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Atop Technologies, Inc.

SE59XX Series
Industrial Device Server Series

User Manual

V1.0

September 25th, 2017

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1 Preface

1.1 *Purpose of the Manual*

This manual supports the user during the installation and configuring of the SE59XX Industrial Device Server Series. It explains the technical features available with the mentioned product. As such, it contains some advanced network management knowledge, instructions, examples, guidelines and general theories designed to help users manage this device and its corresponding software. A background in general theory is necessary when reading it. Please refer to the Glossary for technical terms and abbreviations (if any).

1.2 *Who Should Use This User Manual*

This manual is to be used by qualified network personnel or support technicians who are familiar with network operations. It might be useful for system programmers or network planners as well. This manual also provides helpful and handy information for first time users. For any related problems, please contact your local distributor. If they are unable to assist you, please redirect your inquiries to www.atop.com.tw or www.atoponline.com.

1.3 *Supported Platform*

This manual is designed for **SE59XX Industrial Serial Device Server Series** and that series only**.**

1.4 *Manufacturers' FCC Declaration of Conformity Statement*

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause an undesired operation.

Note: all the figures herein are intended for illustration purposes only. This software and certain features work only on certain Atop's devices.

---

2 Introduction

2.1 Overview

The SE59XX is an industrial Ethernet serial device server which acts as a gateway for communications between Ethernet (TCP/UDP) port and RS-232/RS-422/RS-485 port. The information conveyed by the SE59XX model is transparent to both host computers (Ethernet) and serial devices (RS-232/RS-422/RS-485). Data coming from the Ethernet port is sent to the designated RS-232/RS-422/RS-485 port, and data received from RS-232/RS-422/RS-485 port is sent to the Ethernet port, allowing full-duplex and bi-directional communication. In the computer-aided manufacturing or industrial automation areas, field devices can directly connect to an Ethernet network via the SE59XX model. In normal PCs or laptops, a virtual COM port can be created using our vitual COM software to fetch serial data from SE59XX remotely over Ethernet. Note that SE5901 model does not support RS-422 and 4-wired RS-485.

With the SE59XX model, it is possible to communicate with a remote serial device over the LAN or even over the Internet, which dramatically increases reachability and scalability.

Figure 2.1 illustrates an example of multiple devices connected to the Industrial Serial Device Server. A PC connects to the Industrial Serial Device Server via Ethernet interface, and a monitored device reports to Industrial Serial Device Server via RS-232/RS-422/RS-485 interface. It is possible to have multiple PCs connected into the same Industrial Serial Device Server through TCP or UDP transport protocols, as well as multiple monitored devices connected via RS-232/RS-422/RS-485 to Industrial Serial Device Server.

Figure 2.1 An Application of SE59XX Industrial Serial Device Server with Multiple Devices

2.2 Features

The SE59XX Industrial Serial Device Server Series share the same software platform on different available hardwares. It provides

- Flexible hardware platform, in different port variants based on Your needs
- TCP Server/Client, UDP, Virtual COM and Tunneling modes supported
- Remotely monitor, manage, and control industrial field devices

- Configuration via Web Browser/ Serial Console/ Telnet Console/ Atop's Windows Utility (Device Management Utility)
- Rugged metal housing with IP30 protection for wall or DIN-Rail mount
- Wide range power supply input between 9 – 48 VDC

Caution

Beginning from here, extreme caution must be exercised.

Never install or work with electricity or cabling during periods of lightning activity. Never connect or disconnect power when hazardous gases are present.

Warning: HOT!

WARNING: Disconnect the power and allow unit to cool for 5 minutes before touching.

3 Getting Started

3.1 *Packing List*

Inside the purchased package, you will find the following items.

Table 3.1 Packing List

Item	Quantity	Description
SE59XX	1	Industrial Serial Device Server
Mounting Kit	1	On SE5908 / SE5916 / SE5908A / SE5916A • Rack Mounting Type-L angles (x 2) • Screws (x 6) On SE5901 / SE5904D / SE5901B - DIN Rail Kit
Terminal Block		Power Supply/ Relay output: • TB3 x 1: 3-pin 5.08mm lockable Terminal Block (SE5901, SE5901B) • TB3 x 2: 3-pin 5.08mm lockable Terminal Block (SE5908-DC,SE5916-DC) TB7 x1: 7-pin 5.08mm lockable Terminal Block (SE5904D only) Serial ports: Terminal block is included only on TB model • TB5 x 1: 5-pin 5.08mm lockable Terminal Block (SE5901) • TB5 x 4: 5-pin 5.08mm lockable Terminal Block (SE5904D) • TB5 x 8: 5-pin 5.08mm lockable Terminal Block (SE5908A) • TB5 x 16: 5-pin 5.08mm lockable Terminal Block (SE5916A)
Documentation	1	Hardware Installation Guide (Warranty card is included)

Note:

- Notify your sales representative immediately if any of the above items is missing or damaged upon delivery.
- Atop's utility software Device View© and Serial Manager© are obsolete and replaced by Device Management Utility®.

