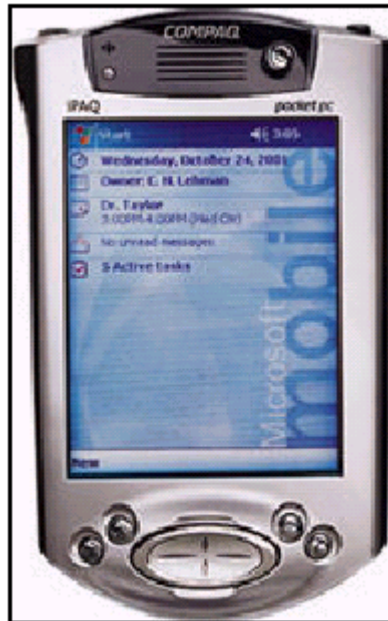# Application Note
ActiveSync using the Serial Port Profile (SPP)
between BTW 1.2 and Compaq iPAQ H3870

2002/5/23

Compaq iPAQ H3870 Pocket PC

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1. Introduction
As a technology leader in the wireless networking market, WIDCOMM's vision is to enable consumers to easily, conveniently and securely access information and services from their Bluetooth devices anytime and anywhere – from homes, offices and public places.
- BTW™ is a set of software drivers and utilities that seamlessly integrate Bluetooth technology into your desktop or laptop computer.
- BTW-CE™ is a complete communication software solution for integrating Bluetooth wireless technology into the Pocket PC® operating system. It has all the necessary protocol and driver software to enable PC OEMs to bring wireless devices to market quickly and efficiently.

The Compaq iPAQ H3870 includes an integrated Bluetooth adapter and operating system extensions that are based upon the same stack that is used by the WIDCOMM BTW-CE

software.

This document describes the procedure for demonstrating wireless ActiveSync (using the Bluetooth Serial Port Profile as transport) to move files between an iPAQ H3870 and a Bluetooth-enabled Microsoft Windows laptop or desktop computer.   This document was tested using the following configuration:

- A desktop or laptop computer with an available USB interface and running the Microsoft Windows 2000 operating system.
- BTW version 1.2.1.14.
- A Psion USB dongle running firmware version 114.
- A standard version of the Compaq iPAQ H3870.
- Microsoft ActiveSync 3.5.

NOTE: The procedure may be slightly different on a computer running another version of the Microsoft Windows operating system. It may also differ slightly under other versions of Microsoft ActiveSync or other versions of BTW.

2. A Quick Overview of the Procedure

The basic procedure for running this demonstration is not complicated.   Microsoft ActiveSync can be configured to use a serial port connection.   Instead of a physical serial cable connecting the two computers, a Bluetooth wireless link is used to simulate a serial connection.   Here is a quick overview of the process:

1) Install BTW 1.2 and a Psion dongle on your Windows Computer (98SE, 2000, Me, or XP version)
2) Install ActiveSync 3.5 on your Windows computer.
3) On the Windows computer, discover the VCOMM port that will be used for an incoming Serial Port Profile connection.
4) Configure ActiveSync 3.5 on the Windows computer to use the VCOMM port uncovered in step 3.
5) Use the iPAQ to inquire for the BTW device.
6) On the iPAQ, set the BTW device as the designated ActiveSync partner.
7) On the iPAQ, initiate the ActiveSync connection.
8) Verify that the ActiveSync connection has succeeded.
iPAQ H3870 to BTW 1.2   Wireless ActiveSync

