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Bluetooth® Adapter User Guide, Model: BCM92035NMD

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NOTE: Unless otherwise stated, all instructions begin from **My Bluetooth Places** with folder options set to **Show common tasks in folders**. To go to **My Bluetooth Places**, double-click the Bluetooth icon  in the taskbar notification area (system tray). See also [Accessing My Bluetooth Places](#) for more detailed information.

Things You Can Do Wirelessly with Your Bluetooth Wireless Technology Enabled Computer

With your Bluetooth wireless technology enabled computer you can connect to other Bluetooth wireless devices and other Bluetooth wireless devices can connect to this computer to exchange files and share resources. This computer and other Bluetooth wireless devices must be within range of each other to be able to connect. The specific things you can do wirelessly include:

[Use the microphone and speakers of a remote device on this computer](#)

[Let a remote device use this computer's speakers and microphones](#)

[Establish a virtual serial port connection between this computer and a remote Bluetooth device](#)

[Connect to the Internet using a Bluetooth enabled telephone, modem, or other remote Bluetooth device that offers the dial-up networking service](#)

[Use the fax capabilities of a Bluetooth enabled telephone, modem, or other remote Bluetooth device that offers the fax service](#)

[Access files, folders, and subfolders in a specific folder on a remote Bluetooth device from this computer](#)

[Replace this computer's speakers and microphone with a Bluetooth headset](#)

[Use a Bluetooth enabled mouse, keyboard, or other human interface device](#)

[Make a network connection to a remote device or to a Local Area Network \(LAN\) using the network connection of the remote device](#)

[Exchange electronic business cards with a remote device and to send other Personal Information Manager \(PIM\) items such as calendar items, contacts, notes, and messages to the remote device](#)

[Synchronize this computer's PIM database with the PIM database on a remote device](#)

[Add a Bluetooth printer to your list of available printers](#)

Getting Started

Determine the Status of This Computer's Bluetooth Wireless Device

The status of the Bluetooth wireless device on this computer is indicated by the appearance of the Bluetooth wireless technology icon in the taskbar notification area (system tray).



A white-on-blue icon indicates that the Bluetooth radio is enabled.



A red-on-blue icon indicates that the Bluetooth radio is disabled.



A green-on-blue icon indicates that the Bluetooth device on this computer is connected to a remote Bluetooth device.

If the Bluetooth icon is not white-on-blue , enable the radio. To enable the Bluetooth radio, right-click the Bluetooth icon  and click **Enable Bluetooth Radio**.

The properties of the Bluetooth wireless device on this computer are set during installation. These default settings should be appropriate for most of the items listed in [Things You Can Do Wirelessly with Your Bluetooth Wireless Technology Enabled Computer](#). If the Bluetooth radio is enabled, you are ready to [Start Using Bluetooth](#).

Start Using Bluetooth



NOTE: Unless otherwise stated, all instructions begin from **My Bluetooth Places** (in the Windows XP environment set **Folder Options** to **Show common tasks in folders**). To go to **My Bluetooth Places**, double-click the Bluetooth icon  in the taskbar notification area (system tray).

Audio Gateway

To use the microphone and speakers of a remote device on this computer

From the remote device, establish an audio gateway connection with this computer (for instructions, refer to the user guide for the remote device).

To let a remote device use this computer's speakers and microphones

1. From this computer, click (Windows XP) or double-click (Windows 2000) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Audio Gateway** in the **Bluetooth Service Selection** list, and then click **Next**.

4. In **Bluetooth Device Selection**, click the name of the device you want to let use this computer's speakers and microphone, and then click **Next**.



NOTE: If the device you are looking for is not an audio device, click **Show all devices** in the list to the right of **Search Again**.

5. Click **Finish**.

To disconnect the audio gateway connection

1. From this computer, click **Search for devices in range**.
2. Right-click the device you established an audio gateway connection with and click **Disconnect Audio Gateway**.

Bluetooth Serial Port

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

1. From this computer, click (Windows XP) or double-click (Windows 2000) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Bluetooth Serial Port** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Click **Finish**.
6. Respond to the **Bluetooth PIN Code Required** message and **Bluetooth PIN Code Request** that appear on both this computer and the remote device (see [Responding to a Bluetooth PIN Code Request](#)). Note the COM port name that is associated with the connection and configure applications to use that port.



NOTE: Unless you have a specific reason to do so, do not change the default COM port setting.

To disconnect the virtual serial port connection between this computer and a remote Bluetooth device

1. From this computer, click **Search for devices in range**.
2. Right-click the device you established a wireless serial connection with and click **Disconnect Bluetooth Serial Port**.

Dial-up Networking

If this computer is physically connected to a modem and you want to allow remote Bluetooth devices to use the modem to access the Internet or log on to a remote server, configure the **Dial-up Networking** service on this computer (see [Local Services Settings](#) in **Bluetooth Tasks**).

To connect to the Internet using a Bluetooth enabled telephone, modem, or other remote Bluetooth device that offers the dial-up networking service

1. From this computer, click (Windows XP) or double-click (Windows 2000) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Dial-up Networking** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.

5. Click **Finish**.
6. Respond to the **Bluetooth PIN Code Required** message and **Bluetooth PIN Code Request** that appear on both this computer and the remote device (see [Responding to a Bluetooth PIN Code Request](#)).



NOTE: Unless you have a specific reason to do so, do not change the default Bluetooth device or alter its configuration.

To disconnect the dial-up networking connection

1. From this computer, click **Search for devices in range**.
2. Right-click the device you established a dial-up networking connection with and click **Disconnect Dial-up Networking**.

Fax

If this computer is physically connected to a modem and you want to allow remote Bluetooth devices to use the modem to send faxes, configure the **Fax** service on this computer (see [Local Services Settings](#) in **Bluetooth Tasks**).

To use the fax capabilities of a Bluetooth enabled telephone, modem, or other remote Bluetooth device that offers the fax service

1. From this computer, click (Windows XP) or double-click (Windows 2000) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Fax** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Click **Finish**.
6. Respond to the **Bluetooth PIN Code Required** message and **Bluetooth PIN Code Request** that appear on both this computer and the remote device (see [Responding to a Bluetooth PIN Code Request](#)).

To disconnect the fax connection

1. From this computer, click **Search for devices in range**.
2. Right-click the device you established a fax connection with and click **Disconnect Fax**.

File Transfer

To access files, folders, and subfolders in a specific folder on a remote Bluetooth device from this computer



NOTE: Before proceeding, verify that the **File Transfer** service is enabled on the remote device, the **File Transfer** application has been configured on this computer, and that the two devices have been paired. If **Public Folder** is not available, the remote device is not configured for remote file operations.

1. If the **Folders** pane is not visible in **My Bluetooth Places**, (if it is visible, skip to step 2), click **Folders** on the **Explorer** bar.



NOTE: Perform the following steps from the **Folders** pane.

2. Click **Entire Bluetooth Neighborhood**.
3. From the **Bluetooth** menu, click **Search for Devices**.
4. Click **Entire Bluetooth Neighborhood** to view all of the Bluetooth devices within range.
5. Click (or double-click, as necessary) the device name of the remote device with the File Transfer folder you want to perform file operations on.
6. Click the **File Transfer** folder of the remote device.
7. Perform the desired file operations on the contents of the **File Transfer** folder:
 - Drag files or folders from the **File Transfer** folder to any other available location on this computer (copies files or folders to the specified location).
 - Drag files or folders from any available location on this computer to the **File Transfer** folder (copies files or folders to the **Bluetooth Exchange Folder** of the remote device).
 - Right-click the file or folder and click **Open**, **Print**, **Send To**, **Cut**, **Copy**, **Delete**, or **Properties** as desired (**Send To Bluetooth Exchange Folder** copies the file or folder to this computer's **Bluetooth Exchange Folder**; **Cut** or **Delete** operations have no effect on the **Bluetooth Exchange Folder** of the remote device).



NOTE: If **Secure Connection** has been enabled for **File Transfer**, you (or the remote device operator) must respond to requests for FTP file access permissions on both the remote device and this computer.

Headset

To replace this computer's speakers and microphone with a Bluetooth headset

1. From this computer, click (or double-click, as necessary) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Headset** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Click **Finish**.



NOTE: Most Bluetooth headsets ring when a connection is attempted; answer the ring to complete the connection.

To disconnect the headset

1. From this computer, click **Search for devices in range**.
2. Right-click the device you established a headset connection with and click **Disconnect Headset**.

Human Interface Device (HID)

To use a Bluetooth enabled mouse, keyboard, or other human interface device

1. From this computer, click (or double-click, as necessary) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Human Interface Device** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Click **Finish**.
6. Respond to any **Bluetooth PIN Code Required** message and **Bluetooth PIN Code Request** that appear on this computer (see [Responding to a Bluetooth PIN Code Request](#)).



NOTES:

1. Some HID devices have multiple modes. Before establishing a connection, be sure that the HID is in the desired mode. For example, in the case of an HID that can function as both a mouse and a laser pointer, be sure the mode switch is set to **Mouse** before attempting to connect.
2. The HID connection persists after the initial HID connection is established. If the computer is restarted or shut down and turned on again, the connection is automatically reestablished.
3. HID devices usually have a button (the button is sometimes difficult to find) that must be pressed before other Bluetooth devices can locate the HID. Even after the button is pressed, the HID can only be discovered for a limited time, and then the button must be pressed again. The time period can be as short as 30 seconds or as long as 180 seconds. Be sure to read the documentation that accompanies the HID before you attempt to connect to the device.
4. Under normal circumstances, there is no reason to close an HID connection. If, for some reason, the connection must be closed, open **My Bluetooth Places**, right-click the service name, and click **Disconnect**. When an HID connection is closed manually in this way, the persistence of the connection is broken. To reestablish a persistent connection, reestablish the connection.

Network Access

To make a network connection to a remote device or to a Local Area Network (LAN) using the network connection of the remote device

1. From this computer, click (or double-click, as necessary) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Network Access** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Respond to the **Bluetooth PIN Code Required** message and **Bluetooth PIN Code Request** that appear on both this computer and the remote device (see [Responding to a Bluetooth PIN Code Request](#)).

To disconnect the network connection

1. From this computer, click **Search for devices in range**.
2. Right-click the device you established a network connection with and click **Disconnect Network Access**.