Table 3.2 Description of Optional Accessories

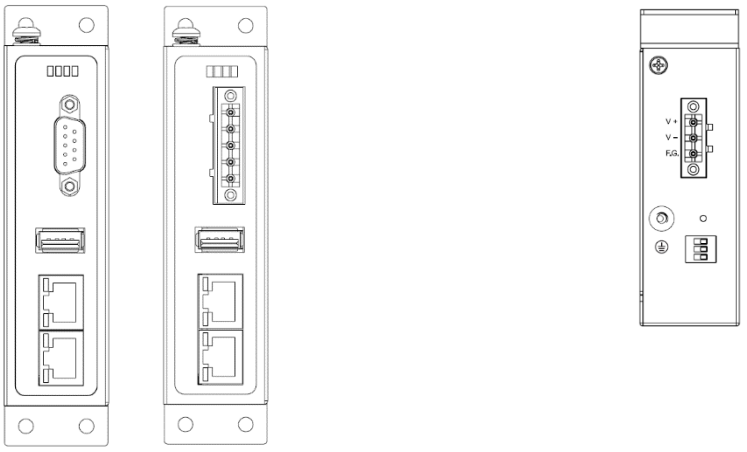
Optional Accessories		
Model Name	**Part Number**	**Description**
Wall Mount Kit	70100000000050G	Black aluminum wall mount kit
ADP-DB9(F)-TB5	59906231G	Female DB9 to Female 3.81mm, a TB5 Converter
SDR-75-24	50500752240001G	75W/3.2A DIN-Rail 24VDC power supply 88~264VAC / 124-370VDC input
UN315-1212(US-Y)	50500151120003G	Y-Type power adaptor, 100~240VAC input, 1.25A @ 12VDC output, US plug, LV6
UNE315-1212(EU-Y)	50500151120013G	Y-Type power adaptor, 100~240VAC input, 1.25A @ 12VDC output, EU plug, LV6
LM28-C3S-TI-N	50708031G	SFP Transceiver, 1250Mbps, 850nmVCSEL, Multi-mode, 550m, 3.3V, -20~85°C
LM38-C3S-TI-N	50709411G	SFP Transceiver, 1250Mbps, 1310nmFP, Multi-mode, 2km, 3.3V, -40~85°C

LS38-C3S-TI-N	50709391G	SFP Transceiver, 1250Mbps, 1310nmFP, Single-mode, 10km, 3.3V, -40~85°C
LS38-C3L-TI-N	50709441G	SFP Transceiver, 1250Mbps, 1310nmDFB, Single-mode, 30km, 3.3V, -40~85°C
LM38-A3S-TI-N	50708051G	SFP Transceiver, 155Mbps, 1310nmLED, Multi-mode, 2km, 3.3V, -40~85C
LS38-A3S-TI-N	50709431G	SFP Transceiver, 155Mbps, 1310nmFP, Single-mode, 30km, 3.3V, -40~85C

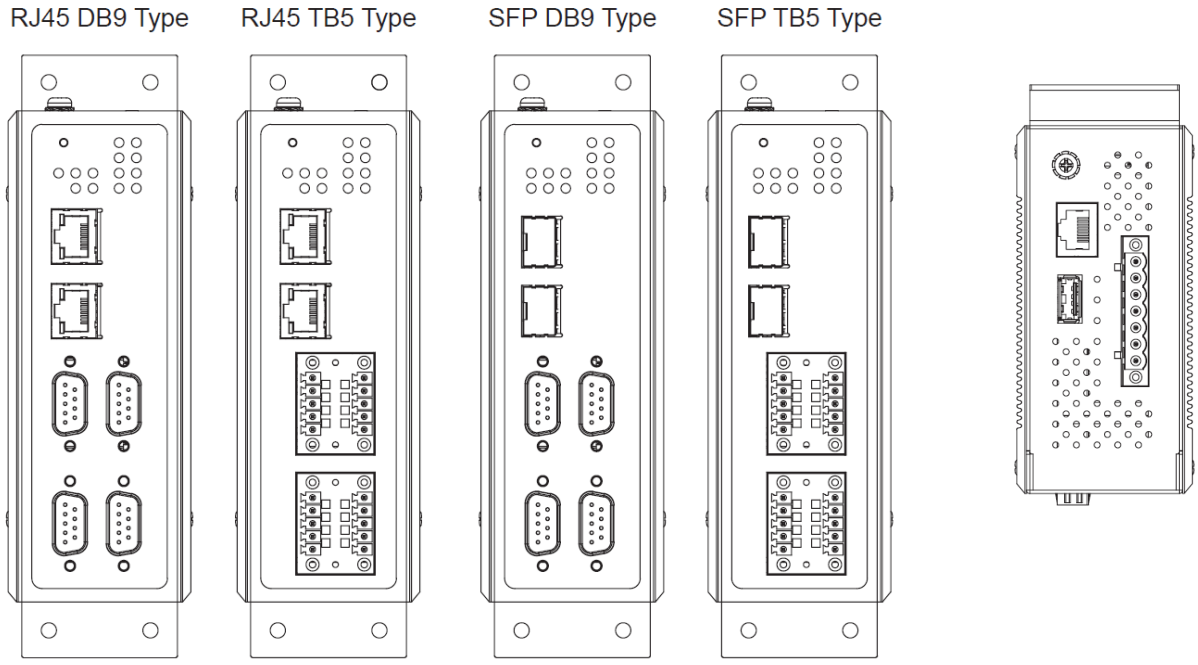
3.2 *Appearance, Front and Rear Panels*

The following figures show particular SE59XX series device's front and rear panels.

