

# **Bluetooth TO Serial CONVERTER**

**E-P132-B**



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# Introduction

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Thank you for your purchasing 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. E-P132-B 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 uses the frequency hopping and 128bit encryption in 2.4 GHz frequency range. Hardware setting is very easy and simple. The maintenance is very convenience too. One pair of E-P132-B 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.

# Package checklist

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E-P132-B product is shipped with the following items:

- 1 unit of E-P132-B Bluetooth to RS232 converter with 2 dBi Antenna
- 1 unit of Power Adaptor ( 5V DC, 200mA )
- Documentation & Software CD

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

# Product Specification

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- Serial Port

No. of Port : RS-232 \* 1 Port

- Port Type : DB9 female ( RX / TX , DTR / DSR , RTS / CTS )  
( have been cross over )

- Speed : 1200 bps ~ 115.2K bps
- Parity : None , Odd , Even
- Data Bit : 8
- Stop Bit : 1 , 2
- Flow Control : DTR / DSR
- RS-232 Signals : Rx , Tx , GND , RTS , CTS , DTR , DSR

- Bluetooth Port

No. of Port : Bluetooth \* 1 Port

- Compliant with Bluetooth v1.2
- 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

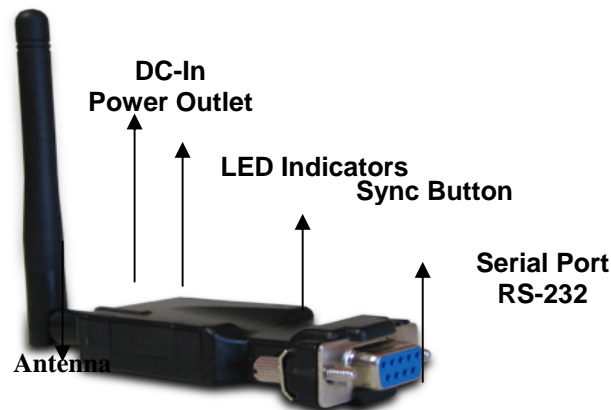
- Dimensions : 65 \* 30 \* 12 mm ( W \* D \* H not include antenna )
- Weight : 35 gm ( not include power )

**Note: Changes or modifications are not expressly approved by the manufacturer could void the user's authority to operate the equipment**

# Product Panel Views Description

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## Product Views



### DC-In Power Outlet

The E-P132-B 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 Port of RS-232



Connect the serial RS-232 port into the device as like computers and serial devices. ( RS-232 RX/TX , DTR / DSR , RTC / CTS have been cross over )

## Set-up Button



The purpose is for synchronizing between E-P132-B 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 to set-up mode.

## 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.



# Hardware Installation

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1. Connect E-P132-B 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 E-P132-B Bluetooth adapter immediately.
3. After connecting to synchronize between the device and the “ BT RS232 Config Tool” software, the green & red LED will be blinked alternately.

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-P132-B 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 RS-232 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 RS-232 and meanwhile at PC side, you can either connect a DCE RS-232 to it.

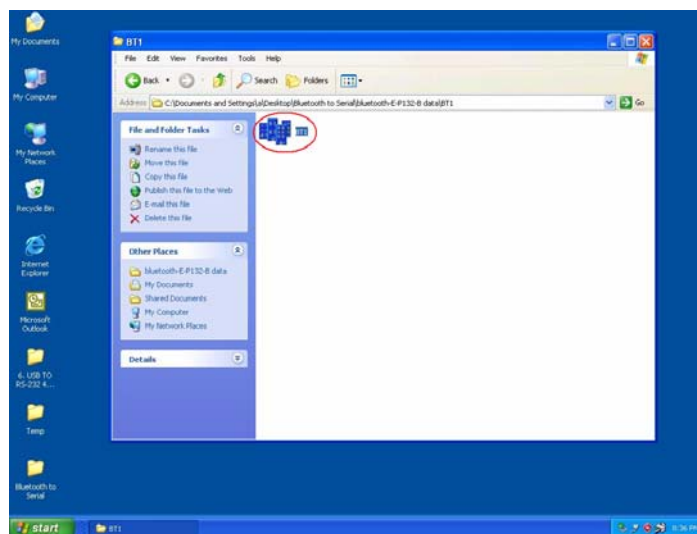
# BT RS232 Config Tool Installation & Setup

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When setting up E-P132-B 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 E-P132-B adapter, you have to pair it with another E-BT232 device.

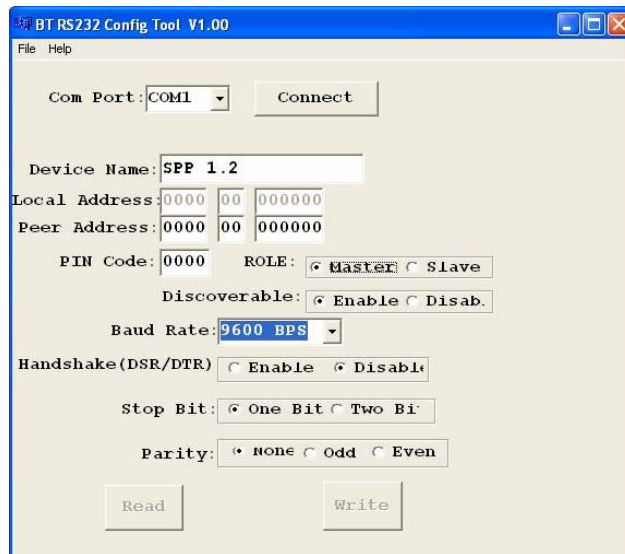
All the E-P132-B Bluetooth to RS-232 Adapters must be configured first before you use it. The purpose of configuration is to pair two BT RS232 devices for an exclusive connection between them, and pairing is done by utilizing Bluetooth address and PIN code

## ● Tool Installation



When setting up E-P132-B 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. BT RS232 config tool is used to detect and setup the installed.

## ● BT RS232 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 retying 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 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-P132-B 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.

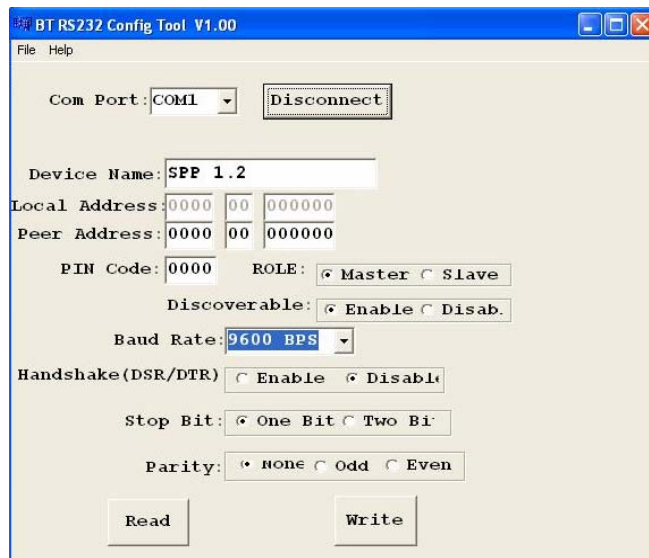
## **J. Stop Bit**

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

## **K. Parity**

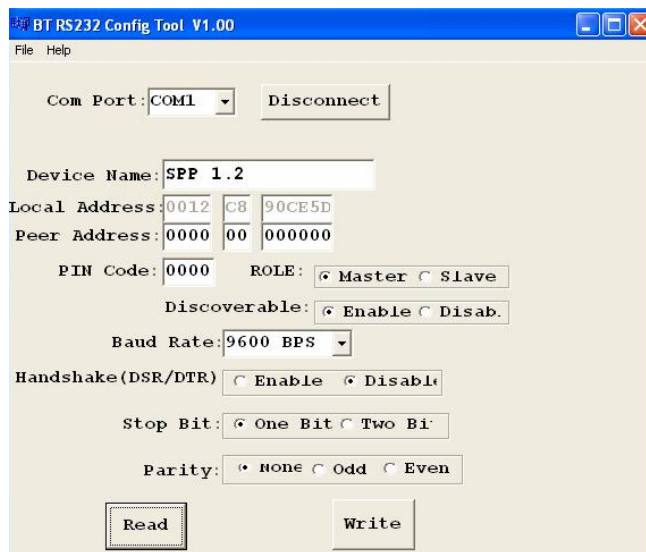
The item of parity is sat at the “None” item.

## 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 BT RS232 Config Tool screen.

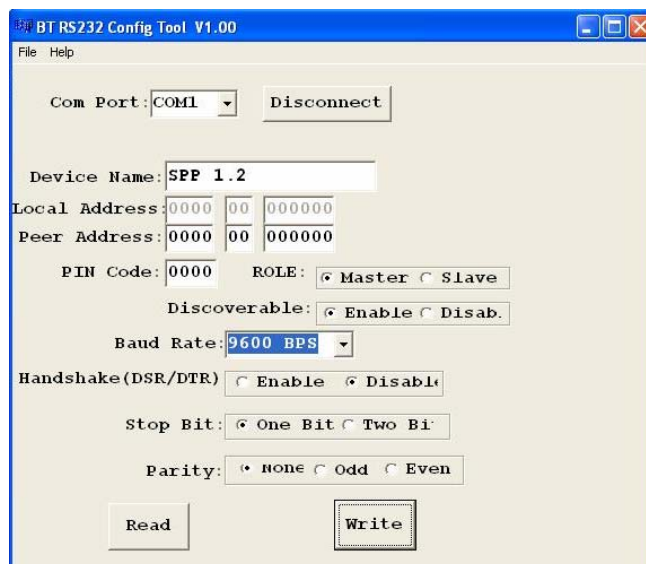
## Apply “Read”



The screenshot shows the 'BT RS232 Config Tool V1.00' window. The 'Com Port' is set to 'COM1' and 'Disconnect' is a button. The 'Device Name' is 'SPP 1.2'. The 'Local Address' is '0012 C8 90CE5D'. The 'Peer Address' is '0000 00 000000'. The 'PIN Code' is '0000'. The 'ROLE' is 'Master' (selected). The 'Discoverable' option is 'Enable' (selected). The 'Baud Rate' is '9600 BPS'. The 'Handshake (DSR/DTR)' is 'Disable' (selected). The 'Stop Bit' is 'One Bit' (selected). The 'Parity' is 'None' (selected). The 'Read' button is highlighted with a red border, and the 'Write' button is also visible.

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.

## Apply “Write”



The screenshot shows the 'BT RS232 Config Tool V1.00' window. The 'Com Port' is set to 'COM1' and 'Disconnect' is a button. The 'Device Name' is 'SPP 1.2'. The 'Local Address' is '0000 00 000000'. The 'Peer Address' is '0000 00 000000'. The 'PIN Code' is '0000'. The 'ROLE' is 'Master' (selected). The 'Discoverable' option is 'Enable' (selected). The 'Baud Rate' is '9600 BPS'. The 'Handshake (DSR/DTR)' is 'Disable' (selected). The 'Stop Bit' is 'One Bit' (selected). The 'Parity' is 'None' (selected). The 'Write' button is highlighted with a red border, and the 'Read' button is also visible.

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

# Appendix A

## Pin outs and Connector

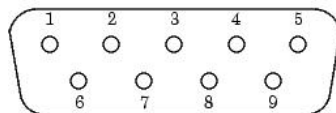
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### ❑ DC Power outlet



### ❑ 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 ( Optional )

### ❑ RS-232 Wiring Diagram

Serial Device	Converter
2 RX	2 TX
3 TX	3 RX
5 GND	5GND
4 DTR	4 DSR
6 DSR	6 DTR

(Flow Control)

(Flow Control)

## Remark

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device uses, generates and radiated radio frequency energy. The radio frequency energy produced by this device is well below the maximum exposure allows by Federal Communications Commission(FCC).