PIM Item Transfer



NOTE: The selected **Received Business Cards** option does not influence the settings on other PIM-related property pages.

To exchange electronic business cards with a remote device and to send other Personal Information Manager (PIM) items such as calendar items, contacts, notes, and messages to the remote device

1. From this computer, click (or double-click, as necessary) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **PIM Item Transfer** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Click **Finish**.

6. In **My Bluetooth Places**, right-click **PIM Item Transfer** and click **Receive Business Card**, **Send Business Card**, **Exchange Business Cards**, **Status**, **Copy**, **Paste**, or **Properties** as desired, and follow the on-screen instructions (if any).

PIM Synchronization



NOTES:

1. If synchronization is available for a specific item type but not enabled on the remote device, synchronization *will not happen* for that item.
2. All choices are not available for all items. For example **Note** items can be synchronized only in Microsoft Outlook. Therefore, Lotus Notes and Outlook Express do not appear as choices on the **Notes** item menu.
3. Personal Information Managers that are not installed on this computer do not appear as choices on the menus.

To synchronize this computer's PIM database with the PIM database on a remote device

1. From this computer, click (or double-click, as necessary) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **PIM Item Transfer** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Click **Finish**.
6. In **My Bluetooth Places**, right-click the remote device you want to synchronize this computer's PIM database with and click **Start PIM Synchronization**.

Printer

To add a Bluetooth printer to your list of available printers

1. From this computer, click (or double-click, as necessary) **Bluetooth Setup Wizard**.
2. Click **I know the service I want to use and I want to find a Bluetooth device that provides that service**, and then click **Next**.
3. Click **Printer** in the **Bluetooth Service Selection** list, and then click **Next**.
4. In **Bluetooth Device Selection**, click the name of the device you want to connect with, and then click **Next**.
5. Click **Finish**.
6. Follow the instructions provided by the **Add Printer Wizard**.

Send Data to a Bluetooth Device

This feature is used to send data directly from Windows Explorer, Microsoft Office applications, Microsoft Outlook items, and Microsoft Internet Explorer to another Bluetooth device. Data types include:

- Files from Windows Explorer
- Documents from Microsoft Office applications
 - Word
 - Excel
 - Access
 - PowerPoint
- Microsoft Outlook items
 - Contacts

- Appointments
- Tasks
- Messages
- Notes
- Microsoft Internet Explorer
 - Entire web pages
 - Individual images

To send data from Windows Explorer, Microsoft Office, or Microsoft Outlook

1. In the application:
 - A. **Windows Explorer**. Select one or more files (folders cannot be transferred).
 - B. **Microsoft Office**. Select a document (only the document in the active window can be transferred).
 - C. **Microsoft Outlook**. Select one or more items.
2. From the **File** menu, click **Send To Bluetooth** or point to **Send To** and then to **Bluetooth**, as appropriate.
3. Click the name of the device to send the data to
or
Click **Other**, click the device from the list, and then click **OK** to send the data.

To send a Web Page from Microsoft Internet Explorer

1. From the **Tools** menu, click **Send To Bluetooth**.
2. In **Select Device**, click the device name, and then click **OK**.

To send a selected image from Microsoft Internet Explorer

1. Right-click the image to be transferred and click **Send To Bluetooth**.
2. In **Select Device**, click the device name, and then click **OK**.

How Bluetooth Wireless Technology Works

Each Bluetooth wireless technology enabled device usually has both a Bluetooth service and a corresponding Bluetooth application. Bluetooth services and applications usually have coinciding names. For example, there is a Bluetooth Fax service and a Bluetooth Fax application.

Bluetooth Services are services that this computer provides to remote Bluetooth devices. **Bluetooth Applications** are software applications on this computer that allow this computer to use the Bluetooth services that are provided by remote Bluetooth devices. Some Bluetooth applications provide full functionality for a specific task, such as locating other Bluetooth devices or synchronizing two Personal Information Managers. Other Bluetooth applications provide a way for standard Windows applications to accomplish some tasks wirelessly. For example, a Bluetooth application may create a wireless serial connection between computers or provide wireless access to the Internet. The Bluetooth applications on this computer are listed on the [Client Applications](#) tab in **Bluetooth Configuration**.

The services that your Bluetooth enabled computer can provide to other Bluetooth devices include:

Audio Gateway (allows a remote Bluetooth device to replace this computer's speakers and microphone)

Bluetooth Serial Port (allows a remote Bluetooth device to establish a virtual serial port connection with this computer)

Dial-up Networking (allows a remote Bluetooth device to use a modem on this computer to access the Internet or another computer)

Fax (allows a remote Bluetooth device to use this computer's fax modem to send faxes)

File Transfer (allows a remote Bluetooth device to access files, folders, and subfolders in a specific folder (Bluetooth Exchange Folder) on this computer)

Headset (allows a Bluetooth headset to be used as the audio input/output mechanism for this computer)

Network Access (allows a remote Bluetooth device to make a network connection to this computer or to connect to a Local Area Network using this computer's network connection)

PIM Item Transfer (allows a remote Bluetooth device to exchange electronic business cards and other Personal Information Manager (PIM) items with this computer)

PIM Synchronization (allows a remote Bluetooth device to synchronize a Personal Information Manager (PIM) database with the PIM database on this computer)

A list of these services can be seen by clicking **View My Bluetooth services** (Windows XP) or double-clicking **My Device** (Windows 2000). These services are also listed on the [Local Services](#) tab of **Bluetooth Configuration**.

Not all Bluetooth servers necessarily provide all of these services. For example, network gateways may provide only the **Network Access** service. To see which services are enabled by this computer, click (or double-click, as necessary) **Bluetooth Setup Wizard**, click **I want to configure the Bluetooth services that this computer will provide to remote devices**, and then click **Next**. Services that are enabled are indicated by a check mark in the check box next to each service name in **Bluetooth Service Selection**.

Some Bluetooth services are hardware dependent; for example this computer cannot provide the fax service unless it has a physical fax modem. Some Bluetooth services, such as the **Bluetooth Serial Port**, use *virtual hardware*. As such, a physical port on this computer is not required. Instead, virtual serial ports are created 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 the computer starts and the **Bluetooth Adapter** is inserted into the USB port. Each service can be set up to require security measures before allowing a remote Bluetooth wireless device to connect. See [View or Modify Configuration](#) in **Bluetooth Tasks**.

In general, using Bluetooth services provided by other devices on this computer involves the following steps:

1. Finding a remote device that has the service you want to use. See [View Devices in Range](#) and [Bluetooth Setup Wizard](#) in **Bluetooth Tasks**.
2. Pairing this computer with the remote device (if a secure connection is desired or required). See [Establish Pairing](#) in **Bluetooth Tasks**.
3. Discovering the service on the remote device. See [Discover Services](#) in **Bluetooth Tasks**.
4. Connecting the service on this computer to the service on the remote device. See [Making a Connection](#) in **Bluetooth Tasks**.



NOTE: You must establish a connection with a remote device before you can use a service provided by that device. Devices that configured for **Secure Connection**, however, must be paired before a connection can be made. This is done automatically. To manually pair a device with this computer see [Establish Pairing](#) in **Bluetooth Tasks**.

The applications that your Bluetooth enabled computer has available include:

Audio Gateway (allows you to let a remote device use this computer's speakers and microphone)

Bluetooth Serial Port (allows you to establish a virtual serial port connection with a remote device)

Dial-up Networking (allows you to use the modem on a remote device to access the Internet or another computer)

Fax (allows you to use the fax modem on a remote device to send faxes)

File Transfer (allows you to access files, folders, and subfolders in a specific folder on a remote device)

Headset (allows you to replace this computer's speakers and microphone with a remote device)

Human Interface Device (allows you to use one or more Bluetooth HID (mouse, keyboard, and so on))

Network Access (allows you to make a network connection to a remote device or to a local area network (LAN) using the network connection of the remote device)

PIM Item Transfer (allows you to exchange electronic business cards with a remote device and to send other Personal Information Manager (PIM) items such as calendar items, contacts, notes, and messages to the remote device)

PIM Synchronization (allows you to synchronize this computer's PIM database with the PIM database on a remote device)

Printer (allows you to use a Bluetooth printer)

Basic Bluetooth Operations

Basic Bluetooth operations include:

[Accessing My Bluetooth Places](#)

[Setting the Properties of This Computer's Bluetooth Services](#)

[Specifying How This Computer Accesses Services on Other Bluetooth Devices](#)

[Setting Bluetooth Devices To Be Discoverable](#)

[Making a Connection](#)

[Responding to a Bluetooth PIN Code Request](#)

[Using Bluetooth Exchange Folder](#)

[Using Quick Connect to Access Services of Other Devices](#)

[Viewing the Status of Bluetooth Devices and the Services They Provide](#)

[Enabling/Disabling the Bluetooth Radio](#)

For more detailed information about Bluetooth operations, see [Bluetooth Tasks](#).

Accessing My Bluetooth Places

During the setup of the **Bluetooth/SD Reader Adapter**, the **My Bluetooth Places** folder is placed in **My Computer**, and a Bluetooth icon  is placed in the taskbar notification area (system tray). Go to **My Bluetooth Places** by double-clicking the **My Bluetooth** icon  in any of these locations. **My Bluetooth Places** provides fast access to most Bluetooth

operations. Go to **My Bluetooth Places** to configure this computer's Bluetooth capabilities and to discover and use the services of remote Bluetooth devices.

From **My Bluetooth Places** you can perform the following Bluetooth tasks:

Windows XP Environment

- Use **Bluetooth Setup Wizard** (use to configure devices, connections, and local services). See also [Bluetooth Setup Wizard](#) in **Bluetooth Tasks**.
- **View My Bluetooth services** (displays a list of Bluetooth services provided by this computer)
- **View devices in range** (shows Bluetooth devices that currently can be accessed)
- **View or modify configuration** (configure your Bluetooth properties)
- Access **Bluetooth Exchange Folder** (contains files and folders visible to remote Bluetooth devices)

Windows 2000 Environment

- Use **Bluetooth Setup Wizard** (configure devices, connections, and local services)
- **Entire Bluetooth Neighborhood** (displays previously found Bluetooth devices)
- **Find Bluetooth Devices** (searches for nearby Bluetooth devices)
- **My Device** (view the services provided by this computer)
- Access **Bluetooth Exchange Folder** (contains files and folders visible to remote Bluetooth devices)

Setting the Properties of This Computer's Bluetooth Services



NOTE: Unless otherwise stated, all instructions begin from **My Bluetooth Places** (in the Windows XP environment set **Folder Options** to **Show common tasks in folders**). To go to **My Bluetooth Places**, double-click the Bluetooth icon  in the taskbar notification area (system tray).

