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HLK-M20 WiFi transparent transmission module

AT Command Description

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1. Module working mode

The module can work in transparent transmission mode and at command mode. In

transparent transmission mode, the module automatically establishes a TCP/UDP connection on the network through WiFi according to the configuration parameters, and forwards data between this TCP/UDP connection and the serial port as it is, that is, sending and receiving data through the serial port and the TCP/UDP connection on the network. In

at command mode, transparent transmission is stopped, and AT commands can be sent to the module through the serial port to set or query the parameter configuration of the module, such as setting the remote IP and port number of the TCP/UDP connection;

the module automatically enters transparent transmission mode when it starts.

2. How to switch between transparent transmission mode and **at** command mode

2.1 Switch from transparent transmission mode to **at** command mode

2.1.1 Button mode

In any state, if the time of pulling down the ES/Def pin is greater than 0.5 seconds and less than 3 seconds, the module immediately enters the at-point mode. If the ES/Def pin is pulled low for more than 6 seconds, the module will be restored to factory default settings.

2.1.2 The serial port receives special format data during transparent transmission

When exiting transparent transmission mode, pause the serial port input for 200ms to ensure that the data in the serial port is sent and cleared, then input "+++", and after receiving the reply "a", input "a", and pause for 200ms to ensure that there is no subsequent data input to exit transparent transmission mode. When exiting transparent transmission mode, the

corresponding link will be closed. Do not input anything before and after "+++" and "a", including "\r\n", to avoid misoperation as much as possible.

2.2 Entering transparent transmission mode from **AT** command mode

Send at command: at+TS=1

3. at command format description

3.1 Command Format

In at mode, you can configure system parameters through the at command of the serial port. The command format is as follows:

at+[command]=[value]\r

The \r is required, otherwise it will be considered as an incorrect at command. All at commands sent and received are in character format.

3.2 Command Type:

3.2.1 Setting class commands:

at+<x>=<...>

x represents the parameter name to be set, and ... represents the parameter value. The return value of successful setting: **at+<x>=<...>**

ok

Set the return value of failure or format error:

at+<x>=<...>

ERRORFor

example:

Send: at+UType=2 Receive:

at+UType=2 ok

3.2.2 Query commands:

at+<x>=?

x represents the query parameter name, and ... represents the parameter value. Return value: **at+<x>=?**

<...>

For

example: Send:

at+WA=? Receive: at+WA=?

0

4. Detailed explanation of at command

4.1 The command list is as follows: (commands are case sensitive)

Parameter classification	Keywords	Function
WiFi connection parameters	WA	Wi-Fi network mode ap/sta
	WM	Wifista configuration method
	Sssid	STA target AP ssid
	Spw	STA Target AP Key
	dhcp	STA ip address mode: static/dynamic
	ip	Static IP
	mask	Static subnet mask
	gw	Static Gateway
	Asses	Network name in softap mode
	But	Wireless channels in softap mode
	Apw	Secret key in softap mode
	Aip	IP in softap mode.
Serial port parameters	Ub	Serial port baud rate
	Out	Serial port data bit length
	Up	Serial port check digit
	Us	Serial port stop bit length
TCP/UDP connection parameters	UType	Transparent transmission function network mode
	UIp	Transparent transmission function target ip
	URPort	Transparent transmission function remote port
	ULPort	Transparent transmission function local port
Other parameters	Rb	Restart module
	see	Module version
	SAVE	Save Configuration
	Df	Restore factory settings
	TS	Transparent transmission state switching
	mac	Get MAC address

Note: The at command is case sensitive. The two characters "at" are lowercase.

4.2 Detailed explanation of command functions

4.2.1 OF

Function:

WiFi network mode.

Format:

at+WA=<WA>\r Parameters:

Network mode

value	meaning
1	SoftAP
OTHERS STA	

4.2.2 WM

Function:

Wifi sta configuration method.

Format:

at+WM=<WM>\r

Parameter:

sta configuration mode

value	Meaning:
0	If configured, connect automatically; if not configured, execute airkiss.
1	Execute airkiss to obtain the configuration.

4.2.3 Sssid

Function:

STA target AP ssid. Format:

at+Sssid=<Sssid>\r

Parameter: Sssid: ssid. Usually ssid is the wireless name of the wireless router to be connected, with a maximum of 32 characters. Example:

at+Sssid=? Returns the currently set ssid name.

4.2.4 Spw

Function:

STA target AP secret key. Format:

at+Spw=<Spw>\r Parameters: Spw:

secret

key. Currently the most commonly used encryption method is wpa2-aes, which is also the most secure encryption method.

The minimum number of characters in the encryption method is 8 bits, and the maximum number of characters in the encryption key is 63 bits.

