



Promi-MSP™

Quick Installation Guide

[Version 2.0](#)

For Wireless Multi-Serial Communications,
based on Bluetooth Technology

by Bluetooth

Enabling Wireless Serial Communications

Contents

1. About Promi-MSP™	3
1.1 External View	6
1.2 LED indicators	8
2. Installation	9
2.1 Network Settings	10
2.2 LAN Access Profile	13
2.3 Firmware Download	14
2.4 Serial Port	17
2.4 Reset/Reboot/Quit	19
3. Configuration	20
3.1 Configuration via Promi-MSP software	20
3.1.1 When Promi-MSP is connected to PC directly	20
3.1.2 Log in Promi-MSP software	21
3.1.2 Operation Mode	22
3.1.3 Bluetooth	29
3.1.4 Connections	30
3.1.5 Neighborhoods	31
3.1.6 Repeater	32
3.1.7 MSP information	33
4. COM port Redirector	34
4.1 COM port redirecotr	34
4.1.1 Virtual COM	34
5.1.2 Serial/IP	39
4.2 Discovery Protocol	41

Revision History: User Manual of Promi-MSP™

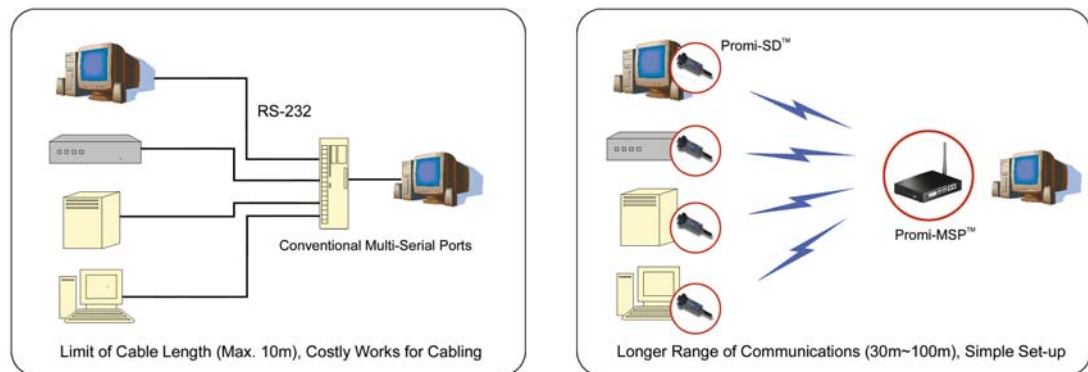
<i>Version</i>	<i>Changed Contents</i>	<i>Date</i>
1.0	Draft version	01/02/2003
1.1	Added user guide for Promi-MSP software	07/14/2003
1.2	Promi-MSP software upgrade and New commands added	08/11/2003
2.0	New functions of Promi-MSP102 series added	09/10/2004

1. About Promi-MSP™

Promi-MSP™ is a Bluetooth-wireless multiple serial communications port for minimum 7 to maximum 14 devices; an option to conventional multi-serial ports. Wireless Promi-MSP™ results in dramatic installation cost and time savings and fretless application.

With Promi-SD™ installed at RS-232 interfaced terminals, Promi-MSP™ affords dependable convenience for a variety of serial communications environments.

Refer to the figure 1.1. below:



<Fig. 1.1>

Promi-MSP™ is a wireless multi-serial Bluetooth technology-based server. Bluetooth SIG qualified protocol stack assures standardized, secure and scaleable serial communications. Promi-MSP™ identification of data, per each additional unique Bluetooth SPP enabled device address, prevents data jam.

Bluetooth's 2.4GHz frequency-hopping system voids RF interference from sources such as Wireless LAN. Increased communications security is possible via optional user set-up authentication.

Promi-MSP™ transmits data from each Bluetooth terminal to PC via TCP/IP Ethernet. TCP/IP PCs also respond to each Bluetooth terminal wirelessly via Promi-MSP™.

Without changing non-TCP/IP serial communications software Promi-MSP™ is accessible via installation of the COM port redirector program. More information is in Appendix 4.1.

<Table 1.1> Promi-MSP™

Model	Hardware Interface	Specifications
Promi-MSP 102(a) (Part no. : MSP00-10201)	LAN 10/100 x2, Inclusive Hub function. Ethernet/RS232C com. supported Built-in Bluetooth (Max. 7 Bluetooth links)	Coverage : 100m Data rate : Max. 723 Kbps Frequency: 2.4GHz COM port redirector

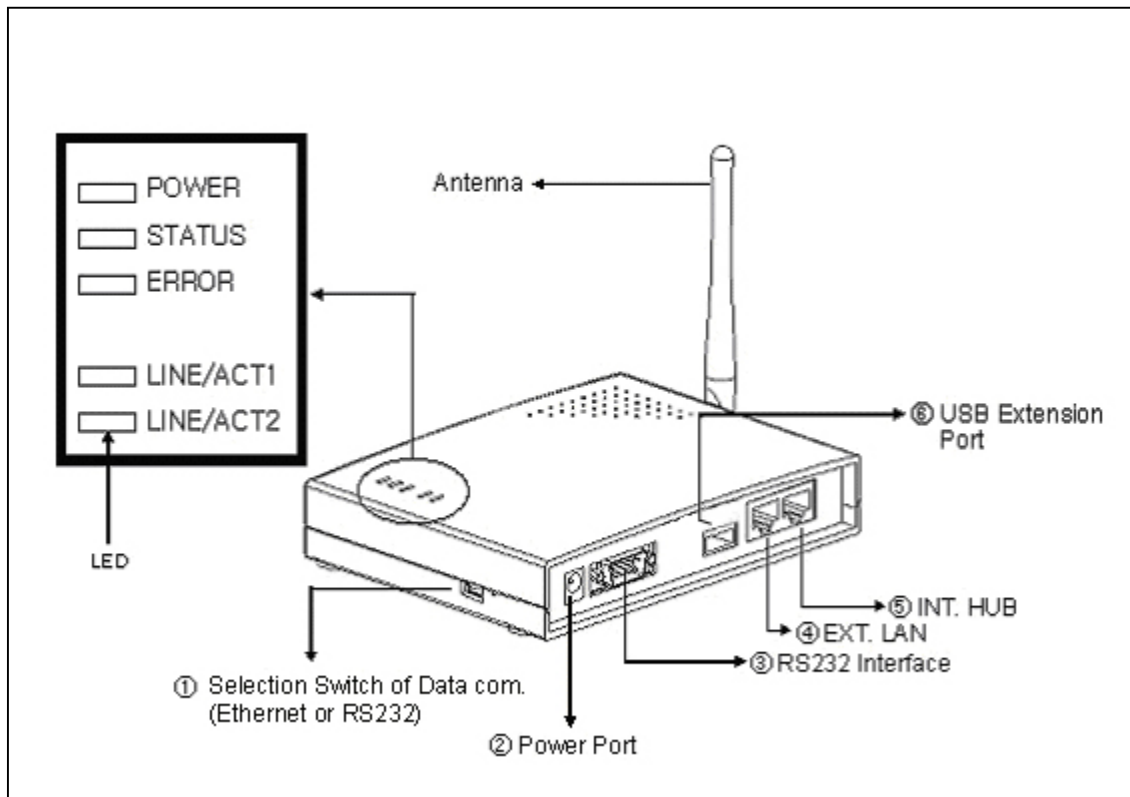
Promi-MSP 102(b) (Part no. : MSP00-10202)	LAN 10/100 x2, Inclusive Hub function. Ethernet/RS232C com. supported Built-in Bluetooth 1 USB A-type port for USB extension dongle (Max. 14 Bluetooth links)	- VirtualCOM and Serial/IP Supported Networks HTTP / FTP / Telnet / IP- sharing(NAT) / DHCP /PPP server
--	---	---

* Promi-MSP101 was phased out as of August, 2004.

One Promi-MSP™ set includes:

Hardware	Quantity	Remarks
Promi-MSP™	1	
Power Adapter	1	
Antenna	1	
RS232 cable	1	
Software and Manual in CD	1	
USB extension Dongle	1	For Promi-MSP102(b) only
Anchor Support	1 Set	


1.1 External View



<Fig. 1.2> Promi-MSP 102(a)/(b) external view

① DIP Switch

Users may select the way of data communication with Host. Default setting is TCP/IP communication using no. ④ **RJ45 marked EXT**, but if users need, data communication by no. ③ RS232 Interface marked "IOIOI" is also possible.

- If DIP switch is on the side of drawing , Promi-MSP communicates with Host via Ethernet line (TCP/IP).
- If users want to use RS232 com. please change the direction of switch to the other way.

② Power Port: For Power Adapter connection

③ RS232 Interface marked "IOIOI":

For Promi-MSP network configuration via RS232 serial cable - One RS232 serial cable, both ends female DSUB interfaces, is provided with Promi-MSP.

This port can be used for both Configuration of Promi-MSP and Data communication with Host.

- ④ **RJ45 marked EXT.:** For connection to Host or HUB devices. For connection to PC, use a [Crossed cable](#); for connection to HUB, use Straight Ethernet cable.
- ⑤ **RJ45 marked INT.:** For HUB port connection to another Promi-MSP™. This is for expansion of connections more than 14.
- ⑥ **USB Extension Port:** For expanding multi-connection beyond 7 devices. A Bluetooth USB extension dongle Airlogic will be supplied with Promi-MSP102(b) for extension of 7 connection.



