Guideline to configure Modbus RTU to TCP of Serial device for 4G Router

The following content uses a Local test environment as an testing example,shown as Figure1. For User's public Server network environment just refer to Figure2.

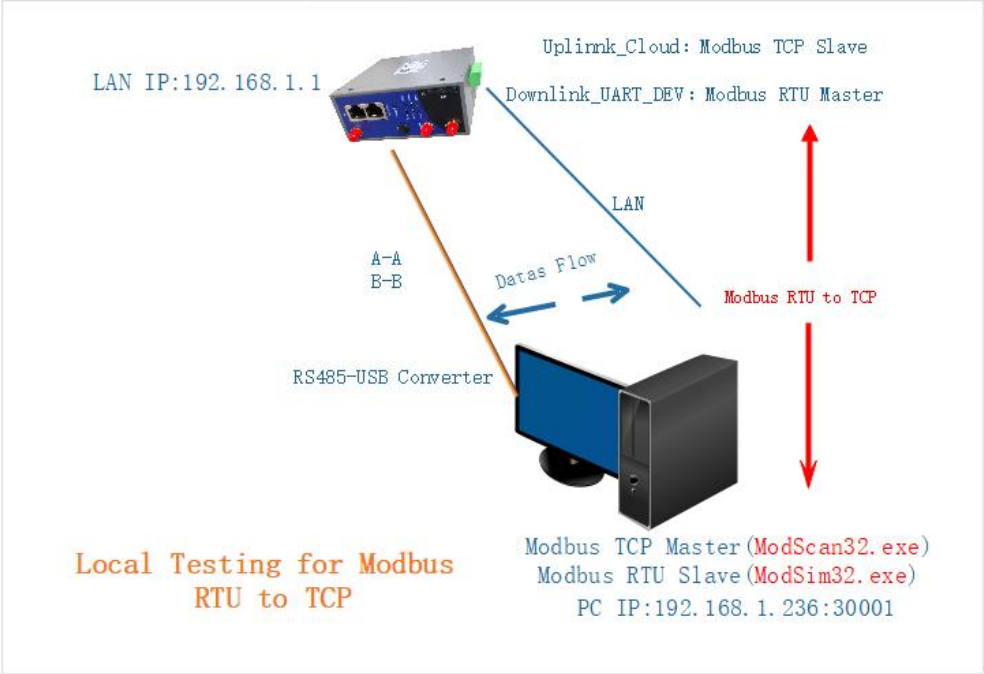


Figure1

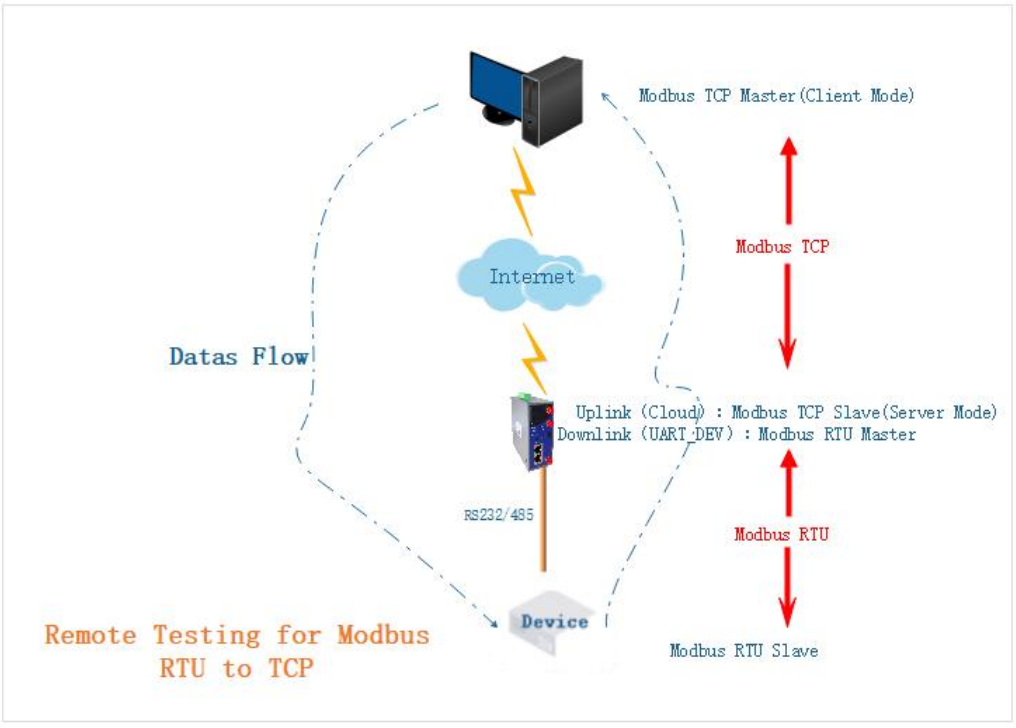
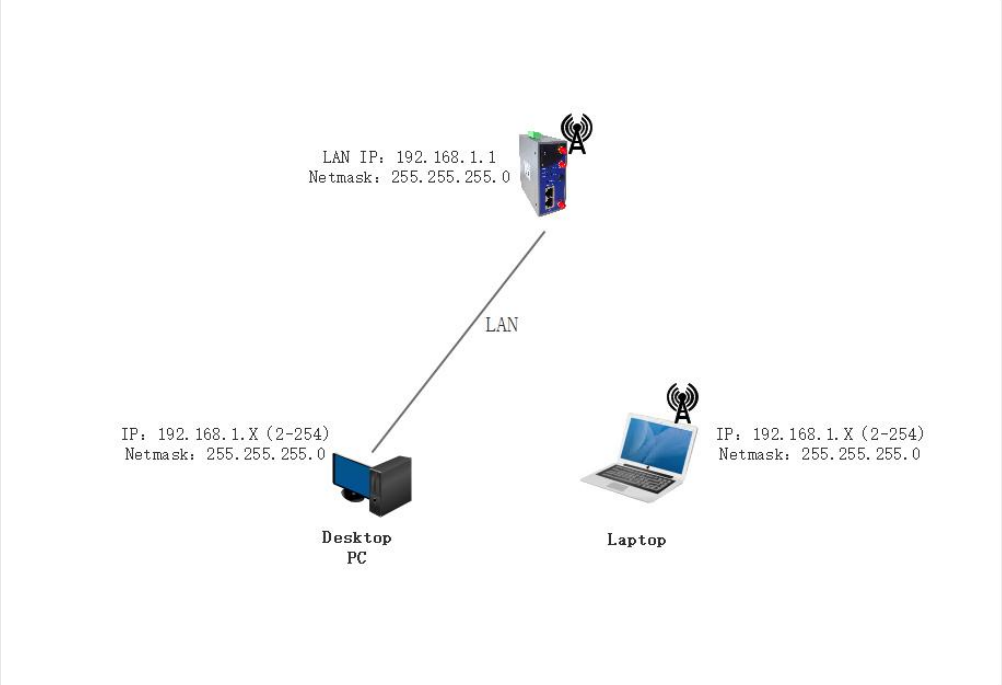
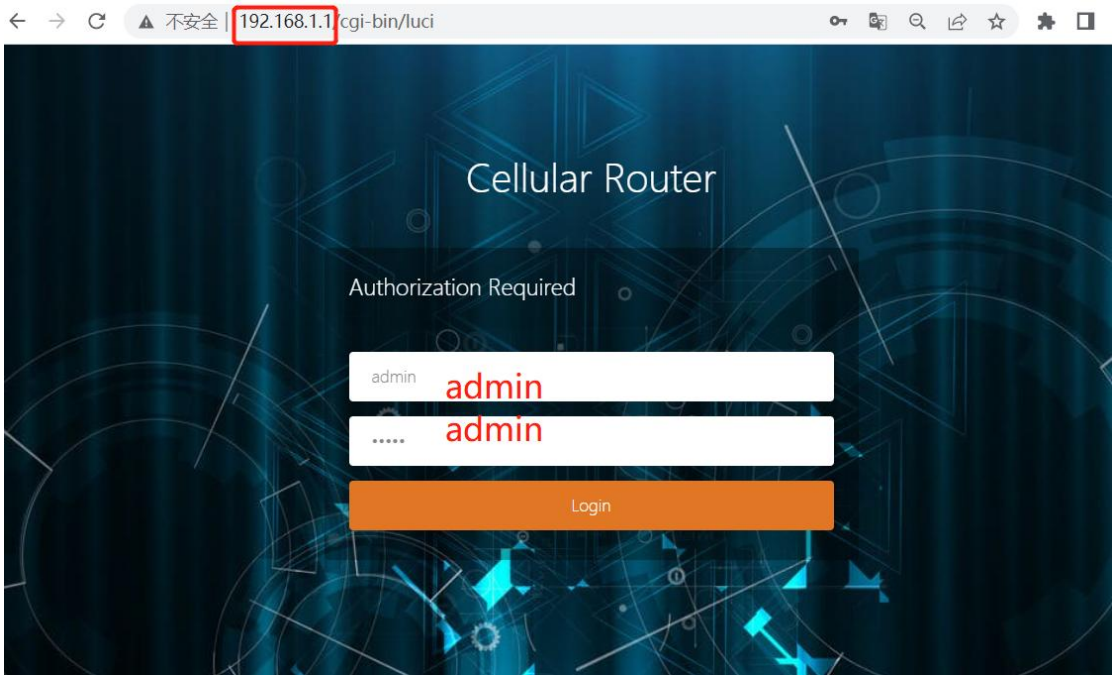


