

# NPort Z2150/Z3150 Series

1-port RS-232/422/485 to ZigBee converters or ZigBee-to-Ethernet gateways



## Features and Benefits

- IEEE 802.15.4/ZigBee compliant
- Network topologies: mesh/star/cluster tree
- 128-bit AES hardware encryption
- Enhanced surge protection for serial and power
- Dual DC power inputs (NPort Z3150)
- Easy-to-use configuration utility

## Certifications

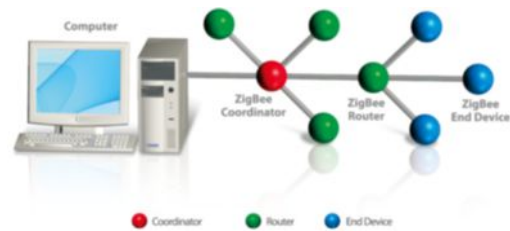


## Introduction

The NPort Z2150 and NPort Z3150 are IEEE 802.15.4/ZigBee compliant, providing a reliable wireless solution for serial-to-ZigBee networks requiring minimal wiring presence. The NPort Z2150 can be configured as a ZigBee coordinator (ZC), a ZigBee router (ZR), or a ZigBee end device (ZED). Any serial device can be connected to the NPort Z2150 and exchange data via PAN. A user-friendly utility is provided to configure the device type and network settings in a few simple steps.

### ZigBee Coordinator

The figure shows a typical topology of a ZigBee network. The NPort Z3150 is the ZigBee coordinator (ZC) connected to numerous ZigBee routers (ZR), and the routers are connected to the end devices (ZED).



### Surge Protection for Serial and Power

Surge, which is typically caused by high voltages that result from switching and lightning transients, is a common threat to all electrical devices. Moxa's leading-edge surge immunity solution, which is applied to the NPort Z2150/Z3150's serial and Ethernet lines, is tested and proven compliant with IEC 61000-4-5. This surge protection provides a robust solution that can protect electrical devices from voltage spikes and withstand electrically noisy environmental conditions.

## Specifications

### Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)	NPort Z3150: 1
10/100BaseT(X) Port	NPort Z3150: Auto MDI/MDI-X connection
Magnetic Isolation Protection	NPort Z3150: 1.5 kV (built-in)

### Ethernet Software Features

Windows Real COM Drivers	NPort Z3150: 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
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## Serial Interface

Connector	DB9 male
No. of Ports	1
Serial Standards	RS-232, RS-422, RS-485
Operation Modes	NPort Z3150: Real COM mode, RFC2217 mode, TCP Client mode, TCP Server mode, UDP mode
Baudrate	NPort Z2150 Series: 50 bps to 230.4 kbps NPort Z3150 Series: 50 bps to 921.6 kbps
Data Bits	NPort Z2150 Series: 8 NPort Z3150 Series: 5, 6, 7, 8
Stop Bits	1, 2
Parity	NPort Z2150 Series: None, Even, Odd NPort Z3150 Series: None, Even, Odd, Mark, Space
Flow Control	NPort Z2150 Series: None, RTS/CTS NPort Z3150 Series: 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

## 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

## ZigBee Interface

Frequency Band	2.4 GHz
Receiver Sensitivity	-96 dBm
Transmission Distance	Up to 100 meters (in open areas)
Transmission Rate	250 kbps
Transmitter Power	4.5 dBm (max.)
Wireless Security	128-bit AES
ZigBee Antenna Connector	1 RP-SMA male
ZigBee Standards	802.15.4/ZigBee compliant
ZigBee Topology	Star, Mesh, Cluster tree
Antenna	External, 2 dBi

## Power Parameters

No. of Power Inputs	NPort Z2150 Series: 1 NPort Z3150 Series: 2
Input Current	NPort Z2150 Series: 45 mA @ 12 VDC NPort Z3150 Series: 120 mA @ 12 VDC

