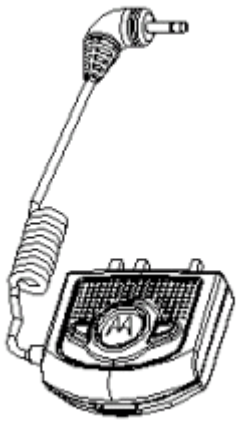
Motorola Bluetooth CE Bus Phone Dongle (Arachnid) User's Guide



FCC Statement

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

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

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

-Reorient or relocate the receiving antenna.

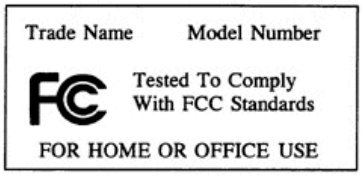
-Increase the separation between the equipment and receiver.

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

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

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

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



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Chapter1 Introduction

1.1 Introduction To The Bluetooth CE Bus Phone Dongle

Your newly purchase product is a Bluetooth-enabled phone dongle that attaches to compatible non-Bluetooth CE Bus connector mobile phones to enable Bluetooth wireless connection, referred to "**Arachnid**" in this document. Snap the Arachnid to compatible non-Bluetooth mobile phones can create a wireless connection to a Bluetooth hands free headset as long as they adhere to the Bluetooth 1.1 specifications and support either the headset or hands free Bluetooth profiles. Just plug Arachnid into your phone and you are free to move up to 10 meters away from your phone. It doesn't matter that your phone doesn't have Bluetooth capacity. Arachnid requires no battery of its own but receives power from the mobile phone's battery through the CE Bus connector.

Arachnid also provides Dial-up Networking and Serial Port Connection between the phone and a Bluetooth USB Dongle installed on desktop or laptop. The Bluetooth USB dongle on the PC will control all commands sent to the Arachnid and the Arachnid will be responsible for routing these commands to the phone.

1.2 Package Content

Open the box and remove all items, please make sure that you have received the following items:

Bluetooth CE Bus Dongle Package Content	
1	Bluetooth CE Bus Phone Dongle (Arachnid)
2	Quick Installation Guide

If any item is found missing or damaged, please contact your local reseller for replacement.

1.3 Arachnid Specification

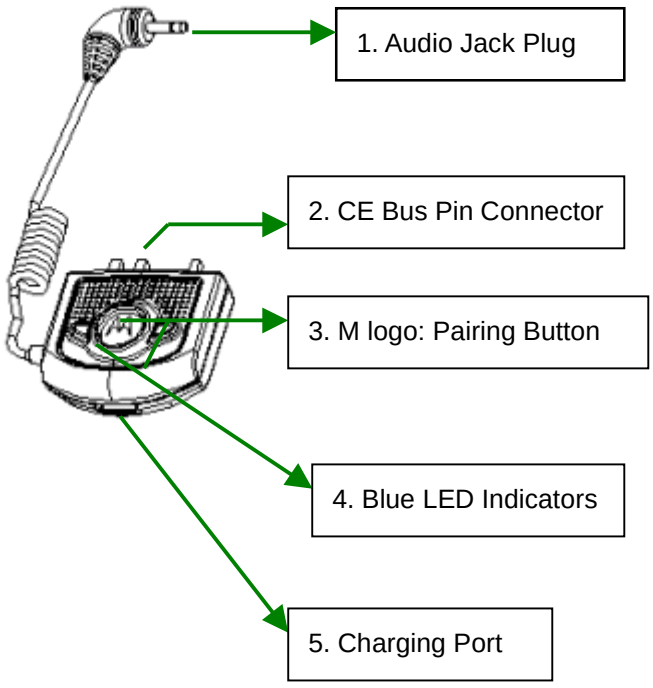
Specification	
RF Technology	Frequency Hopping Spread Spectrum
RF Frequency	2400 to 2483.5 MHz USA/EUROPE/JAPAN 2446.5 to 2483.5 MHz France
Modulation Schemes	0.5 BT, 2GFSK Index: 0.28 – 0.35.
Operating Frequency	2400 ~ 2483.5 MHz ISM band
Bluetooth Compliance	Bluetooth 1.1 Specification
Operating Range	Up to 10 meters
Channel Numbers	79 (f= 2402 + k MHz ,k =0, 1,2 ,…78) 23 (f= 2454 + k MHz ,k =0,1,2 ..,22)
Data Rate	1 Mbps (Typically)
Transmitter Output Power	Typical 0 dBm @ antenna Port
Receiver Sensitivity	Typical –80 dBm @ 0.1% BER
Antenna Type	Integrated chip antenna
Operating Voltage	5VDC +/- 10%
Interface	P2K CE Bus
Size	Estimation 2.5 cm x 1.3 cm x 1 cm (W x L x H)
Compatible Phones	Motorola V60, Motorola V60i, Motorola V60c, Motorola T720, Motorola T722 and Motorola V120 (The compatible phones will be updated without notice. Please contact with our tech support for the up-to-date compatible phone list.)

