Modbus Master implemented inside NR500 VPN Router

Remote Sensor Monitoring with Navigateworx Industrial 3G/4G Wireless Router

Navigateworx NR500 router provides the best industrial networking solution for different kinds of sensors with Modbus Master function implemented. Also offer seamless LTE communication for the management center to collect and analyze statistical data. It is perfect for our entire business system

Mr. Eber

Summary

Modbus is a communication protocol developed by Modicon systems. In simple terms, it is a method used for transmitting information over serial lines between electronic devices. The device requesting the information is called the Modbus Master and the devices supplying information are Modbus Slaves. The Master can also write information to the Slaves.

Modbus is an open protocol, meaning that it's free for manufacturers to build into their equipment without having to pay royalties. It has become a very common protocol used widely by many manufacturers throughout many industries. Modbus is typically used to transmit signals from instrumentation and control devices back to a main controller or data gathering system.

Customer Needs

Industrial Device Communication

Industrial control system is typically used in industries applications such as electricity, water, oil, gas and data. Based on data received from remote stations, automated or operator-driven supervisory commands can be pushed to remote station control devices, which are often referred to field devices.

In a standard Modbus network, Modbus devices are working in local network, but it is not suitable for grabbing the data from Modbus Master device remotely.

That mean in traditional Modbus players, if device want to send data to remote center, we need to connect another network gateway to Modbus Master device, then Modbus Master device able to send data via Cellular / Ethernet / Wi-Fi.

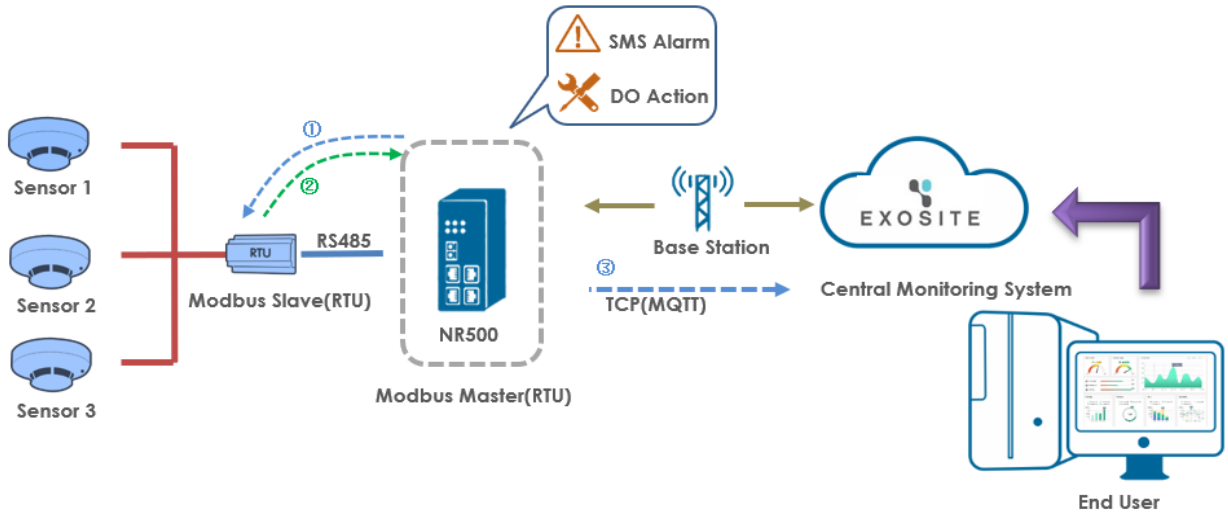
Moving toward continuous monitoring

Security, scalability and reliability are the foundation of Exosite's technology. Deploy a unique combination of technologies to collect, manage, safeguard and serve the data without sacrificing usability. Navigateworx LTE VPN router provide a stable network connection and a variety of sensors, as well as communications, are enabling a move to continuous monitoring for the applications. This entails in-situ sensors combined with local processing and communications for logging, processing, storing, and communicating data to Monitoring Data Center.

Solutions

Most of PLCs or sensors are installed in the middle of nowhere, so the field location needs to send data to central server via Internet. Well, it is hard to get a fixed line for Internet access, so cellular wireless would be a good option for data transmission.

With Modbus Master implemented inside NR500 Router, NR500 Router could not only be a cellular gateway, but also run as a data collection unit to request the information or write information to the Slaves. Meanwhile, NR500 Router are able to send data to 3rd party management platform, e.g. Exosite. Engineers could check the real-time status via web browser.



- NR500 router connects to Modbus Slave (RTU) via RS485.
- NR500 router runs as Modbus Master and request the data from slave devices.
- NR500 router also able to collect data on-demand and send out automatically.
- NR500 router transmits data to Cloud or public server by 3G/4G automatically.
- If slave devices value is out of range and trigger Modbus Alarm, NR500 would send SMS alarm to specified users, or trigger DO action.
- If cellular connection is drop, NR500 router would store the data into Flash & re-send after network reconnected.
- Engineers/End User could login to Cloud platform and check the status of devices.

Benefits

Reduce Construction Costs

In traditional Modbus application, it requires another network gateway connected to Modbus Master device, then Modbus Master device is able to send data via Cellular. NR500 Router support wireless transmission and Modbus master data collection feature in one device. Saving the cost for extra gateway and make the system more reliable. It also supports to save data in Flash when uplink dropped and failed to send out data immediately.

High EMC level

Compliant to EMC standard IEC61000-4 at level 3, it makes the router immune to harsh electromagnetic environments

Good Scalability

Due to the current public network has covered in most areas, there is no blind area, can realize online monitoring a wide range of related information collection and transmission system to meet the coverage requirements.

Reliable Connection

NR500 LTE VPN Router build in watch dog and keepalive policy run inside. The multiple links back to make sure the connection between platform and station is always online. Ensure the normal operation of the entire business system.

About NavigateWorx

NavigateWorx Technologies provides Products, Services, Solutions and Support to the emerging Machine-to-Machine Industry. Our goal is to assist in your efforts to bring Industrial Projects to life, implement Wireline & Wireless Technology Solutions in your Business to simply keep your Devices, Employees and Business connected. That is NavigateWorx.

