

NPort® W2150/2250 Plus

1 and 2-port RS-232/422/485 IEEE 802.11a/b/g wireless device servers



- > Link any serial device to an IEEE 802.11a/b/g network
- > 921.6 Kbps baudrate for RS-232/422/485 transmissions
- > Web-based configuration using built-in Ethernet or WLAN
- > Enhanced remote configuration with HTTPS, SSH
- > Secure data access with WEP, WPA, WPA2
- > Built-in WLAN site survey tool
- > Wireless roaming with user-defined signal strength threshold
- > Off-line port buffering and serial data log
- > Dual power inputs (1 power jack, 1 terminal block)

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



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Overview

The NPort® W2150 Plus and W2250 Plus are the ideal choice for connecting your serial devices, such as PLCs, meters, and sensors, to a wireless LAN. Your communications software will be able to access the serial devices from anywhere over a wireless LAN. Moreover, the Wireless device servers require fewer cables and are ideal for applications that involve difficult wiring situations. In Infrastructure

Mode or Ad-Hoc Mode, the NPort® W2250 Plus and W2150 Plus can Wi-Fi networks at offices and factories allow users to move, or “roam,” between several APs (Access Points). The NPort® W2150 Plus and WLAN environment offers an excellent solution for devices that are frequently moved from place to place.

802.11a/b/g Wireless Connectivity to Serial Devices

Wireless device servers require fewer cables and are ideal for applications that involve difficult wiring situations. In Infrastructure Mode or Ad-Hoc Mode, the NPort® 2150 Plus and NPort® 2250 Plus

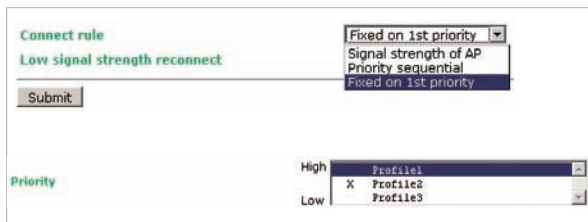
can communicate with any host computer through an access point, or with another NPort® W2150 Plus or NPort® W2250 Plus located up to 100 meters away.

Wireless Roaming Function

Wi-Fi networks at offices and factories allow users to move, or “roam,” between several APs (Access Points). The NPort® W2150 Plus and W2250 Plus include a “Connect Rule” setting to allow wireless roaming.

The “Connect rule” field is only available in Infrastructure Mode and is used to specify the NPort®’s roaming behavior. When “Signal strength of AP” is selected, if more than one AP is detected, the NPort® will connect to the AP that has the highest signal strength, regardless of priority as set in the Priority field. When “Priority sequential” is selected, the NPort® will always try to connect to APs in order of priority, as set in the Priority field, regardless of signal strength. When “Fixed on 1st priority” is selected, the NPort® is only allowed to connect to the first priority AP, as set in the “Priority” field.

This “Priority” field is only available in Infrastructure Mode, and is used to set the priorities of the three available profiles.



Off-line Port Buffering and Serial Data Log for Each Port

For mission-critical applications, data from the serial device must not be lost if the wireless connection goes down. The NPort® W2150 Plus and W2250 Plus are designed to continue operating if the wireless connection is disconnected temporarily. When the wireless connection is retraining, or if the connection fails, the serial data from the serial device will be queued in the 10 MB port buffer built into the device

server. As soon as the wireless connection returns to normal, the data stored in the buffer will be sent to its destination. In addition, a serial data log can be enabled to make troubleshooting easier.

The off-line port buffer for both the NPort® W2150 Plus and NPort® W2250 Plus is 64 KB per port.

Built-in WLAN Site Survey Tool

The NPort® W2150 Plus and W2250 Plus both have a built-in WLAN site survey tool. Additional software is NOT required to complete the site survey.

The purpose of conducting a WLAN site survey is to determine how many access points are required, and where the access points should be placed. For most implementations, the number and placement of access points is designed to guarantee a minimum data rate. With wireless systems, it is often necessary to perform a WLAN site survey before installing the access points, in order to understand how radio waves behave within the facility.