View the default settings for the Bluetooth services properties of this computer to see what the settings are and if they are suitable or appropriate. Common Bluetooth service properties include:

- **Service Name** (the default name of each service can be changed by typing a new name)
- **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)

To view or change the settings of Bluetooth services properties

1. Click **View or modify configuration** under **Bluetooth Tasks** (Windows XP) or right-click the **Bluetooth icon**  in the system tray and click **Advanced Configuration** (Windows 2000) .
2. Click the **Local Services** tab.
3. Double-click the service name to set its security, startup options, and **properties**.

See also [View or Modify Configuration](#) in **Bluetooth Tasks**.

Specifying How This Computer Accesses Services on Other Bluetooth Devices

To view or change the properties settings of Bluetooth applications

1. Click **View or modify configuration** under **Bluetooth Tasks** (Windows XP) or right-click the **Bluetooth icon**  in the system tray and click **Advanced Configuration** (Windows 2000) .
2. Click the **Client Applications** tab.
3. Double-click the application name to set its security and **edit its properties**.

Setting Bluetooth Devices To Be Discoverable

A remote Bluetooth device must be in Discoverable mode for this computer to discover it. For assistance in making a remote device discoverable, consult the documentation for that device. Likewise, this computer must be configured to let other Bluetooth devices discover it.

To set this computer to be discoverable

1. Click **View or modify connection** under **Bluetooth Tasks** (Windows XP) or right-click the **Bluetooth icon**  in the system tray and click **Advanced Configuration** (Windows 2000).
2. Click the **Accessibility** tab in **Bluetooth Configuration**.
3. Select the **Let other Bluetooth devices discover this computer** check box.

See also [View or Modify Configuration](#) in **Bluetooth Tasks**.

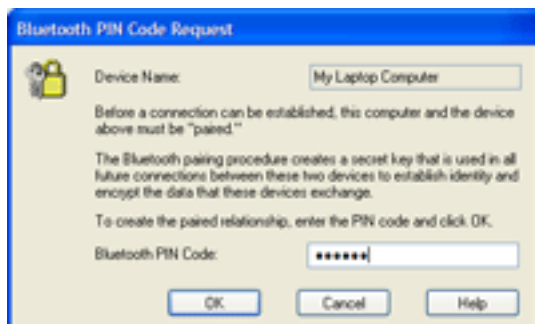
Making a Connection

1. Click **View devices in range** (Windows XP) or **Find Bluetooth Devices** (Windows 2000).
2. Double-click the name of the device you want to establish a connection with.
3. From the list of available services, double-click the name of the service you want to use.

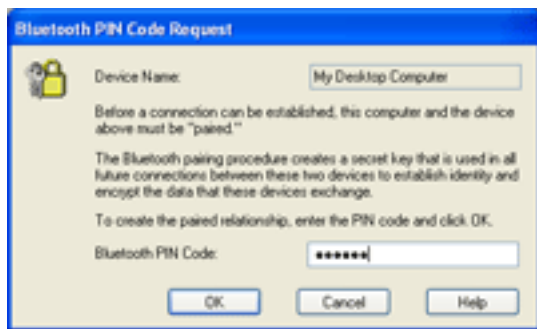
See also [Connect Service](#) in **Bluetooth Tasks**.

Responding to a Bluetooth PIN Code Request

If you try to connect to a remote Bluetooth device that has the **Secure Connection** property set for the service being requested, the device sends an authentication request (**Bluetooth PIN Code Request**).



Your response to this request depends on the type of device sending the request.



- If the sending device has no keyboard or numeric keypad, you must know the **Bluetooth PIN Code** for that device (consult the device user manual) to be able to respond to the request. A **Bluetooth PIN Code Required** message appears on this computer directly above the Bluetooth icon  in the taskbar notification area (system tray). Click anywhere in the message and type the *Bluetooth PIN Code* for the device in the **Bluetooth PIN Code** box, and then click **OK**. The sending device responds by sending a preprogrammed Bluetooth PIN Code. This successfully completes the connection and the two devices become paired.
- If the sending device does have a keyboard or numeric keypad, a **Bluetooth PIN Code Required** message appears on this computer above the Bluetooth icon  in the the taskbar notification area (system tray). Click anywhere in the message and type up to 16 alphanumeric characters in the **Bluetooth PIN Code** box, and then click **OK**. The sending device receives a similar request. You (or the remote operator) must type the same string in the **Bluetooth PIN Code** box and click **OK** (this procedure applies if the remote Bluetooth device is a computer; if it is a PDA or a cell phone, the request message may appear differently and you may need to press a special key on the numeric keypad after typing the Bluetooth PIN Code; refer to the device user manual for information). This successfully completes the connection and the two devices become paired.
- Some keyboards generate a random PIN Code that is transmitted to this computer. If this is the case, type the **Bluetooth PIN Code** on the Bluetooth keyboard exactly as it appears and press **Enter**. This successfully completes the connection and the two devices become paired.

Using Bluetooth Exchange Folder

The Bluetooth Exchange Folder contains files and folders visible to remote Bluetooth devices. This is the highest-level folder on this computer to which a remote Bluetooth device has access. Devices that have been granted access to this Bluetooth Exchange Folder also have access to all subfolders contained within that folder and all files in those subfolders. See also [File Transfer](#).

In the Windows XP environment, click **Bluetooth Exchange Folder** under **Other Places**. After placing a file or folder in the Bluetooth Exchange Folder, the related **File and Folder Tasks** that you can perform include:

- **Rename this file/folder**
- **Move this file/folder**
- **Copy the file/folder**
- **Publish this file/folder to the Web**
- **Share this file/folder**
- **E-mail this file/folder's files**
- **Print this file**
- **Delete this file/folder**

In the Windows 2000 environment, double-click **Bluetooth Exchange Folder**. To perform file and folder operations on any folder in the Bluetooth Exchange Folder, right-click the file or folder and click any of the menu items. The operations you can perform include:

- **Open**
- **Print**

- **Send To**
- **Cut**
- **Copy**
- **Delete**
- **Rename**



NOTE: The Bluetooth Exchange Folder is shared by the **PIM Item Transfer** and the **File Transfer** services and can be configured from **Bluetooth Properties** of either of those services (right-click the name of the service and then click **Properties**). When the Bluetooth Exchange Folder is reconfigured for either of these services, the other service is updated to use the same settings.

Using Quick Connect to Access Services of Other Devices

Right-click the Bluetooth icon , point to **Quick Connect** and then click the Bluetooth service that you want to use. If this computer has already set up a connection to use the desired type of service, the available menu items are:

- **The name of the device** (reestablishes the connection with a listed device with which prior connections to this type of service have been established)
- **Other Devices** (searches for additional devices that potentially provide the desired service). If additional Bluetooth remote devices are found, click a device name from the list, and then click **Connect**.

If this computer has never created a connection to this type of service, the only menu item is **Find Devices**. Click **Find Devices** to search for devices that potentially provide the desired service. If such devices are found, click a device name from the list, and then click **Connect**.

If you use **Quick Connect** to connect for the first time to a remote service that has **Secure Connection** enabled, a **Bluetooth PIN Code Required** message and **Bluetooth PIN Code Request** appear. See [Responding to a Bluetooth PIN Code Request](#). If you disconnect and then reconnect, the remote device sends a **Bluetooth Authorization Requested** message to this computer. Click anywhere in the message and click **OK** in **Bluetooth Service Authorization**. You (or the other operator) must click **OK** in the acknowledgement message that is sent to the remote device.

You can also use Quick Connect to disconnect. To do so, right-click the Bluetooth icon, click **Quick Connect**, point to the service you want to disconnect, and then click the name of the device that provided the service.

Viewing the Status of Bluetooth Devices and the Services They Provide

When remote Bluetooth devices are within range of this **Bluetooth** enabled computer, their presence and status are indicated by the appearance of the icons that appear in **Entire Bluetooth Neighborhood**. To view these icons, click **Search for devices in range** under **Bluetooth Tasks** (Windows XP) or **Find Bluetooth Devices** (Windows 2000). The status of the services provided by each device is indicated by the appearance of the icons that appear when you double-click a device name.

The status of each Bluetooth service provided by this computer is indicated by the appearance of the service icons appearing in **My Device**. To view these icons, click **View My Bluetooth services** (Windows XP) or double-click **My Device** (Windows 2000).

[Table 1](#) (Windows XP) and [Table 3](#) (Windows 2000) show how the device icons appear depending on the status of the device.

[Table 2](#) (Windows XP) and [Table 4](#) (Windows 2000) show how the Bluetooth Service icons appear, depending on the

availability and status of the service provided by a device.

Table 1: Icons Indicating Type and Status of Remote Bluetooth Devices (Windows XP Environment)

Type of Bluetooth Device	Icon Indicating Device Type and Status		
	Normal	Connected	Paired
Audio Gateway			
Desktop			
Headset			
Human Interface Device (Mouse or Keyboard)			
Mobile Computer			
Modem			
Network Access Point			
Personal Digital Assistant			
Printer			
Telephone			
Unknown Device			

Table 2: Icons Indicating Type, Availability, and Status of Bluetooth Services Provided by Remote Bluetooth Devices (Windows XP Environment)

Type of Bluetooth Service	Icon Indicating Type and Availability of Service and Service Status		
	Normal	Connected	Not Available*

Audio Gateway			
Bluetooth Serial Port			
Dial-up Networking			
Fax			
File Transfer			
Headset			
Network Access			
PIM Item Transfer			
PIM Synchronization			
*Services may be unavailable because they are already in use or because the necessary hardware is not installed.			

