Bluetooth Bee v1.2

User Manual

Tinyos Electronics @ 2013

Version 1.2

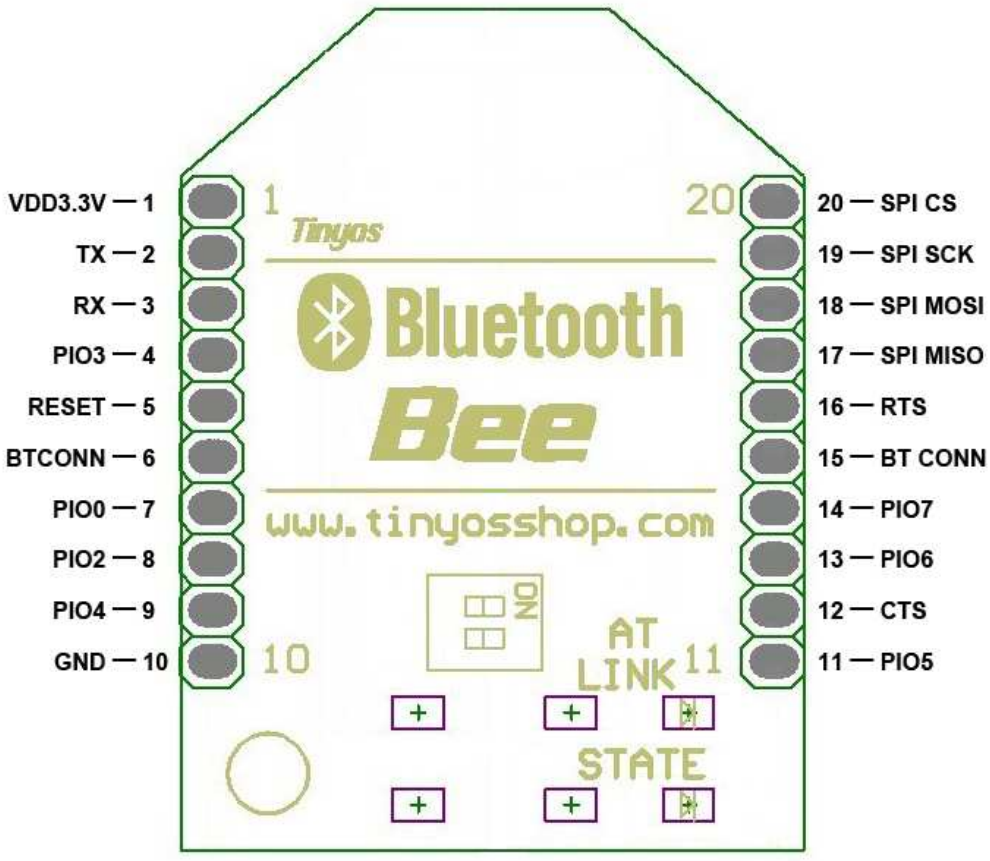
Product Overview

The Tinyos Bluetooth Bee is a Bluetooth wireless module Based on CSR BC417143 Bluetooth chipset. It has compact size and the pinout is compatible with XBEE which is suitable for all kinds of microcontroller systems who have 3.3V power out, the module can use the AT commands to set baud rate.

The Bluetooth Bee module comes with an on-board antenna, the antenna provides better signal quality. It acts like a transparent serial port, which works with a variety of Bluetooth adapter and Bluetooth phone.

The module has been tested with all the Bluetooth adapter on the market matching to use (with the Bluetooth, including laptops and mobile phones).

Pin out



LED State：

LINK: Indicate module state. when power on blinking .

STATE: When module linked with other device LED on.