1.4 Application Scenario

Chapter2
Arachnid Hardware Description

2.1 Arachnid Hardware Diagram

Arachnid contains a Bluetooth module, a CE Bus male connector, and a wired headset jack cable to route the phone audio via the Bluetooth link to a Bluetooth headset.



Hardware Description		
No.	**Item**	**Description**
1	Audio Jack Plug	Connect the plug into your mobile phone's audio jack to route audio to the phone dongle and to perform call control.
2	CE Bus Pin Connector	Connect to mobile phone's CE Bus connector
3	M Logo (Pairing Button)	To recognize two Bluetooth devices and establish the wireless connection between them.
4	Blue LED Indicator	Provides a visual feedback to you about the status of

		Arachnid. See below table for a detailed indicator description.
5	Charging Port	Plug your mobile phone charging plug to this charging port to charge your mobile phone battery.

2.2 LED Indicators Status

LED Indicators	**ON**	**OFF**
	1. Arachnid Initialization: Both LED indicators show steady blue when plugs the Arachnid to your mobile phone to indicate initial status. The initialization will be completed within 10 seconds and the two LED indicators will be turned off. 2. Pairing Mode: While pairing with headsets, these two LED indicators show steady Blue. Pairing with other Bluetooth devices and allows them to access the DUN or Serial Port service, the two LEDs flash blue light alternatively. 3. Successful Pairing: These two Blue LED indicators show 10 quick flashes simultaneously. 4. Standby Mode (no audio channel): Both Blue LEDs flash together at a 3-second interval. 5. Active Mode (with audio channel): Both Blue LEDs flash & pulsate alternatively at a 8-second interval.	No Bluetooth connection.

Chapter3
Applications

Arachnid provides the Bluetooth Audio Gateway profile, DUN (Dial-up Networking) profile and SPP (Serial Port Profile). These profiles can support both data and audio link. The following sections will illustrate how to use these profiles to build the wireless connection between two Bluetooth-enabled devices.

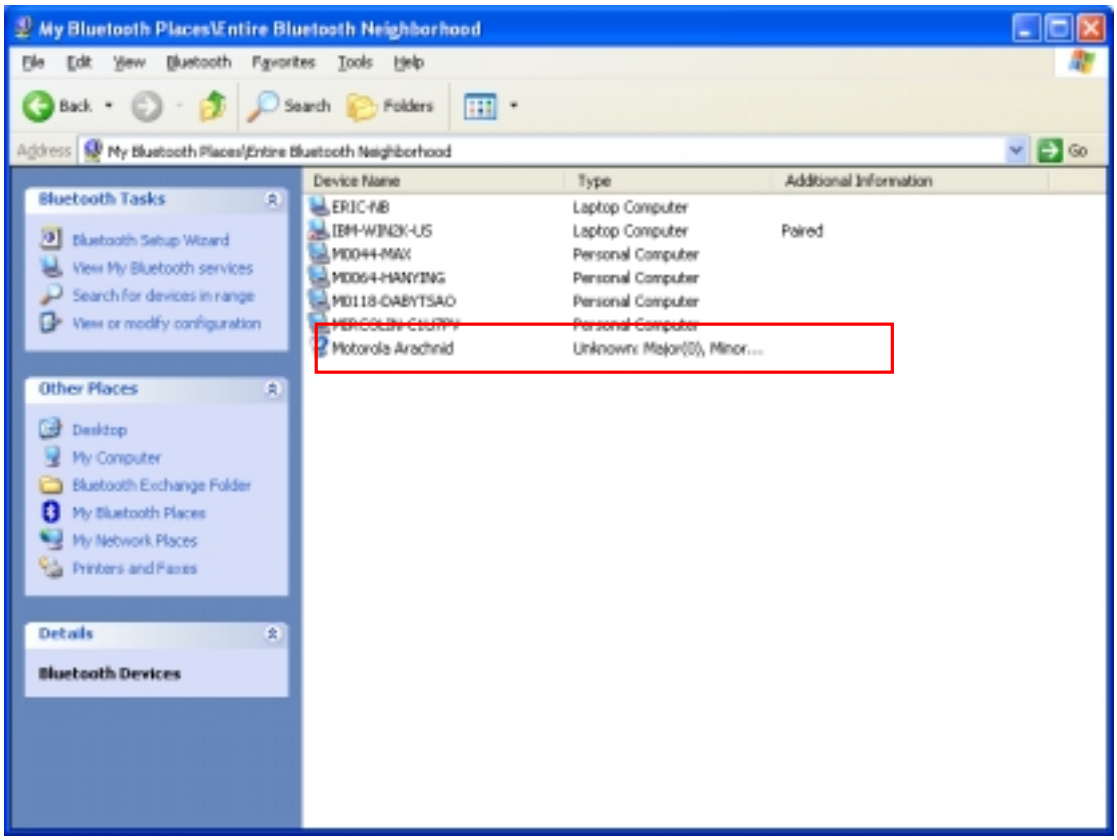
3.1 Serial Port Service

This serial port service can be used by applications as though a physical serial cable connected the devices. Prior to using the Arachnid's Bluetooth service, the PC side should have the Bluetooth USB Dongle (adapter) and Bluetooth software properly installed. The PC side Bluetooth software illustrated here is Widcomm Bluetooth software. For other Bluetooth software, the process may vary, please refer to your Bluetooth software user's manual.