NOTE:

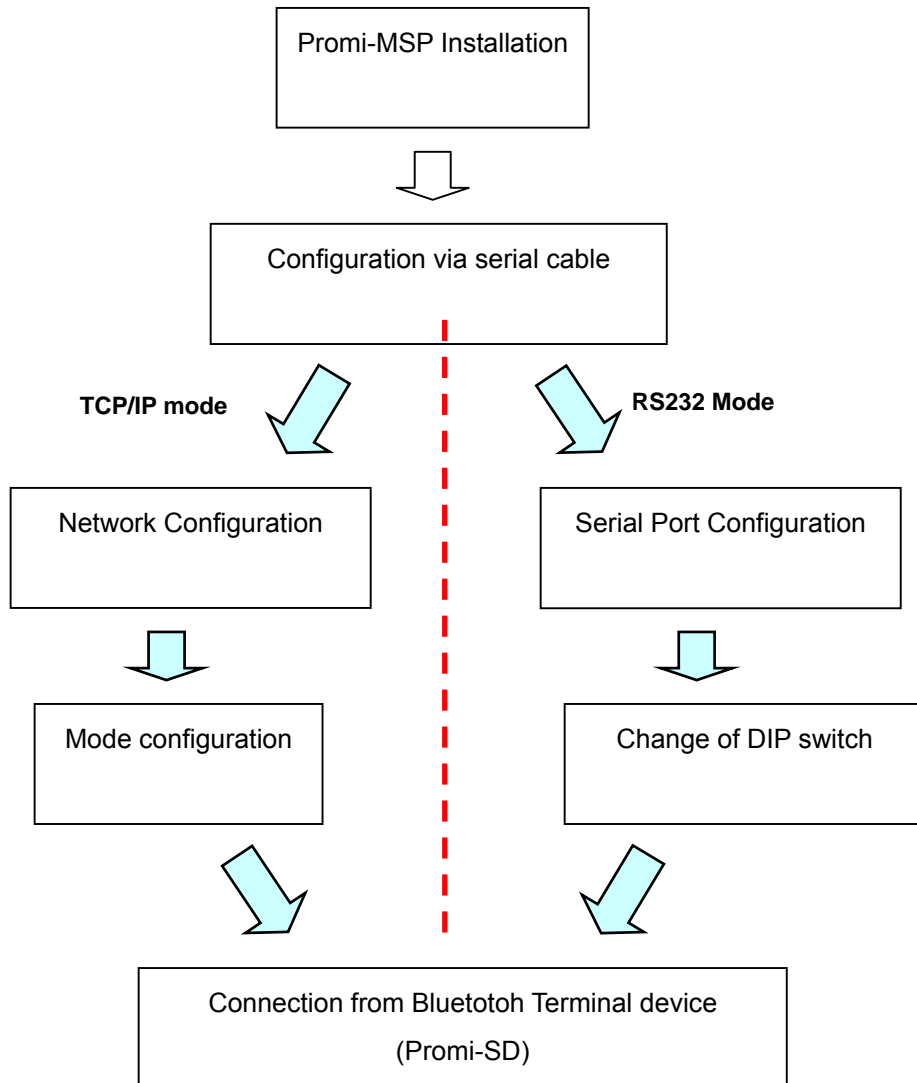
Only provided Airlogic's dongles will be able to operate at Promi-MSP102(b). USB dongles from other mfg. cannot be used for extension of Bluetooth connections.

1.2 LED indicators

- POWER: POWER ON/OFF Status
- STATUS: Promi-MSP™ Status
- ERROR: Error Event Status
- LINE/ACT1, LINE/ACT2: RF45 connections Status

STATUS LED	ERROR LED	Description
ON	OFF	Normal
Blinking	OFF	Connecting to Station MSP (in Repeater Mode)
OFF	ON	Internal Bluetooth module operation malfunction
ON	Blinking	LAN connection Error (Connecting to ADSL or waiting for DHCP server response)
Flashing	Flashing	Upgrading Firmware <u>DO NOT turn off Promi-MSP during firmware upgrade;</u> turning off Promi-MSP during firmware update may impair operability

2. Installation



TIP

If you are going to use Promi-MSP as RS232 mode – RS232 communication with Host, you don't need to configure Networking settings.

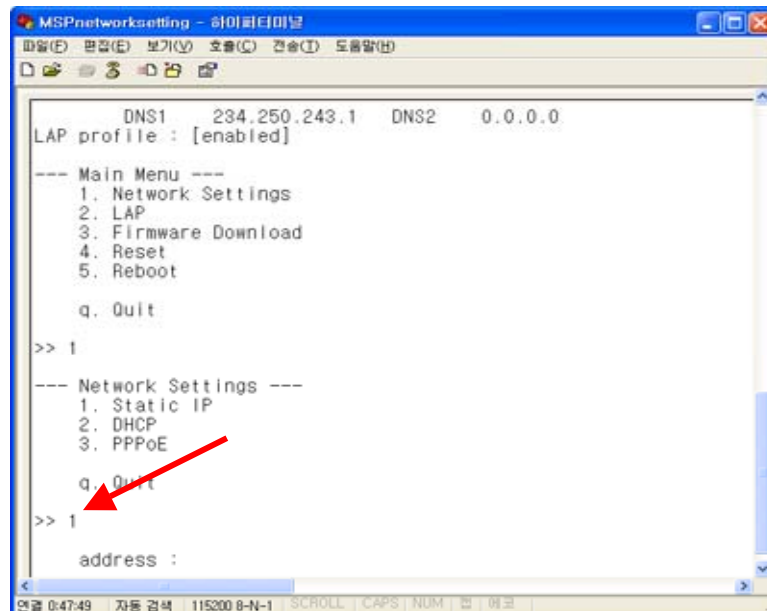
2.1 Network Settings

- (1) Promi-MSP™ power-up; 'POWER' and 'STATUS' LEDs display green
- (2) Promi-MSP™ network configuration: connect Promi-MSP™ to PC via RS232 cable
- (3) Open HyperTerminal
- (4) Set PC COM port;
Baud rate 115200 / 8 Data bit / non-parity / 1 stop bit / no hardware flow control
- (5) Press Enter key; ***the following information is displayed on HyperTerminal screen***; If Promi-MSP™ prompts Login ID/password, default values are:

Login: admin

Password: 11111

- (6) **Default Promi-MSP™ IP address factory setting is 192.168.1.10.** Revise to user appropriate networking environment IP address
- (7) To revise Network Settings, click main menu Number. Enter "1" as displayed below.
- (8) Network Settings sub menu is displayed.

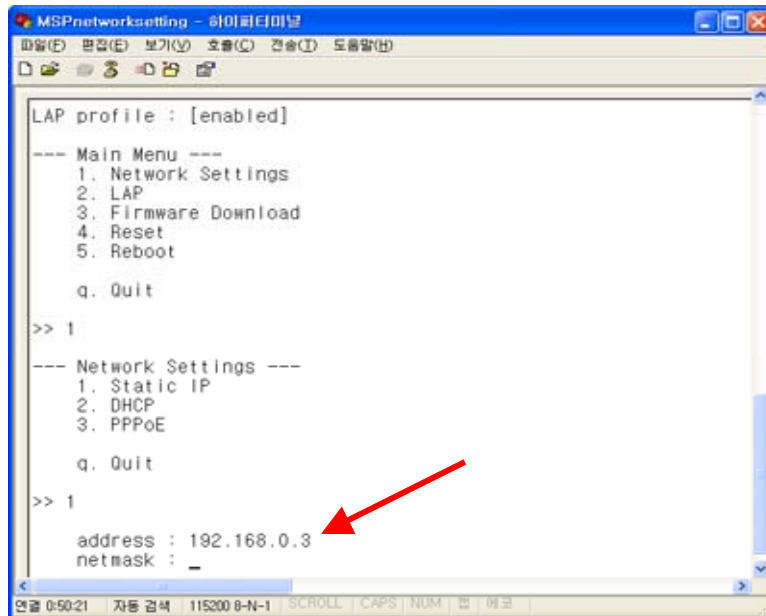


Description:

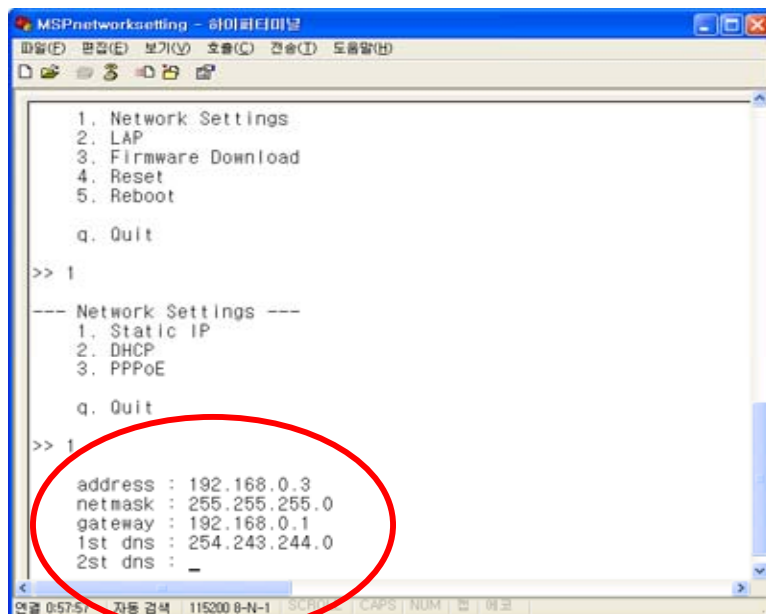
1. Static IP: For Assigning Promi-MSP™ a static IP
2. DHCP: For Assigning Promi-MSP™ a DHCP IP

3. PPPoE: For assigning Promi-MSP™ a PPPoE IP

- (9) If No. 1, Static IP, is selected, the following is displayed on screen:
- (10) Enter user Static IP address. In the example below, 192.168.0.3 is entered for the Promi-MSP™ IP address. Enter the user network appropriate IP address.