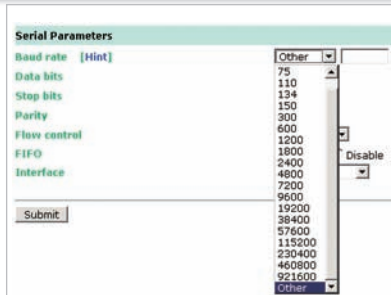


Secure Remote Management and Configuration with SSH/SSL

Unauthorized access is one of the biggest headaches for system managers. In addition to IP filtering and password protection, the NPort® W2150 Plus and W2250 Plus also support SSH and SSL to protect the NPort® W2150 Plus and W2250 Plus from hackers. To

transmit control messages securely, open the web console using a web browser (Internet Explorer, for example) that supports https. You may also open the serial or Telnet console, such as PuTTY, using a terminal emulator that supports SSH.

Select "Any Baudrate" between 50 bps and 921.6 Kbps



Most device servers only support a fixed number of serial baudrates. However, some applications require special baudrates, such as 250 Kbps or 500 Kbps. With the NPort® W2150 Plus and W2250 Plus, you can enter any baudrate between 50 and 921.6 Kbps.

If your device's baudrate is not a standard baudrate, select "other" from the drop-down list and then enter the baudrate.

Specifications

LAN Interface

Ethernet: 10/100 Mbps, RJ45 connector, Auto MDI/MDIX
Magnetic Isolation Protection: 1.5 KV built-in

WLAN Interface

Standard Compliance: 802.11a/b/g
Radio Frequency Type: DSSS/OFDM

Tx Power:

802.11a: 14 dBm (typical)
 802.11b: 17 dBm (typical)
 802.11g: 15 dBm (typical)

Rx Sensitivity: -80 dBm

Transmission Rate:

802.11a: 54 Mbps
 802.11b: 11 Mbps
 802.11g: 54 Mbps (max.) with auto fallback (54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps)

Transmission Distance: Up to 100 meters (in open areas)

Antenna Connector: Reverse SMA

Network Modes: Infrastructure, Ad-Hoc

Wireless Security:

WEP: 64-bit/128-bit data encryption
 WPA, WPA2, 802.11i: Enterprise mode and Pre-Share Key (PSK) mode
 Encryption: 128-bit TKIP/AES-CCMP EAP-TLS, PEAP/GTC, PEAP/MD5, PEAP/MSCHAPV2, EAP-TTLS/PAP, EAP-TTLS/CHAP, EAP-TTLS/MSCHAP, EAP-TTLS/MSCHAPV2, EAP-TTLS/EAP-MSCHAPV2, EAP-TTLS/EAP-GTC, EAP-TTLS/EAP-MD5, LEAP

Serial Interface

Serial Standards: RS-232/422/485

Number of Ports:

NPort® W2150 Plus: 1
 NPort® W2250 Plus: 2

Connectors: DB9 male

Serial Data Log: 64 KB

Off-line Port Buffering:

NPort® W2150 Plus: 20 MB
 NPort® W2250 Plus: 10 MB

Serial Communication Parameters

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 1.5, 2

Parity: None, Even, Odd, Space, Mark

Flow Control: RTS/CTS, XON/XOFF, DTR/DSR

Baudrate: 50 bps to 921.6 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

RS-485-2w: Data+, Data-, GND

Software

Network Protocols: ICMP, IP, TCP, UDP, DHCP, Telnet, DNS, SNMP, HTTP, SMTP, SNMP, SSH, HTTPS

Configuration Options: Web Console, Serial Console, Telnet Console, Windows Utility

Driver Support: Windows Real COM driver (for Windows 95, 98, ME, NT, 2000, XP, 2003, Vista, XP x64, 2003 x64, Vista x64), Linux Real TTY driver, Fixed TTY driver (for SCO Unix, SCO OpenServer, UnixWare 7, UnixWare 2.1, SVR 4.2, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i)

Management: SNMP MIB-II

Physical Characteristics

Housing: Aluminum sheet metal (1 mm)

