NavigateWorx

NR500 Series
Industrial Cellular VPN Router

Application Note 005

Transparent Mode with TCP Client on RS485

Version: V1.0.0
Date: 2018/08/03
Status: Confidential

Directory

1. Introduction

1.1 Overview

This document contains information regarding the configuration and use of RS485 Transparent Mode with TCP Client.

This guide has been written for use by technically competent personnel with a good understanding of the communications technologies used in the product, and of the requirements for their specific application.

1.2 Compatibility

This application note applies to:
Models Shown: NR500 series.
Firmware Version: V1.0.0(903.0) or newer
Other Compatible Models: None

1.3 Version

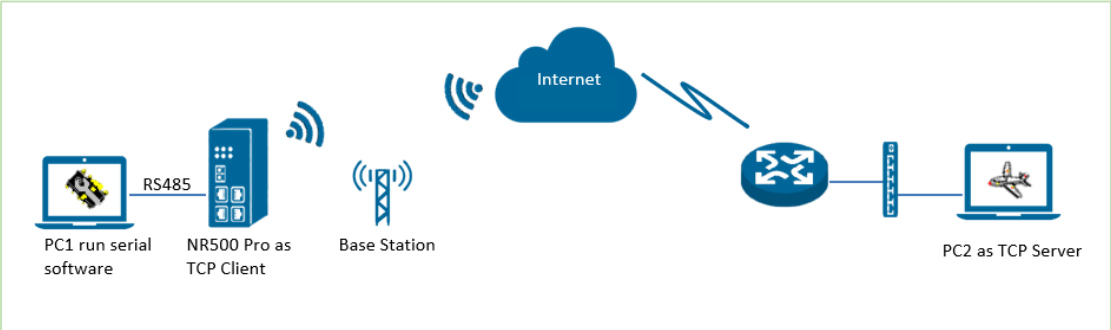
Updates between document versions are cumulative. Therefore, the latest document will include all the content of previous versions.

Release Date	Doc. Version	Firmware Version	Change Description
2018/08/03	V1.0.0	V1.0.0(903.0)	First released

1.4 Corrections

Appreciate for corrections or rectifications to this application note, and if any request for new application notes please email to: **support@navigateworx.com**

2. Topology

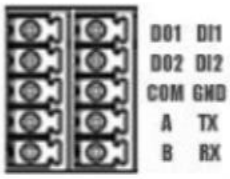


1. NR500 Pro runs as TCP Client and connect to Internet with SIM card.
2. PC1 simulate as serial device and runs serial software, such as Hercules. Hercules will send the datas to the TCP server side through NR500 Pro with TCP transparent mode.
3. PC2 runs as TCP server and assume it can get the Public Static IP address. PC2 enable TCP software, such as TCPUDPDbg. TCPUDPDbg can receive the datas from TCP Client side.

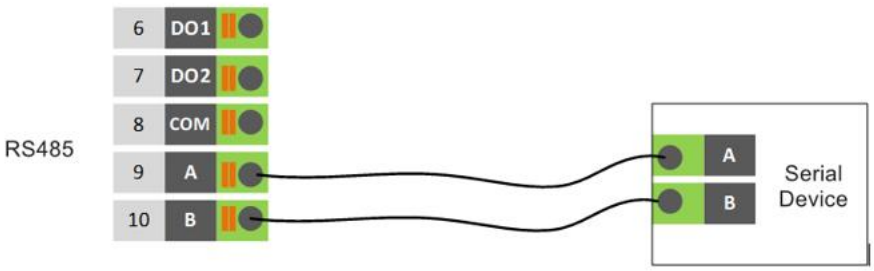
3. RS485 Cable

1. Please follow below picture to make the RS485 cable:

- **Serial Port & DIDO**



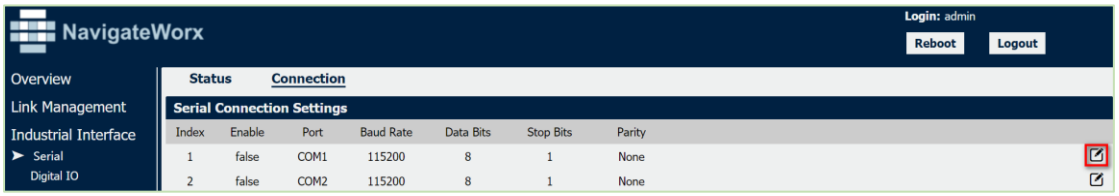
PIN	RS232	RS485	DI	DO	Direction
1	--	--	--	DO1	Router-->Device
2	--	--	--	DO2	Router-->Device
3	--	--	--	COM	--
4	--	A	--	--	Router<-->Device
5	--	B	--	--	Router<-->Device
6	--	--	DI1	--	Router<--Device
7	--	--	DI2	--	Router<--Device
8	GND	--	--	--	--
9	TX	--	--	--	Router-->Device
10	RX	--	--	--	Router<--Device



