EpoX BlueTooth Dongle User's Guide

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Chapter One

Introduction to

Bluetooth

The term Bluetooth refers to a worldwide standard for the wireless exchange of data between two devices.

In order to exchange data, two Bluetooth devices must establish a connection.

Before a connection is established, one device must request a connection with another. The second device accepts (or rejects) the connection.

The originator of the request is known as the client.

The device that accepts (or rejects) the request is known as the server.

Many Bluetooth devices can act as both client and server.

A client Bluetooth device runs a software program that requests a connection to another device as part of its normal operation. For example, the program may request a connection to a remote computer, a printer, or a modem.

Becoming a Bluetooth client normally requires an action by the device operator, such as an attempt to browse a remote computer, print a file, or dial out on a modem.

Every Bluetooth device that provides a service must be prepared to respond to a connection request. Bluetooth software is always running in the background on the server, ready to respond to connection requests.

Introduction to

Bluetooth for Windows

Bluetooth for Windows is the solution for the seamless integration of Bluetooth technology into personal computers.

Most Bluetooth-enabled devices have the capability to act as
- A Bluetooth server: these devices provide one or more services, such as access to the Internet, to other Bluetooth devices.

- A Bluetooth client: these devices use the service(s) provided by Bluetooth servers.

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

Bluetooth for Windows provides
- **Clients with the means:**

  - **To locate other Bluetooth devices in the immediate vicinity (inquiry)**

  - **Discover the services that those devices offer (discovery)**

  - **Connect to, use, and disconnect from those services.**

- **Servers with the means to include/exclude individual services in the list of services they provide to clients.**

- **Extensive security, including:**

  - **Authorization**

  - **Authentication**

  - **Encryption.**

Bluetooth for Windows supports
- **Windows XP**

- **Windows 2000**

- **Windows 98SE (Second Edition)**

- **Windows Me (Millennium Edition)**

Bluetooth for Windows functions the same way, regardless of the supported version of Windows on which it is

running.

Bluetooth Device Identity

Every Bluetooth device has a unique 48-bit binary Bluetooth Device Address (BDA) burned into its Read-Only Memory (ROM). This address cannot be changed by the end-user.

A device BDA is usually displayed in hexadecimal format; 00:D0:B7:03:2E:9F is a valid BDA.

Each Bluetooth device also has an operator-configurable, user-friendly name to help distinguish it from other Bluetooth devices. The user-friendly name may be up to 99 alphanumeric characters in length and may contain spaces. My Personal Computer **is a valid user-friendly name.**

Device Icons for Windows 9x, ME and 2K

Name	Normal	Connected	Paired
Desktop			
Laptop			
Modem			
Network Access Point			
Personal Digital Assistant			
Printer			
Telephone			
Unknown			

Service Icons for Windows XP

Name	Normal	Connected	Not Available*
Dial-up Networking			
Fax			
File Transfer			
Information Exchange			
Network Access			
Serial Port			
Synchronization			

Device Icons for Windows XP

Name	Normal	Connected	Paired
Desktop			
Laptop			
Modem			
Network Access Point			
Personal Digital Assistant			
Printer			
Telephone			
Unknown Device			

Service Icons for Windows 9x, ME and 2K

Name	Normal	Connected	Not Available*
Dial-up Networking			
Fax			
File Transfer			
Information Exchange			
Network Access			
Serial Port			
Synchronization			

Chapter Two

Installation

Installing Bluetooth for Windows (BTW)

SYSTEM REQUIREMENTS

Bluetooth for Windows (BTW) runs under Microsoft® Windows® 2000, Windows 98 Second Edition (SE), and Windows Millennium Edition ("Me").

UNINSTALL PREVIOUS VERSION OF BTW

Any previous version of the BTW software must be uninstalled before installing an upgraded version.

There are two ways to remove BTW:

1. The Install Shield® Wizard automatically uninstalls the previous version when a new version is installed.

2. Manually uninstall BTW by completing these steps:

a) Close any open applications.

b) From the Windows taskbar, click Start **followed by** Settings **followed by Control Panel.**

c) Double-click Add/Remove Programs.

d) On the *Add/Remove Programs* **window, select the EPoX Bluetooth Software entry. Scroll down if necessary.**

e) Click the Change/Remove **button (Windows 2000). The Install Shield Wizard is started.**

f) Click OK **on the** *Confirm File Deletion* **window to remove the EPoX Bluetooth Software and all of its components.**

g) When prompted, click Restart **and then click the** Finish **button.**

installation process. Under normal Windows 2000 installations you should not be prompted for the Windows CD; however you may want to have it on hand.

Install Shield Wizard
Installing BTW is an automated process made easy by the use of the Install Shield Wizard. You will need to:

- **Read and acknowledge the License Agreement.**

- **Fill in some customer information, including the License Key.**

- **Fill in some device information.**

- **Make a few choices**

Install Shield will uninstall the previous version of BTW, copy the required files, install drivers and virtual COM ports, set up the system registry, and register services.

Complete these steps to install BTW:

1. Exit all applications.

2. Insert the EPoX BTW CD. The auto-run option will start and the Install Shield Wizard setup dialog box is displayed. If auto-run does not occur, manually start the setup process—from the Windows taskbar, click Start **followed by** Run **and**

INSTALL BTW

Windows 98 Second Edition (SE) and Windows Millennium Edition (Me) BTW requires that a number of Microsoft® Windows® networking components be installed before BTW can be successfully configured. If Windows 98SE or Windows Me was installed without the networking components, have the MS Windows CD available during the BTW

select setup.exe **on the CD.**

3. Follow the instructions on the screen:

a) On the *Welcome* **screen, click the** Next **button.**

b) (Skip this step if you have already uninstalled any previous version of BTW) Should Install Shield Wizard find a previous version of BTW on the personal computer, it will attempt to uninstall it. On the *Remove the Program* **screen, click the** *Remove* **button. The** *Uninstalling EPoX Bluetooth Software* **screen displays the uninstall process progress. When complete, the system will reboot. Start the install process again, beginning at step 1.**

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

d) On the *Customer Information* **screen, enter the required information:**

A User Name, for example, *John Smith,* **An Organization name, for example,** *ABC Software.*

The License Key provided by EpoX (see Section 1.4—License Keys, for additional information). The format is: XXXXXXXX-XXXXXXXX-XXXXXXXX-XXXXXXXX. _ Click the Next **button.**

e) On the *Device Information* **screen, enter the required information: Device Name—other Bluetooth-enabled devices, when inquiring about devices within radio range, will see this user-configured device name. The name can be changed after the installation process through the BTW Configuration Panel. _ Device Type—click the down arrow and choose** Desktop **or** Laptop **from the drop-down list. The device type can be changed after the installation process through the BTW Configuration Panel. _ Click the** Next **button.**

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

g) The Install Shield Wizard is ready to install the BTW software. If you need to review or change any settings, click the Back **button. Click the** Cancel **button to exit the Wizard. Otherwise, click the** Install **button. The Installing EPoX Bluetooth Software screen displays the installation progress. If prompted to insert the Windows CD, do so and follow the on-screen instructions.**

h) When the installation has complete, click the Finish **button on the Install Shield Wizard Completed screen.**

Install Shield Wizard Screen Shots

Install Shield Wizard contains screen shots of the Install Shield Wizard as it is displayed during the

Installation of Bluetooth for Windows. The illustrations have been reduced in size.
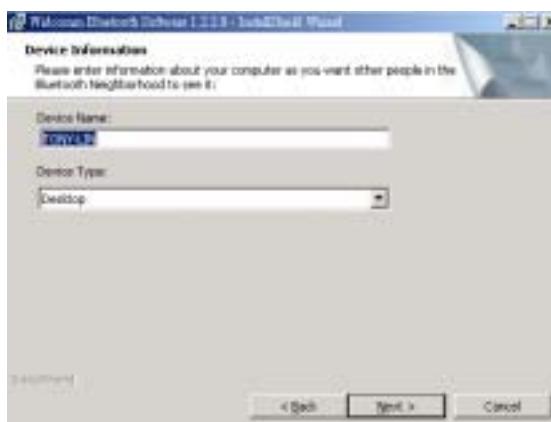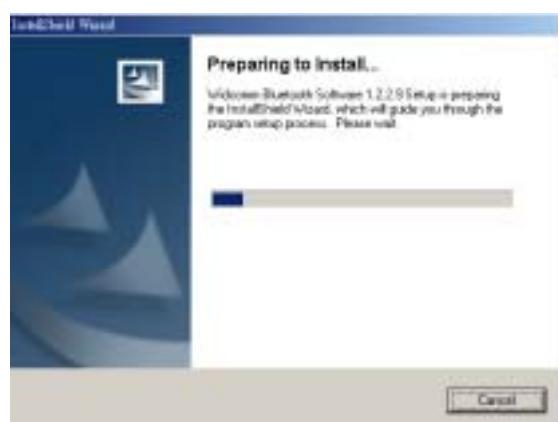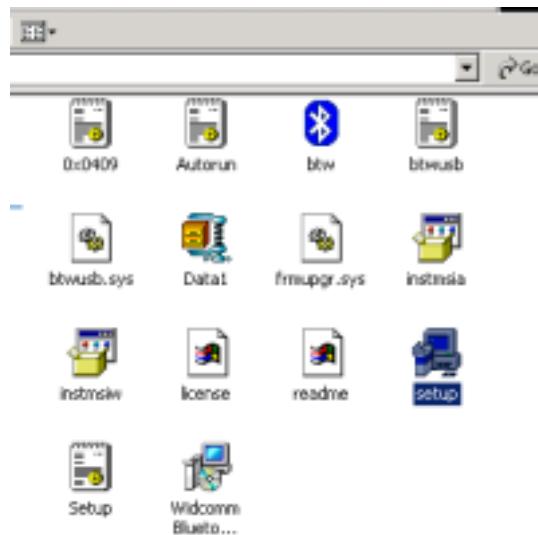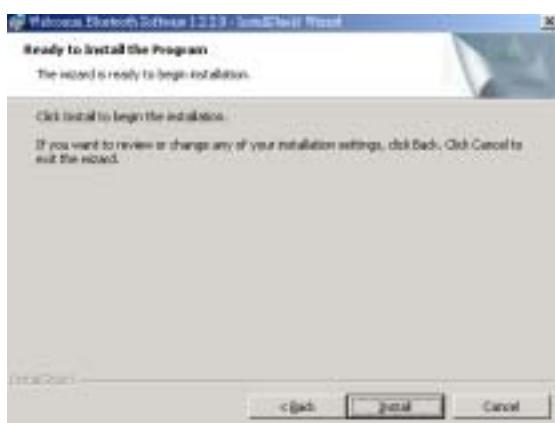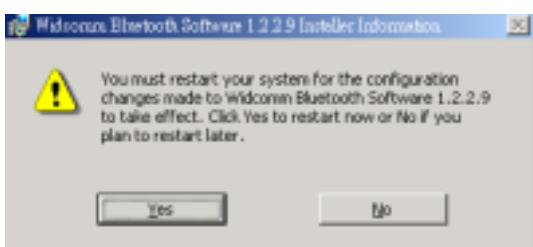
Chapter Three

