



NP316 Series
16-port RS-232/485/422 to Ethernet Serial Server
User manual

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Contents

1. Introduction	3
2. Packing List	3
3. Features	3
4. Specifications	3
5. Panel Layout	5
5.1 Front panel	5
5.2 Rear panel (RS-232/485/422 Port)	6
6. Dimension	6
7. Software installation and setting	7
7.1 Set the IP address of the device	7
7.2 Create the Virtual COM port on the PC	9
8. Application	10
9. FAQ	11

1. Introduction

NP316 series can conveniently connect up to 16 serial devices to an Ethernet, allowing you to network your existing serial devices with only basic configuration. With NP316 series, you can both centralize the management of your serial devices, and distribute management hosts over the network.

NP316 series can be used to connect different devices for remote management, each serial port operates independently to provide maximum versatility, each port can be operate in Driver, TCP Server, and TCP Client mode independently.

2. Packing List

NP316 series are shipped with following items.

1. NP316 series server × 1
2. User manual × 1
3. Quick Installation Guide × 1
4. Straight network cable × 1
5. 220V power line × 1
6. Software CD-ROM × 1
7. Product Warranty booklet × 1

3. Features

1. Adopt 32 bit ARM processor, 125 DMIPS manage ability
2. 16 serial ports, with support for RS-232/RS-485/RS-422
3. Support 10/100M Ethernet
4. Support 300bps-460.8Kbps
5. Support TCP, UDP, ARP, ICMP, HTTP, TELNET and DHCP protocol
6. Support across gateway, router communication
7. Support standard TCP/IP SOCKET
8. Support Virtual serial driver access and auto connect after the network disconnect
9. Choice of configuration methods: Windows, TELNET and WEB

4. Specifications

Ethernet

Number of ports: 1(NP316E, NP316E-2AC:2)

Standard: 10/100Base-T(X)

Speed: 10/100M auto-sensing

Working mode: half /full duplex

Working: TCP Server, TCP Client, UDP and Real COM driver

Memory: Most 32Kbyte

Transmission: 100m

Electromagnetism isolate: 1KV

Connector: RJ45

Serial

Standard: RS-232/RS-485/RS-422

Number of ports: 16

Signals: RS-232:DCD,RXD,TXD,DTR,GND,DSR,RTS,CTS

RS-485:Data+,Data-,GND

RS-422:TXD+,TXD-,RXD+,RXD-,GND

Parity: None, Even, Odd, Space, Mark

Data bits: 5bit, 6bit, 7bit, 8bit

Stop bits: 1, 1.5, 2

Baud rate: 300bps ~ 460.8Kbps

Flow control: RTS/CTS or XON/XOFF

Direction control: RS485 side adopt ADDC technology, auto text and control data transfer direction

Loading: RS-485/422 side support 32 nodes (customize 128 nodes) loopback

Transmission: RS-485/422 side 1200M,

RS-232 port 15M

Interface protection: 1500W surge protection,
15KV ESD protection

Software

Network protocols: Support TCP, UDP, ARP, ICMP, HTTP, TELNET and DHCP

Driver support: Windows Real COM driver

(Windows NT/2000, Windows XP/2003)

Configuration options: Windows, TELNET and WEB

Power

Power input: AC/DC 85~265V (NP316E-2AC: dual power supply)

Consumption: <2W

Environment

Working temperature:-20℃~60℃

Storage temperature:-25℃~85℃

Humidity: Relative humidity 5% to 95%

Appearance

Color: Black

L×W×H: 438.0mm×230.0mm×45.0mm

Material: Iron (Shell)

Weight: 460g

Warranty: 5 years

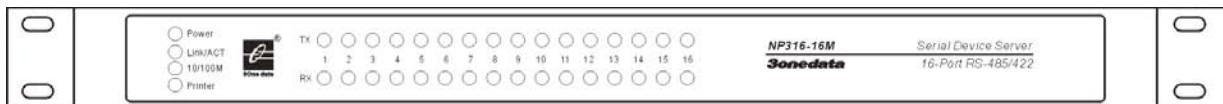
Approvals: FCC, CE, RoHS approvals

5. Panel Layout

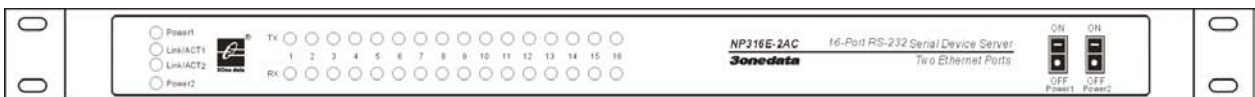
- NP316** 16-port RS232 to Ethernet
- NP316-8M** (8-port RS232+8-port RS485/422) to Ethernet
- NP316-16M** 16-port RS485/422 to Ethernet
- NP316E** 16-port RS232 to 2 Ethernet ports
- NP316E-2AC** 16-port RS232 to 2 Ethernet ports, dual power

