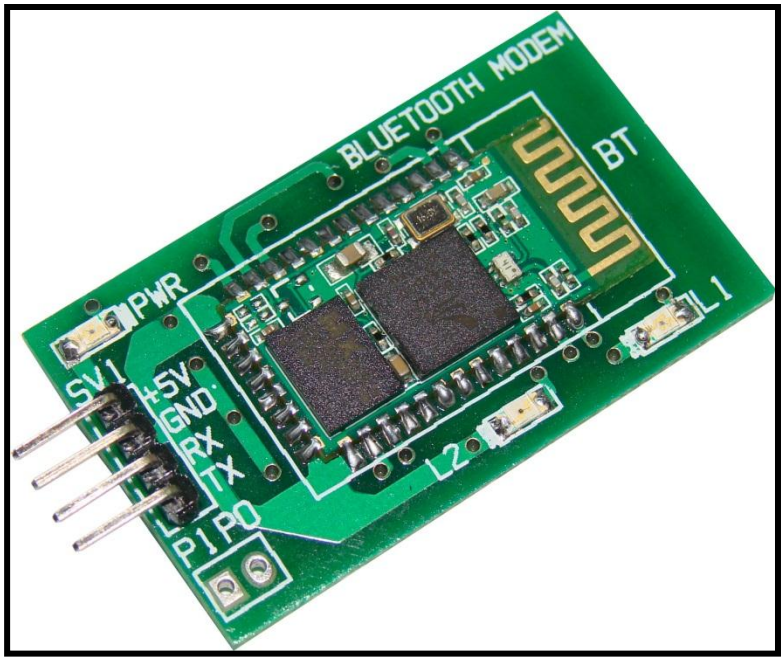
Bluetooth Modem

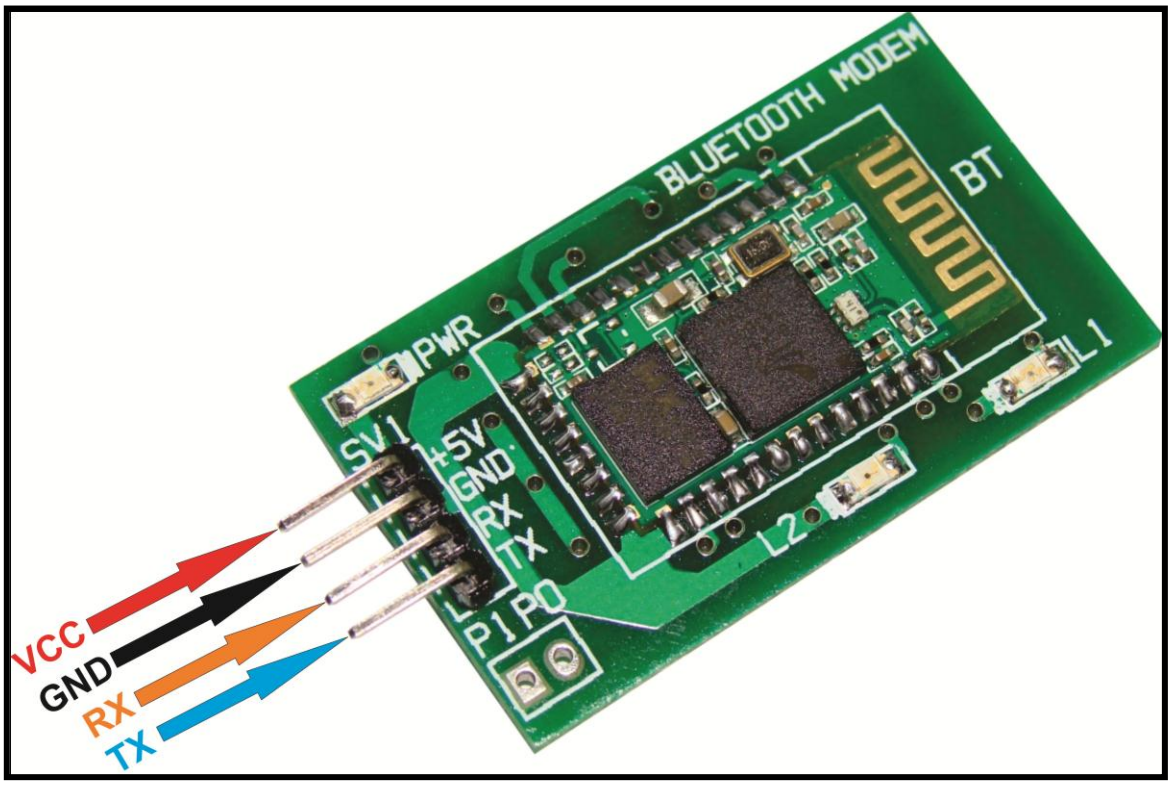


This Bluetooth modem is an easy to use module and can be directly interface to the microcontroller UART PINs, and specifically designed for transparent wireless serial connection setup. This design uses CSR's Bluetooth chips, V2.0 protocol standards with self-efficient on board antenna.

Features:

- Operating Voltage: 4.5V to 5 V DC.
- Onboard power indicator LED.
- Band: 2.40GHz—2.48GHz (ISM Band).
- Bluetooth protocol: Bluetooth V2.0 protocol standard.
- Power Level: Class2 (+6dBm).
- Receiver sensitivity: -85dBm.
- Power Consumption: in Search mode 35 mA, after connection 8mA.
- UART interface with programmable baud rate.

PINOUT:



1. **Making Connections**:

VCC: +4.5V to 5V DC
GND: GND
RX: TX pin of microcontroller
TX: RX pin of microcontroller

Note:

1. This modem is Bluetooth slave device so it is capable of communicating with computer or mobile devices which features Bluetooth capability.

2. Two slave modules cannot communicate with each other.

3. Master Bluetooth modules can be arranged on request

AT COMMANDS:

Following are the AT commands to configure different parameters of the Bluetooth module,

Hardware Connection: Connect the Bluetooth modem computers serial port using RS232 to TTL convertor or user can use the USB to TTL convertor to connect the modem to computer.

