NPort W2004 Series
Quick Installation Guide

Second Edition, June 2008

1. Overview

The NPort W2004 Series of Wireless Serial Device Server extends wireless networking capabilities to printers, scales, medical equipment, manufacturing machinery, bar code readers, card readers, point-of-sale equipment, and other data collection devices. The 3-in-1 RS-232/422/485 serial interface of NPort W2004's 4 serial ports gives you a convenient means of linking most serial devices to your wireless network.

NPort W2004 Wireless Serial Device Servers have the following features:

- Link any serial device to a Wi-Fi 802.11g/b network
- 4 RS-232/422/485 ports, at up to 460.8 Kbps
- Web-based configuration interface
- Supports Windows COM and Linux tty drivers
- Supports TCP Client/Server and UDP modes
- Secure data access via standard WEP
- Enhanced remote configuration via HTTPS and SSH

2. Package Checklist

Before installing NPort W2004 products, verify that the package contains the following items:

- NPort W2004 x 1
- Documentation & Software CD
- RJ45 to RJ45 Ethernet crossover cable
- RJ45 to male DB9 cable (CBL-RJ45M9-150)
- RJ45 to female DB9 cable (CBL-RJ45F9-150)
- Warranty booklet
- Quick Installation Guide

Optional Accessories

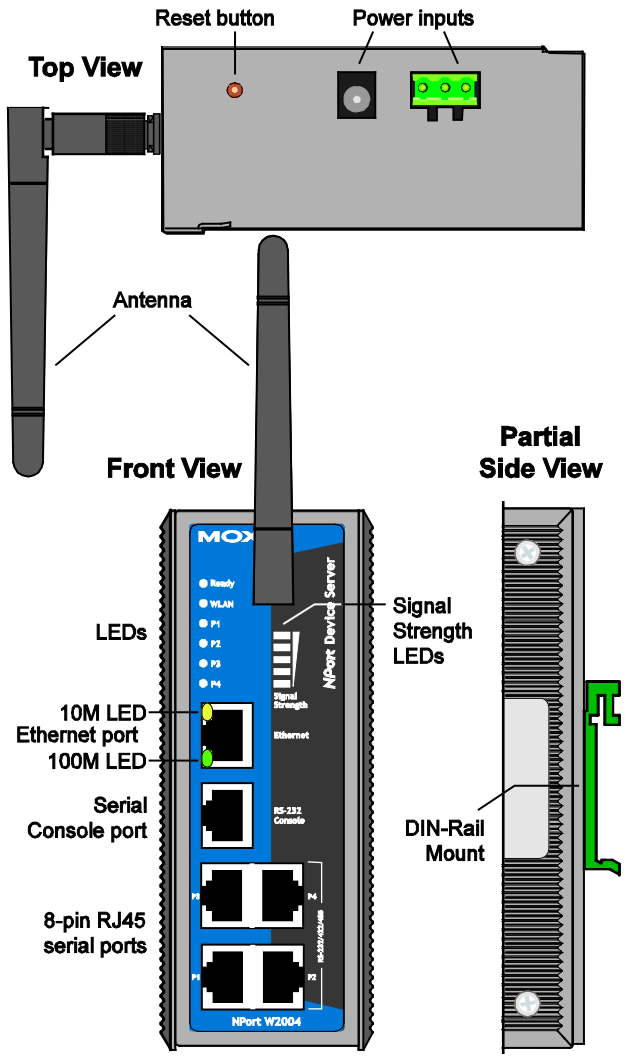
- CBL-RJ45M9-150 RJ45 (8-pin) to DB9 (M) cable, 150 cm
- CBL-RJ45F9-150 RJ45 (8-pin) to DB9 (F) cable, 150 cm
- CBL-RJ45M25-150 RJ45 (8-pin) to DB25 (M) cable, 150 cm
- CBL-RJ45F25-150 RJ45 (8-pin) to DB25 (F) cable, 150 cm

Notify your sales representative if any of the above items is missing or damaged.

P/N: 18020200100

3. Hardware Introduction

As shown in the following figures, NPort W2004 has six 8-pin RJ45 ports, four for the RS-232/422/485 interface, one for the RS-232 serial console, and one for the 10/100M Ethernet port interface.



