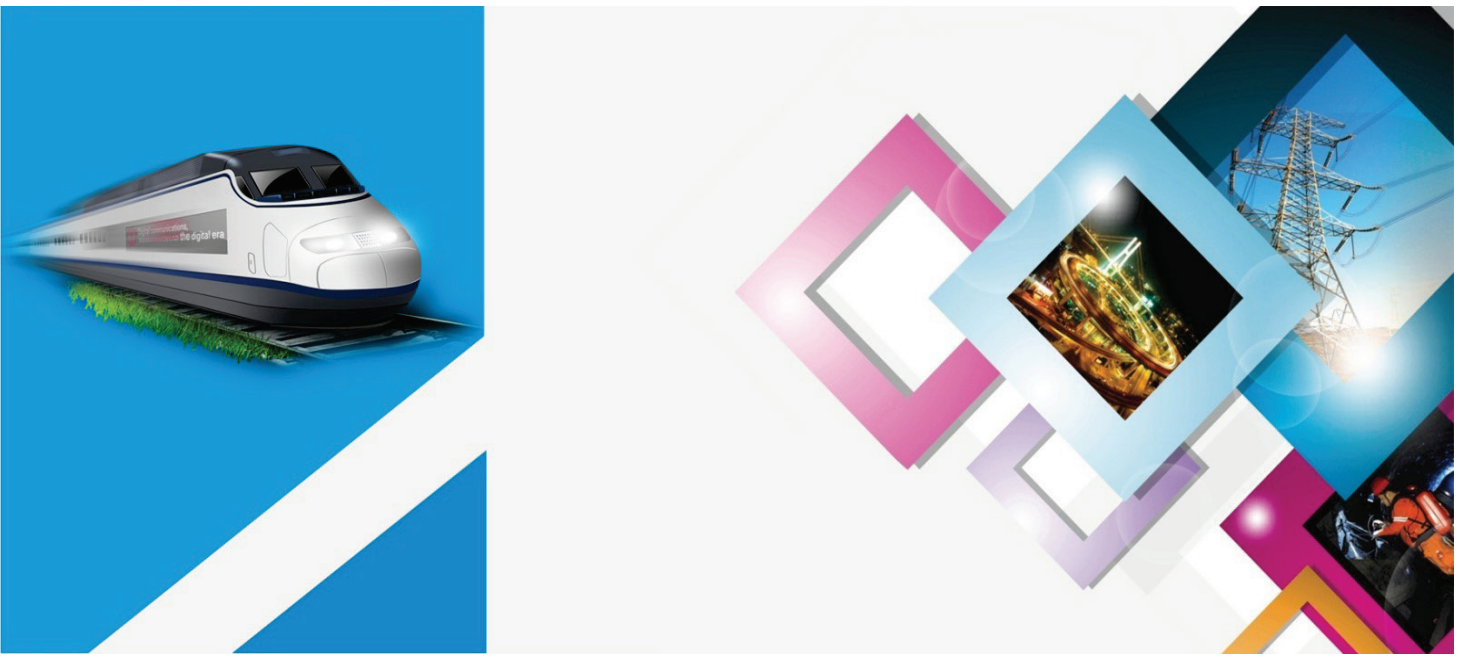
3onedata
Make network communication more reliable



DebugTool
User Manual

Document Version: 01

Release date: 2018-12-14

Industrial Ethernet communication solutions experts **3onedata Co., Ltd.**

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Preface

DebugTool user manual has introduced following functions of the management software:

- Software features
- Instructions

Audience

This manual applies to the following engineers:

- Network administrators
- Technical support engineers
- Hardware engineers

Conventions

Format	Description
" "	Words with the symbol "" mean that those are interface words. Fox example "Port number".
>	Multiple paths are separated by the symbol '>'.
Light blue Font	Click light blue font to hyperlink The font color is as follows: 'Light Blue'.
About This Chapter	The section 'about this chapter' provides links to various sections of this chapter, as well as links to the Principles Operations Section of this chapter.

Symbols

Format	Description
⚠ Notice	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal

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Format	Description
	injury.
 Warning	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 Note	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.
 Key	The tips of configuration and operation.

Revision History

Version No.	Date	Revision note
01	2018-12-14	Manual development

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1 Product Overview

1.1 Product Introduction

Debug Tool is a debugging tool developed by 3onedata for serial device server, CAN server and modbus gateway. It supports creating network debugging, CAN debugging and Modbus debugging. It can be connected with devices to establish TCP/UDP client/server and UDP multicast for network or CAN. It can establish Modbus master/slave station, client and server to send and receive data.

1.2 Basic Features

Network features

- Support TcpClient and UdpClient mode: network client emulation can be used for testing and debugging network server devices;
- Support TcpServer and UdpServer mode: network server simulation can be used for testing and debugging network client devices;
- Support UdpGroup mode: Network Udp multicast emulation can be used for testing and debugging unicast or multicast connection of the network device;
- Support modifying the value of transmitted data, and support transmitted content is optional hexadecimal or ASCII value;
- Support optional manual or automatic data transmission, and support modifying the value of transmission interval when sending the data automatically.

CAN features

- Support TcpClient and UdpClient mode: CAN client emulation can be used for testing and debugging CAN server devices;
- Support TcpServer and UdpServer mode: CAN server simulation can be used for testing and debugging CAN client devices;

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- Support UdpGroup mode: CANUdp multicast emulation can be used for testing and debugging unicast or multicast connection of the CAN devices;
- Supports modification of frame type, frame format, frame ID, frame data; support optional single or multiple frames transmission and the settings of the quantity of transmitted frames.
- Supports optional manual or automatic data transmission, support the modification of sending interval value and the increment of frame ID when sending the data automatically.

Modbus features

- Support ModbusPoll mode: Modbus host emulator can be used for testing and debugging Modbus slave devices, this module supports Modbus RTU, Modbus ASCII, Modbus TCP/IP, and it can emulate 32 host devices;
- Support ModbusSlave mode: Modbus slave device emulator can emulate 32 slave devices/address domains;
- Support master device: 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x0F, 0x10 function code;
- Support slave devices: 0x01, 0x02, 0x03, 0x04 function code;
- Support binary, decimal, hexadecimal display of register values;
- Support the statistics of received and transmitted messages;
- Support modification of register values.

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2 Installation Instruction

2.1 Usage Preparation

DebugTool software supports the following 32 or 64 bits operating systems:

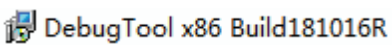
- Microsoft Windows 2000
- Microsoft Windows XP
- Microsoft Windows Server 2003
- Microsoft Windows Server 2008
- Microsoft Windows Server 2012
- Microsoft Windows 7
- Microsoft Windows 8
- Microsoft Windows 10

Notice

Please shut down the anti-virus software before installing the anti-virus software.

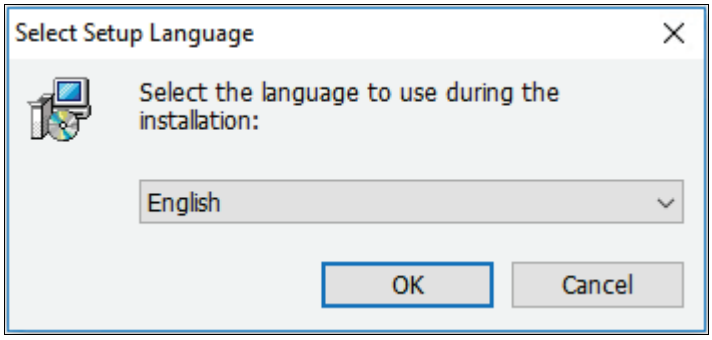
2.2 Software Installation

Prepare the DebugTool installer as shown below:



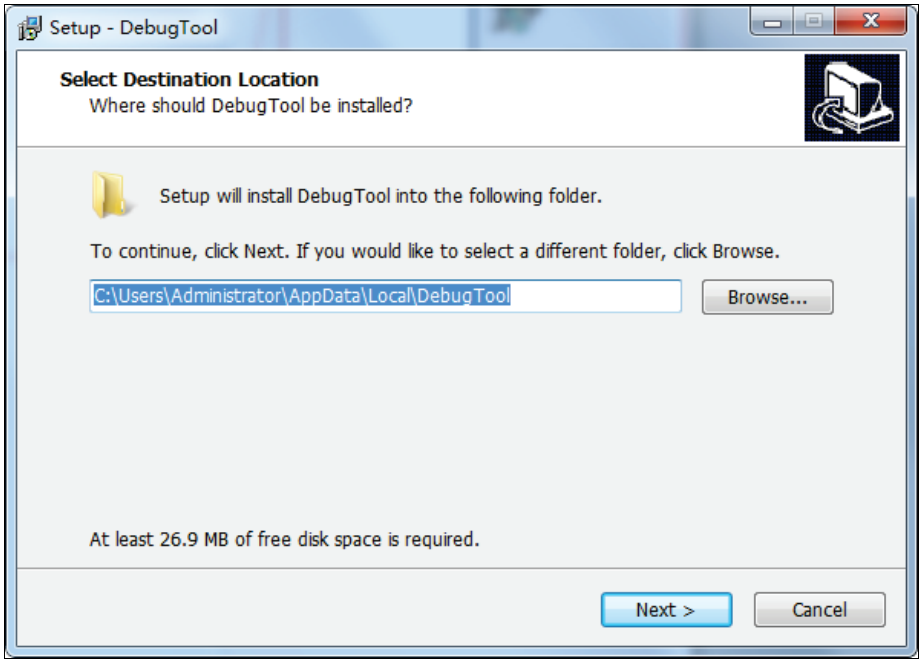
Installation steps:

Step 1 Run the installer shown above, the installation wizard appears on the screen, enter the installation language selection interface, as shown below.



Step 2 Select the language "English".

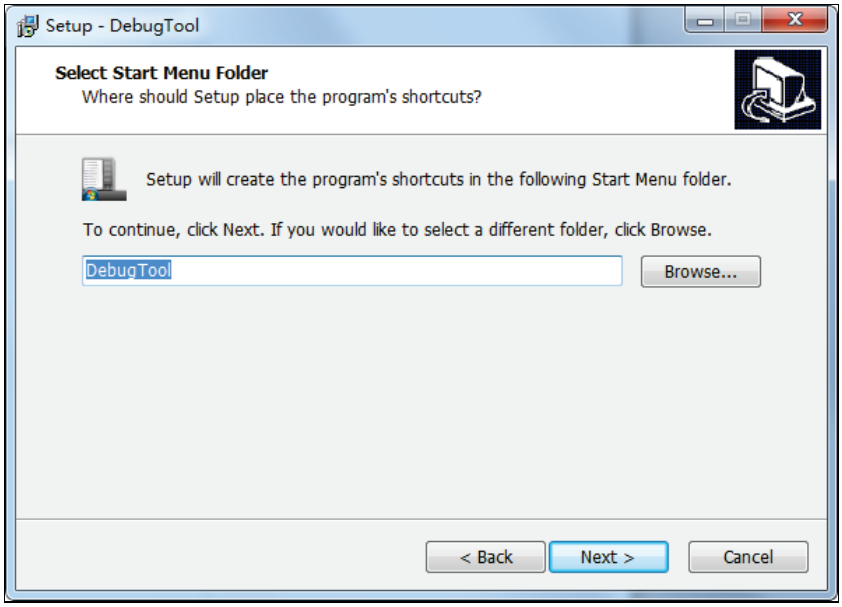
Step 3 Click "OK" to enter the target path display interface of the installer, as shown in the following figure.



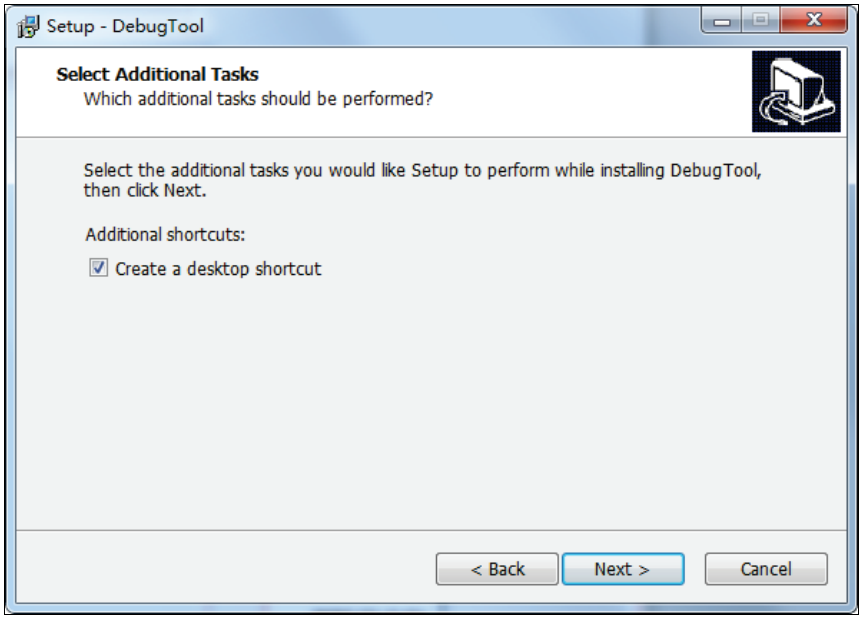
Step 4 (Optional) Select the path of software installation via "Browse", where the default path is used.

Step 5 Click "Next" to enter the configuration interface of start menu folder, as shown below.

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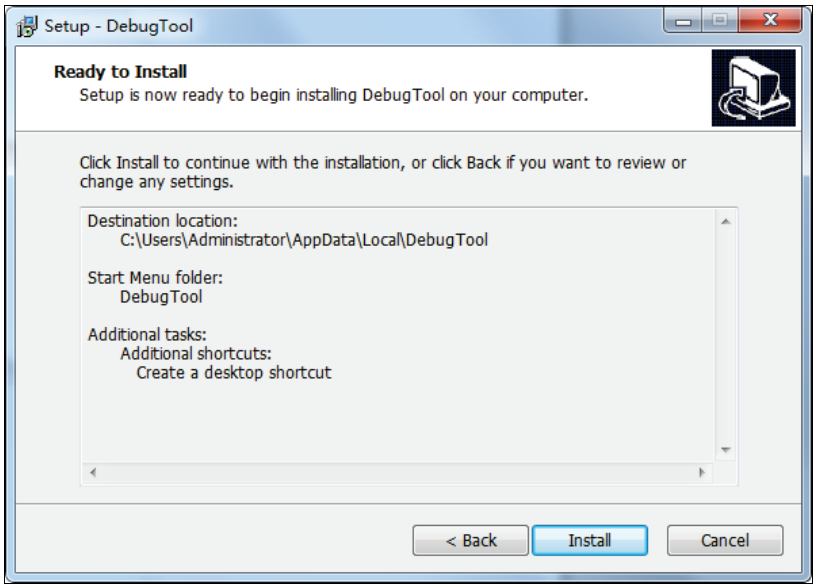


Step 6 Click "Next" to enter the additional task options interface, as shown in the following figure.

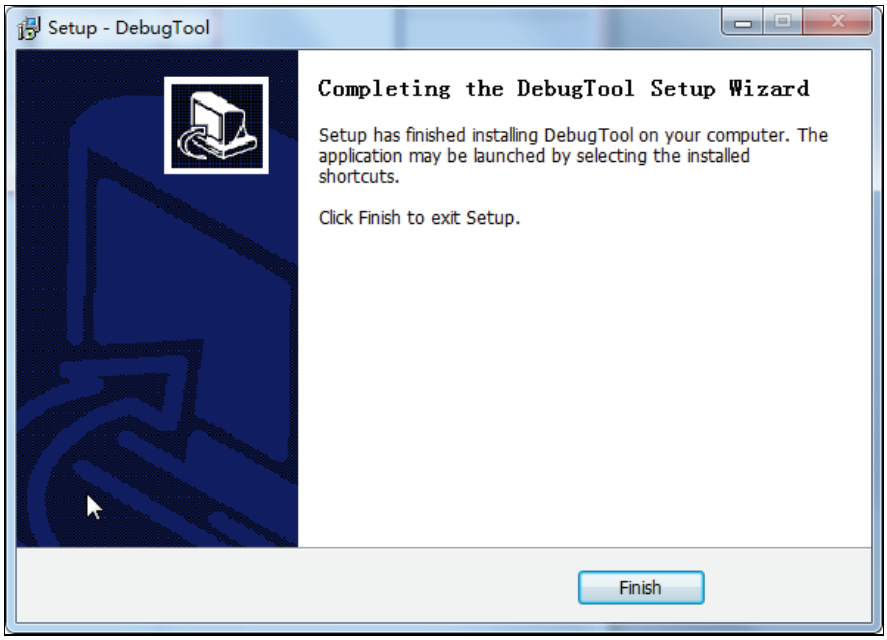


Step 7 Click "Next" to create a desktop shortcut, as shown in the following figure.

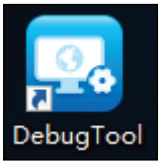
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Step 8 Click "Install" to start the installer and display the progress of installation.



Step 9 Click "Finish" to finish the installation and exit the installation interface. The desktop shortcut is displayed as shown below.



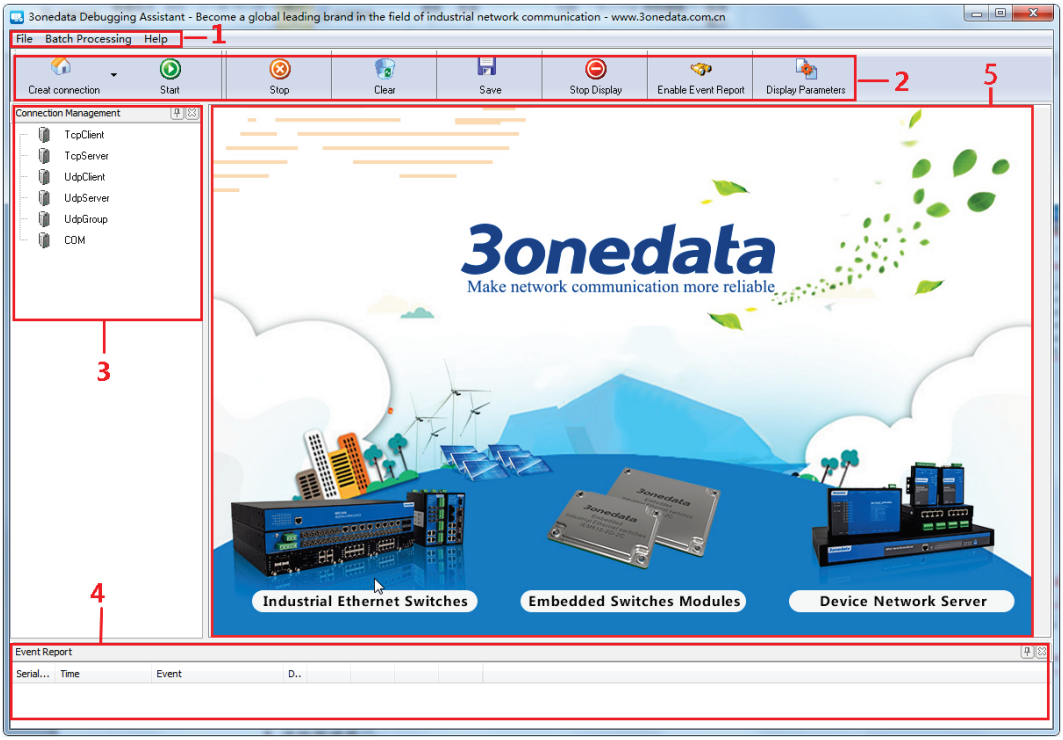
Step 10 End.

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3 Software Function

3.1 Overview

Run the installed Debug Tool on the desktop, the interface as the figure below:



1. Menu Bar
2. Tool bar
3. Connection management window
4. Event report window
5. Working interface

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3.2 Menu Introduction

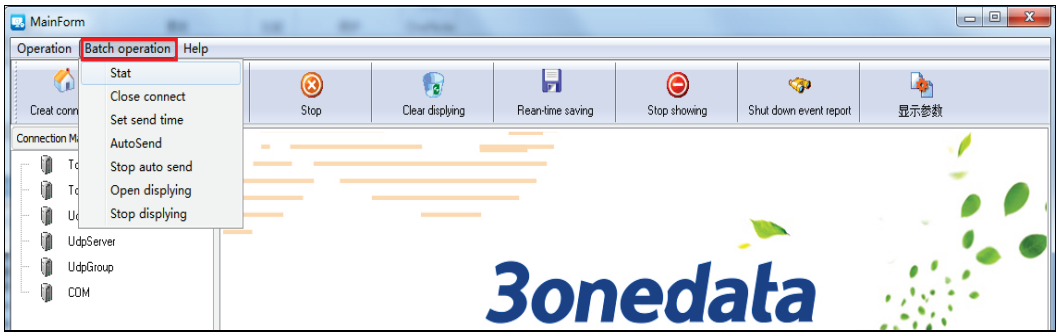
Function Description

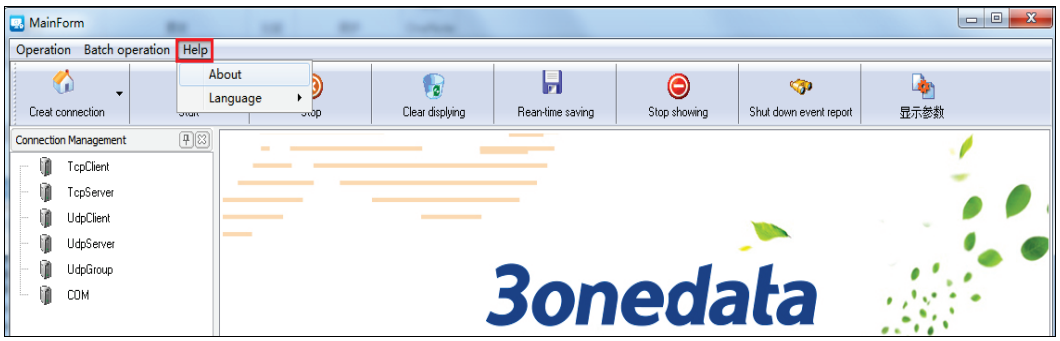
In the options of menu bar, user can perform simple, batch operations, language switching and so on.

Step Description

Menu bar screenshot







Main operation instructions of the menu bar

Shortcut option	Description
Operation	**Operation menu bar**
Save configuration	Save the created connection configuration

Load in configuration	Load in locally saved connection configuration
Open connection management	Open the connection management window and the created connection will be displayed in this window.
Open event report	Open the event report window, the prompt information includes: successful connection and connection failure information Notes: ModBus does not support event report. For CAN and network debugging, user needs to enable "Show Event Report" in the tool bar.
Batch operation	**Patch operation menu bar**
Start	Start all established connections
Close connect	Close all established connections
Set send time	Set the transmission interval of all established connections
Auto Send	Automatically send request data of all connected clients Notes: This option only takes effect while creating network debugging or CAN debugging.
Stop auto send	Stop sending request data of all connected clients Notes: This option only takes effect while creating network debugging or CAN debugging.
Open displaying	Display the received and transmitted data of all connected sessions Notes: This option only takes effect while creating network debugging or CAN debugging.
Stop displaying	Stop displaying the received and transmitted data of all connected sessions Notes: This option only takes effect while creating network debugging or CAN debugging.
Close connection	Close all established connections
Help	**Help menu bar**
About	In the window of "About", user can view the corresponding version number and company information of the tool.
Language	In the window of "Language", user can switch languages as needed. The options include: • Chinese (China) (Z) • English(USA)

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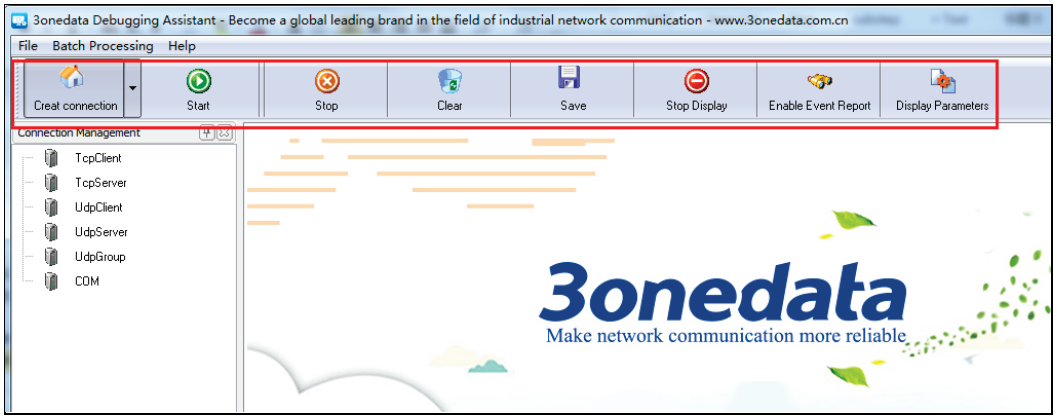
3.3 Tool Introduction

Function Description

In the tool bar, user can conduct operations such as create connection, start, stop and so on.

Step Description

Tool bar screenshot



Main operation instructions of tool bar

Shortcut Option	Instruction
Create connection	In the menu of creating connection, creating network debugging, Can debugging and ModBus debugging are supported.
Start	Start the connection of current operation window
Stop	Stop the connection of current operation window
Clear	Clear the display of information such as received and transmitted data Notes: Modbus debugging does not support this function now.
Save	Save the information of received and transmitted data in real time
Stop Display	Stop the display of information such as received and transmitted data Notes: Modbus debugging does not support this function now.
Enable Event Report	Display the information such as successful connection, connection failure, etc. Notes: Modbus debugging does not support this function now.
Display Parameters	Display the line number and data format of Modbus

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	Notes: The option only takes effect while creating Modbus debugging.

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4 Create Network Debugging

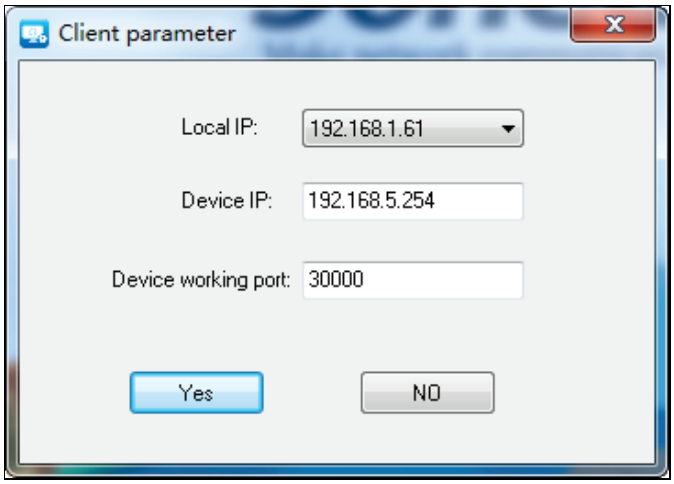
4.1 TcpClient

Function Description

On the page of TcpClient, user can create a Tcp client.

Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > TcpClient". Pop up the window of "Client parameter" as below.

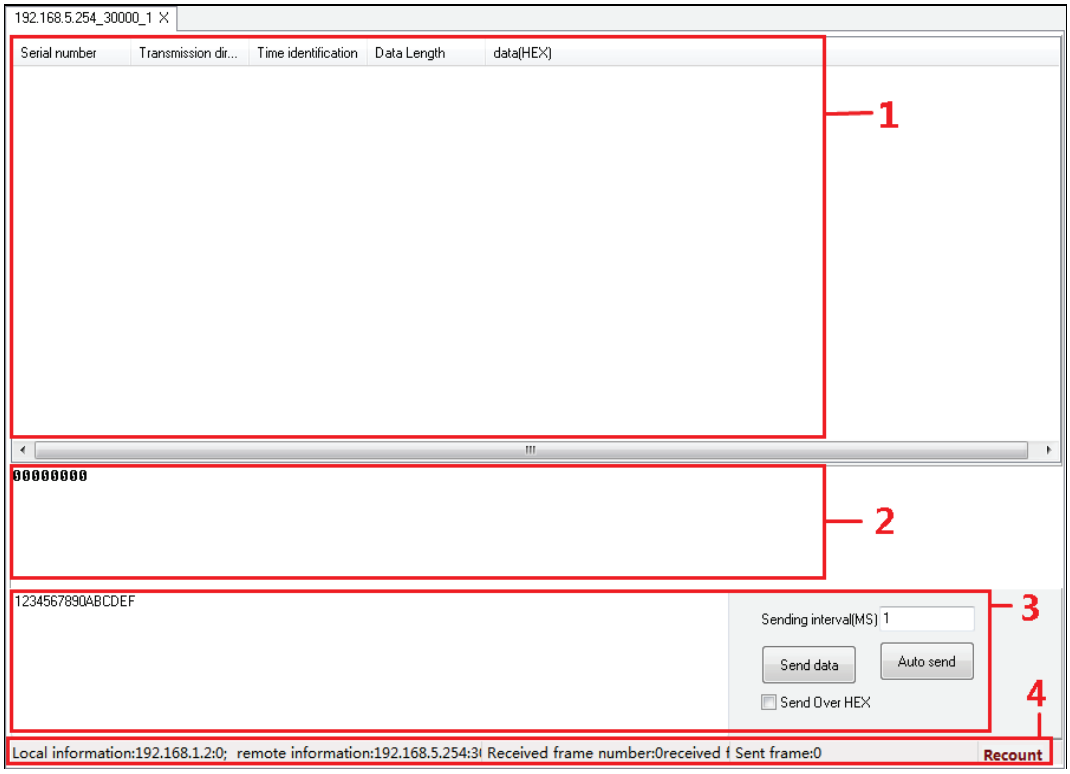


Interface Element	Description
Local IP	IP address of the local client
Device IP	IP address of connected devices
Device working port	Working port of appointed connection devices, value range is: 0-65535 Notes:

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	The device working port must be the same to "Local port" of the server.

Step 2 Enter the values of "Local IP", "Device IP", and "Device working port". Click the button of "OK". The TcpClient interface as follows.



1. Data receiving and transmission area
2. Detailed data area
3. Sending data area
4. Information area

TcpClient interface parameters description

Interface Element	Description
Data receiving and transmission area	**Display details of data receiving and transmission**
Serial number	Serial numbers of information
Transmission direction	Data transmission direction: • Receive • Send
Time identification	The specific time of sending or receiving data, hour: minute: second: millisecond

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Data Length	Length of transmitted or received data
data (HEX)	The details of transmitted or received data, the data is a hexadecimal value.
Detailed data area	**When a piece of overlength information is displayed incompletely in the data receiving and transmission area, user can select this information. The detailed information, including hexadecimal and ASCII values, is displayed in the detailed data area.**
Sending data area	**Send data manually or automatically**
1234567890ABCDEF	The content of transmitted data can be manually modified Notes: After ticking the "Hexadecimal Send" check box on the right side, the value entered for modification must be hexadecimal.
Sending interval	Set the time interval for automatically sending data
Send data	Click the button to send data
Auto send	Click the button to send data automatically
Send Over HEX	Radio box of hexadecimal sending • When this option is checked, the sending content is the hexadecimal value. • When this option is not checked, the sending content is the ASCII value.
Information area	**Information display area**
Local information	Local IP address and port number
remote information	Remote IP address and port number
Received frame number	Number of received frames
Sent frame	Number of transmitted frames
Recount	Click this option to recalculate the number of received and transmitted frames

Step 3 End.

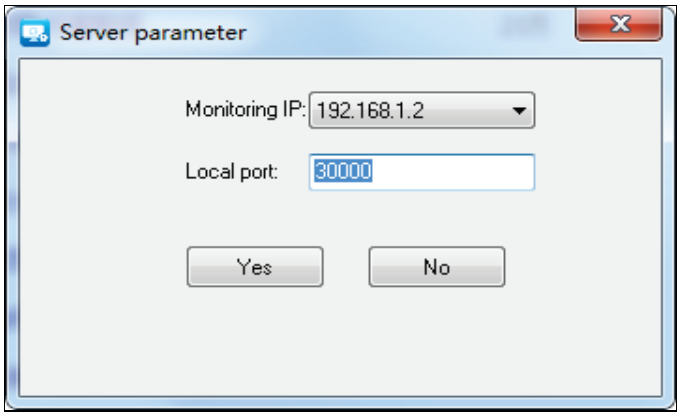
4.2 TcpServer

Function Description

On the page of TcpServer, user can create a Tcp server.

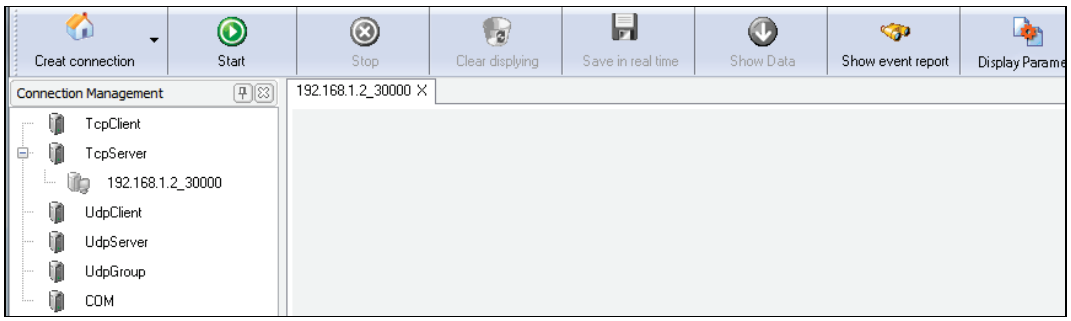
Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > TcpServer".Pop up the window of "Server parameter" as below.



Interface Elements	Description
Monitoring IP	The IP address of the server
Local port	Ports monitored by local server, value range is: 0-65535

Step 2 Enter the values of "Monitoring IP" and "Local port" and click the button of "OK". The TcpServer interface is shown as below.



Step 3 End.

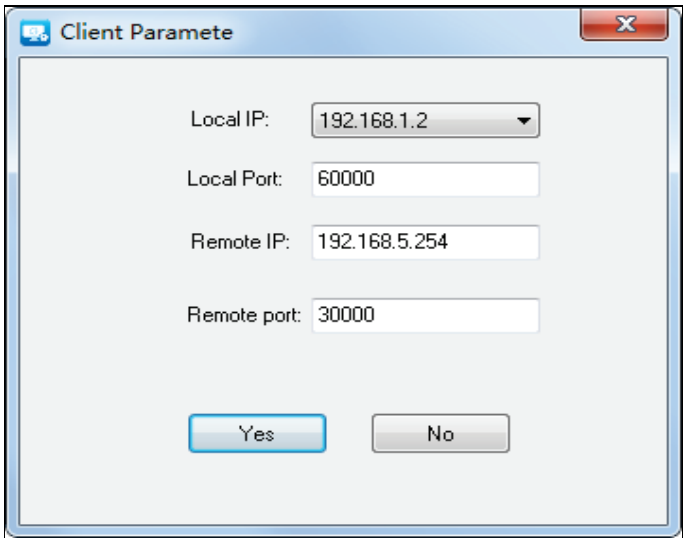
4.3 UdpClient

Function Description

On the page of Udp Client, user can create an Udp client.

Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > UdpClient".Pop up the window of "Client parameter" as below.



Interface Elements	Description
Local IP	IP address of the local client
Local Port	Port of local client
Remote IP	IP address of remote server
Remote port	Port of remote server

Step 2 Enter the values of "Local IP", "Local Port", "Remote IP" and "Remote port". Click the button of "Yes" to pop up the UdpClient interface. Specific parameters description can refer to "TcpClient Interface Parameters Description" in the chapter of "TcpClient".

Step 3 End.

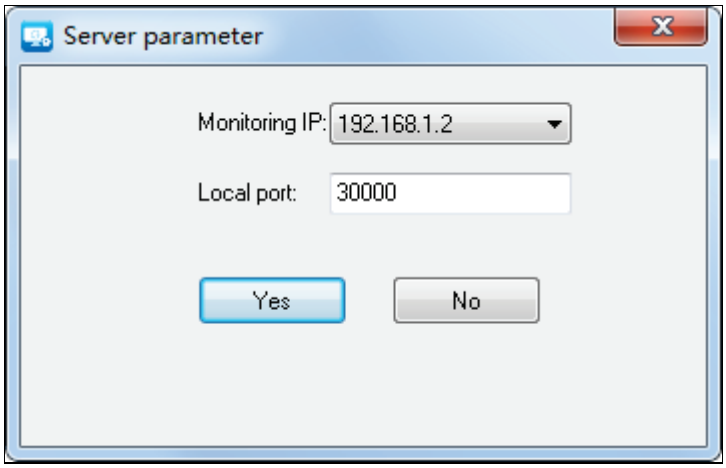
4.4 UdpServer

Function Description

On the page of UdpServer, user can create an Udp server.

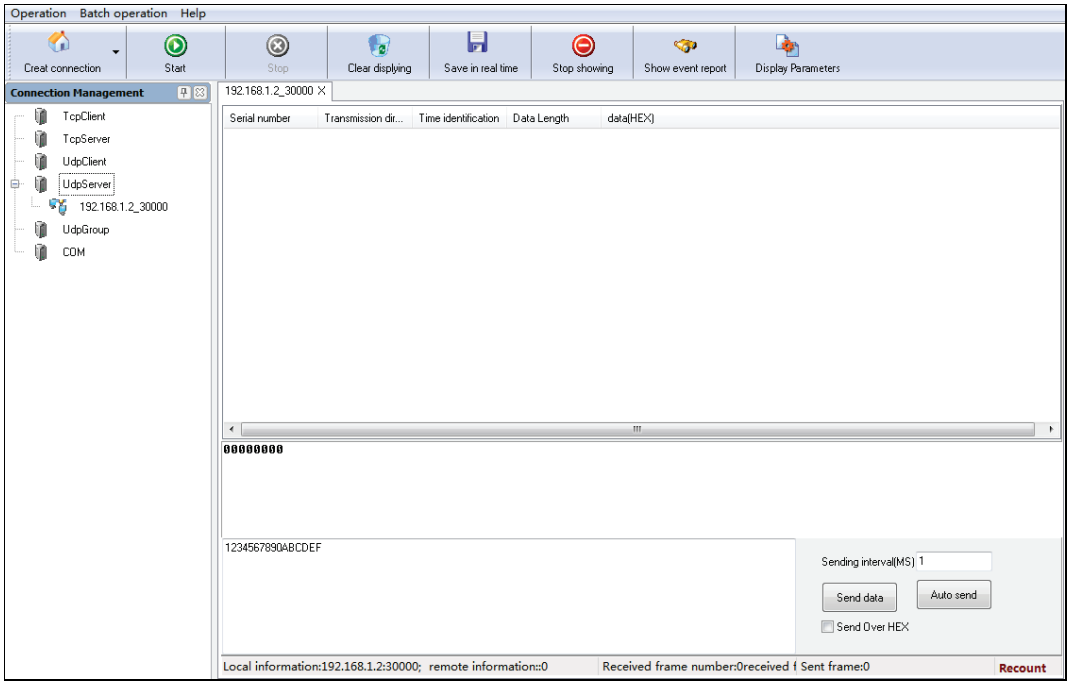
Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > UdpServer".Pop up the window of "Server parameter" as below.



Interface Elements	Description
Monitoring IP	The IP address of the server
Local port	Ports monitored by local server, value range is: 0-65535

Step 2 Enter the values of "Monitoring IP" and "Local port" and click the button of "OK". The UdpServer interface is shown as below.Specific parameter description can refer to "TcpClient Interface Parameter Description" in the chapter of "TcpClient".



Step 3 End.

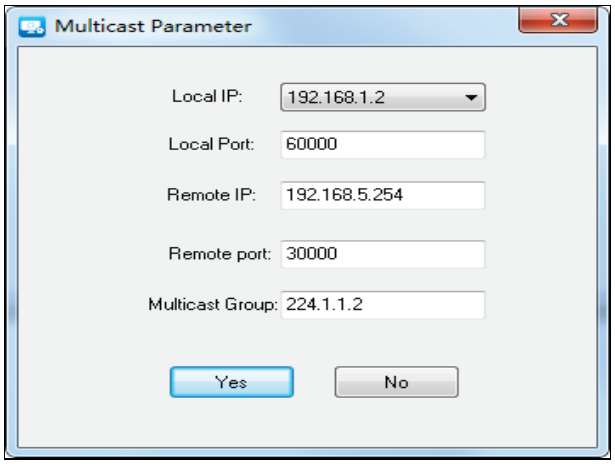
4.5 UdpGroup

Function Description

On the page of Udp Group, user can create an Udp group.

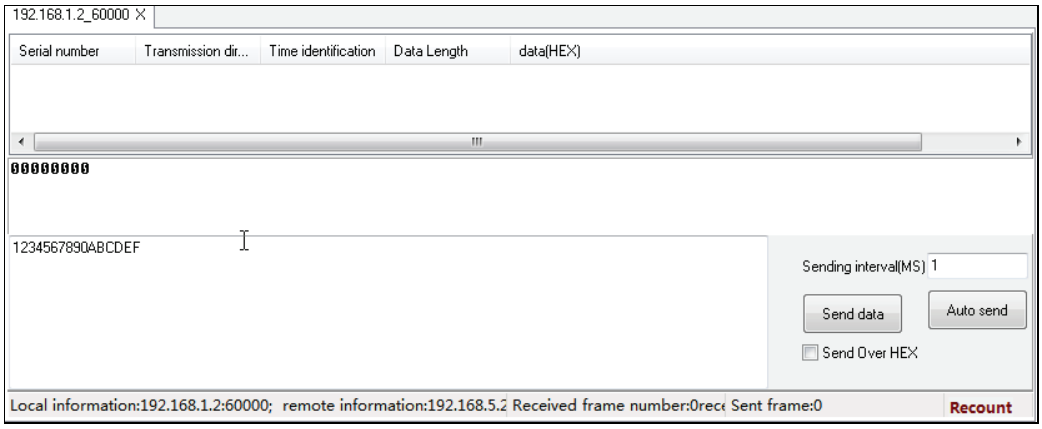
Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > UdpGroup". The pop-up "Udp Multicast Parameters" window is shown as below.



Interface Elements	Description
Local IP	The local IP address
Local Port	Local port
Remote IP	remote IP address can be either a single IP or a multicast IP Notes: When the remote IP is a single IP, it will be transmitted in the form of unicast; when the remote IP is a multicast IP, it will be transmitted in the form of multicast.
Remote port	Remote port
Multicast Group	The multicast IP where the device is located, the device can receive the network data of the multicast IP.

Step 2 Enter the values of each parameter and click the button of "OK". The UdpGroup interface is shown as below.Specific parameters description can refer to "TcpClient Interface Parameter Description" in the chapter of "TcpClient".

