Industrial Device Server User Guide

SDSTX3110-121-LRT

Version 1.11

May 2015

33607 Rev. A

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1. Introduction

1.1 Product Description

The SDSTX3110-121-LRT is an innovative 1-port RS232/422/485 to 2 ports LAN redundant device server. To assure the agility and security of critical data, SDSTX3110-121-LRT offers many powerful features for HW & SW redundancy. When the connection between the master-link and LAN fails, the SDSTX3110-121-LRT can automatically switch to another LAN port within 10mS, to guarantee a non-stop connection.

SDSTX3110-121-LRT also supports switch mode, allowing you to Daisy Chain multiple SDSTX3110-121-LRT together using the two Ethernet switch ports. Secondly, the SDSTX3110-121-LRT can simultaneously transfer data to 5 servers. This feature can assure all critical data is saved on different servers to avoid loss of data in the event of a network segment or server failure.

Thirdly, the SDSTX3110-121-LRT provides dual redundant power inputs on the DC power jack and terminal block. The SDSTX3110-121-LRT also provides a NAT pass through function so that you are able to manage the SDSTX3110-121-LRT inside or outside the NAT router. It is easy for different IP domains to use SDSTX3110-121-LRT. You can configure and manage the device by using the SDS-Manager application.

1.2 Software Features

- Redundant Dual Ethernet Ports: Recovery time < 10mS
- Switch Mode Supported: Daisy Chain support to reduce usage of switch ports
- Secured Management by HTTPS and SSH
- Event Warning by Syslog, Email, SNMP Trap, and Beeper
- NAT-pass through: Manage through a NAT router
- Multiple servers: 5 simultaneous servers in Virtual COM, TCP Server, TCP Client mode, UDP
- Versatile Modes: Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
- Event Warning via Syslog, Email, SNMP trap, and Beeper
- OS support: Windows NT/2000/ XP/ 2003/VISTA/Windows 7 (32/64 bit)

1.3 Hardware Features

- Redundant Power Inputs: 12~48 VDC on terminal block and power jack
- Operating Temperature: -40 ^{o}C to +70^{o}C
- Storage Temperature: -40^{o}C to +85^{o}C
- Operating Humidity: 5% to 95%, non-condensing
- Casing: IP-30
- 2 10/100Base-T(X) Ethernet port
- Dimensions (W x D x H) : 72mm (W) x 29.4mm (D) x 123.4mm (H)

2. Hardware Installation

2.1 Install SDSTX3110-121-LRT on DIN-Rail

Each SDSTX3110-121-LRT has a Din-Rail clip on rear panel. The Din-Rail clip can be used to mount the SDSTX3110-121-LRT on a 35mm Din-Rail.

2.1.1 Mounting the SDSTX3110-121-LRT on a DIN-Rail

Step 1: Slant the SDSTX3110-121-LRT and position the metal spring behind the top edge of the Din-Rail.

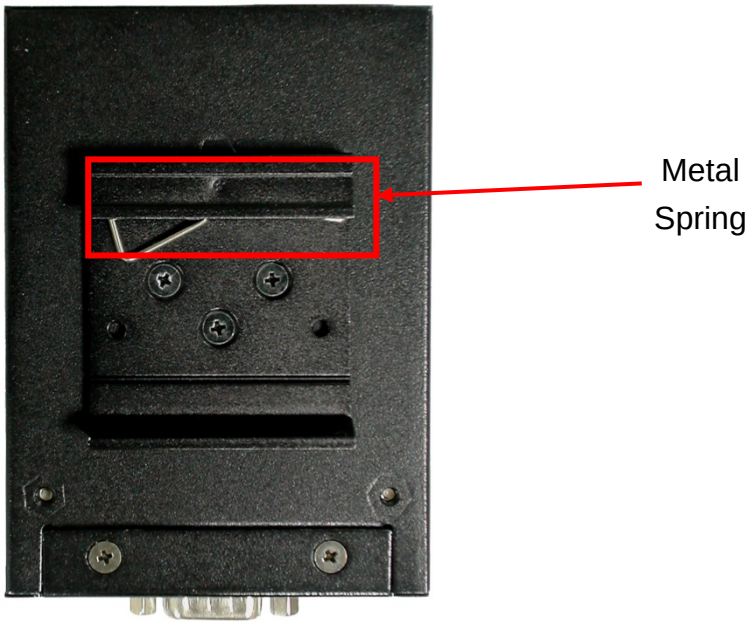


Figure 2-1

Step 2: Push the SDSTX3110-121-LRT down on the Din-Rail until the bottom of the clip grips the bottom edge of the DIN Rail. You may hear a “click” sound when this happens.

Figure 2-2

2.2 Wall Mounting Installation

Each SDSTX3110-121-LRT has also contains a wall mount bracket that can be found in the package. The following steps show how to mount the SDSTX3110-121-LRT on a panel or wall:

2.2.1 Mount the SDSTX-3110-121-LRT on Wall

Step 1: Remove the Din-Rail clip by removing the 3 screws.

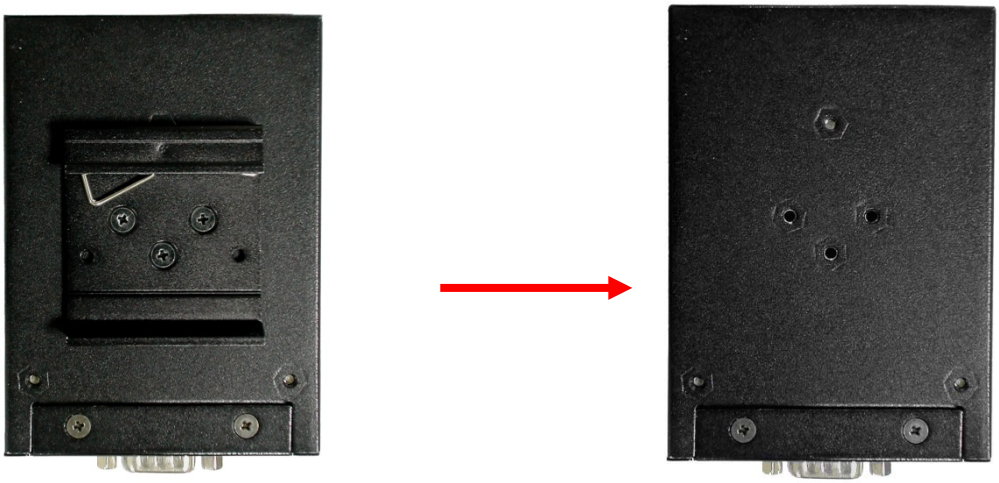


Figure 2-3

Step 2: Use the screws that can be found in the package to install the wall mount bracket.

Figure 2-4

The screw specifications are shown below. In order to prevent damage to the SDSTX3110-121-LRT, the size of screws should not be larger or longer than the size used for the DIN Rail clip.

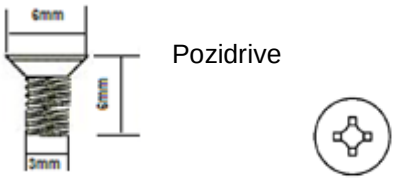


Figure 2-5

Step 3: Mount the SDSTX3110-121-LRT on a panel or wall using the holes in the wall mount bracket.

Figure 2-6

3. Hardware Overview

3.1 Front Panel

Figure 3-1 Front Panel

1. LED for PWR1 and system status. When the PWR1 links, the green LED will be light on.
2. LED for PWR2 and system status. When the PWR2 links, the green LED will be light on.
3. LED of 10/100Base-T(X) Ethernet port 1.
4. LED of 10/100Base-T(X) Ethernet port 2.
5. LED of serial port. Green for transmitting, red for receiving

3.2 Front Panel LEDS

The following table describes the SDSTX3110-121-LRT front panel LEDs.

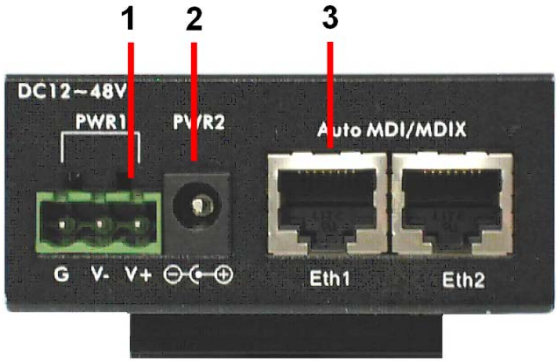
LED	Color	Status	Description
PWR1	Green/Red	On	DC power 1 activated.
		Red blinking	Indicates an IP conflict, or DHCP or BOOTP server did not respond properly.
PWR2	Green/Red	On	DC power 2 activated.
		Red blinking	Indicates an IP conflict, or DHCP or BOOTP server did not respond properly
ETH1	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
		Amber On/Blinking	10Mbps LNK/ACT
ETH2	Green/Amber	Green On/Blinking	100Mbps LNK/ACT
		Amber On/Blinking	10Mbps LNK/ACT
Serial	Green	Blinking	Serial port is transmitting data
	Red	Blinking	Serial port is receiving data

Table 3-1 Front panel LEDs

3.3 Top Panel

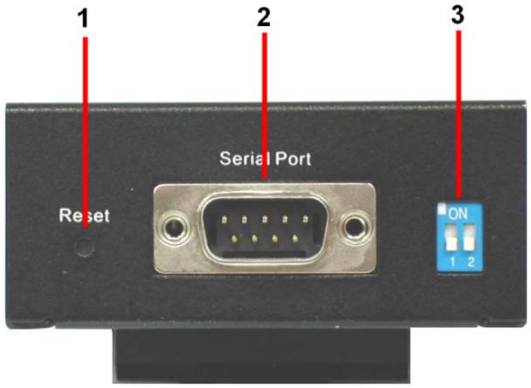
The Top panel components of SDSTX3110-121-LRT are shown below:

1. Terminal block include: PWR1 (12 ~ 48V DC)
2. Power Jack include: PWR2 (12 ~ 48V DC)
3. RJ45 Ethernet Connector: 2 10/100Base-T(X) Ethernet interface.



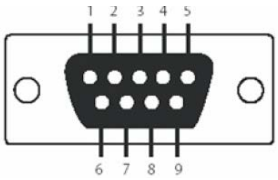
3.4 Bottom Panel

The bottom panel components of SDSTX3110-121-LRT are shown below:



1. Reset button. Press and hold for 5 seconds to restore factory defaults.
2. Male DB9 connector: Serial interface of RS-232/422/485 (2 wire)(4 wire).

DB9 Connector



Pin #	RS 232	RS 422	RS 485 (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 mod act as DTE				

Table 3-2 Pin assignment

3. DIP Switch: Termination for RS-422/485 

DIP 1	DIP 2	Termination Configuration
ON	ON	Termination for long distance 4-wire RS485/422
ON	OFF	Reserved
OFF	ON	Termination for long distance 2-wire RS485
OFF	OFF	No termination for RS485/ 422 (short distance)

Table 3-2 DIP Switch

3.5 Rear Panel

The rear panel components of SDSTX3110-121-LRT are shown below:

1. Screw holes for wall mount bracket and DIN-Rail clip
2. Din-Rail clip
3. Wall Mount bracket

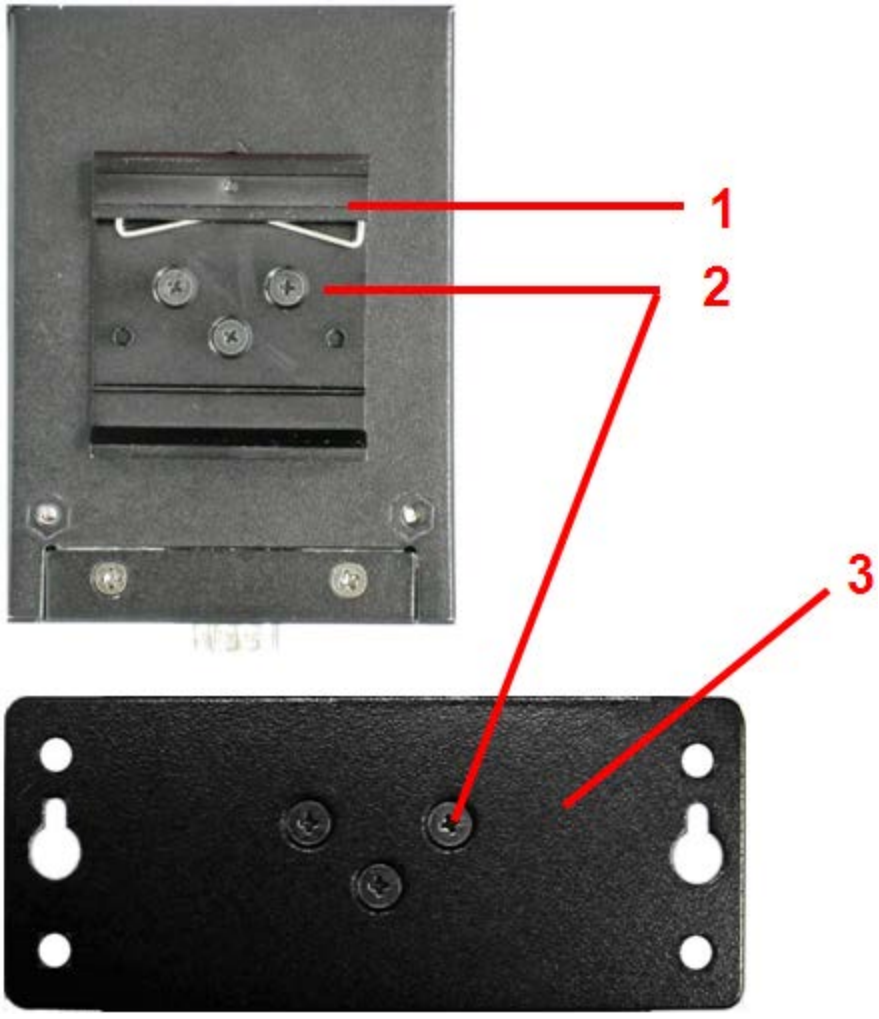


Figure 3-4 Rear Panel

4. Cables

4.1 Ethernet Cables

The SDSTX3110-121-LRT has standard Fast Ethernet ports. According to the link type, the SDSTX3110-121-LRT uses CAT 3, 4, 5,5e UTP cables to connect to other network equipment (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45

Table 4-1 Cable Types and Specifications

100BASE-TX/10BASE-T Pin Assignements

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data.

Pin Number	Assignment
1	TD+
2	TD-
3	RD+
4	Not used
5	Not used
6	RD-
7	Not used
8	Not used

Table 4-2 RJ-45 Pin Assignments

The SDSTX3110-121-LRT supports auto MDI/MDI-X operation. Straight- through or cross-over cables can be used to connect the SDSTX3110-121-LRT to other equipment. The following table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	Not used
5	Not used	Not used
6	RD-(receive)	TD-(transmit)
7	Not used	Not used
8	Not used	Not used

Table 4-2 MDI / MDI-X pins assignment

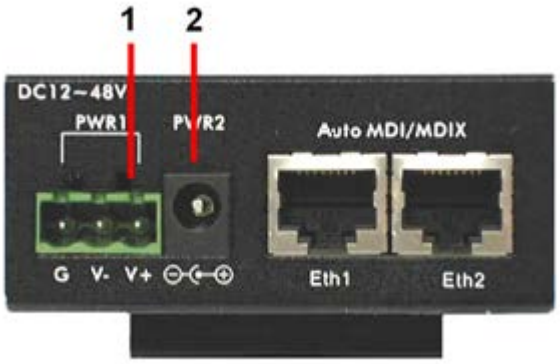
***Note:** "**+**" and "**-**" signs represent the polarity of the wires that make up each wire pair.*

5. Power Sources

5.1 Power Source Options

The SDSTX3110-121-LRT provides 2 different methods of supplying input power.

1. Terminal block include: PWR1 (12 ~ 48V DC)
2. Power Jack include: PWR2 (12 ~ 48V DC)
3. RJ45 Ethernet Connector: 2 10/100Base-T(X) Ethernet interface.



Power Supply Options

Depending on the use and location for the serial device server, two different power supply options are recommended.

25135 DIN Rail Mounted Power Supply

The DIN rail power supply is best suited for usage in non-climate controlled environments. In these environments equipment is normally installed inside equipment cabinets with DIN rails for mounting.

Basic Specs:

Input Voltage: 85~264VAC or
120~370VDC
Output Voltage: 24VDC
Rated Power: 10 Watts
Operating Temperature: -40ºC to +70ºC
Screw terminal power connections

SPS-UA12DHT Shelf Mounted Power Supply

The shelf mounted power supply is best suited to areas where the device server may be mounted to a wall and use a standard A/C outlet for powering the device.

Basic Specs:

Input Voltage: 90~264VAC

Output Voltage: 12VDC

Rated Power: 18 Watts

Operating Temperature: 0ºC to +70ºC

Standard A/C plug and barrel connector

6. Management Interface

5.1 SDS-Manager

SDS-Manager is a powerful Windows utility for the SDS series. It supports device discovery, device configuration, group setup, group firmware update, monitoring functions, etc. SDS-Manager makes it easy for you to install and configure devices over the network.

5.1.1 Install SDS-Manager

Installing SDS Manager requires approximately 8785 K of PC memory.

The default Destination Directory is *C:\Program Files\SDS-Manager*.

Step 1: Execute the Setup program; double click on the SDS-Manager_20150203.exe file.

Step 2: Click "**start**" after selecting the folder for the SDS-Manager.

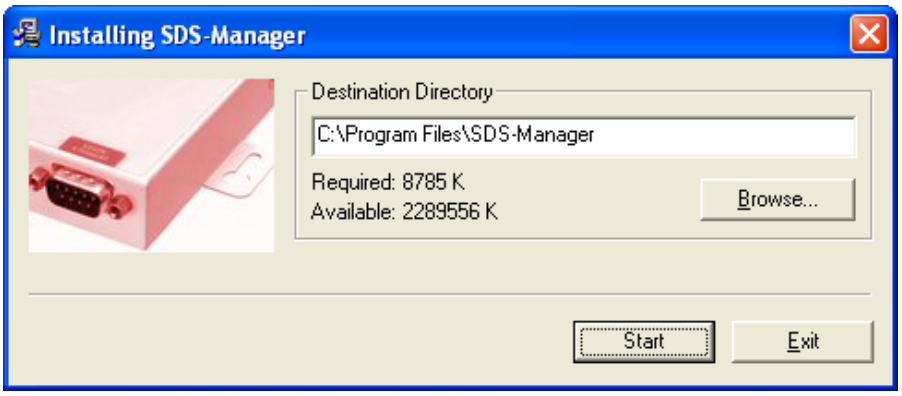
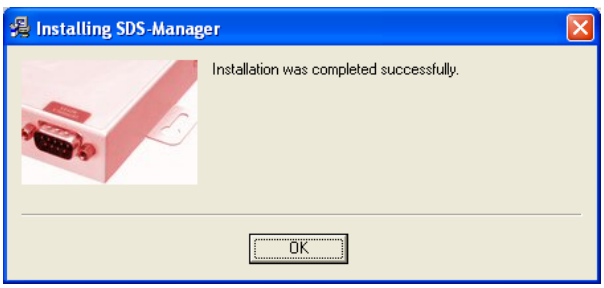
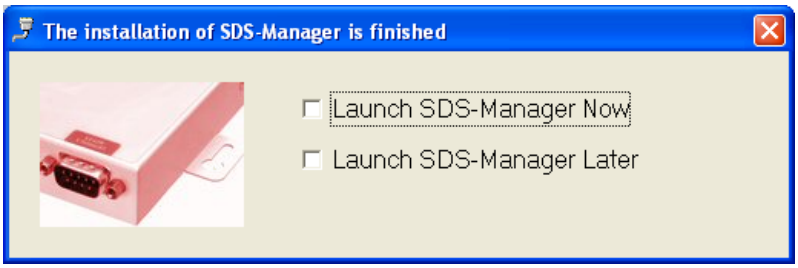


Figure 5-1

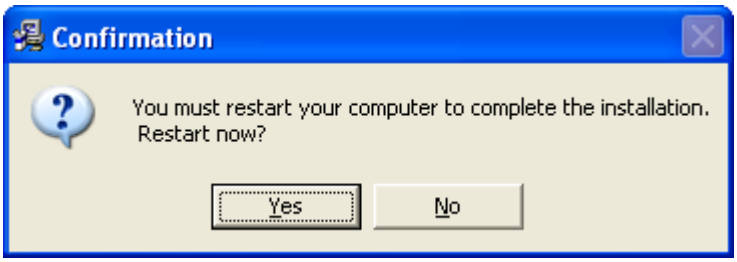
Step 3: When installation completes successfully, then click "OK".