SE5901



SE5904D



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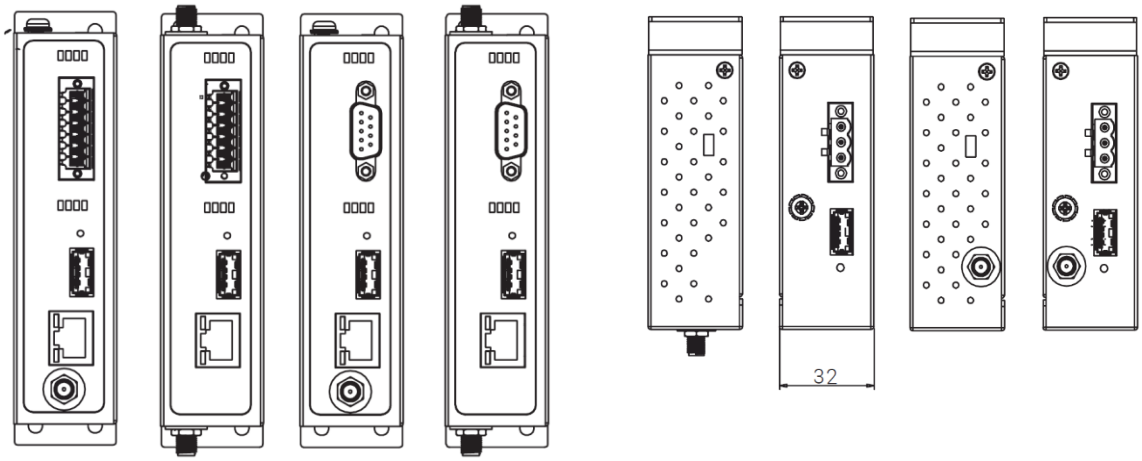
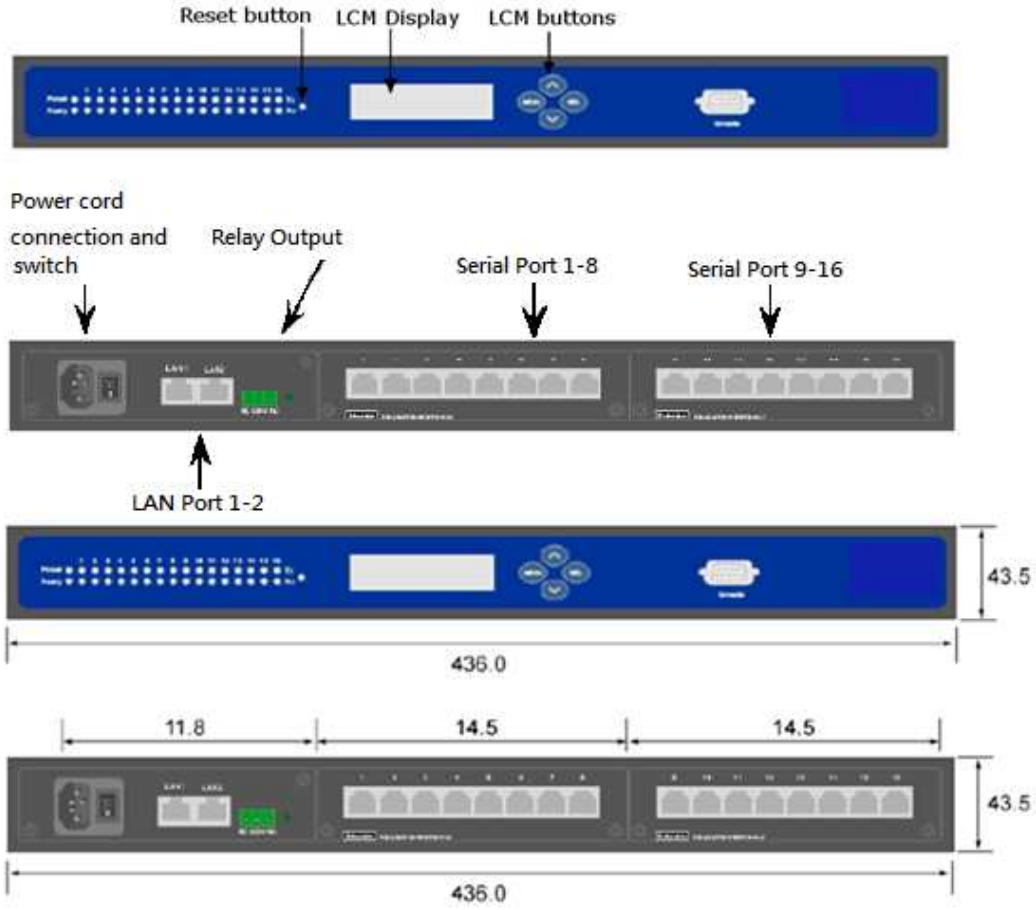
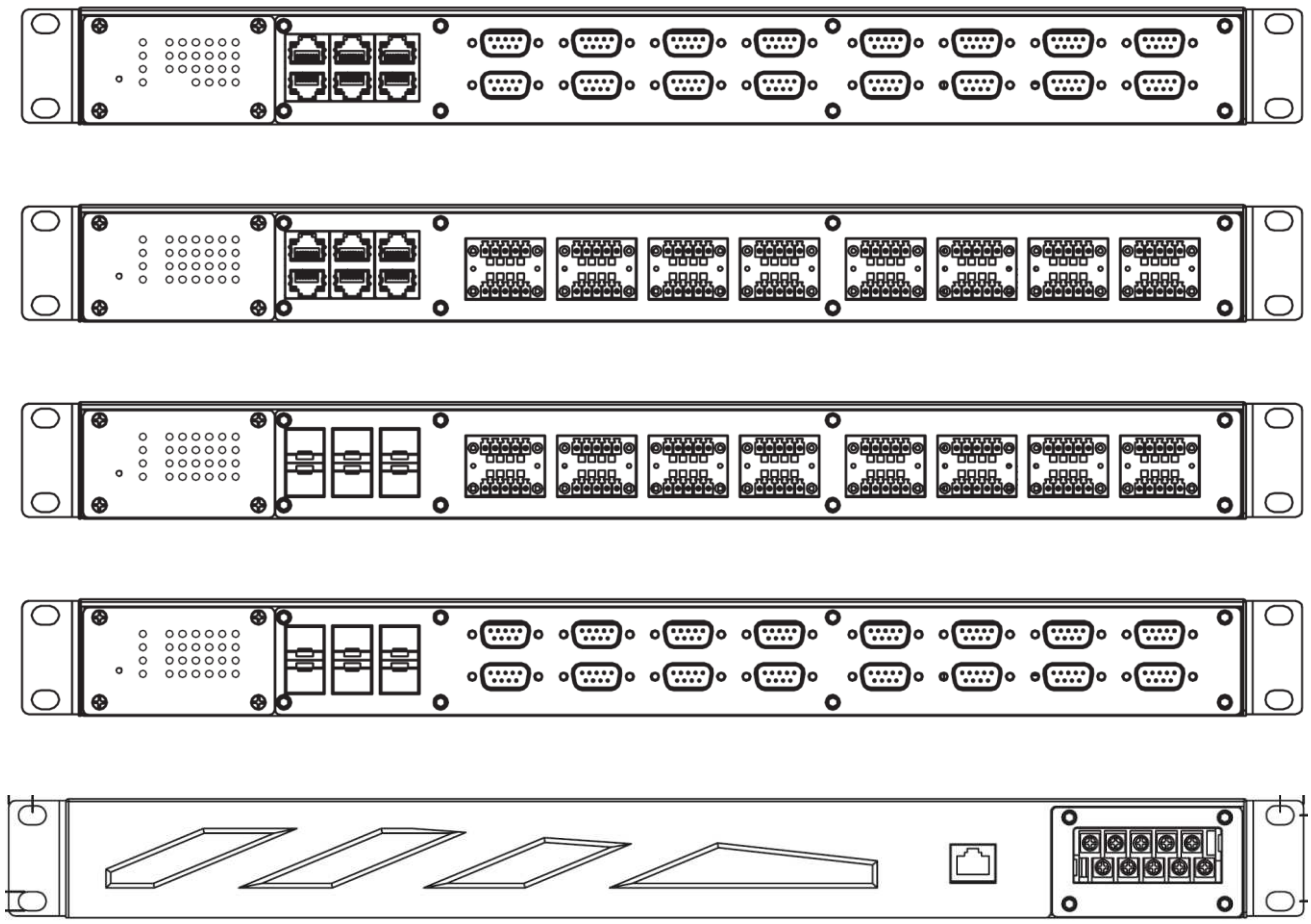


