SMC Networks

USER GUIDE

IVT BlueSoleil™

User Manual

Version: 1.6.0

For SMCBT-EDR *Bluetooth* USB Dongle with EDR Technology

This document describes how to use IVT BlueSoleil™.

Contents

1 BlueSoleil™ Introduction

BlueSoleil™ is a Windows-based Bluetooth Wireless software suite from IVT. It is fully compliant to the latest Bluetooth SIG specifications. BlueSoleil™ incorporates Bluetooth and computer technologies to enable users to wirelessly access computing devices, form networks, and exchange information.

BlueSoleil™ V1.4.8 includes nine Bluetooth profiles. The following table indicates which of these profiles is available for client and server devices.

Profile Description		Client	Server
PAN	Personal Area Networking	√	√
SPP	Serial Port	√	√
DUN	Dial-Up Networking	√	
LAP	LAN Access	√	√
FTP	File Transfer	√	√
HID	Human Interface Device	√	
HCRP	Hardcopy Cable Replacement	√	
OPP	Object Push	√	√
SYNC	Synchronization	√	√
BIP	Basic Imaging	√	√
AV	AV	√	√
HS	Headset	√	√
FAX	FAX	√	

BlueSoleil™ supports more than ten Bluetooth chip-sets and HCI interfaces including USB, UART, PCMCIA and Compact Flash.

IVT BlueSoleil™ supports:

♦ Windows 2000/XP

♦ Windows 98SE/Me

This manual describes how to use BlueSoleil™:

♦ How to start and exit BlueSoleil™.

♦ How to navigate the Main Window and Service Window.

♦ How to use the Bluetooth profiles.

2   BlueSoleil™ Graphical User Interface

2.1   Start BlueSoleil™

After installing BlueSoleil™, there are two ways to start the program:

1. A BlueSoleil™ shortcut icon on the Windows desktop.

2. An IVT BlueSoleil™ program group entry in the Windows' **Start | Programs** menu.

Double-click the BlueSoleil™ shortcut icon on the desktop or click the BlueSoleil™ menu item on the **Start | Programs | IVT BlueSoleil™** menu to start the BlueSoleil™ software.

The BlueSoleil™ icon will be displayed at the bottom right corner of the Windows desktop (Figure 2.1).

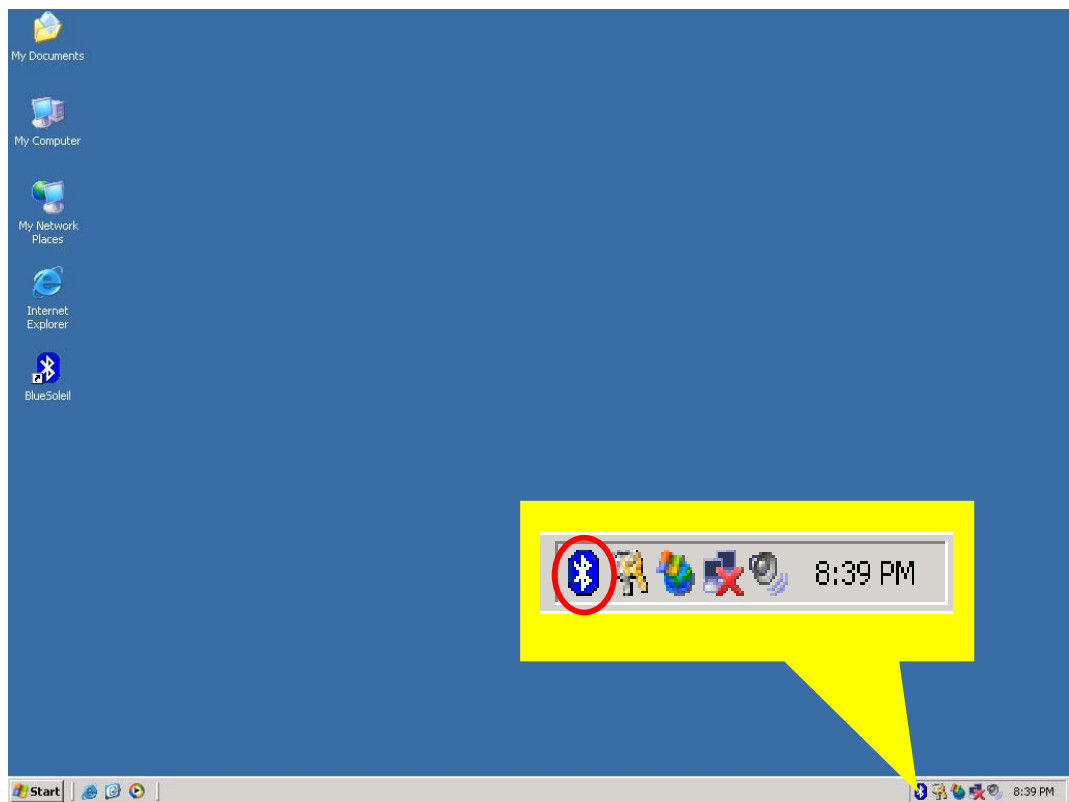
Figure 2.1: BlueSoleil™ icon

The BlueSoleil™ Main Window pops up as shown in Figure 2.2.

2.2   Exit BlueSoleil™

To exit BlueSoleil™, right-click the BlueSoleil™ icon at the bottom right corner of the Windows task bar and select **Exit** on the pop-up menu.

Note: Selecting the **Close** button at the top right corner of the BlueSoleil™ window only hides the BlueSoleil™ window.

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2.3   BlueSoleil™ Main Window

The BlueSoleil™ Main Window displays all surrounding Bluetooth devices. From the BlueSoleil™ Main Window users can search for surrounding Bluetooth devices and can execute connect/ disconnect functions.
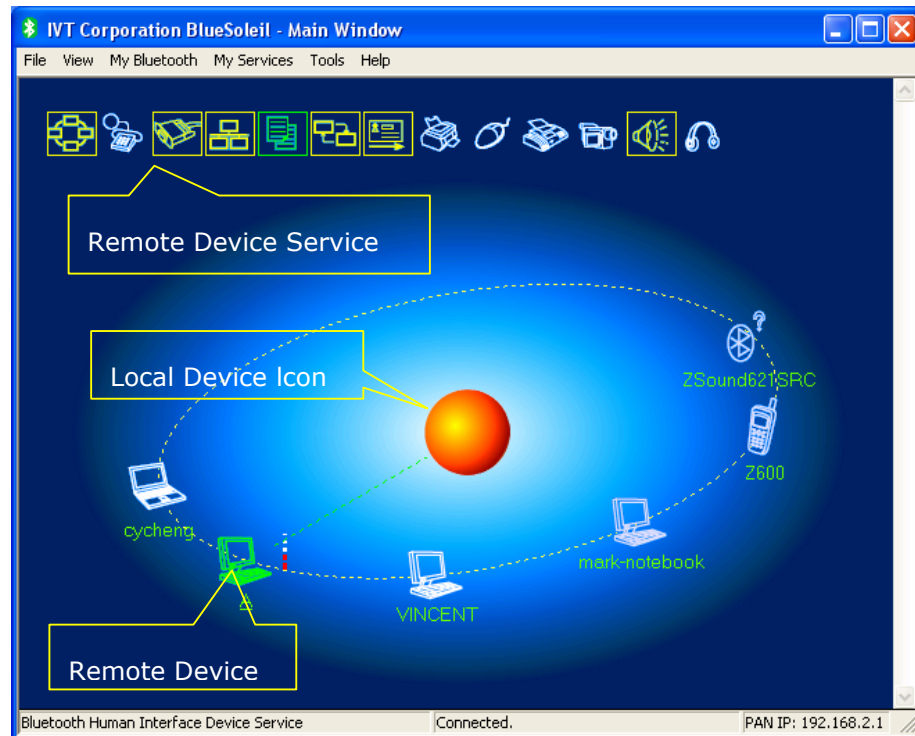
Figure 2.2: BlueSoleil™ Main Window

The main elements in the BlueSoleil™ Main Window are:

- ♦ My Device Icon
- ♦ Remote Bluetooth Device Icons
- ♦ Bluetooth Service Icons

2.3.1   My Device Icon

This icon represents the client computer. It is called the 'My Device icon' or 'center ball' in this document.

Functions:

3. Hover the mouse over the My Device icon to display the client Bluetooth device name and address.

4. Double-click to start/ stop searching for surrounding Bluetooth devices.

5. Right-click to display the pop-up menu with related operations.

2.3.2 Remote Bluetooth Device Icons

The icons in the table below represent the remote Bluetooth devices.

Device Type	Icon
Headset	
Keyboard	
LAN Access Point	
Laptop	
Mobile	
Modem	
Mouse	
Personal Computer	
PDA	
Printer	
Scanner	
Unknown device	

The following colors are used to indicate the status of the remote Bluetooth device:

- ♦ White (Idle)
  This is the normal status of the device.
- ♦ Yellow (Selected)
  The device has been selected by the user.
- ♦ Green (Connected)
  The device has been connected.

Functions:

6. Single-click to select.

7. Double-click to get the services remote Bluetooth device supports.

8. Right-click to display the pop-up menu with related operations.

2.3.3   Bluetooth Service Icons

The Bluetooth Service Icons represent the Bluetooth services supported by the remote device.

Bluetooth Service	Icon
Personal Area Networking	
Dial-up Networking	
Serial Port	
LAN Access	
File Transfer	
Information Synchronization	
Object Push	
Printer	
Human Interface Device	
FAX	

Basic Imaging	
AV	
Headset	

The following colors are used to indicate the status of the Bluetooth service:

- ♦ White (Idle)
  This is the normal status.

- ♦ Pink (Available)
  The Bluetooth service is available for the selected device.

- ♦ Yellow (Selected)
  The service icon has been selected by the user.

- ♦ Green (Connected)
  The service is connected.

Functions:

9. Hover the mouse over the icon to display the service name.

10. Single-click to select the service.

11. Double-click to connect.

12. Click to display the pop-up menu with related operations.
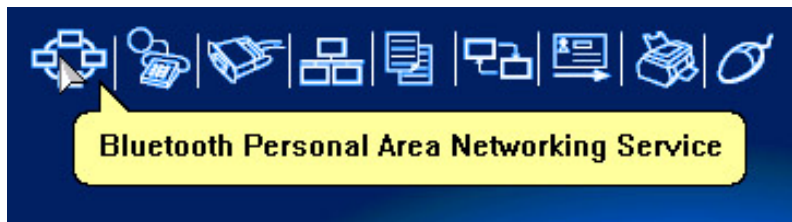
Figure 2.3: Bluetooth PAN Service Icon

2.4   Service Window

Select menu **View | Service Window** and the Service Window appears.

This window displays the Bluetooth services the 'my Bluetooth device' provides to remote Bluetooth devices. These services are called 'my Bluetooth services'.
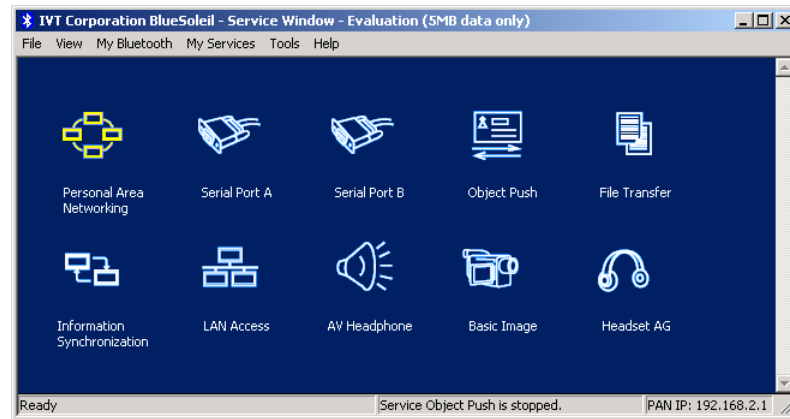
Figure 2.4: BlueSoleil™ Service Window

Main Elements:

♦ My Service Icons

2.4.1 My Service Icons

These icons represent 'my Bluetooth services'.

My Bluetooth Service	Icon
Personal Area Networking	
Serial Port A	
Serial Port B	
Object Push	
File Transfer	
Information Synchronization	
LAN Access	
AV Headset	
Basic Image	

Headset AG	

The following colors indicate the status of the Bluetooth service:

- ♦ White (Idle)
  Normal status.

- ♦ Pink (Started)
  My Bluetooth service is started.

- ♦ Green (Connected)
  A remote device has connected to my Bluetooth service.

Functions:

13. Single-click to select.

14. Double-click to start/stop a service.

15. Right-click to display the pop-up menu with related operations.

3 Personal Area Networking

3.1 Introduction

The Bluetooth Personal Area Networking (PAN) is a Bluetooth application, which enables devices to form an ad-hoc network or to access a remote network through a network access point.

The PAN application can be used in the following scenarios:

- Two or more computers (or PDAs) can be connected through PAN and can visit each other using Windows **Network Places** or any application based on TCP/IP.
- A computer (or PDA) can access a Local Area Network or the Internet through a PAN Network Access Point (NAP) bridge.
- A computer with PAN installed acts as a TCP/IP gateway.

Each of these scenarios is now covered in more detail.

3.2 Connect Two Computers

This section outlines the steps involved in connecting two computers, Computer A and Computer B.

Computer A:	Computer B:
Notebook/ Laptop PIII, 800MHz, 128M	Desktop, PIII, 600MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™

Step 1: Insert Bluetooth USB dongles in both computers.

Step 2: Start BlueSoleil™ in both computers.

Step 3: Set device name of each computer to anything you want. Here they are named Computer A and Computer B.
- In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.
- Repeat for Computer B.

Step 4: Set the Security Level.
- Click Tools | Configurations | Security, the Security Configuration panel pops up.
- On the **Security Configuration** panel, select **High** in Security Level.

Note: If you check the **Fixed Passkey** and input a Bluetooth passkey, this passkey will be used as the default passkey. The other computer will then have to provide the same passkey during the connection procedure if it wants to connect to this computer.
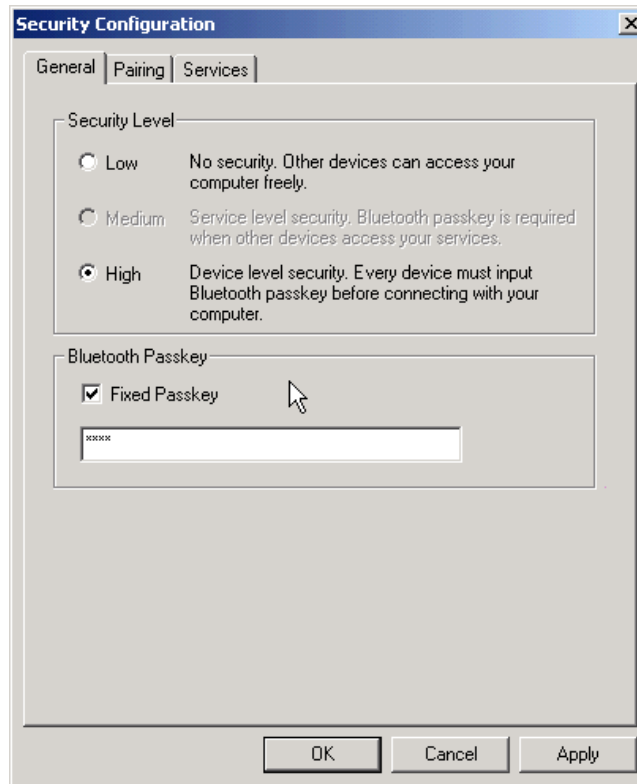
Figure 3.1: Security Configuration

Step 5: Start the PAN service on Computer A.

♦ In the BlueSoleil™ Main Window, click **View | Service Window**.

♦ In the Service Window, right-click the Personal Area Networking icon. Choose **Start Service**. (Figure 3.2)
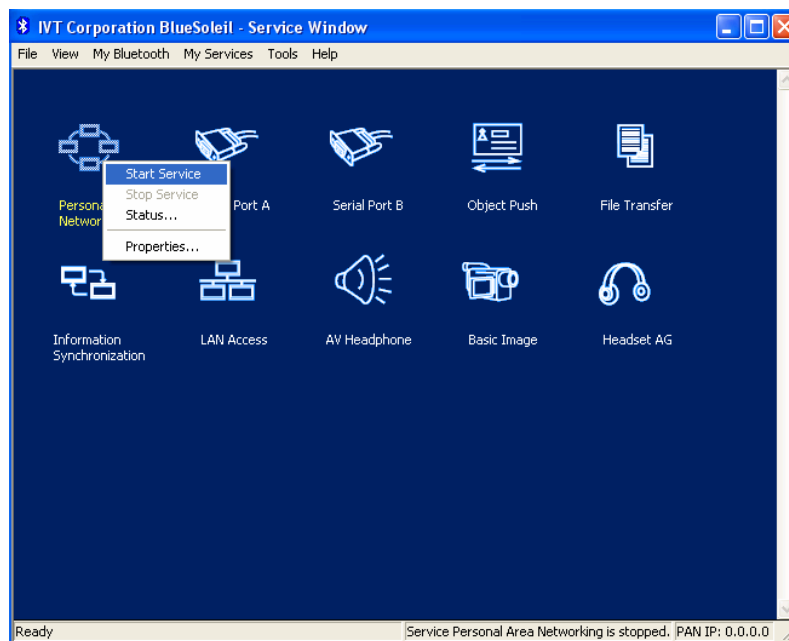
Figure 3.2: Start PAN Service on Computer A

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Step 6:   Search for Computer A on Computer B.

♦ Double-click the My Device Icon (center ball). The surrounding discovered Bluetooth devices appear.

♦ Check to see if Computer A appears. If it does not appear, double-click the My Device Icon again. Repeat the operation until you find Computer A.

Step 7:   Find the PAN service on Computer A.

♦ Double-click the Computer A device icon on Computer B.

♦ Enter the Bluetooth passkey (if security is set to **High** on either side) to start the authenticating process. The **Enter Bluetooth Passkey** window pops up on Computer A. Input any characters or numbers, e.g. "12". The **Enter Bluetooth Passkey** window pops up on Computer B. Input exactly the same characters or numbers as you input for Computer A, e.g. "12". (Figure 3.3)

♦ Once authentication is complete, the PAN service is found.
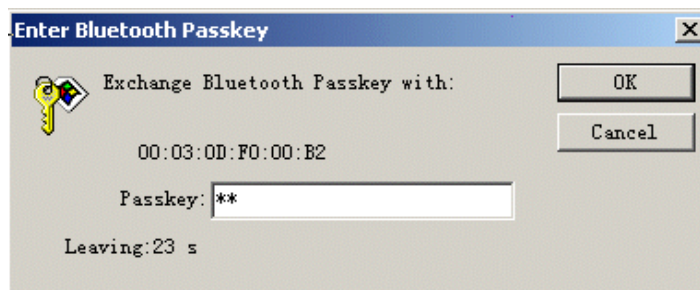
Figure 3.3: Input passkey
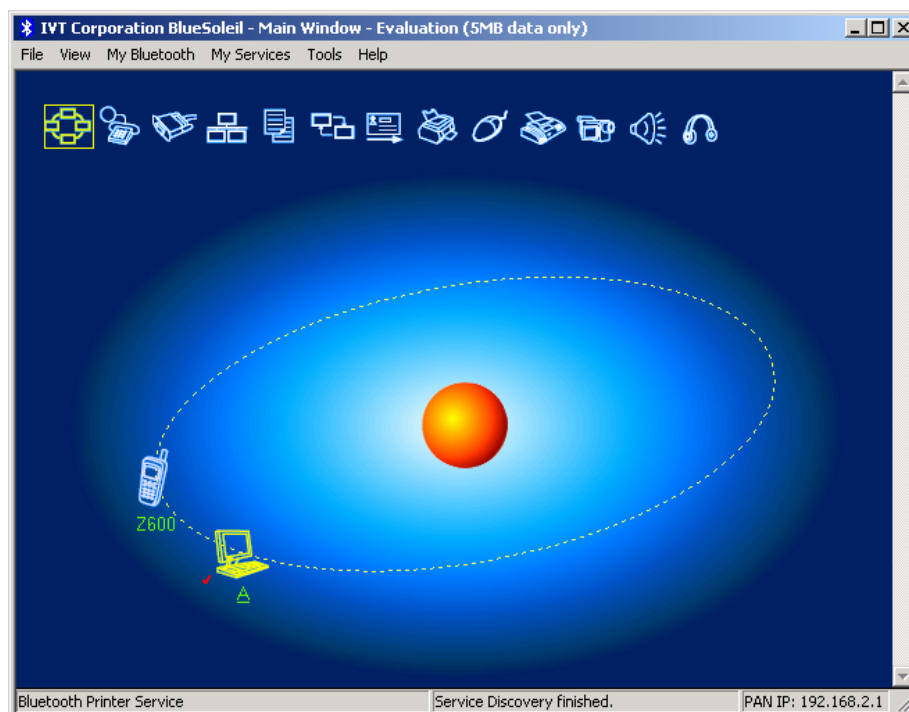
Figure 3.4: PAN service is found

Step 8:   Connect to Computer A.