Features

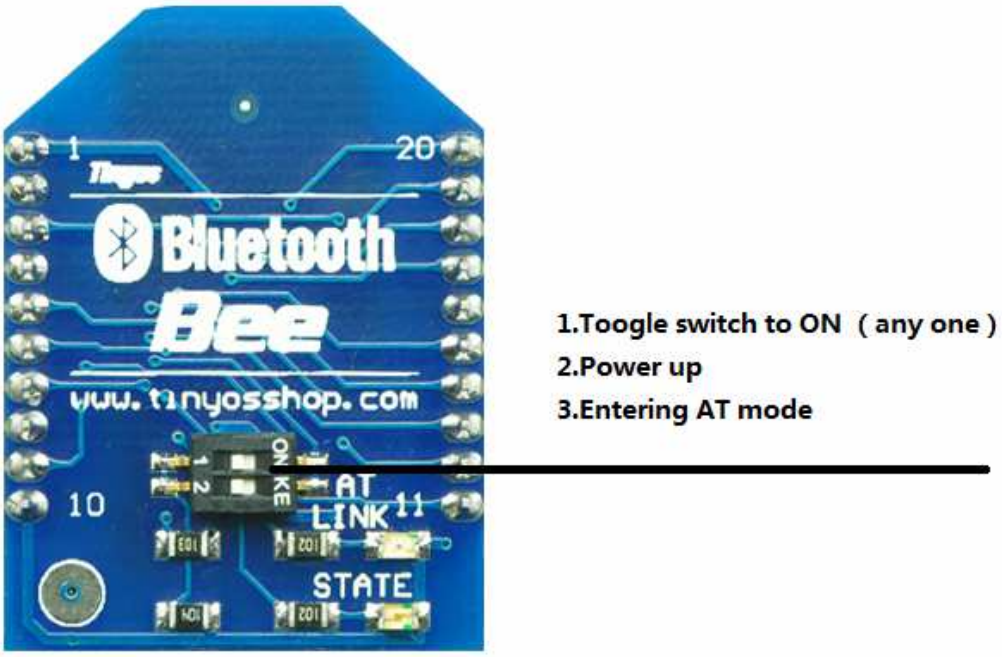
- Bluetooth chip: CSR BC417143
- Bluetooth protocol: Bluetooth Specification v2.0 + EDR
- USB Protocol: USB v1.1/2.0
- Operating frequency: 2.4 ~ 2.48GHz unlicensed ISM band
- Modulation: GFSK (Gaussian Frequency Shift Keying)
- Transmit Power: ≤ 4dBm, Class 2
- Transmission distance: 20 ~ 30m in free space
- Sensitivity: ≤-84dBm at 0.1% BER
- Transfer rate: Asynchronous: 2.1Mbps (Max) / 160 kbps; Synchronous: 1Mbps/1Mbps
- Safety features: Authentication and encryption
- Support profiles: Bluetooth serial port
- Serial port settings: 1200 ~ 1382400 / N / 8 / 1
- Baud rate default: 9600
- Pair: 1234
- Input Voltage: +3.3 DC/50mA
- Operating temperature: -20 ℃ ~ +55 ℃
- Module Size: 32 x 24 x 9mm

AT Command

The current version of the module only supports AT commands used to set the baud rate. The default baud rate for this module's AT mode is 38400bps. For regular use, the default baud rate is 9600.

Entering AT mode

- Using Arduino Serial Terminal and USB Xbee converter. You can download Arduino IDE Here
- Place the module into AT Mode while powered off. Apply power to it and open the corresponding com port in Arduino IDE's serial terminal. Set the Baud rate to 38400 and the setting next to that to "both NL & CR". You should now be able to send AT commands to the Bluetooth bee.



