

# NPort® W2150A/W2250A

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



NPort® W2150A

NPort® W2250A

- > 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 surge protection for serial, LAN, and power
- > Remote configuration with HTTPS, SSH
- > Secure data access with WEP, WPA, WPA2
- > Built-in WLAN site survey tool
- > Fast automatic wireless fast roaming
- > Off-line port buffering and serial data log
- > Dual power inputs (1 screw-type power jack, 1 terminal block)



## Overview

The NPort® W2150A and W2250A 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® W2150A and NPort® W2250A can connect to Wi-Fi networks at offices and factories to allow users to move, or “roam,” between several APs (Access Points), and offer 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® W2150A and NPort® W2250A

can communicate with any host computer through an access point, or with another NPort® W2150A or NPort® W2250A located up to 100 meters away.

## Wireless Fast Roaming Function

Wi-Fi networks at offices and factories allow users to move, or “roam,” between several APs (Access Points). Moxa’s Fast Roaming function

increases the roaming speed to unify AP channels and avoid wasting channel hopping time while roaming.

## 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® W2150A and NPort® W2250A are designed to continue operating if the wireless connection is disconnected temporarily. If the wireless connection is restraining, or if the connection fails, the serial data from the serial device will be queued in the built-in port buffer with over 10 MB of

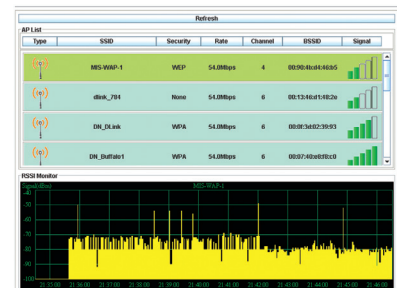
storage. As soon as the wireless connection returns to normal, the data stored in the buffer will be sent to its destination. In addition, a serial data log can be enabled to make troubleshooting easier.

The serial data log buffer for both the NPort® W2150A and NPort® W2250A is 64 KB per port.

## Built-in WLAN Site Survey Tool

The NPort® W2150A and NPort® W2250A 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/HTTPS

Unauthorized access is one of the biggest headaches for system managers. In addition to IP filtering and password protection, the NPort® W2150A and NPort® W2250A also support SSH and HTTPS to provide protection from hackers. To transmit control messages

securely, open the web console using a web browser that supports https (Internet Explorer, for example). 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® W2150A and NPort® W2250A, 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

### Ethernet Interface

**Number of Ports:** 1  
**Speed:** 10/100 Mbps, auto MDI/MDIX  
**Connector:** RJ45  
**Magnetic Isolation Protection:** 1.5 KV built-in

### WLAN Interface

**Standard Compliance:** 802.11a/b/g  
**Network Modes:** Infrastructure, Ad-Hoc  
**Transmit Power:**  
 802.11a: 14 dBm (typical)  
 802.11b: 17 dBm (typical)  
 802.11g: 15 dBm (typical)  
**Receive Sensitivity:** -80 dBm  
**Radio Frequency Type:** DSSS/OFDM  
**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)  
**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

**Antenna Connector:** Reverse SMA

### Serial Interface

**Number of Ports:**  
 NPort W2150A: 1  
 NPort W2250A: 2  
**Serial Standards:** RS-232/422/485 (DB9 male connector)  
**Off-line Port Buffering:**  
 NPort W2150A: 20 MB  
 NPort W2250A: 10 MB  
**Serial Line Surge Protection:** 1KV (level 2)

### 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  
**Baudrate:** 50 bps to 921.6 Kbps  
**Serial Data Log:** 64 KB

### 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 V1/V2c/V3, HTTP, SMTP, SNT, SSH, HTTPS  
**Configuration Options:** Web Console, Serial Console, Telnet Console, Windows Utility  
**Secure Configuration Options:** HTTPS, SSH  
**Windows RealCOM Drivers:** Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/ 7 x86/x64, Embedded CE 5.0/6.0, XP Embedded  
**Fixed TTY Drivers:** 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  
**Linux Real TTY Drivers:** 2.4.x, 2.6.x, 3.0.x  
**Utilities:** NPort Search Utility and NPort Windows Driver manager  
**Management:** SNMP MIB-II

