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1 Port RS232 Serial over IP Ethernet Device Server

NETRS2321P

*actual product may vary from photos

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NL: Gebruiksaanwijzing - nl.startech.com
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FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

•   Reorient or relocate the receiving antenna.

•   Increase the separation between the equipment and receiver.

•   Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

•   Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by StarTech.com could void the user's authority to operate the equipment.

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Product Overview

Top View

DIN rail screw hole

Wall-mount screw hole

Front View

RS-232 DB9 male serial port

Rear View

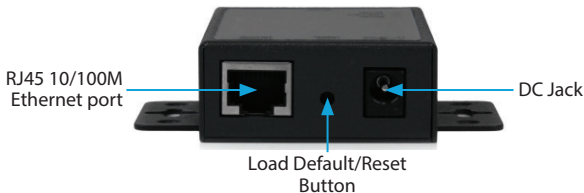RJ45 10/100M Ethernet port

DC Jack

Load Default/Reset Button

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DIN Rail Mounting

Attach the included DIN Rail brackets (one per side) using the provided screws to the top DIN Rail screw hole (marked in the above diagram), and clip to your DIN Rail

Load Default Settings / System Reset Button

Load Default Settings

Press and hold this button for more than 3 seconds, then release to load the factory default settings.
IP address: **10.1.1.1**
Subnet Mask: **255.0.0.0**
Login ID / Password: **admin**

System Reset

Press and hold this button for more than 10 seconds, then release to reboot the device (maintains configuration settings)

LED Indicators

LED Name	Status	Description
Ready	On	Power is on and the device is ready.
	Off	Power is off or the device is not ready.
Link/Act	On	UTP is link.
	Blinking	UTP Tx/Rx is activity.
	Off	UTP is not link.
Tx/Rx	Blinking	RS-232 port is transmitting or receiving data.
	Off	No data is transmitting or receiving in RS-232 port.

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RJ45 Ethernet Pin Assignments

Pin	
1	TX+
2	TX-
3	RX+
6	RX-

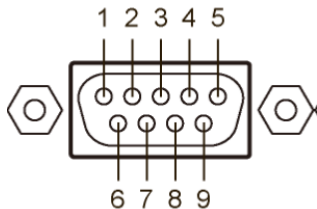Pin 8   Pin 1
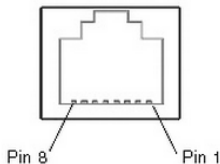
RS-232 DB9 Male Pin Assignment

NOTE: This serial device server performs as a **DTE** device.

Pin	Name	I/O
1	DCD	Input
2	RD	Input
3	TD	Output
4	DTR	Output
5	GND	
6	DSR	Input
7	RTS	Output
8	CTS	Input

1 2 3 4 5

6 7 8 9

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Introduction

Packaging Contents

- 1 x Serial over IP Device Server
- 1 x Universal Power Adapter (NA/UK/EU)
- 1 x Software CD
- 1 x Instruction Manual
- 1 x DIN Rail Kit

Installation

Web Browser Method

1. Plug in the power adapter and connect the RJ45 interface to your LAN.

   NOTE: Alternatively, you can also use a crossover cable to connect the NETRS2321P directly to your system for the initial configuration.

2. Press and hold the load default button for more than 3 seconds and less than 10 seconds, then release it. This will return the serial device server to factory default and it will respond to the IP address 10.1.1.1.

3. Configure the PC to the same IP domain.

4. Open a web browser and connect to **http://10.1.1.1** to open the configuration interface. The default login ID will be "**admin**" and the password will be "**admin**".

5. Once logged in, you will have access to all configuration settings including the ability to change the IP address for the device server.

Virtual COM Port Application

1. Plug in the power adapter and connect the RJ45 interface to your LAN.

2. Insert the included CD and launch the VirtualCom software.

3. Follow the on-screen instructions to install VirtualCom and WinPcap.

4. Once installed, double-click the VCOM shortcut to launch the application.

5. Click the Search button in the VCOM software window to locate the device.

   NOTE: You may receive a firewall notification at this point of the install, please allow access to this application

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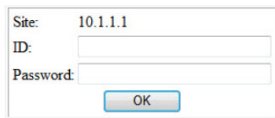
Broadcast Search

The Broadcast Search function is used to locate all NETRS2321P devices that are connected to the same LAN as your computer. Since the Broadcast Search function searches by MAC address and not IP address, all NETRS2321P connected to the LAN will be located, regardless of whether or not they are part of the same subnet as the host.

NOTE: Broadcast packet packets are not passed through a router. The VCom utility can only be used to monitor devices in the same segment of the LAN.