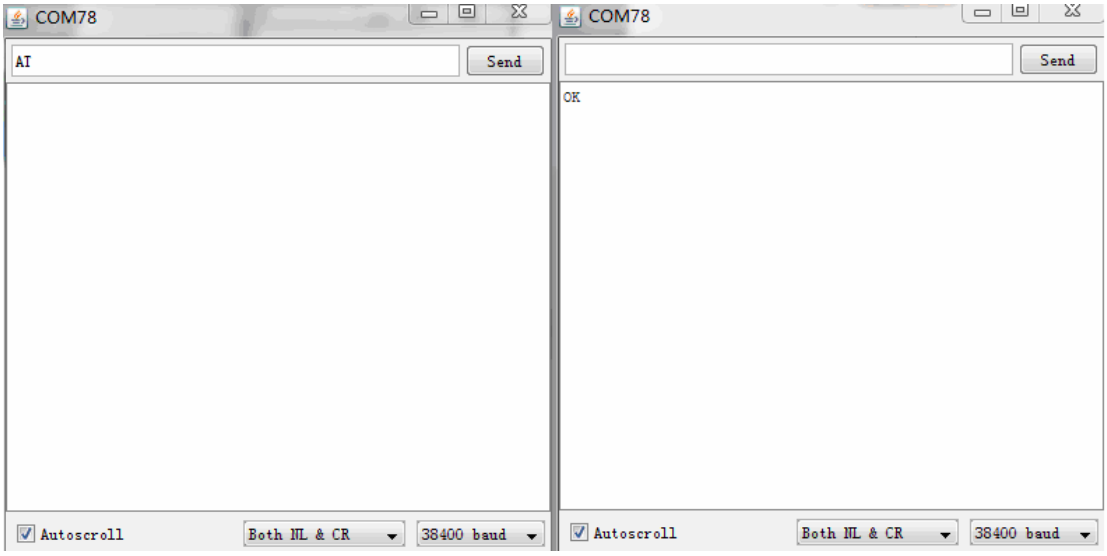
AT Mode default baud rate:38400bps

Using Xbee USB adapter to set the module

Test Command

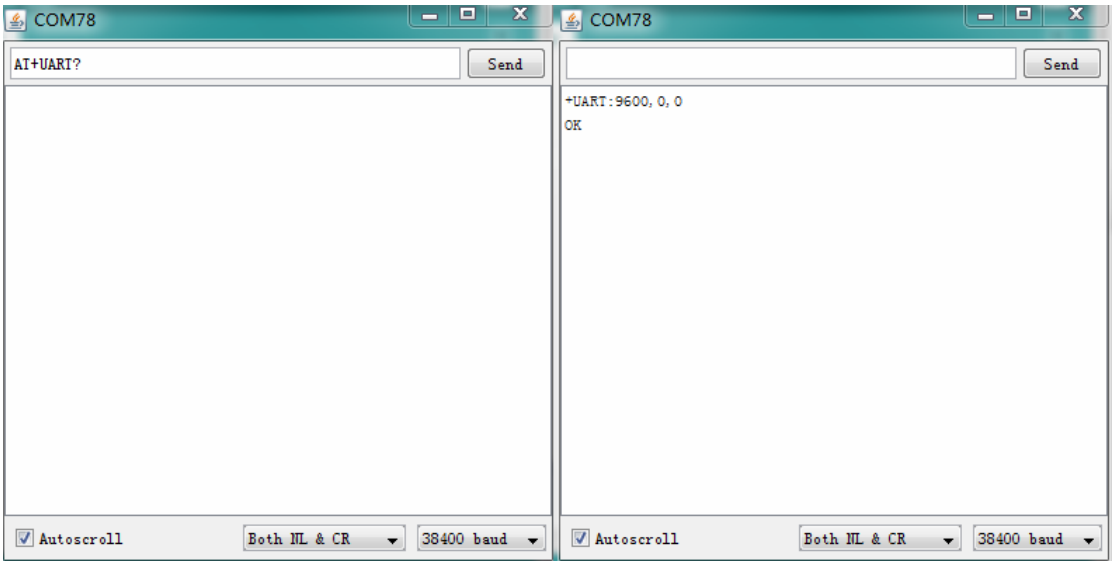
- Transmit:AT
- Return:OK

(No Carriage Return is Required)



Query UART Setting

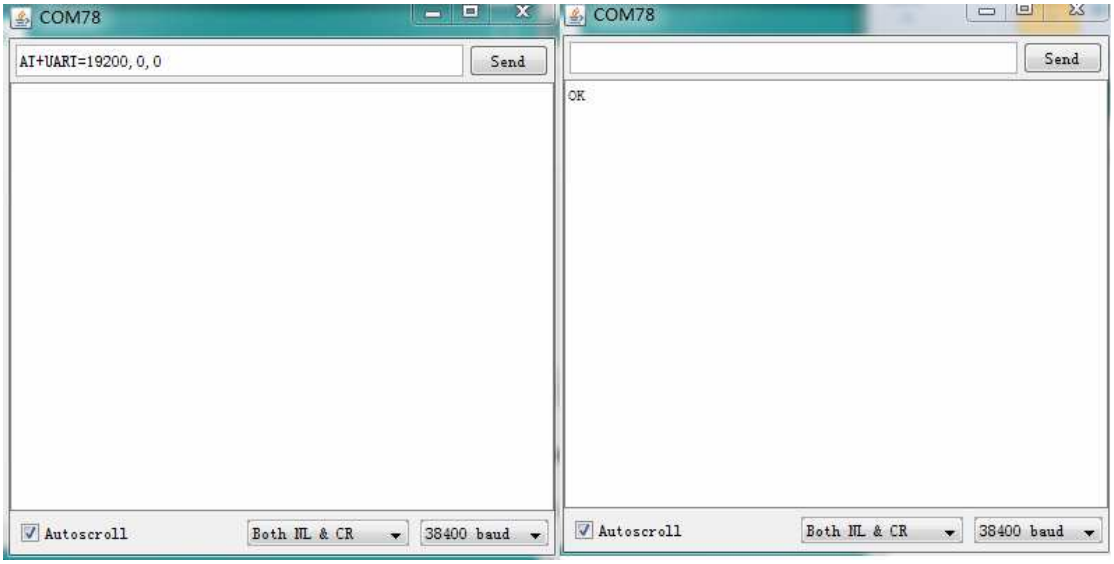
- Transmit：AT+UART?
- Return：+UART:9600,0,0
- Return：OK



