NPort® Z2150/Z3150 Series

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

NPort Z3150 NPort Z2150

- 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

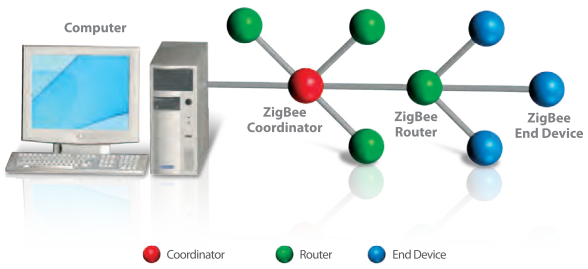
Overview

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. An 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 ad 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 tp 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

Windows Real COM Drivers: Windows 95/98/ME/NT/2000, Windows XP/2003/Vista/2008/7/8/8.1 (x86/x64), Windows 2008 R2/2012/2012 R2 (x64), Windows Embedded CE 5.0/6.0, Windows XP Embedded
Configuration:
NPort Z2150: ZigBee Configuration Utility
NPort Z3150: Web Console
Firmware Upgrade:
NPort Z2150: ZigBee Configuration Utility
NPort Z3150: Windows Utility, Web Console

Hardware

DIP Switch: Console/Operation Mode
SW1: Pull high/low resister, 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 (3.33 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)
Storage Temperature: -40 to 75°C (-40 to 167°F)
Operating Humidity: 5 to 95% RH
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

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 (meantime between failures): Over 20 years

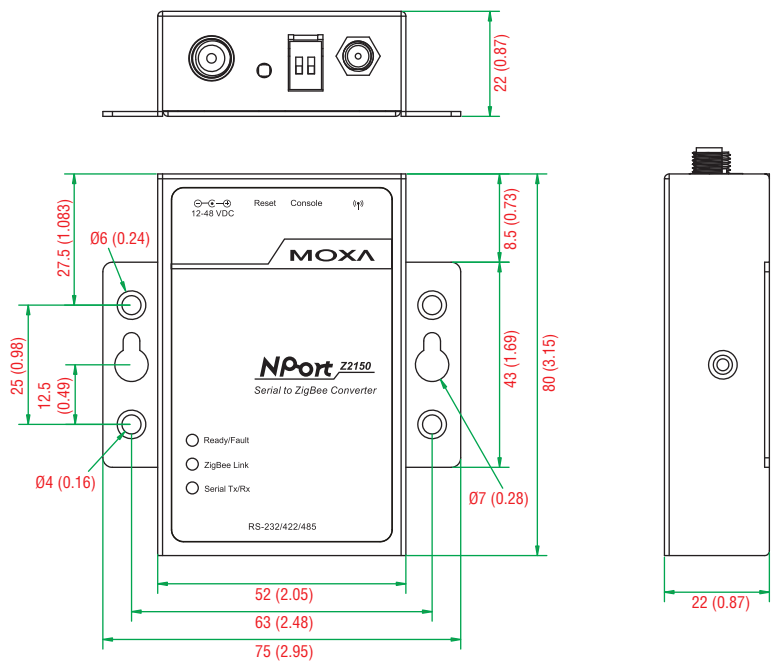
Warranty

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

Dimensions

Unit: mm (inch)

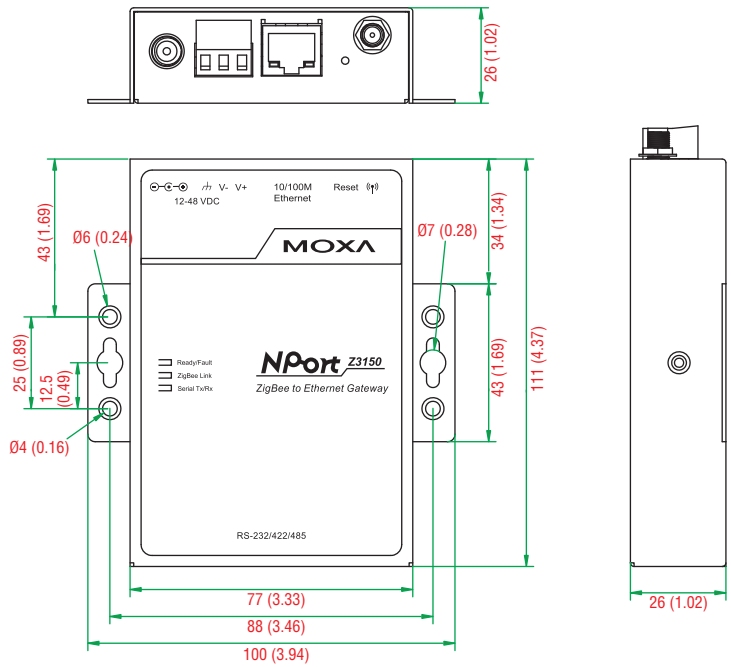
NPort® Z2150



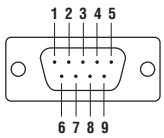
Dimensions

Unit: mm (inch)

NPort® Z3150



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

Optional Accessories (can be purchased separately)

DK-35A: Mounting kit for 35-mm DIN rail
PWR-12150-USJP-SA-T: 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, US/JP Plug
PWR-12150-EU-SA-T: 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, EU Plug
PWR-12150-UK-SA-T: 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, UK Plug
PWR-12150-CN-SA-T: 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, CN Plug
PWR-12150-AU-SA-T: 100 to 240 VAC input, 12 VDC/1.5A output, -40 to 75°C, screw type, AU Plug

Package Checklist

- NPort Z2150 or NPort Z3150
- 100 to 240 VAC power adapter (excluding T models)
- 2.4 GHz antenna
- Documentation and software CD
- Warranty card
- Quick installation guide (printed)