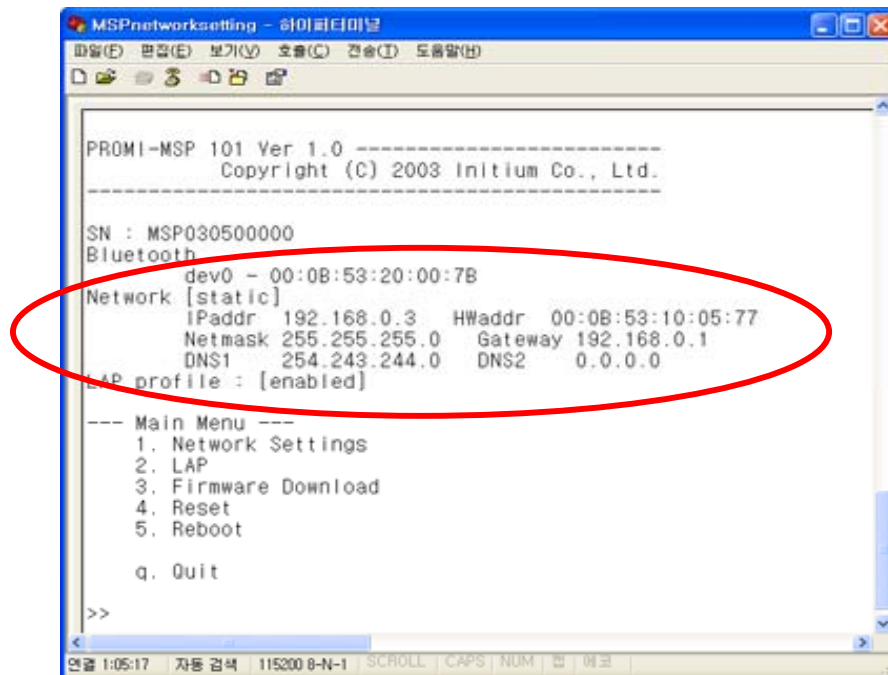


- (11) Please enter your Netmask/Gateway/DNS information, as in below for example:



- (12) Press Enter; Promi-MSP™ will prompt reboot request. Enter 'Y' [Yes]; press Enter to reboot Promi-MSP™ to apply the revised Network Settings.
- (13) Enter Login ID and Password. Default ID: admin, Password: 11111

(14) Revised Network settings are displayed



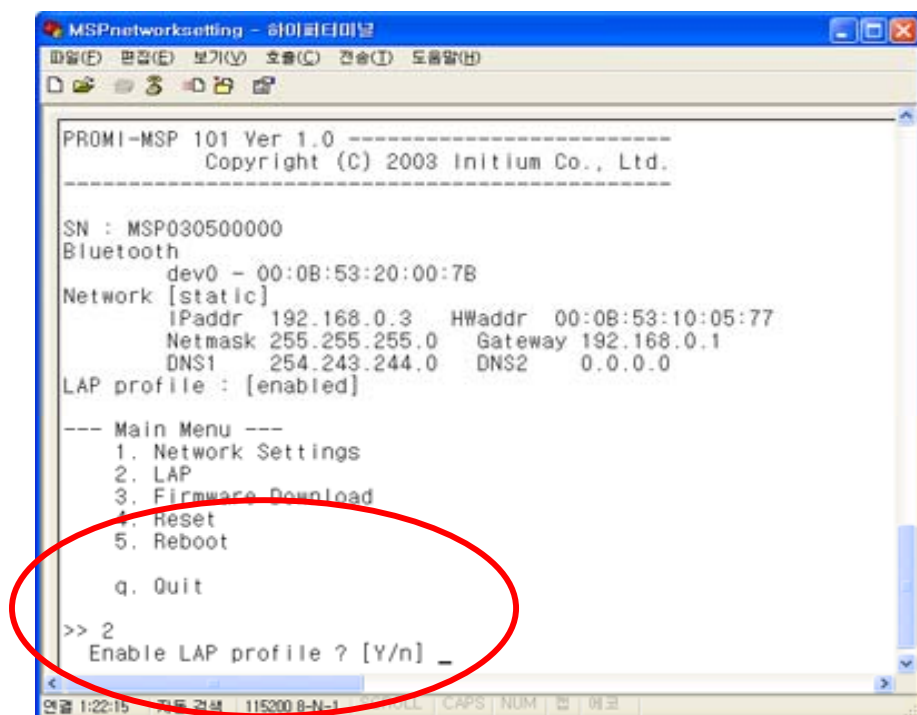
<An example: Revised Network Settings>

(15) Networking configuration is complete. The preceding example shows static IP assignment to Promi-MSP™. User selects static, DHCP or PPPoE IP as needed.

2.2 LAN Access Profile

Promi-MSP™ supports LAN Access Profile for Bluetooth networking Access Point. By direct connection of Promi-MSP™ to ADSL, the internet is accessible via Bluetooth.

Select menu 2. LAP by entering '2'; Promi-MSP™ prompts for LAP profile enable/disable. Select 'Y' [Yes] to enable or 'N' [No] to disable LAP profile.



TIP:

For Internet connection, both LAP and PAN may be used. For more information, please refer to Appendix 5.4

2.3 Firmware Download

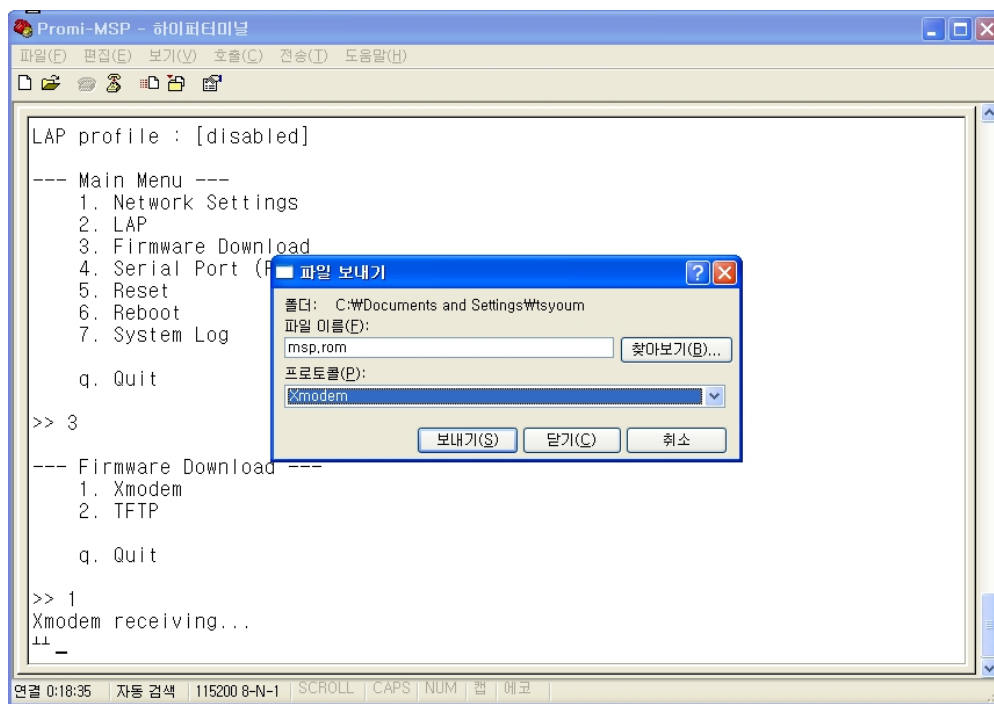
Promi-MSP enables user firmware upgrade. The INITIUM customer support team offers available firmware upgrades via Xmodem or TFTP user download; menu no. 3. Firmware Download.

During Firmware download, STATUS and ERROR LEDs flash. DO NOT TURN OFF Promi-MSP™ during firmware download. Turning off Promi-MSP™ during firmware download may result in operation malfunction.

There are two methods of firmware upgrade: 1. Xmodem 2. TFTP.

2.3.1 Firmware Upgrade via Xmodem:

Users may upgrade the firmware using Xmodem protocol via RS232 serial cable.



<Upgrade firmware via Xmodem>

2.3.2 Firmware Upgrade via TFTP:

- Users may upgrade the firmware using TFTP via Crossed cable.

3. Firmware Download → 2.TFTP

- Then you will get following screen:

```
TFTPD ready. Send firmware using TFTP.  
Windows 2000/XP:  
tftp -i 192.168.1.10 put <filename>
```

- **Please keep this serial console connected.**
- For firmware upgrade via TFTP, network configuration of your PC which is connected to Promi-MSP should be changed. Open your Network Connections and see Property information of Local Network in your PC and change configuration as follows for direct communication with Promi-MSP.

IP: 192.168.1.11

Subnet: 255.255.255.0

Gateway: 192.168.1.1

These settings for direct communication only with Promi-MSP connected.

- After you save the MSP upgrade ROM file to your PC, please open COMMAND window as in below.
- Users need to make sure that the upgrade ROM file is in the same location or users need to specify the exact location to send the ROM file to the connected Promi-MSP via Crossed ethernet cable.

- Below window is showing the procedure of sending ROM file named "msp2_040906.rom" to the connected Promi-MSP via TFTP.

```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\김유진>tftp -i 192.168.1.10 put msp2_040906.rom
Transfer successful: 2867088 bytes in 13 seconds, 220545 bytes/s

C:\Documents and Settings\김유진>_

```

- Users will be able to check the status of firmware upgrade in Serial console.

```

MSPnetworksetting - 하이퍼터미널
파일(F) 편집(E) 보기(V) 호출(C) 전송(T) 도움말(H)

1. Xmodem
2. TFTP
q. Quit

>>
--- Firmware Download ---
Current:
    PromiMSP_102 1.8.0 -- Mon, 06 Sep 2004 15:17:35 +0900

1. Xmodem
2. TFTP
q. Quit

>> 2
TFTPd ready. Send firmware using TFTP.
Using MS-Windows 2000/XP, 'tftp -i 192.168.1.10 put <filename>'
Receive done.
Upgrading Firmware...
CAUTION!!! Never turn off Promi-MSP in progress.
Done. Reboot Promi-MSP.