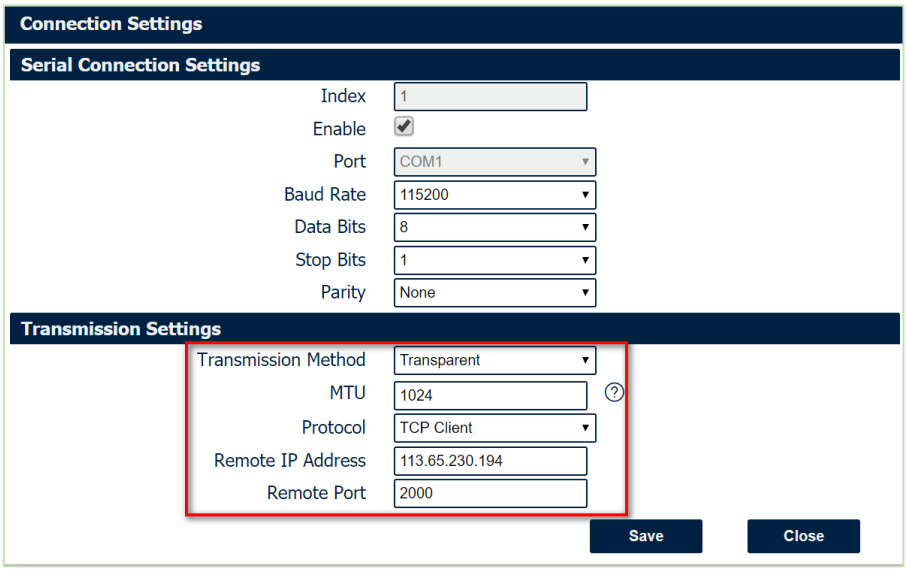
4. Configuration

4.1 RS485 Configuration

1. Go to Link **Industrial Interface>Serial>Connection>Index 1**, Click the **Edit button** of COM1.



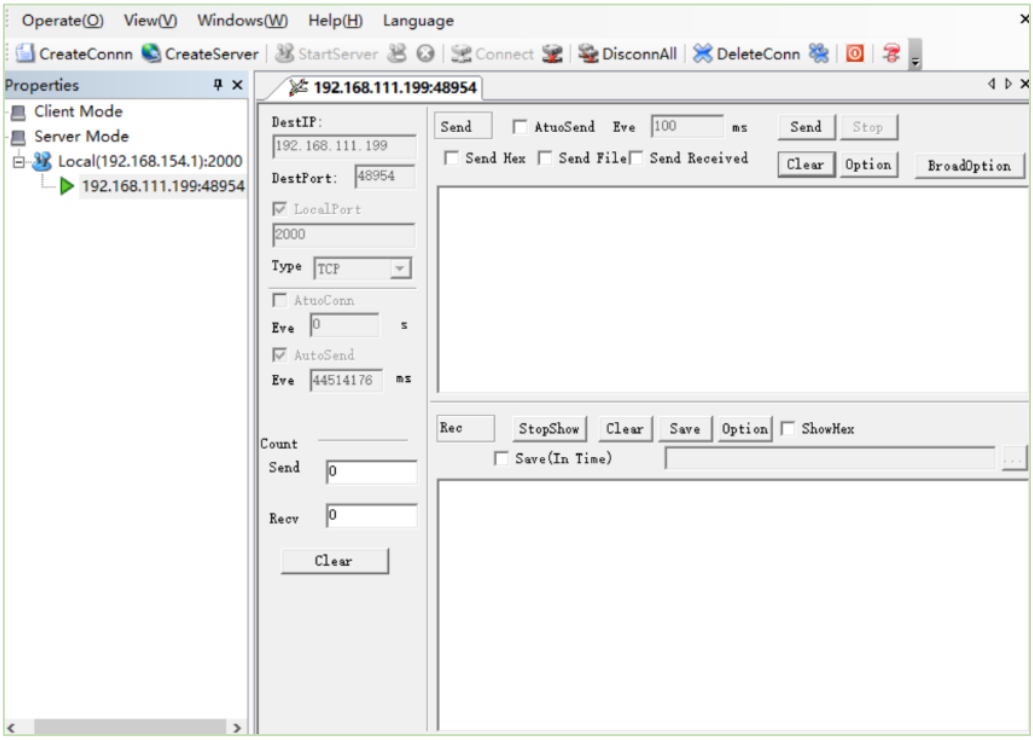
2. Enable RS485 setting, select Protocol as "TCP Client" and enter the Server ip address and Server Port. Click Save.