Then use the computers hyper terminal application to apply the AT commands to modem.

Default setting for hyper terminal is as follows:

Bits per seconds: 9600
Data bits: 8
Parity: None
Stop bit: 1
Flow control: None

Commands:

Note: All the commands should be typed in capital letters.

1. Send: AT
Returns: OK

2. To change the Bluetooth Serial communication baud rate
Default baud rate is 9600.
Send: AT + BAUD1
Returns: OK1200
Send: AT + BAUD2
Returns: OK2400
1---------1200
2---------2400
3---------4800
4---------9600
5---------19200
6---------38400
7---------57600
8---------115200
9---------230400
A---------460800
B---------921600
C---------1382400
It is recommended **not to set** the baud rate above 115200.

3. To change the Bluetooth device name
Send: AT + NAME*name*
Returns: Okname
Parameter name: the device name length should be 20 characters or less.
For example:
Sending AT + NAME*albert_stine*
Returns: OKname
Then the Bluetooth name will change to *albert_stine*

4. Modify the Bluetooth pairing password：
Send: AT + PINxxxx
Returns: OK setpin
Parameter xxxx: password pair to be set(length: 4 bytes) this command can be used to modify the pairing password of the module.
For example:
Send: AT + PIN8888
Returns: Oksetpin
Bluetooth pairing password will changed to 8888,
The module pair default password is 1234.

NOTE: After executing the above commands it's necessary to power down the module and again turn it ON to make the new setting effective.

