NetPortServer Compact 2 Port RS232/422/485 Device Server with Modbus and MQTT Support

NPS5251

Compact 2 Port RS232/422/485 Serial Device Server

The NPS5251 is a compact 2-port RS232/422/485 device server and IoT gateway for industrial use. It combines functions like serial device server, Modbus gateway, MQTT gateway, RS485-to-JSON gateway, and virtual COM port device tool. With two RS232 RJ45 ports, two RS485 terminal ports, and two Ethernet LAN ports, it ensures flexible and reliable connectivity. Its compact design supports desktop and DIN-rail installation, while the wide 10–30VDC power input or AC adapter enhances flexibility. The NPS5251 offers a cost-effective, space-saving solution.

-25~70°C   Windows 10   Windows 11   **Modbus**   MQTT

Features & Benefits

Modbus RTU /Ethernet Gateway

• Integrated Serial Port Server (Serial Device Server)

• Modbus RTU Server/ Client

• Modbus RTU to MQTT Gateway

• Cloud JSON data to Modbus RTU

• TCP Server/ Client, UDP, UDP Multicast

• TCP Server

• Auto-Polling Storage Multi Modbus/TCP Client to Single Modbus RTU Server

• Cloud Modbus/TCP to Modbus RTU Client Access

Modbus Gateway

• Modbus RTU protocol to Modbus/TCP

• RTU/Register Auto Polling and Storage

• Allows Multiple points access same serial device

• Scheduling Polling Modbus RTU register

JSON to Modbus RTU

• CSV JSON Table

• Scheduling Polling Modbus RTU register

• Scheduling Publish in JSON format

• Subscribe support request and Setting Modbus Register

Modbus RTU to MQTT

• Publish RTU data in JSON format

• Subscribe JSON to Modbus RTU by HTTP Post, HTTP Get

• NTP support for Network Time Synchronize

Serial Device Server

• TCP/UDP Transmission to virtual serial port

• Support Virtual COM Software tool

Serial Interface

• Two RS232 DB9 RJ45 ports and Two RS422/485 Terminal ports

• Baud Rate – 1200bps ~460800bps, 5~9 data bit

• Parity Check – None, Odd, Even, Mark, Space

Industrial Application

• DC 10~30V Power Input, Terminal Connector

• -25~75°C / 5~95% RH Environment Operating Temperature

Interfaces

RS232 RJ45 **100M LAN**

Power
Link 1/2:
(Green- LAN OK)
(Blue- TCP or UDP)
Active 1/2:
(Green- LAN to Serial)
(Blue- Serial to LAN)
Net: LAN1

Power Adapter DC Jack

Power Input 10~30VDC

Reset Switch

RS485

Dimensions

67

25

12

9

Ø4

109,3

95,3

R3,6

25

Ø7

79

26
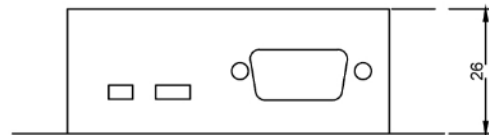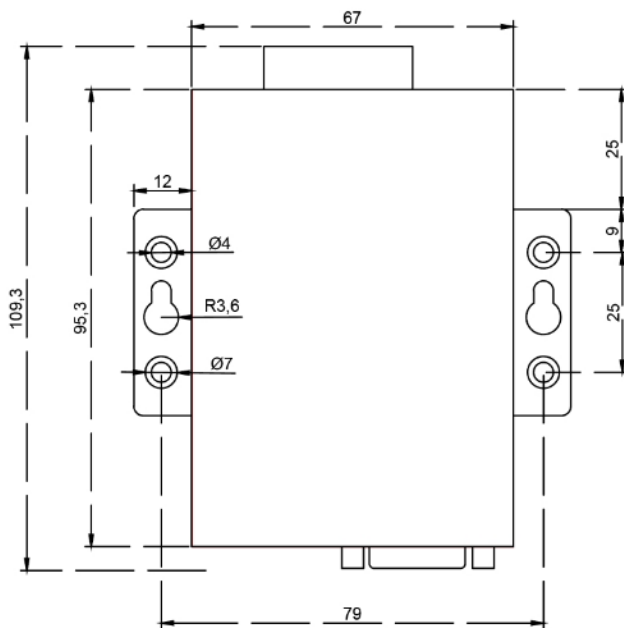
✓ Virtual COM Device Discovery and Management