5.1 Front panel

NP316, NP316-8M, NP316-16M:



NP316E, NP316E-2AC:



ON/OFF: Power supply switch

TX: Serial data transfer

RX: Serial data receive

Power(1,2): Power(1,2) supply indicator

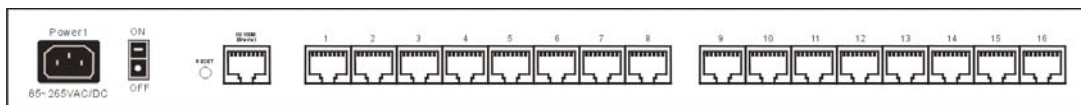
Link/ACT(1,2): Bright when connected to network

10/100M: ON is 100M, OFF is 10M

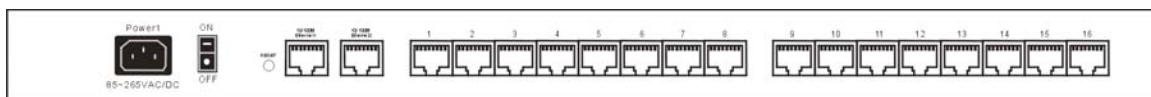
Printer: No use (hold)

5.2 Rear panel

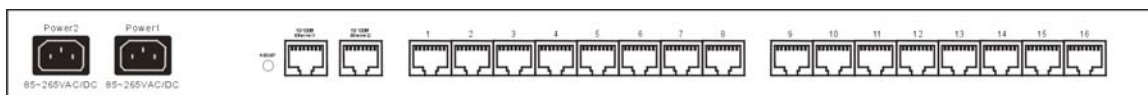
NP316, NP316-8M, NP316-16M:



NP316E, NP316E-2AC:



NP316E-2AC:

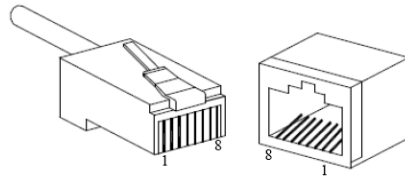


85~265VDC/AC: AC/DC 85~265V power supply input

Printer, Console: No use (hold)

5.2.1 10/100Base-T(X) Ethernet port

The 10/100BaseT(X) ports located on NP316 series front panel. The pin of RJ45 port display as below. Connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 100Ω of UTP, 10Mbps is used 100Ω of UTP 3,4,5.

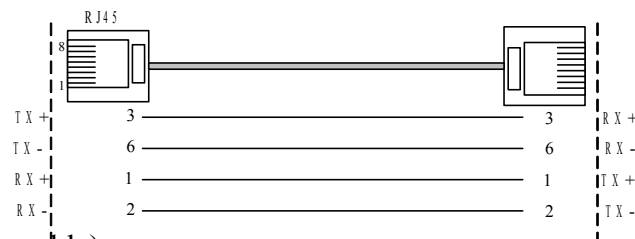


RJ45 port support automatic MDI/MDI-X operation. can connect the PC, Server, Converter and HUB by straight-through cable wiring. Pin 1, 2, 3, 6 Corresponding connection in MDI. 1→3, 2→6, 3→1, 6→2 are used as cross wiring in the MDI-X port of Converter and HUB. 10Base-T are used in MDI/MDI-X, the define of Pin in the table as below.

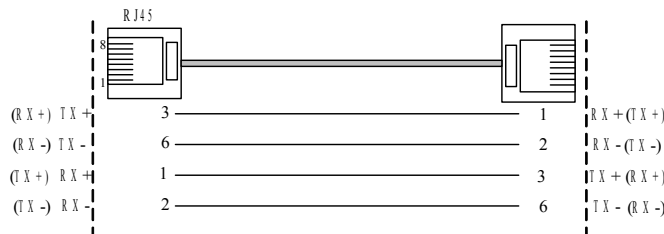
pin	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4, 5, 7, 8	—	—

Note: “TX±” transmit data±, “RX±” receive data±, “—”not use

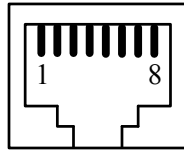
MDI(Straight-through cable):



MDI-X (Cross-over cable):

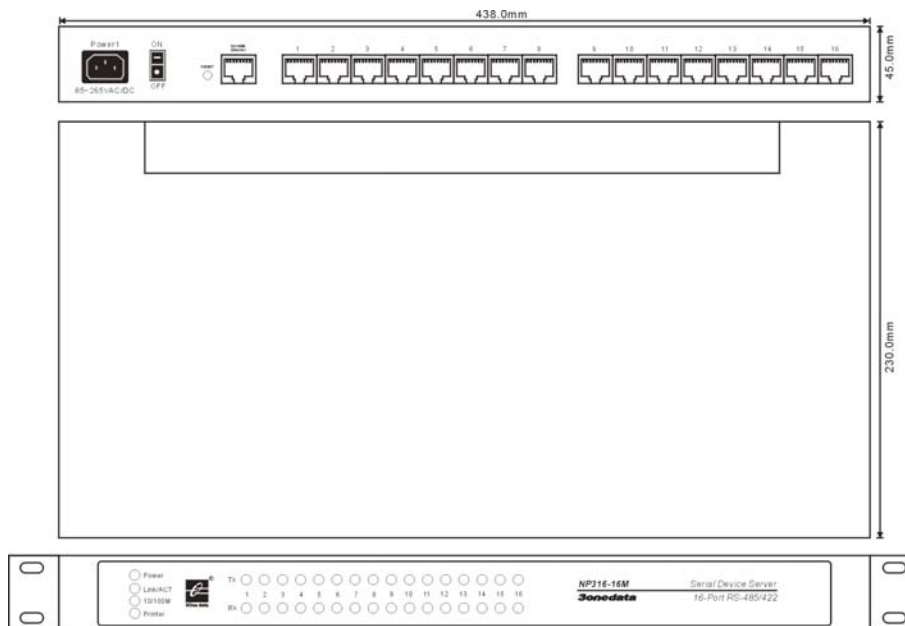


5.2.2 RS-232/485/422(RJ45)



No.	RS-232	RS-485	RS-422
1	TXD	Data+	RXD+
2	RXD		TXD+
3	RTS	Data-	RXD-
4	CTS		TXD-
5	DSR	GND	short-circuit 5,6 (5 FULL,6 GND)
6	GND		
7	DTR		
8	DCD		

6. Dimension



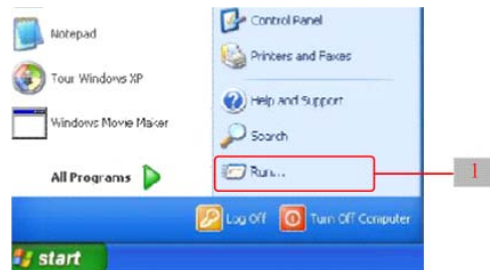
7. Software installation and setting

7.1 Set the IP address of the device

The IP address of the device and the PC must be in the same subnet (the default IP of the device is in the subnet of 192.168.1.233). First, must make the IP address of the device in the same subnet network(192.168.1.X) of PC.

If they are not in the same subnet network or the IP address has been used by another device, Use Telnet to change the IP address of the device.

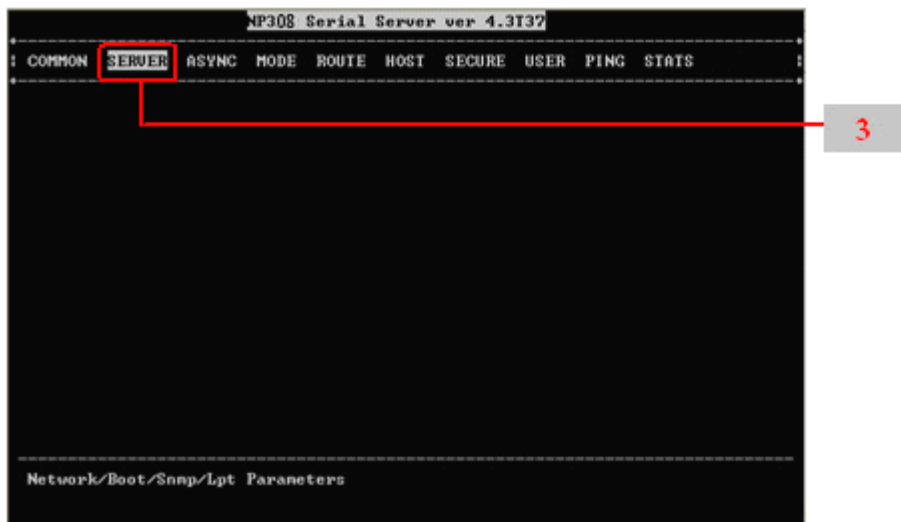
I. “Start” → “all programs” → “Running”



II. Input default IP address of the device “**Telnet: 192.168.1.233**”. Click “**OK**”, setting the IP of device by telnet. Choose the menu by “↑, ↓, ←, →” of the keyboard and quit by “**ESC**” key.