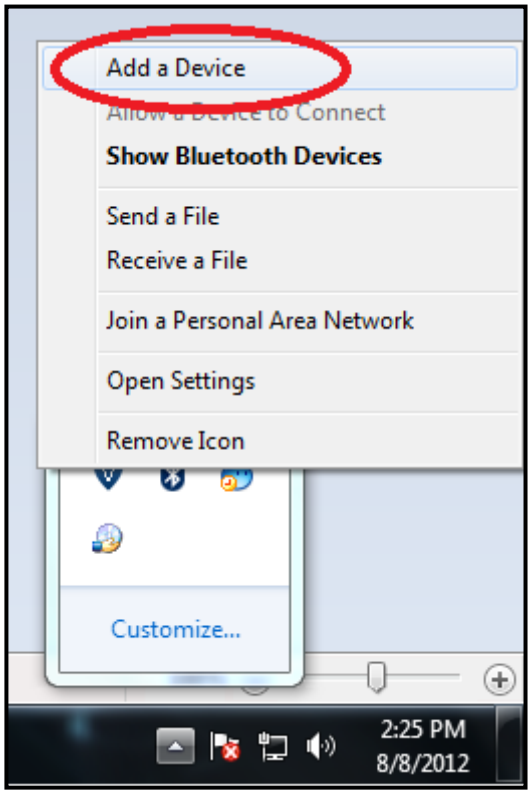
Using Bluetooth modem to communicate with the Computer Serial Port:

1. Power ON the Bluetooth modem by applying the +5V Power supply at the supply pins.

2. Enable Bluetooth function of the computer or which features Bluetooth capability or connect a Bluetooth dongle to computer.

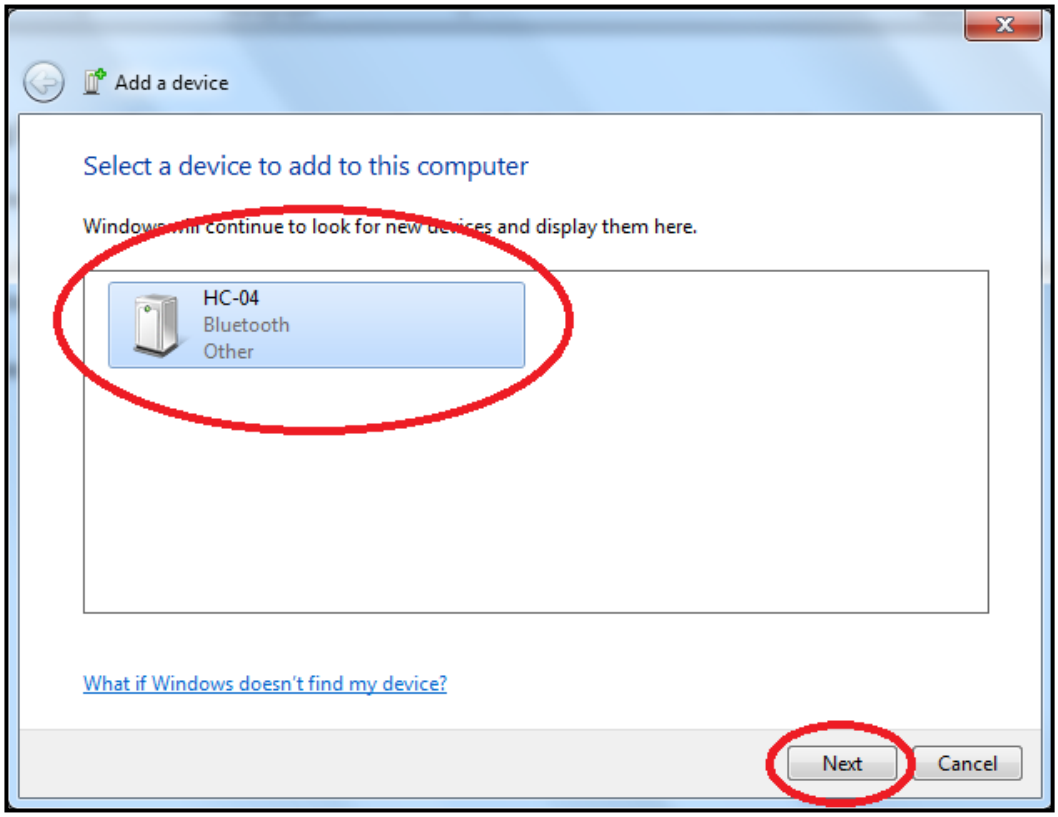
Follow the following procedure:

"Right click on the Bluetooth icon from task bar "

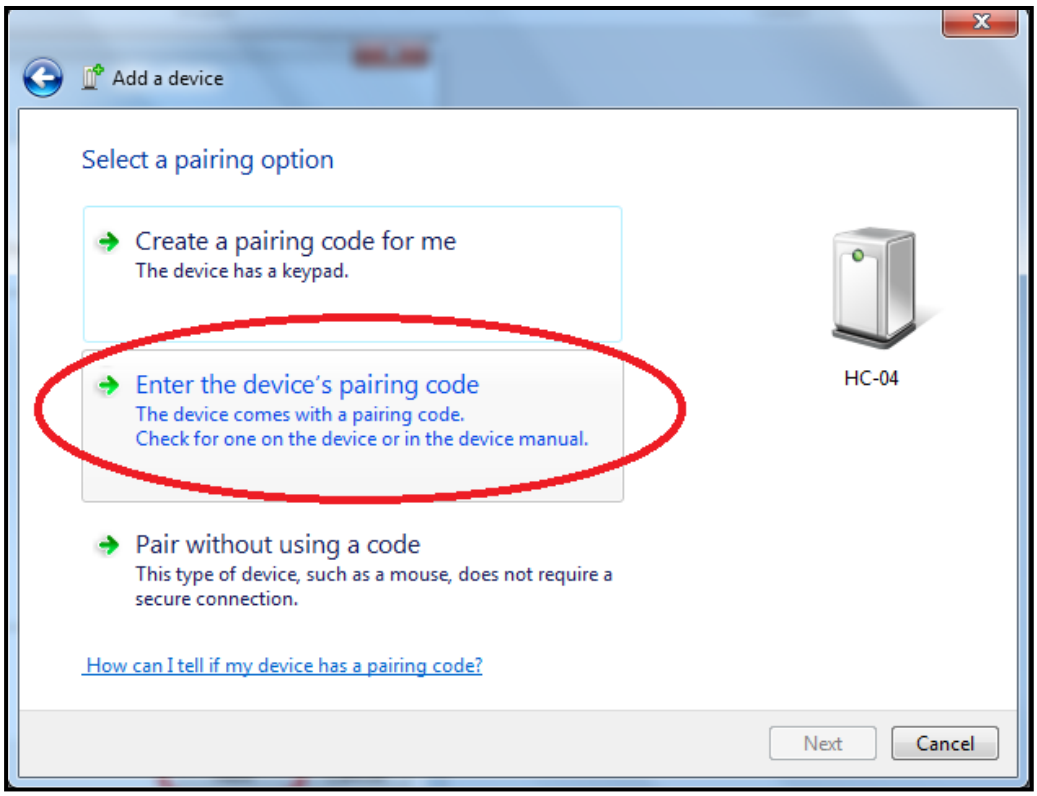


"Click on the Add a Device"