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- ◆ Right-click the PAN service icon; select **Connect** on the pop-up menu. (Figure 3.5)
- ◆ The connection is established successfully (Figure 3.6). Wait until the valid IP address is shown on the bottom right status bar on both Computer A and Computer B.
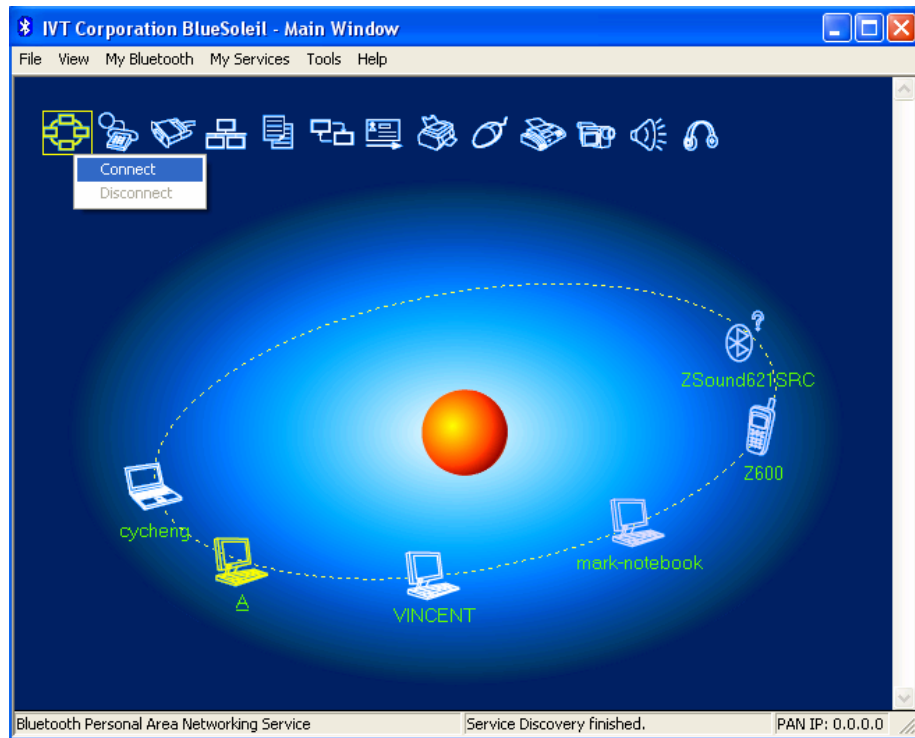
Figure 3.5: Connect to PAN Service
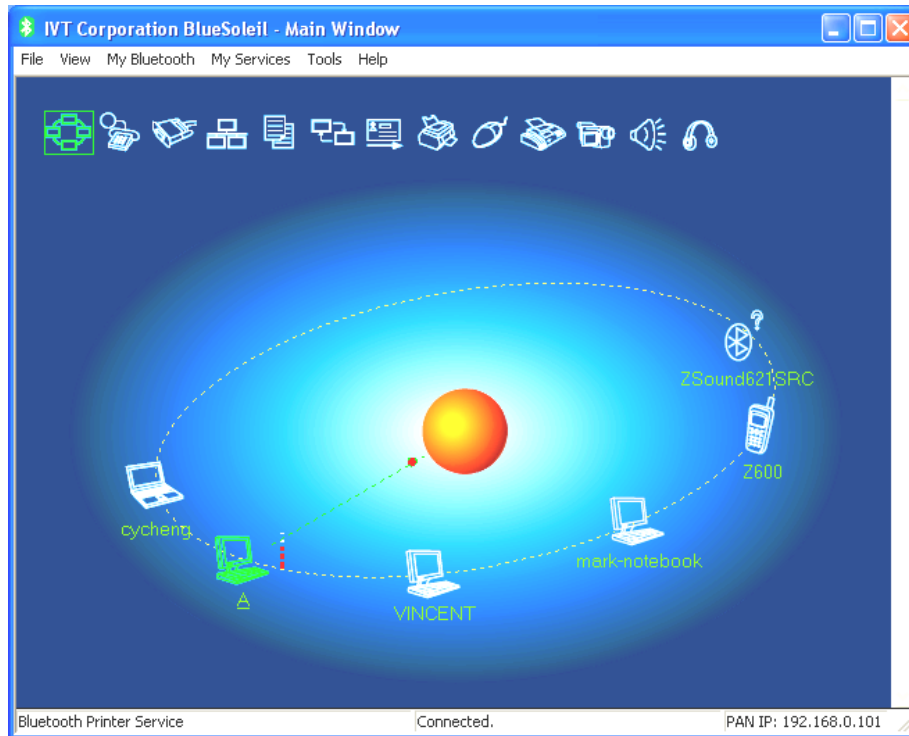
Figure 3.6: Connection is established successfully.

Step 9:   Computer A and Computer B are now connected. On Computer B, go to **Windows | My Network Places** to find Computer A and copy files. Figure 3.7 shows where to input Computer A's name. In Figure 3.7, Computer A is named 'mike'.
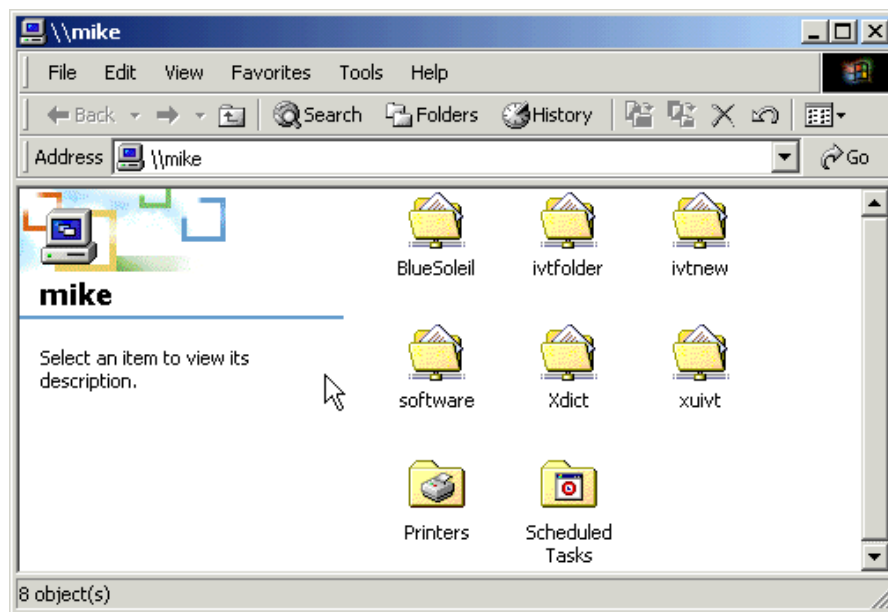
Figure 3.7: Find Computer A in My Network Places

Step 10:   To disconnect the PAN connection, disconnect from either Computer

A or from Computer B.

♦ On Computer B, right-click on the PAN service icon and choose **Disconnect**. (Figure 3.8)

♦ On Computer A, right-click on the PAN service icon and choose **Stop Service**. (Figure 3.9)
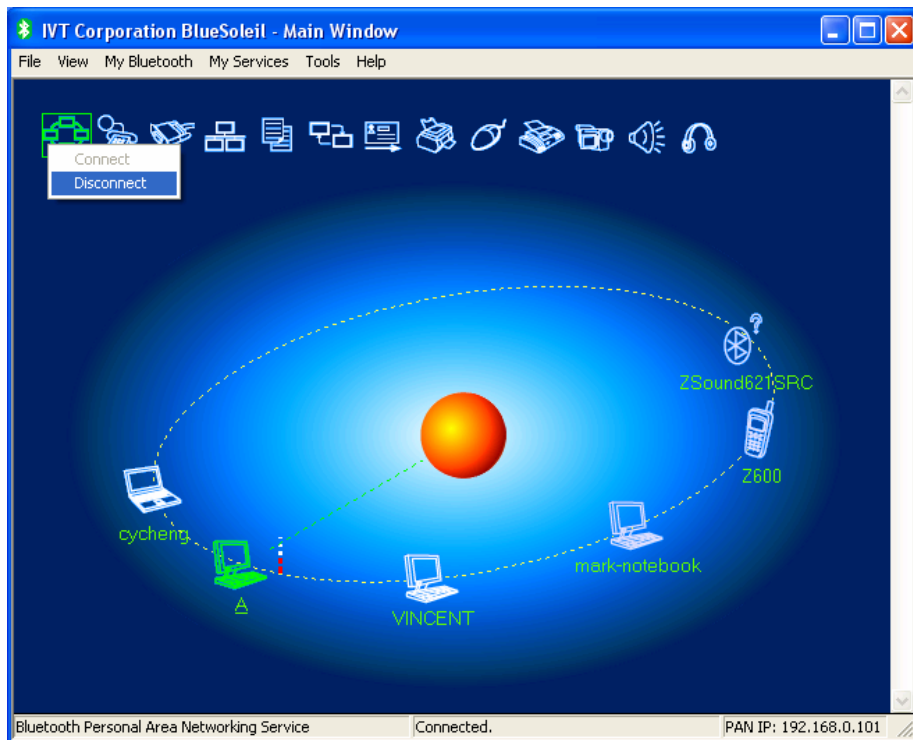
Figure 3.8: Disconnect the PAN service from Computer B
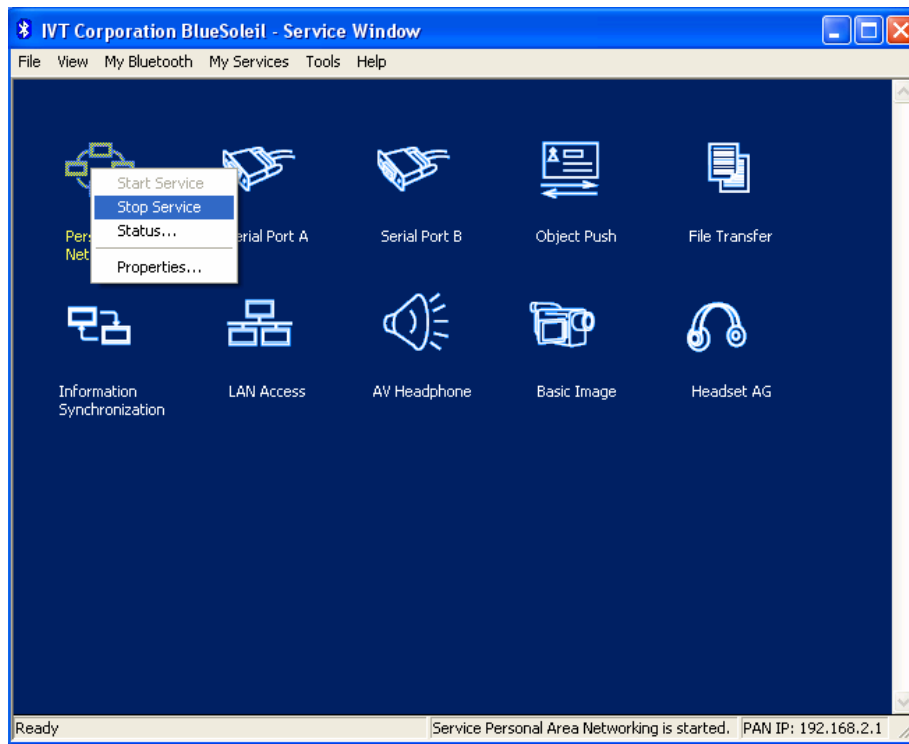
Figure 3.9: Stop the PAN service on Computer A

Advanced Usage:

♦ Computer A is now the center node. Other computers, for example, Computers C, D and E, can connect to Computer A with BlueSoleil™ following the same steps as those for Computer B.

♦ Computer A, B, C, D and E can access each other using the Windows **Network Places**. This forms a Bluetooth ad-hoc networking environment.

Note: Computer A can currently only support up to 7 connections.
Also it takes about 1 minute before an IP address can be obtained on the client side (Computer B) unless a DHCP server is running on the server side (Computer A).

3.3 Computer with PAN acting as a TCP/IP Gateway

The following sections outline how to enable Computer B to access the Internet through Computer A.

Computer A:	Computer B:
Notebook/ Laptop, PIII, 800MHz, 128M	Desktop, PIII, 600MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™
Network Adapter connecting to the Internet	

Step 1:   Enable Internet access sharing on Computer A.

♦ See "Section 3.2: Connect Two Computers", and complete Steps 1 to 7.

♦ Refer to steps outlined in "Section 3.4.1 Connect to the Internet using ICS", to set up Internet sharing.

Step 2:   Computer B can now access the Internet.

Advanced Usage:

♦ Computer A is now the center node of the network. Other computers with BlueSoleil™ installed, for example, Computers C, D and E, can connect to Computer A following the same steps as those for Computer B.

♦ Computers A, B, C, D and E can access each other using the Windows **My Network Places** and form a Bluetooth ad-hoc networking. Computers B, C, D and E can then access the Internet through Computer A.

Note: Computer A can currently only support up to 7 connections. Also it takes about 1 minute before an IP address can be obtained, unless Computer A is connected to a DHCP server.

3.3.1   Connect to the Internet using ICS

The PAN server can share a network connection with PAN clients with Windows ICS. ICS (Internet Connection Sharing) uses NAT (Network Address Translation) to share a network connection. PAN clients use internal network addresses (192.168.0.x). ICS is suitable for both dial-up and LAN connections.

For more detailed information about ICS and NAT, please refer to the Microsoft Windows help topic "Internet Connection Sharing".

3.3.2   Settings on the PAN server

Step 1:   Right-click the **My Network Places icon** and select **Properties.**
(Figure 3.10)
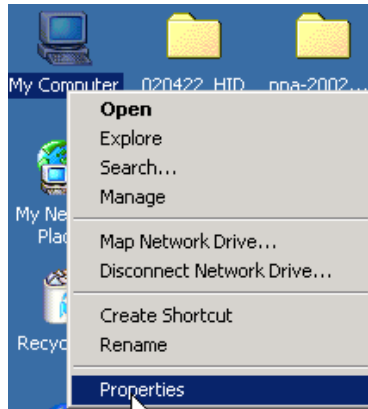
Figure 3.10: Select Properties on My Network Places

Step 2:   Right-click the connection through which you access the Internet,
and then select **Properties**. (**Error! Reference source not
found**.)
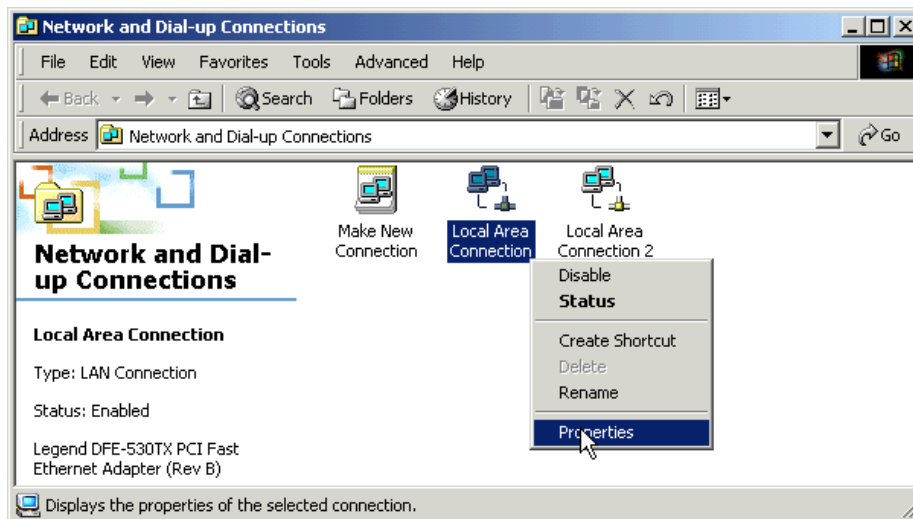
Figure 3.11: Click the connection through which you access the Internet

Step 3:   On the **Sharing** tab, select the **Enable Internet Connection
Sharing** check box. Figure 3.12 shows how to enable Internet
Connection Sharing for a local area connection on Windows 2000.
Figure 3.13 shows how to enable Internet Connection Sharing for a
dial-up connection on Windows 2000.
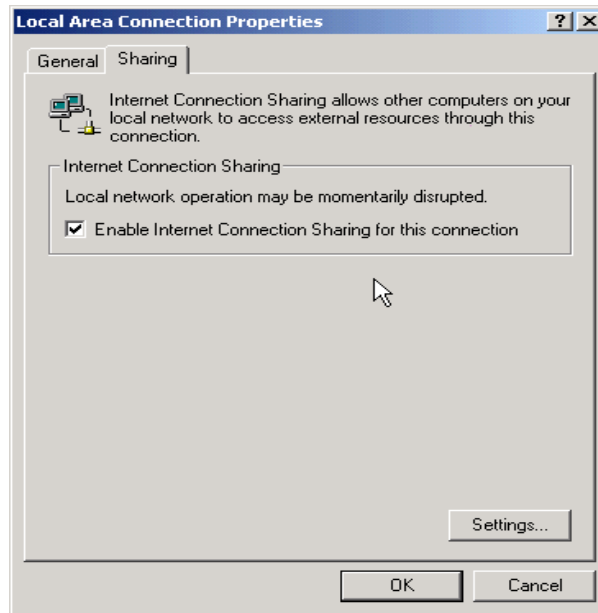
Figure 3.12: Internet Connection Sharing for a Local Area Connection on Windows 2000

Step 4:   If this connection is a dial-up one, and you want automatic dialing when another computer in your home network attempts to access external resources, then check the **Enable on-demand dialing** check box. Click **OK**.
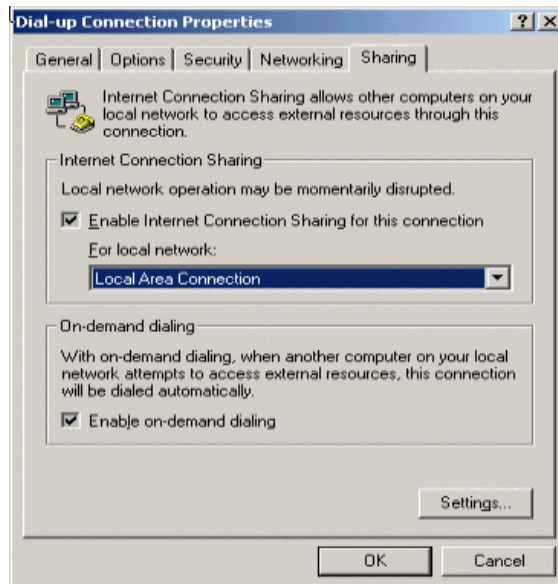
Figure 3.13: Internet Connection Sharing for a Dial-up Connection on Windows 2000

Step 5:   A message window appears as shown in Figure 3.14. Click **Yes**. The IP address of the BT network adapter is changed to 192.168.0.1 and a DHCP server is started on BT network adapter.

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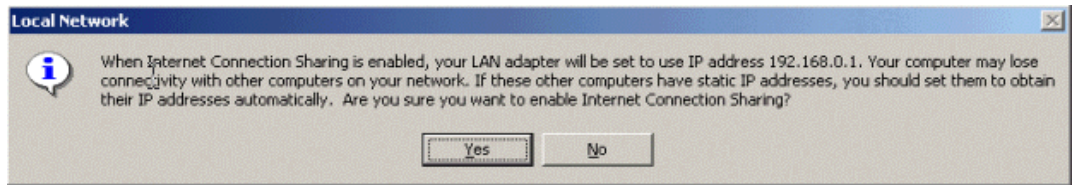
Figure 3.14: Confirm Enabling Internet Connection Sharing

Note: The Internet Connection Sharing wizard will set the IP address of the BT network adapter to 192.168.0.1, and a DHCP server will be run on Computer A. PAN clients in the Bluetooth network can be set statically or dynamically to any IP address in the range 192.168.0.2 to 192.168.0.253.

3.4   PAN Configuration

3.4.1   My PAN Service

In the BlueSoleil™ Service Window, right-click the Personal Area Networking icon. On the pop-up menu, select **Properties** to configure my PAN service. (Figure 3.15)

Setting Items:

♦ **Auto start this service when my Bluetooth starts**
Check this option to automatically start my PAN service the every time BlueSoleil™ is started.
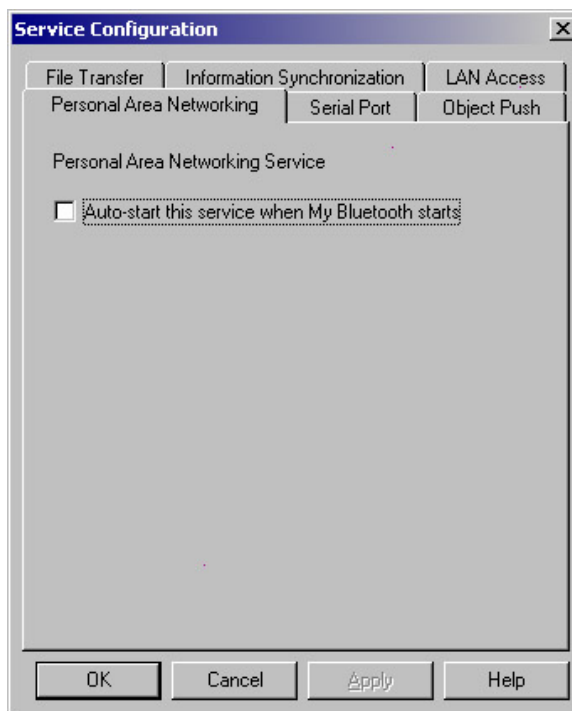
Figure 3.15: Service Configuration

4   Dial-Up Networking

4.1   Introduction

The Bluetooth Dial-up Networking (DUN) service allows a Bluetooth-enabled client to access the Internet wirelessly through a modem on another Bluetooth device or a cellular phone. The other Bluetooth device or the cellular phone is called the gateway (server) as it provides access to the public network.

The DUN profile can be used in the following scenario:

♦ A Bluetooth computer accesses the Internet through a Bluetooth cellular phone or Bluetooth modem.

4.2   Connect to a Dial-up Gateway from a Computer

This section outlines the steps involved in a computer (client) accessing the Internet through a Bluetooth cellular phone.

Computer A:	Bluetooth Cellular Phone:
Notebook/ Laptop, PIII, 800MHz, 128M	Sony Ericsson T68 cellular phone
A Bluetooth USB dongle	
Windows XP	
IVT BlueSoleil™	

Step 1:   Insert the Bluetooth USB dongle in the computer.

Step 2:   Start BlueSoleil™ in the computer.

Step 3:   Set device name of the computer to anything you want. Here it is named Computer A.

♦ In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Set the Sony Ericsson T68 to be discoverable so that Computer A can find the T68.

♦ Press the **Menu** button on the T68 and scroll until you reach the **Connect** menu option, select **Connect** and scroll until you find **Bluetooth**. Select this option and scroll until you see **Discoverable**. Press the **Yes** button to confirm the selection.

♦ The T68 will now enable itself to receive connection requests from other devices.

Step 5:   Add Computer A to the paired device list in the T68.

♦ Press the **Menu** button on the T68 and scroll until you reach the **Connect** menu option, select **Connect** and scroll until you find **Bluetooth**. Select this option and scroll until you see **Discover**. Press the **Yes** button to confirm the selection.

♦ The T68 will now start searching devices. Once the T68 finds "ComputerA" on the screen, select it by pressing the **Yes** button. The **Add to paired device?** message appears on the

screen. Press **Yes** to confirm you want to initialize pairing.

♦ The T68 will ask for the Bluetooth passkey. You can input any number, for example, "1".

♦ On the BlueSoleil™ side, the **Enter Bluetooth Passkey** window pops up requesting the Bluetooth passkey. Input the same Bluetooth passkey you have input in the T68 and click **OK**.

