

SE8502-M12 Series IP68 Rated 2-Port Serial Server User's Manual



Version 1.1

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Important Announcement

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1. Introduction

1.1. Overview

SE8502-M12 is an Industrial 2-Port IP68 Serial Server, built for the uses of waterproof, dustproof, and vibration-resistant.

There is a strong demand for reliable and rugged networking solutions, that can be used for the industrial workplace where is in harsh environmental conditions, such as high levels of moisture, dust, heat, electrical interference, and vibration. SE8502-M12 is a device that has IP68-rated housing and M12 metal connectors. It also provides a wide working temperature range from -40 ~ 75°C.

SE8502-M2 supports multiple link mode with TCP server/client, UDP and VirtualCOM, can be configured by Windows Base utility. In addition, M12 connectors can secure a firmly connecting, and prevent loose from vibrating condition, such as in moving vehicles.

1.2. Features

- 15KV ESD protection for serial signals
- 10/100Mbps Fast Ethernet full duplex auto negotiation
- Support multiple link mode with TCP server/client, UDP and Virtual COM mode
- Monitor, manage and control industrial field devices remotely
- Configuration: Built-in Web Server /Serial Console/ Telnet
- Two serial COM ports support RS-232/RS-485/RS-422 by Software Selectable
- Windows Base utility for IP configuration
- Upgrade firmware from remote-PC via Ethernet
- Rigid aluminum case design complies with IP68 standard
- Wide temperature range : -40 ~ 75°C
- Field-style mounting

1.3. Package Checklist

Your SE8502-M12 is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

SE8502-M12

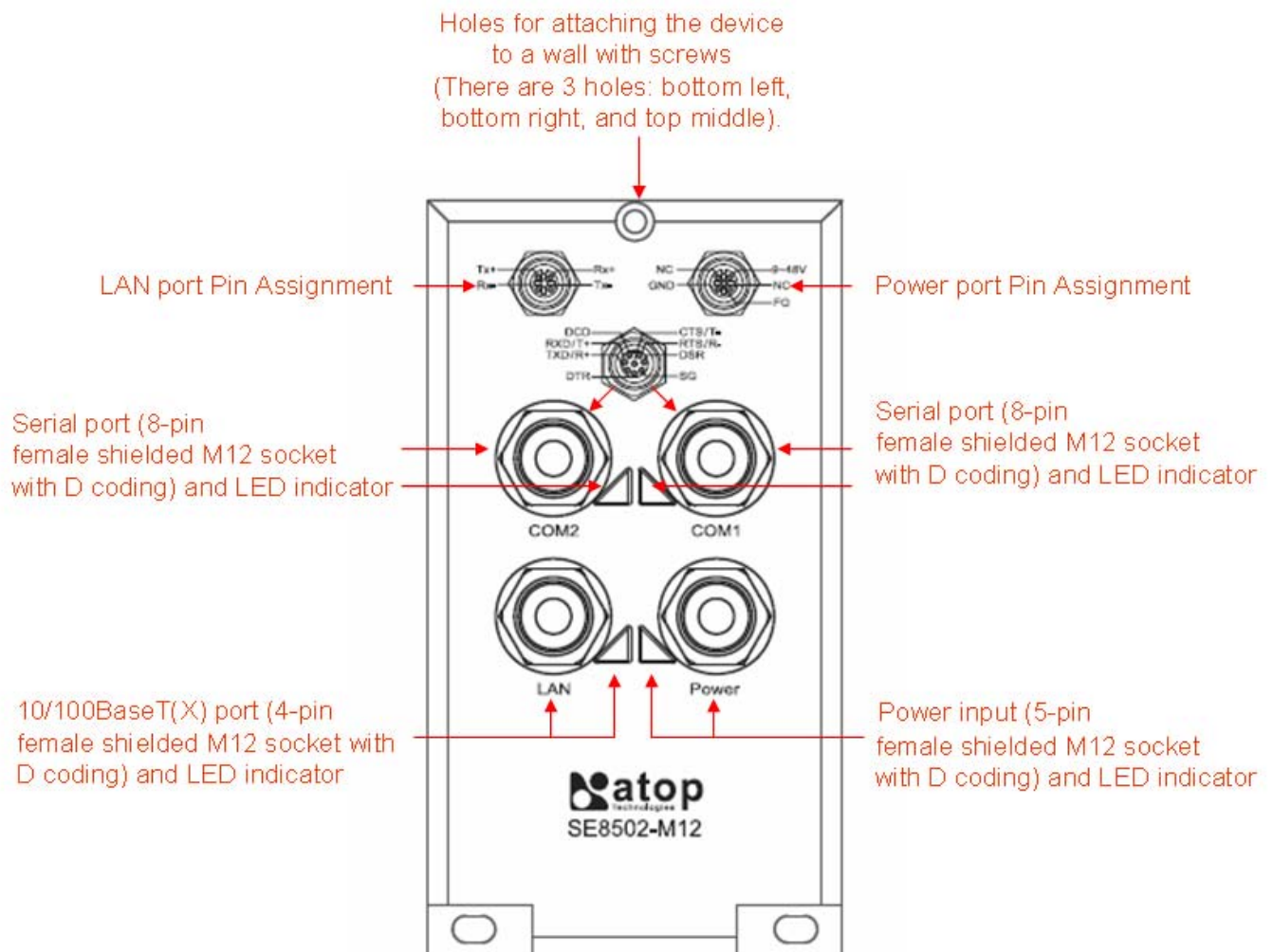
Quick Start Guide.

Product CD with user's manual and configuration utility "SerialManager"

✳ **NOTE:** Notify your sales representative if any of the above items is missing or damaged.

1.4. Interfaces

SE8502-M12 Panel Layouts



1.5. Panel/Wall Mounting

To mount the SE8502-M12 on the panel or wall, please follow up the steps below,

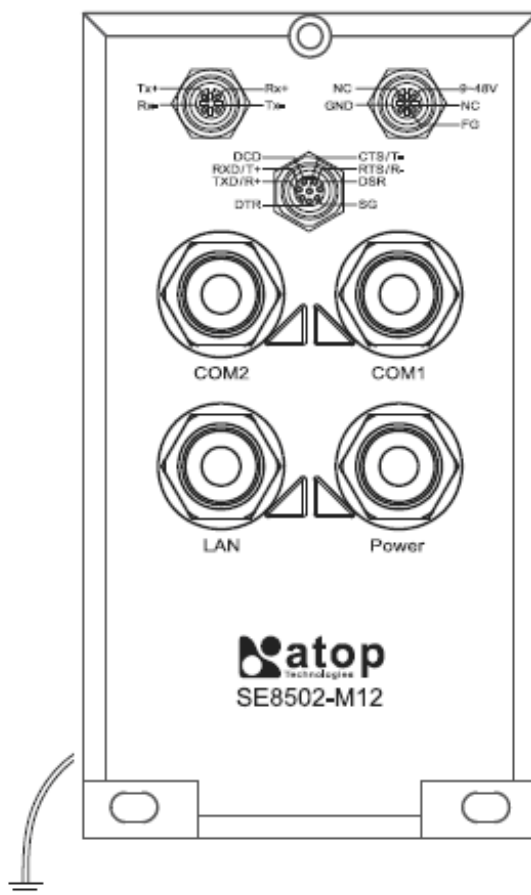
1. Select three proper screws and make holes on the panel or wall.
2. Insert the first screw into the top screw hole and screw it into panel or wall firmly.
3. Insert the another two screws into the two bottom holes and screw them into panel or wall firmly.

Notice: The SE8502-M12 is designed to be mounted to a well-grounded mounting surface .Please confirm the SE8502- M12 is mounted firmly before doing the cabling.

■ 1.6 Grounding the SE8502-M12

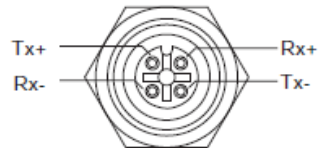
Proper grounding will minimize the effects of noise due to electromagnetic interference (EMI).

Please install the ground connection from the ground screw to the grounding surface before connecting the devices.

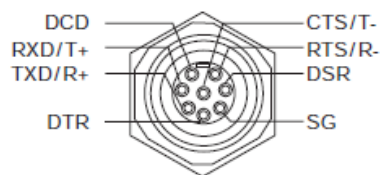


1.7 Pin assignment of LAN/ Serial / Power port

LAN Port Pin Assignment



Selectable Serial Port Pin Assignment

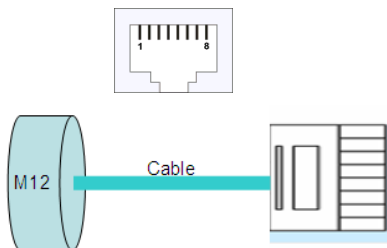


Power Port Pin Assignment



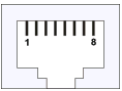
NC = Not Assigned

There are two wiring diagrams for straight-through and cross-over Ethernet cables.



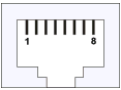
RJ45(8-pin) to RJ45(8-pin) straight-through cable wiring

10/100BaseT(X) Ethernet Port Connection

RJ-45								
Pin	1	2	3	4	5	6	7	8
Signal	Tx+	Tx-	Rx+			Rx-		

RJ45(8-pin) to RJ45(8-pin) cross-over cable wiring

10/100BaseT(X) Ethernet Port Connection

RJ-45								
Pin	1	2	3	4	5	6	7	8
Signal	Rx+	Rx-	Tx+			Tx-		

2. Software Setup

Now the SE8502-M12 hardware is installed and power is on, network IP configuration will be set in this section.

2.1. Default Settings

The SE8502-M12 has an IP addresses one for Ethernet interface. These default settings are shown from under information

Default IP addresses

Interface	Device IP	Subnet mask	Gateway IP
LAN port	10.0.0.50.100	255.255.0.0	10.0.0.254

The other default settings of SE8502-M12 are shown in the following table

Property	Default Value
Ethernet Port	
IP Address	10.0.50.100
Gateway	10.0.0.254
Subnet Mask	255.255.0.0
Security	
User Name	Admin
Password	Null (<i>Leave it blank</i>)
Serial	
COM	9600/None/ 8/1,No flow control, packet delimiter disabled
Link Mode	TCP Server, Listen port 4660/4661,No Filter, Virtual COM disabled
SNMP	
SysName of SNMP	Name (System Name)
SysLocation of SNMP	Location (System Location)
SysContact of SNMP	Contact (System Contact)

Table 1. Default settings of the SE8502-M12 device

2.1.1. Configure IP by SerialManager Utility

Use **SerialManager** configuration utility that comes with product CD or diskette to configure the network parameters. For more details, please refer to [Appendix B1](#).

Find new device and IP assignment

- Use **SerialManager Utility** for finding new device IP address, get device's current IP from table list
- Re-assigned IP, network mask and gateway if need with **SerialManager Utility**.
- User can configure User ID, Password and Host Name with **SerialManager Utility**.

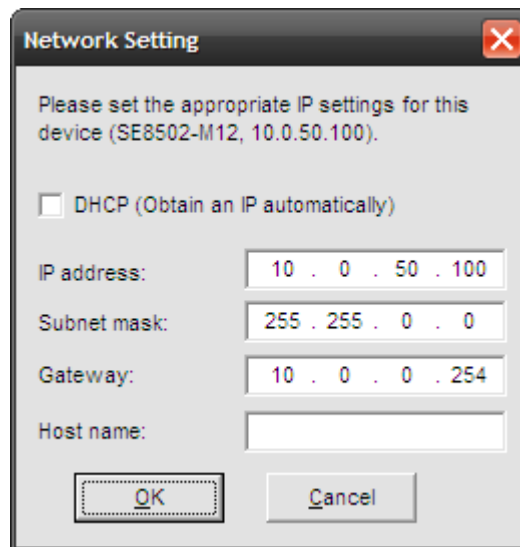


Fig 2. IP settings for SerialManager Utility tool

* **Note:** All settings were NOT changed if user ID or password was incorrect.

If there is more than one device using the same IP address in same Subnet. User has to correct mapping between MAC address & IP address by ARP commands.

ARP commands

ARP (address resolution protocol) commands can be used to assign a static IP address on SE8501-M12 using its hardware MAC (media access control) address. The MAC address "0060E9-xxxxxx" is printed on the rear side of SE8502-M12. The following figure shows how to use ARP command on MS-DOS command prompt window.

Example: Set IP 10.0.50.100 to MAC address 00-60-e9-06-07-d2.

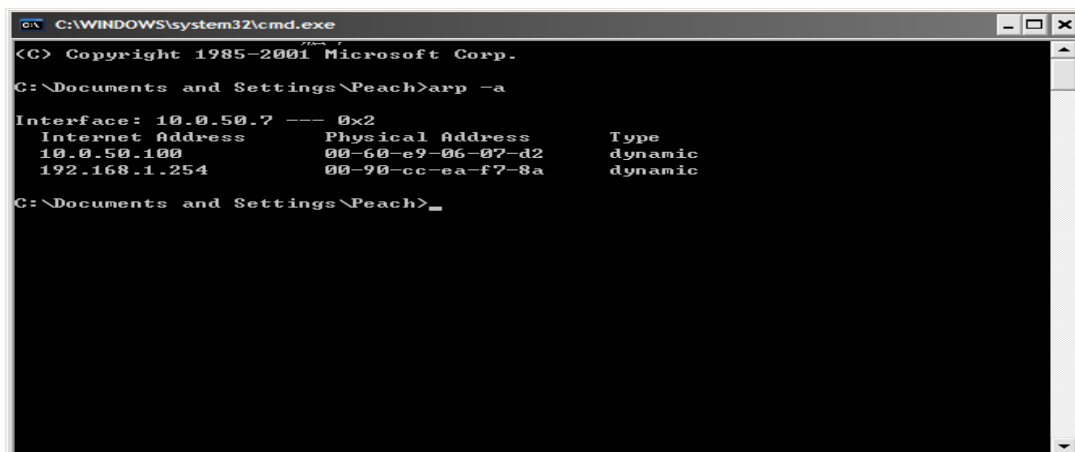


Fig 3. Map IP address to MAC address by ARP Command

✱ **Note: ARP commands can only be used to set a static IP address of SE8502-M12**

- **arp -a** commands show the current mapping IP and MAC addresses.
- **arp -s** “IP address” “MAC address” mapping the IP address to specify MAC address.

2.1.2. Configure IP by web interface

Use common Web browser, ex. Microsoft Internet Explorer or Mozilla Firefox, to configure the network parameters of SE8502-M12.

- Open web browser, type in the **IP address** (default IP: 10.0.50.100) of SE8502-M12 to be configured. Default user name is **admin** and default password is **null** (leave it blank).
- Configure IP settings from web **Network links page** then click “**Save Configuration**” to save settings.
- Click on “**Restart**” button to make the change effective.

Please refer to contents of [Web Configuration section](#) for more details.

2.1.3. Configure IP by Telnet utility

Use common Telnet utility, ex. Microsoft Hyper-terminal, to configure the network parameters of SE8502-M12.

- Run command **telnet “IP address”** to telnet to SE8502-M12 .**Default IP address is 10.0.50.100** and default password is **null** (leave it blank).
- Configure IP settings from **network settings** menu, and **restart** system after saved settings.

Please refer to [Telnet Configuration](#) section for more details.

2.1.4. Auto IP with DHCP

DHCP server will automatically supply an **IP address gateway address**, and **subnet mask** to SE8502-M12. By default, the DHCP client function on SE8502-M12 is disabled, user can activate the DHCP functions by the following steps

- Execute **SerialManager Utility**
- Click on the **IP address** (of SE8502-M12)
- Click “**Config**” to pop-up the static IP Dialog Window
- Check on “**Auto IP**”
- Click “**Config Now**” (The SE8502-M12 will restart and obtain the IP from the DHCP server automatically)

2.2. TCP/IP Port Number

Default Port numbers of SE8502-M12 is **4660** (1st port) & **4661** (2nd Port) and it is associated with the serial port **COM1** and **COM2** respectively. After the application program connected to the TCP port 4660 (or 4661) on the SE8502-M12, data of user’s application program are transmitted transparently to SE8502 and vice versa.

Application Connectivity

SE8502-M12 provides Tunneling and Virtual COM operation mode. The SE8502-M12 is designed to transmit data between one-or-more serial devices to/from one-or-more TCP/IP devices through **wireless** or **wire** Ethernet, so SE8502-M12 can enhance the accessibility of the serial device through the ubiquitous TCP/IP based Ethernet. The connection distance limit is overcome by SE8502-M12. Examples of these devices are PLC controllers, card readers, display signs, security controls, CNC controller, etc.

2.3. TCP & UDP Protocols

SE8502-M12 can be operated in two most common protocols **TCP** and **UDP**.

2.3.1. Transmission Control Protocol (TCP)

TCP provides a connection and a byte oriented data stream with control parameters such as flow control, multiple ports option, and order delivery notification. Once the connection is established, data can be transmitted in both directions. TCP guarantees data is transmitted from one node to the other node(s) in orderly. The protocol also distinguishes the transmitted data for different applications (such as a Web server or an Email server) on the same computer.

For redundant or dual-network connectivity purposes, SE8502-M12 offers two TCP operation Modes so users may choose for their specific application, TCP Server Mode and TCP Client Mode.

2.3.2. User Datagram Protocol (UDP)

UDP is a faster datagram delivery protocol. User can configure SE8502-M12 to work in the UDP mode. UDP is connectionless protocol and can transmit multicast data to/from a serial device to one/multiple host computer. Because UDP is the connectionless protocol, UDP does not guarantee the reliability and orderly data streams like TCP protocol. Datagram may arrive out of order or lose without notice. But the advantage of UDP is the speed. UDP is faster and hence more attractive in time-sensitive applications.

2.4. Connectivity Topology

SE8502-M12 is also equipped with Tunneling and Virtual COM operation modes. It is designed to transmit data to/from multiple serial devices and from/to multiple TCP/IP devices on Ethernet, so it can enhance the accessibility of the serial devices immensely. **Fig 4.** is the example of SE8502-M12 connection topology.