Basic Operations

Start Program

way 1
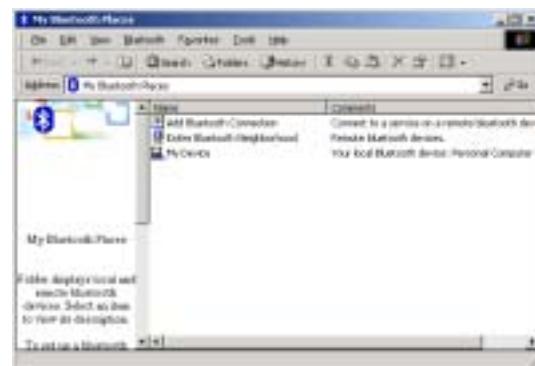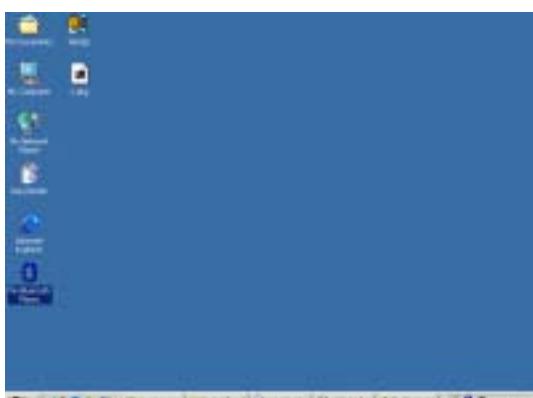
Find Bluetooth Devices

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

To start the Search for Devices:

- **In the Folders pane of My Bluetooth Devices, select (highlight) a device name**
- **Open the Bluetooth menu and select Search for Devices.**

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

way 2

Periodic Search for Devices

Bluetooth for Windows can be configured to automatically search for devices on a regular basis (Bluetooth Configuration Panel >Discovery tab).

One of the advantages of Bluetooth is the mobility the wireless connections allow.

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However, mobility means that devices may move in or out of connection range during the time between the automatic updates performed by Bluetooth for Windows. To be certain that the displayed list of devices in the neighborhood is current, or if automatic periodic inquiry is not enabled, force an update of the device list using the technique described in Find Bluetooth Devices, above.
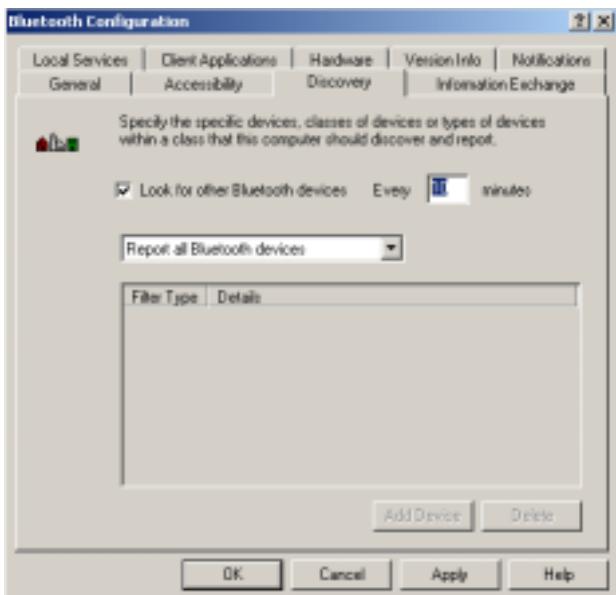
Some devices within connection range may not show up in the list of devices found because

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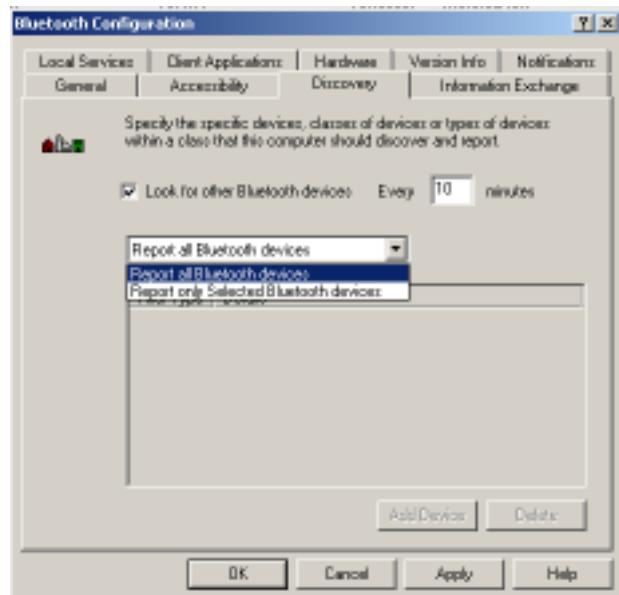
- The unlisted device is configured to be non-discoverable (Bluetooth Configuration Panel > Accessibility tab, on the un-listed device).
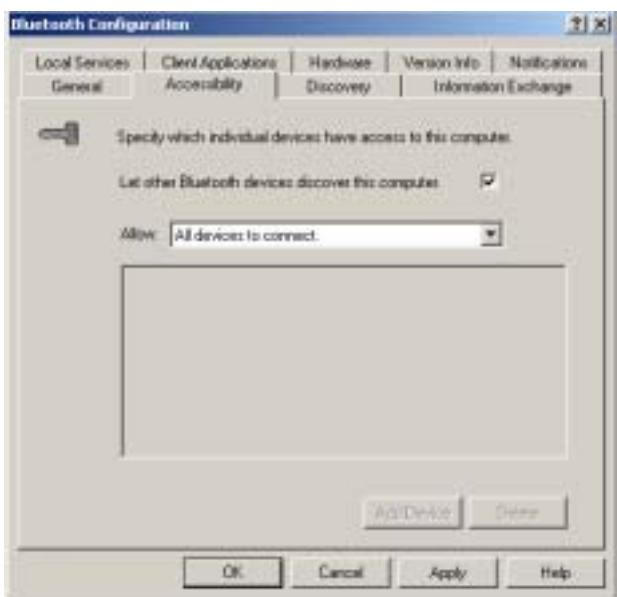
Find a Service

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

To initiate a Service Discovery, in the folders pane of My Bluetooth Places, right-click the device and select Discover Available Services from the pop-up menu.

The services supported by Bluetooth for Windows are:

- Bluetooth Serial Port establishes a Bluetooth wireless connection between two devices. The connection may be used by applications as though a physical serial cable connected the devices.

- Dial-up Networking allows a Bluetooth client to use a modem that is physically attached to the Bluetooth server.

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

- File Transfer establishes a Bluetooth wireless connection that allows your computer to perform file system operations on another Bluetooth-enabled device browse, drag/drop, open, print, cut/copy, paste, delete, rename, etc.

- Information Exchange establishes a Bluetooth wireless connection between two devices so that they can exchange personal information manager data such as business cards, calendar items, email messages, and notes.

- Information Synchronization establishes a Bluetooth wireless connection between two devices and uses the connection to synchronize Personal Information Manager Data between the two devices.

- Network Access establishes a Bluetooth wireless connection between the client and a server that is physically connected to the Local Area Network. If the client has permission (user name and password for the LAN), the wireless connection can be used as if the client were hardwired to the LAN.

All Bluetooth servers do not necessarily provide all of these services. For example, network gateways only provide access to the Local Area Network (the Network Access service).
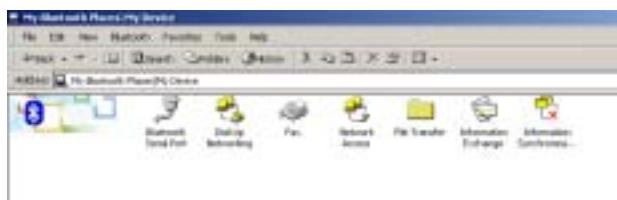
Bluetooth Connection Status

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

Display the Connection Status dialog box
- **In My Bluetooth Places, from the Folders pane, select (highlight) a device.**

- **In the right pane of My Bluetooth Places, right-click a service name and select Status from the pop-up menu.**
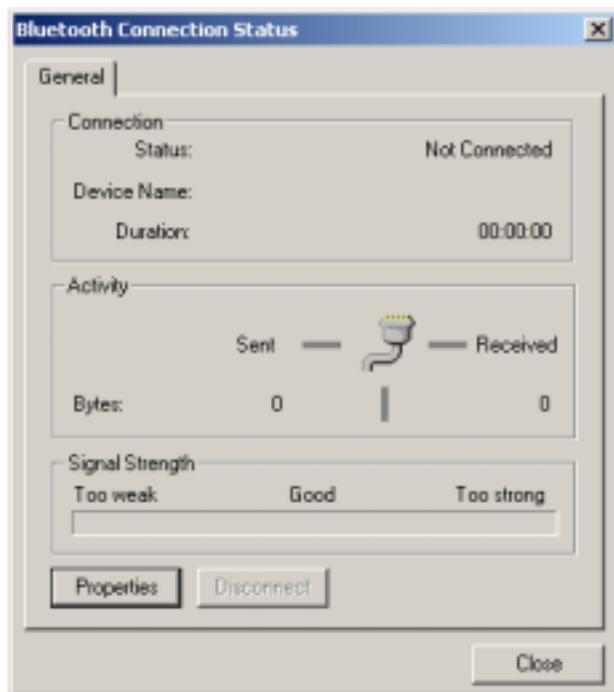
Information provided is
- Status: **Connected or Disconnected.**

- 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 variable scale that ranges from Too Weak through Good to Too Strong.**

To change the power transmission level

of this computer: from the Bluetooth Configuration Panel, Hardware tab, click the Advanced button, and then change the setting in the Maximum Power Transmission drop-down list.