```

- During upgrade, LEDs will flashing and users should NOT turn off Promi-MSP this time. If user cannot send the ROM file, please check the network connection status.
- Once ROM file is delivered to the connected Promi-MSP, the upgrade firmware will be recorded to momory. During this time both STATUS LED and ERROR LED will flashing speedly. NEVER turn off Promi-MSP during this firmware recording.
- Once finished, please resupply power to Promi-MSP for applying.



Note:

If you turn off Promi-MSP during firmware upgrade, Promi-MSP may be damaged severely.

2.4 Serial Port

Serial port of Promi-MSP can be used for both Configuration and Data communication. For this, users need to change the DIP switch of Promi-MSP to the right.

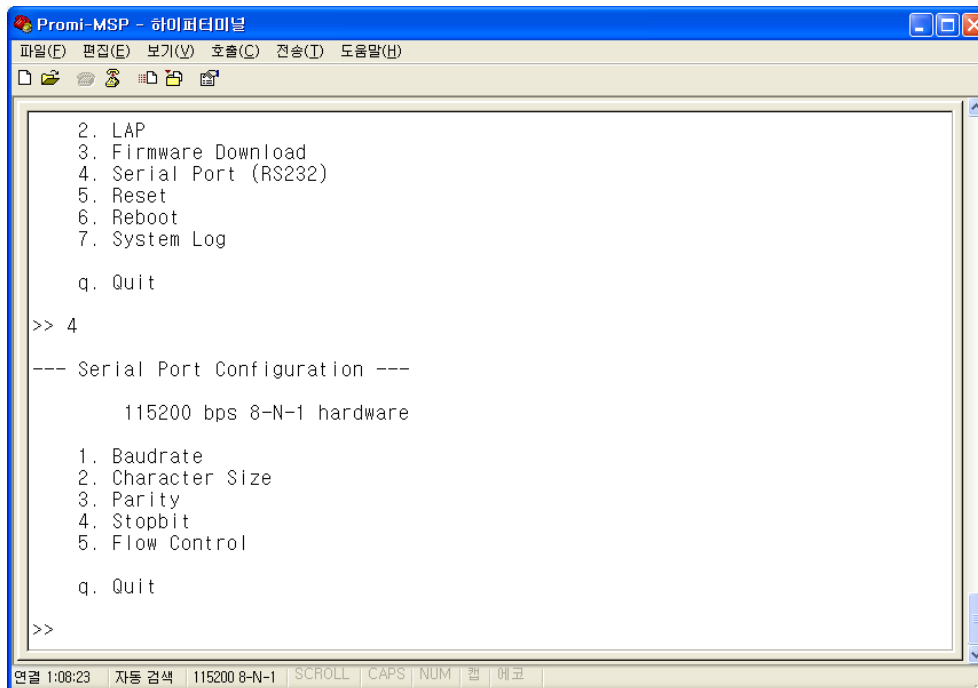


Note:

Before to configure the serial port settings, please change the DIP switch to the right.

Users may set configuration of serial port communication in this menu.

Below figure is showing that '115200 bps 8-N-1 hardware' which menas '115200 bps, 8 data bit, None parity, 1 stop bit, hardware flow control (RTS/CTS).



Configurable ranges:

Baudrate	1200 ~ 115200 bps
Character size	8, 7, 6, 5 bits
Parity Check	None / Even / Odd
Stop Bit	1 bit or 2 bits
Flow Control	Hardware (RTS/CTS), Software (XOn/Off), None

For applying changed configuration, please RESUPPLY the power, then Promi-MSP will start to operate as RS232 mode.



TIP:

If you need to do data communication via RS232 port, you do not need to configure Network settings.

2.4 Reset/Reboot/Quit

Entering no. 4, Promi-MSP™ RESET, in the main menu, restores all factory Default value settings.

REBOOT restarts Promi-MSP™ for new configuration application.

QUIT instantly aborts current processing.

3. Configuration

If users finished configuring network settings using serial console, now users need to select the operation mode of Promi-MSP. Following three (3) ways can be used for selection of operation mode:

1. Via Promi-MSP configuration software
2. Via Telnet (Control port)
3. Via Web browser (Internet Explorer, etc.)

In this chapter, guide to use Promi-MSP configuration software will be introduced.
How to configure via Telnet or Web browser will be introduced in Appendix.

3.1 Configuration via Promi-MSP software

3.1.1 When Promi-MSP is connected to PC directly

If users are going to connect Host PC and Promi-MSP directly using a crossed cable, network settings as in the chapter 2.1 will not be required.

Promi-MSP has factory settings: Static IP 192.168.1.10/24

For communication with Promi-MSP, set the IP of Host PC to have proper address.

If you connected Promi-MSP to the Network, not to the Host PC, skip this chapter and go to next chapter 3.1.2.

Open your Network Connections and see Property information of Local Network.

Change your IP address to Static:

IP: 192.168.1.11

Subnet: 255.255.255.0

Gateway: 192.168.1.1

These settings for direct communication only with Promi-MSP connected.

3.1.2 Log in Promi-MSP software

For easier configuration and **monitoring** on a specific Promi-MSP, which has been installed locally or remotely, users may use Promi-MSP software.

Start Promi-MSP software, and press “Search MSP device” button on the left side.

The 'MSP Device' window displays a table with the following data:

Name	IPAddr	MAC
Promi-MSP-SW2	192.168.1.174	00:0B:53:10:05:7A
Promi-MSP	192.168.1.20	00:0B:53:10:05:5F

Below the table are buttons for 'Search MSP Device' and 'Cancel'. A section titled '<< Connection >>' contains input fields for 'IP Address' and 'Control Port', along with a 'Connect' button.

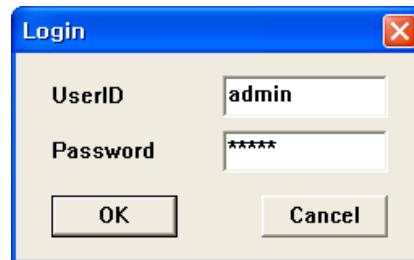
Please select one Promi-MSP you would like to access and press “Connect” button.”

The 'MSP Device' window shows the same table as before, but the row for 'Promi-MSP' is highlighted. The 'IP Address' field in the connection section is now filled with '192.168.1.20' and the 'Control Port' field is filled with '2525'.

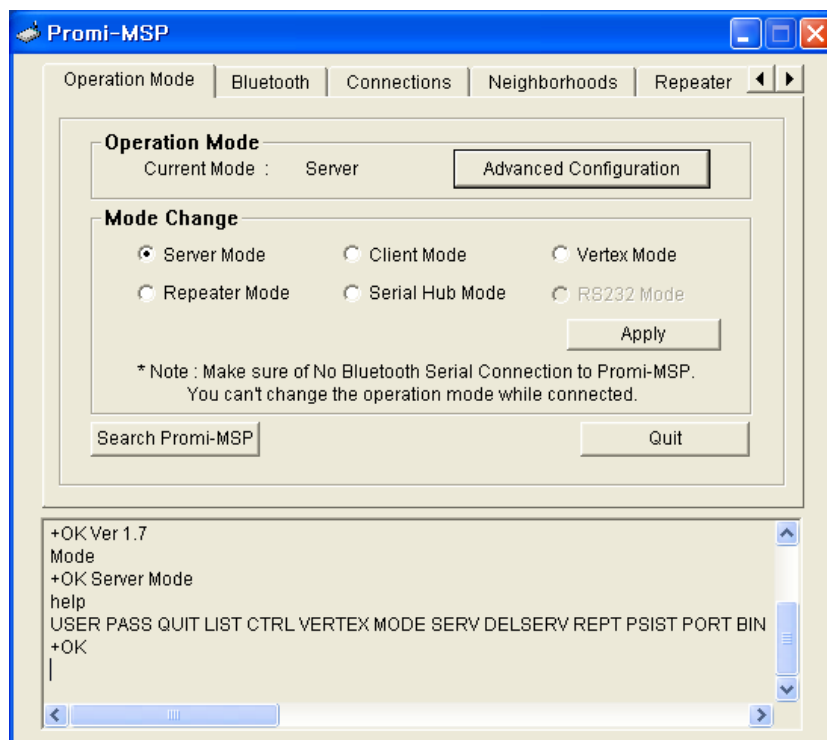
Name	IPAddr	MAC
Promi-MSP-SW2	192.168.1.174	00:0B:53:10:05:7A
Promi-MSP	192.168.1.20	00:0B:53:10:05:5F

Below the table are buttons for 'Search MSP Device' and 'Cancel'. A section titled '<< Connection >>' contains input fields for 'IP Address' and 'Control Port', along with a 'Connect' button.

You will need to enter UserID/Password: admin/11111



3.1.2 Operation Mode



Promi-MSP may be set to different type of Mode, so users may select one for its own implementation. There are 6 types of Mode: Server, Client, Vertex, Repeater, Serial Hub, and RS232. (RS232 Mode will be provided to Promi-MSP102 only)

- MSP Operation Mode

This shows current type of Mode.

- Mode Change

Users may change and select the type of Operation mode.

- Search Promi-MSP

Users may search Promi-MSP on the network.

***Note:** While Bluetooth devices are connected to Promi-MSP, mode change is not possible.

a) Server Mode

In Sever Mode, Promi-MSP will operate as a Server on the network. Host PC will connect to Promi-MSP via TCP/IP Ethernet, and Promi-MSP get the connection. After connection, full duplexing is possible.

Users need to select the Port number to standby to receive connection from Host PC.

Server Mode

Default Data Port Apply

KeepAlive Timeout sec

☐ Do not disconnect TCP socket

Register Bluetooth Device

BDADDR/Name	Port
00:0B:53:12:03:70	8000

Add Delete Modify

<Configuration of Server Mode>

- Default Data Port

If unregistered device tries to connect to Promi-MSP, Promi-MSP will assign the port number consecutively from Default Data port.