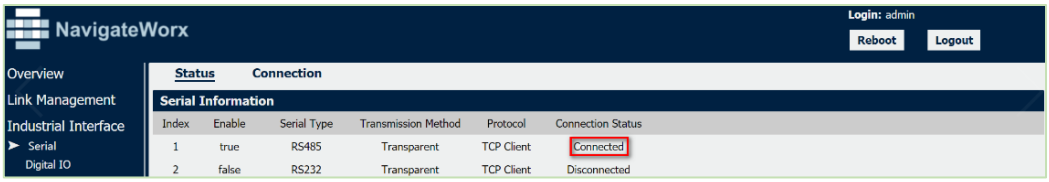
3. Click Save>Apply.

4.2 TCP Server Configuration

1.Run TCP Software "TCPUDPDbg" on server PC2, NR500 Pro will connect to the TCP Server automatically.



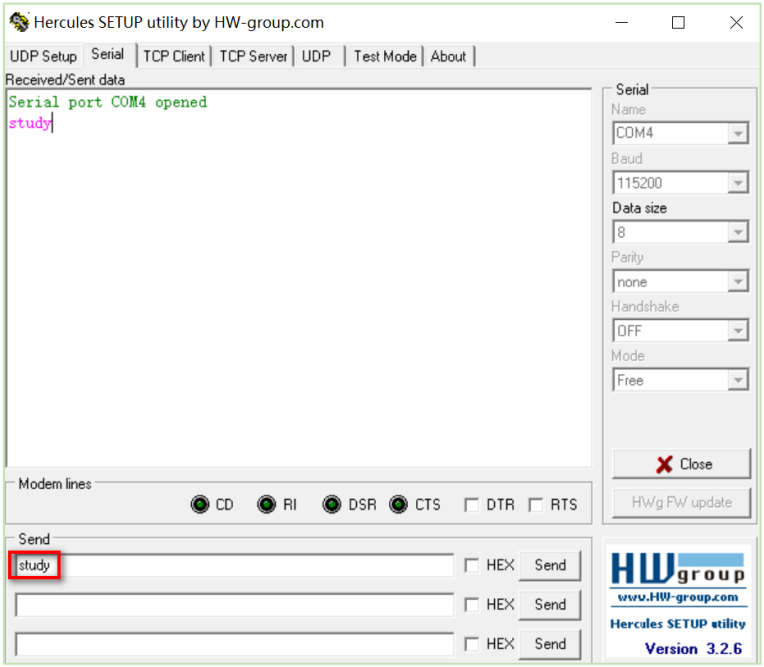
2. Go to **Industrial Interface>Serial>Status>Serial Information>Index1**, it will show the connection status.



5. Testing

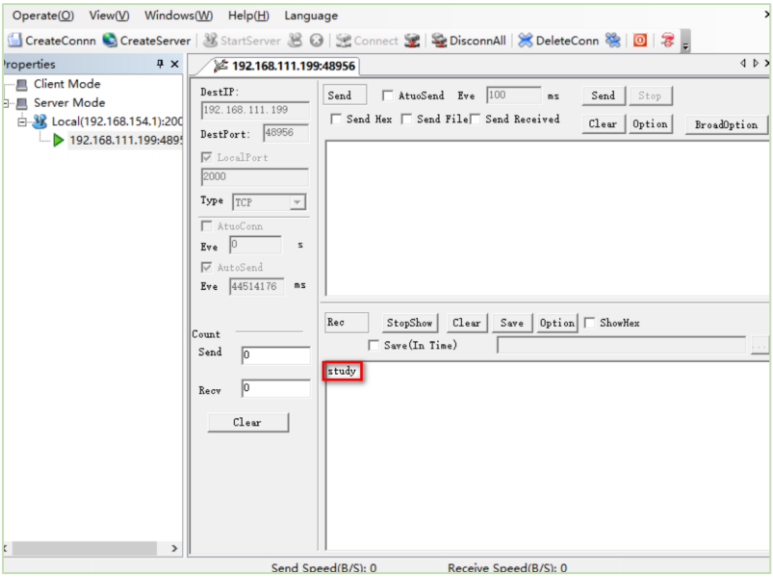
5.1 Test

1. Run serial software"Hercules" on PC1, send the data "study".



5.2 Test Result

1. TCP Server side can receive the data "study"



2. Test successfully.