Memory: 256MB or above
- Operating System: Windows® XP, 2000, ME or 98SE
- Computer with an available USB 1.1 or 2.0 slot
- Windows XP/2000/ME/98SE

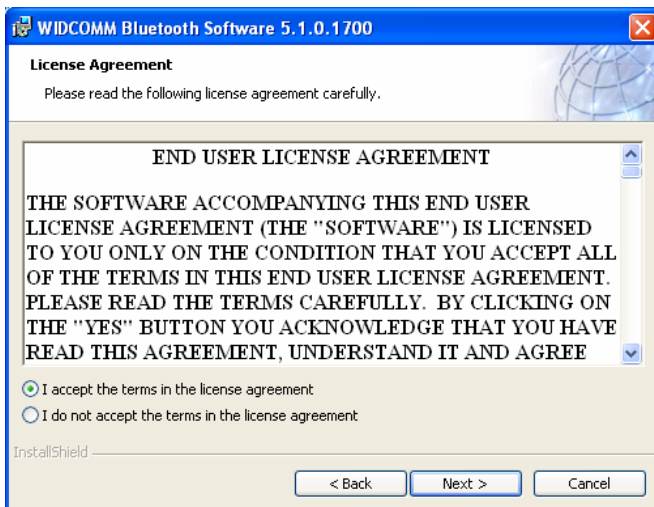
2. Installation

Note: Do not plug the USB Bluetooth v2.0+EDR Dongle to your computer before you install the provided software. You will be prompted to plug the device during the installation.

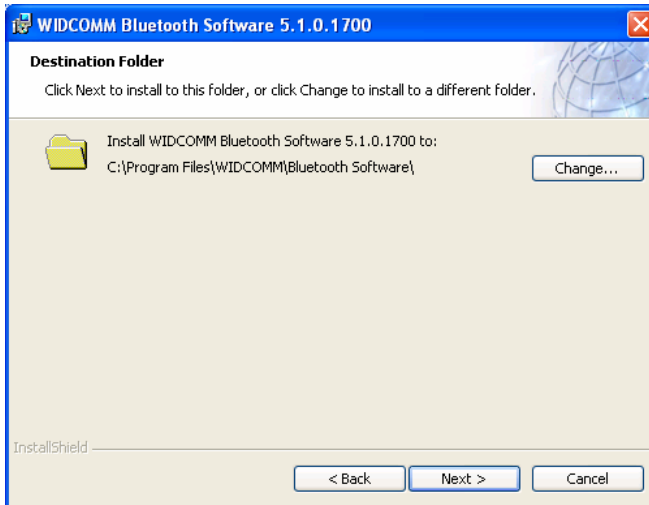
1. Insert the Bluetooth software installation CD into the CD drive of your computer. The setup program will start automatically. If not, locate and double-click the **Setup.exe** file in the **Software** folder to launch the setup program.
2. When the welcome screen appears, click **Next**.



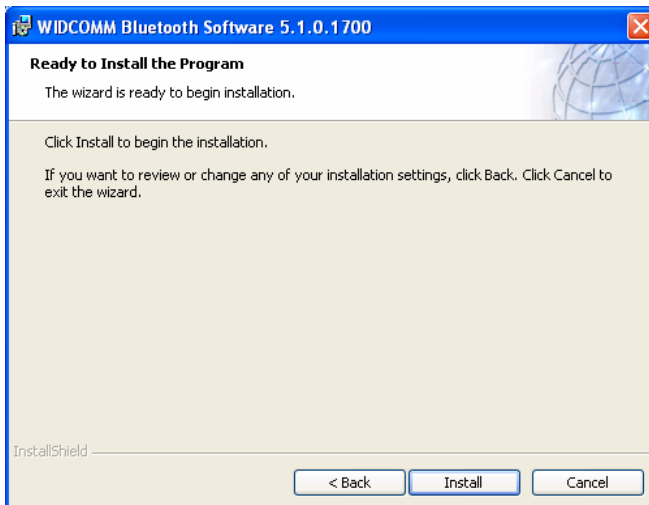
3. Select **I accept the terms in the license agreement** and click **Next**.



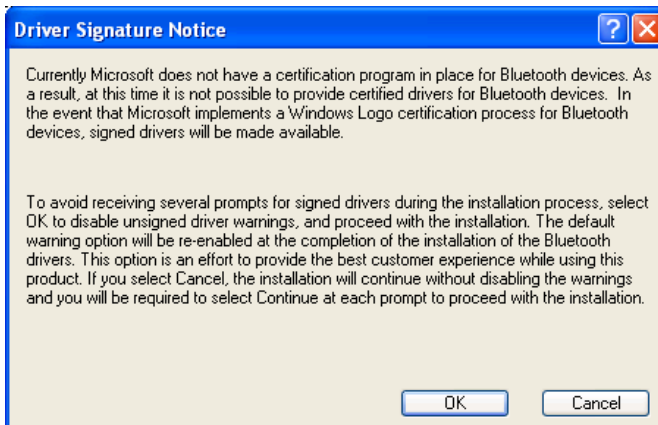
4. You can select to install the program in default directory or click **Change** to specify another directory. After specifying the location, click **Next**.



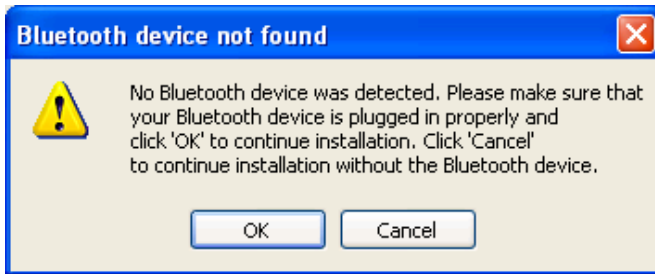
5. Click **Install** to begin the installation.



6. If the **Driver Signature Notice** window appears, click **OK** to avoid keeping being prompted of signature warnings.



7. When prompted, plug your Bluetooth dongle to your computer and then click **OK**.



8. Please wait while the software installs all the supported services. This may take several minutes.

If you are using operation systems other than Windows XP, reboot prompt may appear a couple of times. Just ignore the prompts and wait until the finish screen appears.

9. Click **Finish** to complete the installation.



10. If prompted, restart your computer to enable the settings.

Note: If Skype is installed on your computer, a Skype access dialog box will appear because the Bluetooth audio service is attempting to access Skype. Just select a proper option as required.

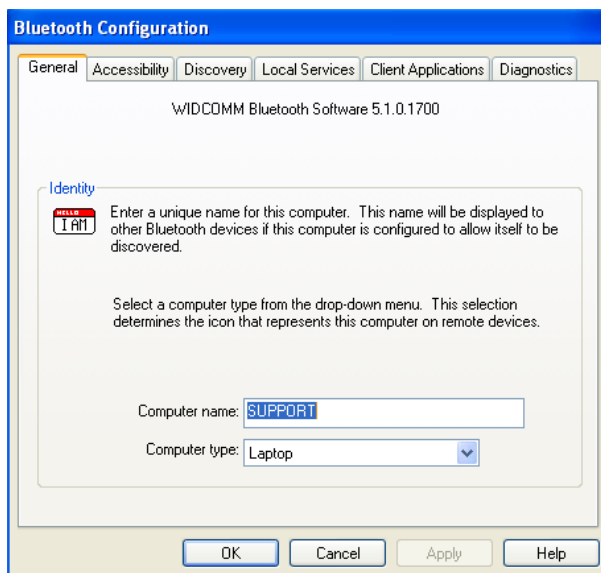
Complete Initial Bluetooth Configurations

After you finish the installation and launch the Bluetooth application for the first time, the **Initial Bluetooth Configuration Wizard** will automatically launch to guide you through the initial configurations.

1. Select the locations you want the icon to appear and click **Next**.



2. Enter a unique name to identify your computer and select a computer type. Then click **Next**.

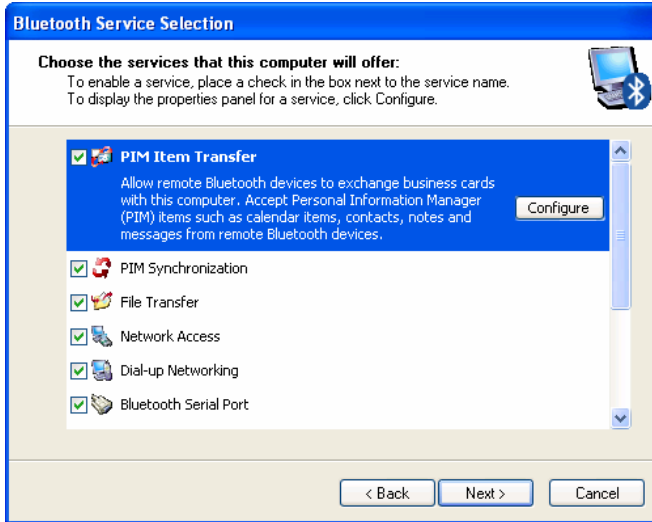


3. Click **Next** to proceed.



4. This screen allows you select the services you want to provide to other Bluetooth devices.

If you click **Cancel** at this point, all the services will not inactive unless otherwise specified via the **Local Services** tab on the **Bluetooth Configuration** panel. See “7. Providing Local Service” on page 44 for more information.



5. The wizard will proceed to help you establish a connection to other Bluetooth devices. You may follow the step-by-step instructions to set up the connections now or click **Skip** and set up later.



3. Quick Start Guide

This chapter provides you with the basic guidelines to get your Bluetooth dongle connected to a service provided by another Bluetooth-enabled device.

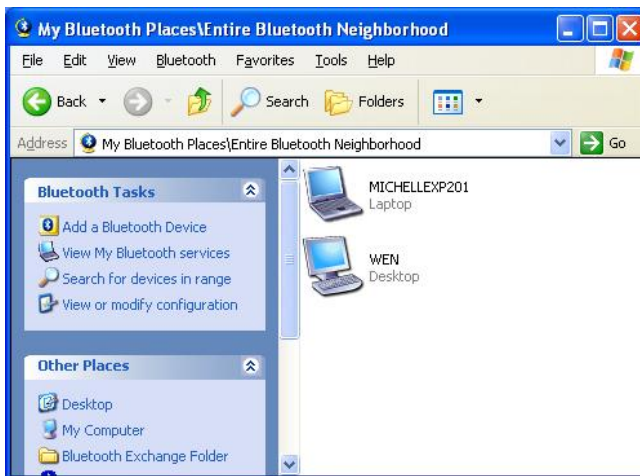
1. Double-click the Bluetooth icon in the notification area.