3. BTW Setup

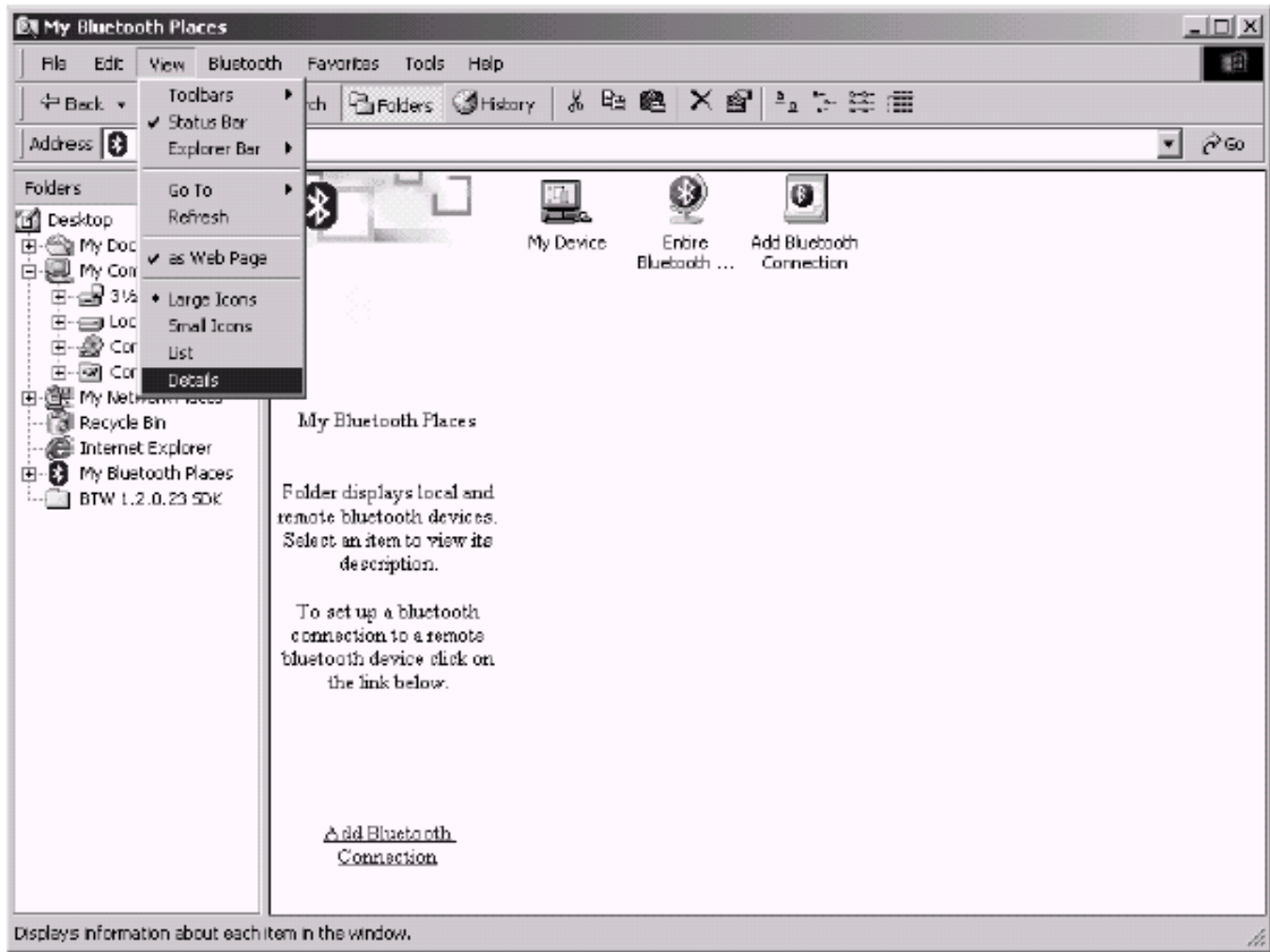### 3.1   CONNECTING THE USB DONGLE TO YOUR DESKTOP OR LAPTOP COMPUTER

Installing the Psion dongle is quick and painless.   Connect the USB cable to the matching USB connector on your PC, laptop computer, or USB hub.

3.2   INSTALLING THE BTW SOFTWARE

The BTW software is installed from a CDROM using an InstallShield executable.   For detailed instruction on how to install the software, see the   *BTW Installation and Uninstallation Instructions*.   This document will be supplied with your BTW CD and has the file name *readme.doc* or *readme.pdf*.