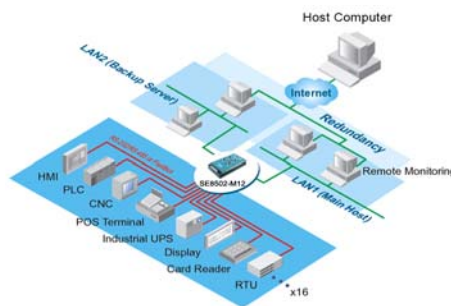


Fig 4. Typical Topology of SE8502-M12 Connection

2.4.1. Virtual COM Mode

The **Virtual COM** software emulates a serial port with Internet or LAN topology. In the Virtual COM Mode, COM port data (RS232) is encapsulated to Ethernet data format. By creating a virtual COM port on a PC, the Virtual COM driver redirects communications from the virtual COM port to the destination IP address (and the designated port number) by encapsulated COM data into IP data. **Fig 5.** illustrates a Virtual COM connection diagram.

Virtual COM Mode (with TCP protocol)

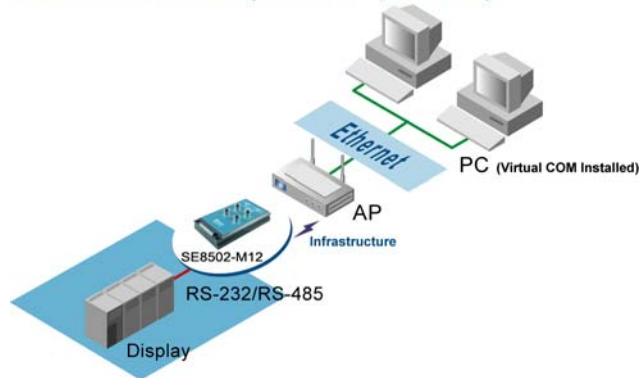


Fig 5. TCP Connection in Virtual COM Mode

TCP Server in Virtual COM Mode

SE8502-M12 can be configured in the TCP server mode (PC as a client) with a unique IP and Port number, and SE8502-M12 waits passively for the PC to establish a connection to. After the connection is established, PC can communicate to serial devices through SE8502-M12.

Configure SE8502-M12 to be TCP server

Using one of the three configuration methods (Telnet, Web, and console), User can configure SE8502-M12 to be as TCP Server as following.

- Disabled the IP filter (default)
- Set the port number (default port is 4660 for COM1, 4661 for COM2).
- If IP filter is enabled, only the assigned source IP is allowed to be connected to SE8502-M12.

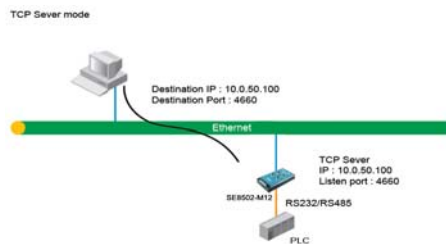


Fig 6. TCP Server in Virtual COM Mode

TCP Client in Virtual COM Mode

SE8502-M12 can be configured to be TCP Client mode (PC as a server) to establish a TCP connection to an application server on PC, or the Remote Control Host. Once the connection is established, PC or Remote Control Host can exchange data with several serial devices at the same time through SE8502-M12.

Configuring SE8502-M12 to be TCP client

User can configure SE8502-M12 to be as TCP Client for example, from **Fig. 7**. PC, as a server, has IP address 10.0.0.100 and listening on port 1000. Each SE8502-M12, connected with serial device, configured as TCP client mode with destination IP address 10.0.0.100 and the destination port 1000, and the IP filter is disabled (by default).

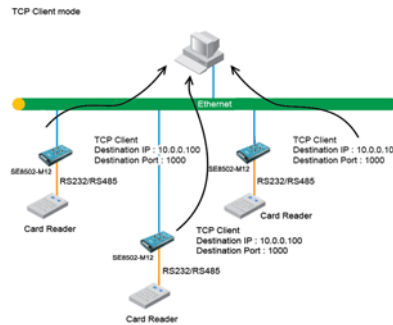


Fig 7. TCP Client in Virtual COM Mode

2.4.2. Tunneling Mode

Tunneling Mode is used for multiple serial devices to “talk” among one another through SE8502-M12’s through wireless LAN or wired Ethernet. This mode is particularly useful when two or more serial devices are far away. This mode can be used to extend the normal serial communication distance of 15 m to 100 m or longer.

One SE8502-M12 can be configured to be the TCP Server Mode with serial device connected and also another SE8502-M12 is configured as TCP client with serial device connected. After the connection is established, both serial devices can exchange data to each other transparently. For example, User can implement SE8502-M12 tunneling mode for Master /Slave mode PLCs or between other serial devices.

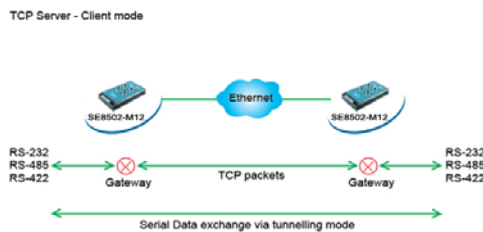


Fig 8. TCP Link in Tunneling mode

Configuring SE8502-M12 to Tunneling Mode

Using one of three configuration methods (Telnet, Web, or Console), user can configure SE8502-M12 to TCP Server mode with a desired IP address and port, and with other SE8502-M12 is configured as TCP Clients mode with Server IP and port as destination IP and port respectively.

✱ **Note:** TCP client has to assign the destination IP and the destination port corresponding to TCP server’s IP and listening port (example: TCP 4660 port).

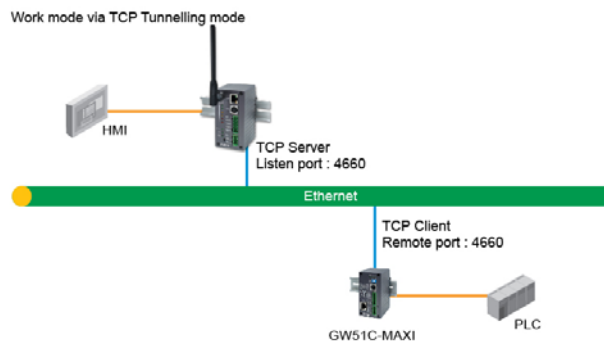


Fig 9. TCP Tunneling Mode

UDP

In UDP mode, User may exchange Multicast data from one SE8502-M12 with multiple SE8502-M12s, Vice versa is also true.

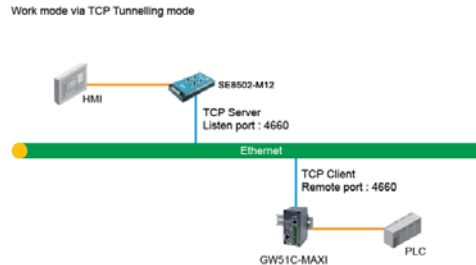


Fig 10. UDP Link in Tunneling mode

Configure SE8502-M12 in UDP Mode

Use one of the three configuration methods (Telnet, Web, and console). User can configure SE8502-M12 to UDP mode. In UDP mode, SE8502-M12 can be configured to communicate to more than one node (Multicasting). Note that the **Multicast** IP address is limited by the Class of IP address and subnet mask. As an example, for a network of Class C of subnet 192.168.1.X and a subnet mask of 255.255.255.0, the maximum Multicast IP address to be configured is **four** destinations IP's.

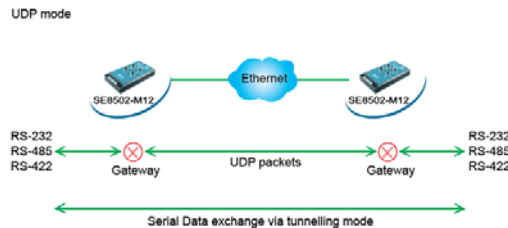


Fig 11. Multi-UDP Link in Tunneling Mode

3. Configure SE8502-M12 by web interface

User has to assign IP address to SE8502-M12 before working on web configuration operations. Please refer to [section 3.2](#) for more detail.

3.1. Login to System

Open one of the web browsers, ex. Microsoft IE or Firefox etc. Enter the IP address of SE8502-M12 on the URL.
Example: <http://10.0.50.100> or <http://user-device-IP>

The following authentication screen shall appear. Enter **user name** and **password** then click on “OK”. The default user name is **admin** and password is **null** (leave it blank).

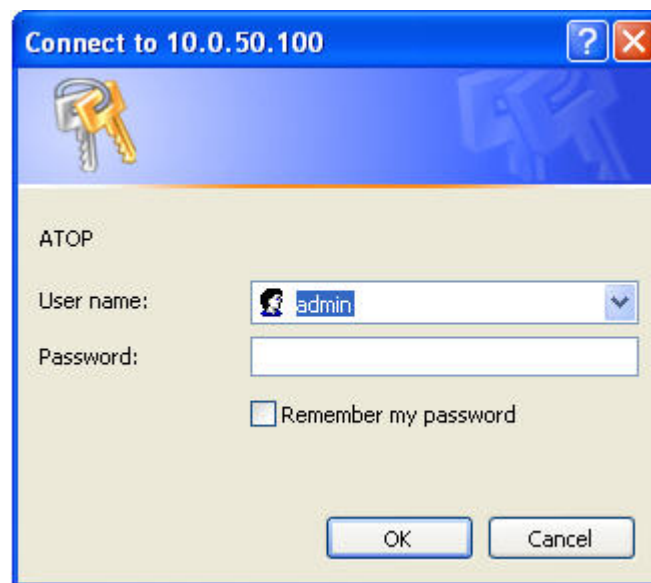


Fig 12. Authorization request for system security

The overview screen shall appear (Fig. 13)

3.2. General Information

This system overview window gives the general information on SE8502-M12, included Network, and Serial information.

Overview

The general device information of ATOP-Serial Server.

Device Information

Kernel Version	2.14
AP Version	2.18

Network Information

LAN	MAC Address	00:60:E9:06:07:D2
	IP Address	10.0.50.100

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Fig 13. Overview for system information by Web Interface

Device Information

SE8502-M12's system information includes **Kernel version** and **AP version**. The information is read only and is attributed from another setting page or system status

Device Information	
Kernel Version	2.14
AP Version	2.18

Fig 14. Device Information from Overview web page

Networking information

Networking information fields are displayed both 'LAN & MAC Address information. The information provided LAN MAC address.

Network Information		
LAN	MAC Address	00:60:E9:06:07:D2
	IP Address	10.0.50.100

Fig 15. Network Information from Overview web page

Serial Information

SE8502-M12 COM1 (COM2) information includes **UART mode, link mode, baud rate, parity, data bits, stop bits, flow control and link status**. The COM1 (COM2) information is read only and is attributed from Serial settings of COM1 or COM2 Port of SE8502-M12.



Fig 16. Serial Information from Serial setting

3.3. Network Configurations

There are four items allowed to change on Network page, included LAN, DNS and SNMP Information.

Network

TCP/IP

To configure network settings of ATOP-Serial Server. After saving configuration you have to restart the device to make the settings effective.

LAN 1 Settings

DHCP	<input type="checkbox"/> Obtain an IP automatically
IP Address	10 . 0 . 50 . 100
Subnet Mask	255 . 255 . 0 . 0
Default Gateway	11 . 0 . 0 . 254

DNS

DNS Settings

DNS1	168 . 95 . 1 . 1
DNS2	255 . 255 . 255 . 255

SNMP

By enabling SNMP you allow the management utility to collect the information of ATOP-Serial Server. You can change the device network identity as well by changing the system name, location and contact.

SNMP Settings

SysName	0060E90607D2
SysLocation	location
SysContact	contact
SNMP	<input checked="" type="checkbox"/> Enable SNMP
Read Community	public
Write Community	private
SNMP Trap Server	0 . 0 . 0 . 0

Save

Fig 17. Network information by Web page

3.3.1. LAN Settings

Operation: [Network] → [LAN Setting]

Click on the “**Network**” link and the following screen shall appear. Fill in IP information on TCP/IP field. Alternatively, click on DHCP to automatically obtain **IP address**, **gateway** and **subnet mask** information.

LAN Settings				
DHCP	<input type="checkbox"/> Obtain an IP automatically			
IP Address	10	0	50	100
Subnet Mask	255	255	0	0
Default Gateway	10	0	0	254

Fig 18. LAN Setting from Network web page

3.3.2. DNS Settings

Operation: [Network] → [DNS Settings]

Click on the “**Network**” link and the following screen shall appear. Fill in DNS information on **DNS Settings** field. Alternatively, User can configure DNS by checking on “**Obtain an IP automatically**” field in **LAN Settings** or **WLAN Settings** fields to automatically obtain DNS from DHCP server.

DNS Settings				
DNS1	168	95	1	1
DNS2	0	0	0	0

Fig 19. DNS Setting from Network web page

3.3.3. SNMP Settings

Operation: [Network] → [SNMP Settings]

Click on the “**Network**” link and the following screen shall appear. Check on “**Enabling Settings**” field. Fill in desired **SysName**、**SysLocation**、**SysContact** information on SNMP Settings fields. The changes of SNMP Settings will take effect only after the SE8502-M12 restarted.

SNMP Settings	
SysName	0060E90607D2
SysLocation	location
SysContact	contact
SNMP	<input checked="" type="checkbox"/> Enable SNMP
Read Community	public
Write Community	private
SNMP Trap Server	0 . 0 . 0 . 0

Fig 20. SNMP Setting from Network web page

3.4. COM Port Configuration

Here User can configure **Serial parameters**, include alias, baud rate, parity, data bit and type of flow control defined by user.

COM 1

Link Mode
 To choose specific working mode for COM 1 port.

☒ TCP Server
 ☐ TCP Client
 ☐ UDP

TCP Server	
Virtual COM	<input type="checkbox"/> Enable
Max. Connections	1
IP Filter	<input type="checkbox"/> Enable
Source IP	0 . 0 . 0 . 0
Local Port	4660
<input type="checkbox"/> Apply to all serial ports (Local Port will be enumerated automatically.)	

Fig 21. COM port Information Web Page

3.4.1. Link Mode Settings

- Click on the “**Serial**” link and the **Fig. 27** screen will appear.
- Fill in Serial parameter information on **Serial Settings** field
- Click on “**Save Configuration**” button to save the changes.

3.4.2. TCP Server Mode

TCP Server mode is default Link mode of **Serial Settings**, and it can wait for connecting requirement from remote host PC which running “serial-to IP” utility or setting SE8502-M12s in tunneling mode. User has to configure listening port to allow client establish connection to this server. Default port number of SE8502-M12 is 4660.

IP filtering function is a simple **ACL** (Access Control List). It can be disabled by setting FILTER_IP to “0.0.0.0”.

User can configure one or group IP for **source IP**. If IP filter is enabled, only source IP assigned can be connected to SE8502-M12

The screenshot shows the 'COM 1' configuration window. At the top, it says 'LINK Mode' and 'To choose specific working mode for COM 1 port.' There are three radio buttons: 'TCP Server' (selected), 'TCP Client', and 'UDP'. Below this is a green header 'TCP Server' followed by a table with settings: 'Virtual COM' (checkbox 'Enable'), 'IP Filter' (checkbox 'Enable'), 'Source IP' (four input boxes), 'Local Port' (input box with '4660'), and 'Connect Number Limit' (dropdown with '1'). Below the TCP Server section is the 'Serial' section with the text 'To configure COM 1 port parameters.' It has a green header 'Serial Settings' and a table with various settings: 'UART Mode' (radio buttons for RS232, RS422, RS485), 'Baud Rate' (dropdown with '9600' and 'bps'), 'Parity' (radio buttons for None, Odd, Even, Mark, Space), 'Data bits' (radio buttons for 5 bits, 6 bits, 7 bits, 8 bits), 'Stop bits' (radio buttons for 1 bit, 2 bits), 'Flow Control' (radio buttons for None, Xon/Xoff, RTS/CTS), 'Packet Delimiter (Network to Serial)' (checkbox 'Enable', radio buttons for Timer and Characters), and 'Packet Delimiter (Serial to Network)' (checkbox 'Enable', radio buttons for Timer and Characters). At the bottom, there is a checkbox 'Apply to all serial ports' and a 'Save Configuration' button.

TCP Server	
Virtual COM	<input type="checkbox"/> Enable
IP Filter	<input type="checkbox"/> Enable
Source IP	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>
Local Port	<input type="text"/> 4660
Connect Number Limit	<input type="text"/> 1

Serial Settings	
UART Mode	<input type="radio"/> RS232 <input checked="" type="radio"/> RS422 <input type="radio"/> RS485
Baud Rate	<input type="text"/> 9600 <input type="text"/> bps
Parity	<input checked="" type="radio"/> None <input type="radio"/> Odd <input type="radio"/> Even <input type="radio"/> Mark <input type="radio"/> Space
Data bits	<input type="radio"/> 5 bits <input type="radio"/> 6 bits <input type="radio"/> 7 bits <input checked="" type="radio"/> 8 bits
Stop bits	<input checked="" type="radio"/> 1 bit <input type="radio"/> 2 bits
Flow Control	<input checked="" type="radio"/> None <input type="radio"/> Xon/Xoff <input type="radio"/> RTS/CTS
Packet Delimiter (Network to Serial)	<input type="checkbox"/> Enable <input type="radio"/> Timer <input type="text"/> 10 (10~30000) ms <input type="radio"/> Characters <input type="text"/> 0x0d0a ("0x"+ASCII Code, Ex. 0x0d or 0x0d0a)
Packet Delimiter (Serial to Network)	<input type="checkbox"/> Enable <input type="radio"/> Timer <input type="text"/> 10 (10~30000) ms <input type="radio"/> Characters <input type="text"/> 0x0d0a ("0x"+ASCII Code, Ex. 0x0d or 0x0d0a)
<input type="checkbox"/> Apply to all serial ports	

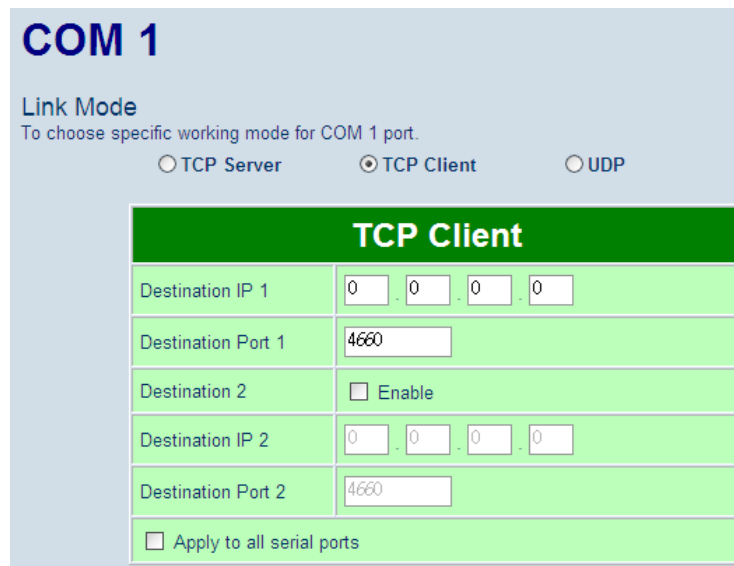
Save Configuration

Fig 22. TCP Server in Link mode

※ Note: Enable Virtual COM mode if the remote site PC’s “Serial to IP” tool is installed

3.4.3. TCP Client Mode

User may enter destination IP & port (default: 4660) to establish connection of counter-pair (remote) host (For example, another SE8502-M12, or PC for data-collection). SE8502-M12 can support two destination hosts simultaneously.