Figure2

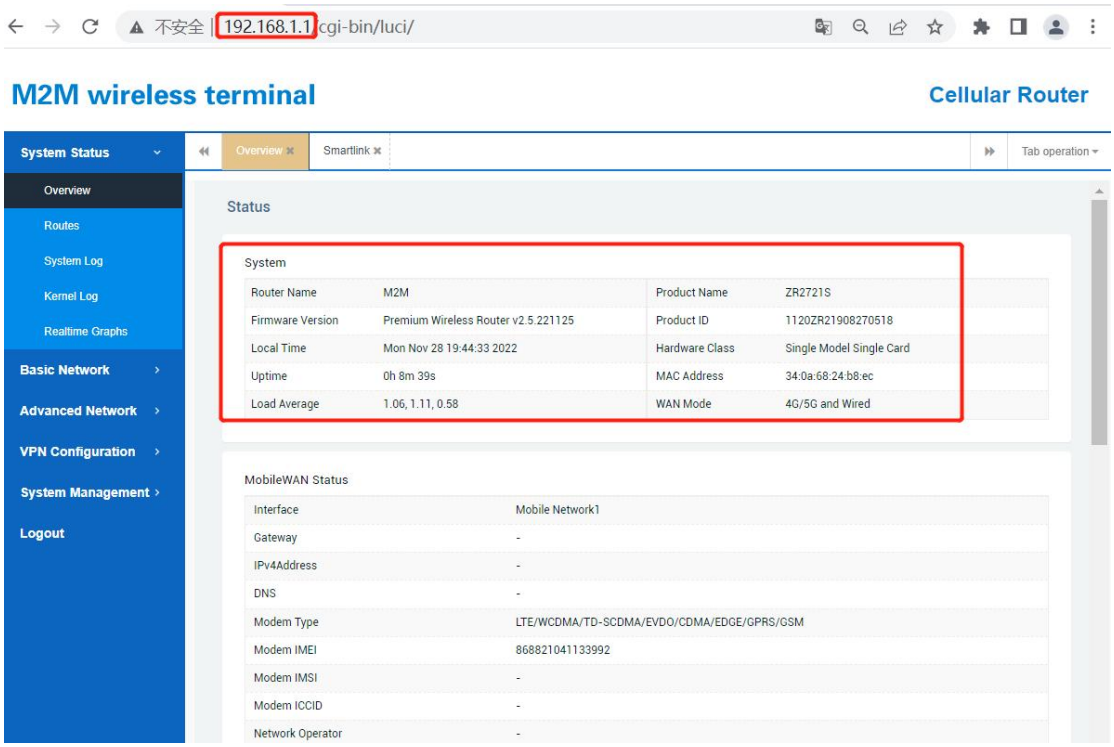
1.Connect the LAN port of the router to the computer, and set the automatic dhcp mode for the computer Network Ineterface Card, and ensure that the computer can obtain the address 192.168.1.x, netmask 255.255.255.0.



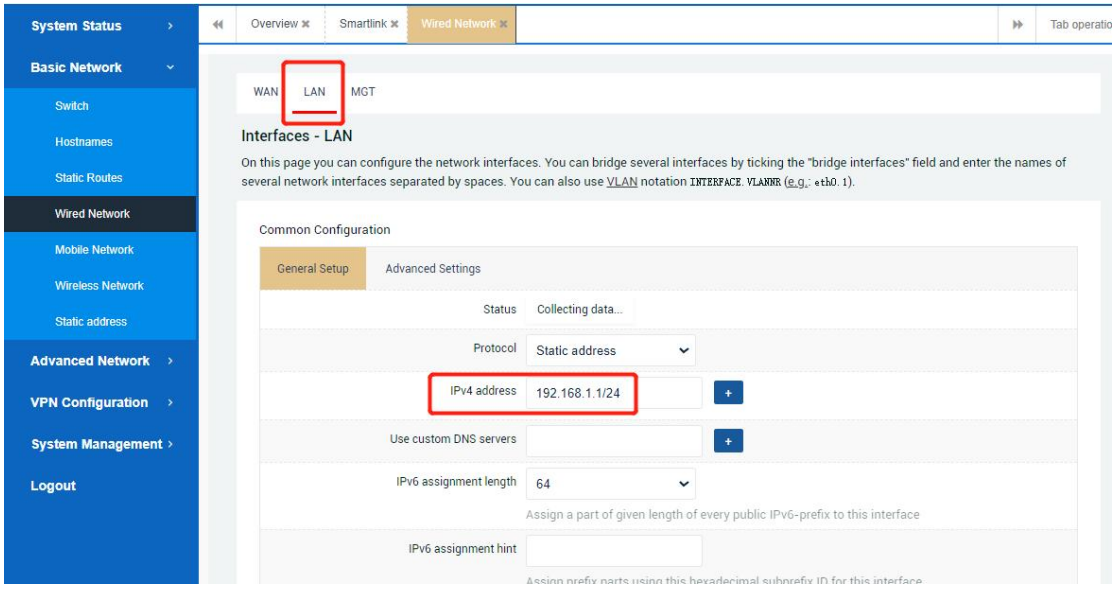
2.Open the browser, type the default IP address of the router with 192.168.1.1, then press Enter. And then input the username/password with admin/admin to login the Router.