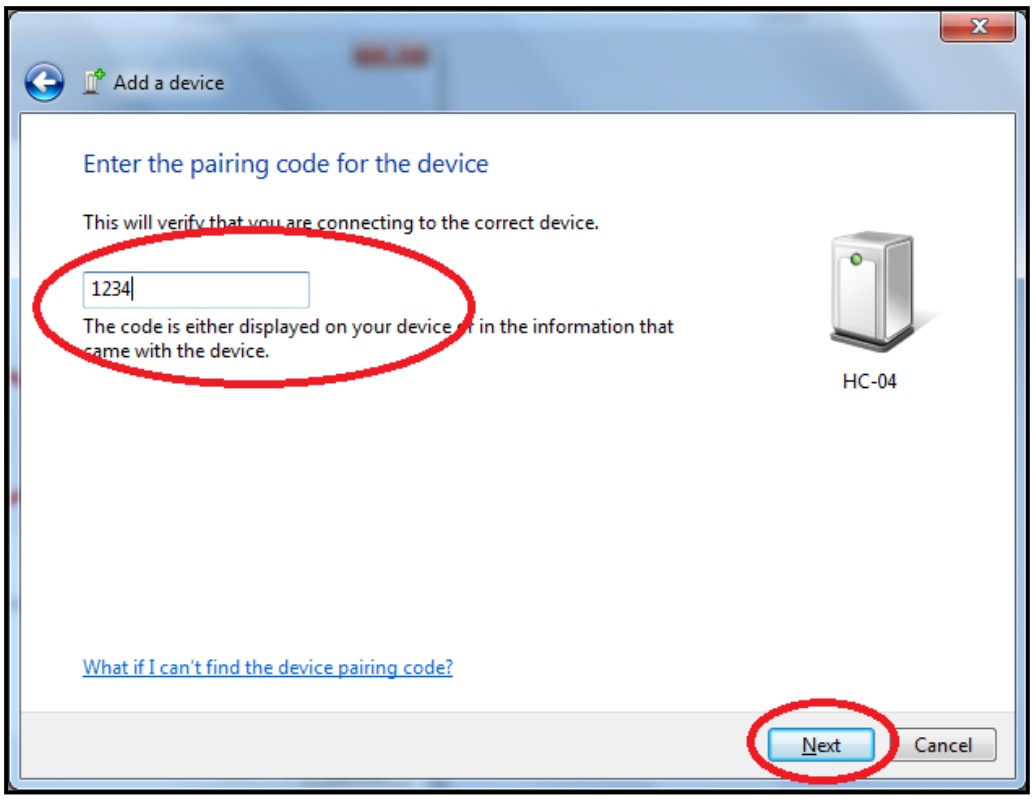
Now click on the "HC-04" then click "Next"



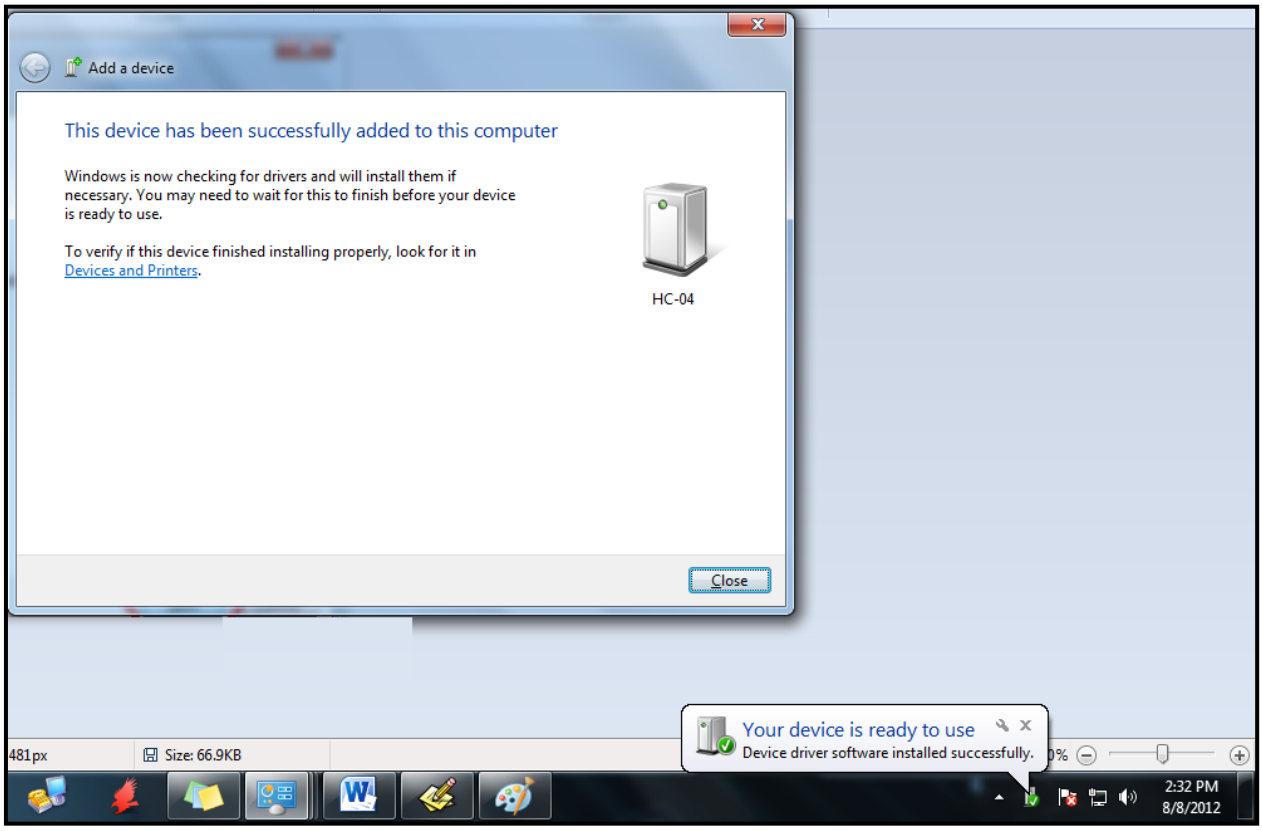
Now click on the “Enter the device pairing code”