III. Knock “**OK**”. Set the IP of device by telnet. Choose the menu by “↑, ↓, ←, →” of the keyboard and quit by “**ESC**” key. Choose the “**Server**” menu and Knock “**Enter**” key, Change the IP of the device.



IV. Change the IP (the changed IP must be in the subnet of the PC). then Knock “**Esc**” key, quit the network

setting.

```

NP308 Serial Server ver 4.3137
-----
: COMMON  SERVER  ASYNC  MODE  ROUTE  HOST  SECURE  USER  PING  STATS  :
-----
Server Name      [NP314      ]
Server Position  [                ]

Eth0 IP Address  [192.168.1.233_ ]
Eth0 IP Mask     [255.255.255.0  ]
Eth0 Mode        [auto   ]
Enable DHCP      [no    ]
DHCP CLIENT ID  [                ]

Default Gateway [                ]
Primary DNS Server [          ]
Second DNS Server [          ]
CONSOLE Timeout [5      ]

Advance          [Enter.. ]

-----
IP Address of the Ethernet Port0

```

4

V. Choose “**COMMON**”, knock “**Enter**”

```

NP308 Serial Server ver 4.3137
-----
: COMMON  SERVER  ASYNC  MODE  ROUTE  HOST  SECURE  USER  PING  STATS  :
-----
Common Configuration

```

5

VI. Choose “**Save Configuration**”, knock “**Enter**”, due to save the setting.

```

NP308 Serial Server ver 4.3137
-----
: COMMON  SERVER  ASYNC  MODE  ROUTE  HOST  SECURE  USER  PING  STATS  :
-----
: Save Configuration :
: Restore Configuration :
: Default Configuration :
: Reset Ports :
: Reboot Server :
: Quit :
-----
Saved Changed Settings to Flash

```

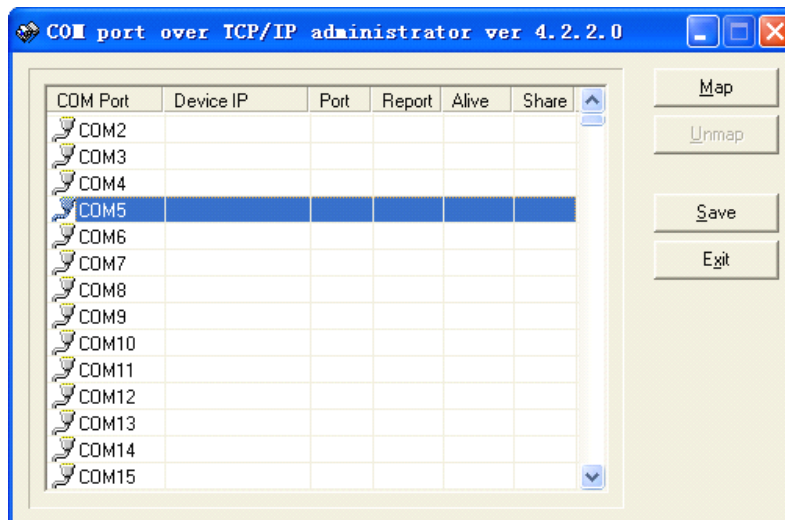
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7.2 Create the Virtual COM port on the PC

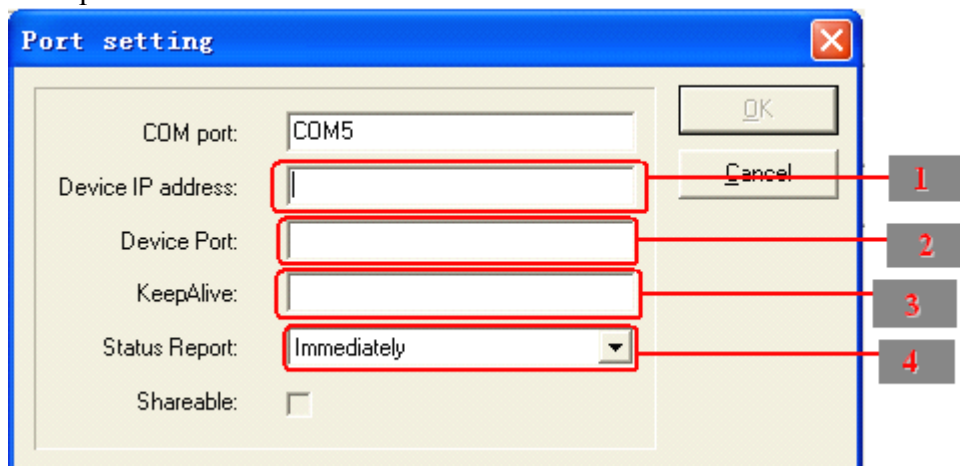
I. Setup the “**setup_nt_2K.exe**” software, you will find the “**com port over tcp/ip.exe**” application in the control panel of windows OS.