Reset Button—Press the *Reset button* continuously for *5 sec to load factory defaults*: Use a pointed object, such as a straightened paper clip or toothpick, to press the reset button. This will cause the Ready LED to blink on and off. The factory defaults will be loaded once the Ready LED stops blinking (after about 5 seconds). At this point, you should release the reset button.

LED Indicators—The front panel of NPort W2004 has 11 LED indicators, as described in the following table.

Name	Color	Function
Ready	red	**Steady on**—Power is on and NPort is booting up. **Blinking fast** (once every 0.5 sec.)—Indicates a LAN IP conflict. **Blinking slowly** (once every 1.0 sec.)—Looking for an IP when no DHCP server is available.
	green	**Steady on**—Power is on and NPort is functioning normally. **Blinking fast** (once every 0.5 sec.)—Loading configuration to factory default after holding down the reset button for 5 seconds. **Blinking slowly** (once every 1.0 sec.)—The device server has been located by the NPort Search utility.
	off	Power is off, or a power error condition exists.
WLAN	green	**Steady on**—Wireless enabled. **Blinking fast** (once every 0.5 sec.)—Indicates an IP conflict with another network host. **Blinking slowly** (once every 1.0 sec.)—Looking for an IP when no DHCP server is available.
P1, P2, P3, P4	orange	Serial port is receiving data.
	green	Serial port is transmitting data.
	off	No data is being transmitted or received through the serial port.
Signal Strength (5 LEDS)	green	The number of lit LEDS indicates the WLAN signal strength. When [0 / 1 / 2 / 3 / 4 / 5] LEDs are lit, the corresponding WLAN status is [Connection Fail / Bad / Fair / Good / Very Good / Excellent].
Ethernet	orange	10 Mbps Ethernet connection.
	green	100 Mbps Ethernet connection.
	off	Ethernet cable is disconnected, or has a short.

4. First-time Hardware Installation Procedure

STEP 1: After removing NPort W2004 from the box, use a cross-over Ethernet cable to connect the NPort's RJ45 Ethernet port directly to your computer's Ethernet port.

STEP 2: Attach the power adaptor to the NPort and then plug the adaptor into an electrical outlet.

STEP 3: Configure the NPort W2004 via the Ethernet port. See the next section for software installation information.

5. Software Installation Information

To install the COM driver, first insert the Document & Software CD into your computer's CD-ROM drive. When the installation window opens, click on the **Install COM Driver** button, and then follow the on-screen instructions.

To see detailed information about NPort W2004, click on the **Documents** button, and then select "NPort W2004 User's Manual" to open the pdf version of the manual.

An NPort Search Utility is also included on the Documentation & Software CD. The NPort Search Utility is used to search for NPort W2004 units on the network. To install the utility, first insert the Documentation & Software CD into your computer's CD-ROM drive. When the installation window opens, click on the **Install UTILITY** button, and then follow the on-screen instructions.

6. Initializing W2004's IP Address

Factory Default IP Addresses

LAN: Static; IP/netmask = 192.168.126.254/255.255.255.0
WLAN Static; IP/netmask = 192.168.127.254/255.255.255.0
(If the LAN or WLAN is configured for DHCP, but the DHCP server cannot be found, the IP addresses will revert to the above default values.)

NOTE If you forget the IP address, you can use the NPort Search utility (from your PC) to locate the NPort W2004 unit over the network. You will be able to view the IP address on the screen.

NOTE Only one of the two network interfaces can be active at any given time. If the NPort is powered on and the Ethernet port is connected to a live network or device, then the Ethernet link will be active, and the WLAN will be inactive. If the Ethernet port is NOT connected to a live network, the WLAN will be active, and the Ethernet link will be inactive.

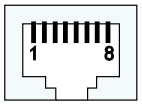
Web Console

Follow these steps to access NPort W2004's web console.