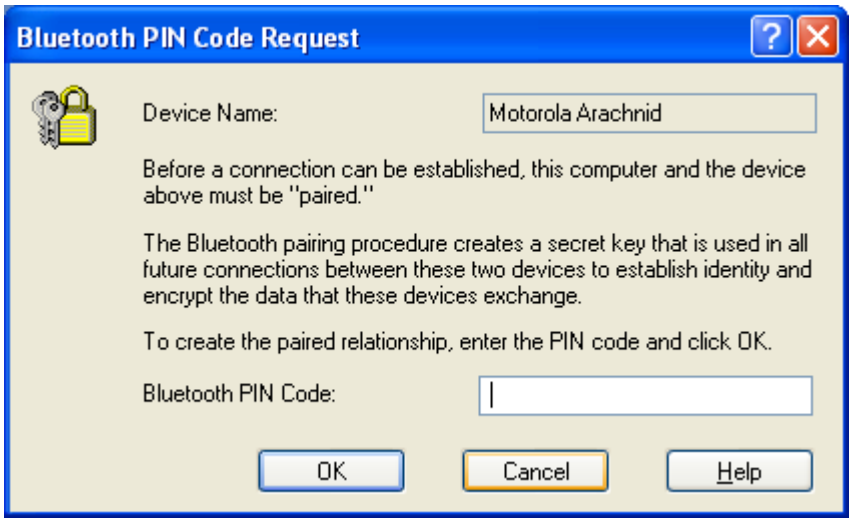
To establish a Bluetooth serial port connection between two Bluetooth-enabled devices:

Steps:

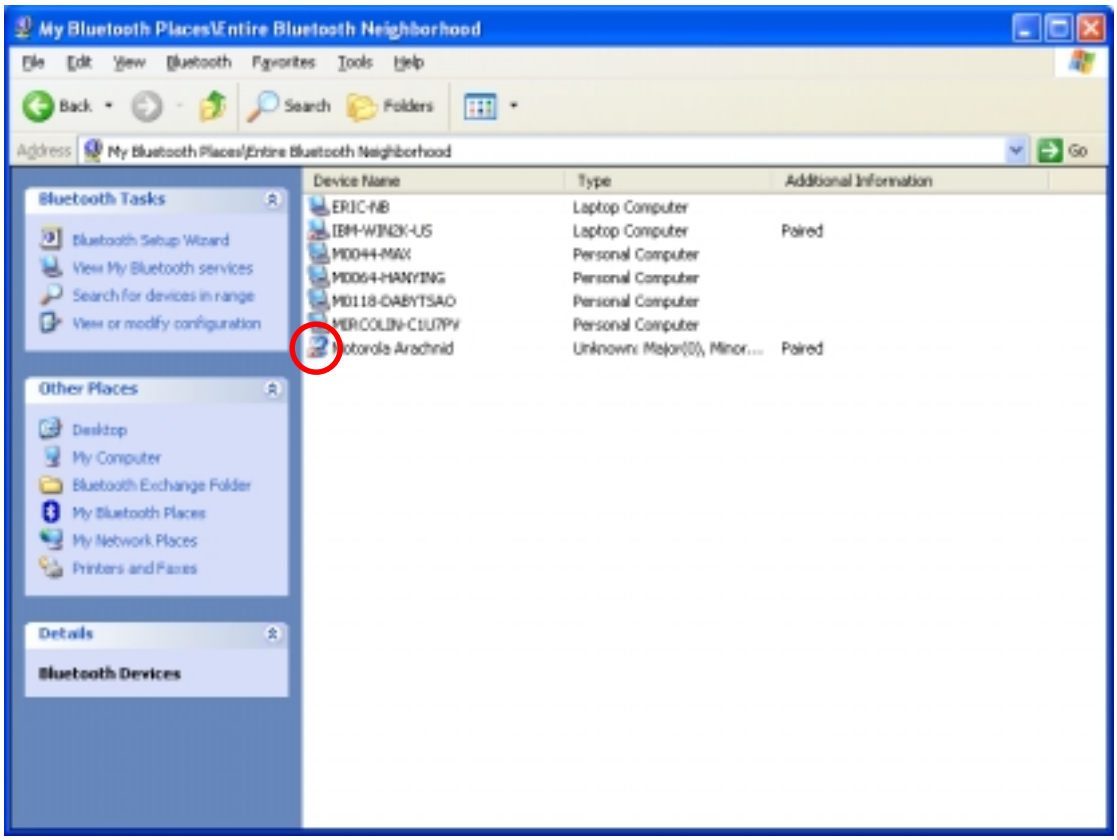
1. Press the M logo (pairing button) of Arachnid once and the device will be in "discoverable" mode. The Bluetooth-enabled PC can find Arachnid and pair with it. The two LEDs of Arachnid flash blue light alternatively.
2. From PC side, double-click **My Bluetooth Places** on Windows desktop. From **Bluetooth** menu, click **Search For Devices** and the found Bluetooth devices will be shown on the right pane. You can see **Motorola Arachnid** is in the list.



