RTL8720D AT instruction manual

Content

Modify records

Type	Modify content	Modified	Date	Software release
A	First draft version	Yang Bin	2019/06/05	V2.2.1
M	Upgrade to V2.3.0 and modify the ATSP sleep wake-up mode Change the position AT the serial port	Yang Bin	2019/07/05	V2.3.0
M	Upgrade to V2.4.0 1. Added the original factory supplement, 00014753-6.0a_critical_patch_r36319_wifi_bt_issue 00014849-6.0a_critical_patch_r36319_fix_ble_mac_address_flip_issue_gcc 00014853-BLE-link-mode-test_patch-image_v01 2. Specify AT serial port to TX:PB_1 RX:PB_2 3. Add Bluetooth network configuration	Yang Bin	2019/07/30	V2.4.0
M	Upgrade to V2.4.1 Fixed the problem of printing redundant messages AT the port during socket communication.	Yang Bin	2019/08/14	V2.4.1

Type: A- add M-modify D-delete

1. Basic information

Log serial port

Log serial port is mainly used to output log TX:PA_7 RX:PA_8

Baud rate: 115200

AT instruction serial port uart0

The AT command serial port is used to input the AT command and view the returned results.

TX:PB_1 RX:PB_2

Baud rate 38400

Note that the AT command ends with a line break (\r\n)

The minimum system needs to connect VCC,GND and AT serial ports to operate.

2. General AT Command

2.1 AT-test AT Command

AT	
Description	Test whether the AT command is started
Response	[AT] OK
Example	#AT [AT] OK

2.2 ATS? -List all commands

ATS?	
Description	List all AT Commands
Response	[ATS?] <command list> [ATS?] OK [ATS?] ERROR: <error_no>
Error Code	1: Failed to obtain the command list.
Example	# ATS? [ATS?] Common AT Command: AT ATS? ... ATPL [ATS?] OK

2.3 Restart the ATSR module

ATSR	
Description	Restart the module
Response	AT COMMAND READY (module restart completed)
Example	ATSR

2.4 ATSV query version

ATSV	
Description	Query version information
Response	[ATSV] OK:<at-version>,<sdk-version>(<compile_time>)
Example	# ATSV [ATSV] OK:v2.2.1,v6.0a(Jun 5 2019)

2.5 ATSP enters low power consumption mode

ATSP=<mode>	
Description	Enter low power consumption mode
Parameter	Mode: r allows sleep. a Disable hibernation
Response	[ATSP] OK:0
Be careful	After a command is executed, the system hibernates only when there are no tasks to be executed To wake up, you need to run ATSP=a command on the AT serial port
Example	# ATSP=r [ATSP] OK:0

2.6 ATSE sets serial port echo

ATSE=<echo>	
Description	Set the level of echo and debug information
Response	[ATSE] OK
Parameter	echo: 0: disables command echo. 1: enable command echo
Error Code	1: Parameter number error 2: Parameter error
Example	# ATSE=1 [ATSE] OK

2.7 ATSY restore factory settings

ATSY	
Descriptionnt	Restore factory default settings
Response	[ATSY] OK

Error Code	1: failed to restore the default settings. 2: failed to restore the default image.
Example	# ATSY [ATSY] OK AT COMMAND READY

2.8 ATSU sets serial port parameters

ATSU=<baudrate>,<databits>,<stopbits>,<parity>,<flowcontrol>,<configmode>	
Description	Set serial port parameters
Response	Success [ATSU] OK Fail [ATSU] ERROR:<error_code>
Parameter	baudrate:Baud rate 2400, 4800, 9600, 19200, 38400(default),57600, 115200, 921600, 1152000 databits:data bits 5: 5 bit data 6: 6 bit data 7: 7 bit data 8: 8 bit data (default) stopbits：stop bit 1: 1 bit stop (default) 2: 2 bit stop Parity:check bit 0: None parity (default) 1: Odd parity 2: Even parity Flowcontrol:Flow Control 0: disable flowcontrol (default) 1: enable RTS and CTS Configmode:Effective method 0: The configuration takes effect immediately but is not saved to flash 1: The configuration is saved to the flash and takes effect immediately 2: Save the configuration to the flash and restart it to take effect
Error Code	1: Parameters Format Error 2: Parameter error
Example	# ATSU=38400,8,1,0,0,2 [ATSU] OK

2.9 ATSO OTA upgrade

ATSO=<IP>,<port>	
Description	OTA upgrade
Response	ATS0] OK This is an asynchronous operation. Receiving OK simply means the task has started. Other messages need to be checked in the log port. It will automatically restart after work
Parameter	IP: server IP Port: server Port
Example	Reference appendix 1: OAT upgrade process

2.10 ATSC switch Image

ATSC=<image ID>	
Description	Switch images
Response	[ATSC] OK [ATSC] ERROR:<error_code>
Parameter	image ID: 0: uses OTA1 mirroring 1: Use OTA2 mirroring
Notice	The module will be restarted after the switchover is successful (OTA upgrade will automatically switch the image without manual switching)
Example	ATSC=1 [ATSC] OK

2.11 ATSG-GPIO control

ATSG=<OPT>,<PORT>[,<DATA>,<DIR>,<PULL>]	
Description	GPIO control

Parameter	OPT: R:Reading IO level W:output level PORT：Specify GPIO Eg：PA_12 DATA:output level 0：output low level 1：Output high level

