



SHENZHEN HI- LINK ELECTRONIC CO.,LTD

HLK-RM08K-AT INSTRUCTIONS

V1.2



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一、 AT commands instructions (commands are case-sensitive)

In AT mode, you could configure the system parameters by serial port AT commands. AT commands as follow:

Configuration

at+[command]=[value]\r

Query

at+[command]=?\r

Return

at+R[command]=[value]\r

Commands list:

Network:	
Netmode	Network mode
Dhcp	Dynamic/Static IP address
WANIp	IP Static IP
WANIpMask	Static IP subnet mask
SGw	Static gateway
SDnsF	Static main DNS
Dhcpd	DHCP Server enable
DhcpdTime	DHCP DHCP server IP lease time
DhcpdIpStart	DHCP DHCP server initial address
DhcpdIpStop	DHCP DHCP server terminal address
DhcpdMask	DHCP DHCP server subnet mask
STASsid	WIFI network name(STA mode)
STAEncType	WIFI certificated encryption way(STA mode)
STAPasswd	WIFI password (STA mode)
APSSsid	WIFI network name(AP mode)
APEncType	WIFI certificated encryption way (AP mode)
APPasswd	WIFI password (AP mode)
LANIp	LAN port IP address
LANIpMask	LAN port subnet mask
PortEnable	ETH port enable
TcpKI	TCP Live time
TcpKIL	TCP Live interval



Socket: (correspond to multiple groups of settings)	
NProType	Transparency protocol type
NPackLen	Frame length
NPackTime	Group frame time
NPackITime	Group frame interval
NDomain	Remote address
NRPort	Remote port
NLPort	Local port
NTcpTo	TCP overtime time
NTcpCTo	TCP Connection timeout
NCTcpReC	TCP Reconnect time
NTcpKeepA	TCP live Enable
NTcpRealT	TCP Real time
NTcpMaxConn	TCP Maximum number of connections
NBufFlush	Socket Cache empty
NReconn	Socket Reconnection
NStat	Socket status
UART PORT: (correspond to multiple groups of settings)	
SBaud	Baud rate
SWidth	Data bit length
SPari	check
SStop	Stop bit length
SFlowC	Flow Control
SAtMode	AT Instruction mode
SBufFlush	The serial cache is cleared
SReopen	Serial restart
Others :	
Name	Module name
Ver	version
MAC	MAC address
ResetD	Restore the default settings
Save	save
SaveToC	Save to customer store
Apply	Submit
Reboot	Reboot
ID	ID Set the query
UdpAtEn	UDP AT Instruction function enabled
UdpAtPrefix	UDP AT Instruction function flag
WebDis	Web Enable

OpMode

(Gateway, AP Client, Bridge) Operating mode

Note:
1) Module has multiple sockets, serial port settings, and instructions to increase the suffix.
Such as:
SBaud or SBaud0 - Serial port 0 Baud
Sbaud1 - Serial 0 baud
After sending the configuration command must be saved and then submitted.
EG: at+NetMode=1\r\n
at+Save=1\r\n
at+Apply=1\r\n
at+Reboot=1\r\n

1. Netmode

Features:

Network mode settings

Format:

at+Netmode=<Netmode>\r

Parameter:

Table 6-3 Network mode

Value	Description
0	default setting (default)
1	Ethernet
2	WiFi sta
3	WiFi ap
4	WiFi ap client

2. Dhcp

Features:

Set the WAN port IP address acquisition mode

Format:

at+Dhcp=< Dhcp >\r

Parameter:

Table 6-3 Dynamic / Static IP Addresses

Value	Description
0	Static
1	Dynamic (default)



3. WANIp

Features:

Set the static IP address of the WAN port

Format:

at+WANIp=< IP >\r

Parameter:

Eg : 192.168.1.100

4. WANIpMask

Features:

Set the subnet mask of the WAN port static IP

Format:

at+WANIpMask=< Mask >\r

Parameter:

Eg:255.255.255.0

5. SGw

Features:

Set the WAN port static IP gateway

Format:

at+SGw=< SGw >\r

Parameter:

EG:192.168.1.1

6. SDnsF

Features:

Static main DNS

Format:

at+SDnsF=< SDnsF >\r

Parameter:

Example:192.168.1.1

7. Dhcpd

Features:

DHCP server enabled

Format:

at+Dhcpd=< Dhcpd >\r

Parameter:

Table 6-3 DHCP SERVER ENABLE

Value	Description
0	Closed
1	Open (default)

8. DhcpdTime

Features:

DHCP server IP lease time

Format:

at+DhcpdTime=< DhcpdTime >\r

Parameter:

86400 Duration value in minutes, the default is 86400

9. DhcpdIpStart

Features:

DHCP server address start address

Format:

at+DhcpdIpStart=< DhcpdIpStart >\r

Parameter:

Default value: 192.168.16.100

10.DhcpdIpStop

Features:

DHCP server address termination address

Format:

at+DhcpdIpStop =< DhcpdIpStop >\r

Parameter:

Default value:192.168.16.250

11.DhcpdMask

Features:

DHCP server subnet mask

Format:

at+DhcpdMask=< DhcpdMask >\r

Parameter:

Default value:255.255.255.0

12.STASSid

Features:

SSID STA mode, Connect SSID of the upper AP

Format:

at+STASSid=< Ssid >\r

Parameter:

13.STAEncType

Features:

STA mode, connect the upper level of Ap authentication encryption

Format:

at+STAEncType=< EncType >\r

Parameter:

Table 6-3 Encryption mode

Value	Description	Description
0	None	open network
1	Wep	Encryption
2	Wep_share	Encryption, encryption certified
3	wpa	tkip
4	wpa	aes
5	wpa2	tkip
6	wpa2	aes

Note: If the AP encryption method is wpa / wpa2_XXXX, please select wpa2_XXXX directly.

14.STAPasswd

Features:

STA mode, please connect the password of upper AP.



Format:

at+STAPasswd=< Passwd >\r

Parameter:

15.APSsid

Features:

Set AP mode SSID

Format:

at+APSsid=< Ssid >\r

Parameter:

Default value: HI-LINK_****,****is the last four digital number

16.APEncType

Features:

Set AP mode encryption method

Format:

at+APEncType=< EncType >\r

Parameter:

Table 6-3 Encryption method

值	Description
0	None- Open network
1	Wep encryption
2	Wep_share encryption, encryption certified
3	wpa tkip
4	wpa aes
5	wpa2 tkip
6	wpa2 aes (default)

17.APPasswd

Features:

Set AP mode WIFI password

Format:

at+APPasswd=< Passwd >\r

Parameter:

Default value: 12345678



18.LANIp

Features:

LAN port IP address

Format:

at+LANIp=< IP >\r

Parameter:

Default value:192.168.16.254

19.LANIpMask

Features:

LAN Port IP subnet mask

Format:

at+LANIpMask=< Mask >\r

Parameter:

Default value:255.255.255.0

20.PortEnable

Features:

ETH enable control,Netmode=0 or Netmode= 4 available

Format:

at+PortEnable=< Enable >\r

Parameter:

Enable= ETH0+ ETH1+ ETH2+ ETH3+ETH4

ETHn: Disable 0

Enable 2ⁿ

Example: Enable=31,5 ETH PORT open, Enable=3, ETH0 and ETH1 open, others closed.

