

## Wireless Bluetooth V2.0 RS232 TTL Transceiver Module

This is the module I bought:

<http://dx.com/p/wireless-bluetooth-rs232-ttl-transceiver-module-80711> for US\$6.60

- The main properties:
- Band: 2.40GHz—2.48GHz , ISM Band
- Bluetooth protocol: Bluetooth V2.0 protocol standard
- Power Level: Class2 (+6dBm )
- Receiver sensitivity: -85dBm
- Operating Voltage: 3.3V (Threshold voltage: 3.0V~4.2V)  
With a floor
- voltage is:3.3V~5V;
- Temperature: -40°C ~+105°C
- Reference energy: Waiting for a search is 35 mA
- Connect on-line is about 8 mA

The transceiver module is easy to use and completely encapsulated. It allows your target device to both send and receive the TTL data via Bluetooth technology without connecting a serial cable to your computer.

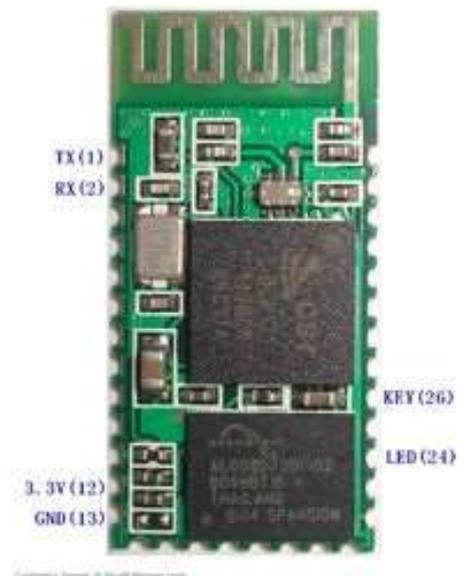
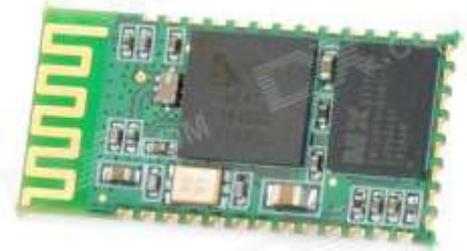
- User defined Baud rate: 1200, 2400, 4800, 9600, 19200, 38400, 57600, and 115200
- Default serial port setting: 9600, N, 8, 1
- Password: 1234
- forward error-correcting codes, automatic frequency-hopping anti-jamming ability.

Datasheet: <http://m2.img.dxcn.com/CDDriver/sku.80711.pdf>

### Connections

(pad with golden dot next to it is pin 1):

- 1: TX (data out)
- 2: RX (data in)
- 11: RESET (connect to ground to reset, pullup-resistor of 10K recommended)
- 12: VCC (3.3V)
- 13: GND
- 24: LED output (ON when there is a connection, BLINKS when there isn't).
- 26: KEY ????



## Bluetooth Module AT Commands Setup

I used a Picaxe 08M2 to send AT commands to the BT module. You don't have to connect both Tx and Rx. You only need one if you will be doing one-way transmission only. You do not have to acknowledge transmissions etc. The Bluetooth part handles all of that.

You can direct-connect TX/RX to the pins on the Picaxe. No need for a pull-up or pull-down resistor.

One tip when transmitting, as per the Serout description in the manual, set the line HIGH just before transmitting otherwise the first byte may be corrupted. See code below.

To change Bluetooth module settings;

- 1) Plug in serial download cable to breadboard, power up breadboard, download picaxe code using F5, then power down breadboard. Leave the serial cable plugged in and press F8 to see response from picaxe to confirm settings have been applied.
- 2) Power up breadboard and wait...you should see in the terminal window confirmation that the module has been renamed. It is a one-time run programme, so power down when you have confirmation that the settings have been changed.

### 08M2 code:

```
'Run at 4.5 volts but put 4001 power diode in series with + side of BT module to drop voltage to safe operating range. Ignore diode if running at 3V
```

```
'connect BT TX and RX to picaxe, and BT GND to picaxe GND, Vcc as above via diode that's it!
```

```
'44 = comma
```

```
'13 = CR
```

```
'10 = LF
```

```
#picaxe 08m2          ' directive to define target controller
```

```
#no_data            ' directive that there is no eeprom data to load; speeds up download
```

```
symbol BTtxPin = 1   'picaxe pin 1 is rx'er FROM module
```

```
symbol BTrxPin = 2   'picaxe pin 2 is tx'er TO module
```

```
pause 2000           'give BT module time to power up
```

```
'main programme starts here:
```

```
setfreq m8
```

```
high BTtxPin
```

```
serout BTtxPin, T9600_8, ("AT+NAMEB9_Robot") 'DO NOT use = (equals) sign after AT+NAME
```

```
serin [1000,SendError],BTrxPin,T9600_8, b0
```

```
sertextd ("OK",13,10) 'show on terminal screen
```

```
sertextd ("New name is B9_Robot",13,10,13,10) 'show on terminal screen
```

```
SendError:
```

```
low BTtxPin
```

```
sertextd ("DONE",13,10) 'show on terminal screen
```

```
end
```

## AT command codes:

### A、 Test communications

Send: AT (back OK, about once a second)

Returns: OK

### B、 Bluetooth Serial communication baud rate change :

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

### C. Change the module name (max. 20 characters).

Send: AT + NAMEname

Returns: Okname

For example:

sending AT + NAMEbill\_gates

Back OKname

### D、 Modify the Bluetooth pairing password :

Send: AT + PINxxxx

Returns: OK setpin

Parameter xxxx: password pair to be set, 4 bytes, this command can be used from a machine or the host. Slave adapter or cell phone is asked to enter matching password pop-up window, then manually enter this parameter can connect from the machine. The host is using the main Bluetooth module with digital camera, digital camera from the machine, find the camera matching password, and then entered the Bluetooth module is located, then the master Bluetooth module can automatically connect the camera.

For example:

Send: AT + PIN8888

Returns: Oksetpin

Bluetooth pairing password then changed to 8888, the module pair at the factory default password is 1234.