



# USR-N540 Datasheet

4-port Serial to Ethernet Converter

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USR-N540 is 4-port serial to Ethernet converter. It adopts Cortex-M7 solution, which has a main frequency up to 400MHz, powerful performance, fast transmission speed, and high reliability. Equipped with a deeply optimized TCP/IP stack, built in hardware and software watchdog and a variety of keepalive mechanisms, USR-N540 keeps online all the time. It supports TCP Client, TCP Server, UDP Client, UDP Server and HTTPD Client working modes, achieves data transparent transmission via simple configuration.

#### ✧ New Solution

New ARM core, Cortex-M7 solution, equipped with deeply optimized TCP/IP protocol stack. It has low latency and strong scalability, stable and reliable.

#### ✧ Modbus Gateway

It supports Modbus TCP and Modbus RTU protocol mutual conversion, multi-host polling function.

#### ✧ Industrial Grade Design

The device conforms to industrial design standards. Reliable EMC protection and  $-40\sim 85^{\circ}\text{C}$  operating temperature make it endure various complex industrial scenarios.

#### ✧ Dual Sockets

Each serial port supports connecting to two different servers at the same time. Two sockets are mutually backed up, providing higher reliability and better flexibility.

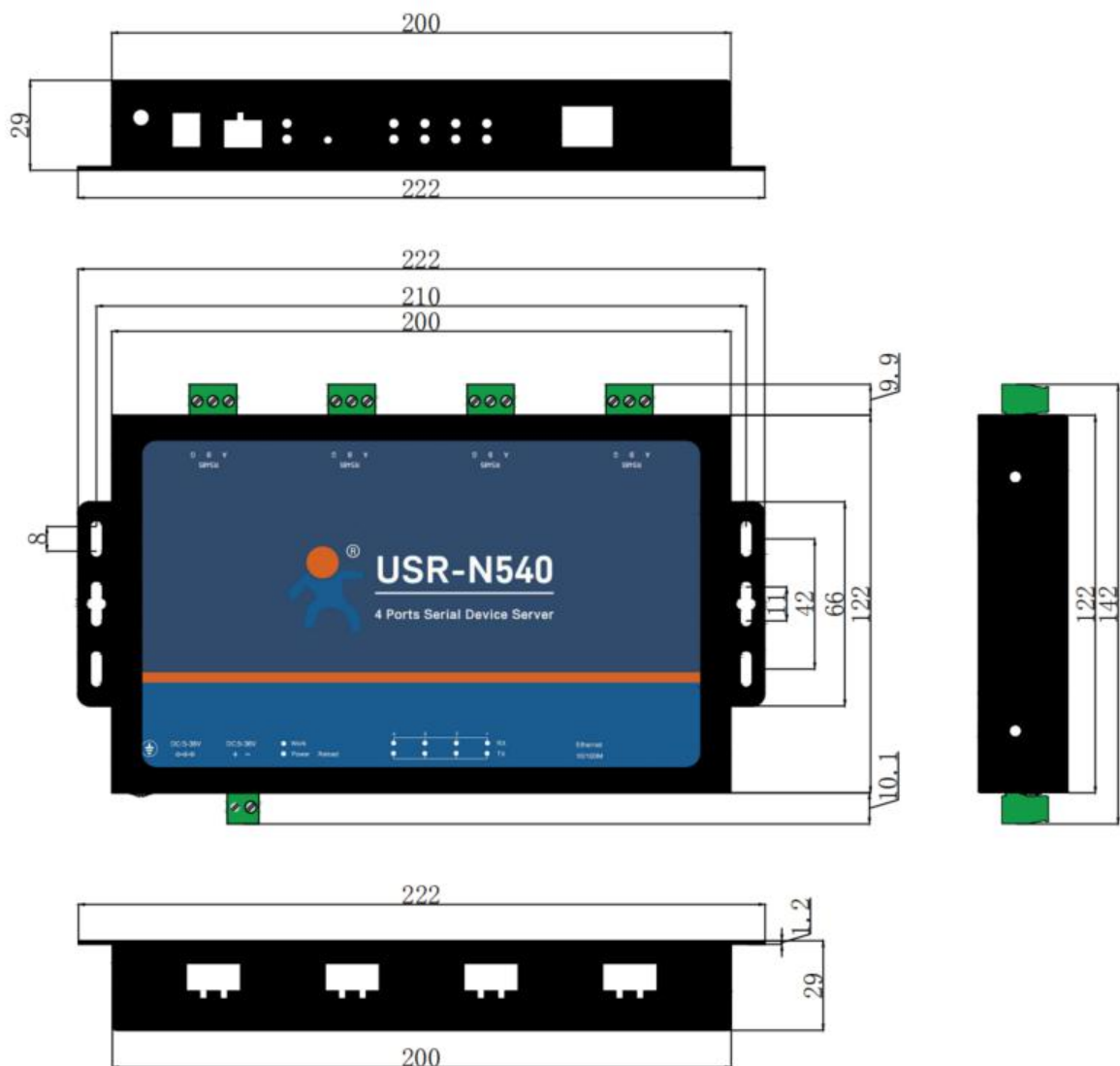
## Features

- Supports four serial ports working independently.
- Supports 5-36V wide voltage input, with reverse polarity protection.
- Supports connecting to Virtual COM Port Driver (USR-VCOM).
- Supports static IP and DHCP client.
- Supports Modbus RTU to Modbus TCP protocol conversion.
- Multiple hardware protection, ESD level4 (air $\pm 15\text{KV}$ , contact $\pm 8\text{KV}$ ), Surge level3 ( $\pm 2\text{KV}$ ), EFT level3 ( $\pm 2\text{KV}$ ).
- Supports configuring parameters via built-in webpage.
- Supports upgrading firmware via built-in webpage and configuration software, more convenient.
- Supports keepalive mechanism to quickly detect the dead connections and reconnect.

- Supports hardware watchdog, automatically restarts when the device goes down.