Enter the pairing code as “1234”

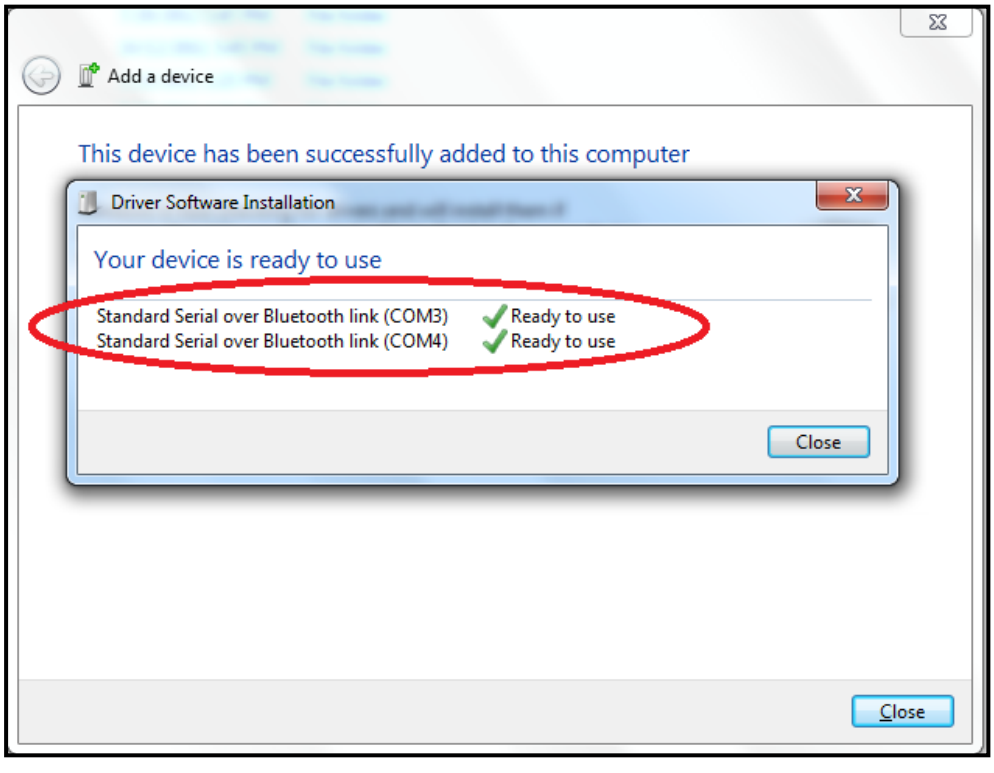


After successful connection following window will get displayed



Click on the “Your device is ready to use” to see the com port generated for the Bluetooth link