Default setting is 9600 bps

Change Baud Rate

- Transmit：AT+UART=19200,0,0
- Return：OK



Change baud rate to 19200bps

AT+UART=<Param1>,<Param2>,<Param3>

Param1:Baud rate

- 4800
- 9600
- 19200
- 38400
- 57600
- 115200
- 230400
- 460800
- 921600
- 1382400

Param2: Stop bit

- 0-1bit
- 1-2bit

Param2: Parity bit

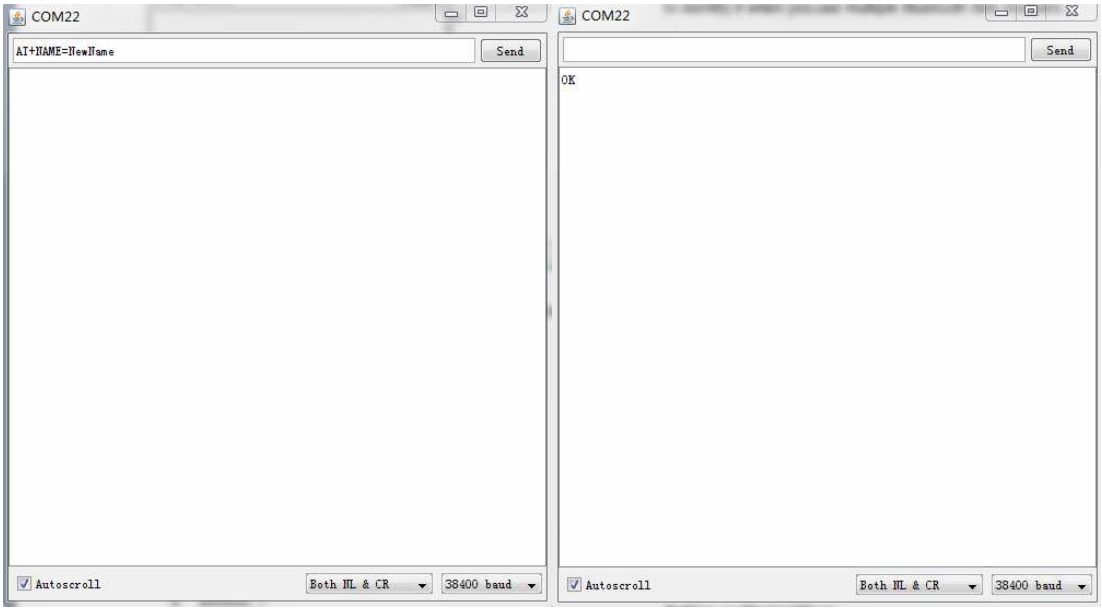
- 0-None
- 1-Odd
- 2-Even

Change Module Name

Bluetooth Bee default Name is ‘BluetoothBee’. You can also change this name by yourself to identify it when you use multiple Bluetooth Bee modules.

