

RS-232 Serial Adapter

BT-240-V2

USER'S MANUAL

version 1.0

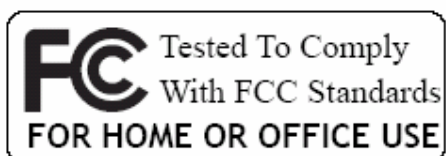


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WELCOME

Thank you for your purchase of the RS-232 Serial Adapter. Featuring Bluetooth wireless technology, RS-232 Serial Adapter creates virtual RS232 connections between your PCs and other RS232 peripherals. RS-232 Serial Adapter is compatible with all Bluetooth v2.1-certified devices and is backward compatible with v1.1/1.2 devices. You can connect your computers and RS232 devices 100 meters away without cables in your working environments.

FEATURES

- Compliant with Bluetooth v2.1+EDR
- Support Bluetooth Serial Port Profile (SPP)
- Operate in 2.4GHz~2.483GHz ISM band
- Operating distance up to 100 meters
- Wide coverage with Class I RF
- Three LEDs Indicating
 - Power On/Off
 - Configuration/ Data Mode
 - Bluetooth Link
- Easy operation and setup
- Support COM port interface: DTE or DCE
- Reset function

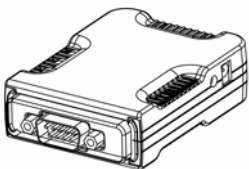
SYSTEM REQUIREMENTS

PCs can optionally have a Bluetooth device installed, such as a Bluetooth USB dongle. It allows you to communicate with RS-232 Serial Adapter.

Windows Systems: Win 98/Me/2000/XP/XP x64.

BEFORE YOU START

1. Confirm Box Contents



RS-232 Serial Adapter



Power Adapter



RS232 Extension Cable



CD

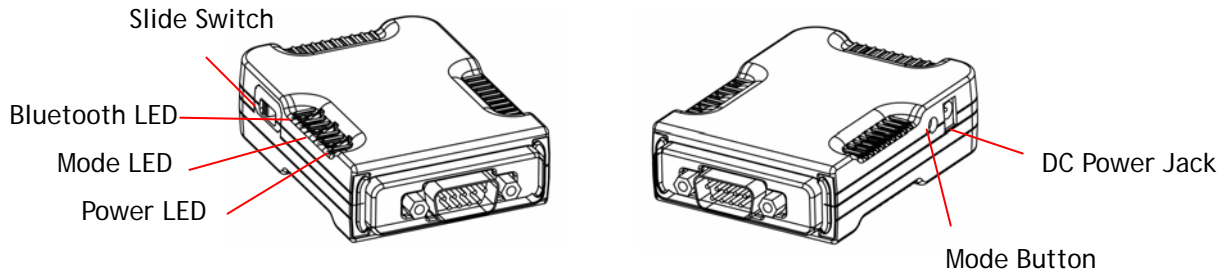


OSG

EXTENSION CABLE

A RS232 Extension Cable provides you to connect your RS-232 Serial Adapter (DTE/DCE) to your RS232 device easier. Please refer to Appendix A for its pinout assignments.

RS-232 SERIAL ADAPTER



GETTING TO KNOW YOUR RS-232 SERIAL ADAPTER

1). RS232 Connector:

DTE - Connect to any DCE device (Master/such as a modem).

DCE - Connect to any DTE device (Slave/such as a PC).

2). Mode Button:

Push it to change operation between Configure/Data Mode and Reset function.

3). Apply power to RS-232 Serial Adapter by using the power adapter accompanied.

4). Set the slide switch position to right (toward 9-pin connector).

(Option : Set it to left position (away from 9-pin connector) features NO DC Power Adapter is needed. A DC power must be applied to RS-232 Serial Adapter through pin-9 of RS232 connector).

5). A one-to-one RS232 Extension Cable allows you to extend the connection if needed.

FUNCTION OF LEDS

● POWER LED

Power LED turns on when POWER is applied to RS-232 Serial Adapter.

● BLUETOOTH LED

Bluetooth LED is flashing quickly when Bluetooth is paired and linked.

Bluetooth LED is blinking when there is data transmitted / received between two paired and linked devices.

<Light flashing 1 second and continues with 1 second blackout repeatedly>

● MODE LED

MODE LED is ON when RS-232 Serial Adapter is staying at Configuration mode.

MODE LED is OFF when RS-232 Serial Adapter is staying at normal DATA mode.

WIDCOMM BLUETOOTH SOFTWARE DRIVER

NOTE : This driver is needed only if you are using a USB Bluetooth Dongle, and you want to use it to communicate with RS-232 Serial Adapter. Skip this section if you are not using it.

