Moxa NPort 5150A

Moxa NPort 5150A Serial Device Server User Manual

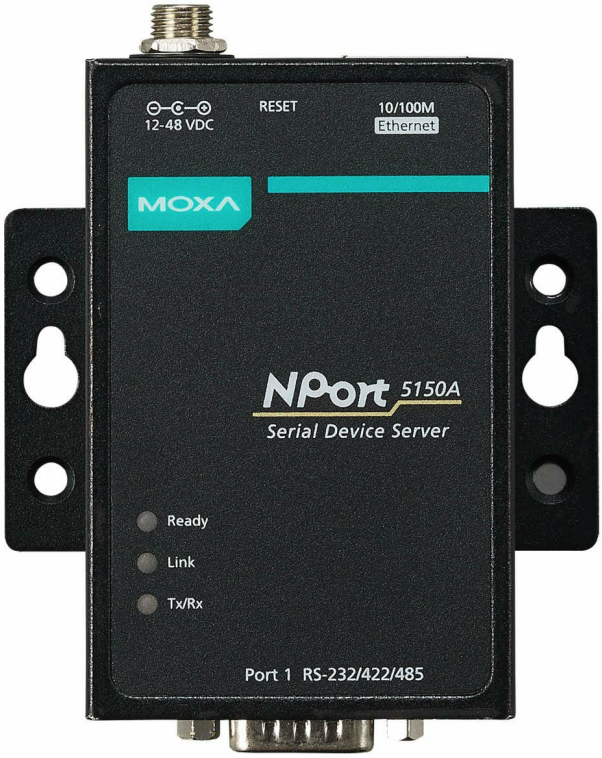
Model: NPort 5150A

1. Introduction

The Moxa NPort 5150A is a compact and robust 1-port RS-232/422/485 serial device server designed to connect serial devices to an Ethernet network. This device enables network-based control and monitoring of serial equipment, making it ideal for industrial automation and data acquisition applications. Its wide operating temperature range of 0 to 60°C ensures reliable performance in various environments.

Key features of the NPort 5150A include:

- Low power consumption of only 1 Watt.
- Speedy 3-step web-based configuration for quick setup.
- Integrated surge protection for serial, Ethernet, and power lines.
- Support for COM port grouping and UDP multicast applications.
- Screw connectors for secure cable installation.
- Real COM/TTY drivers for Windows and Linux operating systems.
- Ability to connect up to 8 TCP hosts simultaneously.
- Standard TCP/IP interface with versatile TCP and UDP operation modes.



Front view of the Moxa NPort 5150A serial device server, showing its compact design and port layout.

2. Setup

2.1 Unpacking and Package Contents

Carefully unpack the NPort 5150A device. Verify that all components are present. Typically, the package includes:

- Moxa NPort 5150A Serial Device Server
- Power Adapter (if included with your model)
- Quick Installation Guide (this manual serves as a comprehensive guide)

2.2 Physical Installation

The NPort 5150A is designed for secure installation. Use the provided screw connectors to mount the device to a panel or DIN-rail (mounting kit may be sold separately). Ensure adequate ventilation around the device to prevent overheating.

2.3 Connecting Power

Connect the power adapter to the NPort 5150A's power input port. Then, plug the power adapter into a suitable power outlet. The device's power LED indicator should illuminate, confirming power supply.

2.4 Connecting Serial Devices

The NPort 5150A features a single serial port that supports RS-232, RS-422, and RS-485 communication standards. Connect your serial device to this port using the appropriate cable. Ensure the serial communication parameters (baud rate, data bits, parity, stop bits) on the NPort and your serial device are correctly matched.

2.5 Connecting to Network

Connect an Ethernet cable from your network switch or router to the Ethernet port on the NPort 5150A. The Ethernet link/activity LED should indicate a successful network connection.

2.6 Initial Configuration (Web-Based)

The NPort 5150A supports speedy 3-step web-based configuration:

1. **Discover the Device:** Use Moxa's NPort Administrator utility or a network scanner to find the NPort 5150A's IP address on your network.
2. **Access Web Console:** Open a web browser and enter the NPort 5150A's IP address. Log in using the default username and password (refer to the device's label or Moxa documentation for defaults).
3. **Configure Settings:** Follow the on-screen wizard or navigate through the web interface to configure network settings (IP address, subnet mask, gateway), serial port settings, and operation modes.