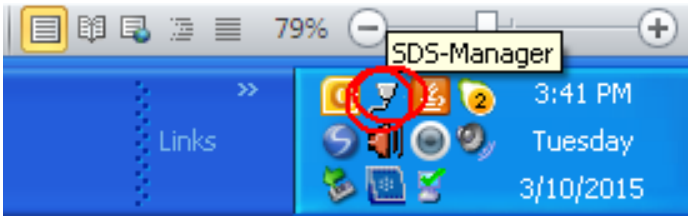
Step 4: Check to launch the SDS-Manager either Now or Later.



Step 5: At the Confirmation dialog, click the **Yes** button to restart your computer immediately, or click **No** to restart your computer later.



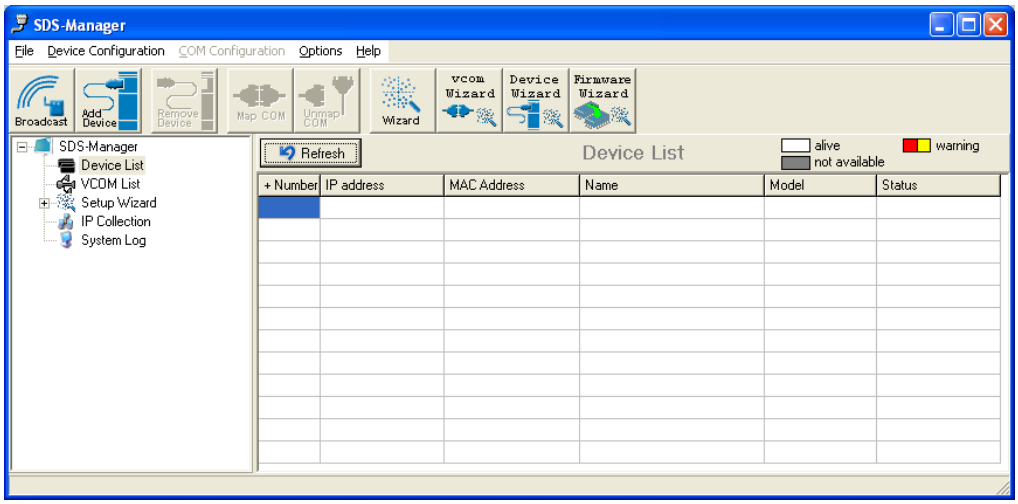
Step 6: Double-click the he SDS-Manager icon in the icon tray to display the startup screen.



5.1.2 Using SDS-Manager

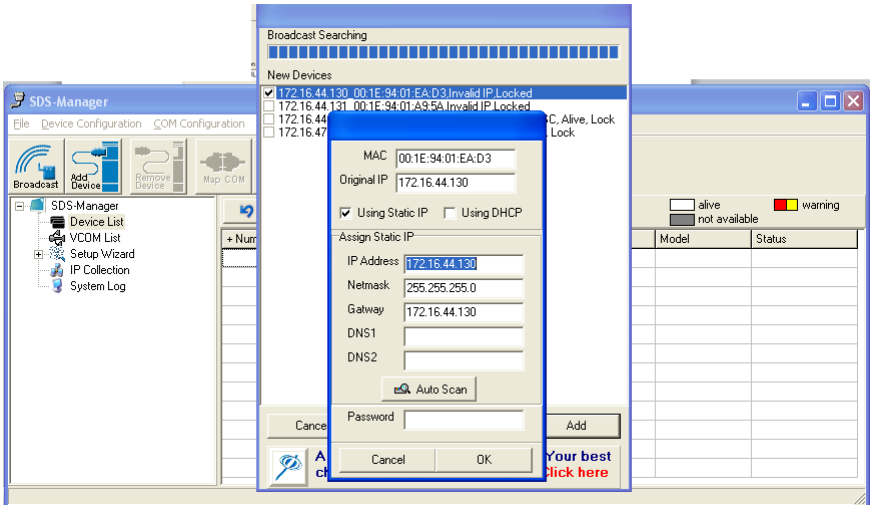
5.1.2.1 Explore Device Servers

The SDS-Manager startup screen is shown below.

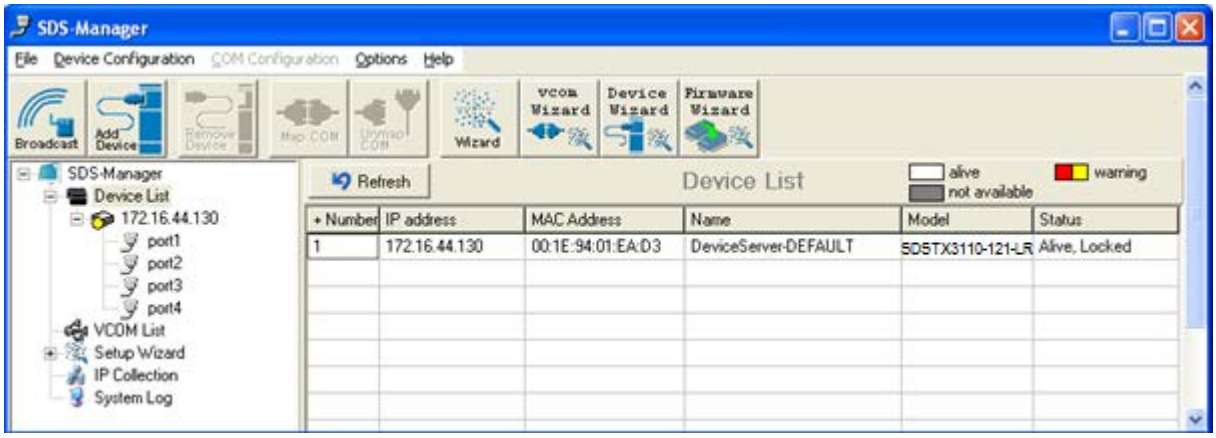


Broadcast button: If you click the **Broadcast** button, the SDS-Manager will broadcast to the network and search for all available DS devices in the network. The default IP address of a serial device server is "**192.168.1.77**".

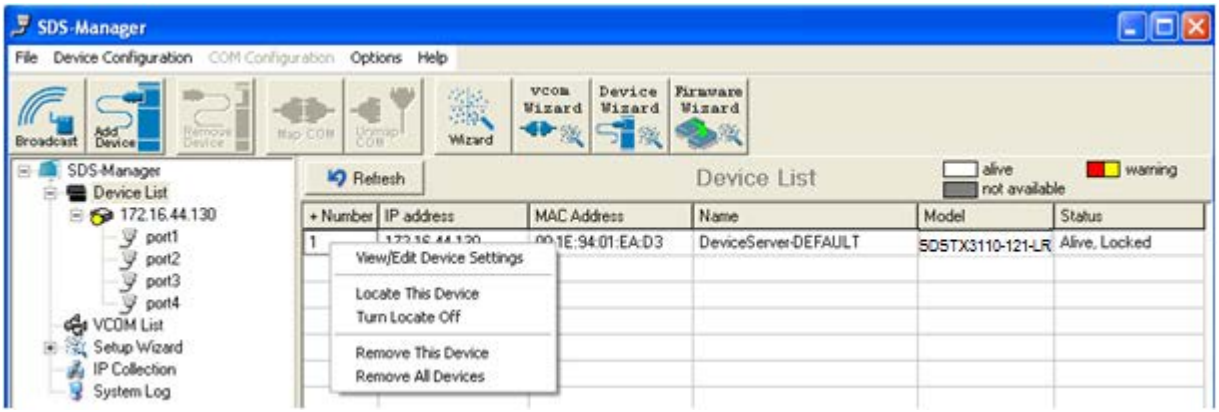
Add Device button: select the device you wish to use and click the "**Add Device**" button. You can set a Static IP address or use DHCP client mode to get an IP address automatically. When done, click the "**OK** "button to add the device.



The added device displays in the Device List:



On the Device List, right click a device to display its options.



The options displayed are:

View/Edit Device Settings: displays the Configure Device Servers page and its tabs.

Locate This Device: attempts to determine the device location.

Turn Locate Off: turns off the attempt to locate the device.

Remove This Device: deletes the selected device from the Device List.

Remove All Devices: deletes all configured devices from the Device List.

5.1.2.2 Configure Device Servers

General tab

This page lets you set the device name, SNTP server and Auto IP Report.

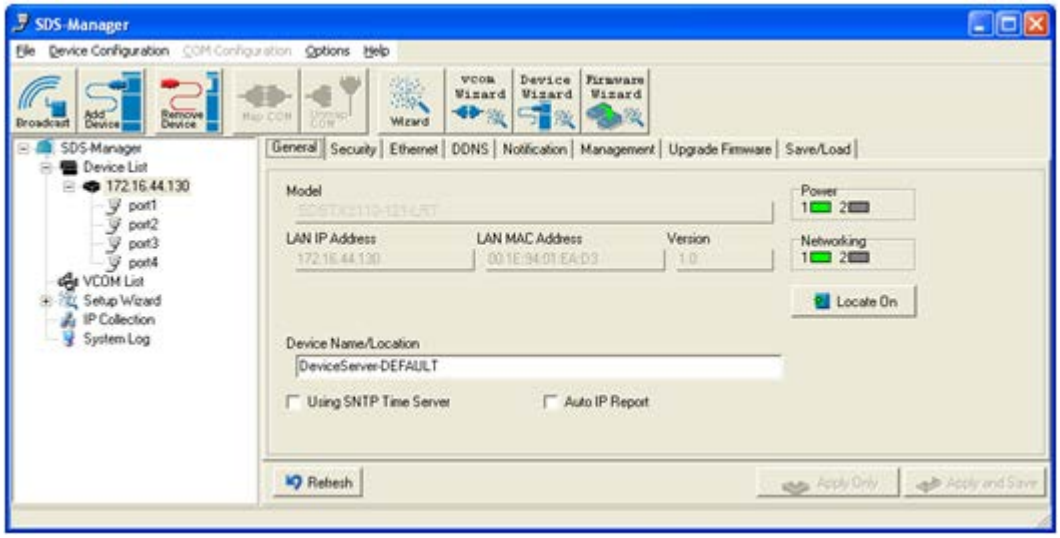


Figure 5-5 General settings tab

The following table describes the labels in this screen.

Label	Description
Device Name/Location	You can set the device name or related information. Click the “Locate On” button to locate the serial server’s position.
SNTP Time Server	Input the SNTP server domain name or IP address, port and select the Time zone.

Table 5-1 General settings

The IP collection option shows the device server status. The default report interval is 0, indicating disabled, but you can configure other IP or Port information.

Security tab

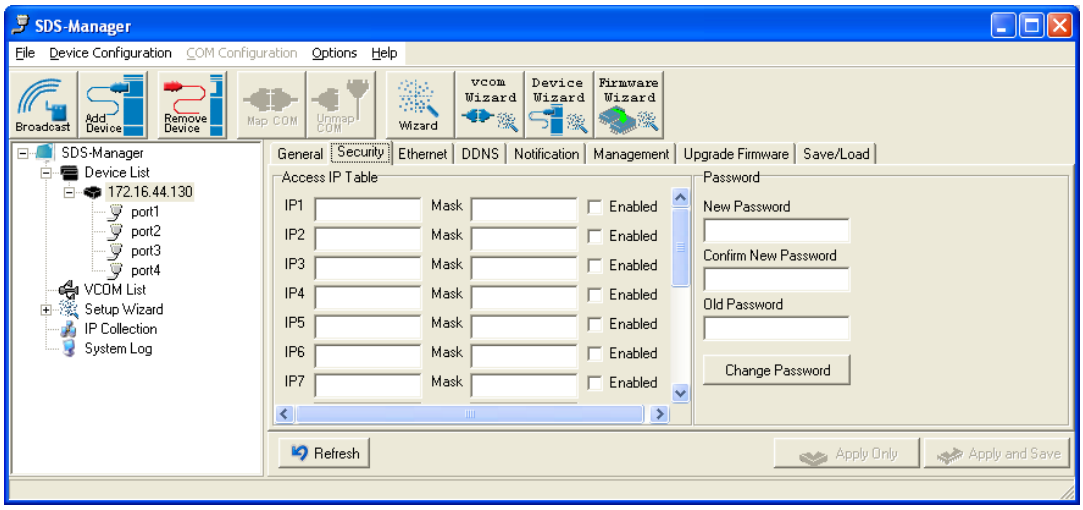


Figure 5-6 Security tab

The following table describes the labels in this screen.

Table 5-2 Security tab

Label	Description
Accessible IP Table	To prevent unauthorized access by setting host IP addresses and network masks.
Password settings	You can set the password to prevent unauthorized access from your server. The factory default password is: **root**.

*Note: The username for the device server login can be changed when using the WEB interface. The username cannot be changed within SDS-Manager. The default username is **root**.*

Ethernet tab - PPPoE

The **PPoE** tab is shown below.

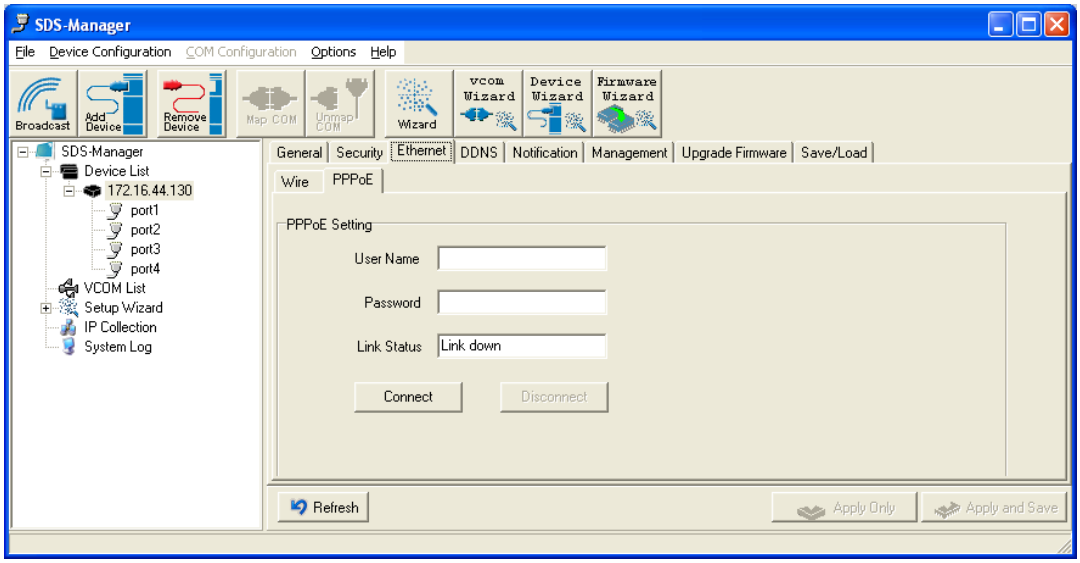


Figure 5-7 Ethernet tab - PPPoE

Label	Description
User Name	Entry field for the user's name.
Password	Entry field for the user's password.
Link Status	Displays the current link status (e.g., Link up or Link down).
Connect button	Click to make the connection when complete.

Ethernet tab - Wire

The **Wire** tab is shown below.

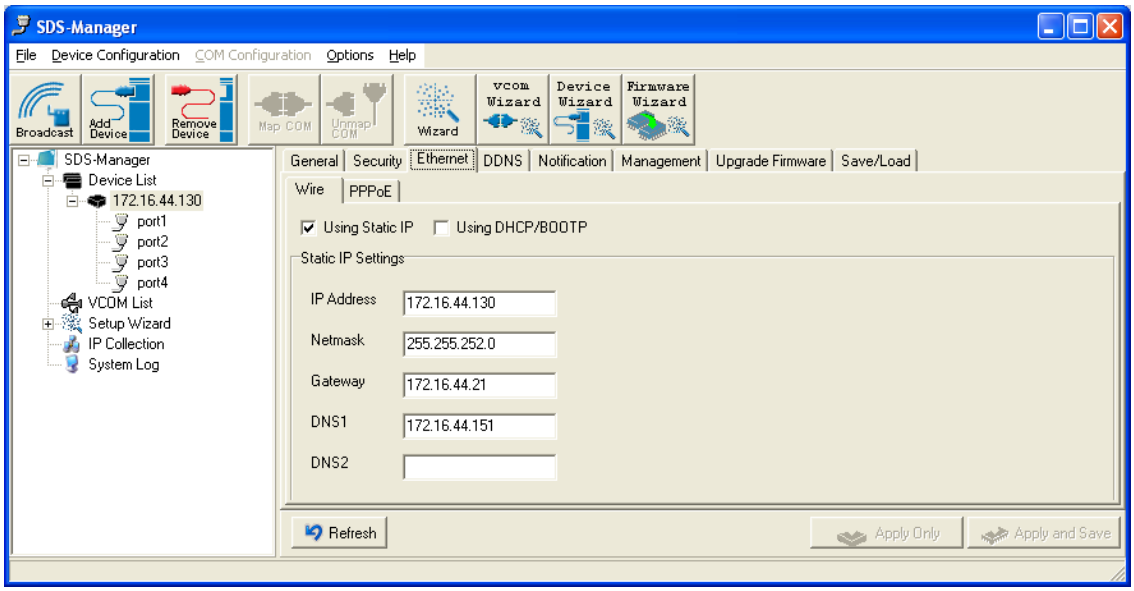


Figure 5-7 Ethernet tab - Wire

Label	Description
Using Static IP	Allows manually assigning an IP address.
Using DHCP/BOOTP	IP Address automatically assigned by a DHCP server in your network.
IP Address	The device's IP address.
Netmask	All devices on the network must have the same subnet mask to communicate on the network.
Gateway	Enter the IP address of the router in your network.
DNS 1 / DNS 2	Enter the IP address of the primary and secondary DNS servers; DNS servers translate domain names into IP addresses.
Ethernet Mode	**Redundant Mode:** When the connection between master-link and LAN fails, the device server can automatically switch to another LAN port within 10mS, and still guarantees a non-stop connection. This is used to connect to multiple servers. **Switch Mode**: Treats the 2 Ethernet ports like a 2 port Ethernet switch.