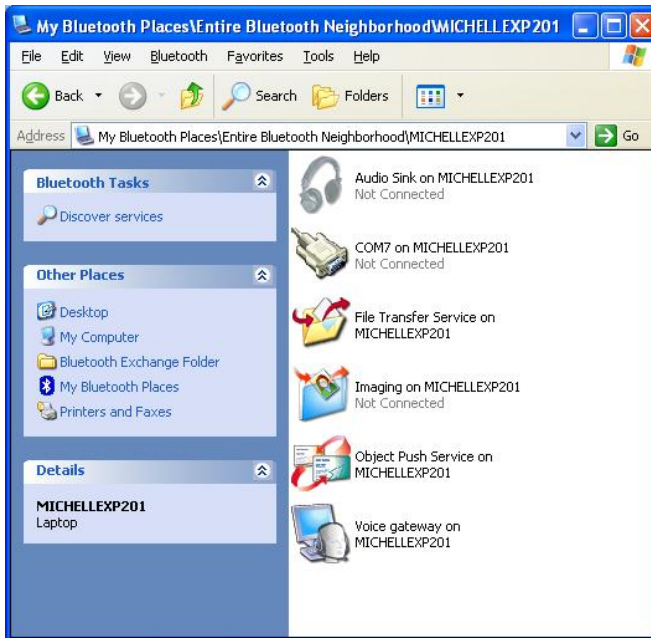
If the Bluetooth icon is blue in color with a red insert (❌), make sure the dongle is properly plugged, right-click the dongle and select **Start the Bluetooth Device**.

2. The utility will search for and display available Bluetooth devices in range. Double-click the target device that you want to connect to.

If you want to connect to a Bluetooth peripheral such as headset or imaging device, refer to the manual that came with the peripheral for instructions about how to make the device discoverable.



- The utility will search for and display available services on the target device. Double-click the service that you want to use. (Ignore this step if you are connecting to a peripheral that offers single service.)



- If pairing is required, type a PIN codes exactly the same in the **Bluetooth Security Code Request** window on both devices and then click **OK**.
If the peripheral has a fixed PIN code, you should refer to the manual that came with the peripheral for the PIN code.






- If prompted, respond to the **Bluetooth Service Authorization** message to allow access the service. After that, you can start to use the Bluetooth service.

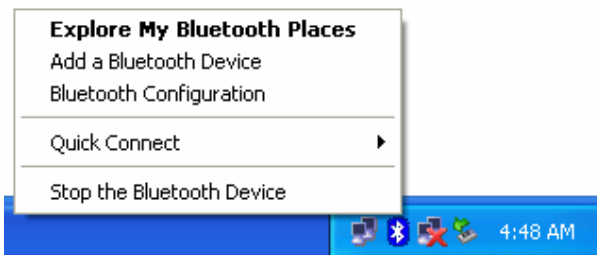
4. Basic Operations

Bluetooth Tray Icon

The Bluetooth icon in the notification area, at the far right of the taskbar provides feedback about Bluetooth status as described in the table below.

Icon	Status
	Bluetooth dongle found and enabled.
	Bluetooth dongle not found or disabled.
	Connected to a service.

The Bluetooth tray also provides fast access to most Bluetooth operations. You can double-click it to access **My Bluetooth Places** or right-click it to pop up the shortcut menu and access the provided functions.



Starting or Stopping Bluetooth

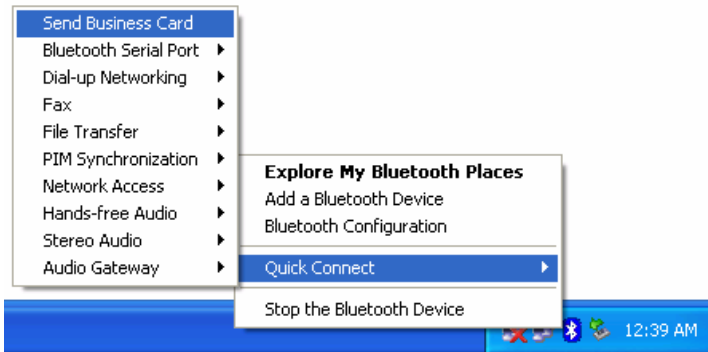
To start Bluetooth - Right-click the Bluetooth icon and select **Start the Bluetooth Device**. The Bluetooth icon is blue in color with a white insert when Bluetooth is running.

To stop Bluetooth - Right-click the Bluetooth icon and select **Stop the Bluetooth Device**.

Creating a Connection

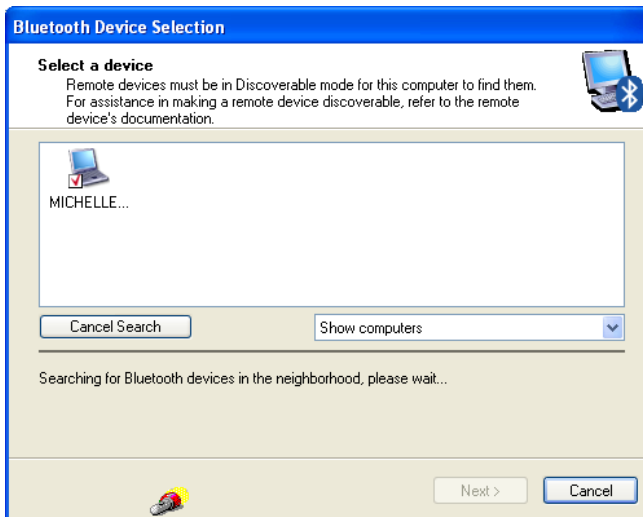
Option 1. Use Quick Connect via the Bluetooth Icon

Right-click the Bluetooth icon in the system tray and select **Quick Connect** and then select the desired Bluetooth service.



a. If selected service is never connected:

1. Select **Find Devices** on the shortcut menu.
2. The utility will search for devices that potentially provide the desired service. Highlight the desired one and click **Next**.



3. The succeeding steps vary according to the service you selected. Just follow the on-screen prompts to proceed.

b. If selected service has been connected in the past:

The options on the shortcut menu are:

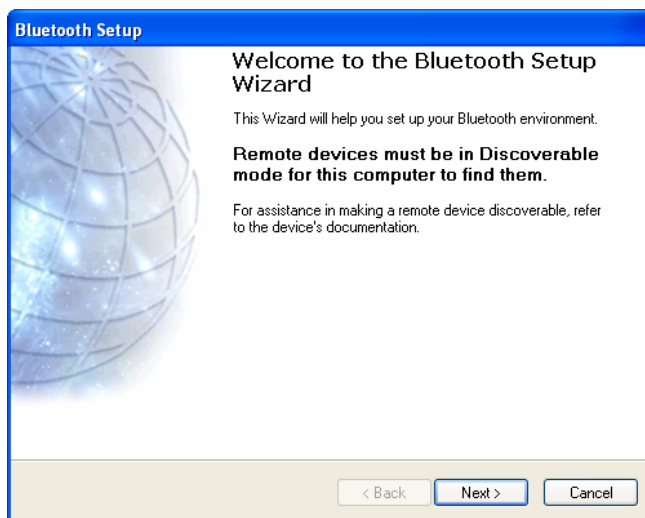
- The name(s) of any device(s) with which prior connections to this type of service have been established. Select a name from the list to re-establish the connection.
- Other Devices - select this option to search for additional devices that potentially provide the desired service, select a device from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

Option 2. Use the Bluetooth Setup Wizard

You can open the setup wizard by either of these methods:

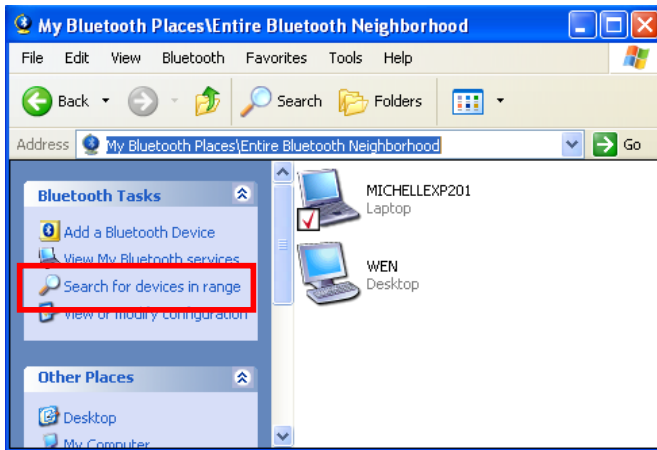
- Right-click the Bluetooth icon and select **Add a Bluetooth Device**
- Double-click the Bluetooth icon to open **My Bluetooth Places** and select **Add a Bluetooth Device**.

When the wizard window pops up, follow the on-screen instructions to proceed:

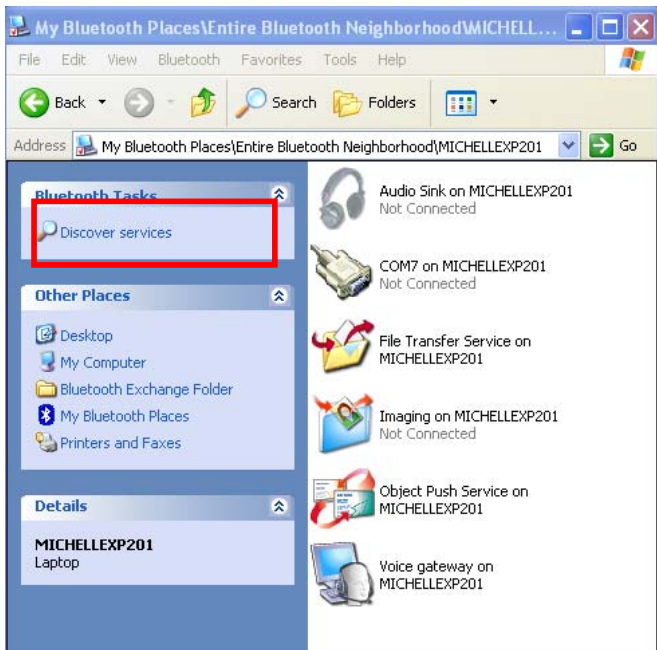


Option 3. From the Entire Bluetooth Neighborhood

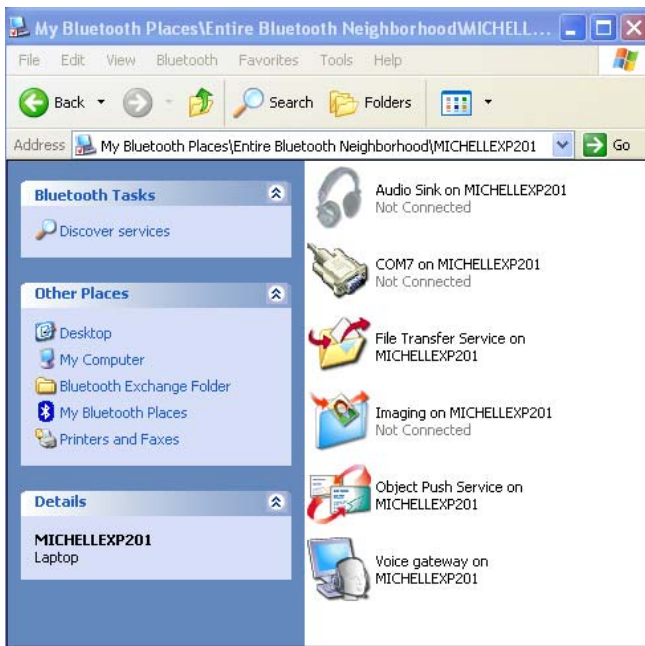
1. Double-click the Bluetooth icon to open **My Bluetooth Places** and select **View Devices in Range**.
2. Available Bluetooth devices should appear in the right pane. If not, click **Search for devices in range** to start searching. Devices icons have three states. Refer to “Device and Service Icons” section on page 14 for details.