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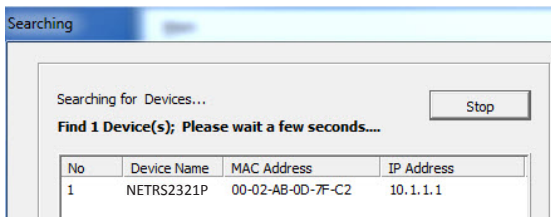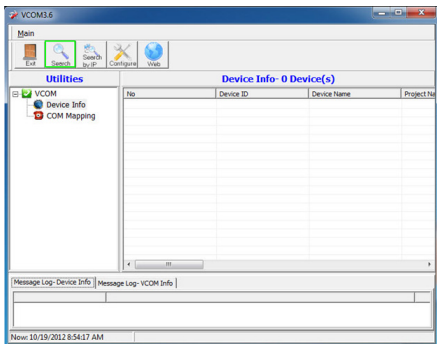
Web Console Operation

Enter the IP address you have set for the NETRS2321P device into your web browser address bar (default IP: 10.1.1.1) and you will prompted to login with your user ID and password (Default: admin/admin).

Site:	10.1.1.1
ID:	
Password:	
	OK

After a successful login, you will see Administrator, TCP Mode, UDP Mode, UART, and Reset Device selections in left frame of the web console - the following sections will describe their function.

Administrator
- Authentication
- System IP
- System Status
- Load default setting
- Firmware update

- **TCP Mode**
- **UDP Mode**
- **UART**
- **Reset Device**

Administrator

Under the 'Administrator' heading, you will be able to set/change the device password, configure the networking parameters, display the current firmware version, load the factory defaults, and perform any future firmware upgrades.

Authentication

In this page, you can change login ID and Password. The NETRS2321P device supports a maximum of 15 characters for password, only alphanumeric characters are allowed ("0-9","a-z","A-Z").

Setting	Value	
Username	admin	max::15
Password	•••••	max::15
Confirm	•••••	
	Update	

Press "Update" to store the data. Reset the device to take effect.

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System IP

On this page, you can adjust the NETRS2321P network configuration. If set to DHCP mode, all other settings will be ignored, and the IP address will be assigned by DHCP server after resetting the device.

Setting	Value
IP Address	10 . 1 . 1 . 1
Subnet Mask	255 . 0 . 0 . 0
Gateway	10 . 1 . 1 . 254
DNS	10 . 1 . 1 . 254
IP Configure	⊙ Static ○ DHCP
VLAN Tag	⊙ Disable ○ Enable : VLAN ID 0
	Update

Press "Update" to store the data. Reset the device to take effect.

System Status

On this page, you can display the system Kernel firmware version and MAC Address.

You can also adjust the device alias (Target Name) and Idle timeout settings. The Target Name field allows a Max of 12 characters, including "0-9","a-z","A-Z", _ (underscore),and "-" (dash).

Item	Value
Kernel Version	V1.3.2 2012/09/28
MAC Address	00:02:AB:0D:7F:C2
Target Name	NETRS2321P max:12
Idle Time Security	10 (1-99 minute) Update

Press "Update" to store the 'Target Name' data, and then, NETRS2321P will reset to take effect.

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Load default setting

On this page, you can load and store the factory default settings into EEPROM.

NOTE: Network settings and MAC address will not be changed.

Load Default Setting to EEPROM
Load

Press "Load" to load default settings. Reset the device to take effect.

Firmware update

On this page, you can update the firmware via Ethernet.

WARNING! Pressing the 'Load' button will immediately erase the flash with no further warning

1. Pressing the "Load" button will erase flash.

2. Wait for erase process to complete.

Erase Flash In Progress (37/128)
If this webpage doesn't refresh smoothly, please connect to http://10.1.1.1 to continue.

3. There are two methods to do the Firmware Update action (TFTP or Web):

   NOTE: Please avoid loss of network connection, power or other interruption during the firmware upgrade procedure

Web

   a. Please type in or browse the target image file in the input field, and then press "update" button to continue.

Firmware Update by Web browser
Select the image file: C:\Documents and Settings\ems\Desktop\STE100A\NETUART. Browse...

Click "Update" to upload file: Update

TFTP

   a. Use Windows Command Prompt window to run the tftp client program.

   Syntax: tftp -i 10.1.1.1 put FILE_DIRECTORY\FILENAME.bin

   b. The firmware update should take about 45 seconds to complete.

   c. If the update process somehow goes wrong (like power failure), please connect to http://10.1.1.1 to try and restart the process (you may have to reset the device first)

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TCP Mode

NOTE: When TCP mode is set to Server or Client mode, the UDP mode will be disabled automatically. When UDP mode is enabled, the TCP mode will be disabled automatically.