♦ Once the pairing process is successfully complete, the T68 device icon is displayed in the Main Window of Computer A. At the meanwhile, the following dialog pops up asking you whether **Create a Shortcut on the windows desktop**. If you choose **yes**, a shortcut icon called **DUN** will occur on the desktop, otherwise the icon will not occur.

♦

♦ This is the icon on the desktop:

♦

Step 6: Search for Bluetooth devices in Computer A until you find the T68.

Step 7: In the Main Window of Computer A, double click the T68 device to find its DUN service. If found, the DUN service icon in the Main Window will turn pink.

Step 8: In the Main Window of Computer A, double click the DUN service icon to connect to the DUN service on the T68.

Step 9: Once the two computers are connected, the Bluetooth Dial-up Networking (DUN) service icon in the Main Window will turn from pink to green.
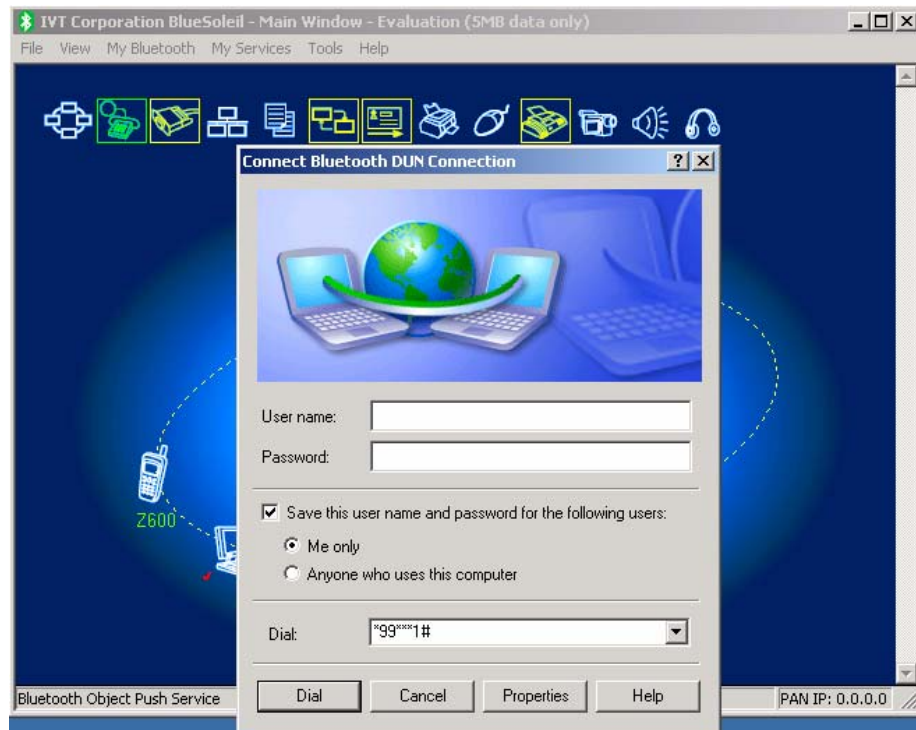
Figure 4.1: Connect BlueSoleil™ DUN Connection

Step 10:   The **Connect BlueSoleil™ DUN Connection** window appears
             (Figure 4.1).

♦ Input a valid username, password and the Internet Service
  Provider's (ISP's) phone number, then click the **Dial** button.

♦ If the dial-up is successful, a small icon appears on the bottom
  right hand of the Windows taskbar, indicating that the dial up
  connection is successfully established.

♦ If the dial-up fails, the Bluetooth connection between the two
  computers will be disconnected. In this case, to reconnect to the
  T68's DUN service, repeat Steps 8-9 above.

Step 11:   Once the dial-up connection is established, users can browse web
             sites or access other Internet services from Computer A.

Step 12:   There are three methods to disconnect the dial-up connection:

♦ Method 1. Double-click the dial-up connection icon on the
  bottom right of the Windows taskbar. The **BlueSoleil™ DUN
  Connection Status** window appears. Click the **Disconnect**
  button to disconnect the dial-up connection (Figure 4.2).

♦ Method 2. Right-click the **Bluetooth Dial-up Networking** icon
  in the Main Window, and then click the **Disconnect** menu item
  on the pop-up menu.

♦ Method 3. Right-click the T68 device in the Main Window and
  select **Disconnect | Bluetooth Dial-Up Networking**.

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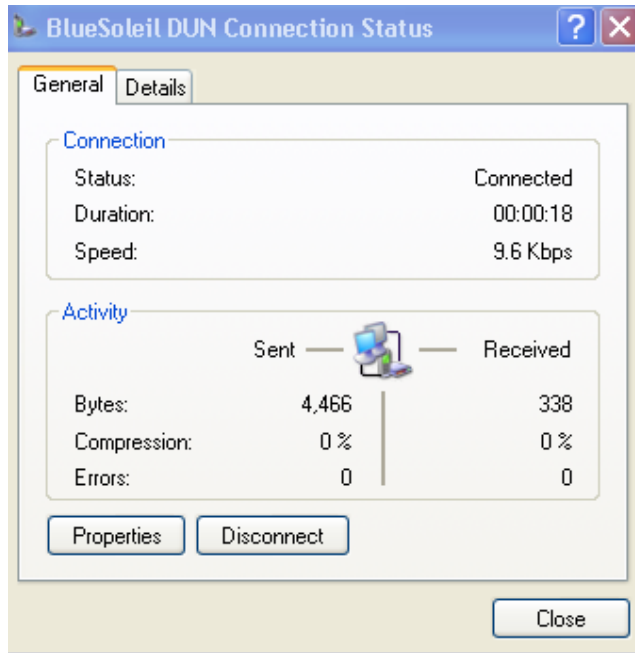
Figure 4.2: BlueSoleil™ DUN Connection Status window

5   Bluetooth Serial Port

5.1   Introduction

The Bluetooth Serial Port (SPP) provides a virtual serial port via Bluetooth as an alternative to a hardwired serial cable between a computer and device. Any program that uses a standard serial port can use the Bluetooth serial port without any change.

The SPP profile can be used in the following scenarios:

♦ Connecting two computers through a Bluetooth serial port.

♦ Using SPP to print a document.

♦ Connecting a computer to any other device that supports SPP through a Bluetooth serial port.

5.2   Connect Two Computers

This section outlines the steps involved in connecting two computers, Computer A and Computer B using the Bluetooth Serial Port application.

Computer A:	Computer B:
Notebook/ Laptop, PIII, 800MHz, 128M	Desktop, PIII, 600MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™

Step 1:   Insert the Bluetooth USB dongles into each computer.

Step 2:   Start BlueSoleil™ in each computer.

Step 3:   Set the device name of the each computer to anything you want. Here they are named Computer A and Computer B.

♦ In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

♦ Repeat for Computer B.

Step 4:   Set the security level to **Low** on Computer A and Computer B. (Use the **Tools | Configurations | Security** menu).

Step 5:   Start the SPP service on Computer A.

♦ In the BlueSoleil™ Main Window, click **View | Service Window**. In the Service Window, right-click the Serial Port icon. Select **Start Service** on the pop up menu. (Figure 5.1)
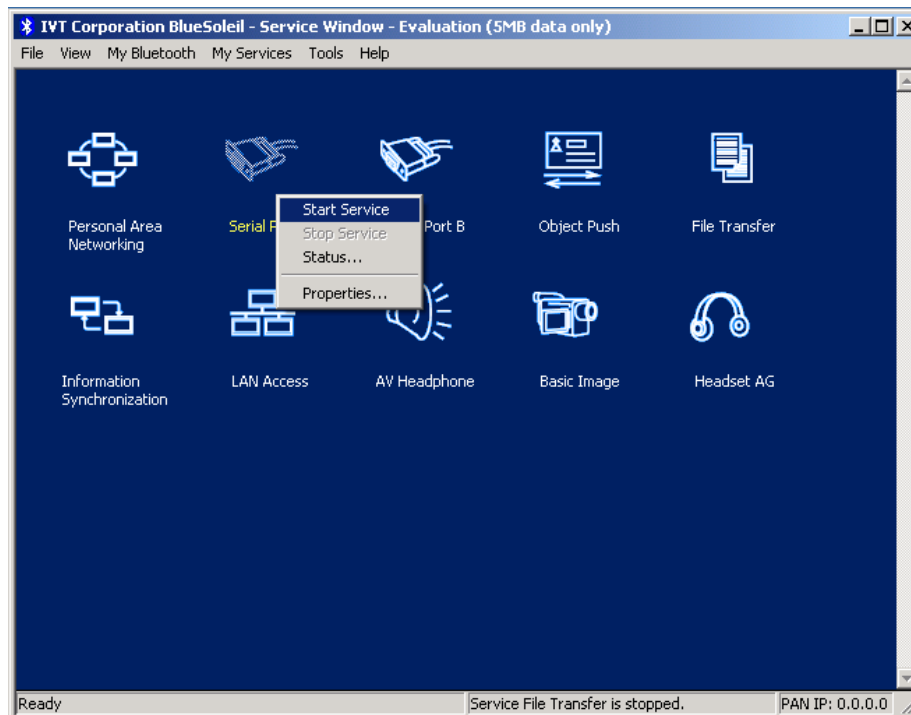
Figure 5.1: Start the SPP Service

Step 6: Connect Computer B to Computer A.

  ♦ On Computer B double click the 'My Device icon' until you find the device, Computer A.

  ♦ Double-click the Computer A device to find its SPP service (Figure 5.2). The Bluetooth Serial Port service icon turns pink.

  ♦ Right-click the Bluetooth Serial Port service icon and select **Connect**. (Figure 5.3)
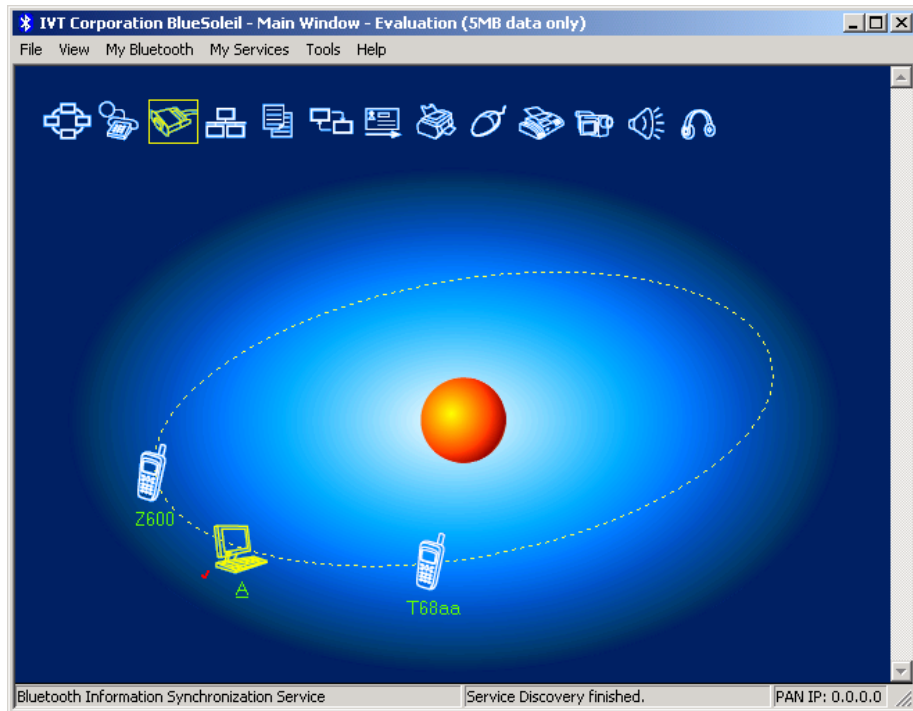
Figure 5.2: Double-click the Computer A device icon
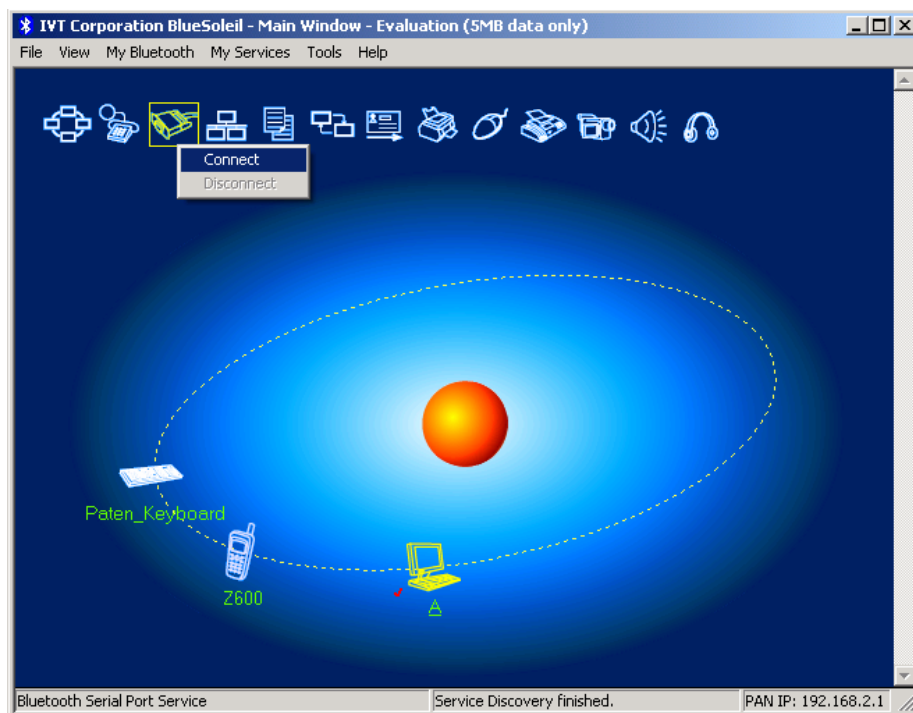
Figure 5.3: Choose Connect

♦ The connection is established successfully as shown in Figure 5.4. Wait for 10 seconds until the serial port number is shown on the right bottom status bar on Computer B. (Figure 5.5)

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Figure 5.4: The connection is established successfully
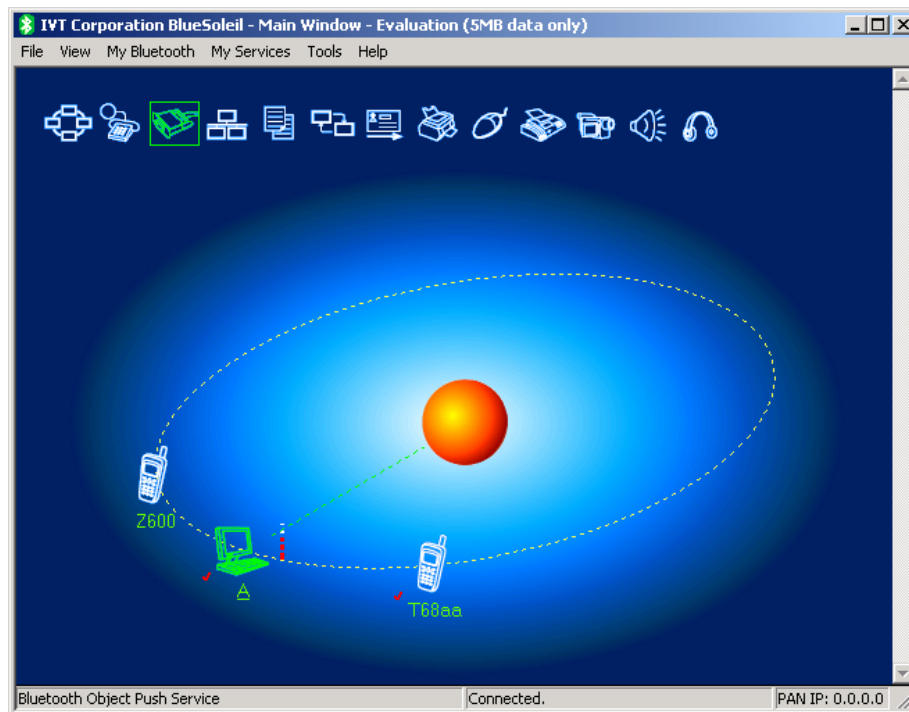
Figure 5.5: The serial port number is shown

5.3   Use SPP to Print a Document

This section outlines the steps involved in connecting a computer to a Bluetooth Printer Adapter using SPP.

Computer A:	Bluetooth Printer Adapter B:
Notebook/Laptop, PIII, 800MHz, 128M	HP Printer
A Bluetooth USB dongle	Bluetooth Printer Adapter
Windows 2000	
IVT BlueSoleil™	

Step 1:   Insert the Bluetooth USB dongle into the computer.

Step 2:   Start BlueSoleil™ in the computer.

Step 3:   Set the device name of the computer to anything you want; here it is named Computer A.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Set the security level to **Low** in Computer A. (Use the **Tools |**

Configurations | Security menu).

Step 5:   Connect Computer A to the Bluetooth Printer Adapter B using SPP.

♦   Go to Computer A; double click the My Device icon' until you find the device Bluetooth Printer Adapter B.

♦   Double-click the Bluetooth Printer Adapter B device to find it's SPP service.

♦   Double-click the SPP service icon to start connecting SPP.

Step 6:   Change the printer settings to use the connected Bluetooth serial port.

Step 7:   Print a document.

5.4   SPP Configuration

5.4.1   My SPP Service

In the BlueSoleil™ Service Window, right-click the **Serial Port** icon. On the pop-up menu, select **Properties** to configure the 'my SPP service'.
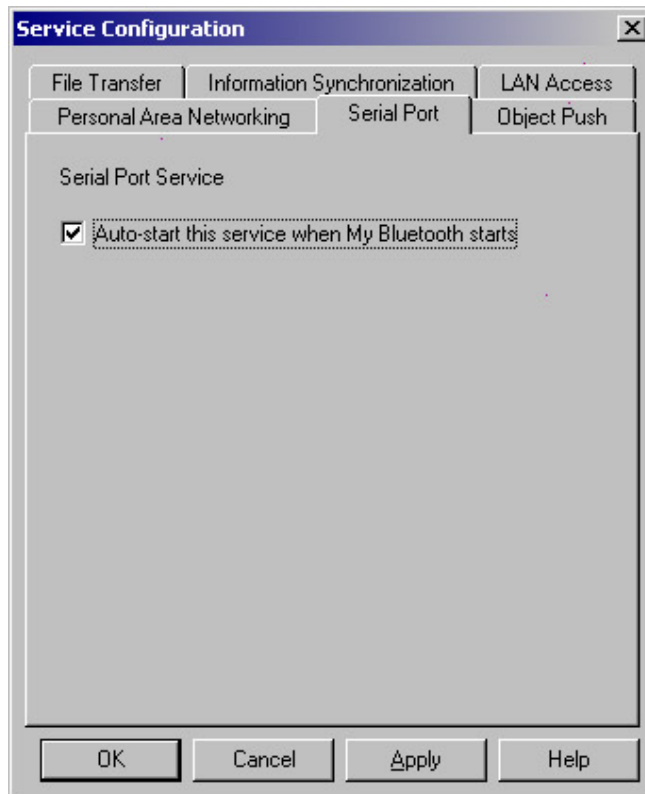
Figure 5.6: SPP Service Configuration.

Setting Items:

♦ **Auto start this service when my Bluetooth starts**
Check this option to automatically start my Bluetooth SPP service every time BlueSoleil™ is started. (Figure 5.6)

6　Bluetooth File Transfer

6.1　Introduction

The File Transfer profile (FTP) supports the file transfer usage model, which offers the ability to transfer files from one Bluetooth device to another.

The FTP profile can be used in the following scenarios:

♦　A computer can transfer files to/from another computer.

♦　A computer can transfer files to/from a PDA.

6.2　Transfer files to/from a Computer

This section outlines the steps involved in Computer A transferring files to/ from Computer B.

Computer A:	Computer B
Notebook/ Laptop, PIII, 800MHz, 128M	Desktop, PIII, 600MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™

Step 1:　Insert the Bluetooth USB dongles into each computer.

Step 2:　Start BlueSoleil™ in each computer.

Step 3:　Set device name of each computer to anything you want. Here they are named Computer A and Computer B,

♦　In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

♦　Repeat for Computer B.

Step 4:　Configure the FTP service on Computer A.

♦　In the Service Window, right-click the **File Transfer** icon. Select **Properties** on the pop-up menu. (Figure 6.1)

♦　The **Service Configuration** window pops up. (Figure 6.2)
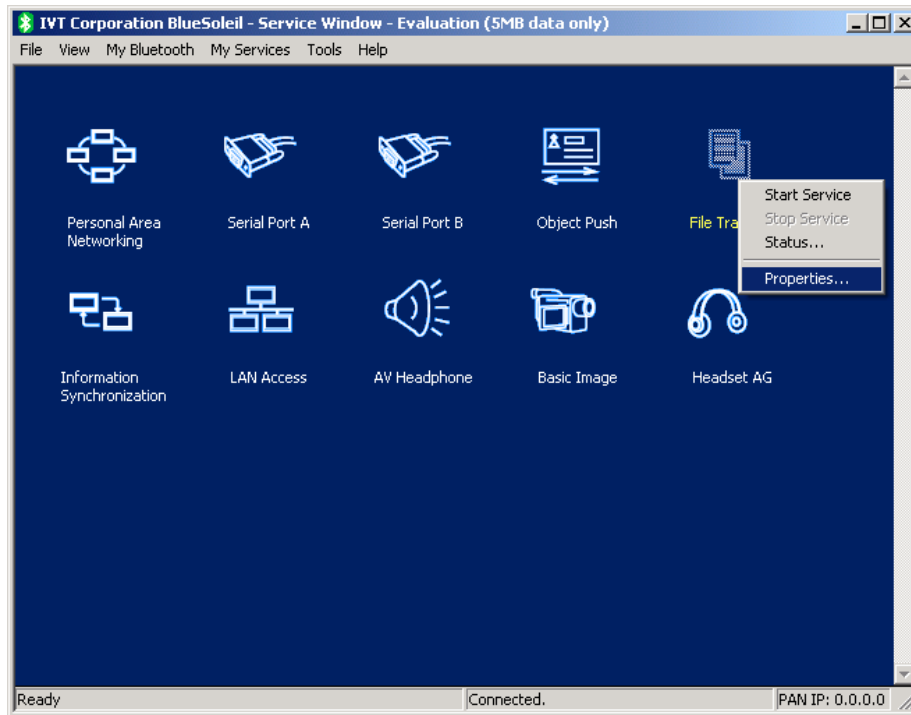
Figure 6.1: Service Window
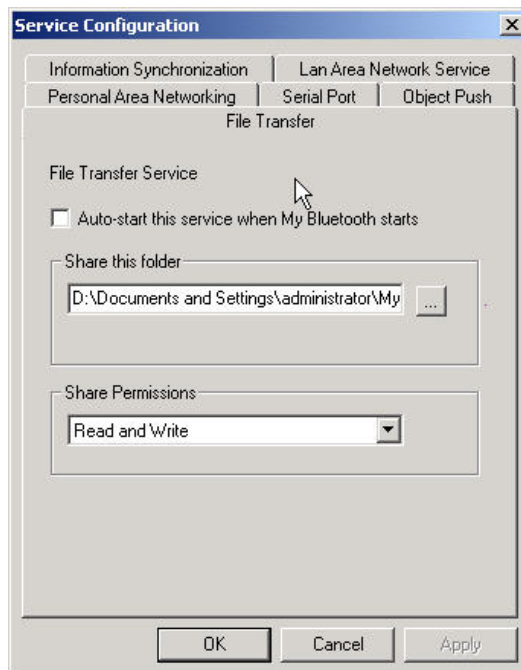
Figure 6.2: The Service Configuration window

♦ In the **Share this folder** field input the folder that you want to share with other computers via Bluetooth. Click the button under **Share this folder** and a new window **Set FTP Server Root Folder** pops up. (Figure 6.3). Select the shared folder in the **Look in** box and click the **Select** button. (Figure 6.4)

♦ For **Share Permissions**, select **Read and Write** so that other

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computers can copy or delete files\ directories to this directory.