3.3   SET EXPLORER TO VIEW DETAILS

On your Windows PC, start the Windows Explorer and click on the *My Bluetooth Places* entry in the folder view.   For additional status information, use the *View   Details* option as shown below.
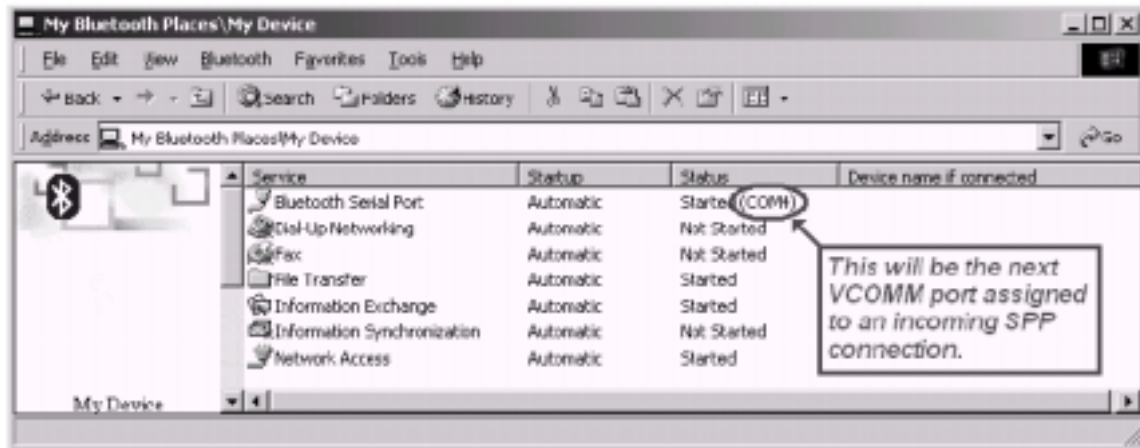
NOTE: It is important later in the process to use the *View Details* option.   This setting will allow you to view the details of your SPP connection in the *My Device* display.

3.4   CONFIGURING BTW AS AN SPP SERVER

No action is necessary on your part.   A service entitled "Bluetooth Serial Port" will be automatically started on your Windows desktop or laptop computer.   This service will handle all incoming requests which attempt to utilize the Serial Port Profile.
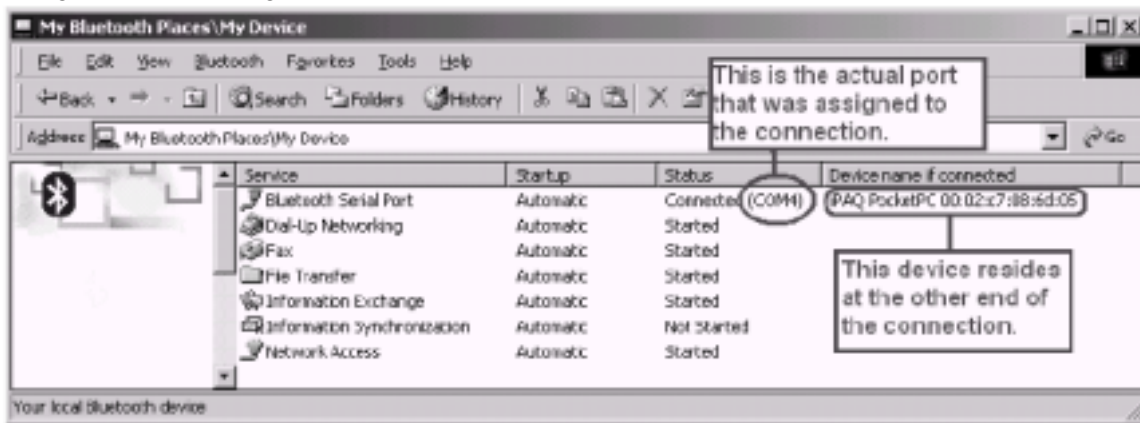
3.5   DISCOVERING THE VCOMM PORT

On the desktop or laptop computer, click on the *My Device* icon in *My Bluetooth Places*.   You will see the following display if you have no active Bluetooth connections:

The local services with no connection active.

Examine the *Status* column under the *Bluetooth Serial Port* service.   Notice that the service is started and that COM4 will be the Virtual COM (VCOMM) port that will be assigned to an incoming SPP connection.

