

Bluetooth to RS-232 Converter

RT-132B Bluetooth Adaptor Operation Manual



First Edition, Nov 2007

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Introduction

Thank you for your purchase of RT-132B as the Bluetooth To Serial Adapter. Featuring Bluetooth wireless technology, It is for replacement of standard RS232 cable perfectly, with standard RS232 interface, so it can be easily adopted for industrial machines with RS232 interface. RT-132B is compatible with all Bluetooth V.2.0-certified and is backward compatible with v1.1/1.2 devices. You can connect between your computers (Master) and RS232 devices (Slave) 100 meters away without cables in your working environments.

Security of Bluetooth wireless communication is very strong because it use the frequency hopping and 128bit encryption in 2.4Ghz frequency range. Hardware setting is very easy and simple. The maintenance is very convenience too. One pair of RT-132B will try to connect automatically whenever powered on after finishing the device's parameters configured. It does not require extra software for operation. No installation of driver and application software.

System OS requirements as Win 98/Me/2000/XP/XP x64.

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Package checklist

RT-132B product is shipped with the following items:

- 1 unit of RT-132B Bluetooth to RS232 converter with Antenna
- 1 unit of Power Adaptor (5V DC, 200mA)
- Quick Installation Guide
- Software CD

NOTE: Notify your sales representative if any of the above items is missing or damaged

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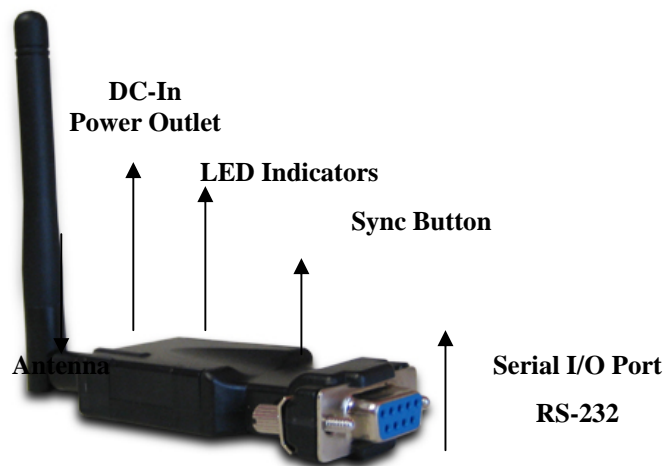
Product Specification

- Serial Port
 - No. of Port : RS-232 * 1 Port
 - Port Type : DB9 female
 - Speed : 1200 bps ~ 115.2K bps
 - Parity : None , Odd , Even
 - Data Bit : 8
 - Stop Bit : 1 , 2
 - Flow Control : DTR / DSR
 - Socket Status/Control : DTR/DSR
 - RS-232 Signals : Rx , Tx , GND , RTS , CTS , DTR , DSR
- Bluetooth I/O Port
 - No. of Port : Bluetooth * 1 Port
 - Compliant with Bluetooth v2.0+EDR
 - Support Bluetooth Serial port profile(SPP)
 - Operate in 2.4GHz – 2.483GHz ISM Band
 - Support Bluetooth Radio with Class 1 & 2 RF
 - Operating Distance up to 100 Meters
- Power : 5V DC / 200mA, Consumption 80mA
- Led Lamp :
 - SYS (red), Pairing (green)
- Environment : Operating Temperature: 0°C ~ 60°C
Storage Temperature : -25°C ~ 70°C
- Dimensions : 65 * 30 * 12 mm (W * D * H not include antenna)
- Weight : 35 gm (not include power)

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Product Panel Views Description

RT-132B Product Views



DC-In Power Outlet

The RT-132B Bluetooth to RS232 is powered by a single 5V DC (Inner positive / outer negative) power supply and 200mA of current. A suitable power supply adapter is part of the packaging. Connect the power line to the power outlet beside of antenna connector and put the adapter into the socket. If the power is properly supplied, the red color LED will be on.



Antenna Connector

The connector for antenna is a standard Reverse SMA jack. Simply connect it to a 2.0dBi dipole antenna and it is 50 Ohms impedance and can support 2.4GHz frequency. (The Antenna is changeable for high gain Antenna)

Serial I/O Port of RS-232



Connect the serial I/O RS-232 port into the device as like computers and serial devices. (RS-232 RX/TX has been CROSS OVER)

Set-up Button



The purpose is for synchronizing between RT-132B device and “BT RS232 Config Tool” software. After finishing the parameter setup of “BT RS232 Config Tool” software, when you click the icon of “Connect” in “BT RS232 Config Tool” software and then use any point tip to push this button immediately on the left side of the device. You will see the icon of “Connect” turn into “Disconnect” and this is meaning successful to active the device.