The controls in the Bluetooth Connection Status dialog box are
- Properties **button: displays the Bluetooth Properties dialog box for this connection.**

- Disconnect **button: closes this connection.**

- Close **button: closes the Bluetooth Connection Status dialog box.**

Bluetooth Connection Wizard

The Connection Wizard walks you through the process of setting up a new Bluetooth connection with another device. The connection is not actually established; instead, a shortcut is placed in the right pane of My Bluetooth Places. To use the connection, double-click the shortcut.

Setup a new connection
- **Open the Connection Wizard: in the Windows system tray, right-click the Bluetooth icon, select Services from the pop-up menu, and then select Connection Wizard from the fly-out menu.**
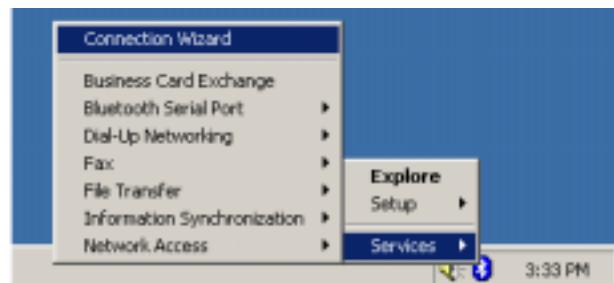
- **On the first Connection Wizard screen:**

  - **In the Select a Service drop-down menu, select the** *type* **of connection that will be established. (The specific service will be selected later, if necessary.)**

  - **In the select a device that provides the service drop-down menu, select the device that will provide the service. (To update the list of devices displayed, click the Search Devices button.)**

  - **Optional: select the require secure encrypted connection option to enable Authentication and Encryption for this connection.**
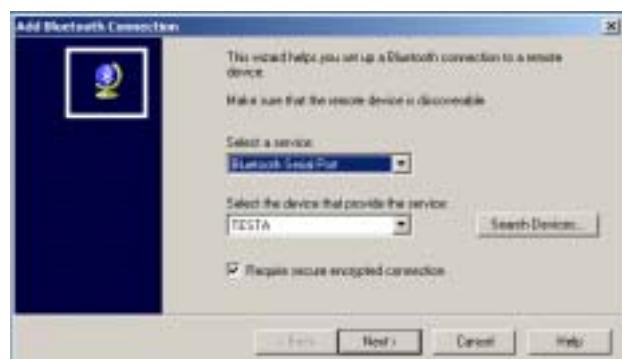
- **Click the Next button.**

- **If the service that was selected in the Select Bluetooth Service dialog box is not offered by the device that was selected in the elect a device that provides the service drop-down menu, then the Select Bluetooth Service dialog box appears with a list of services that are offered by the selected device:**

  - **Select a different service from the Select Bluetooth Service dialog box and click the OK button to proceed or**

  - **Click the Cancel button to close the Select Bluetooth Service dialog box and return to the previous screen, from which you can select a different device.**

- **If more than one service of the type selected in the Select a Service drop-down menu (above) exists on the selected device, for example, multiple Bluetooth Serial Ports, and then the Select Bluetooth Service dialog box appears. Select the specific service to be used and then click the OK button to close the Select Bluetooth Service dialog box.**

- **If only one service of the type selected in the Select a Service drop-down menu (above) exists on the selected device, the next Connection Wizard screen appears.**

- **If "Require secure encrypted connection" was selected, above, a security screen appears.**

  - **To establish a paired relationship with the remote device while using this wizard, enter your Personal Identification Number in the PIN Code field and then click the Next button.**

  - **To establish the paired relationship with the remote device the first time this connection is used, leave the PIN Code field blank and click the Next button.**

- **On the last Connection Wizard screen:**

  - **The top of the screen provides basic information about the new connection he name of the device that will provide the service and the name of the service that will be provided. If this information is NOT correct, click the Back button to return to the previous screen and from that screen select the correct service and device.**

  - **In the connection Name: field, enter a descriptive name for the connection, for example, T Serial Connection to Joe Desktop.**

  - **Optional: select make <selected_device> the default Bluetooth device for <service_name>**

to make this connection the default when using this service. For example, if this option is selected and the text reads make Joe Desktop the default Bluetooth device for the Bluetooth Serial Port service then Joe Desktop will become the default device to be connected to when establishing the Bluetooth Serial Port connection.

Bluetooth Tray

The Bluetooth Tray resides in the Windows System Tray, which is normally located in the lower-right corner of the screen. Bluetooth Tray provides fast access to many routine Bluetooth operations.

From BTTray you can:
- Access My Bluetooth Places **double-click the Bluetooth icon.**

- Access the Bluetooth Configuration Panel **Right-click the Bluetooth icon, selects Setup, and then selects Configuration from the fly-out menu.**

- Access the Bluetooth Security dialog box **Right-click the Bluetooth icon, select Setup, and then select Security from the fly-out menu.**

- Access the Bluetooth Connection Wizard **Right-click the Bluetooth icon, selects Services, and then selects Connection Wizard from the fly-out menu.**
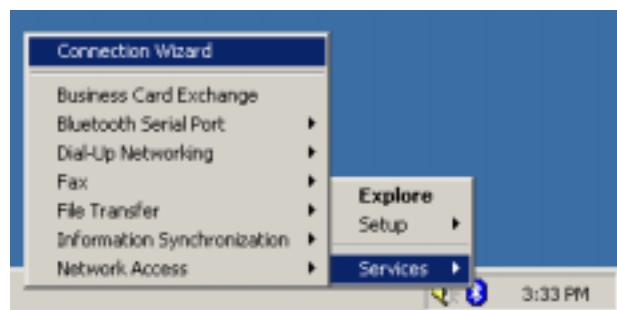
- Exchange Business Cards with another Bluetooth Computer **right-click the Bluetooth icon, selects Services, and then selects Business Card Exchange from the fly-out menu.**
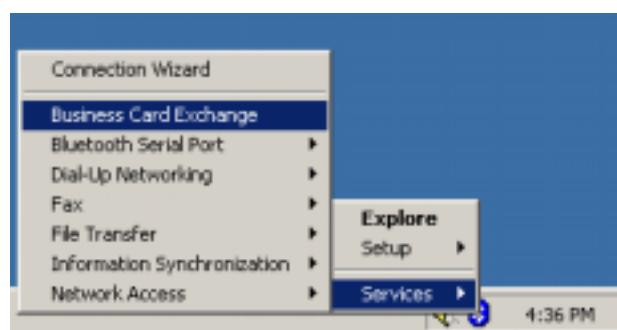
- Search for and connect to a specific service **right-click the Bluetooth icon, select Services, and then select the desired service from the fly-out menu. An additional fly-out menu will appear that contains one or more options, including:**

  - **Find Devices or other Devices and one**

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or

- **more device names. The device name(s) will be present if this computer has used this service, and connected via this technique, at least once before. If a device name is present in the fly-out menu, selecting that device will re-initialize the connection.**

Send to Bluetooth

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

- **Files from Microsoft Explorer**

- **Documents from Microsoft Office applications, including:**

  - **Word**

  - **Excel**

  - **Access**

  - **PowerPoint**

- **Contacts, appointments, tasks, messages, and notes from Microsoft Outlook.**

To use Send to Bluetooth
- **In the application:**

  - Microsoft Explorer **selects one or more files to be transferred. Folders cannot**

be transferred.

  - Microsoft Office **only the document in the active window can be transferred.**

  - Microsoft Outlook **selects one or more items to be transferred.**

- **From the File menu, select Send To, and then select Bluetooth from the fly-out menu.**

  - **Select other to display the Select Device dialog box, or**

  - **Select a device from the sub-menu.**

  - **Click the OK button to send the data.**

A dialog box displays progress.

Chapter Four Client

Appliance

Network Access

The Network Access service permits a Bluetooth client to use a Local Area Network connection that is physically attached to another Bluetooth device (the server).

Possible Network Access servers include
● **Bluetooth-enabled computers that have a hardwired Ethernet connection**

● **Stand-alone Bluetooth Network Access Points**

The Bluetooth server must be specifically configured to provide the Network Access service.

After a Bluetooth device is configured as a Network Access server it cannot act as a Network Access client without being re-configured.

Network Access Setup for

Windows 2000

● **From the Windows Control Panel, select**

Network and Dial-up Connections.
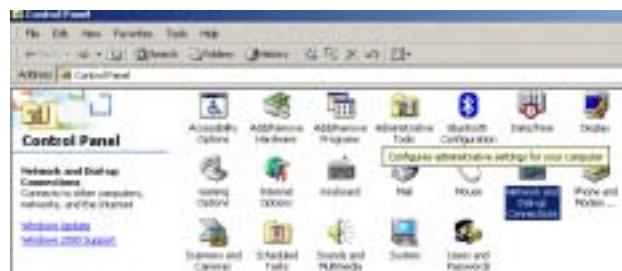
● **Right-click the Local Area Connection icon and select Properties**

● **In the Local Area Connection Properties dialog box, on the Sharing tab, select Enable Internet Connection Sharing for this connection and then click OK.**

Click YES in the confirmation dialog box to enable Internet connection sharing

Network Access Setup for Windows 98SE & Windows Me

Internet Protocol routing software is required on Windows 98SE and Windows Me servers; a downloadable trial version of Win Route Lite is available on the Tiny Software, Inc.

Configure the server:

- **From the Windows Control Panel, double-click the Network icon.**

- **On the Configuration tab, select TCP/IP-> Bluetooth LAN Access Server Driver (scroll down if necessary).**

- **Click Properties and select the IP Address tab.**

  - **Select Specify an IP address**

  - **Enter an IP Address (suggested value 192.168.1.1).**

  - **Enter a Subnet Mask (suggested value 255.255.255.0).**

- **Click OK twice to close the dialog boxes.**

- **Click YES to restart the computer.**

Configure the routing software:
- **In the Windows system tray, right-click the Win Route icon and select Administration**

- **On the Settings tab, select and network adapter**

- **From the Network adapter drop-down list, choose any adapter other than the EPoX adapter, and then click the Settings button.**

- **On the DHCP tab, in the Adapter drop-down list, select the EPoX Bluetooth Windows 9x Adapter.**

- **Select Enable DHCP Server.**

- **Fill in the client IP address range fields:**

  - **From 10**

  - **To 40**

Click the OK button and then minimize (do not close) the Win Route administration configuration panel.

