# 上海域格

# Wi-Fi AT手册

## V1.1

# Contents

# 1 Description of AT Commands

## 1.1 AT+QWIFI Enable/Disable Wi-Fi Function

This command enables or disables Wi-Fi function.

| AT+QWIFI Enable/Disable Wi-Fi Function | |
|---|---|
| Test Command<br>**AT+QWIFI=?** | Response<br>**+QWIFI: (**list of supported **<value>**s**)**<br><br>**OK** |
| Read Command<br>**AT+QWIFI?** | Response<br>**+QWIFI: <value>**<br><br>**OK** |
| Write Command<br>**AT+QWIFI=<value>** | Response<br>**OK**<br><br>If there is any error:<br>**ERROR** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

**Parameter**

| **<value>** | Integer type. Enable or disable Wi-Fi function.<br>0   Disable Wi-Fi function<br>1   Enable Wi-Fi function |
|---|---|

**Example**

```
AT+QWIFI?
+QWIFI: 0              // Wi-Fi function is currently disabled

OK

AT+QWIFI=1            // Enable Wi-Fi function
OK
```

## 1.2 AT+QWSSIDHEX  Set SSID Encoding

This command sets the SSID encoding.

| AT+QWSSIDHEX    Set SSID Encoding | |
| --- | --- |
| Test Command<br>**AT+QWSSIDHEX=?** | Response<br>**+QWSSIDHEX: (**list of supported **<encode>**s**)**<br><br>**OK** |
| Read Command<br>**AT+QWSSIDHEX?** | Response<br>**+QWSSIDHEX: <encode>**<br><br>**OK** |
| Write Command<br>**AT+QWSSIDHEX=<encode>** | Response<br>**OK**<br><br>If there is any error:<br>**ERROR** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

### Parameter

| | |
| --- | --- |
| **<encode>** | Integer type. Set the **<SSID>** of **AT+QWSSID** to be in HEX format or string format. **<SSID>** is saved separately. See **AT+QWSSID** |
| | 0    **<SSID>** of **AT+QWSSID** is a string |
| | 1    **<SSID>** of **AT+QWSSID** is a HEX number |

### Example

**AT+QWSSIDHEX?**
**+QWSSIDHEX: 0**          //The SSID is in string format.

**OK**

## 1.3 AT+QWSSID Set SSID

This command sets Wi-Fi SSID.

| AT+QWSSID   Set SSID | |
| --- | --- |
| Test Command<br>**AT+QWSSID=?** | Response<br>**+QWSSID: <SSID>**<br><br>**OK** |
| Read Command<br>**AT+QWSSID?** | Response<br>**+QWSSID: <SSID>**<br><br>**OK** |
| Write Command<br>**AT+QWSSID=<SSID>** | Response<br>**OK**<br><br>If there is any error:<br>**ERROR** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

### Parameter

| | |
| --- | --- |
| **<SSID>** | When **AT+QWSSIDHEX=0**:<br>String type. A series of ASCII characters not larger than 32 bytes.<br><br>When **AT+QWSSIDHEX=1**:<br>String type. HEX digits. The length of raw data is no more than 32 bytes after coding (in UTF-8). It is mainly used to set SSID in Chinese. |

### Example

**AT+QWSSIDHEX?**
+QWSSIDHEX: 0
OK

**AT+QWSSID?**
+QWSSID: 4G_AP
OK

**AT+QWSSID=4G_WIFI**
OK

## 1.4 AT+QWBCAST Enable/Disable Broadcast

This command enables or disables the broadcast.

| AT+QWBCAST Enable/Disable Broadcast | |
|---|---|
| Test Command<br>**AT+QWBCAST=?** | Response<br>**+QWBCAST: (**list of supported **<broadcast>**s**)**<br><br>**OK** |
| Read Command<br>**AT+QWBCAST?** | Response<br>**+QWBCAST: <broadcast>**<br><br>**OK** |
| Write Command<br>**AT+QWBCAST=<broadcast>** | Response<br>**OK**<br><br>If there is any error:<br>**ERROR** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

**Parameter**

| | |
|---|---|
| **<broadcast>** | Integer type. Enable or disable broadcast.<br>0    Disable broadcast<br>1    Enable broadcast |

**Example**

```
AT+QWBCAST?
+QWBCAST: 1              //The broadcast is enabled.

OK

AT+QWBCAST=0            //The broadcast is disabled.
OK
```