The encryption method will adapt according to the AP to be connected. No setting is required. WEP, WPA, and WPA2 (CCMP, TKIP) are all supported.

4.2.5 dhcp

Function:

STA ip address mode: static/dynamic. Format:

at+dhcp=<dhcp>\r Parameter: IP

address

mode

value	Meaning
0	Static
1	Dynamic

4.2.6 ip

Function:

static ip.

Format:

at+ip=<ip>\r

Parameter: ip: ip address, format 192.168.1.22, note: the middle interval can be a dot "." This command is only valid when at+dhcp=0. In the case of at+dhcp=1, this command is invalid.

4.2.7 mask

Function:

static mask. Format:

at+mask=<maks>\r

Parameters: maks: subnet mask, format 255.255.255.0, note: the interval can be a dot "." This command is only useful when at+dhcp=0. In the case of at+dhcp=1, this command is invalid.

4.2.8 gw

Function: static gw.

Format:

at+gw=<gw>\r

Parameter: gw: gw address, format 192.168.1.1, note: the middle interval can be a dot "." This command is only useful when at+dhcp=0. In the case of at+dhcp=1, this command is invalid

4.2.9 Assids

Function: SSID in SoftAP mode. Format:

at+Assid=<Sssid>\r

Parameter: Assid:ssid. The wireless name of the softap initiated by the module. Example: at+Assid=? Returns the currently set ssid name.

4.2.10 Achan

Function:

The channel of the module's wireless operation under SoftAp. Format:

at+Achan=1\r

Parameters: 1-13. Total 13 channels

4.2.11 Apw

Function: Secret key in SoftAp mode.

Format:

at+Apw=<Apw>\r

Parameters: Apw: Secret key. Only supports WPA2-CCMP encryption. The minimum character in this encryption mode is 8 bits and the maximum secret key is 63 bits.

4.2.12 Aip

Function:

IP address of the module in SoftAp mode Format:

at+Aip=<Aip>\r Parameter: Aip:

IP

address of the module. For example:

at+Aip=192.168.0.99\r Note: The interval can

be a dot “.”

4.2.13 Ub

Function:

Serial port baud rate.

Format:

at+Ub=<Ub>\r

Parameters: Ub: baud rate. Set the serial port baud rate. The baud rate supports 1200-500000. For

example: at+Ub=115200\r. Return ok.

4.2.14 Ex

Function:

Serial port data bit length.

Format:

at+Ud=<Ud>\r

Parameters: Ud: data bit length. Supports 7 bits and 8 bits.

4.2.15 Up

Function:

Serial port check

digit.

Format: at+Up=<Up>\r

Parameter: Up: check digit. 0--no parity, 1--odd parity, 2--even parity

4.2.16 Us

Function:

Serial port stop bit length.

Format:

at+Us=<Us>\r

Parameter: Us: stop bit length. 1--1bit stopbits, 2--2bit stopbits

4.2.17 UType

Function:

Transparent transmission function network mode. Transparent

transmission socket type. Format:

at+UType=<UType>\rParameter : UType: network mode.

Network Mode

value	Meaning:
0	None
1	Tcp Server
2	Tcp Client
3	Udp Server
4	Udp Client

4.2.18 Uip

Function:

Transparent transmission target IP or

domain

name. Format:

at+Uip=<Uip>\r Parameter: Uip: IP address, format 192.168.1.22

4.2.19 URPort

Function:

Transparent transmission function remote

port. Format:

at+URPort=<URPort>\r

Parameters: URPort: port. This at command is only valid when the module is set to tcp client or udp client mode.

4.2.20 ULPort

Function:

Transparent transmission function local

port. Format:

at+ULPort=<ULPort>\r

Parameters: ULPort: local port. This at command is only valid when the module is set to tcp server or udp server mode.

4.2.21Rb

Function:

Restart the module.

Format:

at+Rb=1\r

4.2.22 see

Function:

Module version.

Format:

at+ver=1\r

Parameter: Return the module version number: at+ver=?\r

4.2.23 SAVE

Function:

Save the current configuration to flash .

Format:

at+ **SAVE=1\r**

parameter:

4.2.24 Df

Function:

Restore factory settings.

Format:

at+Df=1\r

parameter:

4.2.25 TS

Function:

Enter/exit transparent transmission mode. Format:

at+TS=<TS>\r

Parameter:

TS value meaning 0

Exit transparent transmission mode. This parameter is only valid in UDP network AT command 1 Enter transparent transmission mode

4.2.26 mac

Function: Get mac address information.

Format:

at+mac=?\r

Parameters: For example: send at+mac=?\r, the returned hexadecimal format is: 48:02:2A:F6:32:2E