Bluetooth Serial Port

The Bluetooth Serial Port service allows two Bluetooth devices to establish a wireless connection through virtual

communications ports and then use that connection as if it were a hardwired serial cable between the devices.

To establish a Bluetooth serial port connection

Connections are initiated from the client:

● **On the client, in the Folders pane of My Bluetooth Places, select Entire Bluetooth Neighborhood.**

● **In the right pane of Entire Bluetooth Neighborhood, right-click anywhere** *except on a device name* **and select Refresh from the pop-up menu.**
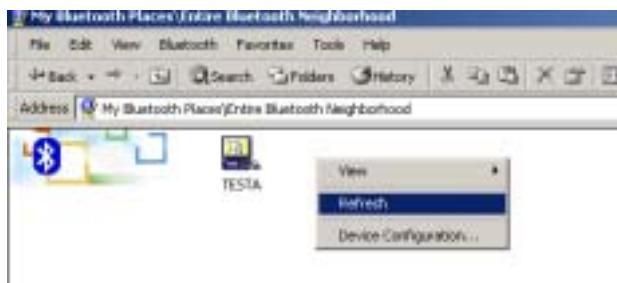
● **In the Folders pane of My Bluetooth Places, right-click the server you want to establish a connection with and select Discover Available Services from the pop-up menu to update the available services list. The available services will be displayed in the right pane of My Bluetooth Places.**
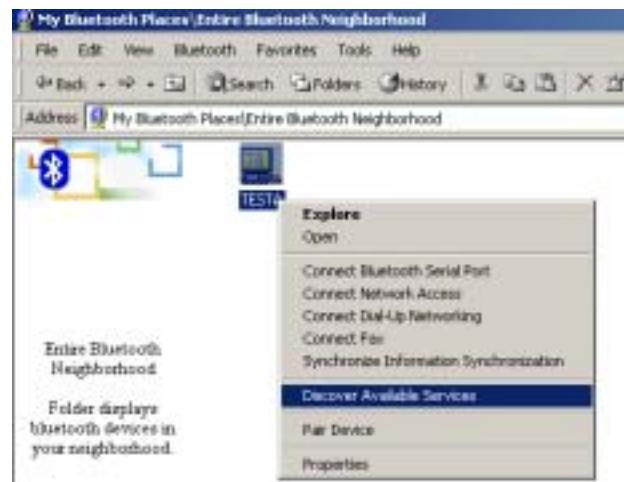
● **In the right pane of My Bluetooth Places, double-click Bluetooth Serial Port. A dialog box appears that contains the communications port number assigned to this connection by the client. The application that will use this connection must be configured to send data to this port.**
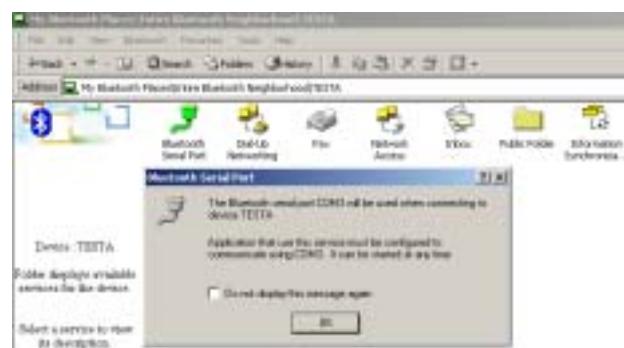
Depending on the security configuration, the dialog box that provides communications port information may not appear until after Authentication and Authorization have been accomplished.

Determine the communications port being used by the server

The application on the server must be configured to use the correct communications port.

To determine the communications port being used by the service:

- **On the server, in the Folders pane of My Bluetooth Places, right-click My Device and select Properties from the pop-up menu**

- **In the Bluetooth Configuration Panel, select the Local Services tab.**

- **Double-click the Bluetooth Serial Port service to display its Service Properties dialog box. The Service Properties dialog box shows the communications port that the connection is using.**
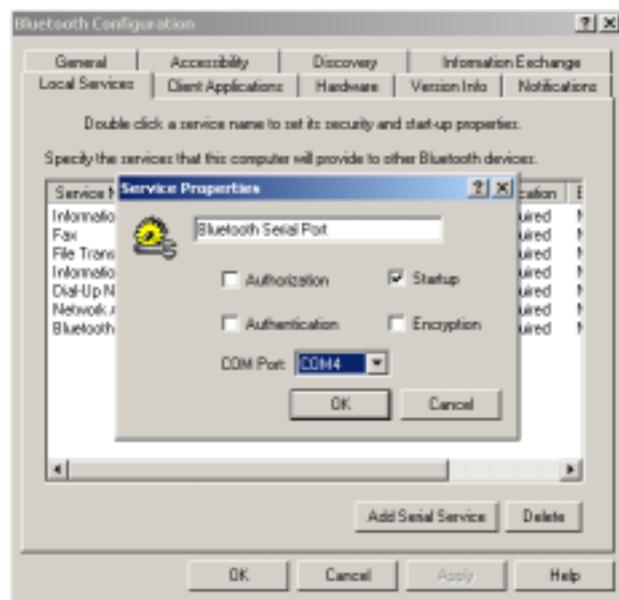
Close a Bluetooth serial port connection

Connections are normally closed from the client:

- **On the client, in the Folders pane of My Bluetooth Places, select (highlight) the device that is providing the Bluetooth Serial Port service.**

- **In the right pane of My Bluetooth Places, right-click Bluetooth Serial Port and then select Disconnect Bluetooth Serial Port from the pop-up menu.**
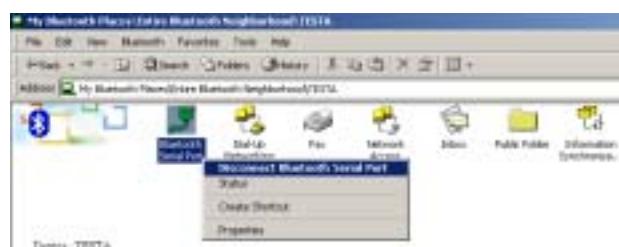
Though not recommended, connections can also be closed from the server:

● On the server, in the Folders pane of My Bluetooth Places, select (highlight) My Device.

● In the right pane of My Bluetooth Places, right-click Bluetooth Serial Port and then select Stop to close the service. The service must be re-started before it will be available to remote devices (right-click Bluetooth Serial Port and select Start from the pop-up menu).

Dial-up Networking

The Dial-up Networking service permits a Bluetooth client to use a modem that is physically connected to a different Bluetooth device (the server).

After the Bluetooth wireless connection is established the client can use the server modem as if it were a local device on the client.

Establish a Dial-up Networking session

Connections are initiated from the client:

● On the client, in the Folders pane of My Bluetooth Places, select Entire Bluetooth

Neighborhood.

● In the right pane of Entire Bluetooth Neighborhood, right-click anywhere *except on a device name* and select Refresh from the pop-up menu.
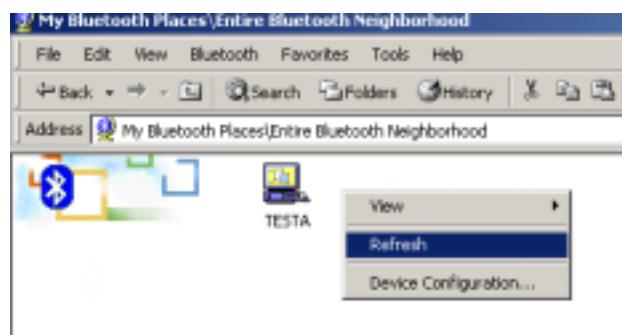
● In the Folders pane of My Bluetooth Places, right-click the server that will provide the Dial-up Networking Service and select Discover Available Services from the pop-up menu to update the available services list. The available services will be displayed in the right pane of My Bluetooth Places.

● In the right pane of My Bluetooth Places,

25
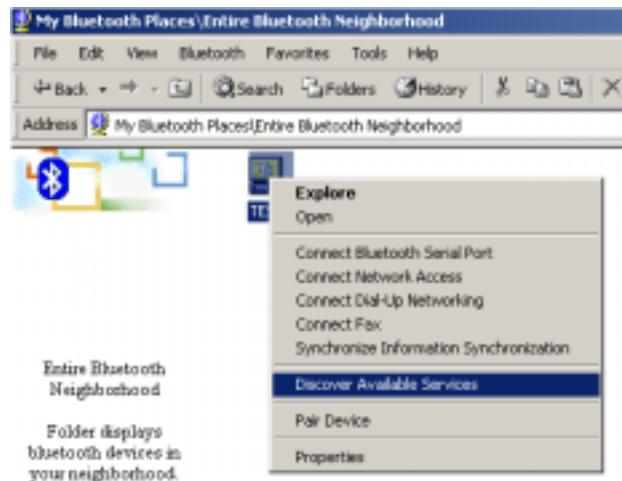
double-click Dial-up Networking.

- **In the Connect to dialog box, fill in your user name, password, and the phone number to be dialed, and then click the Dial button. Select the Save password check box and the dialog box will not appear for subsequent connections to the same phone number.**

You can now open a web browser and connect to the Internet.

Close a Dial-up Networking connection
- **On the client, in the Folders pane of My Bluetooth Places, select (highlight) the device that is providing the Dial-up**

Networking service.