## 1.5  AT+QWAUTH  Set Password

This command sets network authentication type, encryption mode, and password.

| AT+QWAUTH   Set Network Authentication Type, Encryption Mode and Password | |
| --- | --- |
| Test Command<br>**AT+QWAUTH=?** | Response<br>**+QWAUTH: (**list of supported **<auth>**s**)**<br><br>**OK** |
| Read Command<br>**AT+QWAUTH?** | Response<br>**+QWAUTH: <auth>[,<encrypt>,<password>]**<br><br>**OK** |
| Write Command<br>**AT+QWAUTH=<auth>,<encrypt>[,<password>]** | Response<br>**OK**<br><br>If there is any error:<br>**ERROR** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

**Parameter**

| | |
| --- | --- |
| **<auth>** | Integer type. Authentication type. |
| | 1    Open |
| | 3    WPA |
| | 4    WPA2 |
| | 5    WPA/WPA2 |
| **<encrypt>** | Integer type. Encryption mode. |
| | 0    No encryption |
| | 2    TKIP |
| | 3    AES |
| **<password>** | String type. Password string. |

**Example**

```
AT+QWAUTH?
+QWAUTH: 4,3,"1234567890"
OK


AT+QWAUTH=1,0          //Set authorization type as open and encryption mode as null
OK


AT+QWAUTH=5,3,"12345678"    //Set authorization type to WPA/WPA2 and encryption, mode to
OK                          AES, and password to 12345678.
```

## 1.6 AT+QWMOCH Set Frequency Mode and Channel

This command sets the frequency mode and channel of 802.11 network.

| AT+QWMOCH Set Frequency Mode and Channel of 802.11 Network | |
|---|---|
| Test Command<br>**AT+QWMOCH=?** | Response<br>**+QWMOCH: (**range of supported **<mode>**s),(list of supported **<channel>**s)<br><br>**OK** |
| Read Command<br>**AT+QWMOCH?** | Response<br>**+QWMOCH: <mode>,<channel>**<br><br>**OK** |
| Write Command<br>**AT+QWMOCH=<mode>,<channel>** | Response<br>**OK**<br><br>If there is any error:<br>**ERROR** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

**Parameter**

| <mode> | Integer type. 802.11 network frequency mode. | | |
|---|---|---|---|
| | 2 | b | 2.4 GHz mode |
| | 3 | b/g | 2.4 GHz mode |
| | <u>4</u> | b/g/n | 2.4 GHz mode |
| | 8 | g | 2.4 GHz mode |
| <channel> | Integer type. 802.11 network channel. | | |
| | <u>0</u> | Automatic selection | |
| | 1–13 | 2.4 GHz channel | |

**Example**

| | |
|---|---|
| **AT+QWMOCH?**<br>**+QWMOCH: 4,0**<br>**OK** | //Current mode is 2.4 GHz 802.11b/g/n, and channel is automatically. |
| **AT+QWMOCH=3,1**<br>**OK** | //Set mode as 2.4 GHz 802.11b/g and channel tochannel 1. |

## 1.7  AT+QWISO  Enable/Disable Isolation

This command enables or disables isolation among clients connected to AP.

| AT+QWISO   Enable/Disable Isolation Among Clients Connected to AP | |
|---|---|
| Test Command<br>**AT+QWISO=?** | Response<br>**+QWISO:** (list of supported **<isolation>**s)<br><br>**OK** |
| Read Command<br>**AT+QWISO?** | Response<br>**+QWISO: <isolation>**<br><br>**OK** |
| Write Command<br>**AT+QWISO=<isolation>** | Response<br>**OK**<br><br>If there is any error:<br>**ERROR** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

**Parameter**

| **<isolation>** | Integer type. Enable or disable isolation among clients connected to AP.<br>0    Disable isolation<br>1    Enable isolation |
|---|---|

**Example**

**AT+QWISO?**
**+QWISO: 1**                 //Currently isolation is enabled.
**OK**


**AT+QWISO=0**          //Disable isolation.
**OK**

## 1.8 AT+QWCLICNT Query Number of Wi-Fi Clients

This command queries the number of Wi-Fi clients connected to AP.

| AT+QWCLICNT Query Number of Wi-Fi Clients | |
|---|---|
| Read Command<br>**AT+QWCLICNT** | Response<br>**+QWCLICNT: <count>**<br><br>**OK** |
| Characteristics | / |