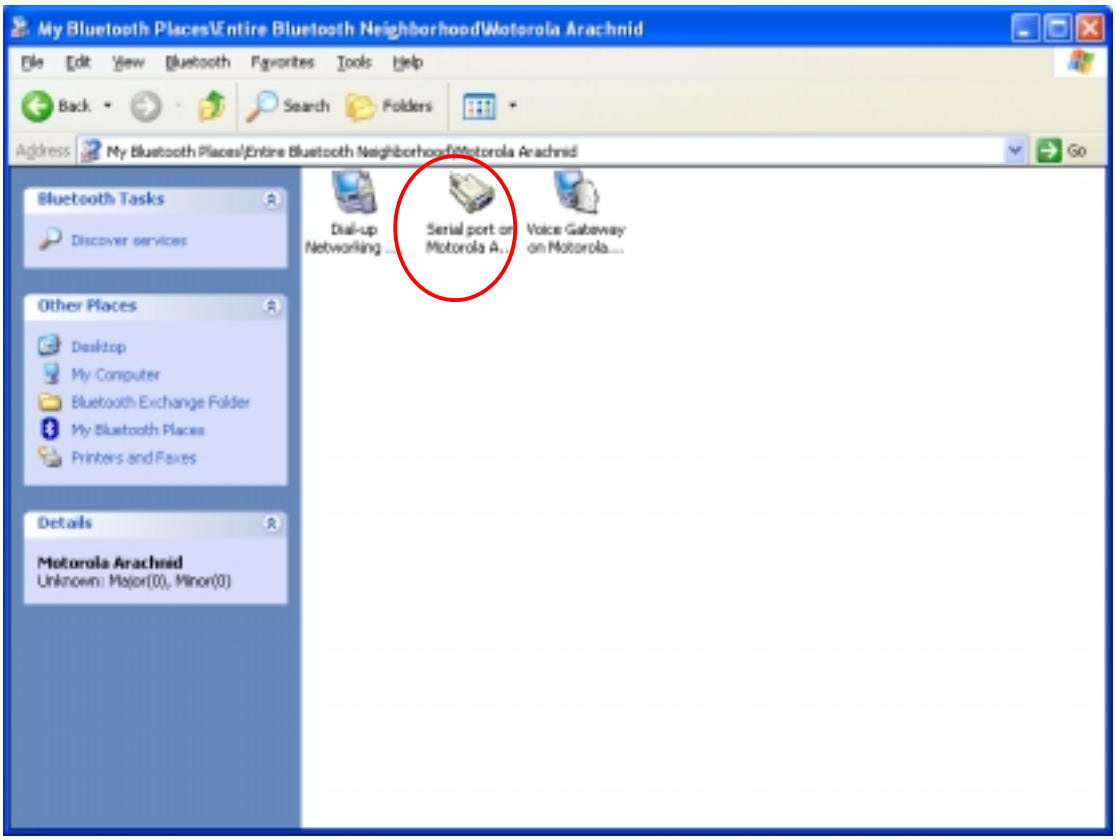
3. Right-click mouse button on the Motorola Arachnid icon and select **Pair Device** from the short-cut menu to pair these two devices. The following Bluetooth PIN Code Request dialog box will be pop-up. Please enter the Bluetooth PIN Code “0000” and click **OK**.



4. The system starts to pair these two devices and the process will take a few seconds. If the pairing process is complete, there will be a red check on the Motorola Arachnid icon and both LEDs on the Arachnid will flash blue rapidly 10 times.



5. Double-click on the **Motorola Arachnid** from the found list to find all Bluetooth services it provides. The service Arachnid provides is in the below window. Double-click on the **Serial Port On Motorola Arachnid** icon.



6. You can find there are two green arrows added on the **Serial Port On Motorola Arachnid** icon  indicating the connection is active. After the serial port connection is successfully built, you can do information synchronization or data link between these two connected Bluetooth devices. For example, transferring a song or address book from PC side to the mobile phone wirelessly.

3.2 Voice Gateway Service

The voice gateway service allows Arachnid to build a wireless connection with Bluetooth headsets adhered to Bluetooth hands free or headset profile 1.1 specifications.