Dimensions:

Without ears or antenna: 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)
 With ears, without antenna: 100 x 111 x 26 mm (3.94 x 4.37 x 1.02 in)
 Antenna Length: 109 mm (4.29 in)

Environmental Limits

Operating Temperature: 0 to 55°C (32 to 131°F)

Operating Humidity: 5 to 95% RH

Storage Temperature: -20 to 85°C (-4 to 185°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption: 560 mA @ 12 V

Regulatory Approvals

EMC: CE (EN55022 and EN55024 Class A, ETSI EN 301 489-17, ETSI EN 301 489-1), FCC Part 15 and 17 Subpart B Class A

Safety: UL (UL60950-1), TÜV (EN60950-1)

DSPR: ARIB-STD 33, ARIB-STD 66

Warranty

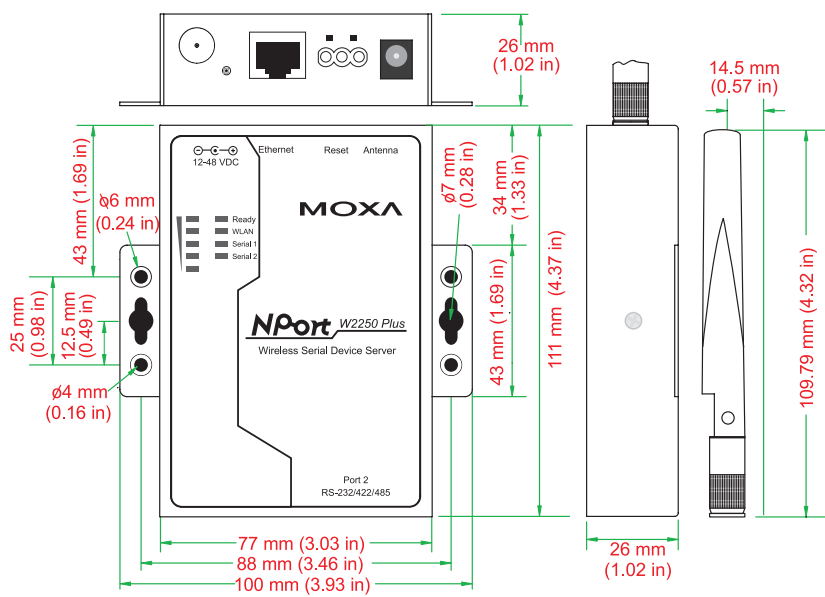
Warranty Period: 5 years

Details: See www.moxa.com/warranty

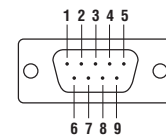
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Dimensions



Pin Assignment, DB9 Male



PIN	RS-232	RS-422/485-4W	RS-485-2W
1	DCD	TxD-(A)	–
2	RxD	TxD+(B)	–
3	TxD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	–	–
7	RTS	–	–
8	CTS	–	–
9	–	–	–

Ordering Information

Available Models

- NPort® W2150 Plus-US:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, US band, US plug
- NPort® W2150 Plus-EU:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Euro plug
- NPort® W2150 Plus-CN:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, US plug, CCC
- NPort® W2150 Plus-UK:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, UK plug
- NPort® W2150 Plus-SAA:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Australia plug
- NPort® W2150 Plus-JP:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Japan band, Japan plug
- NPort® W2250 Plus-US:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, US band, US plug
- NPort® W2250 Plus-EU:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Euro plug
- NPort W2250 Plus-CN:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, US plug, CCC
- NPort® W2250 Plus-UK:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, UK plug
- NPort® W2250 Plus-SAA:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Australian plug
- NPort® W2250 Plus-JP:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Japan band, Japan plug

Optional Accessories (can be purchased separately)

- Serial cables and adaptors: See Appendix A
- DK-35A:** 35 mm DIN-Rail Mounting Kit

Package Checklist

- NPort® W2150 Plus or NPort® W2250 Plus wireless device server
- Power adaptor
- Antenna
- Document and Software CD
- Quick Installation Guide (printed)
- Warranty Card