

NPort W2150A-W4/W2250A-W4 Series

1 and 2-port serial-to-Wi-Fi (802.11a/b/g/n) device servers with a wireless client



Features and Benefits

- Links serial and Ethernet devices to an IEEE 802.11a/b/g/n network
- Web-based configuration using built-in Ethernet or WLAN
- Secure Boot that only allows Moxa-authorized firmware to run on devices
- Remote configuration with HTTPS (TLS 1.3), SSH
- Secure data access with WEP, WPA, WPA2
- WPA/WPA2 Enterprise IEEE 802.1X/RADIUS (EAP-TLS 1.3)
- Fast roaming for quick automatic switching between access points
- Offline port buffering and serial data log
- Enhanced surge protection for serial, LAN, and power
- Dual power inputs (1 screw-type power jack, 1 terminal block)

Certifications



Introduction

The NPort® W2150A-W4 and W2250A-W4 are the ideal choice for connecting your serial and 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, the NPort® W2150A-W4 and NPort® W2250A-W4 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.

Specifications

Ethernet Interface

| | |
|---------------------------------------|---|
| 10/100BaseT(X) Ports (RJ45 connector) | 1 |
| Magnetic Isolation Protection | 1.5 kV (built-in) |
| Standards | IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) |

Ethernet Software Features

| | |
|--------------------------|---|
| Configuration Options | Web Console (HTTP/HTTPS) Windows Utility |
| Management | DHCP Option 82 HTTP IPv4 SMTP SNMPv1/v2c/v3 Syslog Telnet Web Console |
| Windows Real COM Drivers | Windows 11/10/8.1/8/7/Vista/XP/ME/98/95 Windows Server 2022/2019/2016/2012 R2/2012/2008 R2/2008/2003/2000/NT Windows Embedded CE 5.0/6.0, Windows XP Embedded |
| Linux Real TTY Drivers | Kernel Versions: 6.x, 5.x, 4.x, 3.x, 2.6.x and 2.4.x |

| | |
|-----------------------------|--|
| Fixed TTY Drivers | macOS Versions: 10.12 to 10.15, 11.x SCO UNIX, SCO OpenServer, UnixWare 7, QNX 4.25, QNX 6, Solaris 10, FreeBSD, AIX 5.x, HP-UX 11i, Mac OS X |
| Arm®-based Platform Support | Linux kernel 5.x/4.x |
| Virtual Machine | VMWare ESXi (Windows 11/10) VMware Fusion (Windows on macOS 10.12 to 11.x) Parallels Desktop (Windows on macOS 10.12 to 11.x) |
| Android API | Android 3.1.x and later |
| MIB | Device Settings MIB RFC1213, RFC1317 |
| Security | HTTPS/SSL User Authentication Management: local database, RADIUS Secure Protocols: HTTPS (TLSv1.3), SSH, SNMPv3 Cryptography: HMAC, SHA-1, SHA-256, SHA-384, RSA-1024, AES-128, AES-256 |
| Time Management | NTP Client SNTP Client |