Steps:

Pairing the Bluetooth headset and the Bluetooth-enabled mobile phone first. Pairing allows the Bluetooth headset and the mobile phone recognize each other when they connect. Once you have paired these two devices, you don't have to pair them again, unless you want it to pair with another device. Usually, there will be an **ON/Answer** button on the Bluetooth headset. You may refer to your headset user's guide for more details on how to pair and use your headset with other Bluetooth devices.

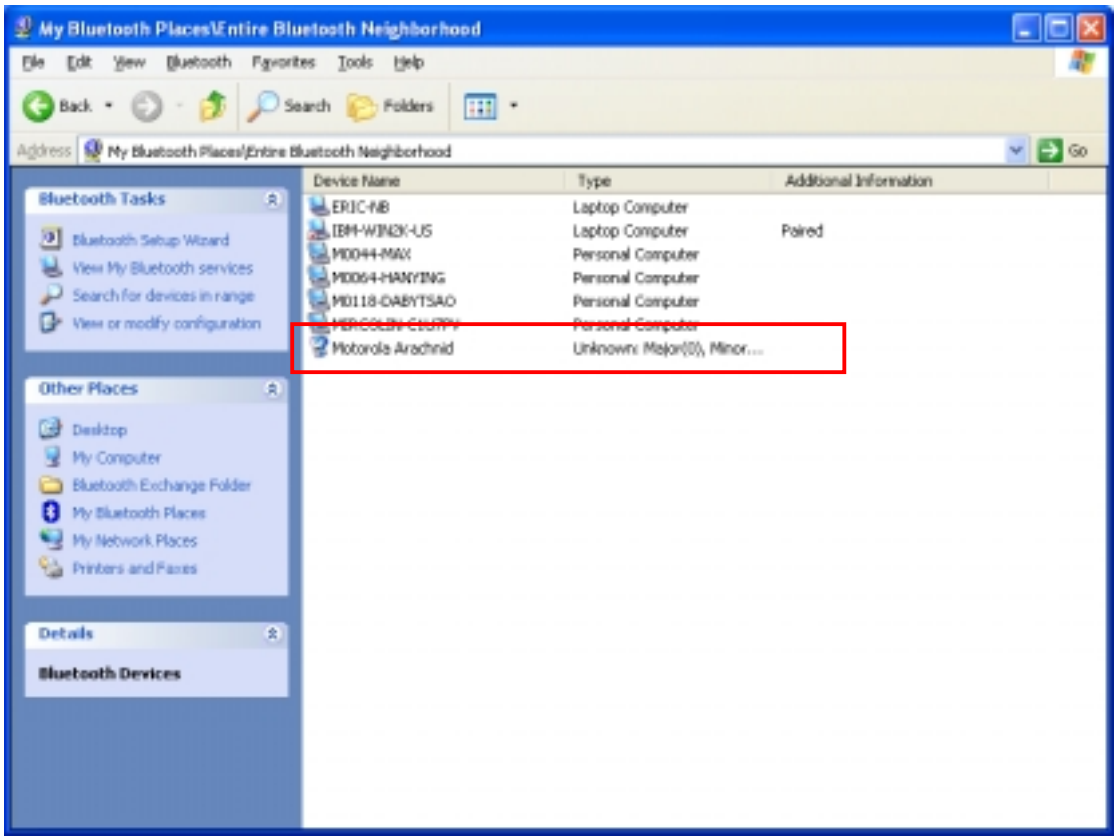
1. Turn on your headset by pressing **ON/Answer** button on your headset to make the headset enter the “discoverable” mode.
2. Press and hold the M logo (Pairing button) of Arachnid for 6 to 10 seconds and the two blue LEDs light up, and then release the pairing button. The Arachnid is in “discoverable” mode. The Arachnid is configured to pair with default passkey “0000” and “1234” products. When the pairing is completed, the two Blue LEDs on the Arachnid will flash rapidly 10 times simultaneously.
3. Click the **ON/Answer** button on the Bluetooth headset will open the audio link with the Arachnid and will enable the mobile phone to show the last dial number. Please refer to your Bluetooth headset user’s manual for more details on operating this product.