Virtual Serial & Device Management - VirCom

Manage(M)   Config(C)   View(V)   Help(H)

Start   Stop   Device   Serial   About

I	Status	Com Na...	COM Name	Type	Device IP	Discription	Dev
1	Connected	COM5	Vitual COM	Bind ID	192.168.0.188	Name : DEV0001	A12

Information

[2025-01-06,17:07:54] Connected to 192.168.0.188 ok.
[2025-01-06,17:07:54] Connecting... 192.168.0.188 .
[2025-01-06,17:07:54] COM5 Create ok!
[2025-01-06,17:07:54] Listen at port 4196 OK.

✓ Device Setting

Device Settings

Device Info

Virtual Serial COM5
Dev Type
Dev Name DEV0001
Dev ID 2878A1282BD3 [-]
MAC Addr 04EEE8182BEB P
Firmware Ver V1.523

Function of the device

- Web Download
- ☑ DNS System
- ☑ REAL_COM Protocol
- ☑ Modbus TCP To RTU
- ☑ Serial Commnad
- DHCP Support
- Storage Extend
- ☑ Multi-TCP Connection

Network

IP Mode Static
  Static
  DHCP
IP Address
Port 4196
Work Mode TCP Server
Net Mask 255 . 255 . 255 . 0
Gateway 192 . 168 . 0 . 1
Dest. IP/Domain 192.168.0.84   Local IP
Dest. Port 4196   □ UDP Dynamic

Serial

Baud Rate 9600
Data Bits 8
Parity None
Stop Bits 1
Flow Control None

Advanced Settings

DNS Server IP 8 . 8 . 4 . 4
Dest. Mode Dynamic
Transfer Protocol None
Keep Alive Time 60 (s)
Reconnet Time 12 (s)
Http Port 80
UDP Group IP 230 . 90 . 76 . 1
□ Register Pkt: □ ASCII
□ Restart If No Data every 300 Sec.
□ Enable Parameter Send every 5 Min.

More Advanced Settings...

Framing Rule
Max Frame Length 1300 (Byte)
Max Interval(Smaller Is Better) 3 (Ms)

Get Default   Save As Defaul   Load Default   Modify Key   Firmware/Config   Restart Dev   Modify Setting   Cancel

Save Setting

✓ Cloud MQTT Configuration

Webpage&code download tool

◉ Direct download mode

Configuration save location
G:\MQTT Config   ...

Special configs:

Config file source: Read from local directory

Modbus cfg.   MQTT cfg.   JSON cfg.   Reg packet   Cmd change   HTTP cfg.   Param file   Clear local dir.

○ Code file download mode
Select code file:
C:\zlsn2003.bin   ...

◉ Download through the network   ○ Download through serial port
Device IP address or domain: 192.168.0.200   Serial port: COM1
Download port (Don't modify): 1092   Baud Rate: 115200

DevID: 2875FC662A2F   Bind ID

Flash size: 256   KB
Please close any other configuration window before downloading.

Download

Advanced Settings

DNS Server IP 8 . 8 . 4 . 4
Dest. Mode Dynamic
Transfer Protocol Modbus_TCP Protocol
  None
  Modbus_TCP Protocol
  REAL_COM Protocol
  TELNET Protocol
Keep Alive Time 60
Reconnet Time 12
Http Port 80
UDP Group IP 230 . 90 . 76 . 1
□ Register Pkt: □ ASCII
□ Restart If No Data every 300 Sec.
□ Enable Parameter Send every 5 Min.

