

BM2001 (Bluetooth USB Adapter) User's Guide



BTNetworks Co., LTD 2005 08.30 Ver 3.0

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1. Introduction (Model: BM2001)

Bluetooth USB Adapter, BM2001 is product that is developed, designed and produced by BTNetworks. It is able to replacement standard RS232 cable perfectly.

- ♦ Bluetooth communication's security 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.
 - One pair of BM2001 will try to connect automatically whenever power up.
- ♦ It needs an installing for the USB device driver.
 - Doesn't need to install the application software.
- ♦ You can choice various configurations with DIP Switch **(In DIP-Switch mode)**
 - Set Baud Rate (1,200 bps ~ 115,200 bps)
 - Set the Role as Master or Slave
 - Select Mode: DIP-Switch Configuration mode or PC configuration mode
- ♦ BM2001 doesn't need the external power because it use the power of PC's USB port

♦ **Default Setting (Factory Setting) & explain the each mode.**

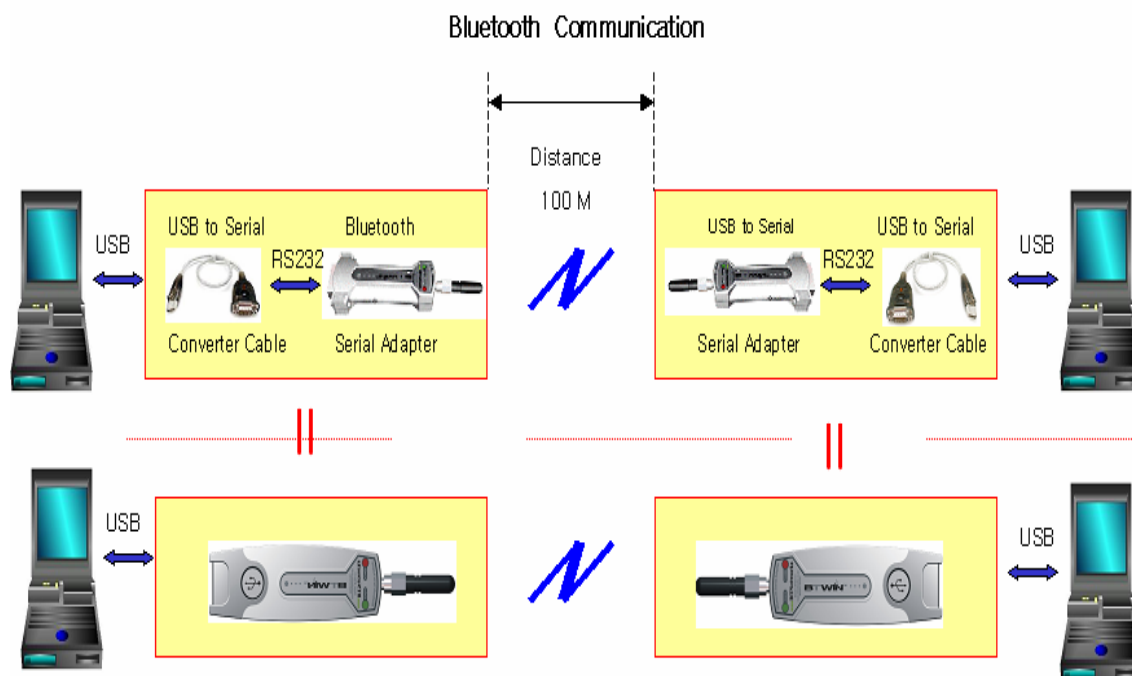
Part	DIP Switch Configuration Mode	PC Configuration Mode
Variable Values	Set Baud rate Select Role - Master - Slave Select Mode - DIP Switch Mode - PC Configuration Mode	Set device name Set Pin Code View Local BD Address Set Remote BD Address Select Role (Master/ Slave) Search for bluetooth device and Connect new device Set Baud rate Set Stop bit Set Parity bit Set Hardware flow control
Ramark	DIP Switch Mode is the default Setting.	You can set up the value with HyperTerminal program of Windows. When connect other bluetooth device, Using this mode.
Default Setting	Baud rate = 9600 bps Data Bit = 8 Bit Stop Bit =1 Bit Parity Bit =No Parity Bit Hardware flow Control = None Role = MASTER or SLAVE	Device Name = BTNetworks PIN Code = BTWIN Operating Mode = MODE1 Baud rate = 9600 bps Data Bit = 8 Bit Stop Bit =1 Bit Parity Bit =No Parity Bit Hardware flow Control = None ROLE = MASTER

2. Bluetooth USB Adapter & Bluetooth USB Dongle.

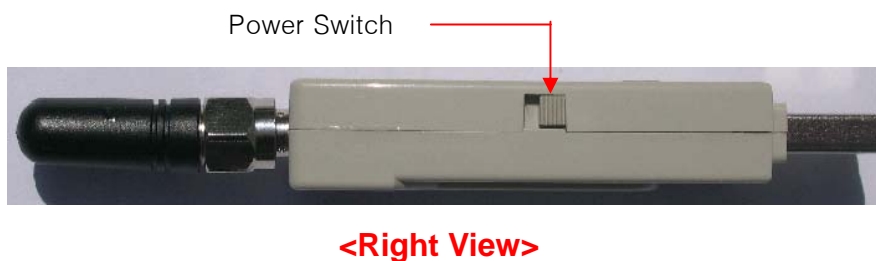
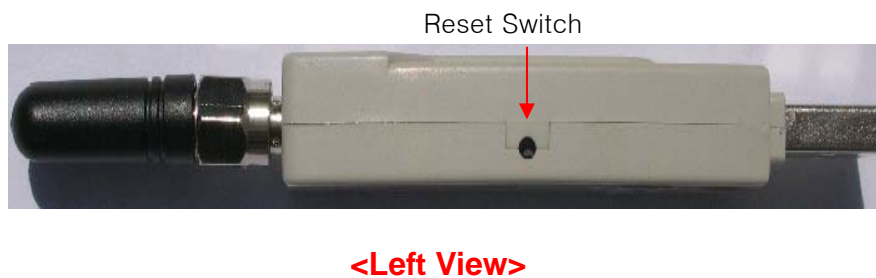
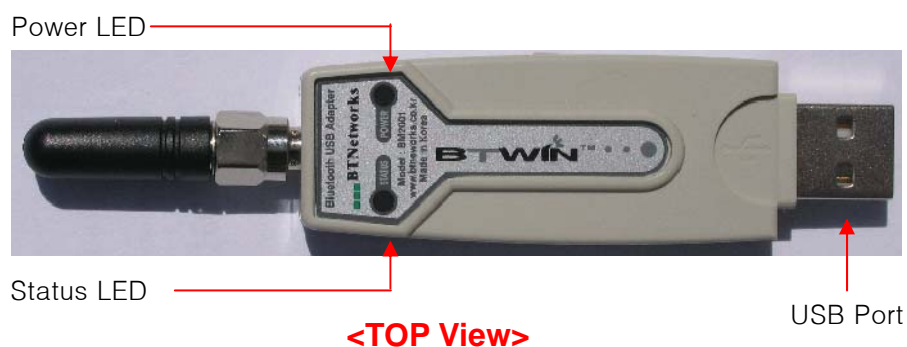
Part	Bluetooth USB Adapter	USB Dongle
Hardware View	Bluetooth Serial Adapter is added USB TO Serial Converter feature.	
Software View	Bluetooth Module includes running software.	Bluetooth Application software works on the PC.
Device driver	Need	Need
Application Software	Don't need	Need
Bluetooth Support Profile	SPP	SPP, PAN, DUN, LAN, HID etc

3. What is the Bluetooth USB Adapter?




Bluetooth USB Adapter is a Bluetooth Serial Adapter plus USB to Serial converter feature.
But it is not a USB dongle. It doesn't need an application software like a BTW or Widcomm.



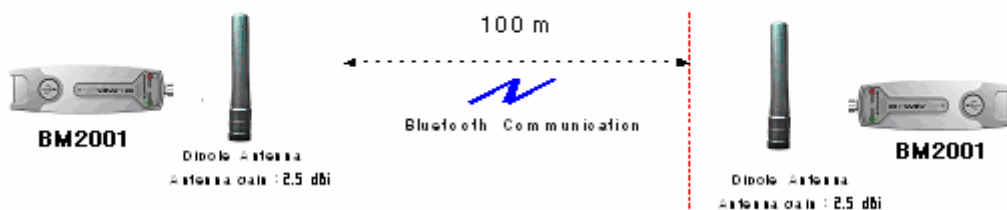
4. External View



5. Contents of Package

No	Picture	Qty	Ramark
1	 BM2001	2	Default
2	 External Antenna (2.5 dB)	2	
3	 BTWIN™ BM2001 User's Guide CD	1	

6. Antenna Configuration Scenario



7. Specification

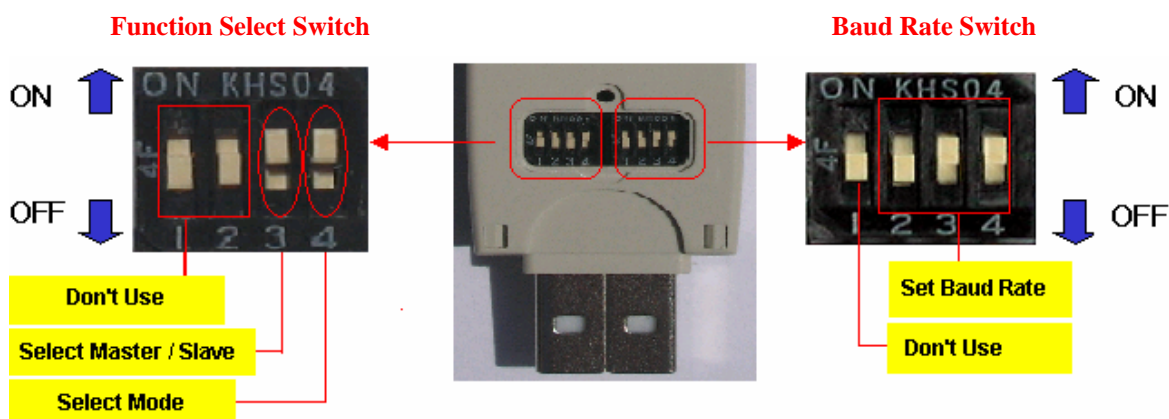
Part	Specification
Bluetooth Spec	Bluetooth Specification V1.1
Communication distance	100 M
Frequency Range	2.4 GHz ISM Band
Sensitivity	-83dBm (Typical)
Transmit Power	12dBm (Typical)
Size	66 * 31 mm
Support Bluetooth Profile	SPP
Input Power	4 - 12 V
Current Consumption	Maximum 100 mA
Operating Temperature	-10℃ ~ 70℃
Communication Speed	1,200bps ~ 115,200bps
Antenna	Dipole Antenna (2.5 dB)
PC interface	USB

8. About the DIP Switch



<Bottom View>

Open the DIP-switch cover, and you can see the below picture.



8.1 Function select switch

Pin #1 and #2 don't use.

Pin #3 is used to select the role.

- The master is up.
- The slave is down.

Pin #4 is used to select the mode.

- The DIP Switch mode is up.
- PC configuration mode is down.

8.2 Baud Rate Switch

You may set the baud rate with this DIP Switch.

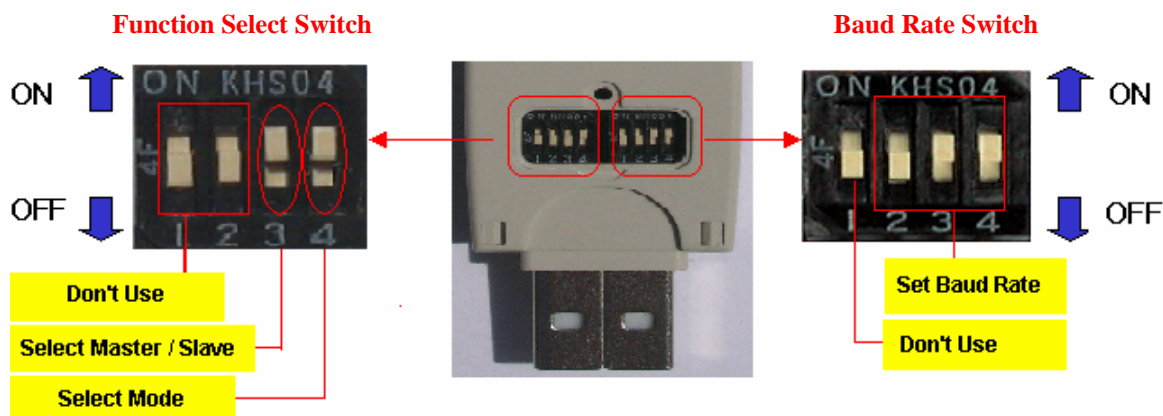
- Pin #2,3,4 are used to set the baud rate.
- You can choice the baud rate from 1,200 bps to 115,200 bps.

*** Caution : If you want to set the baud rate with DIP Switch, pin #4 of the Function select switch must be up.**

9. Function Select Switch

9.1 Select the Role (MASTER / SLAVE)

In order to communicate between two BM2001, one should be a Master and another should be a Slave. You may set the role with pin#3 of the function select switch.



Set the Role with pin #3 of the Function Select switch.

i) Set the Role as a MASTER



Move up the pin#3 of the function select switch, and it is MASTER.

ii) Set the Role as a SLAVE



Move down the pin #3 of the function select switch, and it is SLAVE.

9.2 Select the Mode

BM2001 has two modes, one is DIP Switch mode and other is PC configuration mode.

You may choose the mode.

1) DIP Switch Mode

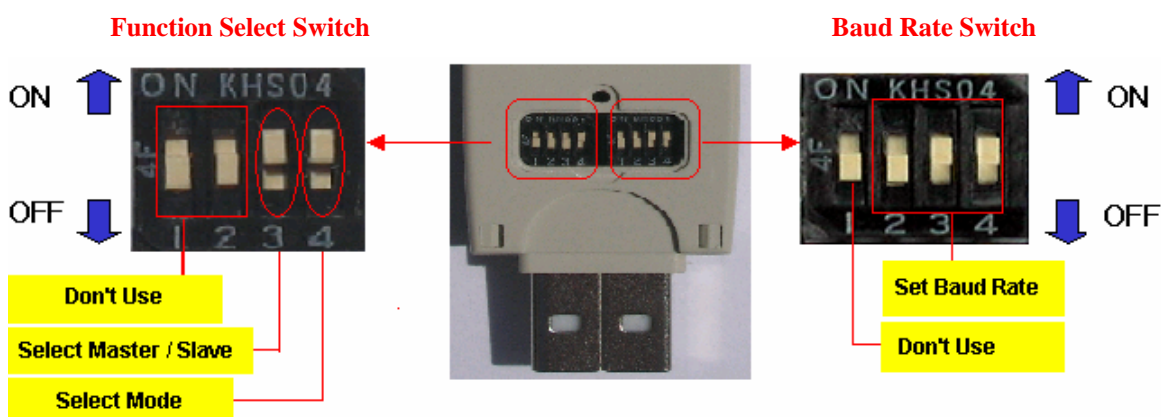
You may set the baud rate and Role with only DIP Switch.

If you want to set them, BM2001's mode must be a DIP Switch mode.

2) PC Configuration Mode

You may set the various values with Hyperterminal of the windows. It is very powerful.

You can set every configuration values in PC configuration mode.



Set the Mode with pin #4 of Function Select Switch.

i) DIP Switch Mode



Move Up the pin#4 of the Function Select Switch, and the Mode is DIP Switch mode.

ii) PC Configuration Mode



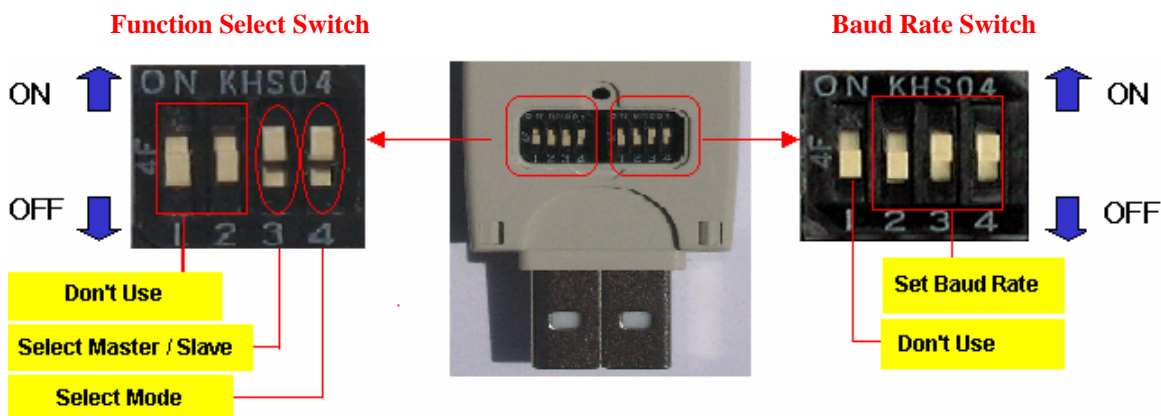
Move down the pin#4 of the Function Select Switch, and the mode is PC Configuration mode.

10. Set the Baud Rate.

BM2001 support various communication speed from 1200 bps to 230,400 bps.

You can set the baud rate with DIP-Switch from 1,200 bps to 115,200 bps.

Check on the baud rate switch.



Set the baud rate with the Baud Rate Switch.

Set the Baud Rate Switch

<p>1200 bps</p>	<p>2400 bps</p>	<p>4800 bps</p>	<p>9600 bps</p>
<p>19200 bps</p>	<p>38400 bps</p>	<p>57600 bps</p>	<p>115200 bps</p>

**** Caution ****

- Pin #1 of the Baud Rate Switch doesn't use.
- Pin #4 of the Function Select Switch must be up (DIP Switch Mode).
- If you want higher speed than 115,200 bps, Use the PC configuration mode.

11. LED / Reset Switch



11-1. Power indication LED / Status indication LED

You can find the status of BM2001 with Red and Green LED indicator.

LED	Status	Description
Power LED	Power ON	Red LED is On (Stable)
Status LED	Connecting	Green LED is flashing twice per second.
	Connection	Green LED is On (Stable)
	Connection Error	Red LED is flashing every 0.05-second.
	Enter Configuration Setting	Red LED is flashing twice per second.
	Configuration Setting	Red LED is flashing three times per second.

11-2. Reset Switch

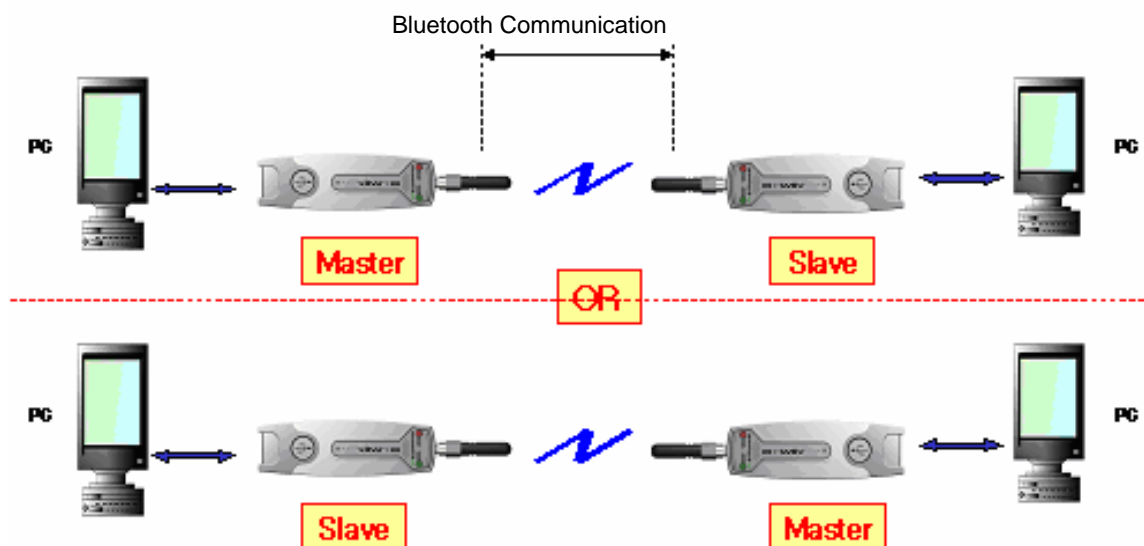
Status LED	Result After Reset
Green is On	1) Current connection will be disconnecting. 2) Releases the latest connection informs. 3) Try Reconnecting.
Red is flashing	1) The setting is initializing as factory setting. 2) BM2001 will begin rebooting.

12. Power Consumption

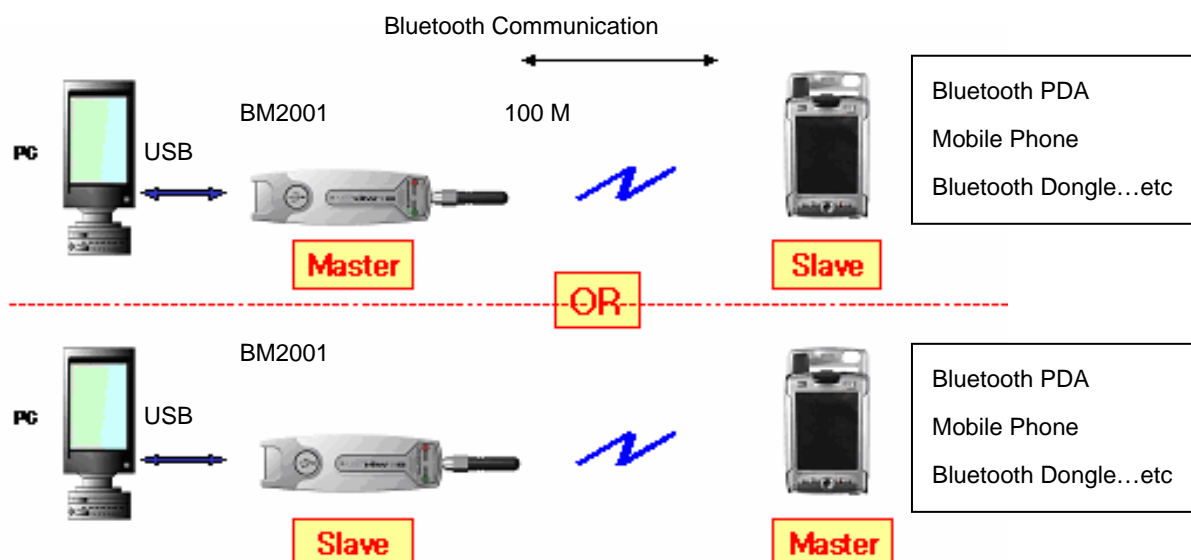
Mode	Current	Remark
Standby	20 mA	Test Environment - Baud rate is 9600 bps - Input Voltage is 5V. Power consumption depends on communication speed and the environment.
Device Searching	73 mA	
Pairing	55 mA	
Before Connection	73 mA	
After Connection	50 - 55 mA	

13. The Bluetooth Communication with BM2001

- In order to communicate between two BM2001, one should be a Master and another should be a Slave.

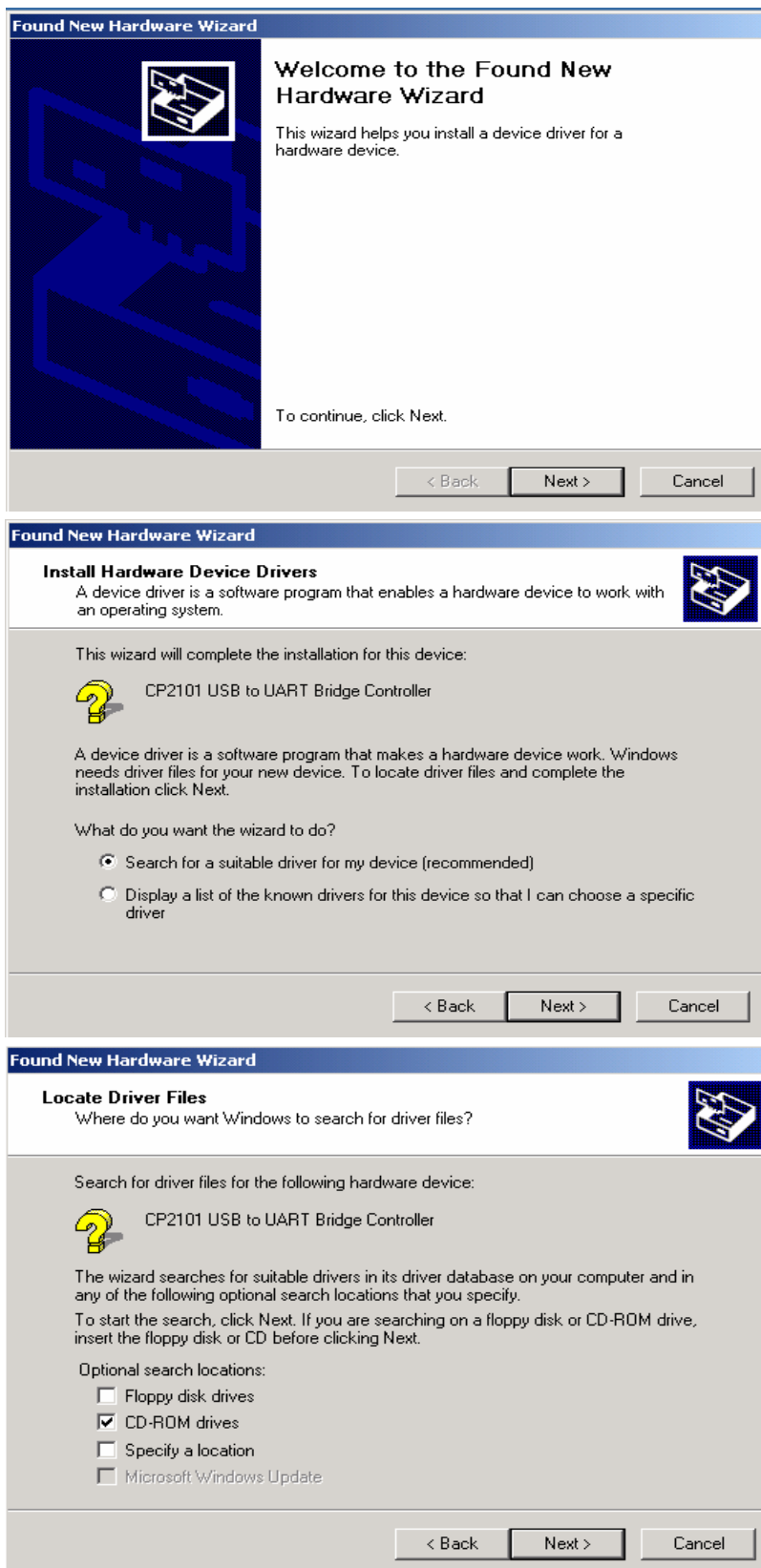


In order to communicate between BM2001 and Bluetooth products that are able to support SPP profile like PDA, Mobile Phone, Bluetooth Dongle, BM2001 must be a Master or a Slave. And the other products must be opposite role. If BM2001 is a Master, other side product should be a Slave.



14. Install the BM2001 device driver

14.1 Windows 98 & Windows 2000



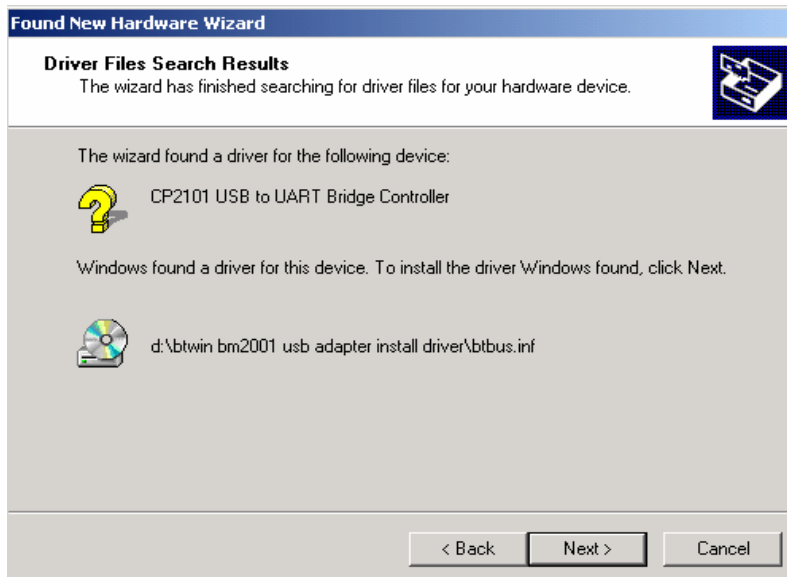
1) Attach BM2001 to USB port of PC and turn on the BM2001.

2) The pop up window will appear for new hardware device.

3) Click Next button.

4) Select “Search for a suitable driver for my device [recommended]” and click Next button.

5) Select “CD-ROM drivers” and click Next button.



6) Windows found a driver for BM2001. Click Next button.



7) First driver Installing procedure has finished. Click Finish button.

* You should do driver installing procedure one more time




8) You may see new pop up window.


Click Next button.

Found New Hardware Wizard

Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.



This wizard will complete the installation for this device:

 CP2101 USB to UART Bridge Controller

A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.

What do you want the wizard to do?


☒ Search for a suitable driver for my device (recommended)

☐ Display a list of the known drivers for this device so that I can choose a specific driver


< Back Next > Cancel

Found New Hardware Wizard

Locate Driver Files
Where do you want Windows to search for driver files?



Search for driver files for the following hardware device:

 CP2101 USB to UART Bridge Controller

The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.

To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.

Optional search locations:

☐ Floppy disk drives

☒ CD-ROM drives


☐ Specify a location

☐ Microsoft Windows Update


< Back Next > Cancel

Found New Hardware Wizard


Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.



The wizard found a driver for the following device:

 CP2101 USB to UART Bridge Controller

Windows found a driver for this device. To install the driver Windows found, click Next.

 d:\btwin bm2001 usb adapter install driver\btw2k.inf

< Back Next > Cancel

Select “Search for a suitable driver for my device [recommended]” and click Next button.

5) Select “CD-ROM drivers” and click Next button.

6) Windows found a driver for BM2001. Click Next button.



7) All driver installing procedure has finished. Click Finish button.

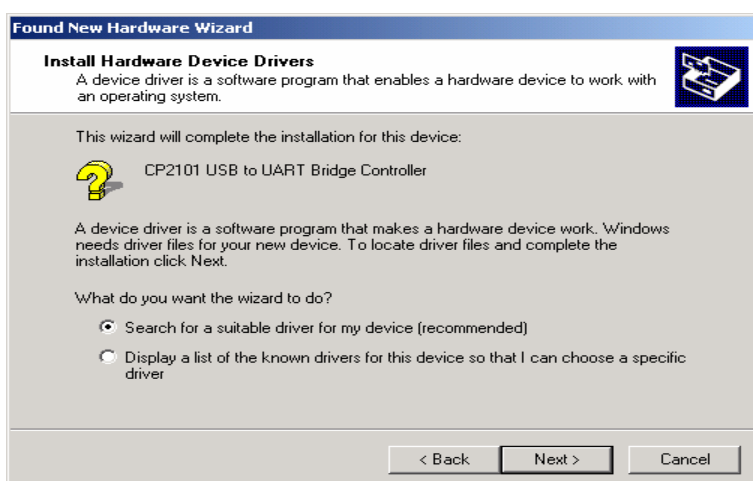
If you have a trouble to install driver, you may try another way. Here is another way. Follow the below procedures.



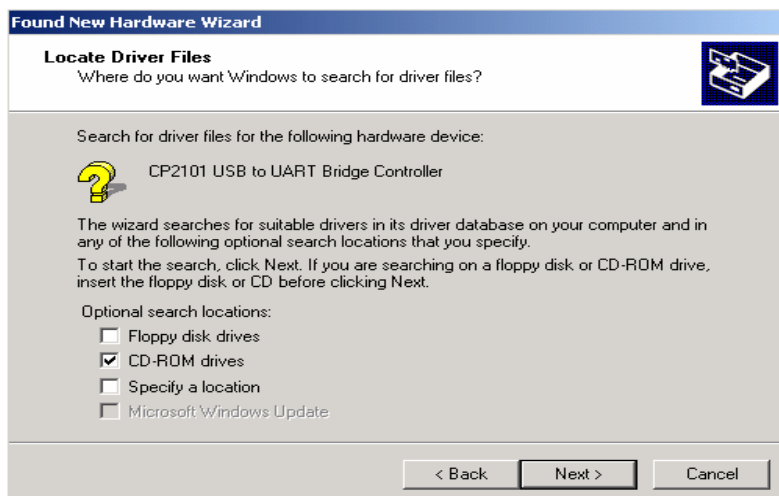
1) Attached BM2001 to USB port of PC and turn on the BM2001.

2) "Found new hardware device" message will be displayed.

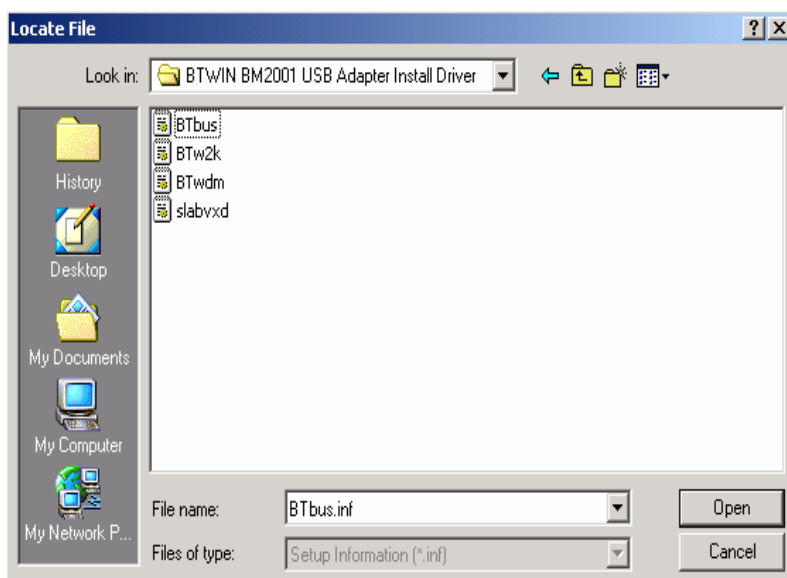
3) Click next button.



4) Select "Search for a suitable driver for my device [recommended]" and click Next button.



5) Select “Specify a location” and click Next button.

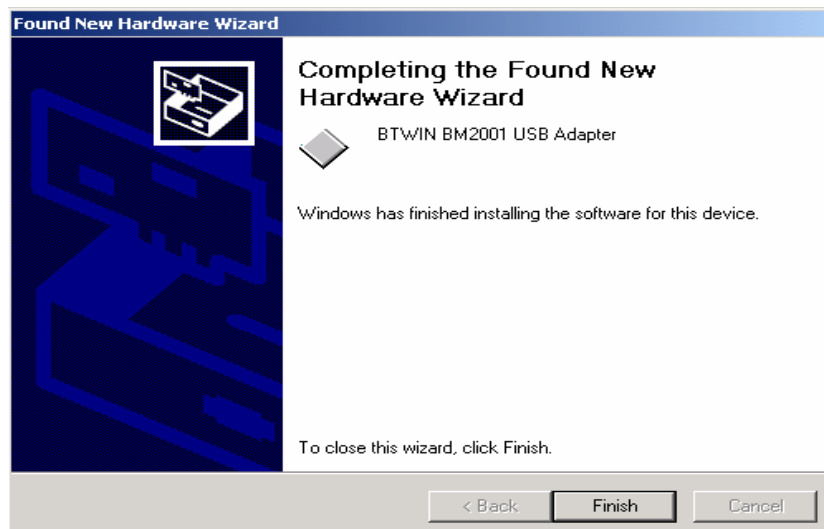


6) Move to CD-ROM's BTWIN BM2001 USB Adapter install driver.

7) Select “Btbus” file and click “Open” button.



8) Windows found a driver for BM2001. Click Next button



9) Driver installing has finished. Click Finish button.

14.2 Windows XP

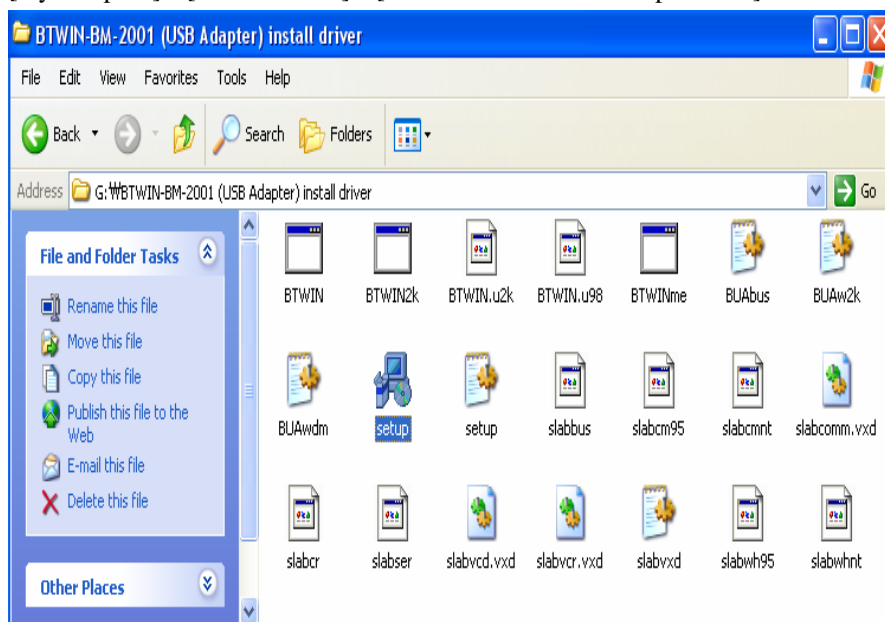
Before set up the device driver, turn off the BM2001's power switch.

The device driver install procedures are separated two steps.

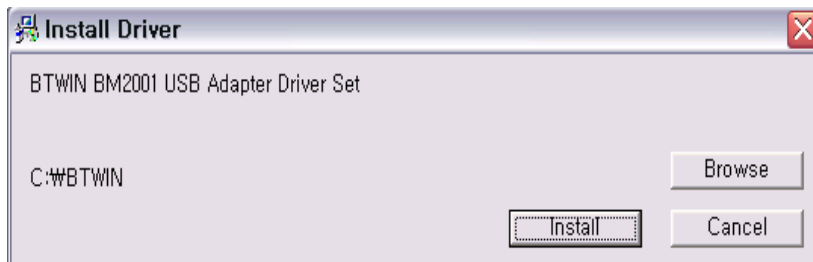
The first step is making the driver folder in the Windows.

[1] Move to "BTWIN BM2001 USB Adapter driver" folder on CD be provided, and you can see below window.

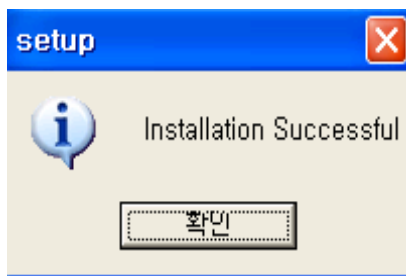
[My Computer] → [CD Rom Drive] → [BTWIN BM2001 USB Adapter driver]



[2] Double click the "Setup" icon, and the pop-up window will appear.



[3] Click the "install" button, and installing procedure will start.



[4] Ok, first step has finished. Open the C drive of your computer, and you can find "BTWIN" folder.

[5] Now, the installing procedure will begin from here for the BM2001's device driver. Turn on the power switch of BM2001.



[6] The windows shall find the new device and you will see the pop-up window.

[7] Select "Install the software automatically [Recommended]" and press "Next" button.

[8] If your OS is a Windows XP, you will see the below windows.



But you can ignore that message, click "Continue Anyway" button.

[9] Click "Finish" button, and window will disappear.

[10] The first installation procedure has been finished.

[11] New windows will appear, but it is not a problem. You will do one more same procedure for the driver installing.





[11] Select “Install the software automatically [Recommended]” and press “Next” button.



[12] If your OS is a Windows XP, you will see the below windows.

But you can ignore that message, click “Continue Anyway” button.

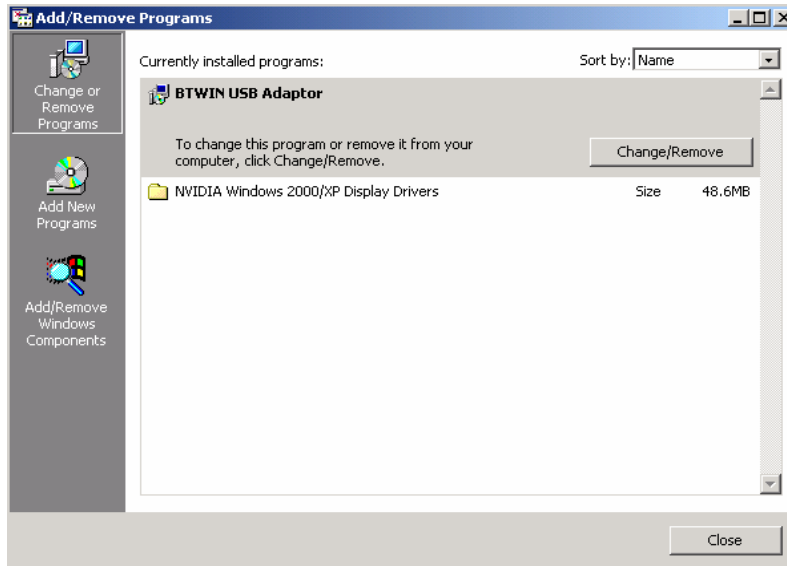


[13] Click “Finish” button, and window will disappear. All installations have been finished.

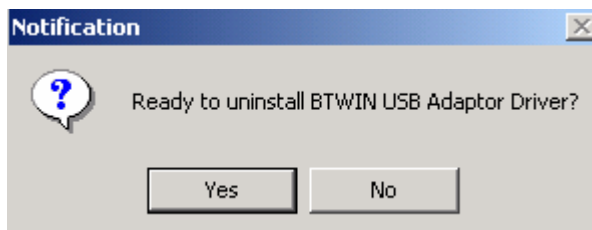
15. Remove the BTWIN BM2001 USB Adapter driver

(Windows 98, Windows 2000 and Windows XP)

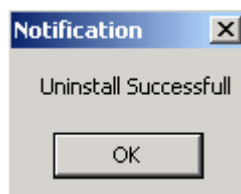
- 1) Move to [My computer] → [Control Panel] → [Add/Remove programs]
- 2) You may see “BTWIN USB Adapter”.
- 3) Select that and click “Change/Remove”



- 4) Click “Yes” button.



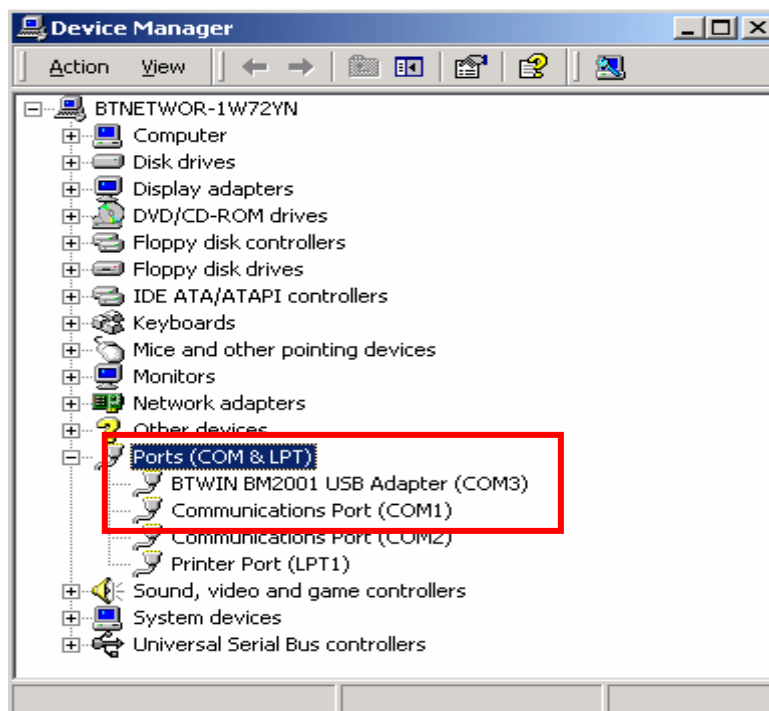
- 5) Click “OK” button.



*** Driver removing is successful.**

16. Set COM Port for BM2001 USB Adapter

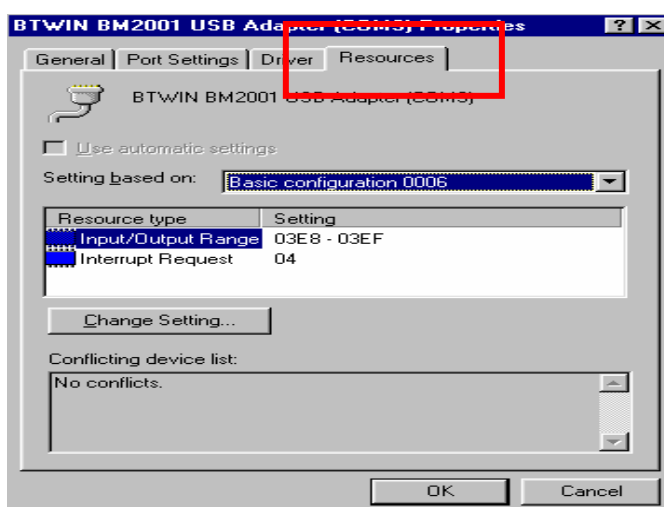
16.1 Window 98



- [1] Move to [My computer]
- [Control Panel] → [System]
- [Hardware]
- [Device Manager]

- [2] Click Port, and you may see "BTWIN BM2001 USB Adapter"

- [3] Double click BM2001 to see its property.



- [3] Select the Resources Tab.

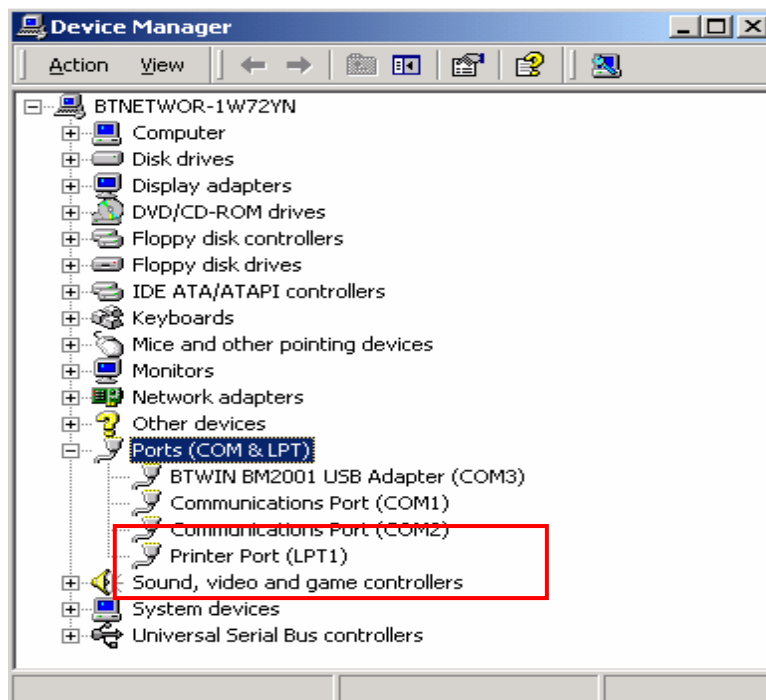
- [4] If you want to change COM port for BM2001, you should change the Setting based on.

- [5] Please refer to below table.

COM Port No	Input / Output Range
COM 1	03F8 – 03FF
COM 2	02F8 – 02FF
COM 3	03E8 – 03EF
COM 4	02E8 – 02EF

COM port Number is assigned by Input / Output Range.

16.2 Windows 2000 & Windows XP



[1] Move to [My computer]

→[Control Panel]

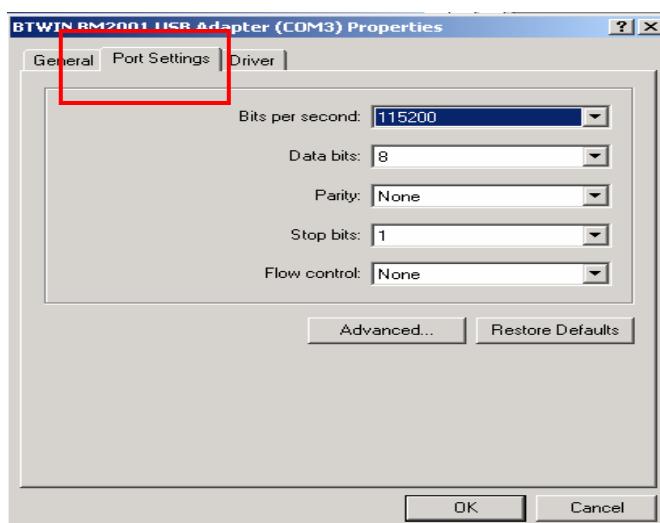
→[System]

→[Hardware]

→[Device Manager]

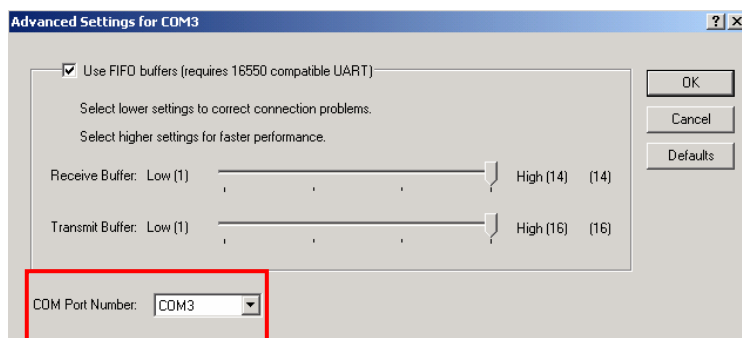
[2] Click Port, and you may see “BTWIN BM2001 USB Adapter”

[3] Double click BM2001 to see its property.



[4] Select “Port Setting” Tab.

[5] Click “Advanced” button.



[6] Set COM port No.

17. DIP-Switch Configuration Mode

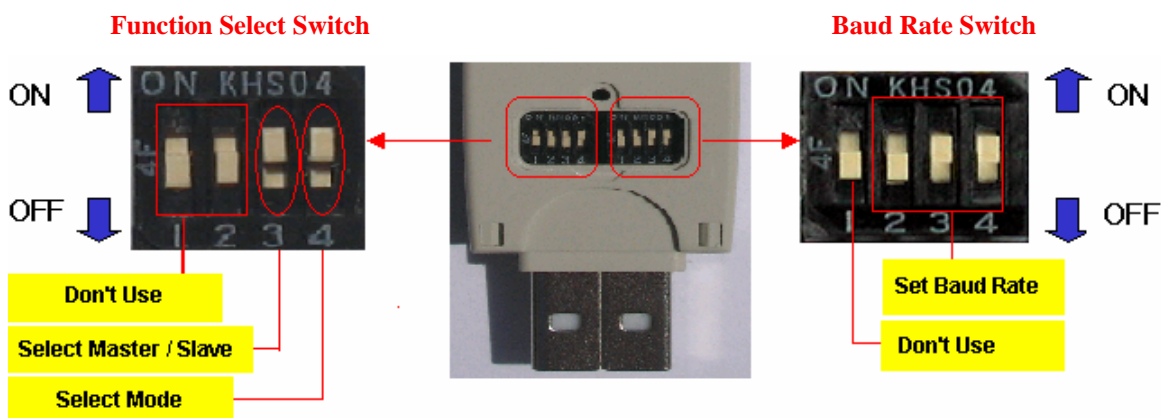
17-1. Check on default setting before testing BM2001

1) There are two BM2001s. One should be a Master and opposite side should be a Slave.

* **BM2001 is set either master or slave at factory.**

2) Mode select is DIP-Switch Configuration mode.

3) Baud rate is 9600 bps.



Set the DIP Switch

i) Set as a MASTER

Function Select Switch



Baud Rate Switch



Setting

Role: Master
bps: 9600 bps
Mode: DIP Switch
Configuration Mode

ii) Set as a SLAVE

Function Select Switch



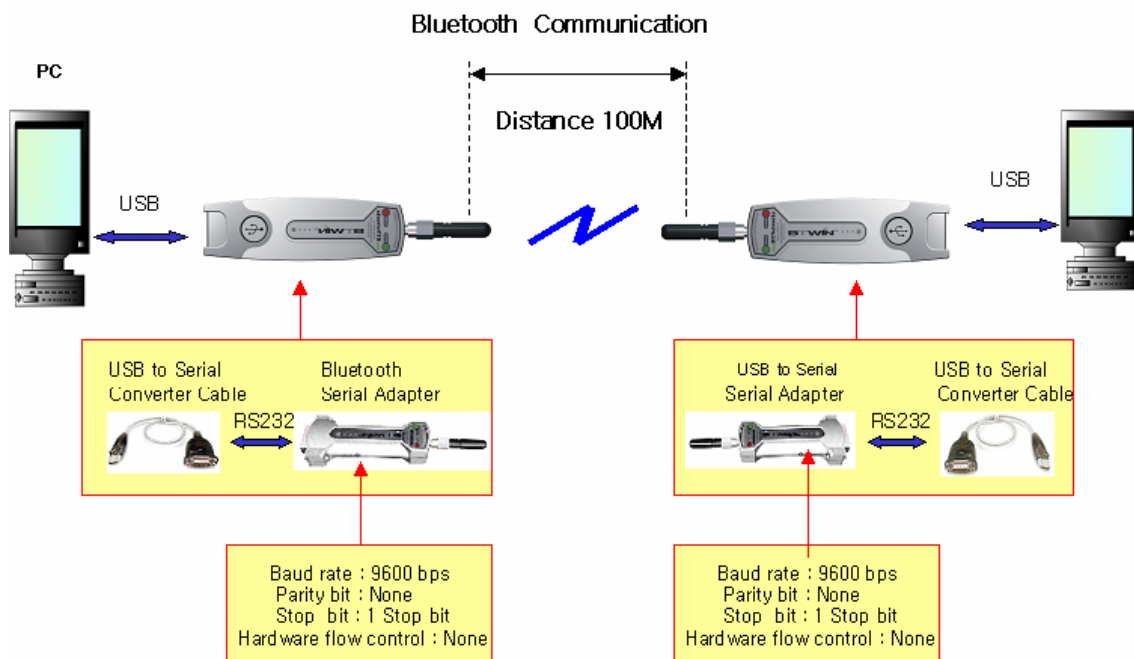
Baud Rate Switch



Setting

Role: Slave
bps: 9600 bps
Mode: DIP Switch
Configuration Mode

17-2. Communication Test at 9600 bps (default Setting)



Part	Description		
Equipment	PC: 2 ea BM2001: 2 ea		
Test Environment	PC is power on and OS is the Windows. Use USB port of each PC.		
Setting Values	Part	Default (Before change)	User Select (After Change)
	External Power Select	Don't Use	Don't Use
	Select RI Signal Line	Don't Use	Don't Use
	Master/Slave Select	Master or Slave	Master or Slave
	Mode Select	Dip switch Configuration mode	Dip switch Configuration mode
	Baud rate	9600 bps	9600 bps
	Parity	None	None
	Stop bit	1 bit	1 bit
	Hardware flow control	None	None
* If use Default setting, You don't have to change the setting.			

Follow these procedures.

[1] Attach BM2001 to USB port of each PC.

[2] Turn on the power switch.

- ◆ Whenever turn on the power switch, BM2001 will start working.

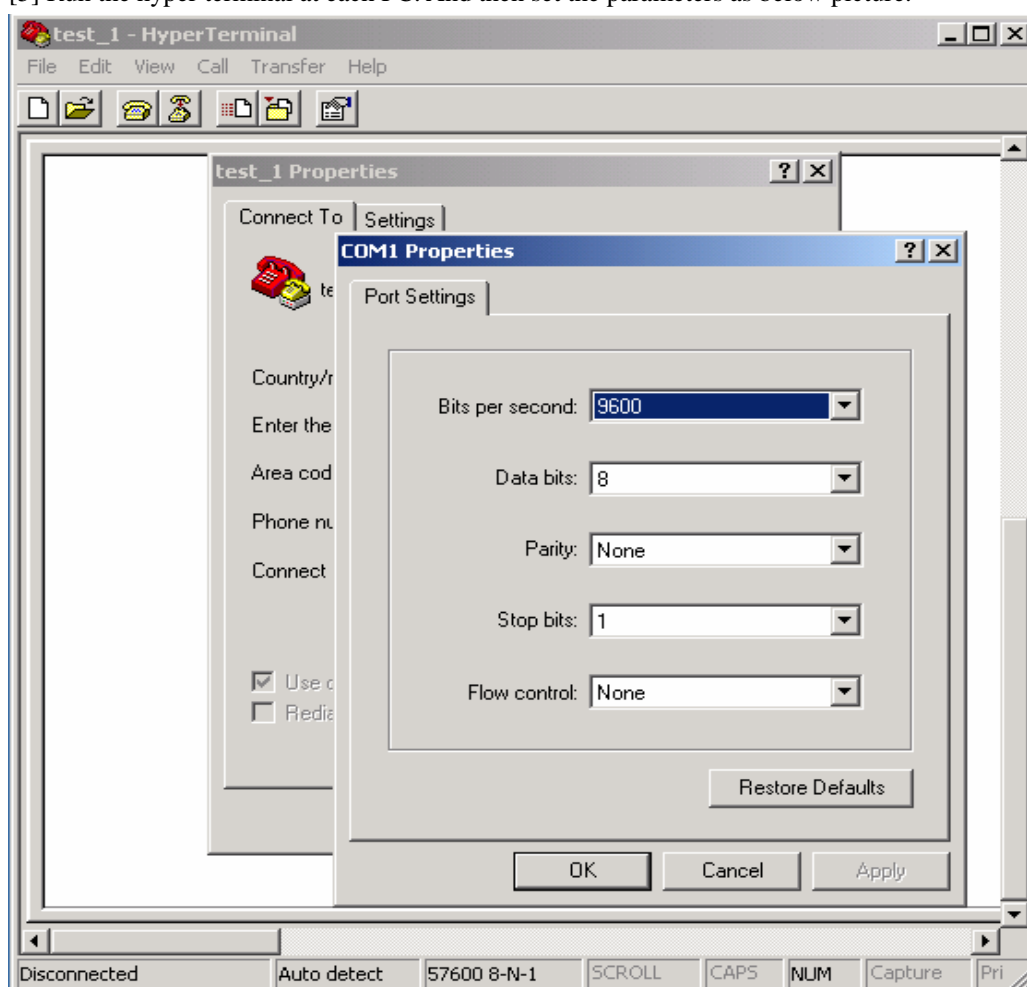
[3] Check on the power LED color is red.

- ◆ It means B2001 is supplied power stable.

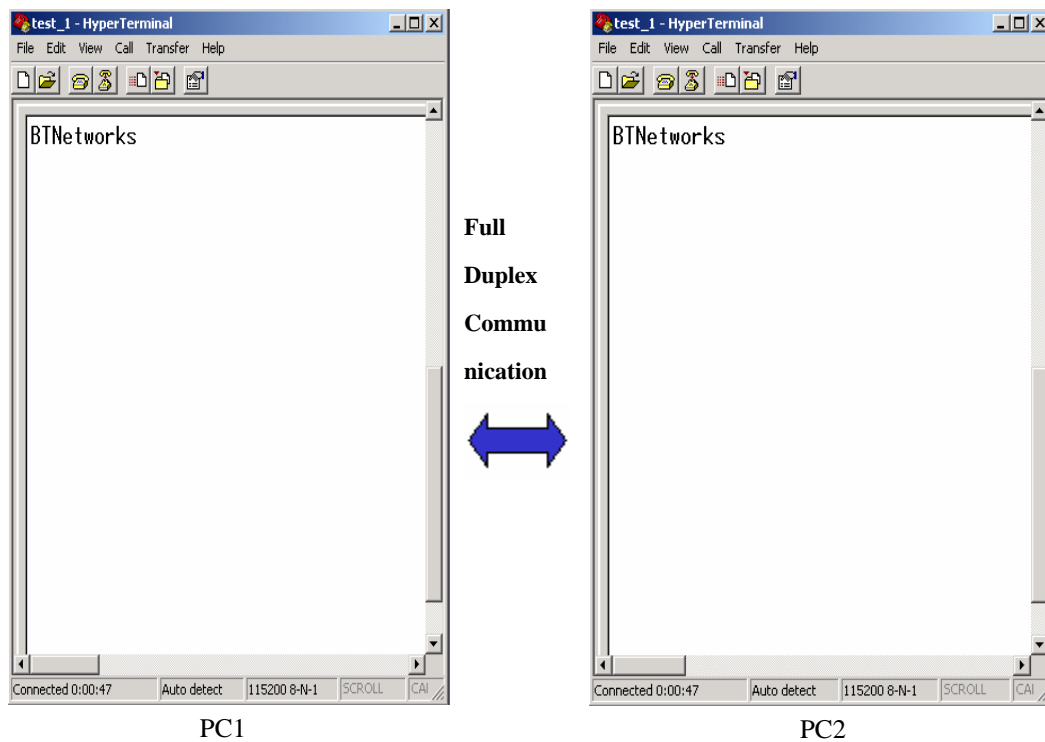
[4] Check on status LED color is green.

- ◆ When Status LED is green, it means is established connection between two BM2001s.

[5] Run the hyper terminal at each PC. And then set the parameters as below picture.

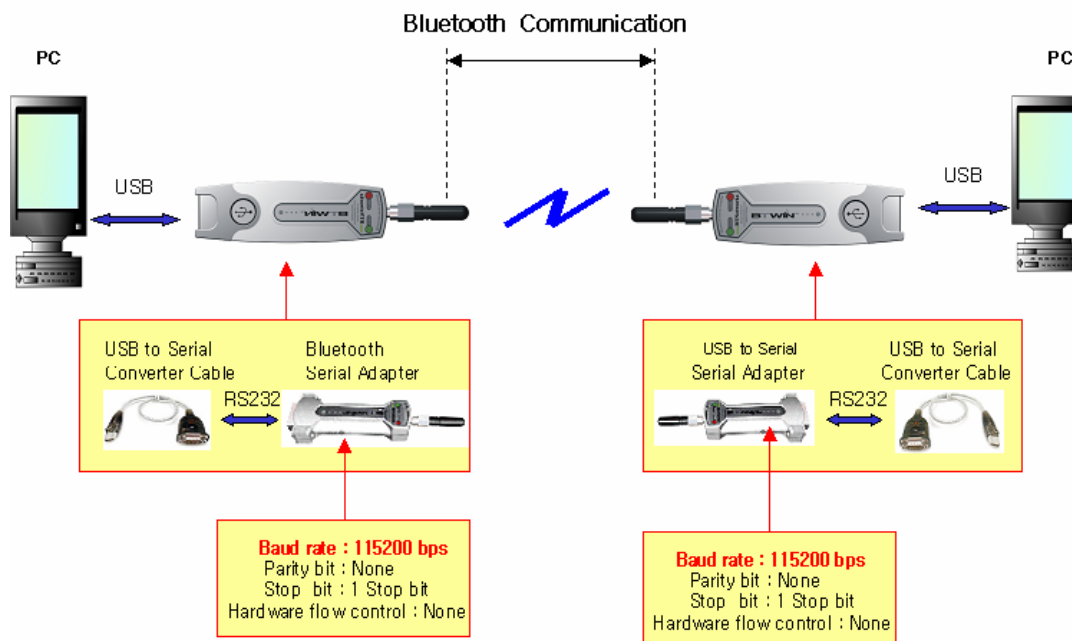


[6] Enter the characters via keyboard at each PC in order to transmit the data between two PCs.



[7] If displayed characters are right, it means both the data transmitting through BM2001 and setup is successful.

17-3. Communication Test at **115,200** bps (change the baud rate)



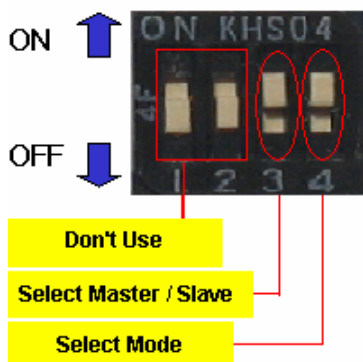
Part	Description		
Equipment	PC: 2 ea BM2001: 2 ea		
Test Environment	PC is power on and OS is the Windows. Use USB port of each PC.		
Setting Values	Part	Default (Before change)	User Select (After Change)
	External Power Select	Don't Use	Don't Use
	Select RI Signal Line	Don't Use	Don't Use
	Master/Slave Select	Master or Slave	Master or Slave
	Mode Select	Dip switch Configuration mode	Dip switch Configuration mode
	Baud rate	9600 bps	115,200 bps
	Parity	None	None
	Stop bit	1 bit	1 bit
	Hardware flow control	None	None
* Only change the baud rate's value			

Follow these procedures.

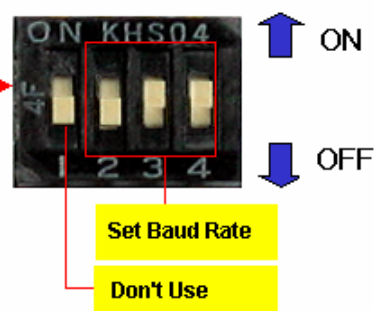
[1] Change the baud rate switch as 115200 bps. Pin 2,3 and 4 are up.

♦ **BM2001** should be either master or slave. If one is a master, another should be a slave.

Function Select Switch



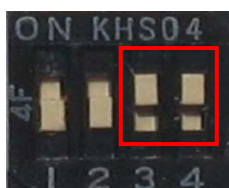
Baud Rate Switch



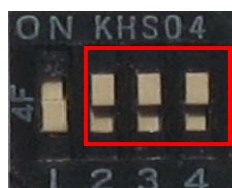
Set the DIP Switch

i) Set as a MASTER

Function Select Switch



Baud Rate Switch



Setting

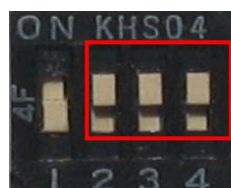
Role: Master
Bps: 115200 bps
Mode: DIP Switch
Configuration Mode

ii) Set as a SLAVE

Function Select Switch



Baud Rate Switch



Setting

Role: Slave
Bps: 115200 bps
Mode: DIP Switch
Configuration Mode

[2] Attach BM2001 to USB port of each PC.

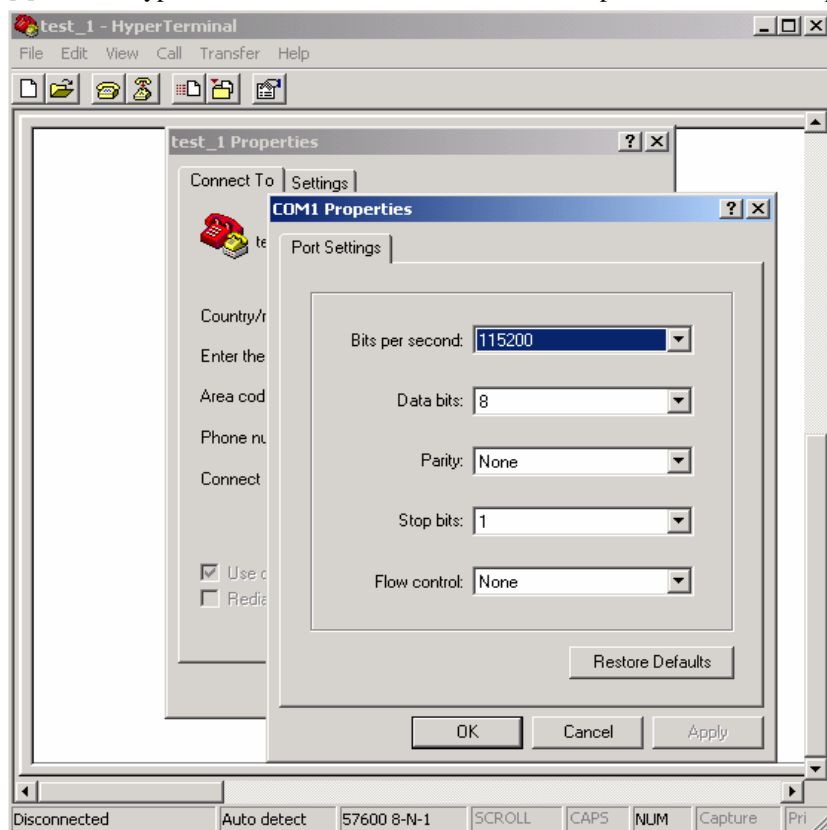
[3] Turn on the power switch.

- Whenever turn on the power switch, BM2001 will start working.
- Check on power LED color is red. It means B2001 is supplied power stable.

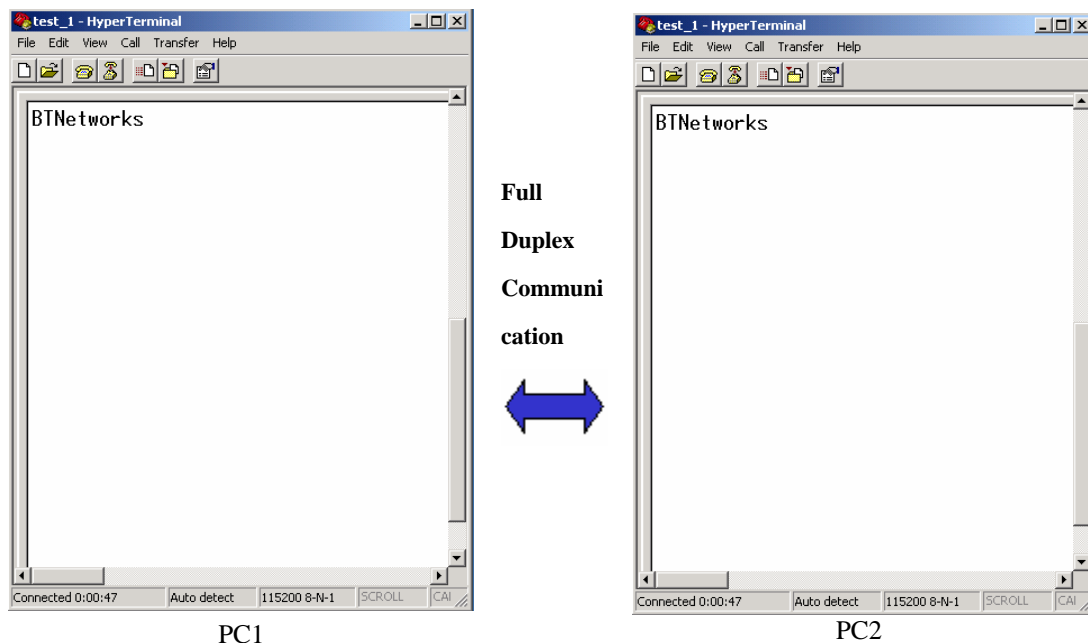
[4] Check on status LED color is green.

- When Status LED is green, it means is established connection between two BM2001s.

[5] Run the hyper terminal at each PC. And then set the parameters as below picture.



[6] Enter the characters via keyboard at each PC in order to transmit the data between two PCs.



[7] If displayed characters are right, it means both the data transmitting through BM2001 and setup is successful.

18. PC Configuration Mode

18-1. Pre Setting before using the PC Configuration Mode

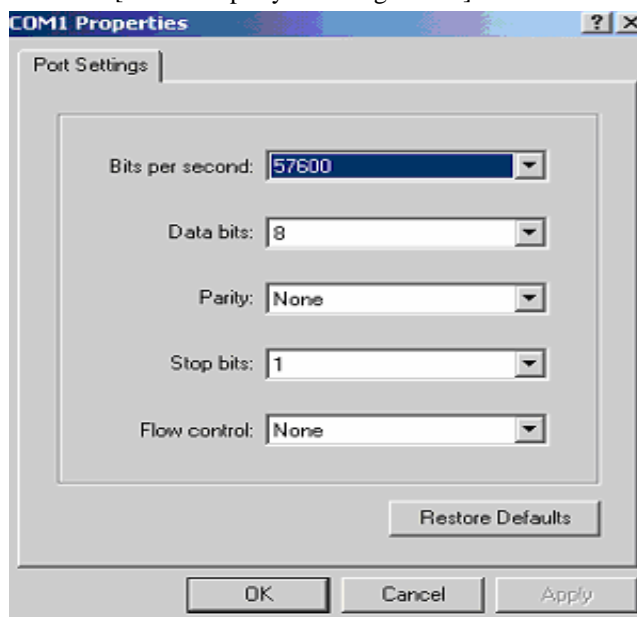
You should below procedures in order to use the PC Configuration mode before turn on the BM2001.

[1] In order to use PC Configuration Mode, you need the serial communication software.

Here we explain the usage scenario with HyperTerminal of Windows.

[2] Run the Hyper Terminal and then disconnect current connection.

[3] Open the menu [File→Property→Configuration] at Menu Bar.

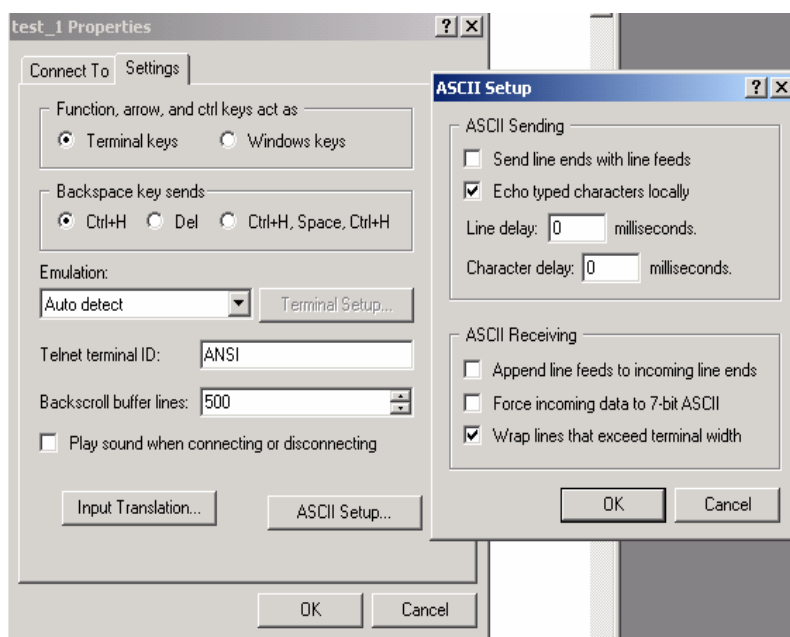


Port Setting

Communication Speed:
Auto-Mode

Data Bit: 8

Parity Bit: None Parity
Stop Bit: 1
Flow Control: None



Click to “ASCII Setup”
button of Setup tab in the
properties to into ASCII
setup mode.

Check the “Echo typed
characters locally” box in
the ASCII Sending.

```

|----- BTWIN -----|
|      Model name : BM1001      |
|      Version    : 3.0         |
|-----|

```

Press the enter key > 5

[4] Afterward above set up, turn on the BM2001 and then click the connect button.

It will appear the message like left picture then it will start the count down.

```

|----- BTWIN -----|
|      Model name : BM1001      |
|      Version    : 3.0         |
|-----|

```

Press the enter key > 5

BTWIN Setting Start

```

===== TOP MENU =====
0 => Device Name       : BTNetworks
1 => Authentication    : Enable PINCODE[BTWIN]
2 => Local BD Address  : 0011b1a10c71
3 => Remote BD Address : 0011b1a10c7c
4 => Role              : SLAVE
5 => Connection Mode   : MODE1
6 => RS-232(Baud Rate) : 9600bps
7 => RS-232(Stop Bit)  : 1 bit
8 => RS-232(Parity Bit) : None
9 => RS-232(Flow Control) : ON

```

```

[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]

```

Select Menu(0~9) > _

[5] Press the enter key within 5 seconds, and appear the TOP menu to configure.

[6] If you don't press the enter key within 5 seconds, BM2001 will try to communicate at default setting.

[7] If you need more detail information for PC Configuration Mode, refer below documents.

18-2. How to use the PC Configuration Mode

```

/ => RS-232(Stop Bit)      : 1 bit
8 => RS-232(Parity Bit)    : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > t
===== TOP MENU =====
0 => Device Name           : BTNetworks
1 => Authentication       : Enable PINCODE[BTWIN]
2 => Local BD Address      : 0011b1a10c71
3 => Remote BD Address     : 0011b1a10c7c
4 => Role                  : SLAVE
5 => Connection Mode       : MODE1
6 => RS-232(Baud Rate)     : 9600bps
7 => RS-232(Stop Bit)      : 1 bit
8 => RS-232(Parity Bit)    : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > _

```

```

BTWIN Setting Start

===== TOP MENU =====
0 => Device Name           : BTNetworks
1 => Authentication       : Enable PINCODE[BTWIN]
2 => Local BD Address      : 0011b1a10c71
3 => Remote BD Address     : 0011b1a10c7c
4 => Role                  : SLAVE
5 => Connection Mode       : MODE1
6 => RS-232(Baud Rate)     : 9600bps
7 => RS-232(Stop Bit)      : 1 bit
8 => RS-232(Parity Bit)    : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > x
/***** BTWIN Setting complete! *****/

BTWIN Slave mode start
_

```

```

9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > f
Retry Select(0~9) >

```

1) After enter the character,
Press the enter key.

2) Small “t” always moves to
TOP MENU.

3) Small “x” closes the PC
configuration utility.

3) To move to other menu you
should input the left first
number of menus.

4) To cancel current input
character use the “←” Back
Space key and “ESC” key.

5) If the entered character is
wrong, “**Retry** > “
message will be displayed.

6) You can enter the character
until maximum 12 characters.

If the entered characters
exceed than 12 characters, it
will display “**Overflow
buffer**” message.

And then it will display
“**Retry** > “ message.

14.3 About the menu of the PC configuration mode

[1] Device Name: Bluetooth device's name

[1-1] You can change the device name within 12 characters.

[1-2] Afterward input the name then press the enter key.

Appear "Change Complete!!" message and then move to TOP MENU.

```
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > f
Retry Select(0~9) > 0
Change Device name
Within 12 character > BTtest
Change complete !!

===== TOP MENU =====
0 => Device Name          : BTtest
1 => Authentication       : Enable PINCODE[BTWIN]
2 => Local BD Address     : 0011b1a10c71
3 => Remote BD Address    : 0011b1a10c7c
4 => Role                  : SLAVE
5 => Connection Mode      : MODE1
6 => RS-232(Baud Rate)    : 9600bps
7 => RS-232(Stop Bit)     : 1 bit
8 => RS-232(Parity Bit)   : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > _
```

The device name is changed from BTNetworks to BTtest.

[1-3] You can see the changed device name at TOP menu.

[2] Authentication

To connect other bluetooth devices it needs an authentication, pin code, encryption.

User may set them in this menu.

```
1 => Authentication       : Enable
2 => Pin Code             : BTWIN
3 => Encryption           : Enable
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      ]
=====
Select Menu(1~3) > t
===== TOP MENU =====
0 => Device Name          : BTtest
1 => Authentication       : Enable PINCODE[BTWIN]
2 => Local BD Address     : 0011b1a10c71
3 => Remote BD Address    : 0011b1a10c7c
4 => Role                  : SLAVE
5 => Connection Mode      : MODE1
6 => RS-232(Baud Rate)    : 9600bps
7 => RS-232(Stop Bit)     : 1 bit
8 => RS-232(Parity Bit)   : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > _
```

Authentication is set as enable

Pin Code is set as BTWIN

[2-1] Authentication

[2-1-1] User may set to request the authentication procedure.

[2-1-2] When it is disable, the encryption feature is disable too.

[2-1-3] The default setting is enable.

```
1 => Authentication      : Enable PINCODE[BTWIN]
2 => Local BD Address   : 0011b1a10c71
3 => Remote BD Address  : 0011b1a10c7c
4 => Role                : SLAVE
5 => Connection Mode    : MODE1
6 => RS-232(Baud Rate)  : 9600bps
7 => RS-232(Stop Bit)   : 1 bit
8 => RS-232(Parity Bit) : None
9 => RS-232(Flow Control) : ON
```

```
=====
[ Back Spcae : Input data Cancel      ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
```

Select Menu(0~9) > 1

```
===== AUTHENTICATION SUB MENU =====
1 => Authentication      : Enable
2 => Pin Code            : BTWIN
3 => Encryption          : Enable
```

```
=====
[ Back Spcae : Input data Cancel      ]
[ t : Move top menu      ]
=====
```

Select Menu(1~3) >

[2-2] Pin Code

[2-2-1] It is like a password.

[2-2-2] To connect between two devices, they have to have a same pin code.

[2-2-3] You can enter the pin code within 12 characters.

[2-2-4] After enter the pin code, "Change complete !!" message will be displayed.

And then move to AUTHENTICATION SUB MENU.

```
===== AUTHENTICATION SUB MENU =====
1 => Authentication      : Enable
2 => Pin Code            : BTWIN
3 => Encryption          : Enable
```

```
=====
[ Back Spcae : Input data Cancel      ]
[ t : Move top menu      ]
=====
```

Select Menu(1~3) > 2

```
=====
Change Pin Code
Within 12 character > TEST
Change complete !!
```

```
===== AUTHENTICATION SUB MENU =====
1 => Authentication      : Enable
2 => Pin Code            : TEST
3 => Encryption          : Enable
```

```
=====
[ Back Spcae : Input data Cancel      ]
[ t : Move top menu      ]
=====
```

Select Menu(1~3) >

Pin code is changed.

[2-3] Encryption

[2-3-1] This encrypt the data between two bluetooth devices.

[2-3-2] The default setting is enable.

[2-3-3] If the authentication is disable, this is disable too.


```
1 => Authentication      : Enable PINCODE[BTWIN]
2 => Local BD Address   : 0011b1a10c71
3 => Remote BD Address  : 0011b1a10c7c
4 => Role               : SLAVE
5 => Connection Mode    : MODE1
6 => RS-232(Baud Rate)  : 9600bps
7 => RS-232(Stop Bit)   : 1 bit
8 => RS-232(Parity Bit) : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel      ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 1

===== AUTHENTICATION SUB MENU =====
1 => Authentication      : Enable
2 => Pin Code           : BTWIN
3 => Encryption         : Enable
=====
[ Back Spcae : Input data Cancel      ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(1~3) >
```

[3] Local BD Address:

[3-1] This is a MAC address of Bluetooth Device. It is fixed parameter. You can't change it.

[3-2] If you choice this menu, "No change local BD address" message will be displayed and then move to Top menu automatically.

[4] Remote BD Address

[4-1] This is the latest paired bluetooth device address.

[4-2] If you want to connect new bluetooth device, delete the latest paired bluetooth device address and then enter new bluetooth address.

```
===== TOP MENU =====
0 => Device Name        : BTtest
1 => Authentication     : Enable PINCODE[TEST]
2 => Local BD Address   : 0011b1a10c71
3 => Remote BD Address  : 0011b1a10c7c
4 => Role              : MASTER
5 => Connection Mode    : MODE3
6 => RS-232(Baud Rate)  : 9600bps
7 => RS-232(Stop Bit)   : 1 bit
8 => RS-232(Parity Bit) : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel      ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 3
Change Remote BD address
Hexa type 12 character > 000b2435fdcc
```

- 1) To use this feature enter "3" and then press the enter key at menu select status.
- 2) Input the new bluetooth device address in a hexadecimal that you want to connect it.
- 3) It will be displayed "Change complete!!" and then move to Top menu automatically.
- 4) You can see the changed Remote BD address.


```
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 3
Change Remote BD address
Hexa type 12 character > 000b2435fdcc
Change complete !!

===== TOP MENU =====
0 => Device Name      : BTtest
1 => Authentication   : Enable PINCODE[TEST]
2 => Local BD Address  : 0011b1a10c71
3 => Remote BD Address : 000b2435fdcc
4 => Role              : MASTER
5 => Connection Mode   : MODE3
6 => RS-232(Baud Rate) : 9600bps
7 => RS-232(Stop Bit)  : 1 bit
8 => RS-232(Parity Bit) : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) >
```

[4-3] When you want to delete the Remote BD address, input twelve zeros
“000000000000”

If you delete the Remote BD address, it is able to connect the first bluetooth device has same PIN code in MODE1.

[4-4] BM1001 must have a Remote BD address in MODE3.

[5] Role

[5-1] Bluetooth device has to be an either master or slave.

[5-2] In order to connect between two bluetooth devices one has to be a master and another has to be a slave.

```
===== TOP MENU =====
0 => Device Name      : BTtest
1 => Authentication   : Enable PINCODE[TEST]
2 => Local BD Address  : 0011b1a10c71
3 => Remote BD Address : 000b2435fdcc
4 => Role              : MASTER
5 => Connection Mode   : MODE3
6 => RS-232(Baud Rate) : 9600bps
7 => RS-232(Stop Bit)  : 1 bit
8 => RS-232(Parity Bit) : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 4
Change Role      :
1 : MASTER      2 : SLAVE
Select(1~2) > _
```

[5-3] Select menu 4 at TOP MENU, and you can select the role.
MASTER is 1 and SLAVE is 2.

[5-4] Select the role and press the enter key.

```
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 4
Change Role :
1 : MASTER      2 : SLAVE
Select(1~2) > 2
Change complete !!

===== TOP MENU =====
0 => Device Name      : BTtest
1 => Authentication   : Enable PINCODE[TEST]
2 => Local BD Address : 0011b1a10c71
3 => Remote BD Address: 000b2435fdcc
4 => Role              : SLAVE
5 => Connection Mode  : MODE3
6 => RS-232(Baud Rate) : 9600bps
7 => RS-232(Stop Bit) : 1 bit
8 => RS-232(Parity Bit): None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > _
```

* You can see the changed Role.

[6] Connection Mode

There are three connection modes. You may select connection mode.

- 1) Select menu 5 at TOP MENU.
- 2) Choice the mode. And press the enter key.

```
===== TOP MENU =====
0 => Device Name      : BTtest
1 => Authentication   : Enable PINCODE[TEST]
2 => Local BD Address : 0011b1a10c71
3 => Remote BD Address: 000b2435fdcc
4 => Role              : SLAVE
5 => Connection Mode  : MODE3
6 => RS-232(Baud Rate) : 9600bps
7 => RS-232(Stop Bit) : 1 bit
8 => RS-232(Parity Bit): None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 5
Change Connection mode :
1 : MODE1      2 : MODE2      3 : MODE3
Select(1~3) > _
```

- 3) You can see the changed mode.

```
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 5
Change Connection mode :
1 : MODE1      2 : MODE2      3 : MODE3
Select(1~3) > 2
Change complete !!

===== TOP MENU =====
0 => Device Name      : BTtest
1 => Authentication   : Enable PINCODE[TEST]
2 => Local BD Address : 0011b1a10c71
3 => Remote BD Address: 000b2435fdcc
4 => Role              : SLAVE
5 => Connection Mode  : MODE2
6 => RS-232(Baud Rate) : 9600bps
7 => RS-232(Stop Bit) : 1 bit
8 => RS-232(Parity Bit): None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > _
```

About the modes

MODE 1

In this mode, BM2001 always connect the latest paired bluetooth device.

If BM2001 has not the Remote BD address, try to connect the first bluetooth device is searched.

At this time, two bluetooth devices must have same PIN code.

MODE 2

1) In MASTER Case

You can search the bluetooth devices have same PIN code round it.

And the bluetooth devices list will be displayed.

You can select one among the bluetooth devices list.

2) In SLAVE case

when it received the connection request from the Master has same PIN code, it connect the master.

MODE 3

If you know the Remote BD address, you can change the Remote BD address in Mode3.

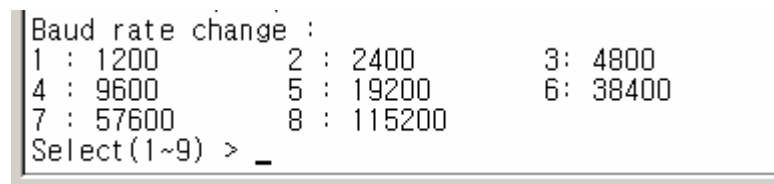
Enter the BD address of Remote device to "Remote BD Address".

***Caution: BM2001 must have a Remote BD Address in mode3.**

[7] RS-232 (Baud Rate)

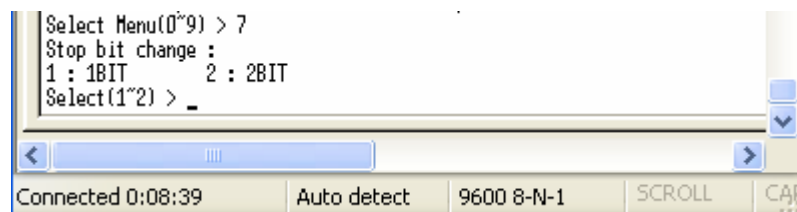
[7-1] It is UART communication speed.

[7-2] BM2001 supports Baud Rate from 1,200 until 230,400 bps.



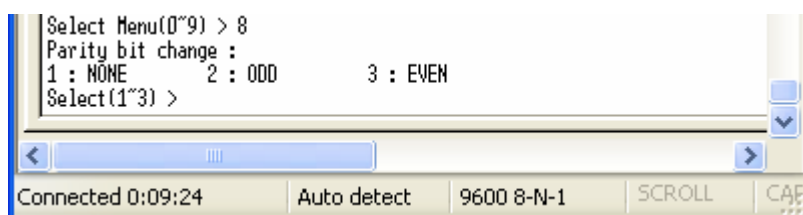
[8] RS-232 (Stop Bit)

STOP Bit is 1 Bit and 2 Bit.



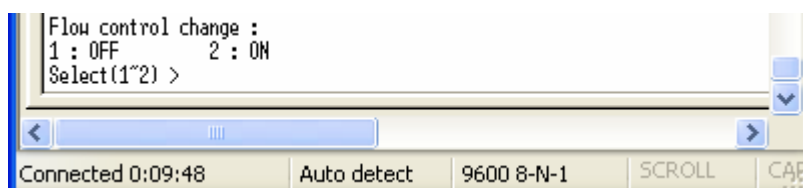
[9] RS-232 (Parity Bit)

Parity Bit is NONE, ODD and EVEN.



[10] RS-232 (Flow control)

BM2001 supports Hardware Flow control. Default setting is OFF.



19. Connection Modes

19-1. MODE 1 (Default Mode)

This is the default setting.

Before user change the connection mode, BM2001 use this mode always.

[1] it communicates with the latest paired bluetooth device.

- The latest paired bluetooth device address is memorized to the Remote BD Address.

[2] If it has not the Remote BD Address,

Master: It tries to connect the first bluetooth device is searched.

At this time, remote device should be a SLAVE mode and must have same PIN code.

SLAVE: When it received the connection request from the Master has same PIN code, it connect the master.

19-2. MODE 2

If you want to connect the new bluetooth device, use this mode.

Using method

[1] Turn off BM2001 and move down the pin#4 of the function select switch. Then BM2001 will be a PC configuration Mode.

[2] Run the Hyperterminal program of the windows. Reffer to “**PC Configuration Mode**”.

[3] Turn on BM2001, you will find the below picture at your monitor.

[4] Press the Enter key within 5 seconds.

```
|===== BTWIN =====|  
|      Model name : BM1001      |  
|      Version   : 3.0          |  
|=====|  
Press the enter key > 5
```

[5] It will enter the PC configuration Mode.

[6] Select No.5 Connection Mode in the menu. And then press the Enter key.

[7] Select No.2 MODE2 in the connectin mode menu. And then press the Enter key.

[8] Turn off BM2001.

[9] Move up the pin#4 of the function select switch. It will ba DIP Switch Mode.

[10] Turn on BM2001.

```

===== TOP MENU =====
0 => Device Name       : BTtest
1 => Authentication    : Enable PINCODE[TEST]
2 => Local BD Address  : 0011b1a10c71
3 => Remote BD Address : 000b2435fdcc
4 => Role              : SLAVE
5 => Connection Mode   : MODE3
6 => RS-232(Baud Rate) : 9600bps
7 => RS-232(Stop Bit)  : 1 bit
8 => RS-232(Parity Bit) : None
9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > 5
Change Connection mode :
1 : MODE1      2 : MODE2      3 : MODE3
Select(1~3) > _

```

In Master Case

[11] You can see the below picture.

- BM2001 will find the bluetooth devices with same PIN code.

```

9 => RS-232(Flow Control) : ON
=====
[ Back Spcae : Input data Cancel ]
[ t : Move top menu      x : EXIT(In top menu) ]
=====
Select Menu(0~9) > x
/***** BTWIN Setting complete! *****/

```

BTWIN Master mode start

```

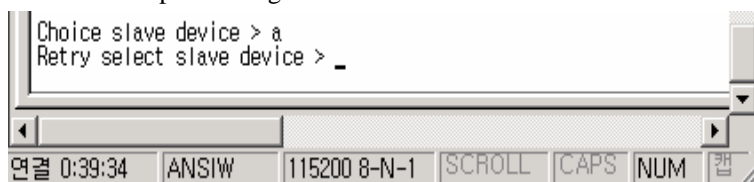
Start Inquiry...
===== Key Operation =====
[ 1~7 : Choice slave device ]
[ s : Stop inquiry ]
[ r : Restart inquiry ]
[ Back space : Input Cance ]
=====
Num BD ADDRESS LOCALNAME CoD
1 0005c9500de2 SPP_CLIENT 000104
2 0011b1a10c80 BTNetworks 001f00
3 000a3a541933 CWP_DONGLE 000000
=====
Choice slave device >

```

- The searching will be kept on until look for 7 slaves.

- Some keys have a function while searching.

- “r”: Retry searching
- “←” Back space key : Cancel the entered data
- “s”: Stop searching



Select one slave device of the list, and master will connect to that.

- If connection is fail, “The slave device is not connectable!!” message will be displayed.

- And retry search for bluetooth devices.

```

=====
Num  BD ADDRESS  LOCALNAME  CoD
1    0005c9500de2  SPP_CLIENT  000104
2    001b1a10c80  BTNetworks  001f00
3    000a3a541933  CWP_DONGLE  000000
=====
Choice slave device > 1
Connect Start : SLAVE BD ADDR(0005c9500de2)
The selected device is not connectable !

Start Inquiry....
===== Key Operation =====
[ 1~7 : Choice slave device ]
[ s   : Stop inquiry        ]
[ r   : Restart inquiry     ]
[ Back space : Input Cncl   ]
=====
Num  BD ADDRESS  LOCALNAME  CoD
1    001b1a10c80  BTNetworks  001f00
2    000a3a541933  CWP_DONGLE  120104
3    0005c9500de2  SPP_CLIENT  000104
4    001b1a10c6e  BTNetworks  001f00
=====
Choice slave device >

```

When the connection is successful, it will be displayed “CONNECTION OK”.

```

2    001b1a10c80  BTNetworks  001f00
3    000a3a541933  CWP_DONGLE  000000
=====
Choice slave device > 1
Connect Start : SLAVE BD ADDR(0005c9500de2)
The selected device is not connectable !

Start Inquiry....
===== Key Operation =====
[ 1~7 : Choice slave device ]
[ s   : Stop inquiry        ]
[ r   : Restart inquiry     ]
[ Back space : Input Cncl   ]
=====
Num  BD ADDRESS  LOCALNAME  CoD
1    001b1a10c80  BTNetworks  001f00
2    000a3a541933  CWP_DONGLE  120104
3    0005c9500de2  SPP_CLIENT  000104
4    001b1a10c6e  BTNetworks  001f00
=====
Choice slave device > 4
Connect Start : SLAVE BD ADDR(001b1a10c6e)
BTNetworksCONNECTION OK

```

In Slave case

When slave device receive the connection request from the master device has same PIN code, it will connect with master device.

After Pairing with new bluetooth device, BM2001 must retrun to MODE1.

If you don't do it, whenever turn on BM2001 it will be find the new bluetooth devices.

Back to Model

- [1] Turn off BM2001. And move down the pin#4 of the function switch to be PC configuration Mode.
- [2] Turn on BM2001. And change the connection mode as MODE1 at the main menu.
- [3] Turn on BM2001. And move up the pin#4 of the function switch to be DIP Switch Mode.

19-3. MODE 3

You can change the remote bluetooth device's address directly.

- [1] Enter the PC configuration Mode with BM2001.
- [2] Select No.5 Connection Mode at the main menu.
- [3] Select MODE3 in the connection mode menu.
- [4] Go back main menu.
- [5] Select No.3 Remote BD address at the main menu.
- [6] Input the Remote device's address.
- [7] Input "x", and then BM2001 will try to connect with new device what you want to connect.
- [8] Wait until "Connection Ok" message will be displayed.
- [9] Restart BM2001.
- [10] Change the connection mode as MODE1 at the main menu.
- [11] Turn off BM2001, and then move up pin#4 of the function switch to be DIP Switch mode.

Two bluetooth devices have same PIN Code to use MODE3.

Regulatory Compliance

FCC compliance Information

This device complies with part 15 of 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.

Information to User

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.

FCC WARNING

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

User information of CE compliance

Hereby, **BT Networks co., Ltd** declares that this is **Bluetooth USB Adapter (BM2001)** in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

RF Exposure Information

The antenna used for this transmitter must be installed to provide a separation distance of at least 1.5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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