- **In the right pane of My Bluetooth Places, right-click Dial-up networks and then selects Disconnect Dial-up Networking from the pop-up menu.**
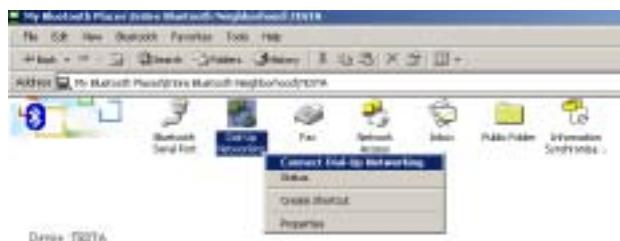
Fax

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

Send a Fax
Connections are initiated from the client:

- **On the client, in the Folders pane of My Bluetooth Places, select Entire Bluetooth Neighborhood.**

- **In the right pane of Entire Bluetooth Neighborhood, right-click anywhere *except on a device name* and select Refresh from the pop-up menu.**
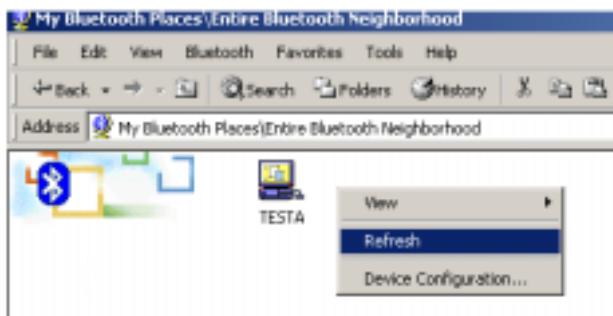
- **In the Folders pane of My Bluetooth Places, right-click the server that will provide the Fax service and select Discover Available Services from the pop-up menu to update the available services list. The available services will be displayed in the right pane of My Bluetooth Places.**
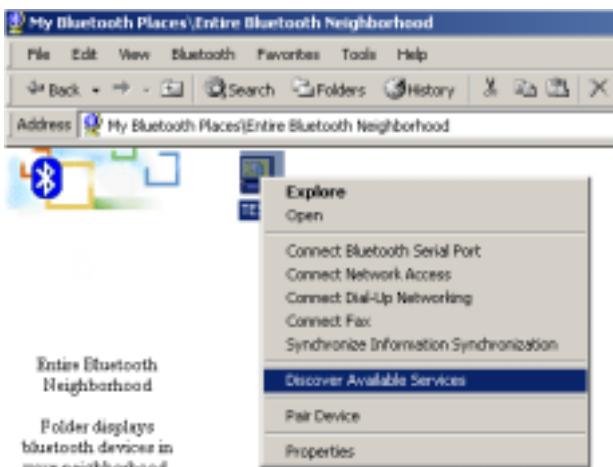
- **In the right pane of My Bluetooth Places, double-click Fax.**

After the Fax connection is established,

open or create the document to be faxed and use the print or end to Fax Recipient option available in most applications.

The Fax connection closes automatically when the transmission is complete.

File Transfer

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

Perform an operation on a folder or file

On the machine from which the File Transfer service will be used:

- **In the Folders pane of My Bluetooth Places, select Entire Bluetooth Neighborhood.**

- **In the right pane of Entire Bluetooth Neighborhood, right-click anywhere *except on a device name* and select Refresh from the pop-up menu.**

- **In the Folders pane of My Bluetooth Places, right-click the device you want to Transfer Files with and select Discover Available Services from the pop-up menu to update the available services list. The available services will be displayed in the right pane of My Bluetooth Places.**

- **Still in the Folders pane of My Bluetooth Places, click the plus (+) sign in front of Public Folder to expand that folder. If there are additional folders inside the expanded folder then those additional folders may have to be expanded. Folder contents are displayed in the right pane of My Bluetooth Places.**

Types of File Transfer operations

In the right pane of My Bluetooth Places, right-click a folder item and select an option from the pop-up menu. A dialog box (the title varies, depending on the operation being carried out) appears and the status line (bottom of the dialog box) indicates the operational step that is being carried out.

The types of operations that can be accomplished are:

- **Open:**

Files re opened in the application associated with them.

- **Folders re expanded to show their contents.**

- **Print ends the selected server file to the client default printer.**

- **Send to:**

- **3.5 Floppy Drive copies the selected item(s) from the server to the client 3.5 floppy drive.**

- **My Shared Folder copies the selected item(s) from the server to the default File Transfer folder on the client.**

- Cut **copies a folder and its contents, or individually selected files in a folder, to the Windows clipboard. When the clipboard contents are pasted to a new location, the originally selected file(s) on the server are deleted.**

- Copy **copies a folder and its contents, or individually selected files in a folder, to the Windows clipboard.**

- Delete **deletes selected file(s) and/or folder(s) on the server.**

- Rename **allows you to change an empty folder name.**

- Properties **displays the file or folder properties dialog box.**

Other options that may appear **(Depending on the context that the menu appears in)**

- **Update updates the contents of a folder**

- **New Folder creates a new folder on the server**

- **Abort FTP Operation aborts an in-process File Transfer operation.**

Information Exchange

The Information Exchange service provides a way to send and receive Microsoft Outlook items to and from another Bluetooth device.

Supported Outlook items are
- **Business cards (*.vcf and *.vcd)**

- **Calendar entries (*.vcs)**

- **Notes**

- **Messages**

There are three types of operation
Send ends an object to another device.

- **Receive requests an object from another device.**

- **Exchange ends a client object and receives a server object.**

The default location of your business card and the location where received items are placed can be configured in the Bluetooth Configuration Panel.

Send, receive or exchange an object
On the client, in the Folders pane of My Bluetooth Places, right-click the Inbox icon of the remote device and select an

option from the pop-up menu.

Business cards are sent, received or exchanged without further intervention.

To send Calendar Items, Notes, and Messages, navigate to the folder that contains the item you want to send, select the item, and then click Open.

Services

Services are provided by the server and used by the client.

The services supported by Bluetooth for Windows are:

- Bluetooth Serial Port **establishes a Bluetooth wireless connection between two devices. The connection may be used by applications as though a physical serial cable connected the devices.**

- Dial-up Networking **allows a Bluetooth client to use a modem that is physically attached to the Bluetooth server.**

- Fax **allows a Bluetooth client to wirelessly send a fax using a device that is physically attached to the Bluetooth server.**

- File Transfer **establishes a Bluetooth wireless connection that allows your computer to perform file system**

operations on another Bluetooth-enabled device browse, drag/drop, open, print, cut/copy, paste, delete, rename, etc.

- Information Exchange **establishes a Bluetooth wireless connection between two devices so that they can exchange personal information manager data such as business cards, calendar items, email messages, and notes.**

- Information Synchronization **establishes a Bluetooth wireless connection between two devices and uses the connection to synchronize Personal Information Manager Data between the two devices.**

- Network Access **establishes a Bluetooth wireless connection between the client and a server that is physically connected to the Local Area Network. If the client has permission (user name and password for the LAN), the wireless connection can be used as if the client were hardwired to the LAN.**

All Bluetooth servers do not necessarily provide all of these services. For example, network gateways such as those in   Blue Gate series only provide access to the Local Area Network (the Network Access service).

Determine the services provided by a Bluetooth device

- **On the client, in the Folders pane of My Bluetooth Places, select Entire Bluetooth Neighborhood.**

- **In the right pane of Entire Bluetooth Neighborhood, right-click anywhere *except on a device name* and select Refresh from the pop-up menu.**

- **In the Folders pane of My Bluetooth Places, right-click a device and select Discover Available Services from the pop-up menu to update the available services list. The available services will be displayed in the right pane of My Bluetooth Places.**

Chapter Five Local Services

Local Services are those services that a Bluetooth server is capable of providing.

The services provided by Bluetooth for Windows are

- **Bluetooth Serial Port**

- **Dial-Up Networking**

- **Fax**

- **File Transfer**

- **Information Exchange**

- **Information Synchronization**

- **Network Access**

The names of all the services are displayed even though the server may not be capable of supporting all services. For example, when a server provides a service that is hardware-dependant, that server must be capable of local action, i.e., a Dial-up Networking server must have a working modem, a Fax server must have a functional fax modem, and a Network

Access server must be physically connected to the Local Area Network.

All services start automatically by default when Bluetooth for Windows is initialized.

Automatic start-up can be turned off for individual services (Bluetooth Configuration Panel, Local Services tab, double-click the service name). If a service is not configured to start automatically it can still be started manually (right-click the service and select Start from the pop-up menu).

Stop a local service

Right-click the service and select Stop from the pop-up menu. Stopped services are not available for use by clients.

With Local Device selected, the Details view of Explorer provides basic information about each local service:

- **Service the name of the service**

- **Startup automatic or Manual**

- **Status:**

  - **Started (COM#) the service is running and ready to use COM#.**

  - **Not Started the service is not running (not available to clients).**

- **Connected (COM#) the service is in use, the local port is COM#.**

- **Device name if connected:**

  - **Empty field the service is not connected**

  - **A device name and/or Bluetooth Device Address identify the device that is using the service.**

Interrupt a connection from the server side

- **Right-click the local service and select Stop from the pop-up menu.**

- **Right-click the local service and select Start from the pop-up menu to re-start the service.**

Chapter Six

Configuration Panel

The Bluetooth Configuration Panel provides access to settings for Bluetooth services, hardware and security and for event notification.

Access the Bluetooth

Configuration Panel

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

- **In the Windows System Tray, right-click the Bluetooth icon, select Setup and then Configuration from the fly-out menu.**
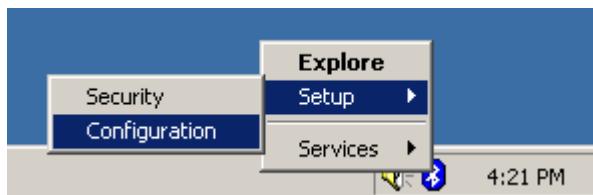
Accessibility Tab

Accessibility Configuration

Settings

The Accessibility tab of the Bluetooth

Configuration Panel lets you specify which remote devices may access this computer.
Security settings configured in the General, Local Services, and Client Applications tabs may also affect which devices have access to this computer.
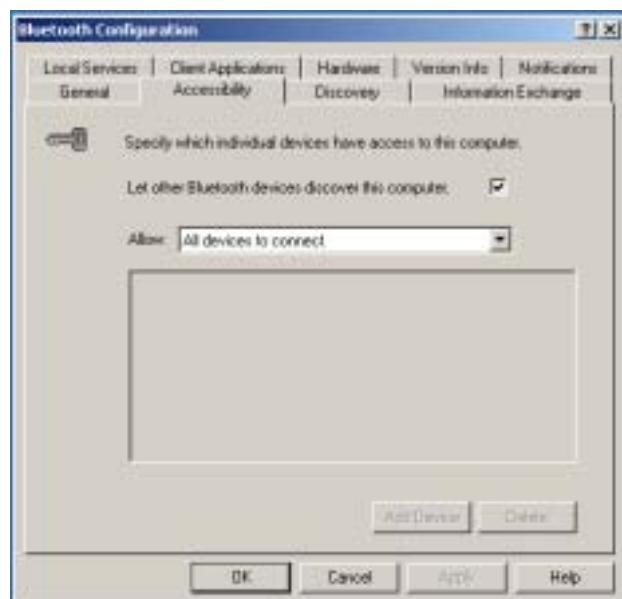
Allow other devices to discover this computer
Select "Let other Bluetooth devices discover this computer" to permit remote Bluetooth devices to find and report this computer in their My Bluetooth Places. If "Allow No devices to connect" (below) is selected, this option is not available.

devices).