Table 3: Icons Indicating Type and Status of Remote Bluetooth Devices (Windows 2000 Environment)

Type of Bluetooth Device	Icon Indicating Device Type and Status		
	Normal	Connected	Paired
Audio Gateway			
Desktop			
Headset			
Laptop Computer			

Modem			
Network Access Point			
Personal Digital Assistant			
Printer			
Telephone			
Unknown Device			

Table 4: Icons Indicating Type, Availability, and Status of Bluetooth Services Provided by Remote Bluetooth Devices (Windows 2000 Environment)

Type of Bluetooth Service	Icon Indicating Type and Availability of Service and Service Status		
	Normal	Connected	Not Available*
Audio Gateway			
Bluetooth Serial Port			
Dial-Up Networking			
Fax			
Headset			
Network Access			
PIM Item Transfer			
PIM Synchronization			

Public Folder







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

Enabling/Disabling the Bluetooth Radio

You may need to disable the Bluetooth radio at times, such as when onboard a commercial aircraft. For newer laptop computers, pressing FN+F2 switches back and forth between **Enable Bluetooth Radio** and **Disable Bluetooth Radio**. For desktop computers and older laptop computers, right-click the **Bluetooth icon**  (white on blue) and click **Disable Bluetooth Radio**; right-click the **Bluetooth icon**  (red on blue) and click **Enable Bluetooth Radio**.

Bluetooth Wireless Technology Security Features

The Bluetooth wireless device uses several different types of security features. These security features are described in Table 5.

Table 5: Bluetooth Wireless Technology Security Features

Authentication	When Secure Connection is enabled for a particular Bluetooth service, one Bluetooth device must be paired with the other before a connection between the two can be made. This pairing procedure, which is known as authentication, involves the exchange of a Bluetooth PIN Code (see Responding to a Bluetooth PIN Code Request). Bluetooth PIN Code Request  Device Name: My Laptop Computer Before a connection can be established, this computer and the device above must be "paired." The Bluetooth pairing procedure creates a secret key that is used in all future connections between these two devices to establish identity and encrypt the data that these devices exchange. To create the paired relationship, enter the PIN code and click OK. Bluetooth PIN Code: ***** OK Cancel Help The device making the connection (device #1) sends a visual notification (Bluetooth PIN Code Request), an audio notification, or both to the other device (device #2). If the notification is ignored, access is denied at the end of a preset timeout period.
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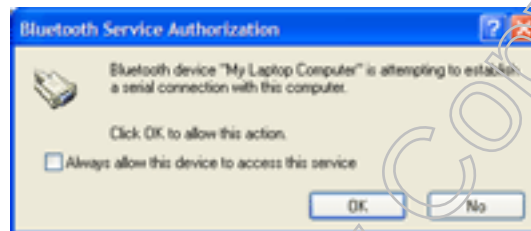


For the two devices to become paired, the operator of device #2 must acknowledge and respond to the Bluetooth PIN Code Request.

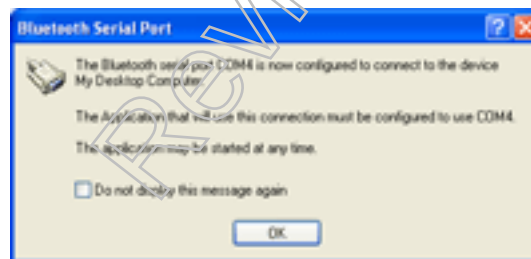
After devices are *paired*, they automatically exchange the Bluetooth PIN Code whenever a service connection is attempted.

Authorization

After two Bluetooth devices are paired, and one device attempts to connect to the other to access a particular service, the device making the connection (device #1) sends a **Bluetooth Service Authorization** request to the other device (device #2).



To allow the connection to proceed, the operator of device #2 must acknowledge the request. Otherwise, the connection attempt times out and fails.



The operator of device #1 must likewise acknowledge the action to complete the connection.

Notification

After a connection between one Bluetooth device and another has been authorized, an audio notification, a visual notification, or both may be sent when a device connects to a service.

Bluetooth Device Identity	Every Bluetooth device has a unique Bluetooth device address (BDA) assigned to it during the manufacturing process. This address cannot be changed by the user. The BDA of a device is usually displayed in hexadecimal format; 00:D0:B7:03:2E:9F is a valid BDA. Each Bluetooth device also has a name that can be assigned by the user to help distinguish that Bluetooth device from other Bluetooth devices. The user-assigned name may be up to 99 alphanumeric characters in length and may contain spaces. My Desktop Computer is a valid user-assigned name.
Encryption	Encryption translates data 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.
Link Key	A link key is a unique and internally generated access code based on a passkey, the Bluetooth device address, and an internally generated random number. A link key is generated automatically when devices pair. After a link key is generated, manual entry of the passkey (Bluetooth PIN Code) is not required.
Pairing	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.  NOTE: The mate of a pair always appears in My Bluetooth Places, even if the mate is not turned on or is out of range. Paired devices remain paired even when: • One of the devices is not powered up. • A service connection is interrupted or the service stopped. • One or both devices are rebooted. If Secure Connection is enabled, pairing between this computer and the remote device is required, and devices pair automatically the first time they attempt to connect (a passkey must be successfully exchanged). To pair with a device manually: In Entire Bluetooth Neighborhood, click the device name, click Establish Pairing under Bluetooth Tasks (Windows XP) or right-click the device name and click Pair Device (Windows 2000). This requires responding to a Bluetooth PIN Code Request. See Establish Pairing In Network Tasks. To remove the pairing, click the name of the device, and then click Remove Pairing under Bluetooth Tasks (Windows XP) or right-click the device name and click Unpair Device (Windows 2000).
Passkey	A Passkey is also called a Bluetooth PIN Code. A passkey is an alphanumeric string of up to 16 characters. A passkey may be required if the Secure Connection option is enabled for a Bluetooth service or program.

Secure Connection	You will require a passkey or link key each time you attempt to make a connection. All data exchanged over the Bluetooth connection is encrypted. Depending on other configuration options, authorization may also be required.
Security Request	If you have Secure Connection enabled, a Bluetooth PIN Code Request and Bluetooth Authorization dialog box may appear when you attempt to make a connection. To proceed, click the balloon prompt that appears on the display of the remote device (if the remote device is not a computer, consult the device user manual for information about how to respond). See Responding to a Bluetooth PIN Code Request .

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Review Copy

Bluetooth Tasks: Bluetooth Adapter User Guide

[Top-Level Tasks](#)

[Secondary Tasks](#)



NOTE: The following instructions for performing Bluetooth tasks are based on starting from **My Bluetooth Places**. To go to **My Bluetooth Places**, double-click the Bluetooth icon  in the taskbar notification area (system tray)

Windows XP Environment: At the root level of the **My Bluetooth Places** folder, the items that appear under **Bluetooth Tasks** are the [top-level tasks](#). When you click a device name or service name that appears in the right-hand pane, other Bluetooth tasks appear below the top-level tasks. These are [secondary tasks](#) that are either device-specific or service-specific.

Windows 2000 Environment: At the root level of the **My Bluetooth Places** folder, the first four items listed are the [top-level tasks](#). When you double-click any of these items (except **Bluetooth Setup Wizard**) other items are listed in a subfolder. When you right-click any of the items in the subfolder, [secondary tasks](#) (along with the usual file operations) are listed on a context-sensitive menu. These secondary tasks are either *device-specific* or *service-specific*.

Top-Level Tasks

Top-level Bluetooth tasks include:

Windows XP Environment

- [Bluetooth Setup Wizard](#) (helps you configure devices, connections, and local services)
- [View My Bluetooth services](#) (displays a list of Bluetooth services provided by this computer)
- [View devices in range](#) (shows remote Bluetooth devices that can be accessed)
- [View or modify configuration](#) (helps you to configure your Bluetooth device properties)

Windows 2000 Environment

- [Bluetooth Setup Wizard](#) (helps you configure devices, connections, and local services)
- [Entire Bluetooth Neighborhood](#) (displays previously found Bluetooth devices and provides access to **Bluetooth Configuration**)
- [Find Bluetooth Devices](#) (searches for nearby Bluetooth devices)
- [My Device](#) (displays a list of Bluetooth services provided by this computer)

Bluetooth Setup Wizard



NOTE: Screen illustrations are in the Windows XP style. The same screens are displayed in the Windows 2000 environment in the Windows Classic style.

You can use the **Bluetooth Setup Wizard** to do the following:

- Find a Bluetooth device that provides a desired service.
- Find a specific Bluetooth device and configure how this computer will use its services.
- Configure the Bluetooth Services that this computer will provide to remote devices.
- Change the name and/or device type that this computer displays to other Bluetooth devices.

To use Bluetooth Setup Wizard

Click **Bluetooth Setup Wizard**, select what you want to do, and then follow the Wizard's instructions.



View My Bluetooth Services (Windows XP); My Device (Windows 2000)

To view the Bluetooth services provided by this computer

Click **View My Bluetooth services** (Windows XP) or double-click **My Device** (Windows 2000).



NOTE: The Bluetooth services provided by this computer are also listed on the **Local Services** tab in **Bluetooth Configuration**. See also [Local Services Settings](#).

View Devices in Range (Windows XP); Find Bluetooth Devices (Windows 2000)

To show remote Bluetooth devices that currently can be accessed from this computer

Click **View devices in range** under **Bluetooth Tasks** (Windows XP) or double-click **Find Bluetooth Devices** (Windows 2000).

Devices that are found are listed in the **Entire Bluetooth Neighborhood** folder in **My Bluetooth Places**.

