USR IOT

Communication
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USR-N510 Datasheet

1-Port Serial to Ethernet Converter

Build a Smarter IOT world, Your Trustworthy Partner

USR-N510 is 1-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-N510 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 -40~85℃ operating temperature make it endure various complex industrial scenarios.

✧ Dual Sockets

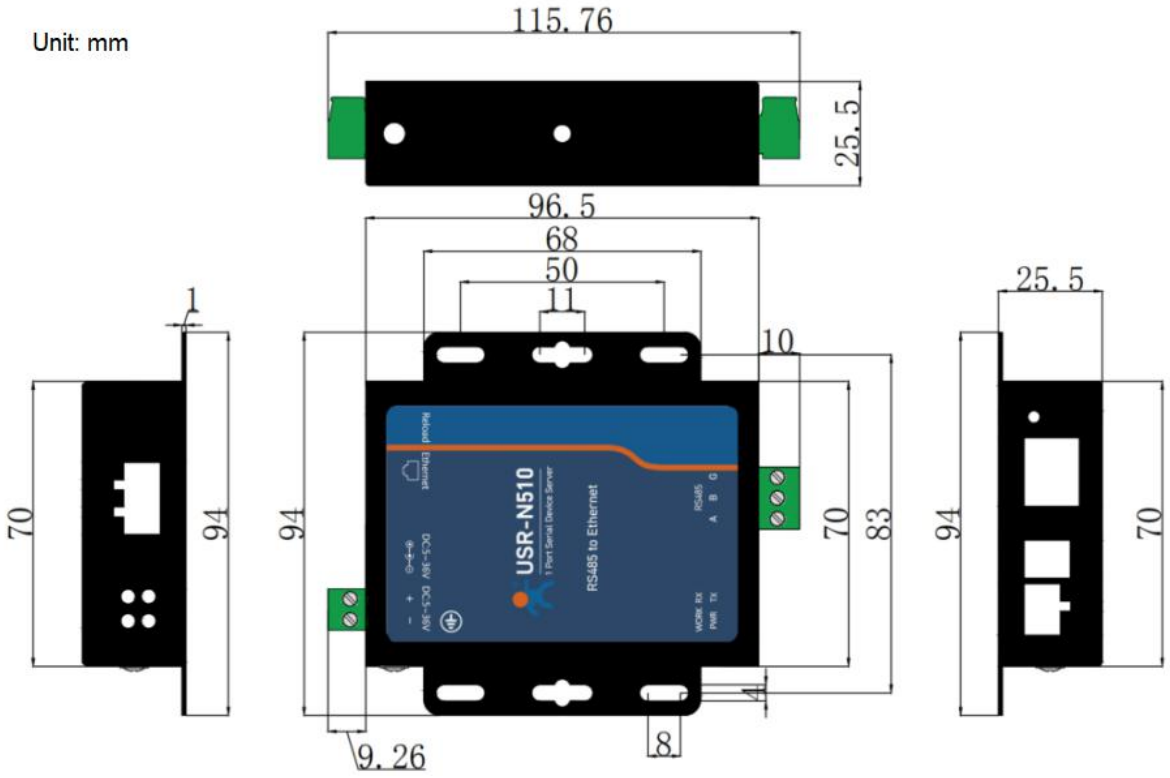
Each serial port supports connecting to two different servers at the same time. Two sockets are mutually backed up, providing higher reliability and better flexibility.

Features

- Supports 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±15KV, contact±8KV), Surge level3 (±2KV), EFT level3 (±2KV).
- 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



- Metal shell, panel mounting.
- Dimensions: 115.7*94.0*25.5mm (L*W*H, including terminals and mounting ears)

Specifications

Item	Parameter	Description
Hardware Parameters	Input Voltage	DC 5.0~36.0V
	Input Current	95mA@5V
	Dimensions	115.7*94.0*25.5mm (L*W*H, including terminals and mounting ears)
	Installation	Panel mounting
	Ground Screw	1
	Operating Temperature	-40~85℃
	Storage Temperature	-40~105℃
	Operating Humidity	5%～95% RH(non-condensing)
	Storage Humidity	5%～95% RH(non-condensing)
	Certifications	CE/FCC/ROSH
Interface Parameters	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.	1
	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
	RS-485 Pull-up and Pull-down Resistor	2.2KΩ
Hardware Protection	ESD-IEC61000-4-2 Level 4	Air±15KV, contact±8KV
	Surge-IEC61000-4-5 level 3	±2KV
	EFT-IEC61000-4-4 Level 3	±2KV
Software	Network Protocol	IP/TCP/UDP/ARP/ICMP/IPV4/DHCP/DNS
	IP Mode	Static IP, DHCP
	Modbus Gateway	Support
	Websocket	Support
	HTTP Client	Support
	UDP Broadcast	Support
	User Configuring	Setup utility, webpage, AT commands

Parameters	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-N510-H7	RS232/RS485/RS422	Standard DB9 male	RS232/485/422×1: RXD, TXD, GND, RTS, CTS,T+(A+), T-(B-), R+, R-
USR-N510-H7-4	RS485	3Pin industrial terminal	RS485-2W: A(+), B(-), GND

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