WLAN Interface

| | |
|---|--|
| WLAN Standards | 802.11a/b/g/n |
| Receiver Sensitivity for 802.11a (measured at 5.680 GHz) | Typ. -91 @ 6 Mbps Typ. -74 @ 54 Mbps |
| Receiver Sensitivity for 802.11b (measured at 2.437 GHz) | Typ. -92 dBm @ 1 Mbps Typ. -84 dBm @ 11 Mbps |
| Receiver Sensitivity for 802.11g (measured at 2.437 GHz) | Typ. -91 dBm @ 6 Mbps Typ. -73 dBm @ 54 Mbps |
| Receiver Sensitivity for 802.11n (2.4 GHz; measured at 2.437 GHz) | Typ. -89 dBm @ 6.5 Mbps (20 MHz) Typ. -71 dBm @ 72.2 Mbps (20 MHz) |
| Receiver Sensitivity for 802.11n (5 GHz; measured at 5.680 GHz) | Typ. -89 dBm @ 6.5 Mbps (20 MHz) Typ. -71 dBm @ 72.2 Mbps (20 MHz) Typ. -85 dBm @ 13.5 Mbps (40 MHz) Typ. -67 dBm @ 150 Mbps (40 MHz) |
| Modulation Type | DSSS OFDM |
| Transmission Distance | Up to 100 meters (in open areas) |
| Transmission Rate | 802.11a/g: 54 Mbps 802.11b: 11 Mbps 802.11n: 6.5 to 150 Mbps |
| Transmitter Power for 802.11b | 16±1.5 dBm @ 1 Mbps 16±1.5 dBm @ 11 Mbps |
| Transmitter Power for 802.11g | 16±1.5 dBm @ 6 Mbps 14±1.5 dBm @ 54 Mbps |
| Transmitter Power for 802.11a | 15±1.5 dBm @ 6 Mbps 14±1.5 dBm @ 54 Mbps |
| Transmitter Power for 802.11n (2.4 GHz) | 16 dBm @ 1.5 Mbps (6.5 MHz) 12 dBm @ 1.5 Mbps (72.2 MHz) |
| Transmitter Power for 802.11n (5 GHz) | 15 dBm @ 1.5 Mbps (6.5 MHz) 12 dBm @ 1.5 Mbps (150 MHz) |
| Frequency Band for CN (20 MHz operating channels) | 2.412 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) |

| | |
|---|---|
| | 5.260 to 5.320 GHz (4 channels) ¹ 5.745 to 5.825 GHz (5 channels) |
| Frequency Band for EU (20 MHz operating channels) | 2.412 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) ¹ 5.500 to 5.700 GHz (11 channels) ¹ |
| Frequency Band for JP (20 MHz operating channels) | 2.412 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) ¹ 5.500 to 5.700 GHz (11 channels) ¹ |
| Frequency Band for US (20 MHz operating channels) | 2.412 to 2.462 GHz (11 channels) 5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels) ¹ 5.500 to 5.700 GHz (11 channels) ¹ 5.745 to 5.825 GHz (5 channels) |
| Wireless Security | WEP encryption (64-bit and 128-bit) WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES) WPA/WPA2-Personal |
| WLAN Modes | Infrastructure mode |

Antenna Characteristics

| | |
|--------------|------------------|
| Connector | RP-SMA (male) |
| Antenna Type | Omni-directional |

Security Functions

| | |
|-------------------------|--|
| Authentication | Local database RADIUS |
| Encryption | AES-128 AES-256 HMAC RSA-1024 SHA-1 SHA-256 SHA-384 |
| Security Protocols | SNMPv3 SSHv2 HTTPS (TLS 1.3) |
| Wireless Security | WEP WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS support EAP-TLS 1.3) WPA/WPA2-Personal |
| Hardware-based Security | Secure Boot |

Serial Interface

| | |
|------------------|--|
| Connector | DB9 male |
| No. of Ports | NPort W2150A-W4/W2150A-W4-T: 1 NPort W2250A-W4/W2250A-W4-T: 2 |
| Serial Standards | RS-232 RS-422 RS-485 |
| Operation Modes | Real COM mode TCP Server mode TCP Client mode |

1. DFS (Dynamic Frequency Selection) channel support: In AP mode, when a radar signal is detected, the device will automatically switch to another channel. However, according to regulations, after switching channels, a 60-second availability check period is required before starting the service.

| | |
|-----------------------------------|---|
| | UDP mode RFC2217 mode Pair Connection mode Ethernet Modem mode Disabled |
| Baudrate | 300 bps to 921.6 kbps |
| Data Bits | 5, 6, 7, 8 |
| Stop Bits | 1, 1.5, 2 |
| Parity | None, Even, Odd, Space, Mark |
| Flow Control | None RTS/CTS XON/XOFF |
| RS-485 Data Direction Control | ADDC® (automatic data direction control) |
| Pull High/Low Resistor for RS-485 | 1 kilo-ohm, 150 kilo-ohms |
| Terminator for RS-485 | 120 ohms |
| Surge | 1 kV |