Input Voltage	NPort Z3150 Series: 12 to 48 VDC, redundant dual inputs
Overload Current Protection	NPort Z3150: Supported NPort Z3150-T: Supported
<b>Physical Characteristics</b>	
Housing	Aluminum
IP Rating	IP30
Dimensions (with ears)	NPort Z2150 Series: 50 x 80 x 22 mm (2.05 x 3.15 x 0.87 in) NPort Z3150 Series: 77 x 111 x 26 mm (3.33 x 4.37 x 1.02 in)
Dimensions (without ears)	NPort Z2150 Series: 75.2 x 80 x 22 mm (2.96 x 3.15 x 0.87 in) NPort Z3150 Series: 100 x 111 x 26 mm (3.94 x 4.37 x 1.02 in)
Weight	NPort Z2150 Series: 340 g (0.75 lb) NPort Z3150: 780 g (1.72 lb)
Installation	DIN-rail mounting (with optional kit), Wall mounting
<b>Environmental Limits</b>	
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 (-140 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
<b>Standards and Certifications</b>	
EMC	EN 55032/24
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 MHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV IEC 61000-4-5 Surge: Power: 1 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
Environmental Testing	IEC 60068-2-1 IEC 60068-2-2 IEC 60068-2-3 IEC 60068-2-14
Radio Frequency	EN 301 893, EN 300 328, EN 301 489-1/17, EN 301 489-1
Safety	IEC 60950-1
Vibration	IEC 60068-2-6
<b>MTBF</b>	
Time	NPort Z2150 Series: 2,542,774 hrs NPort Z3150 Series: 1,109,589 hrs
Standards	Telcordia (Bellcore), GB
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>

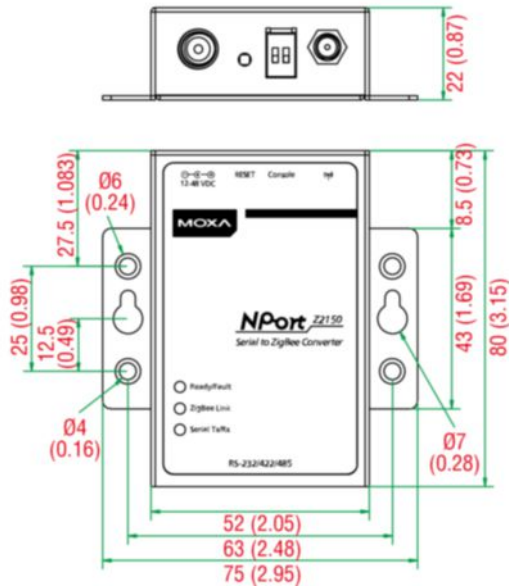
## Package Contents

Device	1 x NPort Z2150/Z3150 Series
Antenna	1 x 2.4/5 GHz antenna
Power Supply	1 x power adapter, universal
Documentation	1 x document and software CD 1 x quick installation guide 1 x warranty card

## Dimensions

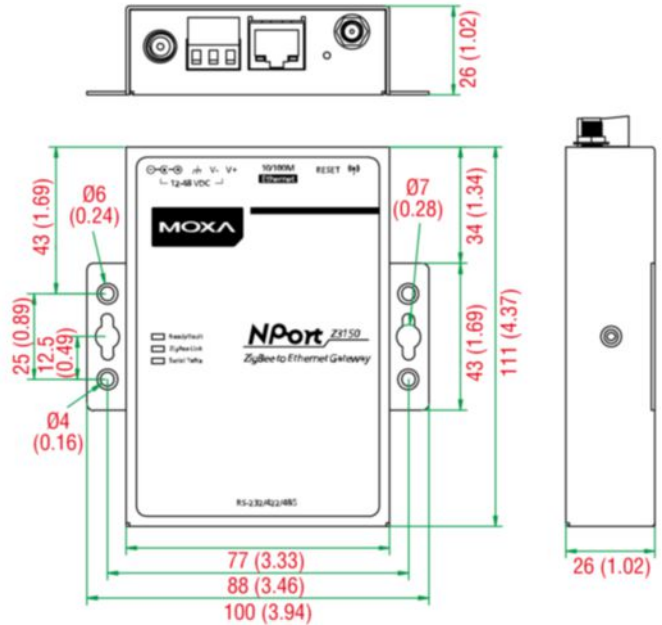
### NPort Z2150

Unit: mm (inch)



### NPort Z3150

Unit: mm (inch)



## Ordering Information

Model Name	Operating Temp.	Supported Baudrates	No. of Ethernet Ports	No. of Serial Ports
NPort Z2150	0 to 55°C	110 bps to 230.4 kbps	0	1
NPort Z2150-T	-40 to 75°C	110 bps to 230.4 kbps	0	1
NPort Z3150	0 to 55°C	50 bps to 921.6 kbps	1	1
NPort Z3150-T	-40 to 75°C	50 bps to 921.6 kbps	1	1

## Accessories (sold separately)

### 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
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#### Power Cords

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

ANT-WDB-ARM-02	2.4/5 GHz, omni-directional rubber duck antenna, 2 dBi, RP-SMA (male)
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