This software is not included in our RS-232 Serial Adapter package. We assume you already purchased a Bluetooth USB dongle and it is already bundled with this software. We also assume you already installed this driver in your PC. If NOT, please read the following messages to learn how to do it.

This Widcomm Driver is accompanied with the Bluetooth USB dongle product you purchased. Try to download the latest version.

There are other Bluetooth services which Widcomm driver provides. We will only emphasize on the cable replacement service, and you may try to know other services by you own.

The following steps tell you how to install the Widcomm driver.

Note: If you bought the extra software, BLINK, it will be automatically installed while you install software.

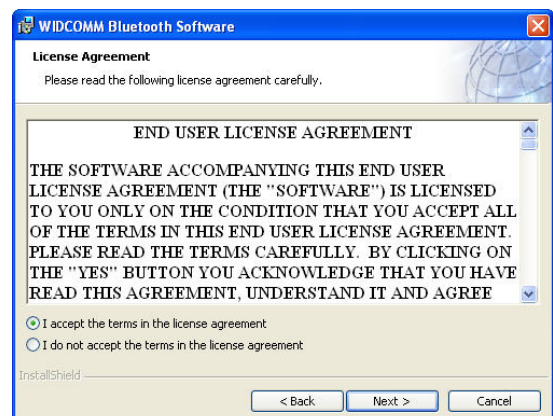
Step 1:

Put Widcomm Driver CD into CD drive of your PC, an Auto-install program will start to guide you to complete the installation step by step. You also can find **Setup.exe** from the given Widcomm Driver CD, double click on it, the installshield wizard dialog box will open, click **Next**.



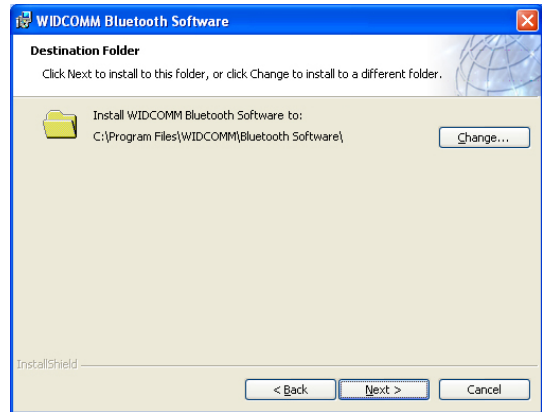
Step 2:

Accept the software license agreement. Click **Next**.



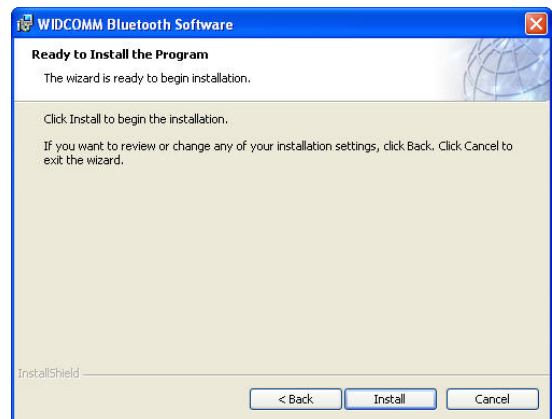
Step 3:

Select destination folder, you can choose the default or change to your favorite.



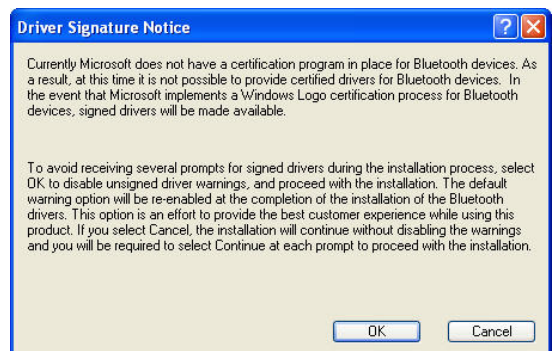
Step 4:

Click **Install** to start the installation and files copying in processing ...



Step 5:


Click OK to ignore un-signed driver warning.



Step 6: If Bluetooth dongle is plugged in your PC now, his screen will not be displayed, otherwise it will show up and one reminding window will show up to ask you to **plug in** the USB adapter. Plug in your USB adapter if it has not been plugged in before. Click OK to continue.



Step 7: Installation is complete.


My Bluetooth places  should appear on your desktop and a similar icon also appears on the lower right corner of your screen.



