

## User Manual

for 1x RS-232/422/485 port  
to 1x or 2x 10/100TX Device Server



and 1x RS-232/422/485 port  
to 1x 100FX Device Server



**Notice**

This manual contents are based on the below table listing software kernel version, hardware version, and firmware version. If the device functions have any different from the manual contents description, please contact the local sale dealer for more information.

<b>Firmware Version</b>	V1.05j
<b>Kernel Version</b>	V1.00
<b>Hardware Version</b>	V1.00

## FCC Warning

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 in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## CE Mark Warning

This is a Class-A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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# Introduction

Device Server is a clever one RS-232/422/485 port to Ethernet port(s). The redundant Ethernet ports can auto-recover rapidly when link breaks.

The serial port of devices such as POS terminal, digital display, medical measurement etc. can be connected to the Device Server over Ethernet just as locally attached. It provides more powerful ability for accessing multiple hosts and eliminates the limitation of transmission distance in Ethernet.

## Features

- RJ-45: 10/100Mbps (1 RS-232/422/485 port to 1 or 2 10/100TX Device Server), 100FX: 100Mbps (1 RS-232/422/485 port to 1 100FX Device Server)
  - Built-in 1.5KV magnetic isolation
  - 1 RS-232/422/485 port, male DB-9, DIP switch selectable
  - DIP switch-controlled mode selection: RS-232, RS-422, RS-485 two-wire, RS-485 four-wire
  - Serial Line Protection: 15 KV ESD for all signals
  - Up to 460.8Kbps transmission rate
  - RoHS regulatory approval
  - Support HTTPS, SSH v2, SSL v3\*\*
  - 4 hosts—Virtual Com, TCP Server, TCP Client—simultaneous connections
  - Virtual Com/TCP Server/TCP Client/UDP/Serial Tunnel serial mode with advanced setting
  - Support Email/SNMP trap/Beeper event notification
  - X-Ware utility for windows NT/2000/XP/2003
    - Device discovery
    - Auto IP report
    - Device setting (run time change, no rebooting)
    - Access Control List
    - Device monitoring
  - Virtual Com/TTY Drivers for Windows NT/2000/XP/2003, Linux real TTY driver
- \*\* Optional

## Software Feature

### Management

Supports Web, X-ware Utilities and Telnet interface for configuration

### Protocols

ICMP, IP, TCP, UDP, DHCP, BootP, ARP/RARP, Telnet, RTelnet, DNS, SNMP MIB II, HTTP, SMTP, Sntp

### Serial mode

Virtual Com/TCP Server/TCP Client/UDP/Serial Tunnel serial mode with advanced setting:

- TCP Alive Check Timeout
- Inactivity Timeout
- Delimiter for Data Packing
- Force TX Timeout for Data Packing

### Security

HTTPS, SSH v2, SSL v3(data encryption)\*\*

### 4 Hosts

### simultaneous connection

Virtual Com/TCP Server/TCP Client(row data only)

Email/SNMP trap/Beeper

### Event notification

SNMP Trap

- Cold/Warm Start
- DSR, DCD Changed
- IP Changed
- Authentication Fail

SNMP Response

- System MIB
- Interface MIB

- ICMP, IP, TCP MIB
- UDP MIB
- RS-232 MIB

X-ware for Windows NT/2000/XP/2003/Vista

- Device discovery
- Auto IP report
- Device setting(run-time change, no rebooting)
- Access Control List
- Group setting
- Device monitoring
- Serial port monitoring
- Log info
- Group Firmware update batch

**Utilities**

**Virtual Com/TTY**

**Drivers (WDM mode, configuration in windows devices manager)**

Windows NT/2000/XP/2003, Linux real TTY Driver  
Windows 95/98, Unix Fixed TTY driver by request\*\*

**Serial API Function**

Port Control, Input/Output Data, Port Status Inquiry

\*\* Optional



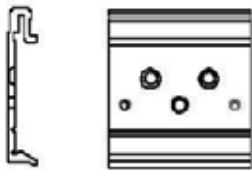
## Accessories

Unpack the accessories and verify them against the checklist below.

- Wall-mounted kit
- DIN rail
- User manual & X-Ware Utility



**Wall-mounted Kit**



**Din-Rail**



**User Manual & X-Ware Utility**

Accessories

Compare the accessories with the standard checklist above. IF any item is missing or damaged, please contact your local dealer for service.

# Hardware Description

This section mainly describes the hardware of Device Server.

## Physical Dimension

The physical dimensions of Device Server are **72mm(W) x 100mm(D) x 32mm(H)**

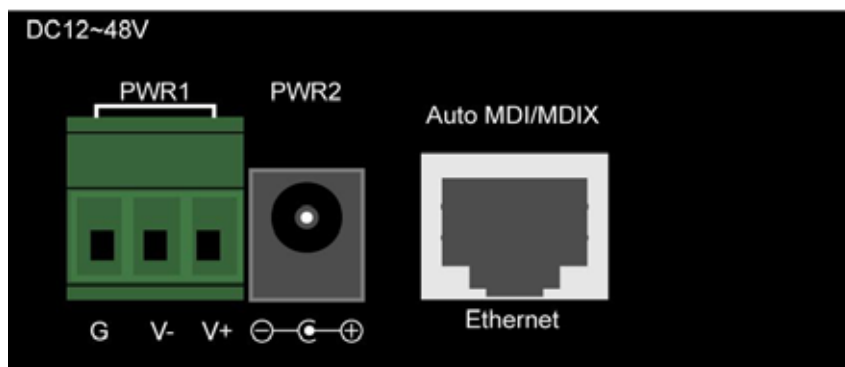
## Top & Bottom

The top & bottom of the Device Server picture are shown as below.

**PWR1:** Insert the positive and negative wires into the V+ and V- holes to the PWR1 on the terminal block connector.

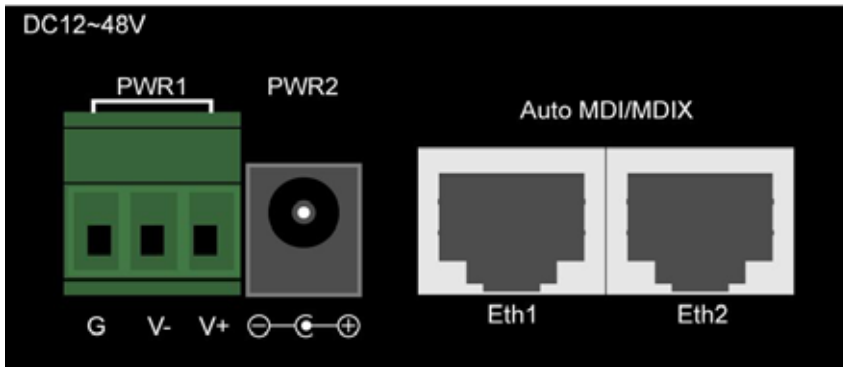
**PWR2:** Insert the DC power supply adapter to PWR2 DC jack with 12V or 24V. In the beginning the power LED is red, and after the system is successful initialized, it turns green. In addition, if PWR1 and PWR2 are connected at the same while, the device server will work with the higher connected voltage.

