

## Accelerate DNP3 Project Deployments

Modbus to DNP3 conversion solutions

# Overcome The Challenges of Using DNP3 Throughout Your Project Deployment

DNP3 (Distributed Network Protocol) has been used by electric companies for over twenty years and has recently started to be adopted in the water industry as well as for oil and gas applications. DNP3 has two main advantages. First, it supports unsolicited responses, so a DNP3 field device (or outstation) can actively send messages when a specific event occurs. Second, it supports the timestamp feature, so data can be tracked regardless of the frequency of polling. Because of these advantages, DNP3 is very popular in telemetry systems and a significant number of field devices and control equipment are already utilizing it.

### **White Paper** Key Considerations When Upgrading DNP3-Supported Communications



networks that have recently been retrofitted and many more that will need to be retrofitted in the near future in order to keep up with the new trends that are emerging.

When a project deployment is underway, the system integrator must overcome several challenges. First, there are multiple requirements for either bridging serial-based DNP3 to Ethernet-based DNP3, or cross-converting DNP3 protocols to other protocols such as Modbus. Second, when embedded computers are used for serial-to-Ethernet commissioning, engineers have to spend a lot of time on protocol conversion as opposed to system automation, which is the main task that engineers have been hired to perform. Last, as the majority of engineers who work on these deployments are not familiar with the protocols that are used to solve communication issues, the deployment will typically take longer and therefore incur increased operational costs.

Find out below how Moxa can help you handle DNP3-related protocol conversions.



**One Solution for All Your Needs**



1

require many devices that utilize different protocols and interfaces.

2

very time consuming.

3

minimum as it is time consuming and often delivers minimal results.



### All-in-One Design

A single model with the capability to address multiple combinations of protocol conversion that provides extreme flexibility when designing your project.

**Transparent Mode:**

- DNP3 serial-to-Ethernet
- Modbus serial-to-Ethernet

**Agent Mode:**

Any combination of Modbus to DNP3 conversion

- DNP3 serial-to-Ethernet
- Modbus serial-to-Ethernet



### Click-and-Play Wizard

User-friendly web console that walks you through the entire setup process in just few minutes.

No additional software is required, but a web-based utility is included at no additional charge for those who prefer it for offline configuration.



### User-Friendly Troubleshooting Tool

Built-in diagnostic tools help engineers easily eliminate communication issues at the operation stages and allow engineers to determine the root cause of a failure.

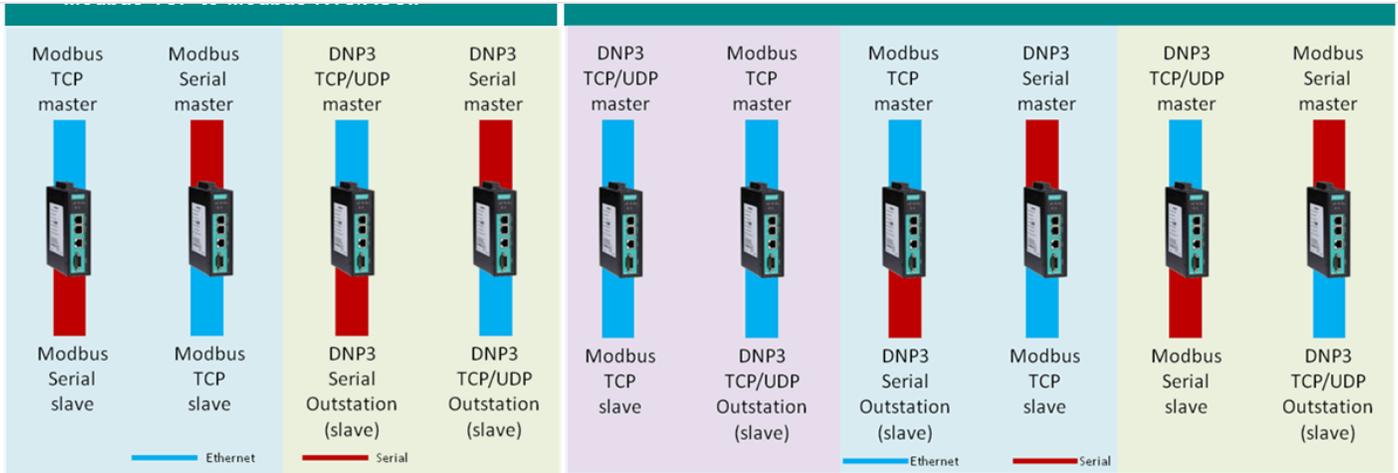
All-in-One-Design



## All-in-One Design

Moxa's MGate 5109 serial-to-Ethernet gateway supports multiple Modbus to DNP3 conversions, including Modbus RTU/ASCII, Modbus TCP, and DNP3 serial/TCP/UDP protocols. As all of these conversions can be performed within a single model, the need to purchase, deploy, and set up multiple devices to perform all of these conversions is eliminated. The MGate 5109 can either convert protocols using the transparent mode, or perform different roles, such as acting as an agent to communicate with the field devices.





# Featured Product





## All kinds of DNP3 and Modbus protocols for serial-to-Ethernet and cross conversion

### MGate 5109 Ethernet Gateway

- Supports Modbus master/slave and DNP3 master/outstation
- Complete diagnosis information for maintenance
- Embedded Modbus and DNP3 serial traffic monitoring
- Serial port with 2 kV built-in isolation protection
- Built-in Ethernet cascading for easy wiring

[Learn More](#)

**This may also interest you**





## DNP3 serial to DNP3 over TCP by tunneling

### NPort IA Serial Device Server

- Real COM/TTY drivers for Windows and Linux
- Enhanced surge protection for LAN/serial/power
- 2 kV isolation for serial signals (isolation models)
- Cascading Ethernet ports for easy wiring
- Redundant DC power inputs



## Computing platform with various hardware interfaces

### UC-8100 Embedded Computer

- ARM® Cortex™-A8 1GHz processor
- Dual auto-sensing 10/100 Mbps Ethernet ports
- -40°C to 70°C wide temperature range with LTE enabled
- Secure data transmission with MQTT & SSL



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## Personal Details



Company

- Industry -

Phone

- Country -

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