Moxa MGate MB3480

MOXA MGate MB3480-4 Ports Serial-to-Ethernet Modbus Gateway User Manual

1. INTRODUCTION

The MOXA MGate MB3480 is a 4-port Modbus gateway designed to convert between Modbus TCP and Modbus RTU/ASCII protocols. This device facilitates seamless communication between Modbus TCP hosts and Modbus RTU/ASCII serial devices, enabling integration of legacy serial equipment into modern Ethernet-based control systems. It supports flexible deployment options, including routing by TCP port or IP address, and offers robust performance for industrial automation applications.

2. PRODUCT OVERVIEW

2.1 Key Features

- Supports Auto-Device Routing for simplified configuration.

- Facilitates easy hardware setup and configuration.

- Enables conversion between Modbus TCP and Modbus RTU/ASCII protocols.

- Equipped with 1 Ethernet port and 4 RS-232/422/485 serial ports.

- Supports 16 simultaneous TCP masters with up to 32 simultaneous requests per master.

- Offers flexible deployment through routing by TCP port or IP address.

2.2 Physical Description

Figure 1: Front view of the MOXA MGate MB3480-4 Ports Serial-to-Ethernet Modbus Gateway. The device features a robust black casing with green terminal blocks for power and serial connections. Indicators for power, Ethernet, and serial

The MGate MB3480 features a compact, industrial-grade design. The front panel includes LED indicators for power, Ethernet link/activity, and serial port transmit/receive status, providing quick visual diagnostics. Four serial ports (RS-232/422/485 configurable) are located on the bottom edge, while the Ethernet port is on the side. Power input is provided via a terminal block.

3. SETUP

3.1 Hardware Installation

1. **Mounting:** Securely mount the MGate MB3480 in a suitable industrial enclosure or on a DIN-rail, if applicable, ensuring adequate ventilation.

2. **Power Connection:** Connect a compatible DC power supply to the device's power input terminal block. Verify the power supply meets the specified voltage and current requirements.

3. **Ethernet Connection:** Connect a standard Ethernet cable from your network switch or host PC to the Ethernet port on the MGate MB3480.

4. **Serial Connections:** Connect your Modbus RTU/ASCII serial devices to the RS-232/422/485 serial ports (Port 1-4) using appropriate cabling. Ensure correct wiring for the chosen serial standard (e.g., TxD, RxD, GND for RS-232; A+, B- for RS-485).

3.2 Initial Configuration

After hardware installation, the MGate MB3480 can be configured via its web-based management interface. Access the device by entering its default IP address (refer to the quick installation guide or product documentation for the default IP) into a web browser. Log in using the default credentials to begin configuring network settings, serial port parameters, and Modbus conversion rules.

4. OPERATING INSTRUCTIONS

4.1 Modbus Protocol Conversion

The primary function of the MGate MB3480 is to convert Modbus TCP requests from Ethernet-based masters into Modbus RTU/ASCII requests for serial slaves, and vice-versa. Configure each serial port for the specific Modbus protocol (RTU or ASCII), baud rate, data bits, parity, and stop bits to match the connected serial devices.

4.2 Routing Configuration

The gateway supports flexible routing mechanisms. You can configure the device to route Modbus TCP requests to specific serial ports based on the TCP port number used by the master or the IP address of the master. This allows for efficient management of multiple serial devices from a single Modbus TCP network.

4.3 Modbus Master/Slave Operation

The MGate MB3480 can handle up to 16 simultaneous Modbus TCP masters, each capable of issuing up to 32 simultaneous requests. This capability ensures high throughput and responsiveness in complex industrial control environments where multiple clients need to access serial Modbus devices concurrently.

5. MAINTENANCE

Regular maintenance helps ensure the longevity and reliable operation of your MGate MB3480. Keep the device clean and free from dust accumulation. Periodically check for and install firmware updates from the Moxa website to benefit from performance improvements, new features, and security enhancements. Ensure all cable connections are secure and free from damage.

6. TROUBLESHOOTING

- **No Power:** Verify the power supply connection and ensure the power adapter is functioning correctly. Check the power LED on the device.

- **No Ethernet Connectivity:** Check the Ethernet cable connection. Verify network settings (IP address, subnet mask, gateway) in the device's web interface. Ensure the Ethernet link LED is active.

- **Serial Communication Errors:** Confirm serial port settings (baud rate, data bits, parity, stop bits) match the connected serial device. Verify serial cable wiring and ensure the correct RS-232/422/485 mode is selected. Check serial Tx/Rx LEDs for activity.

- **Modbus Communication Failure:** Ensure the Modbus protocol (RTU/ASCII) is correctly configured for the serial port. Verify Modbus slave IDs and function codes are correctly addressed by the Modbus TCP master. Check routing rules if configured.

- **Web Interface Inaccessible:** Ensure your PC's IP address is in the same subnet as the MGate MB3480. Try resetting the device to factory defaults if the IP address is unknown (refer to the product documentation for the reset procedure).

7. SPECIFICATIONS

Attribute	Value
Brand	Moxa
Model Number	MGate MB3480
Item Weight	2.25 pounds
Package Dimensions	14.96 x 6.77 x 3.66 inches
Hardware Interface	Ethernet
Compatible Devices	Industrial Equipment, Sensors, Modbus Devices
UPC	613739924556
Manufacturer	Moxa Inc.
Date First Available	January 24, 2018

8. WARRANTY INFORMATION

The MOXA MGate MB3480-4 Ports Serial-to-Ethernet Modbus Gateway is covered by a manufacturer's warranty. Specific warranty terms, conditions, and duration are provided by Moxa Inc. Please refer to the official warranty documentation included with your product or visit the official Moxa website for detailed

information regarding warranty coverage and claims.

9. TECHNICAL SUPPORT

For technical assistance, product inquiries, or further support regarding your MOXA MGate MB3480, please contact Moxa's official technical support channels. You can typically find support resources, FAQs, drivers, and contact information on the official Moxa website. When contacting support, please have your product model number and any relevant error messages or configuration details ready.