3.3 DUN (Dial-up Networking) Service

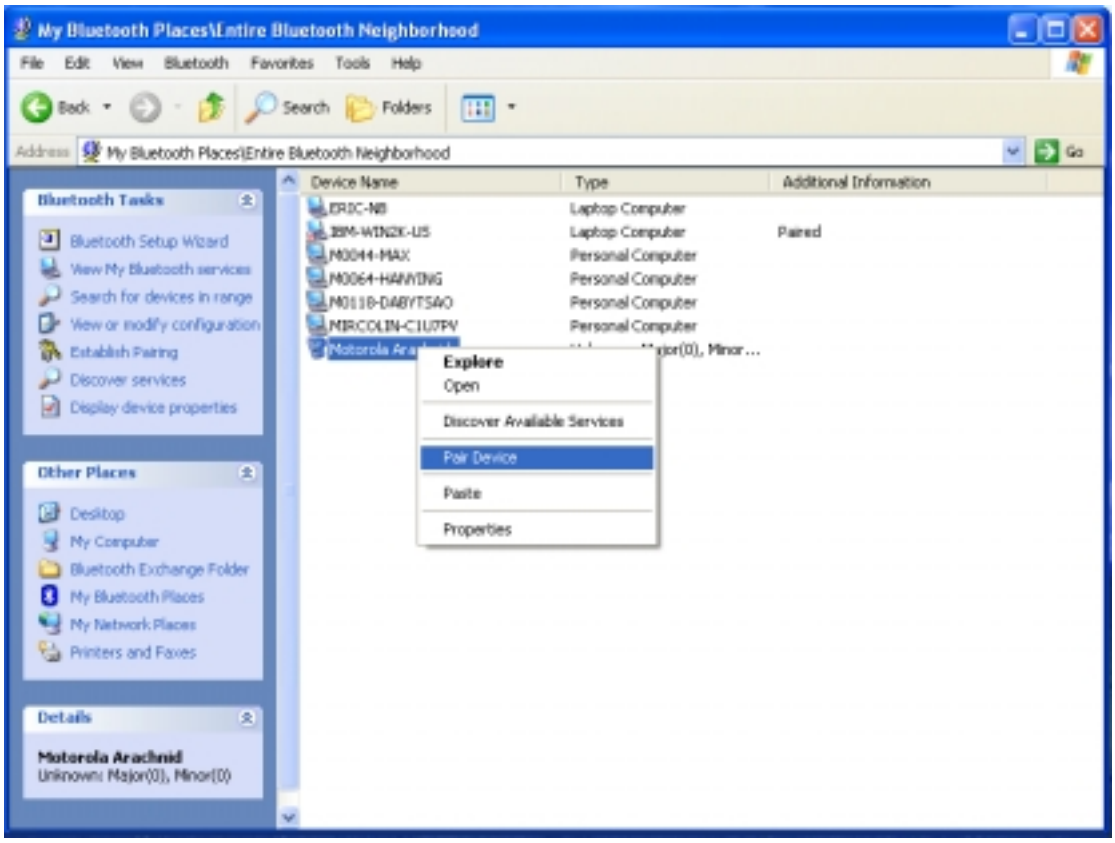
You have to pair Bluetooth devices to establish the connection between them. Before the pairing, the Bluetooth-enabled cellular phone must be in detectable mode. The example illustrated here is the pairing procedure between a Bluetooth-enabled PC using Widcomm Bluetooth software and a cellular phone attached with the Arachnid and has applied the GPRS function. After the pairing process is complete, your Bluetooth-enabled PC can access the Internet through your Bluetooth-enabled cellular phone.

Steps 1 – Pairing

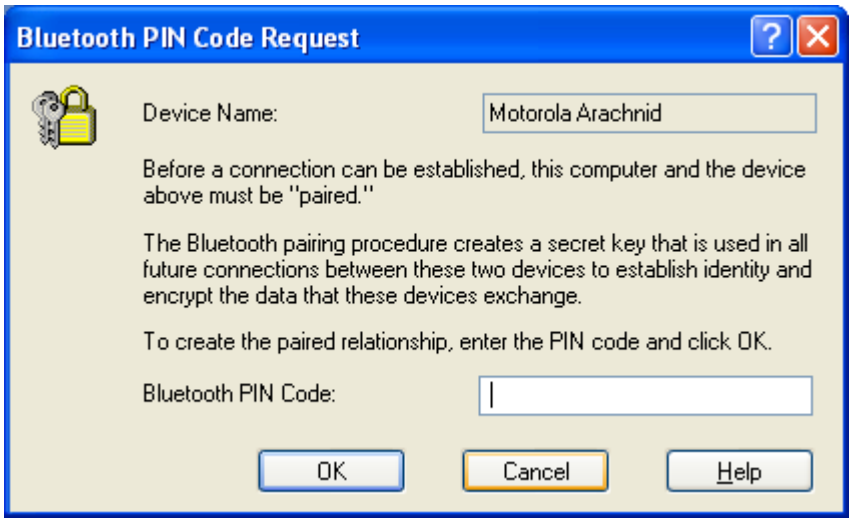
1. Press and release the M logo (Pairing button) of the Arachnid and your Bluetooth-enabled mobile phone will be in “discoverable” mode. The two LEDs of Arachnid flash blue light alternatively.
2. Double click the Bluetooth icon  resides on the Windows system tray.
3. From the Bluetooth Explorer, click **Bluetooth** menu and select **Search for devices**. The Bluetooth devices in range should be shown on the right pane. In this example, the Bluetooth-enabled cellular phone – **Motorola Arachnid** is displayed on the right pane.