Default value: 31

21.TcpKI

Features:

TCP keep alive

Format:

at+TcpKI=< TcpKI >\r

Parameter:



22. TcpKIL

Features:

TCP keepalive Internal time

Format:

at+TcpKIL=< TcpKIL >\r

Parameter:

23. NProType

Features:

Transparency Socket protocol type

Format:

at+NProType=< NProType >\r

Parameter:

Value	Description
0	Disable, no network transparency
1	TCPServer(default)
2	TCPClient
3	UDPServer
4	UDPClient

24. NPackLen

Features:

Serial frame length

Format:

at+NPackLen=< NPackLen >\r

Parameter:

Default value: 200, byte

25. NPackTime

Features:

Serial frame time

Format:

at+NPackTime=< NPackTime >\r

Parameter:

Default value: 50, 10ms



26.NPackITime

Features:

Serial frame time internal

Format:

at+NPackITime=< NPackITime >\r

Parameter:

Default value: 10, 10ms

27.NDomain

Features:

Socket remote domain name or IP

Format:

at+NDomain=< NDomain >\r

Parameter:

28.NRPort

Features:

Socket remote terminal

Format:

at+NRPort=< NRPort >\r

Parameter:

29.NLPort

Features:

Socket local terminal

Format:

at+NLPort=< NLPort >\r

Parameter:

30.NTcpTo

Features:

TcpServer mode, client connection time out without data break time

Format:

at+NTcpTo=< NTcpTo >\r

Parameter:

10ms, Default value is 0, means no timeout

31.NTcpCTo

Features:

Socket tcp connection time out

Format:

at+NTcpCTo=< NTcpCTo >\r

Parameter:

10ms, Default value 200

32.NCTcpReC

Features:

Socket tcp reconnection internal time

Format:

at+NCTcpReC=< NCTcpReC >\r

Parameter:

10ms, Default value 200

33.NTcpKeepA

Features:

Socket tcp keepalive enable

Format:

at+NTcpKeepA=< NTcpKeepA >\r

Parameter:

value	Description
0	Disable
1	Enable(default)

34.NTcpRealT

Features:

Socket TCP real time enable



Format:

at+NTcpRealT=< NTcpRealT >\r

Parameter:

Value	Description
0	Disable
1	Enable(default)

35.NTcpMaxConn

Features:

Socket tcp server the max client connection

Format:

at+NTcpMaxConn=< NTcpMaxConn >\r

Parameter:

Default value: 100

36.NBufFlush

Features:

Socket buffer clear

Format:

at+NBufFlush=1\r

Parameter:

37.NReconn

Features:

Socket reconnection

Format:

at+NReconn=1\r

Parameter:

38.NStat

Features:

Socket status

Format:

at+NStat=?\r

Parameter: Returned value is 4, means connection.

39. SBaud

Features:

Serial Baud

Format:

at+SBaud=< SBaud >\r

Parameter:

1200-2000000, Default value: 115200

40. SWidth

Features:

Serial data length

Format:

at+SWidth=< SWidth >\r

Parameter:

5-8, Default value: 8

41. SPari

Features:

Serial check

Format:

at+SPari=< SPari >\r

Parameter:

值	Description
0	No check (default)
1	Even check
2	Odd check

42. SStop

Features:

Serial stop length

Format:

at+SStop=< SStop >\r

Parameter:

value	Description
1	1 byte (default)
1.5	1.5 byte
2	2 byte

43.SFlowC

Features:

Serial flow control

Format:

at+SFlowC=< SFlowC >\r

Parameter:

Value	Description
0	Disable flow control(default)
1	Enable hardware flow control
2	Enable software flow control

44.SAtMode

Features:

Serial AT mode、transparency mode transfer

Format:

at+SAtMode=< SAtMode >\r

Parameter:

Value	Description
0	Transparency mode(default)
1	At mode

example: at+SAtMode0=0\r\n, Serial 0 enter transparency mode

45.SBufFlush

Features:

Serial buffer clear

Format:

at+SBufFlush=1\r

Parameter:



46.SReopen

Features:

Serial restart

Format:

at+SReopen=1\r

Parameter:

47.Name

Features:

Module name

Format:

at+Name=?\r

Parameter:

48.Ver

Features:

Module version

Format:

at+Ver=?\r

Parameter:

49.MAC

Features:

Module MAC address

Format:

at+MAC=?\r

Parameter:

50.ResetD

Features:

Restore setting :parameters setting and factory setting



Format:

at+ResetD=< ResetD >\r

Parameter:

Value	Description
1	Restore factory setting
2	Restore parameter setting

51.Save

Features:

Save setting

Format:

at+Save=1\r

Parameter:

52.SaveToC

Features:

Save as parameter setting

Format:

at+SaveToC=1\r

Parameter:

53.Apply

Features:

Apply

Format:

at+Apply=1\r

Parameter:

54.Reboot

Features:

Restart

Format:

at+Reboot=1\r



Parameter:

55.ID

Features:

ID setting query

Format:

at+ID=< ID >\r

Parameter:

ID set by AT commands, 4 bytes. Not 0, UDP discover,it will show on the responding package.

56.UdpAtEn

Features:

UDP at commands Enable control

Format:

at+UdpAtEn=< UdpAtEn >\r

Parameter:

Value	Description
1	UDP AT command enable,use UDP configuration ,query (default)
0	UDP AT commands disable

57.UdpAtPrefix

Features:

UDP at commands prefix

Format:

at+UdpAtPrefix=< UdpAtPrefix >\r

Parameter:

Default value: hlkAT

58.WebDis

Features:

Web visit Disable

Format:

at+WebDis=< WebDis >\r

Parameter:

Value	Description
0	Enable web page function(default)
1	Disable Web page function,could not access via HTTP

59.OpMode

Features:

Operation mode setting,available at Netmode=0

Format:

at+OpMode=< OpMode >\r

Parameter:

Value	Description
1	Gateway(default)
2	AP Client
3	Bridge

二、 AT commands configuration in different modes

1.UART to Ethernet mode

at+Netmode=1\r\n

at+Dhcpc=1\r\n

at+WANIp=192.168.16.254\r\n

at+WANIpMask=255.255.255.0\r\n

at+SGw=192.168.16.1\r\n

at+SDnsF=192.168.16.1\r\n

//The above commands are the parameter for the configuration of connecting router.

Named network parameter.

at+NProType0=1\r\n

at+NDomain0=192.168.22.2\r\n

at+NRPort0=8989\r\n

at+NLPor0=8080\r\n

at+NTcpTo0=0\r\n

at+SBaud0=115200\r\n

at+SWidth0=8\r\n

at+SPari0=0\r\n

at+SStop0=1\r\n



// Serial 0 configuration commands.

```
at+NProType1=1\r\n
at+NDomain1=192.168.22.2\r\n
at+NRPort1=8989\r\n
at+NLPor1=8081\r\n
at+NTcpTo1=0\r\n
at+SBaud1=115200\r\n
at+SWidth1=8\r\n
at+SPari1=0\r\n
at+SStop1=1\r\n
```

// Serial 1 configuration commands.

```
at+Save=1\r\n
at+Apply=1\r\n
at+Reboot=1\r\n
```

//commands for save and apply.

2. UART to WIFI- STA(client) mode

```
at+Netmode=2\r\n
at+STASsid=HLK\r\n
at+STAEncType=6\r\n
at+STAPasswd=12345678\r\n
at+Dhcpc=1\r\n
at+WANIp=192.168.16.254\r\n
at+WANIpMask=255.255.255.0\r\n
at+SGw=192.168.16.1\r\n
at+SDnsF=192.168.16.1\r\n
```

//Commands for module configuration of connecting router parameter. Named network parameter.

```
at+NProType0=1\r\n
at+NDomain0=192.168.22.2\r\n
at+NRPort0=8989\r\n
at+NLPor0=8080\r\n
at+NTcpTo0=0\r\n
at+SBaud0=115200\r\n
at+SWidth0=8\r\n
at+SPari0=0\r\n
at+SStop0=1\r\n
```

//Commands for serial 0 configuration.

```
at+NProType1=1\r\n
```



at+NDomain1=192.168.22.2\r\n

at+NRPort1=8989\r\n

at+NLPor1=8081\r\n

at+NTcpTo1=0\r\n

at+SBaud1=115200\r\n

at+SWidth1=8\r\n

at+SPar1=0\r\n

at+SStop1=1\r\n

// Commands for serial 1 configuration.

at+Save=1\r\n

at+Apply=1\r\n

at+Reboot=1\r\n

//commands of save and apply.

