

HLK-SW16 application manua 13

Serial to WIFI application (Serial to Ethernet application)



Shenzhen Hi-Link electronic co., LTD





Note: To ensure the normal operation, please ensure that you have bought our HLK-SW16 development kit. As shown below

WF-Elink" WFE Uartwin Module WAC:44334CB70634 WMAC:44334CB70635 FC FC FORDS	HLK-RM04 module
	HLK-SW16 carrier board
	2.4G flexible antenna
	5V 2000mA power adapter
	Cable (optional)

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:

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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 ont 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.:

本地连接 属性	Internet 协议版本 4 (TCP/IPv4) 雇性 常规 如果网络支持此功能,则可以获取 您需要从网络系统管理员处获得过	主 ? こ の自动指派的 IP 设置。否则, 5当的 IP 设置。
配置(C) 此连接使用下列项目(O): ✓ ■ Microsoft 网络客户端 ✓ ■ QoS 数据包计划程序 ✓ ■ Microsoft 网络的文件和打印机共享 ✓ ▲ Internet 协议版本 6 (TCP/IPv6) ✓ ▲ Internet 协议版本 4 (TCP/IPv4)	 ○ 自动获得 IP 地址(0) ● 使用下面的 IP 地址(S): IP 地址(I): 子网摘码(0): 默认网关(0): 	192 .168 .16 .222 255 .255 .255 .0
 ✓ ▲ 链路层拓扑发现映射器 I/O 驱动程序 ✓ ▲ 链路层拓扑发现响应程序 ✓ 章装 (0) 卸载 (0) 属性 (8) 描述 TCP/IP。该协议是默认的广域网络协议,它提供在不同 	 自动获得 DNS 服务器地址 (B 使用下面的 DNS 服务器地址 首选 DNS 服务器 (P): 备用 DNS 服务器 (A):) (2):
的相互注拨的WP的上的通机。 确定 取消	□ 退出时验证设置 (L)	高級 (Y) 确定 取消

(Can also be connected with the computer or mobile phone through WiFi)

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 can not be modified). Shown as the following diagram:

	Windows 安全	2
SogouEx	plorer	
位于 HLK-W	/R02 的服务器192.168.10.205要求用尸名和图	峦码。
警告:此服务	务器要求以不安全的方式发送您的用户名和密码	吗(没有安全连接
的基本认证)		
	admin	
	□ 记住我的凭据	
1.67		
	确定	取消
	# UNL	- Purs



6 http://192.16	i8.16.254/p2p.asp - Windows Internet Explorer	
文件(F) 编辑(I	E) 查看(V) 收藏夹(A) 工具(T) 帮助(H)	
Go -	🔊 http://192.168.16.254/p2p.asp 🛛 😌 🔻 🖄 🍫 🗙 📴 百度一下,你就知道	+ م
🔶 收藏夹	👍 🎆 VANCL风客诚品.url 💾 当当网.url 抣 淘宝网持卖.url 🕖 百度.url	
Attp://192.1	168.16.254/p2p.asp	□□□ ▼ 安全(S) ▼
DOD C	ottinge	*
FZF St	eungs	
UUID:	HL00000214	
PASSWORD:	LzCPZQ	
	Apply Cancel	
		~
完成	😜 Internet 保护模式: 禁用	🗿 🔻 🍕 100% 👻 🖉

(Note: the account and passwords are case sensitive !!!)

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



Serial to WIFI model

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!