SE5908/16



SE5908A/16A



3.3 *First Time Installation*

Before installing the device, please follow strictly all safety procedures described in the Hardware installation guide supplied inside the product. Atop will not be liable for any damages to property or personal injuries resulting from the installation or overall use of the device. Do not attempt to manipulate the product in any way if unsure of the steps described there. In such cases, please contact your dealer immediately.

Specific installation instructions are not provided in this manual since they may differ considerably based on the .hardware purchased

3.4 *Factory Default Settings*

3.4.1 *Network Default Settings*

The SE59XX Industrial Serial Device Server is equipped with two LAN interfaces with two default IP addresses. Its default network parameters are listed in Table 3.3.

Table 3.3 Network Default Setting

Interface	Device IP	Subnet Mask	Gateway IP	DNS
LAN1	10.0.50.100	255.255.0.0	10.0.0.254	255.255.255.255
LAN2	192.168.1.100	255.255.255.0	192.168.1.254	
LAN 3~6 SE5908A and SE5916A only	192.168.2.1~5.1	255.255.255.0	192.168.1.254	

3.4.2 *Other Default Settings*

The SE59XX Industrial Serial Device Server comes with the following default settings.

Table 3.4 Security , Serial, and SNMP Default Settings

Parameter	Default Values
Security	
User Name	admin
Password	default
Serial	
COM1	RS-232, 9600 bps, 8 data bits, No Parity bit,1 stop bit, No Flow Control Packet Delimiter timer: Auto
COM2	RS-232, 9600 bps, 8 data bits, No Parity bit, 1 stop bit, No Flow Control Packet Delimiter timer: Auto
COM3	RS-232, 9600 bps, 8 data bits, No Parity bit,1 stop bit, No Flow Control Packet Delimiter timer: Auto
COM4	RS-232, 9600 bps, 8 data bits, No Parity bit,1 stop bit, No Flow Control Packet Delimiter timer: Auto
SNMP	
SysName of SNMP	0060E9XXXXXX (MAC address of 1st LAN interface)
SysLocation of SNMP	Location
SysContact of SNMP	Contact
SNMP	Disabled
Read Community	public
Write Community	private
SNMP Trap Server	0.0.0.0

Note: Press the “Reset” button on the front panel for 5 seconds or follow the procedure in Section 0, to restore the SE59XX Series Industrial Serial Device Server to the factory default settings.

4 Configuration and Setup

It is strongly recommended for the user to set the Network Parameters through **Device Management Utility©** first. Other device-specific configurations can later be carried out via Atop's user-friendly Web-Interface.

4.1 *Configuration of Network Parameters through Device Management Utility*

Please install Atop's configuration utility program called **Device Management Utility®** that comes with the Product CD or can be downloaded from our websites (www.atop.com.tw or www.atoponline.com). For more information on how to install **Device Management Utility®**, please refer to the manual that comes in the Product CD. After you start **Device Management Utility®**, if the SE59XX Industrial Serial Device Server is already connected to the same subnet as your PC, the device can be accessed via broadcast packets. **Device Management Utility®** will automatically detect your SE59XX device and list it on **Device Management Utility®**'s window. Alternatively, if you did not see your SE59XX device on your network, press "**Rescan**" icon, a list of devices, including your SE59XX device currently connected to the network will be shown in the window of **Device Management Utility®** as shown in Figure 4.1.

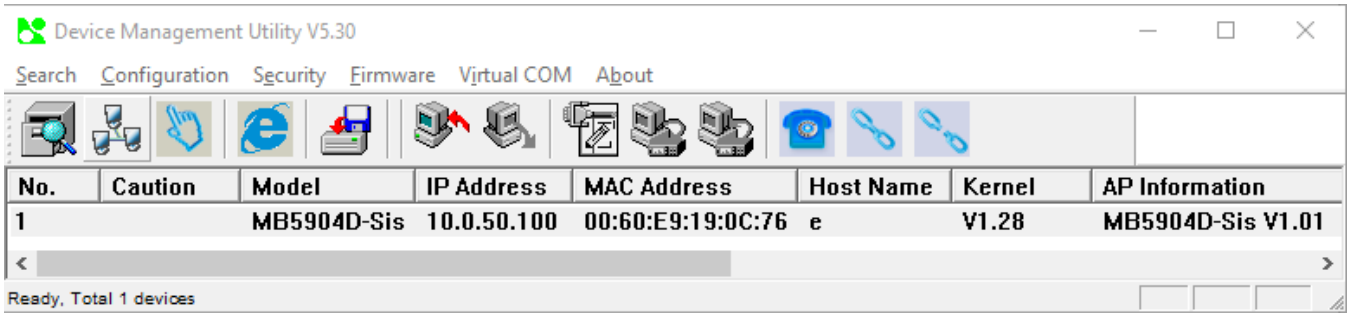


Figure 4.1 List of Device in Device Management Utility

Note: This figure is for illustration purpose only. Actual values/settings may vary between devices.

Sometime the SE59XX device might not be in the same subnet as your PC; therefore, you will have to use Atop's utility to locate it in your virtual environment. To configure each device, first click to select the desired SE59XX device (default IP: 10.0.50.100) in the list of **Device Management Utility©**, and then click "**Configuration → Network**…" (or Ctrl+N) menu on **Device Management Utility©** as shown in Figure 4.2 or click on the second icon called **Network** on the menu icon bar, and a pop-up window will appear as shown in Figure 4.3.