COM 1

Link Mode
 To choose specific working mode for COM 1 port.

☐ TCP Server
 ☒ TCP Client
 ☐ UDP

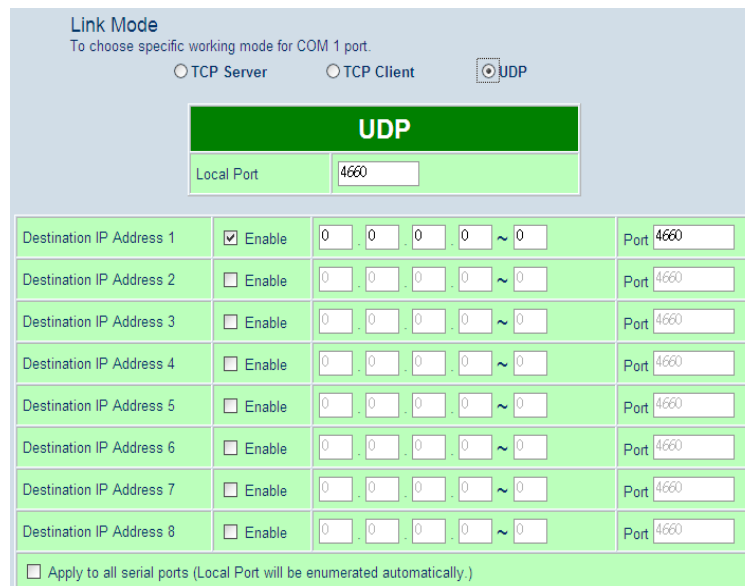
TCP Client	
Destination IP 1	0 . 0 . 0 . 0
Destination Port 1	4660
Destination 2	<input type="checkbox"/> Enable
Destination IP 2	0 . 0 . 0 . 0
Destination Port 2	4660
<input type="checkbox"/> Apply to all serial ports	

Fig 23. TCP Client in Link mode

3.4.4. UDP Mode

SE8502-M12 can be configured in a **UDP mode** to establish connection using **Unicast** or **Multicast** data from the serial device to one or multiple host computers. Vice versa is also true. For example, the original **RS-422/ RS485** bus can be transferred and extended connected distance by SE8502-M12s.

The destination IP is assigned by single IP or group IPs, The configuration is limited by the Local Listening Port. For example, on SE8502-M12 listening port is 4660 which receive data sending from the host computers. SE8502-M12 can support up to **8-group** IPs for UDP connection, if users needed.



Link Mode
 To choose specific working mode for COM 1 port.

☐ TCP Server
 ☐ TCP Client
 ☒ UDP

UDP	
Local Port	4660
Destination IP Address 1	<input checked="" type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
Destination IP Address 2	<input type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
Destination IP Address 3	<input type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
Destination IP Address 4	<input type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
Destination IP Address 5	<input type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
Destination IP Address 6	<input type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
Destination IP Address 7	<input type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
Destination IP Address 8	<input type="checkbox"/> Enable 0 . 0 . 0 . 0 ~ 0 Port 4660
<input type="checkbox"/> Apply to all serial ports (Local Port will be enumerated automatically.)	

Fig 24. UDP protocol in Link mode

✱ **Note: In this phase, UDP mode does not support Virtual COM mode.**

3.4.5. Serial Settings

This filed can be configured with serial parameters for SE8502-M12. Here User can configure Serial parameters, include **UART Mode, baud rate, parity, data bit and type of flow control.**

- **Configure UART Mode:** RS-232 or RS-485 or RS-422
- **Baud rate:** 110/150/300/600/1200/2400/4800/9600/19200/38400/57600/115200/230400/460800/921600
- **Parity:** None or Odd or Even or Mark or Space
- **Data bits:** 5, 6, 7, 8 bits
- **Stop bits:** 1 or 2
- **Flow control:** None or Xon/Xoff or Hardware (RTS/CTS).

Serial Settings	
UART Mode	<input type="radio"/> RS232 <input checked="" type="radio"/> RS422 <input type="radio"/> RS485
Baud Rate	9600 bps
Parity	<input checked="" type="radio"/> None <input type="radio"/> Odd <input type="radio"/> Even <input type="radio"/> Mark <input type="radio"/> Space
Data bits	<input type="radio"/> 5 bits <input type="radio"/> 6 bits <input type="radio"/> 7 bits <input checked="" type="radio"/> 8 bits
Stop bits	<input checked="" type="radio"/> 1 bit <input type="radio"/> 2 bits
Flow Control	<input checked="" type="radio"/> None <input type="radio"/> Xon/Xoff <input type="radio"/> RTS/CTS
Packet Delimiter (Network to Serial)	<input type="checkbox"/> Enable <input type="radio"/> Timer 10 (10~30000) ms <input type="radio"/> Characters 0x0d0a ("0x"+ASCII Code, Ex. 0x0d or 0x0d0a)
Packet Delimiter (Serial to Network)	<input type="checkbox"/> Enable <input type="radio"/> Timer 10 (10~30000) ms <input type="radio"/> Characters 0x0d0a ("0x"+ASCII Code, Ex. 0x0d or 0x0d0a)
<input type="checkbox"/> Apply to all serial ports	

Fig 25. Serial Communication Settings from Web Page

3.4.6. Delimiter Settings

Packet delimiter

Packet delimiter is a way of controlling the number of packets in a serial communication. It is designed to keep packets in track. SE8502-M12 provides two ways in parameter setting: (1) **Packet delimiter by timer** and (2) **packet delimiter by Character pattern**. By default, packet delimiter timer is 1 ms. the range of packet delimiter timer is **1 to 30,000 msec**. For Character pattern terminator, if “character pattern is selected and a data stream ended with “0x0a04”, then the entire data buffer of the serial device is transmitted.

User can also choose character pattern as the packet delimiter indicated.

3.5. Configure System

There are five subsystems for system settings, included **Time**, **WLAN Region**, **Security**, **Set to default** and **Restart**.

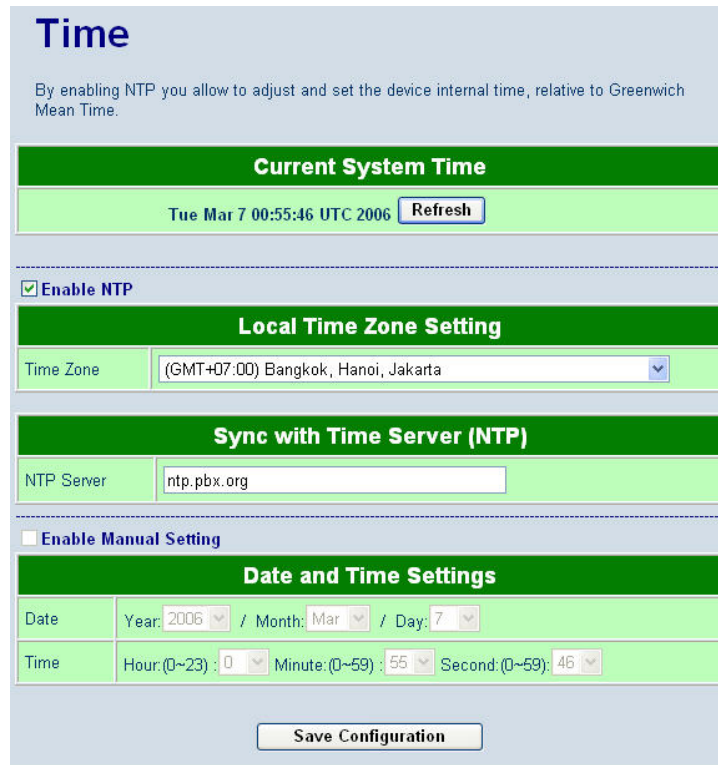


Fig 26. Subsystem menu of system settings Web Interface

3.5.1. Configure Time by NTP Service

Operation: System→Time

User can set date and time manually by fill in “*Set Date and Time manually*” field. User can also configure NTP Server to obtain Network time automatically.



Time

By enabling NTP you allow to adjust and set the device internal time, relative to Greenwich Mean Time.

Current System Time

Tue Mar 7 00:55:46 UTC 2006

☒ **Enable NTP**

Local Time Zone Setting

Time Zone: (GMT+07:00) Bangkok, Hanoi, Jakarta

Sync with Time Server (NTP)

NTP Server: ntp.pbx.org

☐ **Enable Manual Setting**

Date and Time Settings

Date: Year: 2006 / Month: Mar / Day: 7

Time: Hour: (0~23) : 0 Minute: (0~59) : 55 Second: (0~59) : 46

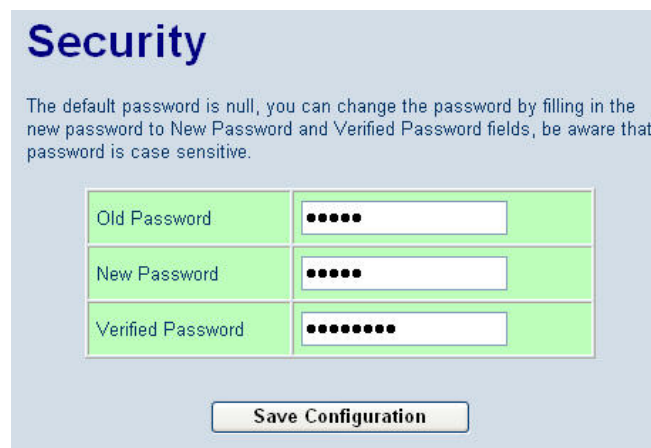
Fig 27. Time service settings from System web page

3.5.2. Security (change the Password)

Operation: System->Security

Click on the “*Security*” link and the following screen shall appear (**Fig. 28**).

Enter the old password on “*Old Password*” field then enter the new password on “*New Password*” and the “*Verified Password*” fields, and then click on “*Save Configuration*” to update the password. The maximum is 8 characters.



The screenshot shows a web interface titled "Security". Below the title is a paragraph: "The default password is null, you can change the password by filling in the new password to New Password and Verified Password fields, be aware that password is case sensitive." Below this text are three input fields: "Old Password" (with 6 dots), "New Password" (with 6 dots), and "Verified Password" (with 8 dots). At the bottom of the form is a button labeled "Save Configuration".

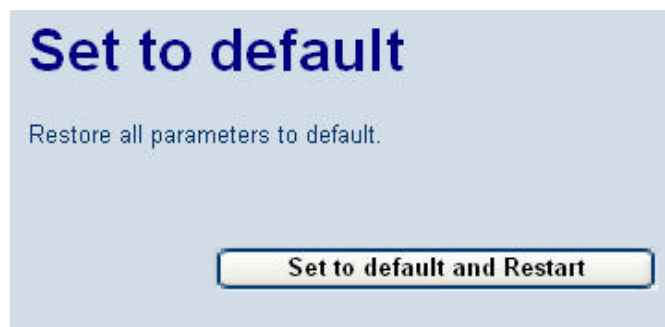
Fig 28. Change password from System Security Page

✱ **Note:** User may press the default reset key to reset password to the default value(blank)

3.5.3. Restoring Factory Default Configurations

Operation: System→ Set to Default

User can click on “*set to default and restart*” button to restore SE8502-M12’s settings to factory default (Fig. 29).



The screenshot shows a web interface titled "Set to default". Below the title is a paragraph: "Restore all parameters to default." At the bottom of the page is a button labeled "Set to default and Restart".

Fig 29. Set all parameters to factory default by Web Interface

3.5.4. Restart System

Operation: System→ Restart

The changes of networking parameters will take effect only after the SE8502-M12 is restarted. User can restart the SE8502-M12 manually by click on Restart button on the restart menu web page (Fig 30).



The screenshot shows a web interface titled "Restart". Below the title is a paragraph: "When the system stops responding correctly, you can perform this. The restart will be complete when the RUN LED starts blinking." At the bottom of the page is a button labeled "Restart".

Fig 30. Restart system by Web

4. Telnet Configuration

User can also use Telnet utility to change SE8502-M12 configuration settings.

- Open Ms-DOS command prompt window or other telnet tools
- Enter the “**IP address**” of the SE8502-M12 (For example, **Telnet 10.0.50.100**). The system then prompts for username and password, the default username is “**admin**” and the default password is **null (blank)**.

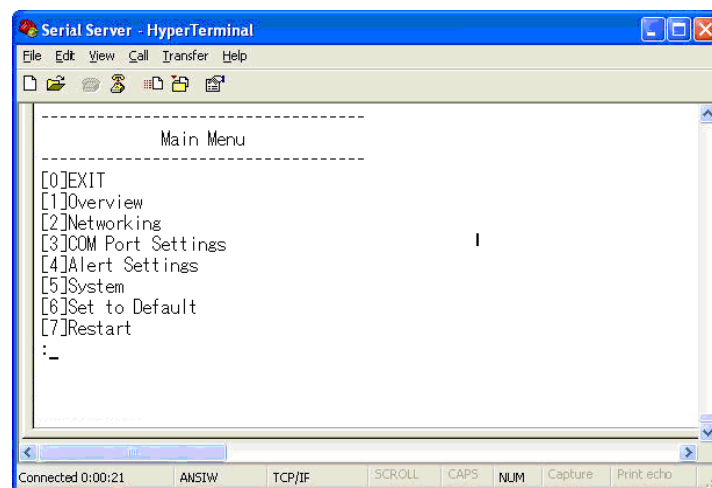


Fig 31. Login into System by Telnet

Then the following main menu shall appear

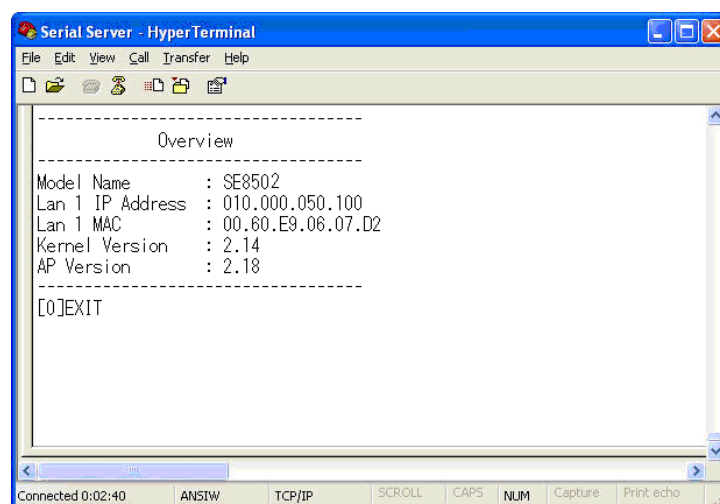


Fig 32. Overview information by telnet

- If the SE8502-M12 does not receive any command within **1 minute**, Telnet will be terminated automatically.
- The changes of networking parameters will take effect only after the SE8502-M12 is restarted.

4.1. General Information

Operation: [Main]→[1 Overview]

Select “1” from “*Input choice (0~6) and enter:*” to enter “**overview page**.”

This system overview window gives the general information on **LAN IP, MAC address, SNMP information, kernel and AP version, and the connection status** of the SE8502-M12 (**Fig. 39**).

The following overview information shall appear.

Device Information:

Kernel Version: [Read Only, Generated by system]

AP Version: [Read Only, Generated by system]

Ethernet Information:

MAC: [Read Only]

IP: [Allows for changes in Network Page]

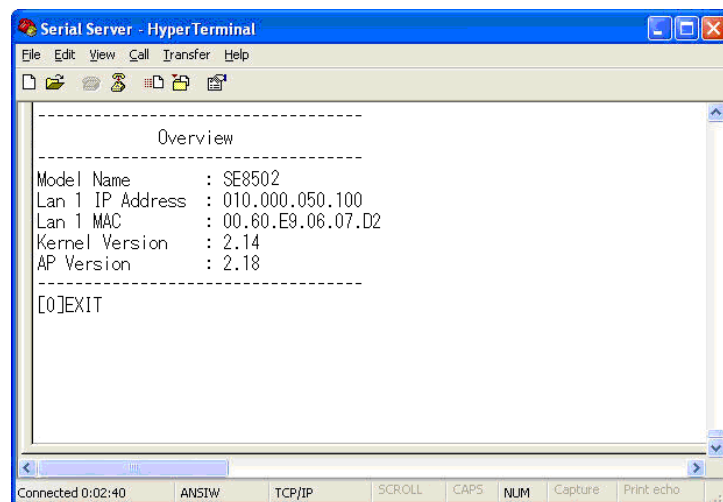


Fig 33. System Information from Overview

DNS Information:

DNS1: [IP address of 1st DNS Server, Allows for changes in Auto IP of Networking Page]

DNS2: [IP address of 2nd DNS Server, Allows for changes in Auto IP of Networking Page]

SNMP Information:

SNMP Status: Enable [or Disable, Allows for changes in Networking Page]

SysName: [Allows for changes in Networking Page]

SysLocation: [Allows for changes in Networking Page]

SysContact: Allows for changes in Networking Page]

Serial Information:

UART mode RS485/RS232/RS422

Link Mode: TCP Server [or TCP Client/UDP Mode, Allows for changes in Serial Page]

Baud rate: 110/150/300/600/1200/2400/4800/9600/19200/38400/57600/115200/230400/460800/921600

Parity: None [or Even/Odd/Space/Mark...Allows for changes in Serial Page]

Data bits: 5, 6, 7, 8 bits

Stop bits 1 bit or 2 bits

Flow Control None, Xon/Xoff, RTS/CTS

4.2. Networking Configuration

Operation: [Main]→[2 Networking]:

Select “2” on “Input choice (0~6) and enter:” to enter **Networking settings** page.