SELECT BLUETOOTH SERVICES

When the first time Widcomm driver is installed, and USB Bluetooth Dongle is plugged to your system, you can configure your Bluetooth services for your system.

Step 1:

Double-click on the Bluetooth icon  on the lower-right corner of the screen, you will see configuration wizard, Click Next button.

Step 2:

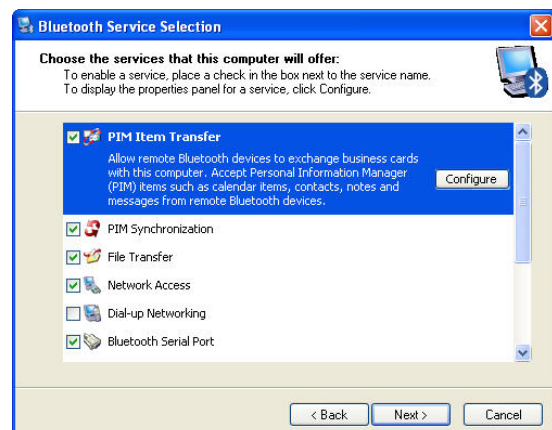
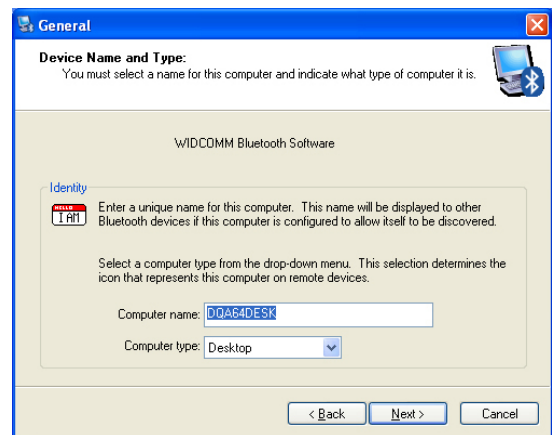
Assign computer name and specify computer type, then click Next button. These can be defined by customer.

Step 3:

Click Next button to configure Bluetooth services.

Step 4:

The default setting is that all services are available, you can check or uncheck one or more services, then click Next button..



Step 5: Click Skip.



Step 6: Configuration is completed. Click Finish.



RS-232 SERIAL ADAPTER

HARDWARE INSTALLATION :

There are two kinds of RS232 devices in the market :

DTE - Data Terminal Equipment (such as a PC).

DCE - Data Communication Equipment (such as a Modem).

Depending on what kind of the RS232 device your RS-232 Serial Adapter is going to connect, you can choose appropriate DTE or DCE RS-232 Serial Adapter to work with it.

At DCE device side :

Connect a DTE RS-232 Serial Adapter to the remote DCE RS232 device (such as a Modem).

At DTE device side :

Connect a DCE RS-232 Serial Adapter to any DTE device, such as a PC.

Take a remote Modem for example, you can connect it with a DTE RS-232 Serial Adapter. While at PC side, you can either connect a DCE RS-232 Serial Adapter to it, or If no DCE RS-232 Serial Adapter is available, you can also connect a Bluetooth USB dongle to your PC.

SOFTWARE INSTALLATION

Before you use your RS-232 Serial Adapter as a Cable Replacement tool, you must

Pair it with another Bluetooth device first. There is a software RS-232 Serial Adapter Utility-Cable Replacement Config Tool.exe which must be run first to configure your Bluetooth RS-232 Serial Adapter.

The utility is to prepare the hardware parameters for pairing, they are :

- Baud Rate
- Stop Bits
- UART Parity

CONFIGURING RS-232 SERIAL ADAPTER

All the RS-232 Serial Adapters must be configured first before they can be used. The purpose of configuration is to pair two Bluetooth devices for an exclusive connection between them, and pairing is done by utilizing Bluetooth Address and PIN code.

In this application, we will show you how to transfer files between two PCs by using Hyper-Terminal program. Each PC has a DCE RS-232 Serial Adapter attached, and we still keep their pairing PIN code to be 0000.

1. Local Setting Up

1.1 Configuring RS-232 Serial Adapter on PC 1:

Step 1: Connect a DCE RS-232 Serial Adapter to COM1 Port of PC1. Apply power to it.

Step 2: Push Mode Button until the MODE LED lights, then it enters Configuration Mode.