**Parameter**

| | |
|---|---|
| **<count>** | Integer type. Number of clients connected to AP. Default value: 16. Range: 1–16. |

**Example**

```
AT+QWCLICNT
+QWCLICNT: 16            //Currently, 16 clients are connected to AP.

OK
```

## 1.9 AT+QWRSTD  Restore Default Settings

This command restores Wi-Fi to default settings.

| AT+QWRSTD   Restore Default Settings | |
| --- | --- |
| Execution Command<br>**AT+QWRSTD** | Response<br>**OK** |
| Maximum Response Time | 30 s |
| Characteristics | The command takes effect immediately.<br>The configuration is saved automatically. |

**Example**

**AT+QWRSTD**　　　　//Restore Wi-Fi to default settings.
**OK**

## 1.10  AT+QWCLILST  List The Mac Addresses of Connected Clients

This command  lists the MAC addresses of all clients connected to the AP.

| AT+QWCLILST   List The Mac Addresses of Connected Clients | |
| --- | --- |
| Execution Command<br>**AT+QWCLILST?** | Response<br>**[+QWCLILST: <mac1>]**<br>**[+QWCLILST: <mac2>]**<br><br>**OK** |

**Parameter**

**<mac1>,<mac2>**        A dotted hexadecimal MAC address like aa:bb:cc:xx:xx:xx.

**Example**

**AT+QWCLILST?**
**OK**
**AT+QWCLILST?**
**+QWCLILST: "AB:CD:EF:xx:xx:xx"**
**+QWCLILST: "xx:xx:xx:AB:CD:EF"**

**OK**

## 1.11  AT+QWIFICON  Check device mode

This command checks whether a TE device accesses the Internet in Wi-Fi AP mode.

| AT+QWIFICON   Check Whether a TE device accesses the Internet in Wi-Fi AP mode | |
|---|---|
| Execution Command<br>**AT+QWIFICON** | Response<br>**+QWIFICON: "status",<status>**<br><br>**OK** |
| Maximum Response Time | 3 s |
| Characteristics | The command takes effect immediately. |

**Parameter**

| | |
|---|---|
| **<status>** | Integer type.<br>Indicate whether a TE device accesses the Internet in Wi-Fi AP mode.<br>0: Disconnected<br>1: Connected |

**Example**

**AT+QWIFICON**
**+QWIFICON: "status",0**

**OK**

## 1.12 AT+QWSTATUS Check Wi-Fi status

This command checks Wi-Fi status.

| AT+QWSTATUS Check Wi-Fi status | |
|---|---|
| Execution Command<br>**AT+QWSTATUS** | Response<br>**+QWSTATUS: \<status>**<br><br>**OK** |
| Maximum Response Time | 3 s |
| Characteristics | The command takes effect immediately. |

**Parameter**

| | |
|---|---|
| **\<status>** | Integer type.<br>Indicate whether.Wi-Fi is start<br>0: Wi-Fi is start<br>1: Wi-Fi is stop |

**Example**

**AT+QWSTATUS**
**+QWSTATUS: 0**

**OK**

# 2  Description  of  URCs

## 2.1  +QWIFIND  URC of Client Connection Status

After Wi-Fi is enabled (**AT+QWIFI=1**), the URC will be reported to indicate if a client is connected or disconnected to AP and the MAC address of the client.

| +QWIFIND   URC of Client Connection Status | |
|---|---|
| **+QWIFIND: <connect>,<MAC>** | Indicate the client connection/disconnection status and MAC address of the client. |

**Parameter**

| | |
|---|---|
| **<connect>** | Integer type. Client connection/disconnection status. |
| | 0    Client is disconnected to AP |
| | 1    Client is connected to AP |
| **<MAC>** | String type. MAC address of the client. Format: HEX number, such as "0A:0B:0C:0D:0E:0F". |

**Example**

| | |
|---|---|
| **+QWIFIND: 1,"0A:0B:0C:0D:0E:0F"** | //The client is connected to AP and the MAC address is "0A:0B:0C:0D:0E:0F". |
| **+QWIFIND: 0,"0A:0B:0C:0D:0E:0F"** | //The client is disconnected to AP and the MAC address is "0A:0B:0C:0D:0E:0F". |