Once you have completed making changes, press "Update" to store the data. Reset the device to take effect.

Item	Setting
Telnet Server/Client	● Server ○ Client ○ Disable
Reverse Telnet	○ On ● Off
CLI Mode	☐ Enable
Port Number	23
Control Protocol	○ RFC2217 ● Port Number : 6000
Remote Server IP Address	● IP 10 . 1 . 1 . 2 ○ Domain Name 0
Client mode inactive timeout	20 second (1~65535,0=Disable)
Server mode protect timeout	60 second (2~65535,0=Disable,1=Can't replace)
	Update

Telnet Server / Client

Set the device to be a **Telnet Server**. In server mode, the Telnet port listens and waits for a host or other client to make a connection. In this case the Ethernet connected device is the client.

Set the device to be a **Telnet Client**. In the case the Ethernet connected device is the Telnet server or other NETRS2321P in server mode.

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Reverse Telnet

Reverse Telnet works the same as Telnet Server mode. The Telnet port is listens for a connection after booting up. If you encounter errors when using some Telnet clients, such as the Microsoft interpretation of Telnet for Windows XP you can try the connection using Reverse Telnet mode.

CLI Mode

The Command Line Interface (CLI) allows user to configure and control NETRS2321P directly through the UART interface.

NOTE: CLI mode is only available when NETRS2321P is in TCP Server Mode.

Port Number

This assigns the TCP server port number that the server will listen on for connecting clients. (Only for TCP Server Mode)

Remote Server IP Address

When in Client mode, this device will automatically try to connect to the remote TCP server with this IP address.

Client mode inactive timeout

When in Client mode, this parameter sets the time that device will maintain a connection until timeout, if there is no data transfer over the connection. After disconnecting, the device will try to build a new connection again immediately.

Server mode protect timeout

When in Server mode, this parameter sets the time that device will maintain a connection until timeout, if there is no data transfer over the connection. Once disconnected, only a Client can initiate a new connection to the Server.

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UDP Mode

When UDP mode is enabled, TCP mode will be disabled automatically. In UDP mode, the Local Port will be assigned to this device. You can list the remote connection IP and Port for up to 10 remote devices.

Once you have completed making changes, press "Update" to store the data. Reset the device to take effect.

Item	Value	
Mode	○ Listen ○ Normal ● Disable	
Local Port	21	
	IP	Port
Remote Address	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0
	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0
	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0
	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0
	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0
	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0
	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0
	● 0 . 0 . 0 . 0 IP ○ 0 Domain Name	0

Mode

Listen: When in UDP Listen mode, it can only receive remote UDP data.

Normal: When in UDP Normal mode, it can both receive and send UDP data to remote units.

Local Port

Assign the UDP port that this unit listens on.

Remote Address

The remote address table allows users to set several remote site IP addresses and ports. When sending data, the device will send UDP data to the IP addresses in the table.

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UART

UART or Universal Asynchronous Receiver Transmitter refers to the 'RS-232 serial port' of the NETRS2321P. All of the port settings are modified from this page.

Once you have completed making changes, press "Update" to store the data. Reset the device to take effect.

Item	Setting
Baudrate	57600
Character Bits	8
Parity Type	none
Stop Bit	1
Hardware Flow Control	none
Uart Memory Overflow count	2821M,340K,319Byte
Uart FIFO Overflow count	0times
Delimiter	□ Character 1: 00 , □ Character 2: FF □ Silent time: 5 (1~255)*200ms □ Drop Character
	Update

Baud rate

Set the baud rate of UART interface. The NETRS2321P supports 110, 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 and 230400bps baud rates.

Character Bits

Set the number of data length of UART interface. The NETRS2321P supports character bits of 5, 6, 7, or 8 bits.

Parity Type

Set the parity of UART interface. The NETRS2321P supports parity settings of Odd, Even, Space, Mark or none.

Stop Bit

Set the stop bit length of UART interface. The NETRS2321P supports 1, 1.5 or 2 stop bits.

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Hardware Flow Control

Set the flow control mode of UART interface as enabled or as none.

UART Memory Overflow count

Shows the number of overflow bytes in network buffer.

UART FIFO Overflow count

Shows the number of overflows counted in the UART RX buffer.

Delimiter

This sets the **Character 1** and/or **Character 2** to be used as the delimiter. When sending data from serial to TCP the data is first stored in the cache. When set, not until the value of character 1 or 2 is received from the serial side is the data released from the cache and sent to TCP.

