HLK-SW16 application manual 3

Serial to WIFI application (Serial to Ethernet application)
Note: To ensure the normal operation, please ensure that you have bought our HLK-SW16 development kit. As shown below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLK-RM04 module</td>
<td></td>
</tr>
<tr>
<td>HLK-SW16 carrier board</td>
<td></td>
</tr>
<tr>
<td>2.4G flexible antenna</td>
<td></td>
</tr>
<tr>
<td>5V 2000mA power adapter</td>
<td></td>
</tr>
<tr>
<td>Cable (optional)</td>
<td></td>
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</tbody>
</table>

Please connect the way shown as below:
Please note the direction that the HLK-RM04 module plug in the carrier board!

1. Product introduction

HLK-SW16 is a new professional remote control terminal launched by Hi-Link electronic, is a realization of TCP through the gateway and establishes communication connection with the remote device, it can be based on without modifying the original protocol, to realize the connection of network client and equipment directly, save the development cycle, enhance the user experience.

Compared with the traditional dynamic domain name plus router port mapping mode, has the incomparable superiority, for the user saving the application of dynamic domain name, the router port mapping and frequent operation, make equipment to achieve the plug-in effect.

2. System principle.

The whole system consists of server, terminal program and client components, as shown in fig.:
1) server

Receiving device and client registration, to assist the client to find equipment and establish the connection

2) device

Automatically connect to the server after the device is started

3) the client

Run the client will automatically connect to the server, to establish a connection to terminal equipment with the aid of a server.

Each part of the carrier board function:
3. Look over the module P2P account and password

1. To ensure that the module is the factory default. Restore factory settings, to power on the module, wait for 35 seconds. Then press one of the two buttons on the carrier board more than 6 seconds.

2. Power on the module again, waiting for 35S, the LEDs on the module flashing.

3. Use Ethernet cable connect the computer and the module LAN port, configuration the computer IP and module IP in the same network segment, as shown in fig.:
4. Enter the 192.168.16.254/p2p.asp in your computer’s web browser, enter the user name admin, password admin, click OK. To view account and password; at the same time, can change the password on this interface (account cannot be modified). Shown as the following diagram:
(Note: the account and passwords are case sensitive!!!)

3. Serial to WIFI (wireless LAN mode) configuration method

Serial to WIFI model
一： Module configuration

Configuration method one: through the serial port

1 Ensure that the module is the factory default. Restore factory settings, power on the module, wait for 35 seconds. Then press one of the two buttons on the carrier board for more than 6 seconds.

2 Power on the module again, wait for 35s. Using DB9 serial port and the serial port of computer with a straight line connecting. Or directly use USB to serial line connected to the HLK-SW16 carrier board. Dial the dial switch to the position shown in the figure:

3 Press the “Exit/Default” button shortly, open the configuration software, select the serial port number, click search module, the command execution and return boxes appears(Found Device at COM3: (115200)) news, means find the module!

configuration parameters

Work mode: wireless network mode
Network protocol selection: We selected TCP server instance

The remote IP: As server the remote IP doesn't work.

Port: TCP server monitor port.

Serial parameters: Modify the parameters according to their own needs.

Configuration according to the following picture. The wireless parameter is the module needs to be connected to the wireless router parameters.

Please note:

Enable DHCP: DHCP enabled, the module need to obtain IP from the router, if module is used as TCP Server, at this time need to log into the router to find the module IP.

DHCP is not enabled: need to fill in your IP address, you need to know the IP address of your router rules. Use our example router as an example, the rules of IP:

- 192.168.10.xxx;
- 255.255.255.0;
- 192.168.10.1
1. Restart the module.
The module will automatically connect to the wireless router named WIFI-mark. This can make communication. Note:
A. Wireless parameter part here is our router parameters, if the user is using the RM04 module, it should be changed to the router parameters of the user.
B. Remove the hook in front of the "enable DHCP". This is in order to facilitate the customers through the IP address to find the module.
C. Local IP refers to the IP of the module, the IP must be in the same network with user router. This IP can’t conflict with any machine’s IP address in the LAN, otherwise communication will failure.
D. Network parameters are based on our company's network settings, users don't copy.

2. Test module is connected to the wireless router WIFI-mark or not:
Ping 192.168.10.160, to see whether it is OK: Start - Run - cmd, see below fig.:
7. Open the p2p software, input the account and password, then click link, see below fig:

![Connection status](image)

Note: This picture is the PC client, the mobile phone also need to open the software and input the account password, then it is OK.
8. After link well, click the client button, the module corresponding to relay will open. See below fig.: 

Communicate successfully!!!!!
The second configure method: through Ethernet port configuration

1. First, restore the factory values. Then start it, one end of the network cable connect to Ethernet 2 (LAN) port of the HLK-SW16’s carrier board, the other end connected to a computer network port. Then set the computer IP as follows:

```
Ping 192.168.16.254 to see whether it is OK: Start——Run——cmd
```
2 Enter 192.168.16.254/ser2net.asp in the browser, will pop up to enter a user name and password dialog. User name and password are admin, configuration is shown as below:
Module IP and the connected router IP must be in the same network segment.

Remember after configured clicking OK. Static IP and DHCP refer to the configuration of the serial port mentioned. Then Apply and wait module to restart.

3. Wait until module restart, pull HLK-SW16’s LAN port network cable, plugged into the WAN port. Next Steps refer to the sixth step of the first configuration method.