



Functional Testing the ZX-Bluetooth

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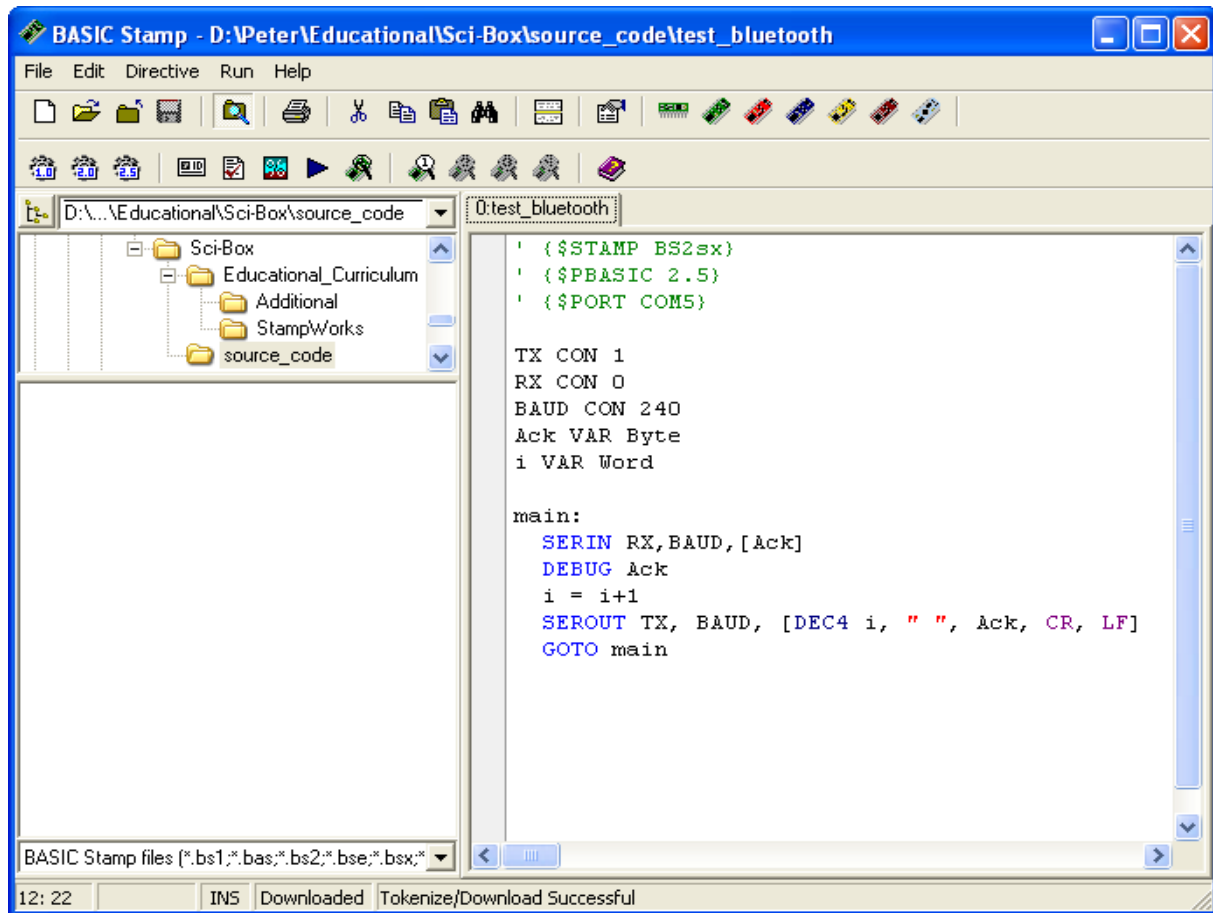
In a nut shell communication is between two rf devices utilising the bluetooth protocol. The hardware is a ZX-BLUETOOTH connected to a micro controller system and a ASUS notebook with its embedded Bluetooth device enabled and running Hyper Terminal. See Figure 11 in the ZX-BLUETOOTH manual for wiring details.