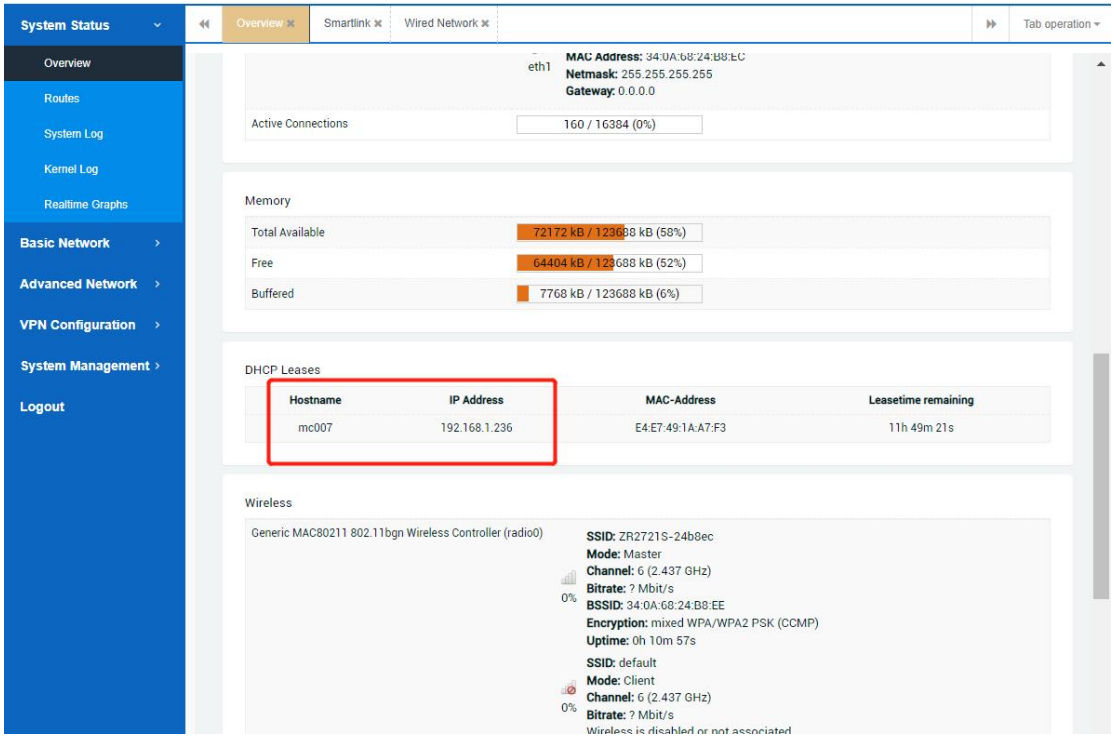


3.After logging , you will see overview details about the router system, including the software/hardware version, product model, product id, networking mode, and MAC address, etc.



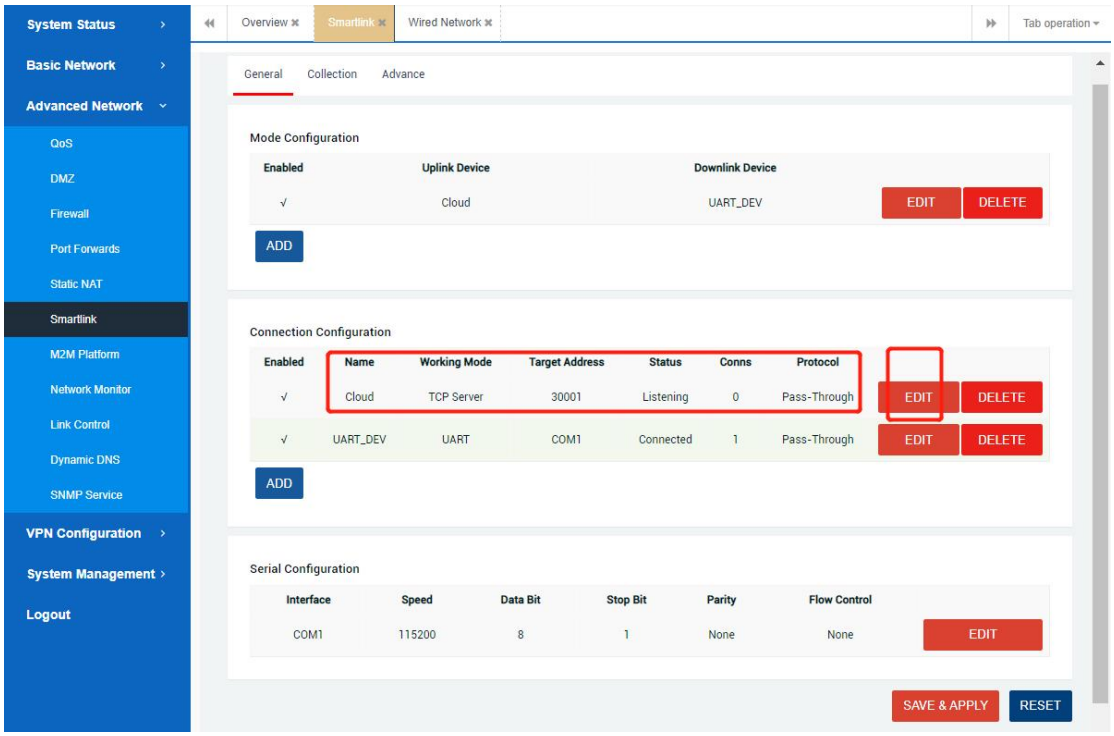
4.Check the LAN IP address of the router and PC address connected to router , shown as follows:

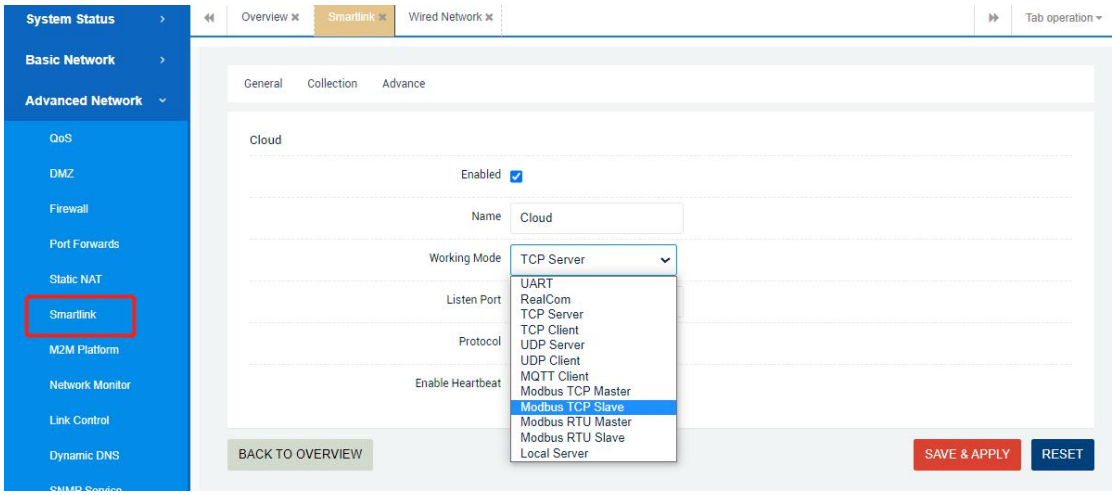


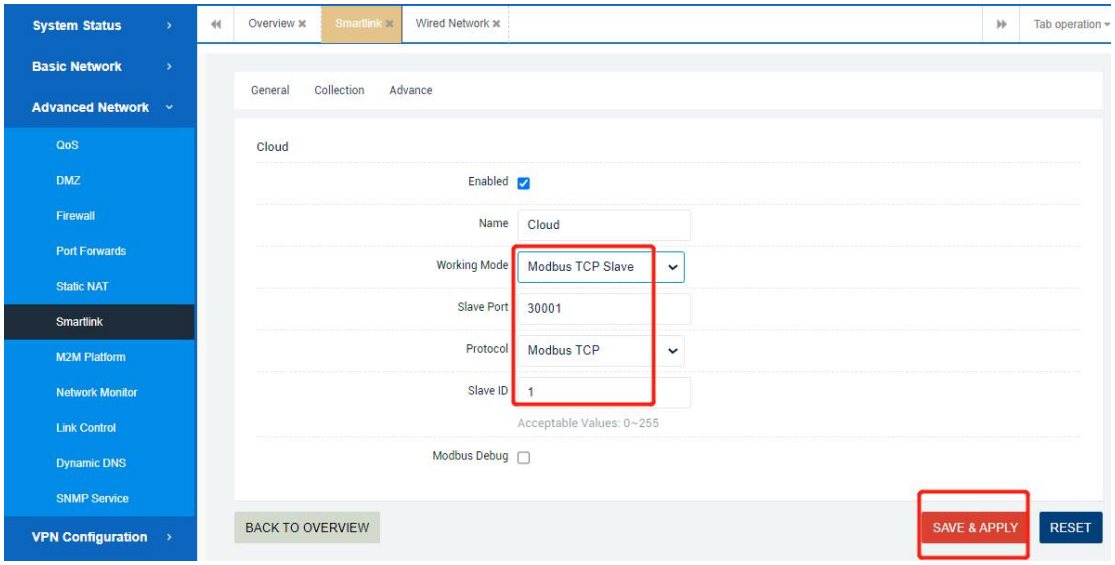


5.Start to configure smartlink usage.

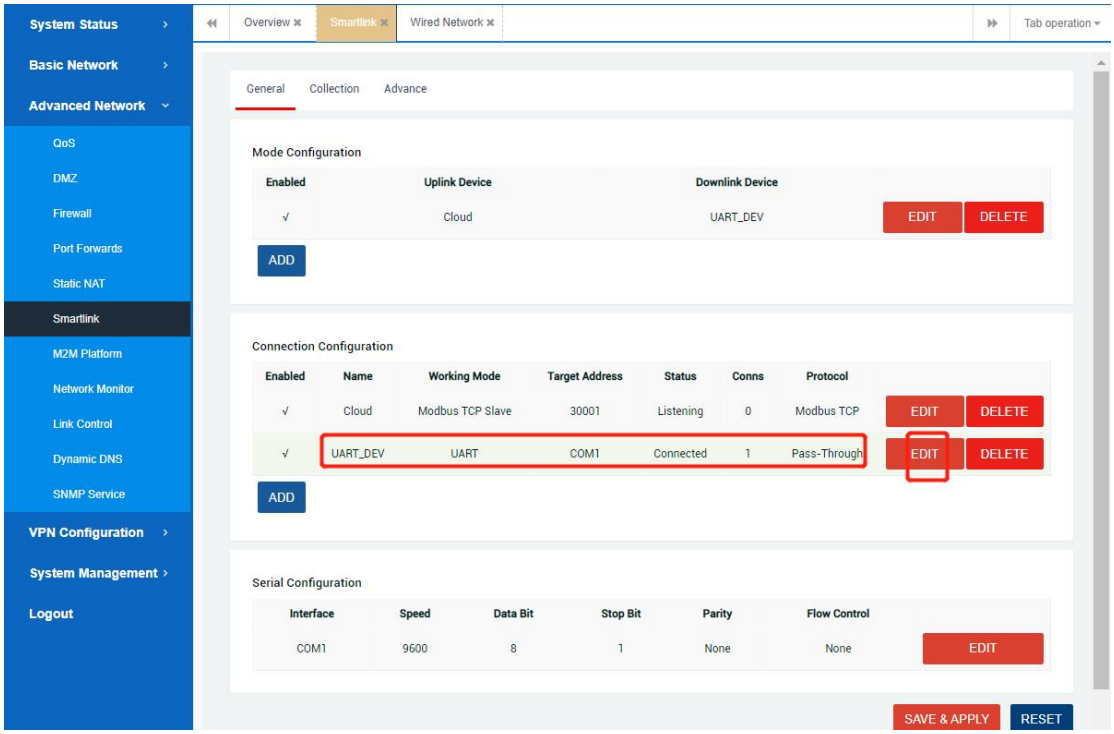
5.1 to config ‘cloud’/’uplink device’ option:　set it to Modbus TCP Slave mode，and set a cutstomized　listening port, such as 30001.