View or Modify Configuration

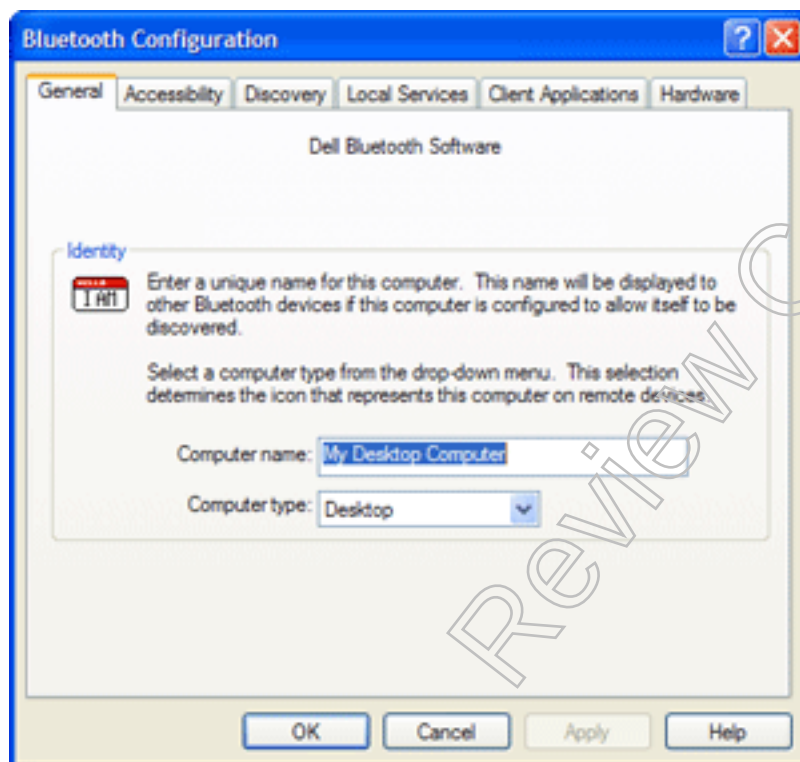
Bluetooth Configuration provides access to settings for Bluetooth services, client applications, hardware, security, discovery, accessibility, default paths, event notification, and other Bluetooth related items.

To open Bluetooth Configuration

Click **View or modify configuration** (Windows XP) or right-click **Entire Bluetooth Neighborhood** and click **Properties**.

General Settings

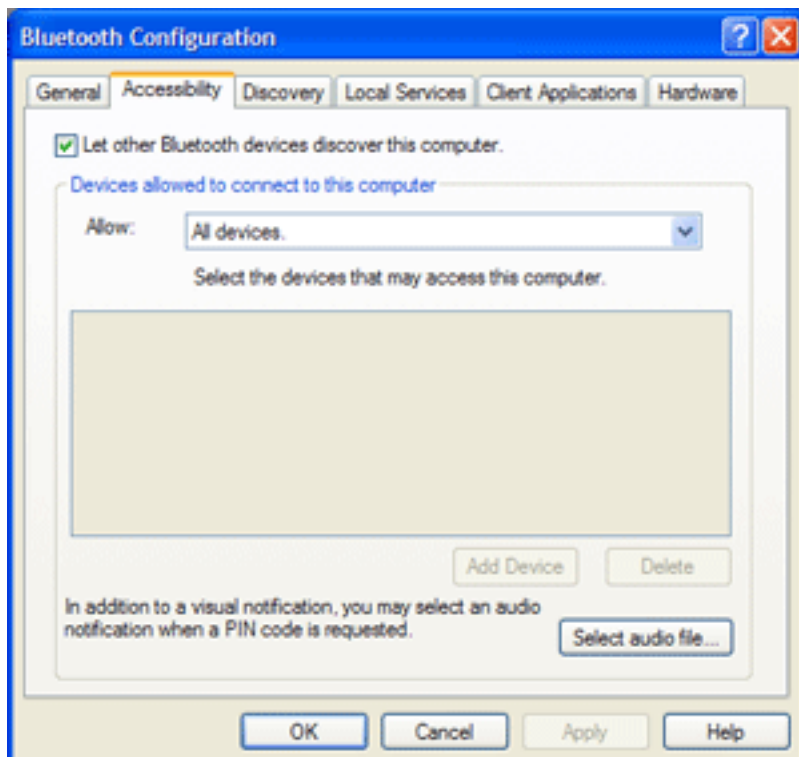
The settings made from the **General** tab determine the information that is displayed to remote devices.



- **Computer name.** Type a unique name to identify this computer to other Bluetooth devices in the vicinity; this field cannot be left blank.
- **Computer type.** From the **Computer type** list click either **Personal Computer** or **Laptop Computer**. This sets the type of icon that is displayed on remote devices 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 notification is made when a remote device requests a Bluetooth PIN Code.



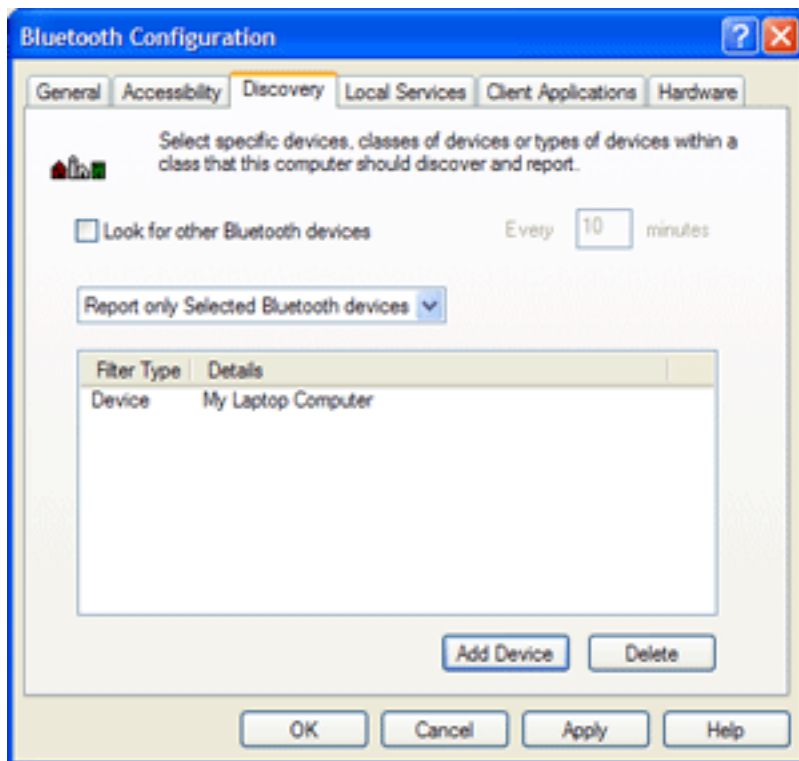
Select the **Let other Bluetooth devices discover this computer** check box to permit remote Bluetooth devices to find and report this computer. The options listed in **Allow** include:

- **No devices** (if **No devices** is selected, the **Let other Bluetooth devices discover this computer** check box is cleared and this option is not available; this computer, however, can still initiate a connection to remote devices)
- **All devices** (all remote devices are permitted to connect to this computer)
- **Only devices listed below** (only the listed devices are allowed to connect to this computer; devices can be added to or deleted from the list by clicking **Add Device** or **Delete**)

Connections are subject to additional security restrictions, such as authentication and authorization, that may be required by the individual services provided by this computer.

Discovery Settings

The settings made from the **Discovery** tab determine whether this computer looks for remote devices automatically, which or what kinds of devices it should discover and report, and how often it should look.

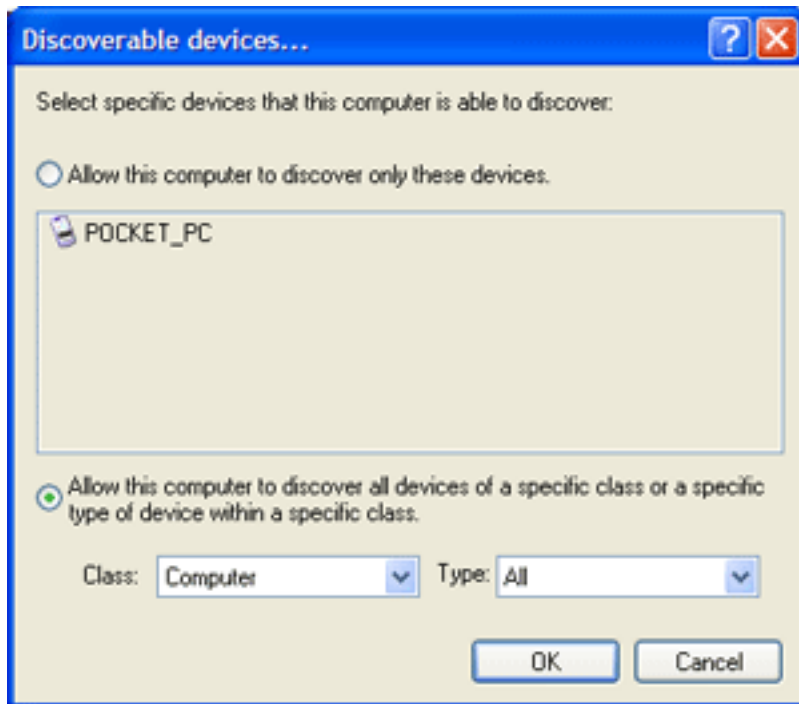


To enable this task, select the **Look for other Bluetooth devices** check box and click either **Report all Bluetooth devices** or **Report only Selected Bluetooth devices** in the list. If you click **Report only Selected Bluetooth devices**, next click **Add Device**.



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.

In **Discoverable devices**, you can limit the discovery to a specific device, all devices of a specific class, or a specific type of device within a specific class.



1. Click whichever option you prefer in **Discoverable devices**. If you click **Allow this computer to discover all devices of a specific class or a specific type of device within a specific class**, from the **Class** and **Type** lists, click the class and type as desired.
2. Click **OK**.