Physical Characteristics

| | |
|---|--|
| Housing | Metal |
| Installation | Desktop DIN-rail mounting (with optional kit) Wall mounting |
| Dimensions (with ears, without antenna) | 100 x 111 x 26 mm (3.94 x 4.37 x 1.02 in) |
| Dimensions (without ears or antenna) | 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in) |
| Weight | NPort W2150A-W4/W2150A-W4-T: 185 g (0.41 lb) NPort W2250A-W4/W2250A-W4-T: 191 g (0.42 lb) |
| Antenna Length | 108 mm (4.25 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 (package included) | -40 to 75°C (-40 to 167°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |

Power Parameters

| | |
|---------------|--|
| Input Current | NPort W2150A-W4/W2150A-W4-T: 429 mA @ 12 VDC NPort W2250A-W4/W2250A-W4-T: 455 mA @ 12 VDC |
| Input Voltage | 12 to 48 VDC |

Standards and Certifications

| | |
|-----|--|
| EMC | EN 55032/35 |
| EMI | CISPR 32, 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 |
| Radio Frequency | CE (ETSI EN 301 893, ETSI EN 300 328, ETSI EN 301489-1/-17), MIC, KC, RCM, WPC |
| Safety | UL 62368-1 IEC 62368-1 |

Reliability

| | |
|--------------------------|-----------------------|
| Alert Tools | RTC (real-time clock) |
| Automatic Reboot Trigger | Built-in WDT |

MTBF

| | |
|-----------|--|
| Time | NPort W2150A-W4/W2150A-W4-T: 1,356,464 hrs NPort W2250A-W4/W2250A-W4-T: 1,187,539 hrs |
| Standards | Telcordia SR332 |

Warranty

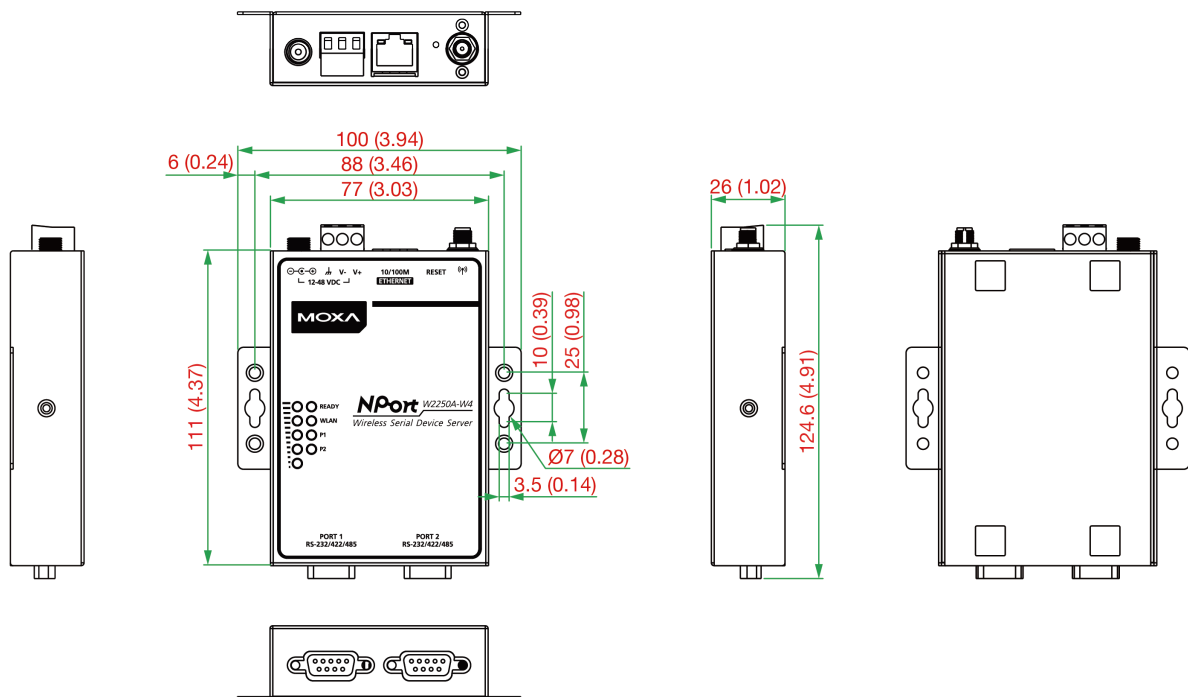
| | |
|-----------------|--|
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |

Package Contents

| | |
|---------------|--|
| Device | 1 x NPort W2150A-W4/W2250A-W4 Series device server |
| Power Supply | 1 x power adapter, suitable for your region (standard temp. models only) |
| Antenna | 1 x 2.4/5 GHz antenna |
| Documentation | 1 x quick installation guide 1 x warranty card |

Dimensions

Unit: mm (inch)



Ordering Information

| Model Name | No. of serial ports | WLAN Channels | Input Current | Operating Temp. | Power Adapter in Box | Notes |
|-----------------------|---------------------|---------------|-----------------|-----------------|----------------------|----------------|
| NPort W2150A-W4-CN | 1 | China bands | 429 mA @ 12 VDC | 0 to 55°C | Yes (CN plug) | — |
| NPort W2150A-W4-EU | 1 | Europe bands | 429 mA @ 12 VDC | 0 to 55°C | Yes (EU/UK/AU plug) | — |
| NPort W2150A-W4-EU/KC | 1 | Europe bands | 429 mA @ 12 VDC | 0 to 55°C | Yes (KR plug) | KC certificate |
| NPort W2150A-W4-JP | 1 | Japan bands | 429 mA @ 12 VDC | 0 to 55°C | Yes (JP plug) | — |
| NPort W2150A-W4-US | 1 | US bands | 429 mA @ 12 VDC | 0 to 55°C | Yes (US plug) | — |
| NPort W2150A-W4-T-CN | 1 | China bands | 429 mA @ 12 VDC | -40 to 75°C | No | — |
| NPort W2150A-W4-T-EU | 1 | Europe bands | 429 mA @ 12 VDC | -40 to 75°C | No | — |
| NPort W2150A-W4-T-JP | 1 | Japan bands | 429 mA @ 12 VDC | -40 to 75°C | No | — |
| NPort W2150A-W4-T-US | 1 | US bands | 429 mA @ 12 VDC | -40 to 75°C | No | — |
| NPort W2250A-W4-CN | 2 | China bands | 455 mA @ 12 VDC | 0 to 55°C | Yes (CN plug) | — |
| NPort W2250A-W4-EU | 2 | Europe bands | 455 mA @ 12 VDC | 0 to 55°C | Yes (EU/UK/AU plug) | — |
| NPort W2250A-W4-EU/KC | 2 | Europe bands | 455 mA @ 12 VDC | 0 to 55°C | Yes (KR plug) | KC certificate |
| NPort W2250A-W4-JP | 2 | Japan bands | 455 mA @ 12 VDC | 0 to 55°C | Yes (JP plug) | — |
| NPort W2250A-W4-US | 2 | US bands | 455 mA @ 12 VDC | 0 to 55°C | Yes (US plug) | — |
| NPort W2250A-W4-T-CN | 2 | China bands | 455 mA @ 12 VDC | -40 to 75°C | No | — |
| NPort W2250A-W4-T-EU | 2 | Europe bands | 455 mA @ 12 VDC | -40 to 75°C | No | — |
| NPort W2250A-W4-T-JP | 2 | Japan bands | 455 mA @ 12 VDC | -40 to 75°C | No | — |
| NPort W2250A-W4-T-US | 2 | US bands | 455 mA @ 12 VDC | -40 to 75°C | No | — |

Accessories (sold separately)

Antennas

| | |
|-------------------|---|
| ANT-WDB-ASM-03 BK | 2 dBi at 2.4 GHz or 2 dBi at 5 GHz, RP-SMA (male) omnidirectional rubber-duck antenna |
|-------------------|---|