In following window the com port generated for data transfer is “com3”

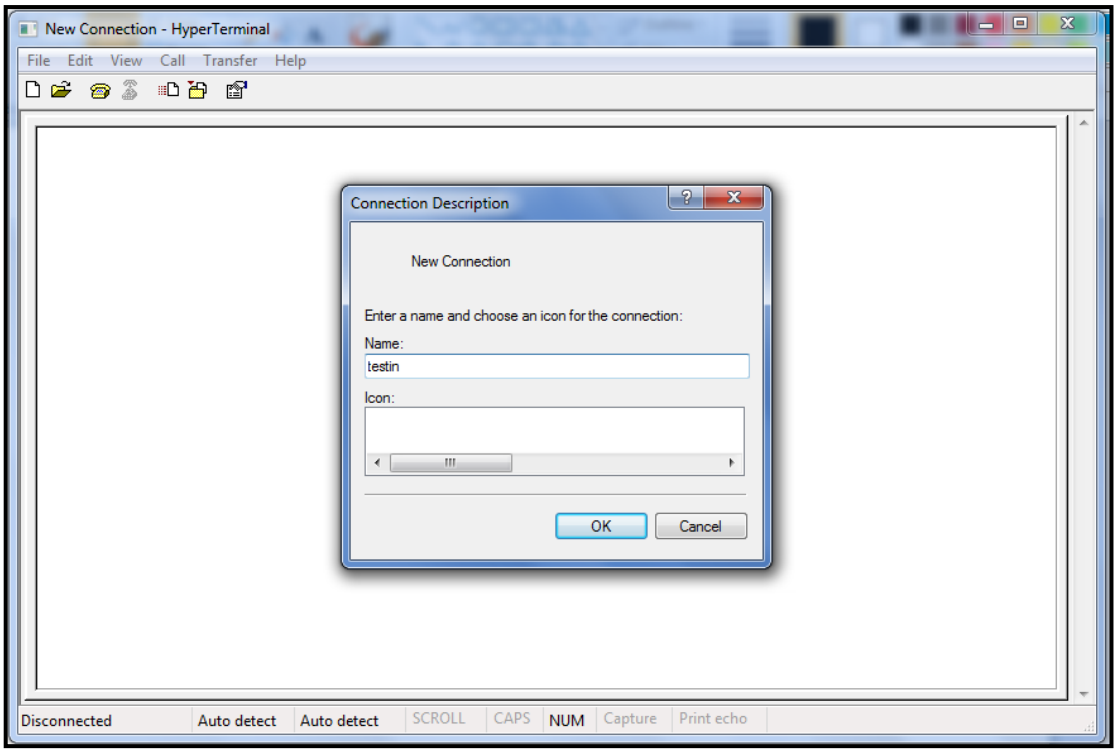


Now to start the data transfer user need to configure the hyper terminal application

Configuring Hyper Terminal of computer:

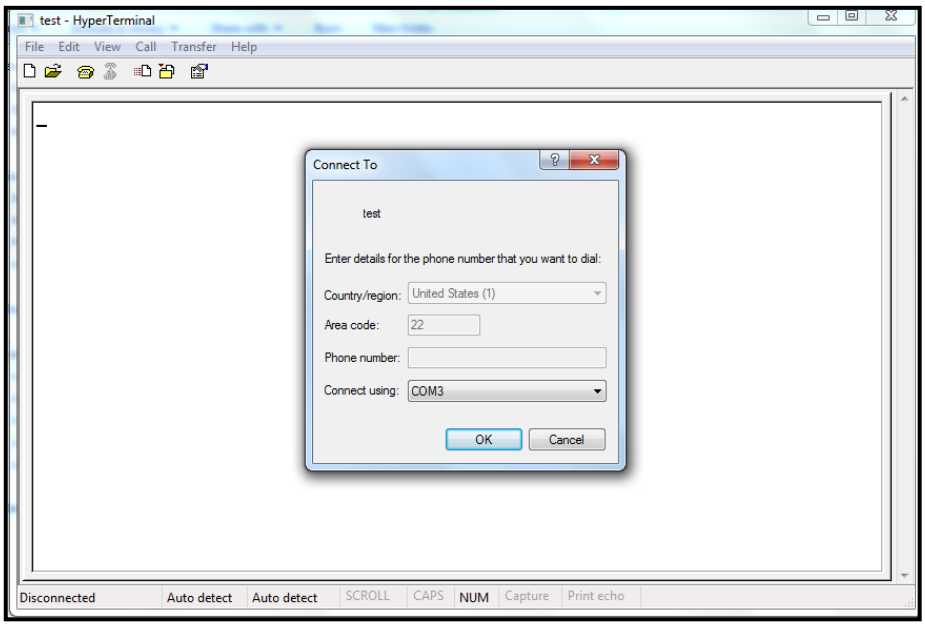
To launch the hyper terminal application goto;