Once you have connected to the *Bluetooth Serial Port* service using iPAQ, this display will change to the following:
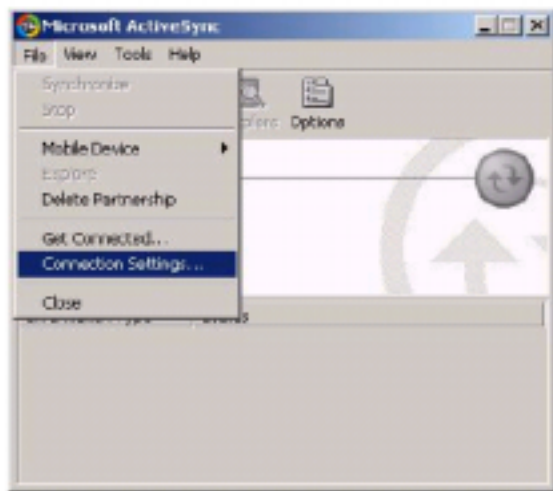

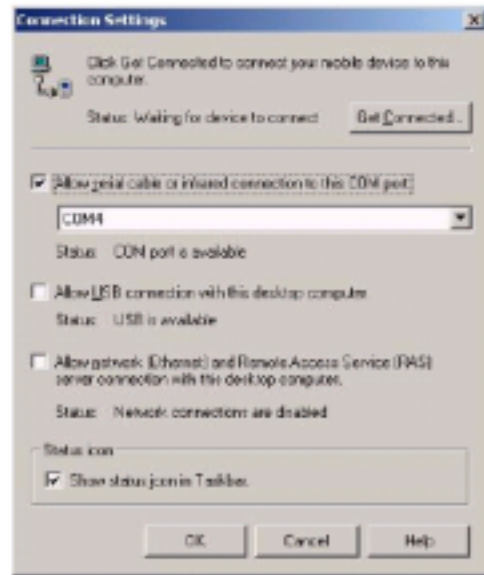The local services when a *Bluetooth Serial Port* connection is in place

Once again, examine the *Status* column under the *Bluetooth Serial Port* service.   Notice that the service is started and the COM4 is assigned to the Bluetooth connection.   Also notice that the friendly name and Bluetooth Device Address of the BTW unit is displayed for this connection. From the above example, you can see that COM4 is the appropriate port to use on the BTW side of the connection.   You must set ActiveSync to use this com port in order to communicate with your iPAQ.

3.6   CONFIGURING ACTIVESYNC 3.5

To configure ActiveSync, you must access the Connection Settings dialog as shown below.
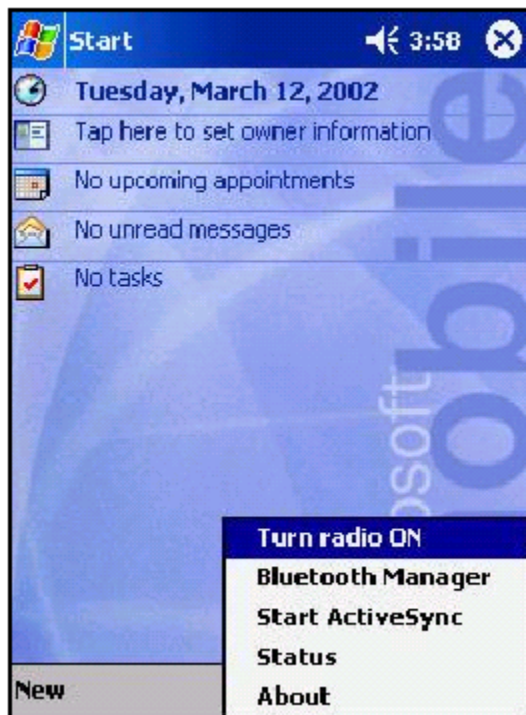
Use *File/Connection Settings...*   Set to serial transport over the correct COM port

Check only the box entitled: *Allow serial cable or infrared connection to this COM port*.   Use the pull-down selector to choose the VCOMM port that you discovered in Section 3.5: *Discovering the VCOMM Port.*
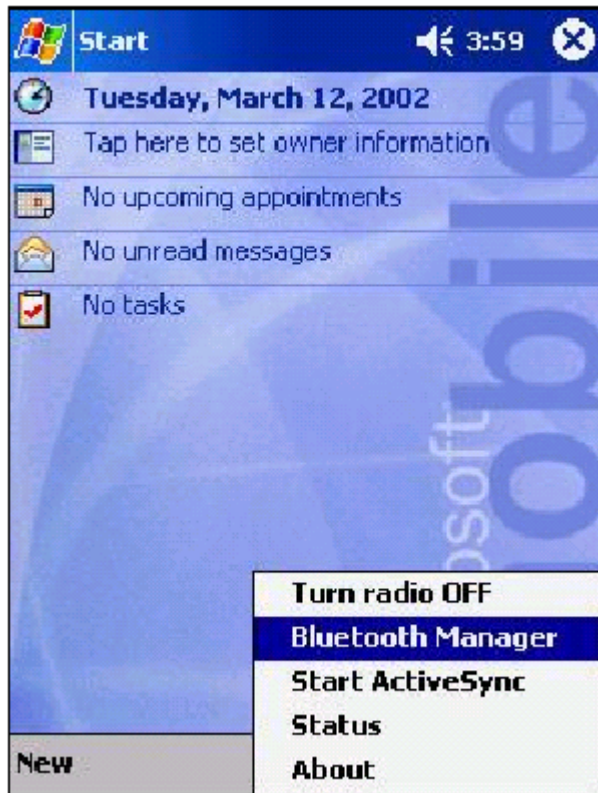
4. IPAQ H3870 Setup