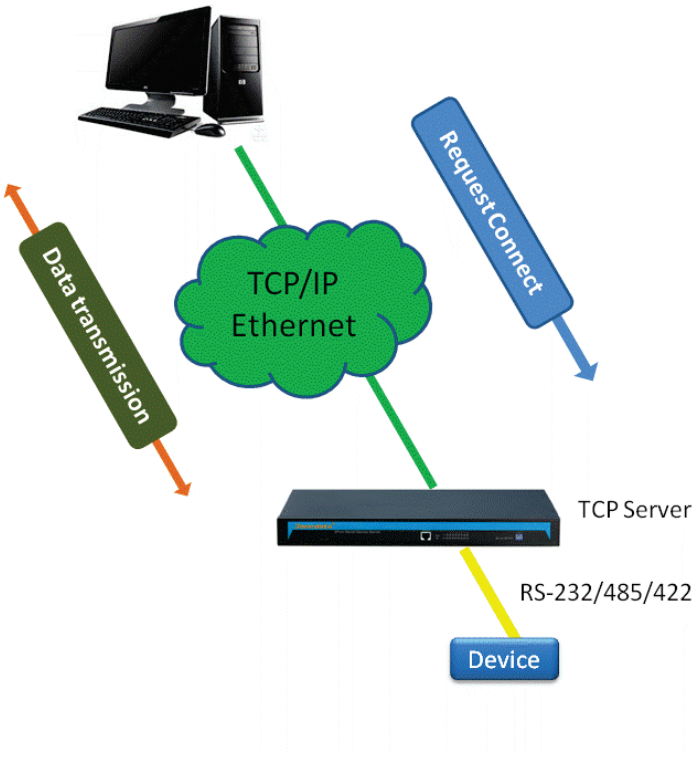


Step 3 End.

4.6 Examples of Operating Mode Configuration

4.6.1 TCP Server Mode (TCP Server Mode)

Background Introduction



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Under the TCP server mode, the serial device server is assigned an IP port number, passive waiting for the host connection.When the host initiates a connection request and establishes a connection with the serial device server, the host can realize bidirectional transparent data transmission through the network connection and the serial port.The TCP server mode supports up to four session connections simultaneously, allowing multiple hosts to simultaneously read or send Ethernet data to a serial device.

Assuming that the serial port "COM1" of the serial server is operating in the "TCP server mode", passively waiting for one host PC to connect, and the host can read or send Ethernet data to a serial device.

The parameters of the serial server (TCP server) are as follows:

- IP Address: 192.168.1.250
- Local Port: 30000
- BaudRate: 115200
- PairtyBits: None
- DataBits: 8
- StopBits: 1

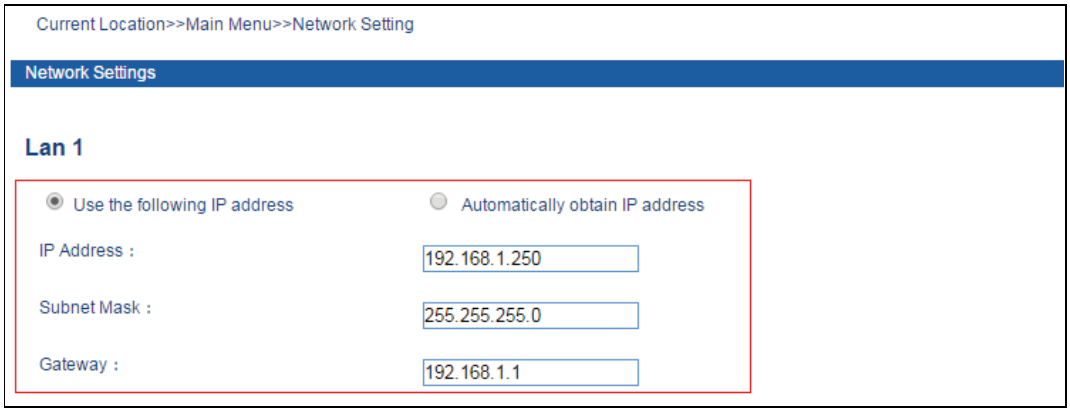
Create TCP client for the host in the software of “Debug Tool”. The parameters information of the host PC (TCP client) as follows:

- IP Address: 192.168.1.61

Operation steps

Setp 1 Configure the IP address of the serial server.

1. Log in to the Web configuration interface and select "Network Setting > Lan 1".

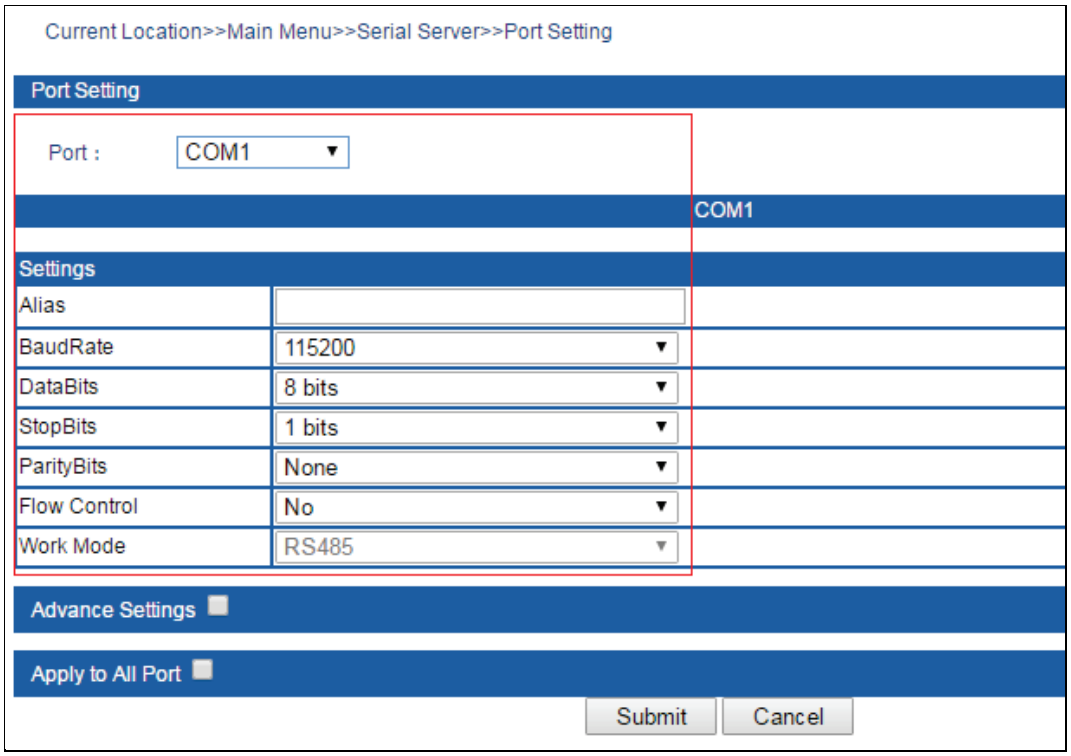


2. In the option box of "Use the following IP address", enter the "IP address", "Subnet Mask" and "Gateway address" corresponding to the serial server.
3. Other parameters remain the default, click "submit".

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Setp 2 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Serial Server> COM Settings".

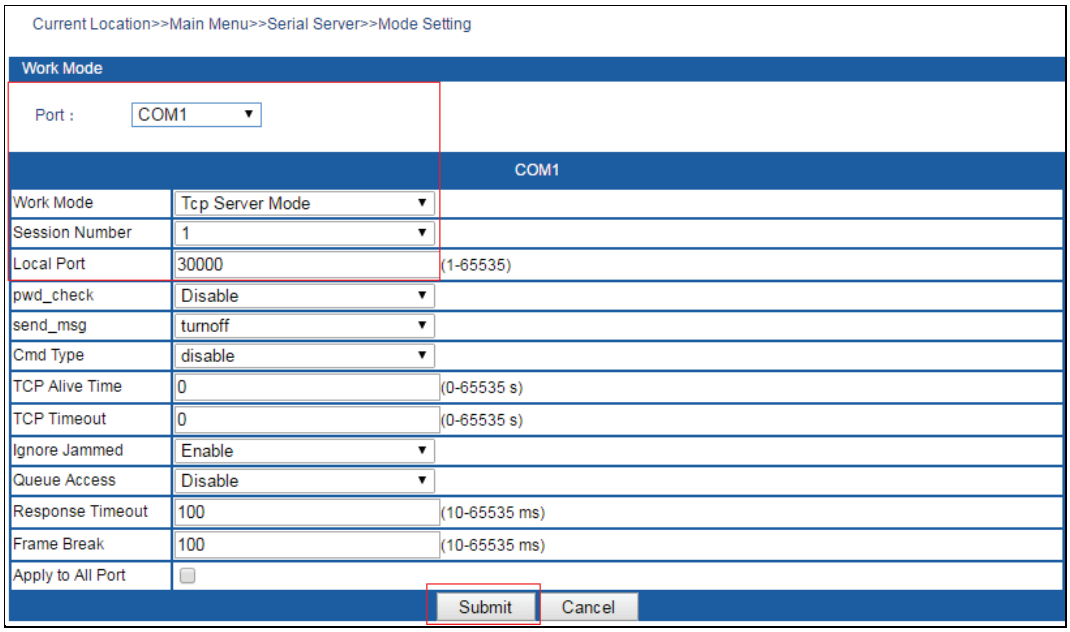


2. Select "COM1" in the "Port" drop-down list.
3. Set the "BaudRate", "DataBits", "StopBits" and "ParityBits" in the "Settings" option box.
4. Other parameters remain the default, click "submit".

Setp 3 Configure the working mode of the serial server.

1. Log in to the Web configuration interface and select “Serial Server> COM Mode Settings”.

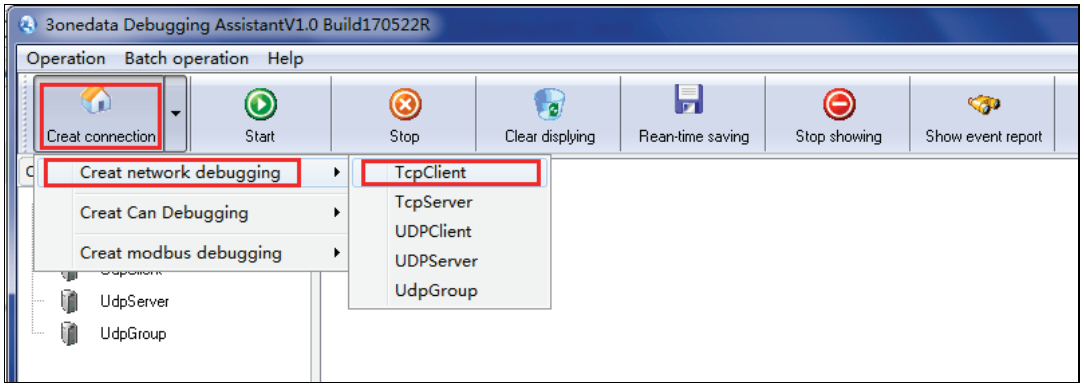
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2. Select “COM1” in the “Port” drop-down list.
3. Click the "Work Mode" drop-down list box and select "TCP Server Mode".
4. Click the "Session Number" drop-down list box and select "1".
5. Enter "30000" in the "Local Port" text box.
6. Other parameters remain the default, click “submit”.

Setp 4 Run the "DebugTool” software, for the host to create TCP client.

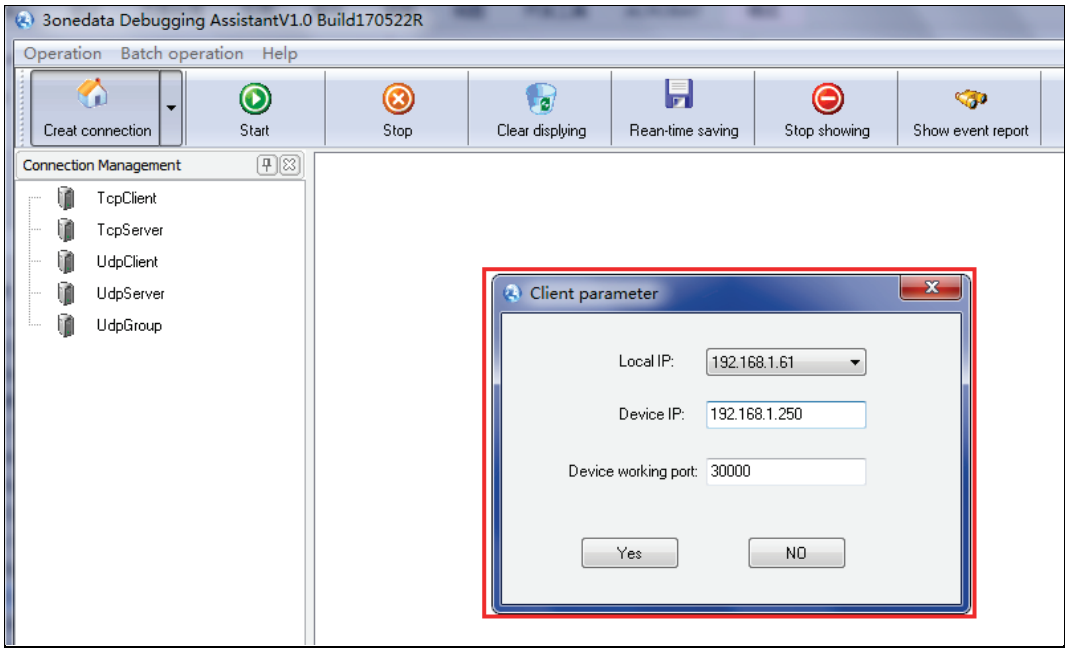
1. To install and run "DebugTool” Software, click “Create Connection” drop-down list box and choose “Create Network Debugging> TcpClient”.



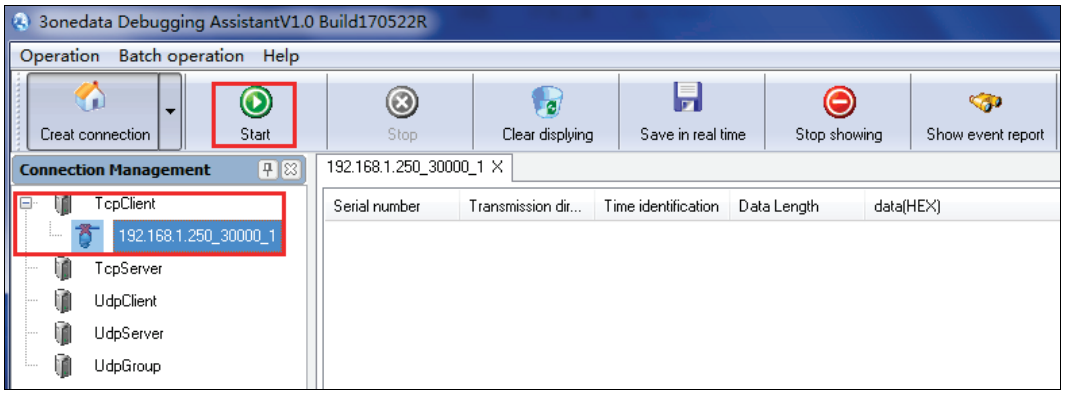
2. In the "Local IP" drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the TCP client).
3. In the "Device IP" text box, enter the IP address "192.168.1.250" of the serial server (that is, the TCP server).
4. In the “Device Working Port” text box, enter the local port "30000" of the serial

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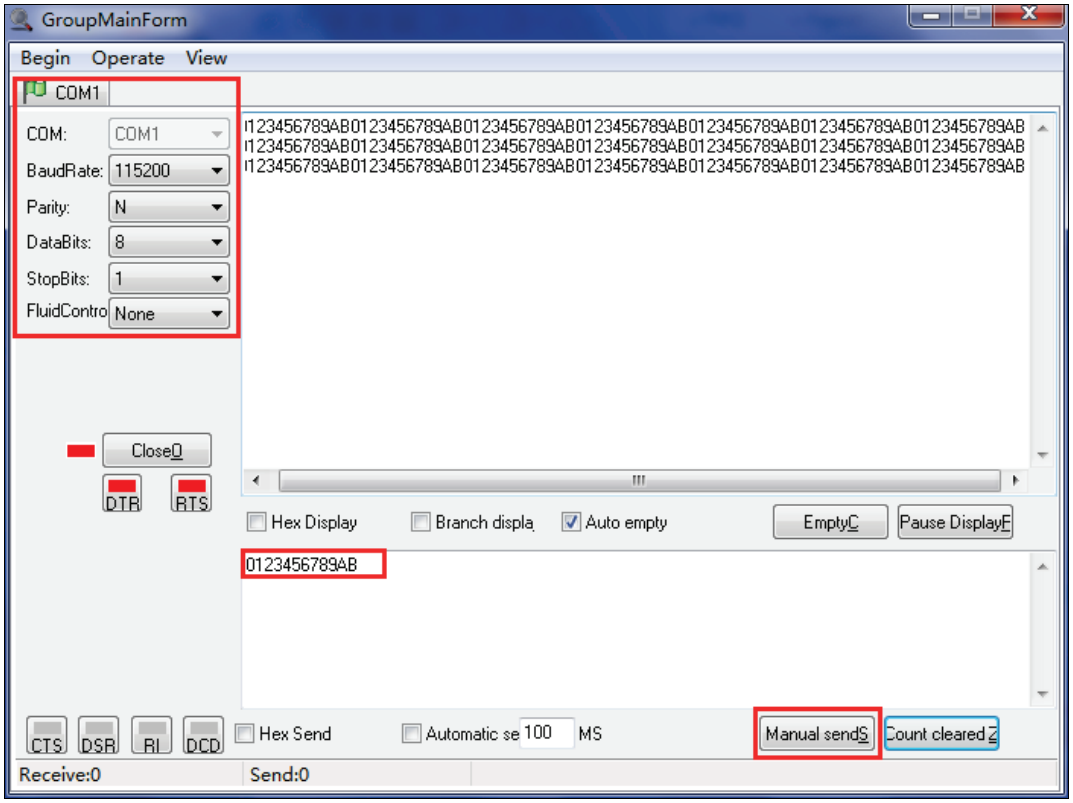
server (that is, the TCP server), and click “OK”.



5. Select the TcpClient connection you created and click “Start”.

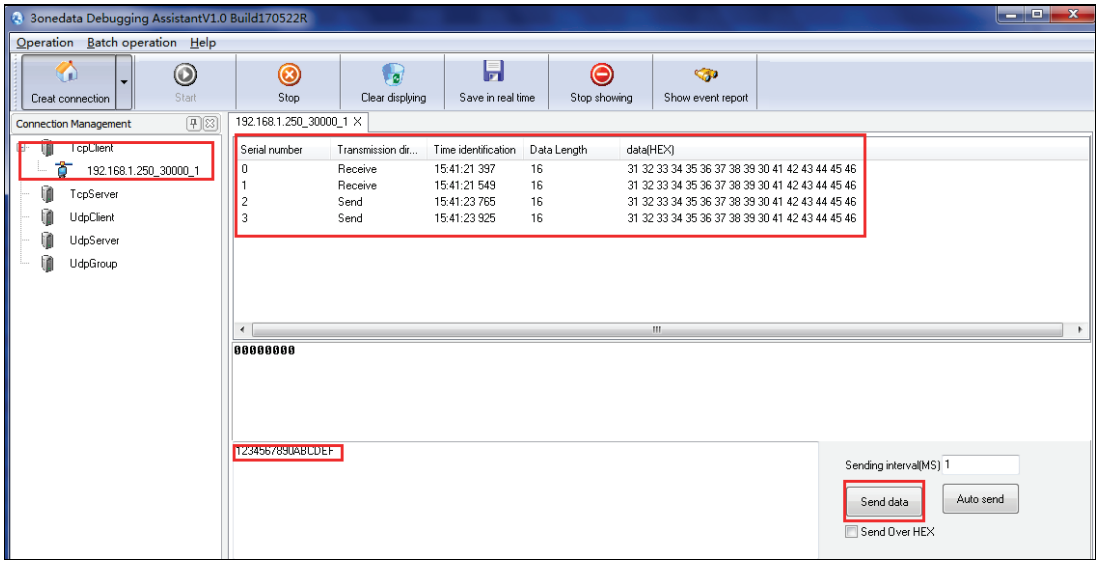


Setp 5 Synchronize the operation of the "ComTest3One" and "DebugTool" software, test the serial server (TCP server) and the host PC (TCP client) to communicate with each other.



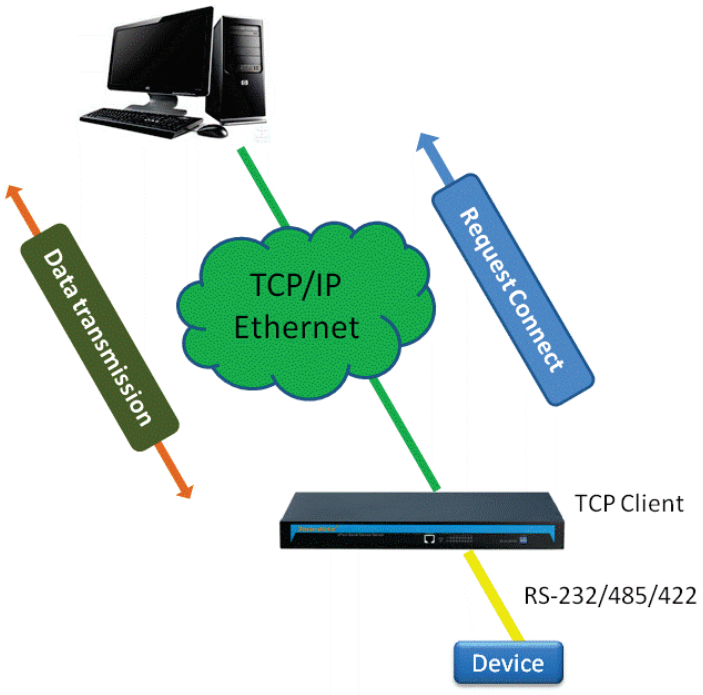
1. Install and run the “ComTest3One” software, click “Begin” menu “New Windows”.
2. Add serial port "COM1" window, configure the COM, BaudRate, parity, DataBits and other parameters and WEB interface "COM settings" consistent.
3. Open the "COM1" serial port signal, for example, enter the serial information "0123456789AB", and click “Manual Send”.
4. Run the "DebugTool" software, in the TcpClient option box to view the host PC to receive the serial information.Similarly, the host PC can also send information to the serial device.

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4.6.2 TCP Client Mode (TCP Client Mode)

Background Introduction



Under the TCP client mode, the serial device server can automatically establish a network connection with the host specified by the user when the serial data

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arrives.When the data transmission is completed, the serial server will automatically shut down the network connection according to the parameters such as TCP alive time and TCP idle timeout time.Similarly, TCP client mode can support up to four session connections at the same time, so that multiple hosts can simultaneously read or send Ethernet data to a serial device.

Assuming that the serial port "COM1" of the serial server is working in "TCP client mode", it initiates a connection with a host PC, and the host can read or send Ethernet data to a serial device.

When the data transfer is completed, the serial server will automatically shut down the network connection after 30 seconds.

The parameters of the serial server (TCP client) are as follows:

- IP Address: 192.168.1.250
- Local Port: 30000
- BaudRate: 115200
- PairtyBits: None
- DataBits: 8
- StopBits: 1

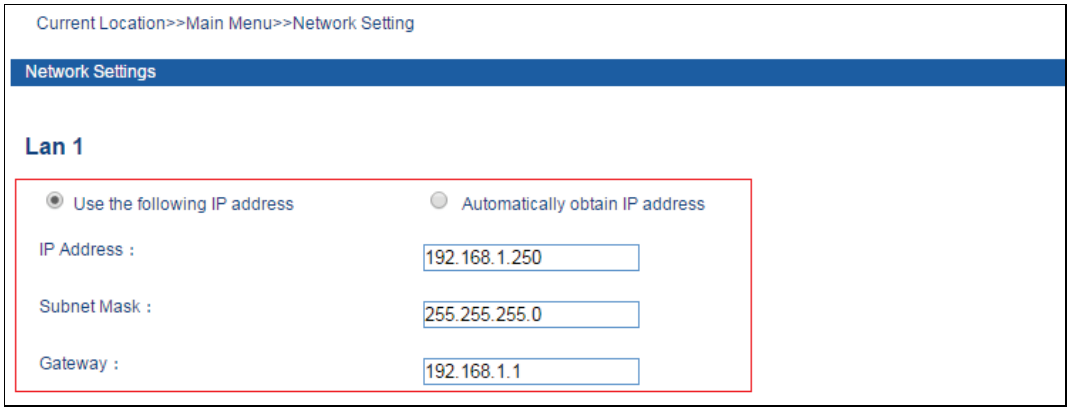
Create TCP server for the host in the software of “Debug Tool”. The parameters information of the host PC (TCP server) as follows:

- IP Address: 192.168.1.61
- Local Port: 31000

Operation steps

Setp 1 Configure the IP address of the serial server.

1. Log in to the Web configuration interface and select “Network Setting”.



2. In the "Use the following IP address" option box, enter the "IP address", "Subnet

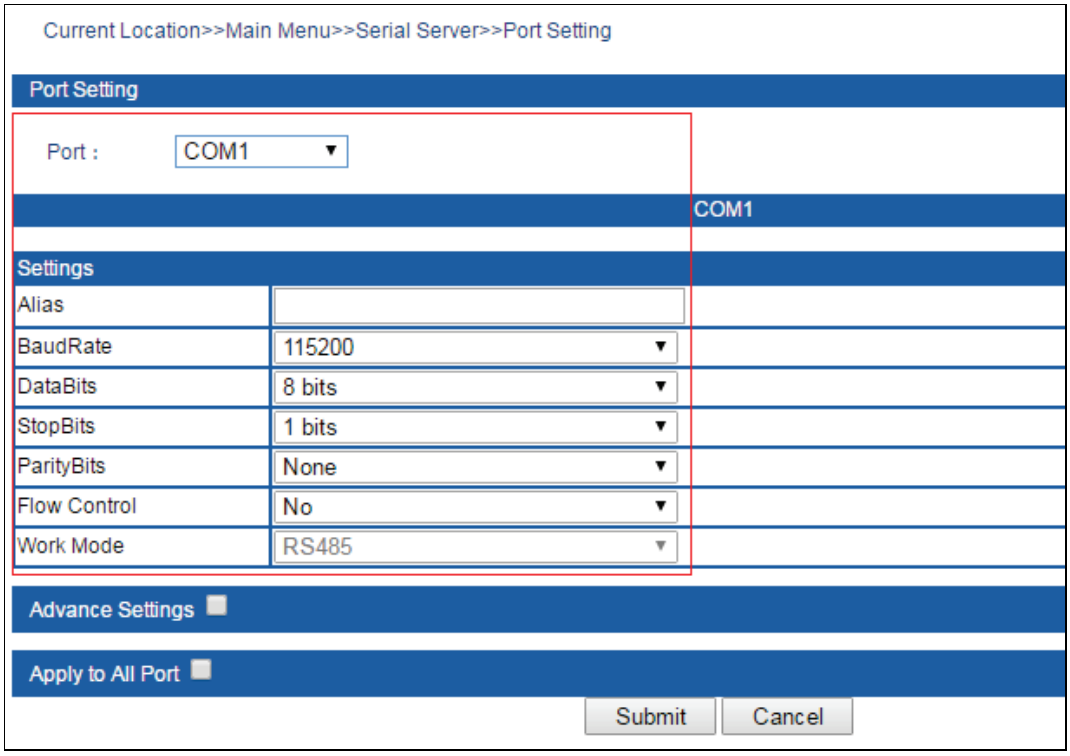
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Mask" and "Gateway address" corresponding to the serial server.

3. Other parameters remain the default, click “submit”.

Setp 2 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Serial Server> COM Settings".

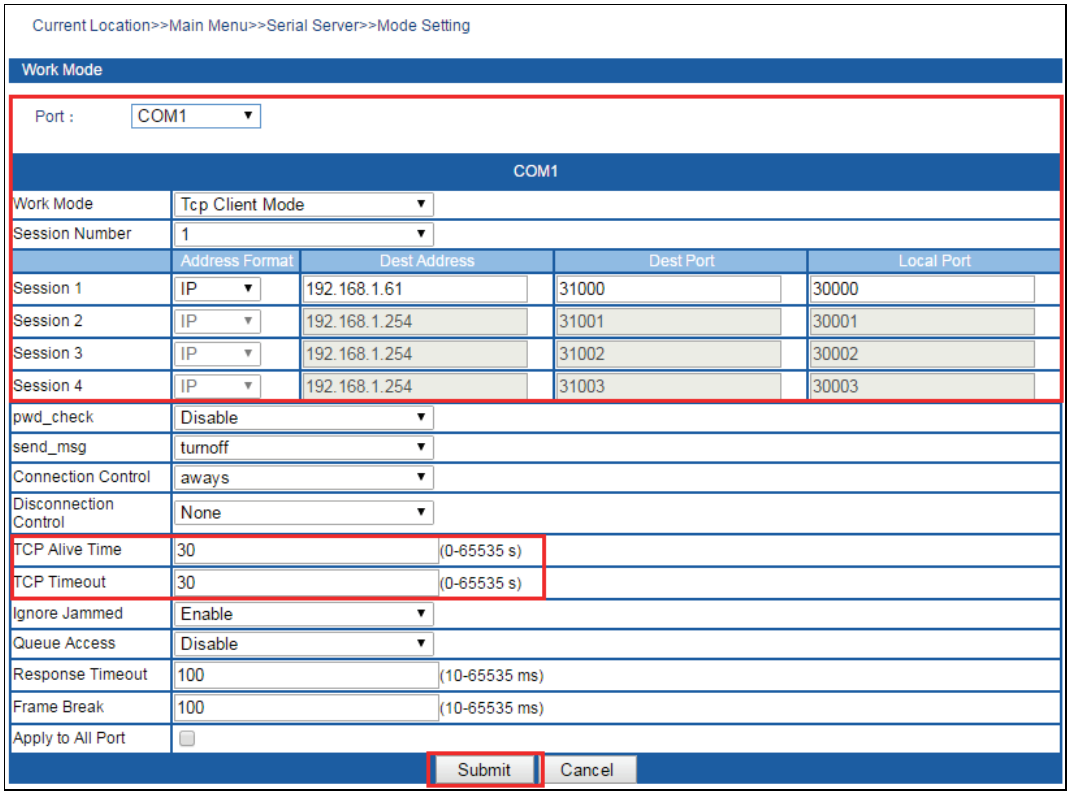


2. Log in to the Web configuration interface and select "Serial Server> COM Settings".
3. Select “COM1” in the “Port” drop-down list.
4. Set the "BaudRate", "DataBits", "StopBits" and "ParityBits" in the "Settings" option box.
5. Other parameters remain the default, click “submit”.

Setp 3 Configure the working mode of the serial server.

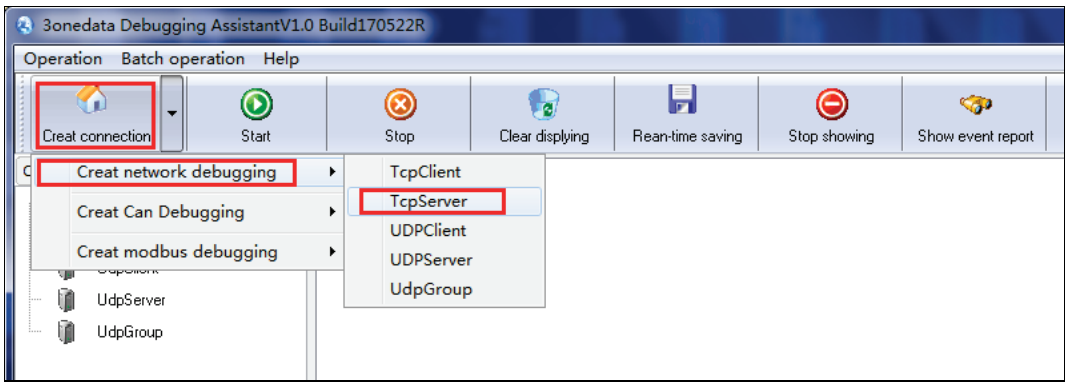
1. Select “COM1” in the “Port” drop-down list.
2. Click the "Work Mode" drop-down list box and select "TCP Client Mode".
3. Click the "Session Number" drop-down list box and select "1".
4. Enter the IP address "192.168.1.61" of the host PC in the "Dest address" text box.
5. Enter the local port number "31000" of the host PC in the "Dest port" text box.
6. Enter the local port number "30000" of the serial server in the "Local port" text box.
7. Enter "30" in the "TCP Alive Time" and "TCP Timeout" text boxes.
8. Other parameters remain the default, click “submit”.

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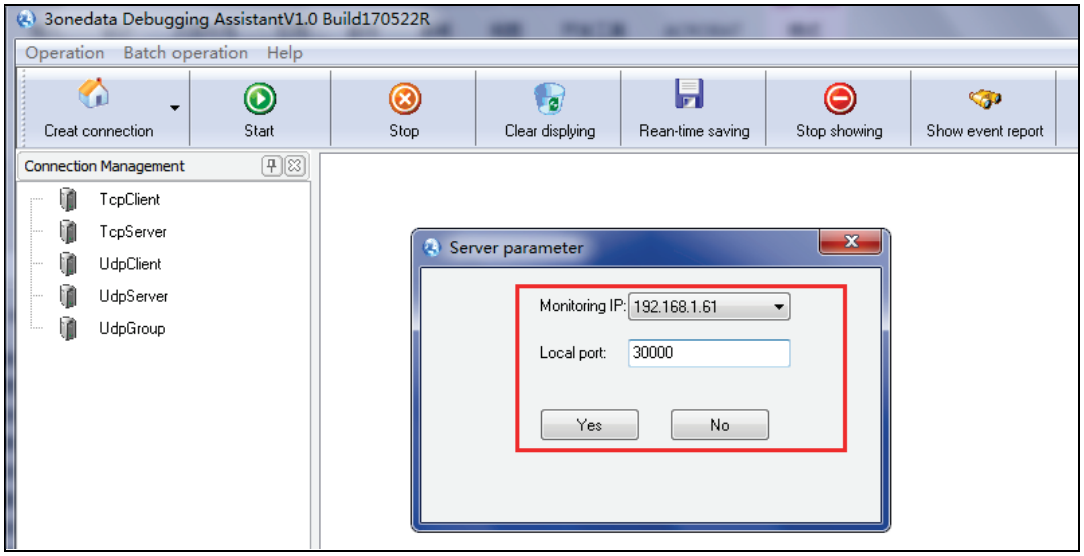


Setp 4 Run the "DebugTool" software, for the host to create TCP server.

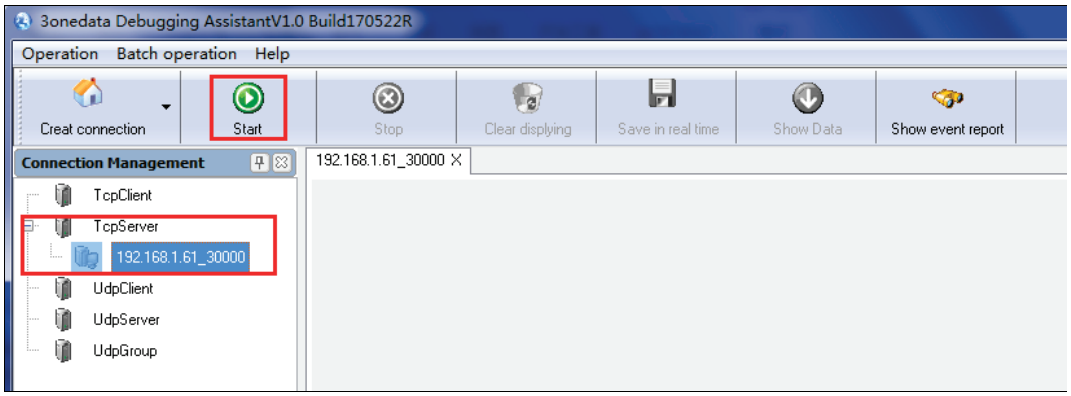
1. To install and run "DebugTool" Software, click “Create Connection” drop-down list box and choose “Create Network Debugging> TcpServer”.



2. In the “Monitoring IP” drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the TCP server).
3. In the "Local Port" text box, enter the local port "31000" of the host PC (that is, the TCP server) and click "OK".

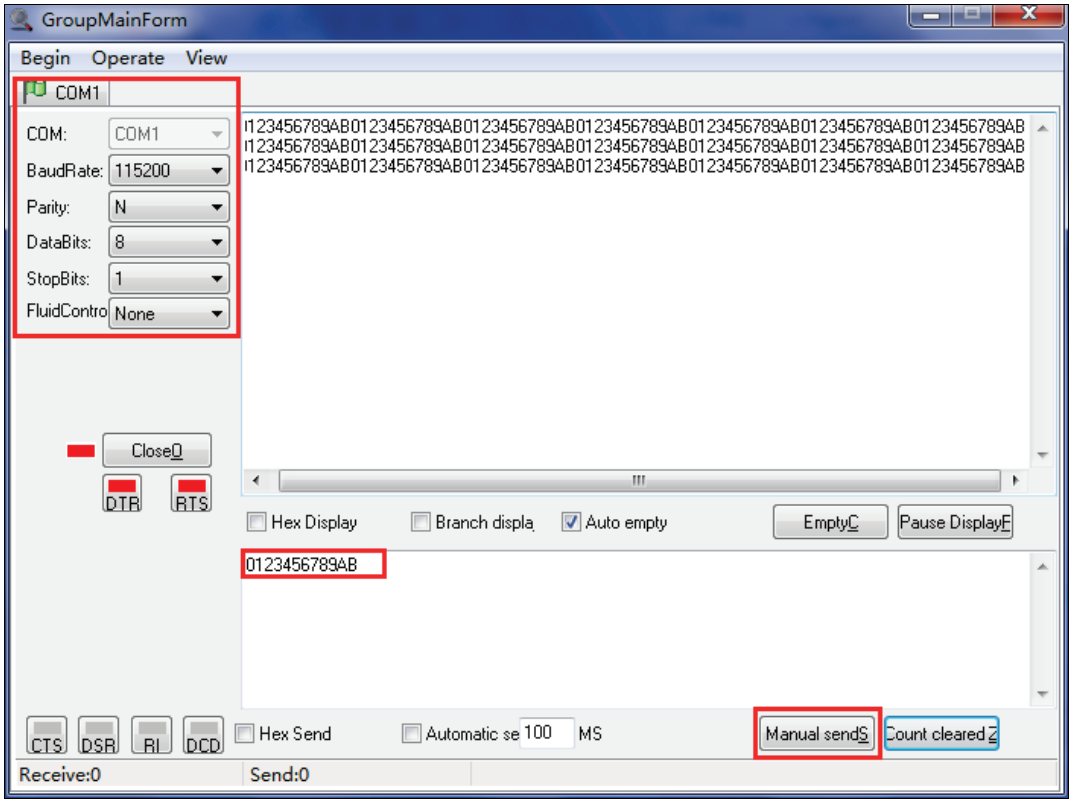


4. Select the TcpServer connection you created and click “Start”.

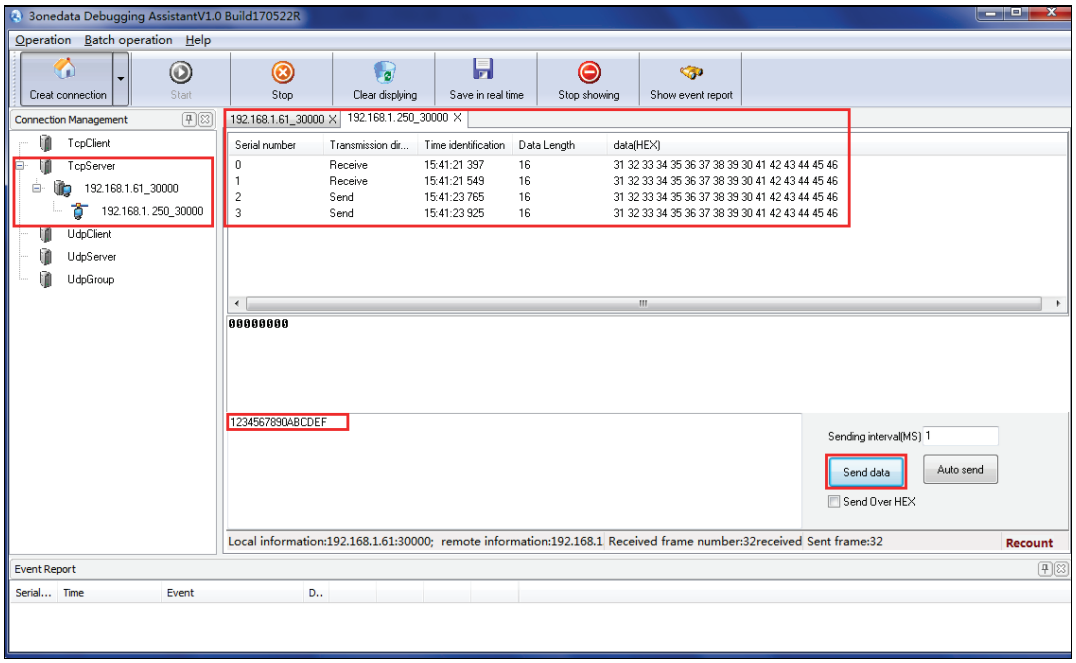


Setp 5 Simultaneous operation of the "DebugTool" and "ComTest3One" software, test the serial server (TCP client) and the host PC (TCP server) to communicate with each other.

1. Install and run the “ComTest3One” software, click “Begin” menu “New Windows”.

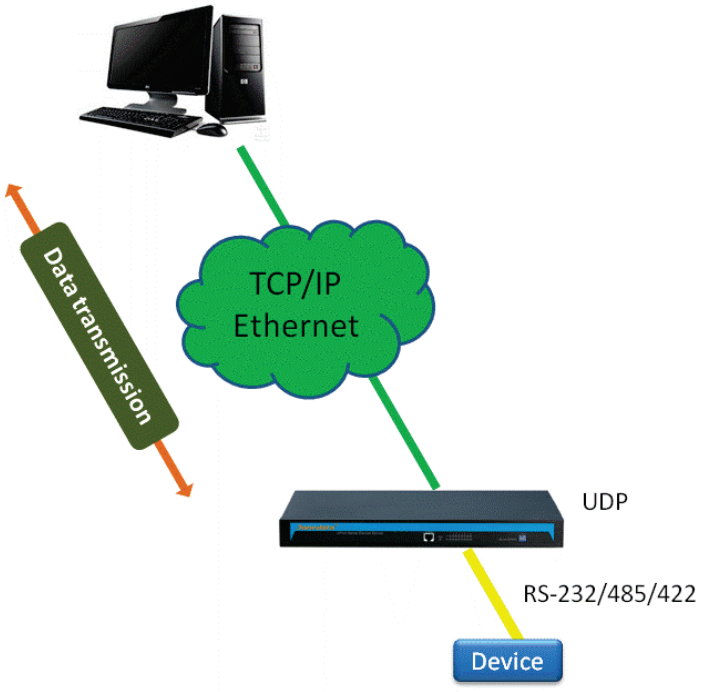


2. Add serial port “COM1” window, configure the COM, BaudRate, parity, DataBits and other parameters and WEB interface “COM settings” consistent.
3. Open the “COM1” serial port signal, for example, enter the serial information “0123456789AB”, and click “Manual Send”.
4. Run the "DebugTool" software, in the TcpServer option box to see the host PC to receive the serial information. Similarly, the host PC can also send information to the serial device.



