# BLUETOOH BEE (SKU:TEL0023)



## Contents

## Introduction

DFRobot Bluetooth Bee Bluetooth wireless module adapts XBEE design. It has compact size, 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 modules somes 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).

## Specifications

- Bluetooth chip: CSR BC417143
- Bluetooth protocol: Bluetooth Specification v2.0 + EDR, not compatible with BLE.

- 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

## Pin out
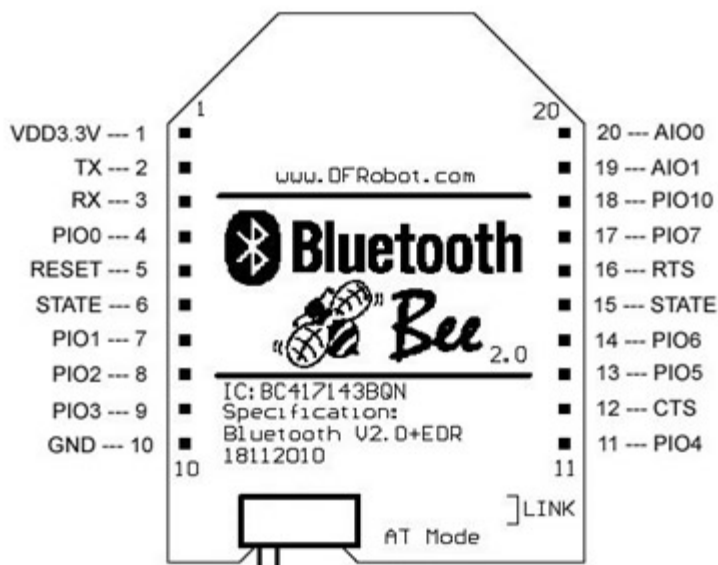


## Tutorial

You will learn how to check and set the BT module's settings by AT command, and it's easy to connect this module with you phone and other BT2.0 devices.

## Requirements

- **Hardware**
  Xbee USB adapter x1
  Bluetooth Bee x1
  Mini USB cable x1
- **Software**
  Arduino IDE V1.6.5 Click to Download Arduino IDE

## Connection

1. Put the switch on BT to "AT", right side in the picture;

2. Stack BT module and Xbee adapter together;

3. Connect the Xbee adapter with PC by USB cable, the LED is ON.



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## Enter AT mode

1. Launch the Arduino > Choose the port(COM) > Open Serial Monitor; (If the COM port didn't show up correctly, please install the driver for Xbee USB adapter.)