**Ethernet (1 RS-232/422/485 port to 1 10/100TX Device Server):** 10/100Mbps redundant Ethernet RJ-45 ports both support Auto MDI/MDIX.



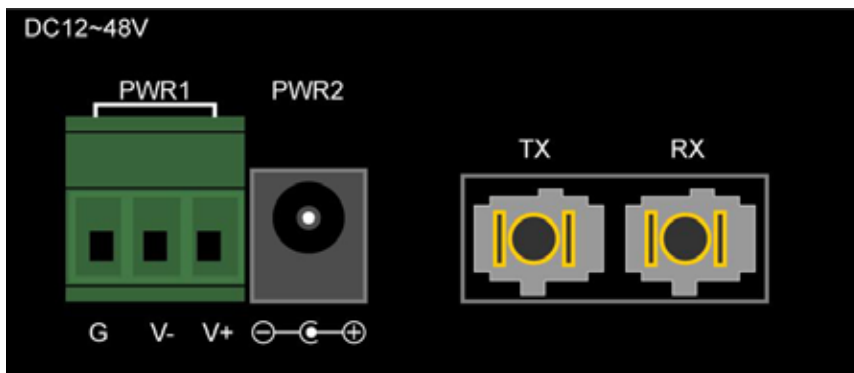
Top side of 1 RS-232/422/485 port to 1 10/100TX Device Server

**Eth1, Eth2 (1 RS-232/422/485 port to 2 10/100TX Device Server):** 10/100Mbps redundant Ethernet RJ-45 port supports Auto MDI/MDIX.



Top side of 1 RS-232/422/485 port to 2 10/100TX Device Server

**TX, RX (1 RS-232/422/485 port to 1 100FX Device Server):** IEEE802.3 u 100Base-FX, SC type connector in multi mode (2 km) or single mode (30 km).

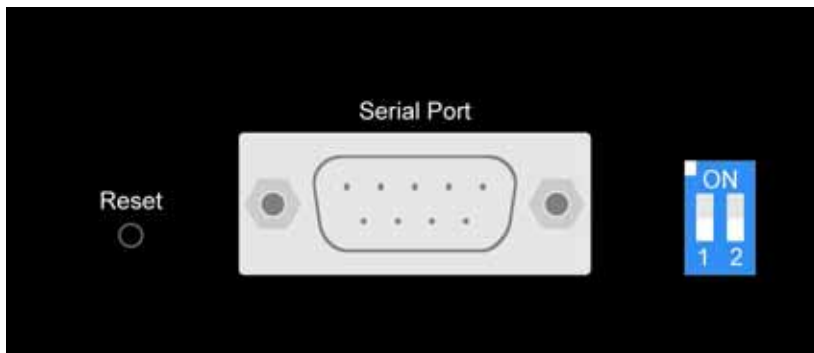


Top side of 1 RS-232/422/485 port to 1 100FX Device Server

**Reset:** Press the reset button about 10 seconds for restoring factory default. Release it when power LED starts to blink in red. As the power LED becomes green, the device server has loaded the factory default and is ready to work.

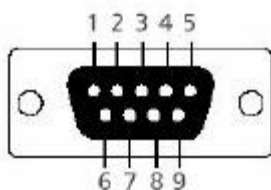
**Serial Port:** It's an RS-232/422/485 port male DB-9 and 15KV ESD for all signals.

**DIP Switch:** 4 modes available for RS-232, RS-422, RS-485 two-wire and RS-485 four-wire.



Bottom side of Device Server

### Pin Assignment



Pin Number	RS-232	RS-422	RS-486(4-wire)	RS-485(2-wire)
1	DCD	RXD-	RXD-	
2	RXD	RXD+	RXD+	
3	TXD	TXD+	TXD+	DATA+
4	DTR	TXD-	TXD-	DATA-
5	GND	GND	GND	GND
6	DSR			
7	RTS			
8	CTS			
9	RI			

→RS-232 mode act as DTE

## DIP Switch



DIP 1	DIP 2	120Ω Termination Configuration
ON	ON	120Ω Terminator for Long Distance 4-wire RS-485/RS-422
ON	OFF	–
OFF	ON	120Ω Terminator for Long Distance 2-wire RS-485
OFF	OFF	No terminator for RS-232/485 (short distance)

## LED Indicators

The LED Indicators gives real-time information of systematic operation status. The following table provides descriptions of LED status and their meaning.

LED	Status	Meaning
<b>PWR1</b>	Red On	Power is on and booting up.
	Red Blinking	Indicates an IP conflict, or DHCP or BOOTP server does not respond properly.
	Green On	Power is on and works functionally
	Green Blinking	Located by Administrator’s Location function.

	Off	No device attached or Link is disconnected
<b>PWR2</b>	Red On	Power is on and booting up.
	Red Blinking	Indicates an IP conflict, or DHCP or BOOTP server does not respond properly.
	Green On	Power is on and works functionally
	Green Blinking	Located by Administrator's Location function.
	Off	No device attached or Link is disconnected.
<b>Eth LNK/ACT</b> (1xRS-232/422/485 port to 1 10/100TX Device Server)	Orange Blinking	10 Mbps Ethernet connection
	Green Blinking	100Mbps Ethernet connection
	Off	Ethernet cable is not connected
<b>Eth1, Eth2 LNK/ACT</b> (1x RS-232/422/485 port to 2 10/100TX Device Server)	Orange Blinking	10 Mbps Ethernet connection
	Green Blinking	100Mbps Ethernet connection
	Off	Ethernet cable is not connected
<b>Fiber LNK/ACT</b> (1xRS-232/422/485 port to 1 100FX Device Server)	Green Blinking	100Base Fiber connection
	Off	Fiber cable is not connected or no work
<b>TX/RX</b>	Orange	Serial port is receiving data.

(1xRS-232/422/ 485 port to 1 100FX Device Server)	Green	Serial port is transmitting data.
	Off	No data is being transmitted or received through the serial port.

## Wiring the Power Inputs

Please follow the below steps to insert the power wire.



G V- V+

1. Insert the positive and negative wires into the V+ and V- contacts on the terminal block connector.



2. To tighten the wire-clamp screws for preventing the DC wires to loose.

**[NOTE]** The wire range of terminal block is from 12 – 24 AWG.

## DIN-Rail Mounting

The DIN-Rail is screwed on the device server when out of factory. If the DIN-Rail is not screwed on the device server, please see the following pictures to screw the DIN-Rail on the device server. Follow the below steps to hang the device server.



