RAK473M Quick Start

User Manual V1.0

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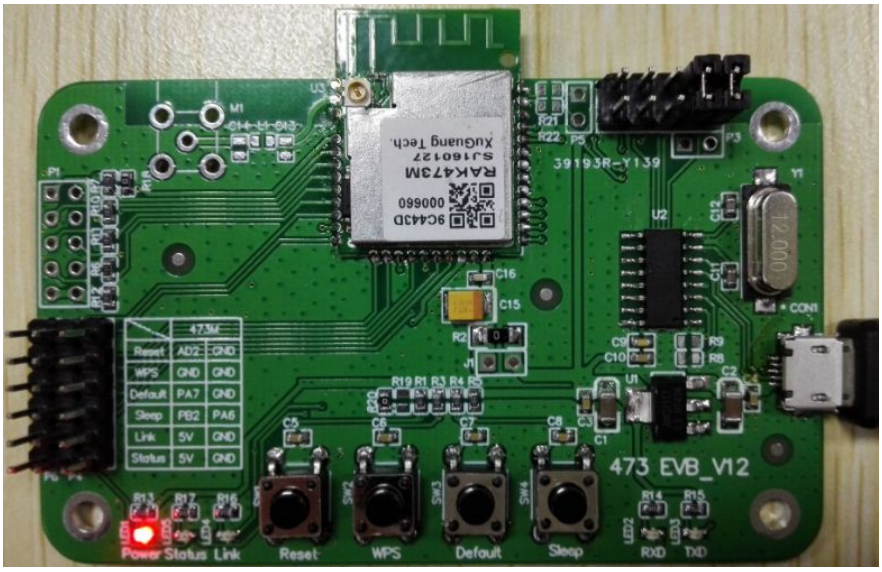
1. Overview

RAK473 is the WIFI module of AT command, through the external MCU sending AT command to RAK473, a variety of functions can be achieved, such as one-key configuration to the router, opening built-in web server, socket communication and so forth.

1.1 Testing AT command through PC

For demoboard RAK473-EVB-V12, the user only needs to use a Micro USB line to link the demoboard.



1.1.1 Testing STA mode:

```
Welcome to RAK473                          //information of starting up
at+ascii=1                                 // setting AT command returning in ASCII
display
OK
at+psk=123456789                           //setting router password
OK
at+connect=rakwireless                     //connecting router
OK
at+ipdhcp=0                                //dynamic access to ip
OK
mac=9C:44:3D:00:06:59
addr=192.168.31.103
```

```
mask=255.255.255.0
gw=192.168.31.1
dns1=192.168.31.1
dns2=0.0.0.0
at+ltcp=25000                                   //creating a tcp server
OK8
at+recv_data=128,0,59231,192.168.31.180         //tcp client connection event received
at+recv_data=0,59231,192.168.31.180,12,hello rak473   //data received
at+recv_data=129,0,59231,192.168.31.180         //tcp client disconnection event received
```

1.1.2 Testing AP mode:

```
Welcome to RAK473                                   //Information of starting up
at+ascii=1                                          // Setting AT command returning in ascii
display
OK
at+psk=123456789                                    //Setting AP password
OK
at+ap=RAK473_AP                                          //creating AP
OK
at+ipstatic=192.168.9.5,255.255.255.0,192.168.9.1,192.168.9.1,0     //setting static ip address
OK
at+ipdhcp=1                                         //openning dhcp server
OK
at+ltcp=25000                                       //creating tcp server
OK8
at+recv_data=connect                                //STA connection event received
at+recv_data=128,0,47466,192.168.9.2                      //tcp client connection event
received
at+recv_data=0,47466,192.168.9.2,12,hello rak473     //data received
at+recv_data=129,0,47466,192.168.9.2                      //tcp client disconnection event
received
at+recv_data=disconnect                             //STA disconnection event received
```

1.1.3 Testing one-key configuration command:

Step1: Open cellphone app, click the "Scan" button, select the router to be connected in the drop-down list of SSID, enter password.

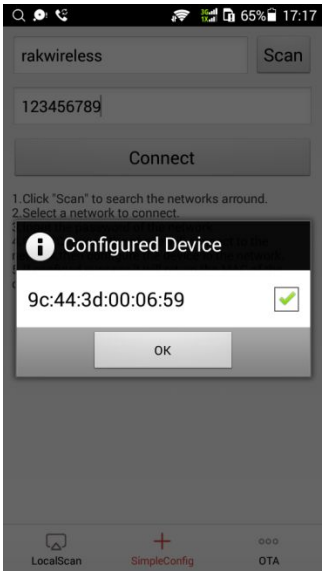
Step2: Computers send at+easy_config\r\n to the module through the serial port.

Step3: Click the "Connect" button on cellphone APP, enter the configuration state.

Step4: After successful configuration, the module serial port sends "OK+IP" message to PC.