2. Choose "Both NL & CR ", "38400" > Send "at"/"AT" > Receive OK"";

3. Send "AT+UART?" > Receive serial settings.

4. Close Serial Monitor > Disconnect USB cable and the BT module with the adapter;

5. Remember to put the switch to left side: AT_off.
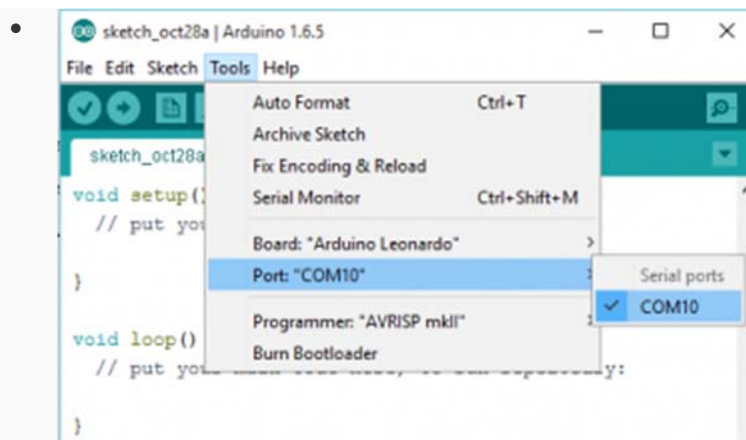


1
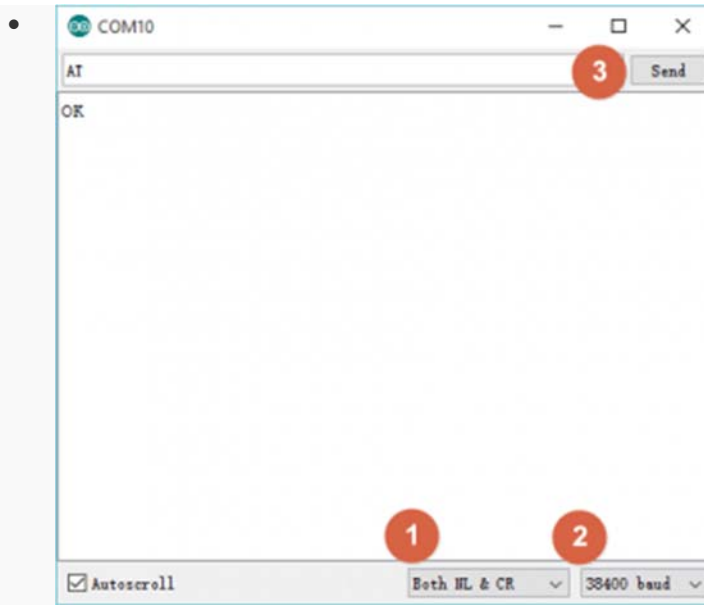
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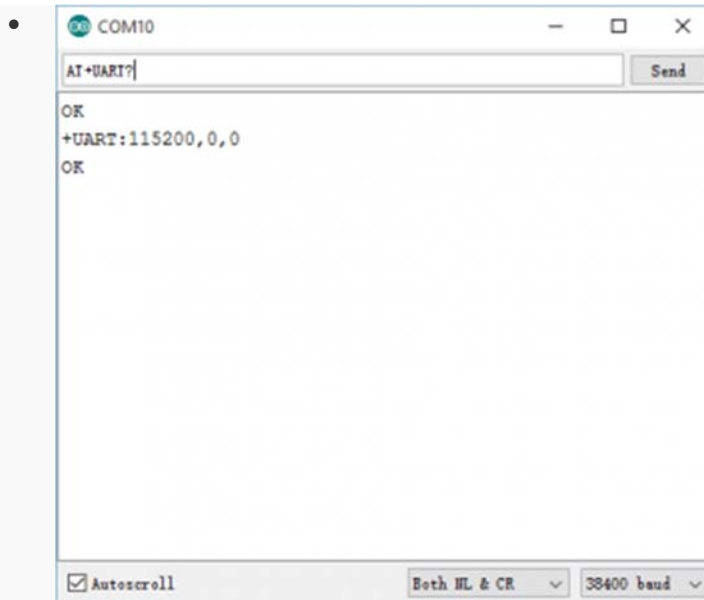


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## Typical AT command

- AT+RESET > OK: It works as power cycle.

- AT+ORGL > OK: Restore the default setting:
Device class: 0

Inquiry code: 0x009e8b33
Device mode: Slave mode
Binding mode: SPP
Serial port: 38400 bits/s; 1 stop bit, no parity
Pairing code: "1234"
Device name: "HHW-SPP-1800-2

- Set/Poll device name
  AT+NAME=<Para1> > OK: Set device name
  AT+NAME? > +NAME: ****/ FAIL: poll device name

- Set/Poll device role
  AT+ROLE= <Param> > OK : Param:0 – slave; 1 – Master; 2 – Slave-loop; Default: 0
  AT+ROLE? > +ROLE: <Param > OK

- AT+ADDR? > Return the address of the Bluetooth device

- Some other similar Set&Poll commands:
  AT+BIND=<Para1>/ AT+BIND?
  AT+PSWD=<Param>/ AT+PSWD?
  AT+UART=<Param1>,<Param2>,<Param3>/ AT+UART? > Default: 9600,0,0
  Param1: baud rate (bits/s): 4800/ 9600/ 19200/ 38400/ 57600/ 115200/ 230400/ 460800/ 912600/ 1382400
  Param2: stop bit: 0- 1 bit/ 1- 2 bits/
  Param3: parity bit: 0- None/ 1- Odd/ 2- Even

  All AT Commands.  http://image.dfrobot.com/image/data/TEL0026/TEL0026_Datasheet.pdf

## Communicate with other devices

Except the Apple devices and BLE module by DFRobot, the Bluetooth Bee are compatible with most computers/ phones with built-in Bluetooth module and other bt modules.

For any questions/advice/cool ideas to share, please visit **DFRobot Forum**.