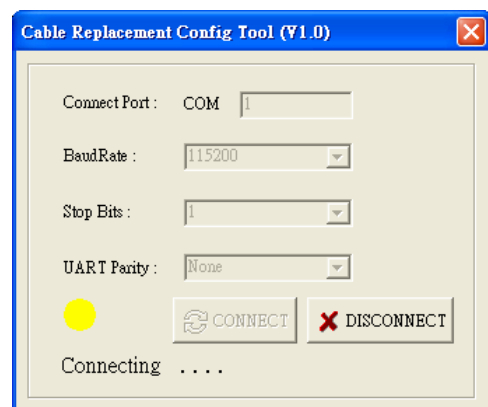
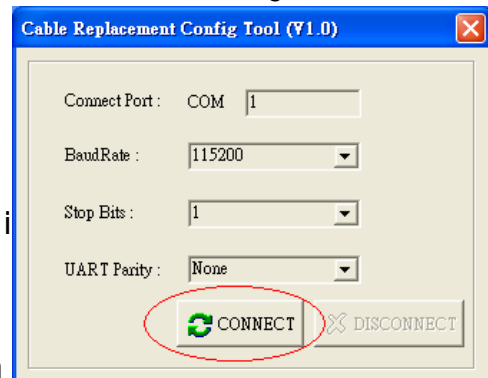
Step 3: Launch RS-232 Serial Adapter Utility-Cable Replacement Config Tool.exe on PC1.

Step 4: Select COM1 Port which RS-232 Serial Adapter is connected.

We assume it is the first time you are configuring this RS-232 Serial Adapter, you can use the default Baud Rate: 115200
Press Connect Button.

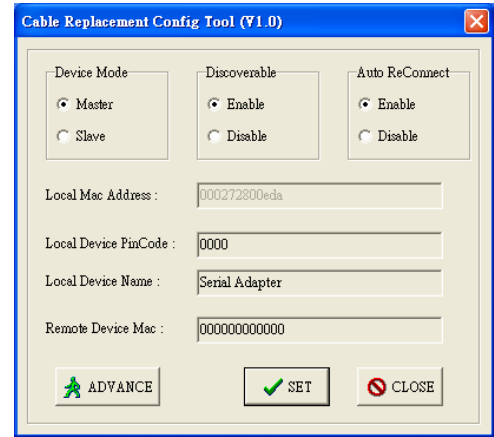
Step 5: If it connects successfully, the yellow light appears, if the connection fails, the red light appears.

While the connection is done, Cable Replacement Config Tool loads all of the setting from the Serial Adapter.



Step 6: Select Master, enter Bluetooth MAC Address of Remote device which will be Pairing and connecting with; input PIN code "0000".

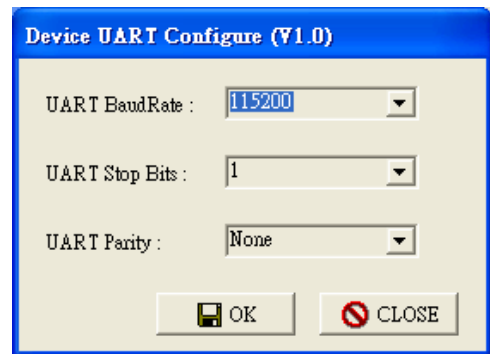
Click **ADVANCE** to change UART Baud Rate, Stop Bits and UART Parity.



Step 7: Select UART Baud Rate, Stop Bits and UART Parity.

Press **OK** button

Then press **SET** button



1.2. Configuring RS-232 Serial Adapter on PC 2:

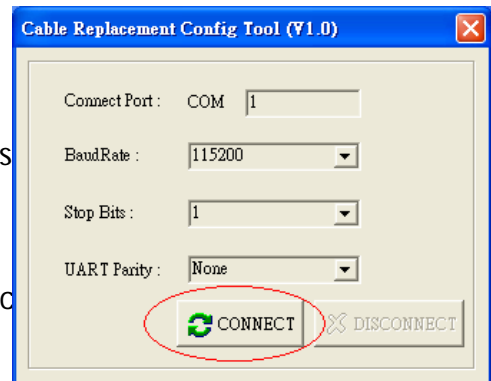
Step 1: Connect a DCE RS-232 Serial Adapter to COM1 Port of PC1. Apply power to it.

Step 2: Push Mode Button until the MODE LED lights, then it enters Configuration Mode.

Step 3: Launch RS-232 Serial Adapter Utility- Cable Replacement Config Tool.exe on PC2.

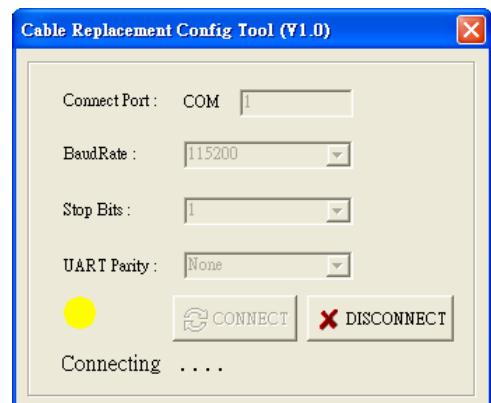
Step 4: Select COM1 Port which RS-232 Serial Adapter is connected.

