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**深圳市海凌科电子有限公司**

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# HLK-RM04 功能说明

ETHERNET 以太网

WIFI 无线网

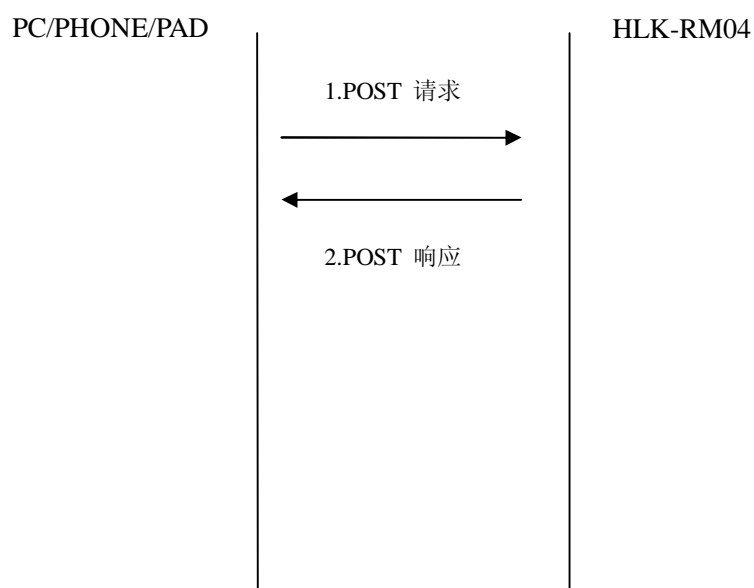
全功能串口网络/无线模块

## HTTP 执行 AT 指令说明

### 应用场景:

网络端通过工具配置模块。提供接口方便执行 at 指令。

### 执行流程:



#### 1. 向模块发送 http post 请求，POST 格式如下：

***POST /goform/ser2netconfigAT HTTP/1.1***

***Host: 192.168.16.254***

***Connection: keep-alive***

***Authorization: Basic YWRtaW46YWRtaW4=***

***Content-Length: 16***

***ver=?&remoteip=?***

**COMMAND0=[VALUE0]& COMMAND1=[VALUE1]&...**

#### 2. 模块返回 post 响应，包含 AT 指令响应，格式如下：

**HTTP/1.0 200 OK**

**Server: HLK-RM04-Webs**

**Pragma: no-cache**

**Cache-control: no-cache**

**Content-Type: text/html**

**<html>**

**<head>**

**<title>My Title</title><link rel="stylesheet" href="/style/normal\_ws.css"**

**type="text/css"><meta http-equiv="content-type" content="text/html;**

**charset=utf-8"></head>**

**<body>**

**at+ver=? V1.71(Jun 3 2013) at+remoteip=? 192.168.1.245**

**</body>**

**</html>**

### 示例 1:

浏览器打开 [http://192.168.16.254/ser2net\\_at.asp](http://192.168.16.254/ser2net_at.asp), 界面返回执行结果。

浏览器发送 tcp 数据如下 (chrome 25.0.1364.172 m):