Device Server

1. First, insert the top of DIN-Rail into the track.





2. Then, lightly push the DIN-Rail into the track.

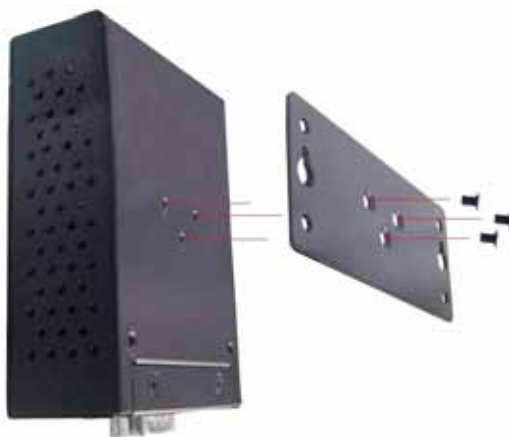


3. Check if the DIN-Rail is tightened on the track or not.
4. To remove the device server from the track, reverse steps above.

## Wall Mount Plate Mounting

Follow the below steps to mount the device server with wall mount plate.

1. Remove the DIN-Rail from the device server; loose the screws to remove the DIN-Rail.
2. Place the wall mount plate on the rear panel of the device server.
3. Use the screws to screw the wall mount plate on the device server.
4. Use the hook holes at the corners of the wall mount plate to hang the device server on the wall.
5. To remove the wall mount plate, reverse steps above.



Screwing the wall mount plate  
on the device server

## Installation Steps

1. Unpack the device server
2. Check if the DIN-Rail is screwed on the device server or not. If the DIN-Rail is not screwed on the device server, please refer to **DIN-Rail Mounting** section for DIN-Rail installation. If you want to wall mount the device server, then please refer to **Wall Mount Plate Mounting** section for wall mount plate installation.
3. Power on the device server. Please refer to the **Wiring the Power Inputs** section for knowing the information about how to wire the power. The power LED on the device server will light up. Please refer to the **LED Indicators** section for indication of LED lights.
4. Prepare the twisted-pair, straight through Category 5 cable for Ethernet connection.
5. Insert one side of RJ-45 cable (category 5) into the device server Eth1 or Eth2 port and another side of RJ-45 cable (category 5) to the PC or NB's Ethernet port. The Eth1 or Eth2 LED on the device server will light up when the cable is connected with the PC or NB. Please refer to the **LED Indicators** section for LED light indication.

## Power On

Connect the power adapter to PWR1 or PWR2 socket on the top side of the device server. The other side of power cord connects to the power outlet. The internal power works with DC in the voltage range of 12-48V. Check the power indicator on the front panel to see if power is properly supplied.

# X-Ware Utilities

Device server supplies a powerful application, which is so-called “X-Ware” to manage multiple devices.

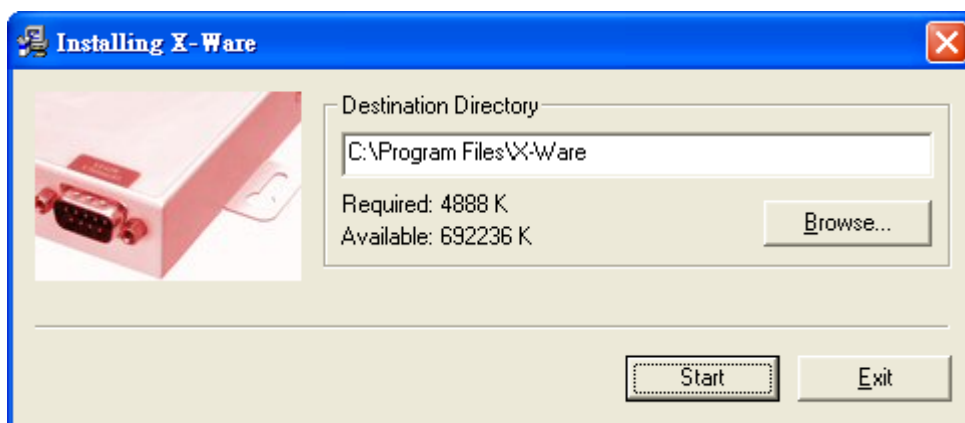
This segment is intended to guide you through the steps to install the Windows application—“X-Ware”.

## Quick Install

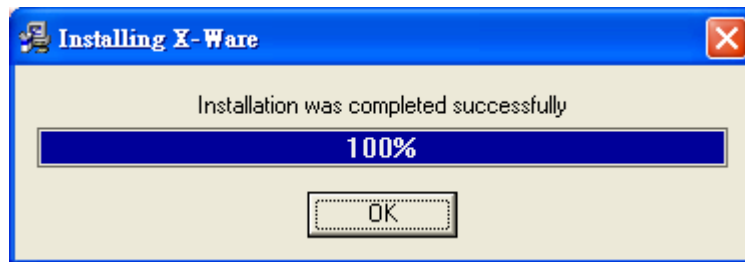
X-Ware is an easy-to-use utility with auto device discovery in a LAN or adding devices on the public network. All of the configurations on the serial server can be done in the X-ware. You can also apply configurations of one serial server to the others. This document shows you how to quick install the software. Being aware of the full functions and configurations description, please refer to the X-Ware user manual.

## Install X-Ware

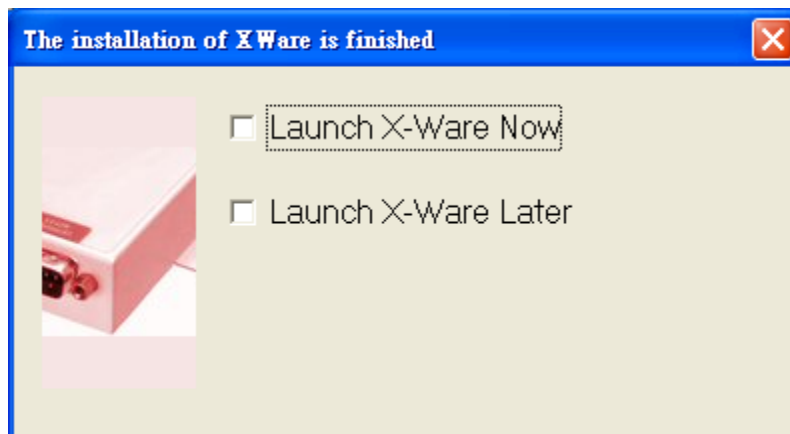
1. Insert the CD to run the program. If the setup program does not run automatically, double-click the X-Ware setup program icon to install.



2. When the installation is completed, click **OK** button.



3. After you have clicked **OK** button, a check-box window shows up. To mark the two check boxes for launching X-Ware immediately or later.