We assume it is the first time you are configuring this RS-232 Serial Adapter, you can set the default Baud Rate: 115200 Press **Connect** Button.

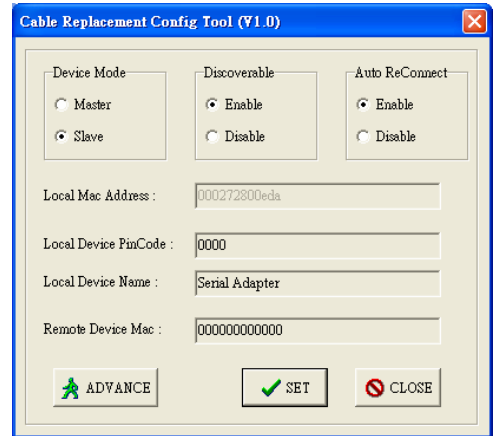


Step 5: If it connects successfully, the yellow light appears, if the connection fails, the red light appears.

While the connection is done, Cable Replacement Config Tool loads all of the setting from the RS-232 Serial Adapter.

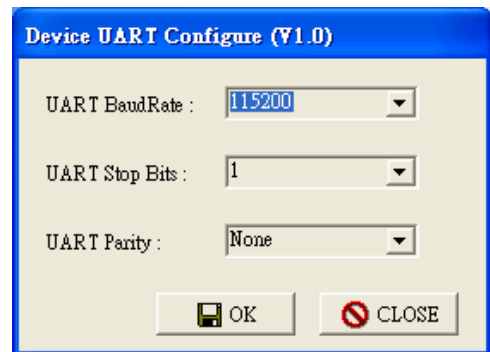


Step 6: Select Slave, enter Bluetooth MAC Address of Remote device which will be pairing and connecting with; input PIN code "0000". Click **ADVANCE** to change UART Baud Rate, Stop Bits and UART Parity.



Step 7: Select UART Baud Rate, Stop Bits and UART Parity

Press **OK** button
Then press **SET** button



1.3 Automatic Connection :

Press Close button.

Remove your RS-232 Serial Adapter from PC COM port, and connect it to a RS232 device.

Now, automatic connection will begin. If configured at Master state, RS-232 Serial Adapter will scan its neighborhood to see if there is any Bluetooth device which has the matched MAC address and PIN code. If found, they will establish the wireless link automatically, and Bluetooth LED (blue color) of RS-232 Serial Adapter will light. If configured at Slave state, RS-232 Serial Adapter will wait for other Bluetooth device to create a link with it.

1.4 RESET function

If you can't connect successfully with default setting, please press **Mode Button** for 5 seconds, MODE LED will blink one time, then RESET is done.

2. START HYPER TERMINAL FILE TRANSFER :

On **PC1** :

Step 1 :

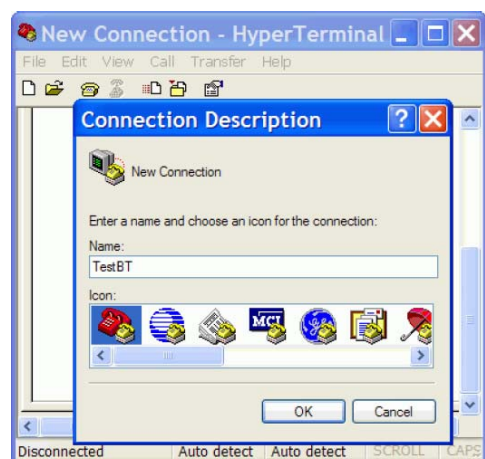
Click **Start**.

Select **Program**.

Select **Accessories**.

Select **Communications**.

Select **HyperTerminal**.



Enter "TestBT" as the project name.

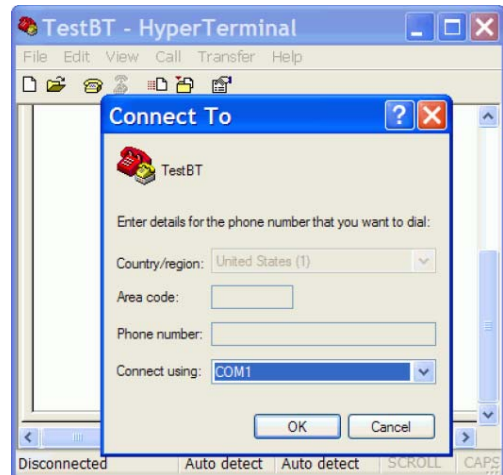
Press OK.