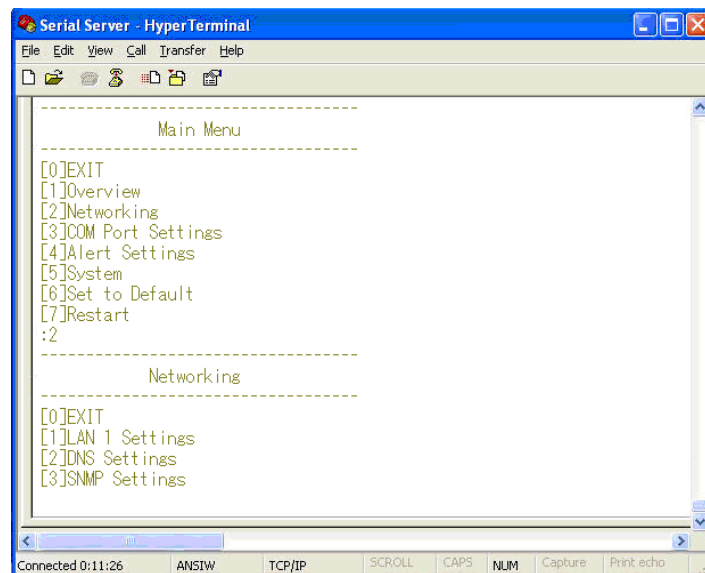


Fig 34. Networking Settings by Telnet

✳ **Note:** Press “0” key to return to the previous menu

This section allows for changes in **IP address, subnet mask, gateway IP address and SNMP** information. Please note that setting changes will not take effect until the SE8502-M12 is restarted.

4.2.1. LAN Settings

Operation: [Main]→[2 Networking]→[1 LAN Settings]

Select “1” from “*Input choice (0~3) and enter on Networking page:*” to enter **LAN Settings** page. The **MAC** address, **IP** address, **subnet mask**, **gateway** address, and **IP mode information** will be shown (**Fig. 42**). User also can set **IP**, **Netmask**, **Gateway**, and **IP mode** of **LAN interfaces** by enter the corresponding menus and values. For example, enter **1** for setting the **IP** address on LAN interface.

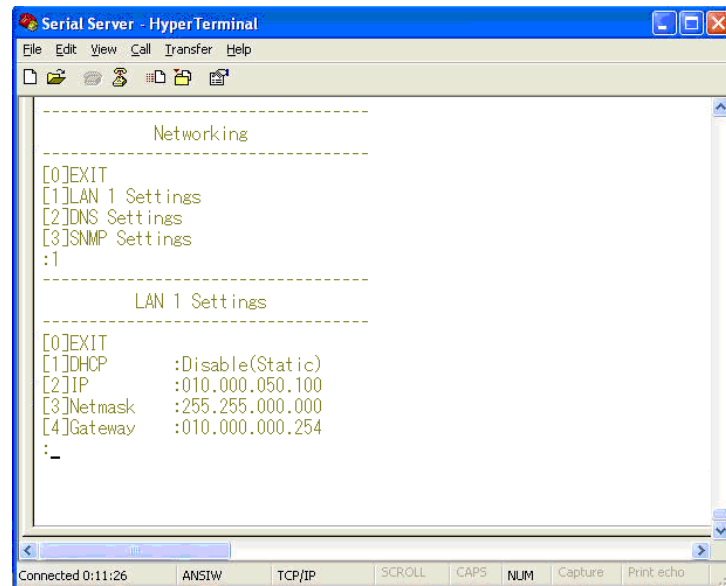


Fig 35. LAN Settings by Telnet

4.2.2. DNS Settings

Operation: [Main]→[2 Networking]→[2 DNS Settings]

Select “2” from “*Input choice (0~3) and enter on Networking page:*” to enter **DNS Settings** page.

Fill in the DNS information DNS1 or DNS2 or both according to user DNS server (**Fig. 43**).

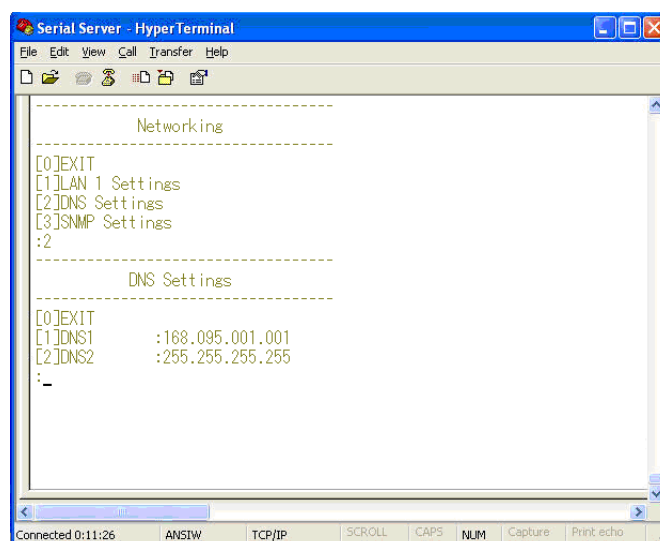


Fig 36. DNS Settings by Telnet

4.2.3. SNMP Settings

Operation: [Main]→[2 Networking]→[3 SNMP Settings]

Select “3” from “*Input choice (0~3) and enter on Networking page.*” to enter **SNMP Settings page**. User can enable/disable SNMP, and set network identification information on **SNMP Settings page**. The changes will not become effective until SE8502-M12 is restarted

SE8502-M12 basically supports get/set SNMP parameters, these are **SysName** (System Name), **SysLocation** (System Location) and **SysContact** (System Contact). These fields will response and supply basic system information from standard SNMP query. User can set the SNMP system parameters by enter the corresponding menus and values. For example, **enter 2** for changing the **SysName** then enter the desired name.

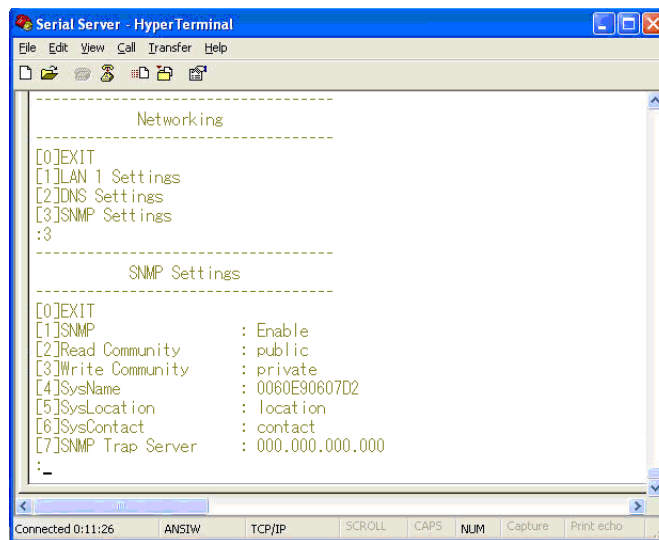


Fig 37. SNMP Settings by Telnet

4.3. COM Port Configuration

User can configure serial parameters, include COM1(COM2) **operation mode**, **port parameters**, **enable or disable serial buffer's data** and **packet delimiter**.

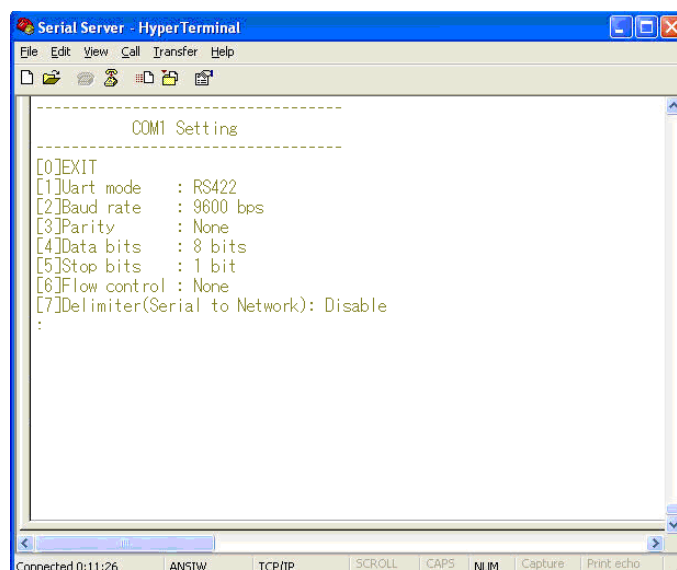


Fig 38. Select COM Port from Serial Settings by Telnet

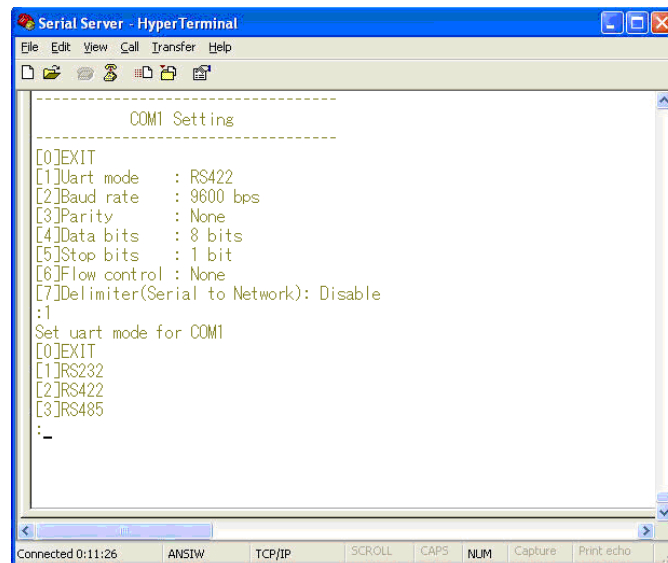


Fig 39. The COM1 Setting page

4.3.1. TCP Server Mode for Link Mode

Operation: [Main] → [4 Serial Settings] → [1 Link mode] → [1 TCP Server]

TCP Server mode is **default** setting for Link mode of serial settings of SE8502-M12, and it can be configured to wait for the host computers to establish a connection with the serial device through SE8502-M12. SE8502-M12 needs to be configured the listening port to waiting for host connection, Default Port number of SE8502-M12 is 4660 (4661) and it is associated with the serial port COM1 (COM2). After the connection is established, data can flow in both directions. SE8502-M12 can wait for connection requested from remote PC which installed “**serial-to IP**” tool or counter-pair SE8502-M12 in **tunneling mode**. After the application program being connected to the TCP port 4660 (4661) on the SE8502-M12, data of user application program are transmitted transparently to serial devices through SE8502-M12 and vice versa.

User enters 1 at COM1 (COM2) Settings page and enters 1 for the TCP Server mode. To enable the remote client which install “**serial-to IP**” to connect to SE8502-M12, user has to **enable** the **Virtual COM** and Set up the designated **port** number.

IP filtering menu is a simple **ACL (Access Control List)**. It can be disabled by setting **FILTER_IP** to “**0.0.0.0**”. User can configure one or group IPs for source IP in IP filtering. If **IP filtering** is **enabled**, only **source IP** assigned can connect to SE8502-M12.

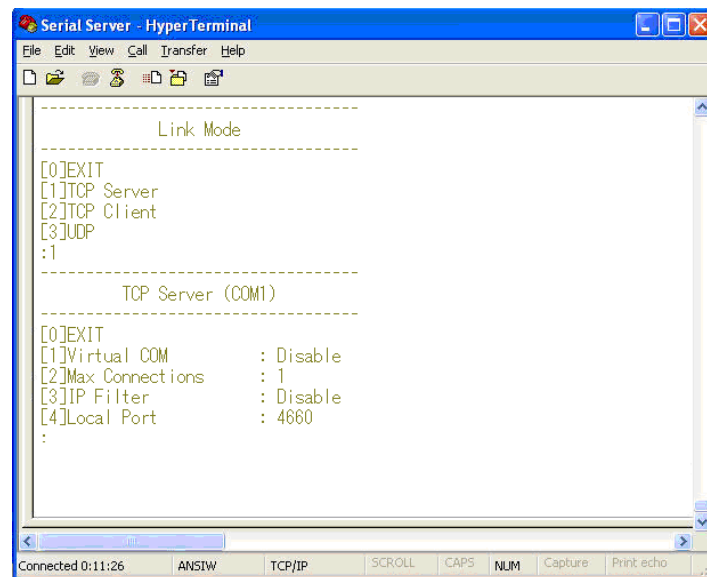


Fig 40. TCP Server mode in link mode

✱ **Note:** Enable Virtual COM mode if the remote site PC's "Serial to IP" tool is installed.

4.3.2. TCP Client for Link Mode

Operation: [Main] → [4 Serial Settings] → [1 Link mode] → [2 TCP Client]

User can configure SE8502-M12 to work in TCP Client mode. On destination IP & port (default: COM1:4660/COM2:4661), Enter the desired destination IP and port (Server IP and port) that SE8502-M12 want to connect to (For example, another SE8502-M12, or PC for data-collection). The SE8502-M12 can support two destination host computers simultaneously. **Fig. 60** is the **TCP Client** page.

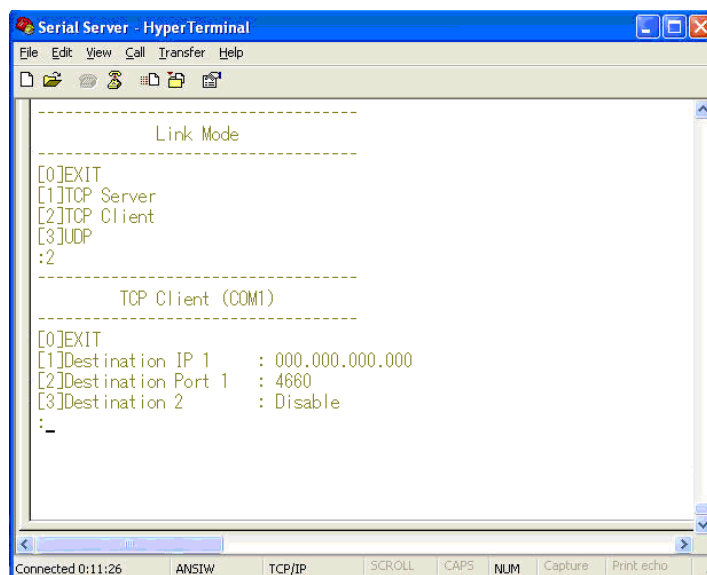


Fig 41. TCP Client mode in link mode

4.3.3. UDP for Link Mode

Operation: [Main] → [4 Serial Settings] → [1 Link mode] → [3 UDP]

SE8502-M12 can be configured to work in UDP mode to establish connection using **Unicast** or **Multicast** protocol. Data can be transmitted from one or multiple serial devices to/from one or multiple host PCs and vice versa. For example, the original RS-422/ RS485 bus data is transferred over the extended connected distance by SE8502-M12s, The destination IP is assigned by single IP or group IPs, The configuration is limited by the Local Listening Port, default 4660 and 4661 on the COM1 and COM2 of SE8502-M12.

SE8502-M12 can support up to 8-group IPs for UDP connection, if users needed.

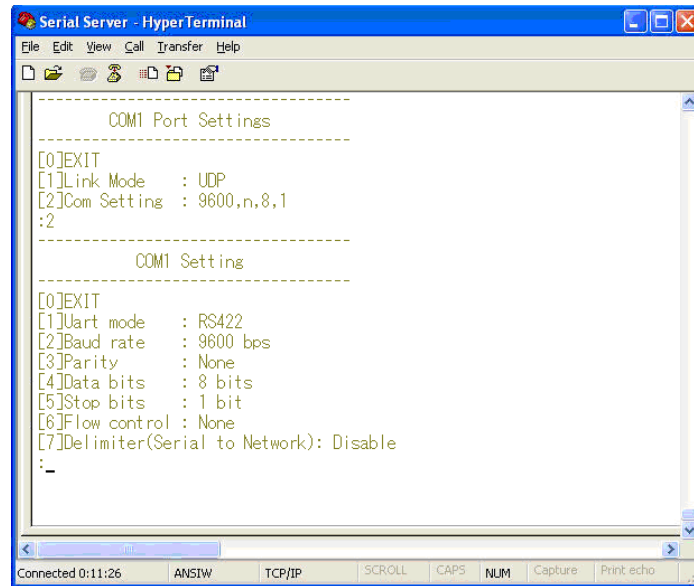


Fig 42. UDP mode in link mode

✳ **Note: In this phase, UDP mode does not support Virtual COM mode.**

4.3.4. Serial Settings

Operation:

[Main] → [4 Serial Settings] → [2 Baud rate]/ [3 Parity]/[4 Data bits]/ [5 Stop bits]/ [6 Flow control]

User can configure **baud rate** 、 **data bits**, **parity** 、 **stop bit** and type of **flow control**.

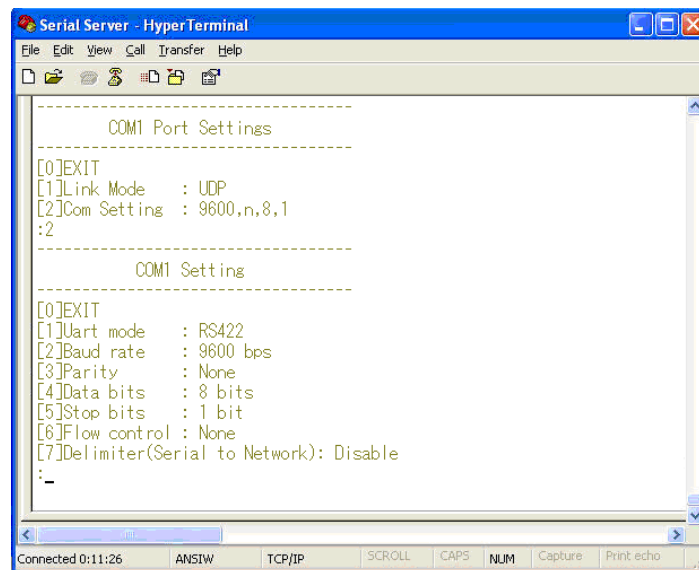


Fig 43. Serial Settings by Telnet

✱ **Note:** The photo-couple isolation one, SE8502-M12, only supported max 230Kbps baud rate.

4.3.5. Packet Delimiter

[Main] → [4 Serial Settings] → [8 Delimiter (Network to Serial)]/ [9 Delimiter (Serial to Network)]

Packet delimiter is a way of controlling the number of packets in a serial communication. It is designed to keep packets in track. SE8502-M12 provides two ways in packet delimiter parameter setting: (1) Packet delimiter **by timer** and (2) Packet delimiter **by character**. By **default, packet delimiter timer is 10 ms**. The ranges of packet delimiter timer is 10 to 30,000 ms, If “character pattern” is selected, for a data stream ended with “0x0d0a”, then the entire data buffer of the serial device is transmitted.