- Transmit：AT+NAME=<Param>
- Return：OK

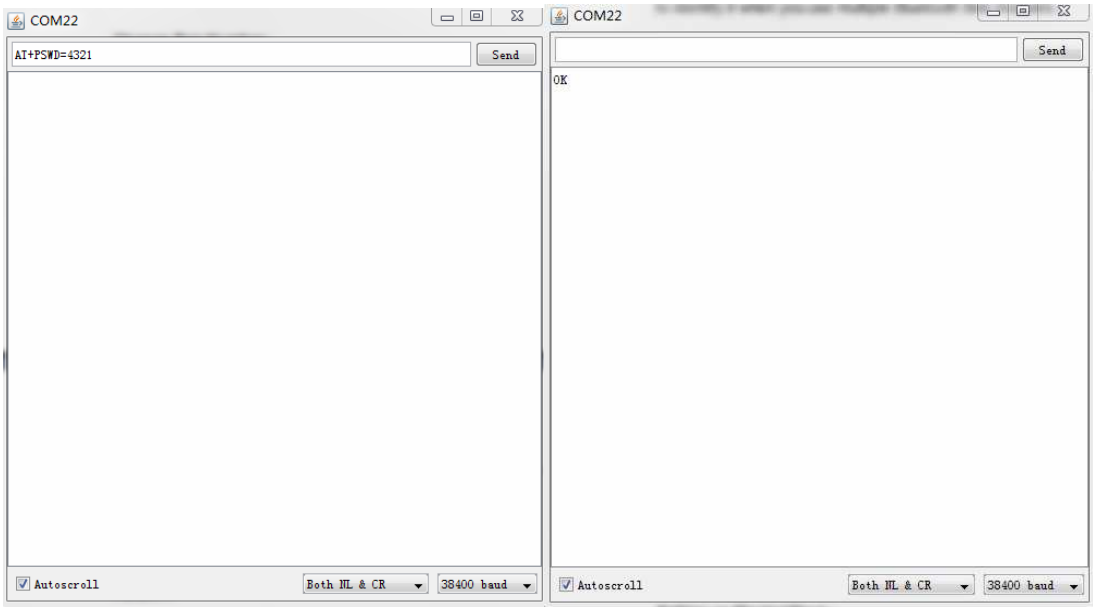
Param: New device name



Change Pair Number

- Transmit：AT+PSWD=<Param>
- Return：OK

Param: New Pair number



Setting as Master/Slave

- Transmit：AT+ROLE=1
- Return：OK

AT+ROLE=<Param1>

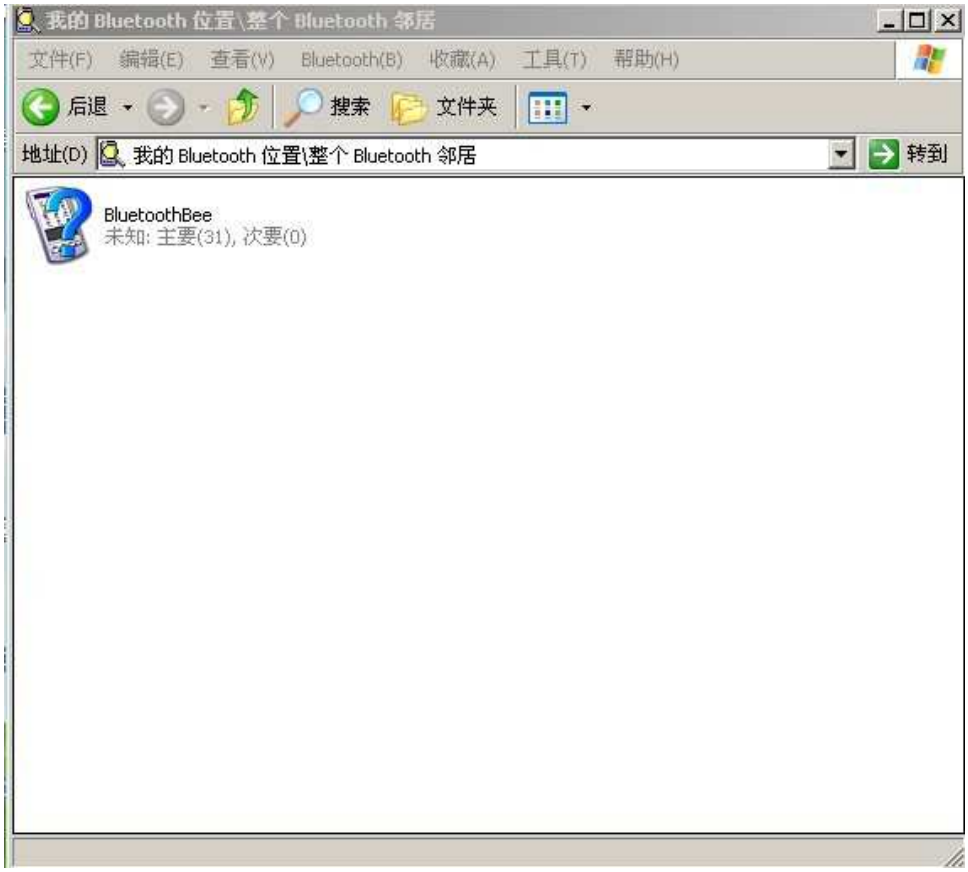
Param1:

- 0--Slave
- 1--Master
- 2--Slave-Loop

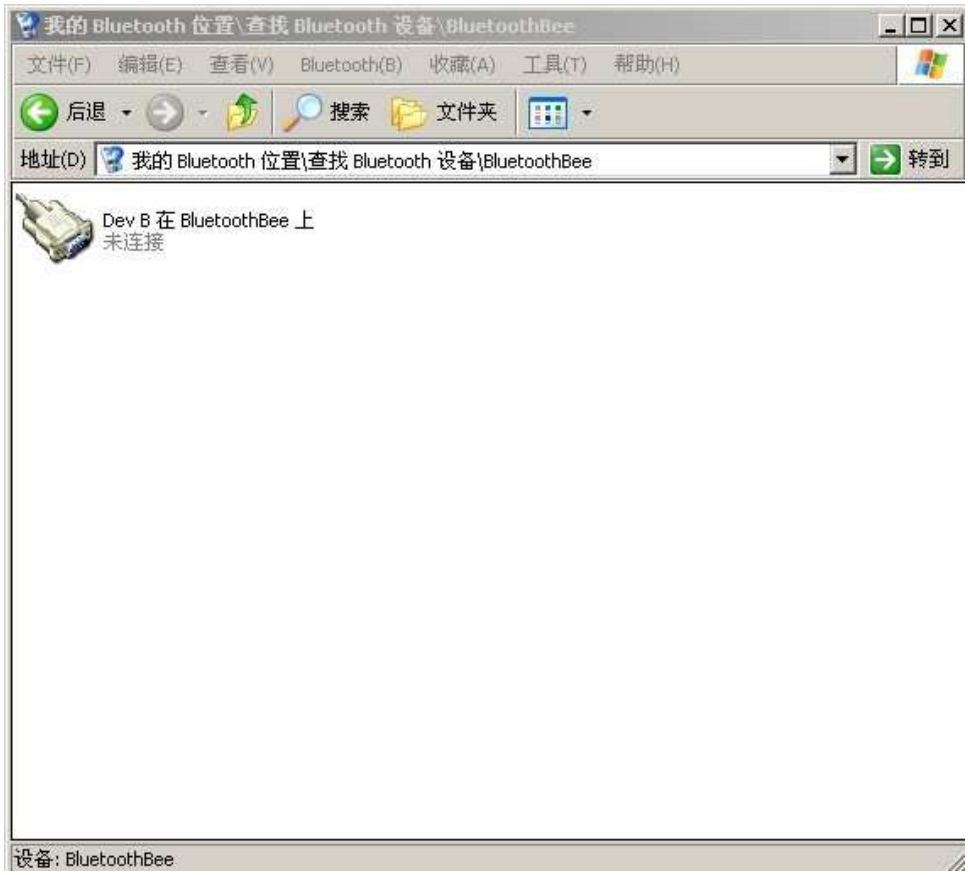
Bluetooth Bee work with Computer

First, you need a computer that support Bluetooth. And installed right driver. Turn on the Bluetooth Bee you will find LINK LED keep blinking.

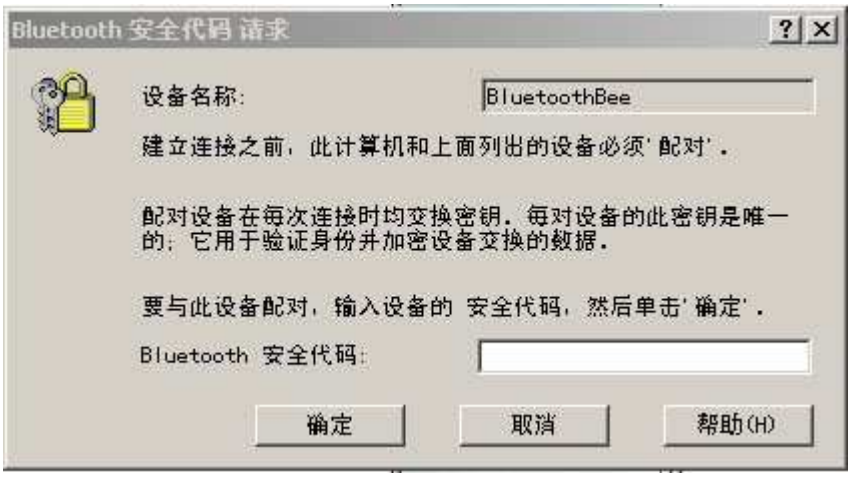
Searching new bluetooth device. You will find a new bluetooth device which named BluetoothBee