Step 2 :

Choose COM1, because Serial

Adapter 1 is connected to COM1 port of PC1.

Press OK.

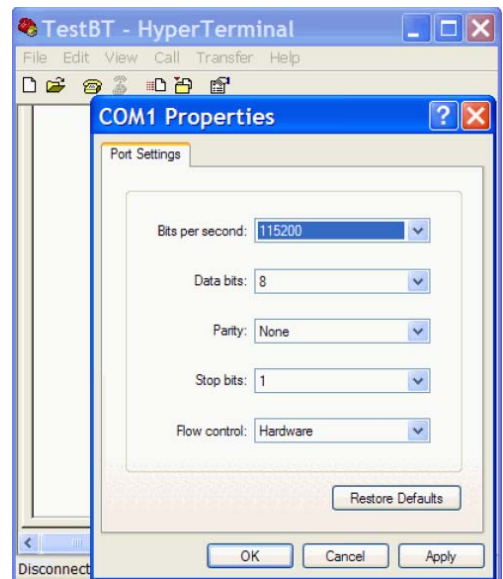


Step 3 :

Configuring RS-232 Serial Adapter on PC1.

Please select "Hardware" Flow Control.

Press OK.

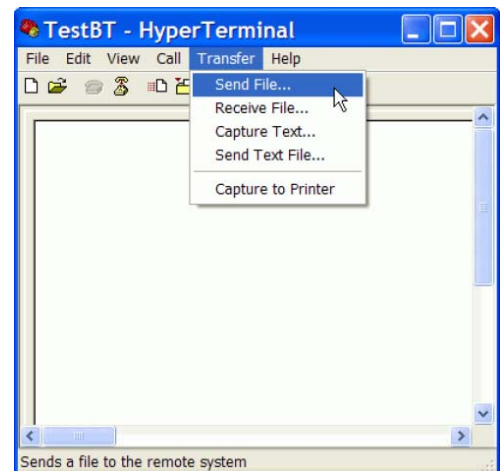


Step 4 :

On PC2 : Repeat the same steps as done on PC1 from Step 1 to Step 3.

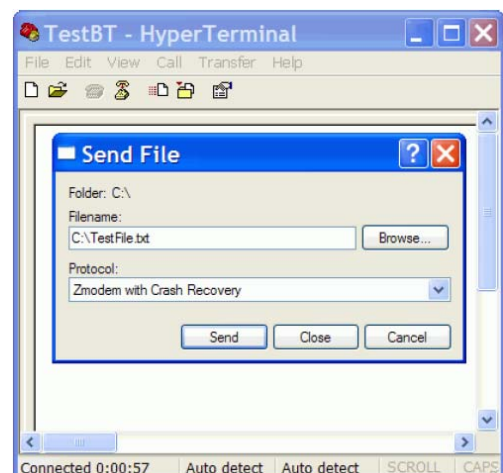
Step 5 :

On PC1, click Transfer on toolbar, click Send File.



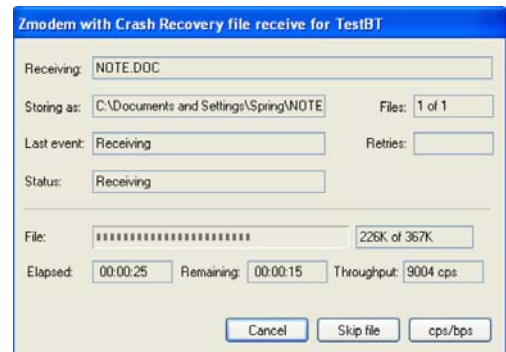
Step 6 :

Browse the file you want to transfer, then click Send.



Now, you will find transferring file using Bluetooth wireless technology is just like transferring file using a hardwired cable. Bluetooth RS-232 Serial Adapter

is the best tool to relieve your life in a cable surrounded environment. You can easily connect a RS232 modem at a remote side, it then is reachable within 100 meters (free space) in your office or home by using Bluetooth Cable Replacement technology.



TROUBLESHOOTING

1. Sympton :

Push MODE button can not get into Configuration mode.

Answer :

Turn off the power of RS-232 Serial Adapter, remove it from your RS232 device, apply power to it, and try again (like a hardware RESET).

2. Sympton :

Data is not correctly set and saved.