4.6.3 UDP Server Mode (UDP Server Mode)

Background Introduction



Under the UDP server mode, the serial server through the UDP protocol and user-specified host for serial data transmission.UDP mode serial device server can transfer data from the serial device to one or more hosts, and the serial device server can also receive data from one or more hosts.Compared with TCP mode, UDP protocol is faster and more efficient.

Assuming that the serial port "COM1" of the serial server is operating under "UDP server mode", passively waiting for one host PC to connect, and the host can read or send Ethernet data to a serial device. Compared with TCP mode, UDP protocol is faster and more efficient.

The parameters of the serial server (UDP server) are as follows:

IP Address: 192.168.1.250

Local Port: 30000

BaudRate: 115200

PairtyBits: None

DataBits: 8

StopBits: 1

The parameters of the host PC (UDP client) are as follows:

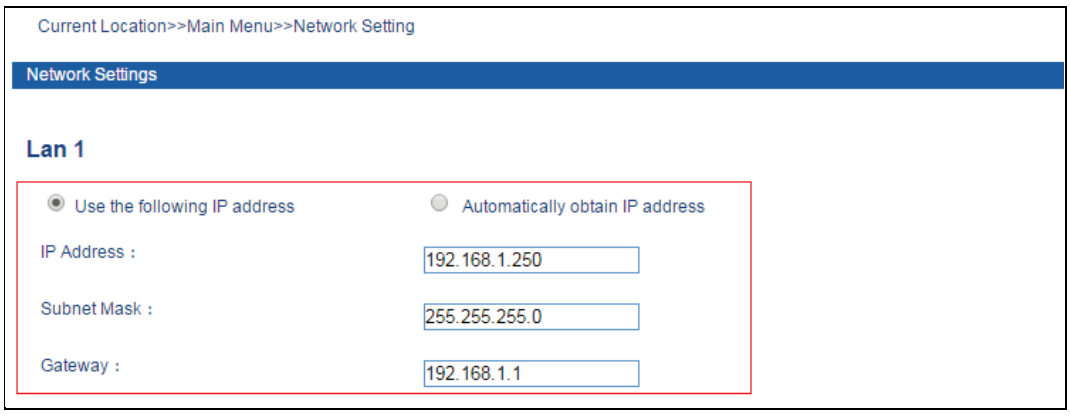
IP Address: 192.168.1.61

Local Port: 31000

Operation steps

Setp 1 Configure the IP address of the serial server.

1. Log in to the Web configuration interface and select “Network Setting > Lan 1”.



2. In the "Use the following IP address" option box, enter the "IP address", "Subnet

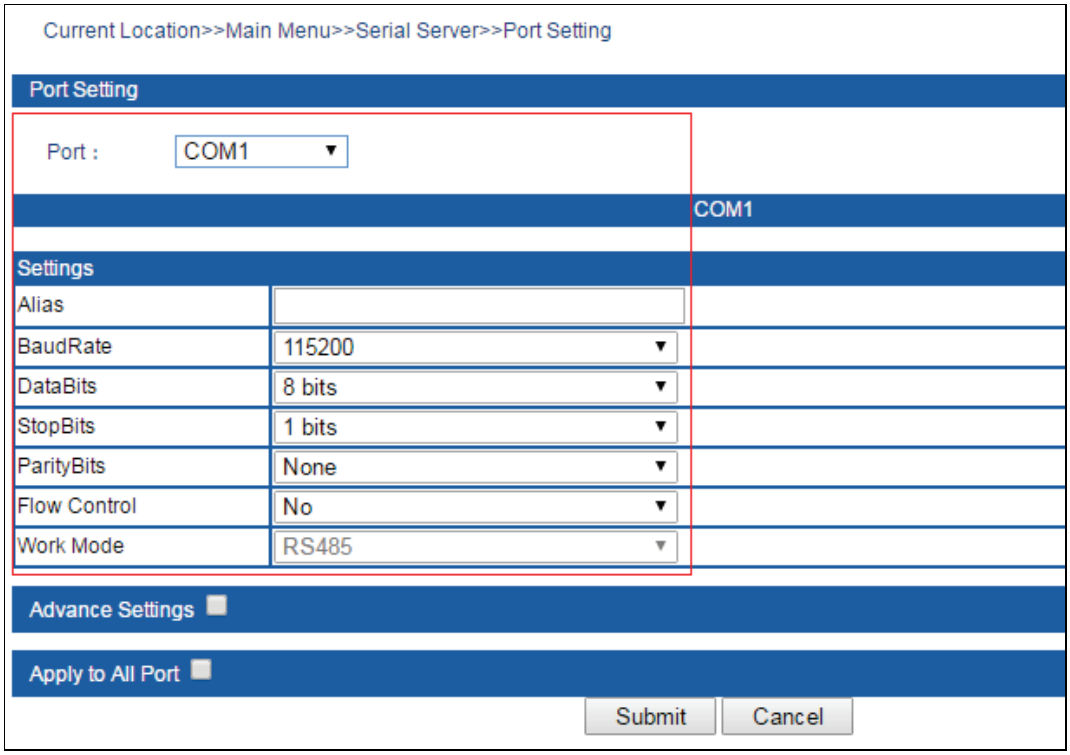
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Mask" and "Gateway address" corresponding to the serial server.

3. Other parameters remain the default, click “submit”.

Setp 2 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Serial Server> COM Settings".

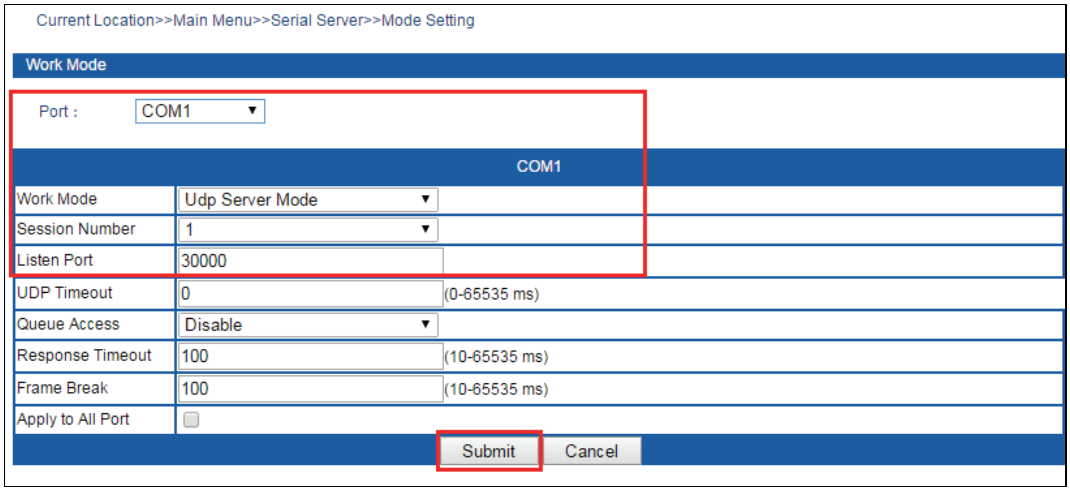


2. Select “COM1” in the “Port” drop-down list.
3. Set the “BaudRate”, “DataBits”, “StopBits” and “ParityBits” in the “Settings” option box.
4. Other parameters remain the default, click “Submit”.

Setp 3 Configure the working mode of the serial server.

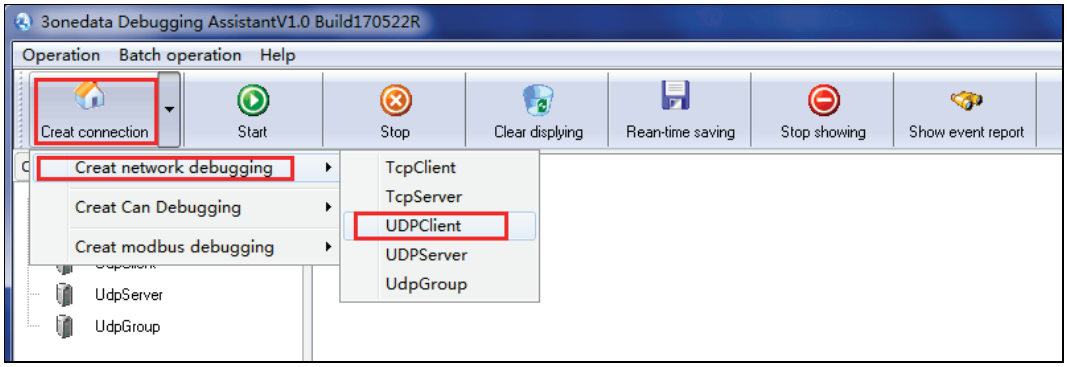
1. Log in to the Web configuration interface and select “Serial Server> COM Mode Settings”.
2. Select “COM1” in the “Port” drop-down list.
3. Click the “Work Mode” drop-down list box and select “Udp Server Mode”.
4. Click the “Session Number” drop-down list box and select “1”.
5. Enter "30000" in the "Listen port" text box.
6. Other parameters remain the default, click “Submit”.

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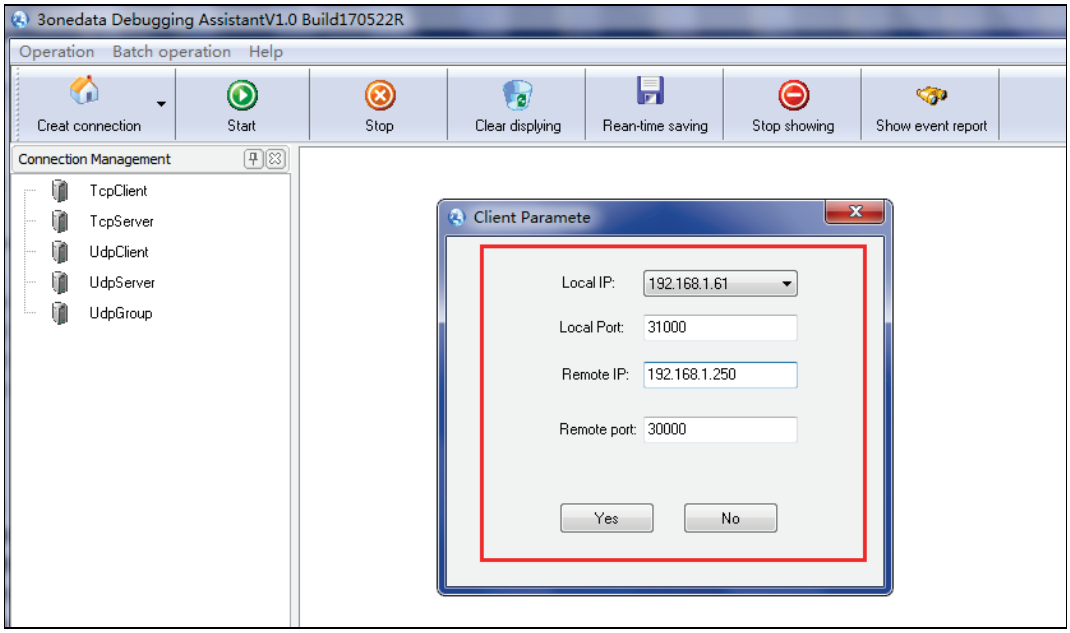


Step 4 Run the "DebugTool" software, for the host to create UDP client.

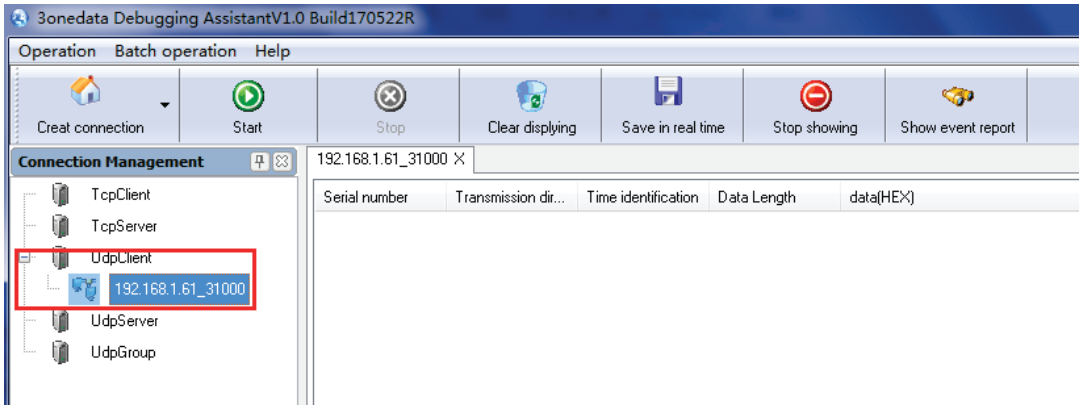
1. To install and run "DebugTool" Software, click “Create Connection” drop-down list box and choose “Create Network Debugging>UDPClient”.



2. In the "Local IP" drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the Udp client).
3. Enter the port number "31000" for the host PC (that is, the Udp client) in the "Local Port" text box.



4. Enter the IP address "192.168.1.250" of the serial server (that is, the Udp server) in the "Remote IP" text box.
5. In the “Remote Port” text box, enter the port number “30000” for the serial server (that is, the Udp server), and click “OK”.
6. Select the created UdpClient connection, click “Start”.

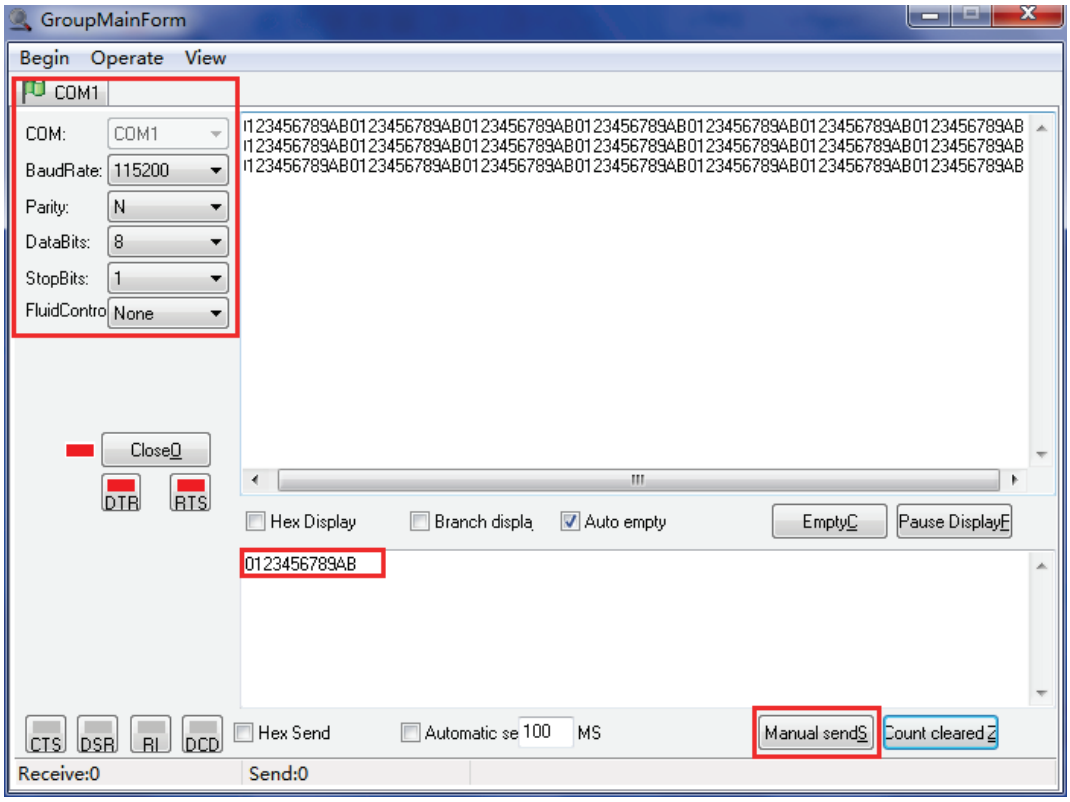


Step 5 Simultaneously run the "DebugTool" and "ComTest3One" software, test the communication between serial server (Udp server) and the host PC (Udp client).

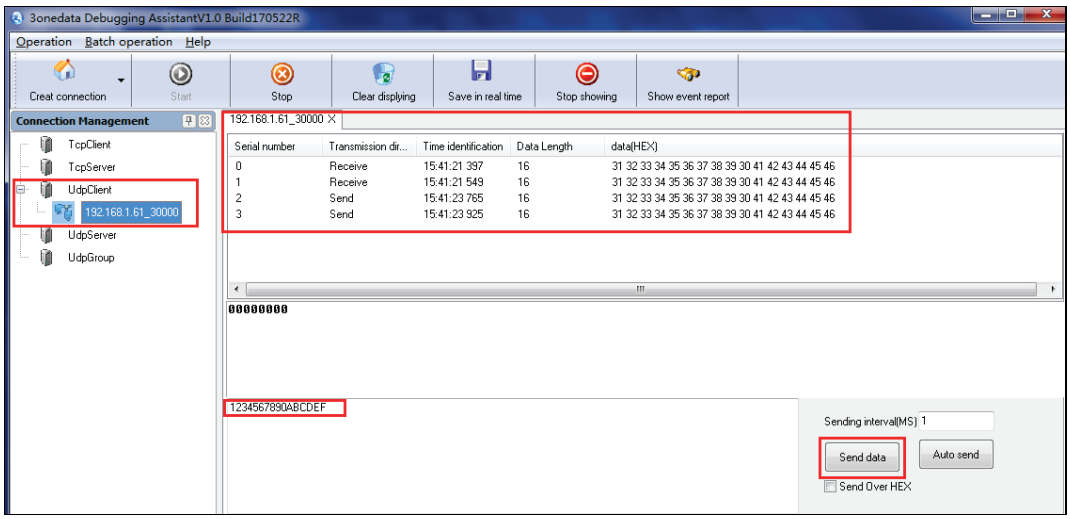
1. Install and run the “ComTest3One” software, click the “New Windows” on the menu of “Begin”.
2. Add serial port “COM1” window, configure the COM, BaudRate, parity, DataBits and other parameters and WEB interface “COM settings” consistent.
3. Open the “COM1” serial port signal, for example, enter the serial information

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"0123456789AB", and click "Manual Send".

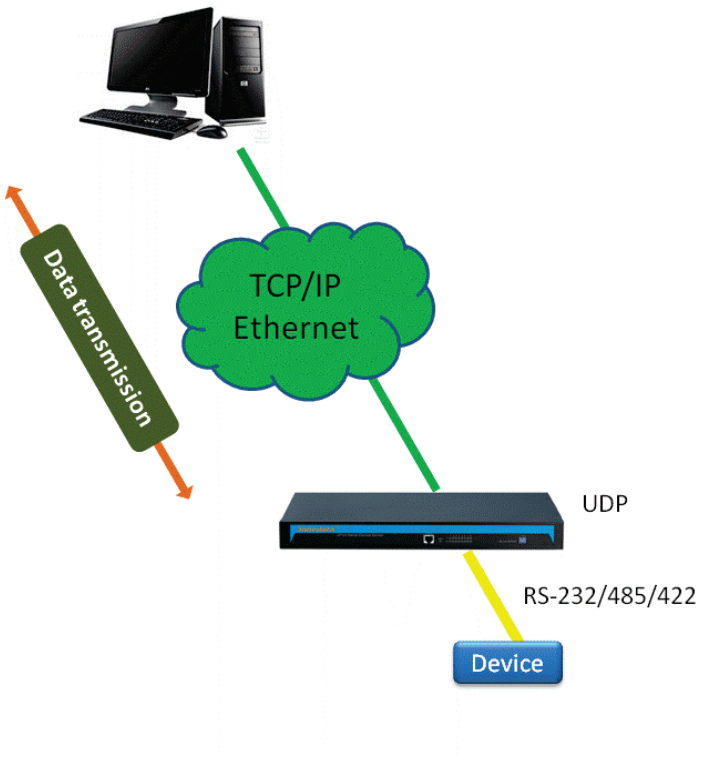


4. Run the "DebugTool" software, in the Udpclient option box to see the host PC to receive the serial information. Similarly, the host PC can also send information to the serial device.



4.6.4 UDP Client Mode (UDP Client Mode)

Background Introduction



In UDP Client mode, the serial server through the UDP protocol and user-specified host for serial data transmission. UDP mode serial device server can transfer data from the serial device to one or more hosts, and the serial device server can also receive data from one or more hosts. Compared with TCP mode, UDP protocol is faster and more efficient.

Assuming that the serial port "COM1" of the serial server works in the "UDP client mode", it initiates a connection with a host PC, and the host can read or send Ethernet data to a serial device. Compared with TCP mode, UDP protocol is faster and more efficient.

The parameters of the serial server (UDP client) are as follows:

IP Address: 192.168.1.250

Local Port: 30000

BaudRate: 115200

PairtyBits: None

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DataBits: 8

StopBits: 1

The parameters of the host PC (UDP server) are as follows:

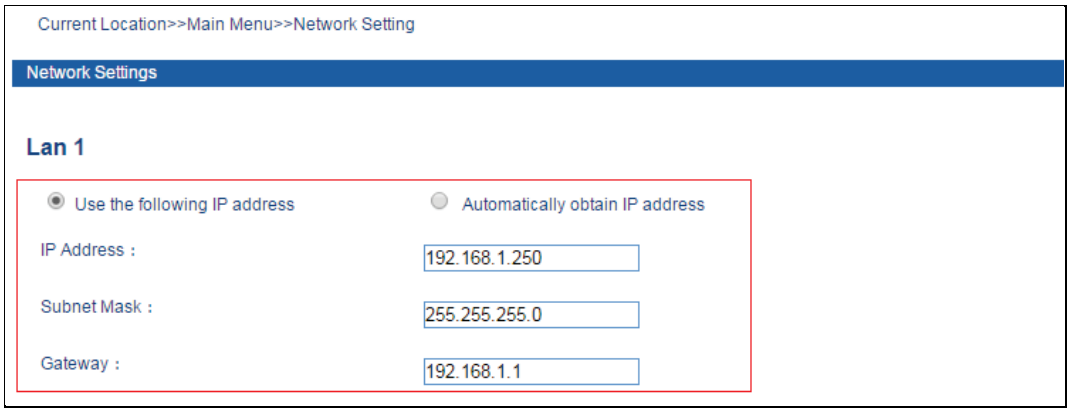
IP Address: 192.168.1.61

Local Port: 31000

Operation steps

Setp 1 Configure the IP address of the serial server.

1. Log in to the Web configuration interface and select “Network Setting”.

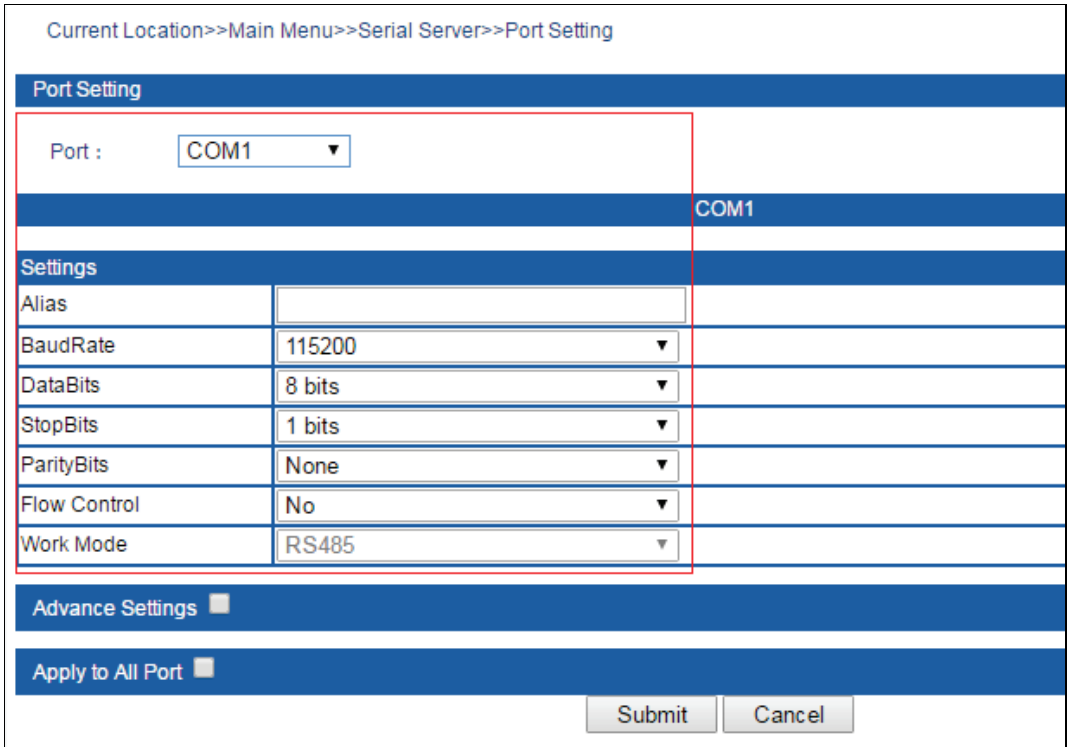


2. In the "Use the following IP address" option box, enter the "IP address", "Subnet Mask" and "Gateway address" corresponding to the serial server.
3. Other parameters remain the default, click “Submit”.

Setp 2 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Serial Server> COM Settings".

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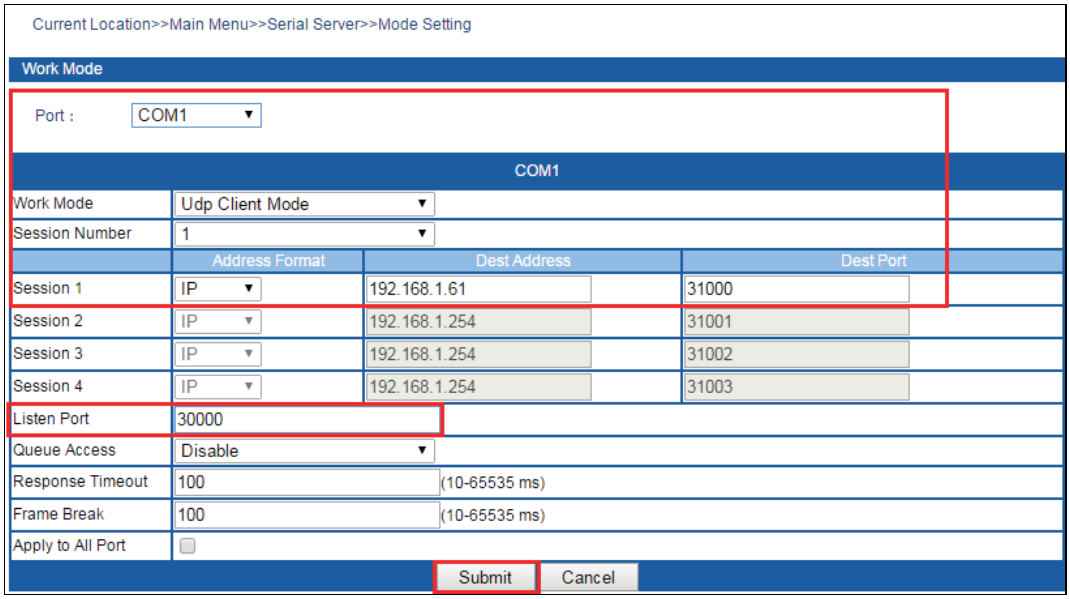


2. Select “COM1” in the “Port” drop-down list.
3. Set the “BaudRate”, “DataBits”, “StopBits” and “ParityBits” in the “Settings” option box.
4. Other parameters remain the default, click “Submit”.

Setp 3 Configure the working mode of the serial server.

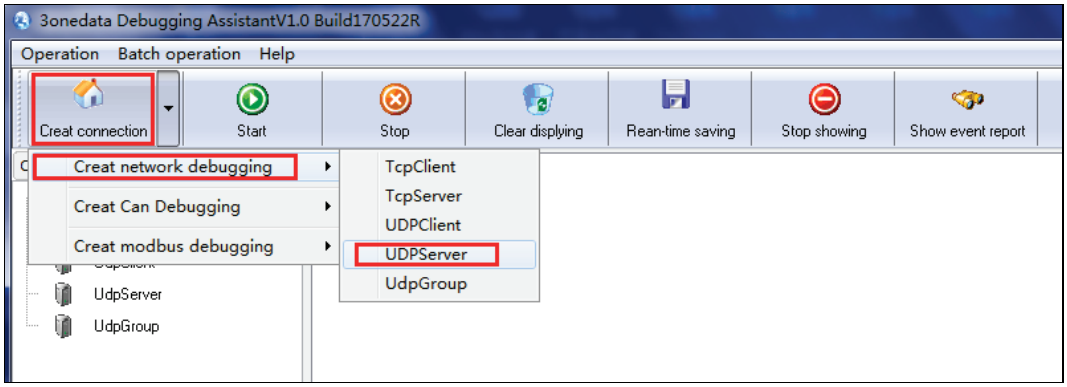
1. Log in to the Web configuration interface and select “Serial Server> COM Mode Settings”.
2. Select “COM1” in the “Port” drop-down list.
3. Click the “Work Mode” drop-down list box and select “Udp Client Mode”.
4. Click the “Session Number” drop-down list box and select “1”.
5. Enter the IP address "192.168.1.61" of the host PC in the "Dest address" text box.
6. Enter the local port number "31000" of the host PC in the "Dest port" text box.
7. Enter the local port number "30000" of the serial server in the "Listen port" text box.
8. Other parameters remain the default, click “Submit”.

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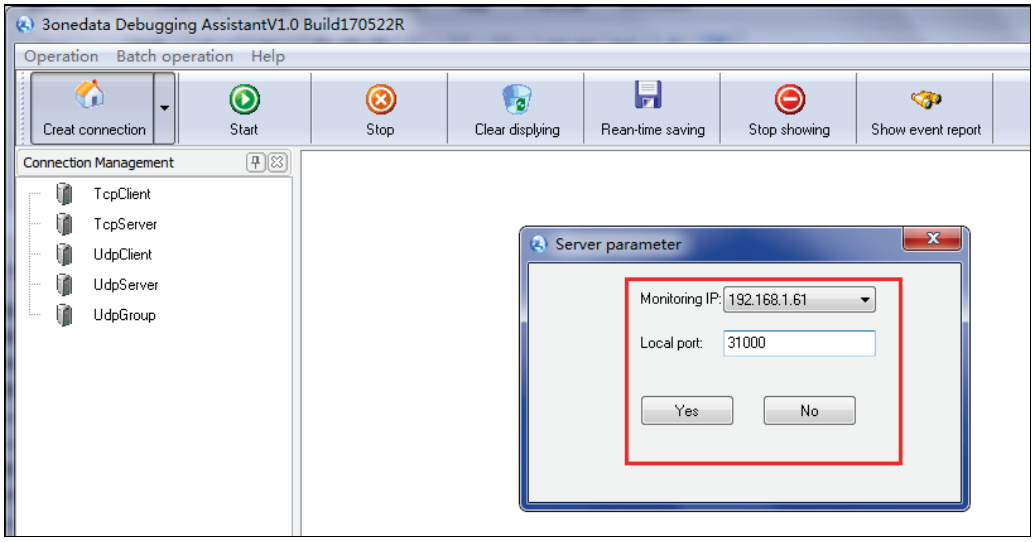


Setp 4 Run the "DebugTool" software, for the host to create UDP server.

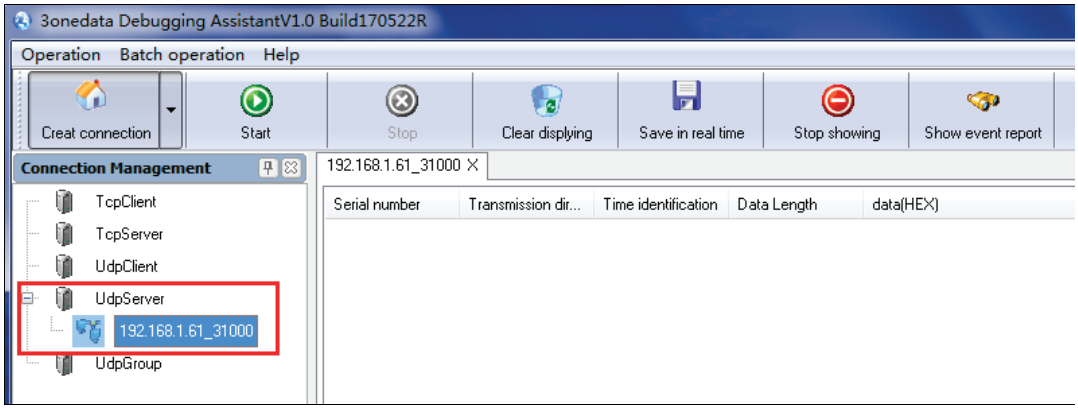
1. To install and run "DebugTool" Software, click “Create Connection” drop-down list box and choose “Create Network Debugging> UdpServer”.



2. In the “Monitoring IP” drop-down list box, select the IP address "192.168.1.61" of the host PC (that is, the UDP server).
3. In the “Local Port” text box, enter the local port "31000" for the host PC (that is, the UDP server) and click “OK”.



5. Select the created UdpServer connection and click "Start".



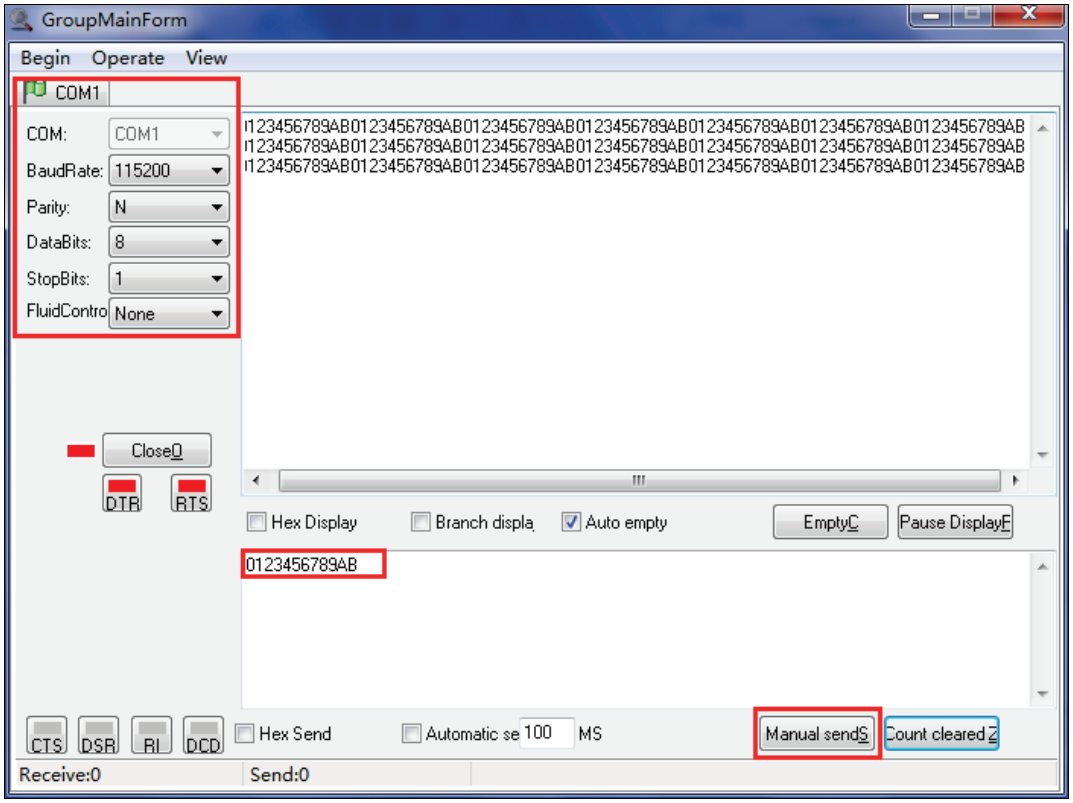
Notice

UDP (User Datagram Protocol), is a connectionless protocol. So after the successful creation of UdpClient connection, you do not need to click "Start".

Setp 5 Simultaneous operation of the "DebugTool" and "ComTest3One" software, test the serial server (UDP Client) and the host PC (UDP server) to communicate with each other.

1. Install and run the “ComTest3One” software, click “Begin” menu “New Windows”.
2. Add serial port “COM1” window, configure the COM, BaudRate, parity, DataBits and other parameters and WEB interface “COM settings” consistent.
3. Open the “COM1” serial port signal, for example, enter the serial information “0123456789AB”, and click “Manual Send”.

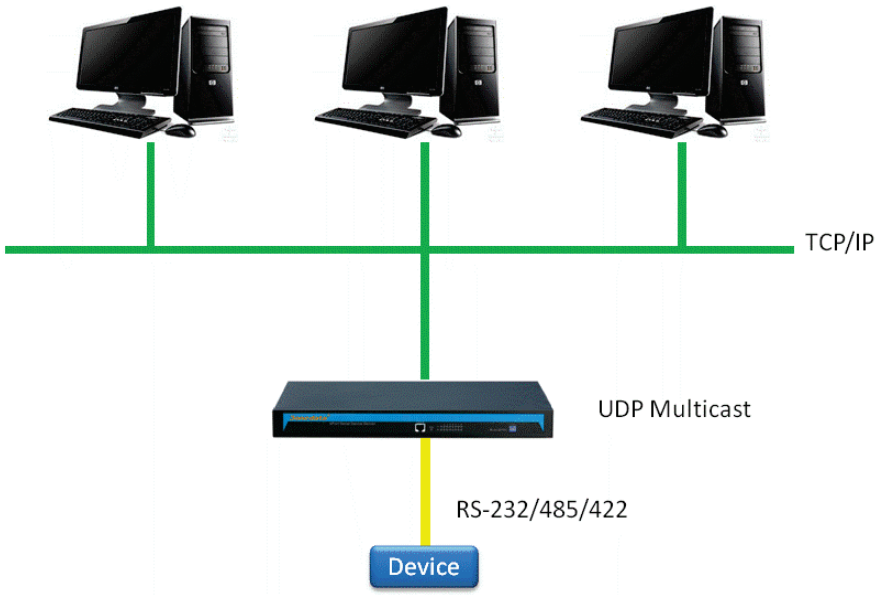
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4. Run the "DebugTool" software, in the UdpServer option box to see the host PC to receive the serial information. Similarly, the host PC can also send information to the serial device.

4.6.5 UDP Multicast Mode (UDP Multicast Mode)

Background Introduction



In UDP multicast mode, the serial server can send unicast or multicast data of the serial device to one or more hosts specified by the user through the UDP protocol, and can also receive unicast or multicast data from one or more devices, enabling multipoint-to-multipoint communication.

Assume that the IP address of the serial server is "192.168.1.250" and the serial server is added to the multicast address "239.0.0.0".So that the serial server through the UDP protocol can make the serial device data through unicast or multicast sent to one or more hosts, but also can receive from one or more host unicast or multicast data, complete multipoint-to-multipoint communication.

The parameters of the serial server are as follows:

- IP Address: 192.168.1.250
- Group Address: 239.0.0.0
- Port: COM1
- Local Port: 30000
- BaudRate: 115200
- PairtyBits: None
- DataBits: 8
- StopBits: 1

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The parameters of the host PC B are as follows:

- IP Address: 192.168.1.61
- Group Address: 224.0.0.0
- Local Port: 31000

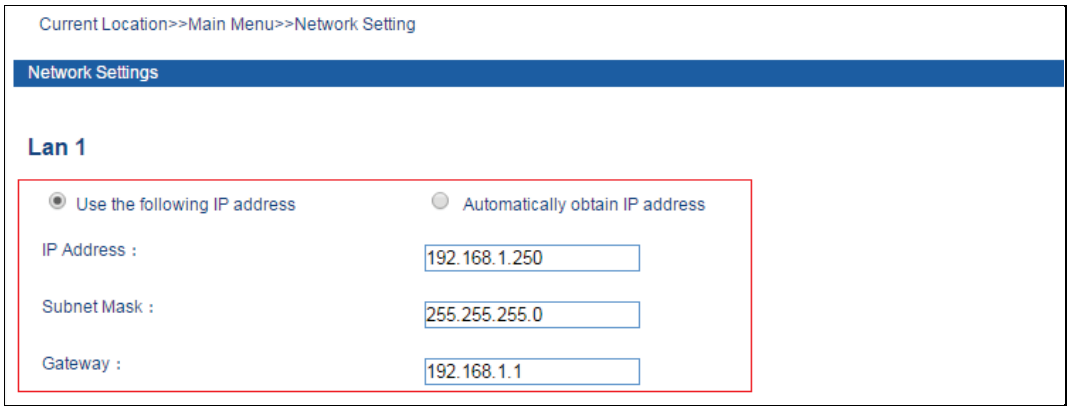
Create UDP multicast for the host in "Debug Tool" software.The parameters information of the host PC as follows:

- IP address: 192.168.1.61
- Local port: 31000

Operation steps

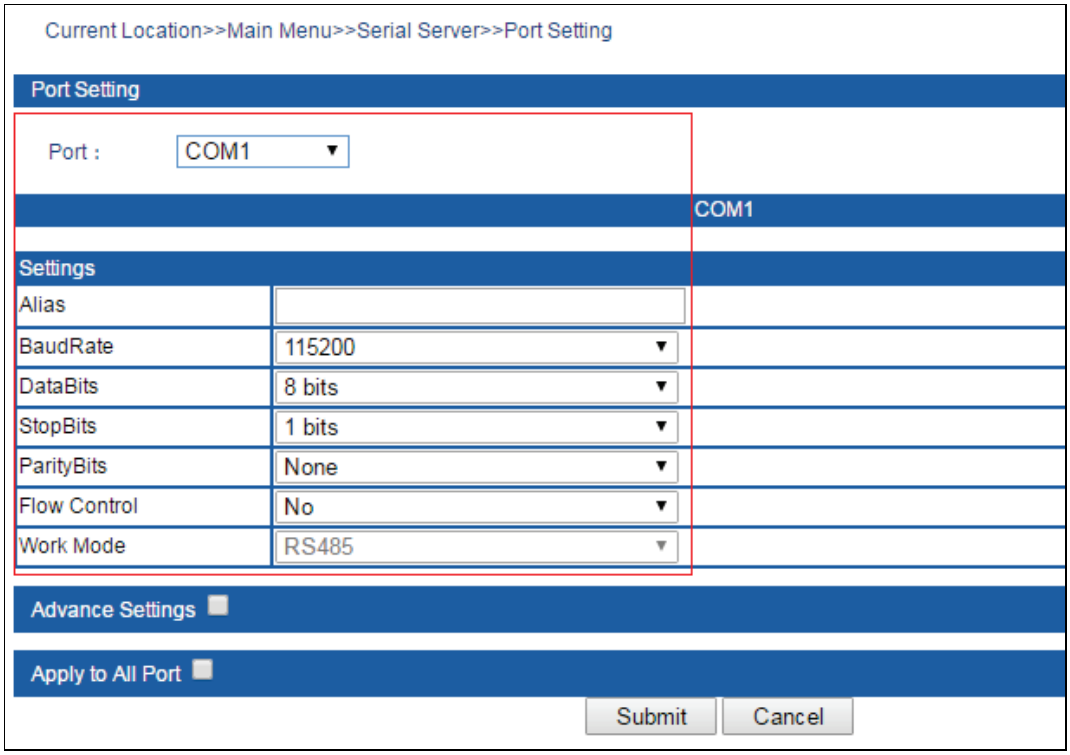
Setp 1 Configure the IP address of the serial server.