User can change packet delimiter timer by following the steps below.

Configure Network Delimiter using Timer

[Main]→[4 Serial Settings]→ [8 Delimiter (Network to Serial)]/ [9 Delimiter (Serial to Network)]

→[1 Timer]

User can choose **packet delimiter timer**’s value as the packet delimiter indicated in **Fig. 63** below

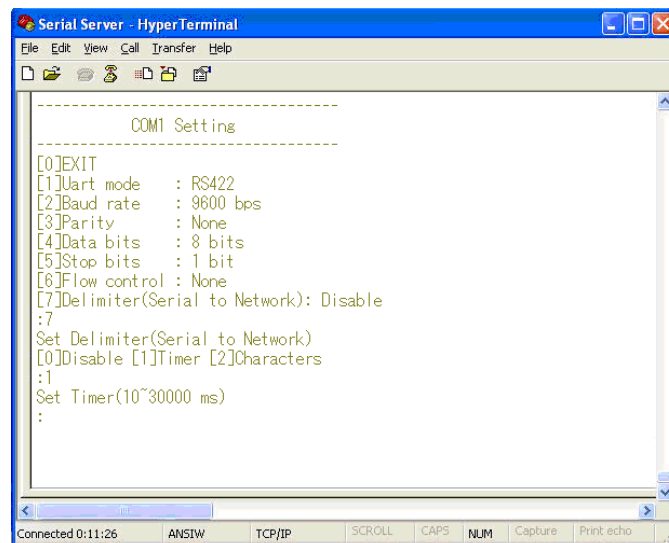


Fig 44. Configure Network Delimiter using Timer

Configure Network Delimiter using Characters

[Main]→[4 Serial Settings]→ [8 Delimiter (Network to Serial)]/ [9 Delimiter (Serial to Network)]
→[2 Characters]

User can choose **packet delimiter character** pattern as the packet delimiter indicated in the **Fig. 45** below:

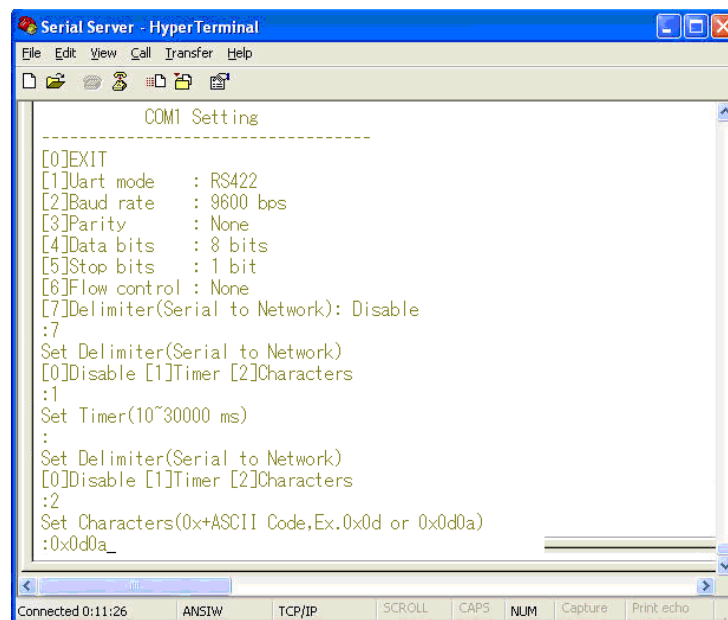


Fig 45. Configure Network Delimiter using Characters

4.4. Security Configuration

Operation: [Main] → [5 Security]

User can change password of SE8502-M12 with this menu.

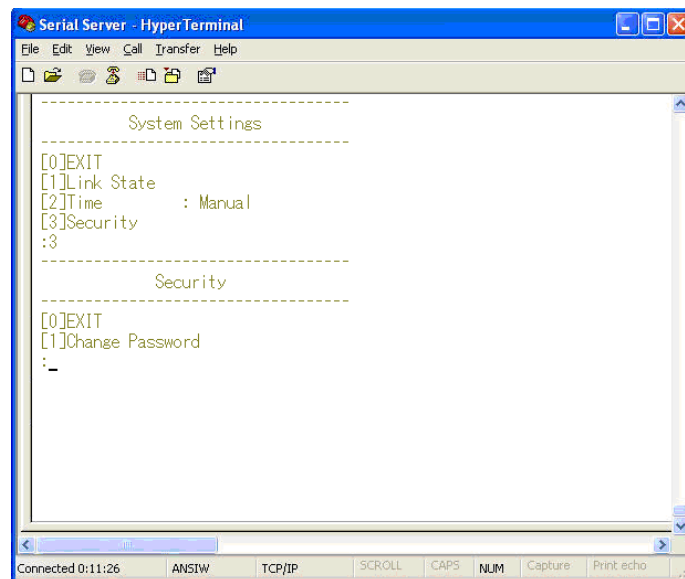


Fig 46. Security settings by Telnet

4.4.1. Change the Password

Operation: [Main] → [5 Security]→ [1 Change Password]

Enter desired password on "New password" fields.

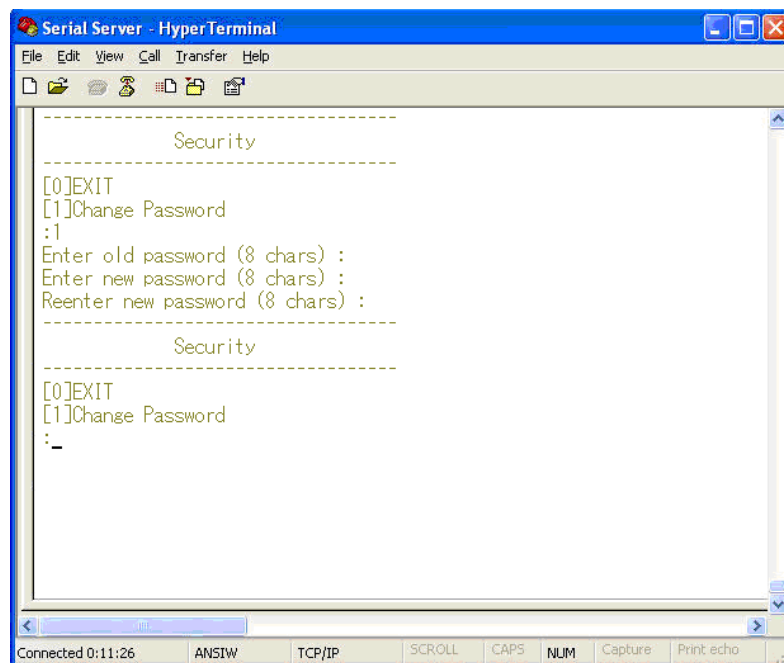


Fig 47. Changing the Password by Telnet

✱ **Note:** User may press the reset key on the product to reset to default password (blank).

APPENDIX A. USING VIRTUAL COM

Virtual COM driver mode for windows converts COM port data (RS232) to IP data to control the RS-232C port on a SE8502-M12 over the IP network. By creating Virtual COM ports on the PC, Virtual COM redirects the communications from the Virtual COM ports to an IP address and port number on a SE8502-M12 which connected to the serial devices. The following figure is Virtual COM connection diagram.

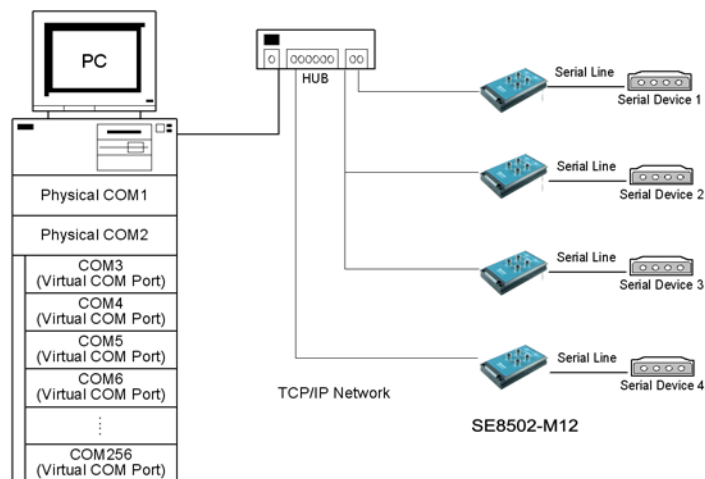


Fig 48. Setup of a Virtual COM driver

A.1 Pre-installation Requirements

Please check the operating system on your PC complied with the following requirements:

- Processor: Intel-compatible, Pentium class
- Operation system: Windows Server 2003, Windows XP, Windows 2000, Windows NT 4.0 SP5 or later, Windows Me, Windows 98, Windows 95, Microsoft NT/2000 Terminal Server, Citrix Meta Frame
- Windows Installer 2.0
- Network: Microsoft TCP/IP networking software

A.2 Applying to the SE8502-M12

Limitation

Virtual COM driver provides user to select up to **4096 COM ports** as Virtual COM ports in a SerialManager Utility PC. User can select them from a list of COM ports, which is from COM1 up to COM4096.

Installation

Make sure you have turned off all anti-virus software before beginning the installation. Run Vcom.exe program included in the CD to install Virtual COM for your operating system.

In the end of the installation, please select one or two COM ports to become the Virtual COM ports.

Uninstalling

- From Windows Start menu, select Setting\ Control Panel\ Add/Remove Programs.
- Select Serial IP for in the list of installed software.
- Click the Add/Remove button to remove the program, or From Windows Start menu select Programs, Serial IP click Uninstall Serial IP to remove the program.

A.3 Virtual COM Communication

Enable Virtual COM on SE8502-M12 by web interface

From web browser access to SE8502-M12 by typing its IP address, click on “*Serial*” link to access Serial page, on the top half of the page click on “*TCP Server*” and enable Virtual COM by putting a check in front of the “**Enable**” checkbox, then type in the local port number in the “*Local Port*” field as indicated in the following screen.

TCP Server	
Virtual COM	<input checked="" type="checkbox"/> Enable
IP Filter	<input type="checkbox"/> Enable
Source IP	0 . 0 . 0 . 0
Local Port	4660
Connect Number Limit	1

Fig 49. Enable Virtual COM Mode by Web page

Enable Virtual COM on SE8502-M12 by Telnet

User may also enable Virtual COM through telnet by setting Serial as a TCP server, and enter the local port number for Serial, then enable virtual COM as shown in the following procedure:

Login SE8502-M12 via Telnet

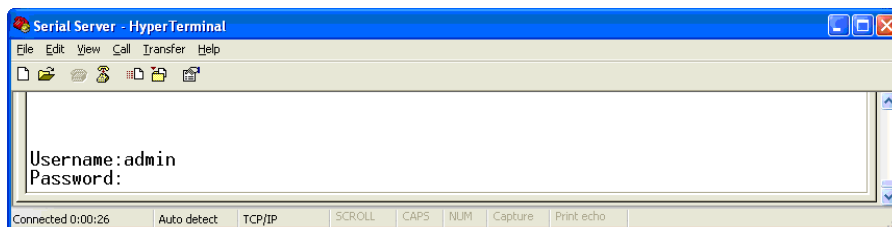


Fig 50. Login into SE8502-M12 by Telnet or Console

Select **serial setting** for TCP server/Client, and enabling Virtual COM mode

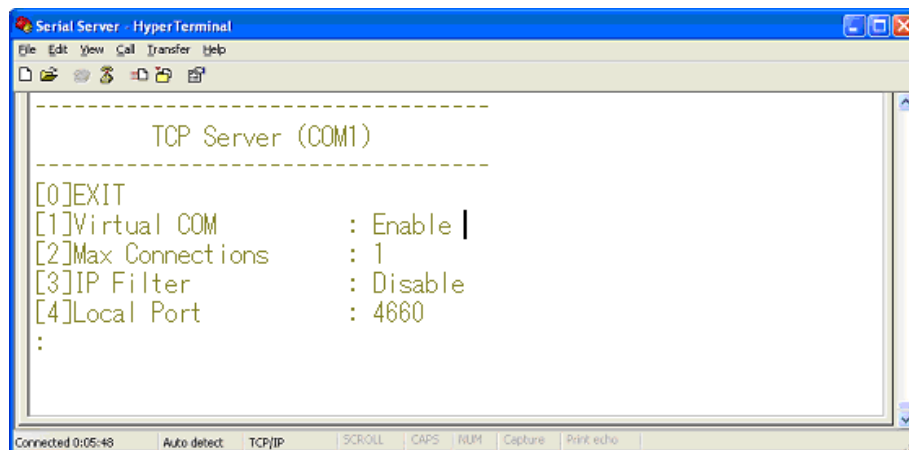


Fig 51. Enable Virtual COM mode by Telnet

Running Serial to IP for program on PC

On Window Start Menu, go to **program\Serial/IP\Control panel**, The “Serial to IP for Control Panel” window shall appear. Then select the serial port.

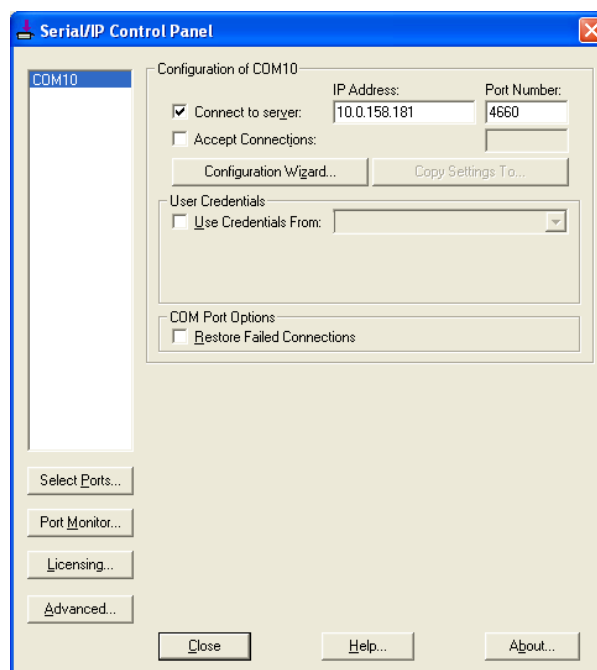


Fig 52. Detail setting from Serial/IP

On the right of the panel is a sample for COM 4 settings. On the left is the list of the COM ports that have been selected (on **Select Ports** window) for use by the Virtual COM Redirector. Change the list by clicking the **Select Ports** button.

Each COM port has its own settings. When click on a COM port, the Control Panel changes to reflect that the selected port.

✳ **Note: COM port changes become effective immediately.**

Configure Virtual COM Ports

Serial/IP COM port can be changed as follows:

- Select a COM port on the list.
- On **IP Address of Server**, enter SE8502-M12 IP address.
- On **Port Number**, enter the TCP port number of the SE8502-M12.
- On **Server Credentials**, the default is **No Login Required**. If the SE8502-M12 does require login by the Virtual COM Redirector, the Virtual COM Redirector must provide a username and/or password every time an application tries to access the SE8502-M12.
- Click the **Configuration Wizard** button and then click the **Start** button that shall appear on the wizard window. This step verifies that the Virtual COM Redirector communicates with the SE8502-M12. If **Log** display does not show errors, click **Use Settings**, return to the Control Panel
- Settings on the **Connection Protocol** must match the TCP/IP protocol supported by the SE8502-M12. The Configuration Wizard is capable of determining the correct settings.
- On **COM Port Options**, the settings must match the COM port behavior expected by the PC application. The Configuration Wizard will recommend such settings.

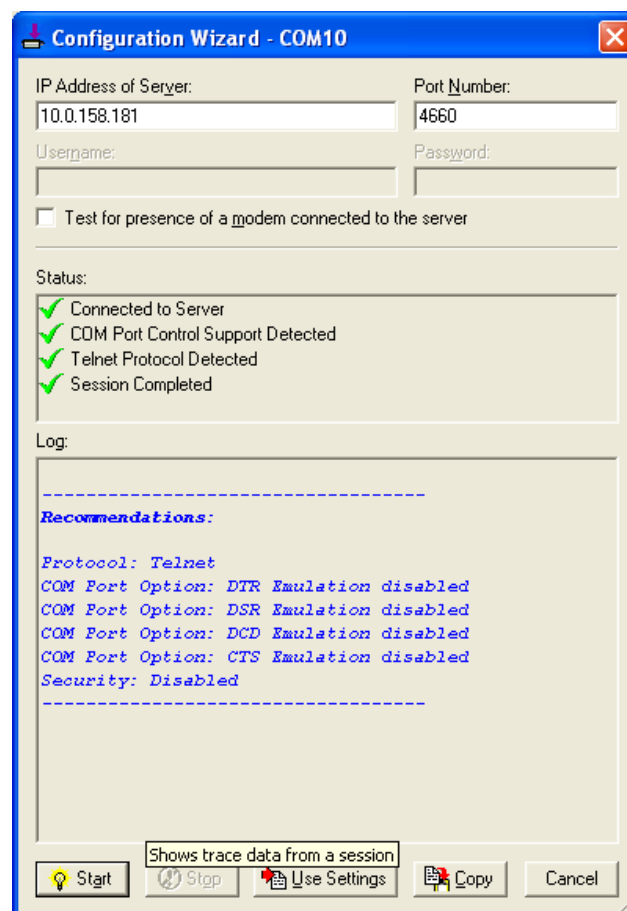


Fig 53. Configuration Wizard from Serial to IP tool

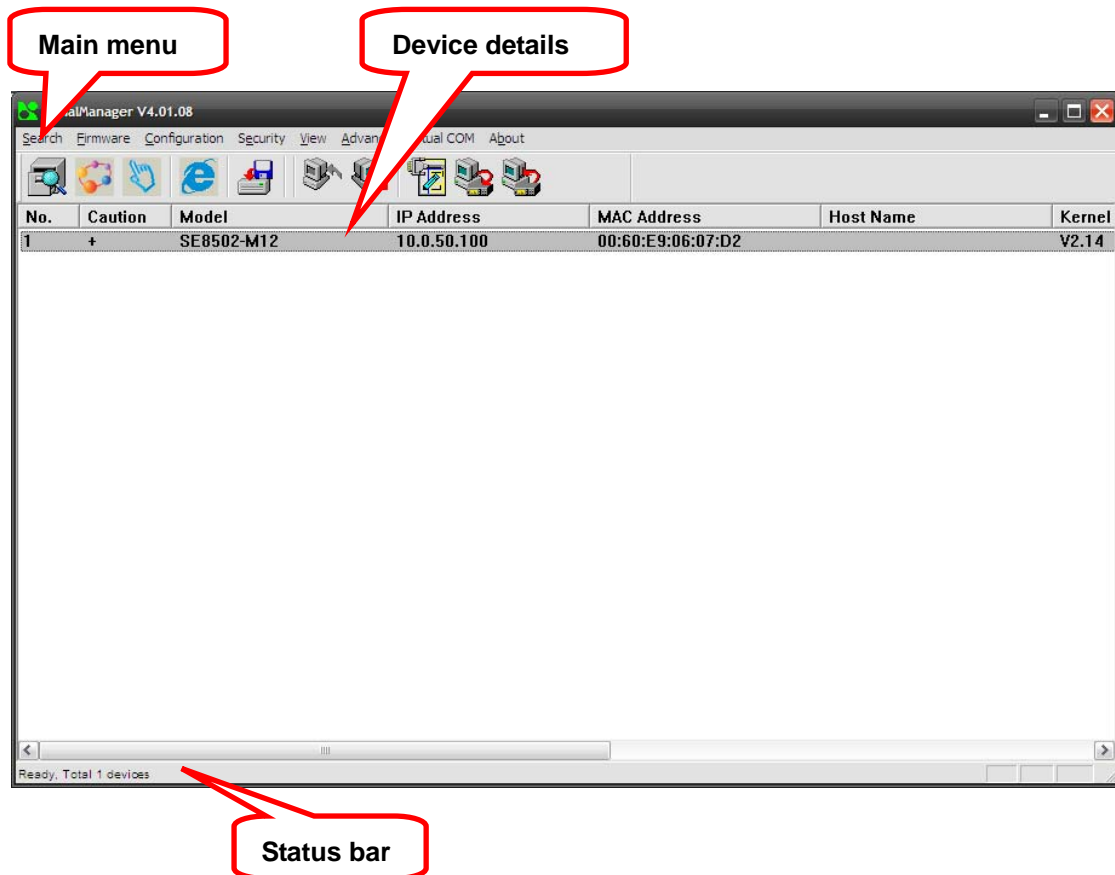
Appendix B. Configuration Utility

B1. SerialManager utility Introduction

SerialManager utility, developed by ATOP, is a special tool for device management and configuration, and can realize the daily management on various ATOP network devices for address search, device positioning, parameter configuring, firmware downloading and so on.