Answer :

1. Check if it is staying at Configuration mode.
2. If it is in local setting up, check if settings of connecting COM port and Baud Rate are correct.
3. If it is in remote setting up, check if its connecting virtual COM port is correct.

3. Sympton :

In DATA mode, automatic link can not be established.

Answer :

1. Check if remore MAC address is set correctly.
2. Check if PIN code is set to the same.
3. Repeat the pairing processes. That is, repeat the configuration processes for two devices again to make sure nothing wrong was done.

4. Sympton :

Configuration is OK, but automatic link can not be established.

Answer :

Turn off the power of RS-232 Serial Adapter, remove it from your RS232 device, apply power to it, and try again (like a hardware RESET). For a Master RS-232 Serial Adapter, it keeps sending a linking request to find another Slave device, while a Slave RS-232 Serial Adapter is waiting to receive any linking request. If you configure both two RS-232 Serial Adapters to all Master states, or to all Slave states, then they can not link together. Bluetooth Dongle is staying at Master or Slave state randomly, in a moment, it acts as a Master device and sends linking request wirelessly, while in another moment, it acts as a Slave device and is waiting for other Master devices to link with it. Once the link is built, it

will stay at the proper mode which it should be.

5. Sympton :

Garbage code is received.

Answer :

Wrong RS232 parameters were set, such as baud rate or parity bit. Configure your RS-232 Serial Adapter to a correct setting again.

6. Sympton :

Mass data transmission will stop midway or receive garbage code.

Answer :

Please select "[Hardware](#)" in flow control setting.

7. Sympton :

Can not connect the RS-232 Serial Adapter when in Remore Setting Up.

Answer :

Check to see if RS-232 Serial Adapter is staying at DATA mode. If YES, please disconnect its link first. This can be done by turning off the power of another Bluetooth device which this RS-232 Serial Adapter is linked with. Turn off power of RS-232 Serial Adapter, then turn it on. Push MODE button to get into Configuration mode.

8. Sympton :

Want to reconfigure RS-232 Serial Adapter, but forgot its previous baud rate setting.

Answer :

Turn off power of RS-232 Serial Adapter, then turn it on. Push MODE button immediately before it automatically links with other Bluetooth device (i.e. let the link NOT be built). At this moment, baud rate is defaultly set to 115200, you then can use this baud rate to get into Configuration mode.

9. Sympton :

Which mode RS-232 Serial Adapter is staying when in Configuration state?

Answer :

In Configuration state, it is always staying at Slave mode. The diffenence between Master and Slave modes only exists in DATA state.

APPENDIX A

(DTE/DCE) Adapter Pinout Definitions:

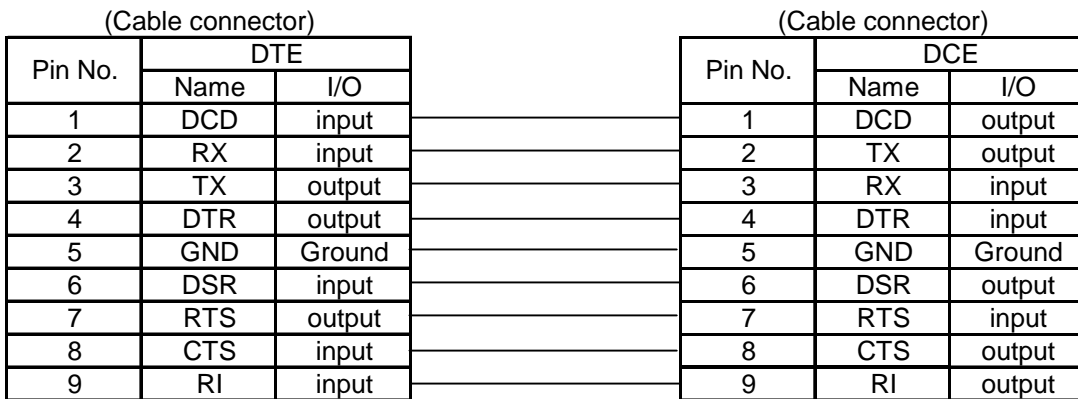
(DTE device)

Pin No.	DTE	
	Name	I/O
1	DCD	input
2	RX	input
3	TX	output
4	DTR	output
5	GND	Ground
6	DSR	input
7	RTS	output
8	CTS	input
9	RI	input