4. X-Ware will broadcast the network and search all available device server units in the network.

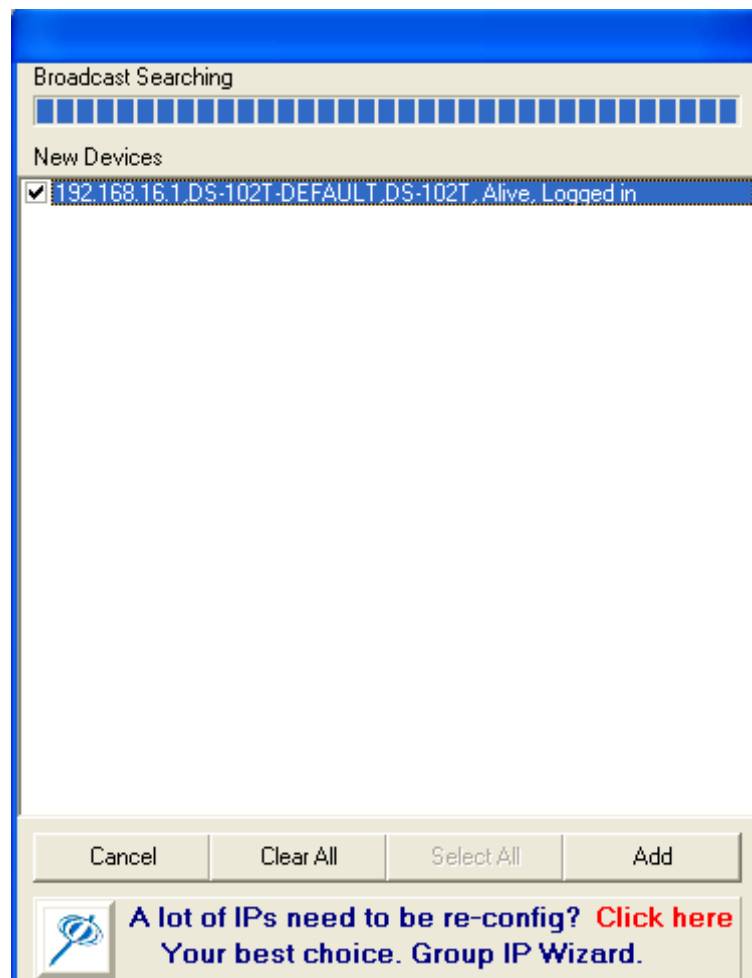
The default parameters are:

IP address: 192.168.161

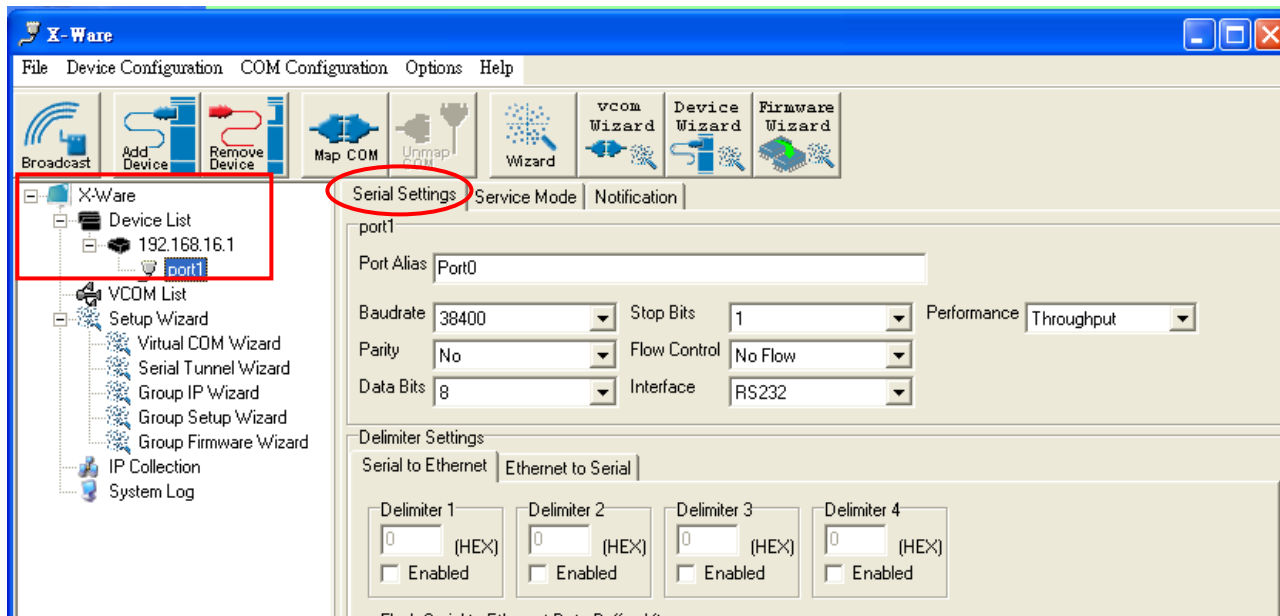
Login: admin

Password: microsens

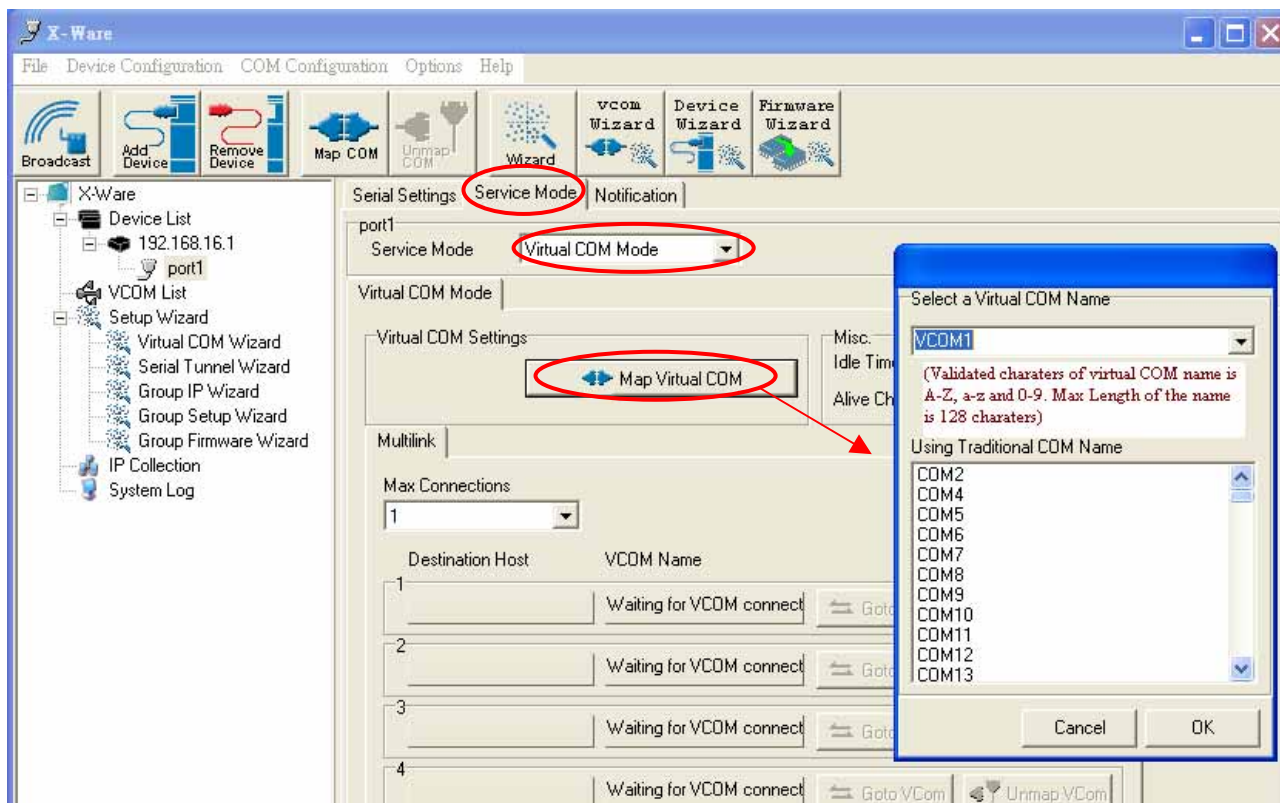
Mark the check box of the new devices and click **Add** button for further configuration.