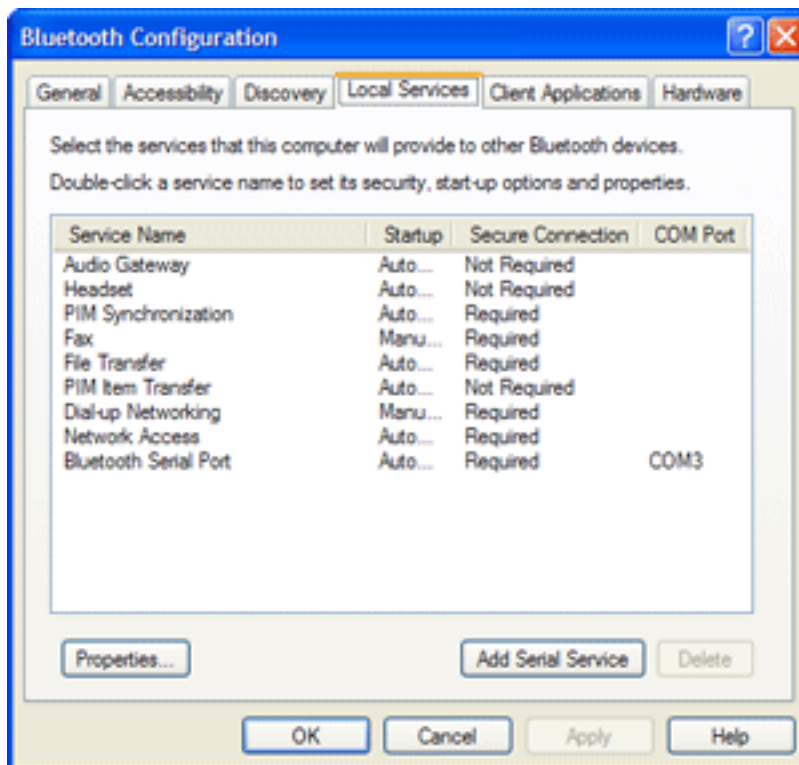


NOTES:

1. You can include more than one specific device, class of device, or type of device in the **Filter Type** list.
2. To temporarily override the **Report only Selected Bluetooth devices** setting, click **Report all Bluetooth devices** and then click **OK**. To reestablish the settings, click **Report only Selected Bluetooth devices** and then click **OK**.
3. You must have at least one device in the filter list to use **Report only selected Bluetooth devices**.

Local Services Settings

Bluetooth services are services that this computer provides to remote Bluetooth devices. The Bluetooth services on this computer are listed on the **Local Services** tab. Setting the properties (for each service) on the **Local Services** tab determines how this computer provides a service to remote devices.



To set security, startup options, and other properties of a Bluetooth Service, double-click the service name.

Client Applications Settings

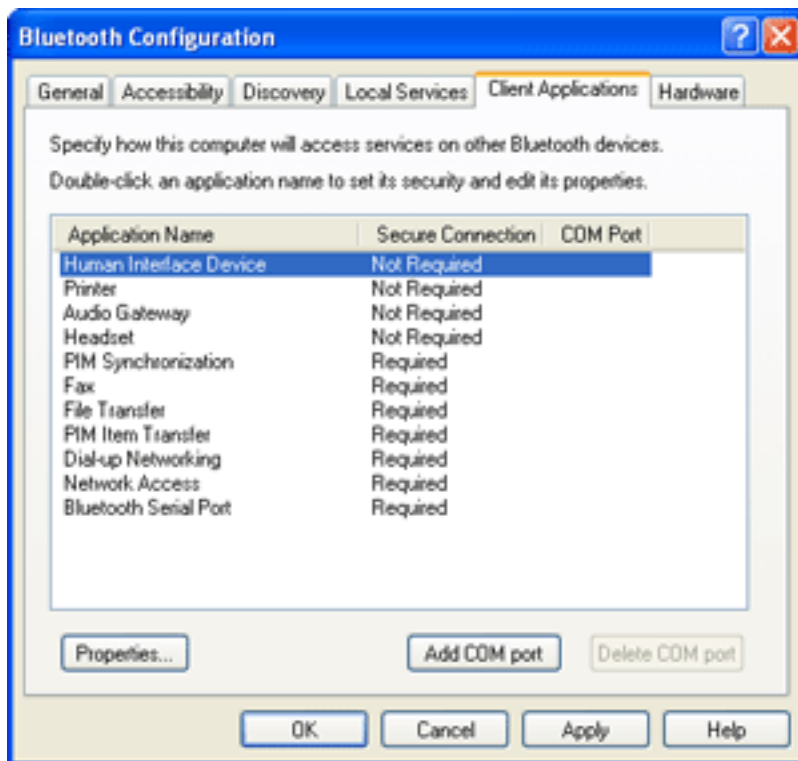
Bluetooth applications are software applications on this computer that allow this computer to use the Bluetooth services that are provided by remote devices. Some built-in Bluetooth applications provide full functionality for a specific task, such as locating other Bluetooth devices or synchronizing two Personal Information Managers.

Other built-in Bluetooth applications provide a way for standard Windows applications to accomplish some tasks wirelessly. For example, a Bluetooth application may create a wireless serial connection between computers or provide wireless access to the Internet. The Bluetooth applications on this computer are listed on the **Client Applications** tab in **Bluetooth Configuration**. Setting the properties (for each application) on the **Client Applications** tab determines how this computer uses a service that is provided by a remote device.

For all of the built-in Bluetooth applications, you can rename the application and require a secure connection when using the application. The **PIM Synchronization** and **PIM Item Transfer** applications have other property settings that you can change as desired.

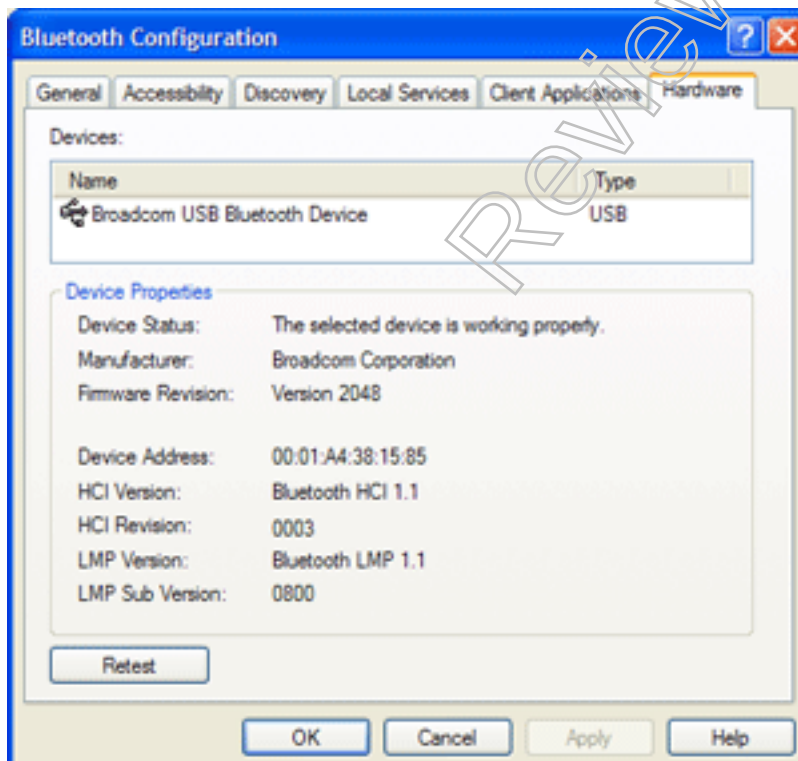
To configure any of the built-in Bluetooth applications

1. Click the **Client Applications** tab.
2. Double-click the name of application you want to configure.
3. Click **Properties** and either accept the default settings by clicking **OK**, or change the settings as desired and then click **OK**.



Device Properties

Information about the properties of the **Bluetooth Adapter** is shown on the **Hardware** tab in **Bluetooth Configuration**.



Click **Retest** to update the **Device Properties** information.

For devices that are to be used in countries that require low radio transmission power, an **Advanced** button will be available on the **Hardware** tab.

1. Click **Advanced** (if available) and select the **Country Code** and the appropriate setting for **Maximum Transmission Power**.
2. Click **Apply** to implement the changes.
3. Click **Yes** to reset the Bluetooth device now (all open Bluetooth connections will be closed) or click **No** to save the changes (the changes will be applied the next time the Bluetooth device is reset or restarted).

Secondary Tasks



NOTES:

1. The names of the secondary tasks listed below are those shown in the Windows XP environment. In the Windows 2000 environment, secondary tasks have either the same name or a similar name.
2. Some of the secondary tasks are available only if a connection shortcut has been created for a particular service.

Secondary device-specific Bluetooth tasks that can be performed on a *remote device* include:

[Connect name of service](#) (establish a specified type of connection with a remote device)

[Establish Pairing](#) (establish a paired relationship between this computer and a remote Bluetooth device)

[Remove Pairing](#) (remove the paired relationship between this computer and the remote Bluetooth device)

[Discover services](#) (query the device for the available services)

[Display device properties](#) (display the device properties for the selected remote Bluetooth device)

Secondary service-specific tasks that can be performed on *services provided by this computer* include:

[Enable name of service](#) (prepare the selected service to be used by Bluetooth devices in the neighborhood)

[Disable name of service](#) (deactivate this service so that it cannot be used by other devices)

[Rename the service connection](#) (give the connection a different name)

[View the status of this connection](#) (view the name of the device connected, and the duration, signal quality, and other settings for this connection)

[Display the properties of this service](#) (view or change the properties for this service, such as the name or security requirements of the service)

Secondary service-specific tasks that can be performed on *services provided by a remote Bluetooth device* include:

[View the status of this connection](#) (view the name of the device connected, and the duration, signal quality, and other settings for this connection)

[Display the properties of this service](#) (view or change the properties for this service, such as the name or security requirements of the service)

Secondary service-specific tasks that can be performed on *shortcuts to services provided by remote Bluetooth devices* include:

[Rename this connection](#) (give the connection a different name)

[Delete this connection](#) (delete the selected connection shortcut)

[Open this connection](#) (connect to the remote device using this connection shortcut)

[Close this connection](#) (disconnect)

[Display connection properties](#) (display the connection properties for the selected shortcut)



NOTE: Connection shortcuts appear at the top level folder in **My Bluetooth Places**.

Secondary Device-Specific Tasks That Can Be Performed on Remote Devices

Connect Service

1. Click **View devices in range** (Windows XP) or **Find Bluetooth Devices** (Windows 2000)
2. Double-click the name of the device you want to establish a connection with.
3. From the list of available services, double-click the name of the service you want to use. If the service requires a secure connection and the two devices have not been paired, enter the Bluetooth PIN Code when prompted to do so (see [Responding to a Bluetooth PIN Code Request](#)). A message indicating that the connection was successful (or not) appears on the display of the remote device. A successful connection is indicated by the appearance of the Bluetooth icon in the notification area (system tray) of the display of both devices (if the remote device is a computer) and by the appearance of the device and service icons, wherever they appear (see [Viewing the Status of Remote Devices and the Services They Provide](#) in **Introduction** for illustrations of status-indicating icons). The white-on-blue Bluetooth icon  changes to a green-on-blue Bluetooth icon . For remote devices other than computers, refer to the device user manual for information about how the device indicates the status of the connection.