B2. Interface

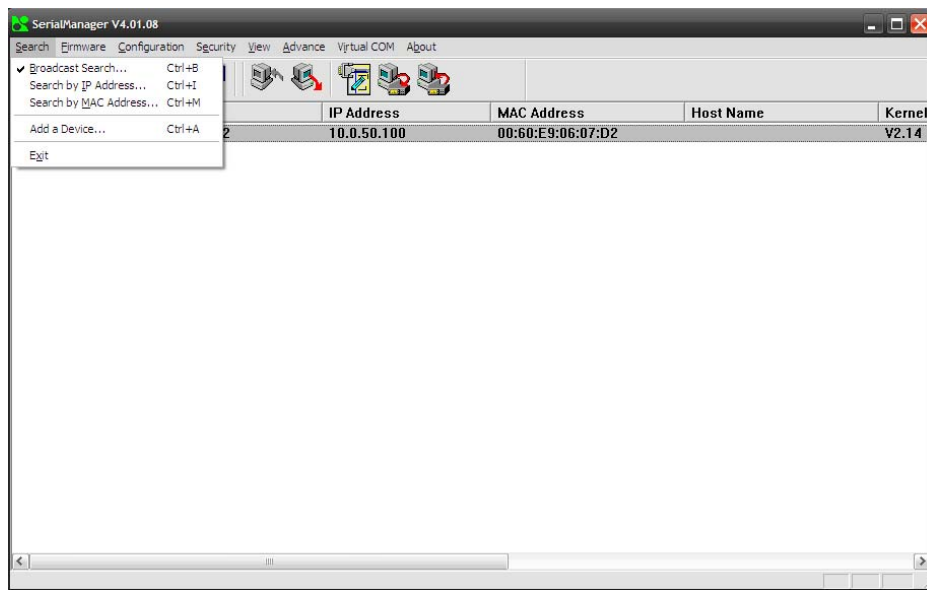
The operating interface of the **SerialManager utility** showed as below:



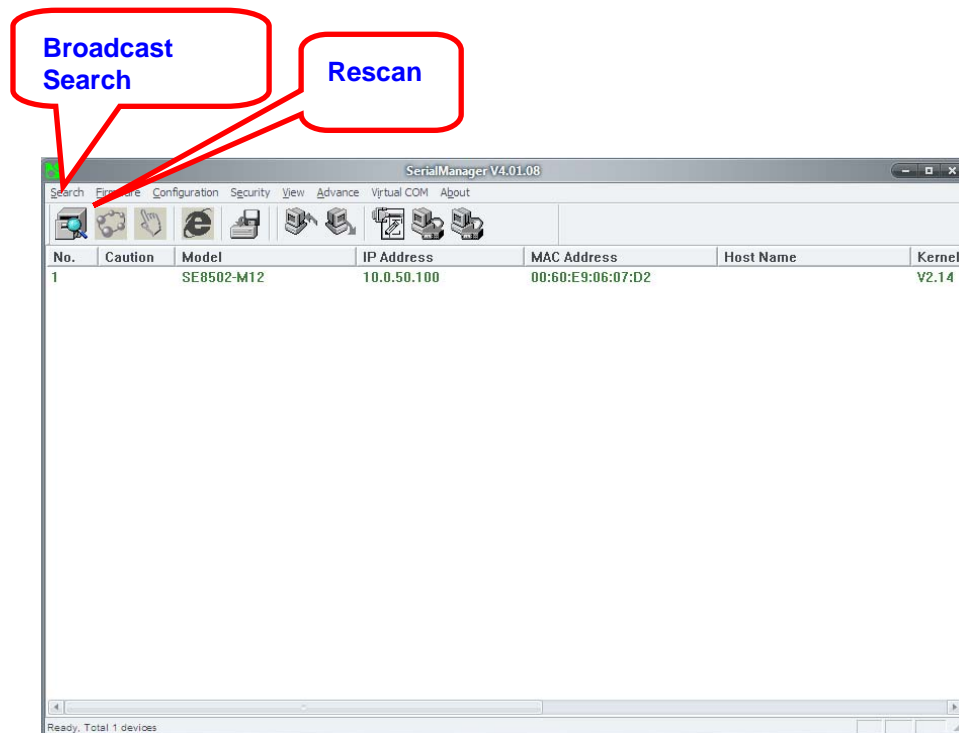
B3. Functions

B3.1 Device Search

This function is applied to search devices in the network. The user can use four ways to search devices. They are search by broadcast, search by special IP addresses, search by special MAC addresses and rescanning devices by using the current search way. The user can select his required search way by clicking the **Search** option on the main menu, shown as below:

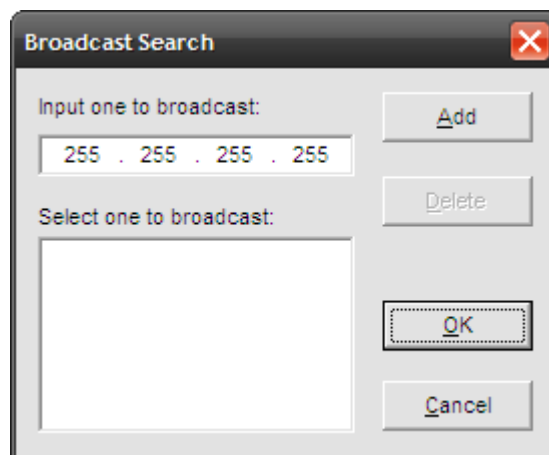


Or, select by clicking a button on the toolbar, as below:



B3.1.1 Broadcast Search

Once **Broadcast Search** is selected, a box will pop up as below:

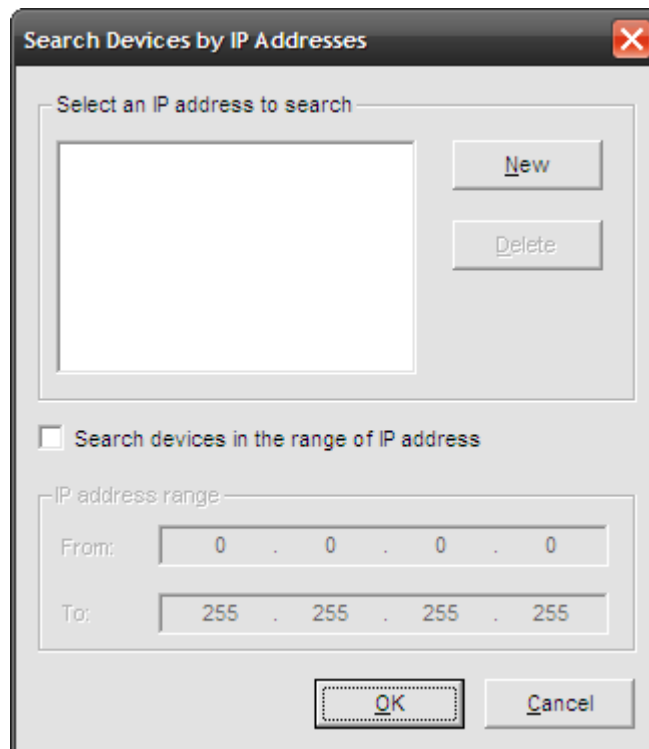


The 'Broadcast Search' dialog box features a title bar with a close button. It contains two input sections: 'Input one to broadcast:' with a text field containing '255 . 255 . 255 . 255' and an 'Add' button; and 'Select one to broadcast:' with an empty list box, a 'Delete' button, and 'OK' and 'Cancel' buttons at the bottom right.

The user may type in or select different broadcast address based on his/her own requirement.

B3.1.2 Search by IP address

Once **Search by IP Address** is selected, an interface will pop up as below:

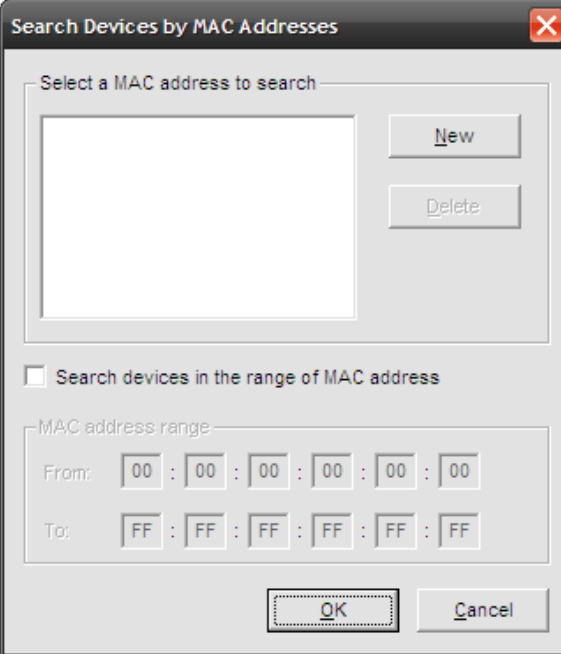


The 'Search Devices by IP Addresses' dialog box has a title bar with a close button. It includes a section 'Select an IP address to search' with an empty list box, 'New' and 'Delete' buttons. Below this is a checkbox labeled 'Search devices in the range of IP address'. Underneath the checkbox is an 'IP address range' section with 'From:' and 'To:' labels and corresponding text fields. The 'From:' field contains '0 . 0 . 0 . 0' and the 'To:' field contains '255 . 255 . 255 . 255'. 'OK' and 'Cancel' buttons are at the bottom right.

Here user may have two options: **Select an IP address to search** or **Search device in the range of IP address**.

B3.1.3 Search by MAC Address

If **Search by MAC Address** is selected, another box will pop up as below:



The screenshot shows a window titled "Search Devices by MAC Addresses". It contains a section "Select a MAC address to search" with a large empty list box and "New" and "Delete" buttons. Below this is a checkbox labeled "Search devices in the range of MAC address". Under the checkbox is a "MAC address range" section with "From:" and "To:" labels, each followed by six input boxes containing "00" and "FF" respectively. At the bottom are "OK" and "Cancel" buttons.

Here the user may search in two ways: **Search a MAC address to search** or **Search devices in the range of MAC address**

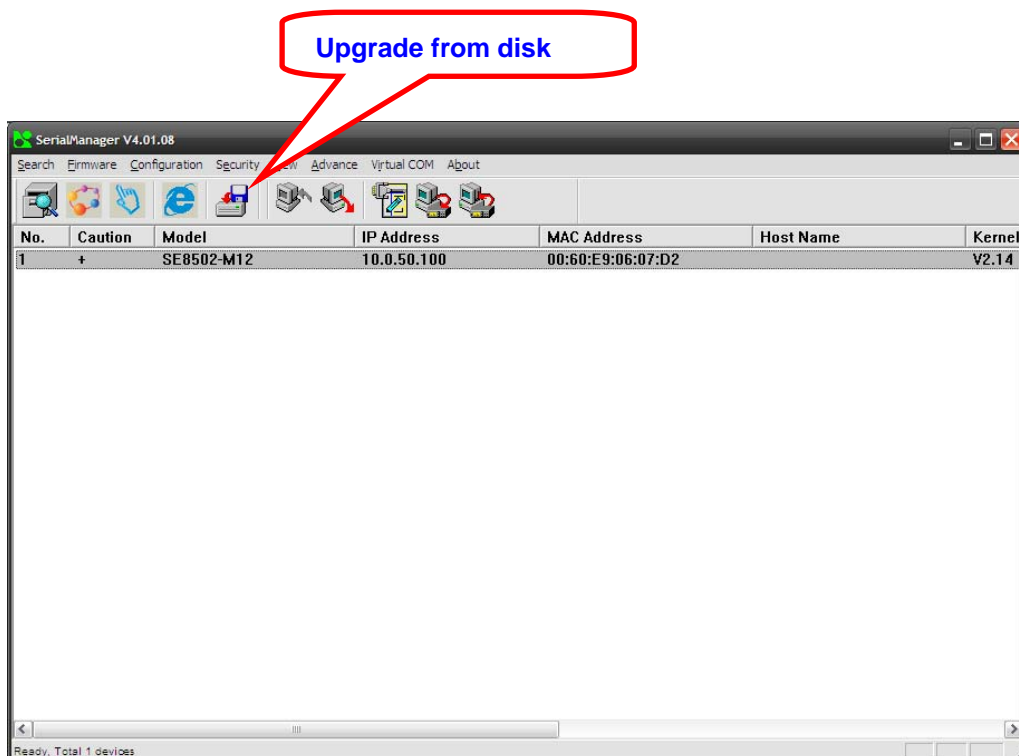
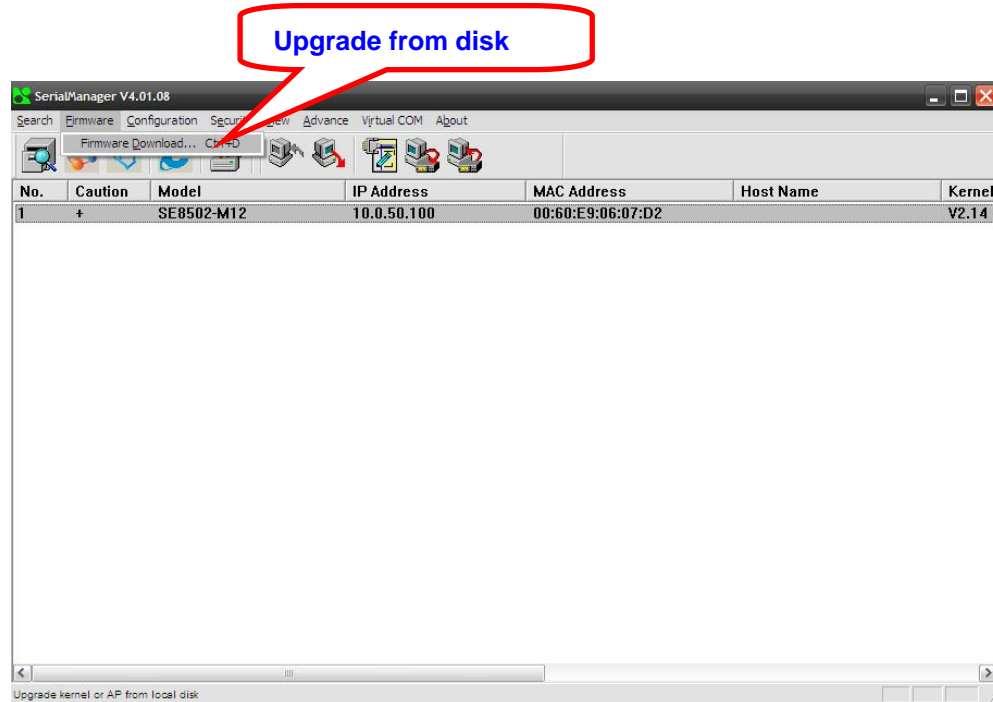
B3.1.4 Rescan

Once the user click the **Rescan** button on the toolbar, the SerialManager utility shall re-search devices by using the current search way.

B3.2 Firmware Upgrade

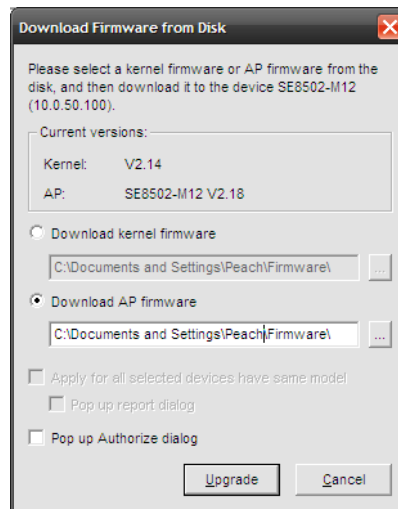
This function is applied to downloading a firmware into a selected device.

Updated version of firmware can be downloaded from www.atop.com.tw.