3. UART to WIFI- AP server

at+Netmode=3\r\n

at+Dhcpd=1\r\n

at+DhcpdIpStart=192.168.16.100\r\n

at+DhcpdIpStop=192.168.16.250\r\n

at+DhcpdMask=255.255.255.0\r\n

at+DhcpdTime=86400\r\n

at+APSSid=HLK\r\n

at+APEncType=6\r\n

at+APPasswd=12345678\r\n

at+LANIp=192.168.16.254\r\n

at+LANIpMask=255.255.255.0\r\n

//Commands for the AP configuration parameter. Named network parameter.

at+NProType0=1\r\n

at+NDomain0=192.168.22.2\r\n

at+NRPort0=8989\r\n

at+NLPor0=8080\r\n

at+NTcpTo0=0\r\n

at+SBaud0=115200\r\n

at+SWidth0=8\r\n

at+SPar0=0\r\n

at+SStop0=1\r\n

//Serial 1 configuration commands.

at+NProType1=1\r\n

at+NDomain1=192.168.22.2\r\n

at+NRPort1=8989\r\n



at+NLPort1=8081\r\n

at+NTcpTo1=0\r\n

at+SBaud1=115200\r\n

at+SWidth1=8\r\n

at+SPar1=0\r\n

at+SStop1=1\r\n

//Serial 1 configuration commands.

at+Save=1\r\n

at+Apply=1\r\n

at+Reboot=1\r\n

//Save and apply commands

4.UART to AP Client —STA+AP mode

at+Netmode=4\r\n

at+STASsid=HLK123\r\n

at+STAEncType=6\r\n

at+STAPasswd=12345678\r\n

at+Dhcpc=1\r\n

at+WANIp=192.168.16.254\r\n

at+WANIpMask=255.255.255.0\r\n

at+SGw=192.168.16.1\r\n

at+SDnsF=192.168.16.1\r\n

//The above commands are the parameter for the configuration of upper router.

at+Dhcpd=1\r\n

at+DhcpdIpStart=192.168.18.100\r\n

at+DhcpdIpStop=192.168.18.250\r\n

at+DhcpdMask=255.255.255.0\r\n

at+DhcpdTime=86400\r\n

at+APSSsid=HLK\r\n

at+APEncType=6\r\n

at+APPasswd=12345678\r\n

at+LANIp=192.168.18.254\r\n

at+LANIpMask=255.255.255.0\r\n

//The above commands are the parameter for the configuration of AP.

at+NProType0=1\r\n

at+NDomain0=192.168.22.2\r\n

at+NRPort0=8989\r\n

at+NLPort0=8080\r\n

at+NTcpTo0=0\r\n



at+SBaud0=115200\r\n

at+SWidth0=8\r\n

at+SPari0=0\r\n

at+SStop0=1\r\n

//These commands are the configuration of serial 0.

at+NProType1=1\r\n

at+NDomain1=192.168.22.2\r\n

at+NRPort1=8989\r\n

at+NLPor1=8081\r\n

at+NTcpTo1=0\r\n

at+SBaud1=115200\r\n

at+SWidth1=8\r\n

at+SPari1=0\r\n

at+SStop1=1\r\n

//These are the serial 1 configuration commands.

at+Save=1\r\n

at+Apply=1\r\n

at+Reboot=1\r\n

//commands for save and apply.