

IOT9064

RS232/485 to TCP/IP

4-Port Serial Port Server

Please read the product manual carefully before using the product.

RS232/485 to TCP/IP

4-Port Serial Port Server User Manual

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Functional Characteristics:

1. New ARM kernel, deeply optimized TCP / IP protocol stack.
2. Support 2 RS232/RS485 ports, working at the same time without affecting each other.
3. Support 6-28V wide voltage input, with antireverse contact protection.
4. Support static IP address or DHCP, automatically obtain IP address.
5. Support for Modbus, the protocol conversion function.
6. Reliable hardware protection, static electricity protection (air $\pm 15\text{KV}$, touch $\pm 8\text{KV}$), surge ($\pm 1\text{KV}$), pulse group ($\pm 1\text{KV}$).
7. Built-in web pages, the parameters can be set through the web page.
8. Support through the web page, configuration software upgrade firmware, firmware update is more convenient.
9. Support Keepalive mechanism, can quickly detect the dead connection and other abnormalities and quickly reconnect.
10. Support hardware watchdog function, crash automatic restart, the module is more stable and reliable.

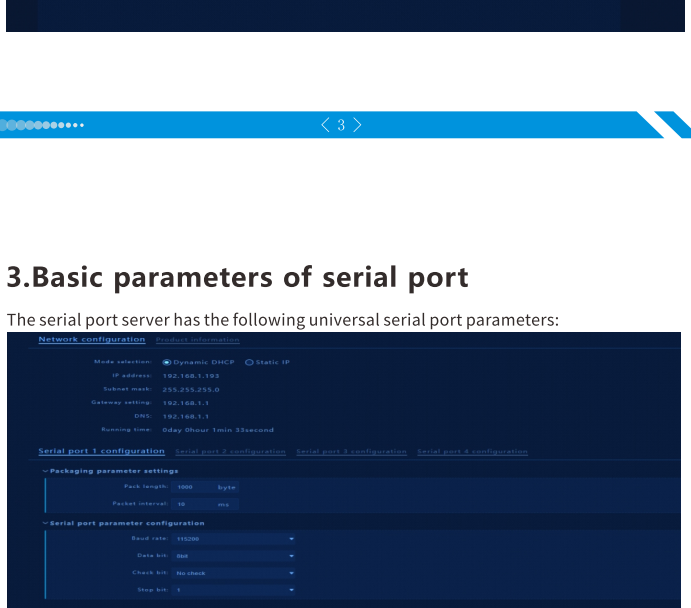
1. How to Use Serial port server

1.1 Get the access IP address of the device

Dynamic switching: Press and hold the Reset button for 3 seconds to switch the dynamic/static mode. In static mode, the Net light is on; in dynamic mode, the Net indicator blinks once every second.

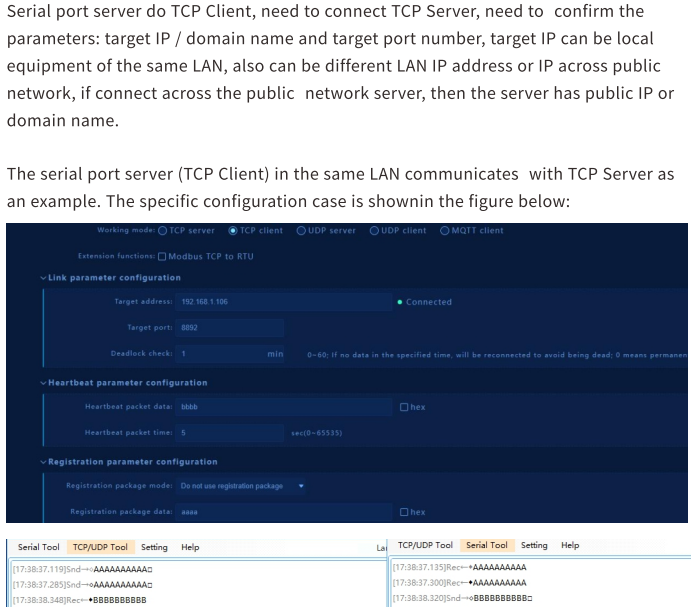
Dynamic IP mode: The serial server and the computer are connected to the same router network. You can use "Device Finder Tool.exe" to search for the ip address of the serial server, as shown in the following figure;

Static IP mode: The serial port server is directly connected to the network port of the computer. Set the static IP address of the computer to 192.168.1.2 , then use a browser to log in to the web page of the serial port server: 192.168.1.100 to set device parameters.