3. Double-click a desired Bluetooth device to display its available services.
If the selected device has added or reconfigured a service, or if the desired service is not an option in the shortcut menu, select the **Discover Available Services** option to update the list of services offered by the device.



4. Double-click the desired service to make the connection.



Security and Pairing

If **Secure Connection** is enabled for any of the Bluetooth services on either of the two devices that attempting to make a connection, they must exchange an identical PIN code upon the initial connection. The code request window on your computer is like the figure below. After the exchange, the two Bluetooth devices are allowed to exchange data in a secure way.



Device and Service Icons

Device Icons

Devices are physical things, such as computers, cameras, headsets, etc. Device icons vary according to device types and have three states:

- Normal - this unadorned icon indicates the presence of a device in the vicinity. Each type of device is represented by a different icon.
- Connected - devices that have been connected to this computer before are represented by an icon with a green tint and/or a small button with arrows added to them, regardless of whether they are turned on, in range, or in Discoverable mode.
- Paired - devices that have been paired with this computer before are represented by a normal icon with a small check box added to it, regardless of whether they are turned on, in range, or in Discoverable mode.

The icons used to indicate device type, paired status, and connection status are illustrated in the table below. (There are some differences between the device and service icons used by Windows 98SE, ME, and 2000, and those used by Windows XP. The table is based on Windows XP.)

Type of Device	Icon Indicating Device Type, Paired Status, and Connection Status		
	Not Paired	Paired	Connected
Audio Gateway			
Headphones			
Camera			
Desktop Computer			
Headset			
Keyboard			
Mouse			
Modem			
Network Access Point			
Laptop Computer			
Personal Digital Assistant			
Printer			
Cellular Phone			
Unknown Device			

Service Icons

Services are what a Bluetooth device can do with other Bluetooth devices, such as access to a local area network, or the ability to send a fax. Some devices, such as headsets or network access points, may provide only a single service. Others, such as desktop and laptop computers, can potentially provide all of the Bluetooth services. Service icons vary according to services types and have three states:

- Normal - this type of unadorned icon indicates that a specific service is potentially available from the selected device.
- Not Available - this type of icon indicates that the service that it represents is not available. Services that are not available are represented by a normal icon with a small X box added to it.

Note: This type of icon only applies to the services on your Bluetooth device (which can be viewed via **My Bluetooth Places > View My Bluetooth service**). When you try discovering the services on a remote Bluetooth device, not available services will not be displayed.

- Connected - this type of icon indicates that this computer is connected to this service. The icon has a green tint and/or a small butting arrows box added to it.

The icons used to indicate service type, availability, and connection status are illustrated in the table below. (There are some differences between the device and service icons used by Windows 98SE, ME, and 2000, and those used by Windows XP. The table is based on Windows XP.)

Name of Service	Icon Indicating Service Type, Availability, and Connection Status		
	Available	Not Available ¹	Connected
Audio Gateway			
Headphones			
Headset			
File Transfer			
Bluetooth Imaging			
Network Access			
PIM Item Transfer			
PIM Synchronization			
Dial-up Networking			
Printer			
Bluetooth Serial Port			
Fax			

5. Configuring Your Bluetooth

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.

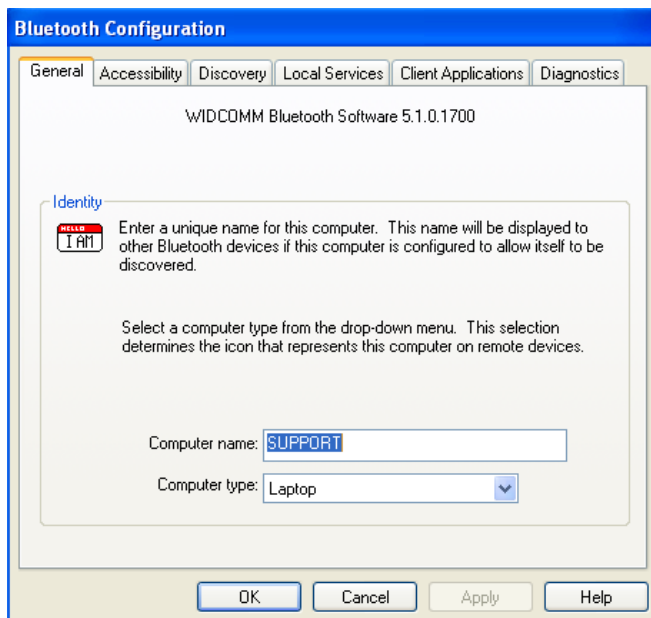
You can open the **Bluetooth Configuration** panel by either of the following ways:

- Right-click the Bluetooth tray icon and select **Bluetooth Configuration**.
- Double-click the Bluetooth tray icon to open **My Bluetooth Places** and select **View or modify configuration**.

General Settings

The settings on the **General** tab determine information that is displayed to remote devices.

- **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.



Accessibility Settings

The **Accessibility** tab 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 this computer. If **Allow No devices** (below) is selected, this option is not available.

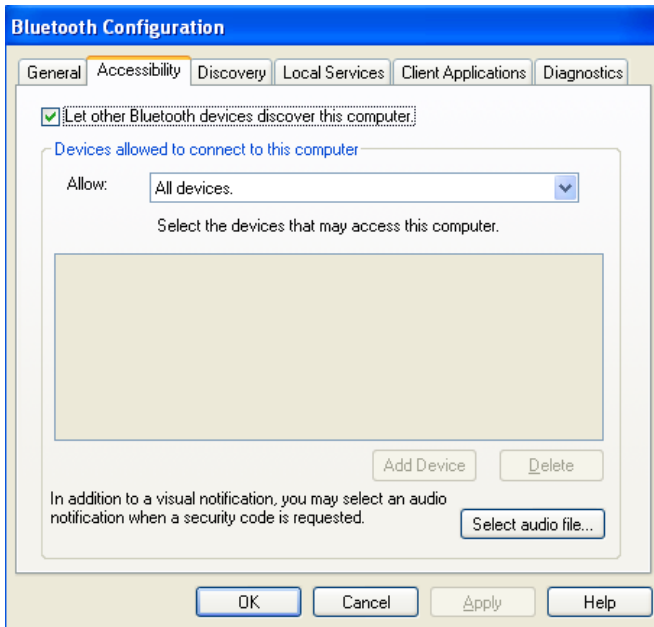
Control the Types of Devices Allowed to Connect to This Computer

From the **Devices allowed to connect to this computer** 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, which may be required by the individual services provided by this computer.
- **Only devices listed below** - only the listed devices are allowed to connect to this computer. Use **Add Device** and **Delete** buttons to edit the list.

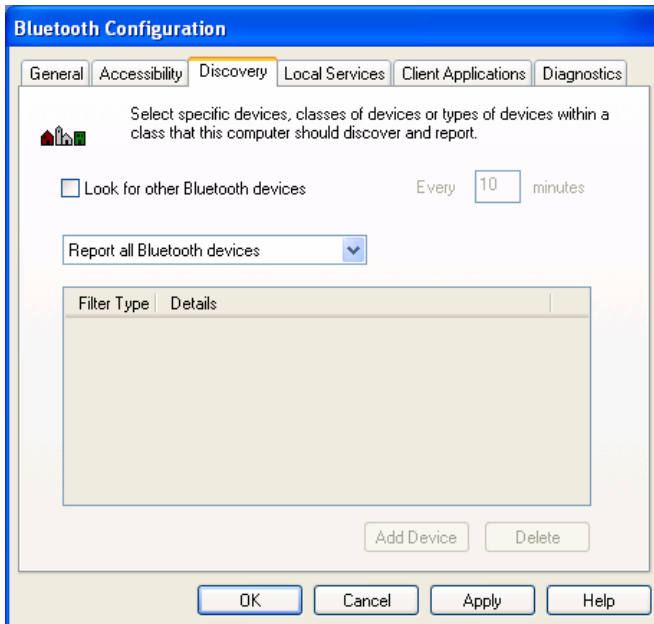
Choose an Audio Notification File

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 choose 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.



Discovery Settings

The **Discovery** tab determines whether this computer looks for other Bluetooth devices automatically, how often it looks for devices, 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 a whole number between 1 and 60.

Determine the Devices That Will Be Reported

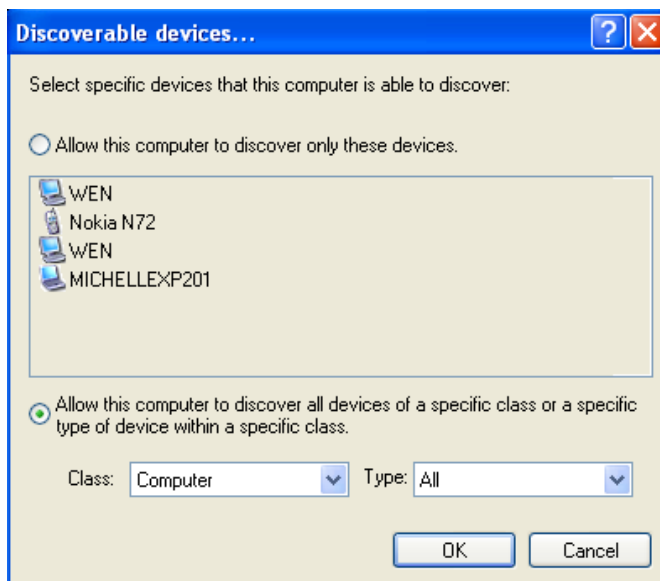
By default, this computer will discover and report all the Bluetooth services. The Bluetooth software can be configured to report only specific devices, specific classes of device, or specific types of device within a class.

To do this, select **Report only selected Bluetooth devices** from the drop-down list and click **Add Device**.

At the **Discoverable devices...** window, you can limit the remote devices reported.