Note: Do not share your Windows system directory in **Read and Write** mode. Other users may delete important Windows' files.
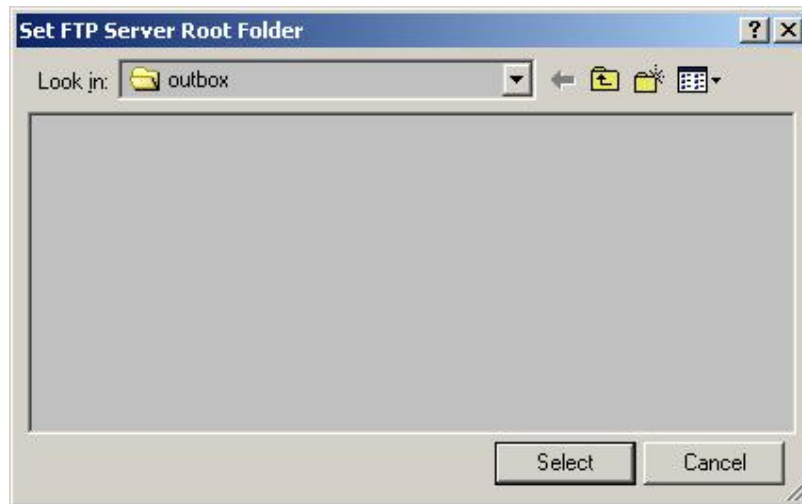
Figure 6.3: Set FTP Server Root Folder
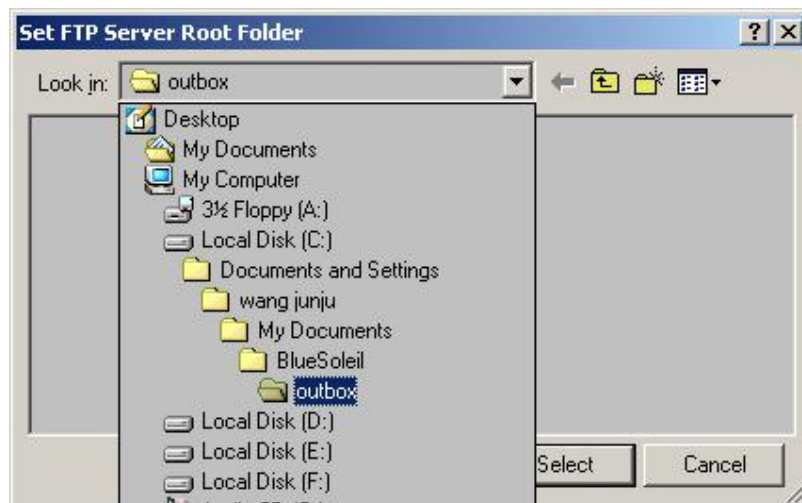
Figure 6.4: Select the shared folder

Step 5:   Search for Computer A on Computer B.
♦   Double-click the My Device icon until you find the device Computer A.

Step 6:   Find the FTP service on Computer A.
♦   Double-click the Computer A device icon on Computer B. (Figure 6.5)
♦   Enter the Bluetooth passkey (if security is set to **High** on either side) to start authentication.
♦   Once authentication is complete, the FTP service is found.

Figure 6.5: Double-click the Computer A device icon

Step 7:   Connect to Computer A.
  ♦   Right-click the FTP service icon; select **Connect** on the pop-up
      menu. The connection is now established (Figure 6.6). The
      remote folder is displayed in a Windows Explorer folder window
      (Figure 6.7).
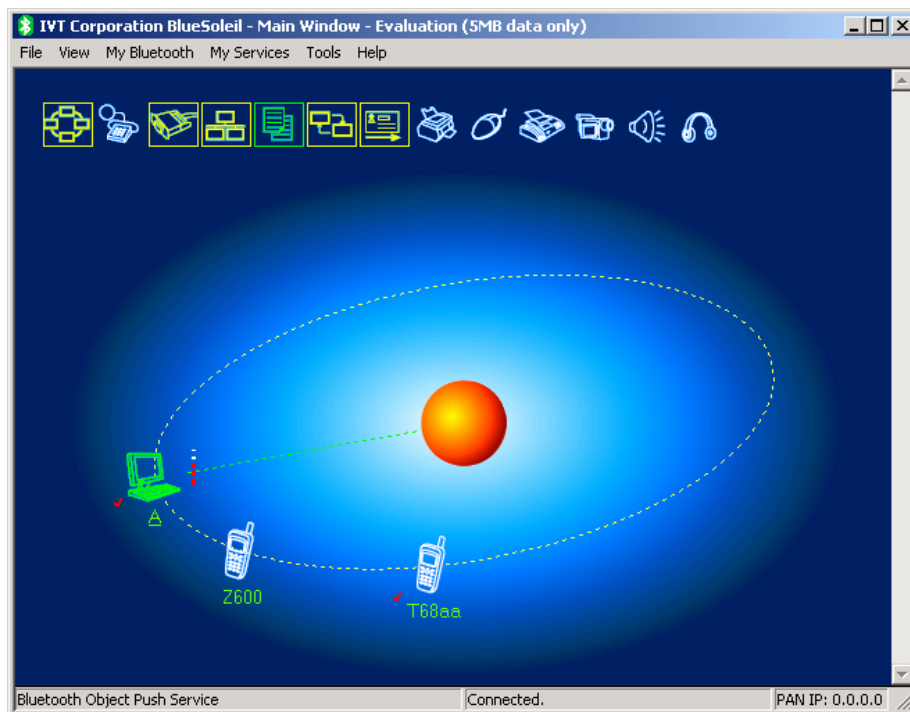
Figure 6.6: The connection is successfully established
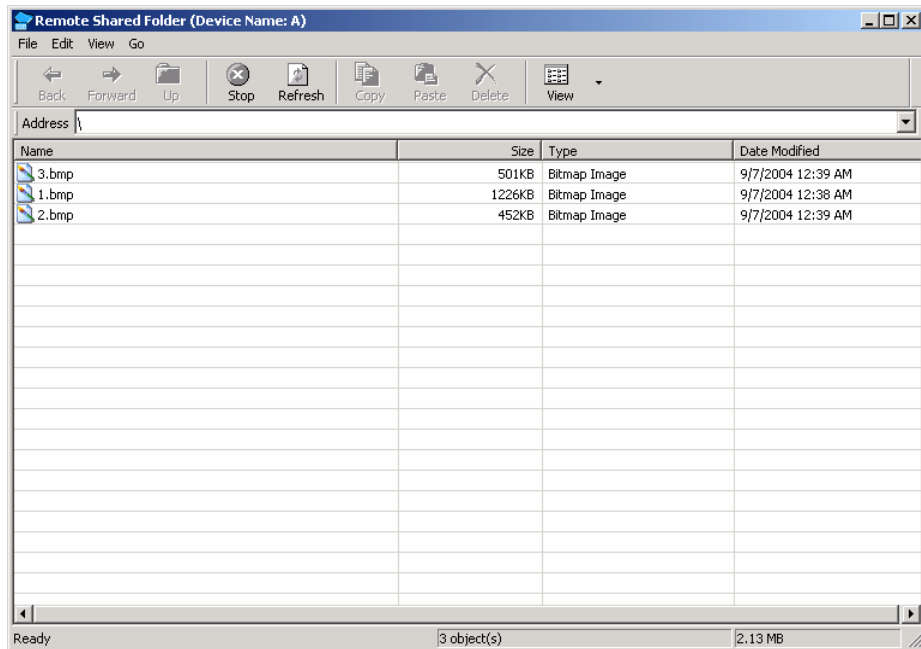
Figure 6.7: The remote folder is displayed

Step 8:   Copy files and directories.

- ♦ From Computer B to Computer A – upload
  Select files\ directories on Computer B and drag files into the
  Remote Shared Folder. (Figure 6.8)

- ♦ From Computer A to Computer B – download
  Select files\ directories from the Remote Shared Folder and drag
  files into the desktop or a folder on Computer B. (Figure 6.9)
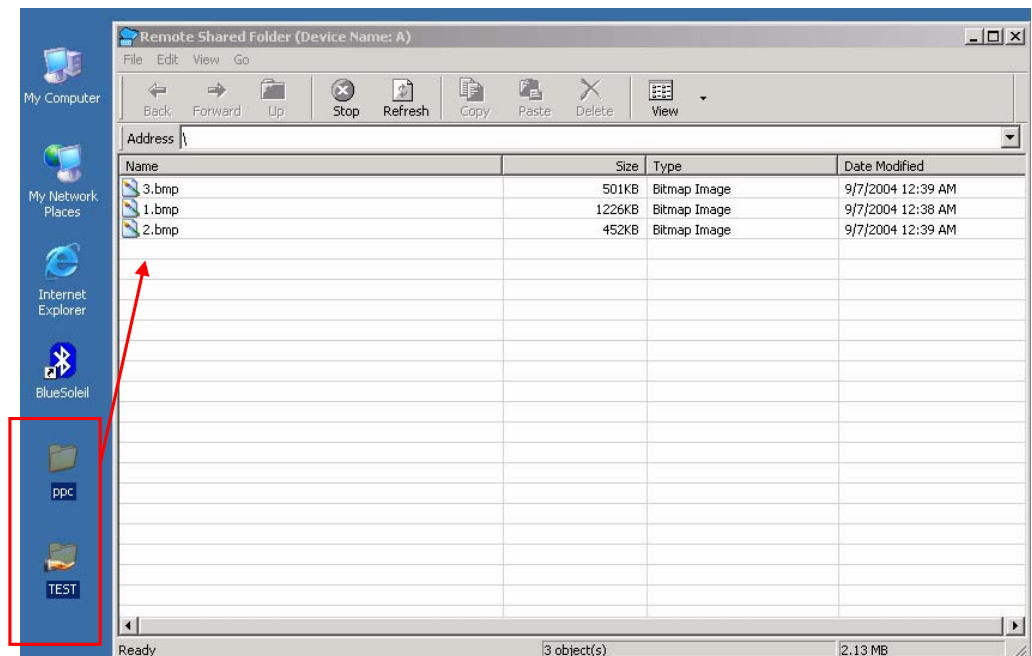
Figure 6.8: Upload files to Computer A
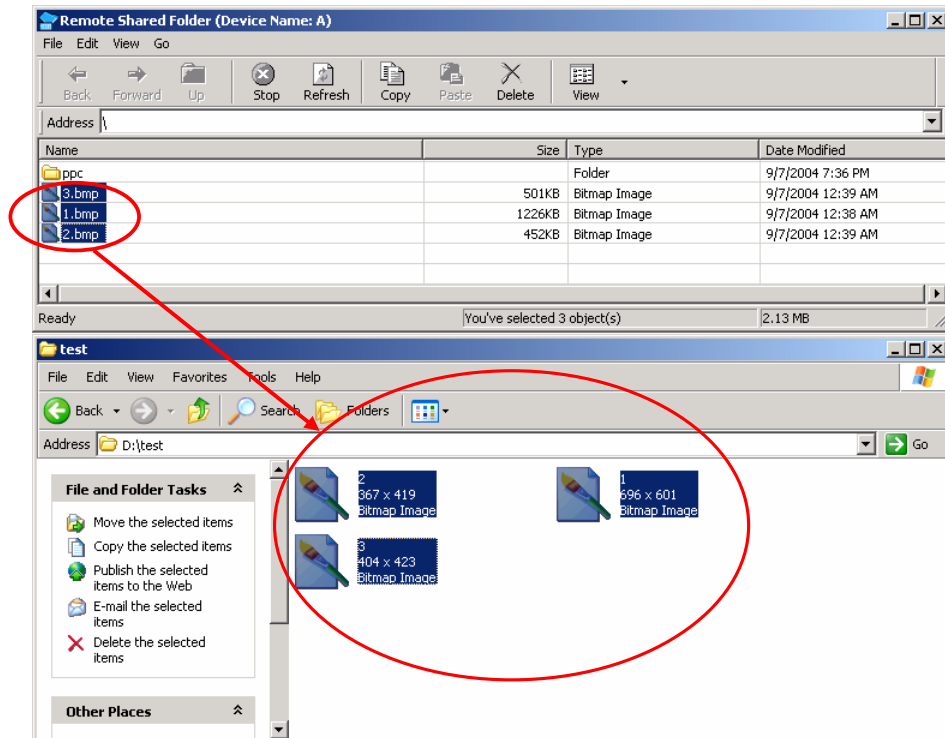
Figure 6.9: Download files from Computer A

6.3   FTP Configuration

6.3.1   My FTP Service

In the BlueSoleil™ Service Window, right-click the File Transfer icon. On the pop-up menu, select **Properties** to configure the 'my FTP service'.
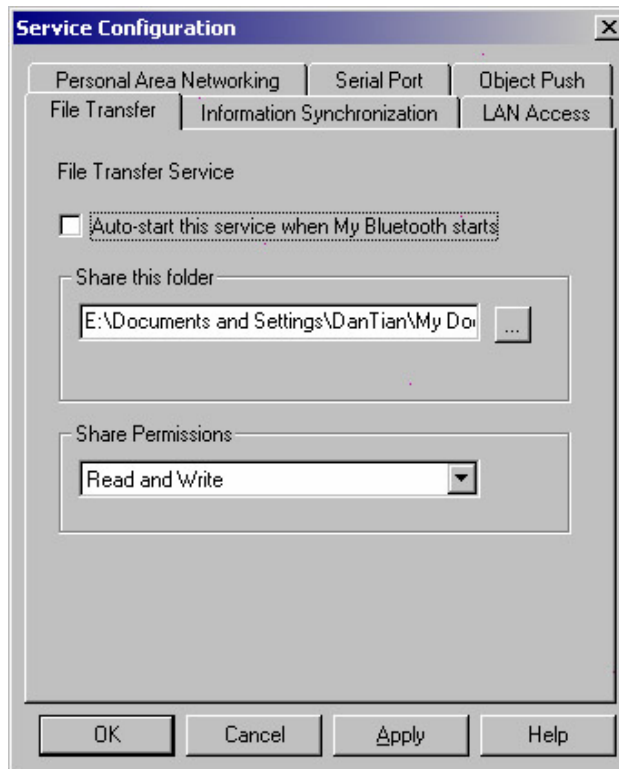
Figure 6.10: Configure FTP service

Setting Items:

♦ **Auto starts this service when my Bluetooth starts**
  Check this box to automatically start the File Transfer service every time BlueSoleil™ is started.

♦ **Root Directory**
  This sets the root directory that you want to share with other computers using Bluetooth.

♦ **Access Permissions**
  This sets the access permission remote computers have to the shared root directory.

7   LAN Access

7.1   Introduction

The Bluetooth LAN Access Profile (LAP) allows Bluetooth-enabled devices to access the services of a LAN using Point-to-Point Protocol. In this usage model, multiple data terminals use a LAN access point as a wireless connection to a Local Area Network (LAN). Once connected, data terminals operate as if they are connected to the LAN via dial-up networking and can access all the services provided by the LAN.

The LAN application can be used in the following scenarios:

♦   A computer (or PDA) accesses a Local Area Network via a LAP Server.

♦   A computer (or PDA) accesses a Local Area Network via a LAN access point.

Note: Before using the LAN Access Profile in Windows98/Me, ensure that a Dial-up Adapter and Windows's component direct cable are already installed on the computer. (See "Section **Error! Reference source not found**.: **Error! Reference source not found.**"). Moreover, every operating system should have an installation of NetBEUI protocol; otherwise, it cannot use computer name to visit other computer.

7.2   Access a Local Area Network (LAN)

This section outlines the steps involved in connecting to a Local Area Network using the LAP application.

Computer A:	Computer B:
Notebook/ Laptop, PIII, 800MHz, 128M	Desktop, PIII, 600MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™

Step 1:   Insert Bluetooth USB dongles into both computers.

Step 2:   Start BlueSoleil™ in both computers.

Step 3:   Set the device name of each computer to anything you want. Here they are named Computer A and Computer B.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

♦   Repeat for Computer B.

Step 4:   Set the security level to **Low** on both Computer A and Computer B. (Use the **Tools | Configurations | Security** menu).

Step 5:   Start the LAP service on Computer A.

♦   In the Service Window, right-click the LAN Access icon. Select **Start Service** on the pop-up menu (Figure 7.1).
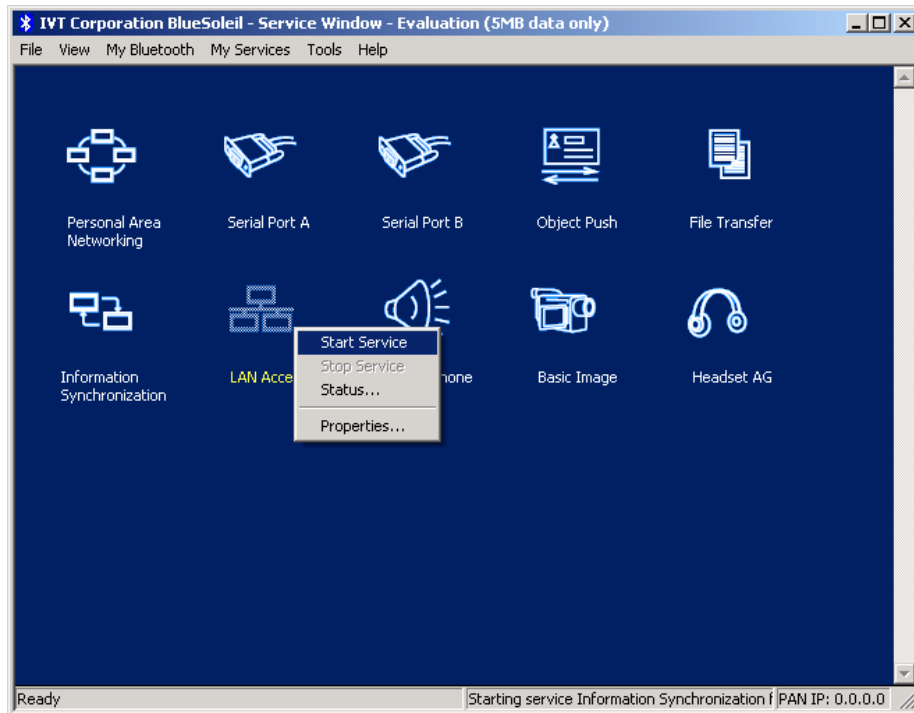
Figure 7.1: Select Start Service

Step 6:   Make incoming connection on Computer A

♦ Right-click on **My Network Places;** select **Properties**. (Figure 7.2)

♦ On the **Network and Dial-up Connections** panel, right-click the **Incoming Connection** icon, and then select **Properties** on the pop up menu. (Figure 7.3)

Figure 7.2: Right-click My Network Places
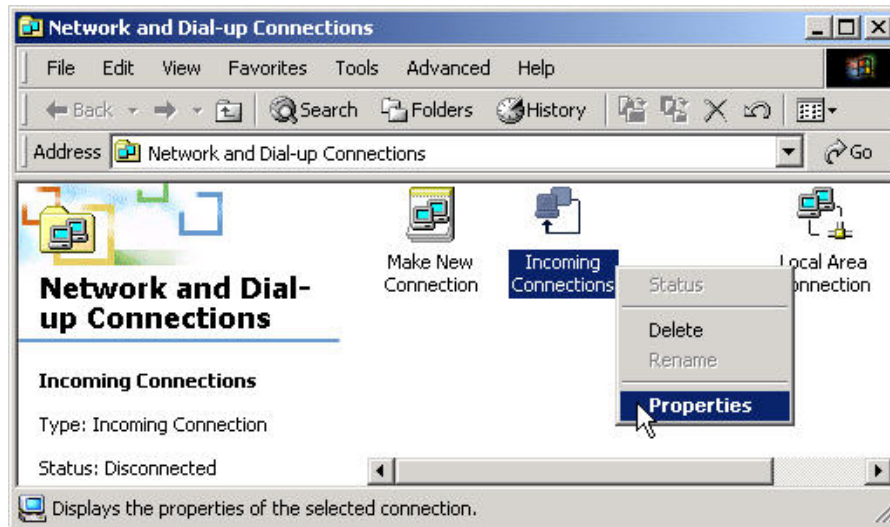
Figure 7.3: Select Properties on the pop up menu

♦ Click **Networking** on the **Incoming Connections Properties** pop-up window. (Figure 7.4)

♦ Choose **Internet Protocol (TCP/IP)** and click **Properties.** (Figure 7.5)
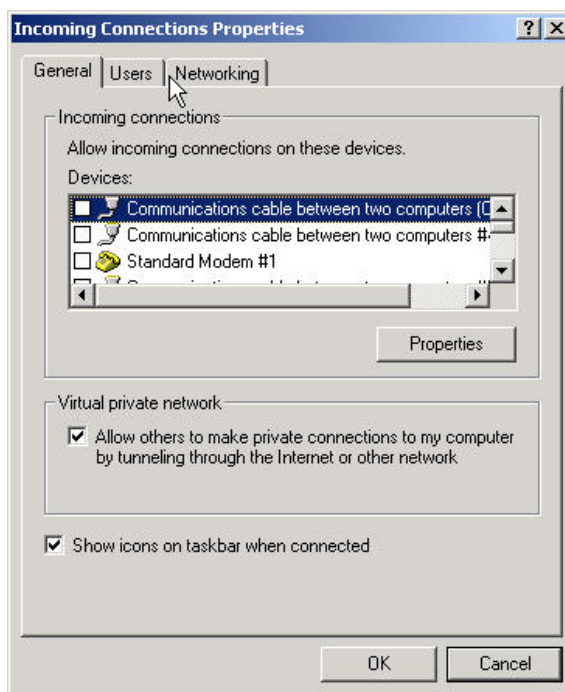
Figure 7.4: Incoming Connections Properties
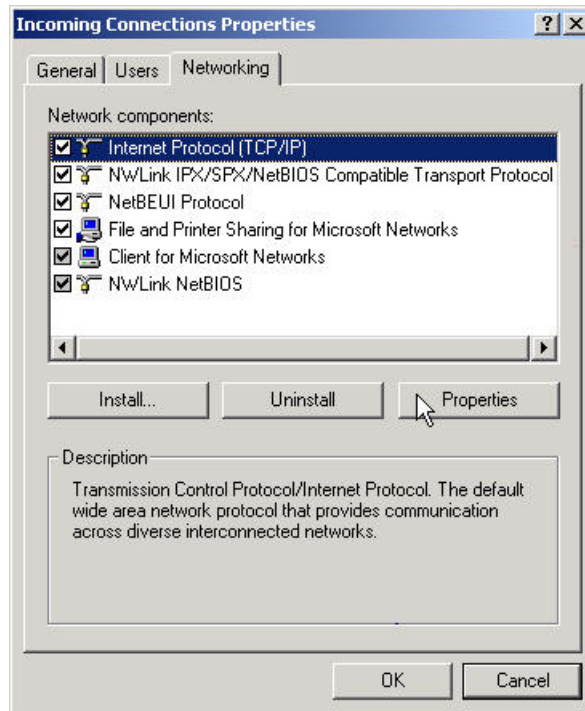
Figure 7.5: Choose Internet Protocol (TCP/IP)

♦ Select **Specify TCP/IP addresses,** and input the two IP addresses. The subnet mask of the two IP addresses should be the same as the subnet of the LAN Computer A belongs to. (Figure 7.6)
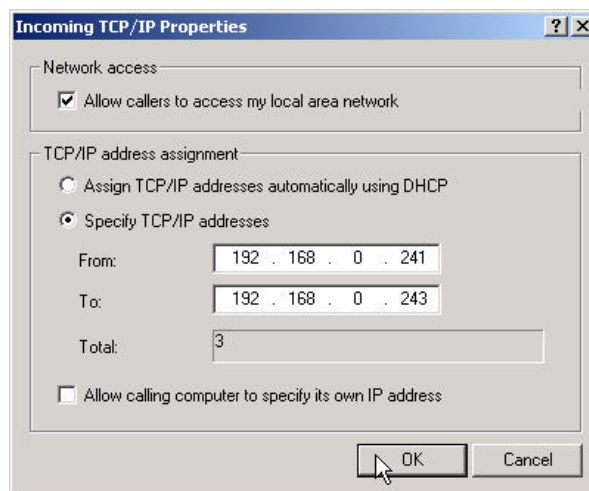
Figure 7.6: Input the IP addresses

Step 7:   Search for Computer A on Computer B.