- **KeepAlive Timeout**

When TCP connection is stopped unexpectedly (Ex. Power off of Host PC), Promi-MSP will request NULL during KeepAlive Timeout (second). If there is no response during this Timeout, TCP connection will be finished.

- **Do not disconnect TCP socket**

In Server Mode, each TCP connection and Bluetooth connection will be matched as point-to-point. When new Bluetooth connection is established, new TCP connection will be established as well.

So, if Bluetooth connection is stopped, TCP connection can be finished.

To prevent this, users may use this option, so does not need to make TCP connection whenever Bluetooth connection is stopped.

- **Register Bluetooth Device :**

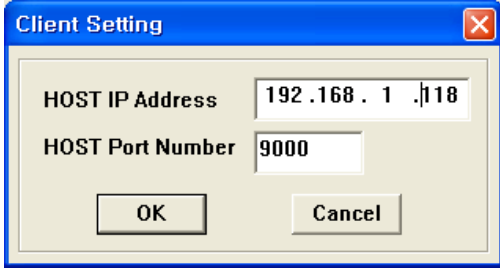
Shows the Bluetooth devices registered.

- **Add :** Add Bluetooth device to register.
- **Delete :** Remove Bluetooth device registered.
- **Modify :** Modify Port of the selected device.

b) Client Mode

In Client Mode, Promi-MSP will act as a TCP client. When a Bluetooth device connects to Promi-MSP, Promi-MSP will try to connect to the designated Host PC. So, Host PC should be in standby status.

In Client Mode, please select the IP address and port number of the Host PC to connect.



The image shows a 'Client Setting' dialog box with a blue title bar and a close button (X) in the top right corner. Inside the dialog, there are two text input fields. The first field is labeled 'HOST IP Address' and contains the text '192.168.1.118'. The second field is labeled 'HOST Port Number' and contains the text '9000'. Below these fields are two buttons: 'OK' and 'Cancel'.

<Configuration of IP address of Host>

Select “Advanced Configuration” button.

Here, users may configure which Bluetooth device will connect to which Host as they need.

Bluetooth device “00:0B:53:20:00:7E” will connect to Host “192.168.1.118”, port no. 5002.

Bluetooth device “00:0B:53:20:00:74” will connect to Host “192.168.1.200”, port no. 5004.

Bluetooth devices, which are not configured to connect to a specific Host, will connect to Default Host in Host information.

Client Mode

HOST Information

IP Address: 192.168.1.118

Port: 9000

☐ re-connect automatically if link is lost

Try to connect to server every: 5000 ms

Apply Refresh Cancel

Server Table

BDADDR/Name	IP:Port
00:0B:53:20:00:7E	192.168.1.118:5002
00:0B:53:20:00:74	192.168.1.200:5004

Add Modify Delete

<그림 0-1> 클라이언트 모드 설정

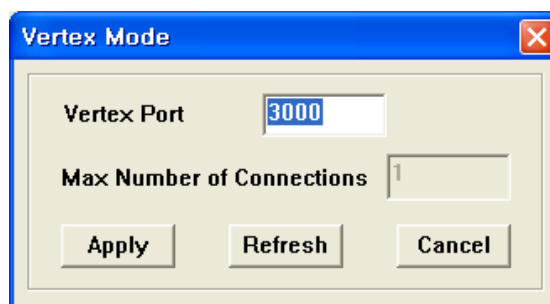
- Host IP Address
For network Host Server IP address entry
- Host Port Number
For Server Host port no. entry
- re-connect automatically if link is lost.
For Host connect retry, if failed. Retry frequency is set in the preceding function..

- Try to Connect to Server every [] ms

When Promi-MSP™ fails to open a data channel connecting to Host, enter the connection retry frequency. Entering 0 [zero] obtains retry abort.

c) Vertex Mode

Promi-MSP™ Vertex Mode avails Wireless RS485 multidrop service when assigned at this site.



<그림 0-2> Vertex 모드 설정

- Vertex Port

For Promi-MSP™ Vertex port no. entry.

- Max Number of Connections

For entering the number of Hosts connectable to Promi-MSP™.

d) Repeater Mode

In Repeater Mode, Promi-MSP will act as a Repeater to expand the coverage of Bluetooth. Let's call the MSP which will act as Repeater, "Repeater", and call the MSP of normal operation as "Station".

In Repeater Mode, configuration required is only the Address of the Station MSP.

When Repeater is connecting the Station, Status LED of Repeater is blinking.

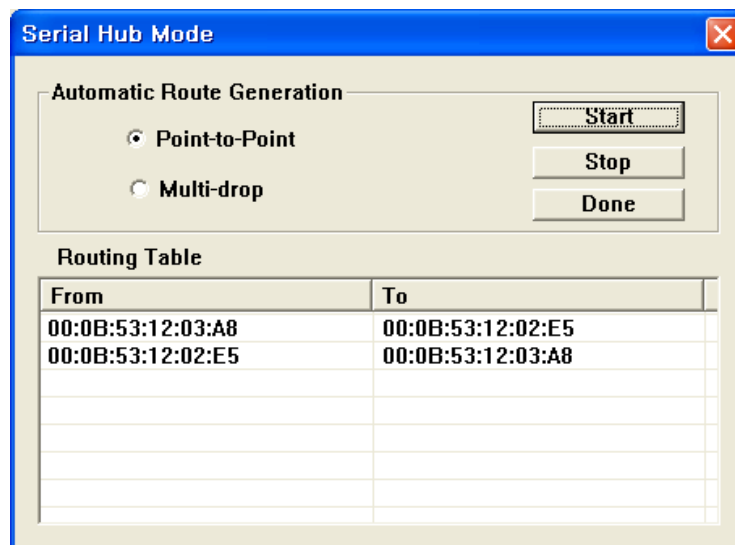
e) Serial Hub Mode

Users may transmit/receive data via Promi-MSP in Serial Hub mode (Serial Hub).
Serial Hub will deliver the data from a Bluetooth device to the other connected Bluetooth device.

Users may configure the Bluetooth devices to use the Serial Hub in Advanced Configuration of Promi-MSP software.

- Point-to-Point

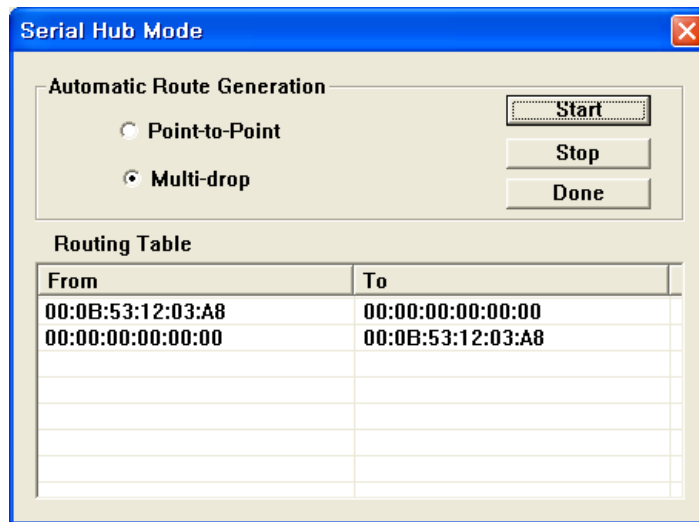
- Press Start Button.
- Then make connection from each Promi-SD to this Promi-MSP. You will have two Promi-SDs, and this Promi-MSP will act as a Serial Hub to expand the range.
- Promi-SD you connected first will be shown to the FROM column
- Next Promi-SD you connected to Promi-MSP will be shown to the TO column as in below.
- Then the Two of Promi-SDs will communicate via Serial Hub Promi-MSP.



- Multi-drop

When one Master Bluetooth device needs to communicate with multiple Slave Bluetooth devices as Multi-drop method.

First connected Bluetooth device will be a Master.

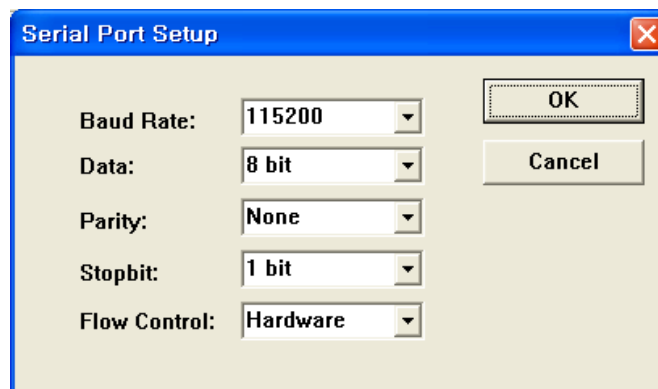


f) RS232 Mode

Available only with Promi-MSP102.