	DIR:IO direction control 0：Input mode 1：Output mode PULL：Pull down mode 0：There is no drop-down mode 1：Pull 2：down 3：Open leak mode

Example	// Read IO
	# ATSG=R,P A_12
	[ATSG] OK :1
	
	// Output
	# ATSG=W,PA_12,1,1,0
	[ATSG] OK :1

3. WIFI command

3.1 ATPW-set wifi mode

ATPW=<mode>	
Description	Set wifi mode (Use ATPN and ATPA must match the specified mode) The connection hotspot must be mode1 or mode3, and the startup AP must be mode2 or mode3
Parameter	mode: 1 : Station mode (default) 2 : AP mode 3 : Concurrent mode
Response	Success [ATPW] OK Fail [ATPW] ERROR:<error_no>
Error Code	1: The parameter format error 2: Parameter error
Example	# ATPW=3 [ATPW] OK

3.2 ATPN-connect to AP

ATPN=<ssid>,<pwd>	
Description	Connect to a specified AP
Parameter	ssid: AP name (add '\' before special characters) pwd: password
Response	Success [ATPN] OK Fail [ATPN] ERROR:<error_code>
Error code	1: The Command format is invalid. 2: Parameter error 3: wifi initialization error 4: an AP connection error occurred. 5: wifi mode error (ATPW setting mode) 6: An error occurred while obtaining the security type. 7: dhcp times out, using static IP address 192.168.1.80
Example	# ATPN=test,12345678 [ATPN] OK

3.3 ATWD-disconnect from AP connection

ATWD	
Description	Disconnect the current wifi
Response	Success [ATWD] OK Fail [ATWD] ERROR:<error_code>
Error Code	3: The operation failed. 4: The Operation timed out.
Example	# ATWD [ATWD] OK

3.4 ATWS scan for AP hotspots

ATWS	
Description	Scanning AT Hotspots
Parameter	SSID in AP mode
Response	AP : <num>,<ssid>,<chl>,<sec>,<rssi>,<bssid> [ATWS] OK

Example	# ATWS # AP : 2,test-AP,1,WPA/WPA2 AES,-44,2c:3b:44:54:66:77 [ATWS] OK

3.5 ATPA-enable AP mode

ATPA=<ssid>,<pwd>,<chl>,<hidden>[,<max_conn>]	
Description	Enable AP mode
Parameter	ssid：AP name (add '\' before special characters) pwd：password chl：Channel (1~11) hidden: 0：Don't hide SSID 1：hide SSID max_conn: Maximum number of connections (1 to 3 By default, 3)
Response	Success [ATPA] OK Fail [ATPA] ERROR:<error_code>
Error code	1: The Command format is invalid. 2: Parameter error 3: wifi initialization error 4: An error occurred while enabling AP. 5: wifi mode error (ATPW setting mode)
Example	# ATPW=3 [ATPW] OK # ATPA="SSID",,11,0 (If the password is blank, there is no password.) [ATPA] OK

3.6 ATW? -View connection information

ATW?	
Description	View the current network connection information (such as IP address and MAC)
Response	<mode>,<SSID>,<chl>,<sec>[,<key_id>],<pwd>,<mac >,<ip>,<gw> CLIENT : <num>,<mac> [ATW?] OK
Example	# ATW? STA,,1,OPEN,,11:22:33:44:55:68,192.168.1.80,192.168 .1.1 [ATW?] OK

3.7 ATPH-set DHCP mode

ATPH=<mode>,<enable>	
Description	Set DHCP mode
Response	[ATPH] OK [ATPH] ERROR:<error_no>
Parameter	Mode:1:AP Mode 2:STA mode Enable:1:DHCP mode 2: Static IP mode
Error Code	1: The Command format is invalid. 2: Parameter error
Note	1. By default, both AP and STA are in DHCP mode. 2. Use ATPE to set static IP addresses for STA mode 3. Use ATPF to set static IP addresses for AP mode
Example	# ATPH=2,2 [ATPH] OK

3.8 ATPE-set DHCP rules in STA mode

ATPE=<ip>[,<gateway>,<mask>]	
Depaint	Set DHCP rules in STA mode
Response	[ATPE] OK [ATPE] ERROR:<error_no>
Parameter	ip: The IP address to be set. For example, 192.168.1.100 [gateway]: the ip address of the gateway. [mask]:IP mask
Error Code	1: The Command format is invalid. 2: Parameter error
Note	1. The default IP address is 192.168.1.80. 2. To use static IP, you need to disable DHCP (ATPH = 2,2)
Example	# ATWD [ATWD] OK # ATPH=2,2 // Set sta to use static IP [ATPH] OK # ATPE=192.168.20.7,192.168.20.1,255.255.255.0 // Set the static IP address of sta [ATPE] OK ATPN= B &T-1,test123456

