

# NPort IAW5000A-I/O Series

**1/2-port RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with 6 or 12 digital I/Os**



- > Link any serial or Ethernet device to an IEEE 802.11a/b/g/n network
- > Redundant dual DC power inputs and relay output supported
- > Secure data access with WEP/WPA/WPA2
- > microSD for configuration backup
- > Wireless Client function for flexible integration
- > 4 kV serial surge protection
- > Serial device server with 6 or 12 digital I/Os



## Overview

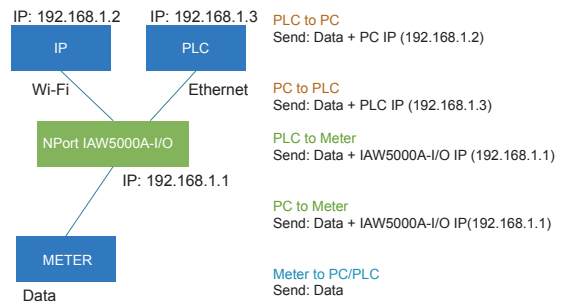
The NPort IAW5000A-I/O wireless serial device servers with digital I/Os provide maximum flexibility when you need to integrate serial equipment in the field with a wireless Ethernet network. The combination of digital I/Os makes the device servers well-suited for a variety of industrial data acquisition applications. The DI/Os on the device can be controlled over TCP/IP using the Modbus TCP protocol and can be configured and secured from a web browser. The

device can also be installed as a COM Port (patented Real COM) on a Windows/Linux PC to make it compatible with legacy applications.

All models are ruggedly constructed, DIN-rail mountable, and designed with redundant power inputs to ensure uninterrupted operation for industrial applications.

## Wireless Client

The device servers are equipped with one Ethernet port that allows data to be transferred seamlessly between the serial line, LAN, and WAN, allowing the LAN and WLAN interfaces to be bridged together using a single IP address.



## 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 IAW5000A-I/O series 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 IAW5000A-I/O series, you can use

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

**Standards Compliance:** 802.11a/b/g/n

**Network Modes:** Infrastructure, Ad-Hoc

**TX Transmit Power:**

802.11b:

Typ. 16 dBm  $\pm$ 1.5 dBm @ 1 Mbps,

Typ. 16 dBm  $\pm$ 1.5 dBm @ 11 Mbps

802.11a:

Typ. 15 dBm  $\pm$ 1.5 dBm @ 6 Mbps,

Typ. 14 dBm  $\pm$ 1.5 dBm @ 54 Mbps

802.11g:

Typ. 16 dBm  $\pm$ 1.5 dBm @ 6 Mbps,

Typ. 14 dBm  $\pm$ 1.5 dBm @ 54 Mbps

802.11n 2.4 GHz

Typ. 16 dBm  $\pm$ 1.5 dBm @ 6.5 Mbps,

Typ. 12 dBm  $\pm$ 1.5 dBm @ 72.2 Mbps

802.11n 5 GHz

Typ. 15 dBm  $\pm$ 1.5 dBm @ 6.5 Mbps,

Typ. 12 dBm  $\pm$ 1.5 dBm @ 150 Mbps

**RX 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, PEAPMD5, 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 IAW5150A-I/O: 1

NPort IAW5250A-I/O: 2

**Serial Standards:** RS-232/422/485 (DB9 male connector)

**Serial Line Surge Protection:** 4 kV (level 4)

**Off-line Port Buffering:**

NPort IAW5150A-I/O: 20 MB

NPort IAW5250A-I/O: 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 and 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:** Tx+, Tx-, Rx+, Rx-, GND

**RS-485-4w:** Tx+, Tx-, Rx+, Rx-, GND

**RS-485-2w:** Data+, Data-, GND

### Digital Input/Output

**Digital Inputs:**

- 4 channels for 6I/O models

- 8 channels for 12I/O models

**Digital Outputs:**

- 2 channels for 6I/O models

- 4 channels for 12I/O models

**Isolation:** 3k VDC or 2k Vrms

### Digital Input

**Sensor Type:** Wet Contact (NPN or PNP), Dry Contact

**I/O Mode:** DI or Event Counter

**Dry Contact:**

- On: short to GND

- Off: open

**Wet Contact (DI to COM):**

- On: 10 to 30 VDC

- Off: 0 to 3 VDC

**Counter Frequency:** 20 Hz

**Digital Filtering Time Interval:** Software Configurable

### Digital Output

**Type:** Sink

**I/O Mode:** DO or Pulse Output

**Over-Voltage Protection:** 45 VDC

**Over-Current Protection:** 2.6 A

**Over-Temperature Shutdown:** 175°C (typical), 150°C (min.)

**Current Rating:** 200 mA per channel

**Storage Card Slot:** 1 microSD (SDHC) card slot; supports up to 32 GB

### Software

**Network Protocols:** ICMP, IPv4, TCP, UDP, DHCP, Telnet, DNS, SNMP V1/V2c/V3, HTTP, SMTP, SNTP, SSH, HTTPS, Modbus TCP (for I/O communication)

**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, 4.x

**Android API:** Android 3.1.x and later

**Utilities:** Device Search Utility and NPort Windows Driver manager

**Management:** SNMP MIB-II

### Physical Characteristics

**Housing:** Aluminum sheet metal

**Weight:**

NPort IAW5150A-I/O:

without the box: 739.50 g (1.63 lb)

with the box: 936.40 g (2.06 lb)

