



LBNP16312

RS-232/485/422 serial device server

User manual



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【Summarize】

LBNP16312 is a high performance Ethernet to RS232/485/422 Ethernet bridge. LBNP16312 obtain UDP or TCP data package, separate data package inside Ethernet, transfer the data through RS-232/485/422 interface according to the LBNP16312 setting demand. LBNP16312 obtain data from RS-232/485/422 interface, pack to UDP or TCP format inside LBNP16312, transfer the data to the device through Ethernet port.

【Package checklist】

LBNP16312 is packed with the following items. If any of these items is missing or damaged, please contact your customer service representative for support.

- LBNP16312
- User manual
- Power adapter 5VDC
- Straight network cable
- Software CD-ROM
- Product Warranty booklet

Optional accessories:

- DIN-Rail Mounting Kit (35mm)

【Feature】

- Provide RS-232/RS-485/RS-422 3-in-1 serial interface
- Support Socket access
- Support Server and Client mode
- Real COM/TTY driver for Windows and Linux
- Support TCP, UDP, ARP, ICMP and DHCP protocol
- Pair Connection mode for connecting two serial devices over a network without a PC
- Support pass gateway, router communication
- Support PPPOE function
- Easy-to-use Windows Utility for mass installation
- Support On-the-fly
- DIN-rail mounting and Wall mounting optional

【Specification】

Ethernet interface

Standard: 10Base-T, 100Base-TX

Protocol: Support TCP, UDP, APR, ICMP and DHCP protocol

Signal: Rx+, Rx-, Tx+, Tx-

Speed: 10/100Mbps

Working: Full duplex/Half duplex

Working format: Support Server and Client format

Flash memory: 512 byte

Transmission: 100m

Surge protect: 1.5KV ESD

Port of type: RJ-45

Serial interface

Support EIA RS-232, RS-422,RS-485 standard

RS-232 signal: TXD, RXD, RTS, CTS, DTR, DSR, DCD, GND
 RS-422 signal: Tx+, Tx-, Rx+, Rx-, GND
 RS-485 signal: Data+, Data-, GND
 Parity: None, Even, Odd, Space, Mark
 Data bit: 7bit, 8bit
 Stop bit: 1, 1.5, 2
 Baud rate 150bps~115200bps
 Flow control: RTS/CTS or non-flow control
 RS485 data direction: ADDC (Auto data direction Control)
 Loading: RS-485/422 side support 32 nodes (optional 128 nodes)
 Transfer distance: RS-485/422 side: 1200m, RS-232 side: less than 15m
 Serial line protect: 1500W surge protect, 15KV magnetic isolation
 Port of type: RS-232: DB-9 male,
 RS-485/422: 4 bit terminal block

Power supply

Power supply input: 5VDC
 Consumption: 300mA

Environment:

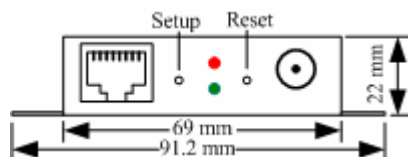
Working temperature: -20°C~60°C, 5~95% RH
 Storage temperature: -25°C~85°C, 5~95% RH

Dimension:

Color: White Blue
 L×W×H: 100mm×69mm×22mm
 Material: Iron Shell)
 Weight: 230g

【Interface and LED indicator】

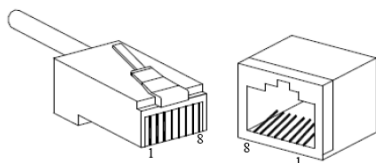
10/100Base-T (X) Ethernet port:



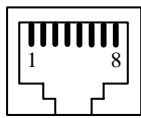
Device connected to Ethernet: Red LED flash

Ethernet port has data transfer: Green LED flash

The 10/100BaseT(X) ports located on LBNP16312 top panel. The pin of RJ45 port display as follows. Connect by UTP or STP. The connect distance is no more than 100m. 100Mbps is used 100Ωof UTP 5 , 10Mbps is used 100Ωof UTP 3, 4, 5.