3.9 ATPF-set DHCP rules in AP mode

ATPF=<start_ip>,<end_ip>,<gateway>	
Description	Set DHCP rules in AP mode
Response	[ATPF] OK [ATPF] ERROR:<error_no>
Parameter	start_ip:DHCP start IP, for example, 192.168.1.100 end_ip:DHCP end IP (note that the end IP and the start IP must belong to the same CIDR block and not the gateway IP, and cannot be 255) gateway: The gateway IP address, which must belong to the same CIDR block as the start and end IP addresses.
Error Code	1: The Command format is invalid. 2: Parameter error
Note	3. The default gateway IP address is 192.168.43.1. 4. To start DHCP, you need to enable the DHCP function (ATPH = 1,1). 5. If DHCP is disabled, you need to set it to static IP mode (ATPH = 1,2).
Example	# ATPH=1,1 [ATPH] OK # ATPF=192.168.55.100,192.168.55.199,192.168.55.1 [ATPF] OK # ATPW=3 [ATPW] OK # ATPA="SSID",,11,0 [ATPA] OK # ATW? STA,,1,OPEN,,00:e0:4c:87:20:28,192.168.1.80,192.168.1.1 AP,SSID,11,OPEN,,00:e0:4c:87:20:29,192.168.55.1,192.168.55.1 [ATW?] OK

3.10 ATPG-configure automatic connection

ATPG=<enable>	
Description	Configure automatic connection
Response	Success [ATPG] OK Fail [ATPG] ERROR:<error_no>
Parameter	enable: 0: disable automatic connection 1: enable automatic connection
Error Code	1: The Command format error 2: Parameter error
Example	# ATPG=0

	[ATPG] OK

3.11 ATPM-modify MAC address

ATPM=<mac>	
Description	Modify MAC address
Response	Success [ATPM] OK Fail [ATPM] ERROR:<error_no>
Parameter	mac:6-byte hex number
Error Code	1: The Command format error. 2: Parameter error
Note	After the MAC is set successfully, it needs to be restarted to take effect.
Example	# ATPM=aa2233cc55ff [ATPM] OK

3.12 ATWQ simple config Network configuration

ATWQ	
Depaint	Simple config distribution network For more information about apps and references, see SDK/tools/simple_config_wizard_3.4b"
Response	[ATWQ] OK The input will not be returned immediately, and will not be returned until the network configuration succeeds or fails. Other messages need to be viewed in the log port.

4. TCP/UDP commands

4.1 ATPS-create a TCP/UDP/SSL Server

ATPS =<mode>,<Local Port>	
Description	Create TCP/UDP/SSL server
Response	Success [ATPS] OK [ATPS] con_id=x (x=[1,9], con_id 0 is reserved) In TCP mode, this parameter is

	returned when there is a client connection

	[ATPS] A client connected to server[<server_id>] con_id:<x>,seed,tcp,address:xxx.xxx.xxx.xxx,port:<x>, socket:<x> (response format refer to section 4.8 ATPI) Fail [ATPS] ERROR:<error_no>
Parameter	mod: 0:TCP 1:UDP 2:SSL Local Port:1~65535
Error code	1: wrong number of parameters 2: Local Port range error 3: Error creating con_id 4: Error creating server task 5: Error creating socket 6: Failed to set socket parameters 7: bind error 8: listen error 9: tcp server already exists 10: Error in accept 11: Error creating seed con_id 12: udpserver already exists 13: Server cannot be created in transparent transmission mode 14: Unknown connection method 15: Failed to listen socket 16: server certificate malloc failed 17: server key malloc failed 18: x509_crt_parse failed for server certificate 19: x509_crt_parse failed for server ca list 20: pk_parse_key failed for server key 21: hang node failed for ssl server 22: accept error for ssl server 23: malloc failed for ssl seed 24: initialization failed for ssl context 25: ssl_set_own_cert error 26: ssl handshake failed for ssl seed 27: create node failed for ssl seed
Example	# ATPN=B&T-1,test123456 [ATPN] OK # ATPS=0,4004 # [ATPS] OK [ATPS] con_id=1

	After the client is connected [ATPS] A client connected to server[1] con_id:3,seed,tcp,address:192.168.20.112,port:52451,socket:2 # ATPI con_id:1,server,tcp,address:192.168.20.115,port:4004,socket:0 con_id:3,seed,tcp,address:192.168.20.112,port:52451,socket:2 con_id:2,server,udp,address:192.168.20.115,port:4005,socket:1 [ATPI] OK

4.2 ATPC-create a TCP/UDP/SSL client

ATPC =<mode>,< Remote Addr>,< Remote Port>[,<Local Port>]	
Description	Create a TCP, UDP, or SSL client
Response	Success [ATPC] OK [ATPC] con_id=x (x=[1,9], con_id 0 is reserved) Fail [ATPC] ERROR:<error_no>
Parameter	mod: 0:TCP 1:UDP 2:SSL Remote Addr: The server IP to be connected Remote Port: The server port to be connected (1 to 65535) Local Port: the Local Port number (1 to 65535)

Error code	1: wrong number of parameters 2: The remote IP is malformed or cannot be connected 3: Remote Port range error 4: Error creating con_id 5: Error creating client task 6: Remote address conversion error 7: Error creating socket 8: hang tcp connection failed 9: connect error for tcp client 10: ang node error for udp client 11: local port should be 1~65535 12: bind local port error 13: connection already exists for TT (transparent transmission) mode 14: set broadcast on socket failed 15: set multicast add membership on socket failed 16: set multicast interface failed 17: connection type is unknown (SSL isn't supported)

	18：Initiate a TCP connection with host:port failed for ssl client 19：memory allocation failed for ssl context structure 20：ssl context initialization failed 21：ssl handshake failed 22：hang node failed for ssl client
Example	# ATPN=B&T-1,test123456 [ATPN] OK //Create a tcp server using the socket tool # ATPC=0,192.168.20.112,10086 # [ATPC] OK [ATPC] con_id=1

4.3 ATPD-delete a connection

ATPD=<con_id>	
Description	Close the connection
Response	Success [ATPD] OK Fail [ATPD] ERROR:<error_no>
Parameter	con_id: 0: close all connections 1 ~ 9: disable the specified connection
Error code	1: The Command format error. 2: Parameter error 3:con_id not found
Example	# ATPD=3 [ATPD] OK

4.4 Data sent by ATPT

ATPT=<data_size>,<con_id>:<data>	
Description	Send data
Response	Success [ATPT] OK ,<con_id> Fail [ATPT] ERROR:<error_no>
Parameter	data_size: data length con_id: 1~9 data: payload data
Error	1: The Command format error.