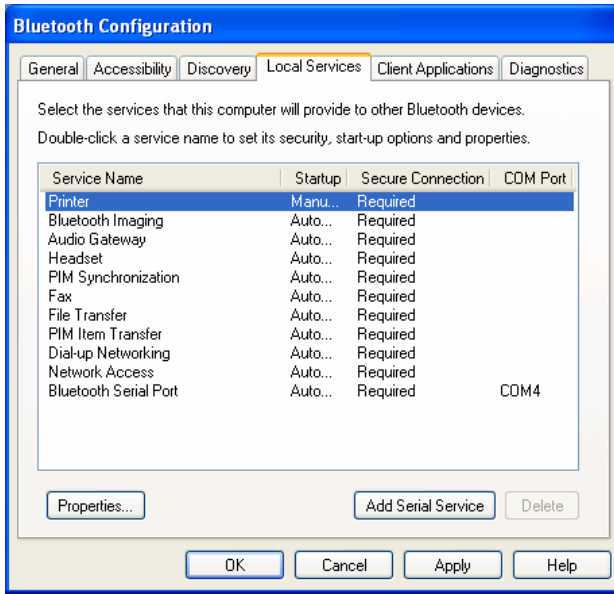
- Specific devices - an individual computer or Bluetooth cellular telephone are examples of specific devices.
- Specific class of device - computer is an example of a class of devices.
- Specific type of device within a class - laptop is an example of a specific type of device within the computer class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



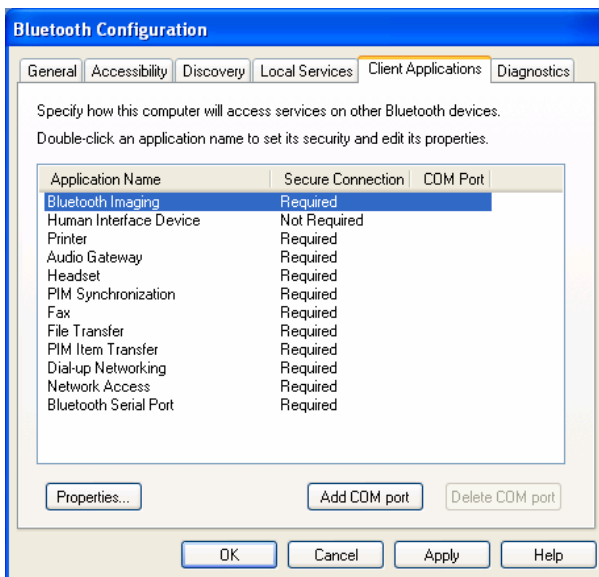
Local Services Settings

This tab allows you to select the services that your computer will provide to other Bluetooth devices. You can also double-click a service name to set its properties or click **Add Serial Service** to add serial service. For more information on providing local services, refer to the “7. Providing Local Service” section on page 44.



Client Applications

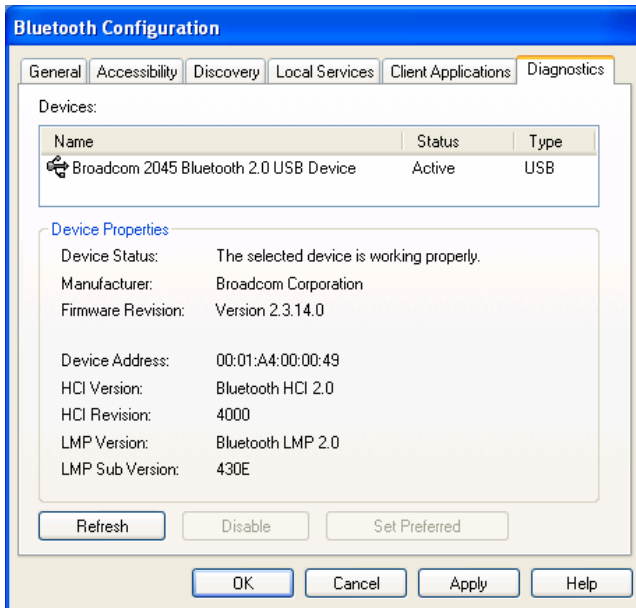
This tab specifies how your computer will access services on other Bluetooth devices. For more information on accessing client applications, refer to the “6. Using Bluetooth Applications” section on page 26.



Diagnostics

This tab allows you to view the Bluetooth dongle information and verify if your dongle is working properly.

If more than one Bluetooth dongles (excluding the dongle of other brand) are plugged to one computer, a prompt will appear indicating only one of them can be active and you will be guided to this tab. Here you can disable the unwanted dongle and specify a preferred Bluetooth dongle on your computer.



Security and Pairing

By default, the properties of all Bluetooth services on this computer and the Bluetooth applications (except Human Interface Device) that this computer uses are set to require a secure connection. When **Secure Connection** is enabled for any of the Bluetooth services on this computer, the two devices that attempting to make a connection must exchange a Personal Identification Number (PIN) code upon the initial connection. After the exchange, the two Bluetooth devices are allowed to exchange data in a secure way.

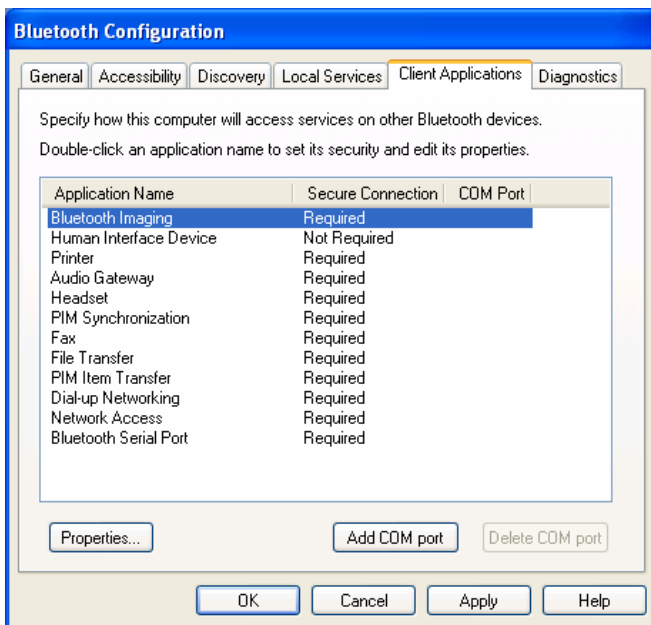
As this Bluetooth dongle supports 8 to 128-bit encryption, the length of the PIN code can vary between 1 and 16 alphanumeric characters. Hence, the length is restricted by the device you want to connect to. For example, some Bluetooth devices only support a PIN code of 1 to 4 characters.



6. Using Bluetooth Applications

This chapter describes how to use the Bluetooth services on other Bluetooth devices with your Bluetooth-enabled computer.

The services on remote Bluetooth devices are referred to as **Client Applications** in the **Bluetooth Configuration** panel. Some client applications are not required to configure unless you want to change the application name or the security settings while some is provided with detailed settings. To configure a client application, go to **Bluetooth Configuration Panel > Client Applications > Printer > Properties**. Refer to the ensuing sections for the descriptions of each client application.



Printer

The Bluetooth Printer application allows this computer to use a Bluetooth printer.

The **Bluetooth Configuration Panel > Client Applications > Printer > Properties > General** tab provides options to configure the application name and enable or disable secure connection.

Note: The secure connection depends on the Bluetooth printer you want to connect to. If the Bluetooth printer's pairing function is in-activated, you should always disable the secure connection service.

Install a Bluetooth Printer

Option One:

1. Go to **My Bluetooth Places > View devices in range** and right-click a Bluetooth printer, select **Add Printer** from the shortcut menu and follow the on-screen instructions.
2. Select the printer manufacturer and model at the prompt. 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. Follow the on-screen instructions to complete the installation.

Option Two:

1. From the Windows **Control Panel**, select **Printers and Faxes > Add a Printer > Next > Local printer > Next**.
2. On the **Select a Printer Port** window of the wizard:
 - Select **Create a new port**.
 - In the **Type of port** 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: Select the printer manufacturer and model at the prompt. 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. Follow the on-screen instructions to complete the installation.

Imaging

The Bluetooth Imaging application allows this computer to **send images to remote devices** that provide the Bluetooth imaging service. Possible uses include the transfer of images to a Bluetooth camera, camera/phone, or any other device that offers the Bluetooth Imaging service. The supported image formats are:

- BMP
- GIF

- PNG
- JPG

Image Format Conversion

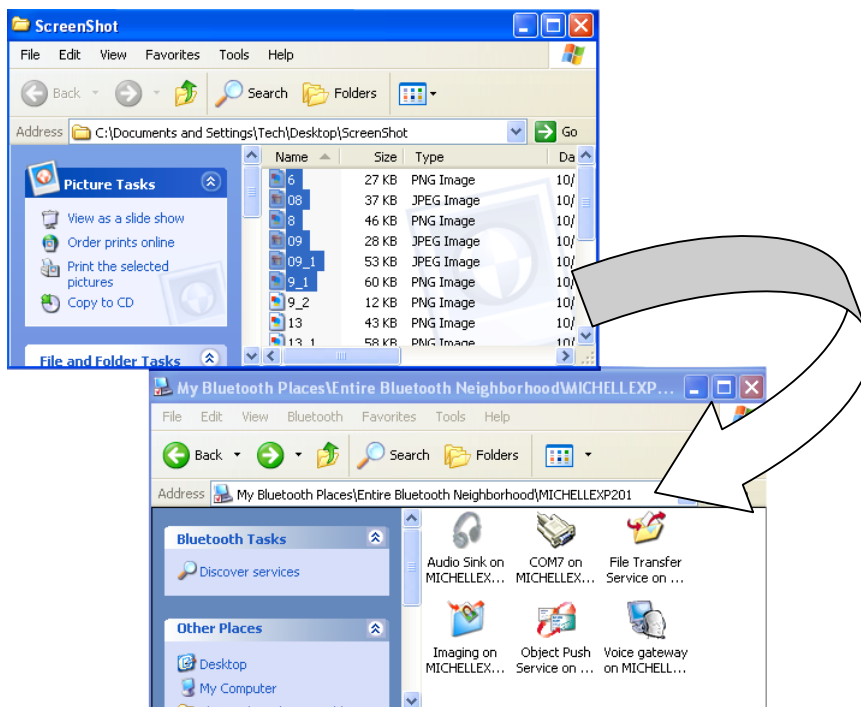
Some devices, particularly battery-powered devices such as phones and cameras, may only be able to accept images in one format and at a single fixed resolution. In that case, the image is converted to the required format and resolution before it is transferred to the remote device.