DDNS tab

Here you can enable or disable DDNS globally and configure DDNS settings.

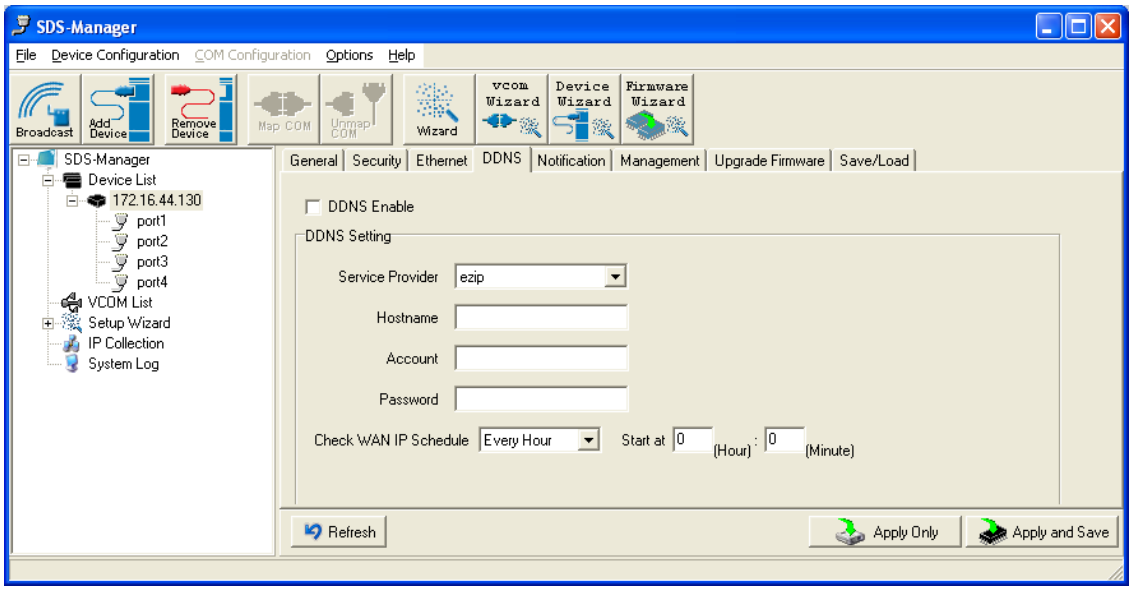


Figure 5-8 DDNS tab

Label	Description
DDNS Enable	Enable or Disable DDNS (Dynamic DNS) on a global basis (at the system level). The default is Disabled.
Service Provider	At the dropdown select ezip, pgpow, dhs, constanttime, dyndns, dyndns-static, dyndns-custom, ods, tzo, easydns, easydns-partner, gnudip, justlinux, dyns, hn, zoneedit, heipv6tb, or 3322.
Hostname	Set the device name or related information.
Account	The serial server's position.
Password	You can set the password to prevent unauthorized access from your server. The factory default is no password.
Check WAN IP Schedule	At the dropdown select every hour, day, week or month and select the start time in hours and minutes.

Notification tab - SNMP Trap

Here you can specify the events that should be sent to the administrator by SNMP traps, Email Notifications, Syslog Notifications, and/or Fault LED/Relay.

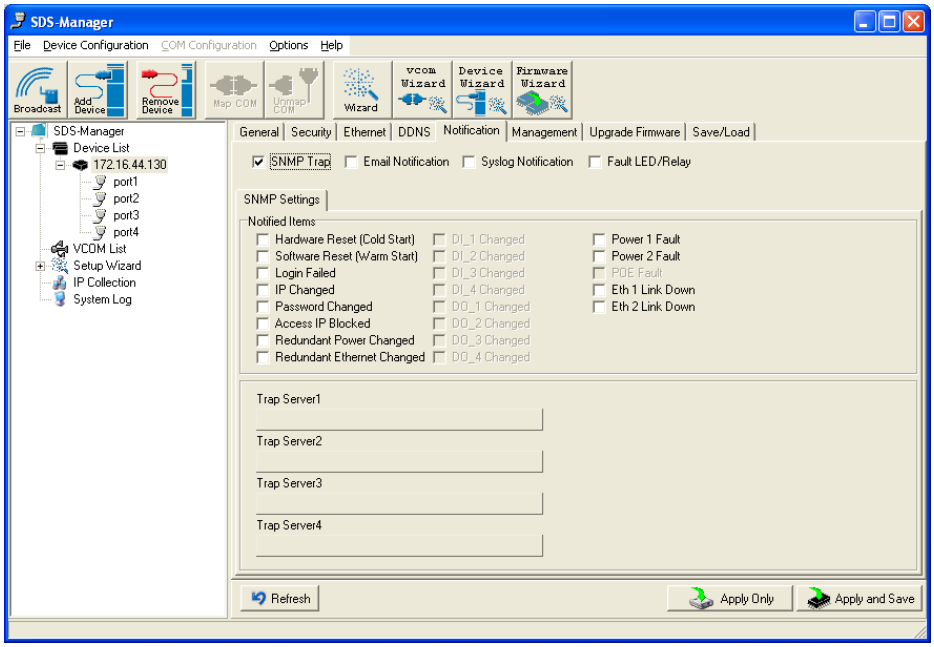


Figure 5-8 Notification tab - SNMP Trap

The following table describes the labels in this screen.

Label	Description
SNMP Trap	To notify events by SNMP trap.
Email Notification	To notify events by Email.
Syslog Notification	To notify events by Syslog.
Notifed Items	Events to be notified.
Trap Server 1-4	The IP address for up to four SNMP Trap Servers.
Apply Only	Apply current setting.
Apply and Save	Apply and save current setting into device memory.

Notification tab - Email Notification

Here you can specify the events that should be sent to the administrator by E-mail.

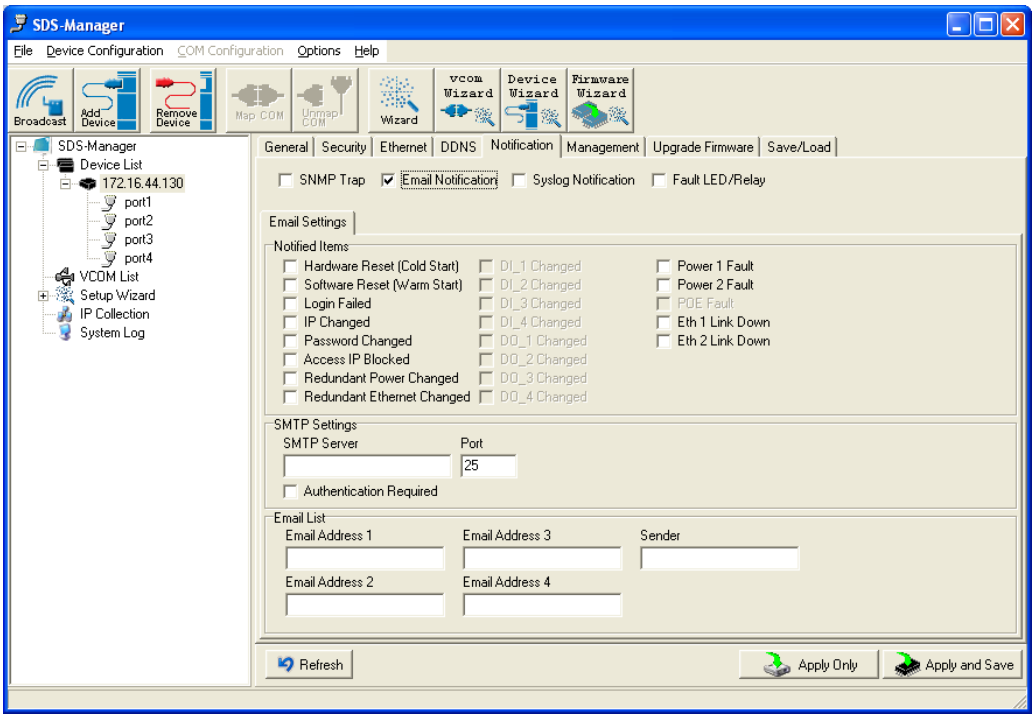


Figure 5-9 Notification tab - Email Notification

The following table describes the labels in this screen.

Label	Description
Email Notification	To notify events by Email.
Notifed Items	Events to be notified. The default is all disabled (unchecked).
SMTP Server	The IP address of the SMTP Server.
Port	The SMTP Server's port number (port 25 by default).
Authentication Required	Checkbox to enable or disable authentication.
Email Address 1-4	The Email address where notifications are to be sent.
Sender	The Email sender's name.

Notification tab - Syslog Notification

Here you can specify the events that should be notified to the administrator by System log.

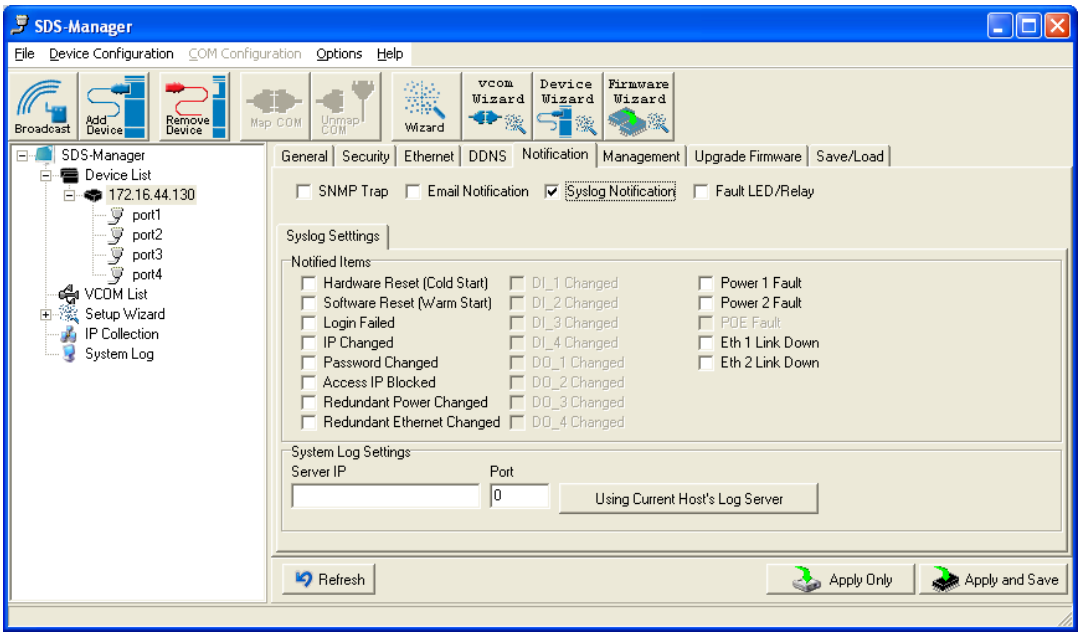


Figure 5-9 Notification tab - Syslog Notification

The following table describes the labels in this screen.

Label	Description
Syslog Notification	To notify events by system log.
Notifed Items	Events to be notified.
Server IP	The Syslog server's IP address.
Port	The Syslog server's port number (0 by default).
Using Current Host's Log Server	Click the button to use the local host's Syslog server.

Notification tab - Fault LED/Relay

Here you can specify the events that should be notified to the administrator by Fault LED/Relay.

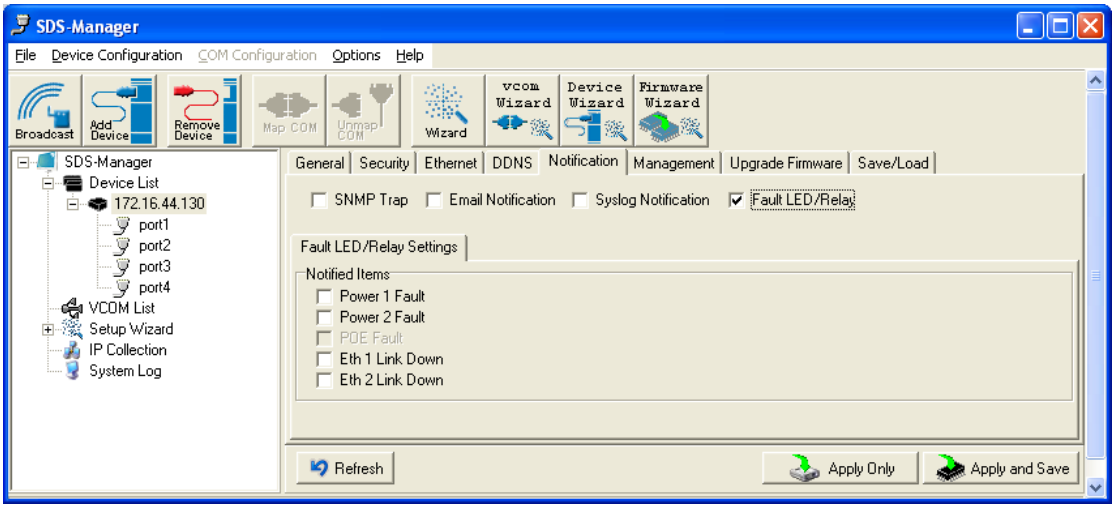


Figure 5-10 Notification tab - Fault LED/Relay

The following table describes the labels in this screen.

Label	Description
Fault LED/Relay	To notify events by fault LEDs/Relay.
Notifed Items	Events to be notified.
Power 1 Fault	Notification if a Power 1 fault occurs.
Power 2 Fault	Notification if a Power 2 fault occurs.
Eth Link 1 Down	Notification if Ethernet Link 1 is down.
Eth Link 2 Down	Notification if Ethernet Link 2 is down.

Management tab

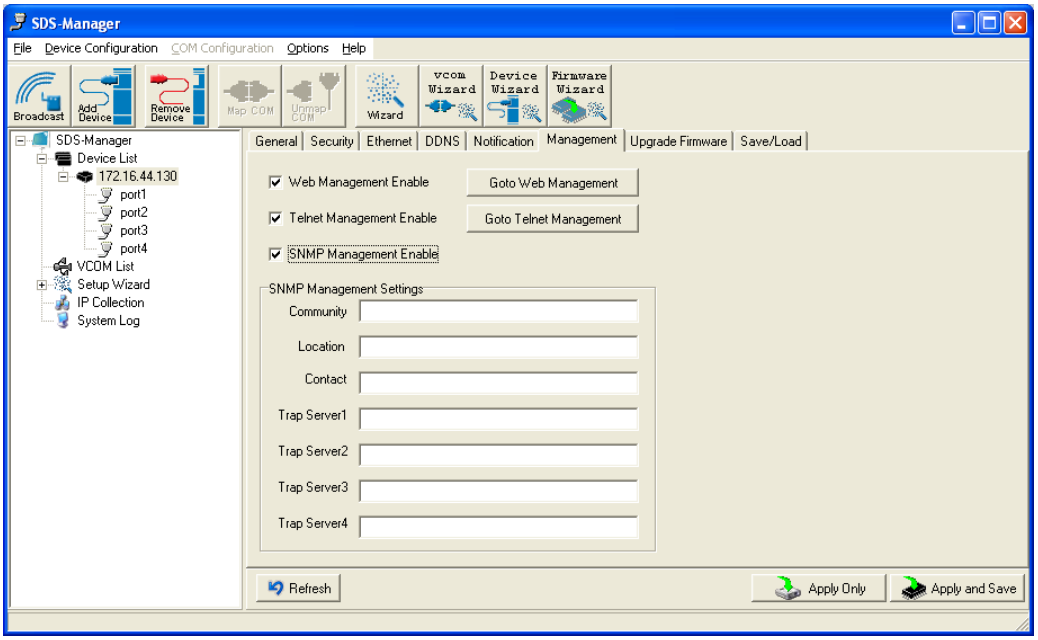


Figure 5-9 Management tab

The following table describes the labels in this screen.

Label	Description
Web Management Enable	To enable management through the web server. Click the "**Goto Web Management**" button to access the web.
Telnet Management Enable	To enable management by Telnet. Click "**Goto Telnet Management**" button to execute Telnet command.
SNMP Management Enable	To enable management by SNMP.
SNMP Management Settings	To configure SNMP related settings (SNMP Community, Location, Contact, and Trap Servers 1-4 IP addresses).

Table 5-4 Management tab settings

Upgrade Firmware tab

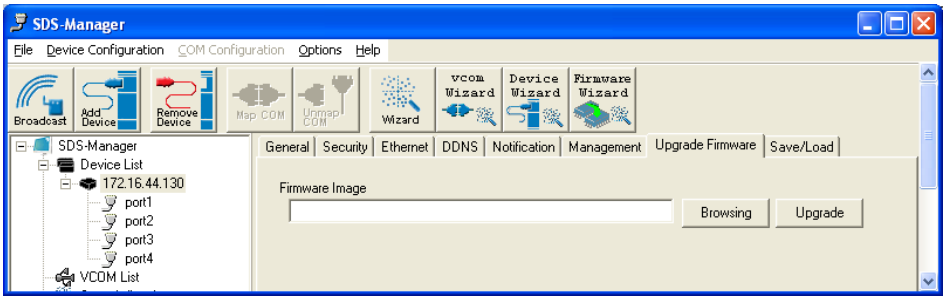


Figure 5-10 Upgrade Firmware tab

The following table describes the labels in this screen.

Label	Description
Firmware Image	The filename of the FW image (*.dat* file).
Browsing	Browse the file and upgrade.
Upgrade	Enable the firmware upgrade.

Table 5-5 Upgrade Firmware tab settings

Save/Load tab

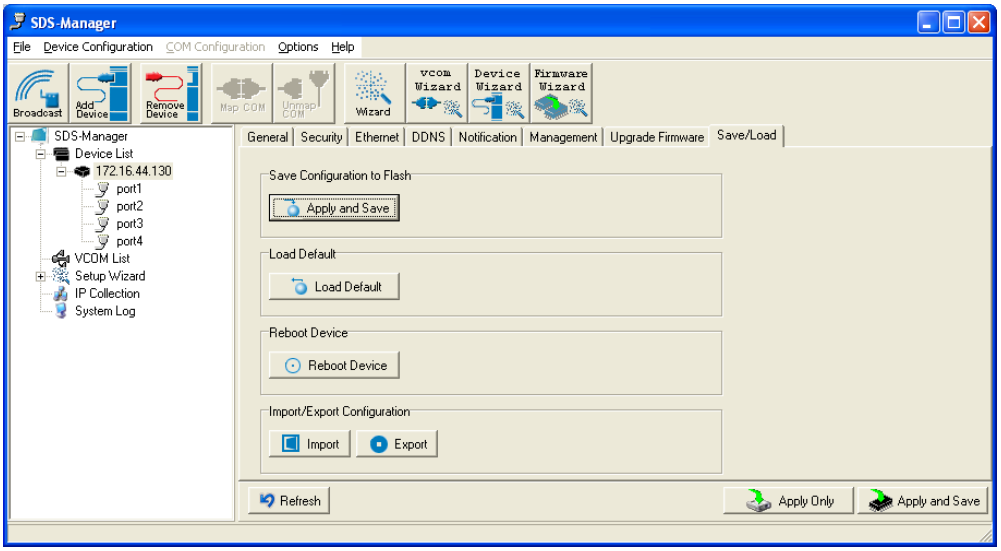


Figure 5-11 Save / Load tab

The following table describes the labels in this screen.