1. Log in to the Web configuration interface and select “Network Setting”.
2. In the "Use the following IP address" option box, enter the "IP address", "Subnet Mask" and "Gateway address" corresponding to the serial server.
3. Other parameters remain the default, click “Submit”.



Setp 2 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Serial Server> COM Settings".

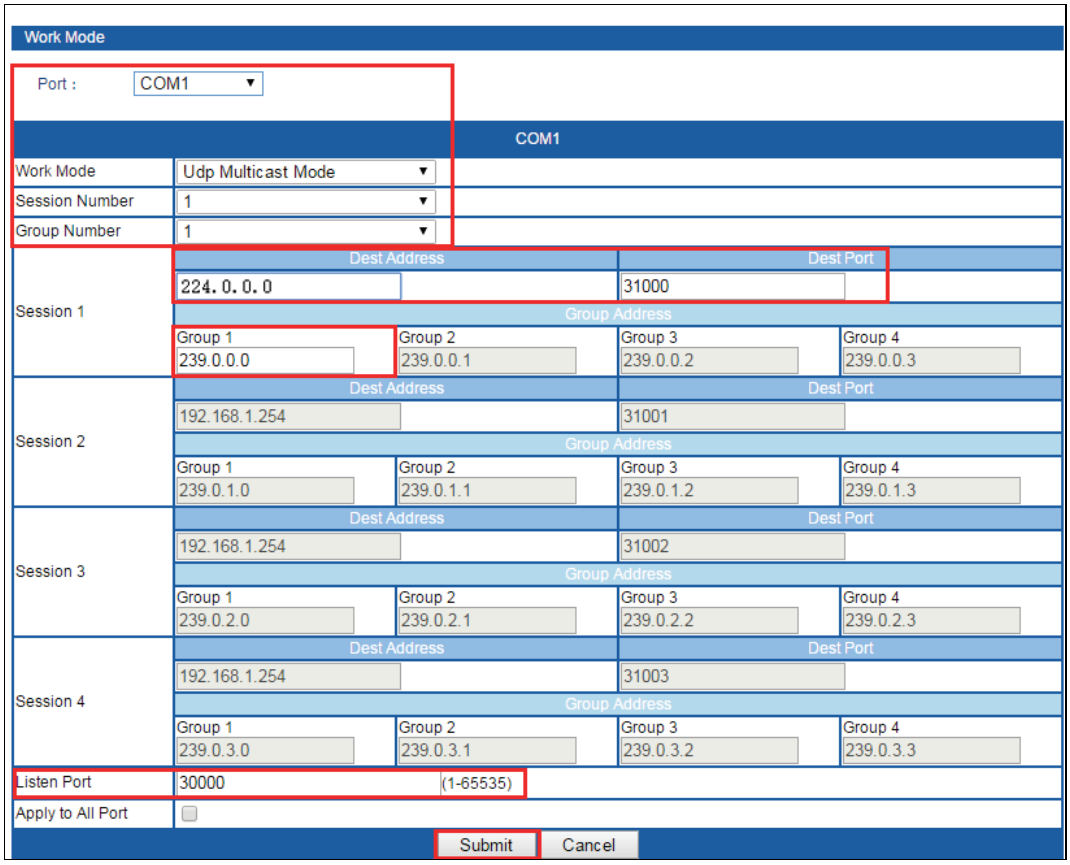


2. Select “COM1” in the “Port” drop-down list.
3. Set the “BaudRate”, “DataBits”, “StopBits” and “ParityBits” in the “Settings” option box.
4. Other parameters remain the default, click “Submit”.

Setp 3 Configure the working mode of the serial server.

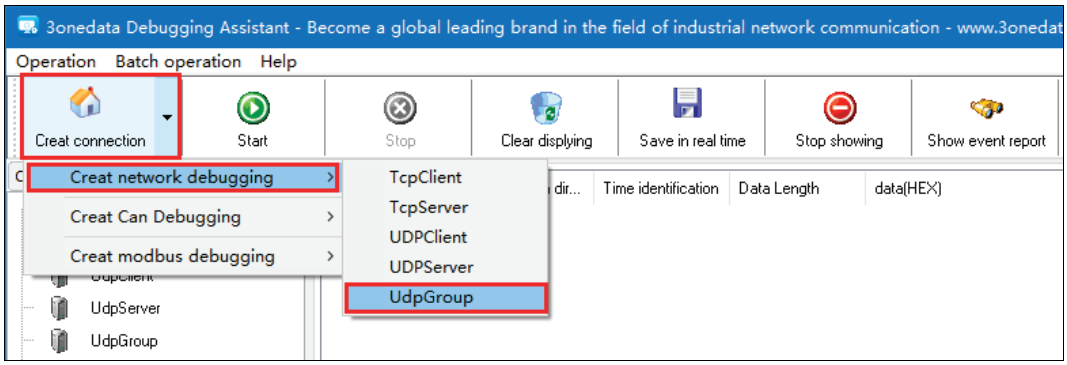
1. Log in to the Web configuration interface and select “Serial Server> COM Mode Settings”.
2. Select “COM1” in the “Port” drop-down list.
3. Click the “Work Mode” drop-down list box and select “UDP Multicast Mode”.
4. Click the “Session Number” drop-down list box and select “1”.
5. Click the “Group Number” drop-down list box and select “1”.
6. Enter the group address "224.0.0.0" of the host PC in the "Dest Address" text box.
7. Enter the local port number "31000" of the host PC in the "Dest Port" text box.
8. Enter the group address "239.0.0.0" of the host PC in the "Group Address/ Group 1" text box.
9. Enter the local port unmber "30000" of the serial server in the "Listen port" text box.
10. Other parameters remain the default, click “submit”.

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Step 4 Run the "DebugTool" software the host to create UDP multicast.

1. To install and run "DebugTool" Software, click “Create Connection” drop-down list box and choose “Create Network Debugging> UdpGroup”.

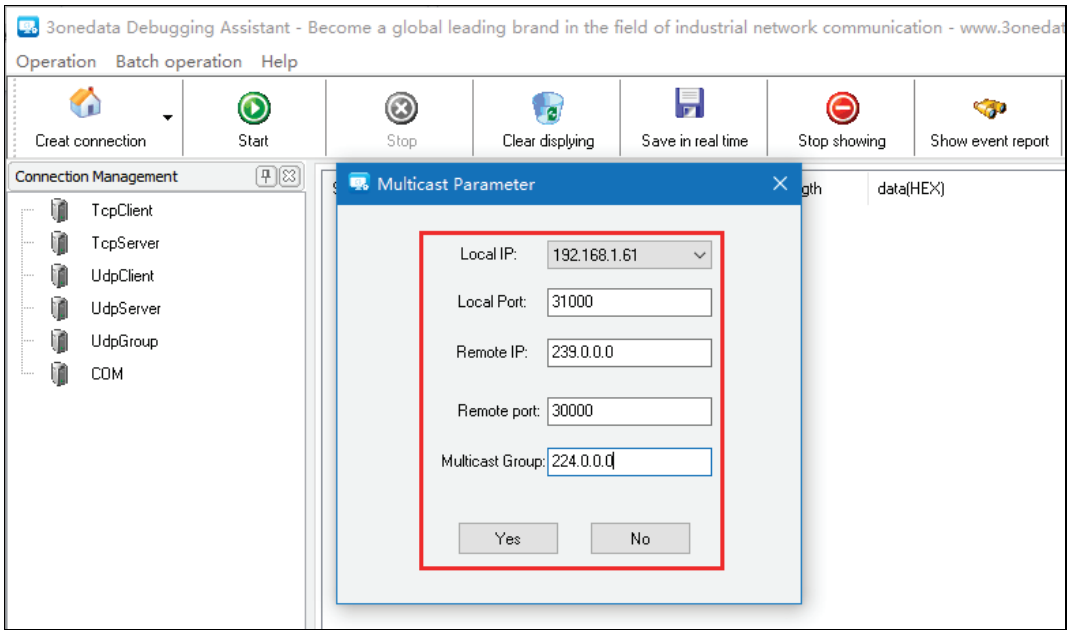


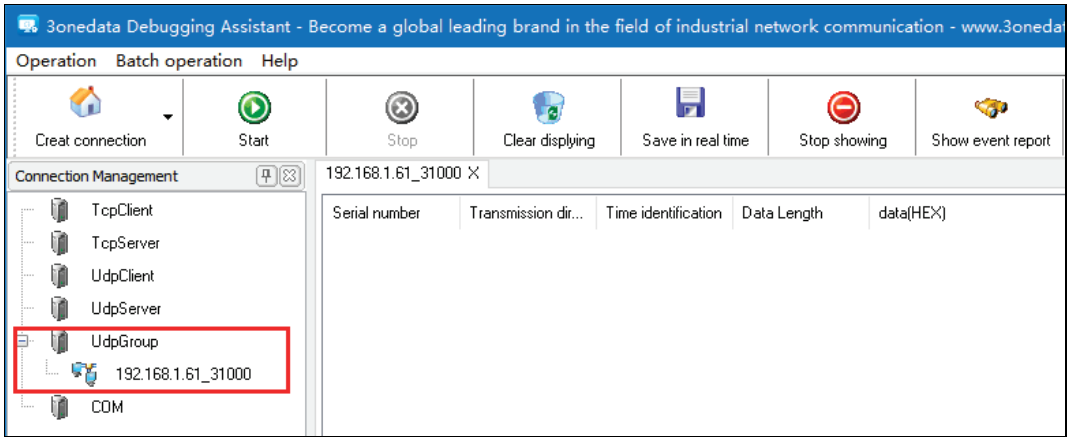
2. In the "Local IP" drop-down list box, select the IP address "192.168.1.61" of the host.
3. In the “Local Port” text box, enter the local port "31000" for the host.
4. In the “Remote IP” text box, enter the IP address "239.0.0.0" for the serial device server.
5. In the “Remote Port” text box, enter the local port number "30000" for the serial

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device server.

6. In the “Multicast” text box, enter the multicast group address "224.0.0.0".

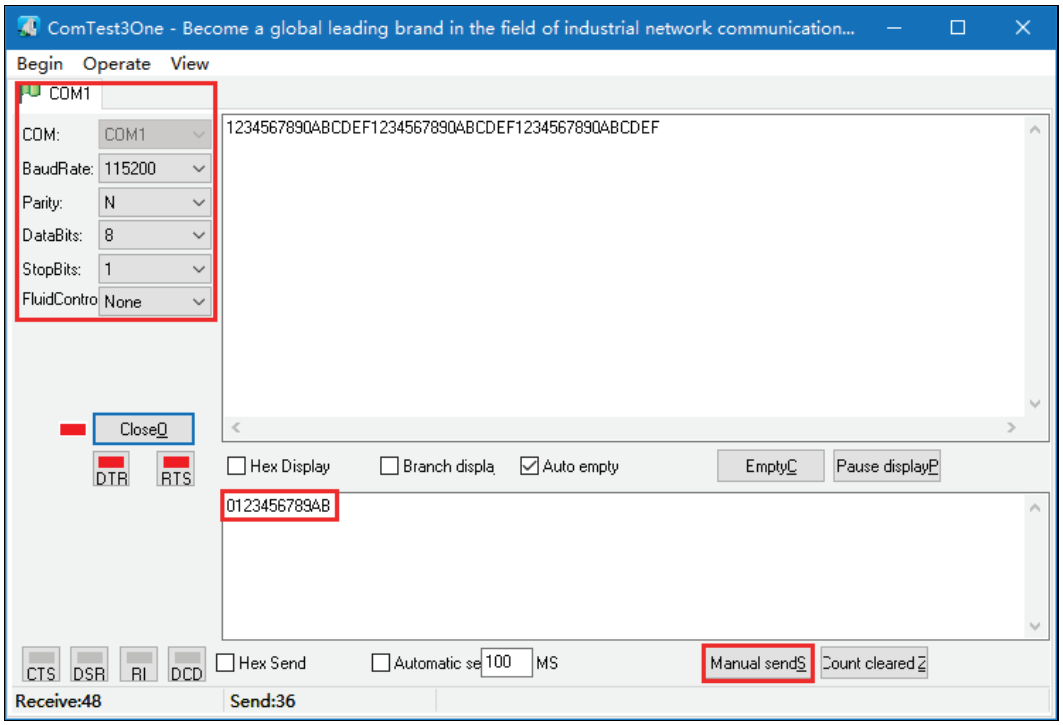


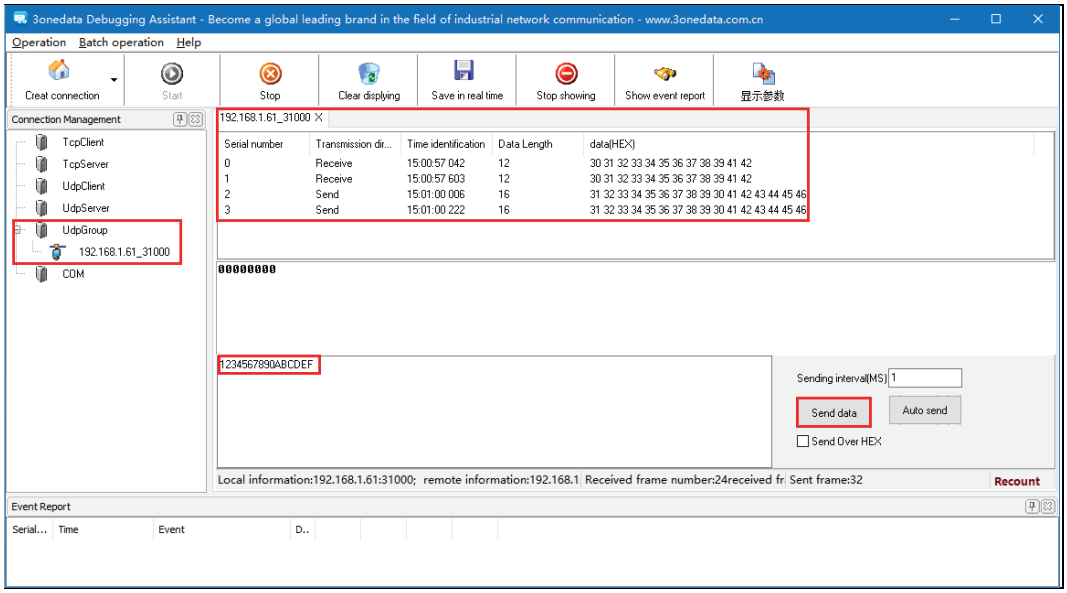


Setp 5 Simultaneous operation of the "DebugTool" and "ComTest3One" software, test the serial serverand the host PC to communicate with each other.

1. Install and run the “ComTest3One” software, click “Begin” menu “New Windows”.
2. Add serial port “COM1” window, configure the COM, BaudRate, parity, DataBits and other parameters and WEB interface “COM settings” consistent.
3. Open the “COM1” serial port signal, for example, enter the serial information “0123456789AB”, and click “Manual Send”.
4. Run the "DebugTool" software, in the UdpGroup option box to view the host received the serial information. Similarly, host can also send information to the serial device.

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ComTest3One - Become a global leading brand in the field of industrial network communication...
Begin
Operate
View
COM1
COM:
COM1
BaudRate:
115200
Parity:
N
DataBits:
8
StopBits:
1
FluidContro
None
1234567890ABCDEF1234567890ABCDEF1234567890ABCDEF
CloseO
DTR
RTS
Hex Display
Branch displa
Auto empty
EmptyC
Pause displayP
0123456789AB
CTS
DSR
RI
DCD
Hex Send
Automatic se
100
MS
Manual sendS
Count cleared Z
Receive:48
Send:36


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Operation
Batch operation
Help
Creat connection
Start
Stop
Clear displying
Save in real time
Stop showing
Show event report
显示参数
Connection Management
TcpClient
TcpServer
UdpClient
UdpServer
UdpGroup
192.168.1.61_31000
COM
192.168.1.61_31000
Serial number
Transmission dir...
Time identification
Data Length
data(HEX)
0 Receive 15:00:57.042 12 30 31 32 33 34 35 36 37 38 39 41 42
1 Receive 15:00:57.603 12 30 31 32 33 34 35 36 37 38 39 41 42
2 Send 15:01:00.006 16 31 32 33 34 35 36 37 38 39 30 41 42 43 44 45 46
3 Send 15:01:00.222 16 31 32 33 34 35 36 37 38 39 30 41 42 43 44 45 46
00000000
1234567890ABCDEF
Sending interval(MS)
1
Send data
Auto send
Send Over HEX
Local information:192.168.1.61:31000; remote information:192.168.1
Received frame number:24received fr
Sent frame:32
Recount
Event Report
Serial...
Time
Event
D..

5 Create CAN Debugging

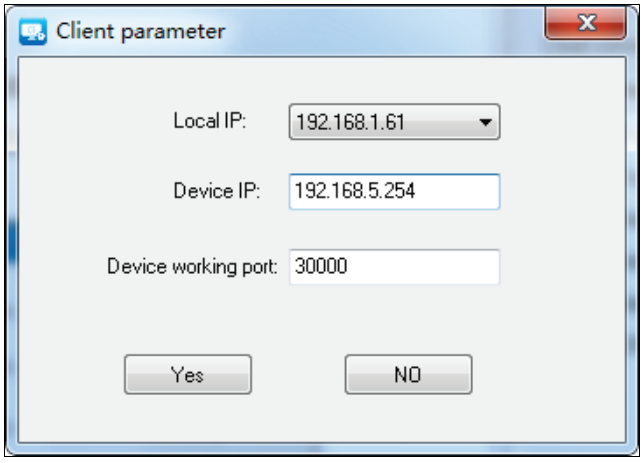
5.1 CanTcpClient

Function Description

On the page of CanTcpClient, user can create a CanTcp client.

Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create Can debugging > CanTcpClient".Pop up the window of "Client parameter" as below.

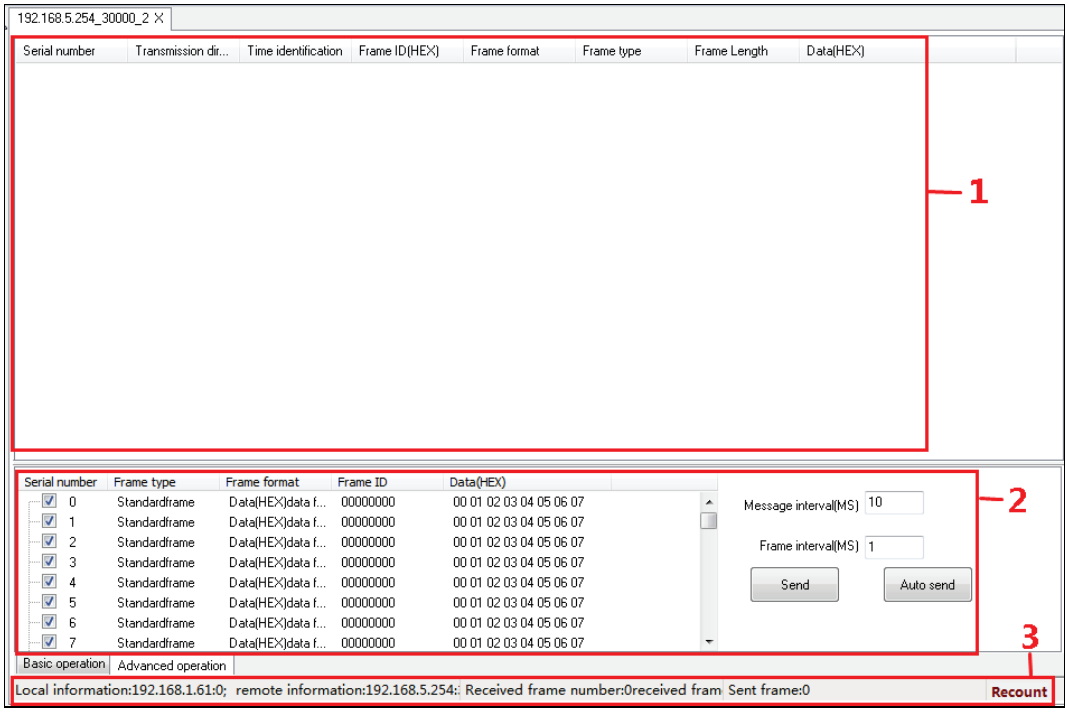


Interface Elements	Description
Local IP	IP address of the local client
Device IP	IP address of connected devices
Device working port	Working port of appointed connected device, value range: 0-65535

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	Note The device working port must be the same to "Local port" of the server.

Step 2 Enter the values of "Local IP", "Device IP", and "Device working port". Click the button of "OK". The CanTcpClient interface as follows.



1. Data receiving and transmission area
2. Data transmission area
3. Information area

CanTcpClient interface parameters description

Operation	Description
Data receiving and transmission area	**Display details of data receiving and transmission**
Serial number	Serial numbers of information
Transmission direction	Data transmission direction: • Receive • Send
Time identification	The specific time of sending or receiving data, hour: minute: second: millisecond
Frame ID (HEX)	The frame ID is a hexadecimal value.

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Frame format	The frame formats can be divided into: • Data frame • Remote frame
Frame type	The frame types can be divided into: • Standard frame • Extended frame
Data Length	Length of transmitted or received frame data
Data (HEX)	The details of transmitted or received data, the data is a hexadecimal value.
Data transmission area	**Send data manually or automatically**
Basic operation	**Select the tab of basic operation and modify the frame data in this tab.**
Frame type	The frame type of transmitted data, the options include: • Standard frame • Extended frame
Frame format	The frame type of transmitted data, the options include: • Data frame • Remote frame
Frame ID (HEX)	In this input box, user can input and modify the transmitted frame ID.
Data (HEX)	In this input box, user can input and modify the transmitted frame data, the data is in format of HEX.
Frame ID add one when	Frame ID plus 1 after every data transmission Notes: It can be checked only when the sending method is automatic sending.
Sending interval(MS)	When the data is sent out automatically, user can fill in the sending interval.
Send single frame at a tim	Check this option to send data each time in the format of single frame
Everytime sending	Check everytime transmission, fill in the number of sending frames, and the frames number of each data packet.
Send data	Click the button to send data
Auto send	Click the button to send data automatically
Advanced operation	**In the tab of advanced operation, user can modify multiple data at the same time.**

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Serial number	Serial number of the transmitted data: • Send this data after the radio button is checked; • Don't send this data after the radio button isn't checked.
Frame type	Select the following option in the drop-down box of the frame type: • Standard frame • Extended frame
Frame format	Select the following option in the drop-down box of the frame type: • Data frame • Remote frame
Frame ID	Select and modify the frame ID
Data (HEX)	Select and modify the data (HEX)
Message interval(MS)	Interval for each transmission when the data is sent out automatically
Frame interval(MS)	Interval for each frame transmission
Send	Click the button to send data
Auto send	Click the button to send the data automatically
Information area	**Information display area**
Local information	Local IP address and port number
remote information	Remote IP address and port number
Received frame number	Number of received frames
Sent frame	Number of transmitted frames
Recount	Click this option to recalculate the number of received and transmitted frames

Step 3 End.

5.2 CanTcpServer

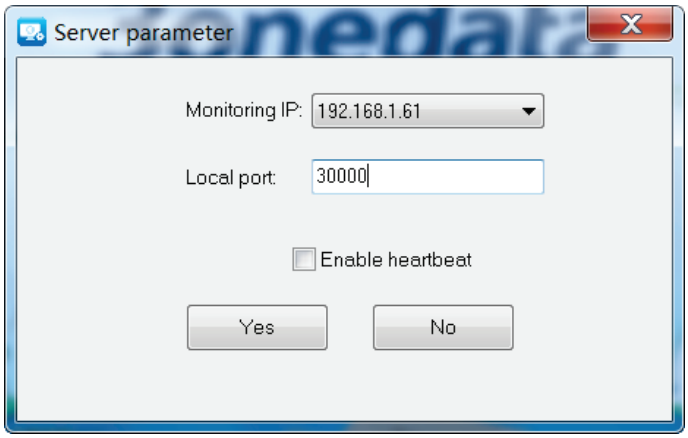
Function Description

On the page of CanTcpServer, user can create CanTcp server.

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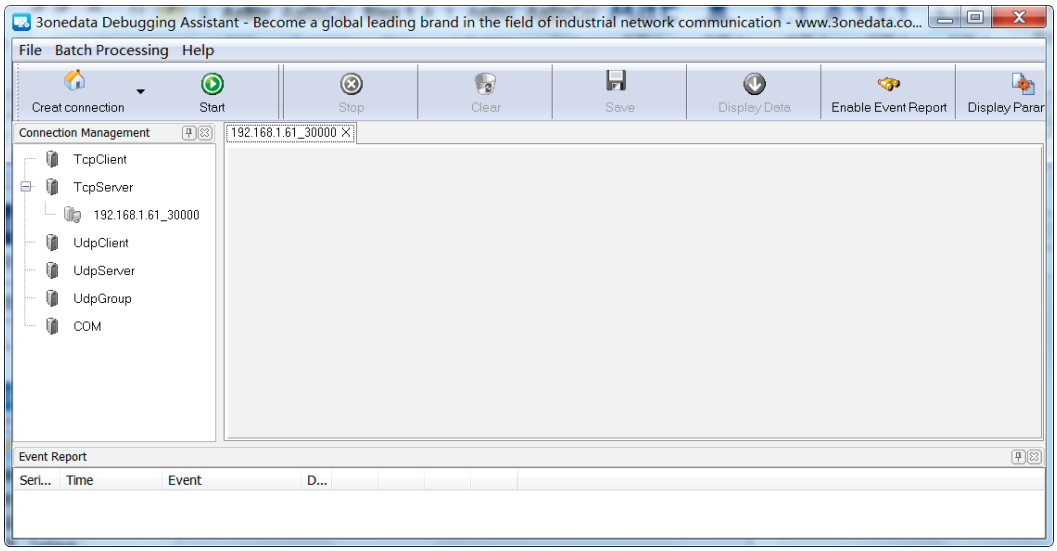
Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create Can debugging > CanTcpServer".Pop up the window of "Server parameter" as below.



Interface Elements	Description
Monitoring IP	IP address of the server
Local port	Ports monitored by local server, value range: 0-65535

Step 2 Enter the values of "Monitoring IP" and "Local port" and click the button of "OK". The CanTcpServer interface is shown as below.



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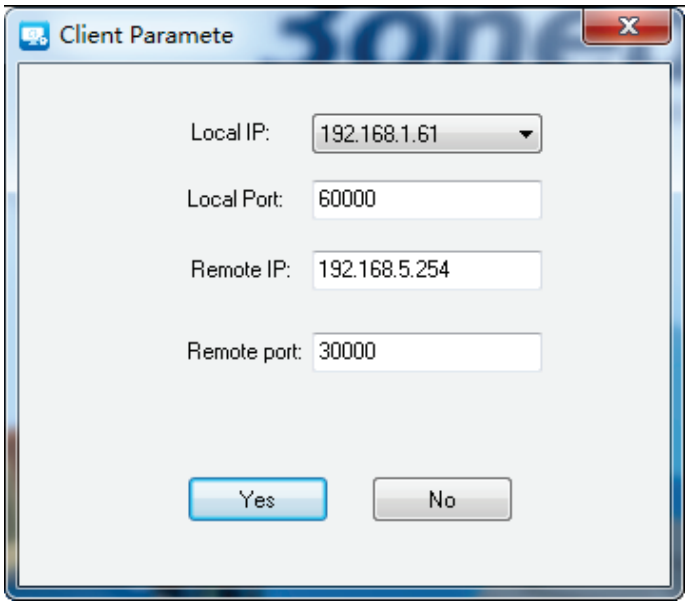
5.3 CanUdpClient

Function Description

On the page of CanUdpClient, user can create a CanUdp client.

Configuration Steps

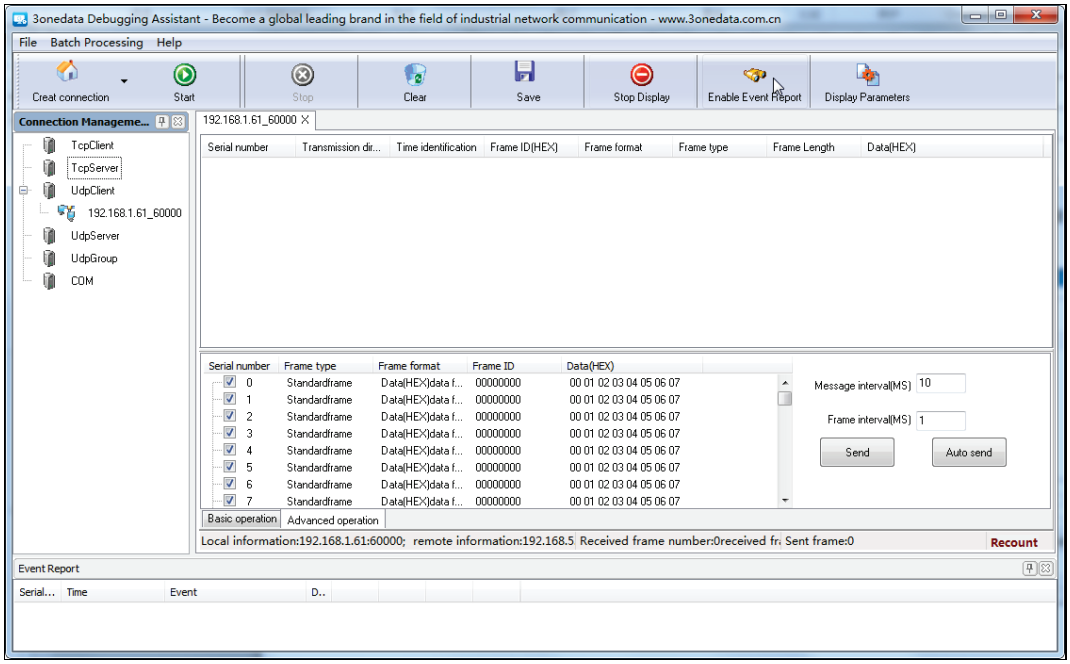
Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > CanUdpClient".Pop up the window of "Client parameter" as below.



Interface Elements	Description
Local IP	IP address of the local client
Local Port	Port of local client
Remote IP	IP address of remote server
Remote port	Port of remote server

Enter the values of "Local IP", "Local Port", "Remote IP" and "Remote port". Click the button of "Yes" to pop up the CanUdpClient interface as below. Specific parameters description can refer to "CanTcpClient Interface Parameters Description" in the chapter of "CanTcpClient".

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Step 2 End.

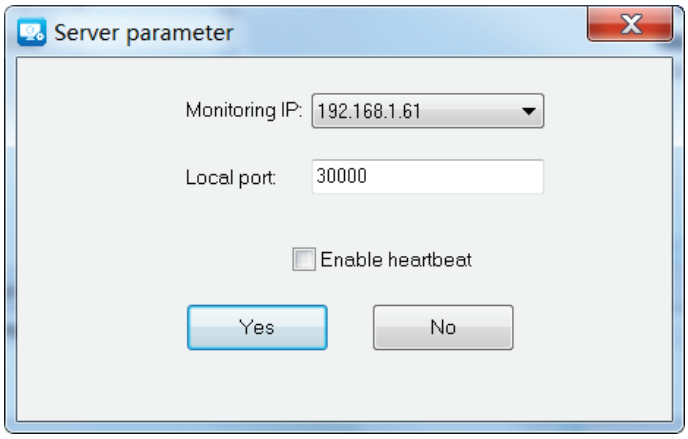
5.4 CanUdpServer

Function Description

On the page of CanUdpServer, user can create CanUdp server.

Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > CanUdpServer".Pop up the window of "Server parameter" as below.

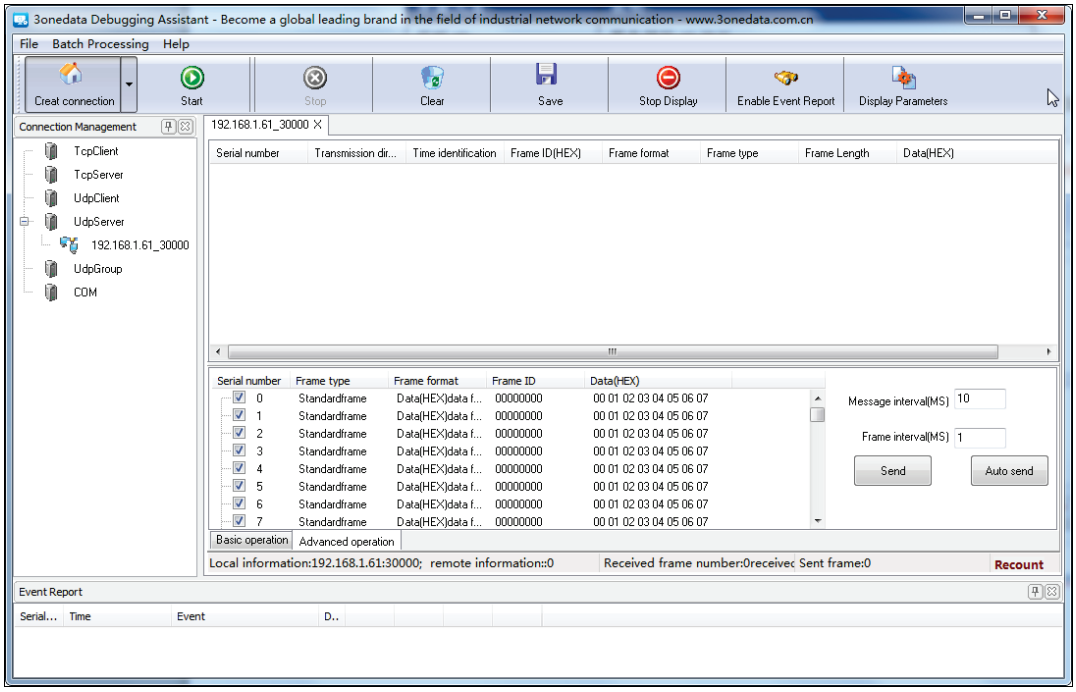


Interface Elements	Description

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Monitoring IP	IP address of the server
Local port	Ports monitored by local server, value range: 0-65535

Step 2 Enter the values of "Monitoring IP" and "Local port" and click the button of "OK". Pop up the CanUdpServer interface as below.Specific parameters description can refer to "CanTcpClient Interface Parameter Description" in the chapter of "CanTcpClient".



Step 3 End.

5.5 CanUdpGroup

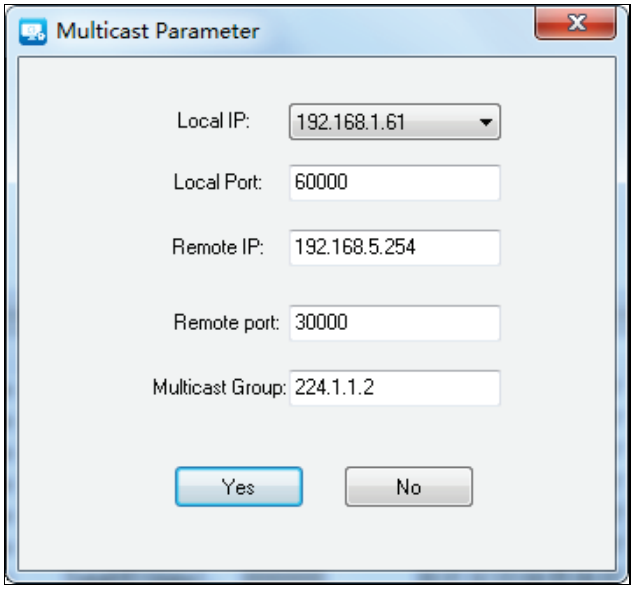
Function Description

On the page of CanUdpGroup, user can create a CanUdp group.

Configuration Steps

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create network debugging > CanUdpGroup".Pop up the window of "Udp Multicast Parameters" as below.

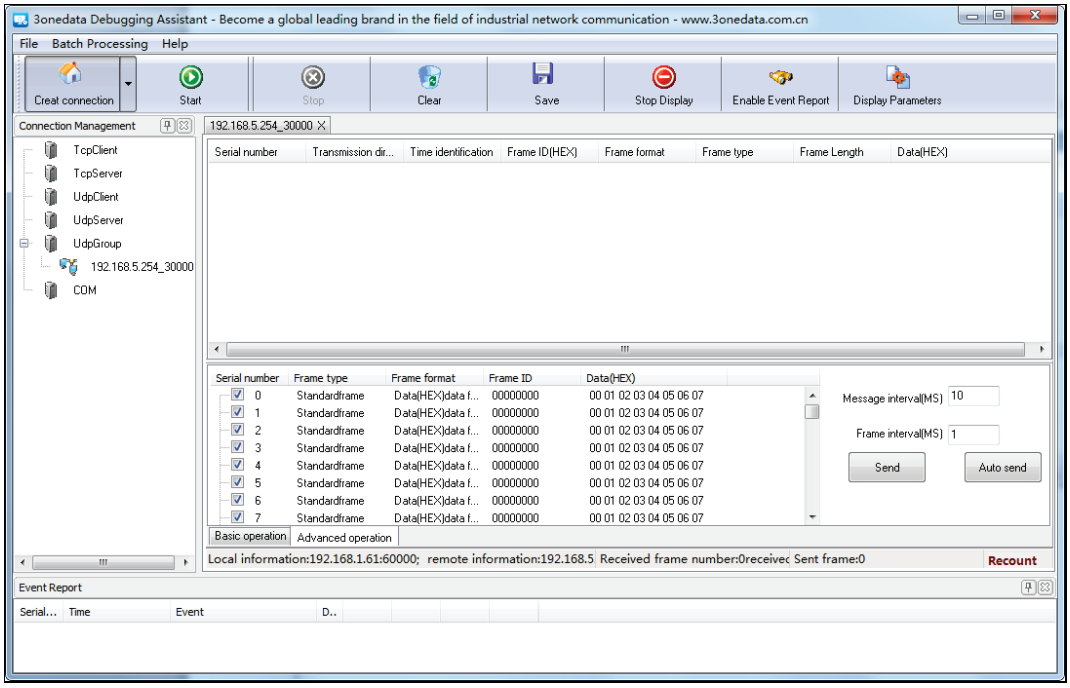
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Interface Elements	Description
Local IP	The local IP address
Local Port	Local port
Remote IP	Remote IP address can be either a single IP or a multicast IP Notes: When the remote IP is a single IP, it will be transmitted in the form of unicast; when the remote IP is a multicast IP, it will be transmitted in the form of multicast.
Remote port	Remote port
Multicast Group	The multicast IP where the device is located, the device can receive the network data of the multicast IP.

Step 2 Enter the values of each parameter and click the button of "OK". The CanUdpGroup interface as below.Specific parameters description can refer to "CanTcpClient Interface Parameter Description" in the chapter of "CanTcpClient".

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Step 3 End.

5.6 Examples of Operating Mode Configuration

5.6.1 CAN TCP Server Mode (CAN TCP Server Mode)

Background Introduction

Under "TCP Server Mode", it's assumed that CAN server port "CAN1" passively waits for the connection of one host PC, and the host can read or send the Ethernet data to a CAN port device.

CAN server (TCP server mode) parameter information as follows:

- IP address: 192.168.1.254
- Work port: 32000
- Baud rate: 1000K

Host PC (TCP client mode) parameter information as follow:

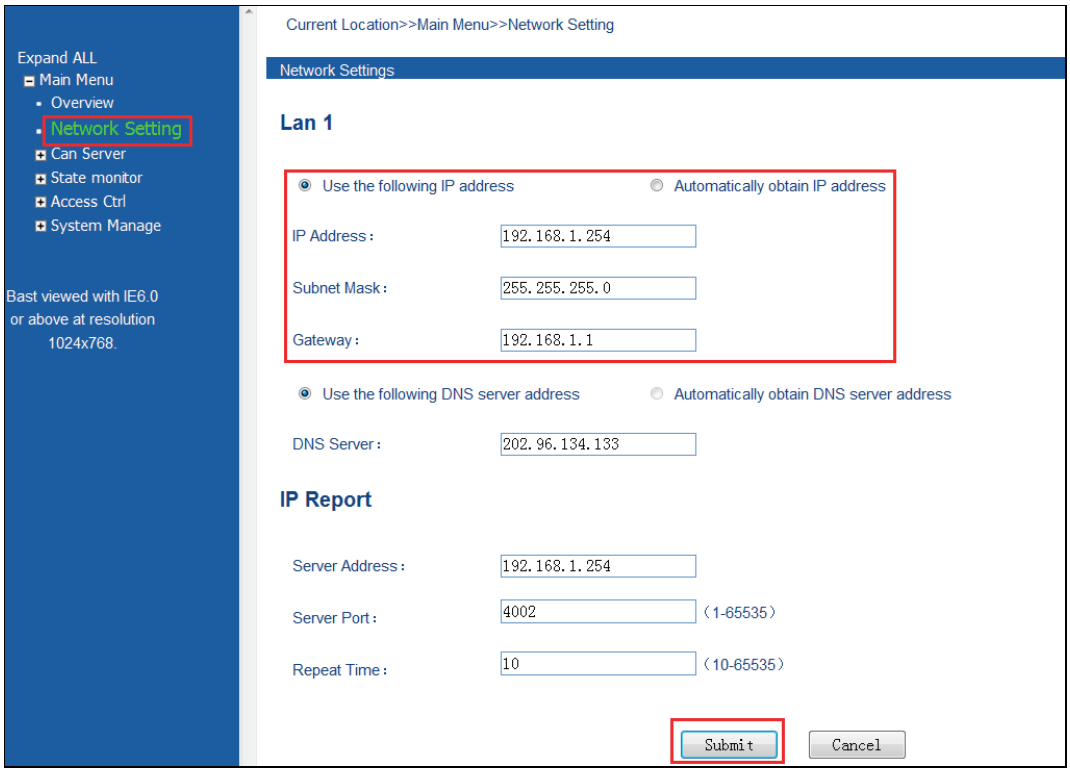
- IP address: 192.168.1.2

Configuration steps

Step 1 Configure CAN server IP address.