♦ Double-click the My Device icon on Computer B until you find the device icon Computer A.

Step 8:   Find the LAP service of Computer A.

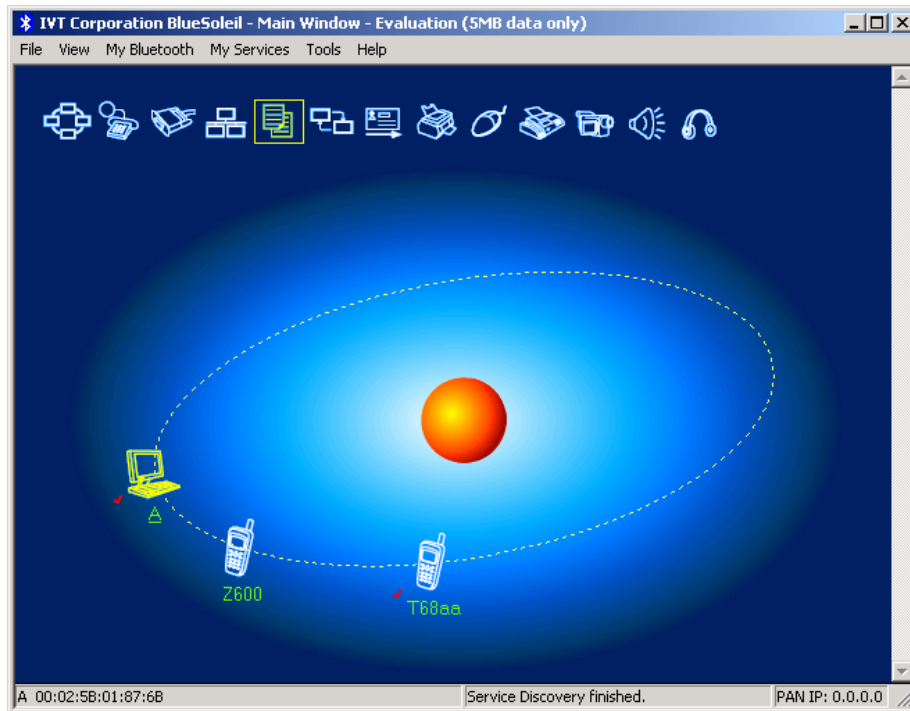♦ Double-click the Computer A device icon on Computer B (Figure 7.7).
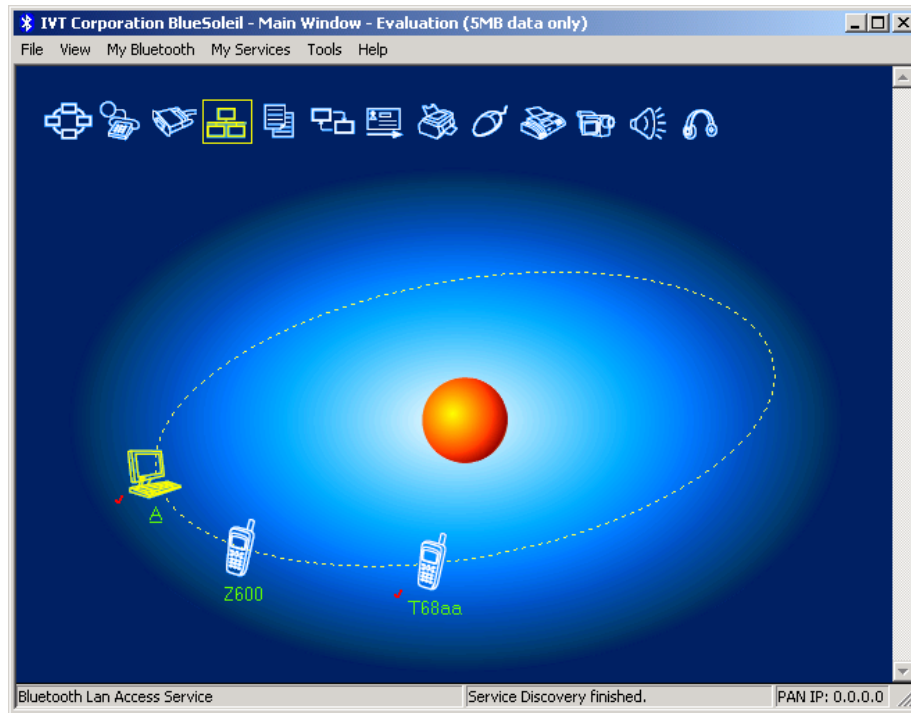
Figure 7.7: Double-click the Computer A device icon

Step 9:   Connect to Computer A.

♦   Right-click the LAP service icon; select **Connect** on the pop-up
         menu. (Figure 7.8)
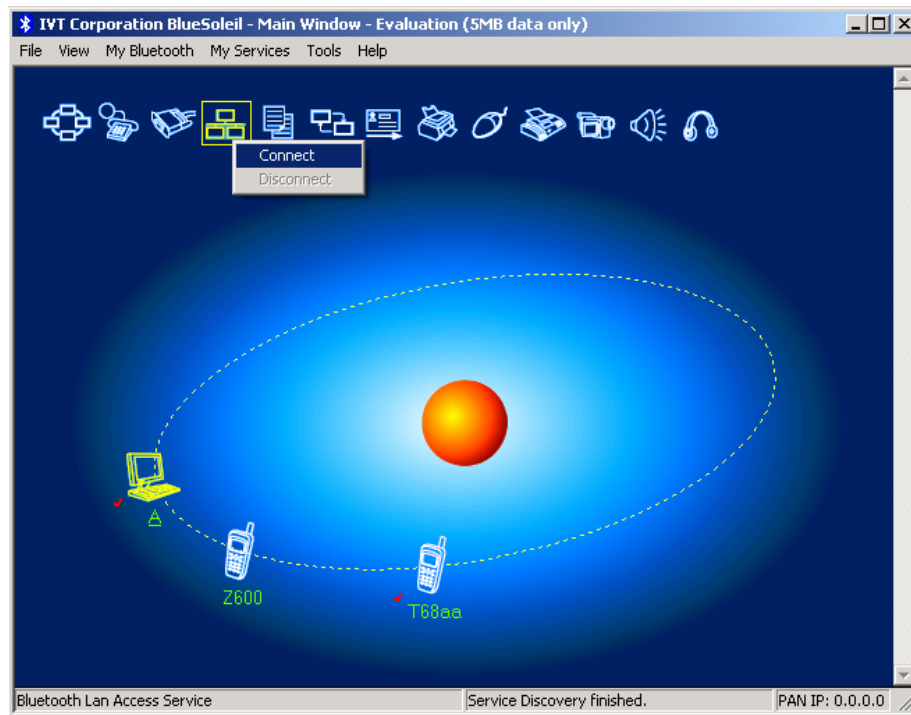
Figure 7.8: Select Connect

♦   The **Connect BlueSoleil™ LAP Connection** window pops up.

Input a username and password. (Figure 7.9)

♦ The connection is then established. (Figure 7.10)

Figure 7.9: Input Username and Password
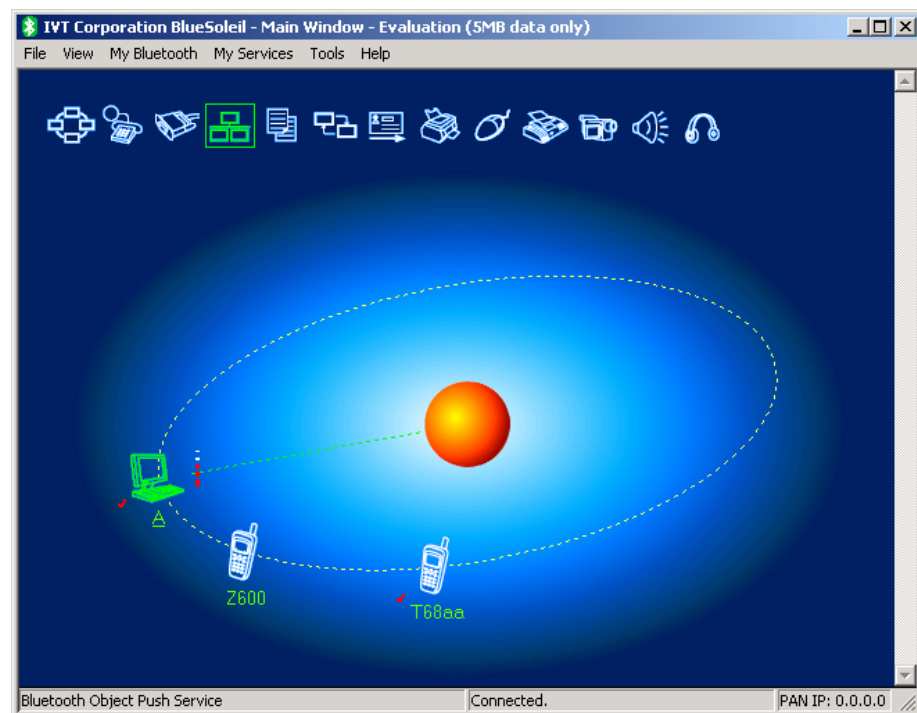
Figure 7.10: Successful connection to LAP

Step 10:   Computer B can now access the LAN via Computer A.

8   Object Push

8.1   Introduction

The Bluetooth Object Push profile (OPP) is an application that offers a way to send and receive Personal Information Management (PIM) data objects from one Bluetooth device to another Bluetooth device.

The objects Object Push supports are:

♦   Business cards (*.vcf)

♦   Calendar entries (*.vcs)

♦   Notes (*.vnt)

♦   Messages (*.vmg)

The OPP profile can be used in the following scenarios:

♦   Connecting a computer to a Bluetooth cellular phone (or PDA), and transferring objects from the computer to the cellular phone (or PDA).

♦   Connecting a computer to a Bluetooth cellular phone (or PDA), and transferring objects from the cellular phone (or PDA) to the computer.

♦   Connecting two computers and transferring objects between them.

8.2   Transfer Objects from a Computer to a Bluetooth Cellular Phone

This section outlines the steps involved in transferring OPP objects from a Computer to a Bluetooth cellular phone.

Computer A:	Bluetooth Cellular Phone:
Notebook/Laptop, PIII, 800MHz, 128M	Sony Ericsson T68
A Bluetooth USB dongle	
Windows 2000	
IVT BlueSoleil™	

Step 1:   Insert the Bluetooth USB dongle into the computer.

Step 2:   Start BlueSoleil™ in the computer.

Step 3:   Set the device name of the Computer A to anything you want. Here it is named Computer A.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Configure the business card of Computer A.

♦   Open the **Service Configuration** window and select the **Object Push** page. In the BlueSoleil™ Main Window, click **My Services**

(Figure 8.1).

♦ Check the boxes, Send Business Card on Request, Accept Business Card, Accept Calendar Items, Accept Email Messages and Accept Notes.

♦ To set 'my business card', click the box **Send My Business Card (*.VCF)**. This opens the **Open File** window. Select a VCF file as your own business card and click the **Open** button. Click the **OK** button on the **Service Configuration** window. If you do not set a business card, the program will generate a business card file automatically using your computer name. (Figure 8.2)
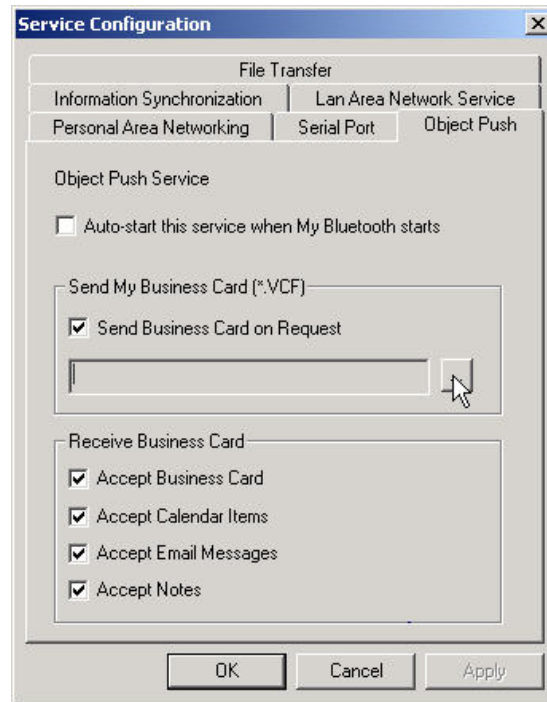
Figure 8.1: Service Configuration
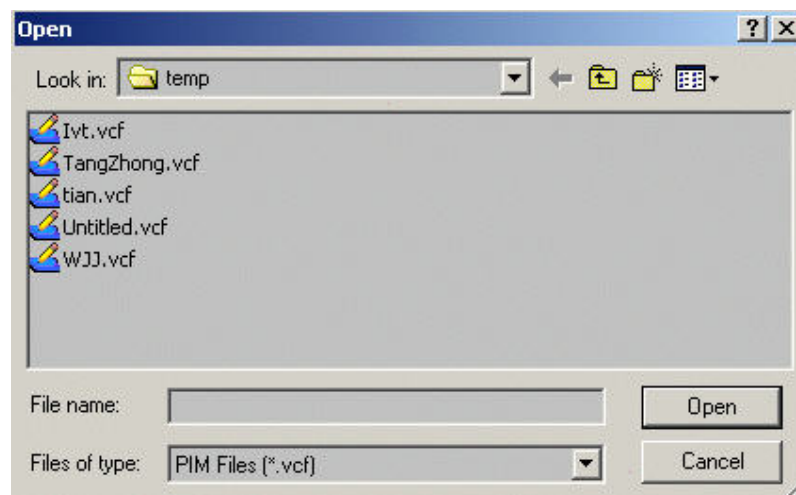
Figure 8.2: Open File

Step 5:   To obtain a VCF card file from MS Outlook.

♦ Open MS Outlook, and select the **Contacts** item in **Outlook Shortcuts.** (Figure 8.3)
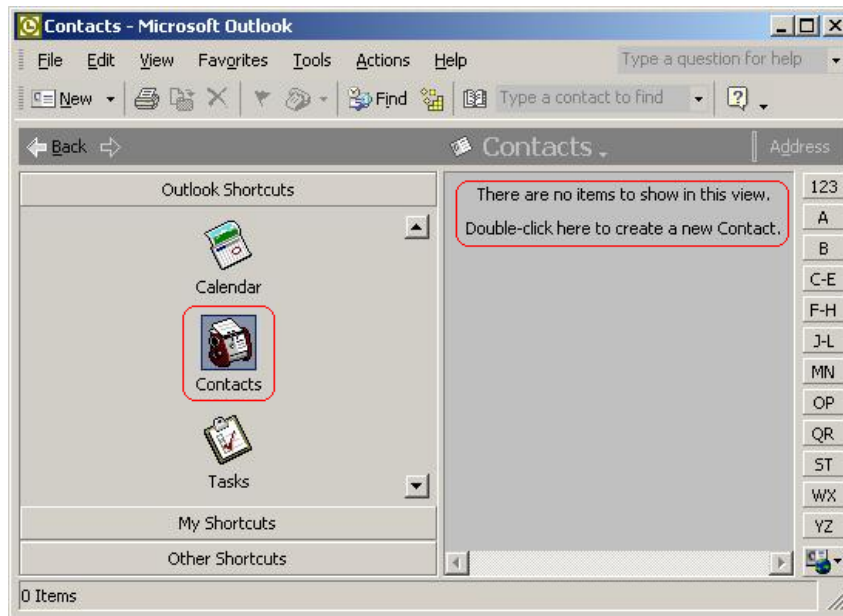
Figure 8.3: MS Outlook main window

♦ If there are no contacts entered, the following message appears on the main window **"There are no items to show in this view. Double-click here to create a new Contact."** Double-click and a pop-up window appears. (Figure 8.4)
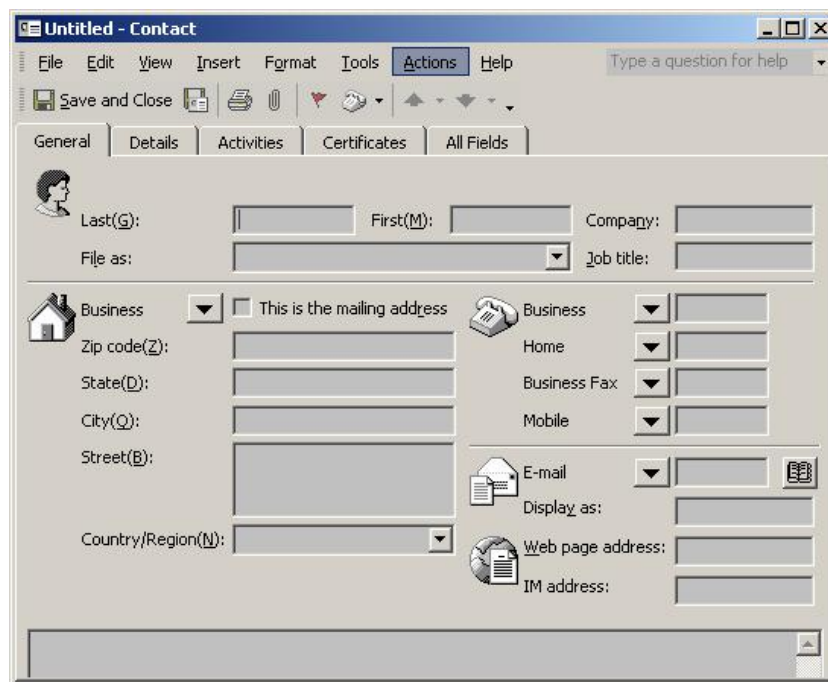
Figure 8.4: Create a new contact

♦ Enter your Contact information. Click **File | Save as** and a **Save As** window pops up. Select the name of the file and the

directory where you want to save the file. Select the **vCard Files (*.vcf)** item in the **Save as type** box. Click the **Save** button. (Figure 8.5)

Figure 8.5: Save new Contact

Step 6: Set the T68 to be discoverable.

♦ Press the **Menu** button on the T68 to find the menu list, and then select the **Connect** item. Press the **Yes** key to enter the **Connect** menu, and then select the **Bluetooth** item. Then select the **Discoverable** item.

Step 7: Search for Bluetooth devices in BlueSoleil™ on Computer A until it finds the T68 (or input the T68 device address directly).

Step 8: Double-click the T68 device to find its OPP service:

♦ If your security attribute is set to **High**, the **Enter Bluetooth Passkey** window pops up (Figure 8.6).

♦ Enter a passkey of your choice, such as "1", and click the **OK** button.
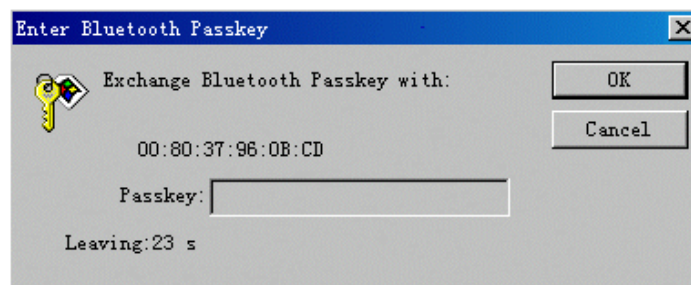
Figure 8.6: Enter the passkey

♦ A message appears on the T68 to ask whether you want to **Add to paired device ?** Press the **Yes** key, enter "1" and then press **Yes** again.

