# antaira

# BTS-1000A
## Bluetooth to RS-232 Converter

## Operation Manual
Version 1.0

# antaira
www.antaira.com

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# 1
# Introduction

Thank you for purchasing the BTS-1000A Bluetooth to Serial Adapter. The BTS-1000A replaces standard RS-232 cables by utilizing Bluetooth wireless technology.  The BTS-1000A uses standard RS-232 interface, so it can be easily adapted for industrial machines with RS-232 connection.  The BTS-1000A is fully compatible with Bluetooth v2.0 and is backward compatible with v1.1/1.2 devices. With the BTS-1000A, you can easily connect your computers (Master) to RS-232 devices (Slave) 100 meters away without needing cables in your working environments.

The BTS-1000A uses the frequency hopping and 128bit encryption in the 2.4 GHz frequency range to ensure a secure connection.  Configuration and setup is very simple with the BTS-1000A.  Once paired, a pair of BTS-1000A will try to automatically connect when powered on.  The BTS-1000A does not require driver installation or extra software to operate.

# 2
# Package checklist

The BTS-1000A is shipped with the following items:

- 1 x BTS-1000A Bluetooth to RS-232 Adapter with Antenna
- 1 x Power Adapter (5V DC, 200mA)
- Quick Installation Guide
- Setup Utility Software CD

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

# 3
# Product Specification

- Serial Port
  
  No. of Ports: RS-232 * 1 Port
  - Port Type: DB-9 female
  - 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 I/O Port
  
  No. of Ports: Bluetooth * 1 Port
  - Compliant with Bluetooth v2.0+EDR
  - Supports Bluetooth Serial port profile(SPP)
  - Operates in 2.4GHz – 2.483GHz ISM Band
  - Supports Bluetooth Radio with Class 1 RF
  - Operating Distance up to 100 Meters
- Power: 5V DC / 200mA, Consumption 80mA
- LED Indicator: SYS (red), Pairing (green)
- Environment: Operating Temperature: 0° ~ 60°
  
  Storage Temperature: -25° ~ 70°
- Dimensions: 65 * 30 * 12 mm ( W * D * H without antenna )
- Weight: 35g ( without power adapter )

# 4

## Product Panel View Description

## BTS-1000A Product View
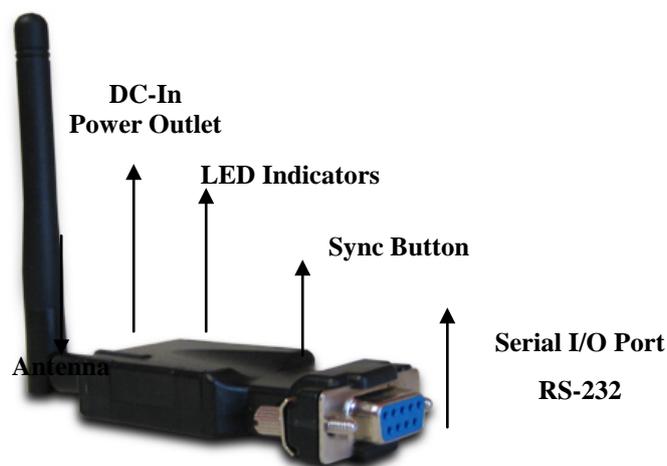


### DC-In Power Outlet

The BTS-1000A Bluetooth to Serial Adapter is powered by a single 5V DC (Inner positive / outer negative) power supply and 200mA of current.   A suitable power supply adapter is included in the packaging.   Connect the power line to the power connector next to the antenna connector and plug the power adapter into a power outlet.   If power is properly supplied, the red LED will turn on.

**Antenna Connector**

The antenna connector is a standard Reverse SMA jack. The 2.0 dBi dipole antenna has 50 Ohms impedance and can support 2.4GHz frequency. (The Antenna is changeable for higher gain Antennas)

**Serial I/O Port of RS-232**



Connect the serial I/O RS-232 connector into devices like computers and other serial devices. (RS-232 RX/TX has been CROSSED OVER)

**Synchronous Button**



The Sync button is used to synchronize BTS-1000A devices using the BT RS232 Config Tool software. After setting the desired parameters and clicking the "Connect" button in the BT RS232 Config Tool software, use any point tip to push this button (located on the left side of the device) immediately. You will see the "Connect" button turn into "Disconnect", which means you successfully activated the device.

**LED Indicators**



**Red Color LED :**

Power indicator (When the power is on, the red color LED stay lit.

**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 blink alternately.

# 5

# BTS-1000A Hardware Installation

1. Connect the BTS-1000A Bluetooth adapter to a COM Port of a PC and then connect the DC power adapter jack into a power outlet and DC-in outlet. You will see the red LED turn on and the green LED will blink.

2. After running the BT RS232 Config Tool and finishing configurations. Click "Connect" and press the Sync button on the BTS-1000A Bluetooth adapter immediately.

3. The green LED will turn on. The BTS-1000A Bluetooth adapter is now active.

# 6

# BT RS232 Config Tool Installation & Setup

When setting up the BTS-1000A adapter for the first time, you have to install and run the BT RS232 Config Tool (BT1.EXE) first in your computer device. The utility CD is enclosed in the packaging. Before you use the BTS-1000A adapter, you have to pair the unit with another BTS-1000A device.

All BTS-1000A Bluetooth to Serial Adapters must be configured first before using. The purpose of configuration is to pair the two BTS-1000A devices for an exclusive connection between them.  Pairing is done by utilizing a Bluetooth address and PIN code.

- **Tool Installation**
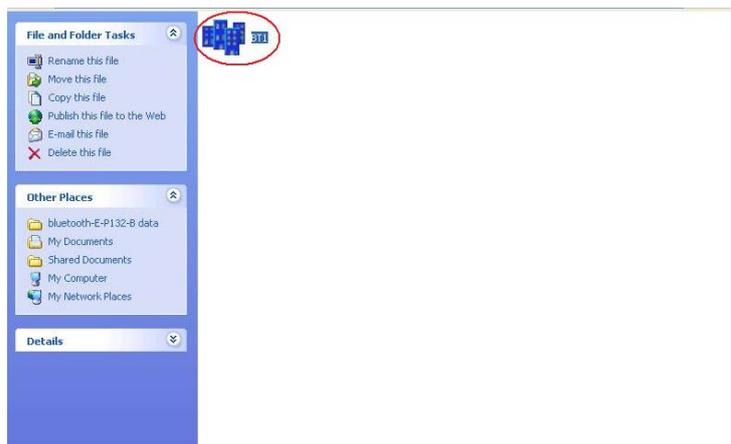


When setting up the BTS-1000A adapter for the first time, you have to install the BT RS232 Config Tool utility software in your computer first which is an executable program in Windows 32-bit environments.  The config tool is used to detect and setup the BTS-1000A.

## ● BT RS232 Config Tool Parameter Configuration
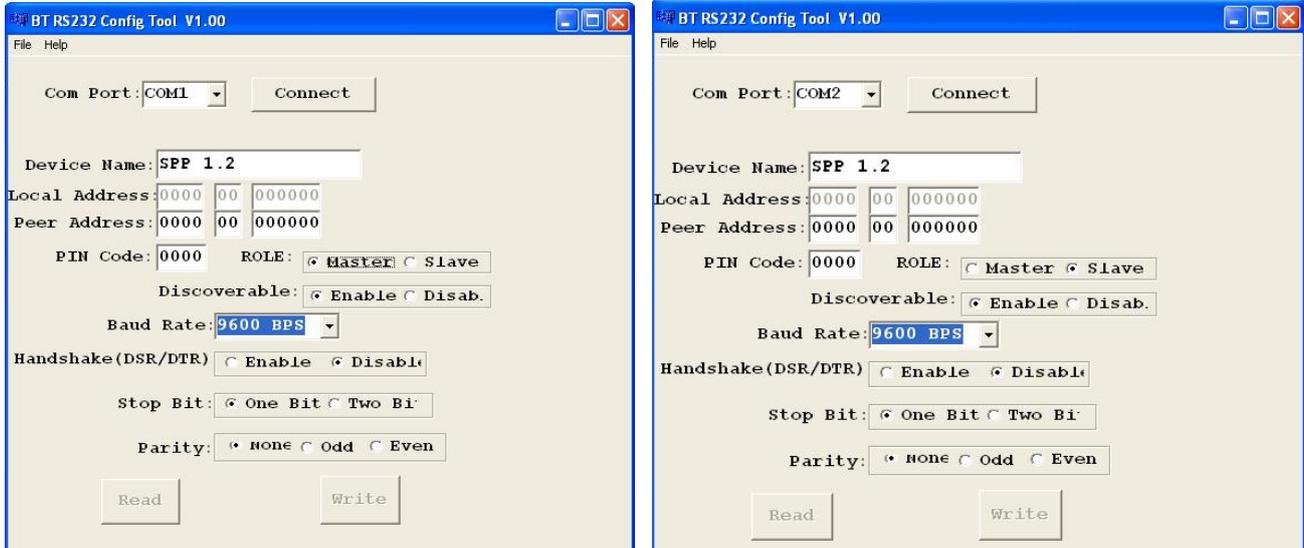


Running the BT RS232 Config Tool, the configuration screen will pop-up as depicted above.

### A. COM Port

Select a COM Port number, you have to avoid the ports that conflict with other devices in your computer and only use available ports.

### B. Device Name

Select a Device Name to identify each device.

### C. Local Address

The Local Address will be automatically changed after finishing the parameter configuration.

### D. Peer Address

The Peer Address is used for two or more devices to communicate in the same network address.

## E. PIN Code

The PIN Code is used for security like a pass key. The device uses this "PIN Code" to identify itself when connecting and establishing communication.

## F. Role

The Role is used to identify the role of the device as either a master or slave.   When the "Role" is set to "Master", the device will function in DTE mode - Data Terminal Equipment (e.g. a PC).   If the "Role" is set to "Slave", the device will function in DCE mode - Data Communication Equipment (e.g. a Modem).

## G. Discoverable

The Discoverable option is used to either allowing or disallow the device from being detected by other Bluetooth devices.

## H. Baud Rate

The Baud Rate option is used for setting transmission speed.   The Baud Rate ranges from 1200bps ~ 115.2Kbps depending on transmission distance and environments.   Normally, the Baud Rate is set at around 9600 bps 8, 1, N.

## I. Handshake(DSR/DTR)

The default setting for Handshake is set to "Disable."

## J. Stop Bit

The default setting for Stop Bit is set to "One Bit."

## K. Parity

The default setting for Parity is set to "None."

## Apply "Connect"
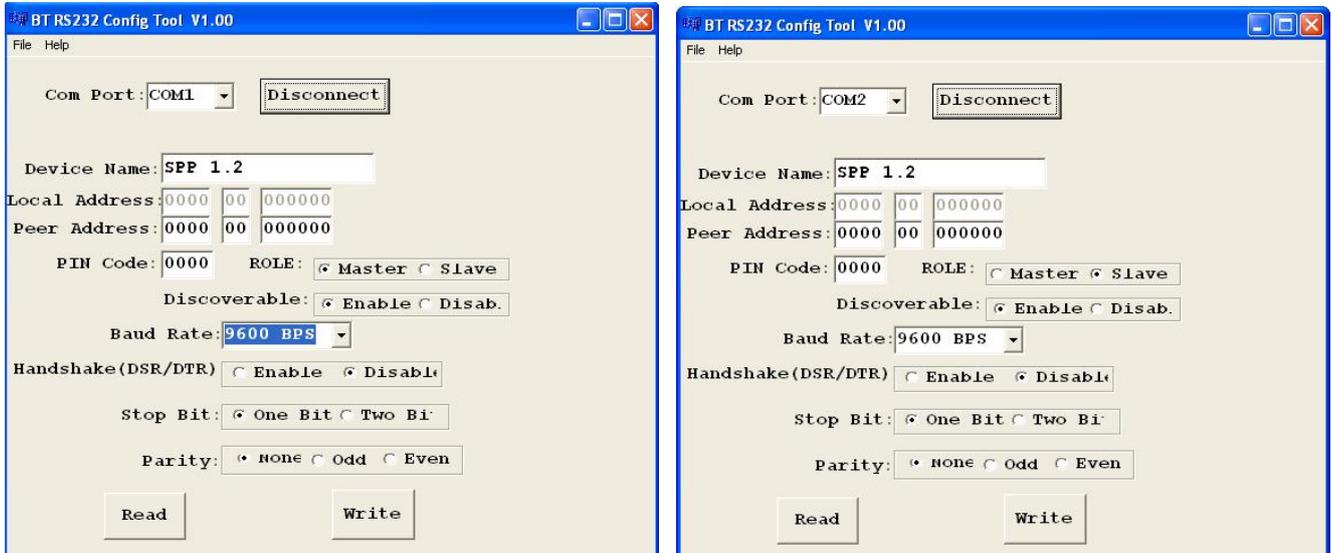


After configuring the parameters, click the "Connect" button while immediately pressing the Sync button located on the left side of the device. On the following screen, the "Connect" button should change to "Disconnect." The "Read" and "Write" button will now be active on the bottom of the BT RS232 Config Tool screen.

**Apply "Write"**
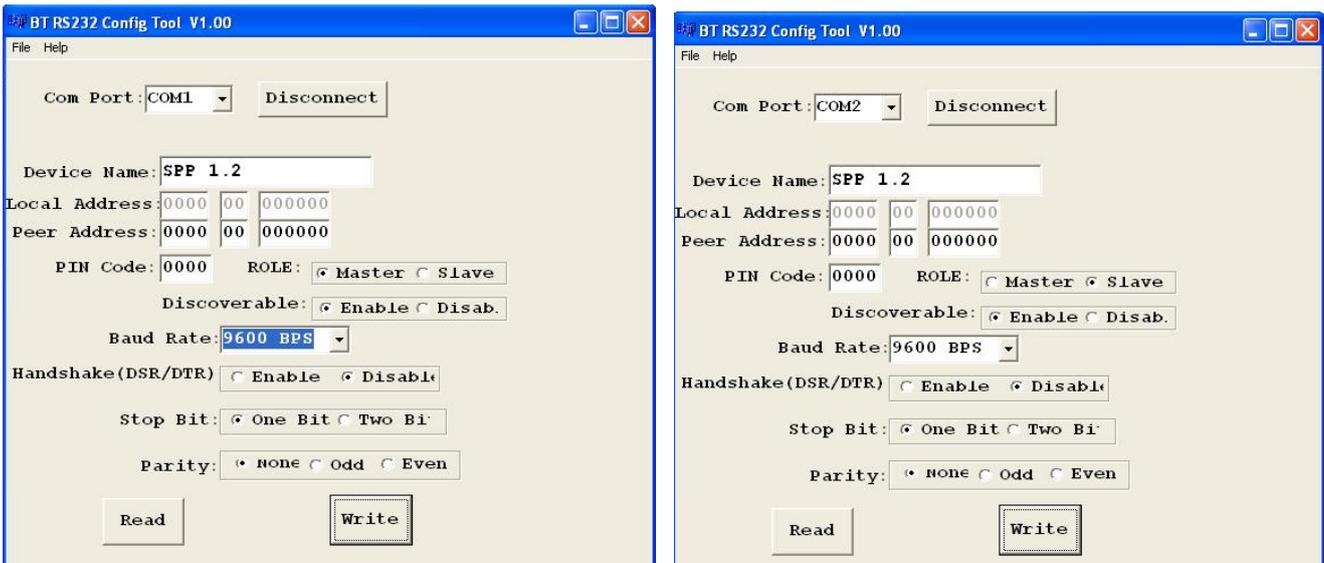


Clicking "Write" will save all parameters configured using the BT RS232 Config Tool.

**Apply "Read"**
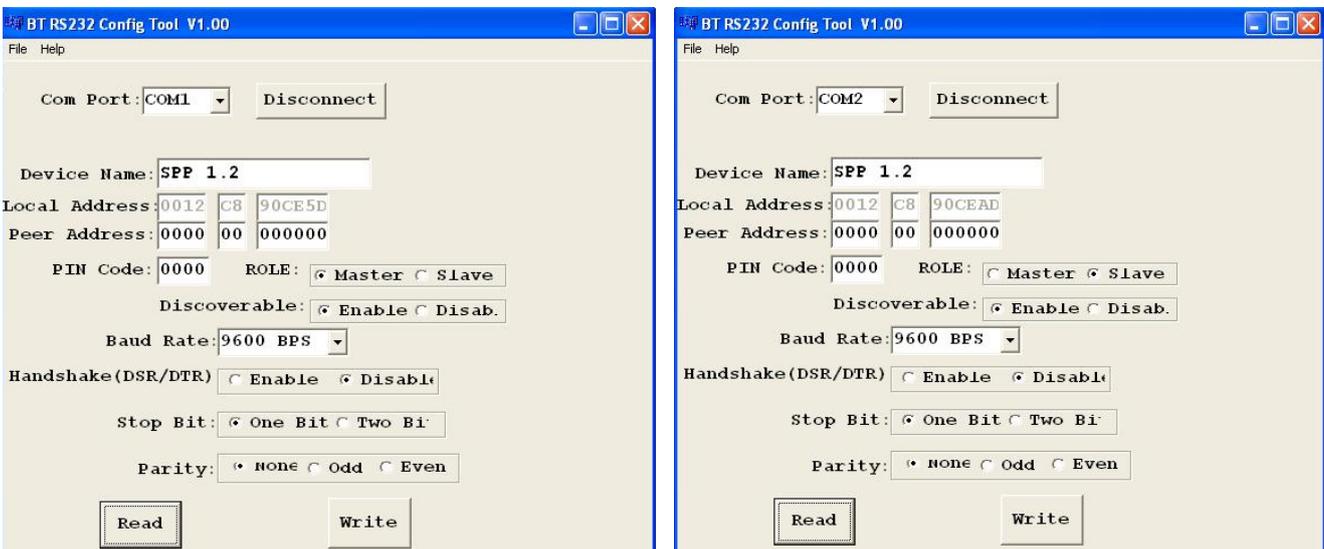


Clicking "Read" will load all parameters saved previously. The local address will be updated from the real device address initially.

# Appendix A

## Pin outs and Connector

□ **DC Power outlet**
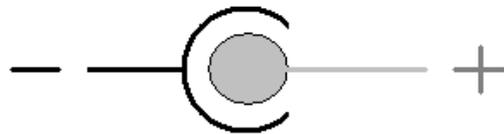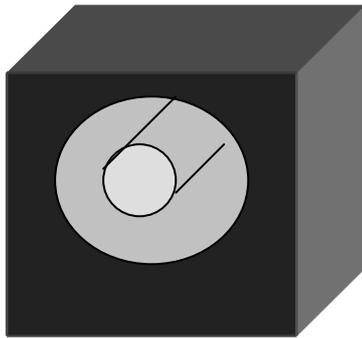


□ **RS-232 Pin Assignment**

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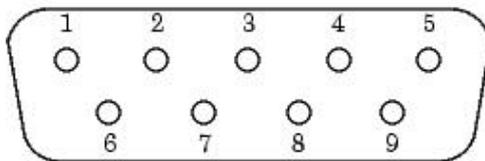


PIN 1:   X          PIN 2: TXD          PIN 3: RXD          PIN 4: DSR

PIN 5: GND          PIN 6: DTR          PIN 7: CTS          PIN 8: RTS

PIN 9: DC 5V

□ **RS-232 Wiring Diagram**

Serial Device                              BTS-1000A 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) |