1.2 Web Page configuration access

Double-click the SN in the software, you can also quickly access the web configuration page through the software, the device default account password (admin / admin), you can also access with the IP address.



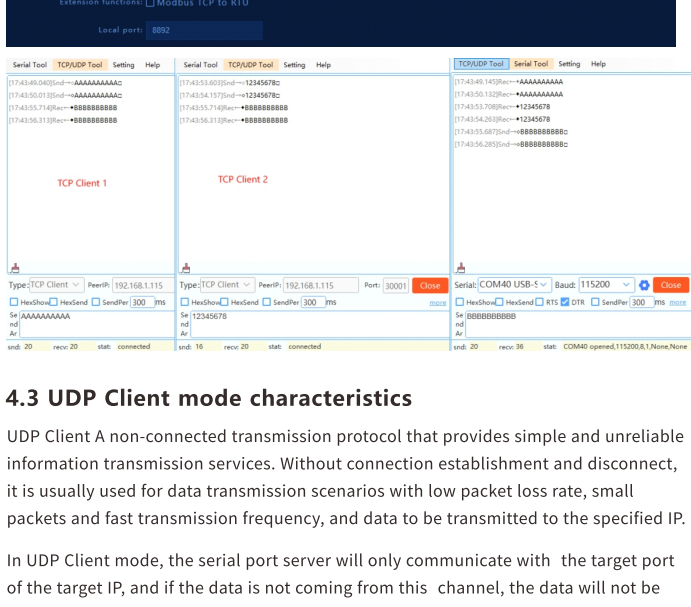
2. Basic function

2.1 Static IP / DHCP

The serial port server supports two network configuration modes: DHCP(automatic acquisition), static IP (manually setting IP address).

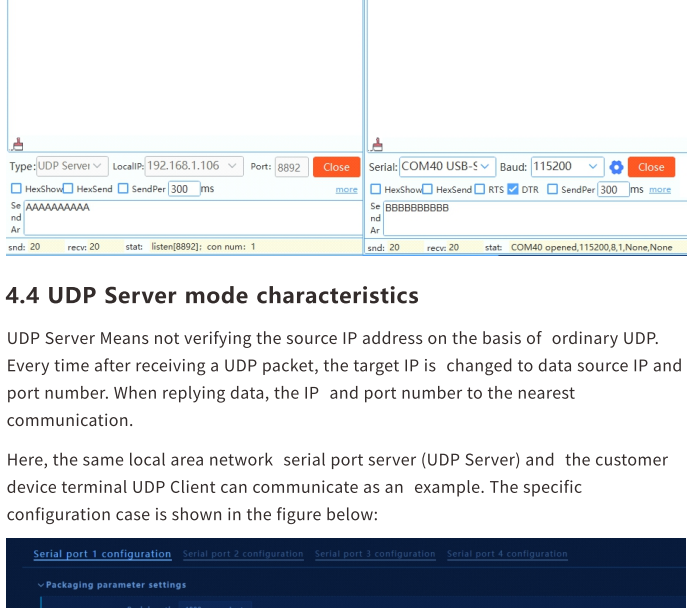
2.1.1 DHCP pattern

The device can be set to DHCP mode to automatically obtain an unoccupied address in the upper-level network, and then the device search tool can be configured to know the IP address of the device.