Sending Images to Remote Imaging Devices

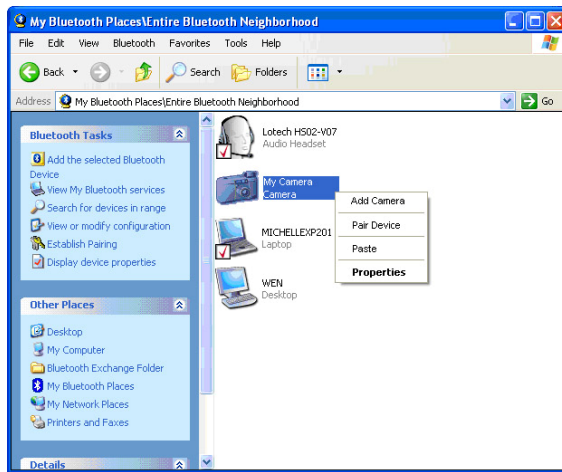
Imaging application connections are created automatically on an as-needed basis.

You can send an image to the remote imaging device by either of the methods:

- If a shortcut to the remote device's imaging service exists in **My Bluetooth Places**, drag and drop, or, copy and paste, to that shortcut.
- Go to **My Bluetooth Places > View devices in range** and drag and drop the image file onto the destination's device icon.



- After copying an image file in Windows Explorer, go to **My Bluetooth Places > View devices in range**, right-click the destination device and select **Paste**.



Note: Battery-powered remote devices, such as a cell phones or cameras, may require that Bluetooth be specifically enabled before they can accept an image; see the battery-powered device's documentation for more information.

Voice Gateway

The **Voice Audio Gateway** application allows a remote Bluetooth device to use this computer's microphone and speakers as the remote device's audio input and output devices. For example, if your Bluetooth cellular phone supports audio gateway service, you can redirect the phone's conversation to your computer's speakerphone.

To connect to an **Voice Gateway** service enabled device:

1. Open **My Bluetooth Places** and discover the **Audio Gateway** service provided by the remote Bluetooth device. Then double-click the service to make the connection.
2. If required, on the remote Bluetooth device respond to the **Bluetooth Service Authorization** message to allow the access.

Once the connection is established, remote device's audio will be redirected to your computer.

Headset

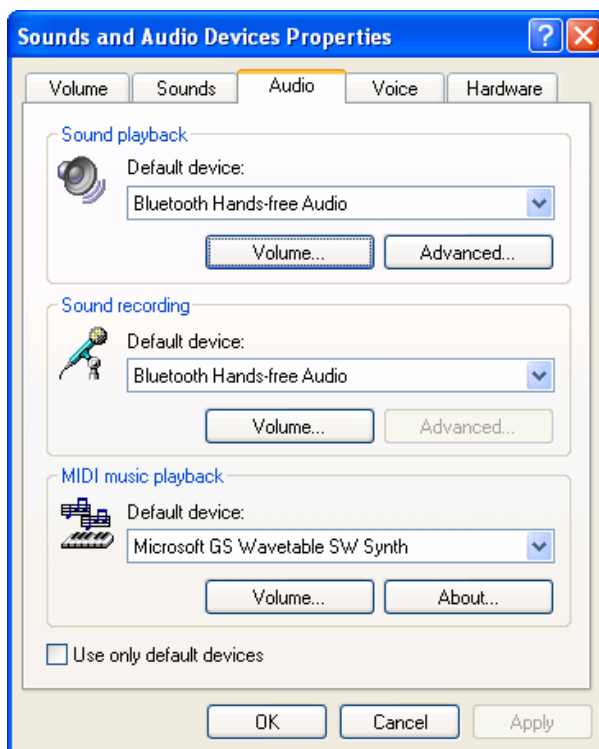
The Bluetooth Headset application allows this computer to use a Bluetooth headset as the audio input and output device for this computer. When a Bluetooth headset is connected to this computer, it functions as a wireless microphone and speaker for an audio application, such as an Internet soft phone or Instant Messaging software.

Connect to a Bluetooth Headset

1. Make a Bluetooth headset discoverable. Refer to the manual that came with the headset for instructions about how to make the device discoverable.
2. Open **My Bluetooth Places** and discover the **Headset** device provided by the remote Bluetooth device. Then double-click the device to make the connection.
3. If the headset has a fixed PIN code and sends out a pairing request, type that PIN code in the **Bluetooth Security Code Request** window, and then click **OK**. Refer to the manual that came with the headset device for the PIN code.
4. Once the connection is established, you will be notified that the connection has been made.

Verifying Bluetooth Headset Installation

Once the Bluetooth headset is installed, it will automatically take over the function of microphone and speakers of your PC. To verify the installation, go to **Control Panel > Sounds and Audio Devices** (or **Sounds and Multimedia**) > **Audio**. Your Bluetooth audio device will be identified as **Bluetooth Hands-free Audio**, **Bluetooth Stereo Audio** or other name according to the device.



PIM Synchronization

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:

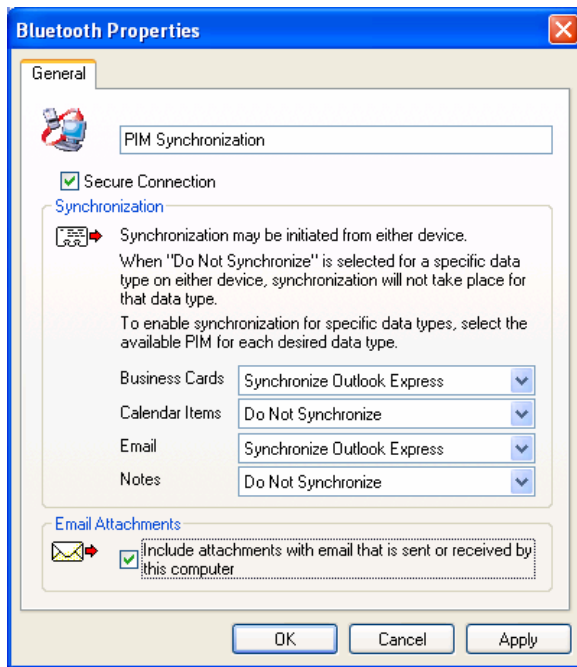
- Business cards
- Calendar items
- Email (with or without attachments)
- Notes

Configure PIM Synchronization

The **Bluetooth Configuration > Client Applications > PIM Synchronization > General** tab provides options to configure. Click the PIM you want to synchronize (if any) in each of the data type lists.

The data item types that can be synchronized are:

- Business cards
- Calendar items
- Email (with or without attachments-see below)
- Notes



To Synchronize the PIM Database

To synchronize the PIM database on this computer with the PIM database of another Bluetooth device:

1. Open **My Bluetooth Places** and discover the **PIM Synchronization** service provided by the remote Bluetooth computer. Then double-click the service to make the connection.
2. If pairing is required, type a PIN code exactly the same in the **Bluetooth Security Code Request** window on both computers, and then click **OK**.
3. On the remote computer, respond to the **Bluetooth Service Authorization** message to allow access the PIM Synchronization service.
4. You will get a message when synchronization is done.

Fax

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

1. Open **My Bluetooth Places** and discover the **Fax** service provided by the remote Bluetooth computer. Then double-click the service to make the connection.
2. Open or create the document to be faxed, and then select the **Print, Send to Fax Recipient** or a similar command that is available in most applications.

Note: The fax application needs to use the Bluetooth Fax Modem.

File Transfer

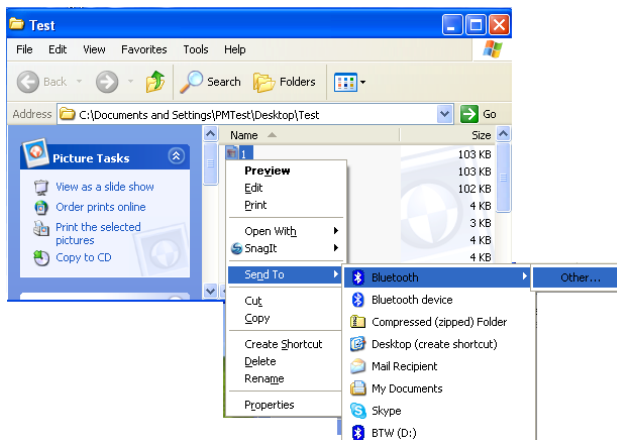
The Bluetooth File Transfer application allows this computer to access, send files to or copy files from another Bluetooth device.

Send Files on This Computer to Remote Bluetooth Device

To send files on this computer to another Bluetooth device:

Option 1

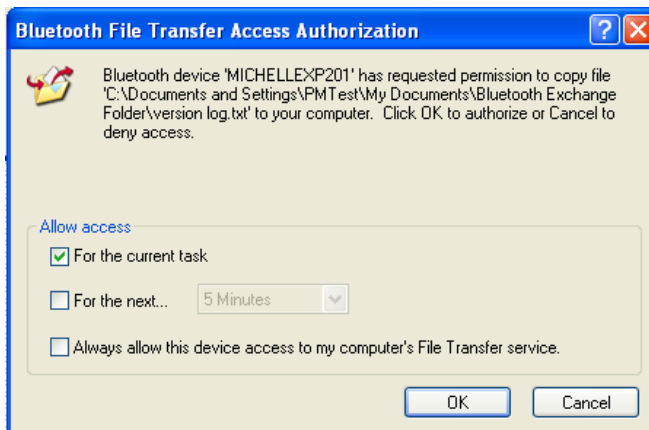
1. In Windows Explorer, open the folder where the file or folder you want to send is located.
2. Right-click the file or folder name, point to **Send To**, point to **Bluetooth**, and then click the name of the destination Bluetooth device.



Option 2

1. Open **My Bluetooth Places** and discover the **File Transfer** service on the destination Bluetooth device.
2. Double-click the **File Transfer** shortcut. The utility will open the **Bluetooth Exchange Folder** on the other Bluetooth device and get its file list.
3. You can now explore the **Bluetooth Exchange Folder** of the other Bluetooth device. Copy or drag-and-drop the file/folder to the desired location on the destination Bluetooth device.

Note: When you send folders to another Bluetooth device, if the **Secure Connection** property of the **File Transfer** service of the other Bluetooth device has been set, the operator of the other Bluetooth device must be available to allow access unless the **Always allow this device access to my computer's File Transfer service** check box in **Bluetooth File Transfer Authorization** is selected. Otherwise, the file transfer fails.



PIM Item Transfer

The Bluetooth PIM Item Transfer application allows this computer to send and receive Personal Information Manager items between this computer and other Bluetooth device.