More Advanced Settings...

Multi Modbus Host

Modbus Multi-Host Support Settings

Modbus Gateway Type: Auto query storage type
Modbus RTU or ASCII:
  Auto query storage type
  Multi-host non-storage type
  Device Client & Slave mode
  Simple Modbus TCP to RTU
  Pre-configable Modbus GW
☑ Enable RS485 Multi-Host
  Maximum wait time of R
  for 196 ms(0~8191)
☑ Enable RS485 bus conflict detection
  Send data only when RS485 bus is idle for 20 ms

✓ Web Configuration

System config

192.168.0.200/ip.html

Logout

Device Information
Device Name: DEV0001
Device MAC: 04-EE-E8-18-2B-EB
Firmware Version: V1.523

Serial Settings
Baudrate: 9600
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control: None

Network Settings
IP Addressing: Static
IP Address: 192.168.0.200
Local Port: 4196
Mode: TCP Server
Subnet Mask: 255.255.255.0
Gateway: 192.168.0.1
Destination IP/DNS: 192.168.0.84
Destination Port: 4196
Web Port: 80

Multi-Master Settings
Protocol: None
Response Timeout: 0   32~6000ms
Multi-Master: Disable
Transmit Delay: 20   0~20ms
NOTE:When the multi-master is disabled, the
response timeout will always be 0. The timeout
must be a multiple of 32.

Advanced Settings
Watchdog Reset: Disable
Watchdog Reset Time: 300   9~1270 s
Re-connect Time: 12   1~255 s

Modify Web Password
New Password:
Confirm Password:

Submit

⚙ Specifications

Network Interface	
Ethernet	Two 10/100M Ethernet RJ45 2KV Surge Protection

Serial Interface	
Connector	Two RS232 RJ45, Two RS422/485 Terminal
Serial Parameters	Baud Rate: 1200~460800bps, Data Bit: 5~9 Parity Check: None, Odd, Even, Space, Mark Flow Control: None Flow Control

Service Mode	
Virtual COM Driver	Windows XP / Windows 7 / Windows 10/ Windows 11
TCP	TCP Server for up to 100 TCP clients, or TCP client to up to 7 destination IP
UDP / UDP Multicasting	UDP Polling & Response by UDP packet between stations UDP Multicast to all station by UDP packet
Modbus	Modbus RTU to Modbus TCP Modbus TCP to Modbus RTU
Cloud	MQTT, JSON to Modbus RTU, HTTP Post, HPPT Get

Network Feature	
Protocol	Ethernet, IP, TCP, UDP, HTTP, ARP, ICMP, DHCP, DNS, Modbus
Security	TCP with authentication key
DHCP	DHCP Client for IP and DNS information from DHCP server
NTP	Network Time Precision (NTP)

Management	
System Management	Windows Utility, Virtual COM, WEB Management
Windows DLL Library	Device management function library (Windows DLL dynamic link library) by VC, VB, Delphi, or C++ Builder with functions such as *read* and *write*.

Power Input & Interface Connector	
Power Input	10~30VDC Input, Terminal Block, DC Jack

Mechanical & Installation	
Installation	Din-Rail, Desktop
Enclosure	Metal
IP Protection	IP20
Dimension	94x65x25mm (LxWxH), Packing Box160x123x79mm, 52pcs per Carton

Environmental	
Operation Temperature	-25°C~70°C, 0% ~ 90%, Non-Condensing
Storage Temperature	-40°C~80°C, 0% ~ 90%, Non-Condensing

Reliability & Warranty	
MTBF	> 200,000 Hours
Warranty	3 Year

🛒 Ordering Information

Model	Description
NPS5251E/U/UK	Compact Two-port RS232/422/485 Device Server, Modbus, MQTT Gateway, 10~30Vdc - Quick Installation Guide - RJ45 to DB9 male cable - Power Adapter (EU/US/UK) - Din-rail Kit