

NPort® Z2150/Z3150 Series

1-port RS-232/422/485 to ZigBee converter or ZigBee-to-Ethernet gateway



NPort® Z2150

NPort® Z3150

- > 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 only)
- > Easy-to-use configuration utility
- > Up to 99 nodes per network

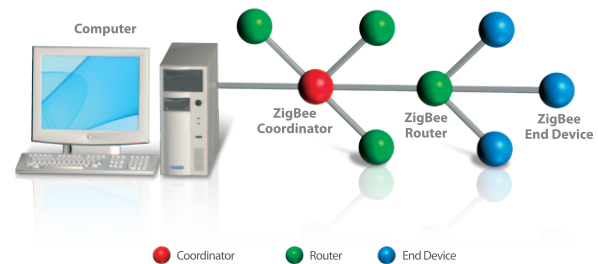
Overview

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 simple steps.

The NPort Z3150 was designed specifically to perform as a ZigBee Coordinator (ZC), providing nodes with an Ethernet interface to the ZigBee PAN. Internet connection and network services are also provided via the ZigBee PAN. Remote users can monitor any ZigBee device in the PAN through the NPort Z3150.

The following 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 end devices (ZED).



Surge-protected Serial and Power Lines

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

ZigBee Interface

- RF Standard:** 802.15.4/ZigBee compliant
- Frequency Band:** 2.4 GHz
- RF Data Rate:** 250 Kbps
- Rx sensitivity:** -96 dBm
- Tx Power:** 4.5 dBm (Max)
- Transmission Distance:** Up to 100m (open space)
- Antenna:** 2dBi
- RF Channel:** 16 channels
- Device Type:** Coordinator, Router (NPort Z2150 only), End Device (NPort Z2150 only)
- Network Topology:** Star, Mesh, Cluster tree
- Security:** 128-bit AES encryption algorithms

Ethernet Interface (NPort Z3150 only)

- Number of Ports:** 1
- Speed:** 10/100 Mbps, auto MDI/MDIX
- Connector:** RJ45
- Magnetic Isolation Protection:** 1.5 KV built-in
- Serial Interface**
- Number of Ports:** 1
- Serial Standards:** RS-232/422/485
- Connector:** DB9 male
- Serial Line Protection:** 1KV surge protection, 15KV ESD protection for all signals
- RS-485 Data Direction Control:** ADDC (Automatic Data Direction Control)

Serial Communication Parameters

Data Bits:

NPort Z2150: 8
 NPort Z3150: 5, 6, 7, 8

Stop Bits: 1, 2

Parity:

NPort Z2150: None, Even, Odd
 NPort Z3150: None, Even, Odd, Mark, Space

Flow Control:

NPort Z2150: RTS/CTS
 NPort Z3150: RTS/CTS, XON/XOFF

Baudrate:

NPort 2150: 50 bps to 230.4 Kbps
 NPort 3150: 50 bps to 921.6 Kbps

Serial Signals

RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND

RS-422: TxD+, TxD-, RxD+, RxD-, GND

RS-485-4w: TxD+, TxD-, RxD+, RxD-, GND

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

Software

Configuration:

NPort Z2150: Utility
 NPort Z3150: Web Console

Firmware Upgrade:

NPort Z2150: Utility
 NPort Z3150: Utility, Web Console

Hardware

DIP Switch: Console/Operation Mode

SW1: Pull high/low resistor, Termination for RS-422/485.

Reset Button: Reset to default

Physical Characteristics

Housing: Aluminum

Weight:

NPort Z2150: 340g
 NPort Z3150: 780g

Dimensions:

NPort Z2150:
 Without ears: 52 x 80 x 22 mm (2.05 x 3.15 x 0.87 in)
 With ears: 75.2 x 80 x 22 mm (2.96 x 3.15 x 0.87 in)

NPort Z3150:
 Without ears: 77 x 111 x 26 mm (3.03 x 4.37 x 1.02 in)
 With ears: 100 x 111 x 26 mm (3.94 x 4.37 x 1.02 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)

Operating Humidity: 5 to 95% RH

Storage Temperature: -40 to 85°C (-40 to 185°F)

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:

NPort Z2150: 45mA@12V
 NPort Z3150: 120mA@12V

Connector: Power Jack with Screw, Terminal block (NPort Z3150 only)

Standards and Certifications

Safety: UL (UL60950-1), LVD (EN60950-1)

EMC: CE (EN55022 Class A, EN55024), FCC Part 15 Subpart B Class A

Reliability

Automatic Reboot Trigger: Built-in WDT (watchdog timer)