Code	2: <Buffer Size> exceeds ATPT limit 3: con_id not found 4: <dst_ip> or <dst_port> error for udp server case 5: sendto() error for udp server 6: sendto() error for udp client 7: TCP server should send data to the seed (server needs to send data to the client, not directly to server) 8: write error for tcp client/server
Note	If it is a TCP server, you cannot directly read and write data from the con_id of the server, it must be for his connection child con_id to read and write data

Example	//TCP server read data
	# ATPN=B&T-1,test123456
	[ATPN] OK
	# ATPS=0,4004
	#
	[ATPS] OK
	[ATPS] con_id=1
	// when the client connects
	[ATPS] A client connected to server[1]
	con_id:5,seed,tcp,address:192.168.20.112,port:52581,socket:2
	#ATPI
	con_id:1,server,tcp,address:192.168.20.115,port:4004,socket:0
	con_id:3,seed,tcp,address:192.168.20.112,port:52451,socket:-1
	con_id:4,seed,tcp,address:192.168.20.112,port:52575,socket:-1
	con_id:5,seed,tcp,address:192.168.20.112,port:52581,socket:2
	con_id:2,server,udp,address:192.168.20.115,port:4005,socket:1
	[ATPI] OK
	# ATPT=6,5:123456 //Send data
	#
	[ATPT] OK,5

4.5 ATPR-receive data

ATPR =<con_id>,<Buffer Size>	
Description	Receive data
Response	Success [ATPR] OK ,<data size>,<con_id>[,<dst_ip>,<dst_port>]:<data> Fail [ATPR] ERROR:<error_no>
Parameter	con_id: 1~9 Buffer Size: bufter size (temporarily disabled)

Error Code	1: The Command format is invalid. 2:<Buffer Size> range: 1 to MAX_BUFFER (default: 1600)

	3:<con_id> not find 4:recvfrom() error for udp server 5:recvfrom() error for udp client/seed not found 6:TCP server should receive from seed (the server needs to read from the client, not directly read server) 7:connection lost 8:read() error for tcp con_id
Note	If it is a TCP server, data cannot be read or written from the con_id of the server Subcon_id reads and writes data

Example	// The UDP server reads the data
	# ATPN=B&T-1,test123456
	[ATPN] OK
	# ATPS = 1400, 5
	#
	[ATPS] OK
	[ATPS] con_id=2
	# ATPI
	Con_id: 1, server, TCP, address: 192.168.20.115, port: 4004, sockets: 0
	Con_id: 2, server, udp, address: 192.168.20.115, port: 4005, sockets: 1
	[ATPI] OK
	// Use the socket tool to send data to 192.168.20.115:4005
	# ATPR = 2100
	[ATPR] OK, 8,2,192.168. 20.112, 10086: the test of STR
	//TCP server reads data
	# ATPN=B&T-1,test123456
	[ATPN] OK
	# ATPS = 0400 4
	#
	[ATPS] OK
	[ATPS] con_id=1
	// When the client is connected
	[ATPS] A client connected to server[1]
	Con_id: 3, seed, TCP, address: 192.168.20.112, port: 52451, sockets: 2
	# ATPI
	Con_id: 1, server, TCP, address: 192.168.20.115, port: 4004, sockets: 0
	Con_id: 3, seed, TCP, address: 192.168.20.112, port: 52451, sockets: 2
	Con_id: 2, server, udp, address: 192.168.20.115, port: 4005, sockets: 1
	[ATPI] OK
	// The client sends data
	# ATPR = 3100
	[ATPR] OK,8,3:test str

4.6 ATPK-automatic data receiving mode

ATPK=<enable>	
Description	Set the automatic receive mode. The received data is in the same format as the ATPR response in normal mode. Only data is returned, and no other format is returned.
Response	Success [ATPK] OK Fail [ATPK] ERROR:<error_no>
Parameter	enable: 0: disable automatic receiving 1: enable automatic receiving
Error Code	1: Parameter error 2: An error occurred while enabling the automatic receive task.

Example	// The UDP server reads the data
	# ATPN=B&T-1,test123456
	[ATPN] OK
	# ATPS = 1400, 5
	#
	[ATPS] OK
	[ATPS] con_id=2
	# ATPI
	Con_id: 1, server, TCP, address: 192.168.20.115, port: 4004, sockets: 0
	Con_id: 2, server, udp, address: 192.168.20.115, port: 4005, sockets: 1
	[ATPI] OK
	# ATPK=1
	[ATPK] OK
	// Use the socket tool to send data to 192.168.20.115:4005
	#
	[ATPR] OK, 8,2,192.168. 20.112, 10086: the test of STR

4.7 ATPI-View Connection list

ATPI	
Description	View Connection list
Response	con_id :<con_id >,<server/seed(TCP client)/client>,\ <tcp/udp>,address:<IP ADDRESS>,port:<PORT>,socket:<socket id> … [ATPI] OK

