

RS232 Serial Over IP Device Server



*I23-SERIAL-ETHERNET shown
Actual product may vary from photos*

User Manual

SKU#: I23-SERIAL-ETHERNET / I43-SERIAL-ETHERNET

For the latest information and specifications visit
www.StarTech.com/I23-SERIAL-ETHERNET / www.StarTech.com/I43-SERIAL-ETHERNET

Compliance Statements

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B 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

Industry Canada Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

CAN ICES-3 (B)/NMB-3(B)

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Safety Statements

Safety Measures

- Wiring terminations should not be made with the product and/or electric lines under power.
- Cables (including power and charging cables) should be placed and routed to avoid creating electric, tripping or safety hazards.

Mesures de sécurité

- Les terminaisons de câblage ne doivent pas être effectuées lorsque le produit et/ou les câbles électriques sont sous tension.
- Les câbles (y compris les câbles d'alimentation et de chargement) doivent être placés et acheminés de façon à éviter tout risque électrique, de chute ou de sécurité

安全対策

- 電源が入っている状態の製品または電線の終端処理を行わないでください。
- ケーブル(電源ケーブルと充電ケーブルを含む)は、適切な配置と引き回しを行い、電気障害やつまづきの危険性など、安全上のリスクを回避するようにしてください。

Misure di sicurezza

- I terminali dei fili elettrici non devono essere realizzate con il prodotto e/o le linee elettriche sotto tensione.
- I cavi (inclusi i cavi di alimentazione e di ricarica) devono essere posizionati e stesi in modo da evitare pericoli di inciampo, rischi di scosse elettriche o pericoli per la sicurezza.

Säkerhetsåtgärder

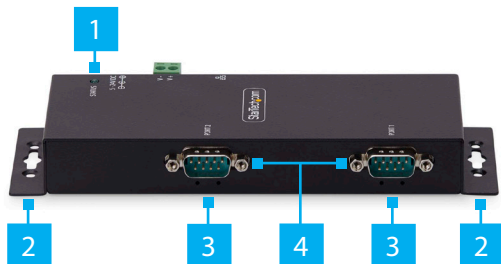
- Montering av kabelavslutningar får inte göras när produkten och/eller elledningarna är strömförda.
- Kablar (inklusive elkablar och laddningskablar) ska dras och placeras på så sätt att risk för snubblingsolyckor och andra olyckor kan undvikas.

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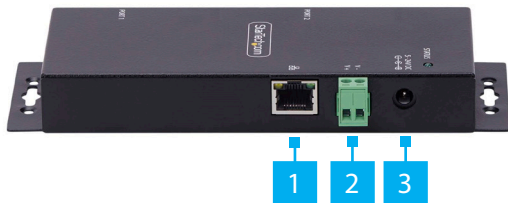
Product Diagram (I23-SERIAL-ETHERNET)

Front View



| Component | | Function |
|-----------|-------------------------------------|---|
| 1 | Status LED | <ul style="list-style-type: none"> Refer to LED Chart |
| 2 | Wall Mounting Bracket Holes | <ul style="list-style-type: none"> Used to secure the Serial Device Server to a Wall or Other Surface using appropriate Mounting Hardware |
| 3 | Serial Communication LED Indicators | <ul style="list-style-type: none"> Refer to LED Chart |
| 4 | DB-9 Serial Ports | <ul style="list-style-type: none"> Connect an RS-232 Serial Device |
| 5 | DIN Rail Mounting Holes (Not Shown) | <ul style="list-style-type: none"> Four Holes on the bottom of the Serial Device Server Used to secure the included DIN Rail Mounting Kit to the Serial Device Server |

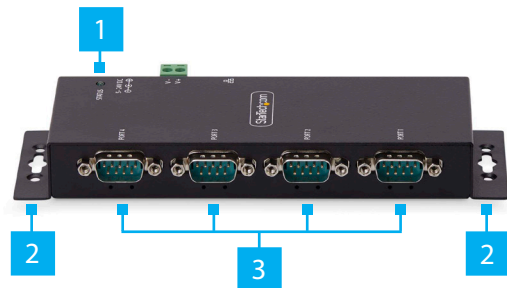
Rear View



| | Component | Function |
|---|--------------------------------------|--|
| 1 | Ethernet Port | <ul style="list-style-type: none"> • Connect an Ethernet Cable to the Serial Device Server • Supports 10/100Mbps • Link/Activity LEDs: Refer to LED Chart |
| 2 | DC 2-Wire Terminal Block Power Input | <ul style="list-style-type: none"> • Connect a +5V~24V DC Power Source • A minimum of 5V 3A (15W) is required |
| 3 | DC Power Input | <ul style="list-style-type: none"> • Connect the included Power Adapter |

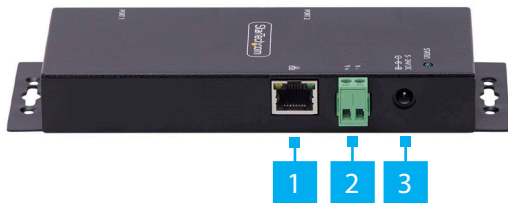
Product Diagram (I43-SERIAL-ETHERNET)

Front View



| Component | | Function |
|-----------|--|---|
| 1 | Status LED | <ul style="list-style-type: none"> Refer to LED Chart |
| 2 | Wall Mounting Bracket Holes | <ul style="list-style-type: none"> Used to secure the Serial Device Server to a Wall or Other Surface using appropriate Mounting Hardware |
| 3 | DB-9 Serial Ports | <ul style="list-style-type: none"> Connect an RS-232 Serial Device |
| 4 | Serial Communication LED Indicators (Not Labelled) | <ul style="list-style-type: none"> Below each DB-9 Port Refer to LED Chart |
| 5 | DIN Rail Mounting Holes (Not Shown) | <ul style="list-style-type: none"> Four Holes on the bottom of the Serial Device Server Used to secure the included DIN Rail Mounting Kit to the Serial Device Server |

Rear View



| Component | | Function |
|-----------|--------------------------------------|--|
| 1 | Ethernet Port | <ul style="list-style-type: none"> Connect an Ethernet Cable to the Serial Device Server Supports 10/100Mbps Link/Activity LEDs: Refer to LED Chart |
| 2 | DC 2-Wire Terminal Block Power Input | <ul style="list-style-type: none"> Connect a +5V~24V DC Power Source A minimum of 5V 3A (15W) is required |
| 3 | DC Power Input | <ul style="list-style-type: none"> Connect the included Power Adapter |
| 4 | Factory Reset Button (Not Shown) | <ul style="list-style-type: none"> Resets the Serial Device Server to factory defaults Refer to Factory Reset Procedure |

Product Information

Package Contents

- Serial Over IP Device Server x 1
- DIN Rail Kit x 1
- Din Rail Screws x 2
- Universal Power Adapter x 1
- Quick-Start Guide x 1

Installation

Default Settings

Out of the Box Settings

- IP Address: DHCP
- Password: admin
- Network Protocol Mode: Telnet Server (RFC2217)
- Serial Mode: RS-232

Factory Default Button Settings

- IP Address: 192.168.5.252
- Password: admin
- Network Protocol Mode: Telnet Server (RFC2217)
- Serial Mode: RS-232

Hardware Installation

(Optional) Configure DB-9 Pin 9 Power

By default, the **Serial Device Server** is configured with the **Ring Indicator (RI)** on **Pin 9**, but it can be changed to **5V DC**. To change the **DB9 Connector Pin 9** to **5V DC** output, please follow these steps:

WARNING! Static Electricity can severely damage electronics. Ensure that you are adequately Grounded before you open the device housing or touch the change the jumper. You should wear an Anti-Static Strap or use an Anti-Static Mat when opening the housing or changing the jumper. If an Anti-Static Strap isn't available, discharge any built-up static electricity by touching a large Grounded Metal Surface for several seconds.

1. Ensure the **Power Adapter** and all **Peripheral Cables** are disconnected from the **Serial Device Server**.
2. Ensure the **Terminal Block Connector** has been removed from the **Serial Device Server**.
3. Using a **Phillips Screwdriver**, remove the **Screws** from the **Housing**.
Note: Save these to re-assemble the housing after changing the jumper.
4. Using both hands, carefully open the **Housing** to expose the **Circuit Board** inside.
5. Identify **Jumper #4 (JP4)**, located inside the **Housing** next to the **DB9 Connector**.
6. Using a pair of fine-point tweezers or a small flat-head screwdriver, carefully move the jumper to the **5V** position.
7. Re-assemble the **Housing**, ensuring the **Housing Screw Holes** align.
8. Replace the **Terminal Block Connector** and **Housing Screws** removed in **Step 2** and **Step 3**.

(Optional) Mounting The Serial Device Server With DIN Rail

1. Align the **DIN Rail Bracket** with the **DIN Rail Mounting Holes** on the bottom of the **Serial Device Server**.
2. Using the included **DIN Rail Mounting Screws** and a **Phillips Head Screwdriver**, secure the **DIN Rail Kit** to the **Serial Device Server**.
3. Insert the **DIN Rail Mounting Plate** at an angle starting from the **Top**, then **Push** it against the **DIN Rail**.

(Optional) Mounting The Serial Device Server To A Wall Or Other Surface

1. Secure the **Serial Device Server** to the desired **Mounting Surface** using the appropriate **Mounting Hardware** (i.e., wood screws) through the **Wall Mounting Bracket Holes**.

Install the Serial Device Server

1. Connect the included **Power Supply** or a **5V~24V DC Power Source** to the **Serial Device Server**.
***Note:** The Serial Device Server can take up to 80 seconds to startup.*
2. Connect an **Ethernet Cable** from the **RJ-45 Port** of the **Serial Device Server** to a **Network Router, Switch, or Hub**.
3. Connect an **RS-232 Serial Device** to the **DB-9 Port** on the **Serial Device Server**.

Software Installation

1. Navigate to:
www.StarTech.com/I23-SERIAL-ETHERNET
or
www.StarTech.com/I43-SERIAL-ETHERNET
2. Click the **Drivers/Downloads** tab.
3. Under **Driver(s)**, download the **Software Package for Windows Operating System**.
4. Extract the contents of the downloaded .zip file.

To view manuals, videos, drivers, downloads, technical drawings, and more visit www.startech.com/support

5. Run the extracted executable file to start the software installation.
6. Follow the on screen prompts to complete the installation.

Operation

Note: *The devices support features which secure and protect the devices and its configuration using standard/best practices but as these are intended to be used in controlled environments using proprietary software (virtual COM port) and open communication standards (Telnet, RFC2217) which do not encrypt the data they should not be exposed to an unsecure connection.*

Telnet

Using Telnet to send or receive data works with any operating system or host device that supports the Telnet protocol. The software for the connected serial peripheral device may require a COM Port or mapped hardware address. To configure this, the StarTech.com Device Server Manager is required, which is only supported on Windows operating systems.

To communicate with the connected **Serial Peripheral Device** via Telnet, perform the following:

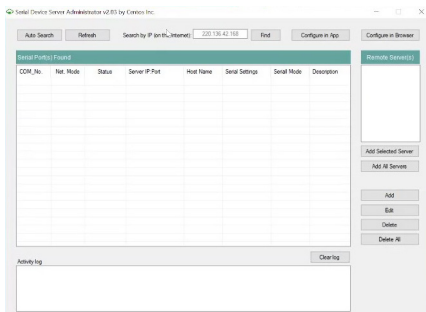
1. Open a terminal, command prompt, or third-party software that connects to a Telnet server.
2. Type the **IP Address** of the **Serial Device Server**.

Note: *This can be found using the StarTech.com Device Server Manager for Windows, or by viewing the connected devices on the local network router.*

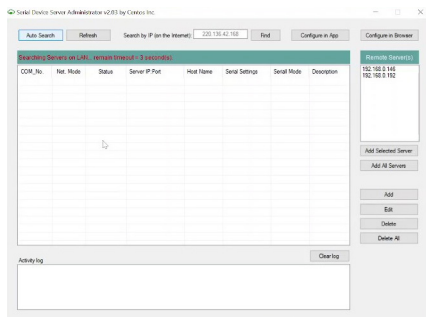
3. Connect to the **Serial Device Server**.
4. Type in the terminal, command prompt, or third-party software to send commands/data to the **Serial Peripheral Device**.

Use the Software to Discover the Serial Device Server

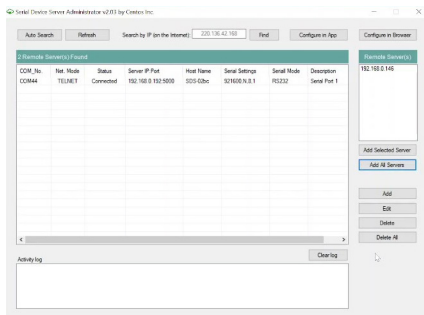
1. Launch the StarTech.com Device Server Manager.



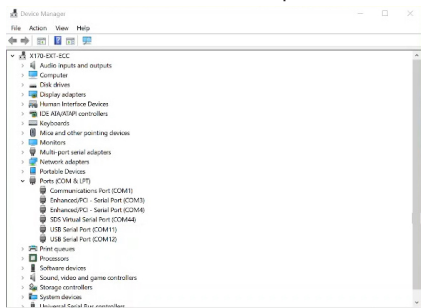
2. Click **Auto Search** to initiate the process of discovering **Serial Device Servers** on the local network.
3. Discovered **Serial Device Servers** will appear in the “Remote Server(s)” list in the right pane.



4. Select "Add Selected Server" to add a specific **Serial Device Server** or "Add All Servers" to add all discovered **Serial Device Servers**.



5. The **Serial Device Servers** will be mounted in Device Manager as "SDS Virtual Serial Port" with an associated COM port number.



Configure the Serial Port Settings

Available Serial Port Options

| Setting | Available Options |
|--------------|--|
| Baud Rate | <ul style="list-style-type: none"> • 300 • 600 • 1200 • 1800 • 2400 • 4800 • 9600 • 14400 • 19200 • 38400 • 57600 • 115200 • 230400 • 921600 |
| Data Bits | <ul style="list-style-type: none"> • 7 • 8 |
| Parity | <ul style="list-style-type: none"> • None • Even • Odd • Mark • Space |
| Stop Bits | <ul style="list-style-type: none"> • 1 • 2 |
| Flow Control | <ul style="list-style-type: none"> • Hardware • Software • None |

In the Software

1. Open the StarTech.com Device Server Manager.
2. Select “Configure in App” or double click the **Serial Device Server** in the list.
3. When the **Settings Window** opens, use the drop down menus to change Baud Rate, Data Bits, COM Port Number, and more.

Note: If changing the COM Port Number, see “Changing COM Port or Baud Rate in Windows” on Page 15.

☒ Edit Connection Parameters

Basic Settings **Advanced Settings**

COM No.: COM44

Network Mode: TELNET

Connection Type: Client

COM Port Type: Virtual

Connection Name: Client_COM44

Remote Server IP: 192.168.208.4

Port: 5000

Serial Port Settings

Baud Rate: 9600 **Data Bits:** 8 **Parity:** None

Stop Bits: 1 **Flow Control:** None

Serial Baud Rate Emulation: ☒ Enabled ☐ Disabled

Apply Changes **Discard Changes**

Advanced Settings

Edit Advanced Settings

Packet Detection

Add pause between packets: none

Before sending packets, wait for: none

Send out the data when the block is: bytes

Send data when received char with code: (ASCII)

Connection Settings

Connect to remote and only when local virtual port is open:

☒ On error retry to establish connection every: 5000 msec

Break connection if no activity for: 10 sec

Send keep alive every: 7 sec

If no reply, every: 1 sec

Data Transfer

Receive data from (RAW mode only): None

Send data to (RAW mode only): None

☒ Notify remote host on local settings change (Telnet)

☒ Allow changing local port settings for real ports only (Telnet)

Data Buffer Settings

Buffer size: 0 KB

Disable Nagle algorithm

Disabling the Nagle algorithm improves small packet response time.

Proxy

Connect to remote server via proxy:

Proxy type:

Proxy server address:

Port: 0

Security

☐ Authenticate

Username:

Password:

Redirect DNS requests to proxy server

Signal Lines

Signal lines state when connection is not established:

DSR: CTS: DCD:

Signal lines state once connection is established:

☒ DSR ☒ CTS ☒ DCD

Allow changing signal lines states when using Telnet:

☒ Allow for DSR ☒ Allow for CTS ☒ Allow for DCD

4. Select “Apply Changes” to save the settings.

In the Web Interface

1. Open a web browser.
2. Type the IP address of the **Serial Device Server** into the address bar.
3. Enter the password and select "Login". See Default Password on Page 6.
4. Select the "Serial Settings" to expand the options.

StarTech.com **Settings** System Management Change Password Restore Default Reboot Server Logout

Settings

| Host Name | Location | DHCP | IP Address | Subnet Mask | Gateway Address | MAC Address | Firmware Version |
|-----------|----------|---------|---------------|---------------|-----------------|-------------------|------------------|
| SDS-1001 | Tapein | Enabled | 192.168.9.202 | 255.255.255.0 | 192.168.9.1 | e8 ea 6a 10 10 01 | v3.00.03.231214 |

| Port | Mode | Destination IP Port | Socket Port | Serial Mode | Serial Settings | COM No. | Description | Reconnect |
|------|---------------|---------------------|-------------|-------------|-----------------|---------|---------------|-----------|
| 1 | Telnet Server | None | 8080 | RS232 | 9600-8-N-1-N | COM 44 | Serial Port 1 | Reconnect |

Save Changes

5. Use the drop down menus to change Baud Rate, Data Bits, COM Port Number, and more.

StarTech.com **Settings** System Management Change Password Restore Default Reboot Server Logout

Settings

| Host Name | Location | DHCP | IP Address | Subnet Mask | Gateway Address | MAC Address | Firmware Version |
|-----------|----------|---------|---------------|---------------|-----------------|-------------------|------------------|
| SDS-1001 | Tapein | Enabled | 192.168.9.202 | 255.255.255.0 | 192.168.9.1 | e8 ea 6a 10 10 01 | v3.00.03.231214 |

| Port | Mode | Destination IP Port | Socket Port | Serial Mode | Serial Settings | COM No. | Description | Reconnect |
|------|---------------|---------------------|-------------|-------------|-----------------|---------|---------------|-----------|
| 1 | Telnet Server | None | 8080 | RS232 | 9600-8-N-1-N | COM 44 | Serial Port 1 | Reconnect |

| Baud Rate | Data Bits | Parity | Stop Bits | Flow Control | Other Options | Set |
|-----------|-----------|--------|-----------|--------------|---------------|-----|
| 9600 | 8 | None | 1 | None | | OK |

Save Changes

6. Under "Set", select "OK" to set the serial settings to the port.
7. Select "Save Changes" to save the settings to the **Serial Device Server**.

Changing COM Port or Baud Rate in Windows

To change the **COM Port** number or **Baud Rate** in **Windows**, the device must be deleted and re-created in the StarTech.com Device Server Manager.

Note: *This is not necessary when using macOS or Linux which use Telnet to communicate with the Serial Device Server and do not map the device to a COM port or hardware address.*

1. Open a web browser and navigate to the IP address of the **Serial Device Server** or click "Configure in Browser" in the StarTech.com Device Server Manager.
2. Enter the **Serial Device Server** password.
3. Under "COM No.", change it to the desired **COM Port** number or change the **Baud Rate** to match the **Baud Rate** of the connected **Serial Peripheral Device**.

Note: *Ensure the COM port number you assign is not already in use by the system, otherwise it will cause a conflict.*

4. Click **Save Changes**.
5. In the StarTech.com Device Server Manager, click the **Serial Device Server** which should still have the old **COM Port** number, then click Delete.
6. Re-add the **Serial Device Server** using "Add Selected Server" to add a specific **Serial Device Server** or "Add All Servers" to add all discovered **Serial Device Servers**.
7. The **Serial Device Server** should now be mapped to the new **COM Port** number.

LED Chart

| LED Name | | LED Function |
|----------|----------------------------|--|
| 1 | Link/Activity LEDs (RJ-45) | <ul style="list-style-type: none"> • Steady Green: Indicates Ethernet connection has established, but no data activity • Blinking Green: Indicates data activity • Off: Ethernet is not connected |
| 2 | Serial Port LEDs (DB-9) | <ul style="list-style-type: none"> • Blinking Green: Indicates serial data is being transmitted and/or received <ul style="list-style-type: none"> • Right LED: Transmit Data Indicator • Left LED: Receive Data Indicator • Off: No serial data is being transmitted or received |
| 3 | Power/Status LED | <ul style="list-style-type: none"> • Steady Green: Power is On • Off: Power is Off • Blinking Green: Restoring to Factory Defaults |

Factory Reset Procedure

To initiate the factory reset procedure, press and hold the **Factory Reset Button** for at least **5 seconds**. When the **Status LED** begins blinking, release the **Factory Reset Button**. The **Status LED** will then illuminate, indicating that the **Serial Device Server** is rebooting.



**I43-SERIAL-ETHERNET shown*

Warranty Information

This product is backed by a two-year warranty.

For further information on product warranty terms and conditions, please refer to www.startech.com/warranty.

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