♦ A message **Pairing** pops up. If pairing is successful, the message **Pairing succeeded** appears. If pairing is

unsuccessful, the message **Pairing failed. Please try again. Retry?** In this case press **Yes** to retry or **No** to cancel.

♦ If the pairing succeeds, you will see the services of the T68 include the OPP service. (Figure 8.7) If you have never created a shortcut **DUN**, the following dialog pops up asking you whether **Create a Shortcut on the windows desktop**. If you choose **yes**, a shortcut icon called **DUN** will occur on the desktop, otherwise the icon will not occur. For details, please refer to the related part of DUN.
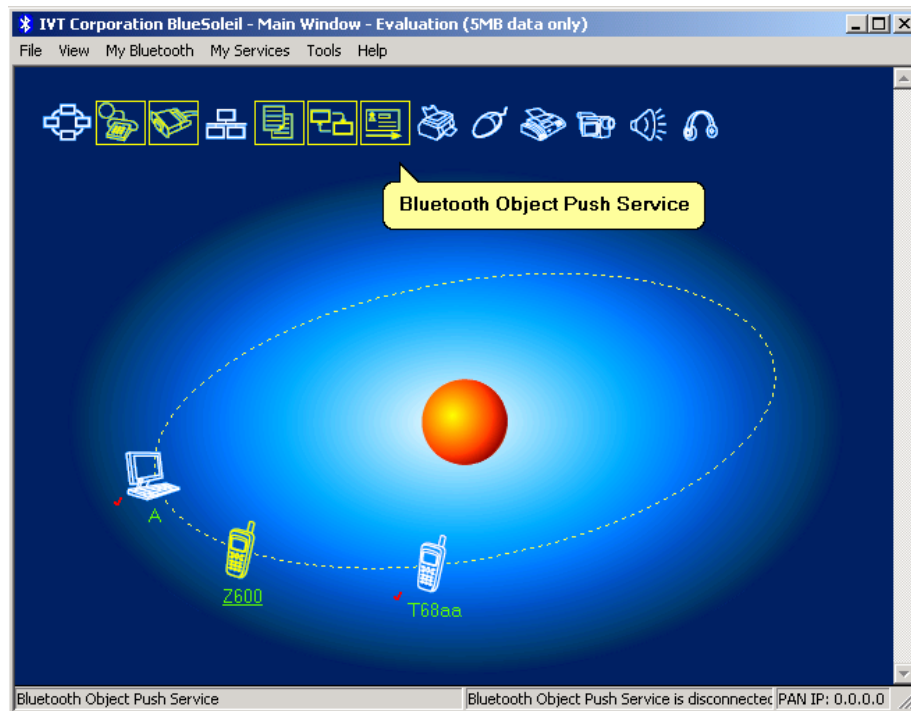
Figure 8.7: Find the services

Step 9:   To send or get objects data, right-click the OPP service icon. There are four options (Figure 8.8) on the pop-up menu:

♦ **Send My Card**: Click this menu item, and a business card from Computer A is sent to the T68.

♦ **Get Card**: Click this menu item to receive a business card from the T68. Open the folder **inbox** to check if you have received the card.
(Note: Open the **My Documents** folder on the computer and find a new folder called **BlueSoleil**. Open this folder to find the subfolders **inbox** and **outbox**. **Inbox** is used to deposit the objects received from other Bluetooth devices. **Outbox** is used to deposit the objects you want to send to other Bluetooth devices.)

♦ **Send Objects**: Click this menu item to send an object in Computer A to the T68 (there are four types of object: *.vcf, *.vcs, *.vmg, *.vnt). Select the objects that you want to send in the window that pops up and click **Open**.

♦ **Exchange cards**: Click this menu item to exchange business cards between Computer A and the T68.
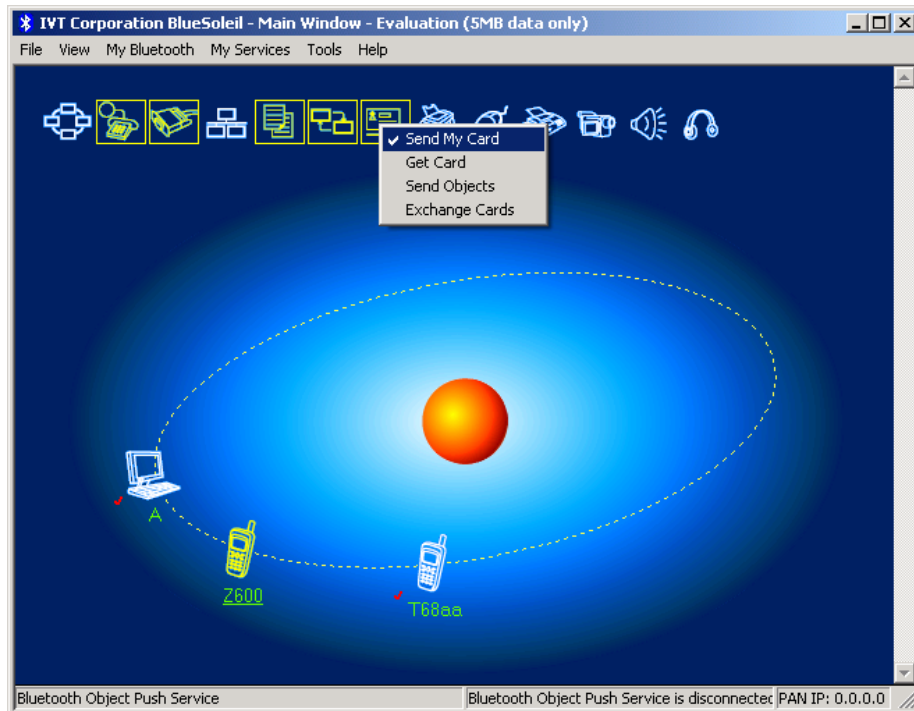
Figure 8.8: Four types of operation

8.3   Transfer Objects from a Bluetooth Cellular Phone to a Computer

This section outlines the steps involved in transferring OPP objects from a Bluetooth cellular phone to a computer.

Computer A:	Bluetooth Cellular Phone:
Notebook/Laptop, PIII, 800MHz, 128M	Sony Ericsson T68
A Bluetooth USB dongle	
Windows 2000	
IVT BlueSoleil™	

Step 1:   Insert the Bluetooth USB dongle into the computer.

Step 2:   Start BlueSoleil™ in the computer.

Step 3:   Set the device name of the computer to anything you want. Here it is named Computer A.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Configure the OPP service attribute of Computer A, and start the OPP service.

♦   In the BlueSoleil™ Main Window, click **My Services| Properties**... (Figure 8.9).

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♦ The **Service Configuration** window pops up. Select the Object Push item. Configure My Business Card (See "Section 8.2: Transfer Objects from a Computer to a Bluetooth Cellular Phone", Step 4) and configure other OPP service attributes for Computer A.
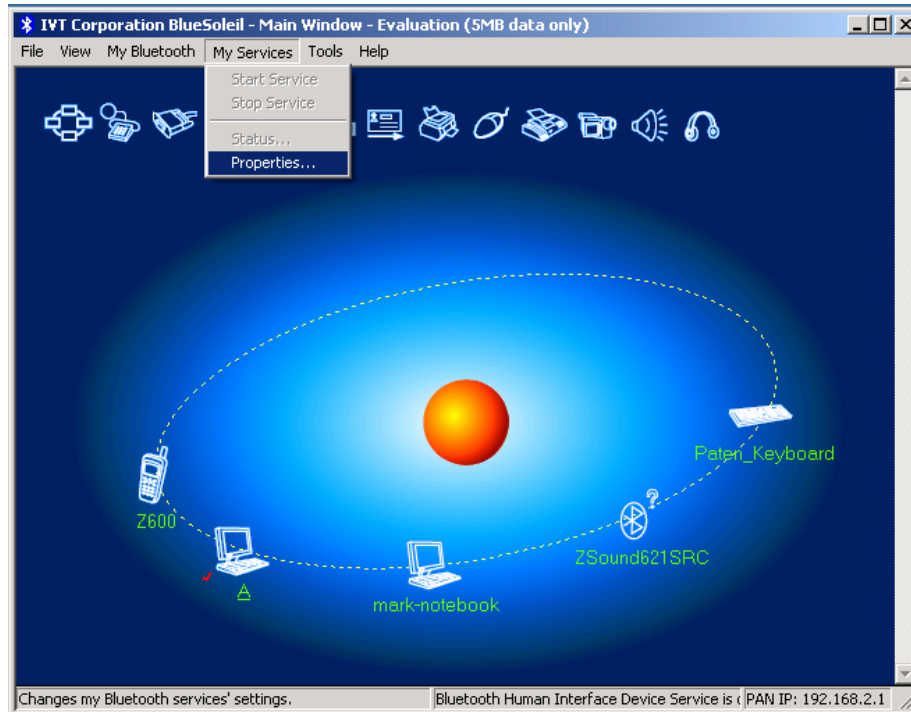
Figure 8.9: Configure the OPP service

♦ In the BlueSoleil™ Main Window, select **View | Service Window**.

♦ Right-click the Object Push icon, and select **Start Service** (Figure 8.10).
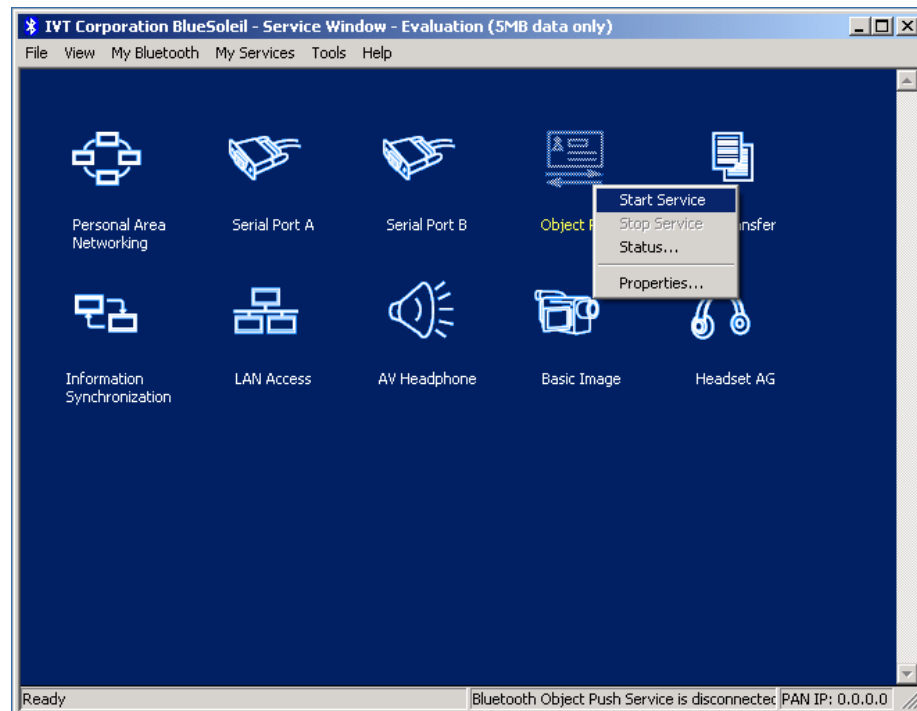
Figure 8.10: Select the Start Service

Step 5: Discover and pair Computer A on the T68.

♦ Select **Menu | Connect | Bluetooth | Discover** on the T68. A list of the surrounding devices appears. Select 'Computer A'.

♦ When the **Add to paired device devices?** message appears, press the **Yes** key and enter a passkey, for example "1". Use the same passkey on BlueSoleil™ as used on the T68. If you have never created a shortcut **DUN**, the following dialog pops up asking you whether **Create a Shortcut on the windows desktop**. If you choose **yes**, a shortcut icon called **DUN** will occur on the desktop, otherwise the icon will not occur. For details, please refer to the related part of DUN.

Step 6: Start the OPP operation.

♦ Select Menu | Phone book | Business cards on the T68.

♦ To send "my card" from the T68.
From the **Business cards** menu, select **Send my own** and then select **Via Bluetooth**. The T68 searches the surrounding Bluetooth devices. To send the business card from the T68 to Computer A, select 'Computer A' on the T68 screen.

♦ To select an object and send it.
From the **Business cards** menu, select **Send contact** and then select **Via Bluetooth**. The T68 asks you to select the object that you want to send. Select an object and send it as specified above.

♦ To receive a business card.
From the **Business cards** menu, select **Receive** and then select **Via Bluetooth**. The T68 is now in discoverable status,

and you can send an object to it from other Bluetooth devices.

♦ To send all business cards.
From the **Business cards** menu, select **Send all** and then select **Via Bluetooth**. Select the destination device Computer A. The T68 then sends all its *.vcf files to Computer A.

8.4 Transfer Objects between Two Computers

This section outlines the steps involved in transferring OPP objects between two Computers (Computer A and Computer B).

Computer A:	Computer B:
Notebook/Laptop, PIII, 800MHz, 128M	Desktop, PIII, 600MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™

Step 1:   Insert Bluetooth USB dongles in both computers.

Step 2:   Start BlueSoleil™ in both computers.

Step 3:   Set device name of each computer to anything you want. Here they are named Computer A and Computer B.

♦ In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

♦ Repeat for Computer B.

Step 4:   Start the OPP service on Computer B (See "Section 8.3: Transfer Objects from a Bluetooth Cellular Phone to a Computer, Step 4) to provide the OPP service for Computer A.

Step 5:   Search for Bluetooth devices in Computer A until it finds Computer B.

Step 6:   Double-click on the Computer B device icon to find it's OPP service.

Step 7:   Perform an OPP operation. (See "Section 8.3: Transfer Objects from a Bluetooth Cellular Phone to a Computer", Step 5)

8.5   Configure OPP Service

8.5.1   My OPP Service

In the BlueSoleil™ Service Window, right-click the Object Push icon. To configure 'my OPP service', select **Properties** on the pop-up menu.
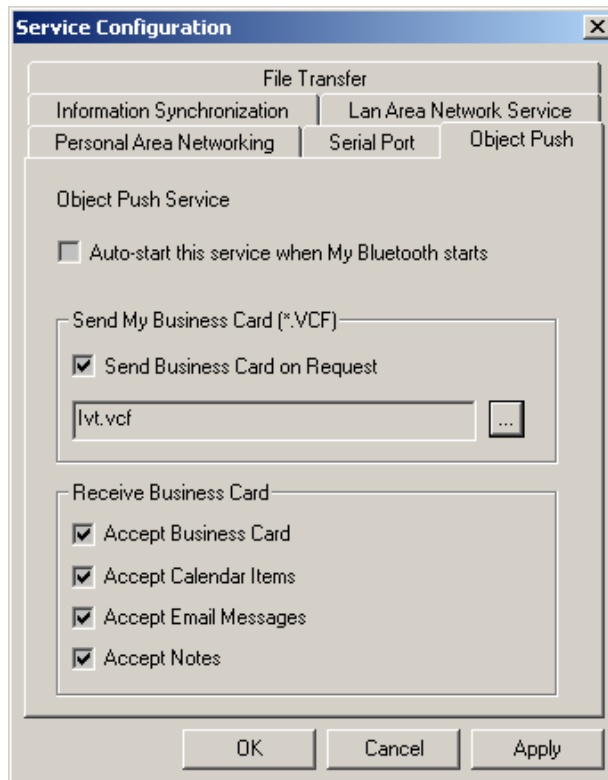
Figure 8.11: Configure OPP service

Setting Items:

♦ **Auto start this service when my Bluetooth starts**
   Select this item if you want to automatically start the OPP service every time BlueSoleil™ starts.

♦ **My Business Card (*.vcf)**
   You must select your own business card (*.vcf file) every time you start BlueSoleil™. If you forget to do this, BlueSoleil™ creates a *.vcf file using your computer name and regards this file as your own business card.

♦ **Send Business Card on Request**
   Select this item to allow other users to receive your business card.

♦ **Receive Business Card**
   There are four possible items here. Each item represents one type of object. You may select the object types that you want to accept.
   - **Accept Business Card to accept business cards (*.vcf)**
   - **Accept Calendar Items to accept calendar items (*.vcs)**
   - **Accept Email Messages to accept email messages (*.vmg)**
   - **Accept Notes to accept notes (*.vnt)**

9   Synchronization

9.1   Introduction

Using Bluetooth Synchronization (SYNC), Bluetooth devices can synchronize messages, notes, calendars and cards with each other.

The objects Synchronization (SYNC) supports are:

- Business cards (*.vcf)
- Calendar entries (*.vcs)
- Notes (*.vnt)
- Messages (*.vmg)

The SYNC application is typically used in the following scenarios:

- A computer exchanging PIM (Personal Information Management) data with a cellular phone or PDA.
- Two computers exchanging PIM data with each other.

9.2   Exchange PIM Data with a Cellular Phone

This section outlines the steps involved in connecting a computer to a Bluetooth cellular phone. The cellular phone works as a server that provides the SYNC service.

Computer A:	Bluetooth Cellular Phone:
Notebook/Laptop, PIII, 800MHz, 128M	Sony Ericsson T68
A Bluetooth USB dongle	
Windows 2000	
IVT BlueSoleil™	

Step 1:   Insert the Bluetooth USB dongle into the computer.

Step 2:   Start BlueSoleil™ in the computer.

Step 3:   Set the device name of the computer to anything you want. Here it is named Computer A.

- In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Set the security level to **Low** on Computer A. (Use the **Tools | Configurations | Security** menu).

Step 5:   Configure the T68.

♦ Set T68 to be discoverable.
Press the **Menu** button on the T68 and select **Connect |
Bluetooth | Discoverable**. Press **Yes** to confirm the selection.

♦ To confirm Pairing.
Press the **Menu** button on the T68 and select **Connect |
Bluetooth | Discover**. The T68 searches for Bluetooth devices
and displays the devices found on screen. Select a device
where BlueSoleil™ is running. Then select **Add to paired
device?** to confirm pairing.

♦ The T68 requests a passkey. Input any number (for example
"1"). In the BlueSoleil™ application a window pops up asking for
the passkey (Figure 2.1). Input the same passkey as in the T68
(for example, "1") and click **OK**. If you have never created a
shortcut **DUN**, the following dialog pops up asking you whether
Create a Shortcut on the windows desktop. If you choose
yes, a shortcut icon called **DUN** will occur on the desktop,
otherwise the icon will not occur. For details, please refer to the
related part of DUN.
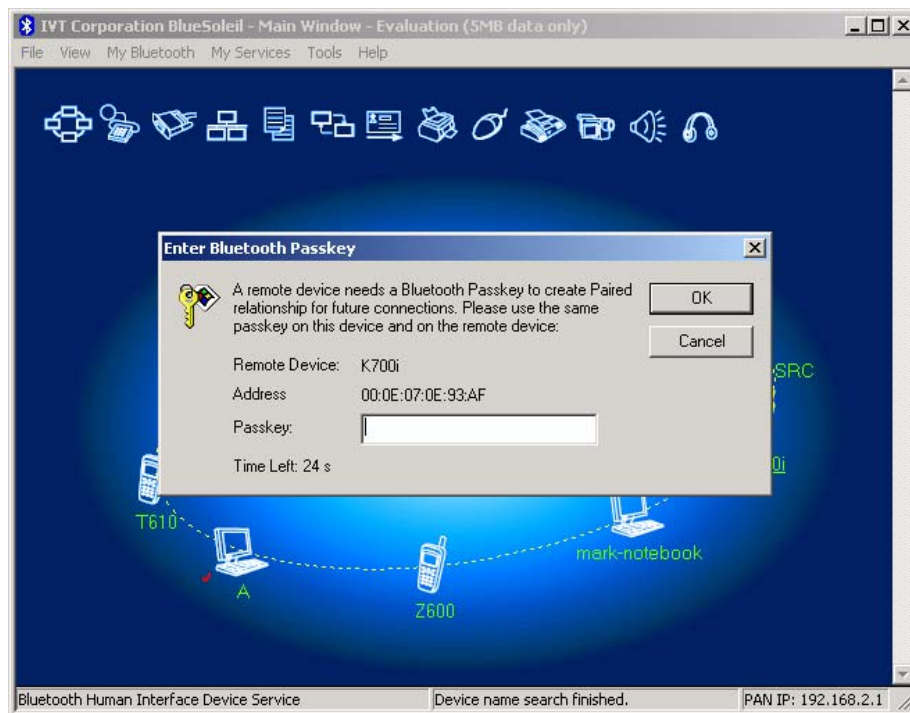
Figure 9.1: Input the passkey

Step 6:   Start synchronization.

♦ Now use the computer running BlueSoleil™ to start the
synchronization. (See "Section 8.3: Transfer Objects from a
Bluetooth Cellular Phone to a Computer", Step 6).

9.3   Set up SYNC Connection between Two Computers

This section outlines the steps involved in setting up a SYNC connection between two computers, Computer A and Computer B. Computer A works as a server that provides the BlueSoleil™ SYNC service. Computer B works as a client that uses the SYNC service provided by Computer A.

Computer A:	Computer B:
Notebook/Laptop, PIII, 800MHz, 128M	Desktop, PIII, 600MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™

Step 1:   Insert the Bluetooth USB dongles into each computer.

Step 2:   Start BlueSoleil™ in each computer.

Step 3:   Set the device name of the each computer to anything you want. Here they are named Computer A and Computer B.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

♦   Repeat for Computer B.

Step 4:   Set the security level to low on Computer A and Computer B. (Use the **Tools | Configurations | Security** menu).

Step 5:   Start the BlueSoleil™ SYNC service on Computer A. Before starting the SYNC Server, it may need to be configured. To configure the server, follow the steps below:

♦   In the Main Window click **View | Service Window**

♦   In the Service Window, right-click the Information Synchronization icon. Select **Properties** on the pop up menu as shown in Figure 9.2.