Label	Description
Save Configuration to Flash	Click to apply the selected configuration file and save current configuration into flash memory.
Load Default	Load default configuration except the network settings. If you want to load all factory defaults, press the "**Reset**" button on the device (Hardware restore).
Reboot Device	Reboot the device server (warm start).
Import Configuration	Restore the previous exported configuration.
Export Configuration	Export the current configuration to a file to backup the configuration.

Table 5-6 Save / Load tab settings

5.1.2.3 Configure Serial Port

Serial Settings

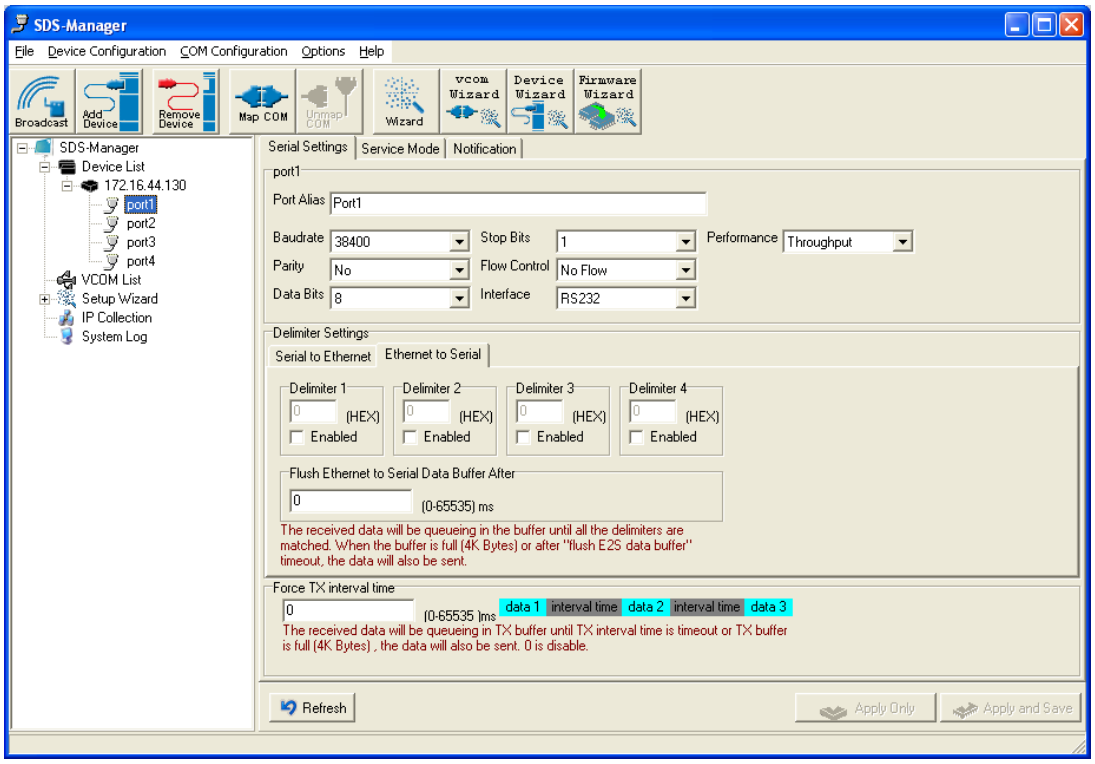


Figure 5-12 Serial Settings tab

The following table describes the labels in this screen.

Label	Description
Port Alias	Label the port to describe the connected device.
Baud rate	110bps/300bps/1200bps/2400bps/4800bps/9600bps/19200bps/ 38400bps/57600bps/115200bps/230400bps/460800bps
Stop Bits	Select 1, 2, or (1.5) stop bits.
Data Bits	Select 5, 6, 7, or 8 data bits.
Parity	Select No, Even, Odd, Mark, or Space parity.
Flow Control	Select No, XON/XOFF, RTS/CTS, or DTR/DSR Flow Control.
Interface	RS232 / RS422 / RS485(2-wires) / RS485(4-wires)
Performance	**Throughput**: This mode optimizes for highest transmission speed.

	Latency: This mode optimizes for shortest response time.
Serial to Ethernet	**Delimiter:** You can define a maximum of 4 delimiters (00~FF, Hex) for each communication direction. The data will be held until the delimiters are received or the option "**Flush Serial to Ethernet data buffer**" times out. 0 will disable this feature (factory default). **Flush Data Buffer After:** The received data will queue in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after "**flush S2E data buffer**" timeout the data will also be sent. You can set the time from 0 to 65535 seconds.
Ethernet to Serial	**Delimiter:** You can define a maximum of 4 delimiters (00~FF, Hex) for each communication direction. The data will be held until the delimiters are received or the option "**Flush Ethernet to Serial data buffer**" times out. 0 will disable this feature (factory default). **Flush Data Buffer After:** The received data will queue in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after "**flushE2S data buffer**" timeout the data will also be sent. You can set the time from 0 to 65535 seconds.
Force TX Interval Time	Force TX interval time specifies 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. 0 disables this function. Factory default value is 0.

Table 5-7 Serial settings

Service Mode – Virtual COM Mode

In Virtual COM Mode, the driver establishes a transparent connection between host and serial device by mapping the serial device server serial port to a local COM port on the host computer. Virtual COM Mode supports up to 5 simultaneous connections, so that multiple hosts can send or receive data via the same serial device at the same time.

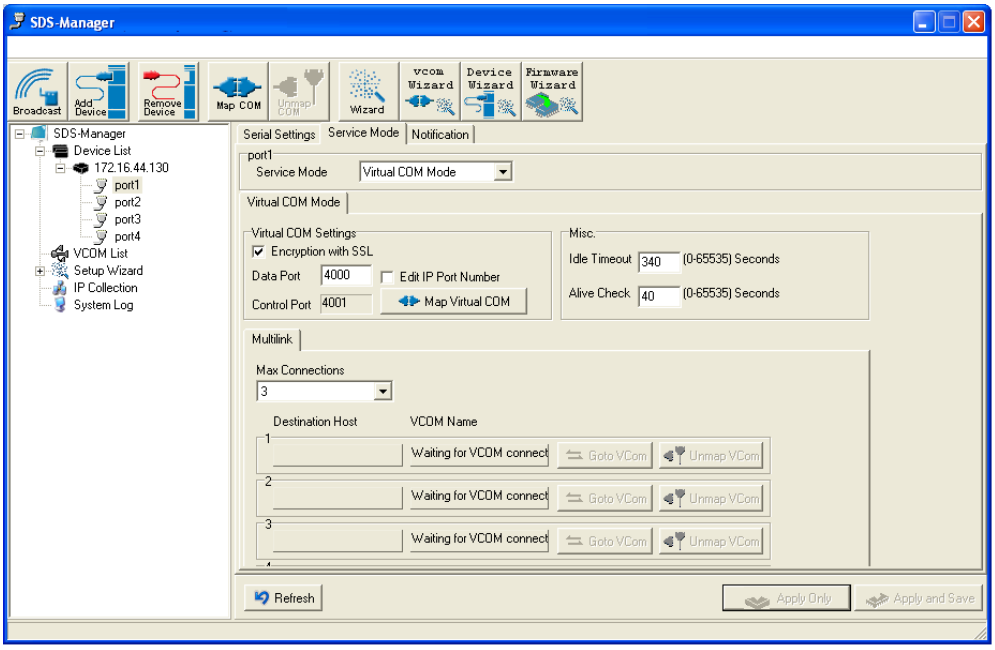


Figure 5-13 Virtual COM mode

The following table describes the labels in this screen.

Label	Description
Map Virtual COM	Click to select a Virtual COM Name to map on.
Max Connections	The maximum number of simultaneous connections is 5: the default value is 1.
Idle Timeout	When the serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port will attempt to connect with other hosts. 0 disables this function (factory default). If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection closes and the port is freed. 0 indicates disable (default).

Table 5-8 Virtual COM

**Not allowed to mapping Virtual COM from web*

Service Mode – TCP Server Mode

In TCP Server Mode, the device server is configured with a unique Port combination on a TCP/IP network. In this case, the device server waits passively to be contacted by the device. After a connection is established, it can then proceed with data transmission. TCP Server mode supports up to 5 simultaneous connections, so that multiple devices can receive data from the same serial device at the same time.

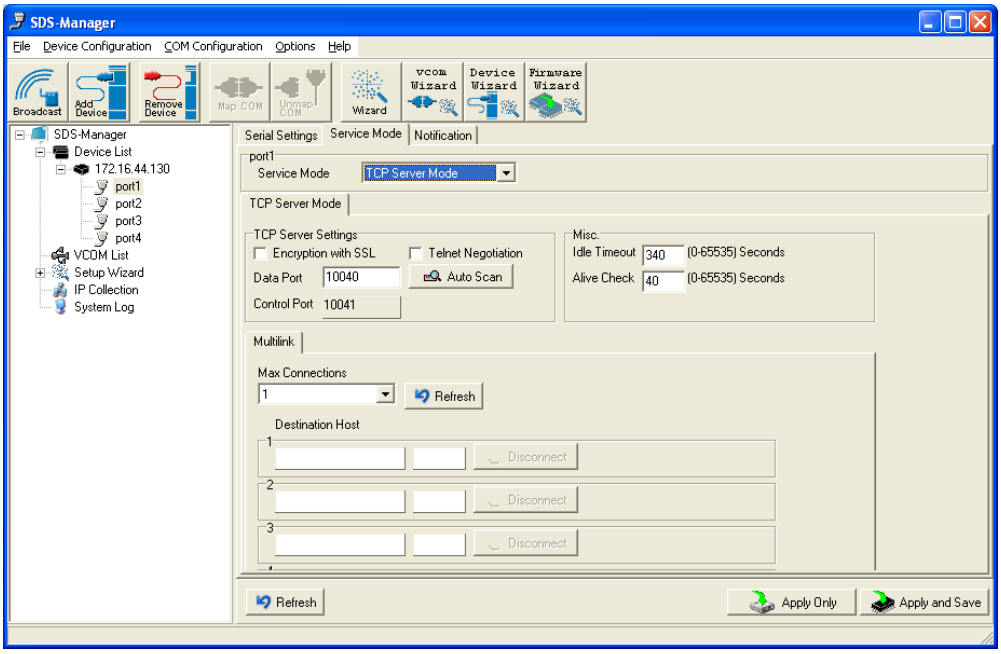


Figure 5-13 TCP Server mode

The following table describes the labels in this screen.

Label	Description
TCP Server Settings	**Encryption with SSL**: TCP Server uses Secure Socket Layer encryption. **Telnet Negotiation**: TCP Server uses Telnet Negotiation protocol encryption.
Data Port	Set the port number for data transmission.
Auto Scan	Scan the data port automatically.
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 try to connect with other hosts. A value of 0 disables this function. The factory default value is 0. If Multilink is configured,

	only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 disables this function. The factory default is 0.
Max Connection	The maximum number of simultaneous connections is 5; the default value is 1.

Table 5-9 TCP Server mode

Service Mode – TCP Client Mode

In TCP Client Mode, the device can establish a TCP connection with a server by the method you have selected (Startup or Any Character). After the data has been transferred, device can disconnect automatically from the server by using the TCP alive check time or Idle time settings.

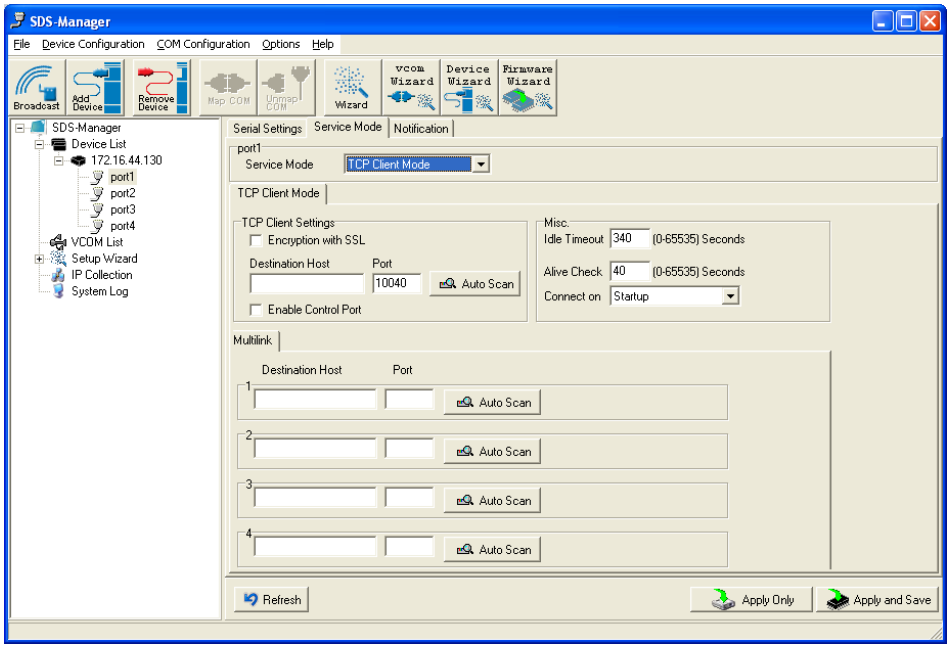


Figure 5-14 TCP Client mode

The following table describes the labels in this screen.

Label	Description
Destination Host	Set the IP address of host.
Port	Set the port number of data port.
Idle Timeout	When the serial port stops data transmission for a defined period of time (Idle Timeout), the connection will be closed and the port is freed to try to connect with other hosts. 0 disables this function (factory default). If Multilink is configured, only the first host connection is effective for this setting.
Alive Check	The serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. 0 disables this function (factory

	default).
Connect on Startup	The TCP Client will build TCP connection once the connected serial device is started.
Connect on Any Character	The TCP Client will build TCP connection once the connected serial device starts to send data.

Table 5-10 TCP Client mode

Service Mode – UDP Mode

Compared to TCP communication, UDP is faster and more efficient. In UDP mode, you can Uni-cast or Multi-cast data from the serial device server to host computers, and the serial device can also receive data from one host or from multiple hosts.

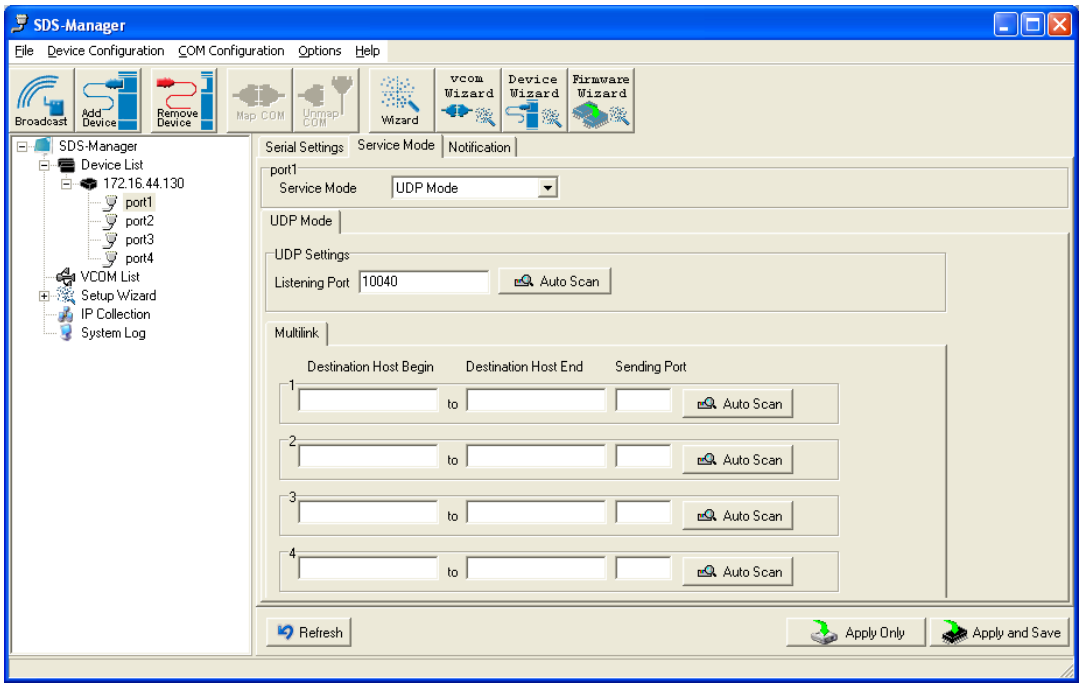


Figure 5-15 UDP mode

Label	Description
Listening Port	The UDP listening port (e.g., port number 10040).
Auto Scan	Click to automatically scan for a UDP listening port.
Destination Host Begin	Enter a beginning IP address for the destination host address.
Destination Host End	Enter an ending IP address for the destination host address.
Sending port	Enter the sending port number.

Notification

Specify the events to be reported and select the method (E-mail, SNMP trap, System log).