STEP 1: Use a cross-over cable to connect the NPort's LAN port to your PC, and then open your web browser.
STEP 2: Type 192.168.126.254 (the default LAN IP) in the browser's address input box.
STEP 3: The NPort W2004 homepage will open. The current configuration settings will be displayed.
STEP 4: For first time users, click on the **Wizard**, and then configure the IP address, SSID, WEP mode, WEP key index, and WEP key. For other selection items, you can use the default settings, or change the settings to match your specific environment.

7. Serial Port Pin Assignments (8-pin RJ45)

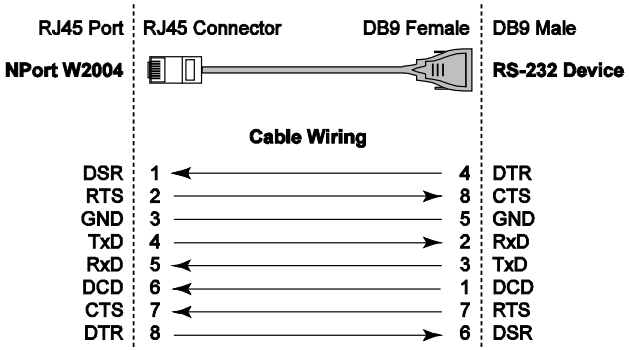
Pin	RS-232	RS-422	4W RS-485	2W RS-485
1	DSR	—	—	—
2	RTS	TxD+	TxD+	—
3	GND	GND	GND	GND
4	TxD	TxD-	TxD-	—
5	RxD	RxD+	RxD+	Data+
6	DCD	RxD-	RxD-	Data-
7	CTS	—	—	—
8	DTR	—	—	—



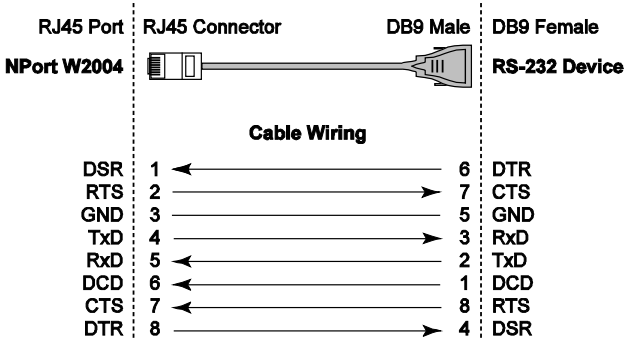
8. Cable Wiring Diagrams

In this section, we show the wiring diagrams for the four optional cables. These cables are used most often for RS-232 applications.

CBL-RJ45F9-150 (8-pin RJ45 to Female DB9)



CBL-RJ45M9-150 (8-pin RJ45 to Male DB9)



9. Specifications

WLAN

Standard Compliance:	802.11g/b
Radio Frequency Type:	DSSS, OFDM
Tx Power 11b:	18 dBm + 2 dBi
Tx Power 11g:	16 dBm + 2 dBi
Rx Sensitivity:	-70 dBm @ 54 Mbps, -85 dBm @ 11 Mbps
Transmission rate:	54 Mbps (max.) with auto fallback (54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps)
Transmission distance:	Up to 300 meters (@ 12 Mbps, in open areas)
Security:	WEP 64-bit/128-bit data encryption
Antenna connector:	Reverse SMA
Network Modes:	Infrastructure, Ad-Hoc

LAN

Ethernet:	10/100 Mbps, RJ45
Protection:	Built-in 1.5 KV magnetic isolation

Serial

No. of ports:	4
Interface:	RS-232/422/485 (8-pin RJ45); 15 KV ESD for all signals
RS-485 data direction	ADDC™ (patented Automatic Data Direction Control)

Serial Communication Parameters

Parity:	None, Even, Odd, Space, Mark
Data bits:	5, 6, 7, 8
Stop bits:	1, 1.5, 2
Flow control:	RTS/CTS, XON/XOFF
Speed:	50 bps to 460.8 Kbps

Environmental

Operating temperature:	0 to 60°C (32 to 140°F) at 5 to 95% RH
Storage temperature:	-20 to 85°C (-4 to 185°F) at 5 to 95% RH

Regulatory Approvals

EMC:	FCC Class A, CE Class A
Safety:	UL, CUL, TÜV

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