1. Login in the Web configuration interface, choose " Main Menu > Network Setting".

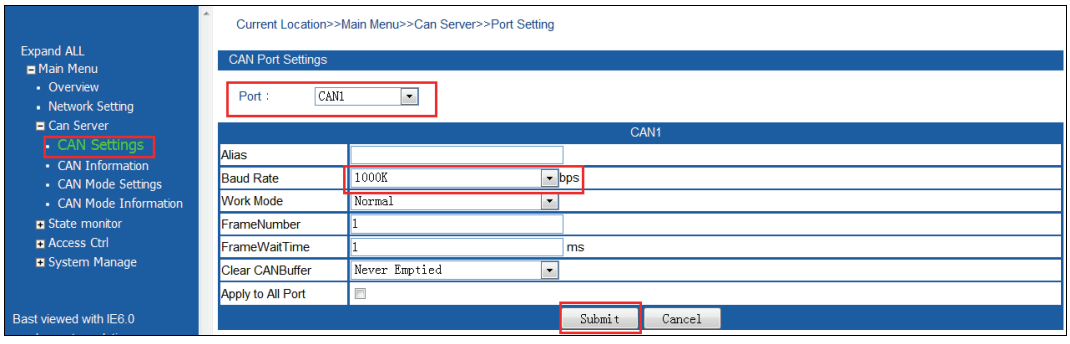
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2. On "Use the following IP address" option box, respectively enter corresponding "IP address", "Subnet Mask" and "Gateway" of CAN server.
3. Other parameters maintain the default, click "Submit".

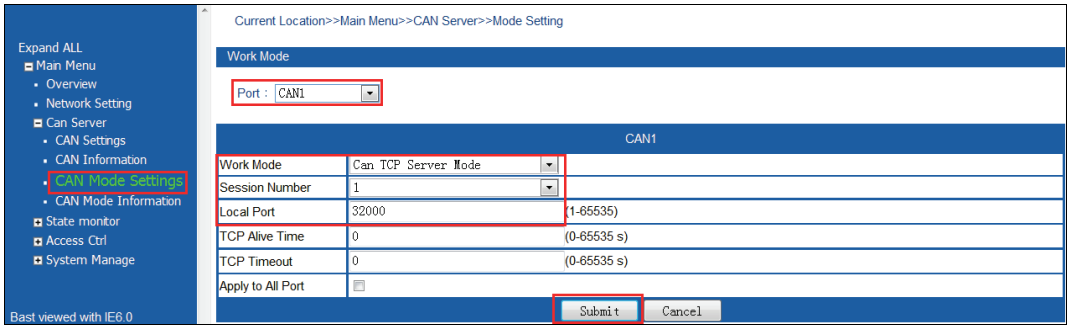
Step 2 Configure the work mode of CAN server.

1. Login in the Web configuration interface, choose " Main Menu > CAN server > CAN Settings".



2. Click "Port" drop-down list box, choose "CAN1".
3. Click "Baud Rate" drop-down list box, choose "1000K".
4. Other parameters maintain the default, click "Submit".
5. Choose "Main Menu > CAN Server > CAN Mode Settings".

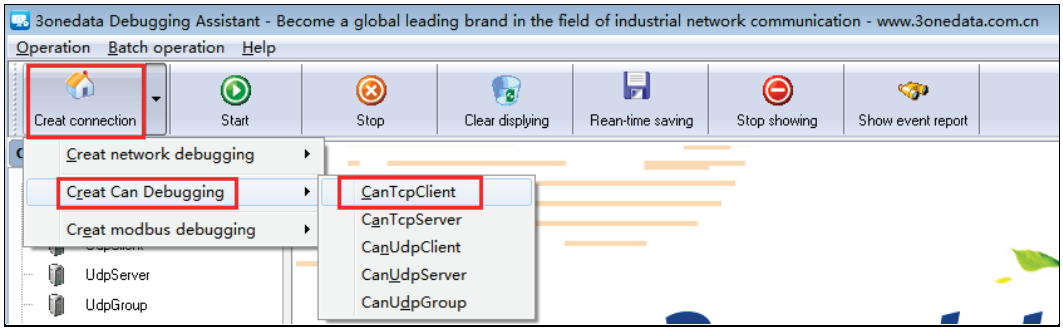
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6. Click "Port" drop-down list box, choose "CAN1".
7. Click "Work Mode" drop-down list box, choose "CAN TCP Server Mode".
8. Enter "32000" on "Local Port" text box.
9. Other parameters maintain the default, click "Submit".

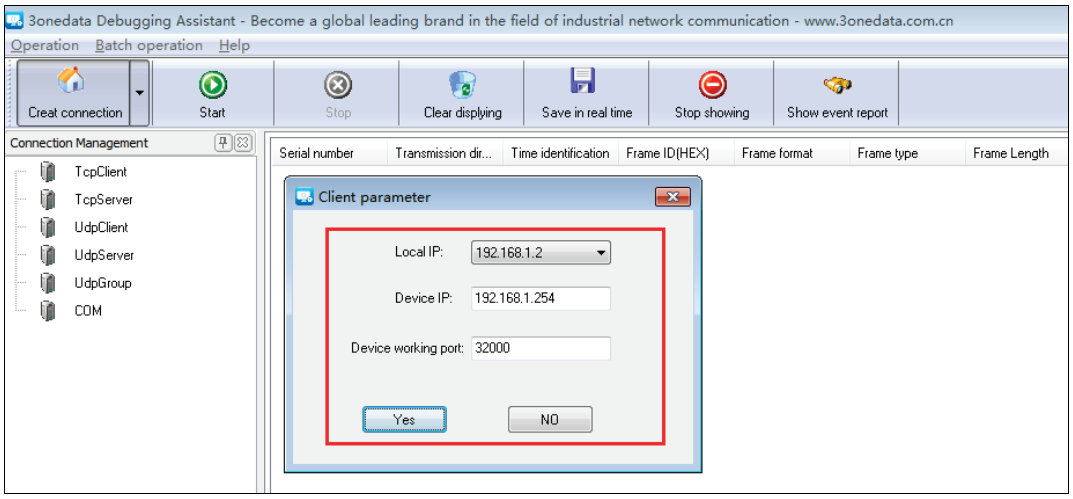
Step 3 Run "3onedata Debugging Assistant" software to create TCP client for the host.

1. Install and run "3onedata Debugging Assistant" software.
2. Click "Create Connection" drop-down list box, choose "Create Can Debugging > CanTcpClient".

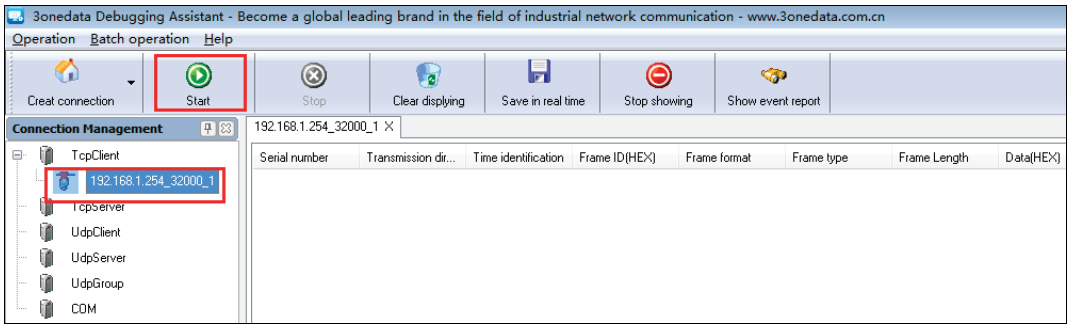


3. On the pop-up "Local IP" drop-down list box, choose the IP address of host PC (TCP client) "192.168.1.2".
4. On the "Device IP" text box, enter the IP address of CAN server (TCP server) "192.168.1.254".
5. On the "Device Working Port" text box, enter the work port of CAN server "32000", click "Yes".

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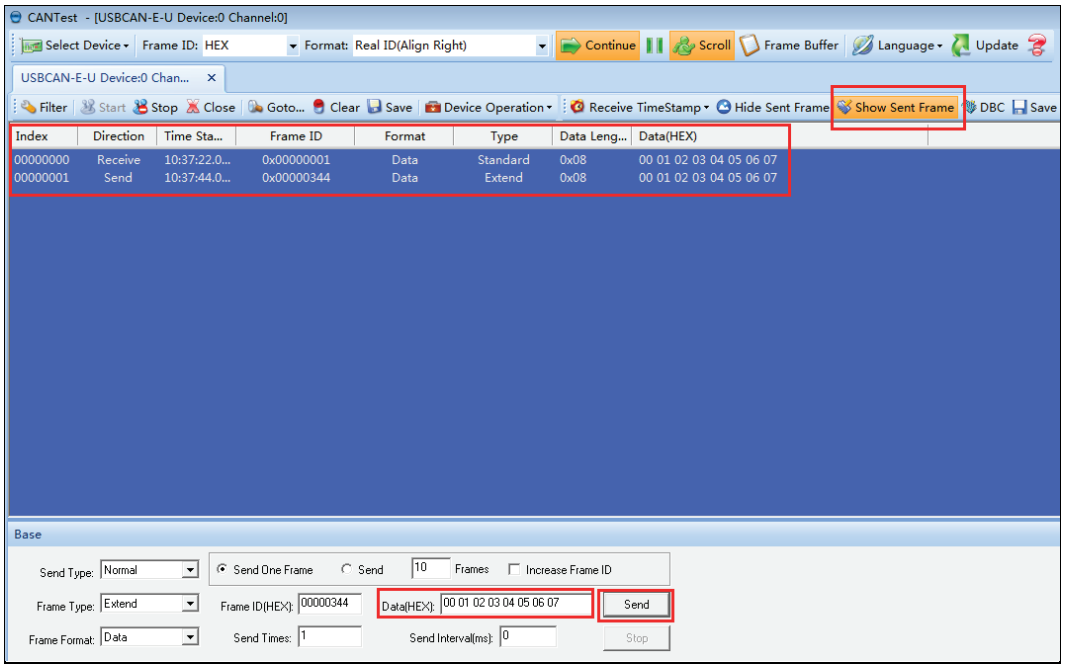
6. Choose the created UdpClient connection, click "Start".



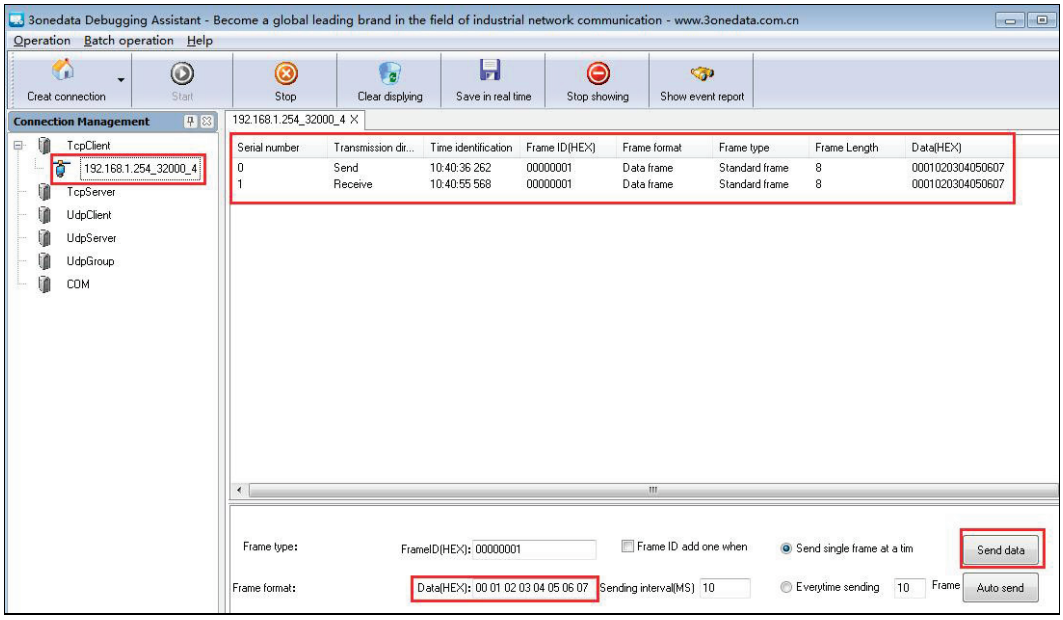
Step 4 Synchronously run "3onedata Debugging Assistant" and "CANTest" software, test the intercommunication between CAN server (TCP server) and host PC (TCP client).

1. Install and run "CANTest" software, click "Show Sent Frame" option box.
2. Frame data maintains default "00 01 02 03 04 05 06 07", click "Send".

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3. Run "3onedata Debugging Assistant" software, check the CAN port information received by host PC on TcpClient option box.In a similar way, host PC can send information to CAN port device.



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5.6.2 CAN TCP Client Mode (CAN TCP Client Mode)

Background Introduction

Under "TCP Client Mode", it's assumed that CAN server port "CAN1" forwardly creates connection with one host PC, meanwhile the host can read or send the Ethernet data to a CAN port device.

CAN server (TCP client mode) parameter information as follow:

- IP address: 192.168.1.254
- Work port: 32000
- Baud rate: 1000K

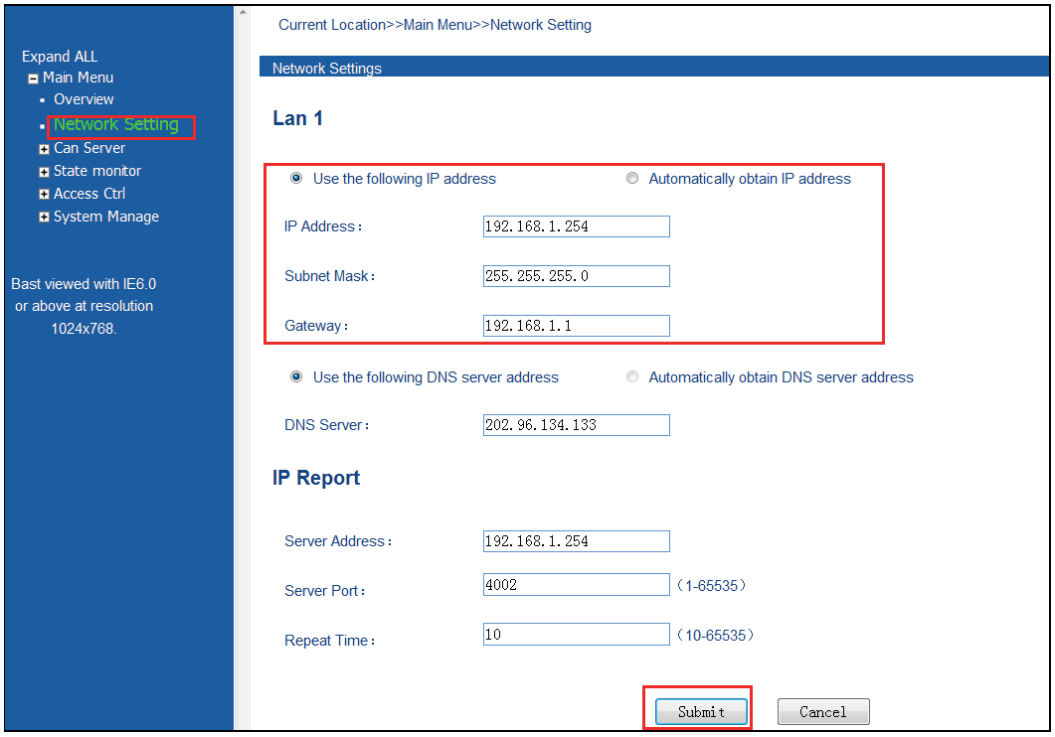
Host PC (TCP server mode) parameter information as follow:

- IP address: 192.168.1.2
- Local Port:33000

Configuration steps

Step 1 Configure CAN server IP address.

1. Login in the Web configuration interface, choose " Main Menu > Network Setting".

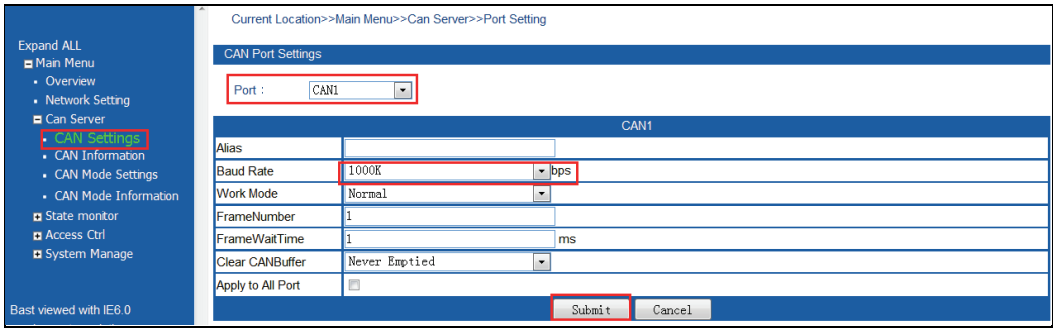


2. On "Use the following IP address" option box, respectively enter corresponding "IP address", "Subnet Mask" and "Gateway" of CAN server.
3. Other parameters maintain the default, click "Submit".

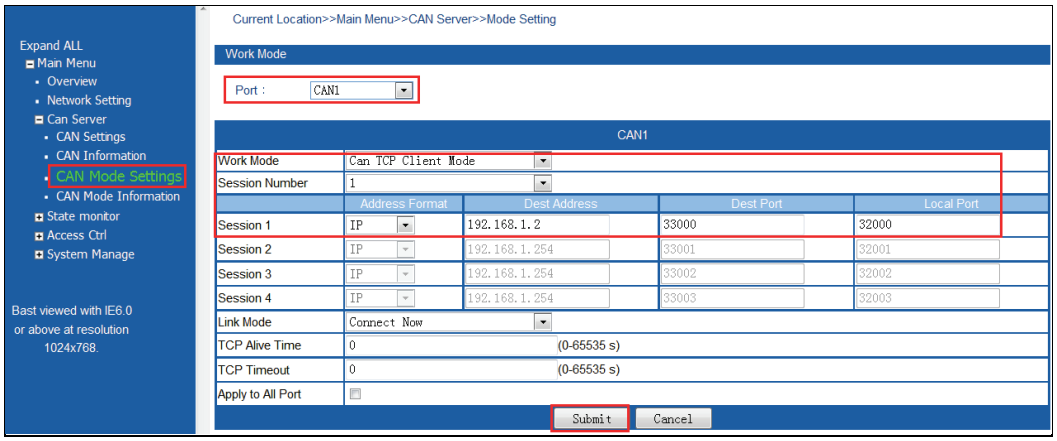
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Step 2 Configure the work mode of CAN server.

1. Login in the Web configuration interface, choose "CAN server > CAN Settings".



2. Click "Port" drop-down list box, choose "CAN1".
3. Click "Baud Rate" drop-down list box, choose "1000K".
4. Other parameters maintain the default, click "Submit".
5. Choose "Main Menu > CAN Server > CAN Mode Settings".

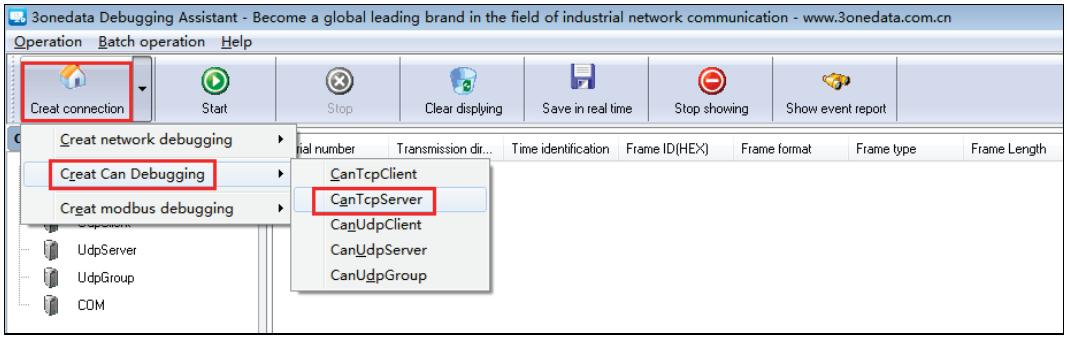


6. Click "Port" drop-down list box, choose "CAN1".
7. Click "Work Mode" drop-down list box, choose "CAN TCP Client Mode".
8. Click "Session Number" drop-down list box, select "1".
9. Enter IP address "192.168.1.2 on the "Dest Address" text box of "Session 1".
10. Enter "33000" on the "Dest Port" text box of "Session 1".
11. Enter "32000" on the "Local Port" text box of "Session 1".
12. Other parameters maintain the default, click "Submit".

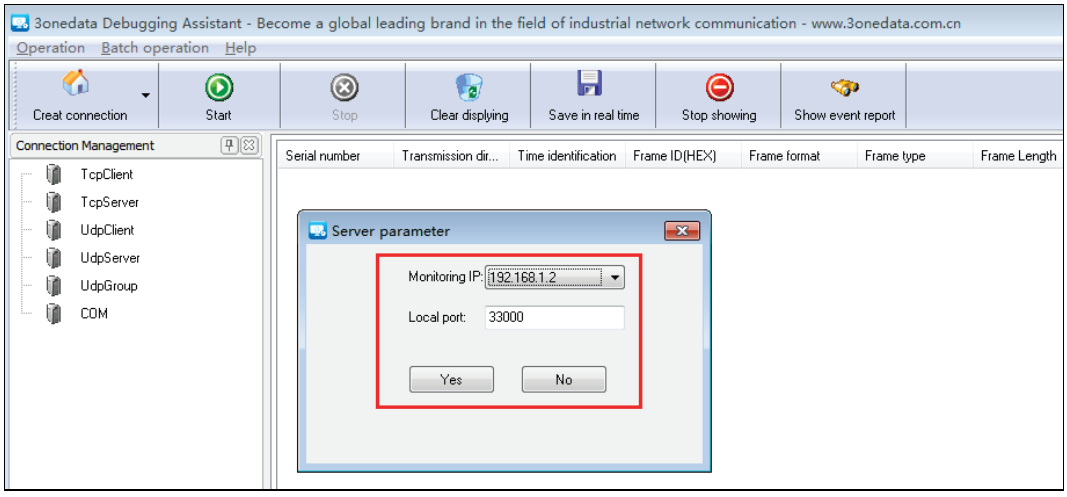
Step 3 Run "3onedata Debugging Assistant" software to create TCP client for the host.

1. Install and run "3onedata Debugging Assistant" software.
2. Click "Create Connection" drop-down list box, choose "Create Can Debugging > CanTcpServer".

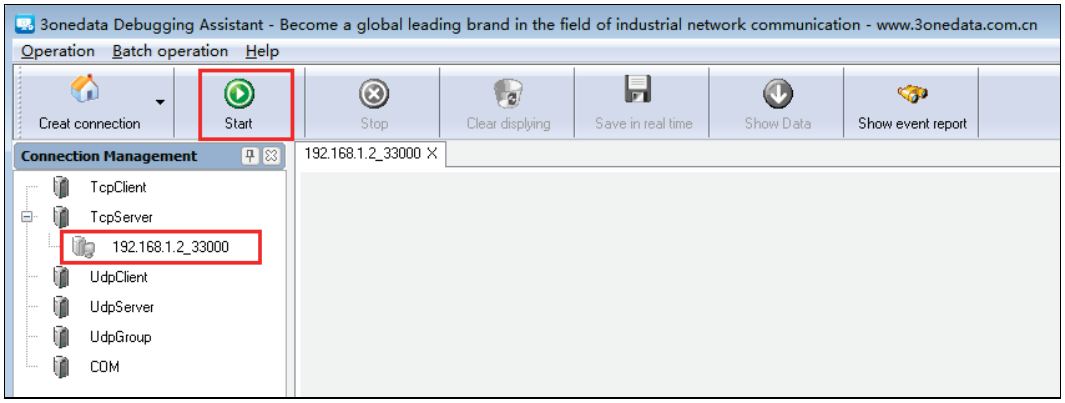
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3. On the pop-up "Monitoring IP" drop-down list box, choose the IP address of host PC (TCP server) "192.168.1.2".
4. Enter the host PC (TCP server) local port "33000" on the "Local Port" text box, click "Yes".



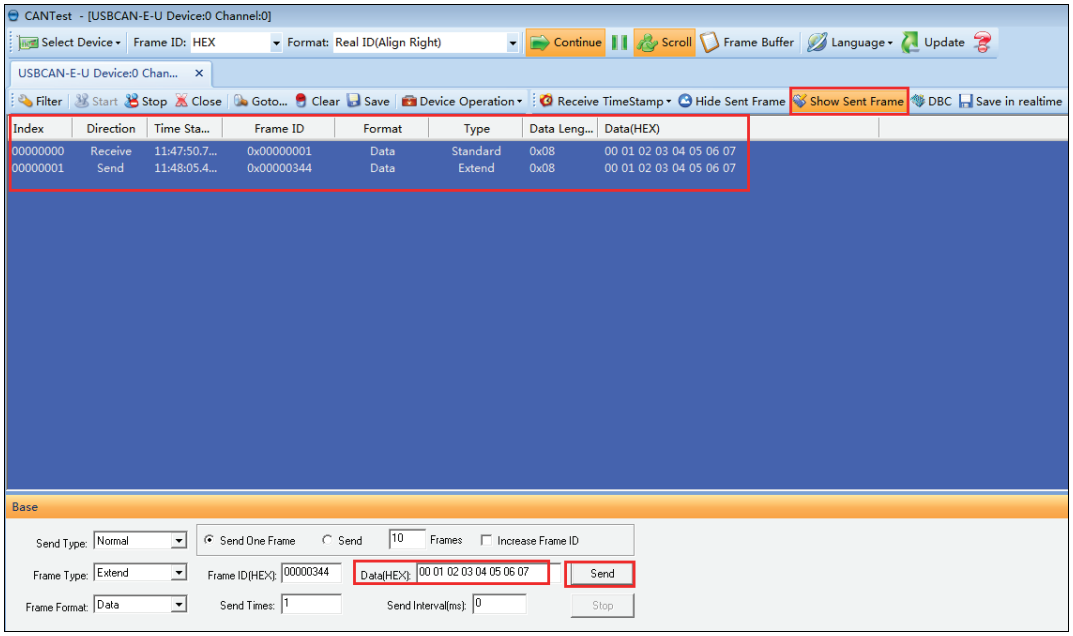
5. Choose the created UdpServer connection, click "Start".



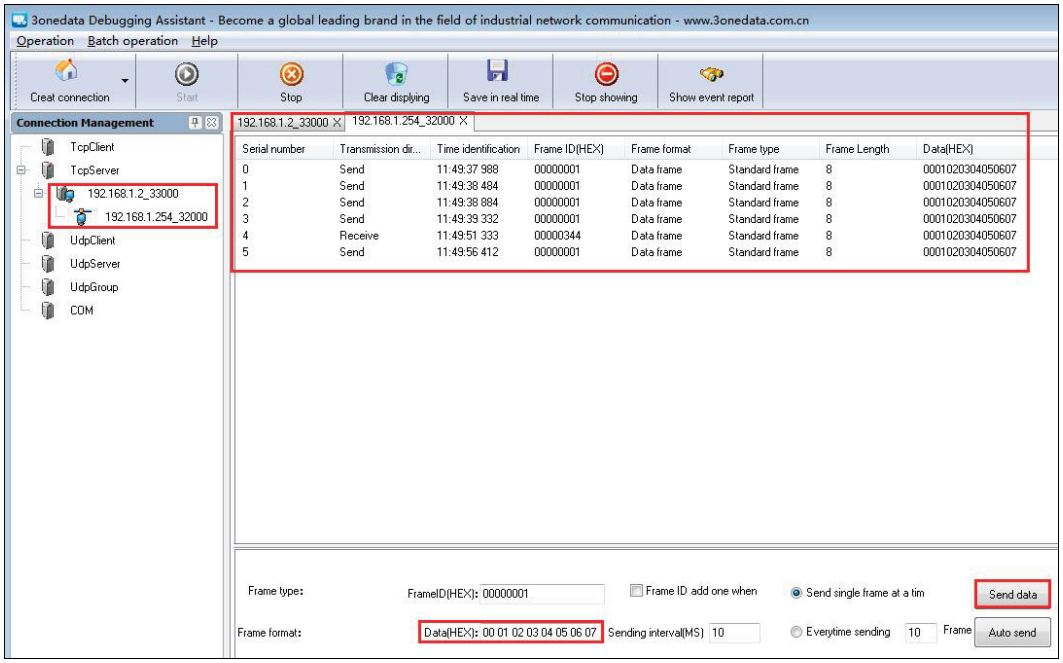
Step 4 Synchronously run "3onedata Debugging Assistant" and "CANTest" software, test the

intercommunication between CAN server (TCP client) and host PC (TCP server).

1. Install and run "CANTest" software, click "Show Sent Frame" option box.
2. Frame data maintains default "00 01 02 03 04 05 06 07", click "Send".



3. Run "3onedata Debugging Assistant" software, check the CAN port information received by host PC on UDPServer option box. In a similar way, host PC can send information to CAN port device.



5.6.3 CAN UDP Server Mode (CAN UDP Server Mode)

Background Introduction

Under "CAN UDP Server Mode", it's assumed that CAN server port "CAN1" passively waits for the connection of one host PC, meanwhile the host can read or send the Ethernet data to a CAN device.

CAN server (UDP server) parameter information as follow:

- IP address: 192.168.1.254
- Listen Port: 32000
- Baud rate: 1000K

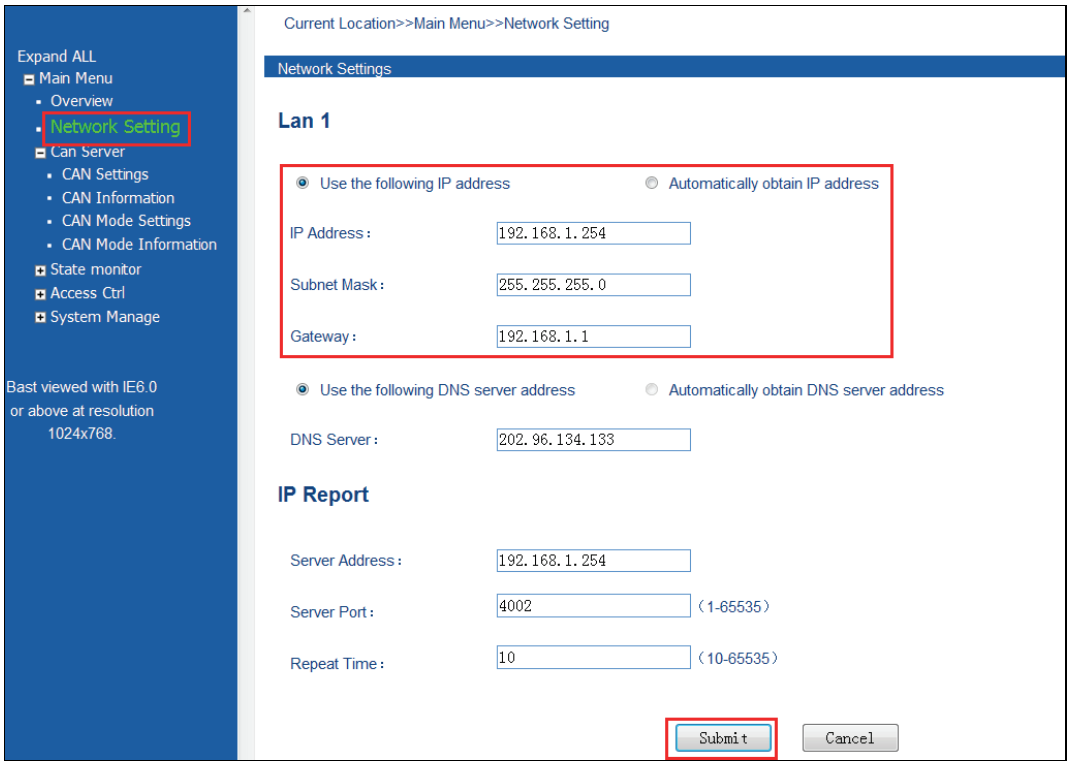
Host PC (UDP client mode) parameter information as follow:

- IP address: 192.168.1.2
- Local Port: 60000

Operation Steps

Step 1 Configure CAN server IP address.

1. Login in the Web configuration interface, choose " Main Menu > Network Setting".



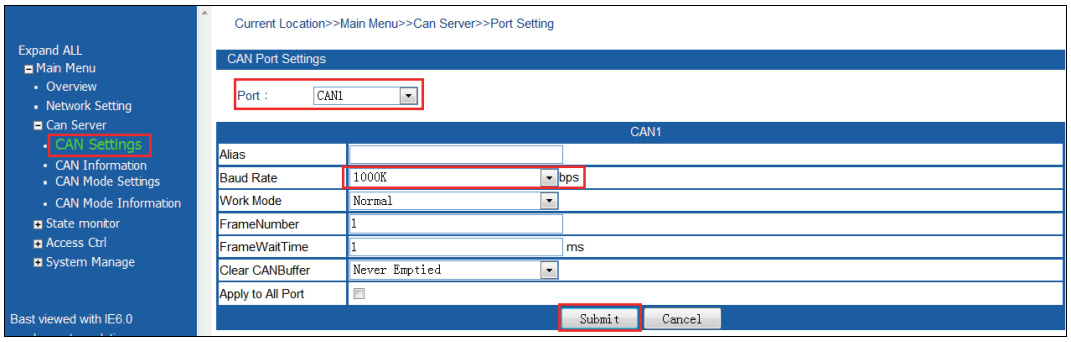
2. On "Use the following IP address" option box, respectively enter corresponding "IP address", "Subnet Mask" and "Gateway" of CAN server.

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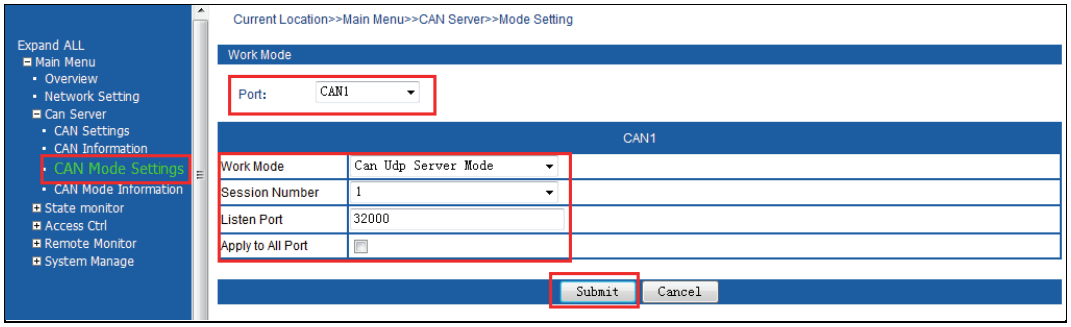
3. Other parameters maintain the default, click "Submit".

Step 2 Configure the work mode of CAN server.

1. Login in the Web configuration interface, choose " Main Menu > CAN server > CAN Settings".



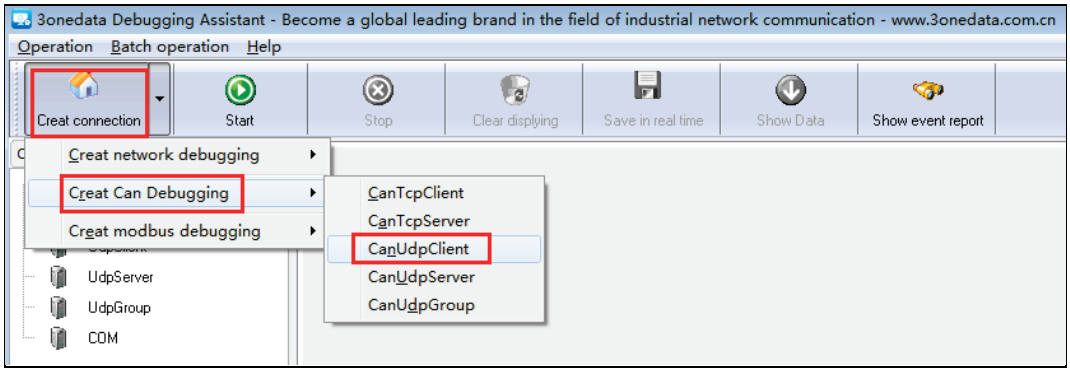
2. Click "Port" drop-down list box, choose "CAN1".
3. Click "Baud Rate" drop-down list box, choose "1000K".
4. Other parameters maintain the default, click "Submit".
5. Choose "Main Menu > CAN Server > CAN Mode Settings".



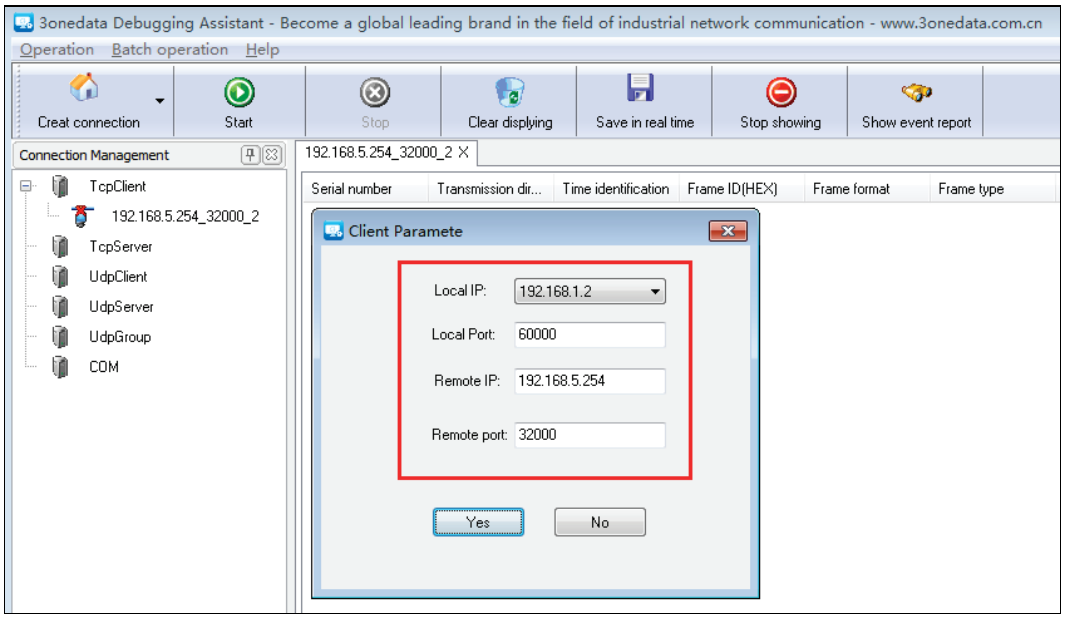
6. Click "Port" drop-down list box, choose "CAN1".
7. Click "Work Mode" drop-down list box, choose "CAN Udp Server Mode".
8. Enter "32000" on "Listen Port" text box.
9. Other parameters maintain the default, click "Submit".

Step 3 Run "3onedata Debugging Assistant" software to create Udp client for the host.

1. Install and run "3onedata Debugging Assistant" software, Click "Create Connection" drop-down list box, choose "Create Can Debugging > CanUdpClient".

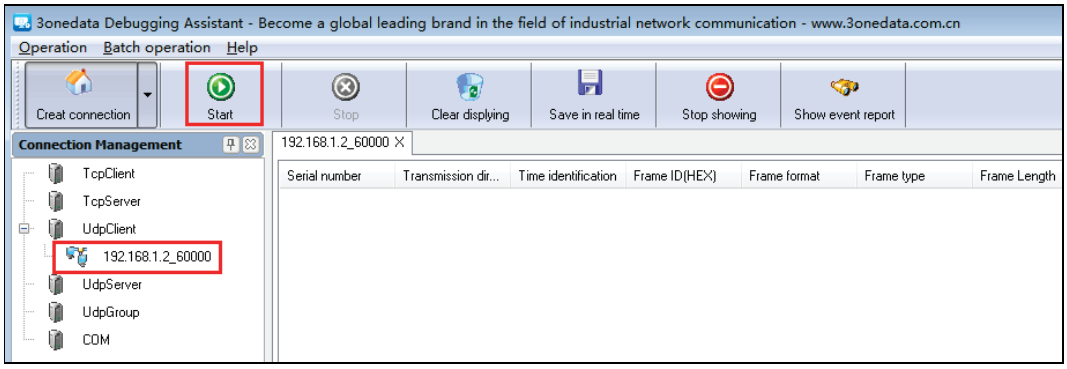


2. On the pop-up "Local IP" drop-down list box, choose the IP address of host PC (Udp client) "192.168.1.2".
3. Enter the host PC (Udp client) port "60000" on the "Local Port" text box.