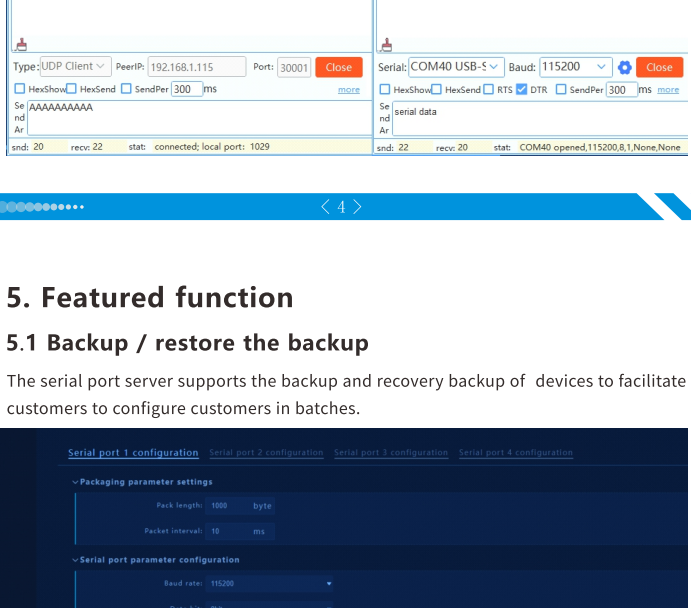
2.1.2 Static IP mode

Static IP mode requires manual configuration of the device's IP address, subnet mask, and gateway to avoid IP conflicts (set the IP address already used). After successful setting, the web configuration page can be accessed through the set IP address.



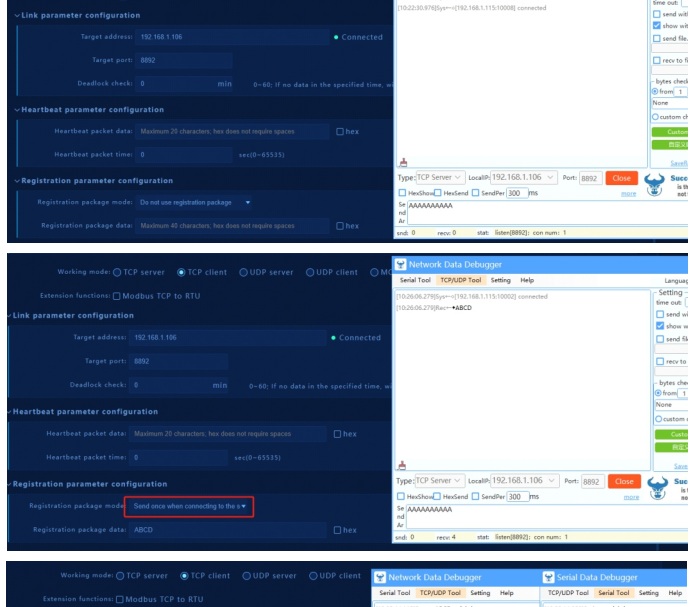
2.2 System reset

The system reset removes all the configurations of the serial port server to restore the original state, and the system restarts.



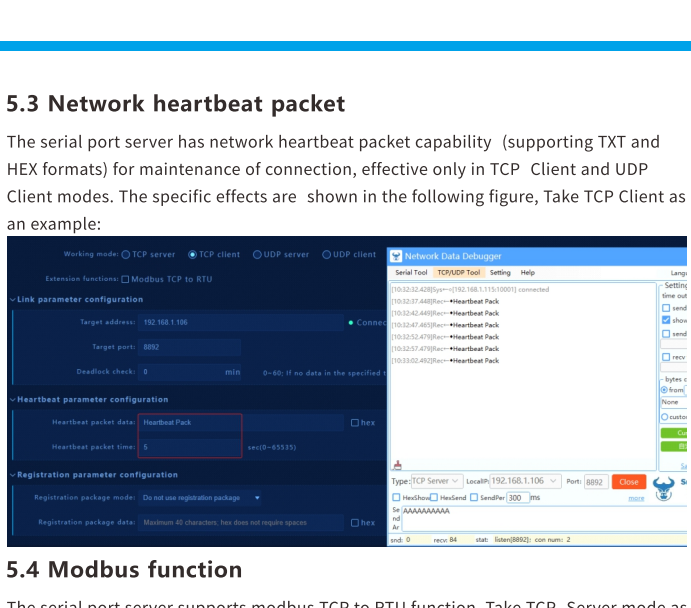
2.3 System upgrade

The serial port server can be upgraded to the firmware (prompted by the upgrade progress bar), and the system will restart after upgrading.