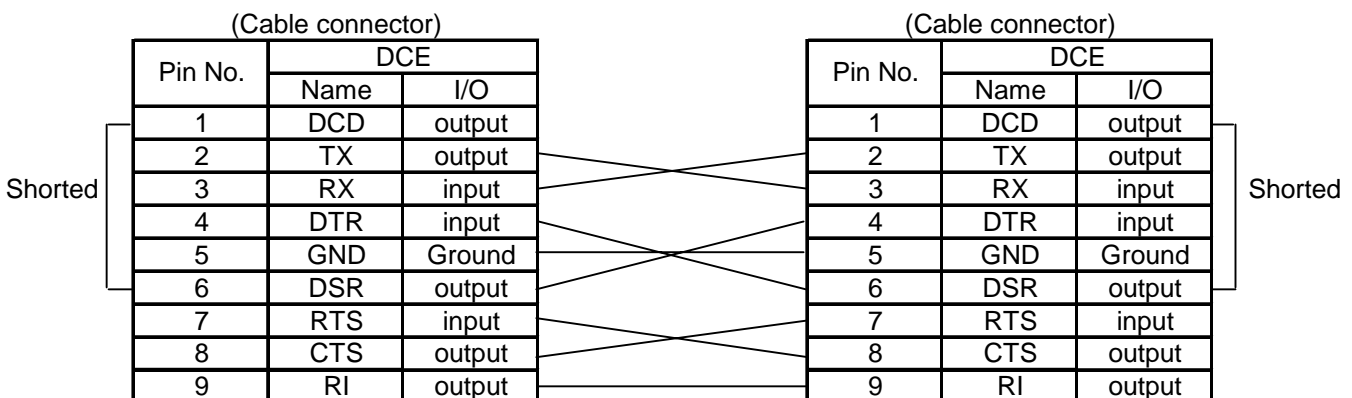
(DCE device)

Pin No.	DCE	
	Name	I/O
1	DCD	output
2	TX	output
3	RX	input
4	DTR	input
5	GND	Ground
6	DSR	output
7	RTS	input
8	CTS	output
9	RI	output

RS232 Extension Cable: (Included in the package)



RS232 Converter cable which can be used to change a DTE device to become a DCE device: (User can purchase from other place)



APPENDIX B
Specifications

Product Name	RS-232 Serial Adapter
Standard	Bluetooth v2.1+EDR
Frequency Band	2.4~2.4835GHz unlicensed ISM band
Spread Spectrum	FHSS (Frequency Hopping Spread Spectrum)
Services Supported	Series Port Profile (SPP)
Transfer Rate	1,200~ 460,800 Bits per second
RF Output Power	10dBm (typical)
Working Distance	Up to 100m in free space
Input Power	7.5V DC
I/O Interface	RS232 DTE/DCE
LED Indicators	Power / Bluetooth active /Mode active
Environment	Operation temperature: 0 °C ~ + 60 °C
	Storage temperature: -10 °C ~ +70 °C
	Humidity: 5 ~ 90% non-condensing
Size	76 (L) x 62(W) x 20(H) mm
Weight	51g

APPENDIX C

Safety Guide :

- * Read and follow all instructions and warnings provided.
- * Save these instructions for future use.
- * When service or replacement of parts is required, ensure work is done by a qualified technician.
- * Do not use this unit near water or in a rainy/moist environment.
- * Use supplied cables only.
- * Do not attempt to service this product yourself. Doing so will expose you to various hazards including dangerous voltage.
- * This unit is suitable for a 110V to 230V AC power supply (Autodetect).
- * Disconnect the power cable (pull plug) and USB cable in the following situations :
 - * In the event of service.
 - * Power cable/plug becomes damaged.
 - * Unit is exposed to excess moisture/rain
 - * Unit has been dropped.
 - * Unit is being cleaned.
- * Unit must be used with adult supervision at all times. Children must not be allowed to handle any of the cables.
- * Never insert any objects other than CDs in the trays.
- * Never insert any objects through ventilation holes.

Caution!

Any electrical equipment is hazardous if handled improperly.

Federal Communications Commission (FCC) Statement

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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 equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure compliance requirements, please avoid direct contact to the transmitting antenna during transmitting.

Europe- R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of March 9, 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE)

CE Declaration of Conformity

For the following equipment:

RS-232 Serial Adapter

(Product Name)

BT-240-V2

(Model Designation)

is herewith confirmed to comply with the requirements set out in the Council (European parliament) Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility of Radio and Telecom device (1999/5/EC). For the evaluation regarding this Directive, the following standards were applied:

EN 300 328 V1.7.1

EN 301 489-1 V1.8.1 ; EN 301 489-17 V1.2.1

EN 60950-1:2006

根據 "低功率電波輻射性電機管理辦法 第十條"之規定：製造、輸入或販賣低功率射頻電機者，應於低功率射頻電機使用說明書內加印第十二條及第十四條之規定內容。

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。