Example	# ATPN=B&T-1,test123456 [ATPN] OK # ATPS=0,4004 # [ATPS] OK [ATPS] con_id=1 # ATPI con_id:1,server,tcp,address:192.168.20.115,port:4004,so cket:0 [ATPI] OK

4.8 ATPP-ping command

ATPP=<Remote IP>,[count] Or ATPP=<con_id>, [count/loop]	
Description	Modify MAC address
Response	Success [ATPP] OK Fail [ATPP] ERROR:<error_no>
Parameter	Remote IP: indicates the IP address or domain name count: ping the number of times loop: ping all the time (note that this operation will not return, there is a ping message printed in the log port)
Error Code	1: The Command format error 2: The con_id is invalid.
Example	# ATPN=B&T-1,test123456 [ATPN] OK # ATPP=www.baidu.com,1 [ATPP] OK

4.9 ATPU-set passthrough mode

ATPU=<enable>	
Description	Set the passthrough mode
Response	Success [ATPU] OK Fail [ATPU] ERROR:<error_no>
Parameter	enable: 1(Enable the passthrough mode and cannot be disabled after it is enabled)
Error Code	1: Parameter error 2: No connection is available.

	3: The server mode cannot enter the transparent transmission mode 4: There can be only one connection in passthrough 5: Failed to enable transparent transmission
Note	1. Enter the transparent transmission mode and send four minus signs "----" to exit the mode 2. After a client is created, the ATPC requires the server to send any data to the client within 20 seconds or directly ATPU=1 enters the transparent mode. Otherwise, the connection is considered invalid and cannot be entered into the transparent mode
Example	# ATPN=B&T-1,test123456 [ATPN] OK // Create a tcp server using the socket tool # ATPC=0,192.168.20.112,10086 # [ATPC] OK [ATPC] con_id=1 # ATPU=1 [ATPU] OK > pc send to 8720

4.10 ATPL-automatic start-up passthrough mode

ATPL =<enable>	
Description	Set the system to automatically enter the passthrough mode upon startup Note: To set this up, you need to set the automatic connection hotspot on startup and create the socket connection to pass through
Response	Success [ATPL] OK Fail [ATPL] ERROR:<error_no>
Parameter	Enable: 0: Erase pass-through parameters and turn off the boot to start pass-through 1: Save the transparent transmission information and start the system to enable transparent transmission
Error code	1: The parameter is incorrect 2: The number of parameters is incorrect 3: The connection was not found

Example	# ATPN=hwap,1234567890 [ATPN] OK # ATPG=1 [ATPG] OK # ATPC=0,192.168.2.62,5002 # [ATPC] OK [ATPC] con_id=1 # ATPL=1

	[ATPL] OK

5. Bluetooth command

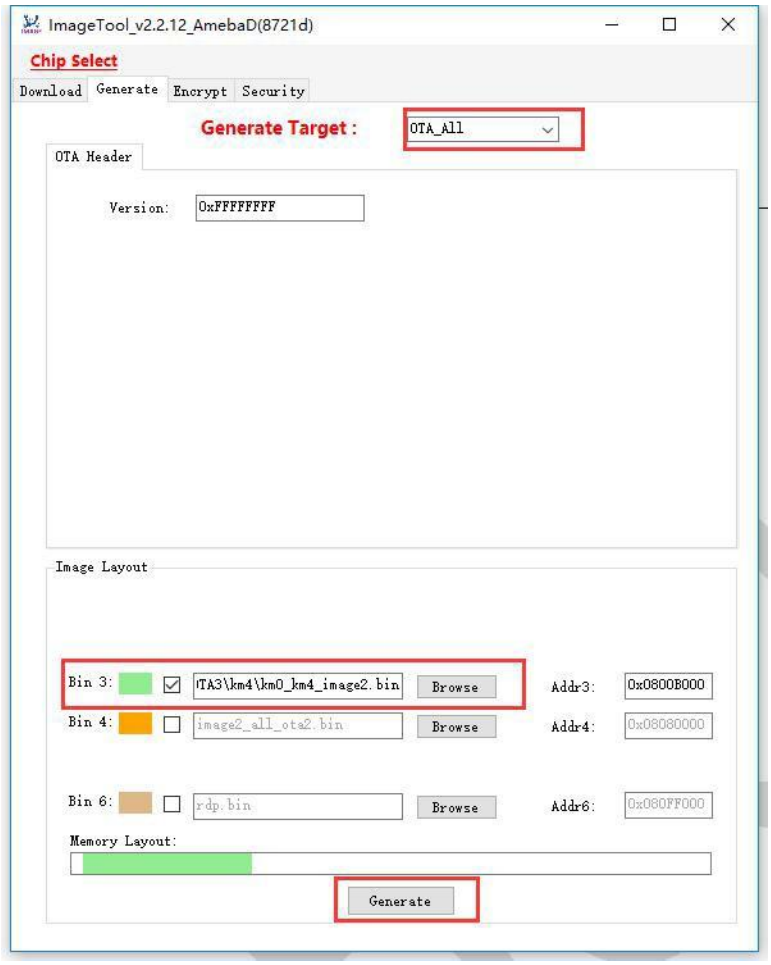
5.1 ATBB-Bluetooth network configuration instruction