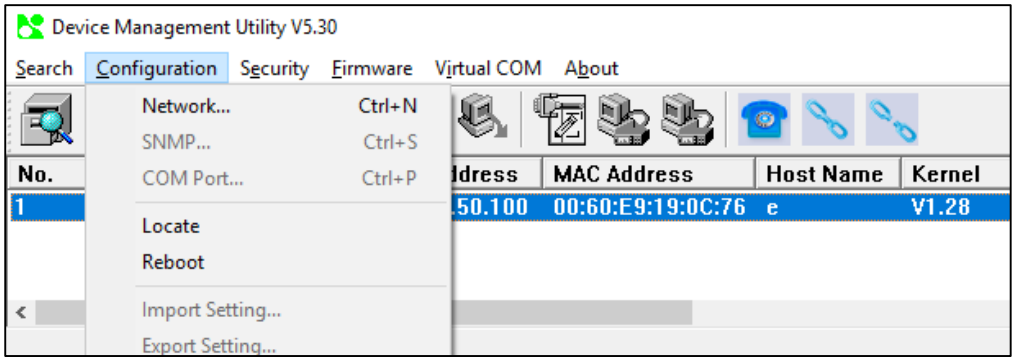


Figure 4.2 Pull-down Menu of Configuration and Network...

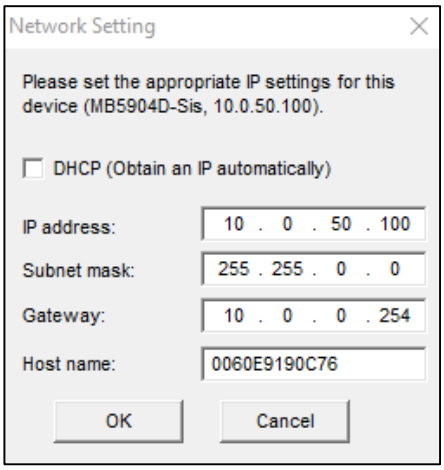


Figure 4.3 Pop-up Window of Network Setting

You may proceed then to change the IP address to avoid any IP address conflict with other hosts on your LAN or to connect the device to your existing LAN as shown in Figure 4.3. The system will prompt you for a credential to authorize the changes. It will ask you for the **Username** and the **Password** as shown in Figure 4.4. The default username is "**admin**", while the default password is "**default**". After clicking on the **Authorize** button, a notification window will pop-up as shown in Figure 4.5 and some device may be restarted. After the device is restarted (for some model), it will beep twice to indicate that the unit is running normally. Then, the SE59XX device can be found on a new IP address. It may be listed automatically by the **Device Management Utility©** or it can be found by clicking on the "**Rescan"** icon. Note that if you did not change the IP address but changed other parameter, you may encounter another notification window as shown in Figure 4.6.

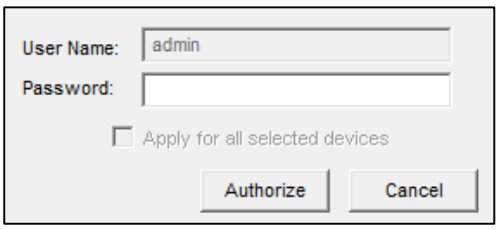


Figure 4.4 Authorization for Change of Network Settings

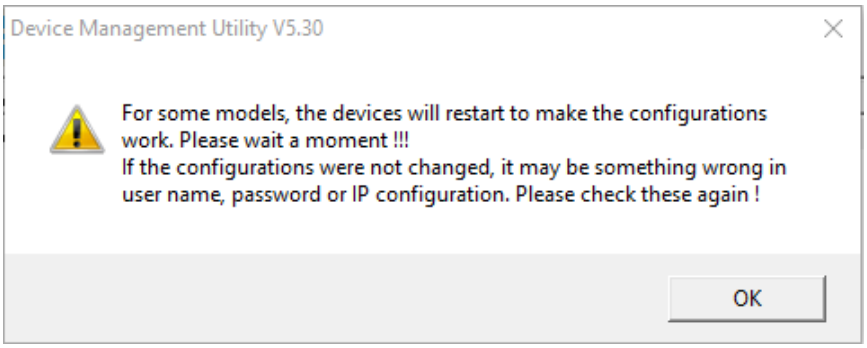


Figure 4.5 Pop-up Notification Window after Authorization

Please consult your system administrator if you do not know your network's subnet mask and gateway address.

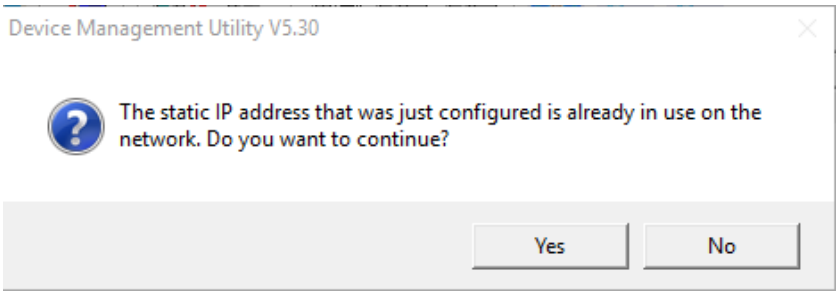


Figure 4.6 Pop-up Notification Window when there is the same IP address in the network

4.2 *Configuring through Web Interface*

Every SE59XX Industrial Serial Device Server is equipped with a built-in web server in the firmware. Therefore, the device can be accessed by using a web browser for configuring by entering the device's IP address (default IP address is 10.0.50.100) in the URL field of your web browser. An authentication will be required and you will have to enter the username (Default value is "admin") and password (Default value is "default") for accessing the web interface as shown in Figure 4.7. Note that you may encounter a warning pop-up window that urges you to change or reset your password to be different from the default value as shown in Figure 4.8. Figure 4.9 illustrates the overview page of the web interface. Figure 4.10 lists all the menus and submenus for web configuration. Please see Section 3.4 for default values. This example is made on MB59XX series, but the overview page is the same.