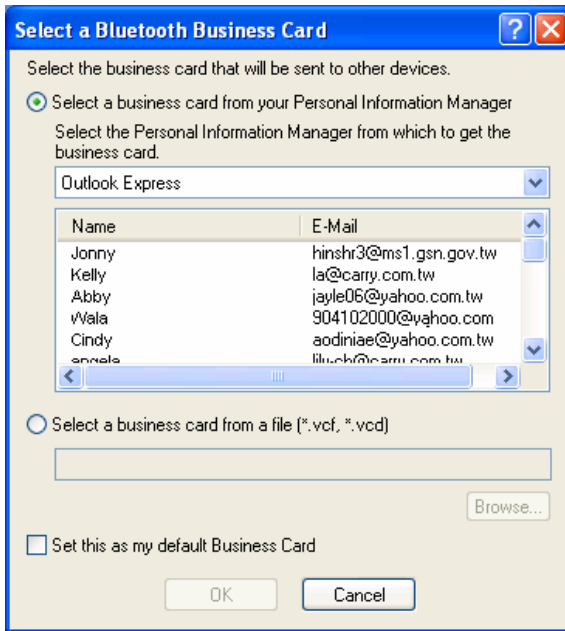
The supported items are:

- Business cards (*.vcf or *.vcd)
- Notes (*.vnt)
- Email (*.vmg) (with or without attachment)
- Calendar (*.vcs)

Electronic Business Cards Operations

To send a business card to remote Bluetooth device

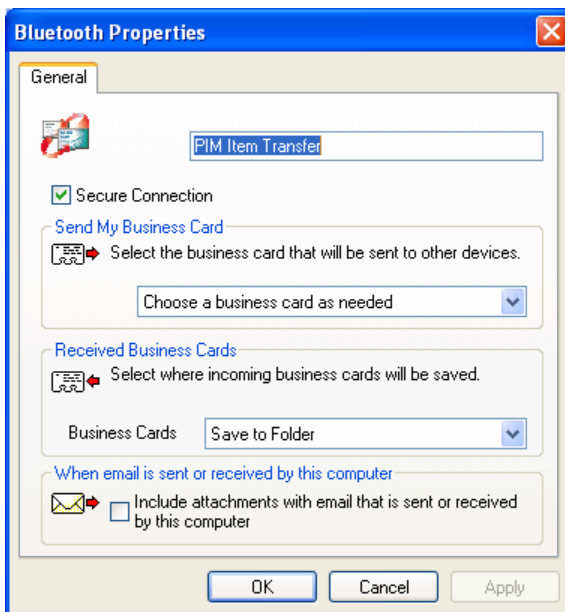
1. Double-click the **PIM Item Transfer** service on a remote device. This service is also referred to as Object Push Service on other Bluetooth device.
2. Select a business card that will be sent to other device.
3. On the remote computer, respond to the **Bluetooth Service Authorization** message to allow the transfer.



To configure business card settings

To configure which business card to send and where to store the received business card,

Go to **Bluetooth Configuration > Client Applications > PIM Item Transfer** to configure required settings.



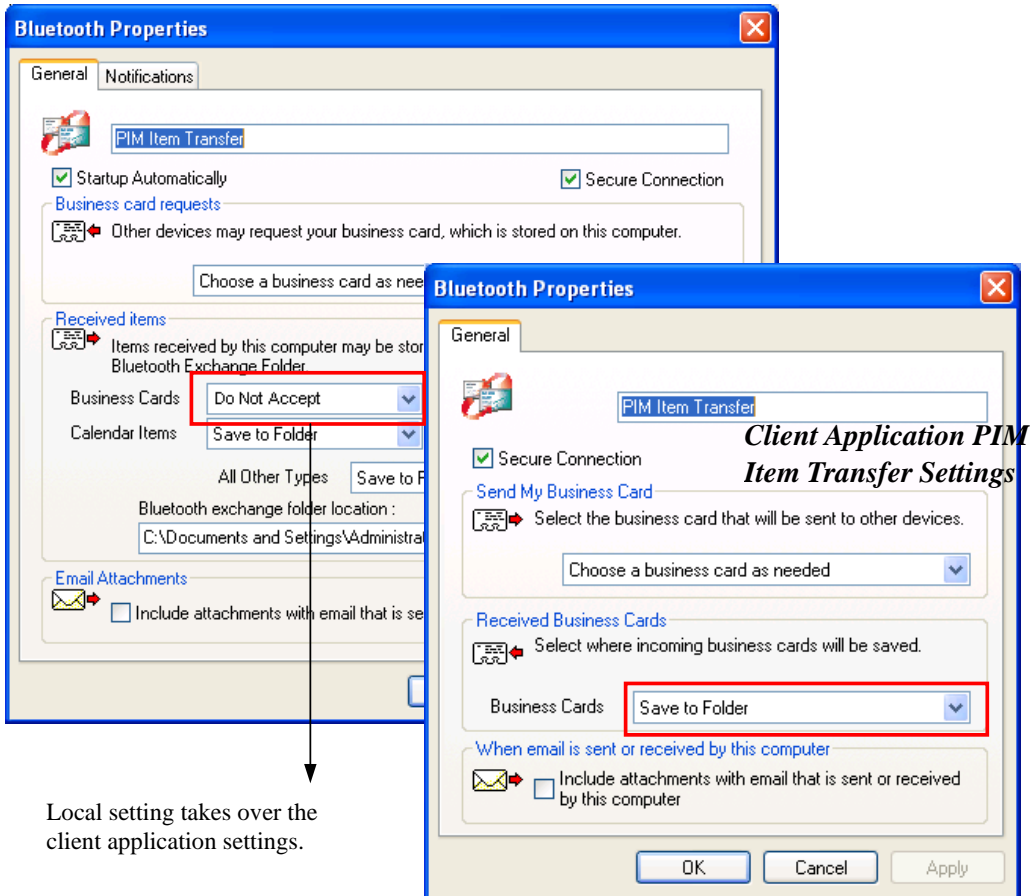
- **Secure Connection:** If the **Secure Connection** property is set on either device, the receiving party must be available to allow access when an access request is received. Otherwise, the PIM transfer fails.



- **Send My Business Card:** Specifies how your business card is handled when it is requested by a remote device.
- **Received Business Cards:** Specifies where to store received business cards.

Note: The selected **Received Business Cards** option is influenced by the local PIM Item Transfer settings. For example, if local setting is configured to **Do Not Accept** business cards, the sending request from remote Bluetooth device fails.

Local PIM Item Transfer Settings



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

To Send Notes, Emails and Calender Entries

To send note, email or calender, just select one or moer target items and then, from the **File** menu of the PIM (e.g., Outlook), select **Send to Bluetooth**. You can also drag-and-drop a supported item directly from your PIM to the PIM Item Transfer service icon of a remote device. Note that :

- 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.
- Not all choices are available for all items. For example, Note items can only be synchronized in Microsoft Outlook. Therefore Lotus Notes and Outlook Express are not displayed as options in the **Notes** item shortcut menu. Personal Information Managers that are not installed on this computer are not displayed as options in the shortcut menus.

Dial-up Networking

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 or log on to a remote network.

Open a connection to the **Dial-up Networking** service that is provided by another Bluetooth device, following the instructions in “Creating a Connection” on page 11.

After the Bluetooth dial-up networking connection is established, a virtual Bluetooth modem will be installed on your computer and a **BluetoothConnection** icon will be added to **Dial-up Connection** group. You can double-click the icon to make the connection.



The connection 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.

To close a dial-up networking connection, just go to **My Bluetooth Places**, right-click the service name and select **Disconnect**.

Network Access

The Bluetooth **Network Access** application allows this computer to join a Personal Area Networking (PAN) or Local Area Network (LAN). The type of network connection that is available is determined by the configuration of the remote Bluetooth device.

Joining a Personal Area Networking (PAN)

PAN provides ad hoc network between Bluetooth devices. If a remote Bluetooth device provides ad hoc network service, then you can connect to it by these steps:

1. Open **My Bluetooth Places** and discover the **Network Access** service provided by the remote Bluetooth device. Then double-click the service to make the connection.
2. On the remote Bluetooth device respond to the **Bluetooth Service Authorization** message to allow network access.
3. To establish the connection, Windows uses Automatic Private IP Addressing (APIPA) to assign addresses to the computers in an ad hoc network. You don't need to configure the TCP/IP networking.

To view the APIPA address, type `ipconfig` at a command prompt, and then press **ENTER**. You should get an output that is similar to the following on both of the Bluetooth devices:

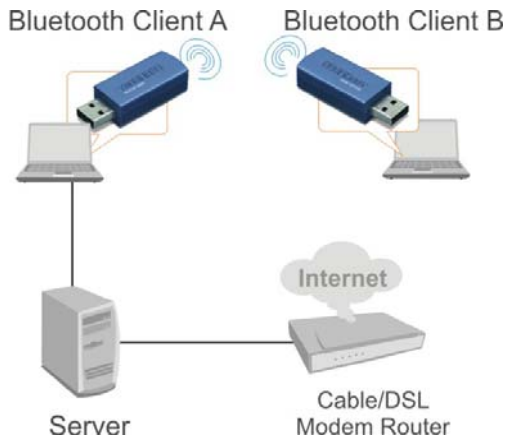
```
Ethernet adapter Local Area Connection:  
Connection-specific DNS Suffix . :  
Autoconfiguration IP Address . . : 169.254.125.34  
Subnet Mask . . . . . : 255.255.0.0  
Default Gateway . . . . . :
```

Once the connection is made, the computers on the same ad hoc network should be able to locate each other and use the network service such as file sharing.

Accessing LAN or Internet via Remote Computer

When a remote Bluetooth computer is connected to the Internet/LAN and configured to sharing that connection, your Bluetooth-enabled device can connect to the Internet/LAN using the remoter Bluetooth computer as the intermediary.

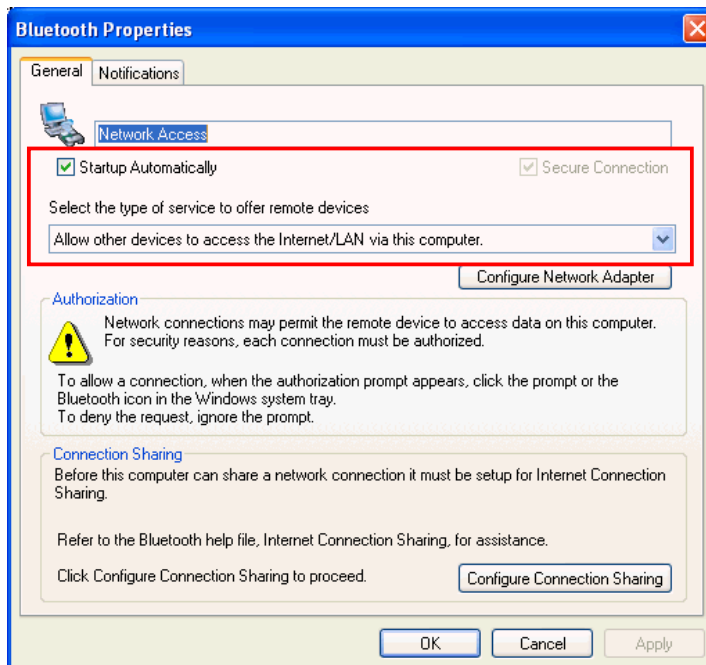
We will use the following example to describe the setup procedures:



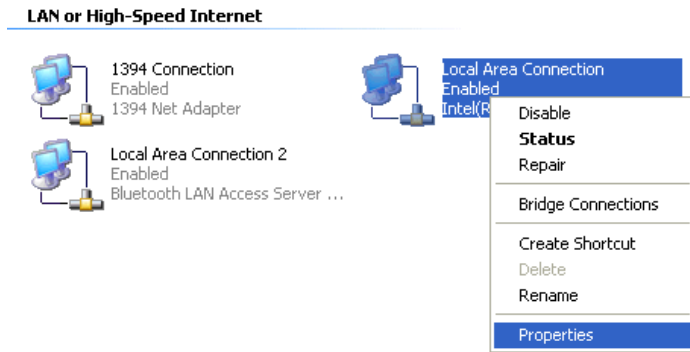
Example: BT Client A is physically connected to the Internet/LAN via a Ethernet network adapter. It's Bluetooth-enabled and connect to BT Client B over Bluetooth connection. BT Client B will use BT Client A as the intermediary to connect to the Internet/LAN.

BT Client A (The computer connected to the Internet/LAN)

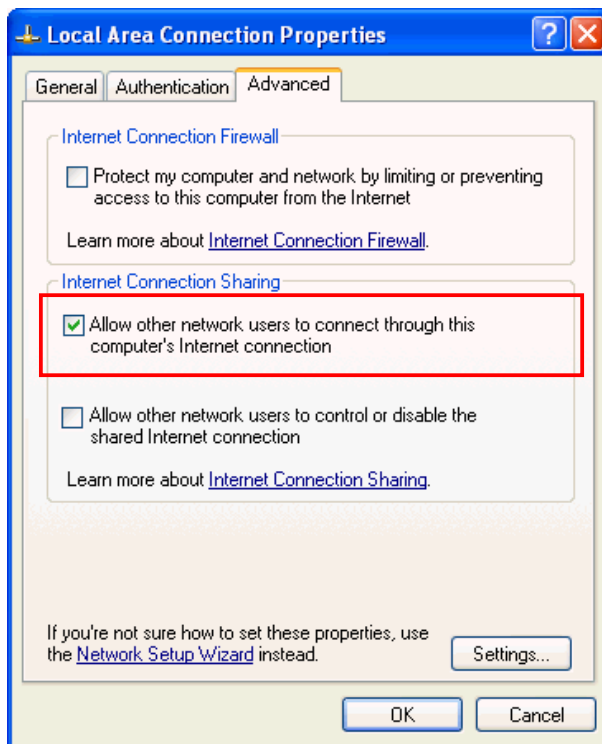
1. Go to **Bluetooth Configuration** panel > **Local Services** > **Network Access** > **Properties**..
2. Enable the **Startup Automatically** checkbox and select **Allow other devices to access the Internet/LAN via this computer** and click **OK**.



3. Go to **Network Connections**, right-click the network adapter that is connected to the Internet/LAN and select **Properties**.



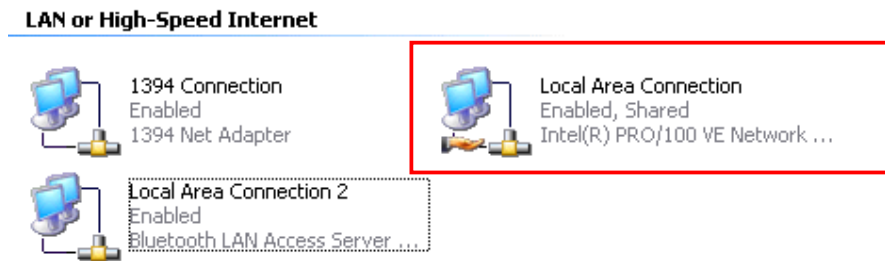
4. On the **Advanced** tab, enable the **Internet Connection Sharing** option as shown below and click **OK**.



5. When IP address prompt appears, just click **Yes**. This will automatically assign your Bluetooth adapter a virtual IP address.



- You will return to the **Network Connections** window and find a hand appended to the network connection icon.



To view the IP address of your Bluetooth network adapter (e.g., Local Area Connection 2), type `ipconfig` at a command prompt, and then press **ENTER**. You should get an output that is similar to the following:

```

Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . : test
Autoconfiguration IP Address . . : 10.0.128.24
Subnet Mask . . . . . : 255.255.0.0
Default Gateway . . . . . : 10.0.0.21

Ethernet adapter Local Area Connection 2:
Connection-specific DNS Suffix . :
Autoconfiguration IP Address . . : 192.168.0.1
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
  
```

The first block of output is annotated with a blue bracket and the text: "The network adapter that connects to the Internet/LAN."

The second block of output is annotated with a blue bracket and the text: "The Bluetooth network adapter."

BT Client B (The computer connected to Client A via Bluetooth)

Providing that Bluetooth Client B is using Windows 2000:

- Open **My Bluetooth Places** and discover the **Network Acces** service provided by the remote Bluetooth device. Then double-click the service to make the connection.



2. On the remote Bluetooth device (i.e. Client A in our example) respond to the **Bluetooth Service Authorization** message to allow network access.



3. Wait a moment for the connection to be made.

The Bluetooth network adapter will be automatically assigned an IP address. To view the assignment, type `ipconfig` at a command prompt, and then press **ENTER**. You should get an output that is similar to the following on both of the Bluetooth devices:

```
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
Autoconfiguration IP Address . . : 192.168.0.190
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.0.1
```

→ The IP address of Bluetooth adapter on Client A

If you want to enable Internet Connection Sharing (ICS) on Windows 98SE, ME, you should run the Network Setup Wizard from the CD or floppy disk. As this manual only describes a very typical connection method, actual connection method varies according to your network environment and a computer's operation system. For more information please refer to Windows online help or your network administrator.

Bluetooth Serial Port

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.

To establish a virtual serial port connection between this computer and another Bluetooth device:

1. Open **My Bluetooth Places** and discover the **Serial Port** service on the destination Bluetooth device.
2. Double-click the **Serial Port** shortcut to make the connection.
3. If secure option is enabled, the operator of the other Bluetooth device must be available to respond to any authorization requests.
4. You will be prompted of the COM port name that is associated with the connection. Now you can configure programs to use that port.

Bluetooth Human Interface Device

The Bluetooth Human Interface Device application allows this computer to use a Bluetooth keyboard, mouse, or other human interface device

1. Verify that the keyboard, mouse or other human interface device (HID) contains batteries, that the batteries are inserted properly and are fully charged, and that you know where the Connect button is to make the device discoverable.
2. Open **My Bluetooth Places** and discover the HID.
3. Double-click the **HID** shortcut to make the connection.
4. If the HID is a keyboard, using the keyboard, type the Bluetooth security code that is in the Bluetooth security code box, and then press **ENTER**.

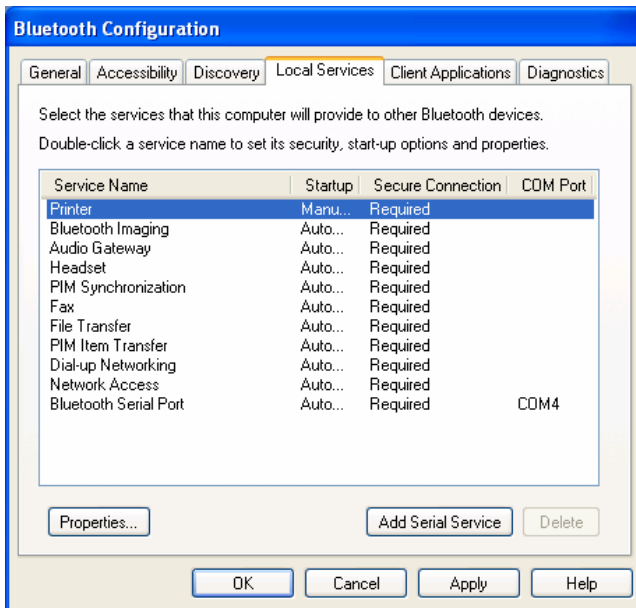
-or-

If the HID is a Bluetooth mouse or other Bluetooth pointing device, use the Bluetooth mouse or other Bluetooth pointing device to click **Click here** if confirmation is required.

You can now use the Bluetooth HID.

7. Providing Local Service

Local services are the services that your Bluetooth-enabled computer provides to other Bluetooth devices. Your computer can offer one or more services, which can be configured via the **Local Services** tab in the **Bluetooth Configuration** panel.



Common Configuration Settings

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.

Printer

The Printer service allows other Bluetooth devices to use a printer that is physically connected to your computer.

To provide this service, the local printer should be physically connected to this computer by a USB or parallel cable, is set as the default printer and is turned on.

Note if the secure connection property for the printer has been set on either computer, the operators of both computers must be available to allow access and to supply the Bluetooth security code when requested. Thereafter, access is granted automatically and it is not necessary to supply the security code.

Bluetooth Image Transfer

The Bluetooth image transfer service allows this computer to **accept** images from remote devices that support Bluetooth image transfer.

The supported image formats are:

- BMP
- GIF
- PNG
- JPG

Received images are stored in **My Documents > Bluetooth Exchange Folder**.

Audio Gateway/Headset

The Audio Gateway/Headset service redirects this computer's audio to another Bluetooth device. For example, if this computer is connected to a Bluetooth audio device and other computer is connected to this computer's audio gateway service, the audio is directed to the Bluetooth audio device.

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

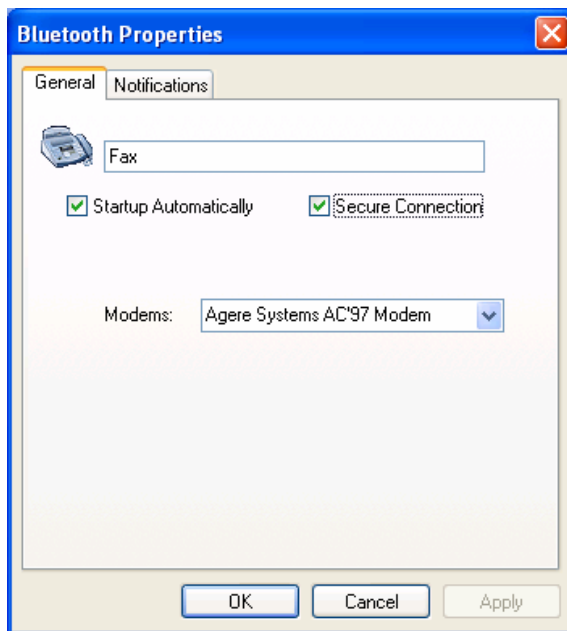
Whether an individual item is accepted and where it is stored, after it is accepted, is configured in the **PIM Item Transfer** service. If that service is not configured to store a particular data type in Outlook, then that data type cannot be synchronized.