The aim of the exercise is to type a character in Hyper Terminal, it must be transmitted from the notebook to the SCI-BOX via the Bluetooth connection. The SCI-BOX must immediately retransmit the same character back to the notebook via the same Bluetooth connection to be displayed in Hyper Terminal.

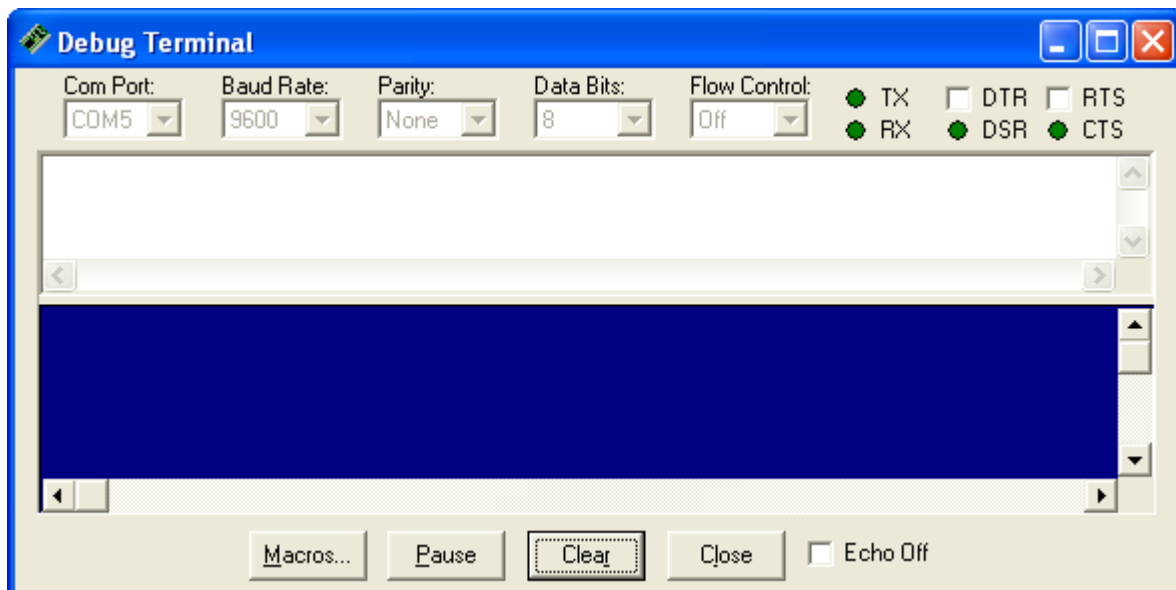
I used the iNex SCI-BOX 2sx stamp micro controller platform as suggested in the documentation. On power up ensure the 'STATUS' led on the bluetooth board flashes. It will start off flashing about 20 times in 5 seconds and then settle down to a flash every three seconds or so. This is normal operation.

Start the Basic Stamp editor and type in the code exactly as shown in the manual. Run it on the SCI-BOX.

DEBUG is a very useful PBasic command because it shows exactly what's happening and can help trace errors, solve problems and give me confidence that my design is working. I used it to check what was coming in on port P0. Remove the DEBUG command when you are satisfied all is well.



The debug window should appear when the code runs.



Now for some details about the notebook system.



The image shows a Windows XP system information window. On the left, there is a monitor icon displaying the Windows logo. Below it, the text reads "Manufactured and supported by:" followed by the ASUS logo. On the right, the "System:" section lists "Microsoft Windows XP Professional, Version 2002, Service Pack 3". The "Registered to:" section lists "Peter" and a partially obscured serial number. The "Manufactured and supported by:" section lists "ASUSTeK Computer Inc. F3E, Intel(R) Core(TM)2 Duo CPU T5550 @ 1.83GHz, 1.83 GHz, 1.99 GB of RAM, Physical Address Extension". A "Support Information" button is located at the bottom right.