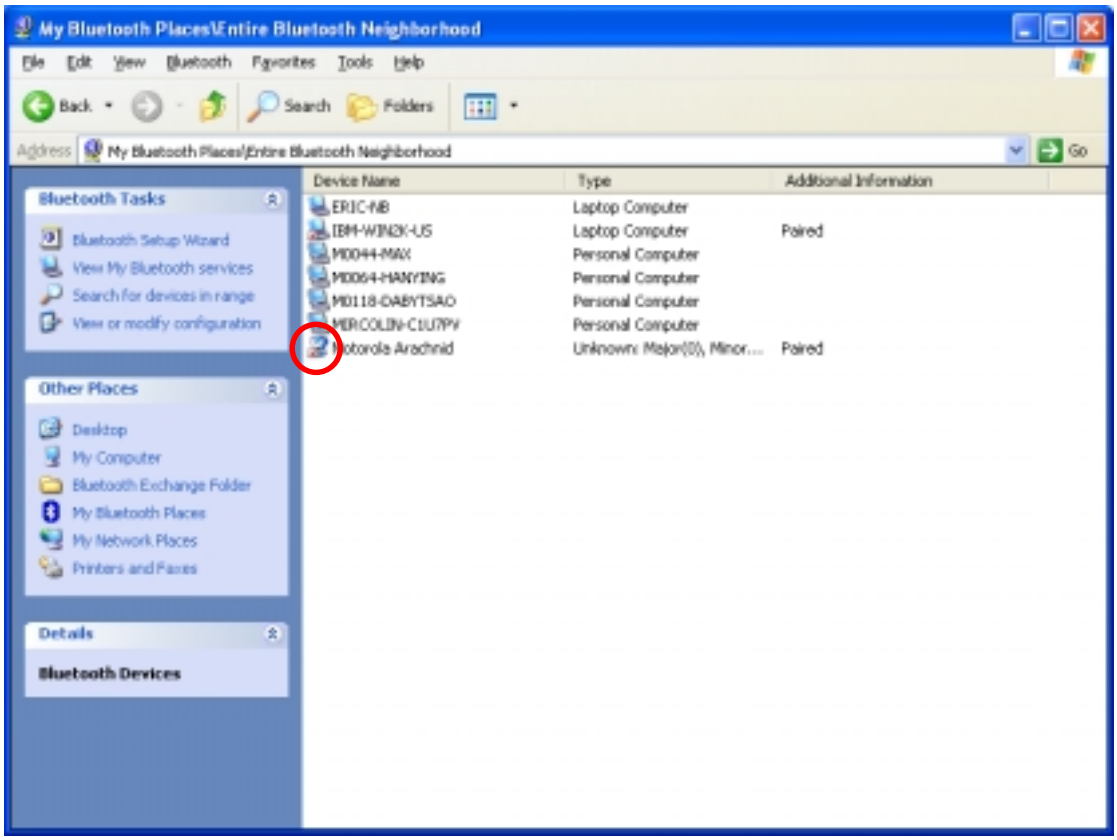
4. Right-click mouse button on the **Motorola Arachnid** phone icon and select **Pair Device** from the shortcut menu.



5. The following Bluetooth PIN Code Request dialog box will be pop-up. Please enter the Bluetooth PIN Code “0000” and click **OK**.



6. The system starts to pair these two devices and the process will take a few seconds. If the pairing process is complete, there will be a red check on the Motorola Arachnid icon and both LEDs on the Arachnid will flash blue rapidly 10 times.