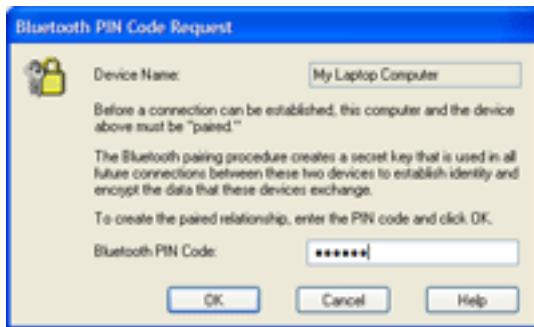
See also [Using Quick Connect to Access Services of Other Devices](#) in **Introduction**

Establish Pairing



NOTE: If **Secure Connection** has been enabled for a service, devices pair automatically the first time they connect (a passkey (Bluetooth PIN Code) must be successfully exchanged).

1. Find the remote device (see [Viewing Devices in Range](#)).
2. Click the name of the device you want to pair with.
3. Click **Establish Pairing** under **Bluetooth Tasks** (Windows XP) or right-click the device name and click **Pair Device** (Windows 2000).



4. In **Bluetooth PIN Code Request** that appears on the display this computer, type any string of up to 16 alphanumeric characters in the **Bluetooth PIN Code** box and click **OK**.
5. Click anywhere in the **Bluetooth PIN Code Required** message that appears on the display of the remote device.
6. In **Bluetooth PIN Code Request** that appears on the display of the remote device, type exactly the same string of alphanumeric characters in the **Bluetooth PIN Code** box and click **OK**.

 **NOTE:** If the remote device is not a computer see [Responding to a Bluetooth PIN Code Request](#) in **Introduction** for instructions.

This computer and the remote device are now paired, as indicated by the appearance of the device icon (see [Viewing the Status of Remote Devices and the Services They Provide](#) in **Introduction** for illustrations of status-indicating icons).

Remove Pairing

1. Find the remote device (see [Viewing Devices in Range](#)).
2. Click the name of the device you want to remove the pairing relationship with and then click **Remove Pairing** under **Bluetooth Tasks** (Windows XP) or right-click the device name and click **Unpair Device** (Windows 2000).

Discover Services

1. Find the remote device (see [Viewing Devices in Range](#)).
2. Click the name of the device you want to query for the available services and then click **Discover services** under **Bluetooth Tasks** (Windows XP) or double-click the device name (Windows 2000).

Display Device Properties

1. Find the remote device (see [Viewing Devices in Range](#)).
2. Click the device name and then click **Display device properties** under **Bluetooth Tasks** (Windows XP) or right-click the device name and click **Properties** (Windows 2000).

Secondary Service-Specific Tasks That Can Be Performed on Services Provided By This Computer

Enable Service

1. Click **View My Bluetooth services** under **Bluetooth Tasks** (Windows XP) or double-click **My Device** (Windows 2000).
2. Click the name of the service and then click **Enable service name service** under **Bluetooth Tasks** (Windows

XP) or right-click the service name and click **Enable** (Windows 2000).

Disable Service

1. Click **View My Bluetooth services** under **Bluetooth Tasks** (Windows XP) or double-click **My Device** (Windows 2000).
2. Click the name of the service and then click **Disable service name service** under **Bluetooth Tasks** (Windows XP) or right-click the service name and click **Disable** (Windows 2000).

Rename the Service Connection

1. Click **View My Bluetooth services** under **Bluetooth Tasks** (Windows XP) or double-click **My Device** (Windows 2000).
2. Click the name of the service and then click **Rename the service connection** under **Bluetooth Tasks** (Windows XP) or right-click the service name, click **Properties**, type a new name in the text box, and click **OK** (Windows 2000).

View the Status of This Connection

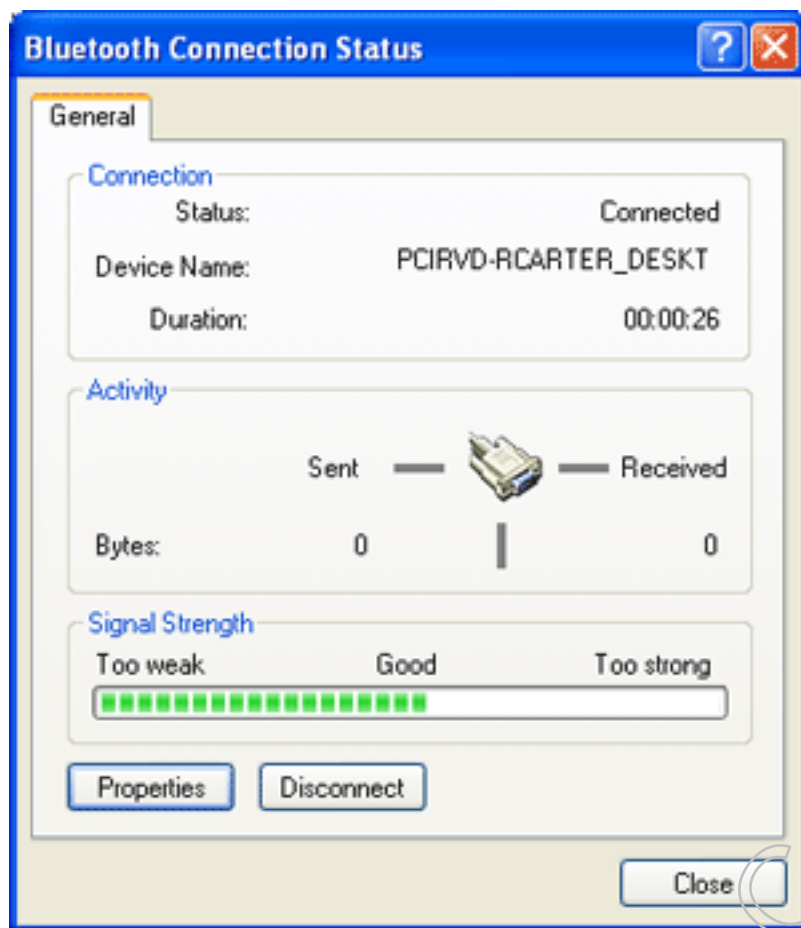
The status of a Bluetooth connection is indicated by the appearance of the device/service icon displayed in the **My Bluetooth Places** folder and subfolders. The status is also stated in the **Status** field when the **Details** view is selected for the folder. The different status-indicating icons are shown in [Viewing the Status of Bluetooth Devices and the Services They Provide](#) in **Introduction**. The appearance of the Bluetooth icon in the taskbar notification area (system tray) also indicates the connection status (the white-on-blue icon  changes to a green-on-blue icon  when a connection is made).

To view more detailed status information

1. Click **View My Bluetooth services** (Windows XP) or double-click **My Device** (Windows 2000).
2. Right-click the service name and click **Status**.

The following information is provided:

- **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 graphical indicator that ranges from **Too Weak** through **Good** to **Too Strong**.



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

Display the Properties of This Service

1. Click **View My Bluetooth services** under **Bluetooth Tasks** (Windows XP) or double-click **My Device** (Windows 2000).
2. Click the name of the service and then click **Display the properties of this service** under **Bluetooth Tasks** (Windows XP) or right-click the service name and click **Properties** (Windows 2000).

Secondary Service-Specific Tasks That Can Be Performed on Services Provided by Remote Bluetooth Devices

View the Status of This Connection

The status of a Bluetooth connection is indicated by the appearance of the device/service icon displayed in the **My Bluetooth Places** folder and subfolders. The status is also stated in the **Status** field when the **Details** view is selected for the folder. The different status-indicating icons are shown in [Viewing the Status of Bluetooth Devices and the Services They Provide](#) in **Introduction**.

To view more detailed status information

1. Click **View My Bluetooth services** (Windows XP) or double-click **My Device** (Windows 2000).
2. Right-click the service name and click **Status**.

The following information is provided:

- **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 graphical indicator that ranges from **Too Weak** through **Good** to **Too Strong**.



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

Display the Properties of This Service

1. Find the remote device (see [Viewing Devices in Range](#)).
2. Click the name of a service and then click **Display the properties of this service** under **Bluetooth Tasks** (Windows XP) or right-click the service name and click **Properties** (Windows 2000).

Secondary Service-Specific Tasks That Can Be Performed on Shortcuts to Services Provided by Remote Bluetooth Devices

Rename This Connection

Click the connection shortcut in **My Bluetooth Places** and then click **Rename this connection** under **Bluetooth Tasks** (Windows XP) or right-click the shortcut, click **Rename**, and type a new name (Windows 2000).

Delete This Connection

Click the connection shortcut in **My Bluetooth Places** and then click **Delete this connection** under **Bluetooth Tasks** (Windows XP) or right-click the shortcut and click **Delete** (Windows 2000).

Open This Connection

Click the connection shortcut in **My Bluetooth Places** and then click **Open this connection** under **Bluetooth Tasks** (Windows XP) or double-click the shortcut (Windows 2000).

Close This Connection

Click the connection shortcut in **My Bluetooth Places** and then click **Open this connection** under **Bluetooth Tasks** (Windows XP) or right-click the shortcut and click **Disconnect** (Windows 2000).

Display Connection Properties

Click the connection shortcut in **My Bluetooth Places** and then click **Display connection** under **Bluetooth Tasks** (Windows XP) or right-click the shortcut and click **Properties** (Windows 2000).

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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 turned on. Verify that the remote member of the pair is within radio range and turned on and then attempt the connection again.

Cannot Discover Services on an Unpaired Remote Device

The remote device may not be turned on, it may be out of range, or it may not be in Discoverable mode. First verify that the remote device is turned on. If the remote device is turned on, verify that it is in Discoverable mode (consult the remote device user manual for information about how to set the device to Discoverable mode). 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 from the server.

1. In **Bluetooth Configuration**, click the **Local Services** tab, and then double-click **Dial-up Networking**.
 2. From the **Modems** list, click the name of the modem that will be used to dial out, and then click **OK**.
 3. Click **OK** to close **Bluetooth Configuration**.
-

How Do I Determine the Bluetooth Device Address (BDA) of My Hardware Device?