NPort IAW5250A-I/O:

without the box: 756.50 g (1.67 lb)

with the box: 953.45 g (2.10 lb)

**Dimensions:** 59.6 x 101.7 x 134 mm (2.35 x 4 x 5.28 in)

**Antenna Length:** 109.79 mm (4.32 in)

### Environmental Limits

#### Operating Temperature:

Standard Models: 0 to 60°C (32 to 131°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

#### Power Consumption:

NPort IAW5150A-I/O: 300 mA @ 12 V

NPort IAW5250A-I/O: 300 mA @ 12 V

**Connector:** Terminal block

### Standards and Certifications

**Safety:** UL 60950-1, EN 60950-1

**EMC:** EN 61000-6-2/6-4

**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: 10 V/m

IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV

IEC 61000-4-5 Surge: Power 1 kV; Signal: Ethernet (2 kV), Serial (4 kV)

IEC 61000-4-6 CS: 10 V

IEC 61000-4-8

**Radio:** CE (ETSI EN 301 893, ETSI EN 300 328), 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 IAW5150A-6I/O: 282,087 hrs

NPort IAW5250A-6I/O: 237,037 hrs

NPort IAW5150A-12I/O: 277,975 hrs

NPort IAW5250A-12I/O: 234,130 hrs

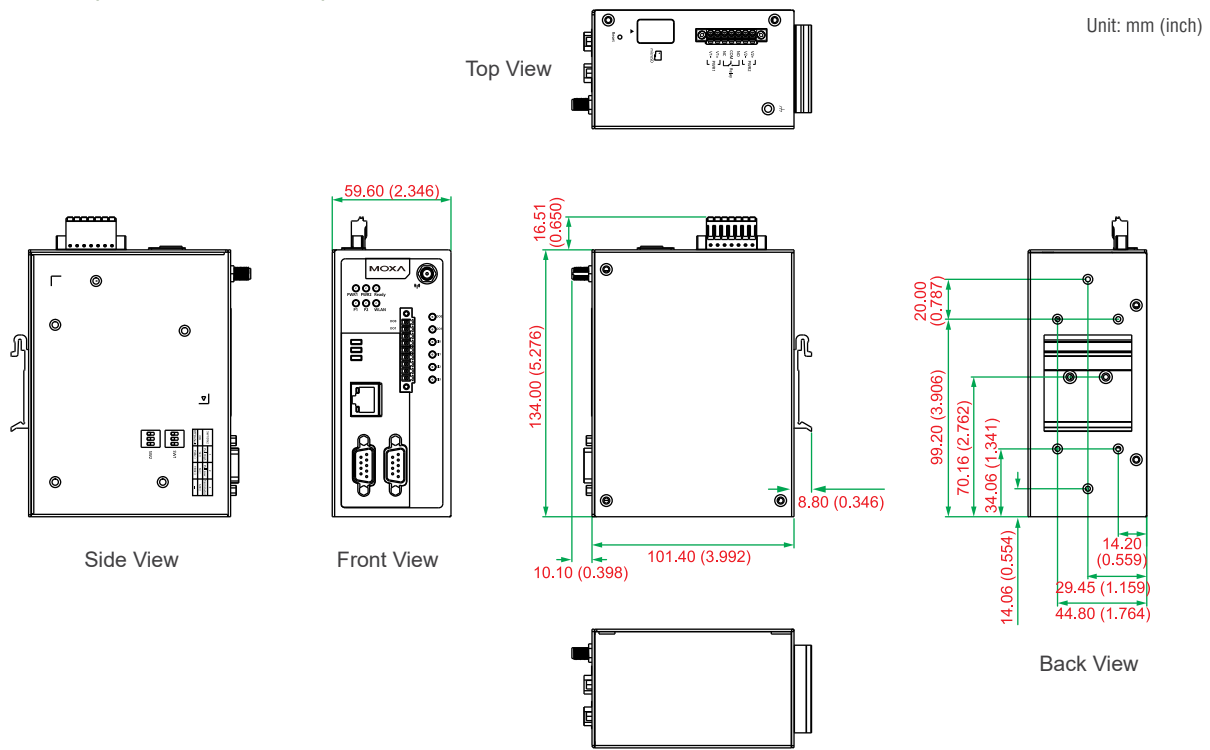
**Standard:** Telcordia (Bellcore) Standard TR/SR

### Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

### Dimensions (NPort IAW5000A-I/O)



## Ordering Information

### Available Models

**NPort IAW5150A-6I/O:** 1-port RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with 4DIs and 2DOs, 0 to 60°C operating temperature

**NPort IAW5250A-6I/O:** 2-port RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with 4DIs and 2DOs, 0 to 60°C operating temperature

**NPort IAW5150A-12I/O:** 1-port RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with 8DIs and 4DOs, 0 to 60°C operating temperature

**NPort IAW5250A-12I/O:** 2-port RS-232/422/485 IEEE 802.11a/b/g/n wireless device server with 8DIs and 4DOs, 0 to 60°C operating temperature

### Optional Accessories (can be purchased separately)

**Mini DB9F-to-TB:** DB9 female to terminal block connector

**WK-51-01:** Wall-mounting kit

**DR-4524:** 45W/2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input

**DR-75-24:** 75W/3.2A DIN-rail 24 VDC power supply with universal 85 to 264 VAC input

**DR-120-24:** 120W/5A DIN-rail 24 VDC power supply with 88 to 132 VAC or 176 to 264 VAC input, selected by a DIP switch

### Package Checklist

- 1 NPort IAW5000A-I/O
- 1 antenna
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card