Silent time - If there is no data sent or received for the number of milliseconds specified the connection is dropped.

The **Drop Character** drops the delimiter character of the serial port when sending to TCP, (the receiver doesn't display the character).

Reset Device

Pressing the "Reset" button will force the NETRS2321P to do system reset action.

Reset Device

Reset

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Virtual COM Software Operation

The Virtual Com application lets you install and configure your NETRS2321P easily over the network. Five function groups are provided to ease the installation process, allow COM mapping, and provide monitoring and IP location server functions.

Configuration

Once the software is installed and you have searched the device on your network (outlined in Installation section), all NETRS2321P devices on the LAN should appear in the list of available devices.

Select the one you would like to adjust and click the Configure button. You will be prompted to enter your User ID and Password (Default: **admin** / **admin**)
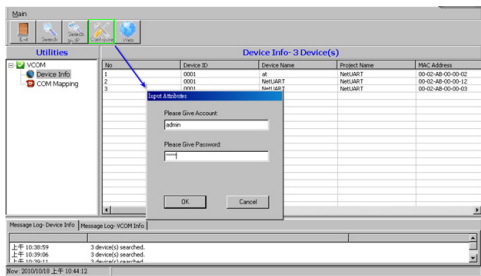
Configure the device and press the **OK** button

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COM Mapping

To map a virtual COM port, select **COM Mapping** from the left pane of the VCOM application, then click Add

Click OK to create the COM Mapping

TCP/UDP

Depending on the protocol you are using, the options below will enable/disable automatically as applicable.

Server/Client (TCP Mode only)

Set the device to be a **Telnet Server.** In server mode, the Telnet port listens and waits for a host or other client to make a connection. In this case the Ethernet connected device is the client.

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Set the device to be a **Telnet Client**. In the case the Ethernet connected device is the Telnet server or other NETRS2321P in server mode.

IP Address

Depending on your selections above, there are one of three scenarios:
TCP Server - Disabled
TCP Client - Remote Server Address
UDP - Remote Target Address

Local Port

Assigns the local port for the device to listen on
TCP Server – Assigns the TCP server port number that the server will listen on
TCP Client – Disabled
UDP – Assign the UDP port that this unit listens on

COM

Assign the desired virtual COM port number

Remote Port

TCP Server – Disabled
TCP Client – Assign the remote TCP port you wish to communicate on
UDP – Assign the remote UDP port you wish to communicate on

Enable Control Connection (TCP Server or Client Only)

Enables/Disables control of the serial device on a remote network. Using the IP address and port number allows the user to gain control of the receiver from a remote location when this is enabled.
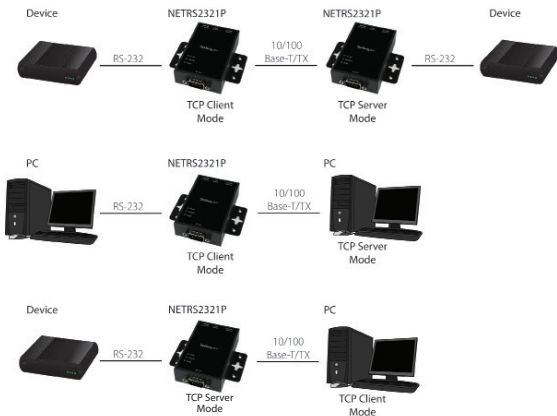
Second(s) for reconnection interval

Dictates the duration that the software will automatically attempt to reconnect the COM port to the serial port on the serial device server, for the purpose of keeping the connection alive.

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Product Applications

UDP

TCP

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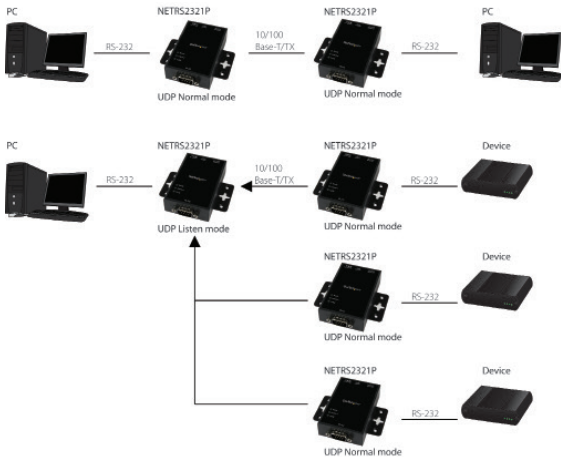
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