♦   Set the option you require, and then click **OK**. (Figure 9.3)
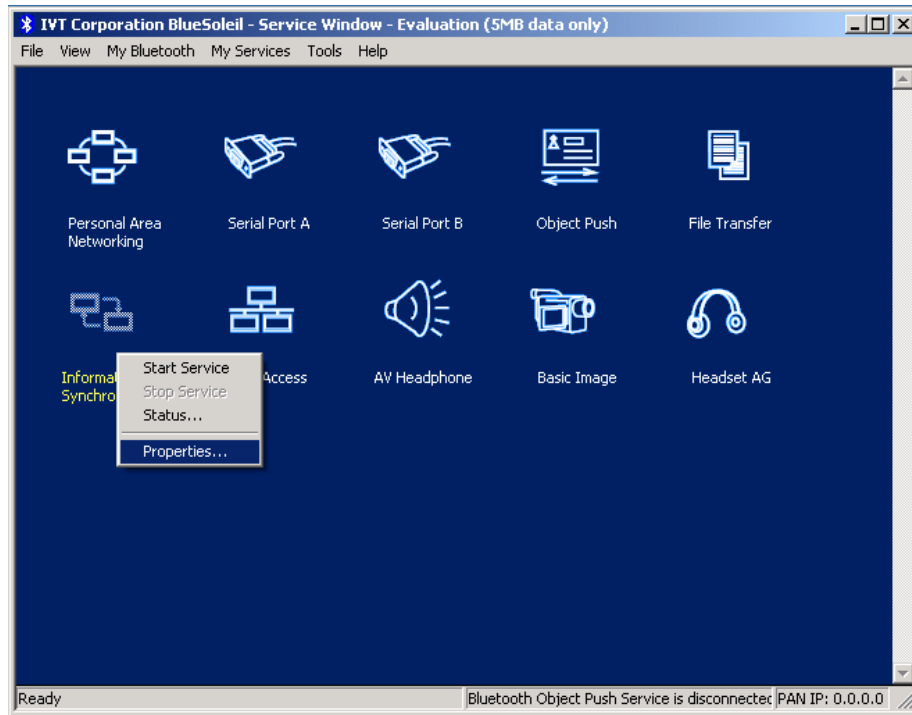
Figure 9.2: Select Properties on the Information Synchronization icon
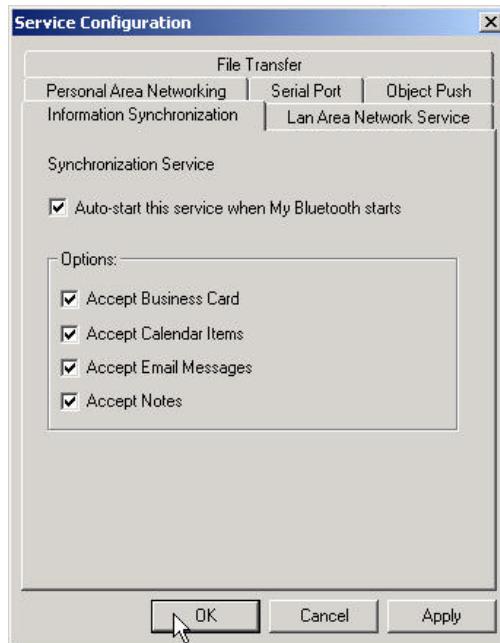
Figure 9.3: Service Configuration
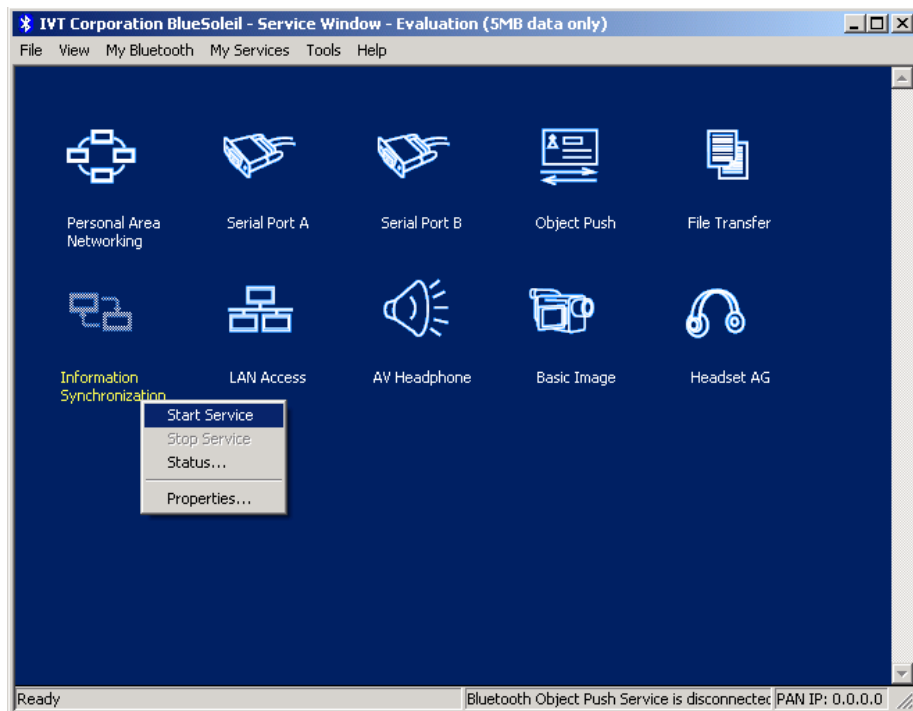
Figure 9.4: Select Start Service

Step 6:   Start the SYNC client on Computer B.

♦   Search the Bluetooth device and find the SYNC service. In the Main Window, click the My Device icon, and wait for a few seconds. When all device icons have appeared, click the Bluetooth device named Computer A. (Figure 9.5)
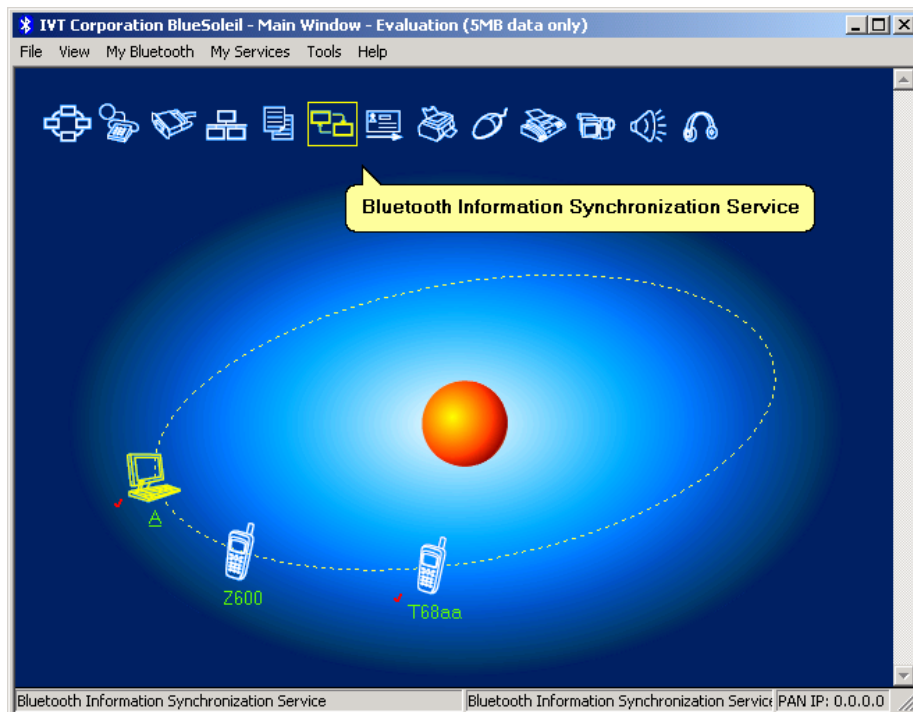
Figure 9.5: Click the Bluetooth device

♦ Double-click the Bluetooth Information Synchronization service icon. The color of the SYNC service icon changes to green (Figure 9.6), indicating the connection is successfully established.
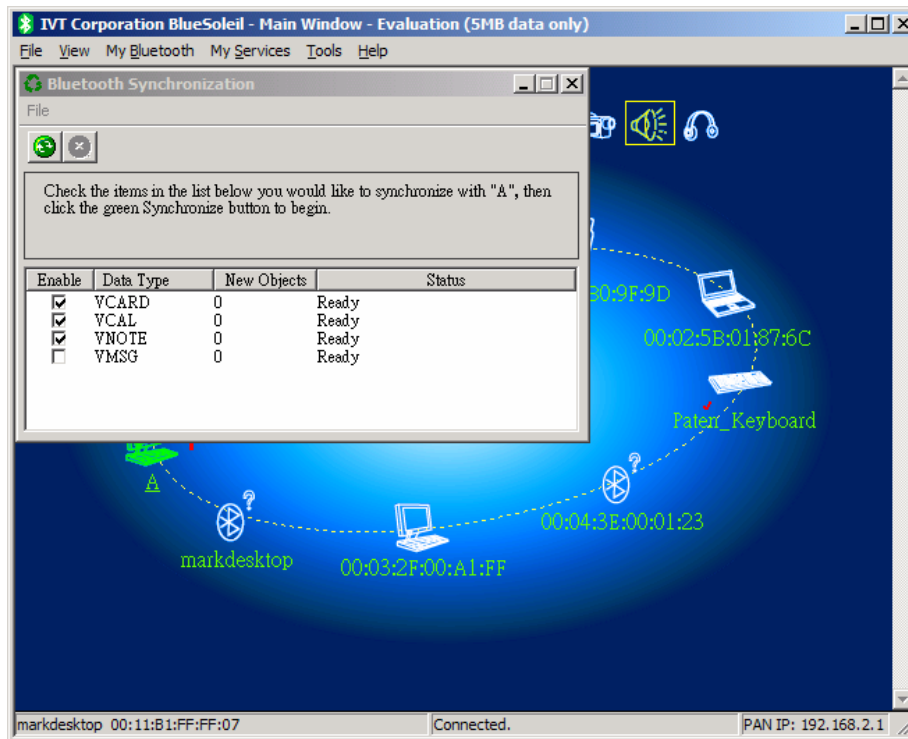
Figure 9.6: Connection is established successfully

♦ The SYNC clients can now start synchronization. Press the green button to begin synchronization. (Figure 9.7).
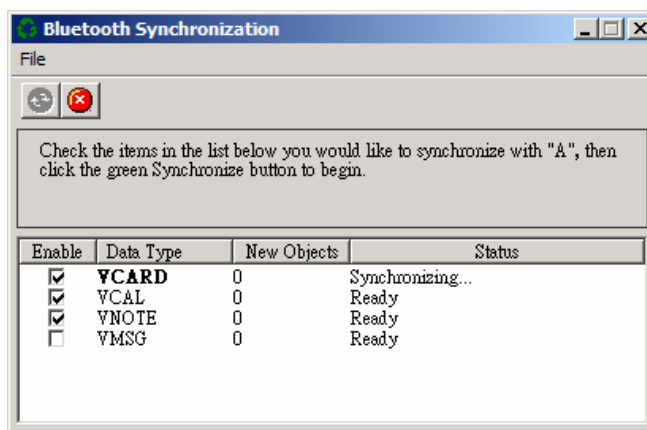
Figure 9.7: Press the green button

Advanced Usage:

♦ Before synchronization select the data type that you want to exchange. Leave the checkbox unchecked to disable the object type that you do not support.

♦ During synchronization push the red button if you want to stop the synchronization.

♦ Click the yellow explore button to check the information data after synchronization.

9.4   Synchronization Configuration

9.4.1   My Synchronization Service

In the BlueSoleil™ Service Window, right-click the Information Synchronization icon. To configure the synchronization service select **Properties** on the pop-up menu. (Figure 9.8)
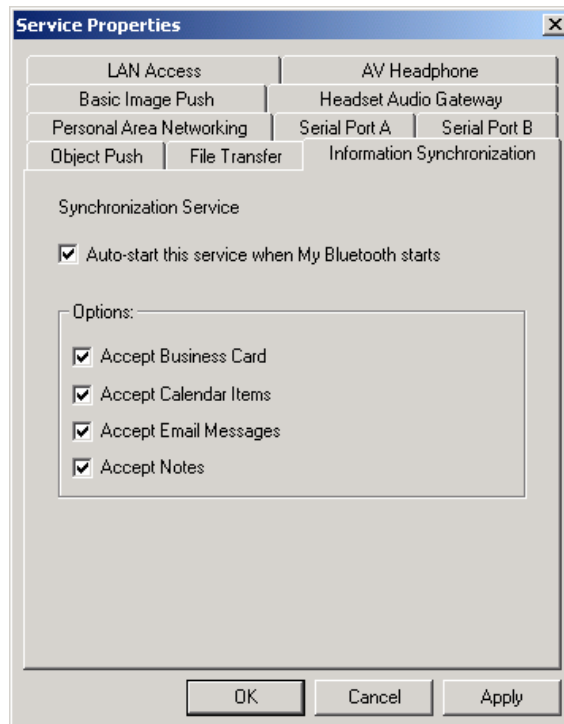
Figure 9.8: Service Configuration

Setting Items:

♦ **Auto start this service when my Bluetooth starts**
Check this item to start my synchronization service automatically every time BlueSoleil™ is started.

♦ **Options**
This service supports options for vCard, vCalendar, vMessage and vNote data types. You can select the data type you want to support.

10   Hardcopy Cable Replacement

10.1 Introduction

The Bluetooth Hardcopy Cable Replacement profile (HCRP) provides services to replace the cable between a host and peripheral device with a Bluetooth link. The most common devices using these services are laptops and desktop computers, however other devices are not excluded.

The HCRP profile can be used in the following scenario:

♦   Print a document using a Bluetooth Printer.

10.2 Print a Document Using a Bluetooth Printer

This section outlines how to print a document from Computer A (client) using a Bluetooth Printer (server)

Computer A:	Bluetooth Printer B:
Notebook/Laptop, PIII, 800MHz, 128M	Bluetooth Printer
A Bluetooth USB dongle	
Windows 2000	
IVT BlueSoleil™	

Step 1:   Insert the Bluetooth USB dongle into the computer.

Step 2:   Start BlueSoleil™ in the computer.

Step 3:   Set device name of the computer to anything you want. Here it is named Computer A.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Turn on the Bluetooth printer to provide the HCRP service for Computer A.

Step 5:   Search for Bluetooth devices on Computer A
In the Main Window, double click the 'My Device icon'. Wait a few seconds. The discovered surrounding devices appear.

Step 6:   Search the HCRP services of Printer B.
Double-click the printer named 'Printer'. The HCRP service icon turns red.

Step 7:   Connect the two devices.

♦   Double-click the HCRP service icon to connect Computer A and the Bluetooth printer.

Step 8:   The connection is established.

♦   After the connection setup is completed, a dashed line between the My Device icon (or 'center ball') and the Bluetooth Printer icon appears and the HCRP service icon turns green. (Figure 10.3)

♦ If there is no driver installed for the Bluetooth printer, then BlueSoleil™ displays a message asking the user to install a driver for the Bluetooth Printer, see the Windows system icons in the bottom right hand corner of the Windows desktop. (Figure 10.1) Install the driver for the printer on Computer A and set its port to COMx.

♦ If there is already a driver installed for the Bluetooth printer, a message appears indicating that the Bluetooth printer is ready (Figure 10.2). BlueSoleil™ sets the Bluetooth printer's port to COMx (e.g. COM3). If there are several drivers for the Bluetooth printer installed on Computer A, BlueSoleil™ automatically sets one of them as the Bluetooth printer.
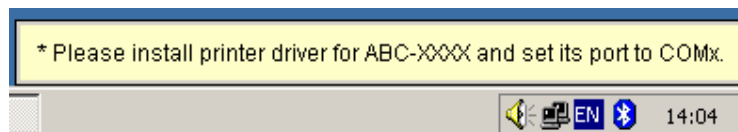
Figure 10.1: Bluetooth Printer Driver is not installed
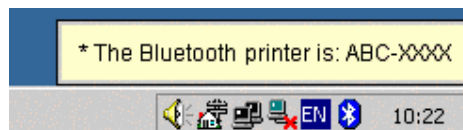
Figure 10.2: Bluetooth Printer Driver is ready

Step 9: Print documents.
♦ Computer A and Bluetooth Printer B are now connected. On Computer A, open the document that you want to print. Select **File |Print**. Then select the Bluetooth printer and print.

Step 10: Disconnect the Bluetooth Printer.
♦ Right-click the HCRP service icon; select **Disconnect** on the pop up menu. (Figure 10.3)

Figure 10.3: Disconnect from the Bluetooth Printer

11   Human Interface Device

11.1 Introduction

A typical Bluetooth Human Interface Devices (HID) is a Bluetooth-enabled mouse, keyboard or joystick. The HID service allows wireless communication to Bluetooth HID devices.

The HID profile can be used in the following scenarios:

♦   Connecting a computer to a Bluetooth Mouse.

♦   Connecting a computer to a Bluetooth Keyboard.

11.2 Connect a Computer to a Bluetooth Mouse

This section outlines how to connect a computer (Computer A) to a mouse (Bluetooth Mouse B).

Computer A:	Bluetooth Mouse B:
Desktop, PIII, 800MHz, 128M A Bluetooth USB dongle Windows 2000 IVT BlueSoleil™	Bluetooth wireless mouse

Step 1:   Insert the Bluetooth USB dongle into the computer.

Step 2:   Start BlueSoleil™ in the computer and set the security level to low using the **Tools | Configurations | Security** menu.

Step 3:   Set the device name of the computer to anything you want. Here it is named Computer A.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools | My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Power on the Bluetooth mouse. (Bluetooth Mouse B)

Step 5:   Search for Bluetooth devices in Computer A until you find Bluetooth Mouse B. In the Main Window, double-click the My Device icon ('center ball'). Wait a few seconds. The discovered surrounding devices appear.

Step 6:   Double-click the Bluetooth Mouse B device icon to find it's HID service. If found, the HID service icon turns red. (Figure 11.1)

Figure 11.1: Find Bluetooth mouse and its service

Step 7:   Double-click the HID service icon to connect to Mouse B. After the
            connection is successfully set-up, a dashed line appears between
            the center ball and the Mouse B icon. The HID service icon turns
            green (Figure 11.2).
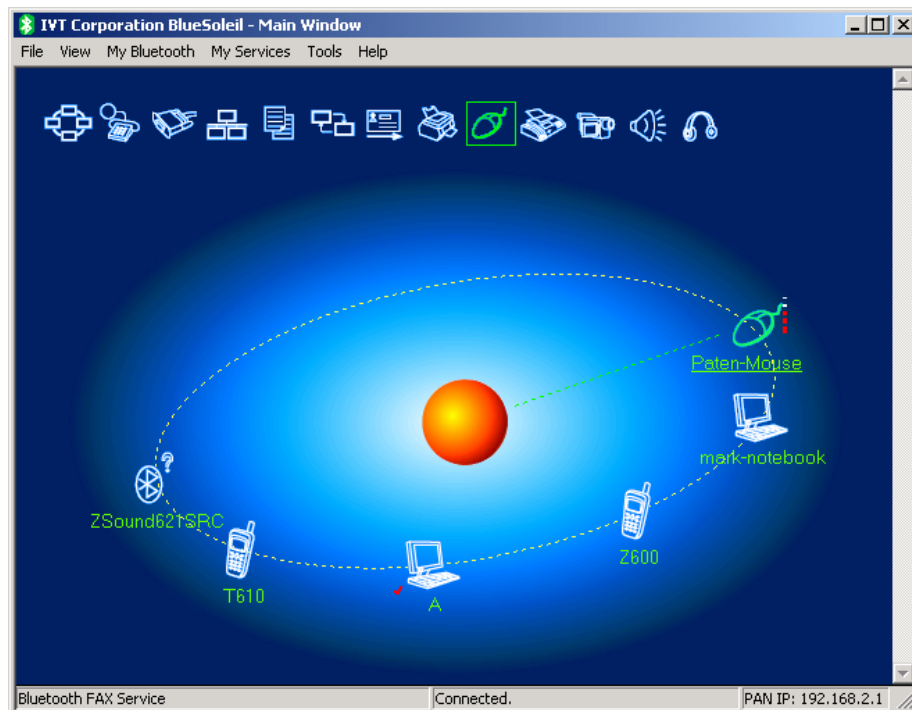
Figure 11.2: Connect to Bluetooth mouse

Step 8:   Install drivers for Bluetooth mouse.
   ♦ If this is the first time Computer A has connected to a Bluetooth mouse, wait for a few seconds to allow Windows to install drivers for a Bluetooth mouse.

   ♦ You will see two new devices in Computer A: **Bluetooth HID Mouse** in 'Human Interface Devices' class and **HID-compliant mouse** in 'Mice and other pointing devices' class. (Figure 11.3)

Step 9:   Now the Bluetooth mouse is ready to use. You can use it as a legacy PS/2 or serial mouse.

Step 10:   To disconnect Mouse B.
   ♦ Right-click the HID service icon in the Main Window and click **Disconnect**. Alternatively right-click Mouse B in the Main Window and select **Disconnect | Human Interface Device**.
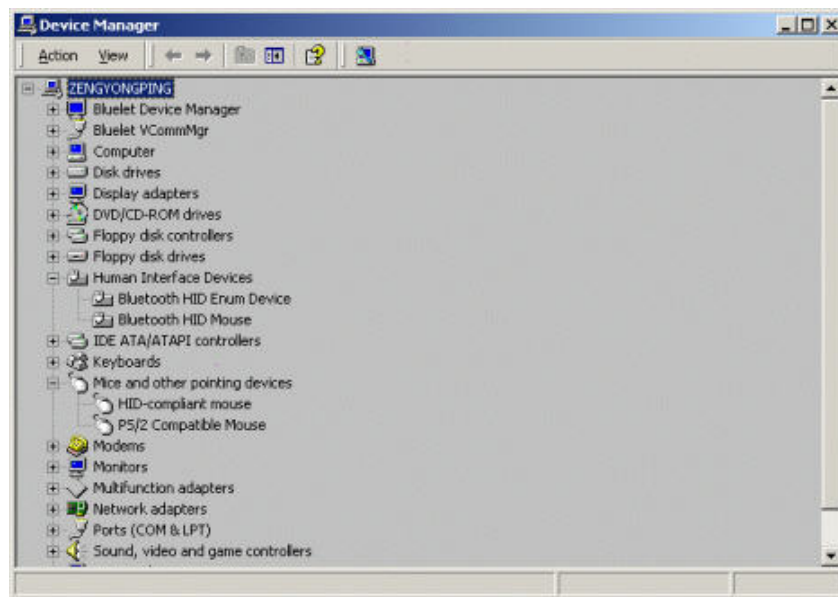
Figure 11.3: New HID mouse device in Device Manager

11.3 Connect a Computer to a Bluetooth Keyboard

This section outlines how to connect a computer (Computer A) to a keyboard (Bluetooth Keyboard B).