→ 设备管理器	HLK-RM04_CONFIG By ShenZhen Hi-Link ElectronicTechn	ology co.,Ltd
文件(F) 操作(A) 查看(V) 帮助(H)	待发送命令	COM3 搜索模块
 ◆ ● 〒 ○ □ ○ □ ○ □ ○ □ ○ □ ○ ○ 	at+netmode=1 at+remotep=192.168.11.245 at+remoteport=8080 at+remoteport=cp at+remoteport=cp at+unde=server at+uart=115200,8,n,1 at+uartpacklen=64 at+uartpacklen=01 at+net_commit=1 at+reconn=1	・ 単口转WIFI ・ 串口以太网 ・ 串口以太网 ・ 先线网卡模式 ・ 田转WIFI ・ 串口转WIFI ・ 日本 ・ 田本 ・ 田本
 ⑦ 通信读口 (COM1) ▷ ● ● 计算机 ▷ ● ● 监视器 ▷ ● 逆曲 ▷ ● 通用串行总线控制器 ▷ ● 通用串行总线控制器 	命令执行与回复 >:at (:Found Device at COM3(115200)!	·匹骗IP 192.168.11.245 端口 8080 本地端口 「 自用DHCP 网络参数
	用户参数保存区 User0 S User1 S User2 S User3 S	本地IP · · · · 子网掩码 · · · · 子网掩码 · · · · DNS · · · · DNS · · · · 提交配置 查询配置 WIFI扫描 透传机

configuration parameters

Work mode: wireless network mode

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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

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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:



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 to set the computer IP as follows:

网络 共享 注接时使用:	常规 如果网络支持此功能,则可以获用 您需要从网络系统管理员处获得过	四自动指派的 IP 设置。否则, 查当的 IP 设置。
此连接使用下列项目(0): ✓ ● Microsoft 网络客户端 ✓ ■ QoS 数据包计划程序 ✓ ■ Microsoft 网络的文件和打印机共享 ✓ ▲ Internet 协议版本 6 (TCP/IFv6) ✓ ▲ Internet 协议版本 4 (TCP/IFv4)	 ● 自动获得 IP 地址(0) ● 使用下面的 IP 地址(S): IP 地址(I): 子网摘码(V): 默认网关(0): 	192 .168 .16 .222 255 .255 .255 .0
 ✓ ▲ 链路层括扑发现映射器 I/O 驱动程序 ✓ ▲ 链路层括扑发现响应程序 ✓ ● 链路层括扑发现响应程序 / 卸载 (U) 属性 (R) 描述 TCP/IP。该协议是默认的广域网络协议,它提供在不同 	 自动获得 DNS 服务器地址 G 使用下面的 DNS 服务器地址 首选 DNS 服务器 (P): 备用 DNS 服务器 (A): 	3) (@):
的相互注接的网络上的通机。	□ 退出时验证设置 (L)	高級 (Y) 确定 取消

Ping 192.168.16.254 to see whether it is OK: Start—Run—cmd



C: C:\VIRDOVS\system32\cmd.exe C:\Documents and Settings\Administrator>ping 192.168.16.254 Pinging 192.168.16.254 with 32 bytes of data: Reply from 192.168.16.254: bytes=32 time<1ms TIL=64</td> Ping statistics for 192.168.16.254: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 0ms, Average = 0ms C:\Documents and Settings\Administrator>

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:



HERELI	NK	Support the IEE	Serial Port Server EE802.11b/g/n. IEEE802.3, IEEE802.3u, WPS/WDS, etc.
English 简体中文	网络模式:	串口-无线(WIFI S	STA) 🔻
HLK-WR02	无线网络名称:	WIFI-mark	[扫描]
	认证加密类型:	WPA/WPA2 AES	
▶ 串口2参数设置	密码:	markmarkmark123	
표 系統管理	IP地址类型:	静态▼	
	IP地址:	192.168.10.160	WIFI parameters
	子网掩码:	255. 255. <u>255. 0</u>	of the router be
dule IP and the	BLAC	192.168.10.1	
nected router IP	自远DNS服务器地址:	192.168.10.1	connected to
st be in the same	备用DNS服务器地址	8.8.8.8	
work segment		weber web	
		当前配置	更新配置
	串口配置:	115200,8,n,1	115200, 8, n, 1
	串口组帧长度:	64	64
	串口组帧周期:	10 臺秒	10
	网络协议模式:	server	服务器 (Server) ▼
	本地远端 服务器域名/IP:	192.168.11.245	192.168.11.245
	本地/远端 端口:	8080	8080
	网络协议选择:	tcp	TCP

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 the first configuration method.