Accessibility, Adding and Deleting Devices

Limit access to your computer to specific remote devices
From the Bluetooth Configuration Panel, Accessibility tab, in the Allow drop-down list box, select "Only devices listed below".
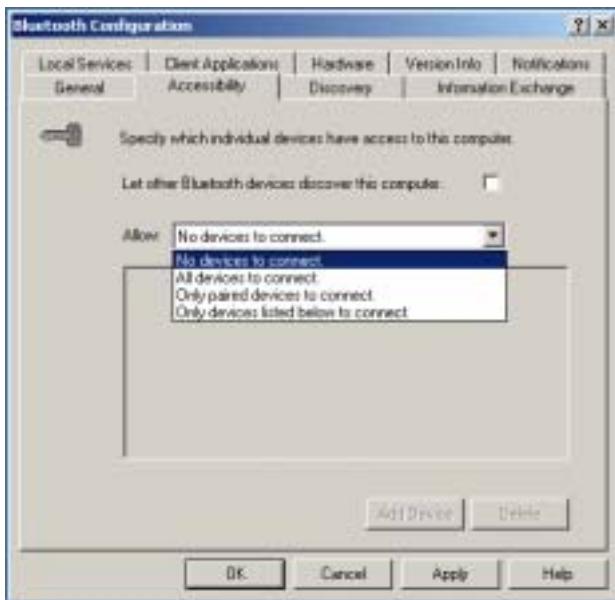
Control the types of devices that are allowed to connect to this computer
From the Allow drop-down-menu, select:

- **All devices to connect** well remote devices are permitted to connect to this computer.

- **No devices to connect** to remote devices are permitted to initiate a connection with this computer. However, this computer can still initiate connections (as a client) with remote Bluetooth devices.

- **Only paired devices to connect** only devices that have been paired with this computer are allowed to connect to it.

- **Only devices listed below to connect** only the listed devices are allowed to connect to this computer (see Accessibility, adding and deleting

Add a device to the list of devices allowed to connect
- **From the Bluetooth Configuration Panel, Accessibility tab, click the Add Device button.**
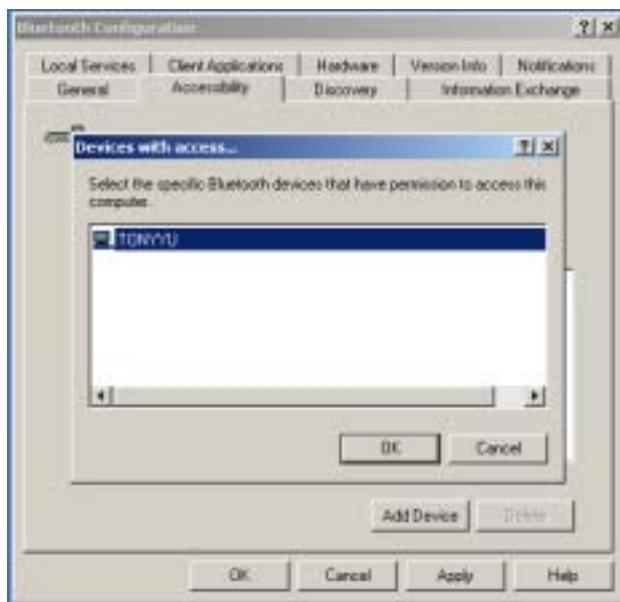
- **In the Devices with access... dialog box select the device(s) and click OK. Multiple devices can be selected at the same time using SHIFT + click and/or CTRL + click.**

Delete a device from the list of devices allowed to connect
- **From the Bluetooth Configuration Panel, Accessibility tab**
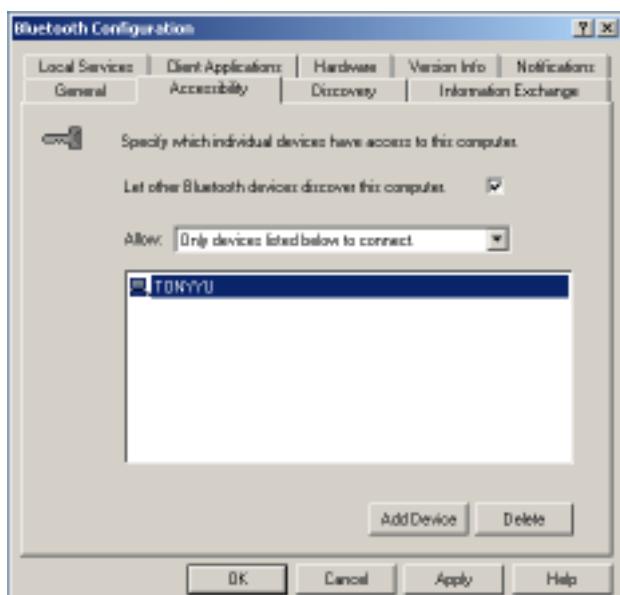
- **In the list of devices allowed to connect, click the name of the device to be removed and then click the Delete button.**

Discovery Tab

Discovery Configuration Settings

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

Periodic Search for Devices
When "Look for other Bluetooth devices" is selected, Bluetooth for Windows automatically searches for devices every X minutes. X is an integer from 1 to 60. To change the time between auto inquiries, highlight the existing time and enter the new time.

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

Determine the devices that will be reported
Bluetooth for Windows can screen out devices that you do not need access to.

The options are:

- **Report all Bluetooth devices**

- **Report only selected Bluetooth devices (see Discovery, Adding Specific Devices and Discovery, Deleting Specific Devices).**

Select the desired option from the drop-down list.

Discovery, Adding Specific Devices

Limit the type of remote devices reported
Bluetooth for Windows can report only specific devices, specific classes of device(s), or specific type(s) of device(s) within a class. Discovered devices 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.

When Bluetooth for Windows is configured to report only specific devices, it reports ONLY those devices.

Report only specific devices
- **From the Bluetooth Configuration Panel, on the Discovery tab, select "Report only selected Bluetooth devices" from**

the drop-down list and then click the Add Device button.
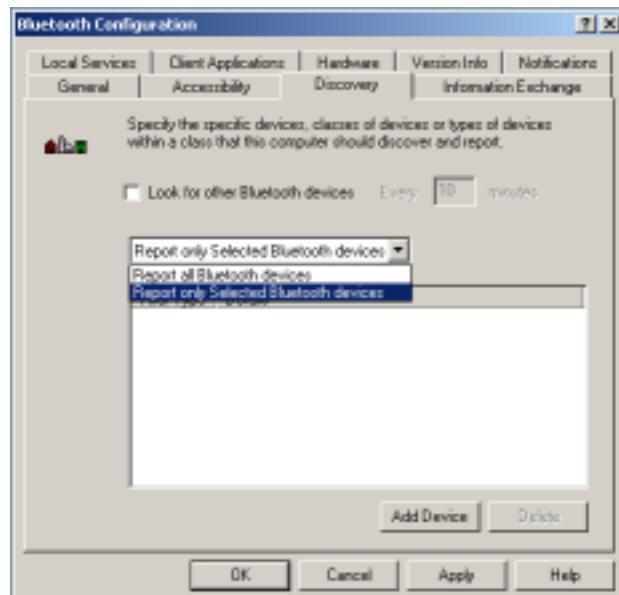
- **In the Discoverable devices... dialog box, highlight the device to be discovered and click the OK button. Multiple devices can be selected at the same time using SHIFT + click and/or CTRL + Click.**
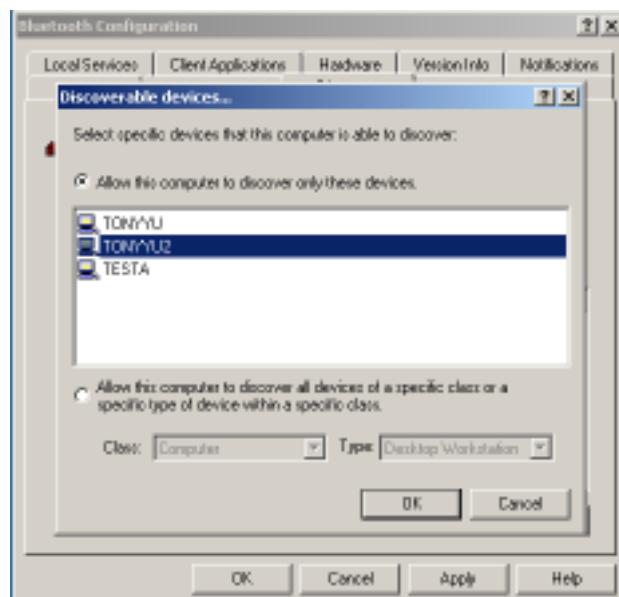
To add a device to the list of devices to be discovered, that device must be within range of the Bluetooth radio; devices that are not within radio range will not appear in the list of devices in the Discoverable devices... dialog box.

Report only a specific class of device

● **From the Bluetooth Configuration Panel, on the Discovery tab, select "Report only selected Bluetooth devices" from the drop-down list and then click the Add Device button.**

● **In the Discoverable devices... dialog box, select "Allow this computer to discover specific devices or types of devices within a class."**

● **From the Class drop-down list, select a class of devices to be discovered.**

● **Click the OK button.**

Report only a specific a type of device within a class

● **Configure Bluetooth for Windows to report the class of device that the type of device belongs to (follow the steps in "Report only a specific class of device," above, but do NOT click the OK button).**

● **In the Discoverable devices... dialog box, from the Type drop-down menu select the specific type of device to be**

reported.

