NPort® W2150A/W2250A

1 and 2-port RS-232/422/485-to-WiFi device servers with wireless client

NPort® W2150A

NPort® W2250A

- Link any serial or Ethernet device to an IEEE 802.11a/b/g/n 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
- Fast automatic wireless fast roaming
- Offline port buffering and serial data log
- Dual power inputs (1 screw-type power jack, 1 terminal block)
- Supports wireless clients

Overview

The NPort® W2150A and W2250A are the ideal choice for connecting your serial or Ethernet 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/n Wireless Connectivity to Serial Devices

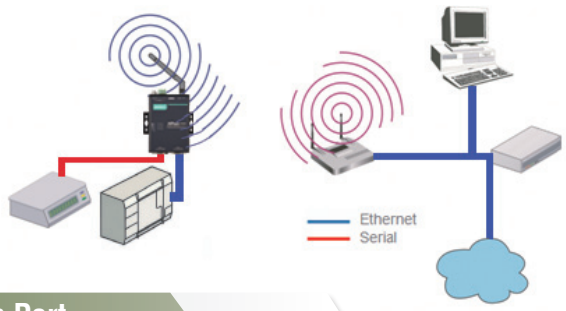
Wireless device servers require fewer cables and are ideal for applications that involve difficult wiring situations. In Infrastructure Mode or Ad-Hoc Mode, the NPort® W2150A and NPort® W2250A can communicate with any host computer through an access point, or with another NPort® W2150A or NPort® W2250A 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.

Wireless Client

Data can be seamlessly transferred between the serial line, LAN, and WAN, allowing the LAN and WLAN interfaces to be bridged together with one IP address.



Offline 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.

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/n
Network Modes: Infrastructure, Ad-Hoc
Transmit Power:
802.11b:
Typ. 16 dBm ±1.5 dBm @ 1 Mbps,
Typ. 16 dBm ±1.5 dBm @ 11 Mbps
802.11a:
Typ. 15 dBm ±1.5 dBm @ 6 Mbps,
Typ. 14 dBm ±1.5 dBm @ 54 Mbps
802.11g:
Typ. 16 dBm ±1.5 dBm @ 6 Mbps,
Typ. 14 dBm ±1.5 dBm @ 54 Mbps
802.11n 2.4 GHz
Typ. 16 dBm ±1.5 dBm @ 6.5 Mbps,
Typ. 12 dBm ±1.5 dBm @ 72.2 Mbps
802.11n 5 GHz
Typ. 15 dBm ±1.5 dBm @ 6.5 Mbps,
Typ. 12 dBm ±1.5 dBm @ 150 Mbps
Receive Sensitivity:
802.11b:
-92 dBm @ 1 Mbps, -84 dBm @ 11 Mbps
802.11a:
-91 dBm @ 6 Mbps, -74 dBm @ 54 Mbps
802.11g:
-91 dBm @ 6 Mbps, -73 dBm @ 54 Mbps
802.11n 2.4 GHz
-89 dBm @ 6.5 Mbps (20 MHz), -71 dBm @ 72.2 Mbps (20 MHz)
802.11n 5 GHz
-89 dBm @ 6.5 Mbps (20 MHz), -71 dBm @ 72.2 Mbps (20 MHz)
-85 dBm @ 13.5 Mbps (40 MHz), -67 dBm @ 150 Mbps (40 MHz)
Radio Frequency Type: DSSS/OFDM
Transmission Rate:
802.11a: 54 Mbps
802.11b: 11 Mbps
802.11g: 6 to 54 Mbps
802.11n: 6.5 to 150 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)
Offline Port Buffering:
NPort W2150A: 20 MB
NPort W2250A: 10 MB
Serial Line Surge Protection: 1 kV (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, IPv4, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, SNTP, SSH, HTTPS, ARP
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/2008/7/8/8.1/10 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded
Fixed TTY Drivers: SCO Unix, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X
Linux Real TTY Drivers: Linux 2.4.x, 2.6.x, 3.x
Utilities: NPort Search Utility and NPort Windows Driver manager
Management: SNMP MIB-II

Physical Characteristics

Housing: Aluminum sheet metal (1 mm)
Weight:
NPort W2150A: 547 g (1.21 lb)
NPort W2250A: 557 g (1.23 lb)
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 75°C (-4 to 167°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)

Power Requirements

Input Voltage: 12 to 48 VDC
Input Current:
NPort W2150A: 179 mA @ 12 VDC
NPort W2250A: 200 mA @ 12 VDC

Standards and Certifications

Safety: UL 60950-1
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV
IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 V/m
IEC 61000-4-8 PFMF
IEC 61000-4-11 DIPs
Radio: CE (ETSI EN 301 893, ETSI EN 300 328, ETSI EN 301 489-17, ETSI EN 301 489-1), ARIB RCR STD-33, ARIB STD-66