Computer A:	Bluetooth Keyboard B:
Desktop, PIII, 800MHz, 128M	Bluetooth wireless keyboard
A Bluetooth USB dongle	
Windows 2000	
IVT BlueSoleil™	

Step 1:   Insert the Bluetooth USB dongle into the computer.

Step 2:   Start BlueSoleil™ in the computer and set the security level to low using the **Tools** | **Configurations** | **Security** menu.

Step 3:   Set device name of the computer to anything you want. Here it is named Computer A.

♦   In the BlueSoleil™ Main Window of Computer A, click **Tools** | **My Bluetooth Device**. Enter 'Computer A' in the device name field in the **My Bluetooth Device** window.

Step 4:   Power on the Bluetooth keyboard. (Bluetooth Keyboard B)

Step 5:   Search for Bluetooth devices in Computer A until you find Bluetooth Keyboard B. In the Main Window, double click the 'My Device icon' (center ball). Wait a few seconds. The discovered surrounding devices appear.

Step 6:   Double-click the Bluetooth Keyboard B device icon to find it's HID service. If found, the HID service icon turns red (Figure 11.4).
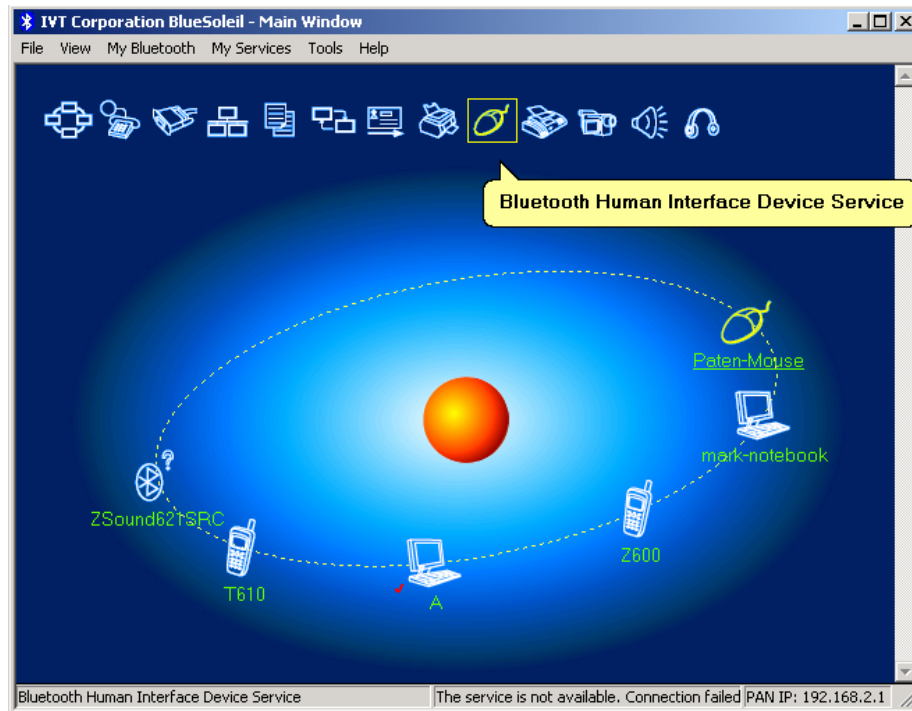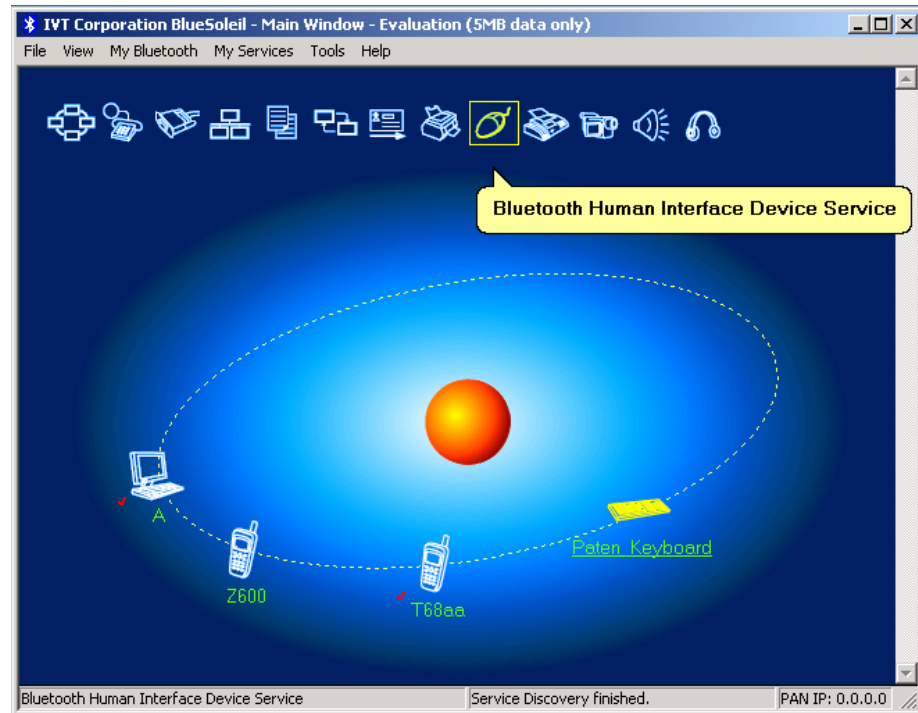
Figure 11.4: Find Bluetooth keyboard and its service

Step 7:   Double-click the HID service icon to connect to Keyboard B. After
           the connection is successfully set-up, a dashed line appears
           between the center ball and the Keyboard B icon. The HID service
           icon turns green (Figure 11.5).
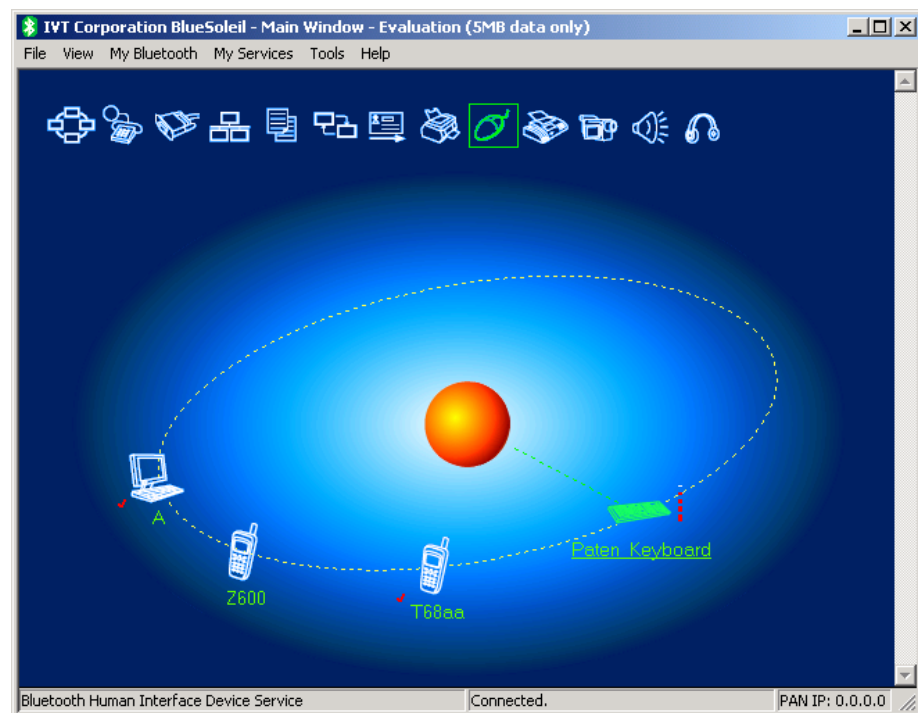
Figure 11.5: Connect to Bluetooth keyboard

Step 8:   Install drivers for the Bluetooth keyboard.

♦ If this is the first time Computer A has connected to a Bluetooth keyboard, wait for a few seconds to allow Windows install drivers for a Bluetooth keyboard.

♦ You will see two new devices in Computer A: **Bluetooth HID Keyboard** in 'Human Interface Devices' class and **HID Keyboard Device** in 'Keyboards' class. (Figure 11.6)
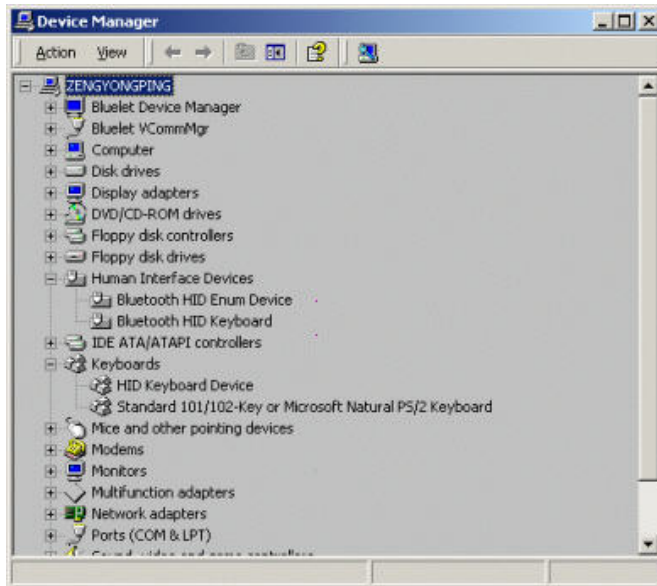
Figure 11.6: New HID keyboard device in Device Manager

Step 9:   Now the Bluetooth keyboard is ready to use. You can use it as a legacy PS/2 keyboard.

Step 10:   To disconnect Keyboard B.

♦ Right-click the HID service icon in the Main Window and click **Disconnect**. Alternatively right-click Keyboard B in the Main Window and select **Disconnect | Human Interface Device**.

12 Connection Shortcut

12.1 Introduction

Connection shortcut profile is used to save time used in searching for devices and browsing services. Once a connection has been established, it can be saved as a shortcut. The shortcut is then used to re-establish the connection, without having to search for the remote Bluetooth device and required Bluetooth service.

12.2 How to use Connection Shortcut

This section outlines how to save a Bluetooth PAN connection as a connection shortcut.

Computer A:	Computer B:
Notebook, Laptop, PIII, 800MHz, 128M	Desktop, PIII, 800MHz, 128M
A Bluetooth USB dongle	A Bluetooth USB dongle
Windows 2000	Windows 2000
IVT BlueSoleil™	IVT BlueSoleil™

Step 1: Establish a PAN connection.

Step 2: Save the Bluetooth Personal Area Neworking Service shortcut on Computer B.
♦ Right-click the Computer A device icon and select **Save Connection as Shortcut | Bluetooth Personal Area Networking Service**. (Figure 12.1)
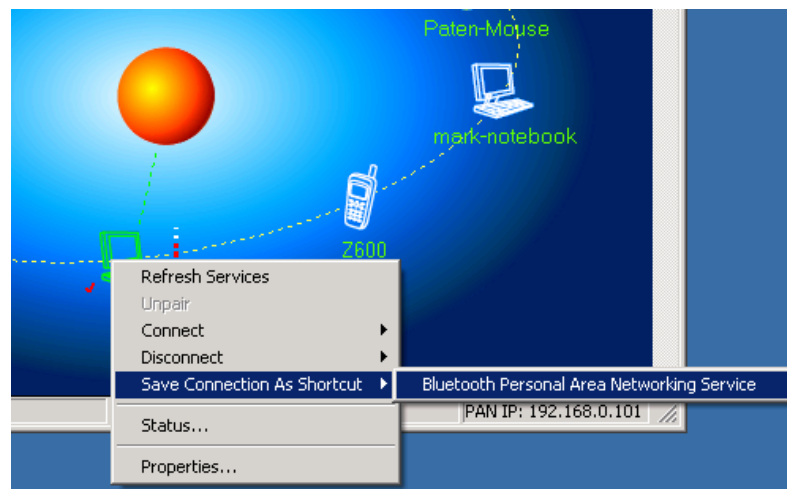
Figure 12.1: Save Bluetooth Personal Area Neworking Service as connection shortcut

Step 3: Double click shortcut on your desk-top (Figure 12.22)

Figure 12.2: Bluetooth Shortcuts

Step 7:   Once the connection is successfully established

Step 8:   Start to use the PAN service provided by Computer A.

13   Bluetooth Glossary

Bluetooth Authentication   Bluetooth authentication is the procedure to verify whether another Bluetooth enabled device has the right to access your computer. During this procedure, a Bluetooth passkey is requested on both sides of the connection. If the passkeys are the same, the authentication procedure is a success and the connection can be setup. If the passkeys are different, then authentication fails and a connection cannot be established.

Bluetooth Authorization   Bluetooth authorization is the procedure to verify whether you are going to allow (authorize) other Bluetooth enabled devices to use Bluetooth services on your Bluetooth enabled device. Every Bluetooth service in your BlueSoleil™ has an authorization setting. The authorization devices list for each service records the devices that have been authorized for that service. The user can change the authorization status for each device.

Bluetooth Connection   A Bluetooth connection refers to the Bluetooth link that can be set up between two Bluetooth devices. Connected Bluetooth devices have a server/ client relationship. One Bluetooth device provides services and another Bluetooth device uses these Bluetooth services.

Bluetooth Connection Shortcut   Connection shortcut is used to save time used in searching for devices and browsing services. Once a connection has been established, it can be saved as a shortcut. The shortcut is then used to re-establish the connection, without having to search for the remote Bluetooth device and required Bluetooth service.

Bluetooth Device   Bluetooth Devices can refer to either of the following:
(1) When referring to the local device configuration, a Bluetooth Device is the local Bluetooth hardware, e.g. USB dongle, UART device, PCMCIA card or BCSP device.
(2) When referring to the Bluetooth application, the Bluetooth device is the Bluetooth system as a whole, e.g. a Bluetooth modem, Bluetooth mobiles or a Bluetooth PDA. A computer together with the BlueSoleil™ and the Bluetooth dongle would also be addressed as a remote Bluetooth device by other Bluetooth devices.

Bluetooth Device Address   A unique 48-bit address that distinguishes different Bluetooth transceivers. Every Bluetooth device has a unique address so that other devices can find it and communicate with it. The address appears in the form of 00:03:20:00:0D:0A.

Bluetooth Device Class   According to the Bluetooth standard, every Bluetooth device is assigned a device type, which is represented in the Bluetooth device class. The Bluetooth device class is three bytes in length in the form of 04:01:00. On the computer side, the class may be Server, Desktop or Laptop. Users will be asked to select it during first time set-up.

Bluetooth Device Inquiry   To use Bluetooth, the user has to first find the remote device. The searching procedure is called device inquiry. There are two kinds of inquiry procedure; General Inquiry and Limited Inquiry. General Inquiry will find all the Bluetooth devices in 'general discoverable mode' and 'limited discoverable mode'. Limited Inquiry will find only the devices in 'limited discoverable mode'.

Bluetooth Dial-up Networking   This is the implementation of the Bluetooth Dial-up Networking profile (DUN). Using DUN, Bluetooth devices can dial-up to the Internet via a Bluetooth modem or a Bluetooth mobile phone.

Bluetooth FAX   This is the implementation of the Bluetooth FAX profile (FAX). Using FAX, Bluetooth devices can send a FAX via a Bluetooth mobile.

Bluetooth File Transfer   This is the implementation of the Bluetooth File Transfer profile (FTP). Bluetooth File Transfer enables the transfer files between Bluetooth devices.

Bluetooth HCRP   This is the implementation of the Bluetooth Hardcopy Cable Replacement profile (HCRP). HCRP provides services to replace the cables between hosts and peripheral devices with a Bluetooth link. HCRP is mainly used for wireless printing.

Bluetooth Information Synchronization   This is the implementation of the Bluetooth Synchronization profile (SYNC). Using Synchronization, Bluetooth devices can synchronize messages, notes, calendars and cards with each other.

Bluetooth LAN Access   This is the implementation of the Bluetooth LAN Access profile (LAP). Using LAP, Bluetooth devices can access Local Area Network via LAN access points.

Bluetooth Object Push   This is the implementation of the Bluetooth Object Push profile (OPP). Using OPP, Bluetooth devices can transfer messages, notes, calendars and cards with each other.

Bluetooth Passkey   In the Bluetooth authentication procedure, a Bluetooth passkey is requested on both connection sides. The same Bluetooth passkey should be input on both sides. If the passkeys are the same, the authentication procedure is successful and connections can be setup. If the passkeys are different, the connection and authentication will fail.

Bluetooth Peripheral Device   This is the implementation of the Bluetooth Human Interface Device profile (HID). By using HID, Bluetooth peripheral input devices such as a Bluetooth mouse or keyboard, can remotely interface with the host computer.

Bluetooth Personal Area Networking   This is the implementation of the Bluetooth Personal Area Networking profile (PAN). Using PAN, Bluetooth devices can connect to each other to form ad-hoc networks. They can form a TCP/IP network or connect to a Local Area Network and the Internet.

Bluetooth Printer   This is the implementation of the Bluetooth Hard-copy Cable Replacement profile (HCRP) as a printer. Bluetooth Printer allows Bluetooth devices to wirelessly print documents to a Bluetooth printer.

Bluetooth Security   Bluetooth security is an important part of the Bluetooth wireless communication technology. Bluetooth security enables illegal access to your computer to be rejected. There are three levels of security: Low, Medium and High. In Low level, there is no security check. In Medium level, remote Bluetooth devices can browse your services. Security is set on every service. The service can be set to request or not to request for authentication and authorization. If you request for authentication, the remote device will be asked to enter the same passkey as the one in your computer. Otherwise, the Bluetooth passkey is not requested. If authorization is set, the remote device has to be in the authorized devices list.

Bluetooth Service   A Bluetooth device may offer certain functions for other Bluetooth devices to use. These functions are called Bluetooth services. For example, a Bluetooth mobile phone can offer four services, which include synchronization, dial-up networking, file transfer and serial port. In BlueSoleil™, all services need to be started manually before use..

Bluetooth Service Browse   A remote Bluetooth device can provide one or more Bluetooth services. To use the services that the remote device provides, the user has to first find the services. This is called service browse.

Bluetooth Serial Port   This is the implementation of the Bluetooth Serial Port profile (SPP). SPP emulates a serial port over Bluetooth, for the Bluetooth device.

Bonding   Bonding is the creation of a relationship between two devices, which are known to each other prior to the bonding procedure. A user initiates the bonding procedure and enters a passkey to create a bond between two devices. This differs from the authentication procedure where the user is requested to enter a passkey during the establishment of the link.

Connectable   Bluetooth devices can be connectable or non-connectable. When the device is connectable, other devices can connect to it.

DHCP The Dynamic Host Configuration Protocol (DHCP) is an Internet protocol for automating the configuration of computers that use TCP/IP.

Bluetooth Dongle A Bluetooth device which can be added onto a computer or notebook to make it Bluetooth enabled, A Bluetooth dongle is typically a USB device.

General Discoverable   Bluetooth devices have three modes: General discoverable, Limited discoverable and Non-discoverable mode. A Bluetooth device will respond to a General Inquiry if it is in general discoverable or limited discoverable mode.

HID A Human Interface device such as a keyboard or mouse.

ICS (Internet Connection Sharing) For more detailed information about ICS, please refer to the Microsoft Windows help topic: Internet Connection Sharing.

Limited Discoverable Bluetooth devices have three modes: General discoverable, Limited discoverable and Non-discoverable mode. In Limited discoverable mode, a Bluetooth device will only respond to a Limited Inquiry.

LAN A LAN is a Local Area Network.

LAN Access Point   One of entities defined in the LA profiles, the LAN Access Point acts like a router between a Bluetooth piconet and an external network.

NAT Network Address Translation (NAT) is used to re-map IP numbers from one range to another range of network addresses.

Non-Connectable   A Bluetooth devices can be connectable or non-connectable. When it is non-connectable, other devices cannot connect to it. This is used in BlueSoleil™ only when the user does not want another device to connect to their computer.

Non-discoverable   Bluetooth devices have three modes: General discoverable, Limited discoverable and Non-discoverable mode. In Non-discoverable mode, a Bluetooth device will not respond to any inquiry, so another Bluetooth device will not be able to find it.

Non-pairable   A Bluetooth device can be pairable or non-pairable. When it is non-pairable, it will not accept a bonding request from other devices.

Pairable   A Bluetooth device can be pairable or non-pairable. When it is pairable, it will accept a bonding request from other devices. After the bonding process is finished successfully, two devices are paired. They now form a trusted relationship. There is no need to exchange Bluetooth Passkeys the next time they connect.

Piconet   A collection of devices connected via Bluetooth wireless technology in an ad hoc fashion. A piconet starts with two connected devices, such as a portable PC and an Access Point, and may expand to eight connected devices. All Bluetooth devices are peer units and have identical implementations. However, when establishing a piconet, one unit will act as a master and the other(s) as slave(s) for the duration of the piconet connection. All devices have the same physical channel utilizing the same Frequency-hopping sequence, defined by the master device clock and the Bluetooth Device Address.

PIM Personal Information Management.

Radio Signal Strength   Bluetooth operates on the 2.4G ISM band. The radio signal is stronger when the remote device is closer or the remote device has a higher radio output. The radio signal is weak when the remote device is distant or the remote device has a weak radio output. The strength of the remote device's radio signal affects the quality of the communication of the two Bluetooth devices. When the radio signal is weak, the Bluetooth data transfer speed is slow. However, if the two devices are too close and the radio signal is too strong, the Bluetooth data transfer speed is also slow because the "sound" is too loud to "hear". The radio signal strength is always referred to as RSSI in Bluetooth.

Remote Bluetooth Device   My Bluetooth device sees all other Bluetooth enabled devices as remote Bluetooth devices. For example, a Bluetooth modem, Bluetooth mobiles or a Bluetooth PDA .

Start Bluetooth Service   Start the selected Bluetooth service. Only after the service is started, can other devices browse the service and connect to it.

Stop Bluetooth Service   Stop the selected Bluetooth service. After the service is stopped, other devices cannot browse the service or connect to it. The existing connection will be disconnected.

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Central Europe:	49 (0) 89 92861-0	Fax 49 (0) 89 92861-230
Nordic and Baltics	46 (0) 566 622 83	Fax 45 (0) 566 622 86
Eastern Europe:	420 266 794 421	Fax 420 266 794 423
Sub- Saharan Africa:	27 012 661 0232	Fax 34 93 471 3374
North West Africa:	34 93 477 4920	Fax 34 93 477 3774
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SMC®
N e t w o r k s
38 Tesla
Irvine, CA 92618
Phone: (949) 679-8000