● **Click the OK button.**

Discovery, Deleting Specific Devices

Remove a device from the list of devices to be discovered
In the Bluetooth Configuration Panel, from the Discovery tab, select the device to be removed and click the Delete button.

If "Report only selected Bluetooth devices" is not selected the Delete button will not be available.

Temporarily override the discovery of specific devices
In the Bluetooth Configuration Panel, from the Discovery tab, select "Report all Bluetooth devices." The specifically selected devices will be discovered along with all other devices.

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

When all devices are deleted an error message will appear if report all Bluetooth devices is not selected.

General Configuration Settings

The settings on the General tab of the Bluetooth Configuration Panel determine device properties and basic system security settings.

● Identity section

  ● **Computer Name-enter a unique names 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 drop-down menu to help identify this computer to other Bluetooth devices in the vicinity.**

● Bluetooth Security Section

  ● High-**requires Bluetooth devices to authenticate (enter a Personal Identification Number (PIN)) before allowing a connection to be established. Your computer and the connected Bluetooth device will exchange data using encrypted links.**

  ● Medium-**the default setting security is configured at the service-level. Service level security means that each individual service must have its security settings (Authentication, Authorization and Encryption) set**

independently.
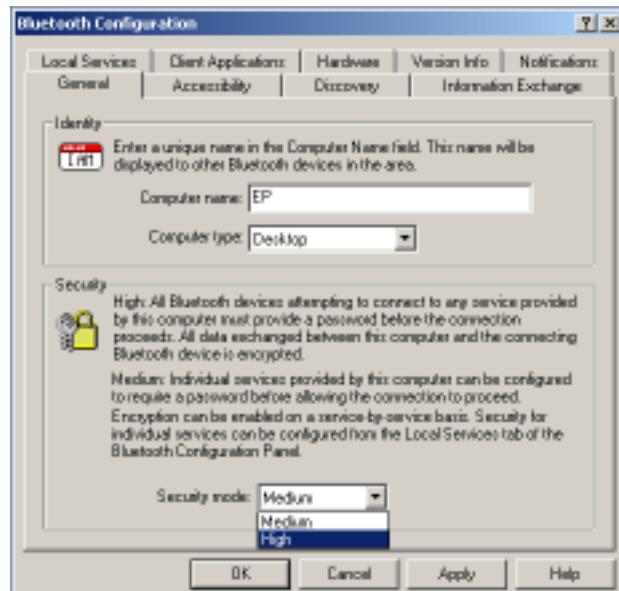
If the security mode is medium and service-level security is not configured, any Bluetooth device will be able to discover your computer and use it services.

Hardware Configuration

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

● Devices:

  ● Name**: the name of the device, e.g., EPoX** *Bluetooth Device*

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● **Type: the type of device, e.g., USB.**

● **Device Properties:**

● Manufacturer: **the name of the company that manufactured the device selected in the Devices section of this dialog box.**

● Firmware Revision: **the manufacturer's firmware version number.**

● Device status: **indicates that the device is operating properly or that there is a problem/conflict.**

● Device Address: **the Bluetooth Device Address (BDA or BD Address) programmed into this device when it was manufactured.**

● HCI Version: **the version number of the Bluetooth Specification that the Host Controller Interface complies with.**

● HCI Revision: **the revision number of the Bluetooth Specification that the Host Controller Interface complies with.**

● LMP Version: **the version number of the Bluetooth Specification that the Link Manager Protocol complies with.**

● LMP Sub Version: **the sub-version**

number of the Bluetooth Specification that the Link Manager Protocol complies with.

● The Advanced button: **displays the Advanced Settings dialog box, which allows you to select the country code and transmission power settings.** *This option is not available on all systems.*

Plug in Dongle

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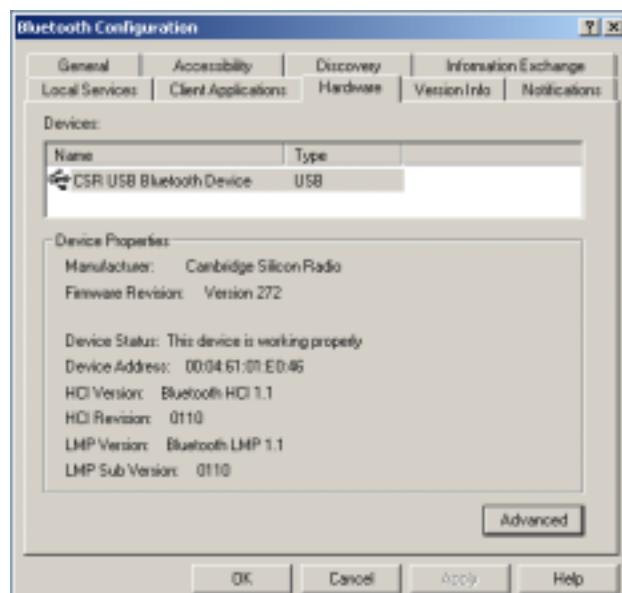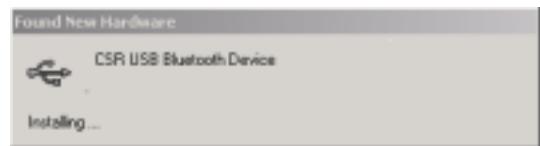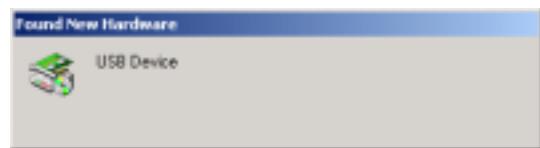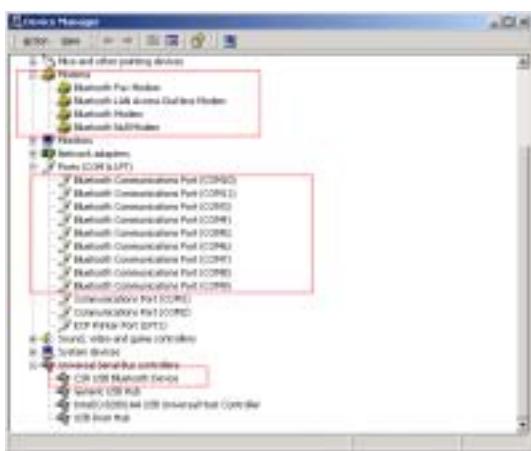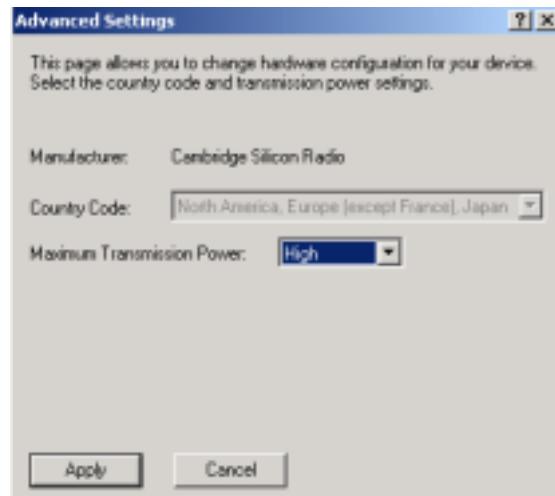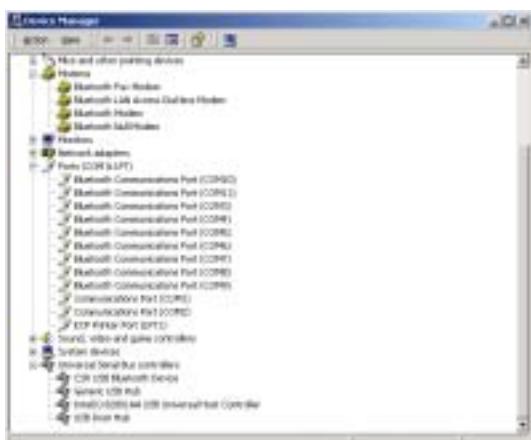
Hardware Advanced Settings Dialog Box

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

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

From this dialog box you can set the:

- **Country Code:**

  - **North America, Europe (except France), and Japan**

  - **France and China**

- **Maximum Transmission Power:**

  - **High**

  - **Medium**

  - **Low**

Click the Apply button to implement the changes. A dialog box appears with notification that the Bluetooth device attached to this computer must be reset

before the change(s) will take effect.

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

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

Information Exchange

Configuration Settings

The settings on the Information Exchange
tab of the Bluetooth Configuration Panel
configure:

● The highest-level directory on this
computer that a remote device has
permission to access

● The path to your electronic business
card

● The path to the directory that will be
used to save incoming:

  ● Business cards

  ● Notes

  ● Messages

  ● Calendar items

File Transfer

My Shared Directory: **the directory
configured in this section is the
highest-level directory to which a remote
Bluetooth computer has access. This
directory and its sub directories are
displayed in the remote device's My
Bluetooth Places.**
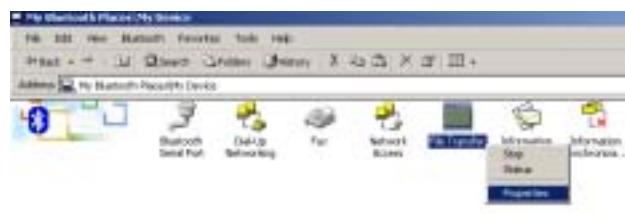
Click the Browse button and navigate to
the directory that will be used as My
Shared Directory.

Send Business Card

My Business Card: **the path to the
directory on this computer that contains
your electronic business card.**

Select the "Send Business Card on
Request" option to allow remote devices

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to obtain your business card.

Click the Browse button and navigate to the directory that contains your business card.

Receive Business Card

My Inbox Directory: **the path to the directory on this computer where inbound Personal Information Manager Items such as Business cards, Notes, Calendar entries and messages will be saved.**

Select the types of items you wish to accept by placing a checkmark in the appropriate boxes, then click the Browse button and navigate to the directory where they should be saved.

Select the "Save Object in Personal Information Manager" option to save incoming objects directly in the PIM. *When this option is selected, the path specified in   your Inbox Directory is not used.*

Local Services Tab

Local Services Configuration Settings

The settings on the Local Services tab of the Bluetooth Configuration Panel determine the configuration of the

services provided by your computer to remote devices. Each service can be configured individually for security, name, and other settings.