Reliability

Alert Tool: RTC (real-time clock)
Automatic Reboot Trigger: Built-in WDT (watchdog timer)

MTBF (mean time between failures)

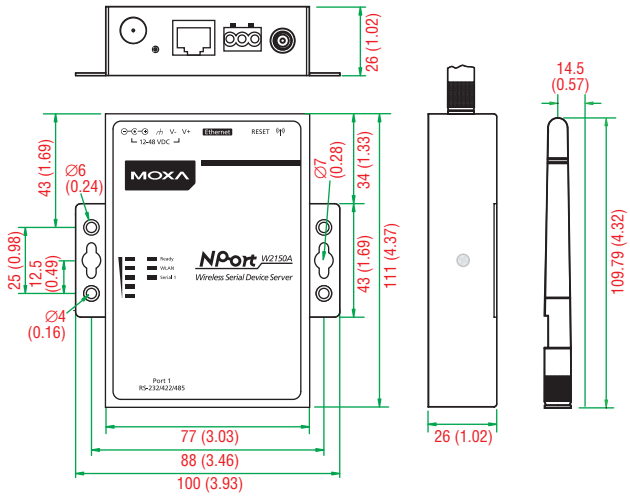
Time:
NPort W2150A: 383,187 hrs
NPort W2250A: 363,327 hrs
Standard: Telcordia (Bellcore) Standard TR/SR

Warranty

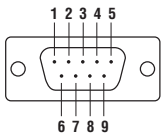
Warranty Period: 5 years
Details: See www.moxa.com/warranty

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

Optional Accessories (can be purchased separately)

DK35A: DIN-rail mounting clips, 35 mm, 2 DIN-rail plates with 4 screws
CBL-PJ21NOPEN-BK-30: Locking barrel plug to bare-wires cable
Mini DB9F-to-TB: DB9 female to terminal block adapter for RS-422/485 applications
Note: One power adapter suitable for your region is included in the product package. Additional power adapters can be purchased separately. Please refer to the Power Accessory Selection Guide for details.

Package Checklist

- 1 NPort W2150A or NPort W2250A wireless device server
- 1 antenna 2.4/5GHz: ANT-WDB-ARM-02
- 100 to 240 VAC power adapter (excluding T models)*
- 1 Ethernet cable: CBL-RJ458P-100
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Note: The package includes one power adapter suitable for your region.

Power Accessory Selection Guide

Barrel Plug Type		Locking Barrel Plug				
O/P		12 VDC 0.5 A, 100 to 240 VAC (Switch-Mode)				
Plug Type		US/JP	EU	AU	UK	CN
Appearance						
Model Name		PWR-12050-WPUSJP-S1	PWR-12050-WPEU-S1	PWR-12050-WPAU-S1	PWR-12050-WPUK-S1	PWR-12050-WPCN-S1
1 Port	NPort 5110	–	–	–	–	–
	NPort 5130	–	–	–	–	–
	NPort 5150	–	–	–	–	–
	NPort 5110A	✓	✓	✓	✓	✓
	NPort 5130A	✓	✓	✓	✓	✓
	NPort 5150A	✓	✓	✓	✓	✓
	DE-211	–	–	–	–	–
	DE-311	–	–	–	–	–
	NPort P5150A	✓	✓	✓	✓	✓
	NPort W2150A	✓	✓	✓	✓	✓
	NPort Z2150	✓	✓	✓	✓	✓
2 Ports	NPort 5210	–	–	–	–	–
	NPort 5230	–	–	–	–	–
	NPort 5232	–	–	–	–	–
	NPort 5232I	–	–	–	–	–
	NPort 5210A	✓	✓	✓	✓	✓
	NPort 5230A	✓	✓	✓	✓	✓
	NPort 5250A	✓	✓	✓	✓	✓
	NPort W2250A	✓	✓	✓	✓	✓
	NPort Z2250	✓	✓	✓	✓	✓