The user can enter the window for downloading by firstly clicking a designated network device, and then selecting the submenu option **Upgrade from disk** in the main menu option **Firmware**, or directly clicking the button **Upgrade from disk**. And then the user can select and download the required firmware from the disk, as shown in the figure

below:

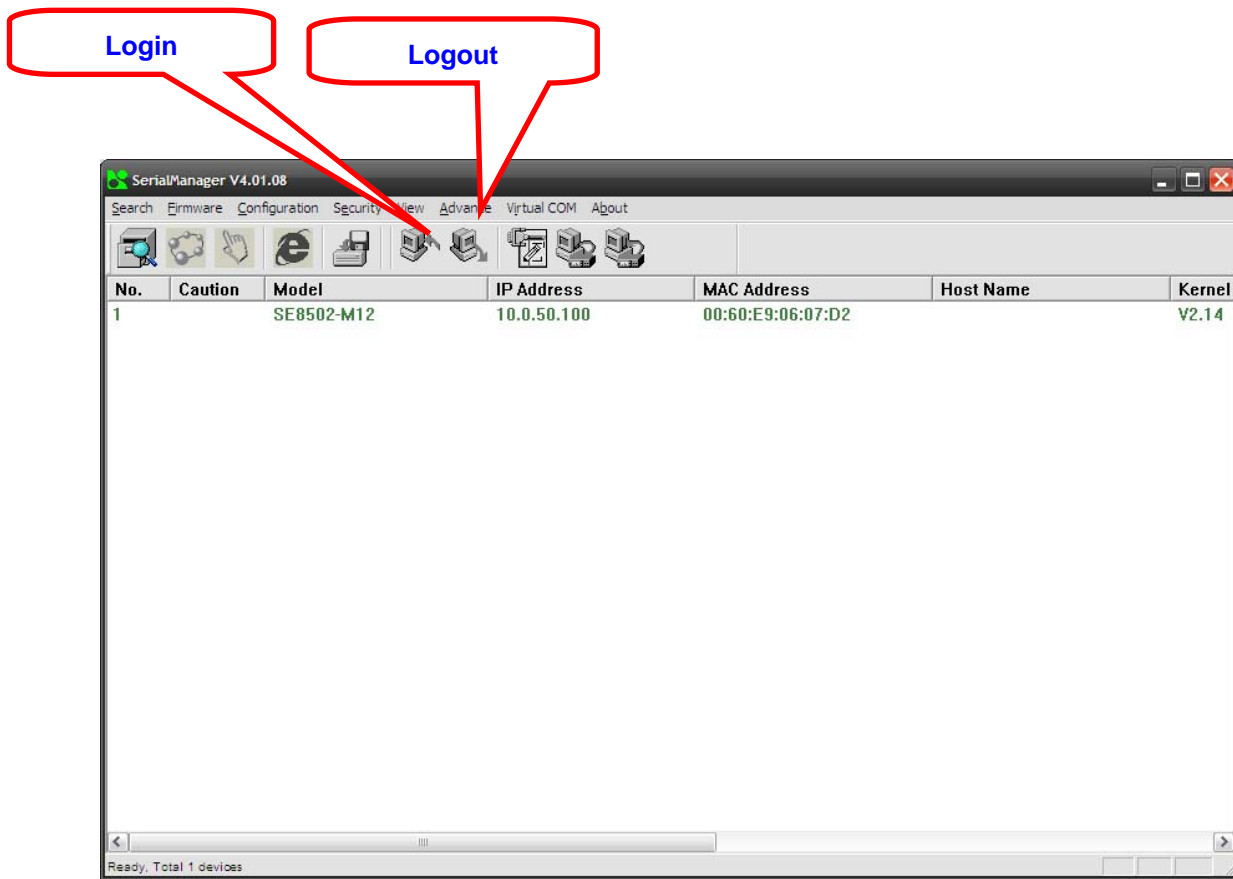


The user can also select several same devices at one time, and realize the firmware updating for them by selecting **Apply for all selected devices have same model**.

Note: Please always download **AP** firmware before downloading **kernel** firmware. The upgrade process could take up more than three minutes. If your device disappears from SerialManager after upgrade, please refer to Appendix C for recovery methods.

B3.3 Security

This function is applied to the security protection for the network devices, so as to supply some necessary protection to a device for configuration modifying, configuration leading-in and leading-out, and some other important functions. Here three functions are mainly supplied, including: **Login**, **Logout** and **Change Password**, shown as the figure below:



B3.3.1 Login

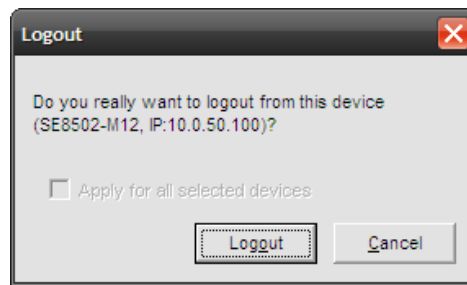
This function is applied to the login to any network device, as some important devices can only be operated after a successful login, shown as the figure below:



The user can also select several devices at one time, and log in them at the same time by selecting **Apply for all selected devices**.

B3.3.2 Logout

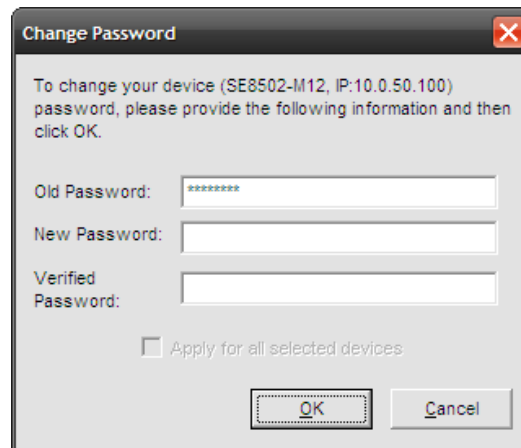
This function is applied to the logout from any network device, as the user should always carry out a logout after he/she has finished the operating action to any important device, shown as the figure below:



The user can also select several devices at one time, and log out them at the same time by selecting **Apply for all selected devices**.

B3.3.3 Change Password

This function is applied to modifying the password for logging in any network device, but can only be realized after a successful log-in, shown as the figure below:

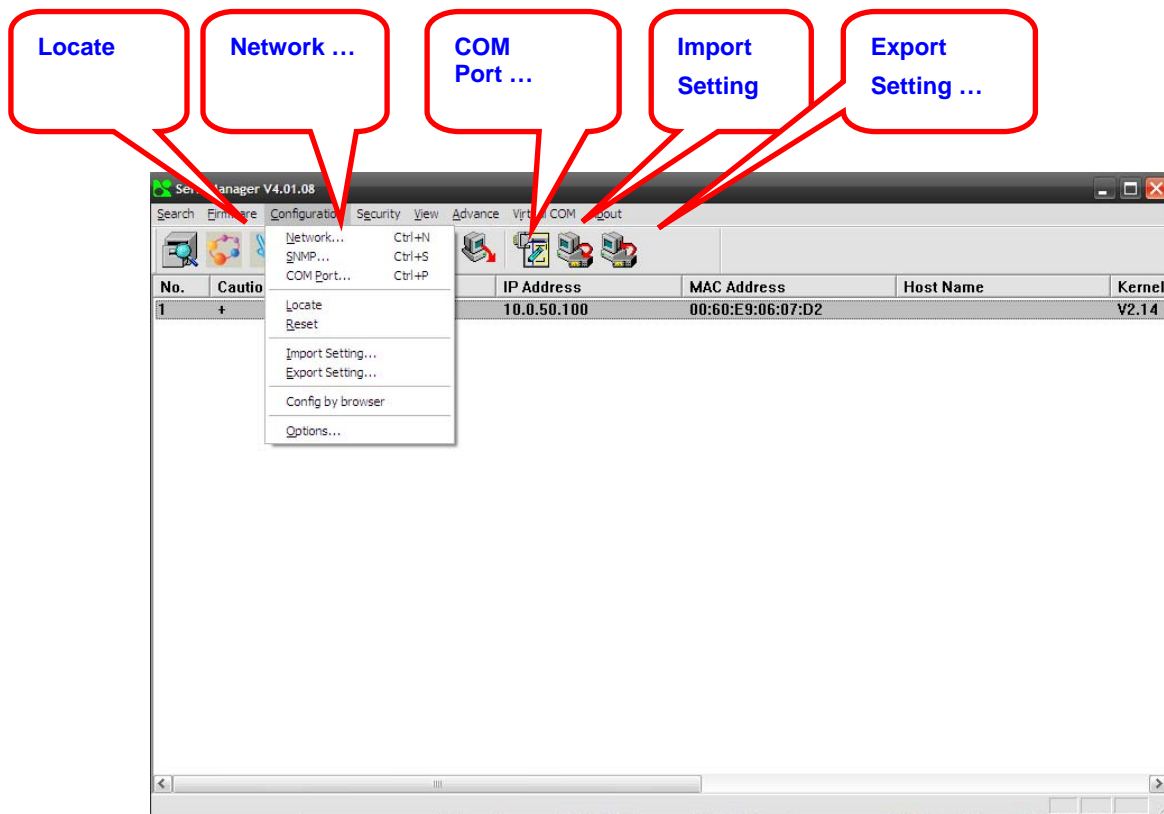


The user can also select several devices at one time, and modify their pins at the same time by selecting **Apply for all selected devices**.

B3.4 Configuration

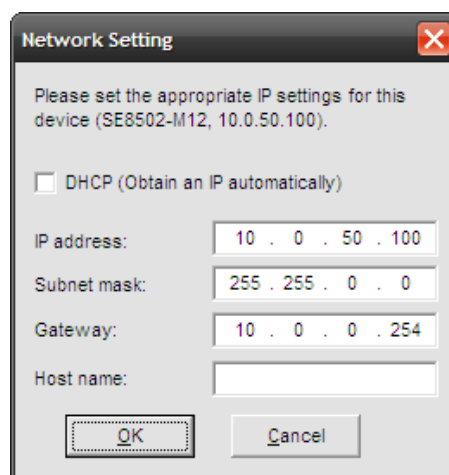
This function is applied to the configuring, import and export of work parameters for any network device, and here are mainly supplied with: 'Network ...', 'COM Port...', 'Locate', 'Reset', 'Erase Flash', 'Import Setting...', 'Export Setting...', 'Virtual COM...', 'Config by IE' and 'Options', and some other application functions. The user can carry out a configuration operating through

menu or by clicking the corresponded button on the toolbar, shown as the figure below:



B3.4.1 Network ...

The user can modify the IP address of any selected device, shown as the figure below:



B3.4.2 COM Port ...

ATOP has developed various network products, and some of the ATOP devices are specially supplied to some serial-port servers, while this function is applied to the configuration of COM port parameters.

Note: This function can be realized only after a successful login, shown as the figure below:

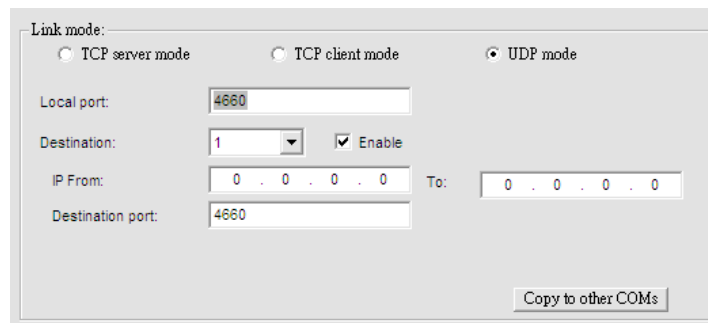
The user can also select several devices at one time, and carry out the configuration for them at the same time by selecting **Apply for all selected same model devices**

Note:

- 1 · COM tags: generated automatically according to the COM port number of the device. If a device has 4 COM port, there will be 4 tags: respectively COM1, COM2, COM3, COM4, and the like.
- 2 · Connecting mode: it means the connecting mode between the serial-port server and other network devices. Each COM corresponds to a connecting mode through which the transferring data will not be interfered by that in another connection. The user can set each corresponded connecting mode and the working parameter by clicking the button "Option", shown as the figure below:

TCP Server mode

TCP Client mode



UDP mode

- 3 · COM port property: it mainly represents the working parameter of the serial port setting, including: serial-port working type, baud rate, data bit, stop bit, parity bit, data packet delimiter and flow control, etc.

B3.4.3 Locate

The user can apply this function to locate a device when he knows its IP address, but doesn't know its position. If a device is selected, the device will appear with singing by which the user can locate the device through the submenu option **Locate** or clicking the **Locate** button on the toolbar.

B3.4.4 Reset

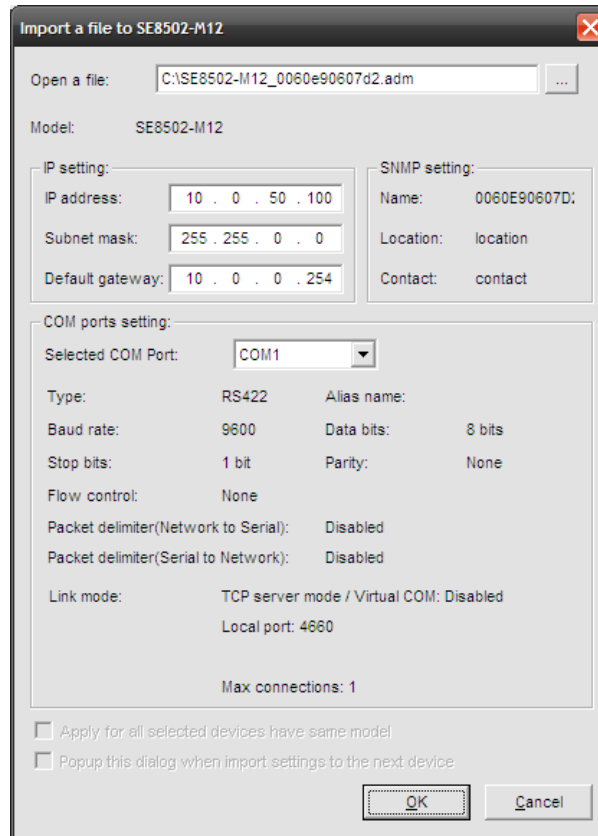
The device should be restarted after a successful modification of parameter configuration. And the user can carry out a restart through the submenu option **Reset**.

B3.4.5 Erase Flash

Some devices are supplied to the user with a certain capacity of Flash memory to save the user's data. And the user can erase the Flash through the submenu option **Erase Flash** or clicking the **Erase Flash** button on the toolbar when the memory capacity is to be used up or the history data are unnecessary to be saved.

B3.4.6 Import Setting ...

If a network has a large number of devices which are used for a same purpose, it would be very complicated to carry out the parameter configuration for each of the devices in the network one by one, while the user can import the parameter information of a standard parameter file directly into all the devices of the network through the submenu option **Import setting ...** or clicking the **Import setting ...** button on the toolbar, thus the work procedures can be largely reduced, shown as the figure below:



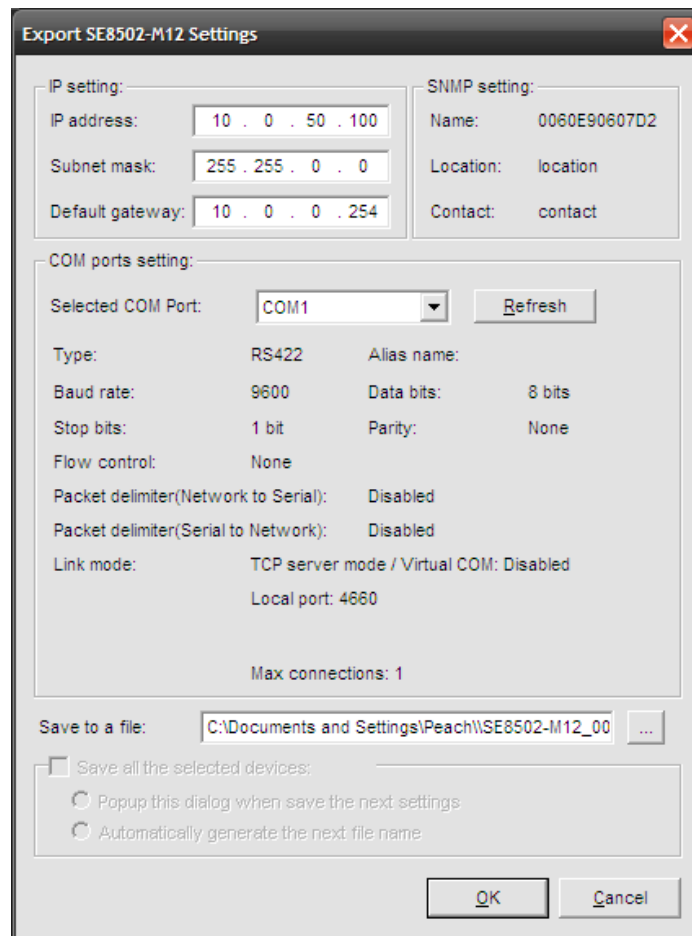
The dialog box titled "Import a file to SE8502-M12" contains the following fields and options:

- Open a file:** C:\SE8502-M12_0060e90607d2.adm
- Model:** SE8502-M12
- IP setting:**
 - IP address: 10 . 0 . 50 . 100
 - Subnet mask: 255 . 255 . 0 . 0
 - Default gateway: 10 . 0 . 0 . 254
- SNMP setting:**
 - Name: 0060E90607D:
 - Location: location
 - Contact: contact
- COM ports setting:**
 - Selected COM Port: COM1
 - Type: RS422
 - Baud rate: 9600
 - Stop bits: 1 bit
 - Flow control: None
 - Packet delimiter(Network to Serial): Disabled
 - Packet delimiter(Serial to Network): Disabled
 - Link mode: TCP server mode / Virtual COM: Disabled
 - Local port: 4660
 - Max connections: 1
- ☐ Apply for all selected devices have same model
- ☐ Popup this dialog when import settings to the next device
- OK** and **Cancel** buttons

The user can also select several devices at one time, and lead the parameter information of a standard parameter file into all the selected devices by selecting **Apply for all selected devices have same model**.

B3.4.7 Export Setting...

If a network has a large number of devices which are used for a same purpose, it would be very complicated to carry out the parameter configuration for each of the devices in the network one by one, while the user can save the parameter information of a standard device into a parameter file through the submenu option **Export setting...** or clicking the **Export setting...** button on the toolbar, thus the parameter information can be led in over again from this parameter file when the user is to carry out a configuration for any other device, shown as the figure below:



The dialog box is titled "Export SE8502-M12 Settings" and contains several sections for configuring the export of device settings.