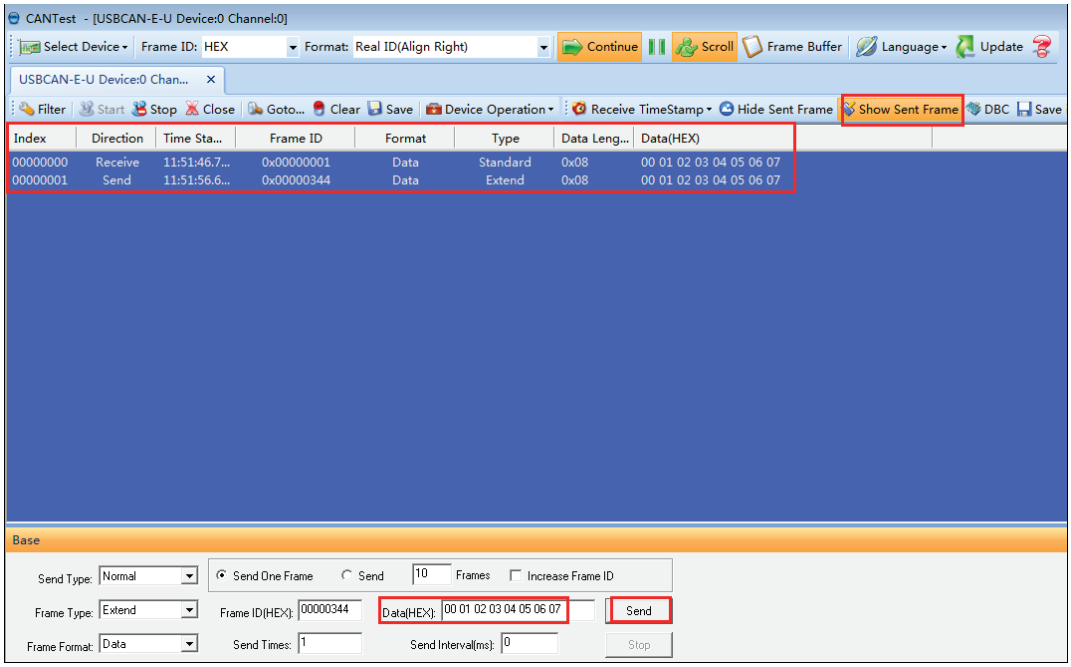
4. On the "Remote IP" text box, enter the IP address of CAN server (Udp server) "192.168.1.254".
5. On the "Remote Port" text box, enter the port of CAN server (Udp server) "32000", click "Yes".
6. Choose the created UdpClient connection, click "Start".

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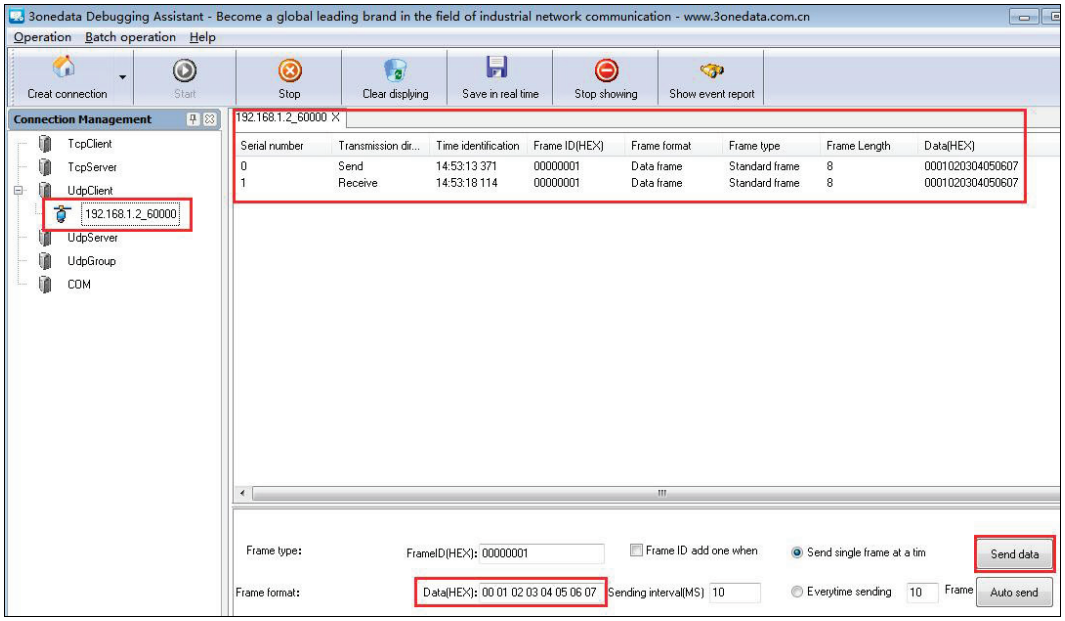


Step 4 Synchronously run "3onedata Debugging Assistant" and "CANTest" software, test the intercommunication between CAN server (UDP server) and host PC (UDP client).

1. Install and run "CANTest" software, click "Show Sent Frame" option box.
2. Frame data maintains default "00 01 02 03 04 05 06 07", click "Send".



3. Run "3onedata Debugging Assistant" software, check the CAN port information received by host PC on UDPClient option box. In a similar way, host PC can send information to CAN port device.



5.6.4 CAN UDP Client Mode (CAN UDP Client Mode)

Background Introduction

Under "CAN UDP Client Mode", it's assumed that CAN server port "CAN1" forwardly waits for the connection of one host PC, meanwhile the host can read or send the Ethernet data to a CAN device.

CAN server (UDP client mode) parameter information as follows:

- IP address: 192.168.1.254
- Listen Port: 60001
- Baud rate: 1000K

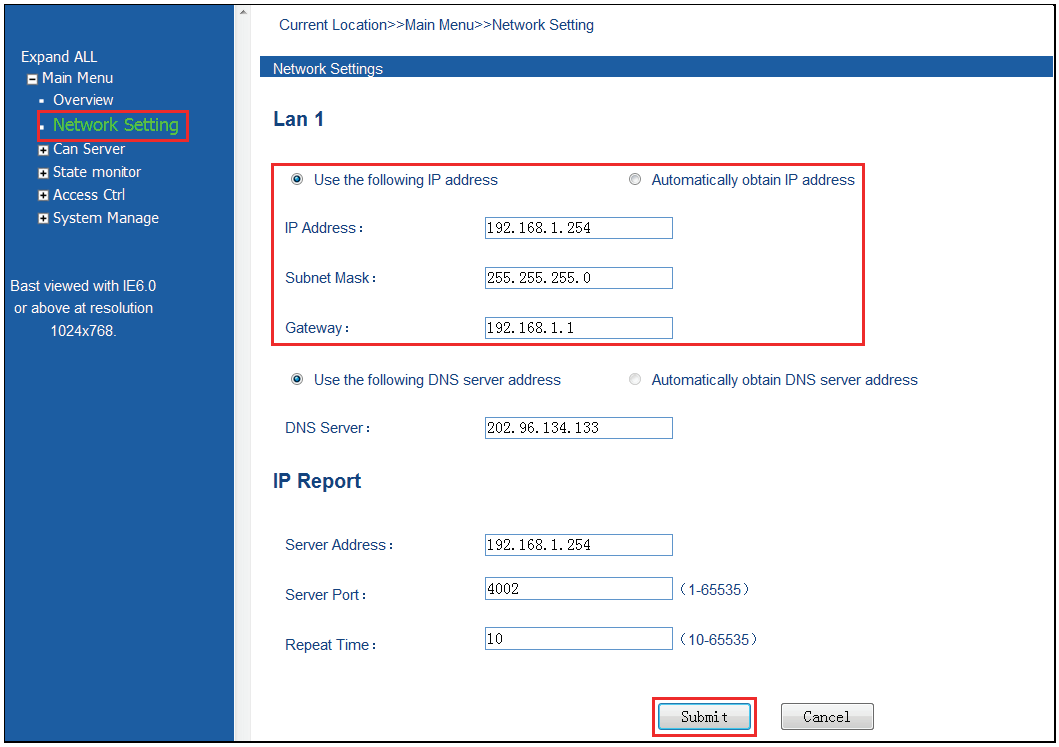
Host PC (UDP server mode) parameter information as follow:

- IP address: 192.168.1.2
- Local Port:33000

Operation Steps

Step 1 Configure CAN server IP address.

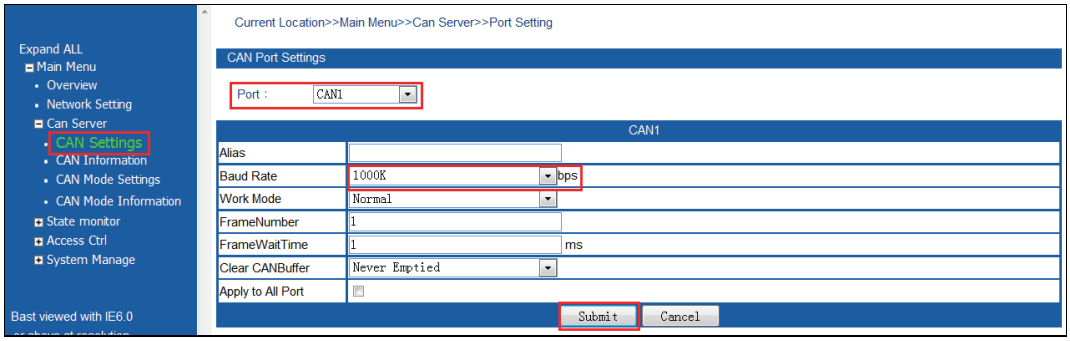
1. Login in the Web configuration interface, choose " Main Menu > Network Setting".



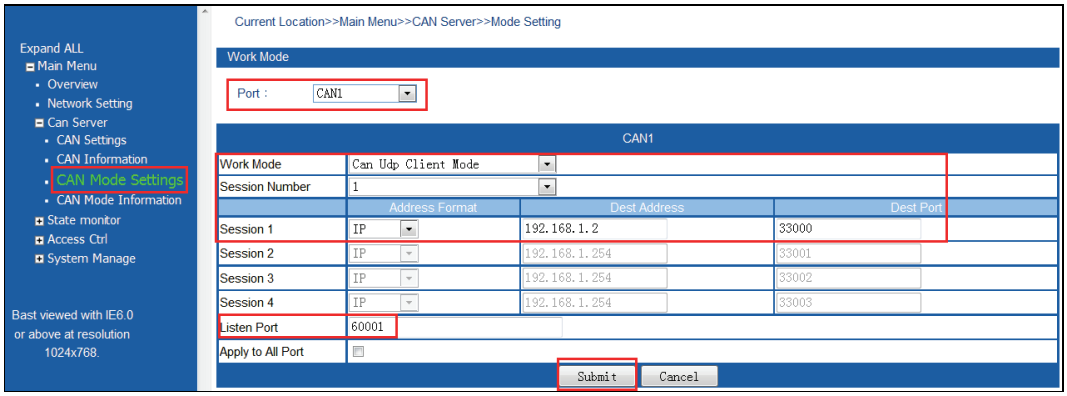
2. On "Use the following IP address" option box, respectively enter corresponding "IP address", "Subnet Mask" and "Gateway" of CAN server.
3. Other parameters maintain the default, click "Submit".

Step 2 Configure the work mode of CAN server.

1. Login in the Web configuration interface, choose " Main Menu > CAN server > CAN Settings".



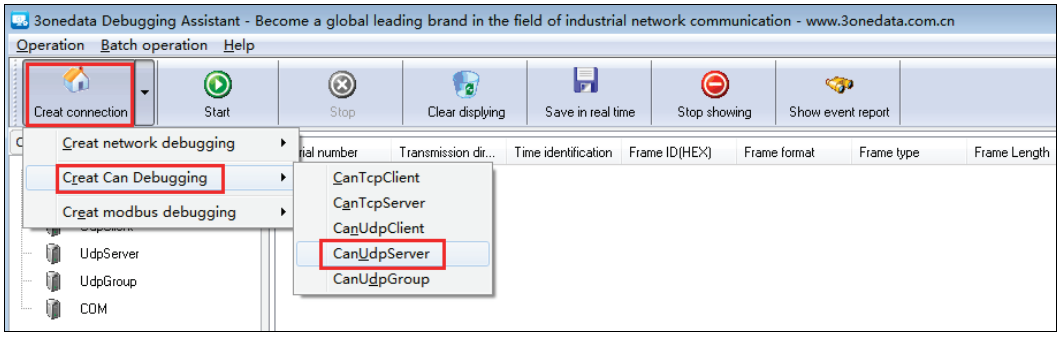
2. Click "Port" drop-down list box, choose "CAN1".
3. Click "Baud Rate" drop-down list box, choose "1000K".
4. Other parameters maintain the default, click "Submit".
5. Choose "Main Menu > CAN Server > CAN Mode Settings".



6. Click "Port" drop-down list box, choose "CAN1".
7. Click "Work Mode" drop-down list box, choose "CAN Udp Client Mode".
8. Enter "192.168.1.2" on the "Dest Address" text box.
9. Enter "33000" on the "Dest Port" text box.
10. Enter "60001" on "Listen Port" text box.
11. Other parameters maintain the default, click "Submit".

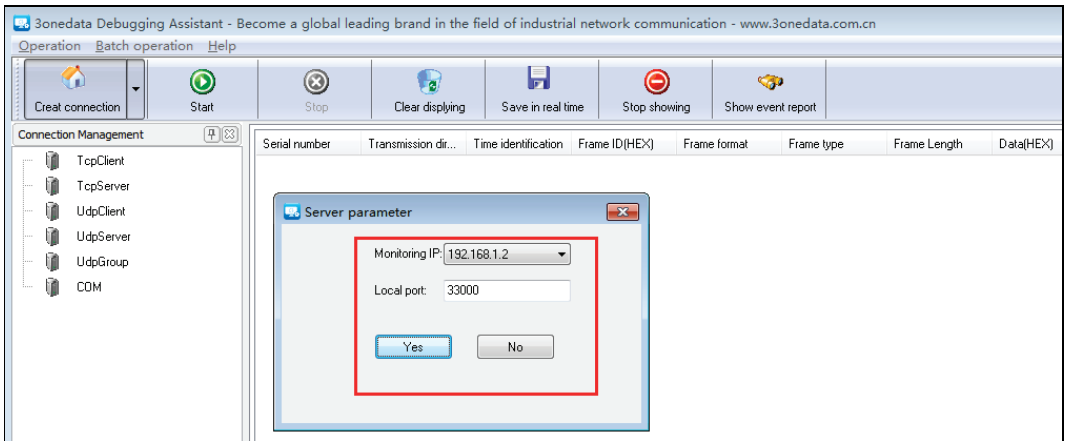
Step 3 Run "3onedata Debugging Assistant" software to create UDP server for the host.

1. Install and run "3onedata Debugging Assistant" software, Click "Create Connection" drop-down list box, choose "Create Can Debugging > CanUDPServer".

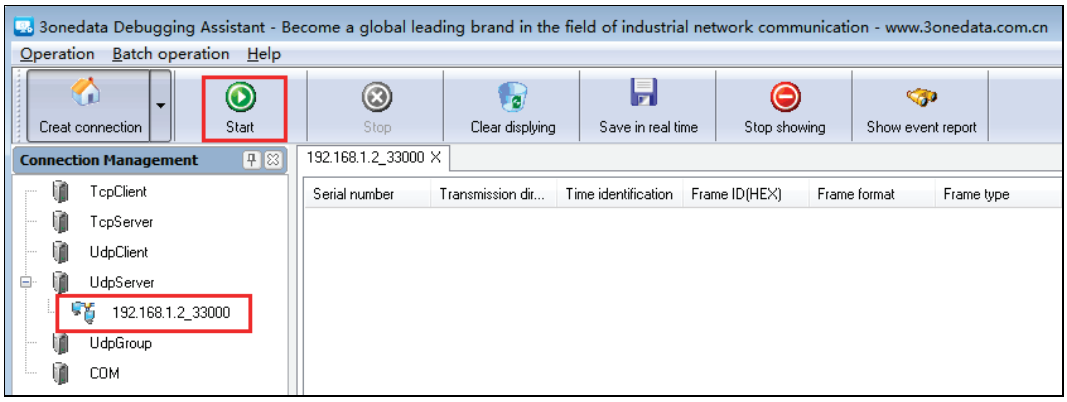


2. On the pop-up "Monitoring IP" drop-down list box, choose the IP address of host PC (UDP server) "192.168.1.2".
3. Enter the host PC (UDP server) local port "33000" on the "Local Port" text box, click "Yes".

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4. Choose the created UdpServer connection, click "Start".

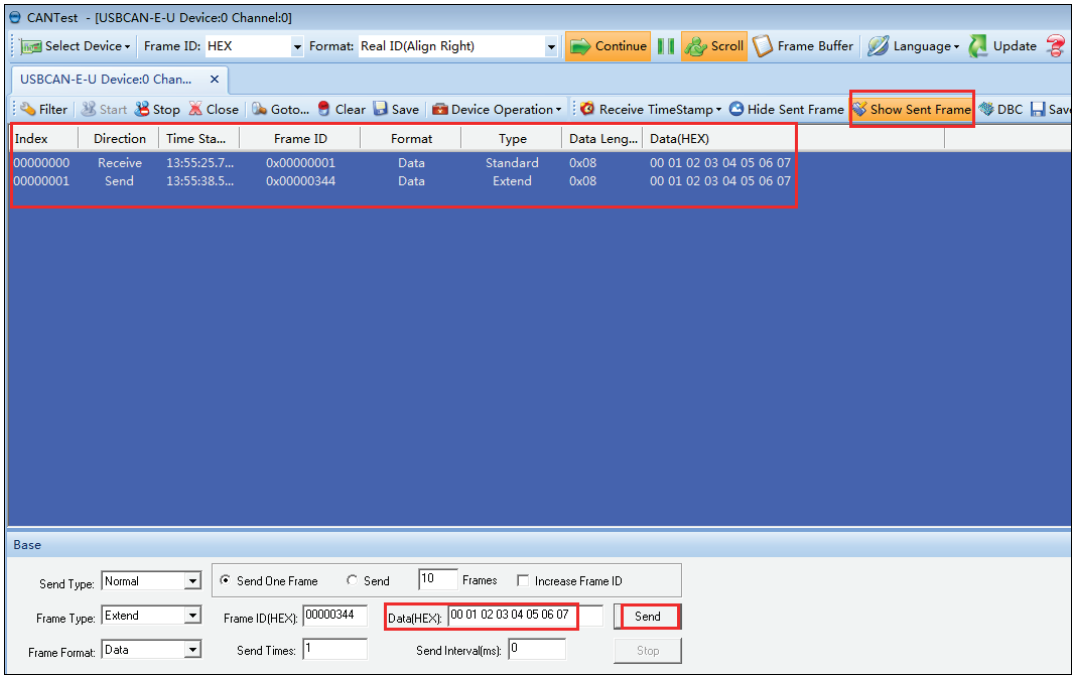


Notice

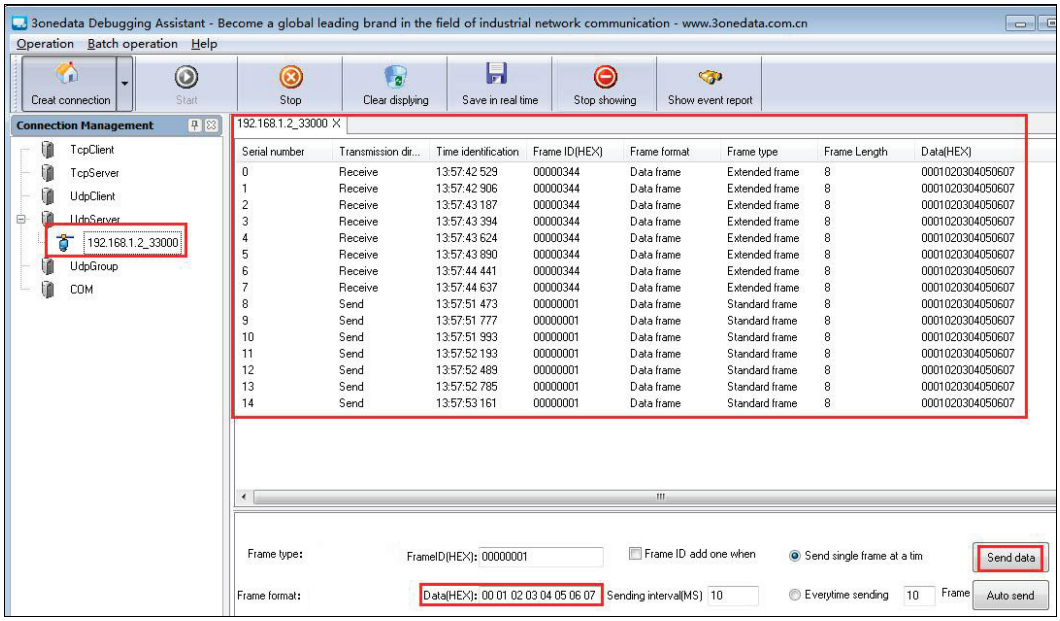
UDP (User Datagram Protocol), it's a connectionless protocol. After, after successfully creating UdpClient connection, user doesn't need to click "Start".

Step 4 Synchronously run "3onedata Debugging Assistant" and "CANTest" software, test the intercommunication between CAN server (UDP client) and host PC (UDP server).

1. Install and run "CANTest" software, click "Show Sent Frame" option box.
2. Frame data maintains default "00 01 02 03 04 05 06 07", click "Send".



3. Run "3onedata Debugging Assistant" software, check the CAN port information received by host PC on UDPServer option box.In a similar way, host PC can send information to CAN port device.



5.6.5 CAN UDP Multicast Mode (CAN UDP Multicast Mode)

Background Introduction

It's assumed that CAN server IP address is "192.168.1.254", user needs to add the CAN server to the multicast address "239.0.0.0".Therefore CAN server can send the unicast or multicast data to one or more appointed hosts via UDP protocol, meanwhile it can receive the unicast or multicast data from one or more devices and achieve many-to-many communication.

CAN server parameter information as follow:

- IP address: 192.168.1.254
- Group Address: 239.0.0.0
- Listen Port: 32000
- Baud rate: 1000K

Host PC parameter information as follow:

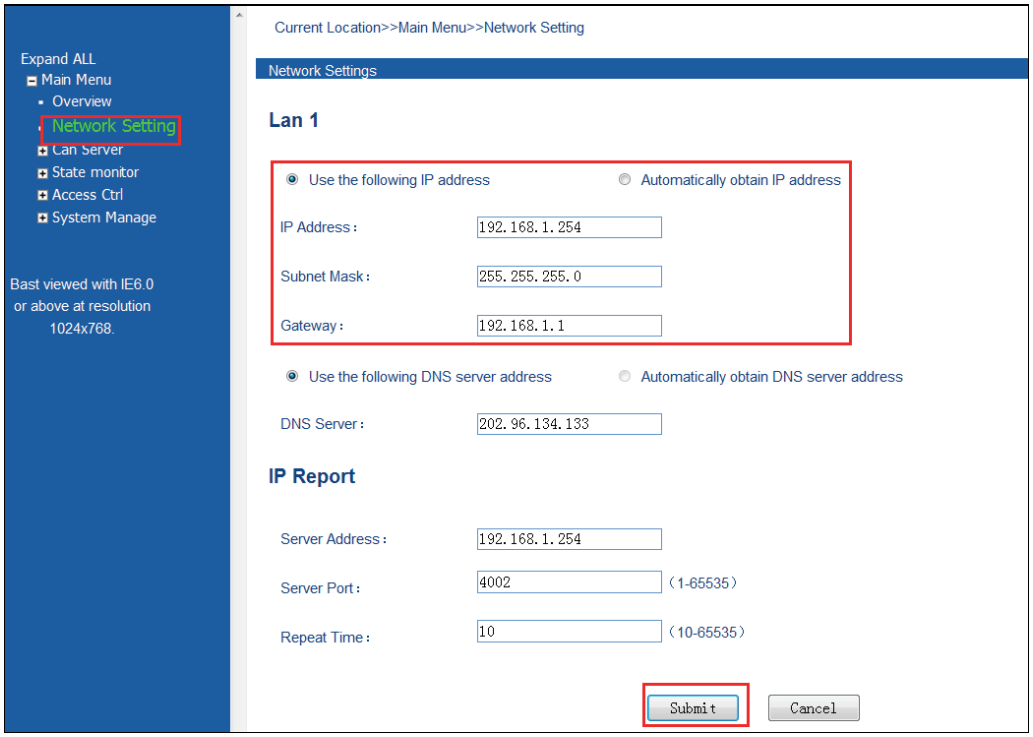
- IP address: 192.168.1.2
- Local Port:33000
- Group Address: 239.0.0.1

Operation Steps

Step 1 Configure CAN server IP address.

1. Login in the Web configuration interface, choose " Main Menu > Network Setting".

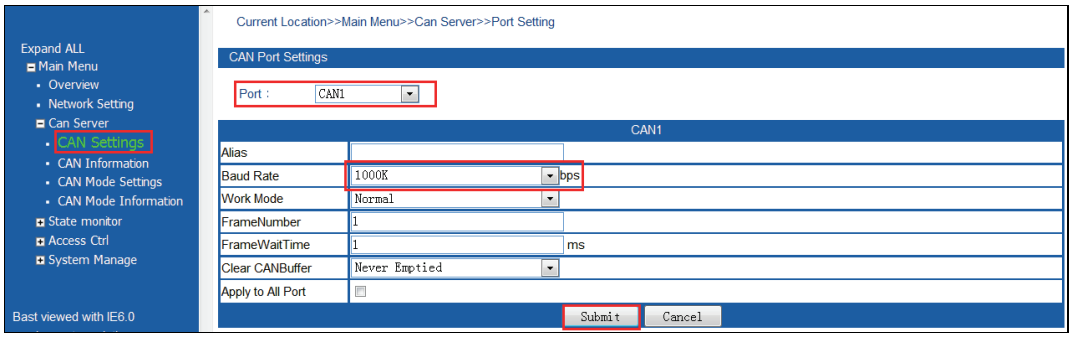
Copyright © Shenzhen 3onedata Co., Ltd.



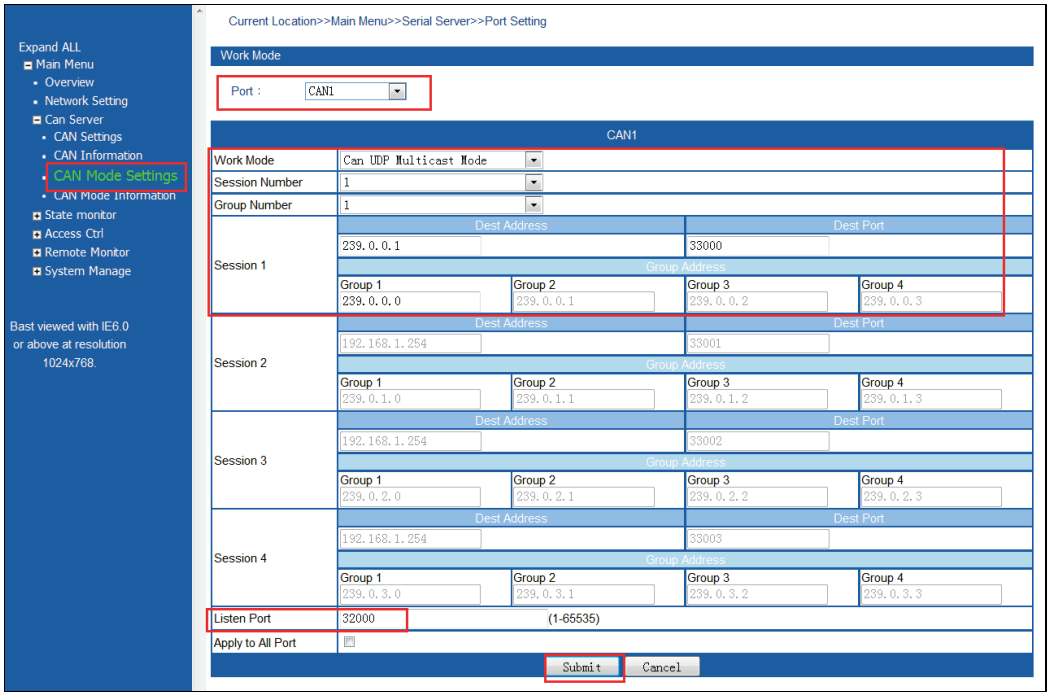
2. On "Use the following IP address" option box, respectively enter corresponding "IP address", "Subnet Mask" and "Gateway" of CAN server.
3. Other parameters maintain the default, click "Submit".

Step 2 Configure the work mode of CAN server.

1. Login in the Web configuration interface, choose " Main Menu > CAN server > CAN Settings".



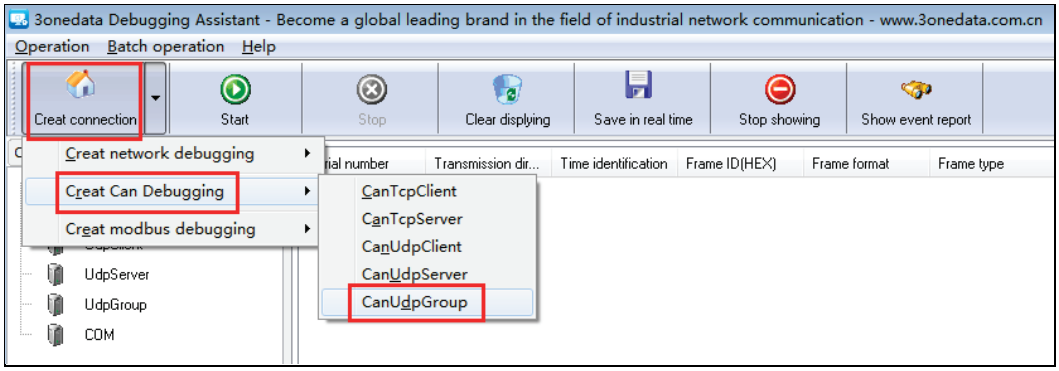
2. Click "Port" drop-down list box, choose "CAN1".
3. Click "Baud Rate" drop-down list box, choose "1000K".
4. Other parameters maintain the default, click "Submit".
5. Choose "Main Menu > CAN Server > CAN Mode Settings".



6. Click "Port" drop-down list box, choose "CAN1".
7. Click "Work Mode" drop-down list box, choose "CAN Udp Client Mode".
8. Enter "239.0.0.1" on the "Dest Address" text box of "Session 1".
9. Enter "33000" on the "Dest Port" text box of "Session 1".
10. Enter "239.0.0.0" on the "Group 1" text box of "Session 1".
11. Enter "32000" on "Listen Port" text box.
12. Other parameters maintain the default, click "Submit".

Step 3 Run "3onedata Debugging Assistant" software to create UDP multicast for the host.

1. Install and run "3onedata Debugging Assistant" software, click "Create Connection" drop-down list box, choose "Create Can Debugging > CanUdpGroup".



2. On the "Local IP" drop-down list box, choose the IP address of host PC "192.168.1.2".

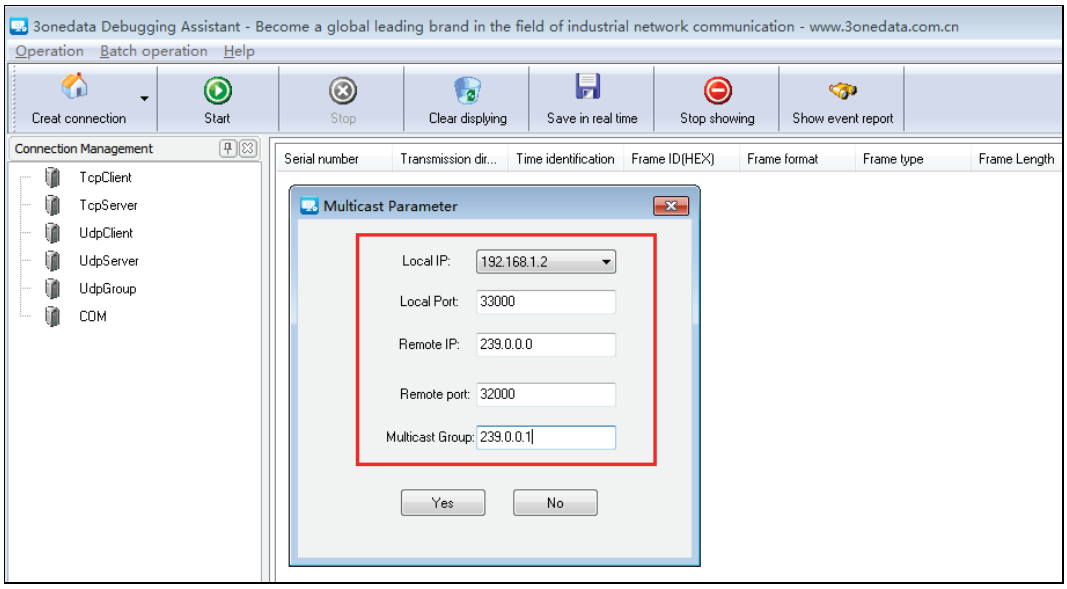
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3. Enter the host PC local port "33000" on the "Local Port" text box.

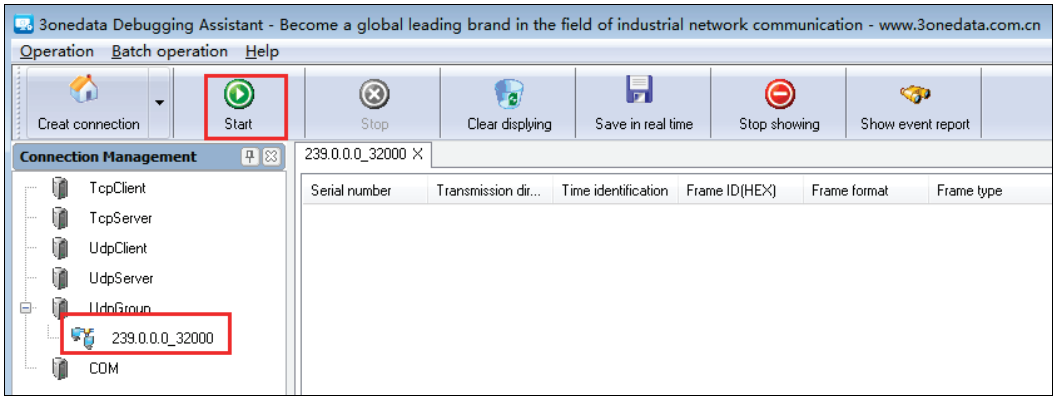
4. On the "Remote IP" text box, enter the IP address of CAN server "239.0.0.0".

5. On the "Remote Port" text box, enter the CAN server local port "32000".

6. Enter multicast group address "239.0.0.1" on the "Multicast Group" text box.



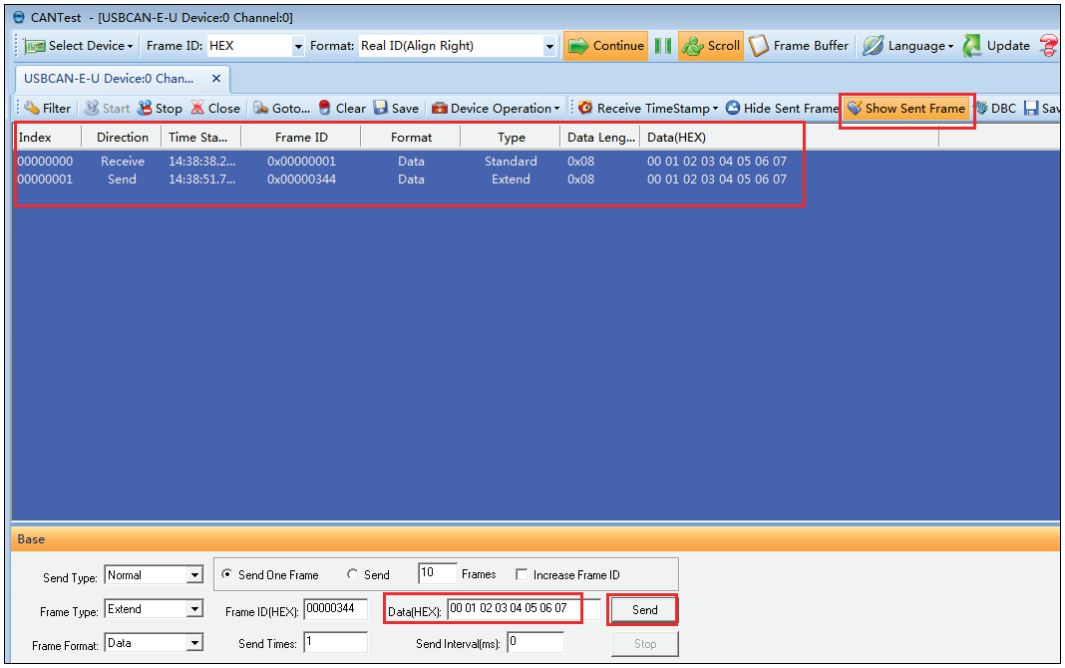
7. Choose the created UdpGroup connection, click "Start".



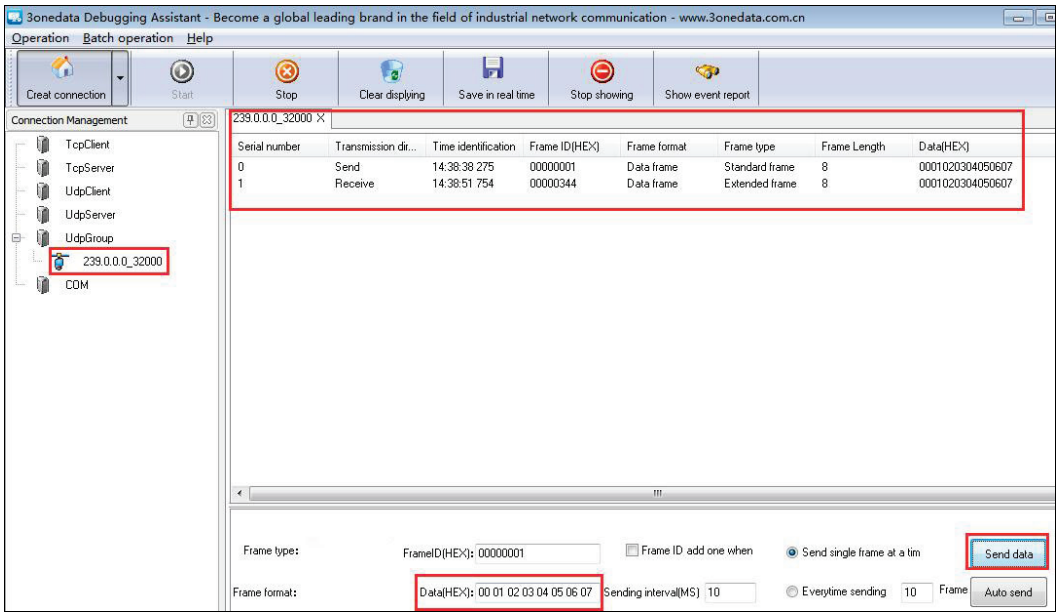
Step 4 Synchronously run "3onedata Debugging Assistant" and "CANTest" software, test the intercommunication between CAN server multicast address and host PC multicast address.

1. Install and run "CANTest" software, click "Show Sent Frame" option box.

2. Frame data maintains default "00 01 02 03 04 05 06 07", click "Send".



3. Run "3onedata Debugging Assistant" software, check the CAN port information received by host PC on UDPGroup option box. In a similar way, host PC can send information to CAN port device.



6 Create Modbus Debugging

6.1 Modbus Monitor

Function Description

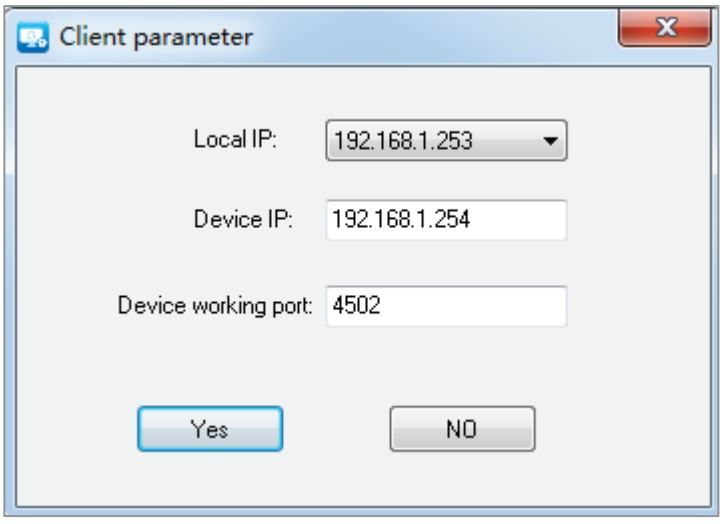
On the page of ModbusMonitor, user can monitor the communication between the master and slave stations by configuring the local IP, device IP, and device working port.

Configuration Steps

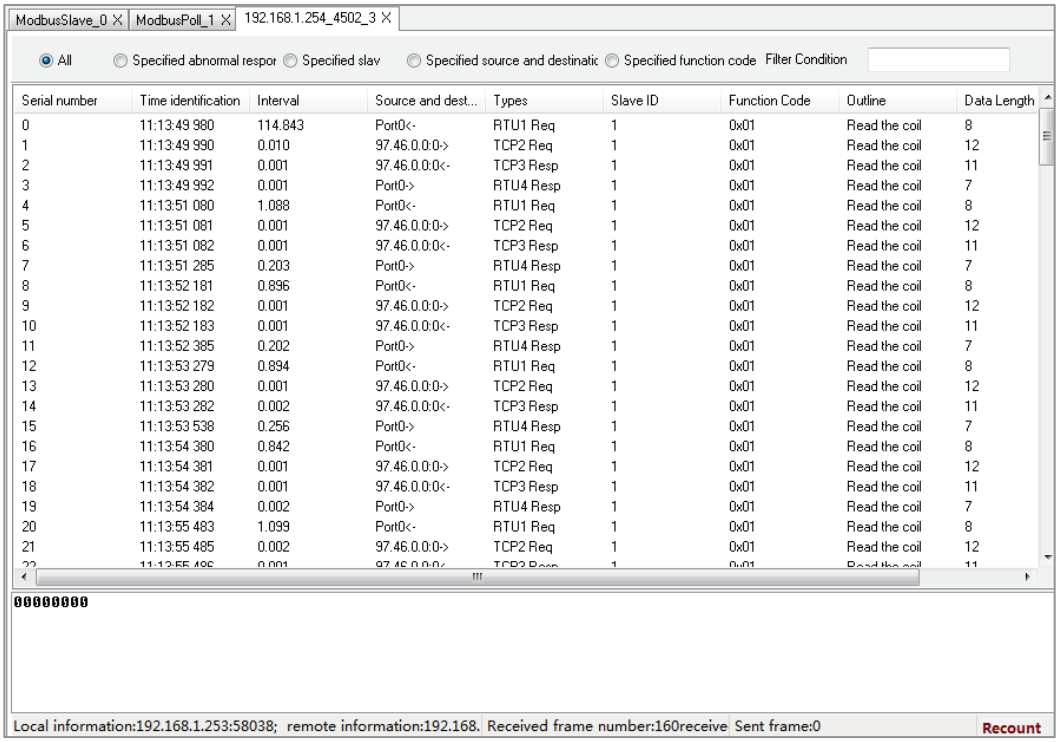
Note

The creation of ModbusMonitor takes effect only after a valid Modbus connection has been established.