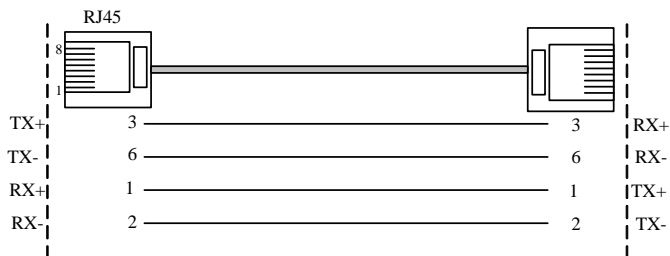
RJ 45 port supports MDI/MDI-X operation can connect the PC, Server, Converter and HUB. Pin 1, 2, 3, 6 Corresponding connection in MDI. 1→3, 2→6, 3→1, 6→2 are used as cross wiring in the MDI-X port of Converter and HUB.10Base-T/100Base-TX are used in MDI/MDI-X, the PIN define in the table as below.



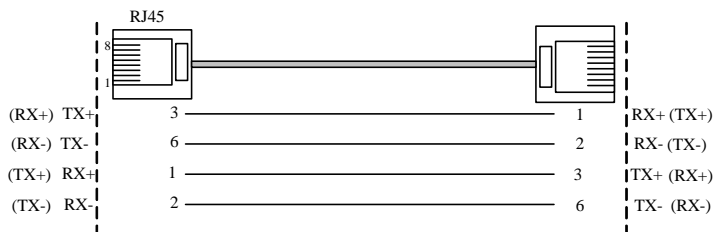
pin	MDI signal	MDI-X signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4, 5, 7, 8	—	—

Note: "TX±" transmit data±, "RX±" receive data±, "—"not use.

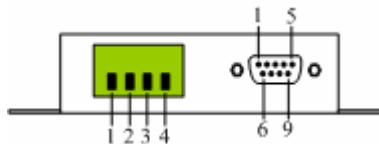
MDI (straight-through cable):



MDI-X (Cross-over cable)



RS-232/485/422 port



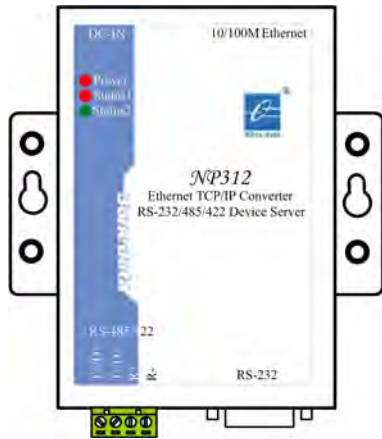
RS-485/422 side: 4 bit terminal block.

- 1 T+/Data+ 2 T-/Data-
- 3 R+ 4 R-

RS-232 side: DB9M (Male)

- 1 DCD 2 RXD 3 TXD 4 DTR
- 5 GND 6 DSR 7 RTS 8 CTS

Obverse:



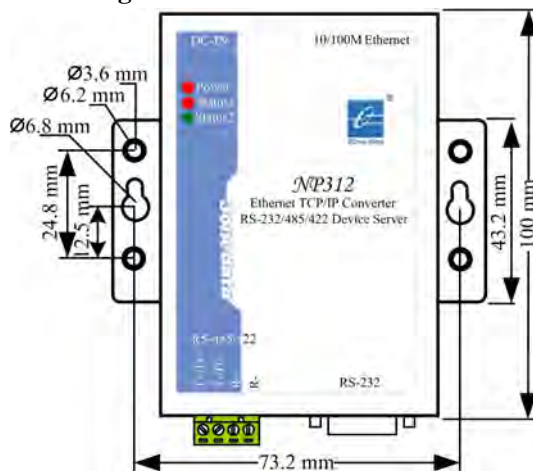
LED indicator:

PWR	Power supply indicate, ON: Light
STATUS1	Detect Ethernet interfere, light when working
STATUS2	State light, twinkling when communication

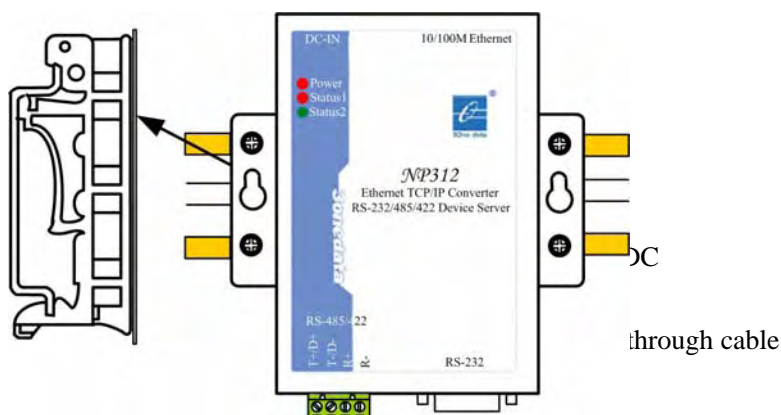
【Installation】

LBNP16312 provides DIN-rail and wall mounting two types of installation.