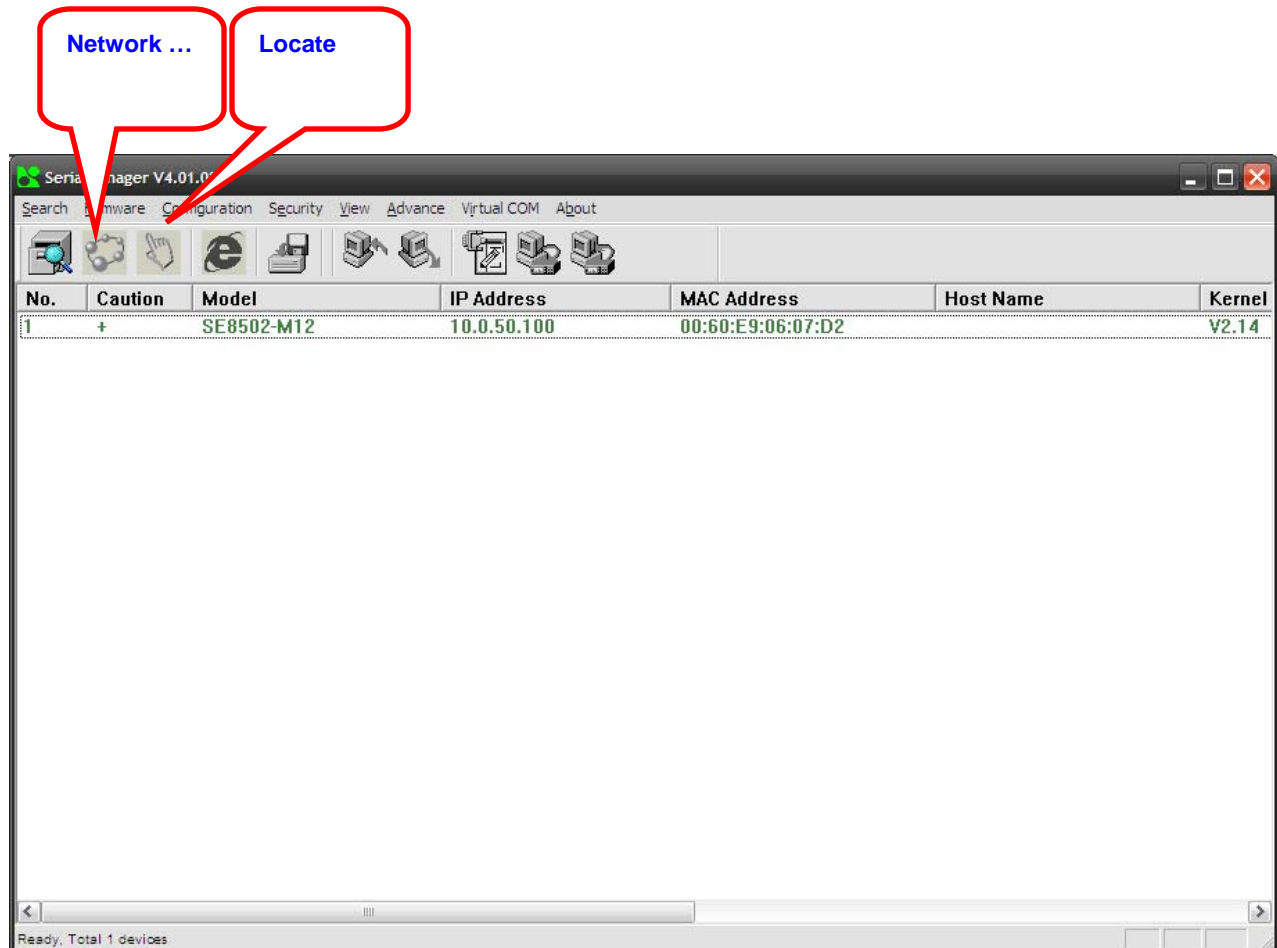
- IP setting:** Includes fields for IP address (10 . 0 . 50 . 100), Subnet mask (255 . 255 . 0 . 0), and Default gateway (10 . 0 . 0 . 254).
- SNMP setting:** Includes fields for Name (0060E90607D2), Location (location), and Contact (contact).
- COM ports setting:** Includes a dropdown for Selected COM Port (COM1) with a Refresh button, and a list of serial port parameters: Type (RS422), Baud rate (9600), Stop bits (1 bit), Flow control (None), Packet delimiter (Network to Serial) (Disabled), Packet delimiter (Serial to Network) (Disabled), Link mode (TCP server mode / Virtual COM: Disabled), Local port (4660), and Max connections (1).
- Save to a file:** Includes a text field for the file path (C:\Documents and Settings\Peach\SE8502-M12_00) and a button to browse for a file.
- Save all the selected devices:** Includes a checkbox and two radio buttons: "Popup this dialog when save the next settings" and "Automatically generate the next file name".

Buttons for OK and Cancel are located at the bottom right of the dialog.

The user can also select several devices at one time, and save the parameter information of these selected devices into a designated parameter file by selecting "Save all the selected devices".

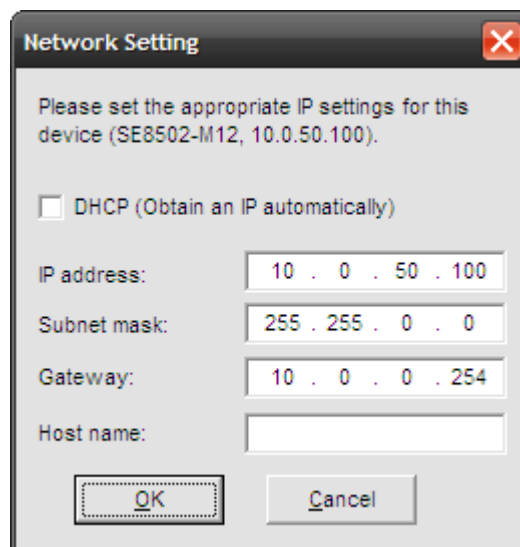
B3.4 Configuration

This function is applied to the configuring, import and export of work parameters for any network device, and here are mainly supplied with: 'Network ...', 'COM Port...', 'Locate', 'Reset', 'Erase Flash', 'Import Setting...', 'Export Setting...', 'Virtual COM...', 'Configure by IE' and 'Options', and some other application functions. The user can carry out a configuration operating through menu or by clicking the corresponded button on the toolbar, shown as the figure below:



A3.4.1 Network ...

The user can modify the IP address of any selected device, shown as the figure below:



A dialog box titled "Network Setting" with a close button (X) in the top right corner. The text inside says: "Please set the appropriate IP settings for this device (SE8502-M12, 10.0.50.100)." Below this is a checkbox labeled "DHCP (Obtain an IP automatically)" which is currently unchecked. There are four input fields: "IP address:" with the value "10 . 0 . 50 . 100", "Subnet mask:" with "255 . 255 . 0 . 0", "Gateway:" with "10 . 0 . 0 . 254", and "Host name:" which is empty. At the bottom are "OK" and "Cancel" buttons.

B3.4.3 Locate

The user can apply this function to locate a device when he knows its IP address, but doesn't know its position. If a device is selected, the device will appear with singing by which the user can locate the device through the submenu option **Locate** or clicking the **Locate** button on the toolbar.

B3.4.4 Reboot

The device should be restarted after a successful modification of parameter configuration. And the user can carry out a restart through the submenu option **Reboot**.

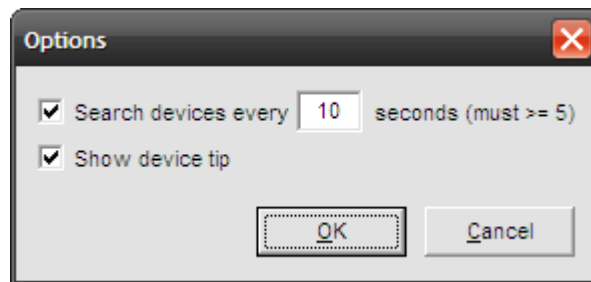
B3.4.5 Configure by IE

Some devices are supplied with build-in Web servers, and the user can carry out any parameter setting directly through the submenu option **Config by IE**, shown as the figure below:



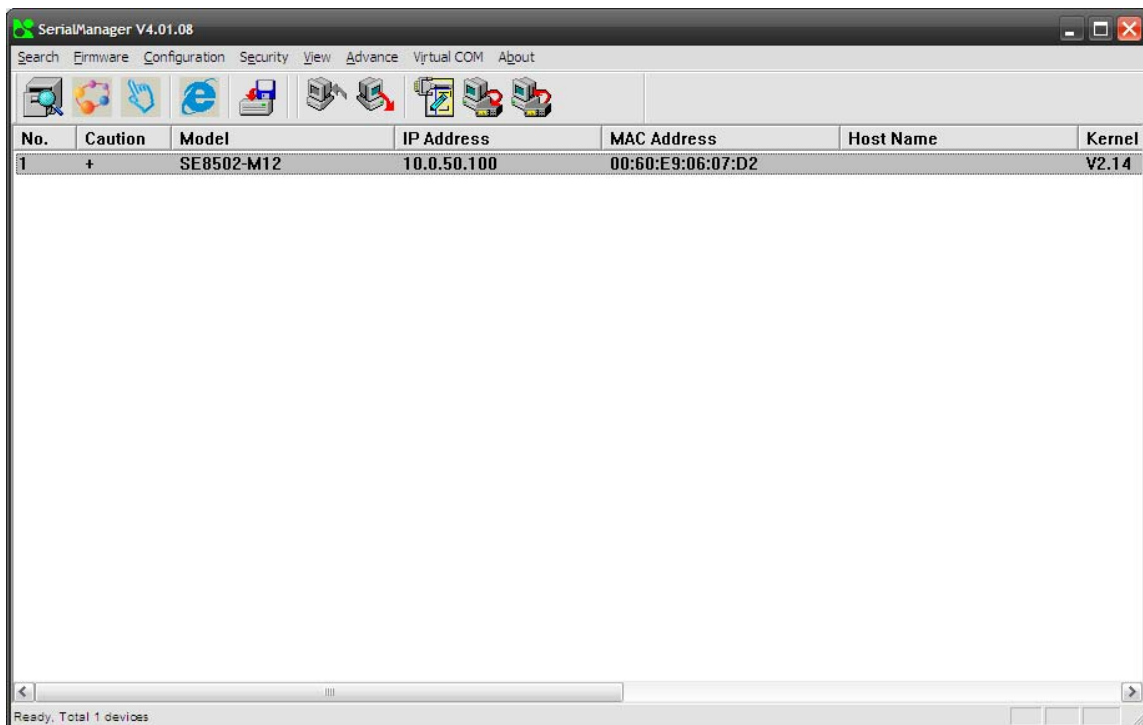
B3.4.6 Option

The option is mainly applied to setting some common work rules of SerialManager utility, such as: search for the time interval of a network device, or whether to display any device indication and so on, shown as the figure below:



B3.5 View

The user can select a display mode of the network device according to his/her own requirement through the menu option "View", such as: display in sequence of device module name, or display in sequence of IP address and so on, shown as the figure below:



B3.6 Help

This function is mainly applied to displaying some help information of the SerialManager utility, shown as the figure below:



Appendix C. Emergency System Recovery

If your device becomes inaccessible and SerialManager cannot find your device, please use the following procedure to recover your device.

C1. System Recovery Procedures

System recovery is based on the TFTP Client embedded in the device. It can recover the device from a bad firmware flash and other unknown reasons if the bootloader is still functioning properly. At boot time, the device will try to connect to a TFTP Server and download valid kernel and AP to recover its Linux System.

Default Settings:

TFTP Server IP: 10.0.50.201

TFTP Server Subnet Mask: 255.255.0.0

Name of Kernel Image: se8502-ker.rom

Name of AP Image: se8502-ap.rom

Name of "Reset to Default" file: 0060E9XXXXXX.cmd

*Please obtain the two ROM images from the CD. File name of the reset file is the device's MAC with cmd extension, For example, 0060E90607D6.cmd.

Follow the upgrading procedures below for the latest firmware.

- Obtain and setup a TFTP server on your PC. Make sure that the PC network settings of the PC is set properly according to the default above.
- Place **kernel, AP, and the reset file** in the root directory of the TFTP Server. For Solarwinds, it is usually C:\TFTP-Root.
- Power on the device. If the bootloader is still functioning, you should see that the device requested files from your TFTP Server. Please wait until the device shows up on the SerialManager. This process could take five minutes or more.
- **Stop or Close your TFTP Server** to prevent firmware recovery loop every time the device restart.

※ **Tips : You can download free TFTP Servers from following locations:**

Solarwinds TFTP Server

http://www.solarwinds.com/products/freetools/free_tftp_server.aspx

Please remember to Start the TFTP Server Service as illustrated in the following picture, default is Stop.

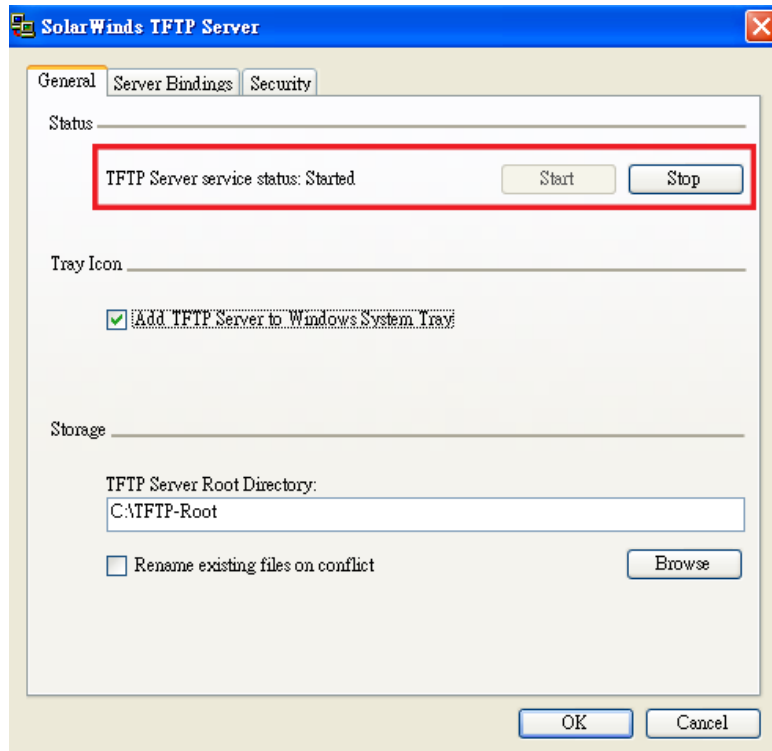


Fig 81. Solarwinds TFTP Server Configuration Window

Appendix C. SPECIFICATION

Hardware Specifications

Specifications		
Ethernet		
	Compliance	IEEE802.3
	Network Interface	10/100 Mbps Fast Ethernet Tx+
	Port	One port
	Transmission Rate	10/100M Auto-detection
	Connector	M12
	Auto MDI/MDI-X	Yes
Link Mode		
	TCP Server	Up to 4 connections or Virtual COM mode
	TCP Client	Up to 2 destination or Virtual COM mode
	UDP	Up to 8 destination
Serial		
	Interface	RS-232/RS-422/RS-485 Software selectable
	Ports	2 Ports
	Baud Rate	110bps~230kbps(Isolation) 110bps~921.6kbps(non-isolation)
	Parity	None, Odd, Even, Mark, Space
	Data bits	5, 6, 7, 8
	Stop Bit	1,2
	Flow Control	None, Software:Xon/Xoff,Hardware:RTS/CTS
	Protection	15KV ESD
	Connector	M12
Power		
	Input	9-48DCV, 0.4A max
	consumption	Max. 3.6W
LED		
	Indicator	COM, LAN, RUN
Approval		
	EMC	CE Class A, FCC Class A
	Protection	IP68 Rated IEC/EN60529
	Vibration	IEC60068-2-64
	Shock	IEC60068-2-27
	Free-fall	IEC60068-2-32(ISTA Test Procedure 2A)
Environment		
	Operating	-40°C~75°C (-40°F ~167°F)

	Storage	-40°C ~85°C (-40°F ~185°F)
	Humidity	5%~95% Non-condensing
Dimension		
	(WxHxD)	79mm x 35mm x 144mm
Physical		
	Weight	700g
	Installation	Field-style mounting
	Warranty	5 years
MTBF		
	Preceding	TBD
Sofetware		
	Configuration	Web Page / Telnet / Serial console / Windows Utility
	Virtual COM	Windows & Linux port redirection software
	Support Protocol	ICMP, TCP/IP, UDP, DHCP Client, NTP, DNS, SNMP, HTTP, Telnet, SMTP

Ordering Information		
SE8502-M12	IP68 Rated 2-Port Serial Device Server	
SE8502-M12-Sis-M12	IP68 Rated 2-Port Serial Device Server, 2KV Isolation	

Warranty Policy

Warranty Conditions

Products supplied by Atop Technologies are covered in this warranty for sub-standard performance or defective workmanship. The warranty is not, however, extended to goods damaged in the following circumstances:

- (a) Excessive forces or impacts
- (b) War or an Act of God: wind storm, fire, flood, electric shock, earthquake
- (c) Use of unqualified power supply, connectors, or maintenance procedure
- (d) Replacement with unauthorized parts

RMA and Shipping Costs Reimbursement

Customers shall always obtain an authorized "RMA" number from Atop before shipping the goods to be repaired to Atop. When in normal use, a sold product shall be replaced with a new one within 3 months after purchase. The shipping cost from the customer to Atop will be reimbursed by Atop.

After 3 months and still within the warranty period, it is up to Atop whether to replace the unit with a new one; normally, as long as a product is under warranty, all parts and labor are free of charge to the customers.

After the warranty period, the customer shall cover the cost for parts and labor. Three months after purchase, the shipping cost from the customer to Atop will not be reimbursed, but the shipping cost from Atop to the customer will be paid by Atop.

Limited Liability

Atop shall not be held responsible for any consequential losses from using Atop's product.

Warranty Period

Industrial Serial to Ethernet Switch: 5 years

**Notes:* Warranty coverage for Accessories such as power adapters and high-gain antenna is one year.

ATOP Customer Services and Supports

1. Please contact your local dealers or Atop Technical Support Center at the following numbers.

- +886-3-550-8137 (Atop Taiwan)
- +86-21-6495-6232 (Atop China)

2. Please report the defected problems via Atop's Web site or E-mail account

Web Site: www.atop.com.tw, e-mail: service@atop.com.tw

Web Site: www.atop.com.cn, e-mail: service@atop.com.cn