1. In **Bluetooth Configuration**, click the **Hardware** tab.
 2. From the **Devices** list, click the name of the device for which you want to determine the address. The BDA is shown opposite **Device Address** under **Device Properties**.
-

How Do I Determine the Version of the Host Controller Interface (HCI)?

1. In **Bluetooth Configuration**, click the **Hardware** tab.
 2. From the **Devices** list, click the name of the device for which you want to determine the HCI version. The HCI version is shown opposite **HCI Version** under **Device Properties**. The HCI revision is listed opposite HCI Revision.
-

How Do I find Information about the Bluetooth Hardware Attached to My Computer?

In **Bluetooth Configuration**, click the **Hardware** tab.

How Do I Test a Wireless Network Access Connection on This Computer?

If this computer 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 network server has access to the Internet, open a browser on this computer and connect to the World Wide Web. You may also ping the server from the command line.

Why Do I Get an Unknown Port Message When I Try to Use 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.

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Specifications: Bluetooth Adapter User Guide

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Bluetooth Adapter Characteristics

Item	Value
Frequency Band	2.402 GHz to 2.480 GHz
Spreading	frequency hopping spread spectrum (FHSS)
Data Rate	700 Kbit/s
Transmit Power	0 dBm typical, Power Class 2 with dynamic power control
Receive Sensitivity	−80 dBm maximum
Antenna	Internal
Operating Range	10 meters
Security	128-bit encryption
LED Indicator	Blue LED indicates the Bluetooth radio is enabled
Enable/Disable Radio	For newer laptop computers, pressing Fn + F2 toggles Enable Bluetooth Radio/Disable Bluetooth Radio . For desktop computers and older laptop computers, right-click the Bluetooth icon  and click Disable Bluetooth Radio ; right click the Bluetooth icon  and click Enable Bluetooth Radio .
Driver	Microsoft Windows XP, Windows 2000
Standards	Bluetooth SIG Specification 1.1, BQB certified
Manufacturer	Broadcom Corporation, BCM2035BTSD

Supported Devices

Device Category	Bluetooth Profiles	Product Types	Uses

Phone	Dial-up networking, Fax, Generic Object Exchange, Synchronization, Headset, Advanced Audio Distribution	Any digital mobile phone with Bluetooth capability	Dial-up networking, fax, phone book synchronization, play audio from phone to computer or computer to phone.
Printer	Basic printing	Bluetooth printer, printer with Bluetooth adapter	Print documents to a Bluetooth capable/enabled printer.
PDA	- Serial port - Dial-up networking - Generic Object Exchange - Object push - File transfer - Synchronization - Headset - Advanced Audio Distribution	Any PDA device with Bluetooth capability that offers the selected profile	- Synchronize with computer - transfer files with computer - Play audio from PDA to computer or computer to PDA
Computer	- Serial port - Dial-up networking - Generic Object Exchange - Object push - File transfer - Synchronization - Headset - Advanced Audio Distribution	Any computer with Bluetooth capability that offers the selected profile	- Transfer files between computers - Use one computer to give wireless Internet access to another computer - Synchronize items - Play remote audio from one computer on another computer
Camera	- Generic Object Exchange - File transfer - Basic imaging	Digital camera with Bluetooth image transfer from the camera to the computer	Transfer images from the camera to the computer.
WLAN	- Generic access - Service discovery application - Extended service discovery	Bluetooth access point (AP)	Access a LAN through a Bluetooth access point.
Other	- Generic access - Service discovery application - Extended service discovery	All devices	Searches for a Bluetooth device and discovers the available services for that device.
Unsupported Profiles	HID, HCRP, PAN, A/V	Bluetooth mouse, keyboard, joystick, hard cable replacement, personal area network, audio/video	Not applicable

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Regulatory Information: Bluetooth Adapter User Guide

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Information for the User

Wireless Interoperability

The Bluetooth radio is designed to be interoperable with any Bluetooth technology product that is based on frequency hopping spread spectrum (FHSS) radio technology and complies with the Bluetooth Specification Version 1.1.

Safety

The Bluetooth radio, like other radio devices, emits radio frequency electromagnetic energy. The level of energy emitted by this device, however, is less than the electromagnetic energy emitted by other wireless devices such as mobile phones. The Bluetooth radio device operates within the guidelines found in radio frequency safety standards and recommendations. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature. In some situations or environments, the use of a Bluetooth radio device may be restricted by the proprietor of the building or responsible representatives of the applicable organization. Examples of such situations include the following:

- Using the Bluetooth radio equipment onboard airplanes, or
- Using the Bluetooth radio equipment in any other environment where the risk of interference with other devices or services is perceived or identified as being harmful.

If uncertain of the policy that applies to the use of wireless devices in a specific organization or environment (an airport, for example), ask for authorization to use the Bluetooth radio device before turning it on.

This device has been certified to the following safety standards for information technology equipment. It is intended for use in IT equipment which is certified to these or equivalent standards:

UL 60950:2000
CAN/CSA-C22.2 No. 60950-00
IEC 60950
EN 60950

Regulatory Information

The Bluetooth radio devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. For country-specific approvals, see [Radio Approvals](#). Broadcom is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this Bluetooth radio kit, or the substitution or attachment of connecting cables and equipment other than that specified by Broadcom. The correction of interference caused by such unauthorized modification, substitution, or attachment is the responsibility of the user. Broadcom and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from the user's failing to comply with these guidelines.

Canada—Industry Canada (IC)

This device complies with Canadian RSS-210.

To prevent radio interference to the licensed services, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or the transmit antenna) that is installed outside is subject to licensing.



WARNING: The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit an RF field in excess of Health Canada limits for the general population; consult safety code 6, obtainable from Health Canada's Web site (www.hc-sc.gc.ca/rpb).

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil est conforme à la norme CNR-210 du Canada.

Pour empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, cet appareil doit être utilisé à l'intérieur seulement et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal.



WARNING: L'installateur du présent matériel radio doit s'assurer que l'antenne est située ou pointée de manière à ce que cette dernière n'émette pas de champs radioélectriques supérieurs aux limites spécifiées par Santé Canada pour le grand public; consulter le code de sécurité 6, disponible sur le site Web de Santé Canada, à l'adresse suivante: (www.hc-sc.gc.ca/rpb).

Europe—EU Declaration of Conformity and Restrictions

This equipment is marked with the  symbol and can be used throughout the European community.

This indicates compliance with the R&TTE Directive 1999/5/EC and meets the following technical specifications:

EN 300 328 – Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Wideband Transmission Systems; Data transmission equipment operating in the 2,4-GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE directive.

EN 301 489-17 – Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17 Specific Conditions for Wideband Data and HIPERLAN Equipment.

EN 60950 – Information Technology Equipment, Safety.

USA—Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions:

- The devices may not cause harmful interference.
- The devices must accept any interference that may cause undesired operation.

Interference 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.



CAUTION: This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the Federal Communications Commissions Rules and Regulations. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. 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:

- Relocate this device
- Increase the separation between the device and the receiver
- Connect the device into an outlet on a circuit different from that of other electronics
- Consult the dealer or an experienced radio technician for help.



NOTE: This Bluetooth radio device must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. Any other installation or use will violate FCC Part 15 regulations. Modifications not expressly approved by Broadcom could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement



WARNING: To comply with FCC RF exposure compliance requirement, the antenna used for this transmitter must be installed to provide a separation distance of at least 2.5 cm from all persons and must not be co-located or operating in conjunction with any other transmitter.

Radio Approvals

It is important to ensure that you only use your radio device in countries where the device is approved for use. To determine whether you are allowed to use your wireless network device in a specific country, please check to see if the radio type number that is printed on the identification label of your device is listed on the radio approval list posted on the vendor's support website.

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Glossary: Bluetooth Adapter User Guide

authentication	A Bluetooth security feature that is used to verify identity; it requires a Bluetooth PIN Code from the remote device.
authorization	A yes-or-no Bluetooth security feature that requires operator intervention to avert having the connection time out and fail.
BDA	Bluetooth Device Address (assigned by the manufacturer).
Bluetooth	A short-range (10 meters) networking protocol that allows enabled devices to automatically recognize each other. Bluetooth wireless technology allows quick and easy connectivity of Bluetooth enabled devices.
Bluetooth PIN Code	The alphanumeric string (up to 16 characters) that is typed to respond to a Bluetooth PIN Code Request. Also referred to as a passkey or password.
Client Applications	Software applications on this computer that allow this computer to use the Bluetooth services that are provided by remote Bluetooth devices.
Bluetooth device	Bluetooth enabled hardware such as a computer, printer, fax, mouse, keyboard, cell phone, headset, or PDA.
Dynamic Host Control Protocol	A protocol used by a server to assign an Internet Protocol (IP) address to a connecting device.
encryption	Encryption translates data 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.
GHz	gigahertz A unit of frequency equal to 1 000 000 000 cycles per second.
HCI	Host Controller Interface
HID	human interface device (mouse, keyboard, and so forth)
link key	An internally generated unique security key that is exchanged by paired devices as proof of identity before a connection is established.
Local Services	Services that this computer provides to other Bluetooth devices.
network adapter	A processor chip that provides network capabilities. A computer may include a network adapter on its system board or it may contain a PC card with an adapter on it.
paired devices	Bluetooth devices must be paired before they can connect. Paired devices share a unique link key, which they exchange each time they connect.
PDA	personal digital assistant
PIM	Personal Information Manager An application, such as Microsoft Outlook, that is used to manage contacts, send and receive e-mail, and schedule events and tasks.
Secure Connection	A setting that requires a passkey or link key each time you attempt to make a connection. All data exchanged over the Bluetooth connection is encrypted. Depending on other configuration options, authorization may also be required.

shortcut	An icon that provides quick access to frequently used programs, files, folders, and drives. Double-clicking such a icon opens its corresponding folder or file without first having to find it. Shortcut icons do not change the location of files, they simply link to the file wherever it is located. You can delete a shortcut without deleting the file with which it is associated. Also, you can rename a shortcut.
taskbar notification area	Also known as the system tray on the Windows desktop. Icons that are placed here provide quick access to applications and functions such as the clock, volume control, and print status. The Bluetooth icon  is located here.
wireless	Telecommunications in which electromagnetic waves (rather than some form of wire) carry the signal over all or part of the communications path.
WLAN	wireless local area network

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