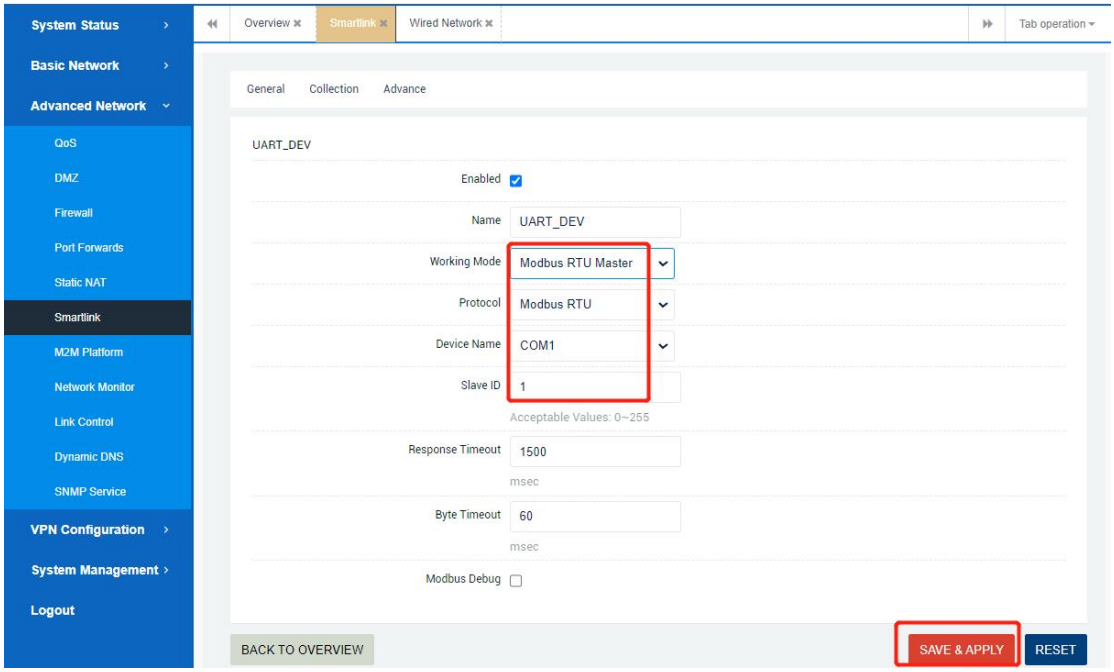






5.2 to modify ‘Downlink Device’ from UART mode to ‘Modbus RTU Master’ mode and select protocol to Modbus RTU, Slave ID to 1 as an example. ALL shown as below.


System Status
Basic Network
Advanced Network
QoS
DMZ
Firewall
Port Forwards
Static NAT
Smartlink
M2M Platform
Network Monitor
Link Control
Dynamic DNS
SNMP Service
VPN Configuration
System Management
Logout
Overview
Smartlink
Wired Network
Tab operation
General
Collection
Advance
Mode Configuration
Enabled
Uplink Device
Downlink Device
√
Cloud
UART_DEV
EDIT
DELETE
ADD
Connection Configuration
Enabled
Name
Working Mode
Target Address
Status
Conns
Protocol
√
Cloud
Modbus TCP Slave
30001
Listening
0
Modbus TCP
EDIT
DELETE
√
UART_DEV
UART
COM1
Connected
1
Pass-Through
EDIT
DELETE
ADD
Serial Configuration
Interface
Speed
Data Bit
Stop Bit
Parity
Flow Control
COM1
9600
8
1
None
None
EDIT
SAVE & APPLY
RESET