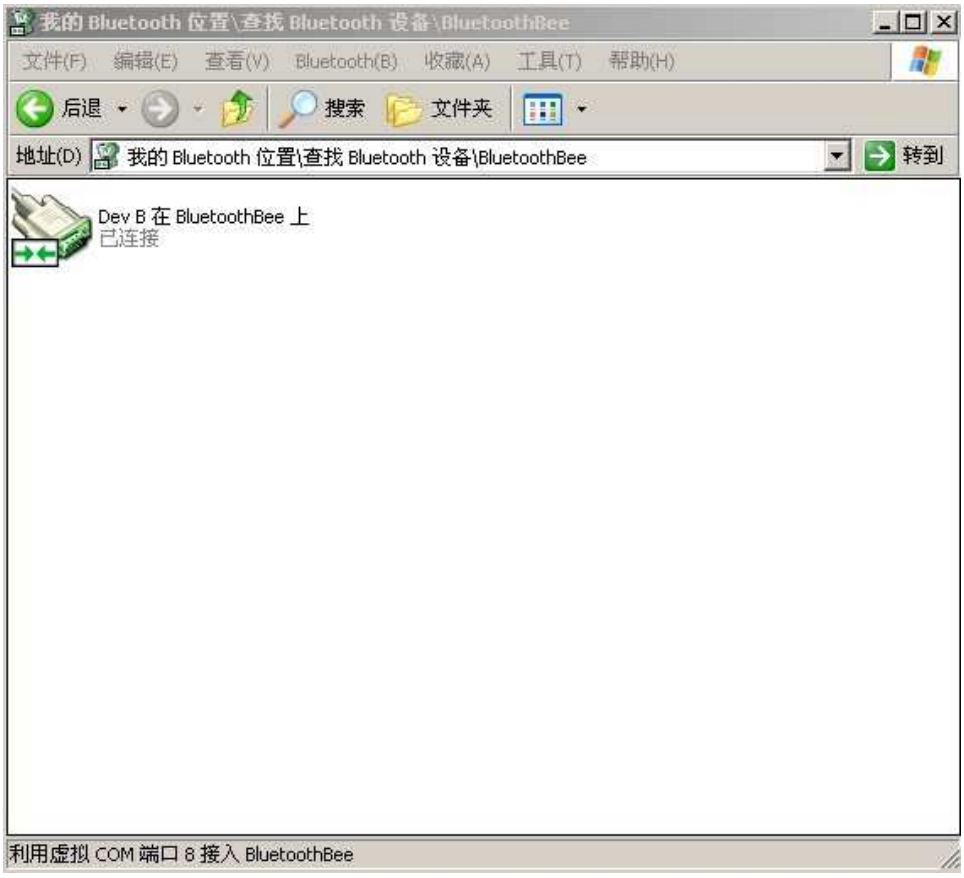


Double click open BluetoothBee



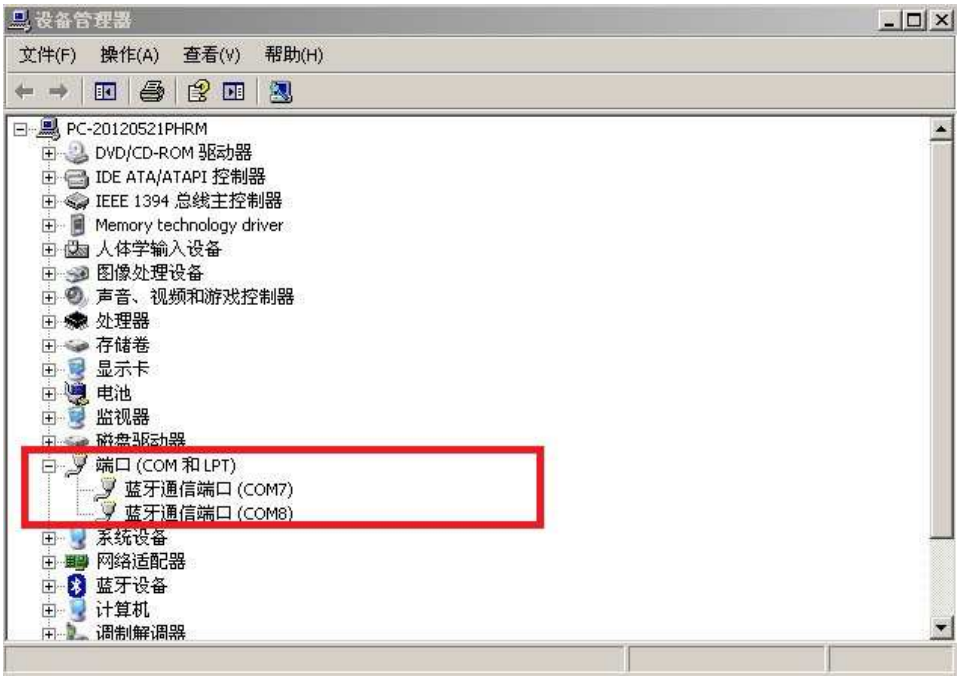
Enter the pairing code :1234





BluetoothBee bind with your computer

STATE LED on Bluetooth Bee light on.



Two new com port created. COM7 and COM8.
You can use COM8 send or receive data with Bluetooth Bee use Serial monitor.

Bluetooth Bee work with Bluetooth Bee

If you want two Bluetooth Bee work together. One of it must be set as Master and the other one be Slave.The 2 modules must have same pair number(default :1234) and Baud rate setting.

Step1:Set one Bluetooth Bee as Master