Barrel Plug Type		Non-Locking Barrel Plug				
O/P		12 VDC 0.5 A, 100 to 240 VAC (Switch-Mode)				
Plug Type		US/JP	EU	AU	UK	CN
Appearance						
Model Name		PWR-12050-WPUSJP-S2	PWR-12050-WPEU-S2	PWR-12050-WPAU-S2	PWR-12050-WPUK-S2	PWR-12050-WPCN-S2
1 Port	NPort 5110	✓	✓	✓	✓	✓
	NPort 5130	✓	✓	✓	✓	✓
	NPort 5150	✓	✓	✓	✓	✓
	NPort 5110A	–	–	–	–	–
	NPort 5130A	–	–	–	–	–
	NPort 5150A	–	–	–	–	–
	DE-211	✓	✓	✓	✓	✓
	DE-311	✓	✓	✓	✓	✓
	NPort P5150A	–	–	–	–	–
	NPort W2150A	–	–	–	–	–
	NPort Z2150	–	–	–	–	–
2 Ports	NPort 5210	✓	✓	✓	✓	✓
	NPort 5230	✓	✓	✓	✓	✓
	NPort 5232	✓	✓	✓	✓	✓
	NPort 5232I	✓	✓	✓	✓	✓
	NPort 5210A	–	–	–	–	–
	NPort 5230A	–	–	–	–	–
	NPort 5250A	–	–	–	–	–
	NPort W2250A	–	–	–	–	–
	NPort Z2250	–	–	–	–	–

Power Accessory Selection Guide

Barrel Plug Type		Non-Locking Barrel Plug				
O/P		12 VDC 1.25/1.5 A, 100 to 240 VAC				
Plug Type		US/JP	EU	AU	UK	CN
Appearance						
Model Name		PWR-12125-USJP-S1	PWR-12150-EU-S2	PWR-12150-AU-S2	PWR-12150-UK-S2	PWR-12125-CN-S1
4 Ports	NPort 5410	✓	✓	✓	✓	✓
	NPort 5430	✓	✓	✓	✓	✓
	NPort 5430I	✓	✓	✓	✓	✓
	NPort 5450	✓	✓	✓	✓	✓
	NPort 5450I	✓	✓	✓	✓	✓
8 Ports	NPort 5610-8	–	–	–	–	–
	NPort 5630-8	–	–	–	–	–
	NPort 5650-8	–	–	–	–	–
	NPort 5650-8-M-SC	–	–	–	–	–
	NPort 5650-8-S-SC	–	–	–	–	–
	NPort 5610-8-DT	–	–	–	–	–
	NPort 5610-8-DT-J	–	–	–	–	–
	NPort 5650-8-DT	–	–	–	–	–
	NPort 5650-8-DT-J	–	–	–	–	–
	NPort 5650I-8-DT	–	–	–	–	–
	NPort 5610-8-DTL	–	–	–	–	–
	NPort 5650-8-DTL	–	–	–	–	–
	NPort 5650I-8-DTL	–	–	–	–	–
16 Ports	NPort 5610-16	–	–	–	–	–
	NPort 5630-16	–	–	–	–	–
	NPort 5650-16	–	–	–	–	–

Barrel Plug Type		Locking Barrel Plug						
O/P		12 VDC 2 A, 100 to 240 VAC (desktop type)	10A/250V Power Cord, 183 cm					
Plug Type		Must accompany with one power cord	US	JP	EU	AU	UK	CN
Appearance								
Model Name		PWR-12200-DT-S1	PWC-C13US-3B-183	PWC-C13JP-3B-183	PWC-C13EU-3B-183	PWC-C13AU-3B-183	PWC-C13UK-3B-183	PWC-C13CN-3B-183
4 Ports	NPort 5410	–	–	–	–	–	–	–
	NPort 5430	–	–	–	–	–	–	–
	NPort 5430I	–	–	–	–	–	–	–
	NPort 5450	–	–	–	–	–	–	–
	NPort 5450I	–	–	–	–	–	–	–
8 Ports	NPort 5610-8	–	✓	✓	✓	✓	✓	✓
	NPort 5630-8	–	✓	✓	✓	✓	✓	✓
	NPort 5650-8	–	✓	✓	✓	✓	✓	✓
	NPort 5650-8-M-SC	–	✓	✓	✓	✓	✓	✓
	NPort 5650-8-S-SC	–	✓	✓	✓	✓	✓	✓
	NPort 5610-8-DT	✓	✓	✓	✓	✓	✓	✓
	NPort 5610-8-DT-J	✓	✓	✓	✓	✓	✓	✓
	NPort 5650-8-DT	✓	✓	✓	✓	✓	✓	✓
	NPort 5650-8-DT-J	✓	✓	✓	✓	✓	✓	✓
	NPort 5650I-8-DT	✓	✓	✓	✓	✓	✓	✓
	NPort 5610-8-DTL	✓	✓	✓	✓	✓	✓	✓
	NPort 5650-8-DTL	✓	✓	✓	✓	✓	✓	✓
	NPort 5650I-8-DTL	✓	✓	✓	✓	✓	✓	✓
16 Ports	NPort 5610-16	–	✓	✓	✓	✓	✓	✓
	NPort 5630-16	–	✓	✓	✓	✓	✓	✓
	NPort 5650-16	–	✓	✓	✓	✓	✓	✓