System Status
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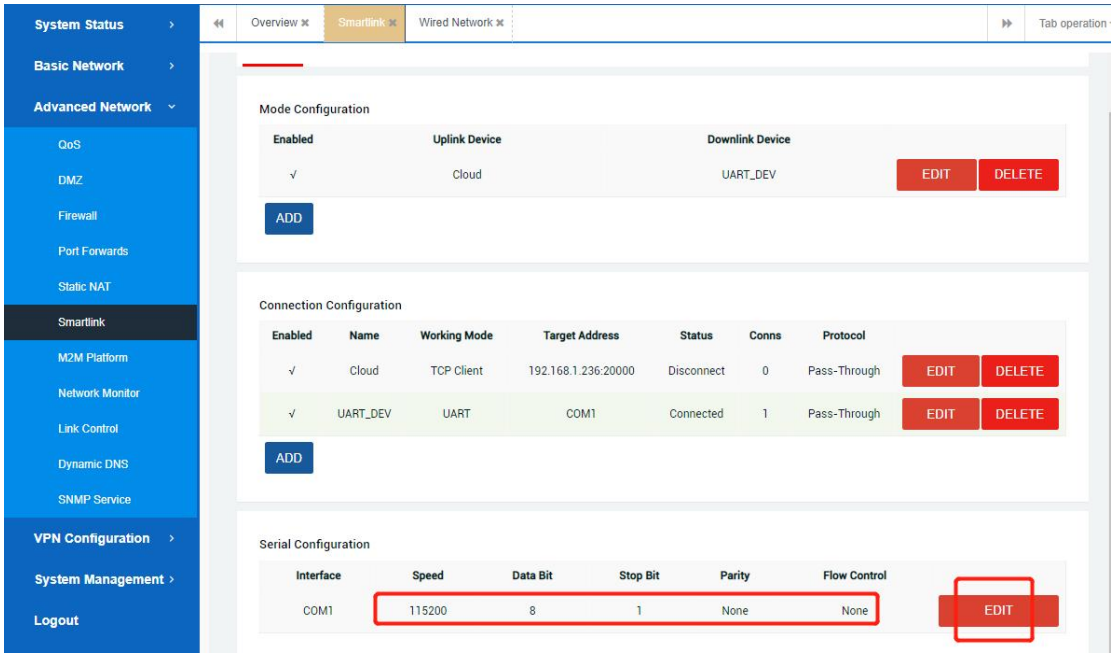
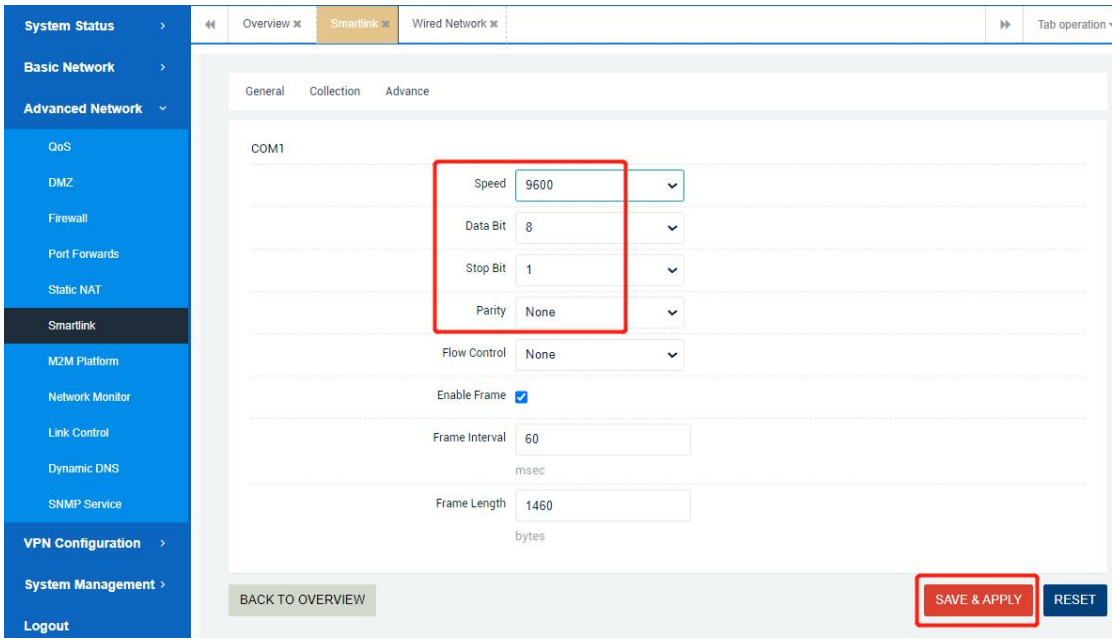
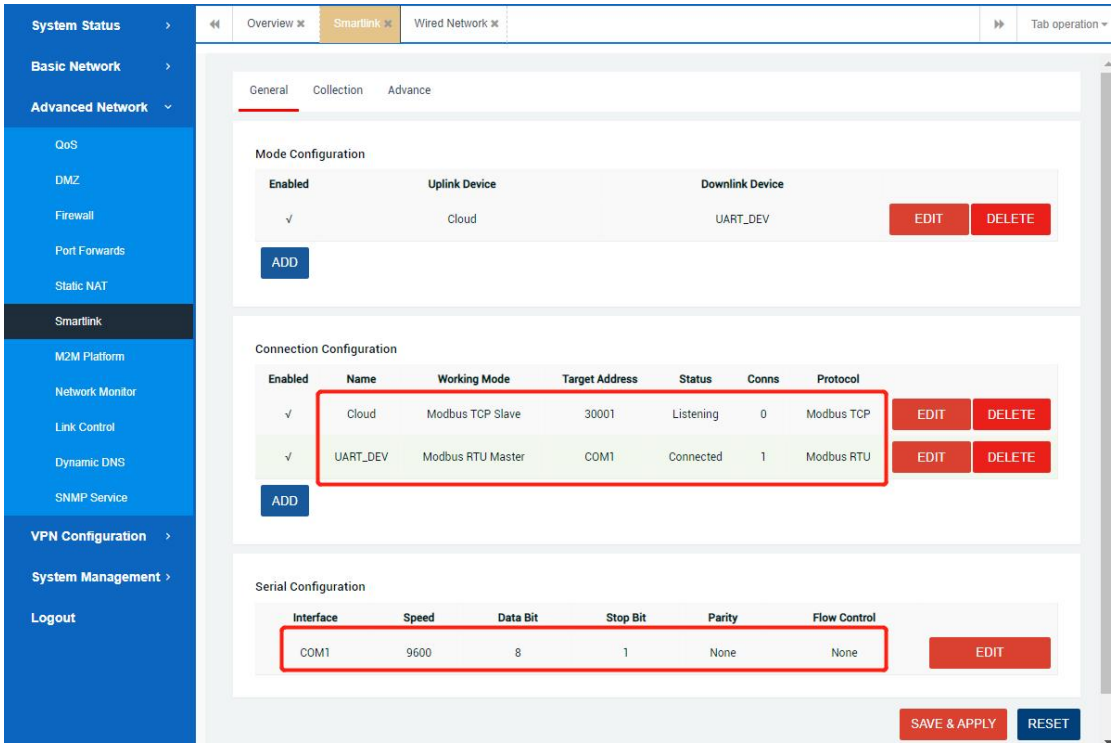
Overview
Smartlink
Wired Network
Tab operation
General
Collection
Advance
UART_DEV
Enabled
Name
UART_DEV
Working Mode
Modbus RTU Master
Protocol
Modbus RTU
Device Name
COM1
Slave ID
1
Acceptable Values: 0~255
Response Timeout
1500
msec
Byte Timeout
60
msec
Modbus Debug
BACK TO OVERVIEW
SAVE & APPLY
RESET

5.3 to Set serial port parameters for RS485/232 device, such as baud rate, data bit, and parity bit.





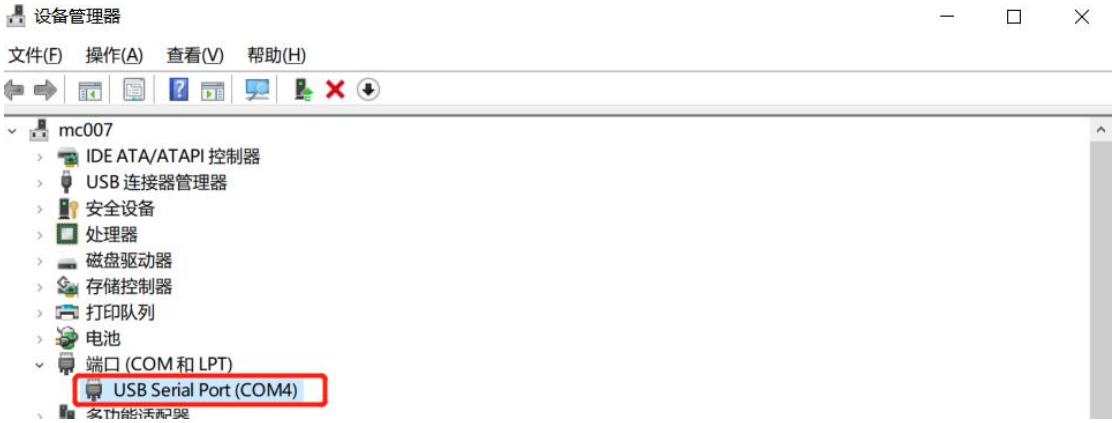
5.4. All configuration finished as following.