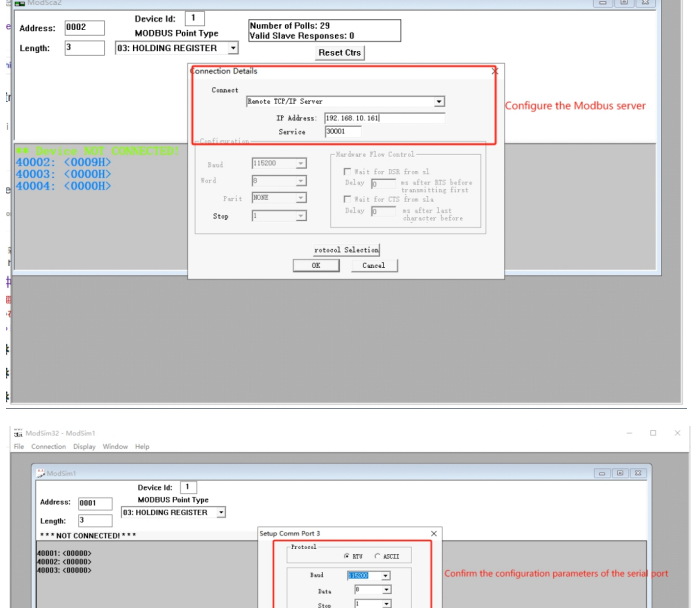
2.4 System reboot

Restart the serial port server, and configure the serial port settings to restart the system before taking effect.



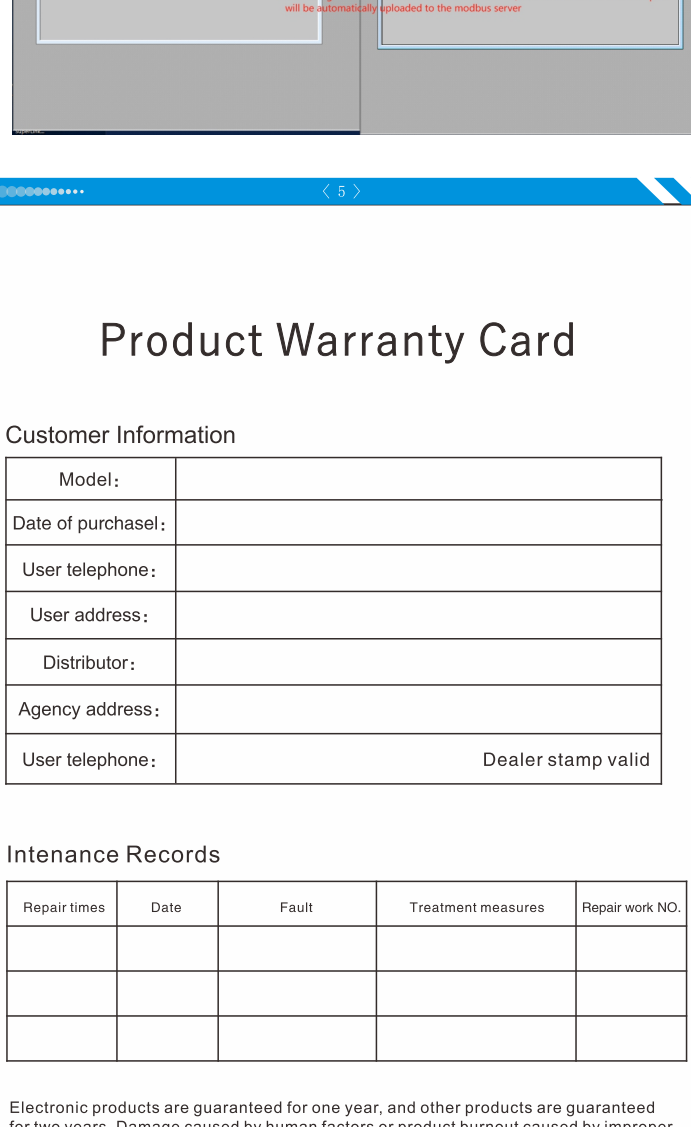
2.5 User account operation

You can modify and cancel the user's login password on the configuration page.



