

Bluetooth SPP Bridge

FB900AS



Model name:
FB900AS

User Manual ver 1.0D



ABOUT FB900AS:

Class 1 / RS232 Interface

DIP switch is available for a second setting

4dBi Dipole Antenna provided

Contact US

Firmtech.Co,LTD





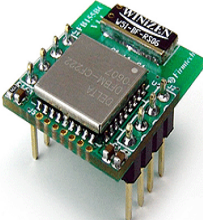
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BM series & FB Series



	BM1001	BM2001	FB151AS	FB151AC	FB155BC
Bluetooth Serial Adapter					
Description	Bluetooth Serial adapter	Bluetooth USB Adapter	Embedded bluetooth module	Embedded bluetooth module	Embedded bluetooth module
Power Class	Class1	Class1	Class1	Class1	Class2
RF Range	Up to 100m	Up to 100m	Up to 100m	Up to 100m	Up to 30 m
Power Connector	DC plug or DB9	USB port	Header 2.54mm	Header 2.54mm	Header 2.54mm
Power Voltage	DC 5V ~12V	DC 5V	DC 3.3V	DC 3.3V	DC 3.3 V
Signal Interface	Female DB9	USB	Header 2.54mm 1X 9X2	Header 2.54mm 1X 9X2	Header 2.54mm 1X4X2
Serial Interface	RS232	RS232	UART	UART	UART
Flow Control	RTS,CTS,DTR,DSR Support	RTS,CTS,DTR,DSR Support	RTS,CTS,DTR,DSR Support	RTS,CTS,DTR,DSR Support	RTS,CTS Support
DIP Switch	Support	Support	No	No	No
Bluetooth Profile	Serial Port Profile	Serial Port Profile	Serial Port Profile	Serial Port Profile	Serial Port Profile
Bluetooth Version	1.2	1.2	1.2	1.2	1.2
Applicable Antenna	Stub Antenna Dipole Antenna Patch Antenna	Stub Antenna Dipole Antenna Patch Antenna	Stub Antenna Dipole Antenna Patch Antenna	Included Chip Antenna	Included Chip Antenna
Certification	FCC,CE,MIC	FCC,CE,MIC	MIC	MIC	MIC
Dimension	68 X 21 X 16	70 X 23 X 11.5	36.5 X 23 mm	37.5 X 23 mm	18 X 20 mm

Accessories

Antennas

	FBA001DA	FBA003DA	FBA004DA	FBA008PA
Part No				
RF Gain	1 dBi	3 dBi	4 dBi	8.5 dBi
Dimension	30 X 8 mm	105 X 11 mm	170 X 13.5 mm	150 X 150 mm
Connector	SMA male	SMA male	SMA male	SMA male
Hand direction	Right Hand	Right Hand	Right Hand	Right Hand
Distance	100 M	150 M	200 M	800 M

Extension Cable

	FBA015EC	FBA100REC		
Part No				
Length	150 mm	1 M		

Power Supply



	FBA001PA	FBA001UPC		
Part No				
Input Voltage	Free	From USB port		
Output Voltage	DC 5V	DC 5 V		

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1. About FB900AS

Bluetooth serial bridge, FB900AS is a product that is developed, designed and produced by Firmtech Co, Ltd. (formerly BTnetworks Inc.). FB900AS can do serial link to extend the communication distance.

Strong Security

Security of Bluetooth wireless communication is very strong because it use the frequency hopping and 128bit encryption in 2.4Ghz frequency range.

Enhanced Frequency Hopping

FB151AX is supported Bluetooth version 1.2 for AFHS.

Simple Using

Hardware setting is very easy and simple.

- The maintenance is very convenience.
- One pair of FB900AS will try to connect automatically whenever powered up.

It does not require extra software for operation.

- No installation of driver and application software.

Simple Configuration

User may set the parameter of FB900AS with HyperTerminal on PC.

FB900AS has 4 DIP switches for the function select.

Flow control support

FB900AS provides RTS, CTS, DTR, and DSR basically.

Remote Control

FB900AS has the remote control feature.

2. Package Constitution

Model no.	Pictures	Q'ty
FB900AS		1ea
FBA001PO	 (5V Power Adaptor)	1ea
FBA004DA	 (4 dBi)	1ea
CD	BTWIN™ User's Guide CD	1ea
FBA100REC	 RS232 Extension Cable	1ea
Bracket	 External Antenna (8 dBi)	1ea

<Table 2.1 FB900AS Package >

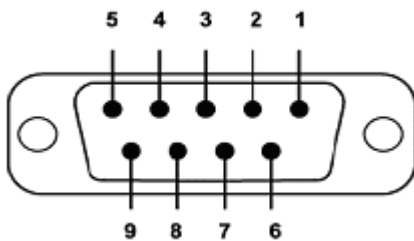
3. External view



<Fig 3.1 FB900AS External view >

NO	Description
1	Power LED
2	STATUS LED
3	Channel 1 LED (display the connection status with the first device)
4	Channel 2 LED (display the connection status with the second device.)
5	Function select switch
6	Reset
7	Power switch

3.1 D Sub 9 Pin Interface



D-SUB 9 Pin Connector

Pin No	Signal Line	Description	Direction
2	TXD	Transmit Data	Output
3	RXD	Receive Data	Input
5	GND	Ground	-

4. Specification & Power consumption

Part	Specification
Bluetooth Spec.	Bluetooth Specification V1.2
Communication distance	100 M
Frequency Range	2.4 GHz ISM Band
Sensitivity	-83dBm (Typical)
Transmit Power	16dBm (Typical)
Size	61 x 84 x 25
Support Bluetooth Profile	SPP
Input Power	5V DC
Current Consumption	Maximum 100 mA
Operating Temperature	-20°C ~ 70°C
Communication Speed	1,200bps ~ 115,200bps
Antenna	Dipole Antenna (4 dBi)
PC interface	9pin DSUB Female (RS232)

<Table 5.1- FB900AS Specification >

Status	Current Consumption	
	MIN	MAX
Standby	7	9
Device searching	71	83
Pairing / Before Connection	65	71
After Connection	14	37
Data Transferring	36	43

<Table 5.2 Power Consumption >

Test Environment

Baud rate : 9600 bps , Input Voltage : DC 5V

Power consumption is depends on the baud rate.

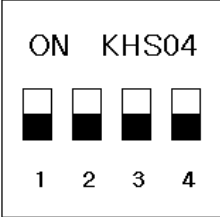
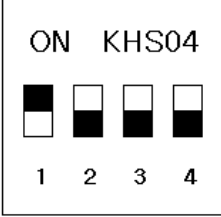
5. Function Select Switch

User can set the function of FB900AS with 4 DIP Switches.

Pin NO	OFF	ON
1	Operation Mode1	Operation Mode2
2	Connection Mode1	Connection Mode3
3	Normal working mode	PC configuration Mode
4	Remote Control Disable	Remote control Enable

5.1 Explain the DIP Switch

[5.1.1] Operation MODE

PIN No	MODE1	MODE2
1	 <p>ON KHS04</p> <p>1 2 3 4</p>	 <p>ON KHS04</p> <p>1 2 3 4</p>

User uses the FB900AS to connect between two bluetooth devices normally.

The bluetooth device's role is **one of Master and Slave** normally.

Between two bluetooth devices to communicate, one should be a Master and opposite side should be a Slave. In this case FB900AS's operation mode is should be MODE1 to connect with them.

Sometimes the bluetooth devices to connect with FB900AS are slave.

In this case FB900AS's operation mode is should be MODE2 to connect with them.

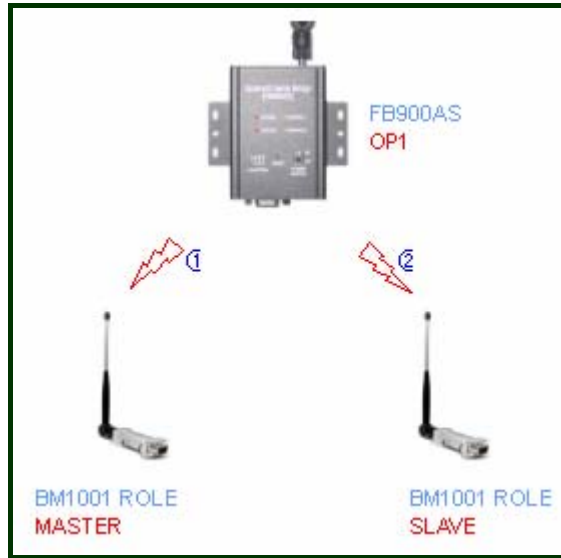
Operation MODE1

There are two bluetooth devices to connect with FB900AS.

One is master mode and the other device is slave mode.

FB900AS's operation mode should be **MODE1** to connect with them.

If user wants to make the link chain with FB900AS, we recommend this mode.



<Fig 5.1. The connection when operation mode1 >

Operation Mode2

If two remote devices are slave mode, FB900AS should be Operation Mode2.

MODE2's connection time is shorter than MODE1.



<Fig 5.2. The connection when Operation MODE2>

[5.1.2] Connection Mode

PIN NO	MODE1	MODE3
2	<p>ON KHS04</p> <p>1 2 3 4</p>	<p>ON KHS04</p> <p>1 2 3 4</p>

Firmtech's all bluetooth products have three connection modes normally. FB900AS has two connection modes, MODE1 and MODE3.

MODE1

In this mode, FB900AS always connect the latest paired bluetooth device.

MODE3

User can enter the Remote bluetooth device's address directly that user wants to pair with FB900AS.

If user wants to change the remote device often, we recommend this mode.

[5.1.3] PC Configuration Mode

User can set the parameters of FB900AS on PC configuration mode.

Refer to 7.PC configuration Mode.

PIN NO	Normal Mode	PC Configuration Mode
3	<p>ON KHS04</p> <p>1 2 3 4</p>	<p>ON KHS04</p> <p>1 2 3 4</p>

※ FB900AS's RS232 port setting is below.

Part	Baud Rate	Data Bit	Parity Bit	Stop Bit
Setting	9600 bps	8 bit	None	1

1) Terminal program's setting is above table.

2) Turn on the FB900AS and user can see the pc configuration window.

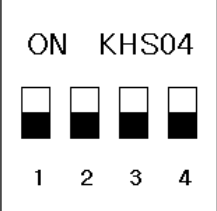
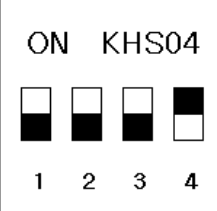
If your PC's OS is Windows, user can use HYPER Terminal program of the windows.

- 3) If you want to get back the default setting, push the reset button on PC configuration Mode.
- 4) After finish the initialization, FB900AS will stop working.
- 5) Reboot FB900AS.

Parameters	Remote control Disable	Remote control enable
Authentication	Enable	Enable
Pin code	BTWIN	BTWIN
Local Name	BT-bridge	BT-bridge
Target Master BD Address	000000000000	000000000000
Target Slave BD Address	000000000000	000000000000
Flow Control	OFF	OFF
Connection MODE	-	MODE1
Remote Control ID	-	admin
Remote Control PW	-	BTWIN
Operation MODE	-	MODE1

< FB900AS 의 Default parameters >

[5.1.4] Remote Control

PIN NO	Remote Control Disable	Remote Control Enable
4		

FB900AS provided the remote control features.

User can access the FB900AS to change its parameters at remote site through Bluetooth serial device. If FB900AS is located in the position of difficult access, user can control and set the parameters of FB900AS through this feature.

When using this feature, the access delay time is about 2 seconds.

6. LED Indication

STATUS LED

Conditions	Action
Into the PC Configuration Mode	Blink every second.
Into the remote control mode	Blink every second.
Happen Error	Very fast blinking

CHANNEL_1 LED

Conditions	Action
Try to connect with the first device	Blink every second.
Connected	LED is ON (Stable)

CHANNEL_2 LED

Conditions	Action
Try to connect with the second device	Blink every second.
Connected	LED is ON (Stable)

RESET

All LEDs are on.

7. PC Configuration Mode

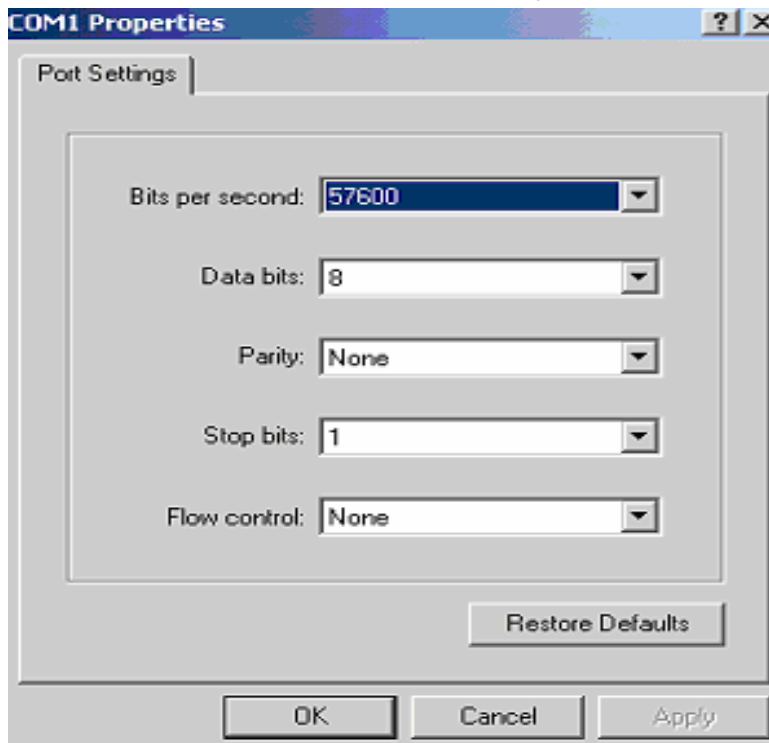
7.1 Prepare for PC Configuration mode

User does prepare the PC's setting to use the PC configuration mode.

[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] Find the COM port of Computer that is connected to FB900AS. Computer has 2 COM port, COM1 and COM2. If you use the USB to serial converter, find its COM port number.

[3] Run HyperTerminal program and select COM port. COM port's properties window will be displayed.

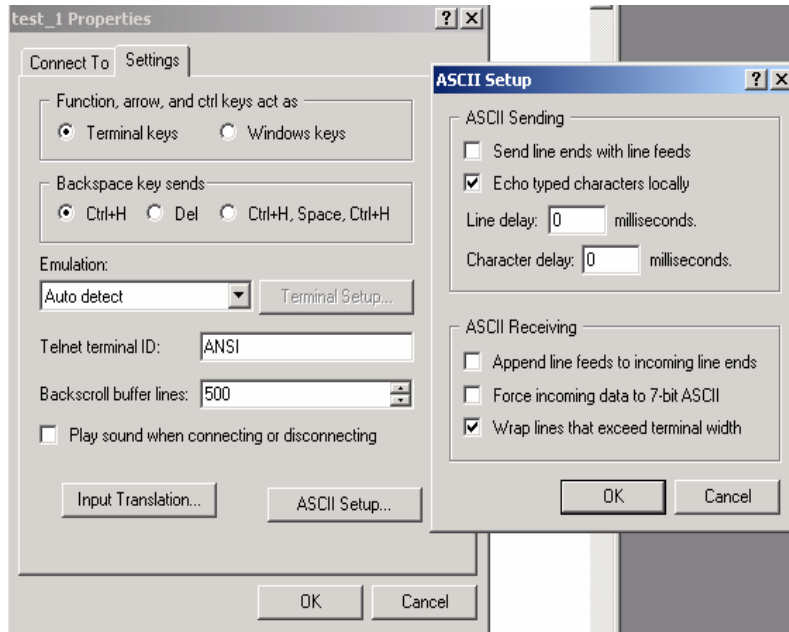


[4] Set the Values as below.

Part	Baud Rate	Data Bit	Parity Bit	Stop Bit
Setting	9600 bps	8 bit	None	1

[5] Push the OK button.

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



[7] Click to “ASCII Setup” button of Settings tab in the properties to into ASCII setup mode.
Check the “Echo typed characters locally” box in the ASCII Sending.

[8] Afterward above set up and turn on the FB900AS.

***FB900AS's pin 3 has to be up (the PC configuration Mode).**

7.2 Start the PC configuration Mode

When start the PC configuration Mode, user can see the below menu.

Maybe the menu is different the below image as the Remote control setting.

```
=====
                          Made by : Firmtech
                          Model   : FB900AS
                          Version : 1.0d
                          =====
1 : BlueTooth Address => 0011b1a108f0
2 : Authentication   => Enable PIN='BTWIN'
3 : LOCAL NAME       => BT-Bridge
4 : TARGET master Addr=> 000000000000
5 : TARGET slave Addr=> 000000000000
6 : FLOW CONTROL     => OFF
                          =====
[ Back Space(Input cancel)      Esc(Move menu) ]
                          =====
Select menu >_
```

[PC Configuration Menu]

How to use the menu

Select the menu that is user want to change in the menu list.

Input the number of menu to select the menu.

Ex) If you want to change DEVICE NAME

Input "0" and "Enter" key. [0 ↵]

- 1) Input the number of menu and then input "Enter" key.
- 2) Small "t" always moves to TOP MENU.
- 3) To cancel current input character use the "←" Back Space key and "ESC" key.
- 4) If the entered character is wrong, "Retry >" message will be displayed.
- 5) 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.

***If you want to get the factory setting, push the reset button on PC configuration mode.**

- 6) After change the configuration, to take effect FB900AS's power off and on.
- 7) Change the mode to Normal mode.

Normal Mode

```
=====
                          Made by : Firmtech
                          Model   : FB900AS
                          Version : 1.0d
                          =====
1 : Bluetooth Address => 0011b1a108f0
2 : Authentication   => Enable PIN='BTWIN'
3 : LOCAL NAME       => BT-Bridge
4 : TARGET master Addr=> 000000000000
5 : TARGET slave Addr=> 000000000000
6 : FLOW CONTROL     => OFF
                          =====
[ Back Space(Input cancel)      Esc(Move menu) ]
                          =====
Select menu >_
```

[Remote Control Switch is OFF]

Remote Control Mode

```
=====
                          Made by : Firmtech
                          Model   : FB900AS
                          Version : 1.0d
                          =====
1 : Bluetooth Address => 0011b1a108f0
2 : Authentication   => Enable PIN='BTWIN'
3 : LOCAL NAME       => BT-Bridge
4 : TARGET master Addr=> 000000000000
5 : TARGET slave Addr=> 000000000000
6 : FLOW CONTROL     => OFF
7 : CONNECTION MODE  => MODE1
8 : REMOTE CONTROL ID=> admin
9 : REMOTE CONTROL PW=> BTWIN
0 : OPERATION MODE   => MODE1
                          =====
[ Back Space(Input cancel)      Esc(Move menu) ]
                          =====
Select menu >
```

[Remote Control Switch is ON]

7.3 Configuration Menu - Remote Control is OFF.

```

=====
                Made by : Firmtech
                Model   : FB900AS
                Version : 1.0d
=====
1 : BlueTooth Address => 0011b1a108f0
2 : Authentication    => Enable PIN='BTWIN'
3 : LOCAL NAME       => BT-Bridge
4 : TARGET master Addr=> 000000000000
5 : TARGET slave Addr=> 000000000000
6 : FLOW CONTROL     => OFF
=====
[ Back Space(Input cancel)      Esc(Move menu) ]
=====
Select menu >_

```

[1] Bluetooth Address

NO	Menu	Default Value
1	Bluetooth Address	MAC Address

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

[1-2] If you choice this menu, curser goes to the main menu automatically.

[2] Authentication

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

User may set them in this menu.

NO	Menu	Default Value
2	Authentication	Enable PIN Code [BTWIN]
Sub Menu		
No	Menu	Default Value
1	Authentication	Enable
2	PIN CODE	BTWIN
3	Encryption	Enable

2.1 Authentication

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

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

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

2.2 PIN CODE

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

[1-2-2] To connect between two devices, they have to have a same pin code.

[1-2-3] You can enter the pin code within 12 characters.

[1-2-4] After enter the pin code, "Change complete !!" message will be displayed.

And then move to AUTHENTICATION SUB MENU.

2.3 Encryption

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

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

[1-3-3] If the authentication is disable, this is disable too.

[3] LOCAL NAME

NO	Menu	Default Value
3	Local Name	BT-Bridge

[3.1] Bluetooth device's name

User can change the device name within 12 characters.

[3.2] Afterward input the name then press the enter key.

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

[4] TARGET address

NO	Menu	Default Value
4	Target Master Add	000000000000
5	Target Slave Add	000000000000

[4-1] The last connected device's address.

[4-2] If user wants to connect with new bluetooth devices, enter the new address to this menu.

[4-3] To enter the BD address the connection mode should be MODE3.

[5] Flow Control

NO	Menu	Default Value
6	Flow Control	OFF

[5-1] It is bypass the flow control signal.

This menu has to be ON when make the link chain on Operation mode1.

7.4 Configuration Menu (Remote Control is On)

```
=====
                          Made by : Firmtech
                          Model   : FB900AS
                          Version : 1.0d
=====
1 : BlueTooth Address => 0011b1a108f0
2 : Authentication   => Enable PIN='BTWIN'
3 : LOCAL NAME       => BT-Bridge
4 : TARGET master Addr=> 000000000000
5 : TARGET slave Addr=> 000000000000
6 : FLOW CONTROL     => OFF
7 : CONNECTION MODE  => MODE1
8 : REMOTE CONTROL ID=> admin
9 : REMOTE CONTROL PW=> BTWIN
0 : OPERATION MODE   => MODE1
=====
[ Back Space(Input cancel)      Esc(Move menu) ]
=====
Select menu >
```

User can not use pin1 and 2 of DIP switch when the remote control is enable.

Instead of that, User can set the operation mode and connection mode on PC configuration mode.

[6] CONNECTION MODE

NO	Menu	Default Value
7	Connection Mode	Mode1

Set the connection mode.

[6.1] MODE1

Whenever FB900AS try to connect with the latest paired bluetooth devices.

If TARGET BD ADDRESS is "000000000000", it search the bluetooth device has same pin code.

After searching, it will try to connect with that automatically.

[6.2] MODE3

User may set the target BD address at the remote site.

[7] REMOTE CONTROL ID

NO	Menu	Default Value
8	Remote Control ID	admin

[7-1] This is the login ID to access to FB900AS at the remote site.

[7-2] User can change this within 12 characters.

[8] REMOTE CONTROL PW

NO	Menu	Default Value
9	Remote Control PW	BTWIN

[8-1] This is the password to access to FB900AS at the remote site.

[8-2] User can change this within 12 characters.

[9] Operation Mode

NO	Menu	Default Value
0	Operation Mode	MODE1

[9-1] User can set the operation mode with this menu.

[9-2] User can not use PIN 1 (the operation switch) when the remote control is enable.

User only can set the operation mode on PC configuration mode.

[9-3] Remote control is used at operation mode1.

8. Operation Mode

User uses the FB900AS to connect between two bluetooth devices normally.

The bluetooth device's role is **one of Master and Slave** normally.

Between two bluetooth devices to communicate, one should be a Master and opposite side should be a Slave. In this case FB900AS's operation mode is should be MODE1 to connect with them.

Sometimes the bluetooth devices to connect with FB900AS are slave.

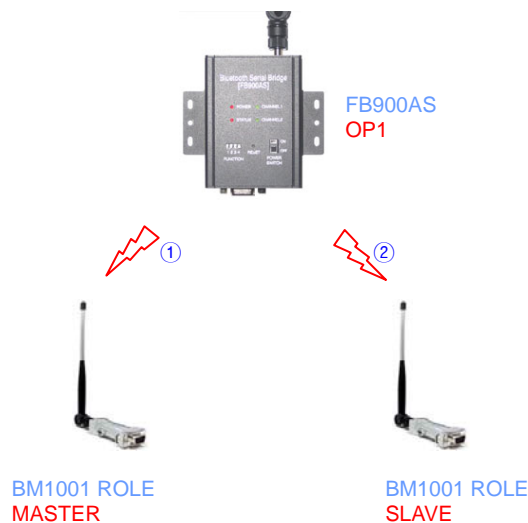
In this case FB900AS's operation mode is should be MODE2 to connect with them.

8.1 Operation Mode1

There are two BM1001s. One is master mode and the other is slave.

FB900AS is should be Operation MODE1 to connect with them.

[1] One FB900AS and two BM1001s



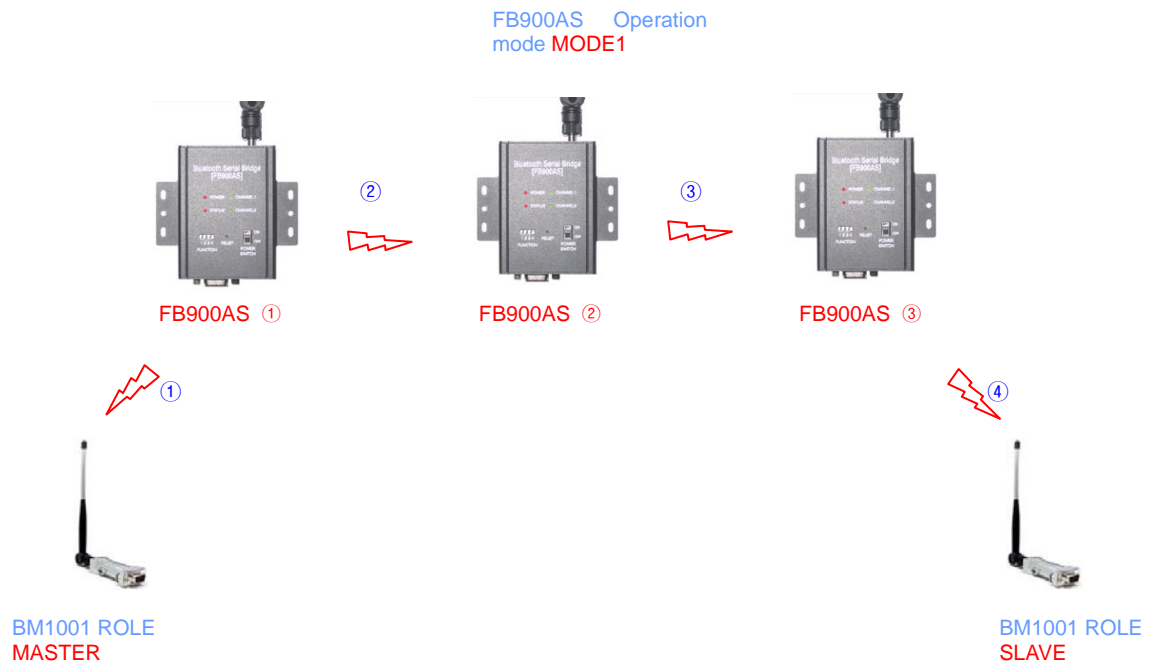
[운영모드 MODE1의 접속 형태]

- 1) Set the PIN code of BM1001s as "BTWIN".
- 2) FB900AS's 4 DIP switches are OFF.
- 3) Power on the BM1001 is Master mode.
- 4) Power on the FB900AS.
- 5) FB900AS's CHANNEL_1 LED is blinking.

It means that FB900AS try to connect with BM1001 (Master mode device).

- 6) After establish the connection, CHANNEL_1 LED is ON.
- 7) Power on the BM1001 is Slave mode.
- 8) FB900AS's CHANNEL_2 LED is blinking.
It means that FB900AS try to connect with BM1001 (Slave mode device).
- 9) After establish the connection, CHANNEL_2 LED is ON.
- 10) After finish the connection, BM1001 output "BT-Bridge Connection OK" message.

**[2] Several FB900AS and two BM1001s
this is the Bluetooth Link chain.**



- 1) Set the PIN code of BM1001s as "BTWIN"
- 2) Set the PIN3 of the DIP switch of FB900AS① and FB900AS② as on in order to into the pc configuration mode.
- 3) PC configuration mode is start. User can see the below picture.


```

[ Back Space(Input cancel)          Esc(Move menu) ]
=====
Select menu >6
Flow Control Change
1 : OFF    2 : ON
Select(1 or 2) > 2
Change OK...
=====
                        Made by : Firmtech
                        Model   : FB900AS
                        Version : 1.0d
=====
1 : BlueTooth Address => 0011b1a108f0
2 : Authentication   => Enable PIN='BTWIN'
3 : LOCAL NAME       => BT-Bridge
4 : TARGET master Addr=> 000000000000
5 : TARGET slave Addr=> 000000000000
6 : FLOW CONTROL     => ON
=====
[ Back Space(Input cancel)          Esc(Move menu) ]
=====
Select menu >

```

- 4) Set the flow control of FB900AS① and FB900AS② as on.
When the flow control is on, it does not output "BT-Bridge Connection OK" message.
- 5) After setting, power off them and their PIN3 is off.
- 6) Power on FB900AS①.
- 7) Power on BM1001 is Master mode.
- 8) After FB900AS① CHANNEL_1 is connected, power on FB900AS②.
- 9) After FB900AS② CHANNEL_1 is connected, power on FB900AS③
- 10) After FB900AS③ CHANNEL_1 is connected, power on BM1001 is slave mode.
- 11) After finish all connection, BM1001 output "BT-Bridge Connection OK" message.

8.2 Operation Mode2

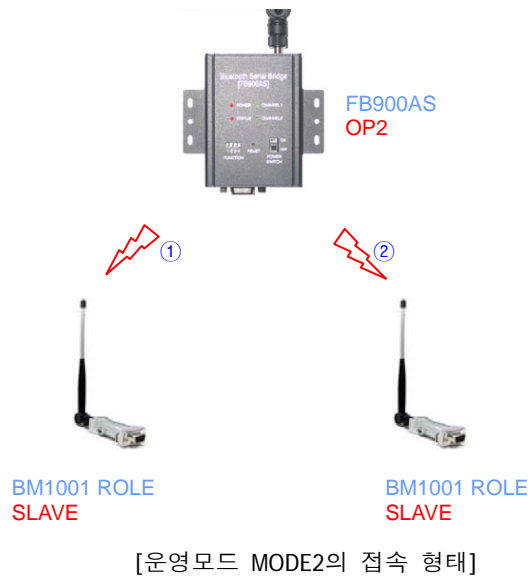
When BM1001s are slave, FB900AS should be Operation Mode2.

User can not use the multi connection (Link Chain) with FB900AS at Operation Mode2.

It also not supports the remote control feature.

MODE2's advantage

The connection time is faster than MODE1. And the connection status is stable than MODE1.



- 1) Set the PIN1 and 2 of FB900AS as ON.
- 2) Set the pin code of BM1001 as "BTWIN"
- 3) Power on BM1001s.
- 4) Power on FB900AS.
- 5) After finish the connection, BM1001 output "BT-Bridge Connection OK" message.
- 6) Set the pin2 of FB900AS as OFF.

9. Remote Control

FB900AS provided the remote control features.

User can access the FB900AS to change its parameters at remote site with Bluetooth serial device. If FB900AS is located in the position of difficult access, user can control and set the parameters of FB900AS through this feature.

When using this feature, the access delay time is about 2 seconds.

To enable the remote control feature, set the PIN4 of FB900AS as ON.

9.1 Change the Target device address at remote site.

```
=====
FB900AS REMOTE CONTROL
=====
1 : BlueTooth Address => 0011b1a108f0
2 : Authentication   => Enable PIN='BTWIN'
3 : LOCAL NAME      => BT-Bridge
4 : TARGET master Addr=> 0011b1a10a8d
5 : TARGET slave Addr=> 0011b1a109c6
6 : FLOW CONTROL    => OFF
7 : CONNECTION MODE => MODE1
8 : REMOTE CONTROL ID => admin
9 : REMOTE CONTROL PW => BTWIN
=====
[ Back Space (Input cancel)      Esc (Move menu) ]
[ 'x' (Exit)                      ]
=====
Select menu >
```

[Connected bluetooth device's address]

We will try to change the target BD address.

Attached BM1001 to PC to set its parameters and run the HYPER terminal program.

We use HYPER terminal of widows.

Set the pin code of Bluetooth device as "BTWIN".

The " Remote Control mode" message will be displayed in HYPER terminal window.

Push the enter key within 2 seconds.

If user doesn't do it, FB900AS will try to connection with the second device.

```
CONNECTION OK
Remote Control mode
..
```

[Remote control intro message]

It will request two answers.

Question	Answer
Login	"admin"+ Enter key
Password	"BTWIN"+ Enter key

```
Remote Control mode
..
Login : admin
Password : BTWIN
Login OK...

|=====|
|          FB900AS REMOTE CONTROL          |
|=====|

1 : BlueTooth Address => 0011b1a108f0
2 : Authentication    => Enable PIN='BTWIN'
3 : LOCAL NAME       => BT-Bridge
4 : TARGET master Addr=> 0011b1a10a8d
5 : TARGET slave Addr => 0011b1a109c6
6 : FLOW CONTROL     => OFF
7 : CONNECTION MODE  => MODE1
8 : REMOTE CONTROL ID => admin
9 : REMOTE CONTROL PW => BTWIN

[ Back Space (Input cancel)      Esc (Move menu) ]
[ 'x' (Exit)                      ]
=====
Select menu >_
```

[Remote Control Menu]

Now, user can change the parameters of FB900AS.

The connection mode should be **mode3** to change the target BD address.

After set the connection mode as mode3, enter the target BD address to Menu4 and Menu5.

If user doesn't know the address, enter twelve zero "000000000000" to address.

After setting, push "x" and enter key to out the remote control mode.

Reconnect with FB900AS. The remote control intro message will be displayed.

Don't push enter key. Wait for a minutes.

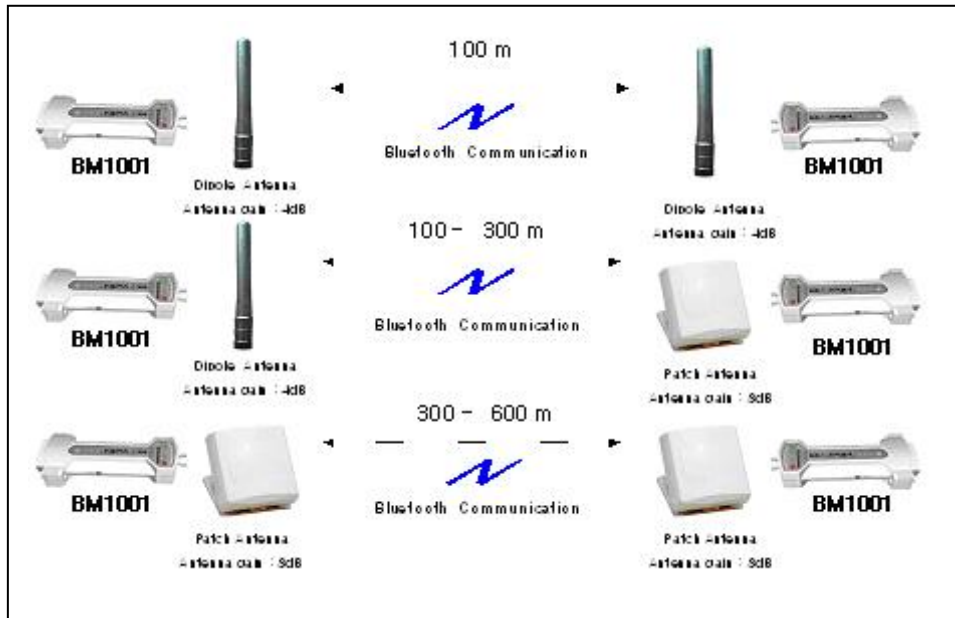
After finish the connection, BM1001 output "BT-Bridge Connection OK" message.

```
CONNECTION OK
Remote Control mode
..BT-Bridge Connection OK
```

[Successful connection message]

If you want to keep this connection, change the connection mode to MODE1 at remote control menu.

10. Range information with External Antennas



Antenna	Part No	RF Gain	Distance
	FBA001DA	1 dBi	Within 100 M
	FBA003DA	3 dBi	Within 150 M
	FBA004DA	4 dBi	Within 200M
	FBA008PA	8.5 dBi	Within 800M

< Table 10.1 Dipole Antennas and distance >

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