### Physical Characteristics

**Housing:** Aluminum sheet metal (1 mm)  
**Weight:** 780 g  
**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: 109.79 mm (4.32 in)

### Environmental Limits

**Operating Temperature:**  
 Standard Models: 0 to 55°C (32 to 131°F)  
 Wide Temp. Models: -40 to 75°C (-40 to 167°F)  
**Storage Temperature:** -40 to 85°C (-4 to 185°F)  
**Ambient Relative Humidity:** 5 to 95% (non-condensing)

### Power Requirements

**Input Voltage:** 12 to 48 VDC  
**Power Consumption:**  
 237 mA @ 12 V, 125 mA @ 24 V, 50 mA @ 48 V

### Standards and Certifications

**Safety:** UL 60950-1, EN 60950-1  
**EMC:** CE, FCC  
**EMI:** FCC Part 15 Subpart B Class A, FCC Subpart C/E, VCCI  
**EMS:** EN 55022 Class A  
**Radio:** CE (ETSI EN 301 893, ETSI EN 300 328), ARIB RCR STD-33, ARIB STD-66  
**Power Line Surge Protection:** 2 KV (level 3)

### Reliability

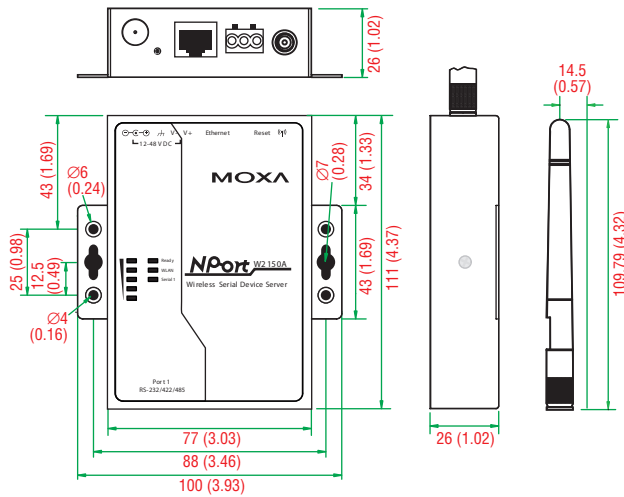
**Alert Tool:** RTC (real-time clock)  
**Automatic Reboot Trigger:** Built-in WDT (watchdog timer)  
**MTBF (mean time between failures):**  
**NPort W2150A:** 383,187 hrs  
**NPort W2250A:** 363,327 hrs

### Warranty

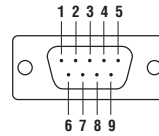
**Warranty Period:** 5 years  
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

## Dimensions

Unit: mm (inch)



## 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 W2150A:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN (includes US/Euro/Japan bands), antenna, 0 to 55°C operating temperature, includes power adapter

**NPort W2250A:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN (includes US/Euro/Japan bands), antenna, 0 to 55°C operating temperature, includes power adapter

**NPort W2150A-T:** 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN (includes US/Euro/Japan bands), -40 to 75°C operating temperature

**NPort W2250A-T:** 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN (includes US/Euro/Japan bands), -40 to 75°C operating temperature

### Optional Accessories (can be purchased separately)

**Serial Cables and Adaptors:** See page A-6 for details

**DK-35A:** 35 mm DIN-Rail Mounting Kit

**PWR-12150-USJP-SA-T:** 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, US/JP Plug

**PWR-12150-EU-SA-T:** 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, EU Plug

**PWR-12150-UK-SA-T:** 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, UK Plug

**PWR-12150-CN-SA-T:** 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, CN Plug

**PWR-12150-AU-SA-T:** 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, AU Plug

### Package Checklist

- NPort W2150A or NPort W2250A wireless device server
- Antenna
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card