3. Operating

3.1 Basic Operation Modes

The NPort 5150A supports various operation modes to suit different application needs:

- **Real COM/TTY Mode:** This mode allows your PC to access the serial port over the network as if it were a local COM port. Install the appropriate Real COM/TTY drivers for Windows or Linux on your host computer.
- **TCP Server Mode:** The NPort listens for incoming TCP connections from host applications. Up to 8 TCP hosts can connect simultaneously.
- **TCP Client Mode:** The NPort initiates a TCP connection to a specified host IP address and port.
- **UDP Mode:** Data is transmitted and received using UDP packets, suitable for applications where speed is prioritized over guaranteed delivery.
- **Pair Connection Mode:** Two NPort devices can establish a direct connection over Ethernet, creating a virtual serial cable.

3.2 COM Port Grouping

The NPort 5150A supports COM port grouping, which allows multiple serial ports (from different NPort devices) to be managed as a single logical COM port on a host computer. This simplifies application development and management for systems with numerous serial devices.

3.3 Driver Installation

For Real COM/TTY mode, you must install the Moxa Real COM/TTY drivers on your Windows or Linux host computer. These drivers can be downloaded from the official Moxa website. Follow the driver installation instructions provided with the software package.

4. Maintenance

4.1 Cleaning

To maintain optimal performance, periodically clean the exterior of the NPort 5150A with a soft, dry cloth. Do not use liquid cleaners or solvents, as these can damage the device.

4.2 Firmware Updates

Moxa periodically releases firmware updates to improve performance, add features, or address security vulnerabilities. Check the official Moxa website for the latest firmware for your NPort 5150A model. Follow the provided instructions carefully when performing a firmware update to avoid damaging the device.

4.3 Environmental Considerations

The NPort 5150A is designed to operate within a temperature range of 0 to 60°C. Ensure the device is installed in an environment that adheres to these specifications. Avoid exposing the device to excessive dust, moisture, or direct sunlight.

5. Troubleshooting

5.1 No Power

- Check if the power adapter is securely connected to both the NPort and the power outlet.
- Verify that the power outlet is functional.
- Ensure the power adapter is the correct type and voltage for the NPort 5150A.

5.2 No Network Connection

- Check the Ethernet cable connection between the NPort and your network device.
- Verify that the network switch/router is powered on and functioning correctly.
- Check the NPort's Ethernet link/activity LED. If it's off, there might be a cable or network issue.
- Confirm the NPort's IP address, subnet mask, and gateway settings are correct for your network.

5.3 Serial Communication Issues

- Ensure the serial cable is correctly wired and securely connected to both the NPort and the serial device.
- Verify that the serial communication parameters (baud rate, data bits, parity, stop bits, flow control) are identical on the NPort and the connected serial device.
- If using Real COM/TTY mode, ensure the drivers are correctly installed and the virtual COM port is mapped to the NPort's serial port.
- Test with a known working serial device or loopback test if possible.

5.4 Resetting the Device

If the device is unresponsive or configuration issues persist, you may need to perform a factory reset. Refer to the official Moxa documentation for the specific procedure to reset the NPort 5150A to its default factory settings. This typically involves pressing a reset button for a certain duration.

6. Specifications

Feature	Specification
Model Name	NPort 5150A
Brand	Moxa
Serial Ports	1 (RS-232/422/485)
Connectivity Technology	Ethernet
Operating Temperature	0 to 60°C
Power Consumption	1 W (typical)
Item Weight	9.9 ounces
Package Dimensions	5.35 x 4.76 x 3.7 inches
Hard Drive Interface	Ethernet (Note: This refers to the network interface, not a physical hard drive)
Compatible Devices	Desktop (Host PCs for configuration and operation)
Installation Type	External Hard Drive (Note: This refers to external device installation, not a hard drive)

7. Warranty and Support

7.1 Warranty Information

For detailed warranty information regarding your Moxa NPort 5150A, please refer to the official Moxa website or the warranty card included with your product. Warranty terms and conditions may vary by region and purchase date.

7.2 Technical Support

If you encounter any issues that cannot be resolved using this manual, or require further technical assistance, please contact Moxa's official technical support. Support contact details can typically be found on the Moxa website (www.moxa.com).