5. Click on the tree menu in the left field, **"X-Ware"→"Device List"→"192.168.16.1"→"port1"**, to configure the serial parameters such as: Port Alias, Baudrate, Parity, Data Bits, Stop Bits, Flow Control, interface and performance.



6. Change to **“Service Mode”** tab, and select the service mode to be Virtual COM Mode. Then press **“Map Virtual COM”** button to map the port onto the COM port.



Now you’ve completed the configuration setting with Virtual mode.

# Web-based Management

Besides using X-Ware Utilities, you can also manage the device server via Web-HTTPS and the SSH console.

The HTTPS is a security protocol that provides communication privacy over Internet. The HTTPS packets transmitted between the device server and PC would be encrypted.

The SSH allows users to securely login to remote host computers, to execute commands safely in a remote computer, to securely copy remote files and to provide secure encrypted and authenticated communications between two non-trusted hosts.

When the device server has been configured with proper IP address and the web management is enabled, you can use web browser to make further configurations.

Type device server's IP address in the URL, for example `https://192.168.16.1` (Note: you cannot just type `http://`, this is not allowed in HTTPS. You should type **https://**).

---

---

`https://192.168.16.1/`

---

---

Key in the IP address in URL

## Server Configuration

Server Configuration contains System Information, SNTP Configuration, IP Configuration and User Authentication.

### System Information

This page shows the information of the device server.

**System Name:** The model name of the device server.

**IP Address:** The IP address of the device server; the default IP is 192.168.16.1.



**MAC address:** The unique hardware address assigned by manufacture.

**Firmware Version:** The firmware version of the device server.

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

- System**
- [System Information](#)
- [SNTP Configuration](#)
- [IP Configuration](#)
- [User Authentication](#)
- Port**
- Serial Setting**
- Management**
- Save/Reboot**

### System Information

System Name	MS655400
IP Address	192.168.16.1
MAC Address	00:60:A7:XX:XX:XX
Firmware Version	1.05j

System Information lists the basic information of this device server.

## SNTP Configuration

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

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- Management**
- Save/Reboot**

### Basic Setting

Name	<input type="text" value="MS655400"/>	
<b>Time</b>		
SNTP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	
Time Zone	<input type="text" value="(GMT+08:00)Taipei"/>	
Local Time	<input type="text" value="Thu Jan 1 10:48:55 1970"/>	
Time Server	<input type="text" value="pool.ntp.org"/>	Port <input type="text" value="123"/>
<b>Console</b>		
Telnet Console	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	

SNTP Configuration page

SNTP Configuration configures Server name, Time Server, and Telnet console enable/disable.

**Name:** The Name of the device server.

**Time:**

- **SNTP:** Enable or disable SNTP function to get the time from the SNTP server.
- **Time Zone:** Set the local time zone of the device server.
- **Local Time:** Set the current time of the device server.
- **Time Server:** The location and port of the time server.

**Console:**

- **Telnet Console:** Enable or disable the telnet console.

## IP Configuration

This page allows user to set the related configuration of the device server in network.

**IP Configuration:** Select the assigning solution of IP configuration which is assigned by DHCP/BOOTP or Static.

**IP Address:** Assign the IP address that the network is using.

**Netmask:** Assign the subnet mask of the IP address.

**Gateway:** Assign the network gateway for the device server. The default gateway is 192.168.16.1.

**DNS Server1:** Assign the primary DNS IP address.

**DNS Server2:** Assign the secondary DNS IP address.

**Auto IP Report**

- **Auto Report to IP:** Assign an IP to report the final alive check.
- **Auto Report to TCP Port:** Assign the port number.
- **Auto Report Interval:** Set the interval period for Auto report.

**Ethernet Mode**

- **Ethernet mode:** The 1 RS-232/422/485 port to 2 10/100TX Device Server supports the choice of RJ-45 ports for being used as a pair of redundant port. If you mark the radio group item of "**Redundant**", only one of the two RJ-45 ports is active. When the active RJ-45 port fails, the other one will be active to take over the work. While you mark the radio group item of "**Switch**", the two RJ-45 ports are used as general switching ports.

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

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- Port Serial Setting**
- Management**
- Save/Reboot**

### Network Setting

IP Configuration	Static
IP Address	192.168.16.1
Netmask	255.255.255.0
Gateway	0.0.0.0
DNS Server 1	192.168.31.228
DNS Server 2	
<b>Auto IP Report</b>	
Auto Report to IP	
Auto Report to TCP Port	0
Auto Report Interval	0 seconds
<b>Ethernet Mode</b>	
Ethernet Mode	<input checked="" type="radio"/> Redundant <input type="radio"/> Switch

Submit

IP Configuration page

## User Authentication

Change web management login password. You have to key in the old password first, and then key in the new password into "New Password" and "Confirm New Password" columns.

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

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### User Authentication

Old Password	
New Password	
Confirm New Password	

Apply

User Authentication page

# Port Serial Setting

Port Configuration includes **Serial Setting**, **Port Profile** and **Service Mode**.

## Serial Setting

### Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

<b>System</b>	<b>Serial Configuration</b>
<b>Port</b>	Port1
<b>Serial Setting</b>	Port Alias <input type="text" value="Port0"/>
<a href="#">Serial Configuration</a>	Interface <input type="text" value="RS232"/>
<a href="#">Port Profile</a>	Baud Rate <input type="text" value="115200"/>
<a href="#">Service Mode</a>	Data Bits <input type="text" value="8"/>
<b>Management</b>	Stop Bits <input type="text" value="1"/>
<b>Save/Reboot</b>	Parity <input type="text" value="None"/>
	Flow Control <input type="text" value="None"/>
	Force TX Interval Time <input type="text" value="0"/> ms
	Performance <input checked="" type="radio"/> Throughput <input type="radio"/> Latency
	<input type="button" value="Apply"/>

Port page

This page allows user to assign Serial Setting parameters, such as baud rate, data bits, stop bits, parity, and flow control etc.