ATPS =<mode>	
Description	Turn Off/On Bluetooth network
Response	Turn on [ATBB]:_AT_BT_CONFIG_[ON] Turn off [ATBB]:_AT_BT_CONFIG_[OFF, deinit BT STACK]
Parameter	mod: 0: Turn Off the Bluetooth network 1: Turn on Bluetooth network
Example	Reference appendix 3: Bluetooth network configuration process

6. Appendix

6.1 Appendix 1: OAT upgrade process

(1) Edit sdk, compile km4 and generate km0_km4_image2.bin file
(2) Use image tools to make OAT.bin file



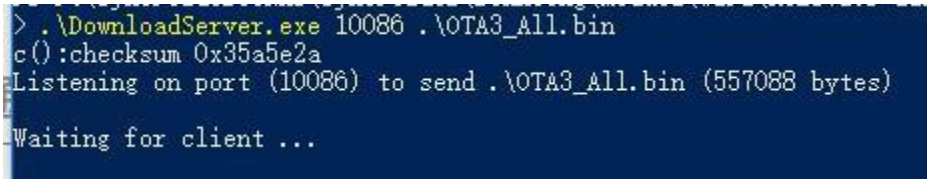
(3) Open the server program

The Server program is in sdk\tools\DownloadServer\ downloadserver.exe

In windows cmd command line mode, go to the server directory and copy the OTA files to be upgraded here

exe 10086.\OTA3_All.bin (10086 is a self-defined port number,

OTA3.bin is the upgrade file.) Start the server

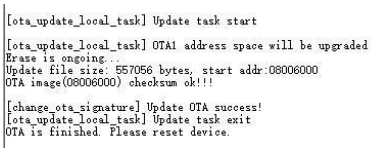


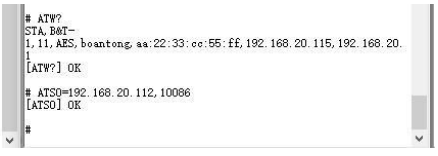
(4) The module connects to the network and starts downloading

Use the ATPN to connect to the same network as the server (the module can ping the server IP address).

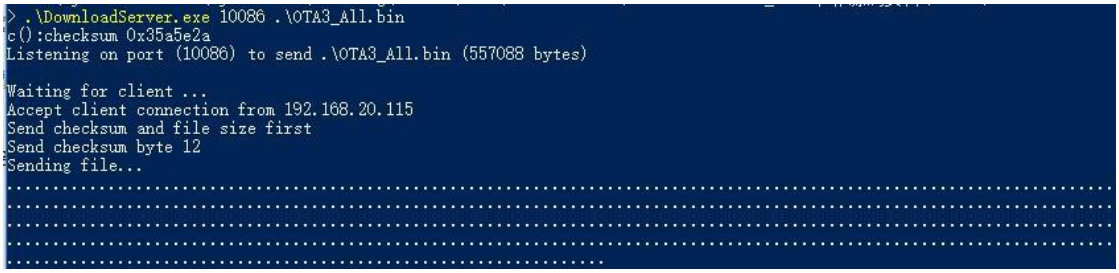
Run ATSO=192.168.20.112. 10086 //10086 is the port number defined by the server

number defined by the server itself



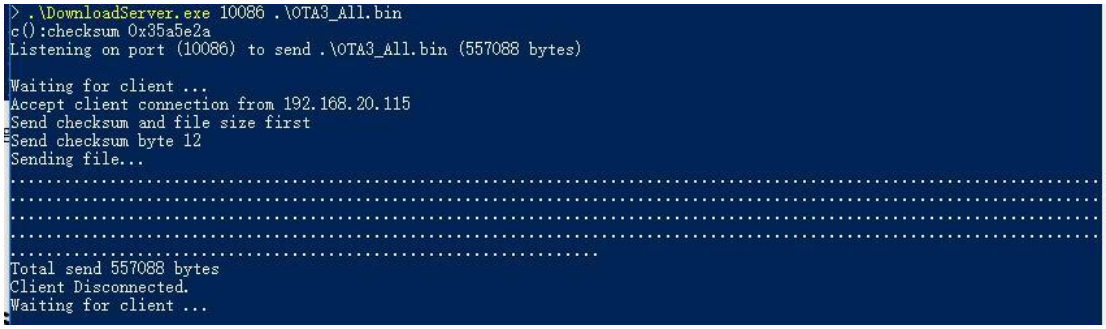


The server displays the following



OTA is finished. Please reset device. Ota is finished. Please reset device. At this time restart the module OTA more

The new is complete, and the server side is shown as follows.



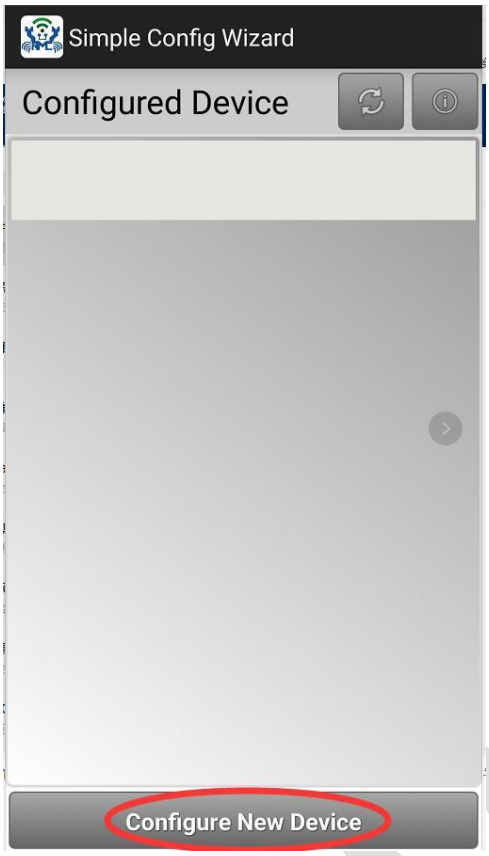
6.2 Appendix 2:simple config network configuration process