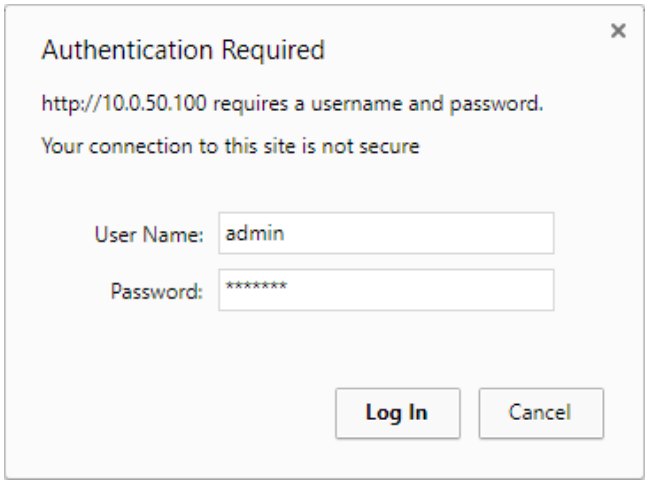


Figure 4.7 Authentication Required for Accessing Web Interface

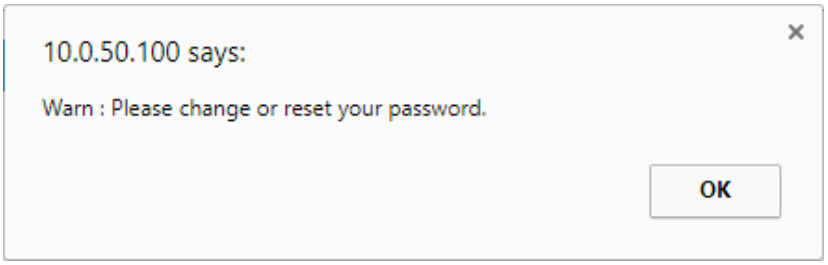


Figure 4.8 Warning Pop-up Window for Changing or Resetting Password from Default Value

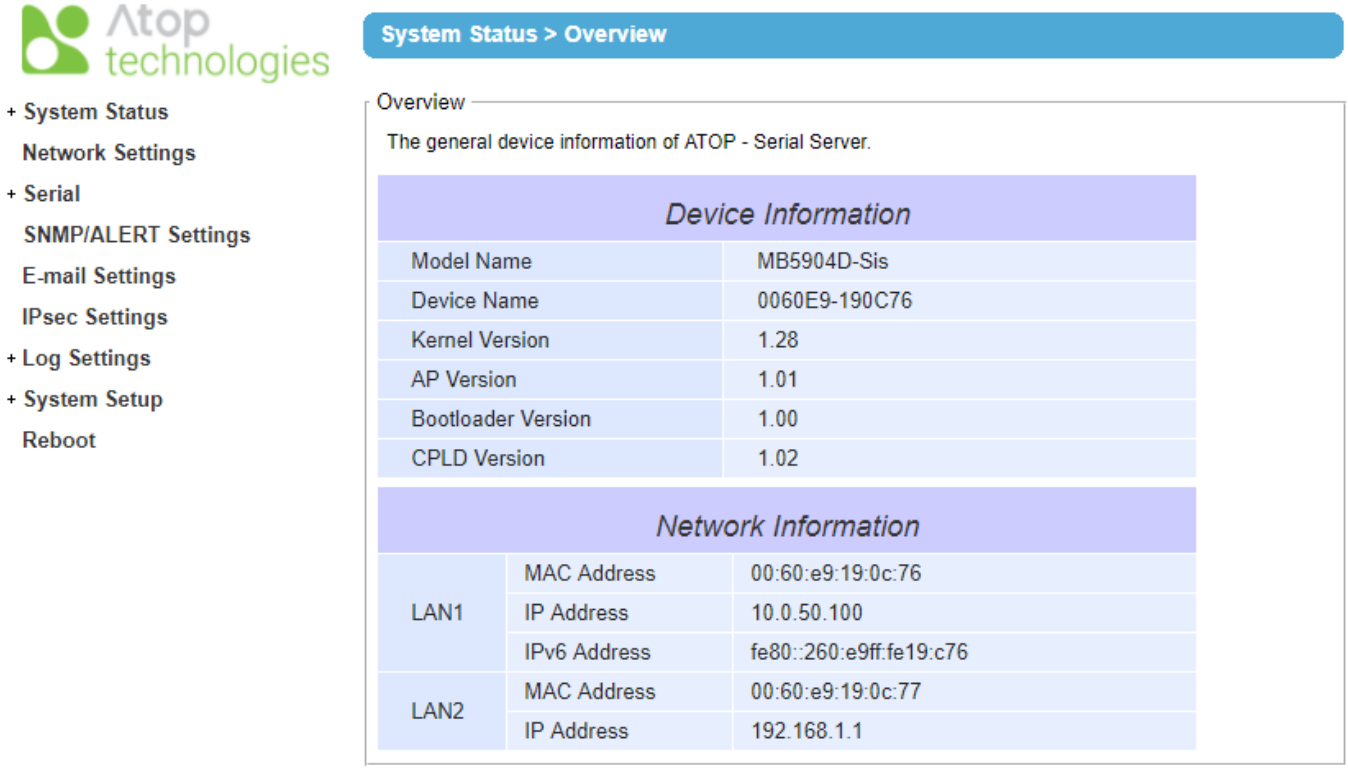


Figure 4.9 Overview Web Page of SE59XX Industrial Serial Device Server.