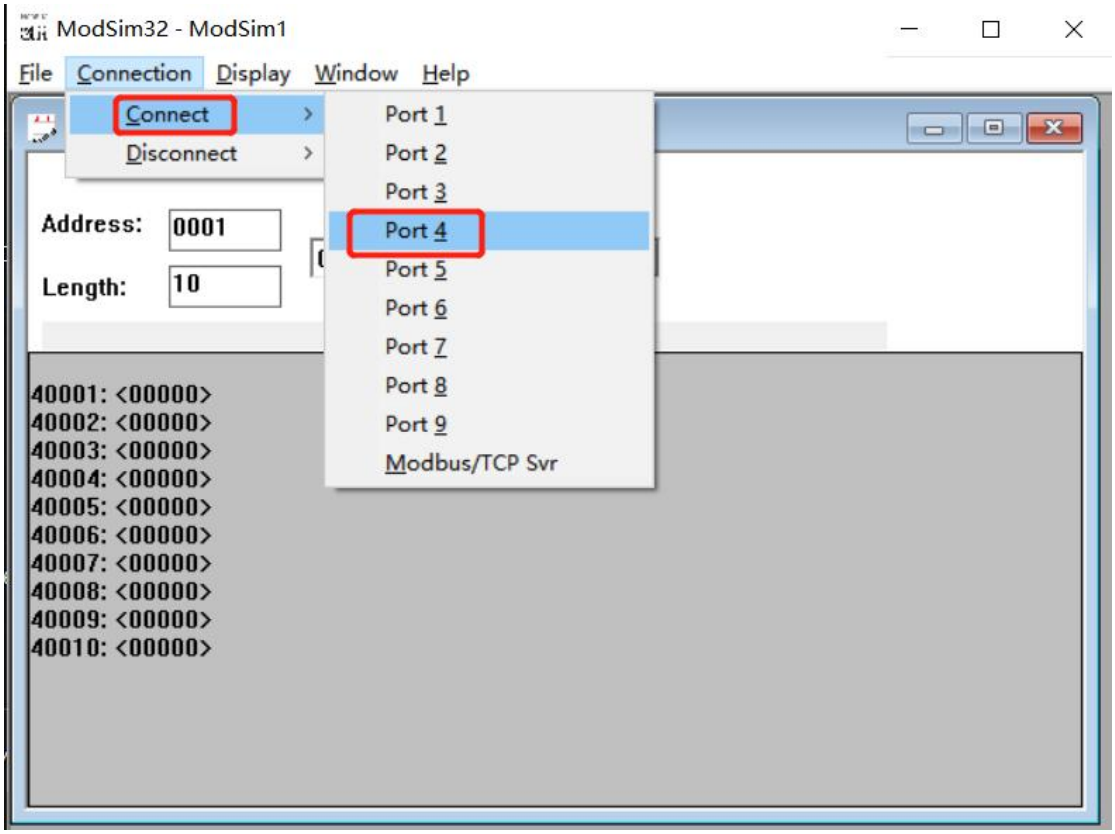
6. Start to test Modbus RTU to TCP communication progress.

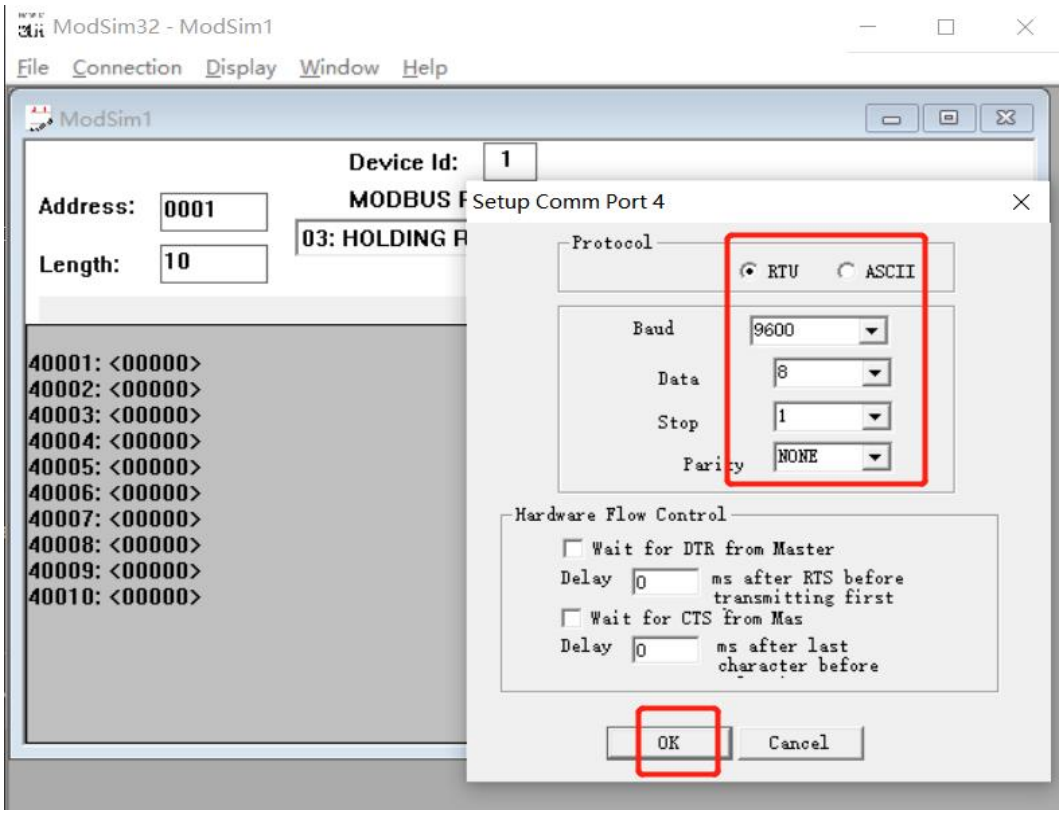
6.1 Run the ModSim32.exe tool (to simulate a RS485 RTU device) and ModScan32.exe tool (to simulate a Server tool supporting Modbus TCP protocol) on the computer at the same time;

6.1 firstly , to View the com port created by the USB-RS485 converter on the PC (com4 for example).