**POST /goform/ser2netconfigAT HTTP/1.1**

**Host: 192.168.16.254**

**Connection: keep-alive**

**Content-Length: 681**

**Cache-Control: max-age=0**

**Authorization: Basic YWRtaW46YWRtaW4=**

**Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8**

**Origin: http://192.168.16.254**

**User-Agent: Mozilla/5.0 (Windows NT 5.1) AppleWebKit/537.22 (KHTML, like Gecko) Chrome/25.0.1364.172 Safari/537.22**

**Content-Type: application/x-www-form-urlencoded**

**Referer: http://192.168.16.254/ser2net\_at.asp**

**Accept-Encoding: gzip, deflate, sdch**

Accept-Language: zh-CN,zh;q=0.8

Accept-Charset: GBK,utf-8;q=0.7,\*;q=0.3

ver=%3F&remoteip=%3F&remoteport=%3F&CLport=%3F&remotepro=%3F&timeout=%3F&mode=%3F&uart=%3F&uartpacklen=%3F&uartpacktimeout=%3F&uartpackintertimeout=%3F&escap=%3F&escap2=%3F&escap2\_time=%3F&RTS=%3F&XON\_XOFF=%3F&netmode=%3F&wifi\_conf=%3F&dhcpcd=%3F&dhcpcd\_ip=%3F&dhcpcd\_dns=%3F&dhcpcd\_time=%3F&dhcpcd=%3F&dhcpc=%3F&net\_ip=%3F&net\_dns=%3F&net\_wanip=%3F&tcp\_auto=%3F&tcp\_client\_check=%3F&Channel=%3F&S2N\_Stat=%3F&wifi\_ConState=%3F&wifi\_Scan=%3F&StaList=%3F&C2\_uart=%3F&C2\_mode=%3F&C2\_remoteip=%3F&C2\_port=%3F&C2\_CLport=%3F&C2\_protocol=%3F&C2\_timeout=%3F&C2\_uartpacklen=%3F&C2\_uartpacktimeout=%3F&C2\_uartpackintertimeout=%3F&C2\_tcp\_auto=%3F&C2\_tcp\_client\_check=%3F&C2\_RTS=%3F&C2\_XON\_XOFF=%3F

## ⊞ Hypertext Transfer Protocol

⊞ POST /goform/ser2netconfigAT HTTP/1.1\r\n

Host: 192.168.16.254\r\n

Connection: keep-alive\r\n

⊞ Content-Length: 681\r\n

Cache-Control: max-age=0\r\n

⊞ Authorization: Basic YWRtaW46YWRtaW4=\r\n

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,\*/\*;q=0.8\r\n

Origin: http://192.168.16.254\r\n

User-Agent: Mozilla/5.0 (Windows NT 5.1) AppleWebKit/537.22 (KHTML, like Gecko) Chrome/25.0.1364.172 Safari/537.

Content-Type: application/x-www-form-urlencoded\r\n

Referer: http://192.168.16.254/ser2net\_at.asp\r\n

Accept-Encoding: gzip, deflate, sdch\r\n

Accept-Language: zh-CN,zh;q=0.8\r\n

Accept-Charset: GBK,utf-8;q=0.7,\*;q=0.3\r\n

\r\n

[Full request URI: <http://192.168.16.254/goform/ser2netconfigAT/>]

## ⊞ Line-based text data: application/x-www-form-urlencoded

0270	3a 20 47 42 4b 2c 75 74 66 2d 38 3b 71 3d 30 2e	:	GBK,utf-8;q=0.7,*;q=0.3...
0280	37 2c 2a 3b 71 3d 30 2e 33 0d 0a 0d 0a 76 65 72		ver=%3F&remoteip=%3F&remoteport=%3F&CLport=%3F&remotepro=%3F&timeout=%3F&mode=%3F&uart=%3F&uartpacklen=%3F&uartpacktimeout=%3F&uartpackintertimeout=%3F&escap=%3F&escap2=%3F&escap2_time=%3F&RTS=%3F&XON_XOFF=%3F&netmode=%3F&wifi_conf=%3F&dhcpcd=%3F&dhcpcd_ip=%3F&dhcpcd_dns=%3F&dhcpcd_time=%3F&dhcpcd=%3F&dhcpc=%3F&net_ip=%3F&net_dns=%3F&net_wanip=%3F&tcp_auto=%3F&tcp_client_check=%3F&Channel=%3F&S2N_Stat=%3F&wifi_ConState=%3F&wifi_Scan=%3F&StaList=%3F&C2_uart=%3F&C2_mode=%3F&C2_remoteip=%3F&C2_port=%3F&C2_CLport=%3F&C2_protocol=%3F&C2_timeout=%3F&C2_uartpacklen=%3F&C2_uartpacktimeout=%3F&C2_uartpackintertimeout=%3F&C2_tcp_auto=%3F&C2_tcp_client_check=%3F&C2_RTS=%3F&C2_XON_XOFF=%3F
0290	3d 25 33 46 26 72 65 6d 6f 74 65 69 70 3d 25 33		
02a0	46 26 72 65 6d 6f 74 65 70 6f 72 74 3d 25 33 46		
02b0	26 43 4c 70 6f 72 74 3d 25 33 46 26 72 65 6d 6f		
02c0	74 65 70 72 6f 3d 25 33 46 26 74 69 6d 65 6f 75		
02d0	74 3d 25 33 46 26 6d 6f 64 65 3d 25 33 46 26 75		
02e0	61 72 74 3d 25 33 46 26 75 61 72 74 70 61 63 6b		
02f0	6c 65 6e 3d 25 33 46 26 75 61 72 74 70 61 63 6b		
0300	74 69 6d 65 6f 75 74 3d 25 33 46 26 75 61 72 74		
0310	70 61 63 6b 69 6e 74 65 72 74 69 6d 65 6f 75 74		
0320	3d 25 33 46 26 65 73 63 61 70 3d 25 33 46 26 65		
0330	73 63 61 70 32 3d 25 33 46 26 65 73 63 61 70 32		
0340	5f 74 69 6d 65 3d 25 33 46 26 52 54 53 3d 25 33		