Cables

| | |
|--------------|--|
| CBL-F9M9-150 | DB9 female to DB9 male serial cable, 1.5 m |
| CBL-F9M9-20 | DB9 female to DB9 male serial cable, 20 cm |

Connectors

| | |
|-----------------|--|
| ADP-RJ458P-DB9F | DB9 female to RJ45 connector |
| Mini DB9F-to-TB | DB9 female to terminal block connector |

DIN-Rail Mounting Kits

| | |
|-------|------------------------------|
| DK35A | DIN-rail mounting kit, 35 mm |
|-------|------------------------------|

Power Adapters

| | |
|-------------------|---|
| PWR-12050-AU-S1 | Locking barrel plug, 12 VDC, 0.5 A, 100 to 240 VAC, AU plug, 0 to 40°C operating temperature |
| PWR-12050-CN-S1 | Locking barrel plug, 12 VDC, 0.5 A, 100 to 240 VAC, CN plug, 0 to 40°C operating temperature |
| PWR-12050-EU-S1 | Locking barrel plug, 12 VDC, 0.5 A, 100 to 240 VAC, EU plug, 0 to 40°C operating temperature |
| PWR-12050-UK-S1 | Locking barrel plug, 12 VDC, 0.5 A, 100 to 240 VAC, UK plug, 0 to 40°C operating temperature |
| PWR-12050-USJP-S1 | Locking barrel plug, 12 VDC, 0.5 A, 100 to 240 VAC, US/JP plug, 0 to 40°C operating temperature |

| | |
|---------------------|--|
| PWR-12050-KR-S1 | Locking barrel plug, 12 VDC, 0.5 A, 100 to 240 VAC, KR plug, 0 to 40°C operating temperature |
| PWR-12150-AU-SA-T | Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, AU plug, -40 to 75°C operating temperature Applicable Models: NPort W2150A-W4-T-CN NPort W2150A-W4-T-EU NPort W2150A-W4-T-JP NPort W2150A-W4-T-US NPort W2250A-W4-T-CN NPort W2250A-W4-T-EU NPort W2250A-W4-T-JP NPort W2250A-W4-T-US |
| PWR-12150-CN-SA-T | Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, CN plug, -40 to 75°C operating temperature Applicable Models: NPort W2150A-W4-T-CN NPort W2150A-W4-T-EU NPort W2150A-W4-T-JP NPort W2150A-W4-T-US NPort W2250A-W4-T-CN NPort W2250A-W4-T-EU NPort W2250A-W4-T-JP NPort W2250A-W4-T-US |
| PWR-12150-EU-SA-T | Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, EU plug, -40 to 75°C operating temperature Applicable Models: NPort W2150A-W4-T-CN NPort W2150A-W4-T-EU NPort W2150A-W4-T-JP NPort W2150A-W4-T-US NPort W2250A-W4-T-CN NPort W2250A-W4-T-EU NPort W2250A-W4-T-JP NPort W2250A-W4-T-US |
| PWR-12150-UK-SA-T | Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, UK plug, -40 to 75°C operating temperature Applicable Models: NPort W2150A-W4-T-CN NPort W2150A-W4-T-EU NPort W2150A-W4-T-JP NPort W2150A-W4-T-US NPort W2250A-W4-T-CN NPort W2250A-W4-T-EU NPort W2250A-W4-T-JP NPort W2250A-W4-T-US |
| PWR-12150-USJP-SA-T | Locking barrel plug, 12 VDC 1.5 A, 100 to 240 VAC, US/JP plug, -40 to 75°C operating temperature Applicable Models: NPort W2150A-W4-T-CN NPort W2150A-W4-T-EU NPort W2150A-W4-T-JP NPort W2150A-W4-T-US NPort W2250A-W4-T-CN NPort W2250A-W4-T-EU NPort W2250A-W4-T-JP NPort W2250A-W4-T-US |

Power Cords

| | |
|---------------------|--|
| CBL-PJ21NOPEN-BK-30 | Locking barrel plug to bare-wire cable |
|---------------------|--|

© Moxa Inc. All rights reserved. Updated May 16, 2023.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.