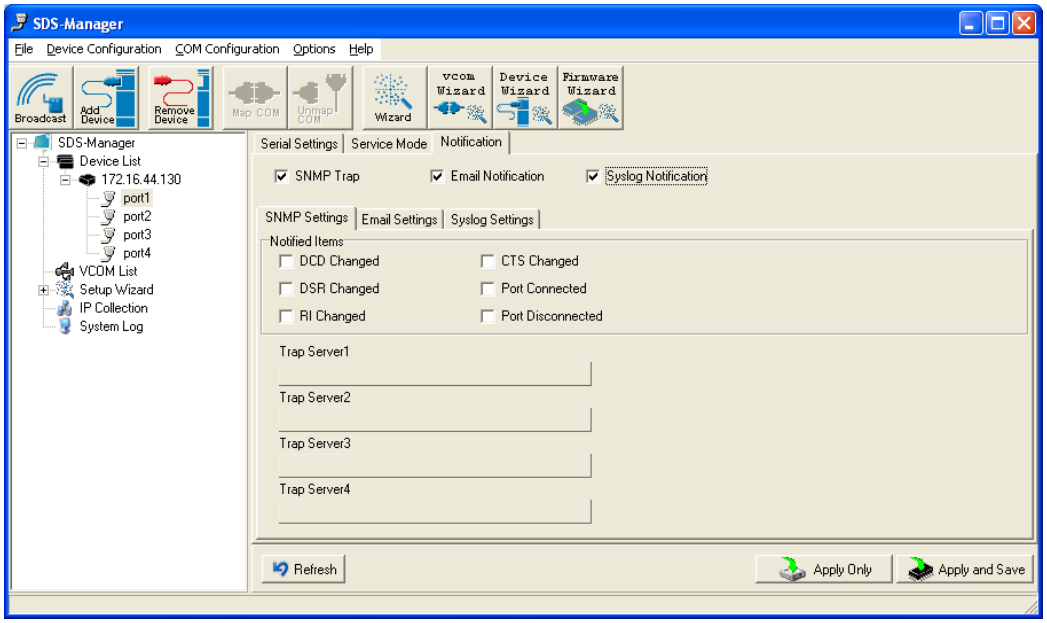


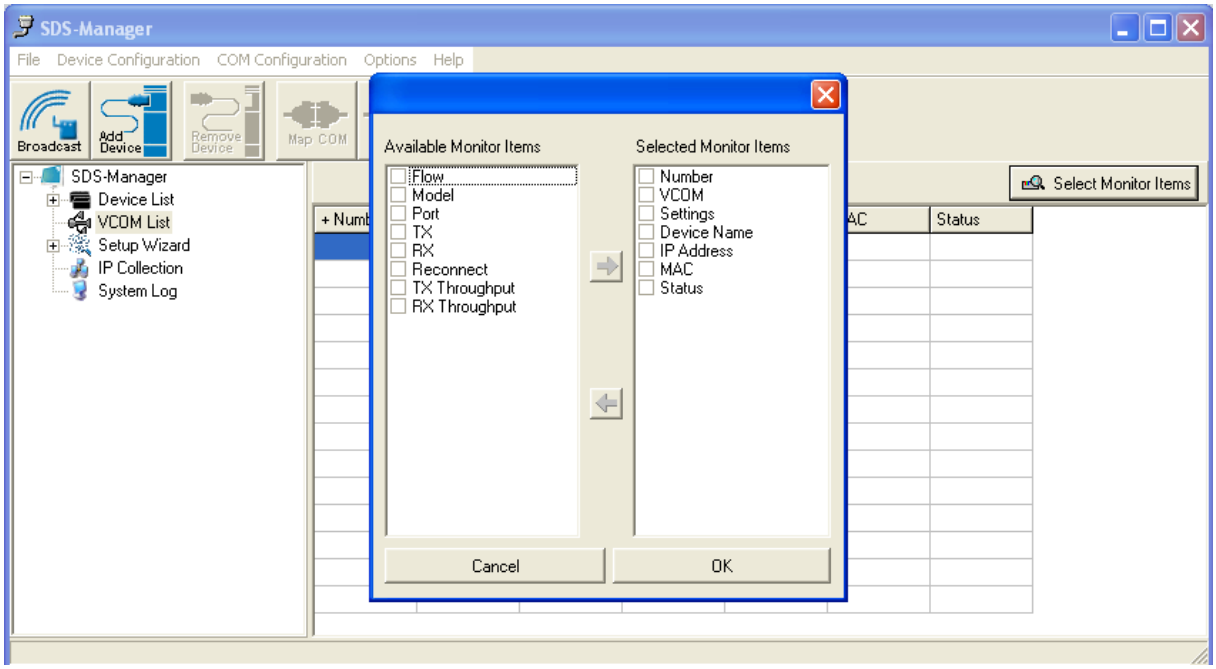
Figure 5-16 Notification

The following table describes the labels in this screen.

Label	Description
DCD Changed	When DCD (Data Carrier Detect) signal changes, it indicates that the modem connection status has changed. Notification will be sent.
DSR Changed	When DSR (Data Set Ready) signal changes, it indicates that the data communication equipment is powered off. A Notification will be sent.
RI Changed	When RI (Ring Indicator) signal changes, it indicates an incoming call. A Notification will be sent.
CTS Changed	When CTS (Clear To Send) signal changes, it indicates that the transmission between computer and DCE can proceed. A notification will be sent.
Port Connected	In TCP Server Mode, when the device accepts an incoming TCP connection, this event will trigger. In TCP Client Mode, when the device has connected to the remote host, this event will trigger. In Virtual COM Mode, Virtual COM is ready to use. A notification is sent.
Port Disconnected	In TCP Server/Client Mode, if the device loses the TCP link, this event will trigger. In Virtual COM Mode, when Virtual COM is not available, this event will trigger. A notification will be sent.

5.1.2.4 VCOM List

At the VCOM List, click the Select Monitor Items button to display the Available and Selected Monitor Items.



Label	Description
Available Monitor Items	Check one or more items for selection. Use the green right arrow button to move a selected item to the “Available Monitor Items” column.
Selected Monitor Items	Check one or more items for selection. Use the red left arrow button to move a selected item to the “Available Monitor Items” column.
Cancel	Click to cancel any changes.
OK	Click to OK any changes.

5.1.2.5 Setup Wizard

The Setup Wizard provides links to the Virtual COM Wizard, Serial Tunnel Wizard, Group IP Wizard, Group Setup Wizard, and Group Firmware Wizard.

Virtual COM Wizard lets you set up the device serial port and map it to Virtual COM port.

STEP 1. Select serial port from available devices.

STEP 2. Setup serial port configuration, baud rate, data bits...etc.

STEP 3. Select the Virtual COM naming.

STEP 4. Done.

Serial Tunnel Wizard helps you couple two serial devices to directly communicate by Ethernet without the PC.

STEP 1. Select two devices that should be tunneled together

STEP 2. Select serial parameters such as baud rate, data bits.

STEP 3. Finish.

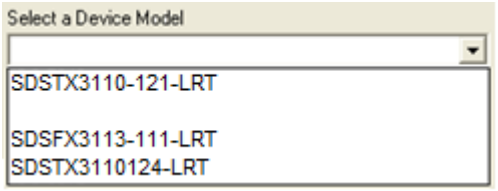
Group IP Wizard helps you configure the IP addresses of a group of new devices. The devices already in the configuration list will not be included.

STEP 1. Locate the new devices by broadcast or by IP range.

STEP 2. Configure the IP range or DHCP IP.

STEP 3. Start

Group Setup Wizard helps you to copy one device settings to other devices of the same model. If the listbox is empty, then no devices were located. Please search and add the devices again.



STEP 1. Select the device model.

STEP 2. Select the source device and destination devices.

STEP 3. Select the device and port settings to copy

STEP 4. Start copying

Group Firmware Wizard helps you to update firmware for a group of devices.

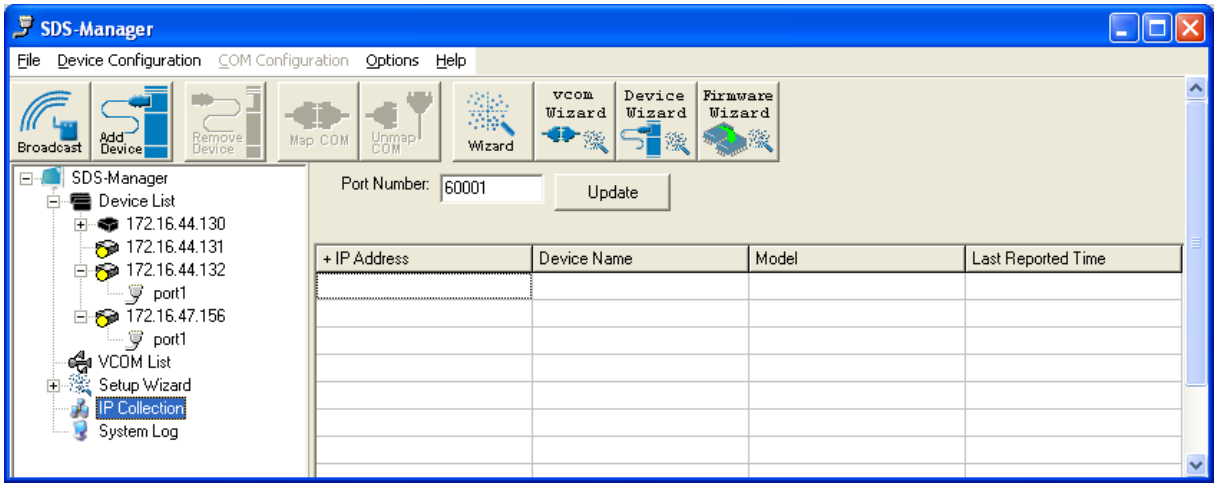
STEP 1. Select the device model.

STEP 2. Select the target devices.

STEP 3. Select the new firmware.

STEP 4. Go.

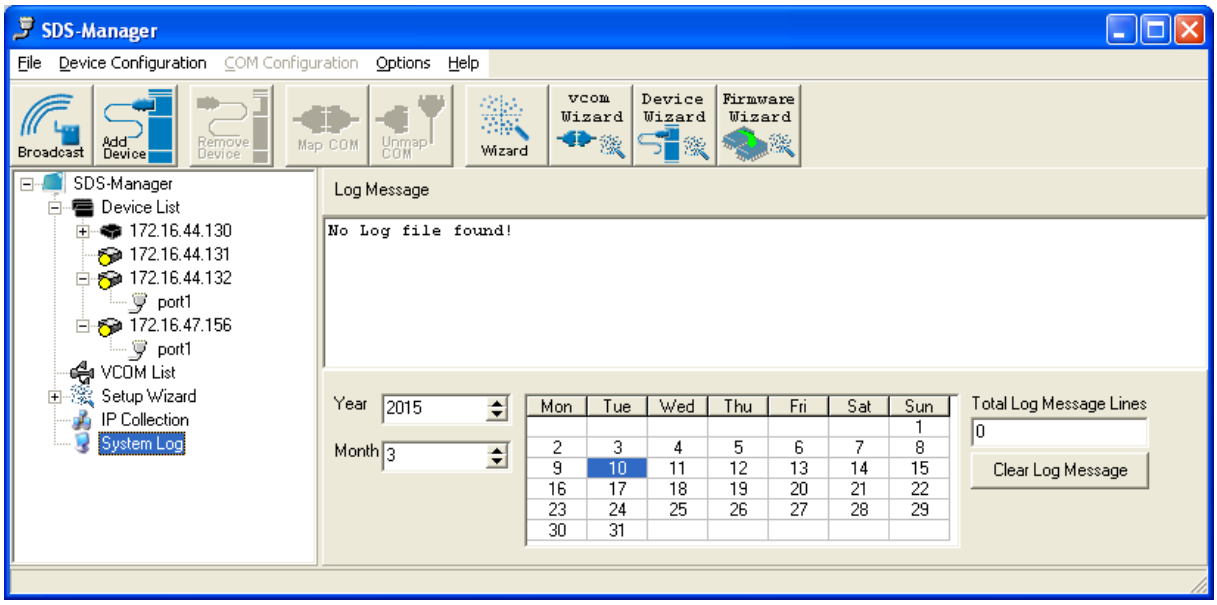
5.1.2.6 IP Collection



Label	Description
Port Number	The IP collection port number (e.g., port number 60001.
Update	Button to update the information display.
IP Address	The reported IP address.
Device Name	The reported device's name.
Model	The reported model.
Last Reported Time	The day, date and time of the last report.

5.1.2.7 System Log

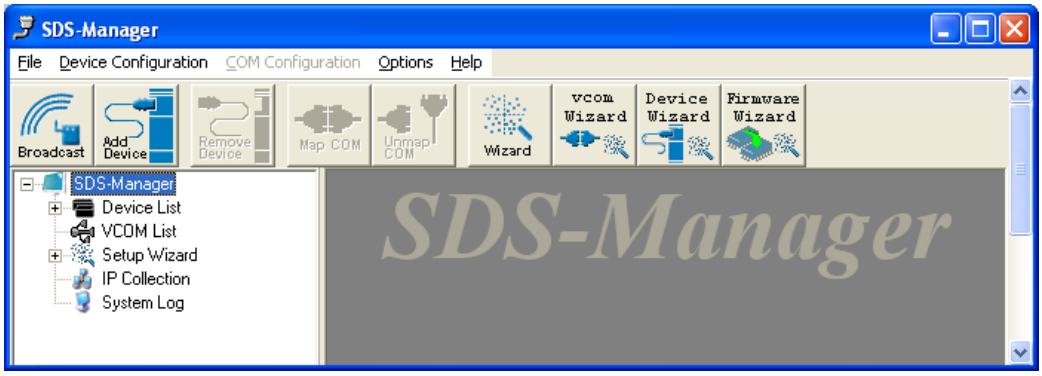
Displays log messages if any are found.



Label	Description
Log Message	The related log file message. Displays '*No Log file found!*' if none reported. Double-click an instance to display event specifics.
Year	Select the year.
Month	Select the month.
Day	Select the day (Mon - Sun).
Total Message Lines	Displays the number of lines currently shown.
Clear Log Message	Click to clear the log messages displayed.

5.1.2.8 Top Bar Icons - Remove Device

Clicking the **Remove Device** icon lets you delete an existing device from the device list.



5.1.2.9 Map COM

Clicking the **Map COM** icon lets you map an existing COM port.

5.1.2.10 Unmap COM

Clicking the **Unmap COM** icon lets you unmap an existing mapped COM port.

5.1.2.11 Wizard

Clicking the **Wizard** icon displays the Welcome to Wizard Center where you can select the various Wizards.See the related section.

5.1.2.12 vcom Wizard

Clicking the **vcom Wizard** icon displays the Virtual COM Wizard; see the related section.

5.1.2.13 Device Wizard

Clicking the **Device Wizard** icon displays the Group Setup Wizard; see the related section.

5.1.2.14 Firmware Wizard

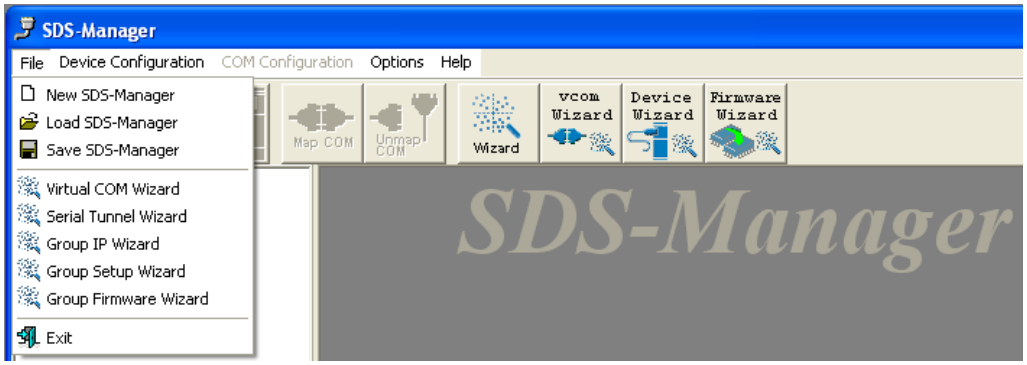
Clicking the **Firmware Wizard** icon displays the Group Firmware Wizard; see the related section.

5.1.2.15 Top Bar Dropdown Menu Items

The Top Bar (drop down) menu items provide a set of functions similar to the left pane menu items.

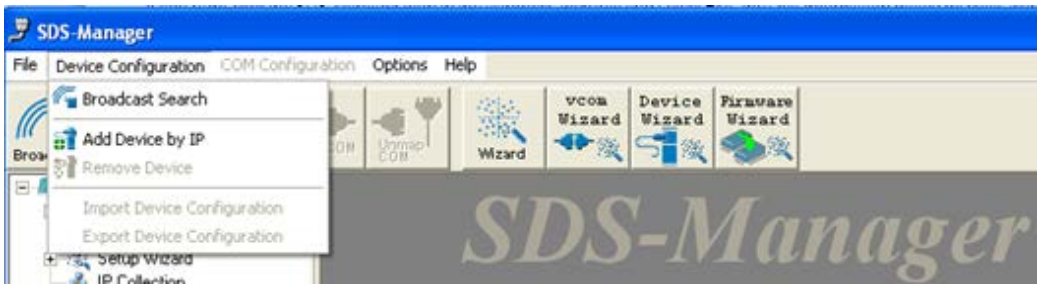
File options

The options presented here include New/Load/Save SDS-Manager configs, Wizards for Virtual COM, Serial Tunnel, Group IP/Setup/Firmware, and Exit.



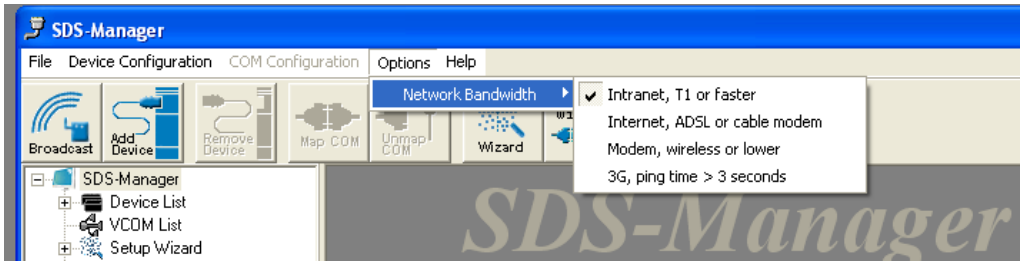
Device Configuration options

These options include Broadcast Search, Add Device by IP, Remove Device, and Import/Export Device Configuration functions.



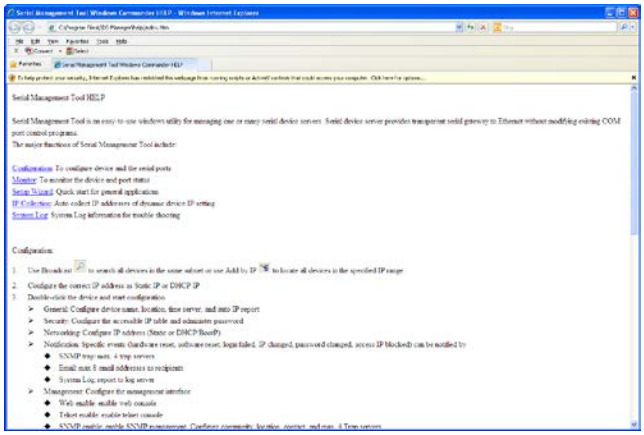
Options > Network Bandwidth options

Here you can select from four network Bandwidth categories: 1. Intranet, T1 or faster. 2. Internet, ADSL or cable modem. 3. Modem, wireless or lower. 4. 3G, ping time > 3 seconds.



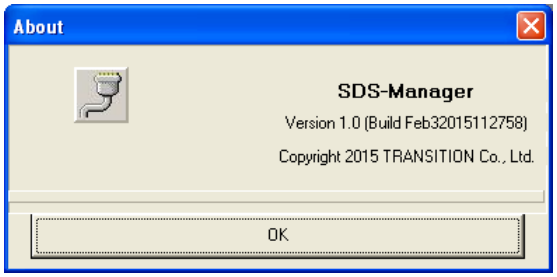
Help > Help option

The **Help** > **Help** Options menu provides the Serial Management Tool HELP in several categories.



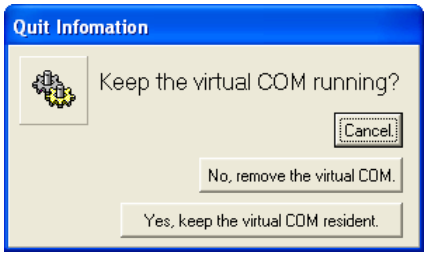
Help > Help About option

This menu option displays version, build, and copyright information.



Exit the SDS-Manager

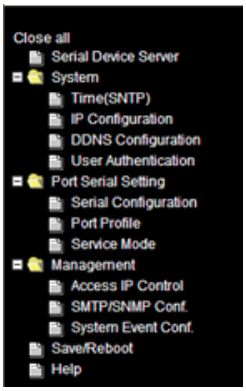
If you right-click the SDS-Manager icon in the Windows icon tray and select Exit, the Quit dialog displays with the message "*Keep the virtual COM running?*".



