NPort's Pair Connection Mode

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Contents

This Tech Note applies to the following NPort device server models:

- NPort DE-211
- NPort DE-311
- NPort DE-311M
- NPort 5100 Series
- NPort 5200 Series
- NPort 5400 Series
- NPort 5600 Series
- NPort IA5150
- NPort IA5250
- NPort W2150 Plus (wireless)
- NPort W2250 Plus (wireless)
- NPort W2150A and NPort W2250A Series (wireless)
- NPort W2150A-W4/W2250A-W4 Series (wireless)
- NPort 6000 Series

1   What is Pair Connection Mode?

The Pair Connection Master and Slave modes connect two NPort device servers over an Ethernet network for serial-to-serial communication. The two NPort device servers can connect to each other with an Ethernet cable, connect to the same LAN, or in a more advanced setup, communicate with each other over a WAN (i.e., through one or more routers). A device attached to one NPort can then communicate transparently with a device attached to the other NPort, as if a serial cable connected the two devices. Both data and modem control signals are transmitted, although DCD signals are not. NPort's Pair Connection modes can overcome the distance limitations inherent in serial communication and introduce many new possibilities for serial-based device control.

2   How to Configure Pair Connection Mode

Before continuing, push the "RESET" button for 10 seconds to reset your NPort to its default settings.

2.1   DE-211/DE-311/DE-311M

1. Power ON the NPort; the Ready LED indicator will light up in green.

2. For RS-232 transmission, set the DE-311's DIP switches to **OFF-OFF-OFF**, set the DE-211's DIP switches to **OFF-OFF-OFF-OFF**, or set the DE-301/331's serial setting to RS-232.

3. Connect the host PC and NPort to the network.

4. If necessary, reconfigure the IP address and netmask of your PC and the NPort so that they are on the same subnet. The NPort's default IP/netmask is 192.168.127.254/255.255.255.0. Test the connection by pinging from the PC to the NPort.

5. Log in to the NPort's Telnet console. E.g. **# telnet <NPort's IP>**

6. Open **[OP_mode]** and select application **[Pair Connection (Master)]**. Under "more setting" set **[Remote IP Address]** to the IP address of the other NPort (which will be configured for **[Pair Connection (Slave)]**)

7. Open **[Serial port]** to configure the serial parameters and terminal software to match your serial device (e.g., 115200, N, 8, 1).

8. Remember to select **[Restart]** to activate all settings.

2.2   NPort 5000 Series

1. Power ON the NPort; the Ready LED indicator will light up in green.

2. Connect the host PC and NPort to the network.

3. If necessary, reconfigure the IP address and netmask of your PC and the NPort so that they are on the same subnet. The NPort's default IP/netmask is 192.168.127.254/255.255.255.0. Test the connection by pinging from the PC to the NPort.

4. Log in to the NPort's Telnet console. E.g. **# telnet <NPort's IP>**

5. Open Main menu > Operating settings > Port > Operating mode **[Pair Connection Master mode]**, and configure the **[IP address]** and **[port]** to match up with the other NPort's settings.

6. Open Main menu > **Serial settings** > Port to configure the serial parameters for the terminal software to match the serial device (e.g., 115200, N, 8, 1).

7. Remember to select **[Save/Restart]** to activate all settings.

2.3   NPort Wireless Series and NPort 6000 Series

1. Power ON the NPort; the Ready LED will light up in green.

2. Connect the host PC and NPort to the network.

3. If necessary, reconfigure the IP address and netmask of your PC and the NPort so that they are on the same subnet. The NPort's default IP/netmask is 192.168.127.254/255.255.255.0. Test the connection by pinging from the PC to the NPort.

4. Log in to the NPort's Telnet console. E.g. **# telnet <NPort's IP>**

5. Open **[Port] > [Modes]** and set Application to **[Pair Connection]**. Under Description/more settings, set **[Pair_Master]**, **[IP address]**, and **[port]** to match up with the other NPort.

6. Open **[Port] > [Line]** to configure the serial parameters for your terminal software to match the serial device (e.g., 115200, N, 8, 1).

7. Remember to select **[Restart]** to activate all settings.

Note   For wireless NPort products (both non-Plus and Plus models), you can activate either the Ethernet port or WLAN, but not both at the same time. If you use the Ethernet port, the WLAN will be disabled. If you want to the use WLAN, you must first unplug the Ethernet cable and restart the NPort to activate the WLAN connection.


Note   1. The default value of **[TCP port]** is 4001.

2. For the NPort DE-211/311/311M device servers, only the NPort with the IP address configured in **[Destination IP addr]** will be able to connect to this NPort. Leave this column empty to allow all other NPorts to connect to this NPort.

3. The default WLAN IP address is 192.168.126.254.

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3   How to Test Pair Connection Mode

RS-232   Ethernet   RS-232

PC's COM port   NPort 1   NPort 2   PC's COM port
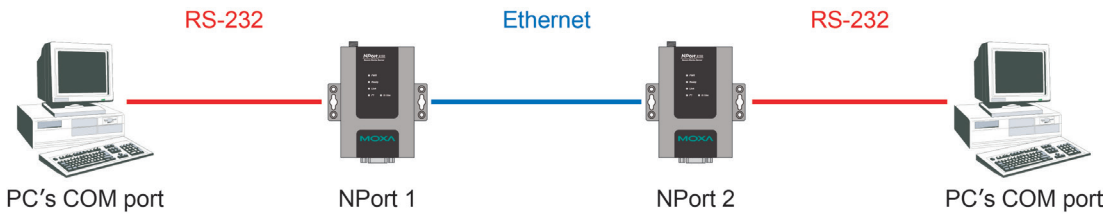
1. Configure NPort#1 for Pair Connection Master and NPort#2 for Pair Connection Slave, and then assign proper IP addresses to both NPorts.

2. Connect a different PC to each of the two NPorts' serial ports, and then use terminal software (e.g., HyperTerminal or Moxa's PComm Terminal Emulator) to test communication.

3. Pair Connection mode has been established if you can transmit data from the COM port of PC#1 to the COM port of PC#2, as shown on the terminal, and also see that PC#1 can receive data from PC#2.

4   Cable Wiring

RS-232 Cable Wiring

NPort	Device
TxD	RxD
RxD	TxD
RTS	CTS
CTS	RTS
DTR	DSR
DSR	DTR
DCD	DCD
GND	GND

4 wire RS-422/485 Cable Wiring

NPort	Device
Tx (+)	Rx (+)
Tx (−)	Rx (−)
Rx (+)	Tx (+)
Rx (−)	Tx (−)
GND	GND

2 wire RS-485 Cable Wiring

NPort	Device
D (+)	D (+)
D (−)	D (−)
GND	GND