4.1 TURN THE RADIO ON

From the Start dialog, tap on the ⊕ icon. Choose *Turn radio ON* from the resulting menu as shown below:
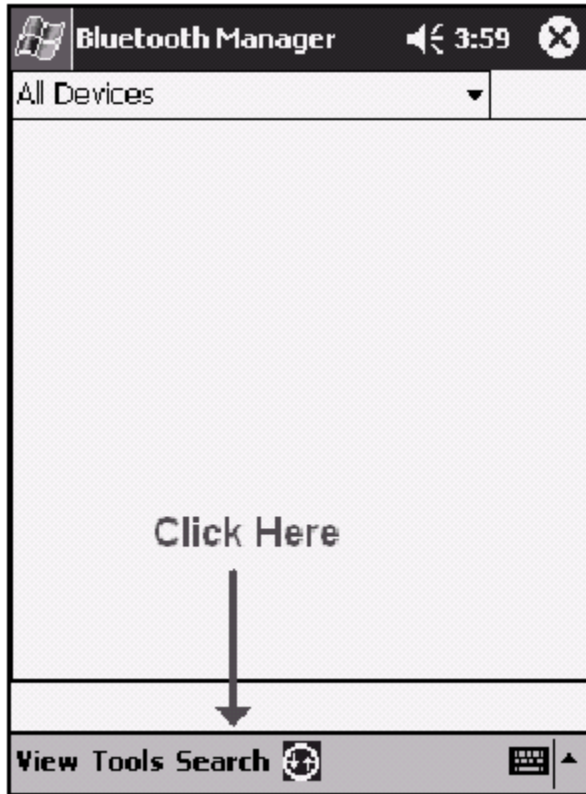
4.2 ENTER THE BLUETOOTH MANAGER

With the radio turned on, tap on the [icon] icon.   Choose *Bluetooth Manager* from the resulting menu as shown below:
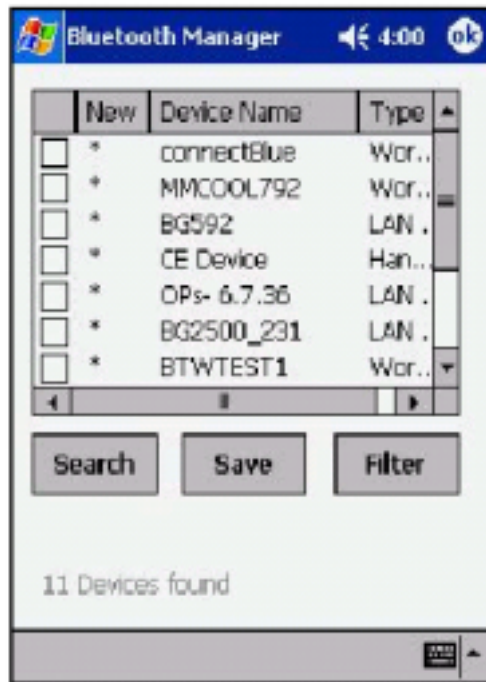

4.3 PERFORM A DEVICE INQUIRY

The Bluetooth Manager will look similar to the screen shown below.   Tap on Search in order to initiate a device inquiry.
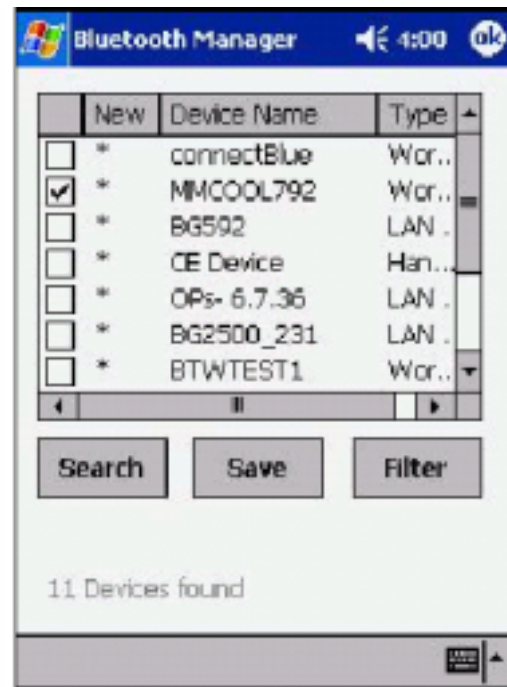
4.4 SELECT THE ACTIVESYNC SERVER

At this point your H3870 will search the local area for any Bluetooth devices.   This may take up to 30 seconds.   Choose the device that you wish to ActiveSync with from the resulting list and check the box next to this device.   In the example shown below, we chose the device with the friendly name of "MMCOOL792."

The Inquiry List

Select the device for ActiveSync

Once you have done this, tap on *Save* to continue.

4.5 SAVE THE DEVICE RECORD

The H3870 will then ask you which device group to use.   You may choose any combination of those shown.   In this case, we simply left this setting at the default of *All Devices*.   Tap on *OK* to complete the save.   The device will then show up as an icon in the designated group as shown below:

Check the device group and tap on OK

Your device record has now been saved

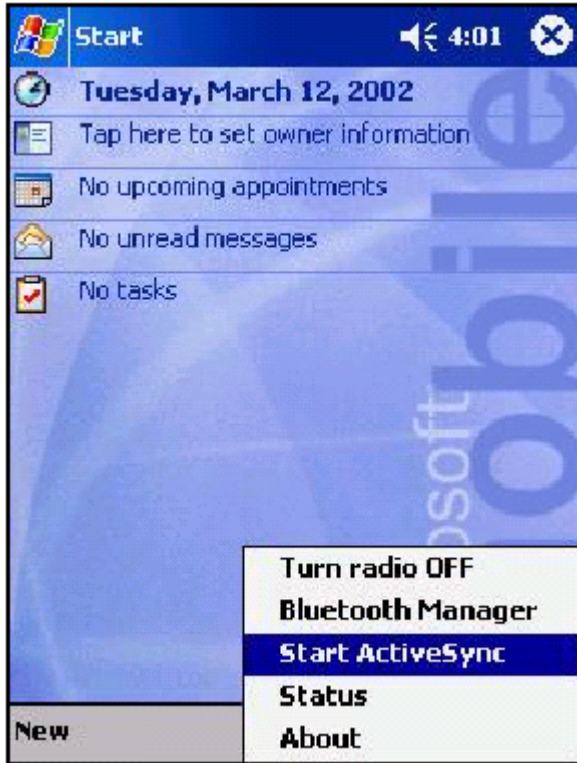## 4.6 SET THE DEVICE AS AN ACTIVESYNC PARTNER

Tap on the icon for your ActiveSync server.   This is the desktop or laptop PC that you wish the H3870 to ActiveSync with.   The H3870 will then perform a service discover (this may take a few seconds) after which you will be presented with a dialog similar to the one shown below. Check the box entitled: *ActiveSync Partner.*
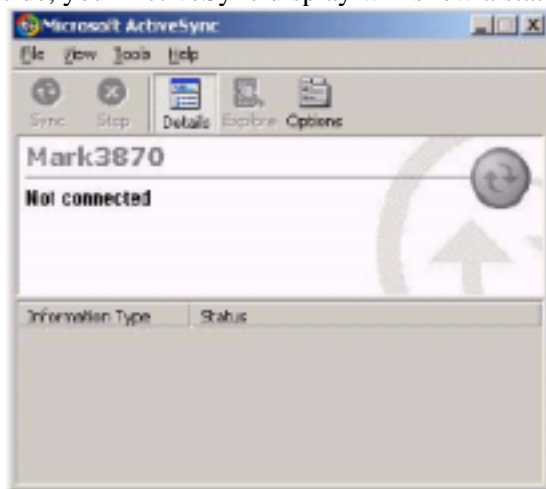
4.7 PERFORM THE ACTIVESYNC

You are now ready to ActiveSync with your desktop or laptop PC.   Tap on the *OK* button repeatedly in order to return to the *Start* screen.

Tap on the ⊕ icon and choose *Start ActiveSync* from the resulting menu as shown below:
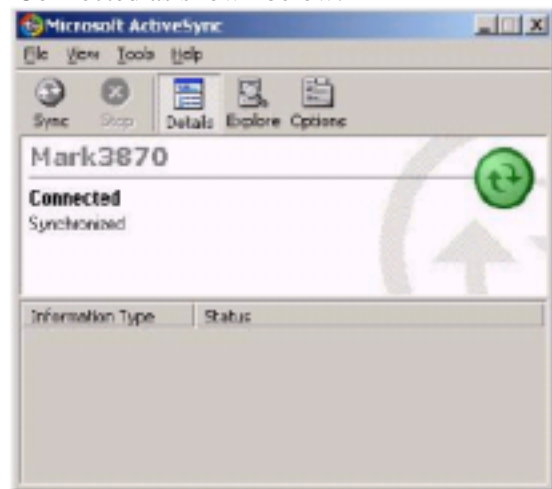

4.8 VERIFY THE PROGRESS OF THE ACTIVESYNC ON THE PC

If you have configured your devices properly, they will sync up.   On the laptop or desktop PC side, your ActiveSync display will show a status of Connected as shown below:
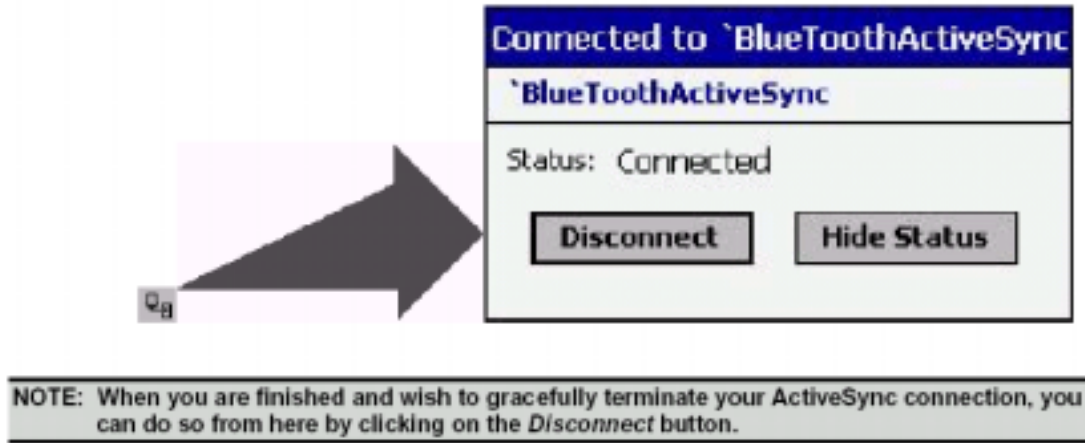

ActiveSync not Connected

ActiveSync Connected

4.9 VERIFY THE CONNECTION STATUS ON THE H3870

Another way to verify that the ActiveSync connection is active, is to click on the connection icon that will appear on the H3870 Start screen. You should see a status dialog indicating that *BlueToothActiveSync* has a status of *Connected* as shown below:

NOTE: When you are finished and wish to gracefully terminate your ActiveSync connection, you can do so from here by clicking on the *Disconnect* button.

5. Troubleshooting

5.1 PROBLEMS SYNCHRONIZING FOR THE FIRST TIME

ActiveSync connections – although reliable once they are established – can sometimes be tricky to establish for the very first time. We have seen problems when ActiveSync can be in a odd state where it does not recognize the remote device. If your devices refuse to sync up, try the following before assuming that your configuration is wrong:

• Put the device in its cradle and ActiveSync the traditional way. In some cases, this has been known clear up the problem.

• Reboot the laptop or desktop computer. This has been known help.