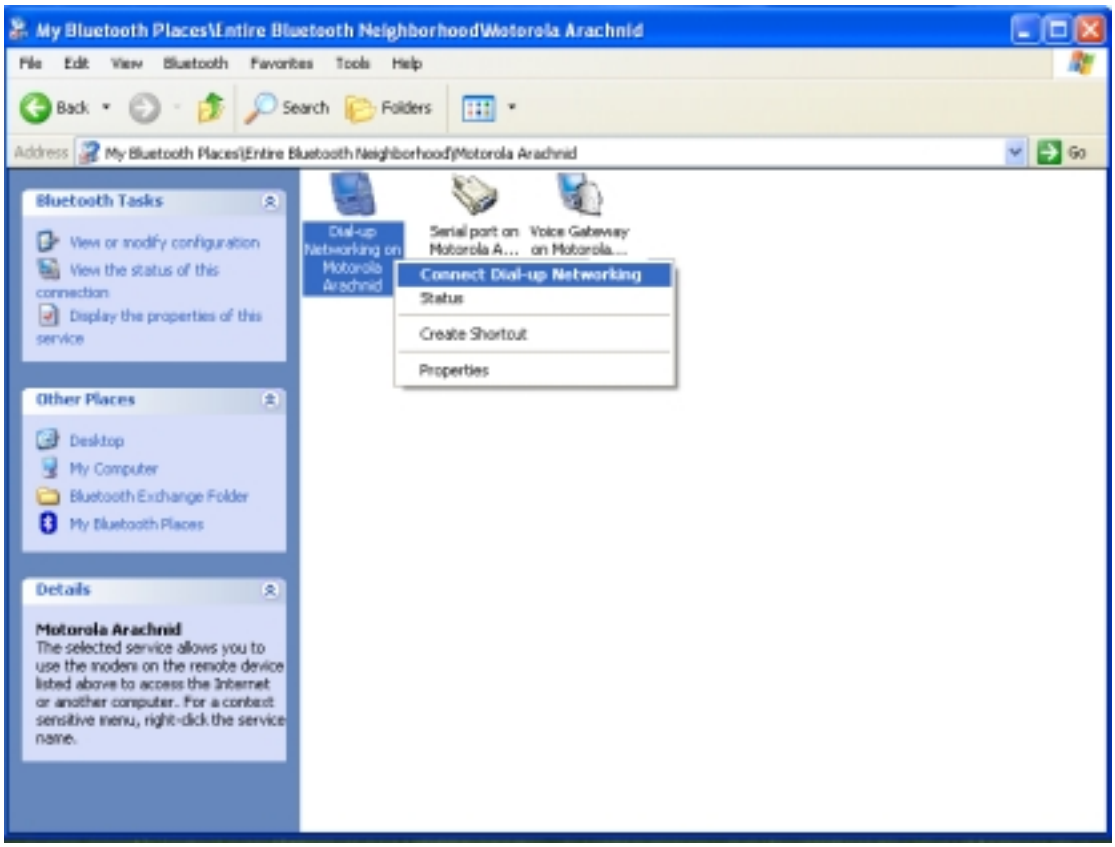


Steps 2 – Connect to the Internet

The following procedures will guide you how to connect to Internet from your Bluetooth-enabled PC through your GPRS cellular phone.

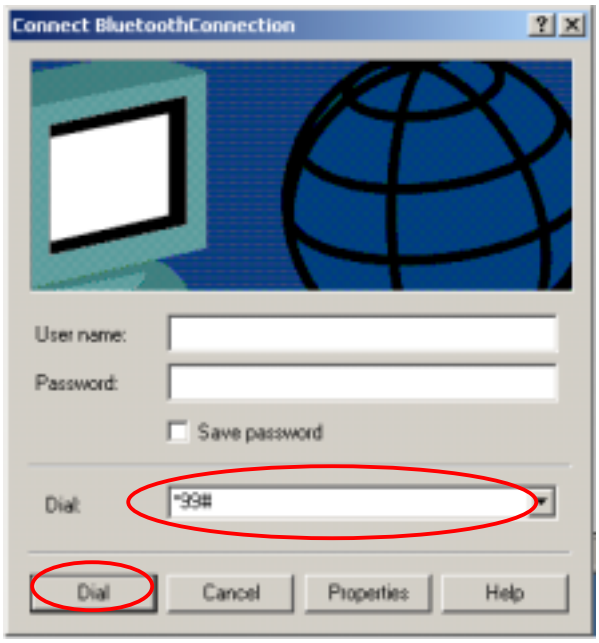
1. Double-click the **Motorola Arachnid** icon to find services it provides and right-click

mouse button on the **Dial-up Networking on Motorola Arachnid**. Select "**Connect Dial-up Networking**" from the shortcut menu.

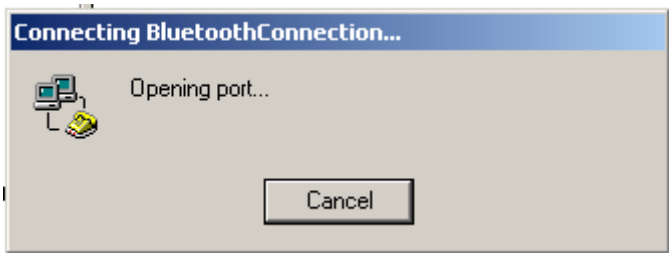


2. The following screen shows that the system starts to connect to the cellular phone. This setting may vary with different GSM/CDMA carrier. Please check with your service provider for setting GPRS service.

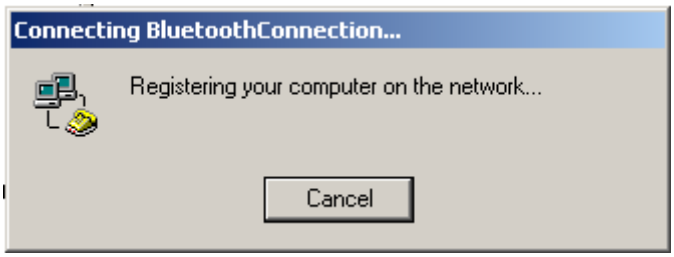
3. Please type the number your GPRS cellular phone provides and click **Dial**.



4. The following screen will be shown on your PC screen indicating the connection process.



5. The following screen will be present on your PC indicating the connection process.



6. If the connection is established successfully, a connection complete dialog box will be displayed and there will be two green arrows added on the **Dial-up Networking on Motorola Arachnid** icon  indicating the service is active. Now, you can open an Internet Browser and surf the Internet or send/receive e-mails from your PC side.