Wall-mounting



DIN-Rail mounting installation:



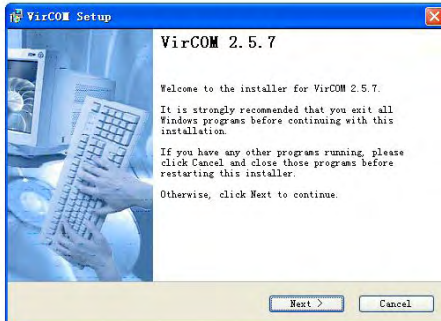
【Software installation and setting】

1 Software installation

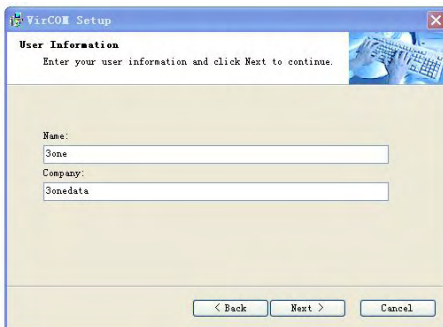
Open the CD-ROM, running the install procedure,
Knock [Next] as follows screen



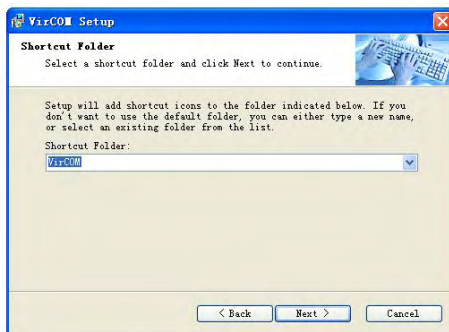
You will see a screen as follows:



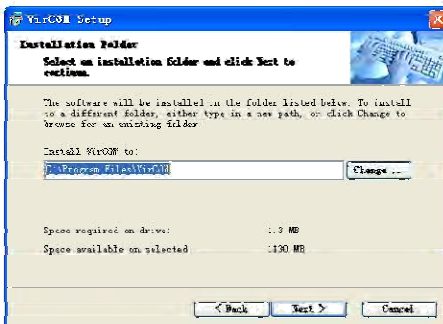
Click "Next"



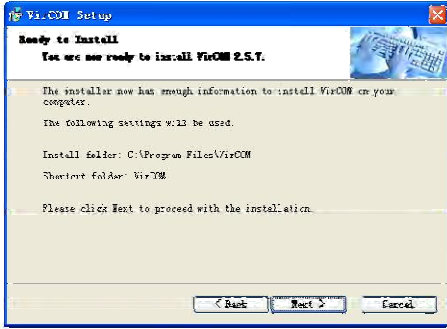
You can change "Name", "Company", click "Next"



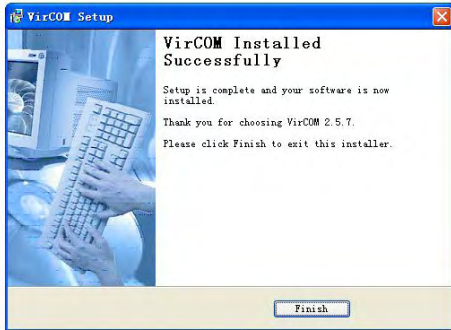
You can use "Change..." revise the location of the software installation



Click "Next"



Click “Next”