Step 1 On the page of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusMonitor".Pop up the window of "Client parameter" as below.



Step 2 Enter the values of "Local IP", "Device IP", and "Device working port". Click the button of "OK". The monitoring window as follows.



The monitoring information screening instructions are shown in the following table:

Operation	Description
All	Show all information
Specified abnormal response	Display information of abnormal responses
Specified slav	Display information of specified slave ID
Specified source and destination	Display information of the specified source and destination, enter the source and destination in the specified input box. The values include: Port0->, Port0<-, IP address->, IP address <-, and their meanings as follows: • Port0->: serial port transmission; • Port0<-: serial port receiving; • IP address->: network transmission; • IP address <-: Network receiving.
Specified function code	Display the information of specified function code, enter the function code in the specified input box. The values include: 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x0F and 0x10. Their meanings as follows: • 0x01: read coil;

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	• 0x02: read discrete magnitude input; • 0x03: read holding register; • 0x04: read input register; • 0x05: write a single coil; • 0x06: write a single register; • 0x0F: write multiple coils; • 0x10: write multiple registers.

Step 3 End.

6.2 Modbuspoll

Function Description

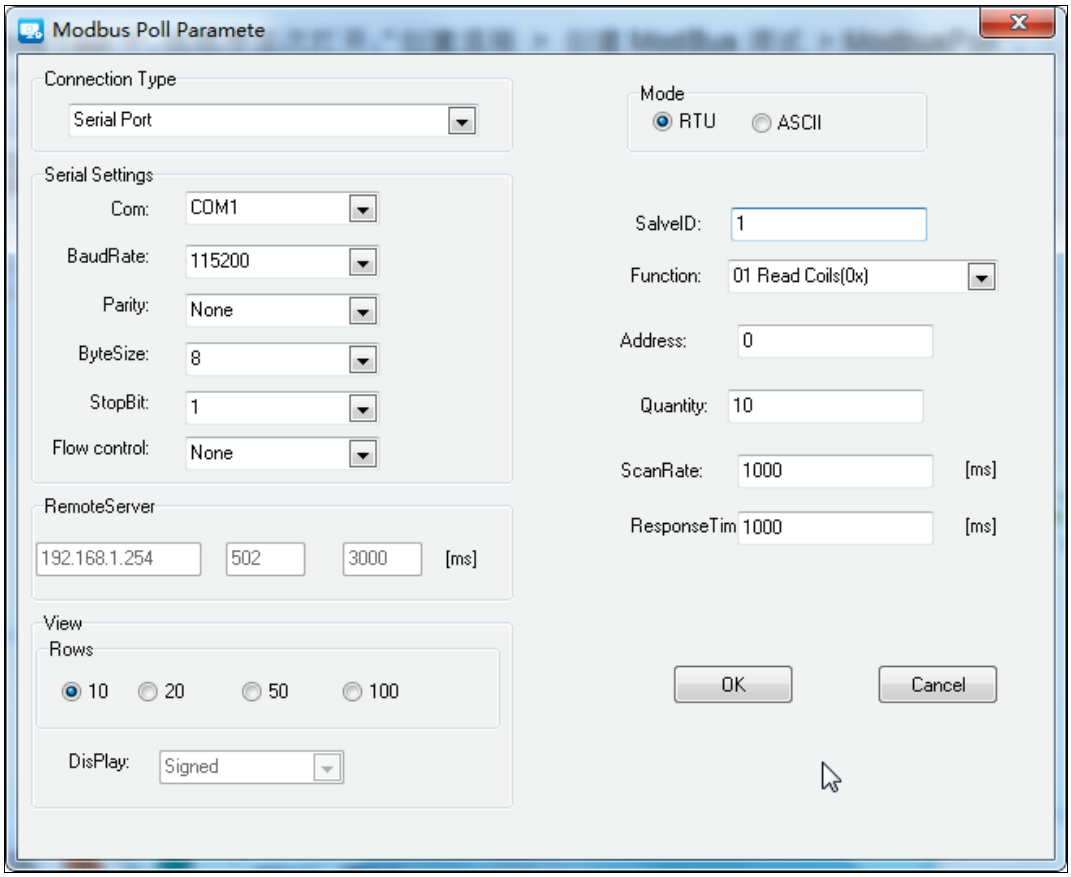
On the page of Modbuspoll, user can configure the master station information.

Operation Path

On the page of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusPoll".

Interface Description

The screenshot of ModbusPoll interface as follows:



Main elements configuration description of ModbusPoll interface:

Interface Elements	Description
Connection Type	• Serial Port: Serial port connection type; • Modbus TCP/IP: Network connection type.
Serial Settings	**Serial Settings column**
Com	Select the port number corresponding to the host
Baud Rate	Select the baud rate corresponding to the host port. The options include: 110/300/600/1200/2400/4800/9600/14400/19200/38400/57600/115200/230400/460800/921600
Parity	Select the parity bit corresponding to the host port. The options include: • None • Odd • Even

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	• Mark • Space
ByteSize	Select the data bit corresponding to the host port. The options include: • 5 bits • 6 bits • 7 bits • 8 bits
Stop Bit	Select the stop bit corresponding to the host port. The options include: • 1 bits • 1.5 bits • 2 bits
Flow control	Select the control pin of the flow control. The options include: • None • DTR/DSR • RTS/CTS • XON/XOFF
Remote Server	**Remote server configuration bar** Notes: The remote server can be configured only when the connection mode is Modbus TCP/IP.
IP address	IP address of the Modbus gateway, it defaults to 192.168.1.254
Port number	The port number of Modbus gateway, the default is 502, it is recommended not to modify
Link timeout	When the remote server link exceeds the setting time, it will prompt user for link timeout.
View	**View configuration bar**
Rows	The number of lines displayed in the debugging tool, the options include: • 10 • 20 • 50 • 100
Display	The value of the format corresponds to the value of the function code:

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	• When the value of the function code is 01 or 02, the value of the format defaults to Signed; • When the value of the function code is 03, 04, 05, 06, 15, or 16, options of the format value include: – Signed; – Unsigned; – HEX; – Binary.
Mode	**Connection mode, the options include:** • **RTU** • **ASCII** Notes: The mode selection function is supported when the connection type is Serial Port.
Slave ID	Slave ID number
Function	The Modbus function code is an element of the Modbus Request/Response PDU. The options are: • 01 Read Coils (0x): read the coil, this function code can be used to read the coil's continuous state from 1 to 2000; • 02 Read Discrete Inputs(1x): Read the discrete magnitude input, this function code can be used to read 1 to 2000 continuous state of the discrete magnitude input; • 03 Read Holding Registers|(4x): Read the holding register, this function can be used to read the content of the continuous blocks of the holding register; • 04 Read Input Registers|(3x): Read the input register, this function code can be used to read consecutive input registers from 1 to about 125; • 05 Write Single Coil: Write a single coil, this function code can be used to write a single output to ON or OFF; • 06 Write Single Register: Write a single

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	register, this function code can be used to write a single holding register; • 15 Write Multiple Coils: Write multiple coils, this function code can be used to write each output to ON or OFF; • 16 Write Multiple Registers: Write multiple registers, this function code can be used to write consecutive register blocks (1 to about 120 registers).
Address	Start address of register or coil
Quantity	Number of registers or coils
Scan Rate	Scanning interval of master stations
Response Tim	Exceeded time of slave response

6.3 ModbusSlave

Function Description

On the page of ModbusSlave, user can configure the slave station information.

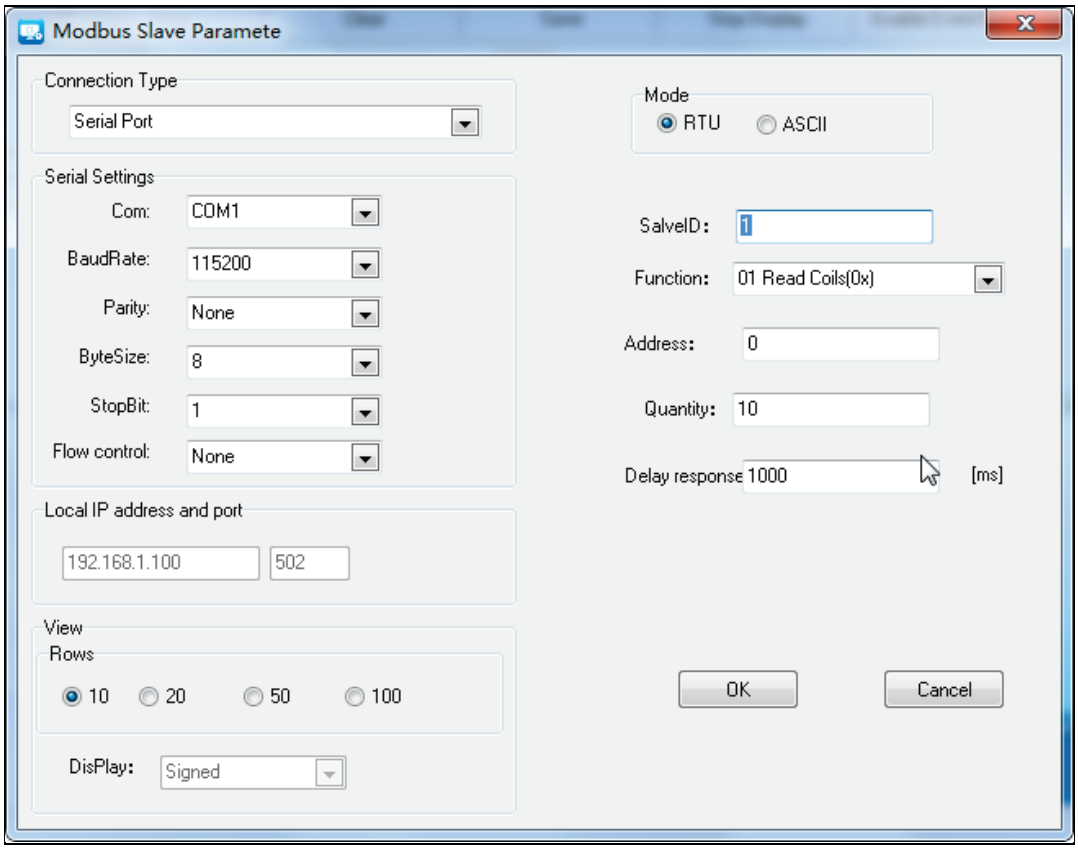
Operation Path

On the page of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusSlave".

Interface Description

The screenshot of ModbusSlave interface as follows:

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Main elements configuration description of ModbusSlave interface:

Interface Elements	Description
Connection Type	• Serial Port: Serial port connection type; • Modbus TCP/IP: Network connection type.
Serial Settings	**Serial Settings column**
Com	Select the serial port number corresponding to the device.
Baud Rate	Select the baud rate corresponding to the serial port number. The options include: 110/300/600/1200/2400/4800/9600/14400/19200/38400/56000/57600/115200/230400/460800/921600
Parity	Select the parity bit corresponding to the serial port number. The options include: • None • Odd • Even • Mark

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	• Space
ByteSize	Select the data bit corresponding to the serial port number. The options include: • 5 bits • 6 bits • 7 bits • 8 bits
Stop Bit	Select the stop bit corresponding to the serial port number. The options include: • 1 bits • 1.5 bits • 2 bits
Flow control	Select the control pin of flow control. The options include: • None • DTR/DSR • RTS/CTS • XON/XOFF
Remote Server	**Remote server configuration bar** Notes: The remote server can be configured only when the connection mode is Modbus TCP/IP.
IP address	IP address of remote server
Port number	Port number of remote server
View	**View configuration bar**
Rows	The number of lines displayed in the debugging tool, the options include: • 10 • 20 • 50 • 100

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Display	The value of the format corresponds to the value of the function code: • When the value of the function code is 01 or 02, the value of the format defaults to Signed; • When the value of the function code is 03, 04, options of the format value include: – Signed; – Unsigned; – HEX; – Binary.
Mode	**Connection mode, the options include:** • **RTU** • **ASCII** Notes: The mode selection function is supported when the connection type is Serial Port.
Slave ID	Slave ID number
Function	The Modbus function code is an element of the Modbus Request/Response PDU. The options are: • 01 Read Coils (0x): read the coil, this function code can be used to read the coil's continuous state from 1 to 2000; • 02 Read Discrete Inputs(1x): Read the discrete magnitude input, this function code can be used to read 1 to 2000 continuous state of the discrete magnitude input; • 03 Read Holding Registers|(4x): Read the holding register, this function can be used to read the content of the continuous blocks of the holding register; • 04 Read Input Registers|(3x): Read the input register, this function code can be used to read consecutive input registers from 1 to about 125.
Address	Start address of register or coil
Quantity	Number of registers or coils
Delayed response	Slave station delays response to the master station time

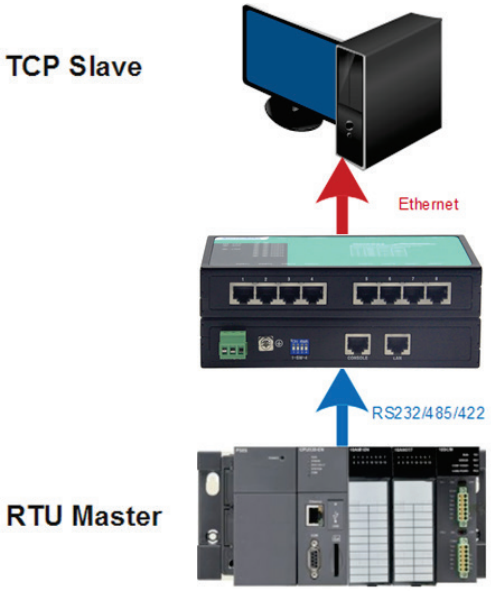
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6.4 Examples of Operating Mode Configuration

6.4.1 RTU Master Mode

Background brief

When the user needs to implement the Modbus R slave master device to communicate with the Modbus TCP slave device, use the Modbus gateway device and set the device's operating mode to RTU Master.



In RTU Master Mode, the RTU master device accesses the TCP slave device through the gateway.

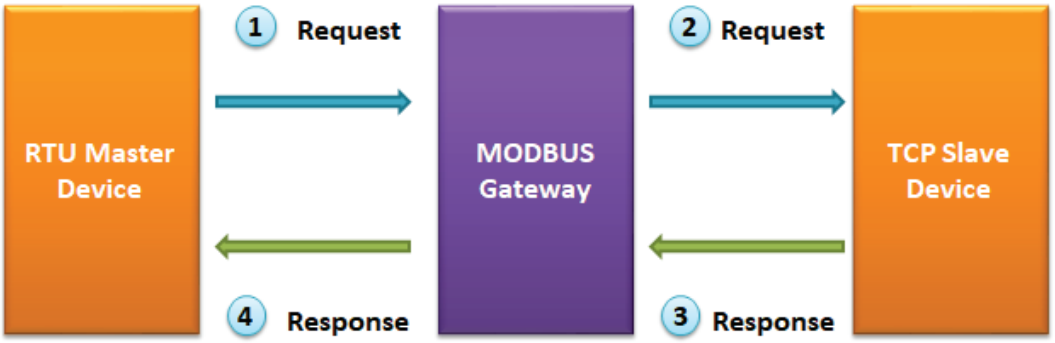
RTU master device sends request to gateway;

Gateway forwarding request to TCP slave device;

TCP slave device returns a response;

The gateway sends back the response.

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The parameters of the RTU master are as follows:

- Communication port: COM1
- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

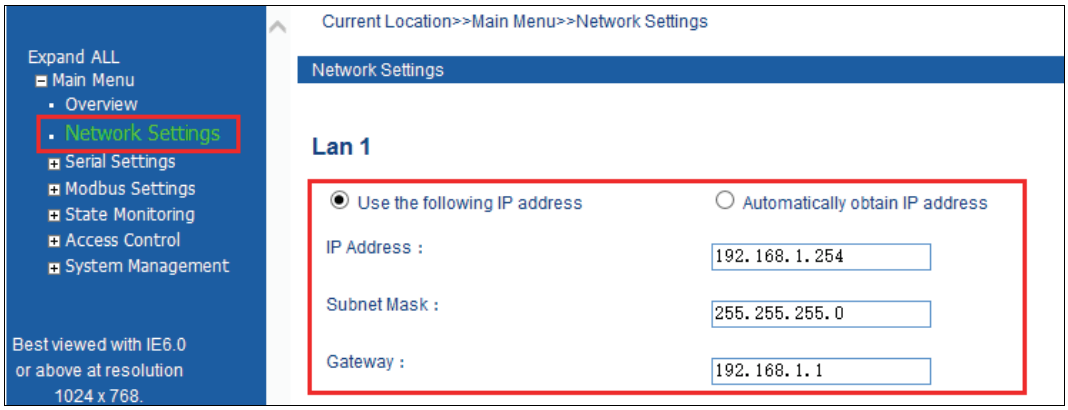
The parameters of the TCP slave are as follows:

- IP address: 192.168.1.80
- Slave ID: 1
- TCP port number: 501

Operation steps

Step 1 Connect the COM serial port of the computer and the COM1 serial port of the Modbus gateway using a cable or a converter.

Step 2 Configure the IP address of the Modbus gateway.



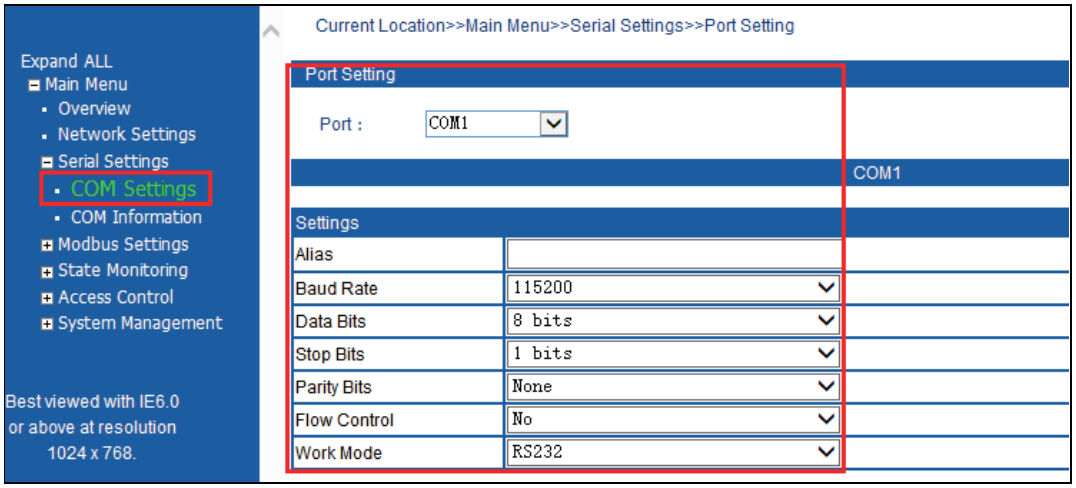
1. Log in to the Web configuration interface and select "Network Setting".
2. In the "Use the following IP address" option box, enter the "IP address", "Subnet Mask" and "Gateway address" corresponding to the Modbus gateway.

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3. Other parameters remain the default, click "submit".

Step 3 Configure the serial port parameter information.

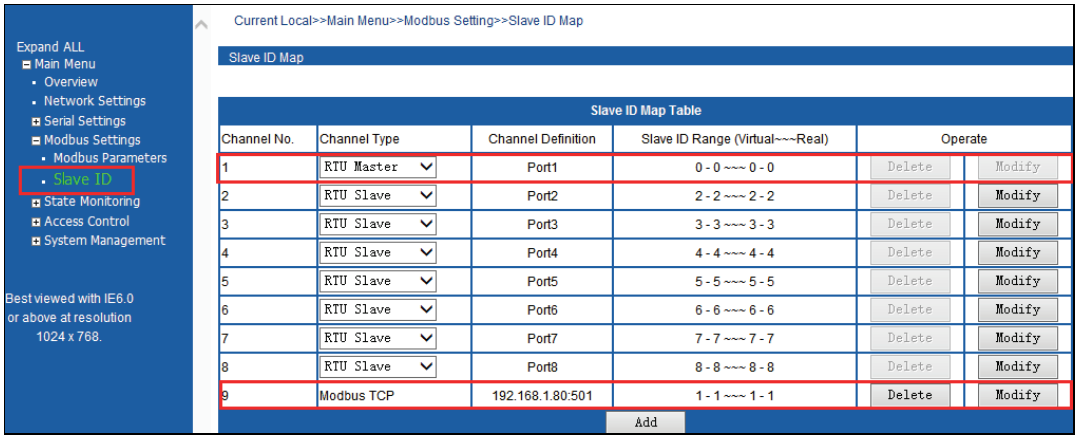
1. Log in to the Web configuration interface and select "Serial Settings> COM Settings".



4. Select "COM1" in the "Port" drop-down list.
5. Set the "BaudRate", "DataBits", "StopBits" and "ParityBits" in the "Settings" option box.
6. Other parameters remain the default, click "submit".

Step 4 Configure the working mode of the Modbus gateway.

1. Log in to the Web configuration interface and select " Main Menu > Modbus Settings > SlaveID ".



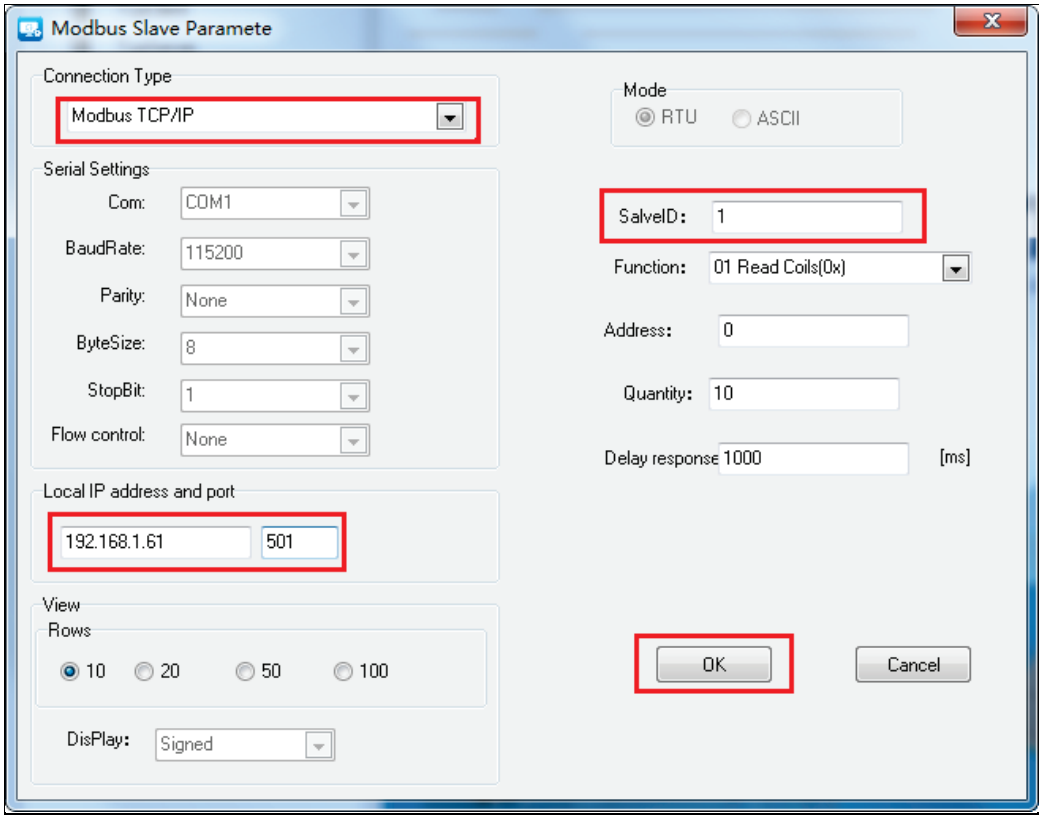
2. In the “Channel NO.”Is 1, click the "channel Type" drop-down list box and select "RTU Master".
3. Click "Add" and enter "192.168.1.80" in the "Remote IP Address" text box.

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4. Enter "501" in the "TCP port" text box.
5. Enter "1" in the "Slave ID Start" and "Slave ID End" text boxes.
6. Enter "0" in the "Slave ID Offset" text box.
7. Click "OK".
8. Save the configuration, click "Submit".

Step 5 Run the Debug Tool software to configure master and slave information.

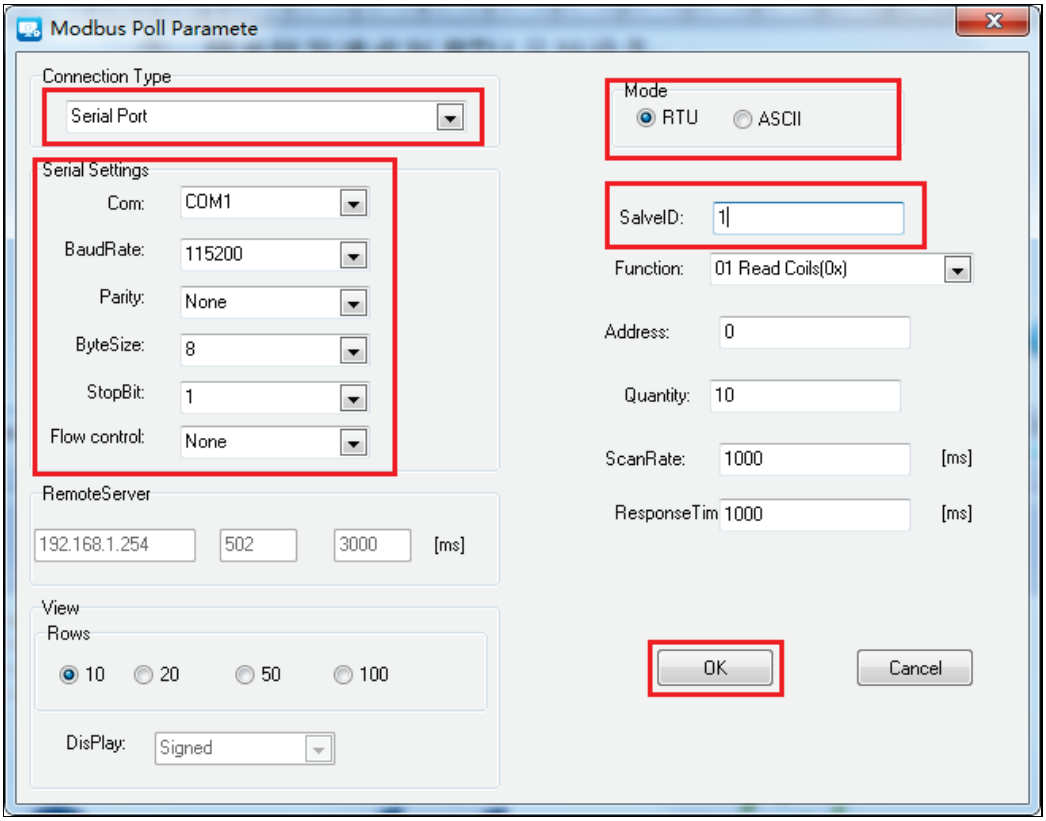
1. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusSlave".
2. Click the drop-down list box of "Connection Type" and select "Modbus TCP/IP".
3. Enter the TCP slave IP address "192.168.1.61" and the TCP slave port number "501" in the text box of "Local IP address and port".
4. Enter "1" in the text box of "Slave ID".
5. Keep the other parameters as default and click “OK”.



6. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusPoll".
7. Click the drop-down list box of "Connection Type" and select "Serial Port".
8. In the option box of "Serial Settings", configure serial port parameter information such as serial port number, baud rate, data bit, parity bit, and stop bit.

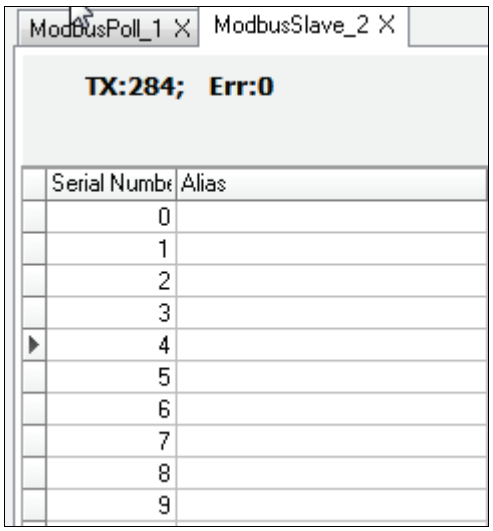
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9. Check the "RTU" mode in the option of "Mode".
10. Enter "1" in the text box of "Slave ID".
11. Keep the other parameters as default and click “OK”.

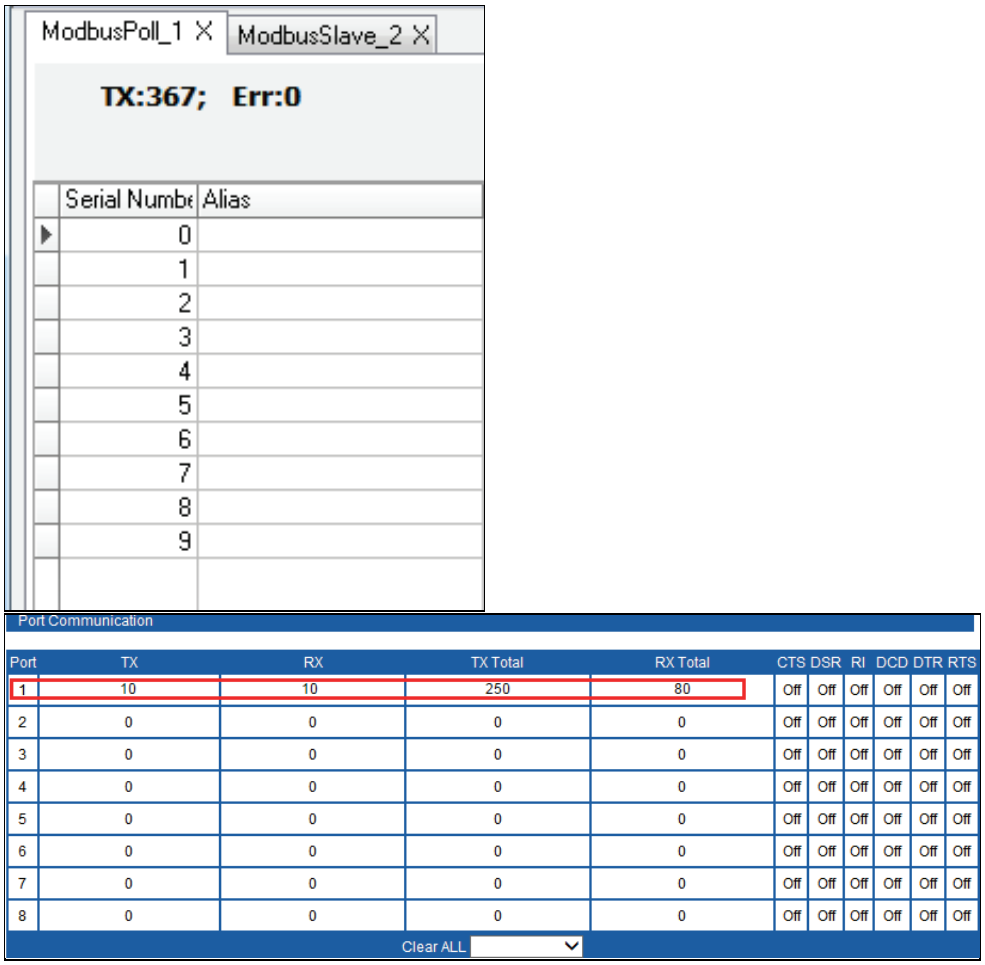


Step 6 View normal communication between the RTU master and the TCP slave.

1. Click "Start" on the top of the ModbusSlave window and the ModbusPoll window to view the connection results.



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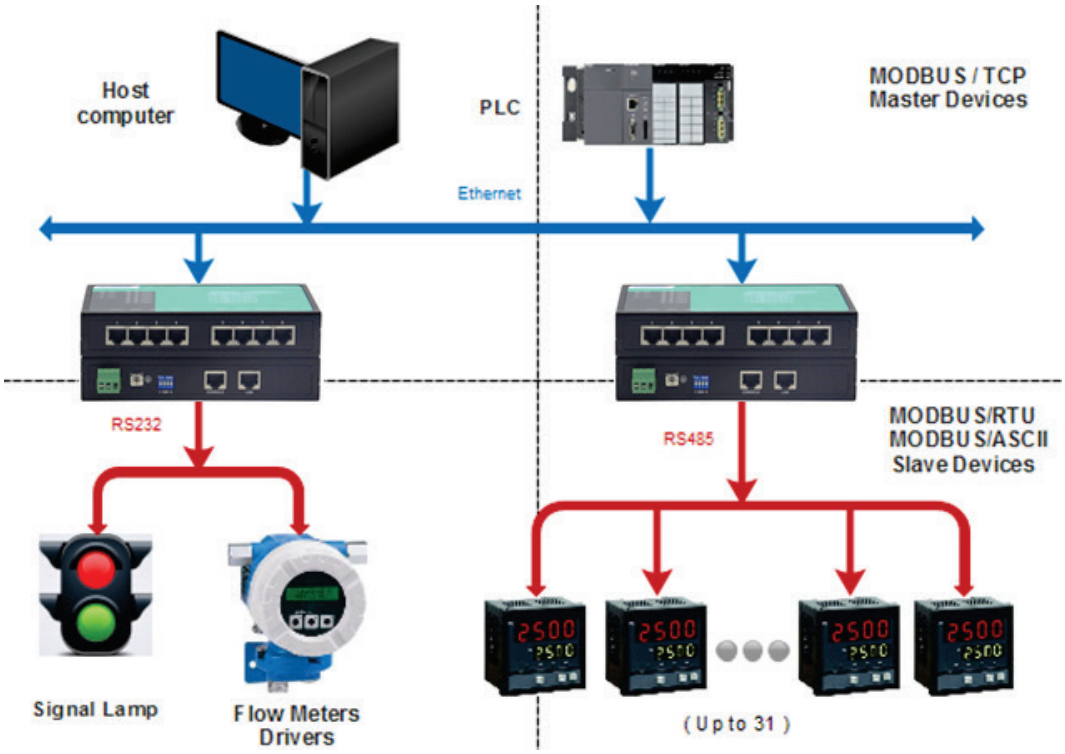
Step 7 End.

6.4.2 RTU Slave Mode

Background brief

When the user needs to implement the Modbus TCP master device to communicate with the Modbus RTU slave device, use the Modbus gateway device and set the device's operating mode to RTU Slave.

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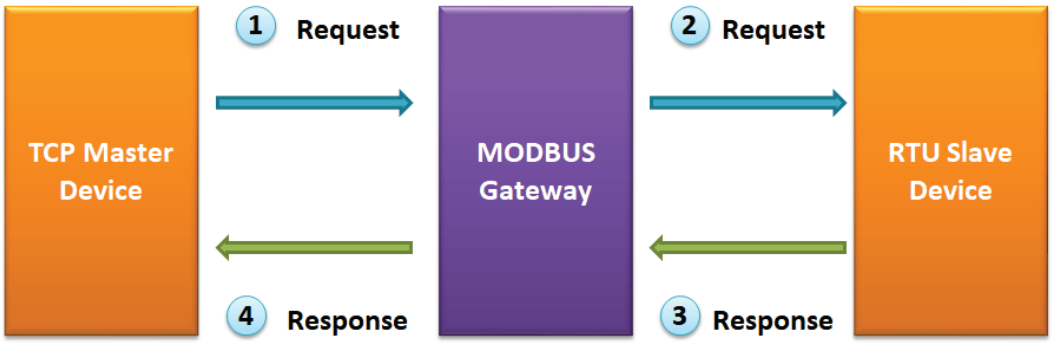
In RTU Slave Mode, the TCP master device accesses the RTU slave device through the gateway.

① TCP master device sends request to gateway;

② Gateway forwarding request to RTU slave device;

③ RTU slave device returns a response;

④ The gateway sends back the response.



The parameters of the TCP master are as follows:

- Slave ID: 2
- TCP port number: 502

The parameters of the RTU slave are as follows:

- Communication port: COM 2

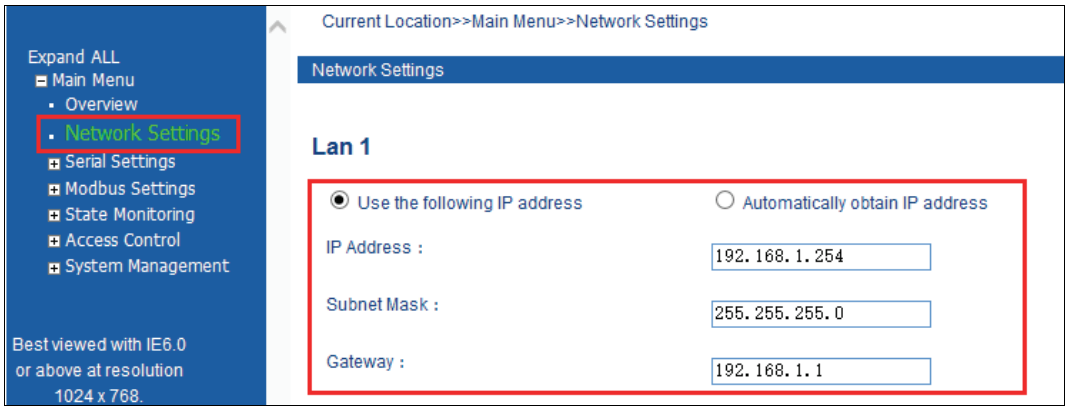
Copyright © Shenzhen 3onedata Co., Ltd.

- Baud rate: 115200
- Parity bit: None
- Data bit: 8
- Stop bit: 1

Operation steps

Step 1 Connect the COM serial port of the computer and the COM2 serial port of the Modbus gateway using a cable or a converter.

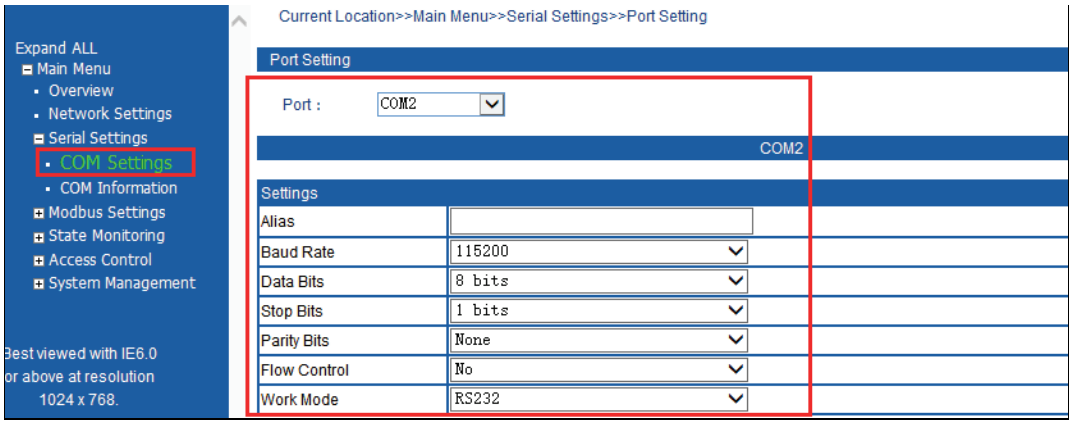
Step 2 Configure the IP address of the Modbus gateway.



1. Log in to the Web configuration interface and select "Network Setting".
2. In the "Use the following IP address" option box, enter the "IP address", "Subnet Mask" and "Gateway address" corresponding to the Modbus gateway.
3. Other parameters remain the default, click "submit".

Step 3 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Serial Settings> COM Settings".



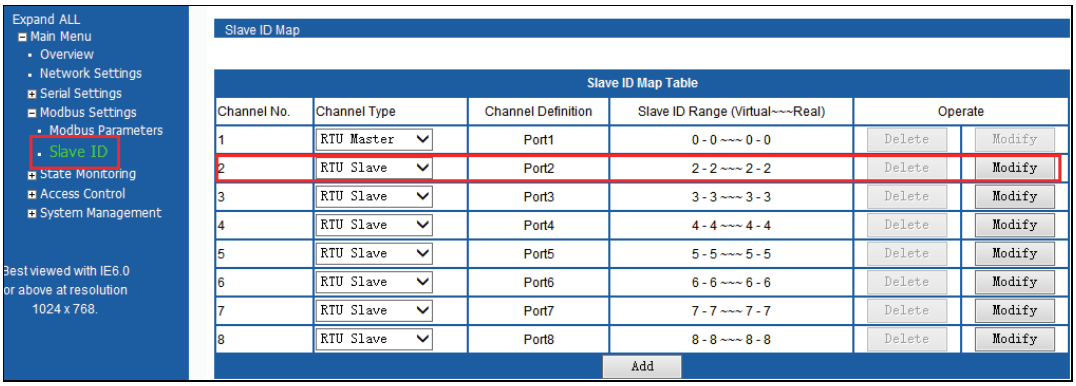
2. Select "COM2" in the "Port" drop-down list.

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3. Set the "BaudRate", "DataBits", "StopBits" and "ParityBits" in the "Settings" option box.
4. Other parameters remain the default, click "submit".

Step 4 Configure the working mode of the Modbus gateway.

1. Log in to the Web configuration interface and select " Main Menu > Modbus Settings > SlaveID ".
2. In the “Channel NO.”is 2, click the "channel Type" drop-down list box and select "RTU Slave".