模块返回数据如下:



```
at+ver=? V1.71(Jun 3 2013) at+remoteip=? 192.168.1.245 at+remoteport=? 8080 at+CLport=? 0
at+remoteport=? tcp at+timeout=? 0 at+mode=? client at+uart=? 115200,8,n,1 at+uartpacklen=?
64 at+uartpacktimeout=? 10 at+uartpackintertimeout=? 255 at+escap=? 0 at+escap2=? 1
at+escap2_time=? 300 at+RTS=? 1 at+XON_XOFF=? 0 at+netmode=? 0 at+wifi_conf=? HI-
LINK_12C7,wpa2_aes,12345678 at+dhcpd=? ? 1 at+dhcpd_ip=?
192.168.16.100,192.168.16.200,255.255.255.0,192.168.16.1 at+dhcpd_dns=?
192.168.16.1,8.8.8.8 at+dhcpd_time=? 86400 at+dhcpd=? ? 1 at+dhcpc=? 1 at+net_ip=?
192.168.11.254,255.255.255.0,192.168.11.1 at+net_dns=? 192.168.11.1,8.8.8.8 at+net_wanip=?
192.168.1.109,255.255.255.0,192.168.1.1 at+tcp_auto=? 1 at+tcp_client_check=? 1
at+Channel=? 1 at+S2N_Stat=? 1 at+wifi_ConState=? error at+wifi_Scan=? Ch SSID BSSID
Security Sigantl()W-Mode ExtCH NT WPS DPID 1 CMCC 5c:0e:8b:24:41:70 NONE 34 11b/g/n
```

## 示例 2:

通过 tcp 工具发送 http post，接收分析响应：

192.168.16.254:80

目标IP: 192.168.16.254  
 目标端口: 80  
☐ 指定本地端口: 4001  
 类型: TCP  
☐ 自动连接  
 每隔: 0 s  
☐ 连接上后自动发送  
 每隔: 0 ms  
 连接

发送区 ☐ 自动发送 每隔 100 ms 发送 停止  
☐ 按十六进制 ☐ 发送文件 ☐ 发送接收到的数据 清空 选项 广播包发送选项

```
POST /goform/ser2netconfigAT HTTP/1.1
Host: 192.168.16.254
Connection: keep-alive
Authorization: Basic YWRtaW46YWRtaW4=
Content-Length: 16

ver=?&remoteip=?
```

接收区 暂停显示 清空 保存 选项 ☐ 十六进制  
☐ 保存到文件(实时)

计数  
 发送: 324  
 接收: 32

```
HTTP/1.0 200 OK
```

发送数据（注意空格）：

```
POST /goform/ser2netconfigAT HTTP/1.1
Host: 192.168.16.254
Connection: keep-alive
Authorization: Basic YWRtaW46YWRtaW4=
Content-Length: 16

ver=?&remoteip=?
```

接收数据（工具原因没有显示返回数据，以下是通过抓包工具看到的数据）：

