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

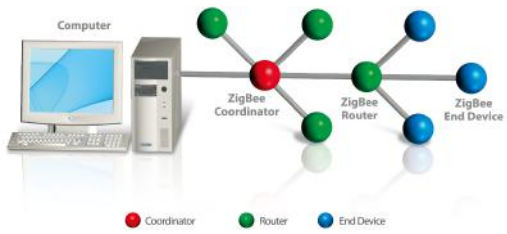
Certifications

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

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

Physical Characteristics

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

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 (-140 to 167°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

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

MTBF

Time	NPort Z2150 Series: 2,542,774 hrs NPort Z3150 Series: 1,109,589 hrs
Standards	Telcordia (Bellcore), GB

Warranty

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

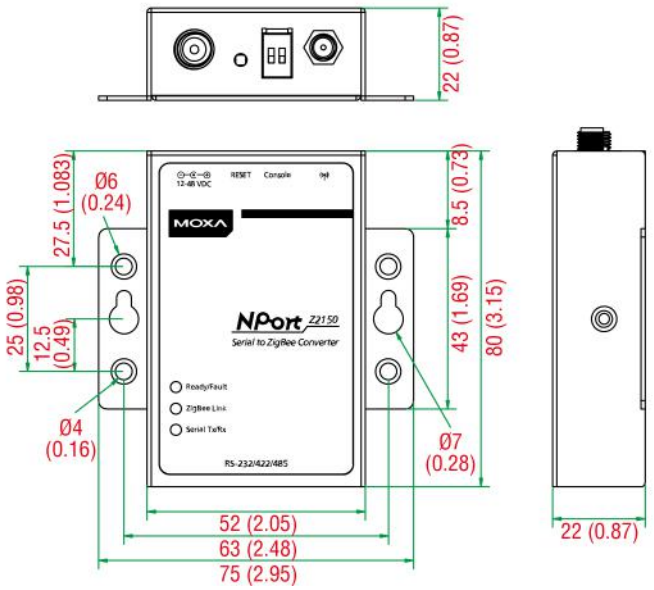
Package Contents

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

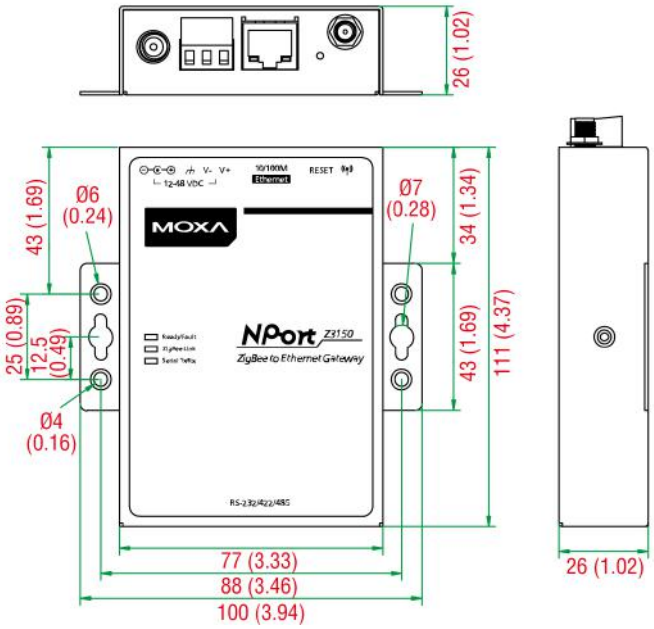
NPort Z2150

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

Power Cords

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

Antennas

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

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