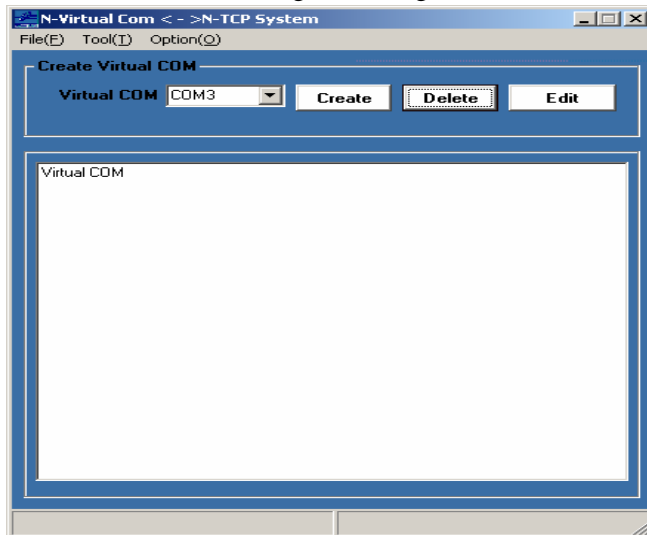


Click “Finish”, Finish installation.

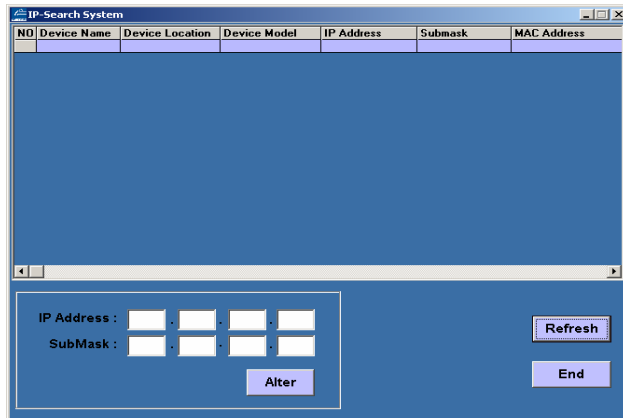
2 Virtual COM port setting:

Connect LBNP16312 to you device (LBNP16312 support RS232, RS485, RS422 3 type serial interface, donot use DIP switch, you can connect accord to your device interface), another side connect Ethernet, plug into 5VDC power supply.

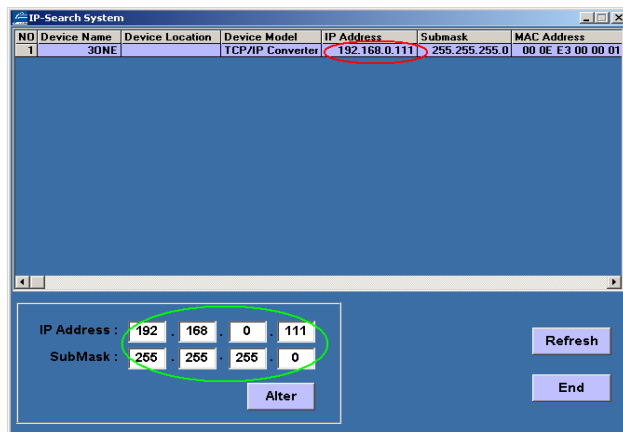
Click “Start”-----“Running”, Running the Vir_COM.exe (You can see the screen as follows) :



Choose **Tool** menu **IP-Search** (Using this option searching LBNP16312 IP address in the Ethernet and providing revise operation) option. You will send a serene as follows:

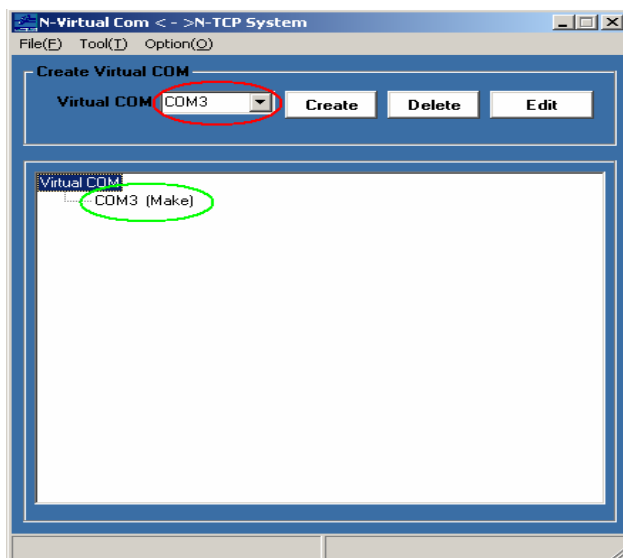


Click **Refresh** button, Found LBNP16312 IP address (Red circle as follows:)