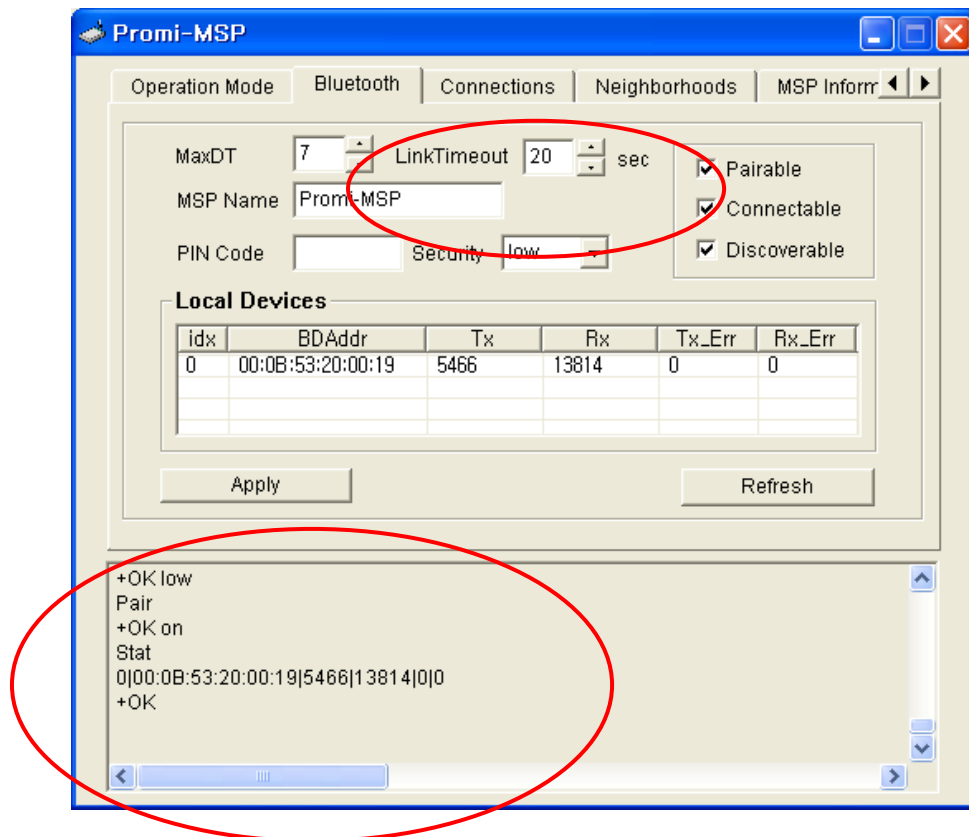
In RS232 Mode, Promi-MSP may communicate with other Bluetooth device via RS232 serial cable.

As RS232 port has been configured to be used as Configuration as factory setting, users need to change the Switch on the left side of Promi-MSP to Data communication.



3.1.3 Bluetooth

In this page, users can find current status of Promi-MSP.



You can see the process of command at the bottom of each page as in Red circle above.



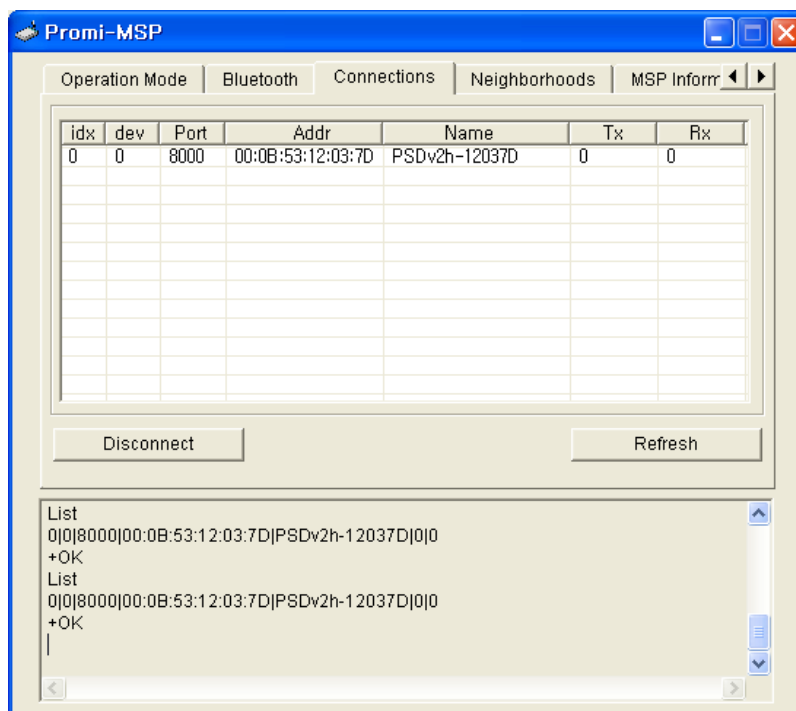
TIP:

For 14 connections in Promi-MSP102(b), please change the MaxDT to 14 above, after intalling USB extension dongle provided.

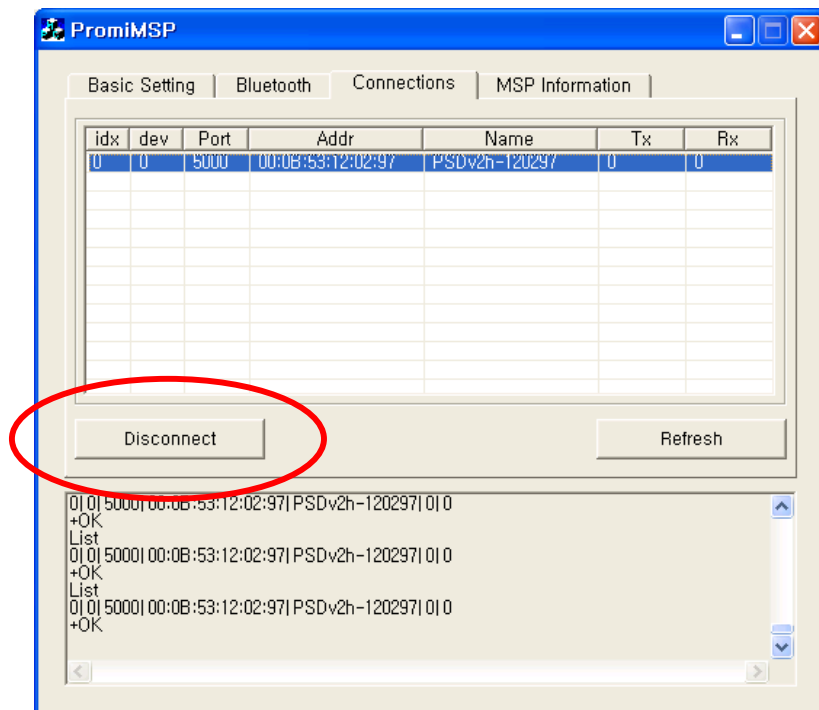


3.1.4 Connections

In this page, users may MONITOR the connection status of devices to Promi-MSP. Now, a Bluetooth device named PSDv2h-0004E1 has been connected for Wireless serial communications as in below.

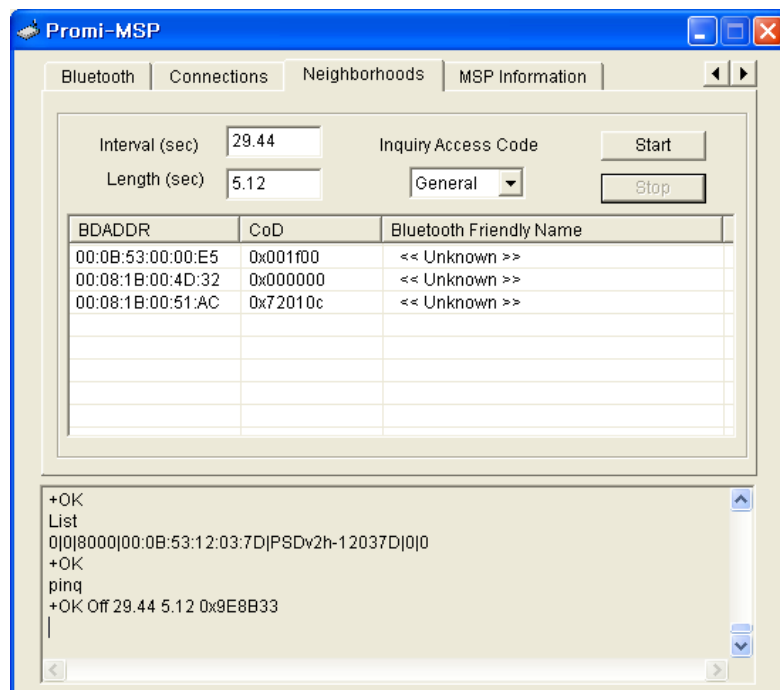


If you want to Disconnect a Bluetooth terminal, you can do the job using DICONNECT button on the left.



3.1.5 Neighborhoods

This page is to search nearby Bluetooth devices, every Interval, during the Length.



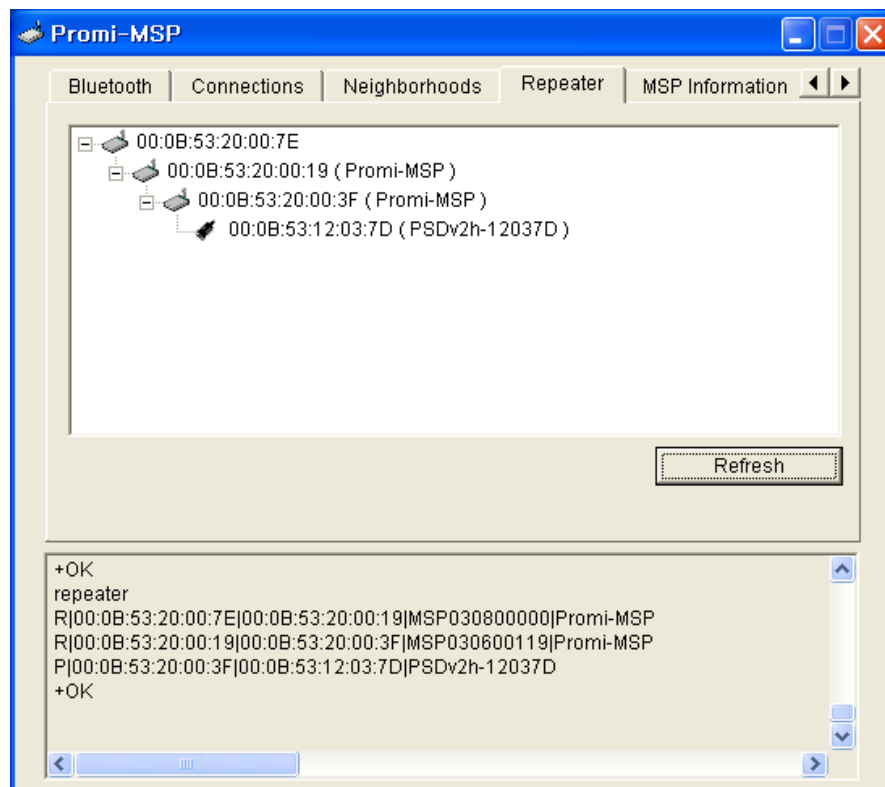
< Neighborhoods >

Bluetooth Friendly Name of only ever-connected devices will be appeared.