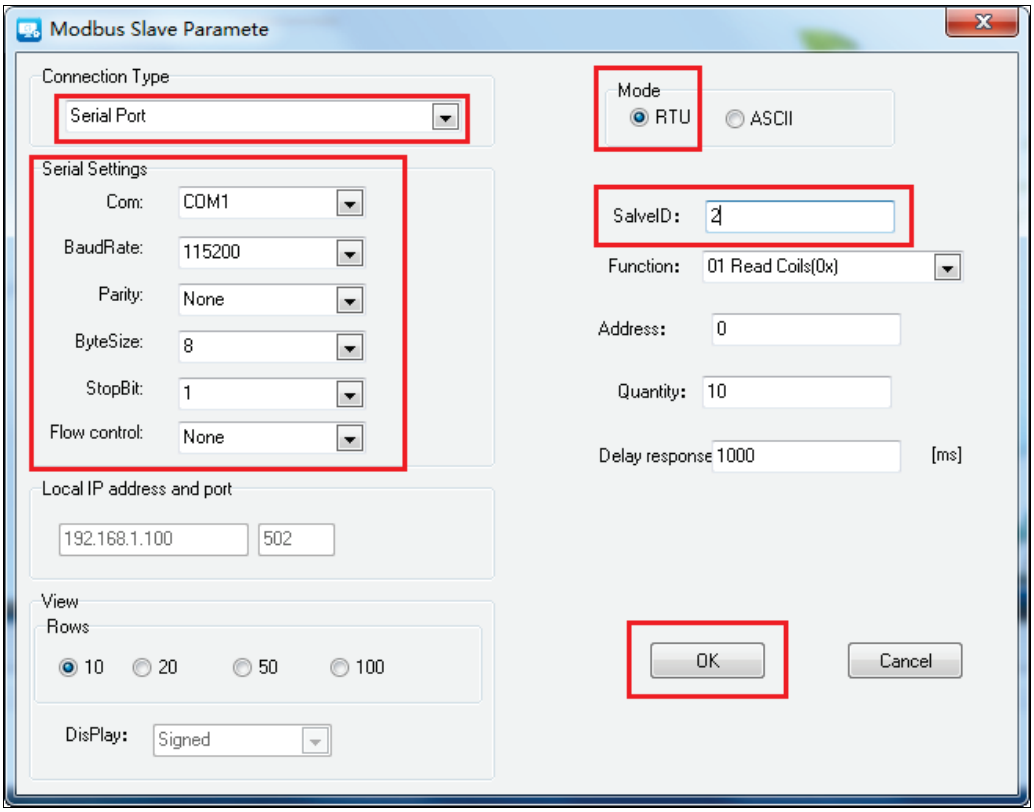


3. In the “Channel NO.”Is 2, click the "Modify".
4. Enter "2" in the "Slave ID Start" and "Slave ID End" text boxes.
5. Enter "0" in the "Slave ID Offset" text box.
6. Click "OK".

Step 5 Run the Debug Tool software to configure master and slave information.

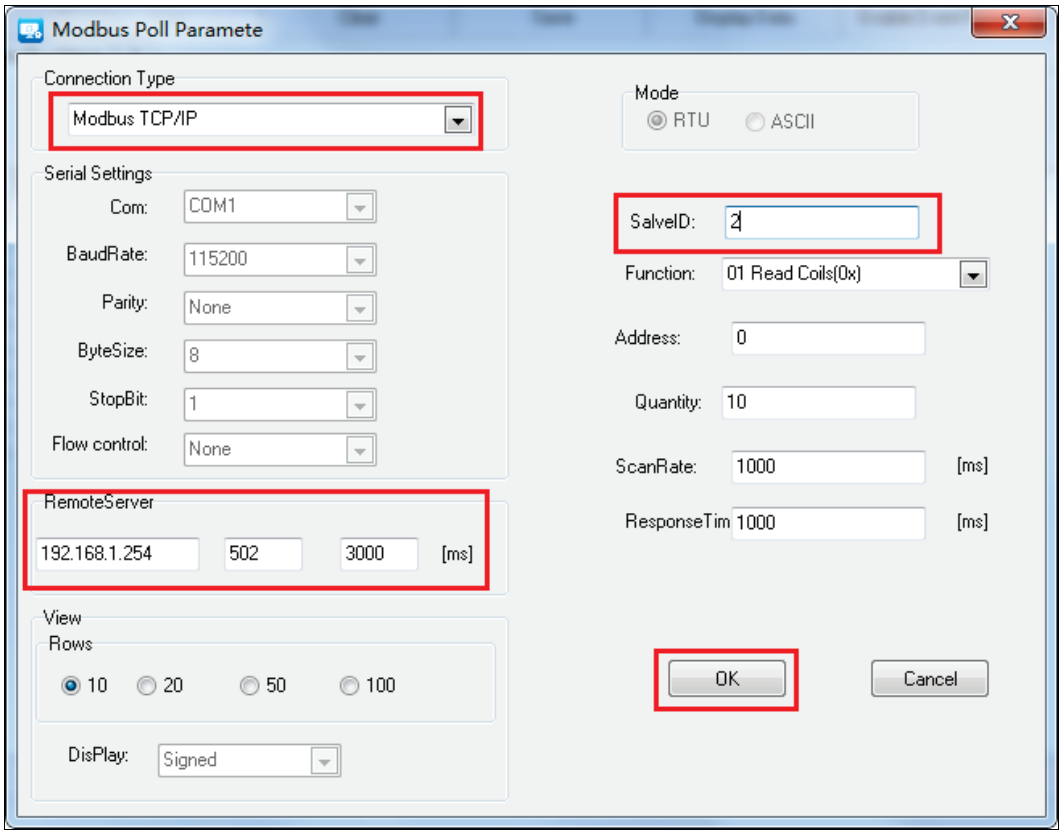
1. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusSlave".
2. Click the drop-down list box of "Connection Type" and select "Serial Port".
3. In the option box of "Serial Settings", configure serial port parameter information such as serial port number, baud rate, data bit, parity bit, and stop bit.
4. Check the "RTU" mode in the option of "Mode".
5. Enter "2" in the text box of "Slave ID".
6. Keep the other parameters as default and click “OK”.

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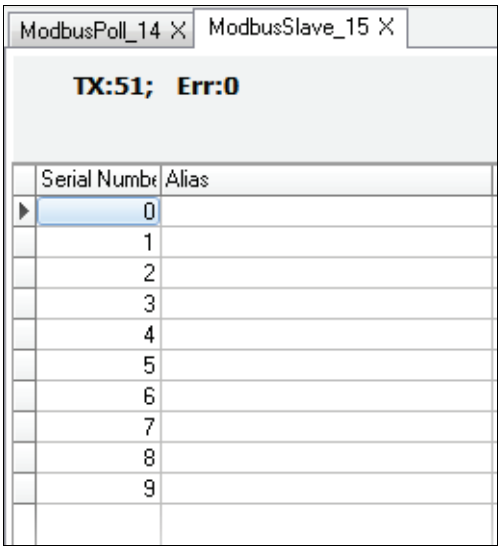
7. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusPoll".
8. Click the drop-down list box of "Connection Type" and select "Modbus TCP/IP".
9. Configure the Modbus gateway IP address, port number, and connection timeout in the option box of "Remote Server".
10. Enter "2" in the text box of "Slave ID".
11. Keep the other parameters as default and click “OK”.

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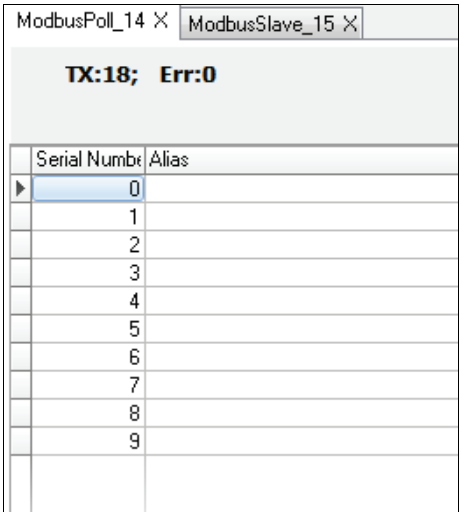


Step 6 View normal communication between the RTU master and the TCP slave.

1. Click "Start" on the top of the ModbusSlave window and the ModbusPoll window to view the connection results.



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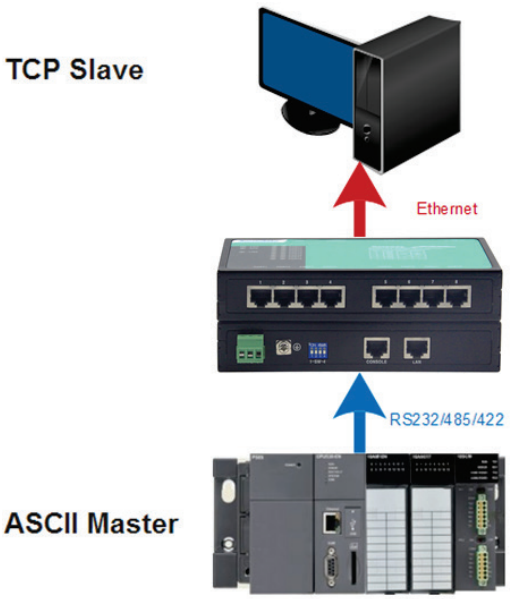


Step 7 End.

6.4.3 ASCII Master Mode

Background brief

When the user needs to implement the Modbus ASCII master device to communicate with the Modbus TCP slave device, use the Modbus gateway device and set the device's operating mode to ASCII Master.



In ASCII Master Mode, the ASCII master device accesses the TCP slave device through the gateway.

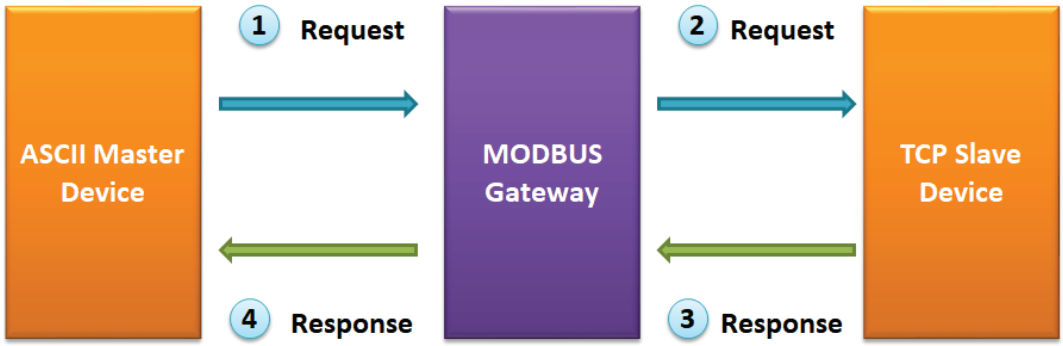
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ASCII master device sends request to gateway;

Gateway forwarding request to TCP slave device;

TCP slave device returns a response;

The gateway sends back the response.



The parameters of the ASCII master are as follows:

- Communication port: COM3
- Baud rate: 115200
- Parity bit: None
- Data bit: 7
- Stop bit: 2

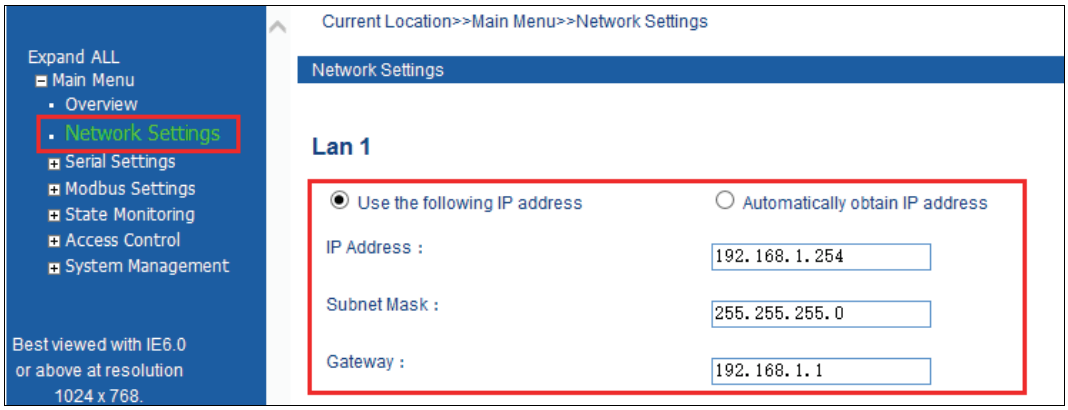
The parameters of the TCP slave are as follows:

- IP address: 192.168.1.80
- Slave ID: 3
- TCP port number: 503

Operation steps

Step 1 Connect the COM serial port of the computer and the COM3 serial port of the Modbus gateway using a cable or a converter.

Step 2 Configure the IP address of the Modbus gateway.

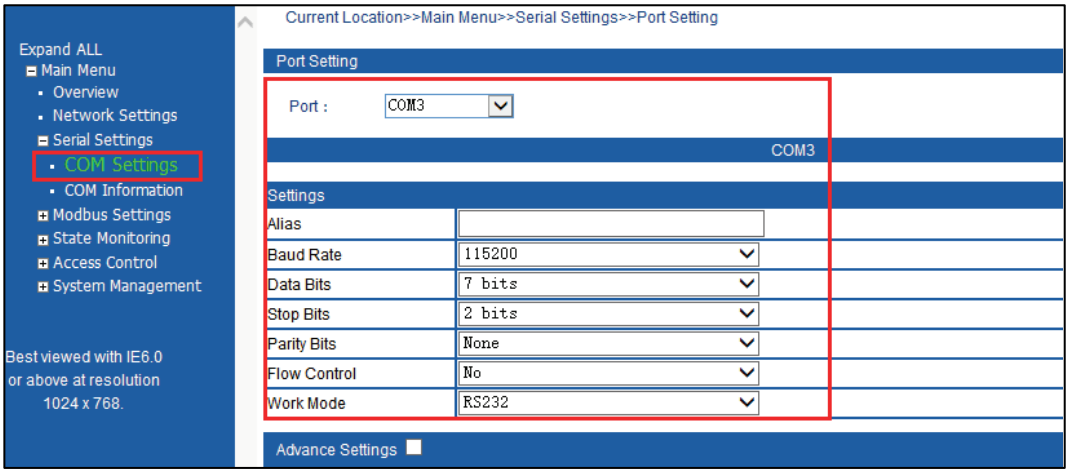


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1. Log in to the Web configuration interface and select "Network Setting".
2. In the "Use the following IP address" option box, enter the "IP address", "Subnet Mask" and "Gateway address" corresponding to the Modbus gateway.
3. Other parameters remain the default, click "submit".

Step 3 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Main Menu > Serial Settings> COM Settings ".

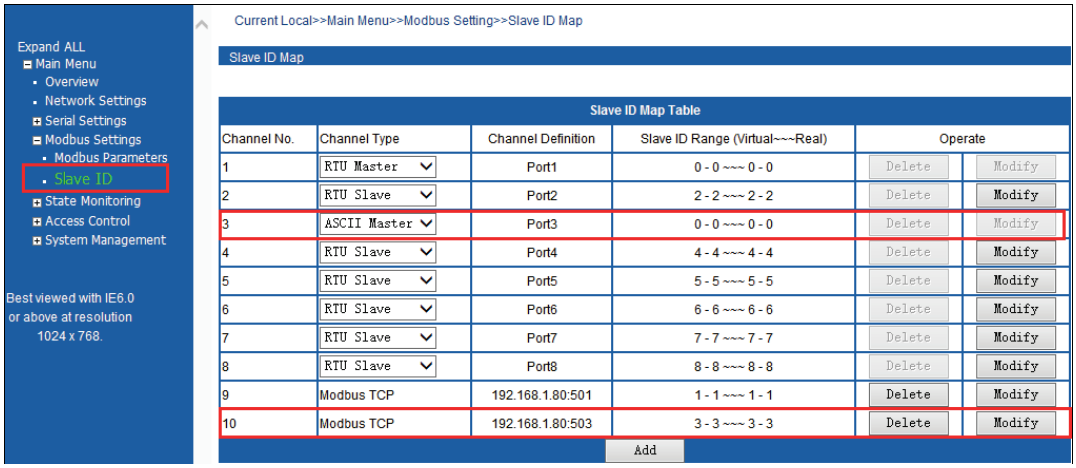


2. Select "COM3" in the "Port" drop-down list.
3. Set the "BaudRate", "DataBits", "StopBits" and "ParityBits" in the "Settings" option box.
4. Other parameters remain the default, click "Submit".

Step 3 Configure the working mode of the Modbus gateway.

1. Log in to the Web configuration interface and select " Main Menu > Modbus Settings > SlaveID ".
2. In the “Channel NO.”is 3, click the "channel Type" drop-down list box and select "ASCII Master".

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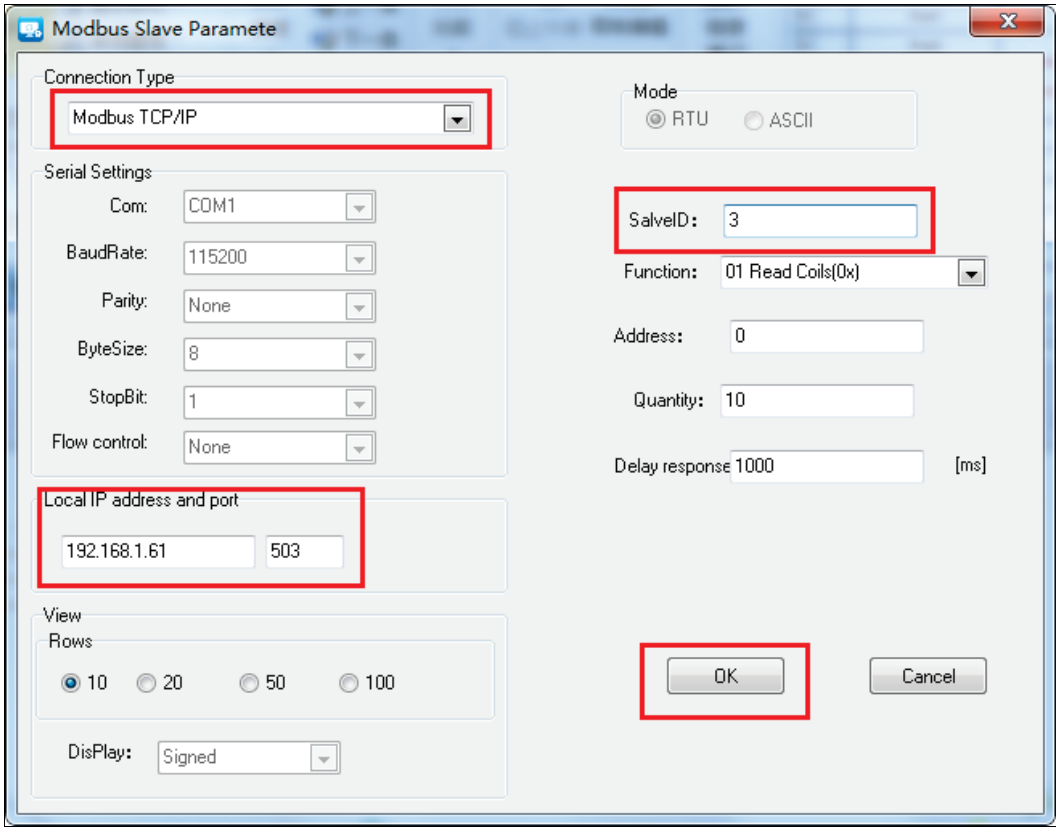


3. Click "Add" and enter "192.168.1.80" in the "Remote IP Address" text box.
4. Enter "503" in the "TCP port" text box.
5. Enter "3" in the "Slave ID Start" and "Slave ID End" text boxes.
6. Enter "0" in the "Slave ID Offset" text box.
7. Click "OK".
8. Save the configuration, click "Submit".

Step 4 Run the Debug Tool software to configure master and slave information.

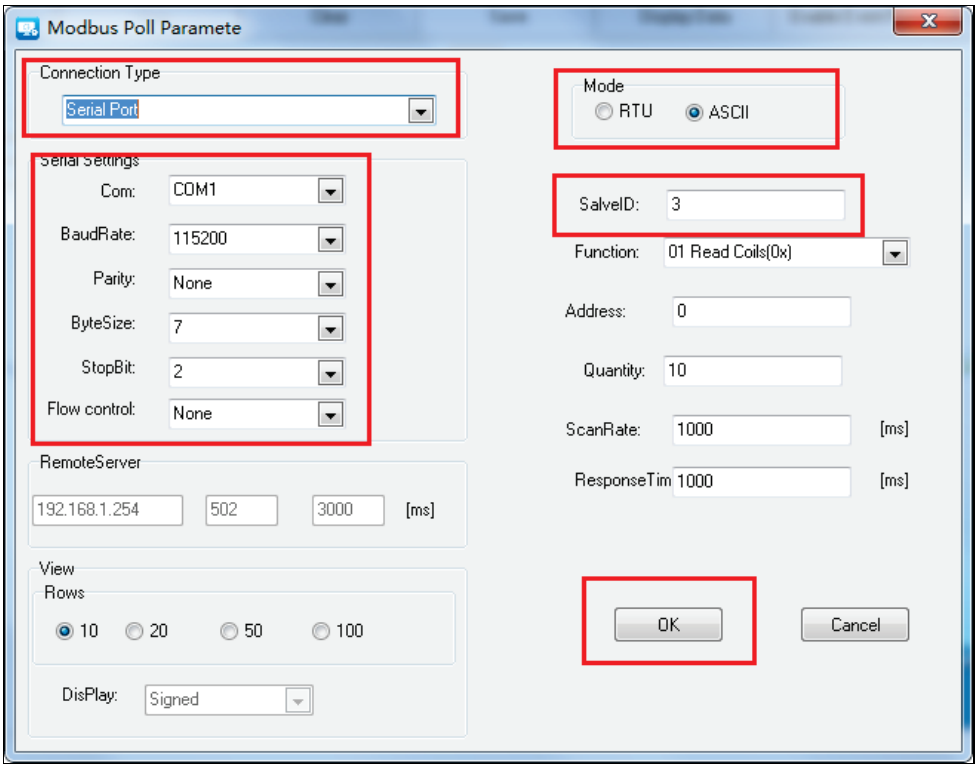
1. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusSlave".
2. Click the drop-down list box of "Connection Type" and select "Modbus TCP/IP".
3. Enter the TCP slave IP address "192.168.1.61" and the TCP slave port number "503" in the text box of "Local IP address and port".
4. Enter "3" in the text box of "Slave ID".
5. Keep the other parameters as default and click “OK”.

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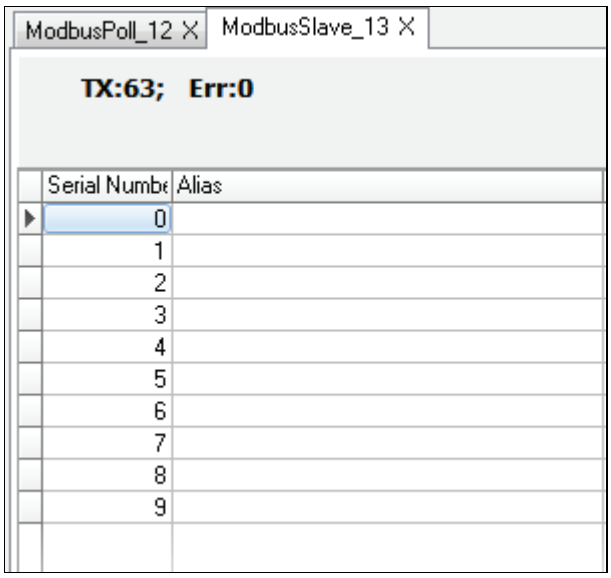
6. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusPoll".
7. Click the drop-down list box of "Connection Type" and select "Serial Port".
8. In the option box of "Serial Settings", configure serial port parameter information such as serial port number, baud rate, data bit, parity bit, and stop bit.
9. Check the "ASCII" mode in the option of "Mode".
10. Enter "3" in the text box of "Slave ID".
11. Keep the other parameters as default and click “OK”.

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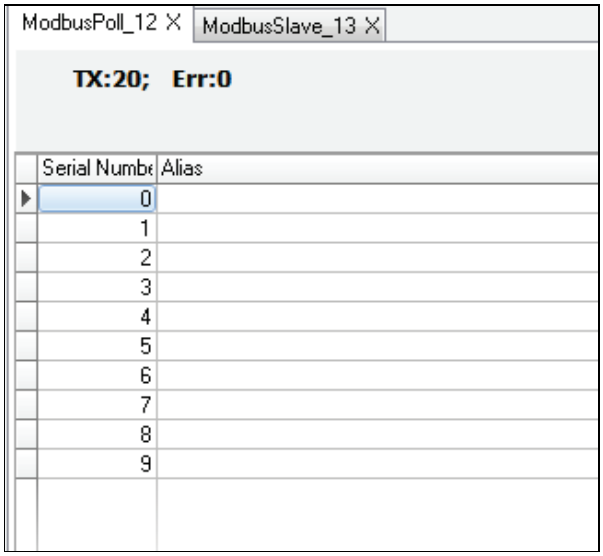


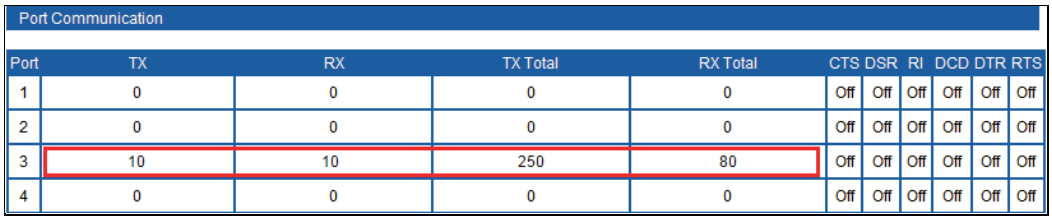
Step 5 View normal communication between the RTU master and the TCP slave.

1. Click "Start" on the top of the ModbusSlave window and the ModbusPoll window to view the connection results.



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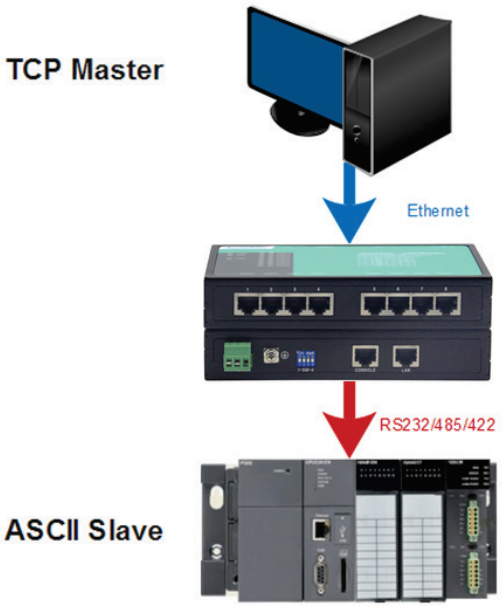
Step 6 End.

6.4.4 ASCII Slave Mode

Background brief

When the user needs to implement the Modbus TCP master device to communicate with the Modbus ASCII slave device, use the Modbus gateway device and set the device's operating mode to ASCII Slave.

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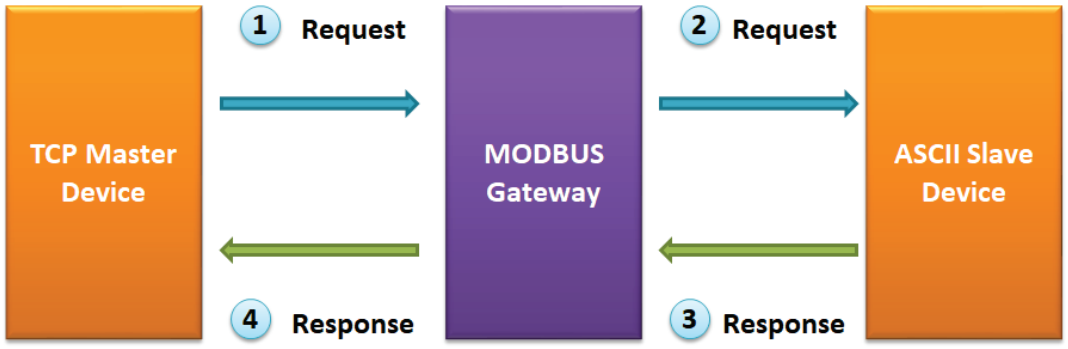
In ASCII Slave Mode, the TCP master device accesses the ASCII slave device through the gateway.

TCP master device sends request to gateway;

① Gateway forwarding request to ASCII slave device;

② ASCII slave device returns a response;

③ The gateway sends back the response.



The parameters of the TCP master are as follows:

- Slave ID: 4
- TCP Port: 503

The parameters of the ASCII slave are as follows:

- Communication port: COM 4
- Baud rate: 115200
- Parity bit: None
- Data bit: 7

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- Stop bit: 2

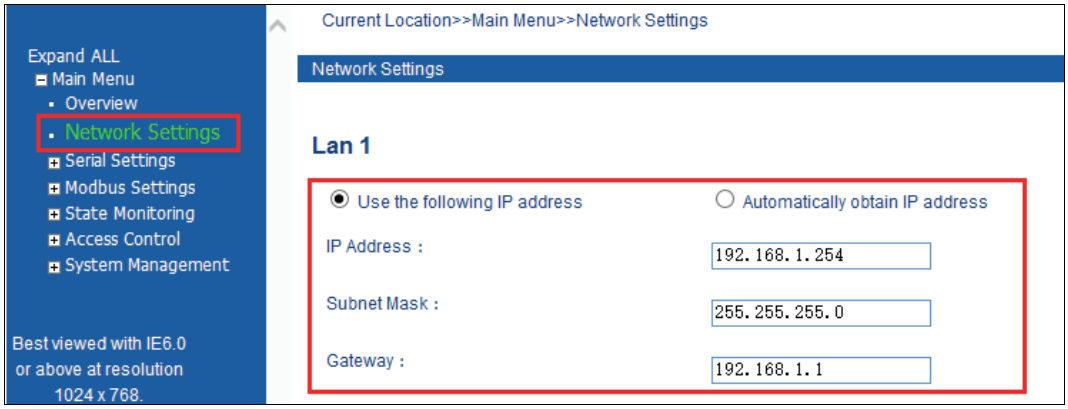
Operation steps

Note

The screenshot reference model for this manual is GW1108-8D (3IN1) Modbus. Other types of products in addition to supporting the serial type (RS-232, RS-422, RS-485), and the number of network ports and the number of serial ports are different, the interftions are the same.

Step 1 Connect the COM serial port of the computer and the COM4 serial port of the Modbus gateway using a cable or a converter.

Step 2 Configure the IP address of the Modbus gateway.

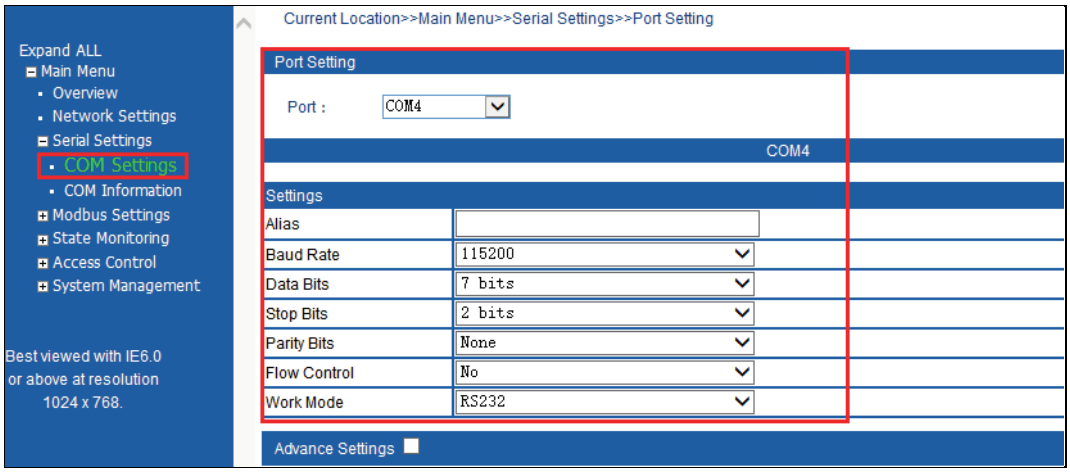


1. Log in to the Web configuration interface and select "Main Menu > Network Setting".
2. In the "Use the following IP address" option box, enter the "IP address", "Subnet Mask" and "Gateway address" corresponding to the Modbus gateway.
3. Other parameters remain the default, click "submit".

Step 3 Configure the serial port parameter information.

1. Log in to the Web configuration interface and select "Main Menu > Serial Settings> COM Settings".

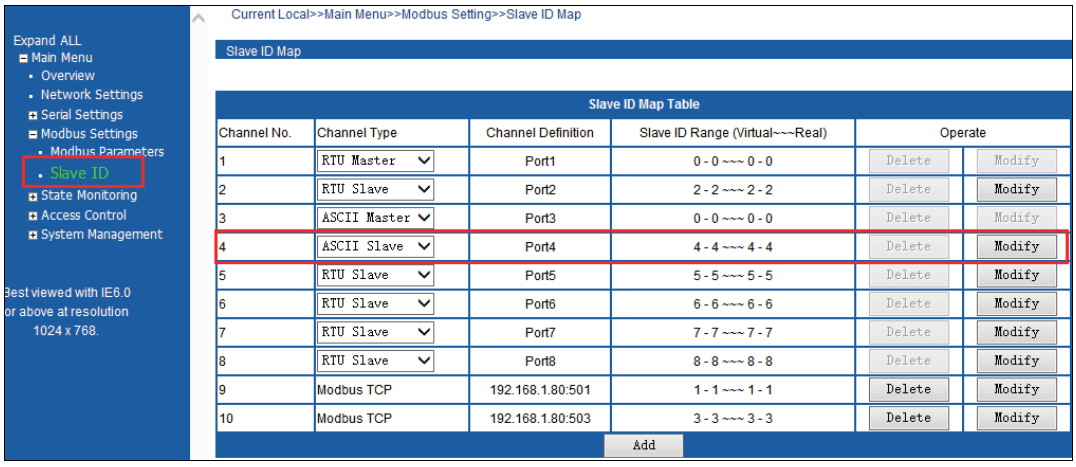
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2. Select "COM4" in the "Port" drop-down list.
3. Set the "BaudRate", "DataBits", "StopBits" and "ParityBits" in the "Settings" option box.
4. Other parameters remain the default, click "Submit".

Step 4 Configure the working mode of the Modbus gateway.

1. Log in to the Web configuration interface and select "Main Menu > Modbus Settings > SlaveID".
2. In the “Channel NO.”is 4, click the "channel Type" drop-down list box and select "ASCII Slave".

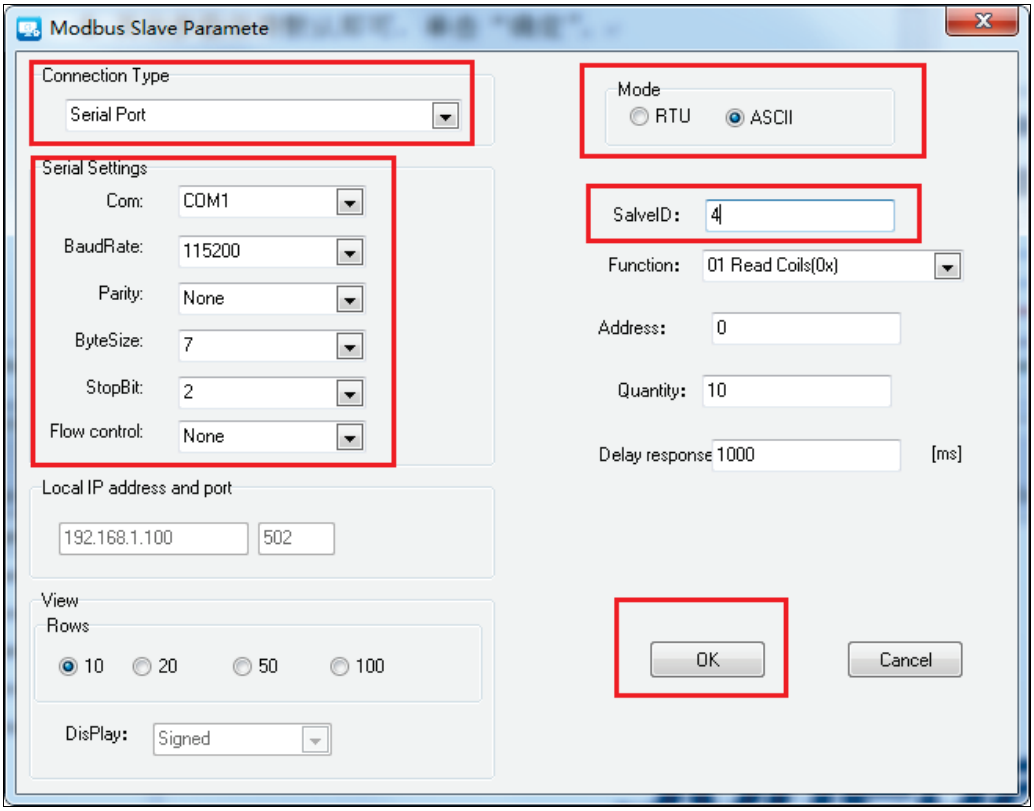


3. In the “Channel NO.”is 4, click the "Modify".
4. Enter "4" in the "Slave ID Start" and "Slave ID End" text boxes.
5. Enter "0" in the "Slave ID Offset" text box.
6. Click "OK".
7. Save the configuration, click "Submit".

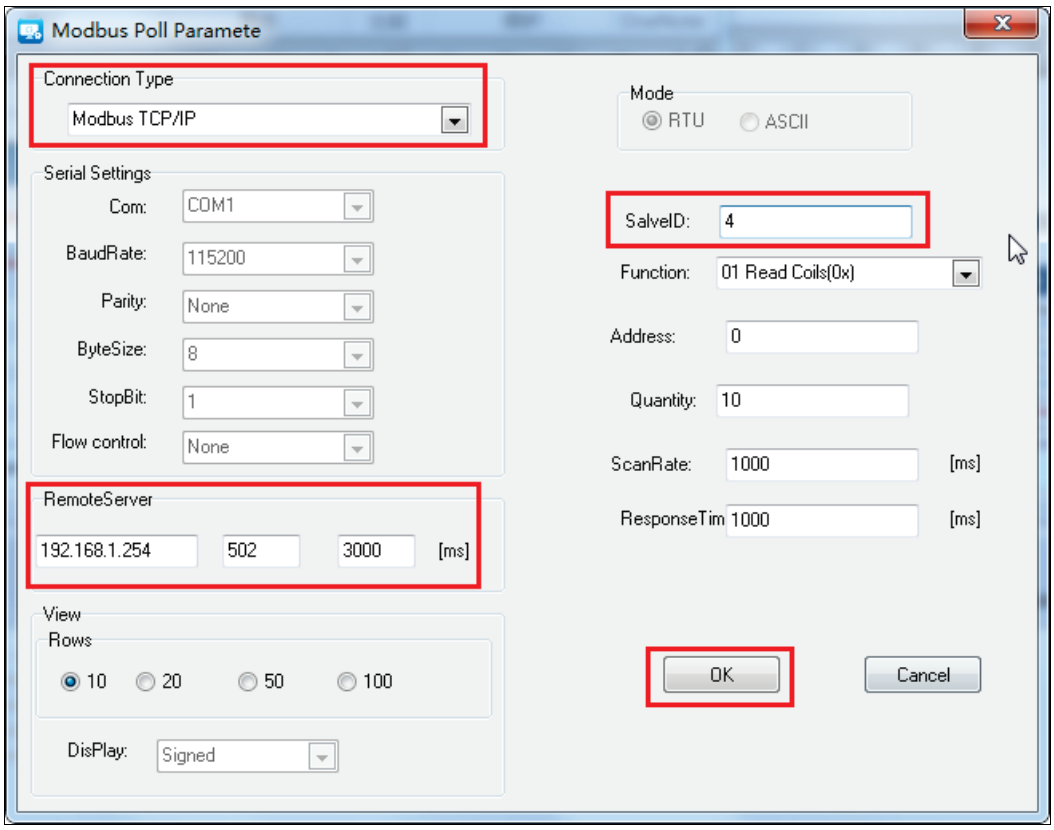
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Step 5 Run the Debug Tool software to configure master and slave information.

1. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusSlave".
2. Click the drop-down list box of "Connection Type" and select "Serial Port".
3. In the option box of "Serial Settings", configure serial port parameter information such as serial port number, baud rate, data bit, parity bit, and stop bit.
4. Check the "ASCII" mode in the option of "Mode".
5. Enter "4" in the text box of "Slave ID".
6. Keep the other parameters as default and click “OK”.

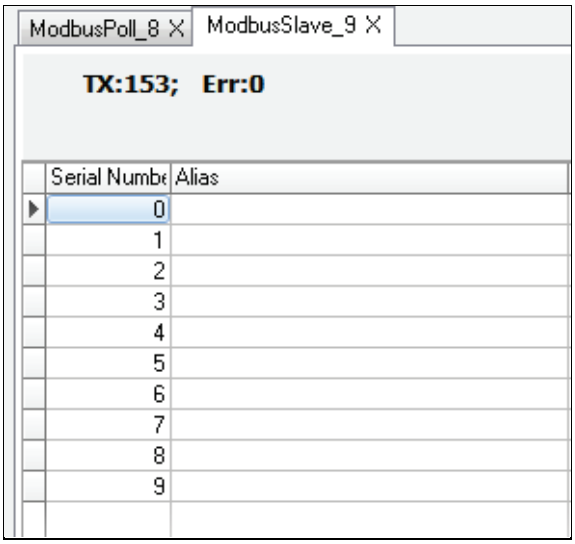


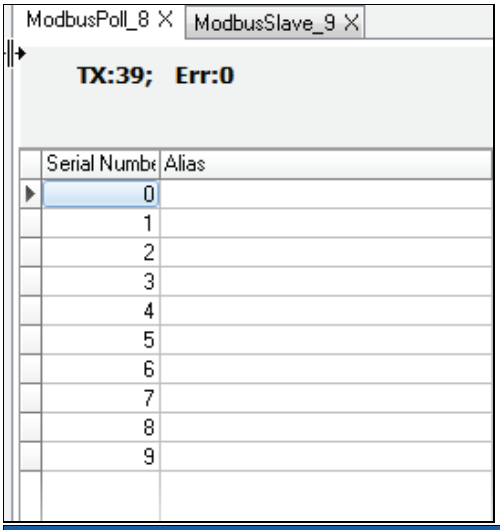
7. In the software of "Debug Tool", open in order: "Create connection > Create ModBus debugging > ModbusPoll".
8. Click the drop-down list box of "Connection Type" and select "Modbus TCP/IP".
9. Configure the Modbus gateway IP address, port number, and connection timeout in the option box of "Remote Server".
10. Enter "4" in the text box of "Slave ID".
11. Keep the other parameters as default and click “OK”.



Step 6 View normal communication between the RTU master and the TCP slave.

1. Click "Start" on the top of the ModbusSlave window and the ModbusPoll window to view the connection results.





Port Communication

Port	TX	RX	TX Total	RX Total	CTS	DSR	RI	DCD	DTR	RTS
1	0	0	0	0	Off	Off	Off	Off	Off	Off
2	0	0	0	0	Off	Off	Off	Off	Off	Off
3	0	0	0	0	Off	Off	Off	Off	Off	Off
4	10	10	170	510	Off	Off	Off	Off	Off	Off

Step 7 End.

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