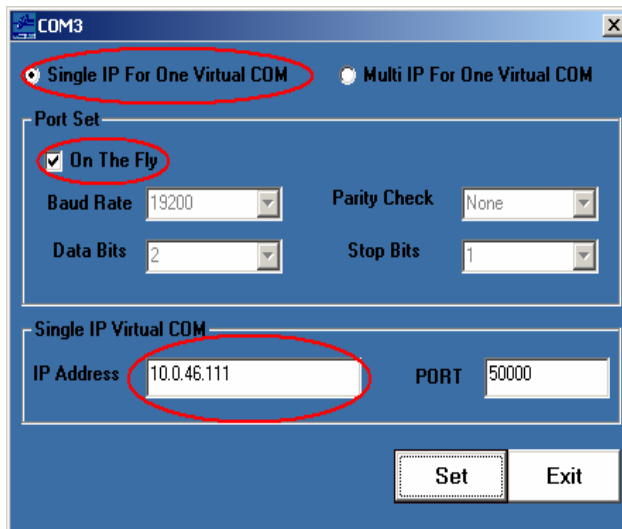


Click the LBNP16312 IP address of the red circle, the IP address will present to the green circle, setting the IP address to make sure that the IP address locate in the same network segment, Click **Alter** after appearing correct hint, then click **Refresh** to check the IP address changed or not in the red circle

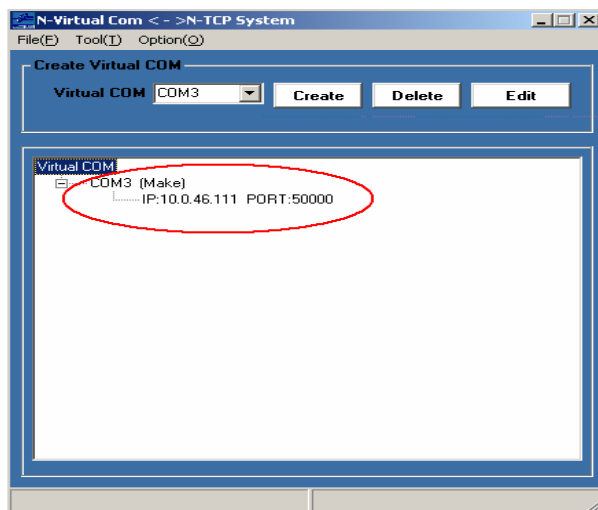
Create virtual serial port(as follows)



Click button on the red circle choosing the COM port, Click Create COM port, appear green circle COM port, and appear COM port setting small screen, you can setting parameter to this COM port. As follows:



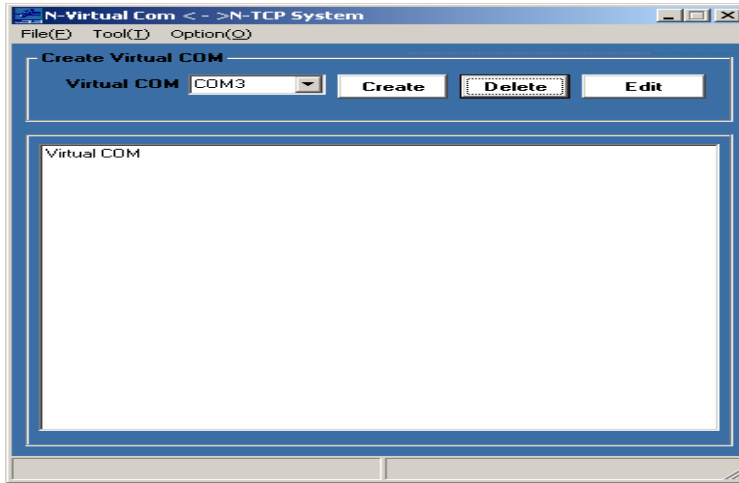
Choose **Single IP For One Virtual COM** (1 serial port communicate with multi server that locate in 1 IP address) option, Choose **One The Fly**, Automatic obtain serial device parameter, do not set by hand, you can also do not choose One The Fly to setting the parameter by hand. Input the IP address into the IP Address, click “Set” button, you will see the screen as follows:



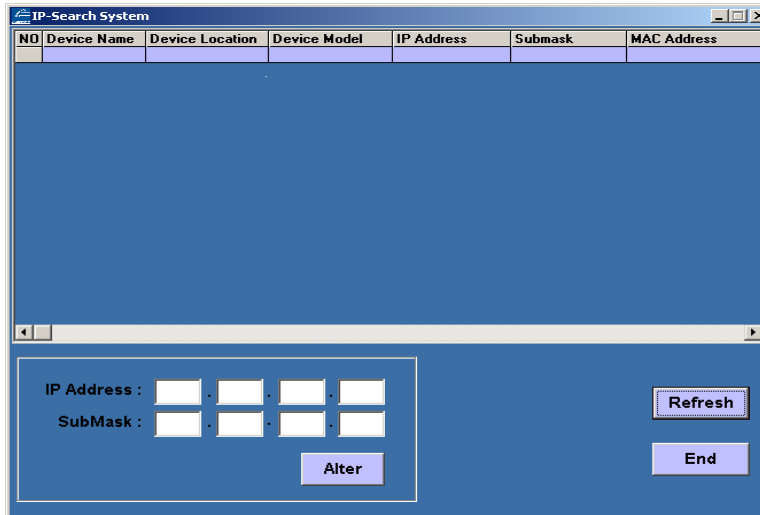
You can delete or Edit the COM port through “Delete” and ”Edit” Finish these operation, the device can communicate to the PC.

3 WinSock access setting

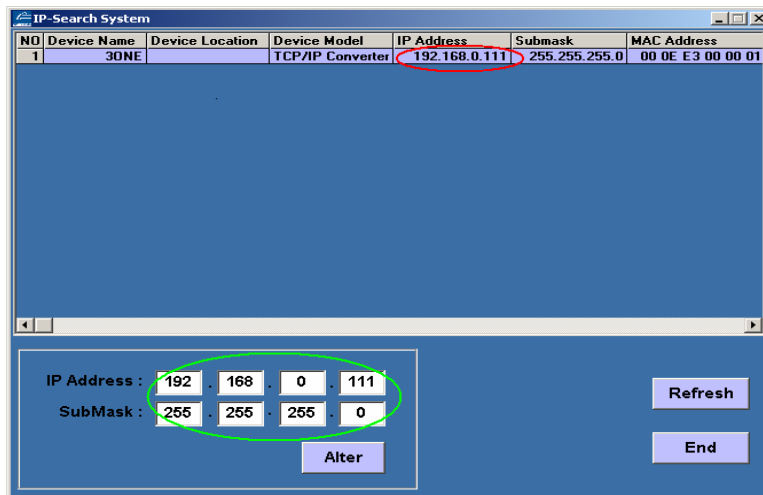
Knock “Start” → “procedure” → “VirCOM” → “VirCOM.exe” (knock the Vir_COM.exe on the desktop), you will see screen as follows



Knock “Tool”->“IP-Search”



Knock “Refresh” button, procedure will search local network segment’s LBNP16312, and display the device as follows diagram. If you want to modification the IP address of LBNP16312, Knock the red circle as follows. Then you will see the blue circle will display the LBNP16312 IP address and SubMask.



Knock “Alter” button, remember the modification IP address. If do not modification, just remember the IP address of LBNP16312.

Connect the IP address of the LBNP16312 in the WinSock procedure.

【High level setting】

1. Set PPPOE function:

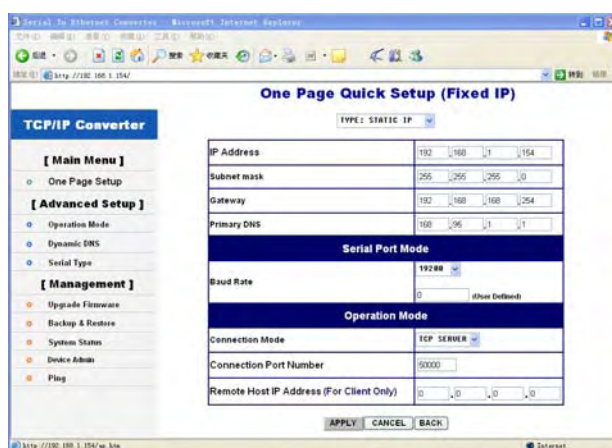
When used the LBNP16312, It must connect Internet and communication with long-range device. But most of the serial device do not have Internet function. The PPPOE function of the LBNP16312 can satisfy this requirement, it can connect the Internet through dial-up Internet, after connected to the serial device, it can communication with long-range device.