LED Indicators



Red Color LED :

Power indicator (When the power is on, the red color LED will be on all the time)

Green Color LED :

Before connecting to synchronize between the device and the “BT RS232 Config Tool” software, the green LED will be blinking

After connecting to synchronize between the device and the “BT RS232 Config Tool” software, the green & red LED will be blinked alternately

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RT-132B Hardware Installation

1. Connect RT-132B Bluetooth adapter to COM Port of PC and then to connect DC power adapter and jack into power outlet and DC-in outlet. You will see the red LED is going to be on and the green LCD will be blinked.
2. After running the BT RS232 Config Tool and finish configuration. Click the icon of “Connect” in tool software and press the SET-UP button of RT-132B Bluetooth adapter immediately.
3. The green LED will be turn on. The E-BT232 Bluetooth adapter is active.

There are two types of RS232 devices in field. One is DTE - Data Terminal Equipment (such as a PC) and the other one is DCE - Data Communication Equipment (such as a Modem). You can setup your E-BT232 device as what type of the RS232 device you are going to connect in DTE or DCE mode to work with it.

At DCE device side meaning is to connect a DTE E-BT232 to the remote DCE RS232 device (such as a Modem). On the contrary, DTE device side to connect a DCE E-BT232 to any DTE device, such as a computer device. For example, you can connect a remote modem with a DTE E-BT232 and meanwhile at PC side, you can either connect a DCE E-BT232 to it.

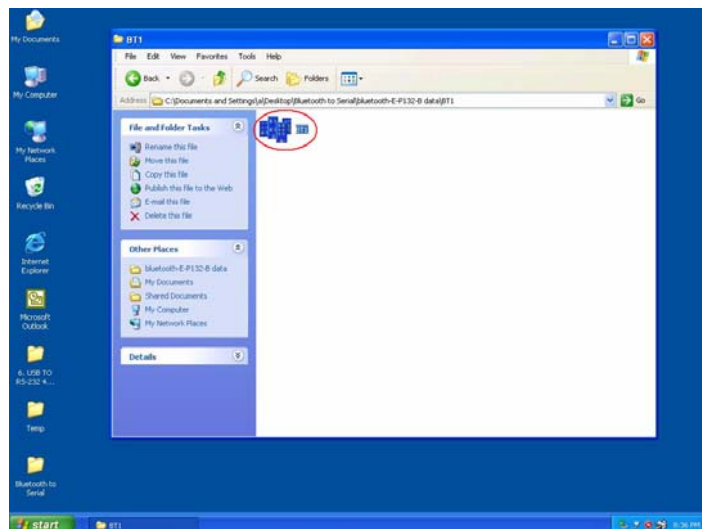
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BT RS232 Config Tool Installation & Setup

When setting up RT-132B adapter for the first time, you have to install and run “BT1.exe” as “BT RS232 config tool” first in your computer device. The utility CD is enclosed in the device box. Before you use RT-132B adapter, you have to pair it with another E-BT232 device.