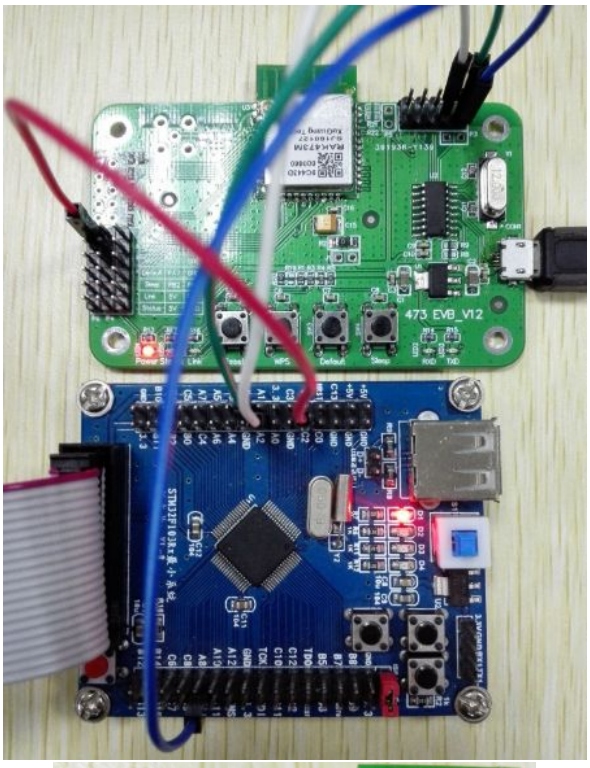
```
at+easy_config
OK
mac=9C:44:3D:00:06:59
addr=192.168.31.103
mask=255.255.255.0
gw=192.168.31.1
dns1=192.168.31.1
dns2=0.0.0.0
```

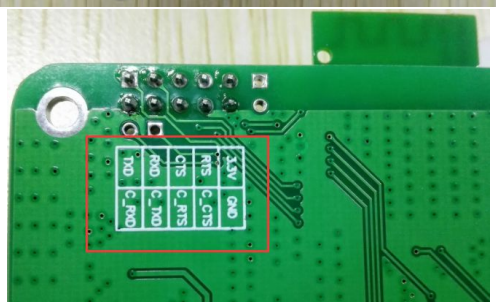
Step5: Cellphone APP has received the mac address of module, the configuration ends.



1.2 External MCU testing AT command

The tests applying STM32F103RCT6 EVB and RAK473-EVB-V12 are as follows:





The connection of two demoboards is as follows:

STM32F103RCT6 EVB	RAK473-EVB-V12
PA2(TX)	RXD (PIN26)
PA3(RX)	TXD (PIN23)
PC2	Reset (PIN11)
PA9(LOG TX)	C_RXD

1.3 Sample code description

The sample code platform is based on STM32F10x and Nano1xx,

1.3.1 ap_sta example

The configuration parameters of AP mode are as follows:

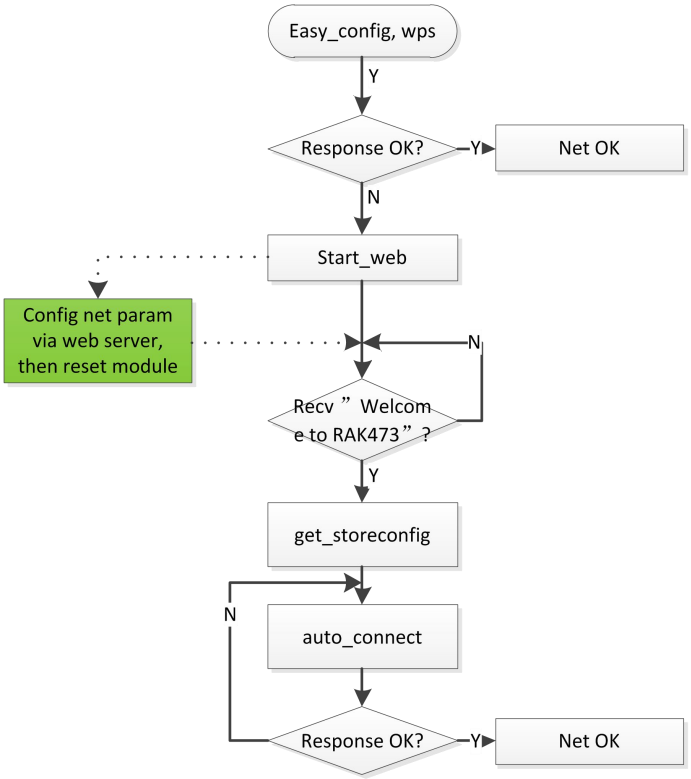
```
#define RAK_AP_STATION_MODE                1                ///< ap mode
#define RAK_PSK                            "123456789"      ///< ap psk
#define RAK_CREAT_AP_SSID                  "RAK473_UART_TEST"   ///< ap name
```

```
#define RAK_IPDHCP_MODE_ENABLE          1               ///< enable dhcps
```

The configuration parameters of STA mode are as follows:

```
#define RAK_AP_STATION_MODE                 0               ///< sta mode
#define RAK_PSK                             "123456789"     ///< router psk
#define RAK_CONNECT_SSID                    "rakwireless"   ///< router ssid
#define RAK_IPDHCP_MODE_ENABLE          0               ///< ip dhcp
```

1.3.2 easyconfig (wps)+AP configuration



1.3.3 tcp_udp

socket communication

2. Modification records

Edition	Author	Date	Modification content
V1.0	harry	2016/1/27	Creating document