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 not be displayed the next time synchronization takes place.

Fax

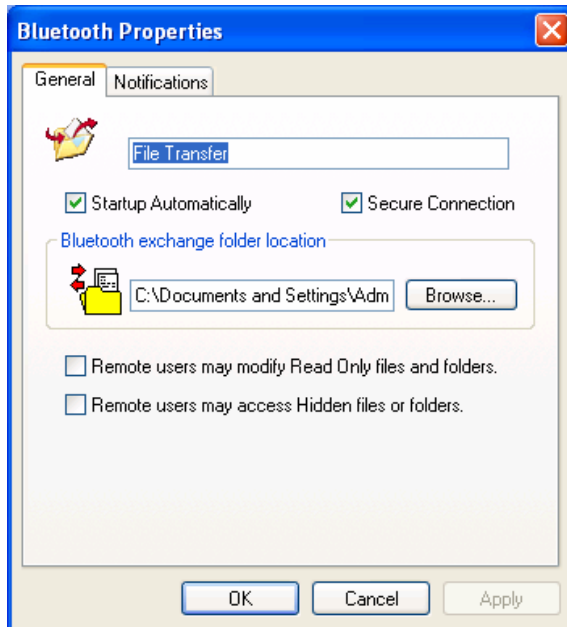
The Fax service allows other Bluetooth device to use this computer's Fax modem to send a fax. To provide this service, your computer must be physically connected to a modem offering fax function.



File Transfer

The File Transfer service allows other Bluetooth devices to explore this computer's Bluetooth exchange folder and send files to or copy from that folder.

To configure your local file transfer service, go to **Bluetooth Configuration > Local Services > File Transfer**. Here you can specify your default exchange folder location and remote user access permissions.



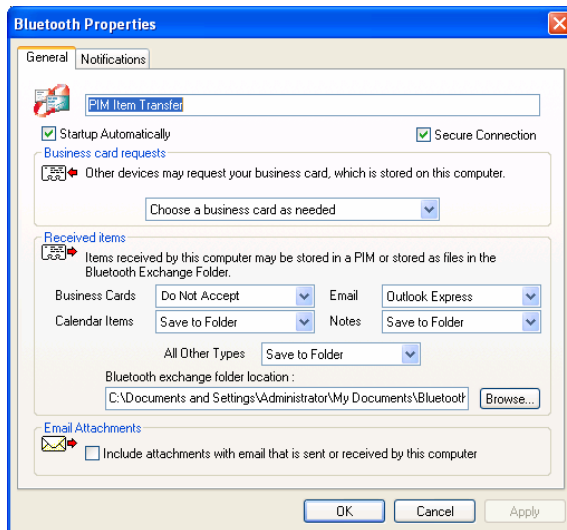
Note: If you set the **Secure Connection** property of the **File Transfer** service of this computer, you must be available to respond to the **Bluetooth Security Code Request** sent by the other device when the other device initially attempts to connect to this computer. Otherwise, the pairing process fails. After the two device are paired, the other device can access the files on this computer without having to obtain access permissions.

PIM Item Transfer

The PIM Item Transfer service allows to exchanges Personal Information Manager items between this computer and other Bluetooth devices.

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

- How business card requests are handled.
- Where to store inbound data items, on an individual basis.
- Whether to send/receive attachments with email.



Dial-Up Networking

The Dial-Up Networking service allows other Bluetooth devices to use this computer's modem to access the Internet or a remote network. To provide this service, your computer must be physically connected to a modem offering fax function.

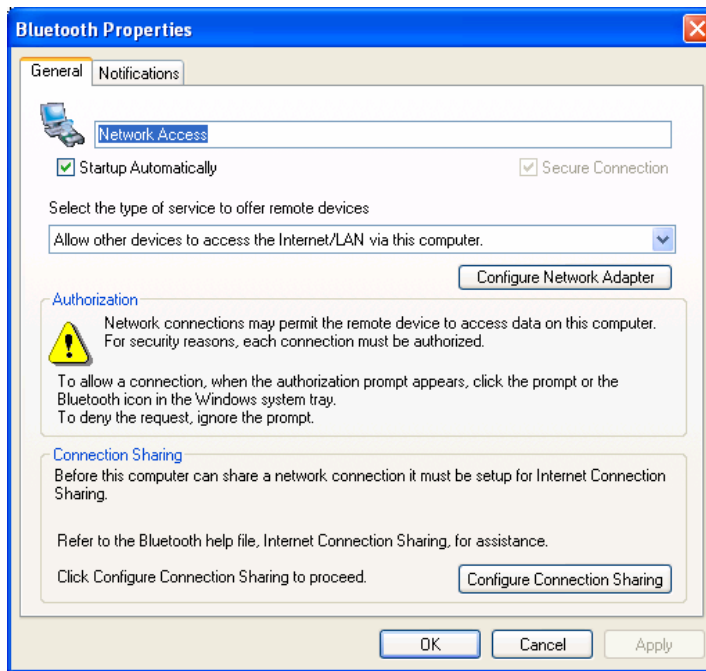
Network Access

The **Network Access** service allows other Bluetooth devices to:

- Create a personal area network (PAN) with this computer. To provide a PAN service, select **Allow other devices to create a private network with this computer** from the drop down list. Windows will use Automatic Private IP Addressing (APIPA) to assign addresses to the computers in an ad hoc network. You don't need to configure the TCP/IP networking.

-or-

- Access the Internet/LAN through this computer. To provide this function, select **Allow other devices to access the Internet/LAN via this computer** from the drop down list. In addition, this computer must be configured to share the Internet connection. For more information, refer to the "Accessing LAN or Internet via Remote Computer" section on page 38.

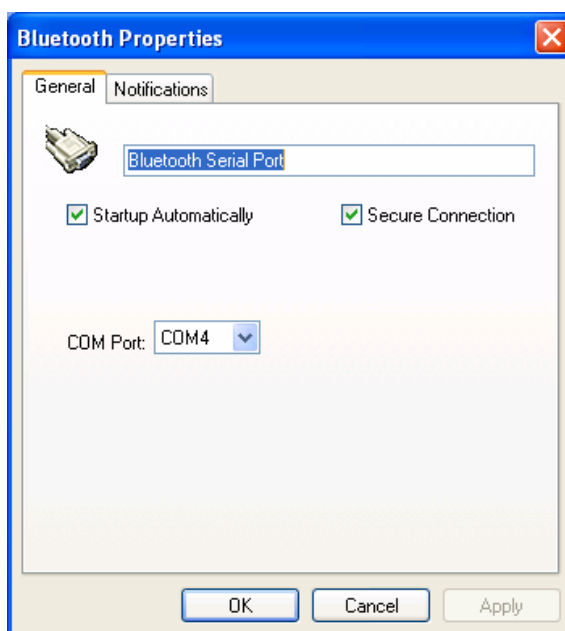


Bluetooth Serial Port

The Bluetooth Serial Port service allows other Bluetooth devices to establish a wireless serial connection with this computer.

In addition to the configuration options common to all Bluetooth services, this service also has setting for specifying a COM port.

Note: Unless you have a specific reason to do so, DO NOT CHANGE the default COM port setting.



8. Troubleshooting

Q1: Windows is unable to recognize my hardware. What should I do?

A1: First, make sure your computer meets the minimum requirements as specified in Section 1 of this quick installation guide. Second, you must install the Bluetooth utility **BEFORE** you physically install your Bluetooth Adapter. Third, plug the adapter into a different USB slot.

Q2: The Bluetooth software is unable to detect my Bluetooth-enabled device. What should I do?

A2: First, disable any software firewall programs such as ZoneAlarm or Norton Internet Security. If you have Windows XP installed on your computer, make sure to disable the built-in XP firewall. Second, make sure Bluetooth device is powered on.

Q3: I cannot pair my Bluetooth device to the TBW-101UB/TBW-102UB USB Adapter. What should I do?

A3: First, make sure that Bluetooth device is powered on. Second, make sure that your Bluetooth device is in pairing mode. Third, make sure to put in the same **Bluetooth security code** on both devices.

Q4: I am not receiving 3Mbps data rate through the adapter. What should I do?

A4: In order to get the full data rate, your Bluetooth device must support Bluetooth v2.0 with Enhanced Data Rate (EDR)

9. Specifications

Item	Description
Interface	USB 1.1 compliant A type female connector
Supported OS	Windows XP, 2000, ME and 98SE
Frequency Band	2.400–2.4835 GHz
Spread Spectrum	Frequency hopping spread spectrum (FHSS)
Data Rate	3 Mbit/s, 2 Mbit/s (EDR) and 1 Mbit/s
Transmission Power	TBW-101UB 3 dBm typical, Power Class 2 with dynamic power control TBW-102UB 12 dBm typical, Power Class 1 with dynamic power control
Receive Sensitivity	–80 dBm maximum
Antenna	PCB antenna
Operating Range	TBW-101UB: 10 meters TBW-102UB: 100 meters
Operating Temperature	0°C to 55°C
Operating Humidity	95% maximum (no condensing allowed)
Storage Temperature	–20°C to 85°C
Security	8~128-bit encryption
Standard	Bluetooth v2.0 + EDR
Compliance	FCC, CE, BQB

*Specifications are subject to change without notice.

Limited Warranty

TRENDnet warrants its products against defects in material and workmanship, under normal use and service, for the following lengths of time from the date of purchase.

TBW-101UB / TBW-102UB - 2 Years Warranty

If a product does not operate as warranted above during the applicable warranty period, TRENDnet shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product. All products that are replaced will become the property of TRENDnet. Replacement products may be new or reconditioned.

TRENDnet shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to TRENDnet pursuant to any warranty.

There are no user serviceable parts inside the product. Do not remove or attempt to service the product by any unauthorized service center. This warranty is voided if (i) the product has been modified or repaired by any unauthorized service center, (ii) the product was subject to accident, abuse, or improper use (iii) the product was subject to conditions more severe than those specified in the manual.

Warranty service may be obtained by contacting TRENDnet office within the applicable warranty period for a Return Material Authorization (RMA) number, accompanied by a copy of the dated proof of the purchase. Products returned to TRENDnet must be pre-authorized by TRENDnet with RMA number marked on the outside of the package, and sent prepaid, insured and packaged appropriately for safe shipment.

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Governing Law: This Limited Warranty shall be governed by the laws of the state of California.

AC/DC Power Adapter, Cooling Fan, and Power Supply carry - 1 Year Warranty



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Please take a moment to register your product online.

Go to TRENDnet's website at <http://www.trendnet.com>

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