Turn on AT switch and then power on the module to entering AT mode and send AT command.

AT Command:

AT+CMODE=1

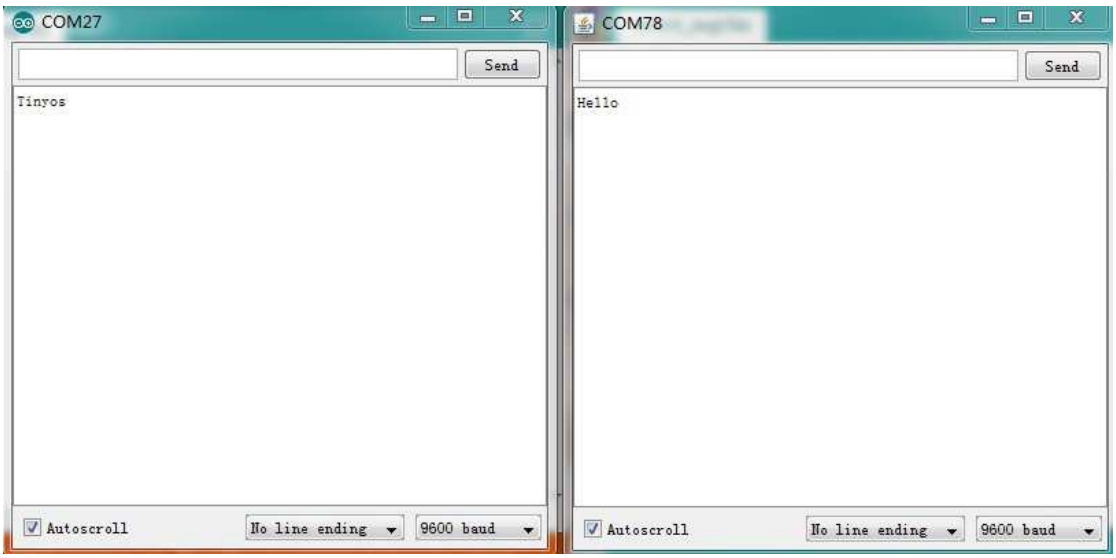
AT+ROLE=1

Step2:Bluetooth Bee automatic binding

Turn off Master module AT switch and Power two Bluetooth Bees.They will automatic binding and in transparent data mode.STATE LED will light on.

Step3:transparent data test

All 2 Bluetooth Bees stack on Xbee adapter and connected with PC. You will find 2 Com ports in Device Manager.

Bluetooth Bee STATE LED light on. This indicated that two modules Binding complete.

Open Arduino IDE Serial monitor. And send test text.