The options here are: **Cancel**: cancel the exit attempt and return to the SDS-Manager.

No, remove the virtual COM.: quit the SDS-Manager and remove the configured virtual COM.

Yes, keep the virtual COM resident.: quit the SDS-Manager and keep the configured virtual COM resident.



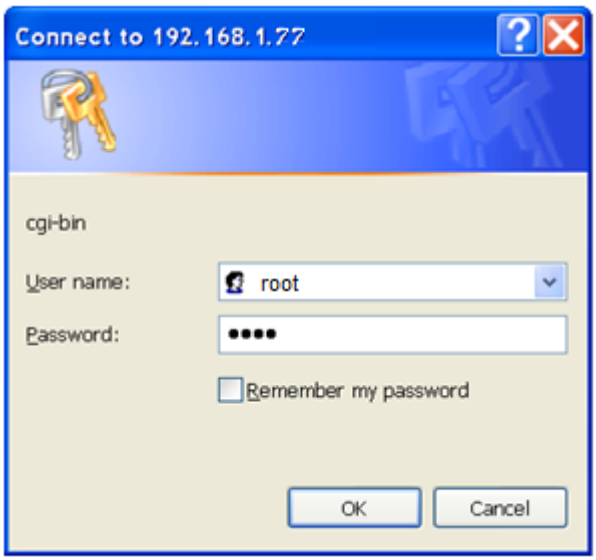
5.2 Configuration by Web Browser

The SDS-Manager lets you configure the System, Port Serial Setting, Management, and Reset / Restore / Backup / Upgrade /Reboot functions.

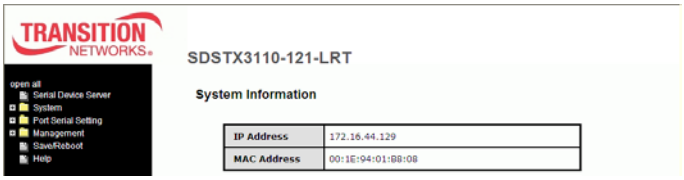
5.2.1 CONNECT TO THE WEB PAGE

1. Input the Device Server IP address "**https://192.168.1.77**" in the Internet Explorer Address input box.
2. Click "**Yes**" button on the dialog box.

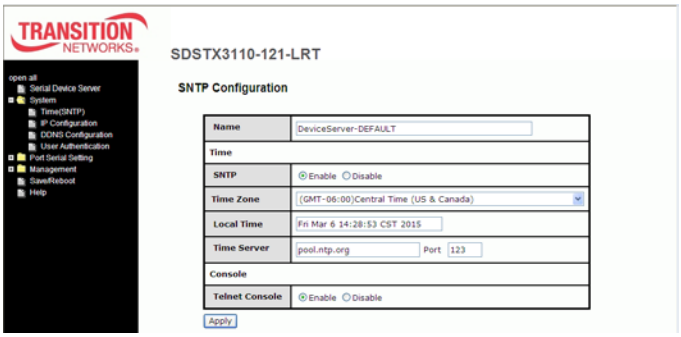
3. Input the name (root) and password (root) (only if password is set), then click "**OK**".



4. Enter the IP Address and MAC Address for the device at the System Information page.



5. Navigate to the **System** > **Time(SNTP)** menu to configure SNTP and Telnet Console access at the SNTP Configuration page. Click the **Apply** button when done.



Name: DeviceServer-DEFAULT

SNTP: Enable or Disable SNTP globally. The default is Disable.

Time Zone: e.g., (GMT-12:00)Eniwetok, (GMT-06:00)Central Time (US & Canada) or (GMT+08:00)Taipei.

Local Time: e.g., **Fri Feb 6 07:59:18 CST 2015**.

Time Server: e.g., **pool.ntp.org**.

Port: e.g., commonly used port number **123**.

Telnet Console: select **Enable** or **Disable** for the Console access. The default is telnet access **Enable**d.

6. Navigate to **System** > **IP Configuration** to configure IP and Ethernet mode parameters. Click **Apply** when done.

IP Configuration: At the dropdown, select **Static**, **DHCP/BOOTP**, or **PPPoE**. The default is **Static**.

Using **Static IP** allows manually assigning an IP address.

Using **DHCP/BOOTP** an IP Address is automatically assigned by a DHCP server in your network.

Using **PPPoE** allows Point-to-Point Protocol over Ethernet as the network protocol for encapsulating PPP frames inside Ethernet

frames. The “PPPoE Setting” page displays with “User Name” and “Password” entry fields, a read-only “Status” field, **Connect** and **Disconnect** buttons, and the **Return** button.

You must assign a valid IP address for the serial device server before attaching to your network. Your network administrator should provide you the IP address and related settings. The IP address must be unique within the network (otherwise, DS will not have a valid connection to the network). The factory default IP address is “**192.168.1.77**”

Netmask: e.g., **255.255.252.0**. All devices on the network must have the same subnet mask to communicate on the network.

Gateway: Assign the IP address of the gateway

DNS Server 1: Enter the IP address of the DNS server; The DNS server translates domain names into IP addresses.

DNS Server 2: Enter a DNS Server address for a second DNS server or leave blank.

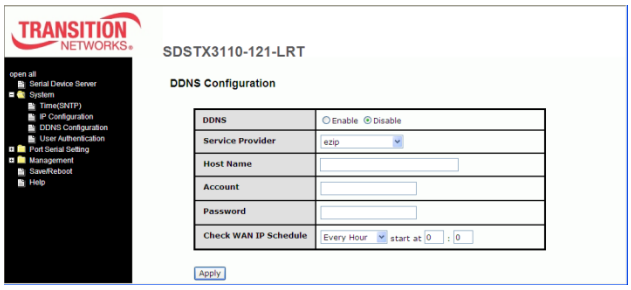
Auto Report to IP: enter an IP address for the auto IP reporting.

Auto Report to TCP Port: enter a TCP port for auto reporting to this TCP port.

Auto Report Interval: the time interval between reports in seconds. The default is **0** seconds. The device server will report its status periodically.

Ethernet Mode: select **Redundant** or **Switch** as the Ethernet mode of operation. The default is **Redundant** mode.
In ***Redundant Mode***, when the connection between master-link and LAN fails, the DS can automatically switch to another LAN port within 10mS, and still guarantee a non-stop connection.
Switch Mode treats the two Ethernet ports like a 2 port Ethernet switch.

7. For DDNS (Dynamic DNS) configuration, navigate to the **System** > **DDNS Configuration** menu and configure the related parameters. Click the **Apply** button when done.



DDNS: select **Enable** or **Disable** DDNS on a global basis (at the system level). The default is **Disable**d.

Service Provider: at the dropdown select ezip, pgpow, dhs, constanttime, dyndns, dyndns-static, dyndns-custom, ods, tzo, easydns, easydns-partner, gnudip, justlinux, dyns, hn, zoneedit, heipv6tb, or 3322.

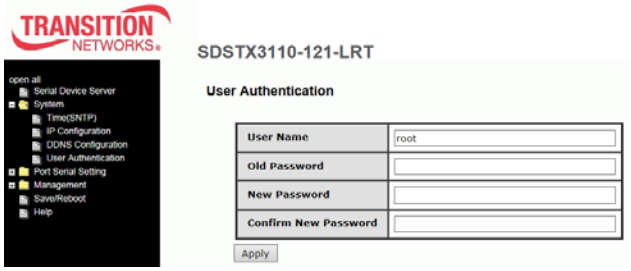
Host Name: Sets the DDNS host device name

Account: Sets the login name for the DDNS service

Password: Sets the login password for the DDNS service

Check WAN IP Schedule: at the dropdown select every hour, day, week or month and select the start time in hours and minutes.

8. Configure User Authentication via the the **System** > **User Authentication** menu. Enter the User Name, old password, enter and confirm the new password, and then click the **Apply** button.



9. Navigate to the **Port Serial Setting** > **Serial Configuration** menu and configure the related parameters. Click the **Apply** button when done.

Port: At the Port dropdown, select Port 1, 2, 3, or 4.

Port Alias: e.g., **Port1**.

Interface: At the dropdown, select **RS232**, **RS422**, **RS485(2-wires)**, or **RS485(4-wires)**. The default is **RS232**.

Baud Rate: At the dropdown, select 110, 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, or 460800 bps baud rate. The default is 38,400 bps.

Data Bits: At the dropdown, select 8, 7, 6, or 5 data bits.

Stop Bits: At the dropdown, select 1 or 2(1.5) stop bits.

Parity: At the dropdown, select None, Odd, Even, Mark, or Space parity.

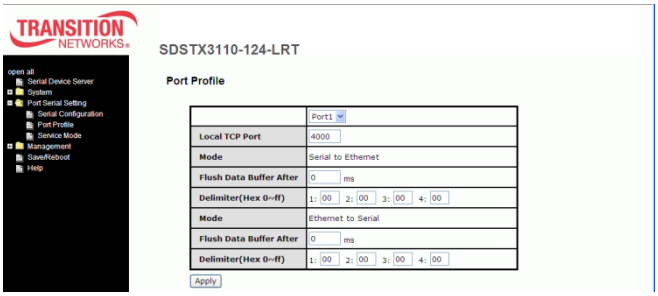
Flow Control: At the dropdown, select None, XON/XOFF, RTS/CTS, or DTR/DSR.

Force TX Interval Time: use 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. An entry of **0** disables this function. The factory default value is **0**.

Performance: click the radio button for either Throughput or Latency mode, where:

Throughput mode is optimized for highest transmission speed.
Latency mode is optimized for shortest response time.

10. Navigate to the **Port Serial Setting** > **Port Profile** menu and configure the related parameters. Click the **Apply** button when done.



Port: At the Port dropdown, select Port 1, 2, 3, or 4.

Local TCP Port: enter the port number of the local TCP port (e.g., port 4000).

Mode: the current mode (**Serial to Ethernet** or **Ethernet to Serial**).

Flush Data Buffer After: the meaning depends on the 'Mode' setting above:

If Mode is ***Serial to Ethernet***, the received data is queued in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after "flush S2E data buffer" timeout, the data is also sent. Set the time from 0 - 65535 seconds.

If Mode is ***Ethernet to Serial***, the received data is queued in the buffer until all the delimiters are matched. When the buffer is full (4K Bytes) or after "flush E2S data buffer" timeout, the data will also be sent. Set the time from 0 - 65535 seconds.

Delimiter(Hex 0~ff): the meaning depends on the 'Mode' setting above:

If 'Mode' is ***Serial to Ethernet***, you can define up to four delimiters (00~FF, Hex) for each. The data is held until the delimiters are received or the option "Flush Serial to Ethernet data buffer" times out. A **0** entry disables this function (factory default value).

If 'Mode' is ***Ethernet to Serial***, you can define upt to four delimiters (00~FF, Hex) for each. The data is held until the delimiters are received or the option "Flush Ethernet to Serial data buffer" times out. A **0** entry disables this function (factory default setting).

11. Navigate to the **Port Serial Setting** > **Service Mode** menu and configure the related parameters. Click the **Apply** button when done. The parameters are described below.

Data Encryption: enable or disable data encryption globally. The default is **Disable**d.

Service Mode: At the dropdown, select Virtual COM Mode, TCP Server Mode, TCP Client Mode, or UDP Mode. Click the **Apply** button when done. The parameter descriptions are below:

*In **Virtual COM Mode***, the driver establishes a transparent connection between host and serial device by mapping the Port of the serial server serial port to local COM port on the host computer. Virtual

COM Mode also supports up to five simultaneous connections, so that multiple hosts can send or receive data by the same serial device at the same time.

*In **TCP Server Mode***, DS is configured with a unique Port combination on a TCP/IP network. In this case, DS waits passively to be contacted by the device. After the device establishes a connection with the serial device, it can then proceed with data transmission. TCP Server mode also supports up to five simultaneous connections, so that multiple device can receive data from the same serial device at the same time.

*In **TCP Client Mode***, the device can establish a TCP connection with a server by the method you set (Startup or Any Character). After the data is transferred, the device can disconnect automatically from the server by using the TCP Alive Check time or Idle timeout settings.

*In **UDP Mode***, you can Uni-cast or Multi-cast data from the serial device server to host computers, and the serial device can also receive data from one or multiple host. Compared to TCP communication, UDP is faster and more efficient.

Telnet Negotiation: Displays only if 'Data Encryption' is Disabled (see above). The default is **Disable**d.

Destination Host: Displays only in 'TCP Client Mode' and if 'Data Encryption' is Disabled (see above).

Destination Port: e.g., 65535. Displays only in 'TCP Client Mode' and if 'Data Encryption' is Disabled (see above).

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 try to connect with other hosts. The valid range is 0-65535 seconds. An entry of 0 disables this feature (factory default value). If Multilink is configured, only the first host connection is effective for this setting.

Alive Check: the serial device will send TCP alive-check package in each defined time interval (Alive Check) to remote host to check the TCP connection. If the TCP connection is not alive, the connection will be closed and the port will be freed. The valid range is 0-65535 seconds. An entry of 0 disables this feature (factory default value). The factory default is **0**.

Connect on: check the **Startup** or **Any Character** radio button. The parameters are:

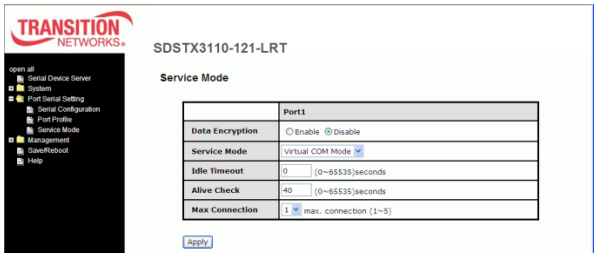
Connect on Startup: the TCP Client will build TCP connection once the connected serial device is started.

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

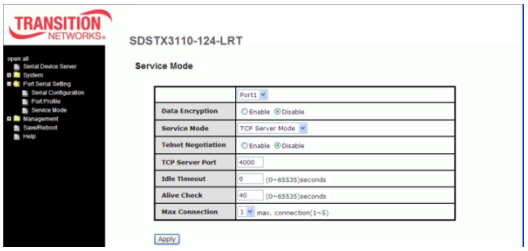
Max Connection: up to five simultaneous connections are supported; the default value is **1** connection.

Service Mode Sample Screens

Service Mode = Virtual COM Mode

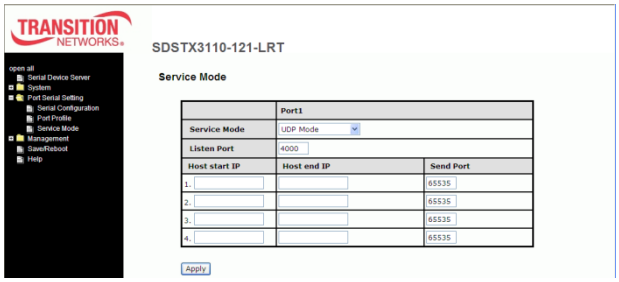


Service Mode = TCP Server Mode

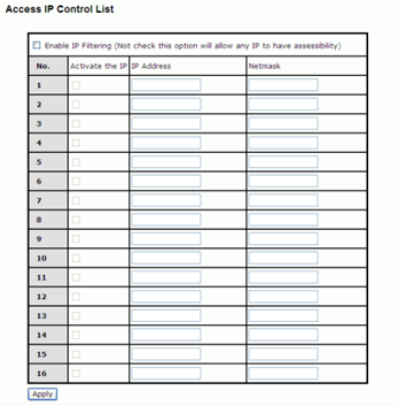


Service Mode = TCP Client Mode

Service Mode = UDP Mode



12. Navigate to the **Management** > **Access IP Control** menu and configure the related parameters. The Access IP Control settings let you add or block the remote host IP addresses to prevent unauthorized access. If a host's IP address is in the accessible IP table, then the host will be allowed to access the device server. You can control device server access by setting the parameter.



a) Only one host with a special IP address can access the device server, "IP address /255.255.255.255" (e.g., "192.168.0.1/255.255.255.255").
b) Hosts on a specific subnet can access the device server. "IP address/255.255.255.0" (e.g., "192.168.0.2/255.255.255.0").
c) Any host can access the device server. Disable this function by un-checking the "Enable IP Filter" checkbox.

The parameters are described below.

Enable IP Filtering: Not checking this option will allow any IP to have accessibility.

No.: column with lines for instances 1-16.

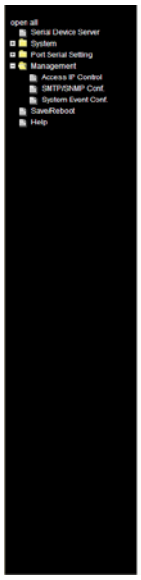
Activate the IP: check the checkbox to activate this IP.

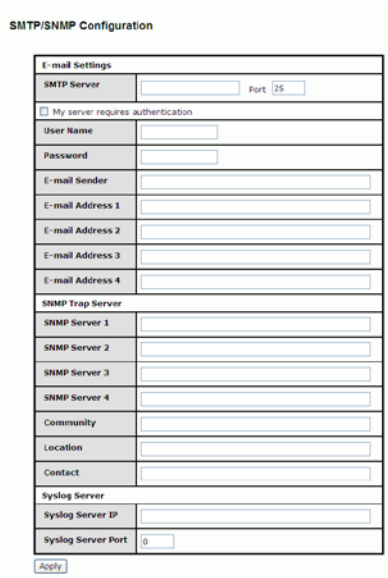
IP Address: entry box for the IP address for the entity.

Netmask: entry box for the IP address for the entity (e.g., **255.255.252.0)**.

Click the **Apply** button when done.

13. Navigate to the **Management** > **SMTP/SNMP Conf** menu and configure the related parameters. Here you can configure E-Mail Settings, server authentication, SNMP Trap Servers and Syslog Server parameters as described below.





SMTP Server configuration includes the mail server's IP address or domain. If the authentication is required, specify your Username and Password. You can specify up to four Email addresses to receive the notification.

SNMP Server configuration includes the SNMP Trap

Server IP address, Community, Location and Contact. There are 4 SNMP addresses you can specify to receive the notification.

SysLog Server configuration includes the server IP and server Port. This option must be used with SDS-Manager.

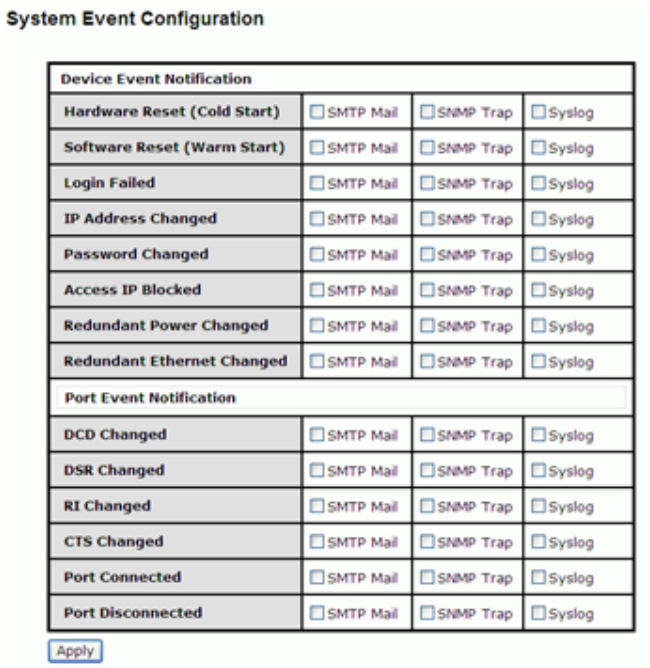
Click the **Apply** button when done.

14. Navigate to the **Management** > **System Event Conf** menu and configure the Device Event Notification and Port Event Notification parameters.

Hardware Reset (Cold Start) refers to starting the system from power off (contrast this with warm start). When performing a cold start, device server will automatically issue an Auto warning message by sending E-mail, log information or an SNMP trap after booting.

Software Reset (Warm Start) refers to restart the computer without turning the power off. When performing a warm start, device server will automatically send an E-mail, log information or SNMP trap after reboot.

Login Failed: when an unauthorized access from the Console or Web interface, a notification will be sent.



IP Address Changed: when IP address of device changes, a notification will be sent.

Password Changed: when password of device changes, a notification will be sent.

Access IP Blocked: when the host accesses the device with blocked IP addresses, a notification will be sent.

Redundant Power Change: when status of power changed, a notification will be sent.

Redundant Ethernet Change: when the status of an Ethernet port changes, a notification will be sent.

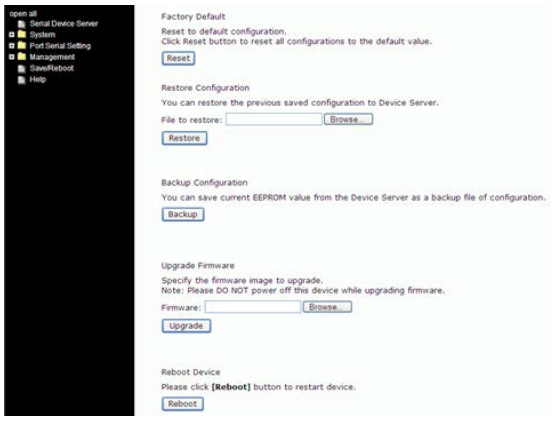
DCD changed: when DCD (Data Carrier Detect) signal changes, it indicates that the modem connection status has been changed. A Notification will be sent.

DSR changed: when DSR (Data Set Ready) signal changes, it indicates that the data communication equipment is powered off. A Notification will be sent.
RI changed: when RI (Ring Indicator) signal changes, it indicates an incoming call. Notification will be sent.
CTS changed: when CTS (Clear To Send) signal changes, it indicates that the transmission between computer and DCE can proceed. A notification will be sent.
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, Virtual COM is ready to use.
A notification will be sent.
Port disconnected: In TCP Server/Client Mode, when the device loses the TCP link, this event will trigger. In Virtual COM Mode, when Virtual COM is not available, this event will trigger. A notification will be sent.

Click the **Apply** button when done.

15. Navigate to the **Save/Reboot** menu to Reset to Factory Defaults, Restore Configuration, Backup Configuration, Upgrade Firmware, and/or Reboot the Device as described below.

Factory Default: Click the **Reset** button to load the default configuration (except Network settings). If you want to load all factory defaults, press and hold the device's **Reset** button for about five seconds for a Hardware restore.



Restore Configuration: Browse to and select the firmware image to upgrade to be restored. Click the **Restore** button to restore the previously exported configuration. Choose a file to upload and click **Restore**. Firmware version and Uptime information displays with the message "*Please click [Restart] button to restart Ser2Net. All Config setting must reboot to make it work*". Click the **Restart** button.

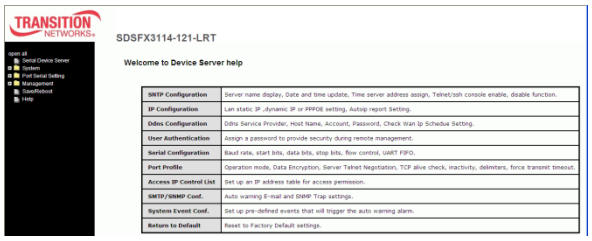
Backup Configuration: Click the **Backup** button to export the current configuration to a file. This lets you save the current EEPROM value from the Device Server as a backup file of configuration. At the dialog, select 'save' this file. At the 'Save As' dialog, specify the save location.

Upgrade Firmware: Browse to and select the firmware image to upgrade to. **Note**: Do NOT power off this device while upgrading firmware. Click the **Close** button when done.

Reboot Device: Click the **Reboot** button to reboot the device.

Help Screen

The Device Server helps screen is shown and described below.



SNTP Configuration: Server name display, Date and time update, Time server address assign, Telnet/ssh console enable, disable function.

IP Configuration: Lan static IP , dynamic IP ,or PPPOE setting, Autoip report Setting.

Ddns Configuration: Ddns Service Provider, Host Name, Account, Password, Check Wan Ip Schedue Setting.

User Authentication: Assign a password to provide security during remote management.

Serial Configuration: Baud rate, start bits, data bits, stop bits, flow control, UART FIFO.

Port Profile: Operation mode, Data Encryption, Server Telnet Negotiation, TCP alive check, inactivity, delimiters, force transmit timeout.

Access IP Control List: Set up an IP address table for access permission.

SMTP/SNMP Conf.: Auto warning E-mail and SNMP Trap settings.

System Event Conf.: Set up pre-defined events that will trigger the auto warning alarm.

Return to Default: Reset to Factory Default settings.

5.2.2 Uninstall the SDS Manager

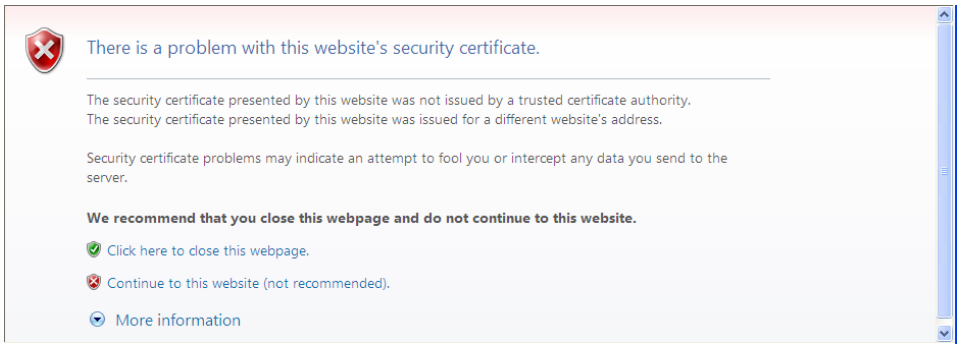
1. Close the SDS-Manager if it is running.

2. Select the Windows Start -> All Programs -> SDS Manager -> uninstall menu.

3. A .bat file screen displays momentarily and then the SDS icon is removed from the Windows icon tray.

5.2.3 Messages

Message: *There is a problem with this website's security certificate.*



Message: *SDS-Manager is running. Please close it, then do uninstall.*

5.3 Configuration by SSH Console

5.3.1 Connect to SDS Commander

You can use an SSH tool (e.g., PuTTY) to access the SDS SSH console (shown below).

The default password is '**admin'**. The SDS Commander functions are shown below.

```
****************************************
*** TRANSITION Industrial Serial Device Server Commander ***
****************************************

Input System Password:  *****
----------------------------------------
[SUPERCOM iCOM3000 Series]
1. Overview
2. General Settings
3. Network Settings
4. Ports settings
5. Security(Accessible IP) Settings
6. Notification(Auto Warning) Settings
A. DDNS setting
C. Change Password
L. Load Factory Default
S. Save configuration
R. Reboot
Q. Exit & Logout

Select one function (0-9,A,C,L,S,R,Q):
```

Each of the SDS Commander functions is shown below.