The Local Services tab also includes options to add and delete user-defined serial services.

Bluetooth for Windows Local Service Names

• **Bluetooth Serial Port**

• **Dial-Up Networking**

• **Fax**

• **File Transfer**

• **Information Exchange**

• **Information Synchronization**

• **Network Access**
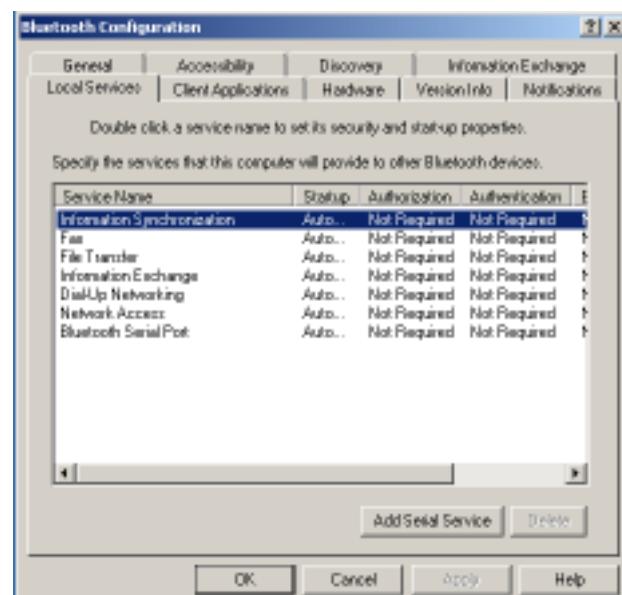
Property settings which are common to all of the local services

Although each of these settings can be set individually for each service, all local services have the have setting for:

- **Authentication**

- **Authorization**

- **Encryption**

- **Startup**

- **Service Name**

Some local services have additional property settings

Some services have an additional setting that is specific to that service.

- **Network Access has an additional setting for the maximum number of connections allowed at any time.**

- **Dial-Up Networking has an additional setting for selecting the modem that will be used by the service.**

- **Fax has an additional setting for selecting the modem that will be used by the service.**

- **Bluetooth Serial Port has an additional setting for selecting the communications that will be used by**

the service.

Notifications Tab

Notifications Configuration

Settings

The Notifications tab of the Bluetooth Configuration Panel lets you associate a sound (Windows *.wav file) with specific Bluetooth events.

Sounds can be associated on an individual basis with several events, including:

- **When a PIN code is required**

- **When a remote device attempts to access:**

  - **Files on this computer**

  - **A Bluetooth port**

  - **The Dial-up network service**

  - **The LAN Access service**

  - **The Fax service**

- **When a remote device attempts to send:**

  - **Information items**

● **Synchronization information**

Associate a sound with a Bluetooth
event
**From the Bluetooth Configuration Panel,
Notifications tab:**

● **In the Notify column of the Events list,
select the check box associated with the
event.**

● **In the Sound area of the Notifications
tab, click the Browse button and
navigate to the sound file (*.wav) to be
used for notification. To preview the
sound file, click the play button.**

● **Click the OK button to close the
Bluetooth Configuration Panel.**

**The sound *will not play*, even though it
has been assigned, unless the Notify
check box is selected.**

Chapter Seven

Security

Security Introduction

Each service that the server provides can be configured to require:

- **Authorization** the server operator must acknowledge all connection attempts before a connection is established

- **Authentication** the server requires a Personal Identification Number (PIN) code or a Link Key before a connection is established

- **Encryption** all data sent between the Bluetooth client and Bluetooth server is encrypted. The encryption key is based on the Authentication Link Key; Encryption requires that Authentication be enabled.

The default security setting for Authorization, Authentication and Encryption is disabled.

Devices can also be paired, a process that eliminates the need to enter a PIN code every time access is attempted

Authentication

Authentication is used to verify identity;

it requires a passkey or Link Key from the remote device. When a remote device attempts access a visual and/or audio warning notifies the local operator.

The local operator can open a dialog box that provides:

- **The user-friendly name of the device attempting access**

- **The name of the local service that the remote device is attempting to access**

- **A place for the local operator to enter a passkey**

The operator of the remote system must enter the identical passkey or access is denied.

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

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

Authorization

Authorization is Yes or No, go-no-go security.

A visual and/or audio warning alerts the server operator that a remote device is attempting to connect.

The server operator responds by clicking the Bluetooth icon in the Windows system tray to open a dialog box that displays:

- The user-friendly name of the device attempting to connect

- The local service to which the remote device is attempting to connect.

The server operator may grant or deny access to the service by clicking an on-screen button.

If the server operator ignores the Authorization notification access will be denied after a preset timeout.

Encryption

Encrypting 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.

Encryption in Bluetooth for Windows is based on the same passkey or Link Key that is used for Authentication. If Authentication is not enabled the key is not available and encryption will not take place.

To use Encryption, Authentication must be enabled.

Enable Encryption for a service

- Right-click a service name and select Properties from the pop-up menu to display the Bluetooth Properties dialog box.

- Select the Encryption option. If Authentication is not enabled it will be automatically turned on when Encryption is selected.

- Click the OK button to close the dialog box and apply the change.

Levels of Security

Security for local services may be configured on an individual basis.

The configuration options are
- Startup-Automatic or Manual

- Authorization

- Authentication

- Encryption

To access the security settings for a local service, in the Bluetooth Configuration Panel, from the Local Services tab, double-click the service name.

Bluetooth-enabled devices from different vendors may handle security in a slightly different manner. Refer to the user's

guide for your Bluetooth device for additional information.

Link Key

A Link Key is a unique, internally generated, access code. Link Keys are generated automatically when devices are Paired or when Authentication is enabled.

Link Keys are created by combining
● **The Passkey**

● **The Bluetooth Device Address**

● **An internally generated random number**

Pairing Devices

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

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

Paired devices remain paired even when
● **One of the devices is not powered up**

● **A service connection is interrupted or**

the service stopped

● **One or both devices are rebooted.**

When Authentication is enabled devices are paired the first time they attempt to connect, after a successful passkey exchange.

To pair devices *before* attempting a connection
● **In the Windows System Tray, right-click the Bluetooth icon, then Setup and select Security from the fly-out menu.**

● **The Bluetooth Security dialog box appears and Bluetooth for Windows performs a device inquiry to update the list of devices in the area. After the inquiry is complete:**

● **In the Found Devices Pane of the dialog box, click the name of the device to be paired**

● **Click the Execute Pairing button.**

● **In the Bluetooth Passkey Request dialog box, enter the Bluetooth Passkey**

● **Click the OK button.**

The check box on the main screen, when selected, permits all services to connect without Authorization.

Remove Pairing

When devices are paired, the configuration information is saved on both devices. Devices remain paired until the relationship is broken on both devices.

To break a paired device relationship
- **In the Windows System Tray, right-click the Bluetooth icon, then Setup and select Security from the fly-out menu.**

- **From the Bluetooth Security dialog box, in the Paired Devices list, select a device, click the Delete button and then click the done button.**

Pairing must be broken on both devices.

Passkey

A Passkey is an alphanumeric string up to 16 characters in length. Passkeys are also called PIN codes, or Personal Identification Numbers.

In Bluetooth for Windows, passkeys are used in the Authentication and Encryption process.

Security Request

Dialog Box

A Bluetooth Authorization or Bluetooth

Passkey Request dialog box may appear (depending on security settings) when a connection is attempted if either Authorization or Authentication is enabled. The method of notification depends on the version of Windows:

- **Windows 2000, Windows Me and Windows XP bubble message is displayed over the Bluetooth icon in the Windows System Tray**

- **Windows 98SE the Bluetooth for Windows icon in the Windows System Tray blinks.**

Regardless of the version of Windows, click the Bluetooth icon in the Windows System Tray and then follow the on-screen instructions. The instructions vary, depending on the security configuration of the system.

If the security notification is ignored the connection request will fail after a preset timeout.

The dialog box provides
- **Device Name: the user-friendly name of the device attempting to connect.**

- **Request to access: the service the remote device is attempting to access.**

- **Buttons for responding**

  - **OK-allow the connection**

- **Cancel-deny the connection**

- **Advanced (click the See Also button, below, for more information).**

- **A check box that, when enabled, grants (authorizes) the connecting device access to all of the services on this computer (click the See Also button, below, for more information).**

Chapter Eight

Troubleshooting

Cannot Connect to a Paired Device

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

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

Cannot discover services on an un-paired remote device

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

- **Verify that the remote device is powered up.**

- **Verify that the remote device is in Connectable mode (Bluetooth Configuration Panel > Accessibility tab).**

- **Perform a Search for Devices to verify that the device is within range.**

Dial-up networking service does not start

The Dial-up Networking service will not start unless a properly configured modem

is attached to the server.

- **Verify that the modem is usable as a local device from the server.**

- **In the Bluetooth Configuration Panel, Local Services tab, double-click the Dial-up Networking service:**

  - **Click the down arrow in the Modem field and select the modem that will be used to dial out**

  - **Click the OK button**

  - **Click the OK button to close the Bluetooth Configuration Panel.**

Determine the BDA of installed hardware

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

Determine the HCI version number

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

The sixth entry contains the Specification

Revision information for the Host Controller Interface, if appropriate.

Determine the LMP version number

In the Bluetooth Configuration Panel, on the Hardware tab, in the Device Properties section, the seventh entry provides Link Manager Protocol version number information.

The eighth entry contains the Link Manager Protocol sub-version number information, if appropriate

Test a Network Access connection

If the client is hardwired to the LAN, unplug the hardwired connection to ensure that the test checks the wireless connection rather than the hardwired connection.

If the server has access to the Internet, open a browser on the client and connect to the World Wide Web.

You may also Ping the server from the DOS prompt.

Unknown Port error

The unknown Port error message usually means an attempt was made to connect a port that was in use.

Additional Bluetooth Serial Ports can be added if they are required.

FCC Notices

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.
"FCC RF Exposure requirements:
  This device and its antenna(s) must not be
co-located or operating in conjunction with any other
antenna or transmitter."

FC **Tested To comply With FCC Standards
FOR HOME OR OFFICE USE**