MTBF (mean time between failures): Over 20 years

Warranty

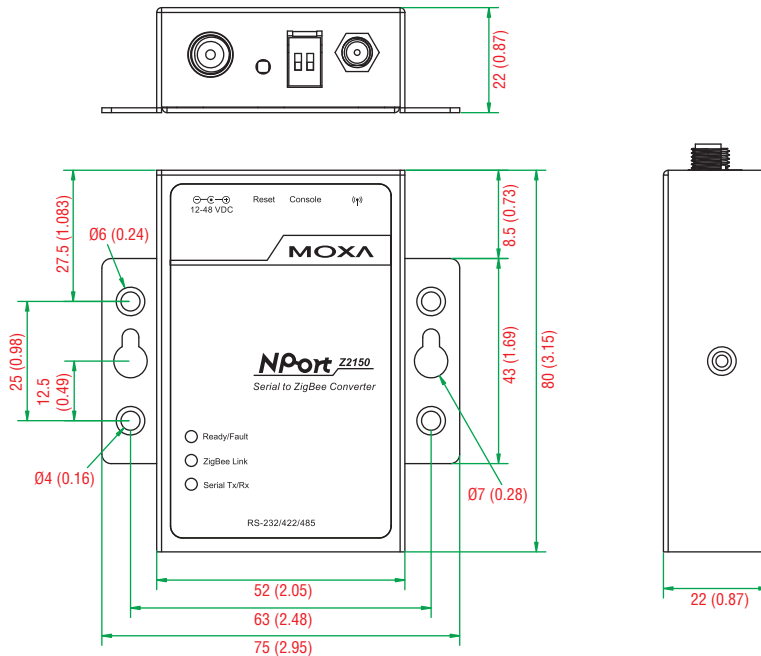
Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)

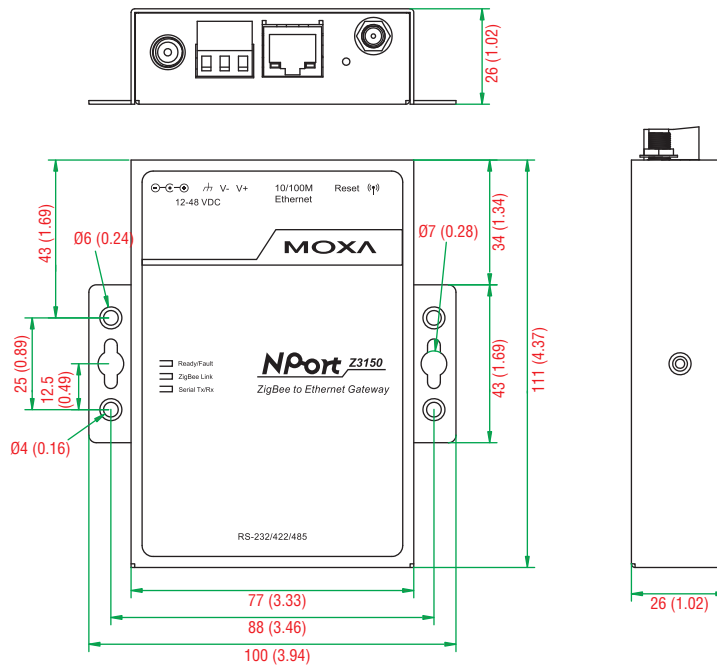
NPort® Z2150



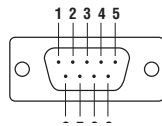
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Pin Assignment



PIN	RS-232	RS-422/RS-485-4w	RS-485-2W
1	DCD	TxD-(A)	-
2	RXD	TxD+(B)	-
3	TXD	RxD+(B)	Data+(B)
4	DTR	RxD-(A)	Data-(A)
5	GND	GND	GND
6	DSR	-	-
7	RTS	-	-
8	CTS	-	-

Ordering Information

Available Models

NPort Z2150: 1-port RS-232/422/485 serial to ZigBee converter with 802.15.4, 0 to 55°C operating temperature

NPort Z3150: 1-port ZigBee to Ethernet gateway, 0 to 55°C operating temperature

NPort Z2150-T: 1-port RS-232/422/485 serial to ZigBee converter with 802.15.4, -40 to 75°C operating temperature

NPort Z3150-T: 1-port ZigBee to Ethernet gateway, -40 to 75°C operating temperature

Package Checklist

- NPort Z2150 or NPort Z3150
- 2.4 GHz antenna
- Documentation and software CD
- Power adaptor (wide temperature models excluded)
- Warranty card
- Quick installation guide (printed)