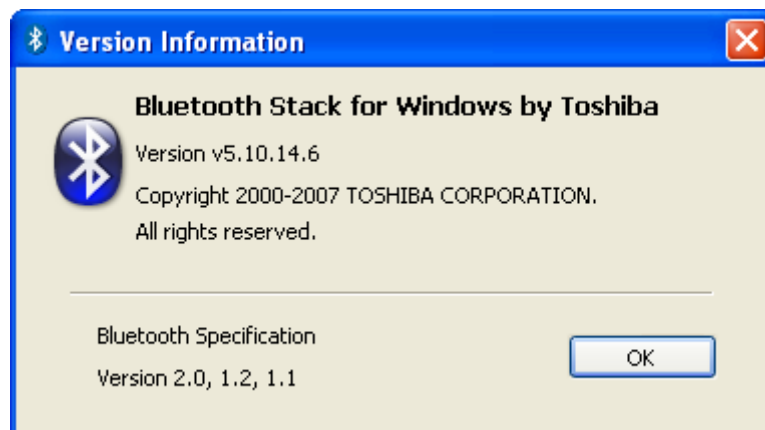
System:
Microsoft Windows XP
Professional
Version 2002
Service Pack 3

Registered to:
Peter

Manufactured and supported by:
ASUSTeK Computer Inc.
F3E
Intel(R) Core(TM)2 Duo CPU
T5550 @ 1.83GHz
1.83 GHz, 1.99 GB of RAM
Physical Address Extension

Support Information

Details of embedded master bluetooth device.



The image shows a "Version Information" dialog box for the "Bluetooth Stack for Windows by Toshiba". It features a Bluetooth logo icon. The text inside the dialog box includes "Version v5.10.14.6", "Copyright 2000-2007 TOSHIBA CORPORATION.", and "All rights reserved.". Below a horizontal line, it lists "Bluetooth Specification Version 2.0, 1.2, 1.1". An "OK" button is located at the bottom right of the dialog box.

Version Information

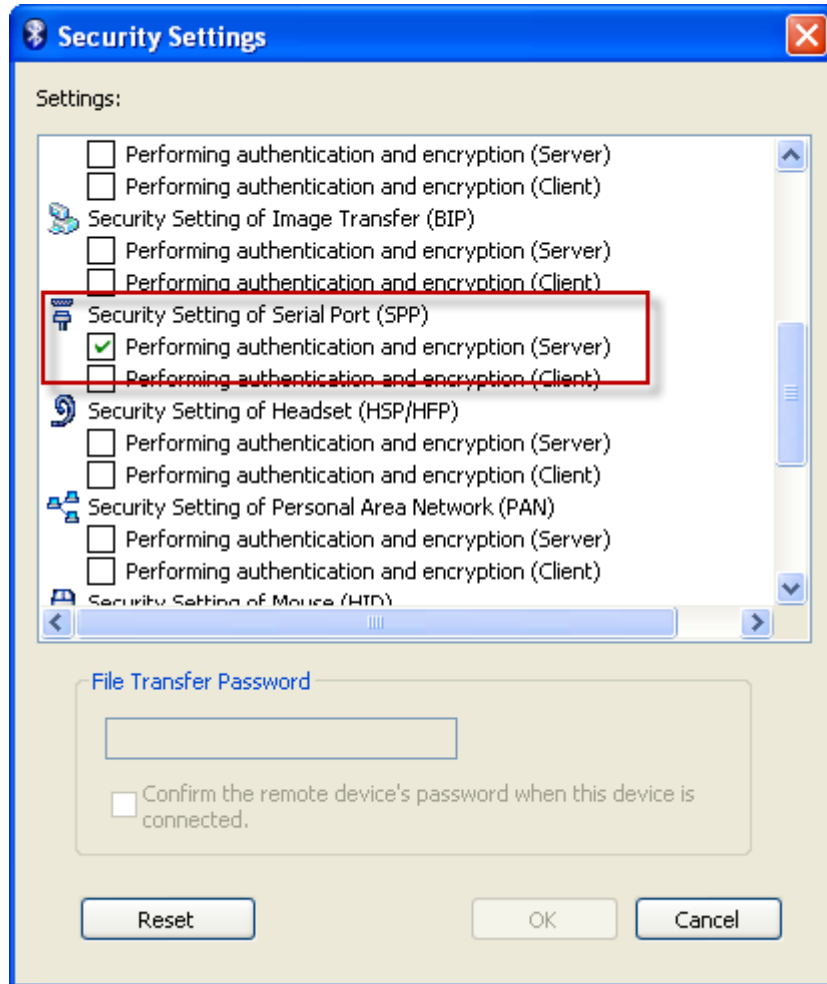
Bluetooth Stack for Windows by Toshiba

Version v5.10.14.6
Copyright 2000-2007 TOSHIBA CORPORATION.
All rights reserved.

Bluetooth Specification
Version 2.0, 1.2, 1.1

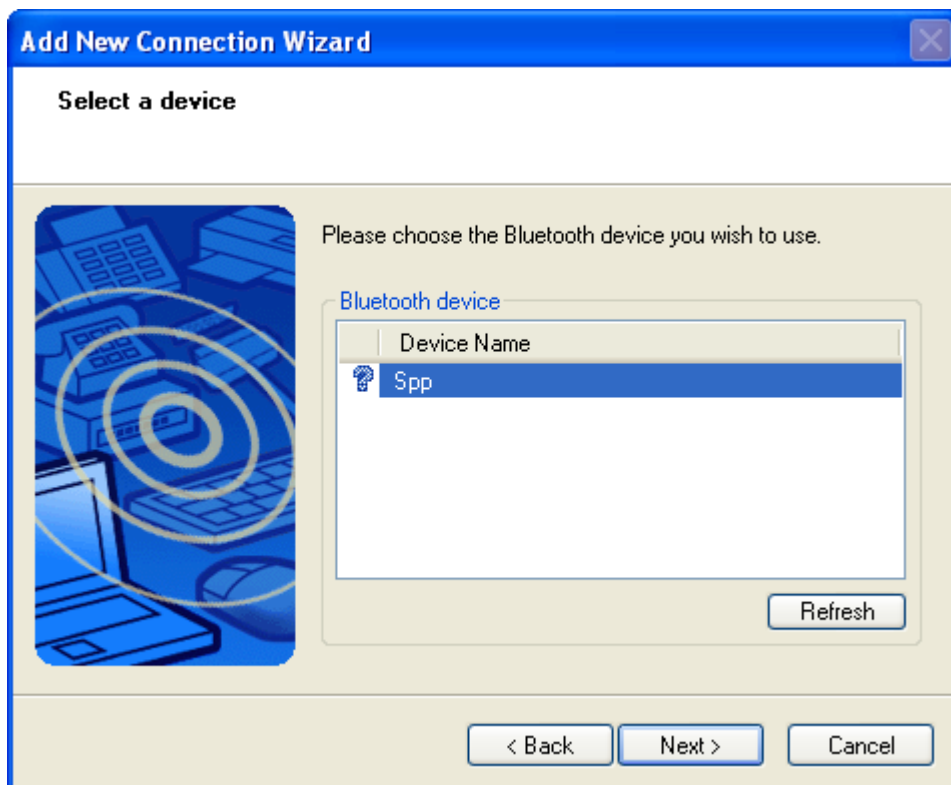
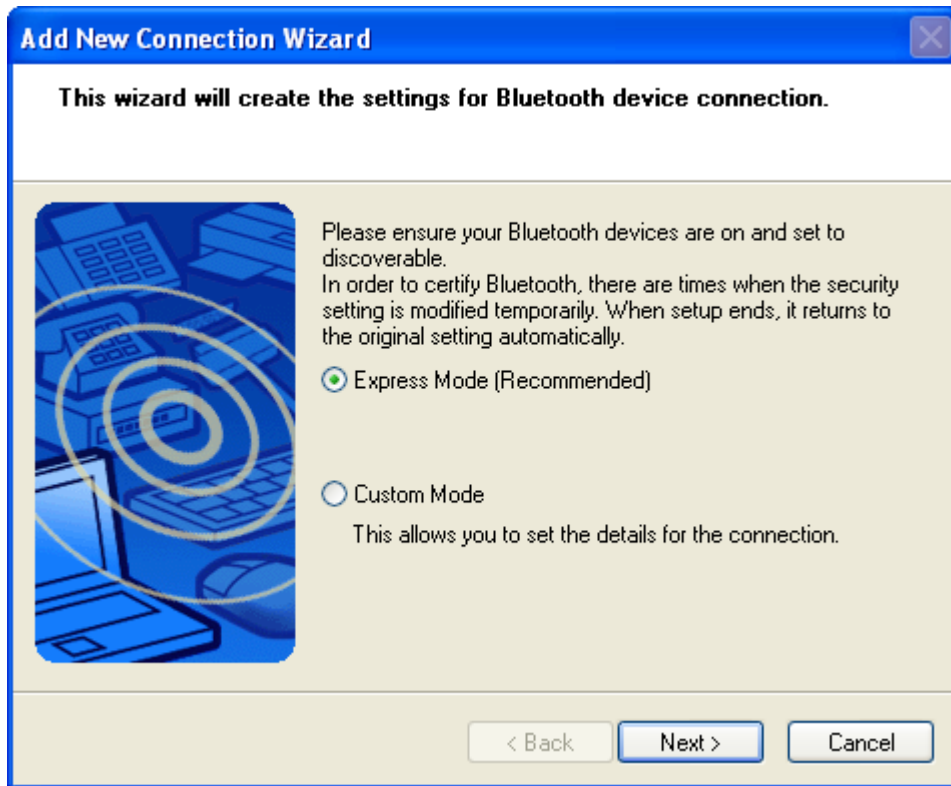
OK

Master bluetooth security settings. (Important!)



This next section shows the process for creating the settings for Bluetooth connection. Your Bluetooth utility windows might look a little different but the the steps should be the same.

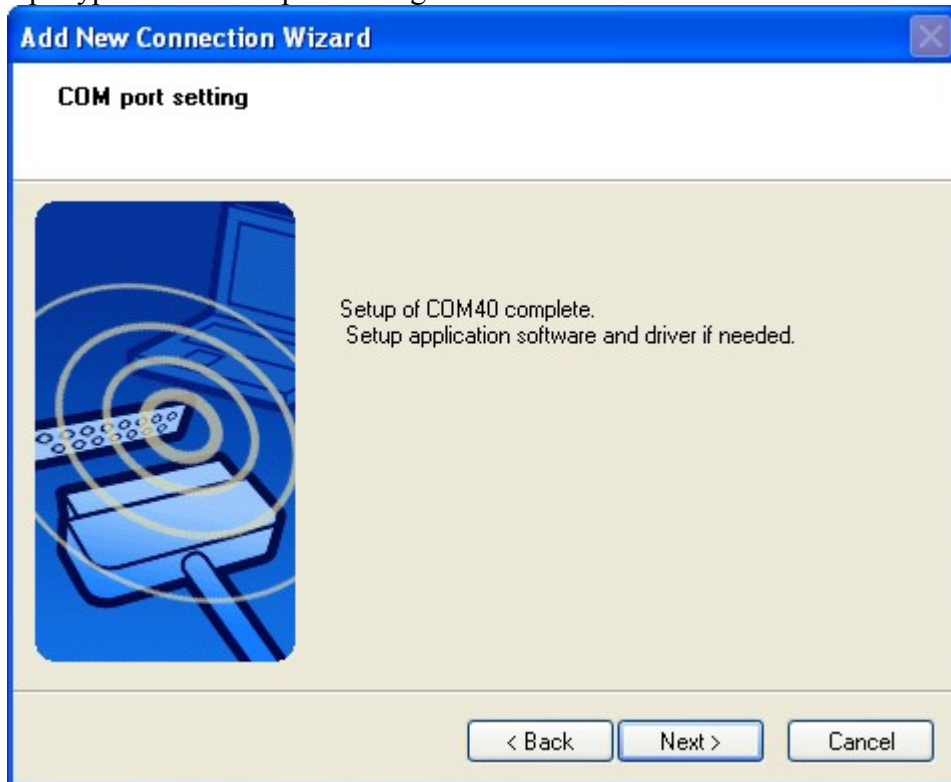
Search for a device and make a new connection.



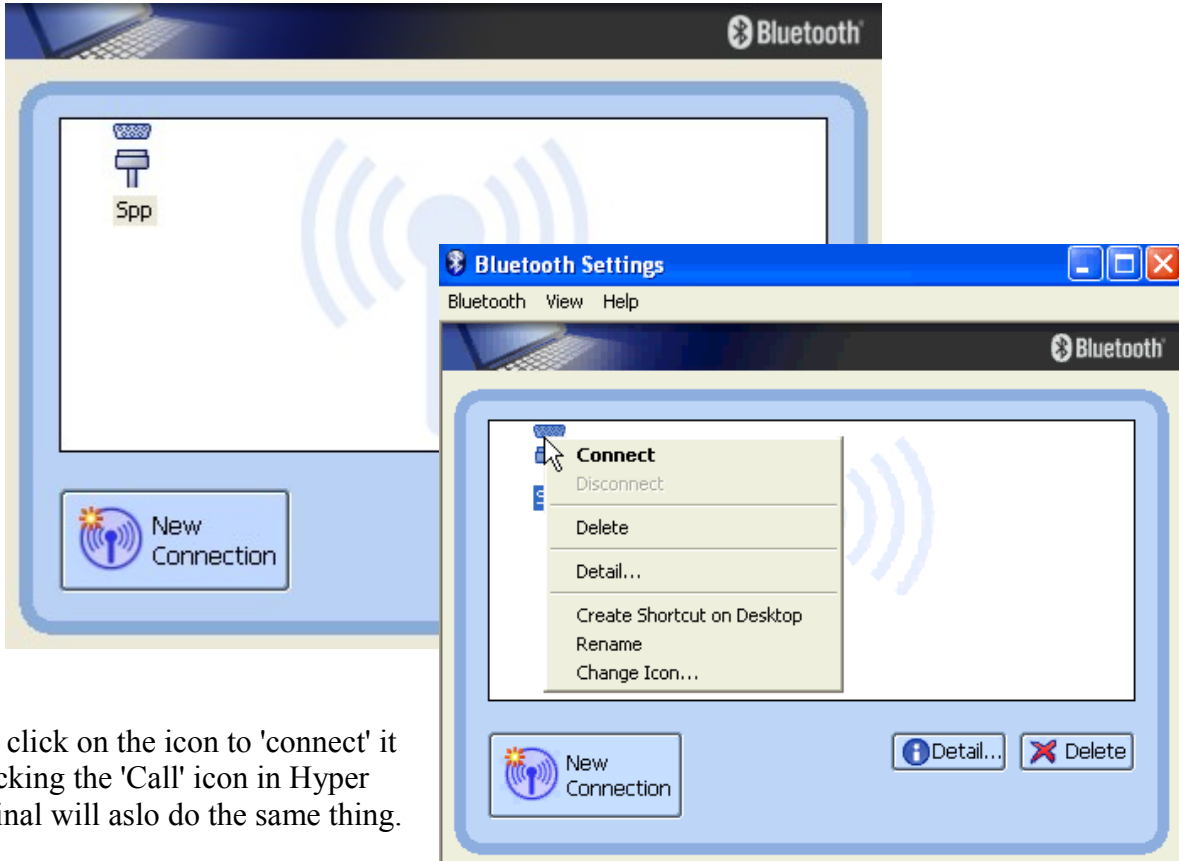
This window appears briefly and warns you about authentication and a passkey. For the NX-BLUETOOTH the passkey is '0000'. (Four zeros). You will need to type this in when asked later.



By default my system chose COM40. Yours might be different. Take note of it because you will need it to set up Hyper Terminal's port settings.



The Bluetooth icon showing successful creation.