3.1.6 Repeater

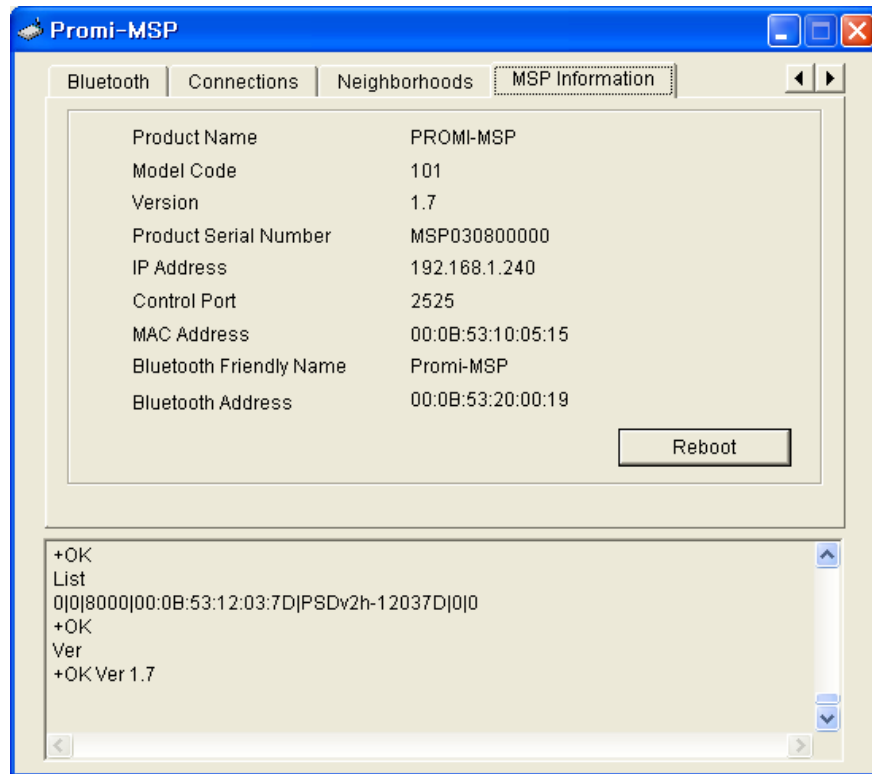
This page shows tree-structure how Repeater MSP and terminal devices are connected to the Station MSP. If user's MSP is in Repeater Mode, nothing will be showed.

In the captured window below, 2EA of Repeater MSPs are connected to a Station MSP and a Promi-SD is connected to 2nd Repeater(00:0B:53:20:00:3F).



3.1.7 MSP information

Users may see Promi-MSP information currently accessing. LIST command in bottom box.



NOTE:

To find out more information on **MODE** of Promi-MSP, please refer to the **Appendix 5.1**

4. COM port Redirector

4.1 COM port redirecotr



NOTE:

INITIUM provides VirtualCOM™ cost-free bundled with Promi-MSP™. Serial/IP™ requires additional cost.

4.1.1 Virtual COM

Serial applications, communicating with devices directly through serial lines, need to communicate with serial Servers through networks. The HelloDevice VirtualCOM program enables this necessity.

To support this environment, HelloDevice VirtualCOM must enable virtual COM port creation, connection of serial application to the virtual COM port, transmission of data from the serial application to the virtual COM port, transmission to the Serial Device Server through network and data reception from the Serial Device Server through network and virtual serial port.

Devices can be connected to the existing serial application with minimal, or no, application modifications.

If serial application is developed, considering a very short response time-out (e.g. 50ms) when communicating with devices directly through serial lines, the application should be modified reflecting the transfer time delay in the network environment (e.g. 500ms). Ethernet does not guarantee data transfer speed, though it is usually much faster than the serial-line.

Running

HelloDevice VirtualCOM program runs automatically at system start-up.

If system the fails to run HelloDevice VirtualCOM at start-up or if the HelloDevice VirtualCOM is closed by selecting [Exit] menu at the tray, run the HelloDevice VirtualCOM manually by clicking short-cut [HelloDevice VirtualCOM / Run HelloDevice VirtualCOM].



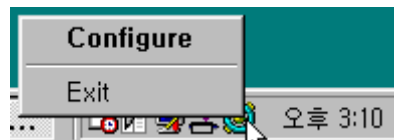
[Short-cut]

Run the HelloDevice VirtualCOM program so the serial application opens the virtual COM port and communicates with the serial server.

Closing

Click the right mouse button on the HelloDevice VirtualCOM tray icon in the tray at the task bar.

Select [Exit] from the tray icon menu; the HelloDevice VirtualCOM program will close.



[HelloDevice VirtualCOM Tray Icon Menu]

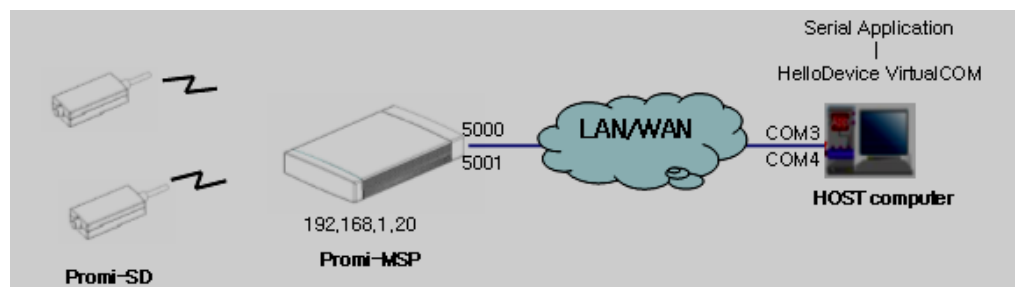


Fig. Relationship between VirtualCOM™ and Promi-MSP™

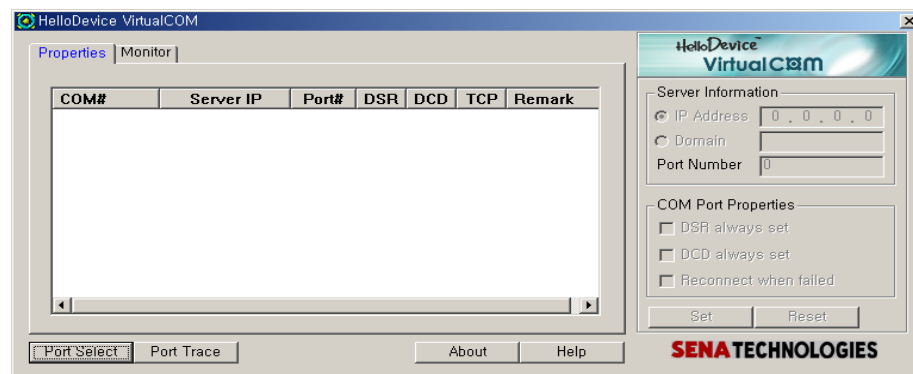
Activating HelloDevice VirtualCOM Window

If the HelloDevice VirtualCOM is closed, [activate it](#).



[HelloDevice VirtualCOM Tray Icon Menu]

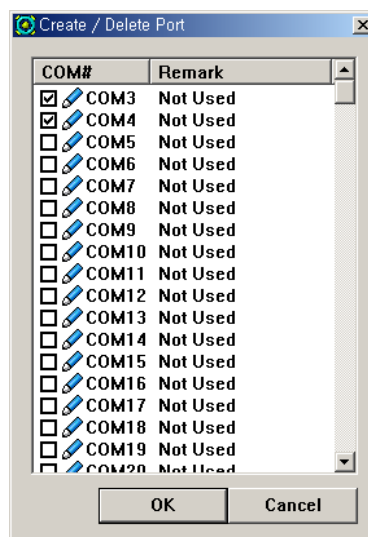
Select [Configure] from the tray icon menu or double click the tray icon to open the [HelloDevice VirtualCOM] window.



[HelloDevice VirtualCOM window]

Selecting / Deselecting Virtual COM Port

Open the [Create/Delete Port Dialog] dialog box by clicking [Port Select] button on the [HelloDevice VirtualCOM] window.



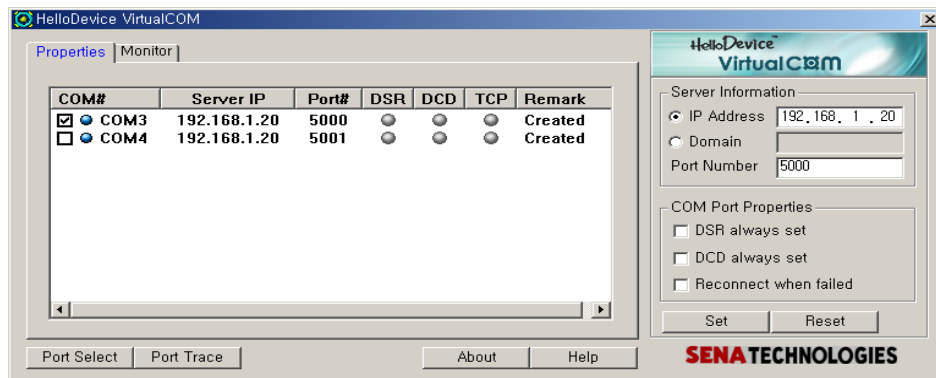
[Create / Delete Port Dialog]

Check the COM port for selection. COM port, displaying [Not Used] in the [remark] column, may be selected.

Uncheck the COM port to delete.

- COM port, displaying [Not Connected serial App.] in the [remark] column, can be deleted.
- COM port, displaying [Connected serial App.] at [remark] column, cannot be deleted; it is already connected to a serial application.