**Port Alias:** Give an alias name to the port to hint the connected device.

**Interface:** 4 type for selecting–RS232 / RS422 / RS485 (2-wires) / RS485 (4-wires)

**Baud rate:** It’s in the range of 110bps to 460800bps.

**Data Bits:** 5, 6, 7, 8

**Stop Bits:** 1, 2 (1.5)

**Parity:** No, Even, Odd, Mark, Space

**Flow Control:** No, XON/XOFF, RTS/CTS, DTR/DSR

**Force TX Interval Time:** Force TX interval time is to specify the timeout when no data has been transmitted. When the timeout is reached or TX buffer is full (4K Bytes), the queued data will be sent. Zero means disable (factory default).

**Performance:** Throughput, Latency.

- **Throughput** mode guarantees the highest transmission speed.
- **Latency** mode guarantees the shortest response time.

## Port Profile

### Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

System

Port  
Serial Setting

Serial Configuration

Port Profile

Service Mode

Management

Save/Reboot

#### Port Profile

	Port1
Local TCP Port	<input type="text" value="4002"/>
Command Port	<input type="text" value="4003"/>
<b>Mode</b>	<b>Serial to Ethernet</b>
Flush Data Buffer After	<input type="text" value="0"/> ms
Delimiter(Hex 0~ff)	1: <input type="text" value="00"/> 2: <input type="text" value="00"/> 3: <input type="text" value="00"/> 4: <input type="text" value="00"/>
<b>Mode</b>	<b>Ethernet to Serial</b>
Flush Data Buffer After	<input type="text" value="0"/> ms
Delimiter(Hex 0~ff)	1: <input type="text" value="00"/> 2: <input type="text" value="00"/> 3: <input type="text" value="00"/> 4: <input type="text" value="00"/>

Serial Configuration page

For advanced data packing options, you can specify delimiters for Serial to Ethernet and/or Ethernet to Serial communications.

You can define maximum 4 delimiters (00~FF, HEX) for each way. The data will be held until the delimiters are received or the optional "Flush Ethernet to Serial data buffer" times out. Zero means disable (factory default).

## Service Mode

There are 4 modes of selection in Service Mode: Virtual COM, TCP Server, TCP Client and UDP.

## Virtual COM

In Virtual COM mode, you need to define the available port number, Idle timeout, Alive check, and Max. connections allowed from 1 to 5.

### Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

Port1	
Service Mode	Virtual COM Mode
Idle Timeout	0 (0~65535)seconds
Alive Check	0 (0~65535)seconds
Max Connection	5 max. connection (1~5)

Apply

Virtual COM Mode page

**Idle Timeout:** When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and re-try for connection with other hosts. Zero is to disable this setting (default). If Multilink is configured, only the first host connection is effective for this setting.

**Alive Check:** The device server device will send TCP alive check package in each defined time interval (Alive Check) to remote host to test the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed for other hosts. Zero is to disable this setting (default).

### TCP Server

In TCP Server mode, you need to define the available port number, Idle timeout, Alive check, and Max. connections allowed from 1 to 5.

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

<b>System</b>	<b>Service Mode</b>	Port1	
<b>Port Serial Setting</b>		Service Mode	TCP Server Mode ▾
<a href="#">Serial Configuration</a>		TCP Server Port	4002
<a href="#">Port Profile</a>		Idle Timeout	0 (0~65535)seconds
<a href="#">Service Mode</a>	Alive Check	0 (0~65535)seconds	
<b>Management</b>	Max Connection	5 ▾ max. connection(1~5)	
<b>Save/Reboot</b>		<input type="button" value="Apply"/>	

TCP Server Mode page

**Idle Timeout:** When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and re-try for connection with other hosts. Zero is to disable this setting (default). If Multilink is configured, only the first host connection is effective for this setting.

**Alive Check:** The device server device will send TCP alive check package in each defined time interval (Alive Check) to remote host to test the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed for other hosts. Zero is to disable this setting (default).

### TCP Client

In TCP Client mode, you need to define the destination host IP and port number, Idle timeout, Alive check. To deploy multilink, specify up to 4 more hosts IP and Port number.

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

NOPORTS_ENABL	
Port1	
Service Mode	TCP Client Mode
Destination Host	0.0.0.0 : 4002
Idle Timeout	0 (0~65535)seconds
Alive Check	0 (0~65535)seconds
Connect on	<input checked="" type="radio"/> Startup <input type="radio"/> Any Character
Destination Host	Port
1. 0.0.0.0	65535
2. 0.0.0.0	65535
3. 0.0.0.0	65535
4. 0.0.0.0	65535

Apply

TCP Client Mode page

**Idle Timeout:** When serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will be freed and re-try for connection with other hosts. Zero is to disable this setting (default). If Multilink is configured, only the first host connection is effective for this setting.

**Alive Check:** The device server device will send TCP alive check package in each defined time interval (Alive Check) to remote host to test the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed for other hosts. Zero is to disable this setting (default).

**Connect on Startup:** The TCP Client will build TCP connection once the connected serial device is startup.



**Connect on Any Character:** The TCP Client will build TCP connection once the connected serial device starts to send data.

### UDP

In UDP mode, you need to define the destination host IP and Local listen port number.

To create more destination hosts, specify the IP range of destination IP and send port number.

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

**System**

**Port Serial Setting**

[Serial Configuration](#)

[Port Profile](#)

[Service Mode](#)

**Management**

**Save/Reboot**

### Service Mode

	Port1		
Service Mode	UDP Mode		
Listen Port	4002		
	<b>Host start IP</b>	<b>Host end IP</b>	<b>Send Port</b>
1.	0.0.0.0	0.0.0.0	65535
2.	0.0.0.0	0.0.0.0	65535
3.	0.0.0.0	0.0.0.0	65535
4.	0.0.0.0	0.0.0.0	65535

Apply

UDP Mode page

## Management

Management includes Access IP Control List, SMTP/SNMP Configuration and System Event Configuration.

### Access IP Control List

The Access IP List specifies the IP address and subnet that can access the device. The access is based on IP and netmask combination. If the access is open to all hosts, do NOT enable this function.

## Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

- System
- Port Serial Setting
- Management
- Access IP Control List
- SMTP/SNMP Conf.
- System Event Conf.
- Save/Reboot

### Access IP Control List

Enable IP Filtering (Not check this option will allow any IP to have assessibility)

No.	Activate the IP	IP Address	Netmask
1	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
2	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
3	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
4	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
5	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
6	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
7	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
8	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
9	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
10	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
11	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
12	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
13	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
14	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
15	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
16	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>

Apply

Access IP Control List page

## SMTP/SNMP Configuration

SMTP/SNMP configuration includes the mail server’s IP address or domain. If the authentication is required, specify the username and password. There are 4 email addresses you can specify to receive the notification.

### Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

- System
- Port Serial Setting**
- Management
- [Access IP Control List](#)
- [SMTP/SNMP Conf](#)
- [System Event Conf](#)
- Save/Reboot

#### SMTP/SNMP Configuration

<b>E-mail Settings</b>	
SMTP Server	<input type="text"/> Port <input type="text"/>
<input type="checkbox"/> My server requires authentication	
User Name	<input type="text"/>
Password	<input type="text"/>
E-mail Sender	<input type="text"/>
E-mail Address 1	<input type="text"/>
E-mail Address 2	<input type="text"/>
E-mail Address 3	<input type="text"/>
E-mail Address 4	<input type="text"/>
<b>SNMP Trap Server</b>	
SNMP Server 1	<input type="text"/>
SNMP Server 2	<input type="text"/>
SNMP Server 3	<input type="text"/>
SNMP Server 4	<input type="text"/>
Community	<input type="text"/>
Location	<input type="text"/>
Contact	<input type="text"/>
<b>Syslog Server</b>	
Syslog Server IP	<input type="text"/>
Syslog Server Port	<input type="text" value="0"/>

Apply

SMTP/SNMP Configuration page

SNMP Trap Server includes up to 4 Trap Servers. You need to at least fill in one Trap Server’s IP or domain. The Community is also required information. Do not use the “;” in this column. Location and Contact is optional information.

## Event Notification

Specify the events that should be notified to the administrator. The events can be alarmed by means of SMTP mail, SNMP trap, or System log.

### Welcome to the 1 RS-232/422/485 port to 2 10/100TX Device Server

[Help](#)

- System
- Port Serial Setting
- Management
- [Access IP Control List](#)
- [SMTP/SNMP Conf](#)
- [System Event Conf](#)
- Save/Reboot

#### System Event Configuration

Device Event Notification			
Hardware Reset (Cold Start)	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Software Reset (Warm Start)	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Login Failed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
IP Address Changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Password changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Access IP Blocked	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Redundant Power Changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Redundant Ethernet Changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Port Event Notification			
DCD Changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
DSR Changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
RI Changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
CTS Changed	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Port Connected	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog
Port Disconnected	<input type="checkbox"/> SMTP Mail	<input type="checkbox"/> SNMP Trap	<input type="checkbox"/> Syslog

Apply

System Event Configuration page

**Device Event Notification:**

- Hardware Reset (Cold Start): Rebooting the device server will trigger the event
- Software Reset (Warm Start): Restarting the computer will trigger the event
- Login Failed: Using wrong password in console will trigger the event
- IP Address Changed: Changing network setting will trigger the event
- Password Changed: Changing the password will trigger the event
- Access IP Blocked: Report blocked IP addresses
- Redundant Power Change: Power change will trigger the event
- Redundant Ethernet Change: Ethernet master port change will trigger the event

**Port Event Notification:**

- DCD changed: When DCD (Data Carrier Detect) signal changes, indicating the modem connection status has changed, the event will be triggered.
- DSR changed: When DSR (Data Set Ready) signal changes, indicating that the data communication equipment is powered off, the event will be triggered.
- RI changed: When RI (Ring Indicator) signal changes, indicating the incoming of a call, the event will be triggered.
- CTS changed: When CTS (Clear To Send) signal changes, indicating that the transmission between computer and DCE can proceed.
- Port connected: In TCP Server Mode, when the device accepts an incoming TCP connection, this event will be trigger. In TCP Client Mode, when the device has connected to the remote host, this event will be trigger. In Virtual COM Mode, when Virtual COM is ready to use, this event will be trigger.
- Port disconnected: In TCP Server/Client Mode, when the device lost the TCP link, this event will be trigger. In Virtual COM Mode, When Virtual COM is not available, this event will be trigger.

Select the events and the type of SNMP mail, SNMP Trap or Syslog, click Submit to enable it.

## Save/Restart

**Factory Default:** Load default configuration except Network Settings.

**Restore Configuration:** Retrieve saved configuration file to apply in the device. Click  to choose the configuration file then click the Import command.

**Backup Configuration:** Save the current configuration into a file and save the file in current host.

**Upgrade Firmware:** Upgrade to new firmware. Click  to select the firmware then click  command.

**Reboot Device:** Click  to restart the device for making the setting effective.

**Welcome to the**  
**1 RS-232/422/485 port to 2 10/100TX Device Server**

[Help](#)

**System**

**Port Serial Setting**

**Management**

**Save/Reboot**

**Factory Default**  
Reset switch to default configuration. Click Reset button to reset all configurations to the default value.

**Restore Configuration**  
You can restore the previous saved configuration to Device Server.  
File to restore:

**Backup Configuration**  
You can save current EEPROM value from the Device Server as a backup file of configuration.

**Upgrade Firmware**  
Specify the firmware image to upgrade.  
Firmware:

**Reboot Device**  
Please click [Reboot] button to restart device

# Technical Specification

This section provides the specifications of device server.

<p><b>Protocol</b></p>	<p>ICMP, IP, TCP, UDP, DHCP, BOOTP, ARP/RARP, Telnet, RTelnet, DNS, SNMP MIB II, HTTP, SMTP, SNTP</p>
<p><b>LED Indicators</b></p>	<p><b>PWR 1 / READY:</b>                  1) Red On: Power is on and booting up. Red Blinking: Indicates an IP conflict, or DHCP or BOOTP server did not respond properly.                  2) Green On: Power is on and functioning normally. Green Blinking: Located by Administrator’s Location function.</p> <p><b>PWR 2 / READY:</b>                  1) Red On: Power is on and booting up. Red Blinking: Indicates an IP conflict, or DHCP or BOOTP server did not respond properly.                  2) Green On: Power is on and functioning normally. Green Blinking: Located by Administrator’s Location function.</p> <p><b>Eth1 Link / ACT, Eth2 Link / ACT</b>                  (1 RS-232/422/485 port to 2 10/100TX Device Server):                  Orange Blinking: 10 Mbps Ethernet                  Green Blinking: 100 Mbps Ethernet</p> <p><b>Eth Link / ACT, Eth2 Link / ACT</b>                  (1 RS-232/422/485 port to 1 10/100TX Device Server):                  Orange Blinking: 10 Mbps Ethernet                  Green Blinking: 100 Mbps Ethernet</p> <p><b>Fiber Link / ACT</b>                  (1 RS-232/422/485 port to 1 100FX Device Server):                  Green Blinking: 100 Mbps fiber connection</p> <p><b>TX / RX</b>                  (1 RS-232/422/485 port to 1 100FX Device Server):                  Serial port is receiving data (Orange)                  Serial port is transmitting data (Green).</p>