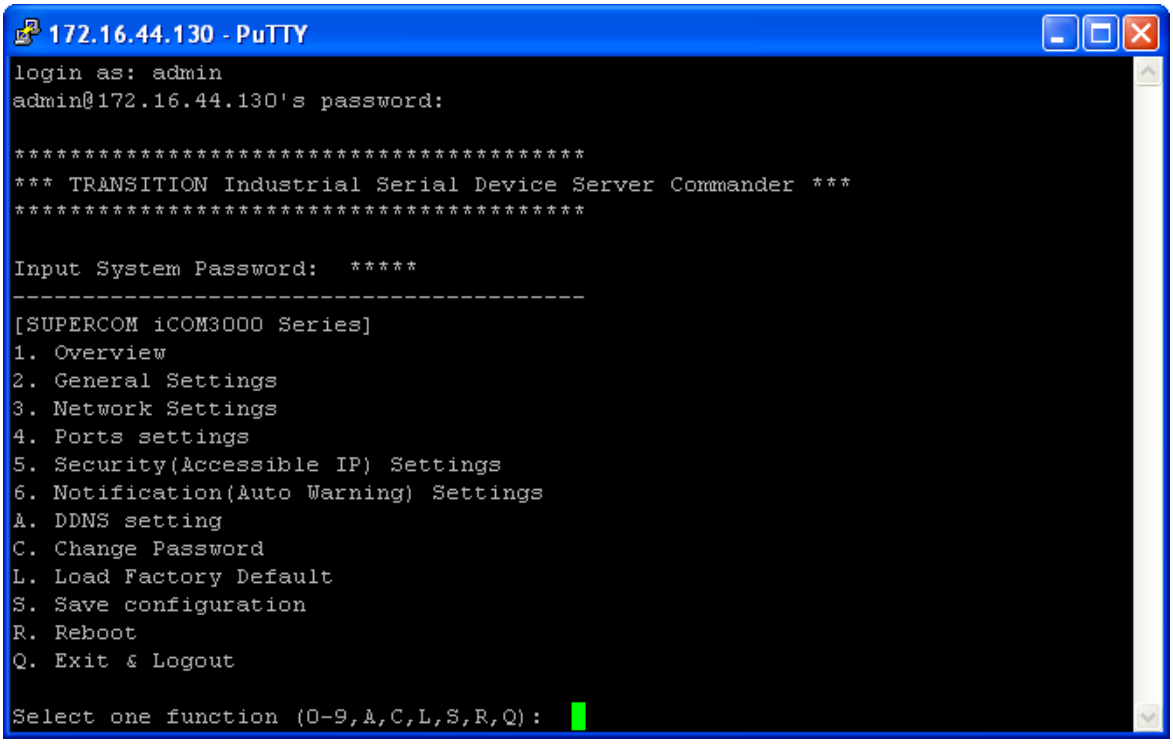


Figure 5-30. SSH Connection - Main menu

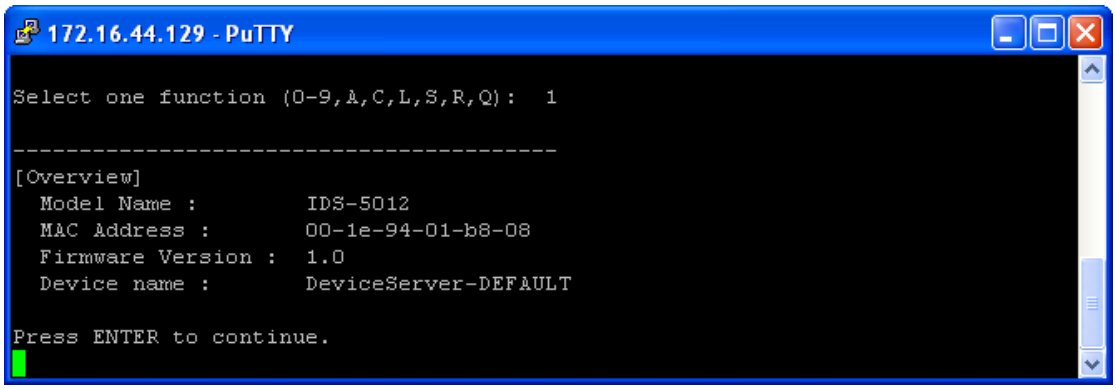


Figure 5-31. SSH Connection - 1. Overview menu

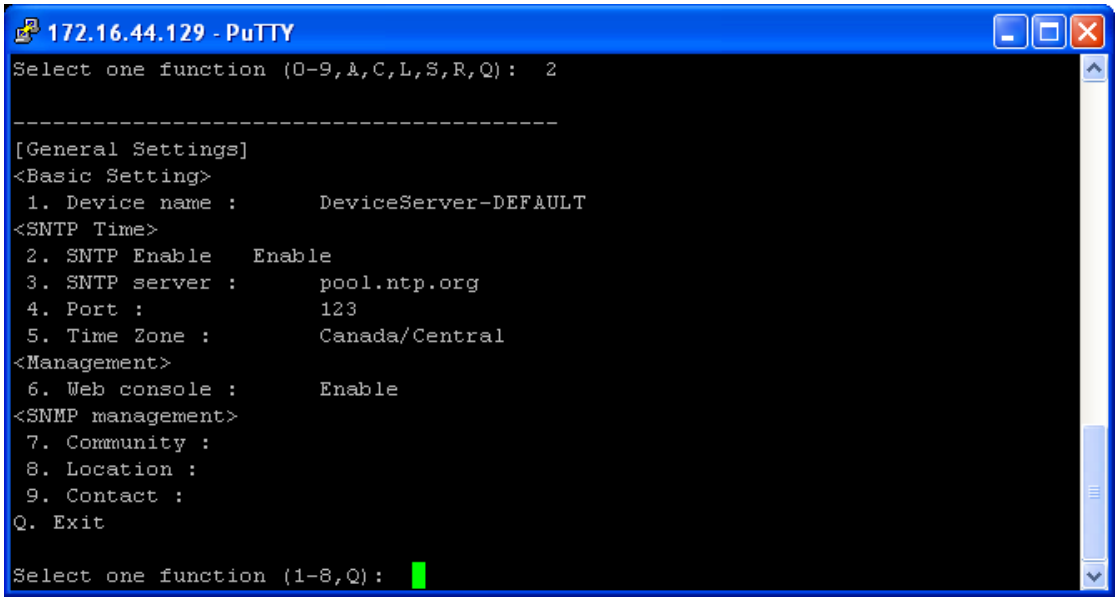


Figure 5-32. SSH Connection - 2. General Settings

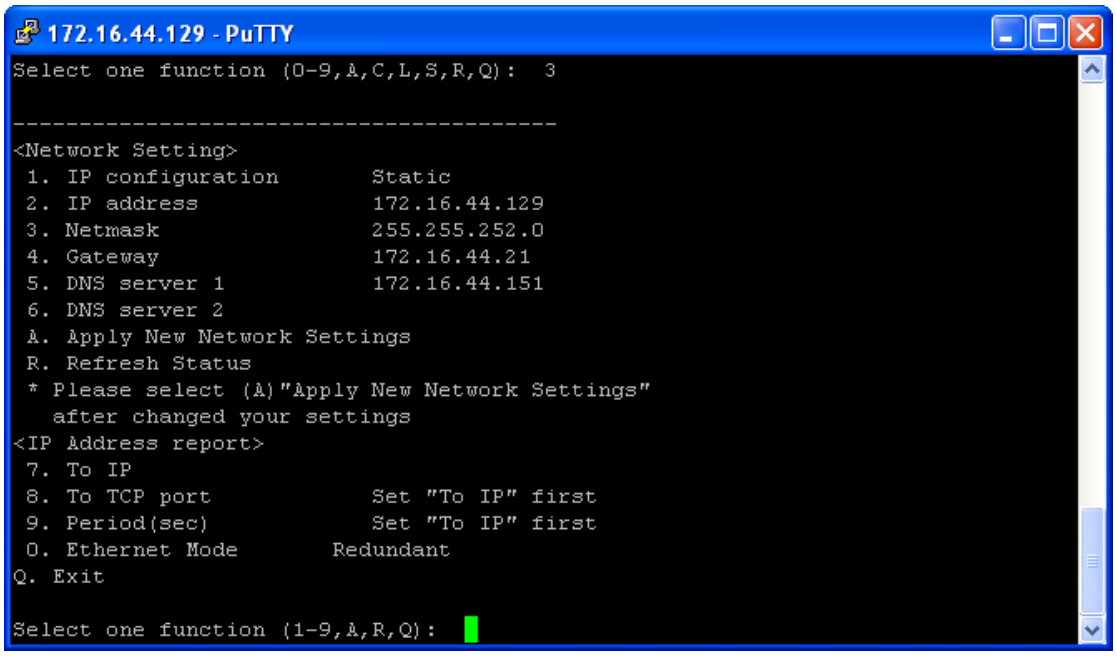


Figure 5-33. SSH Connection - 3. Network Settings

Figure 5-34. SSH Connection - 4. Ports Settings

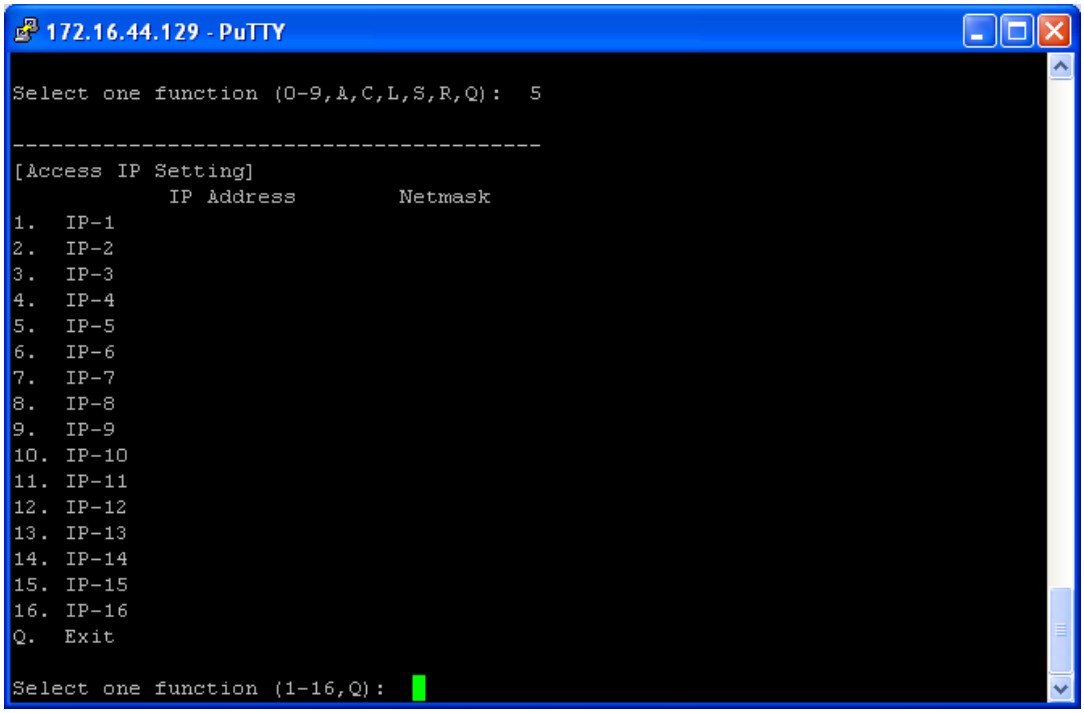


Figure 5-35. SSH Connection - 5. Security(Accessible IP) Settings

igure 5-36. SSH Connection - 6. Notification(Auto Warning) Settings

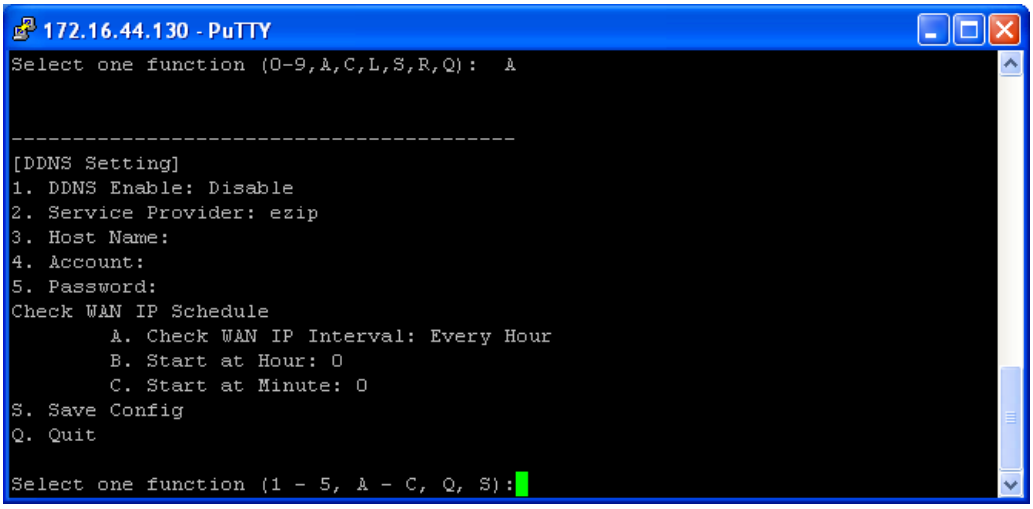


Figure 5-37. SSH Connection - A. DDNS setting

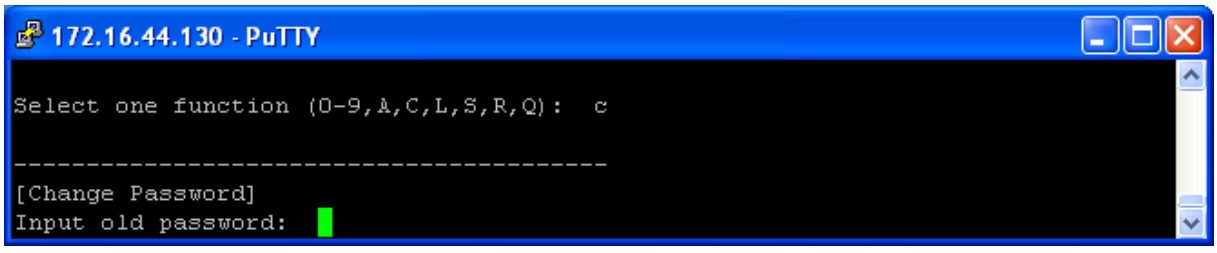


Figure 5-38. SSH Connection - C. Change Password

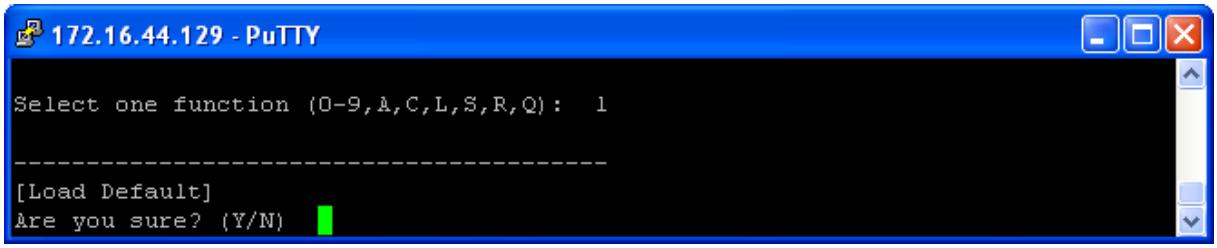


Figure 5-39. SSH Connection - L. Load Factory Default

Figure 5-40. SSH Connection - S. Save configuration

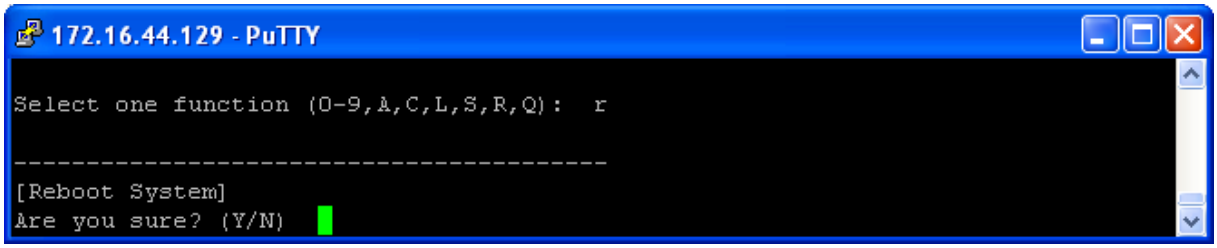


Figure 5-41. SSH Connection - R. Reboot

7. Technical Specifications

Network Interface	
Ethernet	2x 10/100Base-T(X) which support Redundant Dual Ethernet or Switch Mode support. Auto-recover less than 10ms
connector	RJ-45
Protection	Built-in1.5KV magnetic isolation
Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, ARP/RARP, DNS, SNMP MIB II, HTTPS, SSH
Serial Interface	
Interface	1x RS232 / RS422 / 4(2)-Wire RS485. Which can be configured by SDS-Manager
Connector	Male DB9
Serial Baud Rate	110 bps to 460.8 Kbps
Data Bits	5, 6, 7, 8
Parity	odd, even, none, mark, space
Stop Bits	1. 1.5, 2
RS-232 signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND (SDSTX3110-121-LRT/SDSTX3110-121-LRT+)
RS-422 signals	Tx+,Tx-, Rx+, Rx-,GND
RS-485 (4 wire) signals	Tx+,Tx-, Rx+, Rx-,GND
RS-485 (2 wire) signals	Data+, Data-,GND
Flow control	XON/XOFF, RTS/CTS, DTR/DSR
Serial Line Protection	Built-in15KV ESD protection
LED Indicators	PWR (1)(2) / Ready: 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. ETH1(2) Link / ACT: Amber ON/Blinking: 10 Mbps Ethernet Green ON/Blinking:100 Mbps Ethernet Serial TX / RX LEDS: Red: Serial port is receiving data Green: Serial port is transmitting data.
Power Requirements	
Power Input	PWR1: 12 ~ 48VDC in 3-pin Terminal Block PWR2: 12 ~ 48VDC in power jack
Reverse Polarity Protection	Present at terminal block
Power Consumption	4 Watts MAX
Software Utility	
Utility	SDS-Manager for Windows NT/2000/XP/ 2003/VISTA/ Windows 7 (32/64 bits) 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
Serial Mode	Virtual Com / TCP Server / TCP Client / UDP /Serial Tunnel TCP Alive Check Timeout Inactivity Timeout Delimiter for Data Packing Force TX Timeout for Data Packing
Multiple Link	5 Hosts simultaneous connection: Virtual Com / TCP server / TCP Client / UDP

VCOM Driver	Windows NT/2000/XP/2003/VISTA/ Windows 7 (32/64 bits)
Configuration	Web HTTPS console, SSH console, Console Command SDS-Manager for Windows NT/2000/XP/VISTA
Environmental	
Operating Temperature	-40 to 70°C (-40 to 185°F)
Operating Humidity	5% to 95%(Non-condensing)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Mechanical	
Dimensions(W x D x H)	72mm(W)x123.4mm(D)x29.4mm(H)
Casing	IP-30 protection
Regulatory Approvals	
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS) EN61000-4-4 (EFT) EN61000-4-5 (Surge) EN61000-4-6 (CS)
MTBF	533,615 Hrs.
Warranty	Limited Lifetime

8. Troubleshooting

1. Is the **PWR1** or **PWR2** LED blinking Red?

YES

- Check if an IP conflict exists. Re-install the device. See the Network Setting section.
- Check if DHCP or BOOTP server did not respond properly. See the installation instructions.
- Proceed to step 2.

2. Is a Green Power LEDs lit?

NO

- Is the power source live and to spec?
- Is the power adapter properly installed?

YES

- Proceed to step 3.

3. Are the JR-45 LNK/ACT LEDs lit (green for port Link/Act, amber for Duplex/Collision)?

NO

- Verify that the RJ-45 copper cable requirements are met.
- Verify that the other end of the network cable is plugged into an active Ethernet device.

YES

For unresolved issues:

- Contact Technical Support: US/Canada: 1-800-260-1312, International: 00-1-952-941-7600.

Troubleshooting Q&A

Q1: Should SDS-Manager x64 install into “Program Files (x86)” directory on Win7 x64 (or into “Program Files” directory)?
A1: Yes, the different of X64 version of SDS-Manager is the VCOM driver, and but not necessarily for other files. So it will be put into “Program Files (x86)” in default directory.

Q2: SDS-Manager GUI indicates the DUT’s DB9 port being set to RS232 while the DUT’s hardware DIP switch indicates that it is set to RS485 (which takes precedence? Why is there a discrepancy)
A2: The dip switch is for the RS-422/485 termination but not the mode. The mode can only be changed by using software.

Q3: Using SDS-Manager to map a device to a COM port, and then using TeraTerm to connect to that COM port results in the COM port being listed twice within TeraTerm (a COM port should only show up once).
A3: This problem not found when using other Terminal software.

Q4: COM ports mapped by SDS-Manager don’t show up in Windows Device Manager.
A4: It’s designed not to show up in Device manager.

Q5: While setting up the 2nd unit, this warning displayed during discovery of device that was directly connected to the 2nd PC and nothing else: “*IP 192.168.1.77 will be collision with other device. Please select another IP again*.” The other device server used the same IP, but they weren’t connected together, which means either there was a bug and the warning was invalid, or the devices somehow communicated wirelessly.
A5: Did this PC connect with any device with the same IP? Please try to clear the ARP table of this PC.

Safety Warnings and Cautions

These products are not intended for use in life support products where failure of a product could reasonably be expected to result in death or personal injury. Anyone using this product in such an application without express written consent of an officer of Transition Networks does so at their own risk, and agrees to fully indemnify Transition Networks for any damages that may result from such use or sale.

 **Attention**: this product, like all electronic products, uses semiconductors that can be damaged by ESD (electrostatic discarge). Always observe appropriate precuations when handling.

 **Warning**: Potential for damage to equipment or personal injury.

 **Warning**: Risk of Electrical Shock

 Functional grounding point

 Protective grounding point

 Special considerations

9. Service, Warranty and Tech Support

Contact Us

Technical Support

Technical support is available 24 hours a day.

US and Canada: 1-800-260-1312

International: 00-1-952-941-7600

Transition Now 7:00 AM to 6:00 PM CST

Voice Mail: 800-260-1312 x 579 or 952-941-7600 x 579

Chat live via the Web with Transition Networks Technical Support. Log onto www.transition.com and click the Tech Support/Transition Now link.

Web-Based Seminars

Transition Networks provides seminars via live web-based training at www.transition.com click Learning Center.

E-Mail

To ask a question anytime, send an e-mail to our technical support staff at techsupport@transition.com.

Address

Transition Networks

10900 Red Circle Drive,

Minnetonka, MN 55343, U.S.A.

Telephone: 952-941-7600

Toll free: 800-526-9267

Fax: 952-941-2322

Warranty

This warranty is your only remedy. No other warranties, such as fitness for a particular purpose, are expressed or implied. Transition Networks is not liable for any special, indirect, incidental or consequential damages or losses, including loss of data, arising from any cause or theory.
Authorized resellers are not authorized to extend any different warranty on transition networks' behalf.
Effective for products shipped May 1, 1999 and after. Every Transition Networks' labeled product purchased after May 1, 1999 will be free from defects in material and workmanship for the product's Lifetime. This warranty covers the original user only and is not transferable.

What the Warranty Does Not Cover

This warranty does not cover damage from accident, acts of God, neglect, contamination, misuse or abnormal conditions of operation or handling, including over-voltage failures caused by use outside the product's specified rating, or normal wear and tear of mechanical components. If the user is unsure of the proper means of installing or using the equipment, contact Transition Networks' free technical support services.

Establishing Original Ownership

To establish original ownership and provide date of purchase, please complete and return the registration card accompanying the product or register the product on-line on our product registration page.
Transition Networks will at its option:

- Repair the defective product to functional specifications at no charge
- Replace the product with an equivalent functional product
- Refund the purchase price of a defective product

Who to Contact for Returns

To return a defective product for warranty coverage, contact Transition Networks' technical support department for a return authorization number. Transition's technical support department can be reached through any of the following means:

How and Where to Send Returns

Send the defective product postage and insurance prepaid to the following address:

Transition Networks, Inc.

10900 Red Circle Drive

Minnetonka, MN 55343 USA

Attn: RETURNS DEPT: CRA/RMA # _____

Failure to properly protect the product during shipping may void this warranty. The return authorization number must be written on the outside of the carton to ensure its acceptance. We cannot accept delivery of any equipment that is sent to us without a CRA or RMA number.

CRA's are valid for 60 days from the date of issuance. An invoice will be generated for payment on any unit(s) not returned within 60 days.

Upon completion of a demo/ evaluation test period, units must be returned or purchased within 30 days. An invoice will be generated for payment on any unit(s) not returned within 30 days after the demo/ evaluation period has expired.

The customer must pay for the non-compliant product(s) return transportation costs to Transition Networks for evaluation of said product(s) for repair or replacement. Transition Networks will pay for the shipping of the repaired or replaced in-warranty product(s) back to the customer (any and all customs charges, tariffs, or/and taxes are the customer's responsibility).

Before making any non-warranty repair, Transition Networks requires a $200.00 charge plus actual shipping costs to and from the customer. If the repair is greater than $200.00, an estimate is issued to the customer for authorization of repair. If no authorization is obtained, or the product is deemed 'not repairable', Transition Networks will retain the $200.00 service charge and return the product to the customer not repaired. Non-warranted products that are repaired by Transition Networks for a fee will carry a 180-day limited warranty. All warranty claims are subject to the restrictions and conventions set forth by this document.

Transition Networks reserves the right to charge for all testing and shipping incurred, if after testing, a return is classified as "No Problem Found."

THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. TRANSITION NETWORKS IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE OR THEORY. AUTHORIZED RESELLERS ARE NOT AUTHORIZED TO EXTEND ANY DIFFERENT WARRANTY ON TRANSITION NETWORKS'S BEHALF.

Customer Pays Non-Compliant Return Costs

The customer must pay the non-compliant product(s) return transportation cost to Transition Networks for evaluation of said product(s) for repair or replacement. Transition Networks will pay for shipping the repaired or replaced in-warranty product(s) back to the customer (any and all customs charges, tariffs, or/and taxes are the customer's responsibility).

Non-Warranty Repair Costs

Before making any non-warranty repair, Transition Networks requires a $200 charge, plus actual shipping costs to and from the customer. If the repair is greater than $200, an estimate is issued to the customer for authorization before making the repair. If no authorization is obtained, or the product is deemed not repairable, Transition Networks will retain the $200 service charge and return the product to the customer not repaired.

Repaired Non-Warranty Products

Non-warranted products repaired by Transition Networks for a fee will carry a 180-day limited warranty.
All warranty claims are subject to the restrictions and conventions set forth by this document.
Transition Networks reserves the right to charge for all testing and shipping incurred, if after testing, a return is classified as "No Problem Found."

10. Compliance Certifications

- EN60950
- UL508

Declaration of Conformity

DECLARATION OF CONFORMITY

Transition Networks, Inc.

Manufacturer's Name

10900 Red Circle Drive, Minnetonka, Minnesota 55343 U.S.A.

Manufacturer's Address

DECLARES THAT THE PRODUCT(S)

SDSTX3110-121-LRT and SDSTX3110-124-LRT

SDSFX3113-111-LRT and SDSFX3114-111-LRT

CONFORM TO THE FOLLOWING PRODUCT REGULATIONS:

FCC Part 15, CISPR22 / EN55022 Class A
EN61000-4-2 (ESD), EN61000-4-3 (RS); EN61000-4-4 (EFT);
EN61000-4-5 (Surge); EN61000-4-6 (CS)
EN61000-4-8, EN61000-4-11,
IEC60068-2-27, IEC60068-2-32, IEC6068-2-6

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standards(s).

Minnetonka, Minnesota	*March 12, 2015*	*Stephen Anderson*	
Place	Date	Signature	
		Stephen Anderson	*Vice President of Engineering*
		Full Name	Position

151415

European Regulations

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

Achtung ! Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten. In diesem Fäll ist der Benutzer für Gegenmaßnahmen verantwortlich.

Attention ! Ceci est un produit de Classe A. Dans un environment domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilsateur de prende les measures spécifiques appropriées.

In accordance with European Union Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003, Transition Networks will accept post usage returns of this product for proper disposal. The contact information for this activity can be found in the 'Contact Us' portion of this document.

CAUTION: RJ connectors are NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE

NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentlickes Telekommunikationsnetz in den EG-Mitgliedstaaten verstösst gegen die jeweligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

Electrical Safety Warnings

Electrical Safety

IMPORTANT: This equipment must be installed in accordance with safety precautions.

Elektrische Sicherheit

WICHTIG: Für die Installation dieses Gerätes ist die Einhaltung von Sicherheitsvorkehrungen erforderlich.

Elektrisk sikkerhed

VIGTIGT: Dette udstyr skal 78nstallers I overensstemmelse med sikkerhedsadvarslerne.

Elektrische veiligheid

BELANGRIJK: Dit apparaat moet in overeenstemming met de veiligheidsvoorschriften worden geïnstalleerd.

Sécurité électrique

IMPORTANT : Cet équipement doit être utilisé conformément aux instructions de sécurité.

Sähköturvallisuus

TÄRKEÄÄ : Tämä laite on asennettava turvaohjeiden mukaisesti.

Sicurezza elettrica

IMPORTANTE: questa apparecchiatura deve essere installata rispettando le norme di sicurezza.

Elektrisk sikkerhet

VIKTIG: Dette utstyret skal 79nstallers I samsvar med sikkerhetsregler.

Segurança eléctrica

IMPORTANTE: Este equipamento tem que ser instalado segundo as medidas de precaução de segurança.

Seguridad eléctrica

IMPORTANTE: La instalación de este equipo deberá llevarse a cabo cumpliendo con las precauciones de seguridad.

Elsäkerhet

OBS! Alla nödvändiga försiktighetsåtgärder måste vidtas när denna utrustning används.

Record of Revisions

Rev	Date	Description of Changes
A	5/15/15	Initial release for SDSTX3110-121-LRT. Firmware: SDSTX3110-121-LRT_V1.1_20150401.bin

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Copyright restrictions

Address comments on this product or manual to:

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E-Mail: customerservice@transition.com / techsupport@transition.com sales@transition.com / info@transition.com