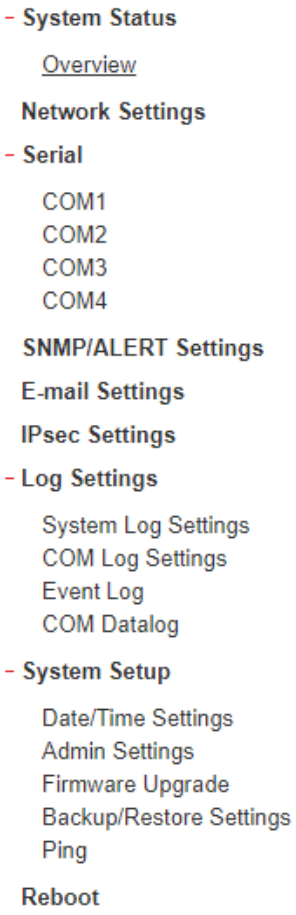


Figure 4.10 Map of Configuring Web Page on SE59XX Industrial Serial Device Server

This approach for configuring your device is the most user-friendly. It is the most recommended and the most common method used for SE59XX Industrial Serial Device Server Series. Please go to its corresponding section for a detailed explanation.

4.3 *Configuring Automatic IP Assignment with DHCP*

A DHCP server can automatically assign IP addresses, Subnet Mask and Network Gateway to LAN interface. You can simply check the **"DHCP (Obtain an IP Automatically)"** checkbox in the Network Setting dialog as shown in Figure 4.3 using Atop's **Device Management Utility©** and then restart the device. Once restarted, the IP address will be configured automatically.

4.4 *Web Overview*

In this section, current information on the device's status and settings will be displayed. An example of SE59XX's overview page is shown in Figure 4.11. Also this example is made on MB59XX.

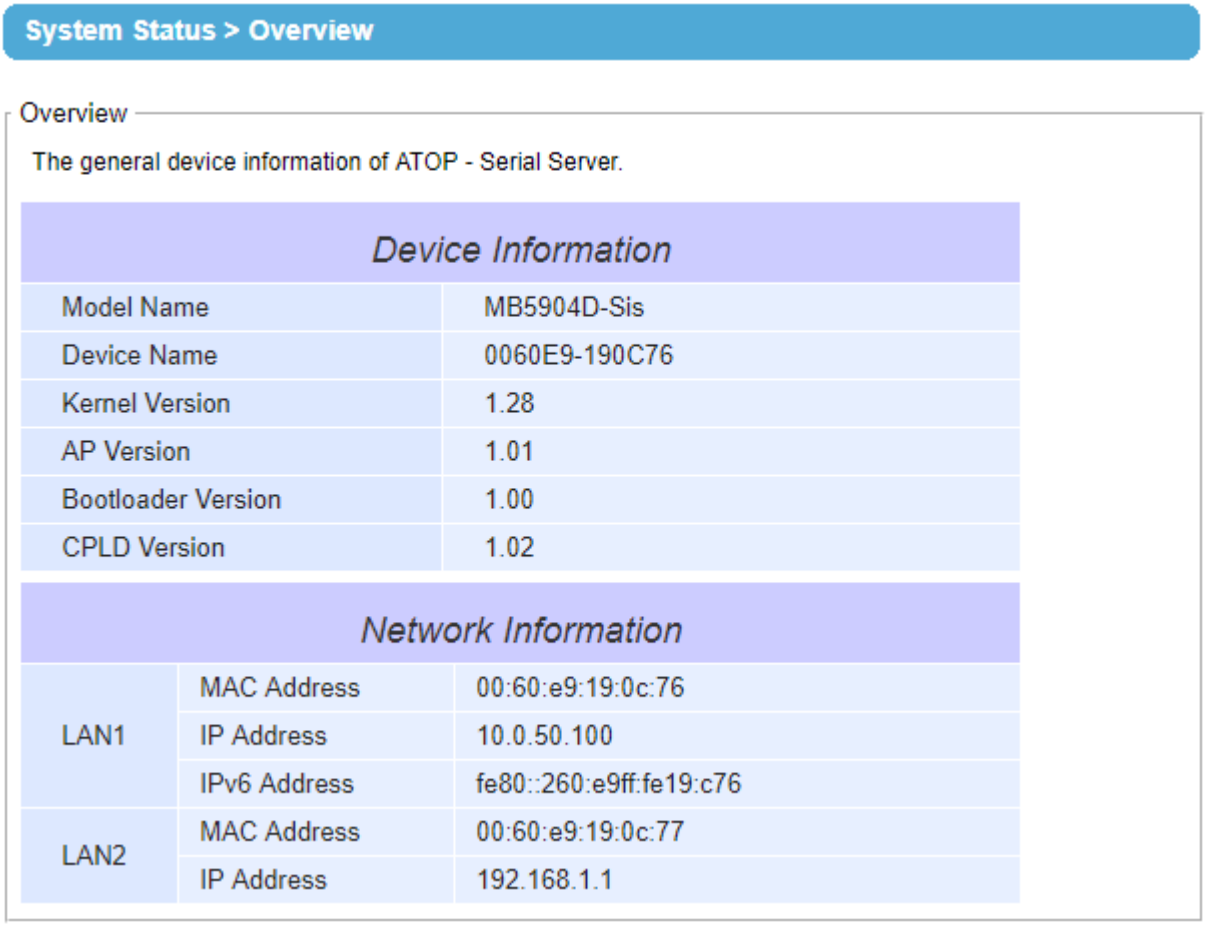


Figure 4.11 Overview Web Page

In detail, the following information is given and separated into two parts (Device Information and Network Information):

- Device Information
  - **Model Name**, as its name implies, shows the device's model
  - **Device Name** shows a given name of the device in which the default value is the MAC address of the LAN interface.
  - **Kernel Version** is the value of the version of the kernel firmware of the device.
  - **AP Version** is the value of the version of the application firmware of the device.
  - **Bootloader Version** is the version of the program that loads the operating system of the device.
  - **CPLD Version** is the version of the Complex Programmable Logic Device (logic device) of the device.
- **Network Information** shows information about the wired network interface on the device.
  - **LAN:** This will display the current **MAC Address**, and **IP Address** of the Ethernet interface.

4.5 *Network Settings*

In this section, both network interfaces and related network settings of the SE59XX device can be configured. There are four sets of parameters which are **LAN1 Settings**, **LAN2 Settings**, **Default Gateway**, and **DNS Server** that can be entered as shown in Figure 4.12. First, **LAN1 Settings** part will allow you to configure the **IP Address**, **Subnet Mask**, and **Default Gateway** for your wired LAN1 network. You can check the box behind **DHCP** option to obtain an IP address automatically. If you checked the box, the rest of the options for **LAN1 Settings** will be greyed out or disabled. Second, **LAN2 Settings** is the same as LAN1 Settings but for the second Ethernet interface. Third, **Default Gateway** part is where you can select the default gateway network for your serial device server. You can either select **LAN1** or **LAN2** by clicking on the corresponding radio button. Fourth, **DNS Server** part is where you can specify the IP Address of your **Preferred DNS** (Domain Name Server) and **Alternate DNS**. If the SE59XX device is connected to the Internet and should connect to other servers over the Internet to get some services such as Network Time Protocol (NTP) server, you will need to configure the DNS server in order to be able to resolve the host name of the NTP server. Please consult your network administrator or internet service provider (ISP) to obtain local DNS's IP addresses.

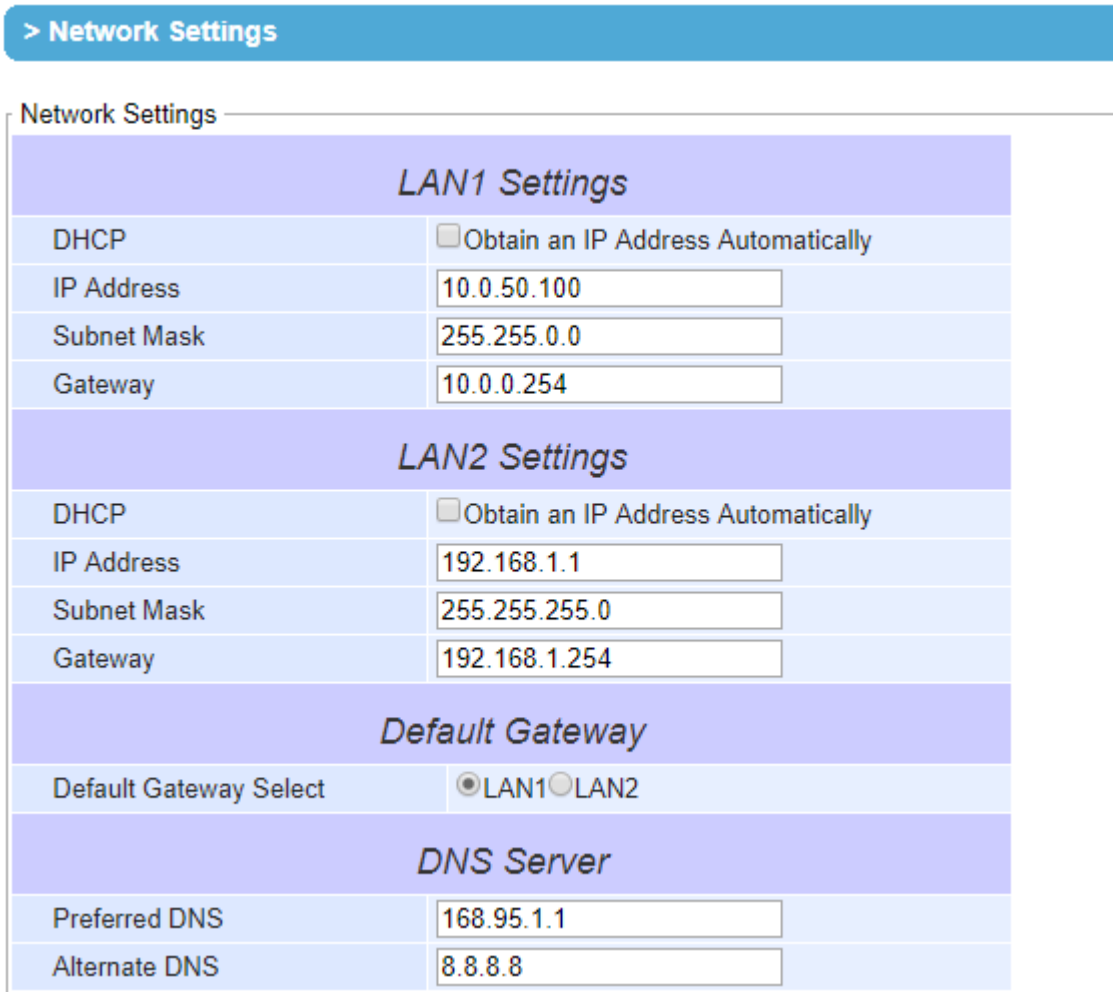


Figure 4.12 Network Settings Web Page

After finishing the network settings configuration, please click the **Save & Apply** button to save all changes that have been made. Finally, the web browser will be redirected to the **Overview** page as shown in Figure 4.11. If you would like to discard any setting, please click the **Cancel** button.

4.6 *Serial*

Since SE59XX is an Industrial Serial Device Server, it supports serial communication with COM port(s). Note that SE59XX series can have up to four COM ports: **COM1**, **COM2**, **COM3**, and **COM4**, while typical SE5901 model will have only one COM port (**COM1**). Figure 4.13 shows the **Serial** menu on the left frame of the web interface of SE59XX. The following subsections will describe how to configure these COM ports.

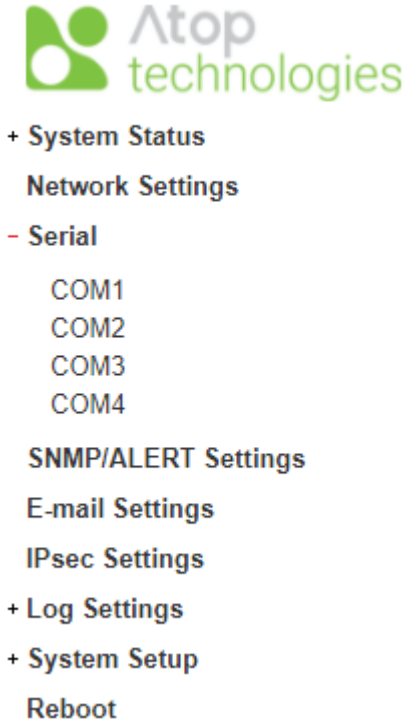


Figure 4.13 Serial Menu