Step 1: Click “Start”→ “Procedure”→ “VirCOM” → “Vir_COM.exe”

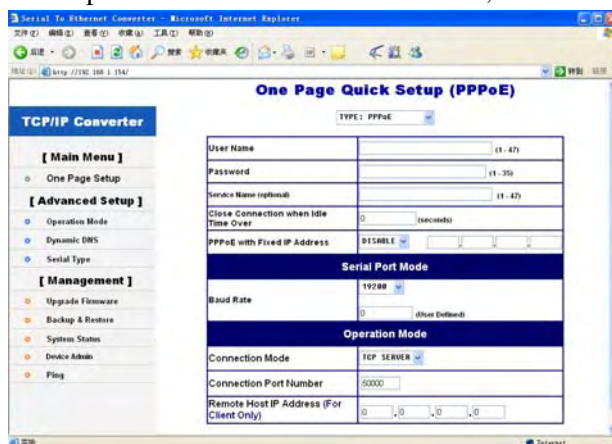
Step 2: Choose **Tool** menu **IP-Search**

Step 3: Click **Refresh** button, search LBNP16312 IP address.

Step 4: Double click IP address that will be set PPPOE function, then enter the setting of IE interface. Management IP address: 192.168.200.200, Input the **User name (admin)** and **password (admin)** into dialog box and enter into setting interface.



Step 5: Chose “PPPOE” from “TYPE”, enter into setting interface.



Instruction: “User Name” and “Password” input the User name and Password that telecom distributed

“**Connection Mode**” is connection mode optional. Usually the mode is TCP Client

“**Connection Port Number**” and “**Remote Host IP Address (For Client Only)**” are far server’s port number and IP address

Note: The serial parameter of the LBNP16312 must setting by hand with the same as the serial device.

2 Pass router setting

Connect PC through Cross-over cable, set the PC IP address to a static IP address and let the IP address locate in 192.168.200.X(X is not 200) network segment. Input 192.168.200.200 at the Web browser address. Input user name and password (default: admin). Enter into the management interface as follows:

TCP/IP Converter	
TYPE: STATIC IP	
IP Address	192 . 168 . 1 . 154
Subnet mask	255 . 255 . 255 . 0
Gateway	192 . 168 . 168 . 254
Primary DNS	168 . 95 . 1 . 1
Serial Port Mode	
Baud Rate	19200 0 (User Defined)
Operation Mode	
Connection Mode	TCP SERVER
Connection Port Number	50000
Remote Host IP Address (For Client Only)	0 . 0 . 0 . 0

Instruction:

“**IP Address**”, “**Subnet mask**” and “**Gateway**” input the IP address, Subnet mask and Gateway that the LBNP16312 locate the network segment.

“**Connection Mode**” is connection mode optional. Usually the mode is TCP Client

“**Connection Port Number**” and “**Remote Host IP Address (For Client Only)**” are far server’s port number and IP address

Setting finished, click “**APPLY**” button

【FAQ】

1. Power adapter is incorrect and connection is incorrect

Solution: (1) Please make sure that the power adapter is 5VDC

(2) When connect to PC, use cross-over cable.

(3) When connect to HUB or Switch, use straight-through cable

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

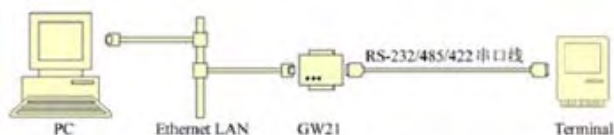
3. Parameter setting is incorrect.

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 LBNP16312, please contact your customer service representative for support

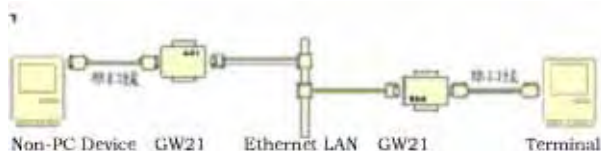
【Application】

Virtual COM port



Adopt LBNP16312's VirCOM software virtual a COM port in the PC, user can control terminal do not change any exist software.

Virtual serial connection



Adapt to some Non-PC devices or No-need PC devices serial control system. Setting LBNP16312 working mode and IP address correctly, user can use LAN create your virtual serial system easily.