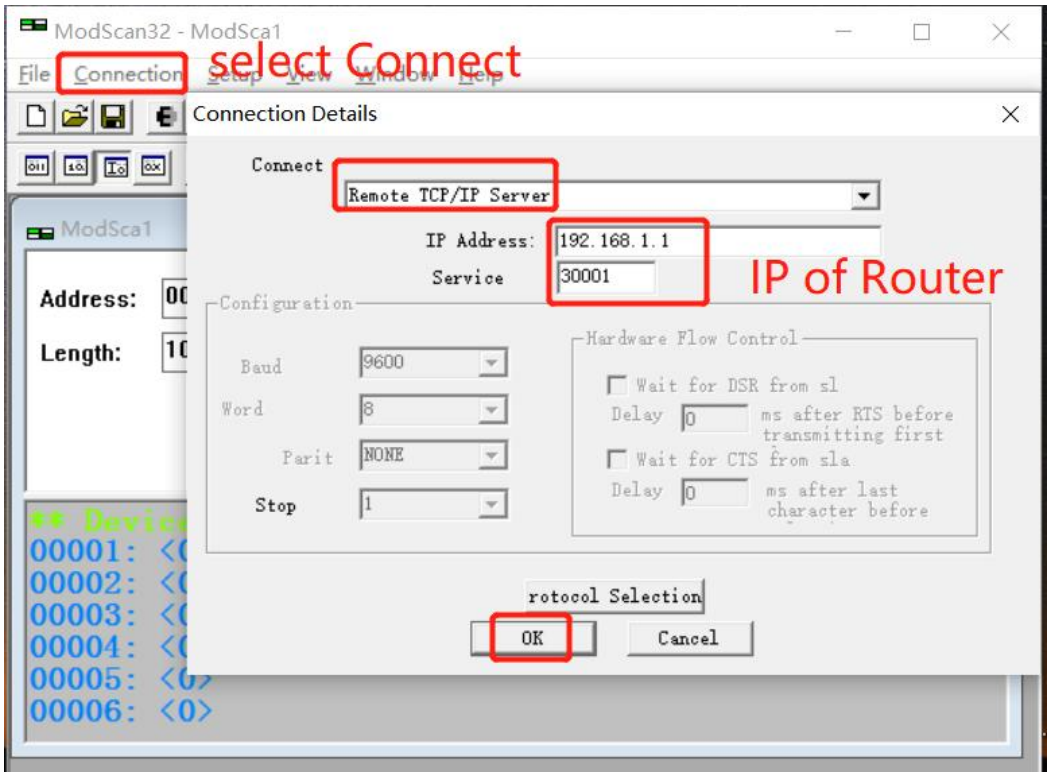


Then to to configure parameters for ModSim tool: to select Port4 and check all serial port parameters as below.

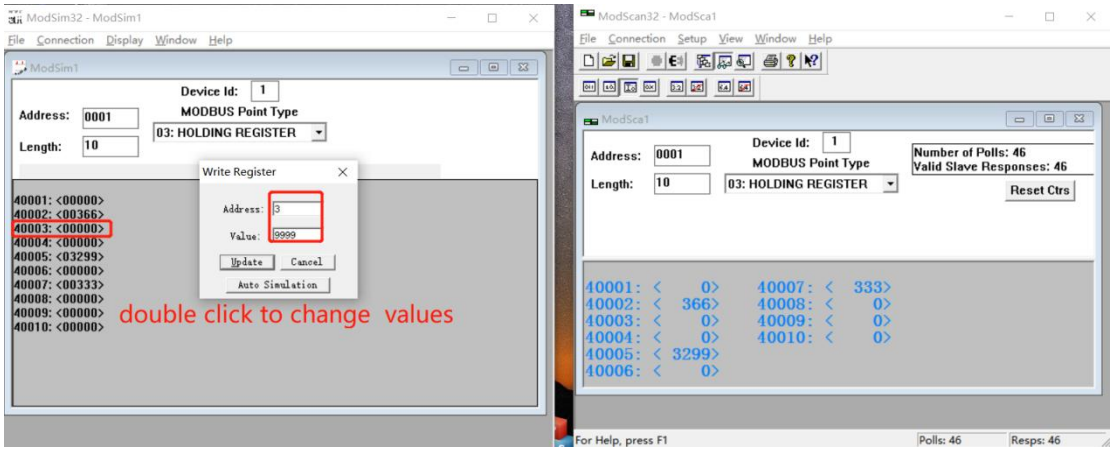


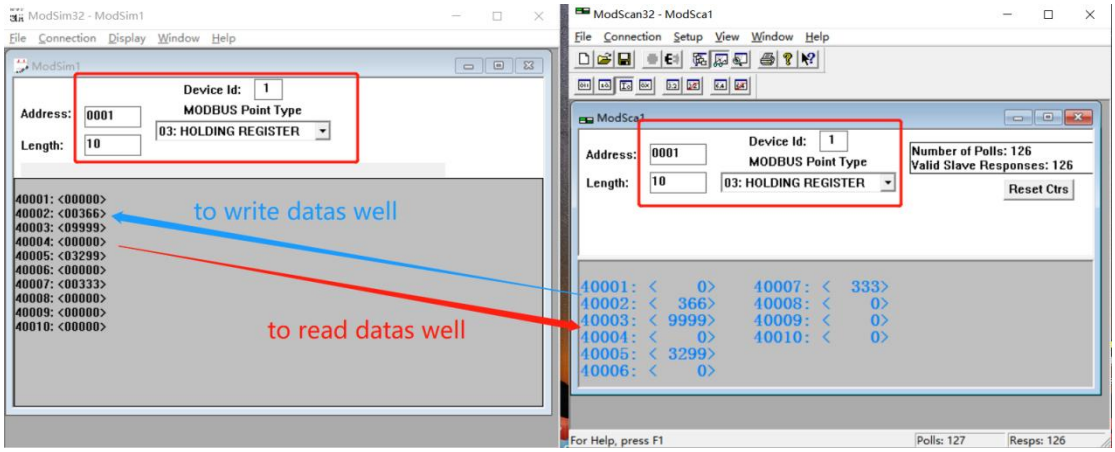


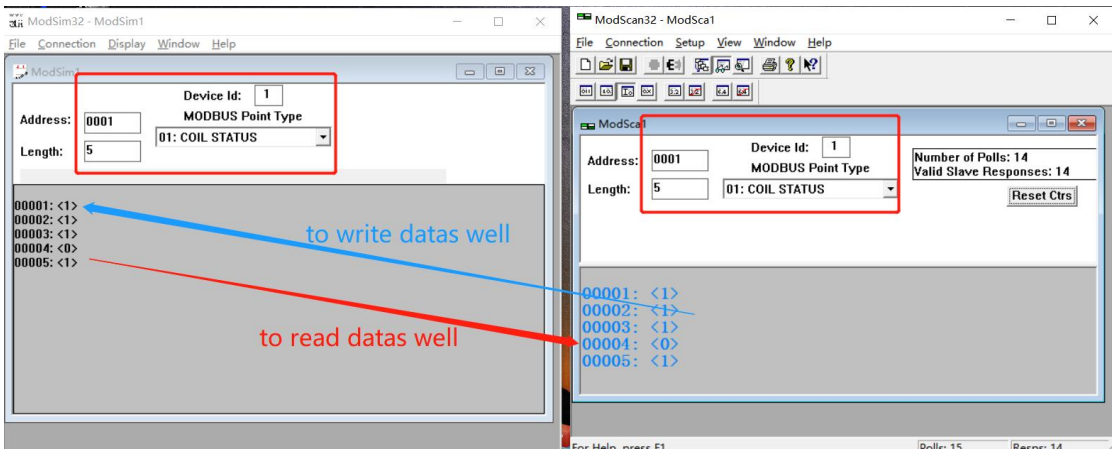
6.2 Secondly, to configure ModScan tool: to select 'Remote TCP/IP Server '(working as Modbus client mode) and set IP address and port keeping same as LAN address of 4G Router.



6.3 Finally, data flows sending and receiving testing were conducted between the two tools as follows. 2 different Modbus Function code demos(code 3 and code 1) are shown as below.







6.4.Additional note: View serial port data logs.

Enable the log debug button on the Smartlink webpage. You can click download to get a *.tar log file and decompress it to view the details of the raw HEX datas from Modbus RTU device and Modbus TCP Master.