

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)



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® W2150 Plus and NPort® W2250 Plus 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.

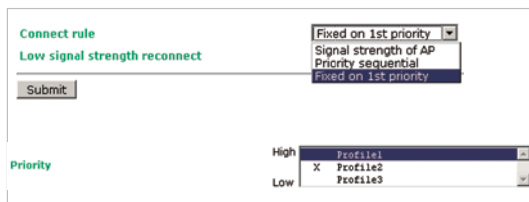
802.11a/b/g Wireless Connectivity to Serial Devices

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® W2150 Plus and NPort® W2250

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 NPort® 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 NPort® W2250 Plus are designed to continue operating if the wireless connection is disconnected temporarily. If 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 serial data log 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 NPort® 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.

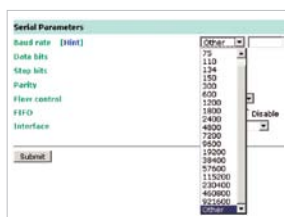


Secure Remote Management and Configuration with SSH/SSL

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

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 W2150 Plus: 1
 NPort W2250 Plus: 2
Serial Standards: RS-232/422/485 (DB9 male connector)
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
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 Real COM 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

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 mm (4.29 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: 560 mA @ 12 V, 294 mA @ 24 V, 162 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: EN55024 Class A, EN 300 328, EN 301 489-1, EN 301 489-17, EN 301 893, ARIB RCR STD-33/T66

Reliability

Alert Tool: RTC (real-time clock)

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

MTBF (mean time between failures):

NPort W2150 Plus: 352,547 hrs

NPort W2250 Plus: 352,034 hrs

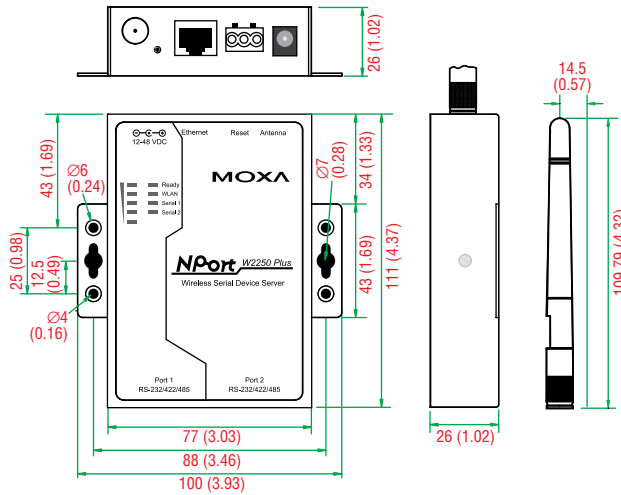
Warranty

Warranty Period: 5 years

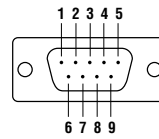
Details: See www.moxa.com/warranty

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 W2150 Plus-US: 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, US band, US plug, 0 to 55°C operating temperature

NPort W2150 Plus-EU: 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Euro plug, 0 to 55°C operating temperature

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, 0 to 55°C operating temperature

NPort W2150 Plus-UK: 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, UK plug, 0 to 55°C operating temperature

NPort W2150 Plus-SAA: 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Australia plug, 0 to 55°C operating temperature

NPort W2150 Plus-JP: 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Japan band, Japan plug, 0 to 55°C operating temperature

NPort W2250 Plus-US: 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, US band, US plug, 0 to 55°C operating temperature

NPort W2250 Plus-EU: 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Euro plug, 0 to 55°C operating temperature

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, 0 to 55°C operating temperature

NPort W2250 Plus-SAA: 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Euro band, Australian plug, 0 to 55°C operating temperature

NPort W2250 Plus-JP: 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN, antenna, Japan band, Japan plug, 0 to 55°C operating temperature

NPort W2150 Plus-T: 1-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN (includes US, Euro, Japan band), -40 to 75°C operating temperature

NPort W2250 Plus-T: 2-port RS-232/422/485 wireless device server with 802.11a/b/g WLAN (includes US, Euro, Japan band), -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 W2150 Plus or NPort W2250 Plus wireless device server
- Power adaptor (non-T models only)
- Antenna
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card