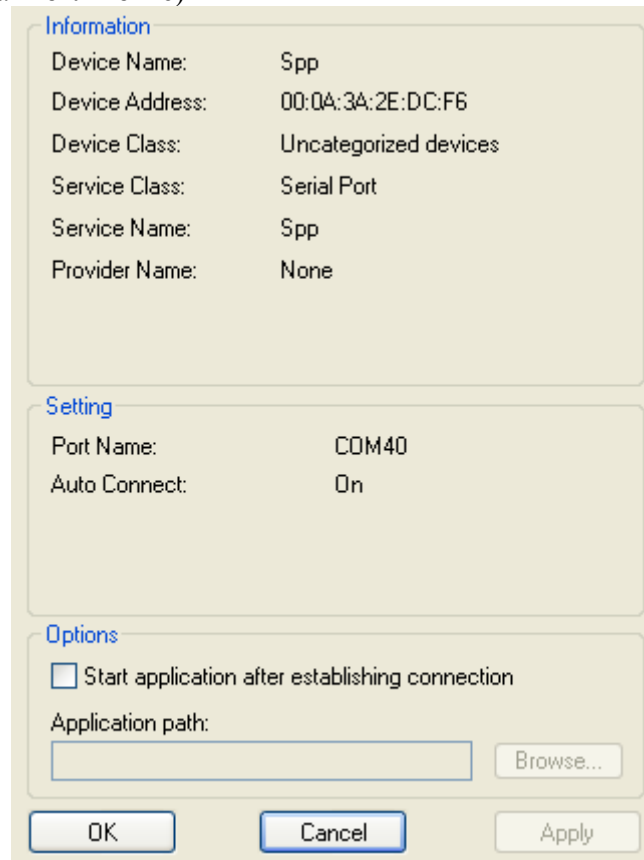
Right click on the icon to 'connect' it or clicking the 'Call' icon in Hyper Terminal will also do the same thing.

Connected!



At this point you can rename the SPP to 'BT GPS' as mentioned in the manual but this is not essential unless you have more than one and chaos starts to reign!

Details of the SPP (Serial Port Profile)



Information	
Device Name:	Spp
Device Address:	00:0A:3A:2E:DC:F6
Device Class:	Uncategorized devices
Service Class:	Serial Port
Service Name:	Spp
Provider Name:	None

Setting	
Port Name:	COM40
Auto Connect:	On

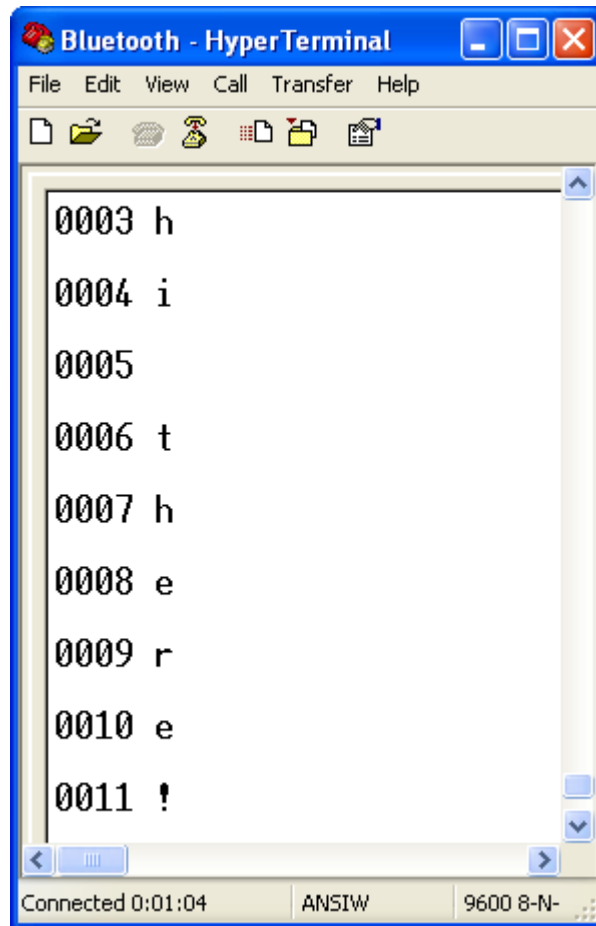
Options	
<input type="checkbox"/>	Start application after establishing connection
Application path:	<input type="text"/> Browse...

OK Cancel Apply

Job done!

Now set up Hyper Terminal or whatever you use. The parameters are 9600 baud rate with 8N1 data settings. (8 data bits, No parity and 1 stop bit). Connect and go! I typed in 'hi there!' in Hyper Terminal and here is the response on both Debug Terminal and Hyper Terminal.





Now isn't that just cool bananas!

Do you have any application ideas? Have fun!

Here's a good place to start if you want to know more about bluetooth technology.
<http://en.wikipedia.org/wiki/Bluetooth>