• Soft reset your iPAQ H3870 and try again. This has also been known to help. See the diagram below for instructions on how to soft reset your H3870.
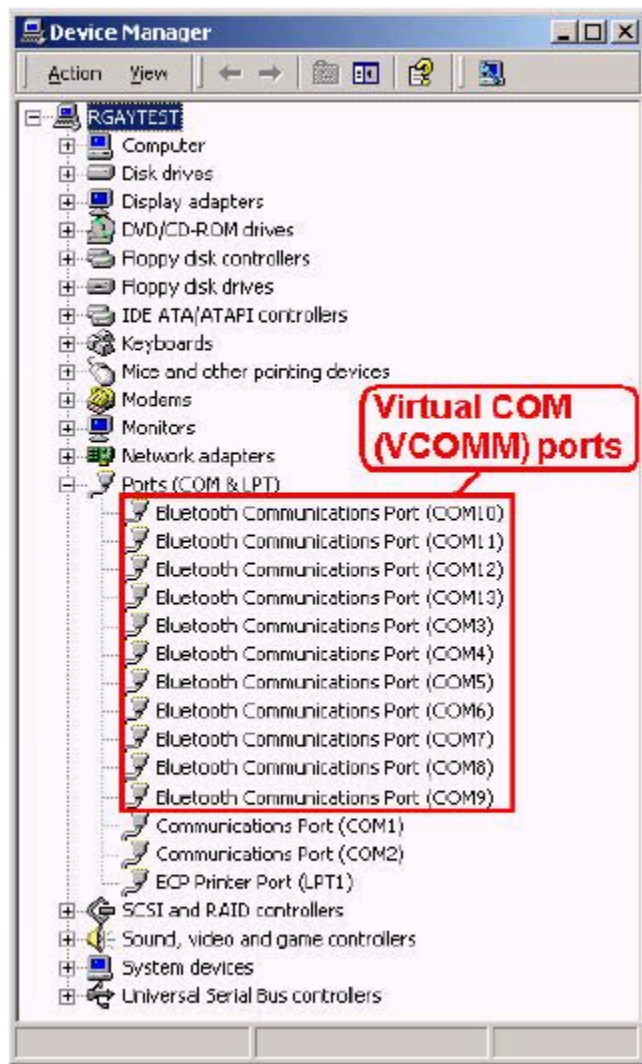
Please try each of these before contacting WIDCOMM, Inc. technical support.

Compaq iPAQ H3870 Pocket PC

To Hard Reset, press and hold the two outer buttons while simultaneously pressing the soft reset button for 5-10 seconds.

The screen will blank.

Press the soft reset button one more time to complete the reset.

Soft Reset Button (Pin Hole)

WARNING: Do NOT hard reset your Pocket PC. A hard reset will remove all software that you have previously installed on your Pocket PC device.

5.2 PROBLEMS WITH ASSIGNED VCOMM PORTS

In order for ActiveSync to work properly, the BTW assigned VCOMM port for the *Bluetooth Serial Port* service must match the serial port that was configured in ActiveSync.   There are cases, however, where third party software may have assigned the VCOMM ports that BTW would normally reserve for itself.   In this case, BTW will assign VCOMM ports with a much higher number (COM15, COM16, COM17, etc.).   The problem is that ActiveSync only supports VCOMM ports up to COM9.   In this case, you may have to de-install BTW, remove the offending software, and re-install BTW in order to make a range of VCOMM ports available to BTW that are also available to ActiveSync.   To view all of the VCOMM ports assigned to BTW, open the *Device Manager* on your system.   Under Windows 2000, click on: *Ports (COM & LPT)*.   You should see a display similar to the one shown below.

The Device Manager under Windows 2000

NOTE: The details of how to run the device manager vary from one version of Microsoft Windows to another.

6. Further Information

For additional technical information or troubleshooting advice, see the following WIDCOMM documents:

- *BTW Installation and Uninstallation Instructions.*   These are supplied with your BTW CD as *readme.doc* or *readme.pdf*.
- *BTW Windows 2000 Release Notes*.
- *BTW Configuration and User's Guide*.

If you still cannot succeed using the steps outlined in the document, contact WIDCOMM technical support.   The preferred method of doing this is to use the on-line forms for BTW.   In order to access these forms, you will need the user name and password that was supplied along with your WIDCOMM product.   You can access these forms from http://www.widcomm.com/Support/index.asp or send an email to support@widcomm.com