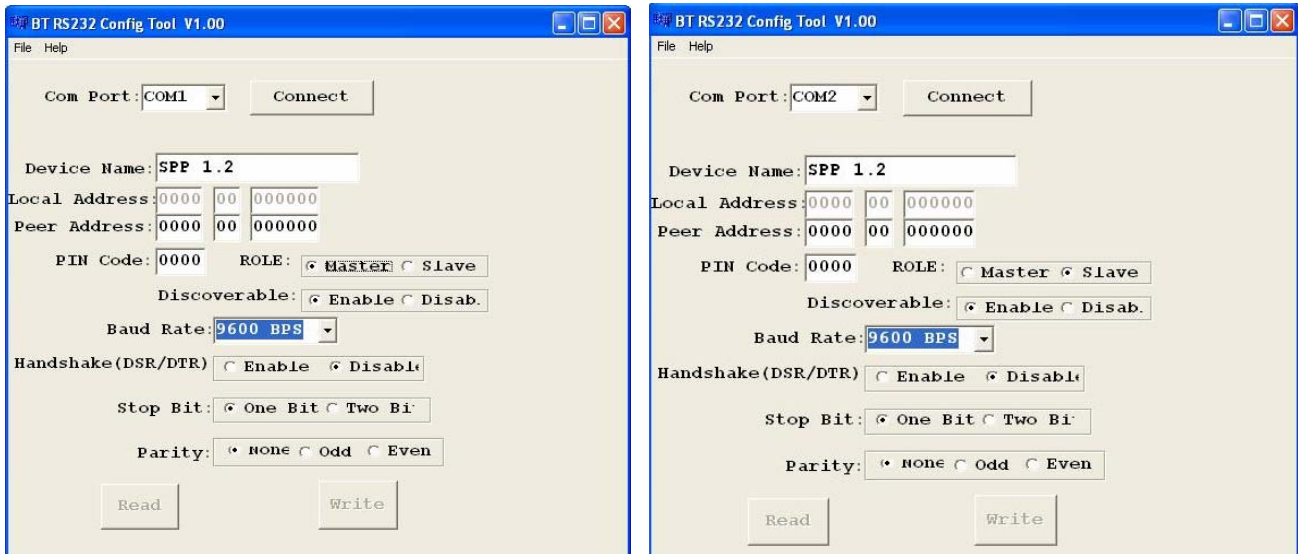
All the RT-132B Bluetooth to RS-232 Adapters must be configured first before you use it. The purpose of configuration is to pair two RT-132B devices for an exclusive connection between them, and pairing is done by utilizing Bluetooth address and PIN code

● Tool Installation



When setting up RT-132B adapter for the first time, you have to install the utility software of “BT RS232 config tool” in your computer first which is an executable program in Windows 32 bit environments. RT-132B config tool is used to detect and setup the installed.

● RT-132B Config Tool Parameters Configuration



After double click the icon of BT1 as “BT RS232 Config Tool”, the configuration screen will be pop-up as the above picture.

A. COM Port

Select COM port number, you have to avoid the port conflict with other device in computer and use available port number

B. Device Name

Select device name is for identify each one device and you can follow the name by tool access or retyping the new name by yourself.

C. Local Address

Local address will be automatically changed after finishing the parameter configuration to apply.

D. Peer Address

Peer address is for two or more devices to communicate in a same network address.

E. PIN Code

PIN code is for the purpose of security consideration during as like a pass key. Device uses this “PIN Code” to identify during connecting and communication.

F. Role

Role is for identifying a role of the device as a master or slave. The item of “Role” is chose “Master”. The device will be play like a DTE mode - Data Terminal Equipment (such as a PC). If the item of “Role” is chose “Slave” and the device will be play like a DCE - Data Communication Equipment (such as a Modem)

You can setup your E-BT232 device as what type of the RS232 device you are going to connect in DTE or DCE mode to work with it.

G. Discoverable

The item of discoverable is for allowing (or not) the device is detected by other Bluetooth devices.

H. Baud Rate

The item of baud rate is for the pack transmission speed. The baud rate range is from 1200 bps~115.2K bps and depend on transmission distance and environments. Normally, the parameter of baud rate is sat around 9600 bps N, 8 ,1,.

I. Handshake(DSR/DTR)

The item of handshake is sat at the “Disable” item.

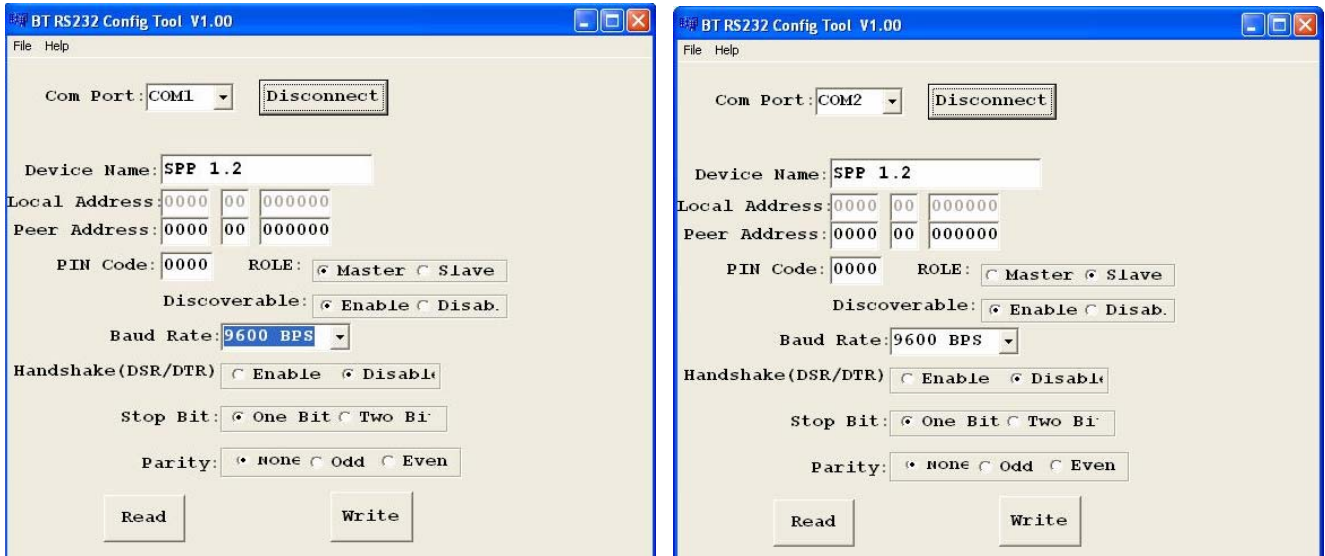
J. Stop Bit

The item of stop bit is sat at the “One Bit” item.

K. Parity

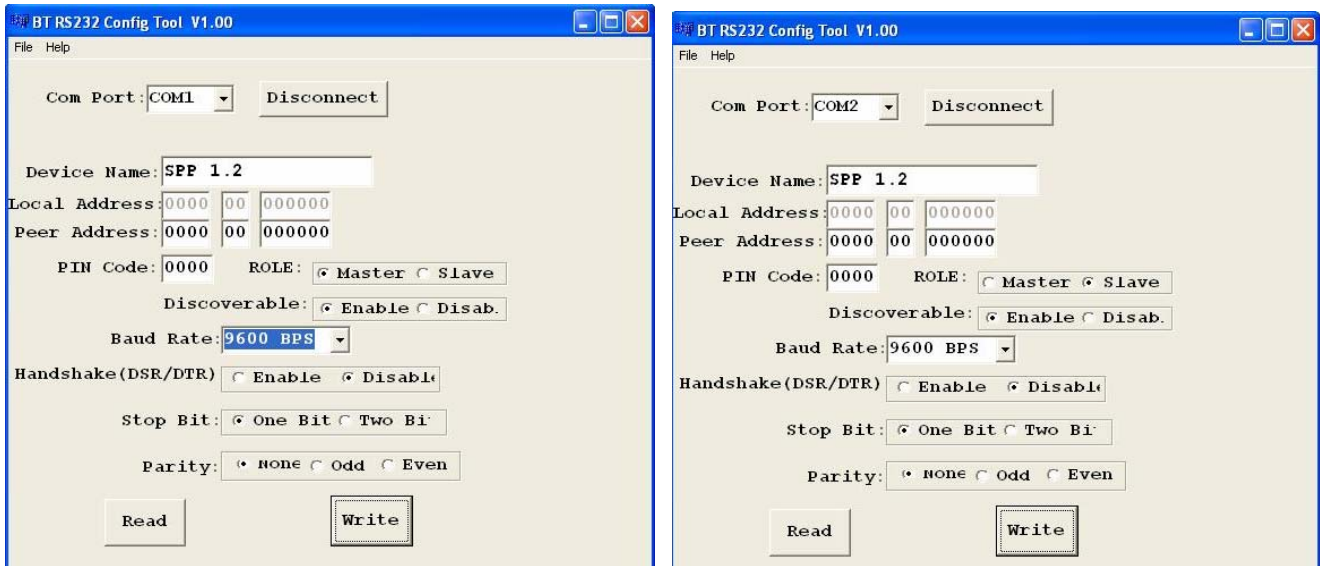
The item of parity is sat at the “None” item.

Apply “Connect”



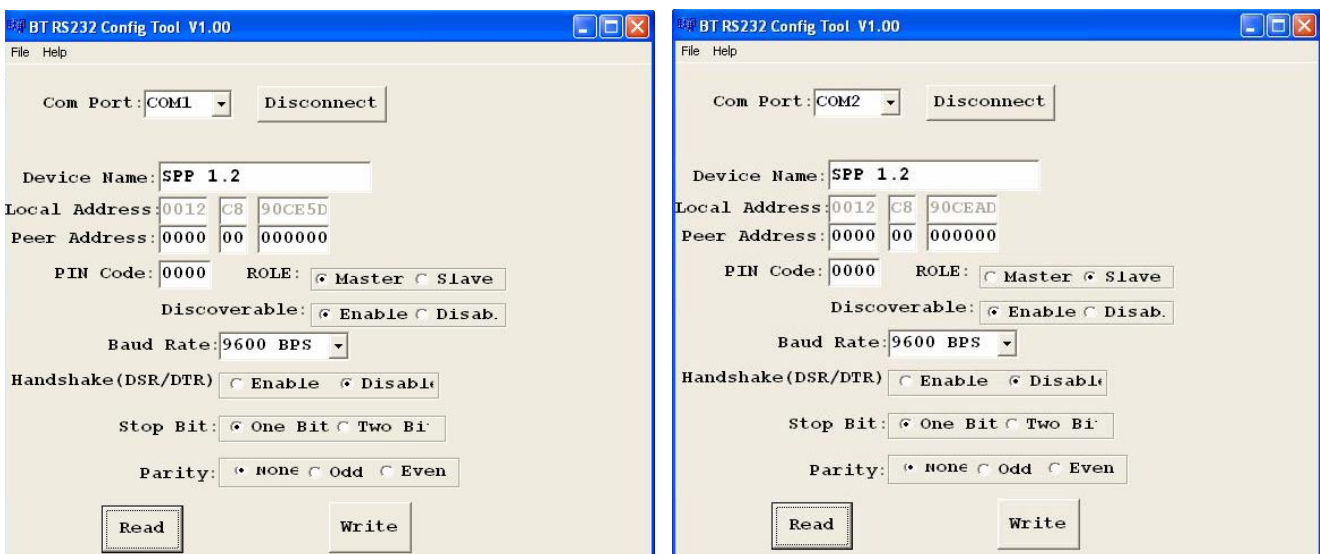
After finish the parameters configuration, click the icon of “Connect” in BT RS232 Config Tool screen and meanwhile press the SET-UP button immediately on the left side of the device. And then the next screen of parameters configuration is pop-up. The icon of “Connect” is changed to “Disconnect” and two icons will be turned into active mode on the bottom of the BT232 Config Tool screen.

Apply “Write”



To click the item of “Write”, the meaning is to save all parameters after configuring into the “BT RS232 Config Tool”.

Apply “Read”

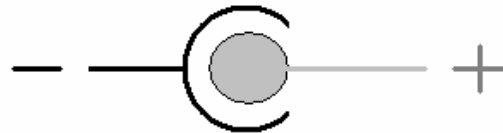
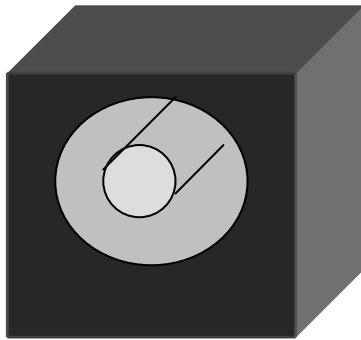


To click the item of “Read”, the meaning is to load all parameters as last time saving from the “BT232 Config Tool”. The local address will be updated the real device address at first time.

Appendix A

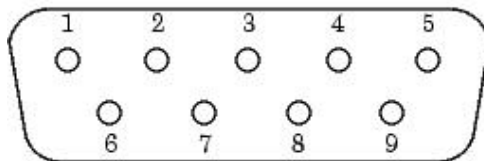
Pin outs and Connector

□ **DC Power outlet**



□ **RS-232 Pin Assignment**

The pin assignment scheme for a 9-pin male connector on a DTE is given below.



PIN 1 : X PIN 2 : TXD PIN 3 : RXD PIN 4 : DSR
 PIN 5 : GND PIN 6 : DTR PIN 7 : CTS PIN 8 : RTS
 PIN 9 : DC 5V

□ **RS-232 Wiring Diagram**

Serial Device

RT-132B Converter

2	RX	2	TX	
3	TX	3	RX	
5	GND	5	GND	
4	DTR	4	DSR	(Flow Control)
6	DSR	6	DTR	(Flow Control)