3. Basic parameters of serial port

The serial port server has the following universal serial port parameters:



Description of the interface parameters:
 [Package length]: default 1000 bytes, can be modified as required.
 [Packet interval]: default 1200 ms, can be modified as required.
 [Paud rate]: default 115200, can be set up, with serial communication equipment port rate.
 [Data bit]: default 8 bits, can be set specifically, consistent with the serial communication device data bit.
 [Check bit]: Default NONE (no inspection), can be set according to the specific setting, need to be consistent with the serial port communication equipment check bit.
 [Stop bit]: Default 1, according to the specific setting, consistent with the serial communication device.

4. Serial port working mode

The serial device server supports three communication protocols: TCP (Server/Client), UDP (Server/Client) and MQTT mode. The specific configuration examples are shown below.

4.1 TCP Client mode characteristics

Serial port target TCP Client, need to connect TCP Server, need to confirm the parameters: target IP / domain name and target port number, target IP can be local equipment of the same LAN, also can be different LAN IP address or IP across public network, if connect across the public network server, then the server has public IP or domain name.

The serial port server (TCP Client) in the same LAN communicates with TCP Server as an example. The specific configuration case is shown in the figure below:

4.2 TCP Server mode characteristics

TCP Server The TCP server, which monitors the network connections and establishes the connections, is usually used for the communication with the TCP clients within the LAN. Like TCP Client, there are connections and disconnection to ensure a reliable exchange of data. In TCP Server mode, the serial port server listens to the native port, responds to the connection request and sends the serial port data to all devices that establish a connection with the serial port server.

When the serial port server does TCP Server, it can accept multiple devices for connection, and when the maximum number of connections exceeds, it will actively kick off the oldest connection.

Here, the same local area network serial port server (TCP Server) and the customer device terminal TCP Client can communicate as an example. The specific configuration case is shown in the figure below:

4.3 UDP Client mode characteristics

UDP Client A non-connected transmission protocol that provides simple and unreliable information transmission services. Without connection establishment and disconnect, it is usually used for data transmission scenarios with low packet loss rate, small packets and fast transmission frequency, and data to be transmitted to the specified IP.

In UDP Client mode, the serial port server will only communicate with the target port of the target IP, and if the data is not coming from this channel, the data will not be received by the serial port server.

The serial port server (UDP Client) in the same LAN communicates with UDP Server as an example. The specific configuration case is shown in the figure below:

4.4 UDP Server mode characteristics

UDP Server Means not verifying the source IP address on the basis of ordinary UDP. Every time after receiving a UDP packet, the target IP is changed to data source IP and port number. When replying data, the IP and port number to the nearest communication.

Here, the same local area network serial port server (UDP Server) and the customer device terminal UDP Client can communicate as an example. The specific configuration case is shown in the figure below:

5. Featured function

5.1 Backup / restore the backup

The serial port server supports the backup and recovery backup of devices to facilitate customers to configure customers in batches.

5.2 Network registration package

The serial port server has the network registration package function, which can send the registration package for authentication when connecting with the server. There are four modes:

1. Do not use the registration package.
2. When connected to the server, send once.
3. The data packets sent to the server are added with the registration packets.
4. Support the above two simultaneously (2 and 3 except 1).

The registration package also supports both TXT and HEX formats.

5.3 Network heartbeat packet

The serial port server has network heartbeat packet capability (supporting TXT and HEX formats) for maintenance of connection, effective only in TCP Client and UDP Client modes. The specific effects are shown in the following figure, Take TCP Client as an example:

5.4 Modbus function

The serial port server supports modbus TCP to RTU function. Take TCP Server mode as an example, test it with modbus simulation tool. The effect is shown in the following figure:

