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, SSH
- Secure data access with WEP, WPA, WPA2
- 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

CE FC UK CA

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 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1/10/11 (x86/ x64), Windows 2008 R2/2012/2012 R2/2016/2019 (x64), Windows Server 2022, Windows XP Embedded
Linux Real TTY Drivers	Kernel versions: 2.4.x, 2.6.x, 3.x, 4.x, and 5.x

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
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 (TLSv1.2), 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)

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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.

	5.180 to 5.240 GHz (4 channels) 5.260 to 5.320 GHz (4 channels)[2] 5.500 to 5.700 GHz (11 channels)[2]
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)[2] 5.500 to 5.700 GHz (11 channels)[2]
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)[2] 5.500 to 5.700 GHz (11 channels)[2] 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 1.2)
Wireless Security	WEP WPA/WPA2-Enterprise 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 UDP mode RFC2217 mode Pair Connection mode Ethernet Modem mode

2. 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.

	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

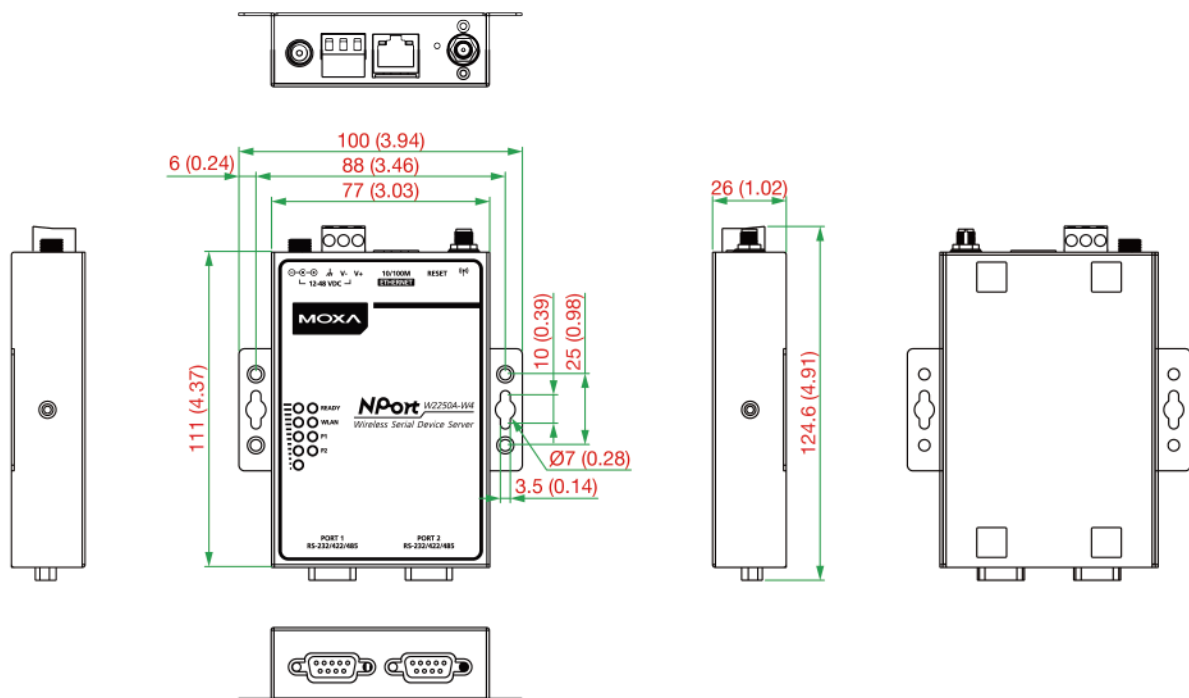|	
Input Current	NPort W2150A-W4/W2150A-W4-T: 429 mA @ 12 VDC NPort W2250A-W4/W2250A-W4-T: 455 mA @ 12 VDC
Input Voltage	12 to 48 VDC

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)

MOXA
Reliable Networks ▲ Sincere Service

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