Click [OK] button. Accordingly, COM ports are selected or deleted.



[HelloDevice VirtualCOM window after selecting / deleting COM port]

Setting the Properties of Virtual COM Port

Check the COM port to set properties.

Select [IP Address] or [Domain] option.

Enter the IP address or domain name.

Set the COM Port Properties options. COM port displaying [Not Set Server] in the [Remark] column requires setting.

- [DSR always set] option: DSR pin is set as high during communication.
- [DCD always set] option: DCD pin is set as high during communication.
- [Reconnect when failed] option: In serial Server connection failure, the HelloDevice VirtualCOM attempts connection.

Click [Set] button to create the virtual COM port.

- Windows 9X series: [Reboot] dialog opens. Virtual COM port is created after system rebooting. When intending to create more than one port, it is better to click [Reboot Now] button at [Reboot] dialog on clicking [Set] button after setting

the last virtual COM port to create. This helps avoid rebooting when the virtual COM port is set.

- Window NT series: By clicking [Set] button, the virtual COM port is created.
- To change properties of the virtual COM port, set properties and click the [Set] button. Properties are set without rebooting Windows 9X or Windows NT series.

Monitoring Virtual COM Port

[TD] indicates that the serial application is sending data to the serial server.

[RD] indicates that the serial server is sending data to the serial application.

The [DTR][DSR][RTS][CTS][DCD] and [RI] column displays the status of each pin.

[Connected] at [Status] column indicates that the network is connected.

[Disconnected] at [Status] column indicates that the network is disconnected.

Tracing Virtual COM Port

Select a COM port to trace.

Open [HelloDevice VirtualCOM Tracer] window by clicking [Port Trace] button from the HelloDevice VirtualCOM window.

***CAUTION**

VirtualCOM operates in background mode. Operation status may be audited from the Windows tray. EXIT VirtualCOM during Serial Com. Program operation may damage the Host system. First close the serial communication program when desiring VirtualCOM EXIT.

5.1.2 Serial/IP

Serial/IP is a serial port emulator enabling unmodified user TCP/IP socket communications Host Serial application program use.

Users may download a 30day-trial version from <http://www.tacticalsoftware.com> after filling out simple forms for testing. INITIUM provides licensed Serial/IP programs to customers purchasing Promi-MSP™. The trial version Serial/IP does not require Serial Number for installation.

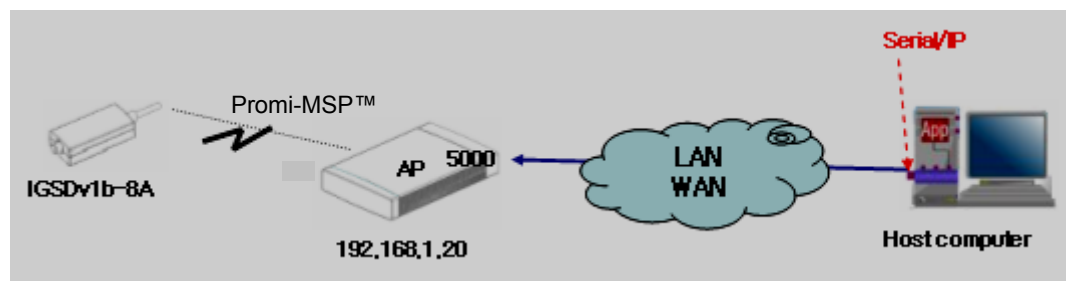


Fig. 4.1. Relationship between Serial/IP and Promi-MSP™

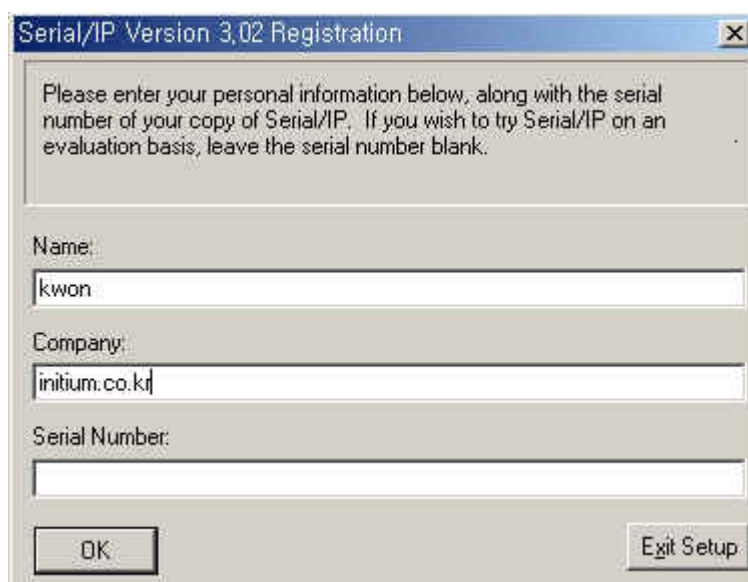


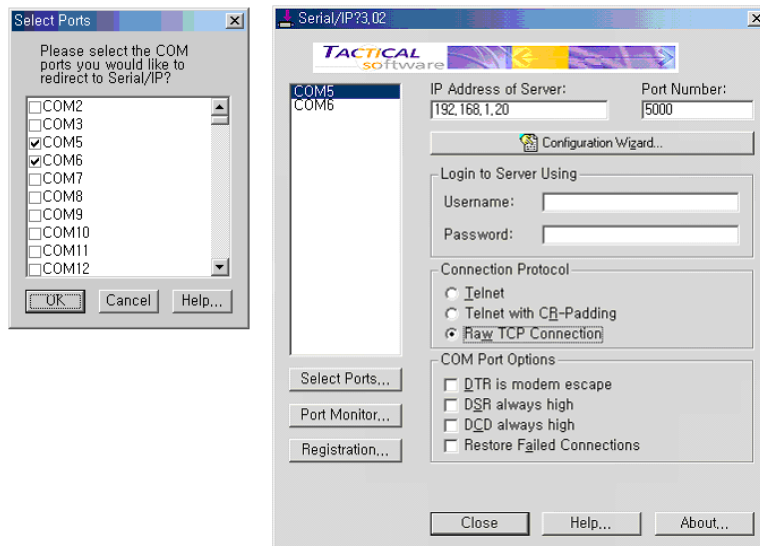
Fig. 4.2. Installation of Serial/IP

- (1) Right mouse clicking the Serial/IP icon on the right side of the Windows Tray activates "Configure...", "Trace Window...", and "Port Monitor..." menu display.



Fig. 4.3. Windows Tray after installation of Serial/IP

- (2) Click “Configure...” menu, and select the Virtual COM port to redirect to Serial/IP as in the left picture in Fig. 4.4 below. Enter IP address and Port number as in the right picture in Fig. 4.4 below.



- (3) Click “Configuration Wizard” button to connect to Promi-MSP™.
- (4) Promi-MSP™ is ready for use without revising Serial Port Applications.

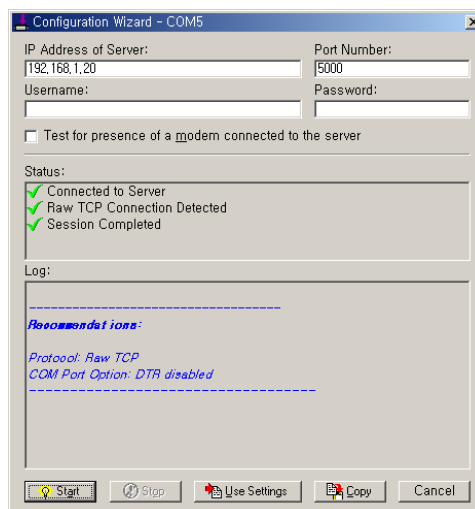


Fig. 4.5. Connection Configuration

4.2 Discovery Protocol

UDP Broadcast on 9097 port

Magic Number (4 bytes)

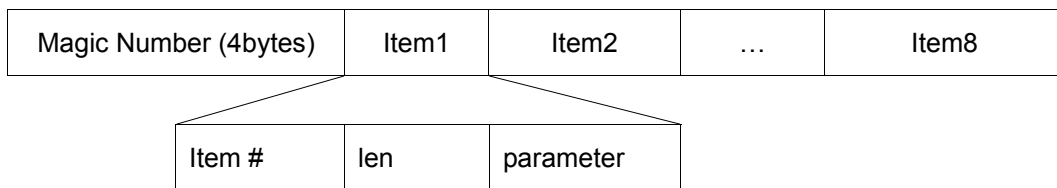
Searching

FA	05	21	EA
----	----	----	----

Response

FA	05	21	EF
----	----	----	----

Format



Item list

Item #	length	Parameter	Example
0x01	Var.	Product Name	PROMI-MSP
0x02	Var.	Model Code	101
0x03	Var.	Product Serial Number	MSP030403287
0x04	4	IP Address	C0 A8 01 0A
0x05	2	Control port (big endian)	09 DD
0x06	6	MAC address	00 0B 52 10 00 36
0x07	Var.	Bluetooth Friendly Name	Promi-MSP
0x08	6	Bluetooth Address	21 04 00 52 0B 00

<An Example>

0	8	16	24	32
Magic1 (=FAh)	Magic2 (=05h)	Magic3 (=21h)	Magic4 (=EFh)	
Item1(=01h)	Len1(=09h)	P	R	
O	M	I	-	
M	S	P	Item2(=02h)	
Len2(=03h)	1	0	1	
Item3(=03h)	Len3(=0Ch)	M	S	
P	0	3	0	
4	0	3	2	
8	7	Item4(=04h)	Len4(=04h)	
C0h	A8h	01h	0Ah	

...

FCC NOTICE

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITION:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDERSIRED
OPERATION.

CAUTION :

- 1)Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- 2)This appliance and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.
- 3)A minimum separation distance of 5 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.