Start>All Programs>Accessories>Communication>Hyper terminal.



Give name to connection and click ***"OK"***

Select the COM PORT name which is generated for the Bluetooth link



Now configure the Port for baud rate, here click on ***"Restore Default"*** button which will restore different parameters to its default values as below then click ***"OK"***.

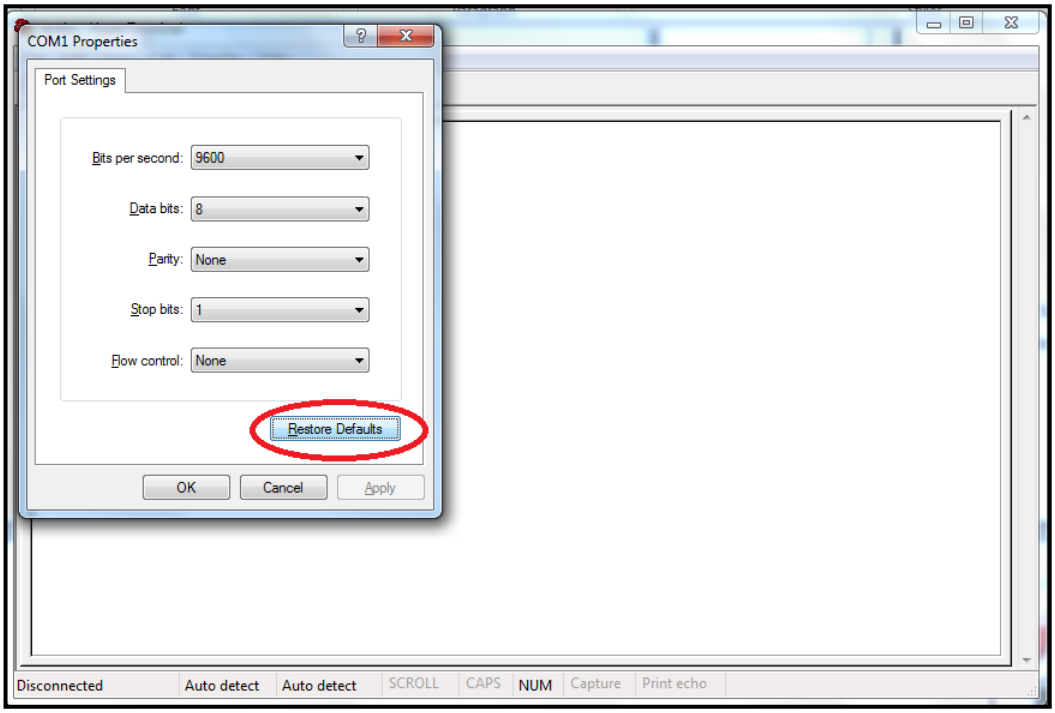
Bits per seconds: 9600.

Data bits: 8.

Parity: None.

Stop bits: 1.

Flow control: None.



Note: Make sure that the baud rate and other settings are same for the Bluetooth modem and hyper terminal.