(1) Mobile phone installation sdk\tools\simple_config_wizard_3.4b\Android configuration tools in the directory

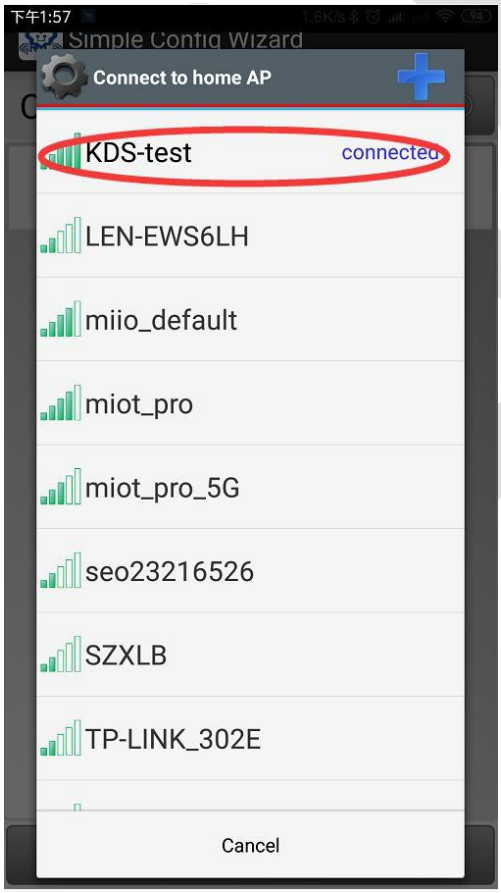
SimpleConfigWizard_v115.apk

(2) Connect the mobile phone to the Wi-Fi network

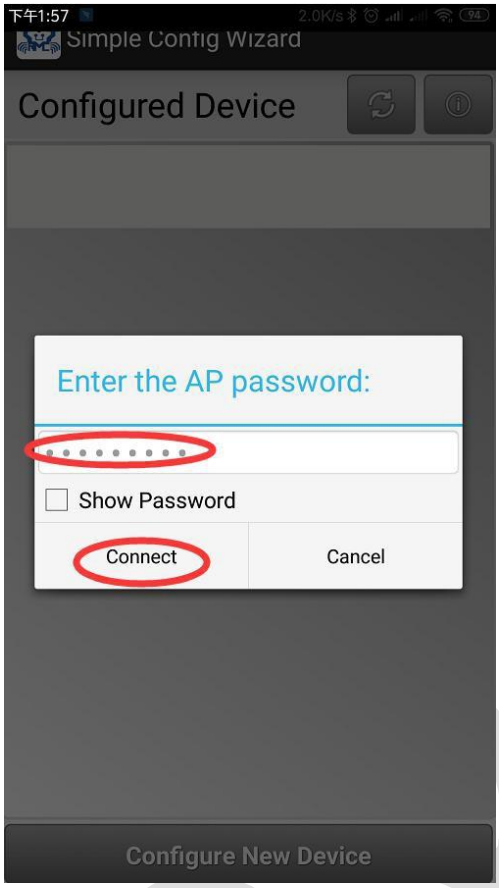
(3) Click configure new device



(4) Select the network to connect



(5) Enter the wifi password and click the link.

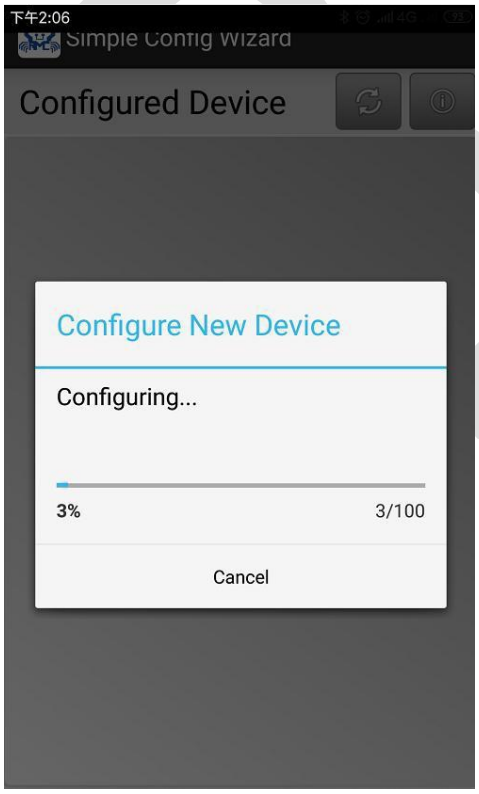


(6) In this case, enter ATWQ on the module to enter the network configuration mode. The log port is printed as follows:

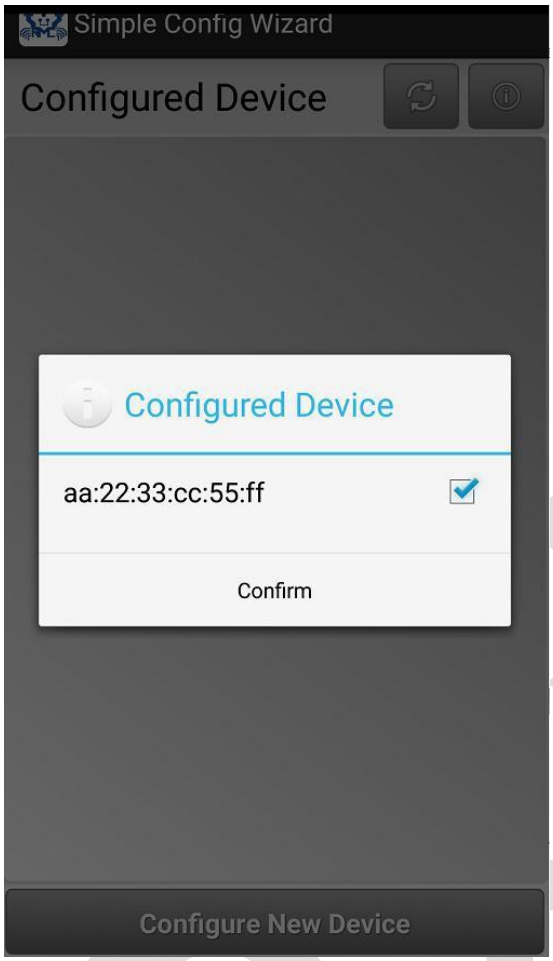
```
[ATWQ]: _AT_WLAN_SIMPLE_CONFIG_
softAP ssid: @RSC-CC55FF00E0, password: 12345678

LwIP_DHCP: dhcp stop.
Deinitializing WIFI ...
WIFI deinitialized
Initializing WIFI ...
WIFI initialized

Switch to channel(2)

Switch to channel(3)

Switch to channel(4)

Switch to channel(5)

Switch to channel(6)

Switch to channel(7)

Switch to channel(8)

Switch to channel(9)

Switch to channel(10)

Switch to channel(11)
```

(7) Click skip on mobile APP

(8) In this case, the network allocation process is entered.



(9) After the network configuration is successful, the following is displayed:



The module log is printed as follows:

```
==== start to connect target AP ====

RTL8721D[Driver]: set ssid [KDS-test]

RTL8721D[Driver]: start auth to 6c:e8:73:aa:2b:e0

RTL8721D[Driver]: auth success, start assoc

RTL8721D[Driver]: association success(res=2)
wlan1: 1 DL RSVD page success! DLBcnCount:01, poll:00000001

RTL8721D[Driver]: set pairwise key to hw: alg:4(WEP40-1 WEP104-5 TKIP-2 AES-4)

RTL8721D[Driver]: set group key to hw: alg:4(WEP40-1 WEP104-5 TKIP-2 AES-4) keyid:2

Interface 0 IP address : 192.168.12.101
Sending simple config ack
recv 92 bytes from 192.168.12.100:8864 at round=0, num=2

Simple Config success

[MEM] After do cmd, available heap 170776


#
```

6.3 Appendix 3: Bluetooth network configuration process

(1) Mobile phone installation sdk\tools\bluetooth\BT Config\Android\WiFiConfig_v2.1_20190315.apk

(2) On the module side, run ATBB = 1 to enable Bluetooth network distribution.

```
ATBB=1
[ATBB]:_AT_BT_CONFIG_[ON]


#
```

(3) Open the APP on the mobile phone and click the magnifying glass to Start Network allocation.

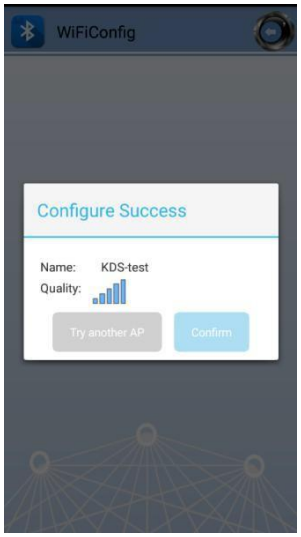
(4) If you want to connect to the network connected by the current mobile phone, enter the password and click Continue.

AP can select Slecet AP select the network to be connected

log

```
[BT Config Wifi] Bluetooth Connection Established

[BT Config Wifi] Band Request
[BT Config Wifi] Scan Request
[BT Config Wifi] Scan 2.4G AP

[BT Config Wifi] Scan Request
[BT Config Wifi] Scan 5G AP
```

(5) After the connection is successful, the APP displays the following



The module log is as follows:

```
[BT Config Wifi] Connect Request
RTL8721D[Driver]: set BSSID:

RTL8721D[Driver]: set ssid [KDS-test]

RTL8721D[Driver]: start auth to

RTL8721D[Driver]: auth success, start assoc

RTL8721D[Driver]: association success(res=17)
wlan1: 1 DL RSVD page success! DLBcnCount:01, poll:00000001

RTL8721D[Driver]: set pairwise key to hw: alg:4(WEP40-1 WEP104-5 TKIP-2 AES-4)

RTL8721D[Driver]: set group key to hw: alg:4(WEP40-1 WEP104-5 TKIP-2 AES-4) keyid:1

[BT Config Wifi] Connected after 3880ms.

Interface 0 IP address : 192.168.43.29
[BT Config Wifi] Got IP after 4782ms.
```