II. Double knock “**COM port over tcp/ip.exe**” application and create virtual the serial port to communicate with the device on the PC.

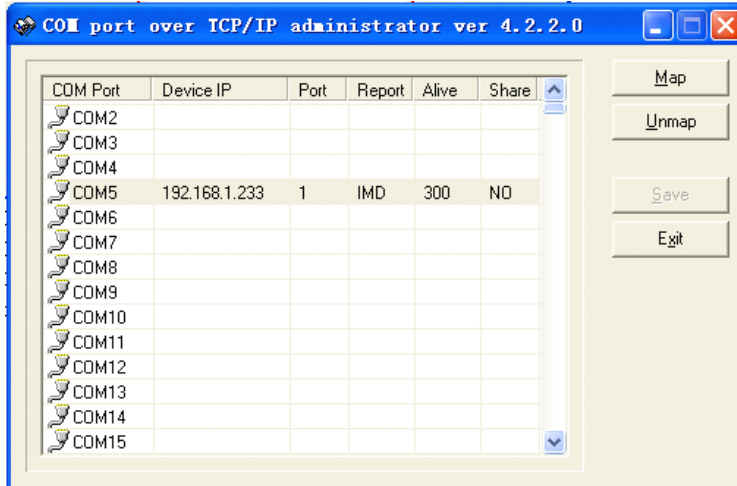


III. Choose the name of the virtual serial port and Knock “**Map**” button. Set the parameter of the virtual serial port.

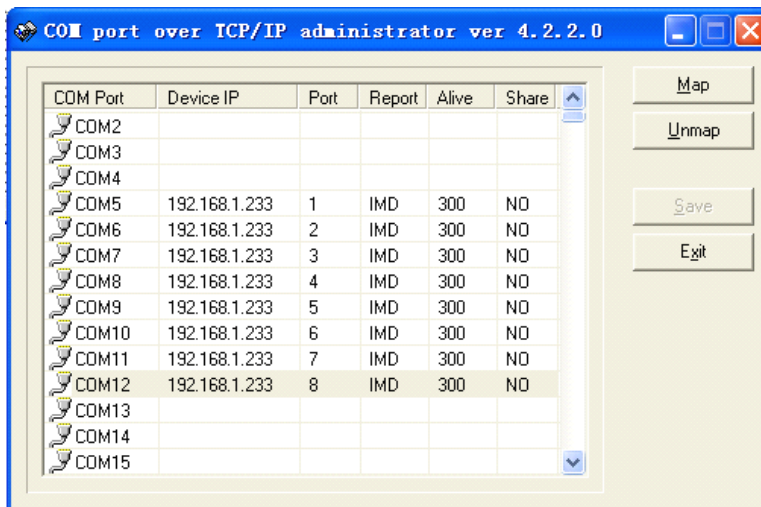


1. Input the IP address of the device
2. Input the NO. of the port of the device(input 1~16)
3. Input 300
4. Default the parameter

IV. Knock “**OK**”, Knock “**Save**”. Then you can use the created the COM5.



V. The virtual serial port COM5 can communicate with the terminal on the NO.1 port of the device.



8.

Application

NP316 series can be used to connect different devices for remote management, each serial port operates independently to provide maximum versatility, each port can be operate in Driver, TCP Server, and TCP Client mode independently.

Pay attention to the questions as below:

- (1) Make sure the power supply input is AC/DC 220V;
- (2) Use the cross-over cable if the devices connect to the PC.
- (3) Use the straight-through cable if the devices connect to the HUB.

Note: Cable (blue) with the product is a straight-through cable.

9. FAQ

1. Power adapter is incorrect and connection is incorrect

Solution: Please make sure that the power supply is AC/DC 220V

2. Vircom connection is failure, LED indicator is OFF

Solution: at first, delete the virtual COM port that do not connect successful. Create a new virtual COM port and connect it, detect LED indicator is ON of OFF

3. Parameter setting is incorrect.

Solution: Enter into the management IP address of device through IE browser, check “Parity”, If it is Mark/space, Parity Check must set “**space**”, then you can adjust **Force Packet Transmit Time** and **Force Packet Transmit Length**.

Note: If you also have some problem about the NP301B, please contact your customer service representative for support.