<p><b>Connector</b></p>	<p><b>100Base-T</b> (1 RS-232/422/485 port to 2 10/100TX Device Server): RJ-45 with auto MDI/MDI-X * 2</p> <p><b>100BaseFX</b> (1 RS-232/422/485 port to 1 100FX Device Server):                  SC multi mode: 0 to 2 km, 1310nm (62.5/125 μm, 500Hz*km)                  SC single mode: 0 to 30 km, 1310nm (9/125 μm, 3.5 PS/(nm*km)), 40, 60 km (optional)</p> <p><b>Serial port:</b> RS-232/422/485 (male DB-9) * 1</p>
<p><b>Serial Communication Parameters</b></p>	<p><b>Parity:</b> None, Even, Odd, Space, Mark  <b>Data bits:</b> 5, 6, 7, 8  <b>Stop bits:</b> 1, 1.5, 2  <b>Flow control:</b> RTS/CTS, XON/XOFF  <b>Speed:</b> 110 bps to 460.8Kbps</p>
<p><b>Power Supply</b></p>	<p><b>Power Input 1:</b> 12 to 48 VDC (3-pin Terminal Block)  <b>Power Input 2:</b> 12 to 48 VDC (Φ2.0 DC Jack)  <b>Power Line protection:</b>                  1 KV Burst (EFT), EN61000-4-4                  0.5 KV Surge, EN61000-4-5</p>
<p><b>Power Consumption</b></p>	<p>3.55 Watts (1 RS-232/422/485 port to 2 10/100TX Device Server)                  3.3 Watts (1 RS-232/422/485 port to 1 10/100TX Device Server)</p>
<p><b>Operating environment</b></p>	<p>-10°C – 60°C, 5% – 95% RH (Non-condensing)</p>
<p><b>Storage environment</b></p>	<p>-40°C – 85°C, 95% RH</p>
<p><b>Dimensions</b></p>	<p>72mm (W) x 100mm (D) x 32mm (H)</p>
<p><b>EMI</b></p>	<p>FCC Class A, CE Class A</p>
<p><b>Safety</b></p>	<p>UL, CUL</p>



# SNMP MIB II and RS232 Like Support

Device server has build-in SNMP agent that supports SNMP trap, RFC 1317 RS232 MIB and RFC1213 MIB-II. The following tables list SNMP variables implemented in Device server. RFC1213 MIB-II supported SNMP variables

System MIB				
sysDescr	sysObjectID	sysUpTime	sysContact	sysName
sysLocation	sysORLastChange	sysORID	sysORDescr	sysORUpTime

Interface MIB				
ifNumber	ifIndex	ifDescr	ifType	ifMtu
ifSpeed	ifPhysAddress	ifAdminStatus	ifOperStatus	ifInOctets
ifInUcastPkts	ifInDiscards	ifInErrors	ifOutOctets	ifOutUcastPkts
ifOutDiscards	ifOutErrors	ifOutQLen	ifSpecific	

Address	MIB			
atIfIndex	atPhysAddress	atNetAddress		

IP MIB				
ipForwarding	ipDefaultTTL	ipInReceives	ipInHdrErrors	ipInAddrErrors
ipForwDatagrams	ipInUnknownProtos	ipInDiscards	ipInDelivers	ipOutRequests
ipOutDiscards	ipOutNoRoutes	ipReasmTimeout.	ipReasmReqds	ipReasmOKs
ipReasmFails	ipFragOKs	ipFragFails	ipFragCreates	ipAdEntAddr
ipAdEntIfIndex	ipAdEntNetMask	ipAdEntBcastAddr	ipRouteDest	ipRouteIfIndex
ipRouteMetric1	ipRouteNextHop	ipRouteType	ipRouteProto	ipRouteMask
ipRouteInfo	ipNetToMediaIfIndex	ipNetToMediaPhysAddress	ipNetToMediaNetAddress	ipNetToMediaType
ipRoutingDiscards				

ICMP MIB				
icmpInMsgs	icmpInErrors	icmpInDestUnreachs	icmpInTimeExcds	icmpInParmProbs
icmpInSrcQuenchs	icmpInRedirects	icmpInEchos	icmpInEchoReps	icmpInTimestamps
icmpInTimestampReps	icmpInAddrMasks	icmpInAddrMaskReps	icmpOutMsgs	icmpOutErrors
icmpOutDestUnreachs	icmpOutTimeExcds	icmpOutParmProbs	icmpOutSrcQuenchs	icmpOutRedirects
icmpOutEchos	icmpOutEchoReps	icmpOutTimestamps	icmpOutTimestampReps	icmpOutAddrMasks
icmpOutAddrMaskReps				

TCP MIB				
tcpRtoAlgorithm	tcpRtoMin	tcpRtoMax	tcpMaxConn	tcpActiveOpens
tcpPassiveOpens	tcpAttemptFails	tcpEstabResets	tcpCurrEstab	tcpInSegs
tcpOutSegs	tcpRetransSegs	tcpConnState	tcpConnLocalAddress	tcpConnLocalPort
tcpConnRemAddress	tcpConnRemPort	tcpInErrs	tcpOutRsts	

UDP MIB				
udpInDatagrams	udpNoPorts	udpInErrors	udpOutDatagrams	udpLocalAddress
udpLocalPort				

SNMP MIB				
snmpInPkts	snmpOutPkts	snmpInBadVersions	snmpInBadCommunityNames	snmpInBadCommunityUses
snmpInASNParseErrs	snmpInTooBigs	snmpInNoSuchNames	snmpInBadValues	snmpInReadOnlys
snmpInGenErrs	snmpInTotalReqVars	snmpInTotalSetVars	snmpInGetRequests	snmpInGetNexts
snmpInSetRequests	snmpInGetResponses	snmpInTraps	snmpOutTooBigs	snmpOutNoSuchNames
snmpOutBadValues	snmpOutGenErrs	snmpOutGetRequests	snmpOutGetNexts	snmpOutSetRequests
snmpOutGetResponses	snmpOutTraps	snmpEnableAuthenTraps	snmpSilentDrops	snmpProxyDrops

RFC1317 RS232 supported SNMP variables

RS232 MIB				
rs232Number	rs232PortIndex	rs232PortType	rs232PortInSigNumber	rs232PortOutSigNumber
rs232PortInSpeed	rs232PortOutSpeed	rs232PortInFlowType	rs232PortOutFlowType	
rs232AsyncPortIndex	rs232AsyncPortBits	rs232AsyncPortStopBits	rs232AsyncPortParity	rs232AsyncPortAutobaud
rs232AsyncPortParityErrs	rs232AsyncPortFramingErrs	rs232AsyncPortOverrunErrs		
rs232InSigPortIndex	rs232InSigName	rs232InSigState	rs232InSigChanges	
rs232OutSigPortIndex	rs232OutSigName	rs232OutSigState	rs232OutSigChanges	

# RS232 Pin Assignment

Pin No.	Name	Notes/Description
1	DCD	Data Carrier Detect
2	RD	Receive Data (RxD, Rx)
3	TD	Transmit Data (TxD, Tx)
4	DTR	Data Terminal Ready
5	SGND	Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	RI	Ring Indicator

RS232 DB9 Male



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