- Supports websocket for bidirectional data transmission between a maximum of 16 websocket clients and any serial port.
- Supports serial and network AT commands.
- Supports UDP broadcast function.

## Dimensions

Unit: mm



- Metal shell, panel mounting.
- Dimensions: 222\*142\*29mm (L\*W\*H, including terminals and mounting ears)

## Specifications

Item	Parameter	Description
<b>Hardware Parameters</b>	Input Voltage	DC 5.0~36.0V
	Input Current	90mA@12V
	Dimensions	222*142*29mm (L*W*H, including terminals and mounting ears)
	Installation	Panel mounting
	Ground Screw	1
	Operating Temperature	-40~85°C
	Storage Temperature	-40~105°C
	Operating Humidity	5%~95% RH(non-condensing)
	Storage Humidity	5%~95% RH(non-condensing)
	Certifications	CE/FCC/ROSH
<b>Interface Parameters</b>	Ethernet Port Spec.	RJ45, 10/100Mbps, auto MDI/MDIX
	Ethernet Port No.	1
	Serial signals	RS-232: TxD, RxD, RTS, CTS, GND RS-422: Tx+, Tx-, Rx+, Rx-, GND RS-485-2w: A+, B-, GND
	Serial Port No.	4
	Serial Baud Rate	600~921.6k(bps)
	Data Bit	7, 8
	Parity	None, Even, Odd
	Flow Control	None, RTS/CTS (RS-232 only), XON/XOFF
<b>Hardware Protection</b>	ESD-IEC61000-4-2 Level 4	Air±15KV, contact±8KV
	Surge-IEC61000-4-5 level 3	±2KV
	EFT-IEC61000-4-4 Level 3	±2KV
	Network Protocol	IP/TCP/UDP/ARP/ICMP/IPV4/DHCP/DNS
	IP Mode	Static IP, DHCP

<b>Software Parameters</b>	Modbus Gateway	Support
	Websocket	Support
	HTTP Client	Support
	UDP Broadcast	Support
	User Configuring	Setup utility, webpage, AT commands
	Serial Packets Cache	Dynamic packet cache. For example: When the packet length is 10 byte, the serial port can cache 450 packets(4.5KB). When the packet length is 1460 bytes, the serial port can cache 10 packets(14.6KB).
	Ethernet Packets Cache	48Kbyte

## Ordering Guide

Model	Serial standards	Connector	Serial signals
USR-N540-H7	RS232/RS485/RS422	Standard DB9 male	RS232/485/422×1: RXD, TXD, GND, RTS, CTS,T+(A+), T-(B-), R+, R-
USR-N540-H7-4	RS485	3Pin industrial terminal	RS485-2W: A(+), B(-), GND

## Purchase & Support

**For more information please visit our websites:**

- Official website: <https://pusr.com>
- Official shop: <https://shop.usriot.com>
- Technical support: <http://h.usriot.com/>