WizFi360

AT command examples

Version 1.0.3

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History

Ver	Date	Description
1.0.0	Aug2019	Initial version
1.0.1	Oct2019	Typing error
1.0.2	Oct2019	Modified Overview description
1.0.3	Oct2019	Change style of section 3. Add "Auto TCP Connection on Transparent Mode"

Contents

1. Overview

There are three operating mode for WizFi360, as below.

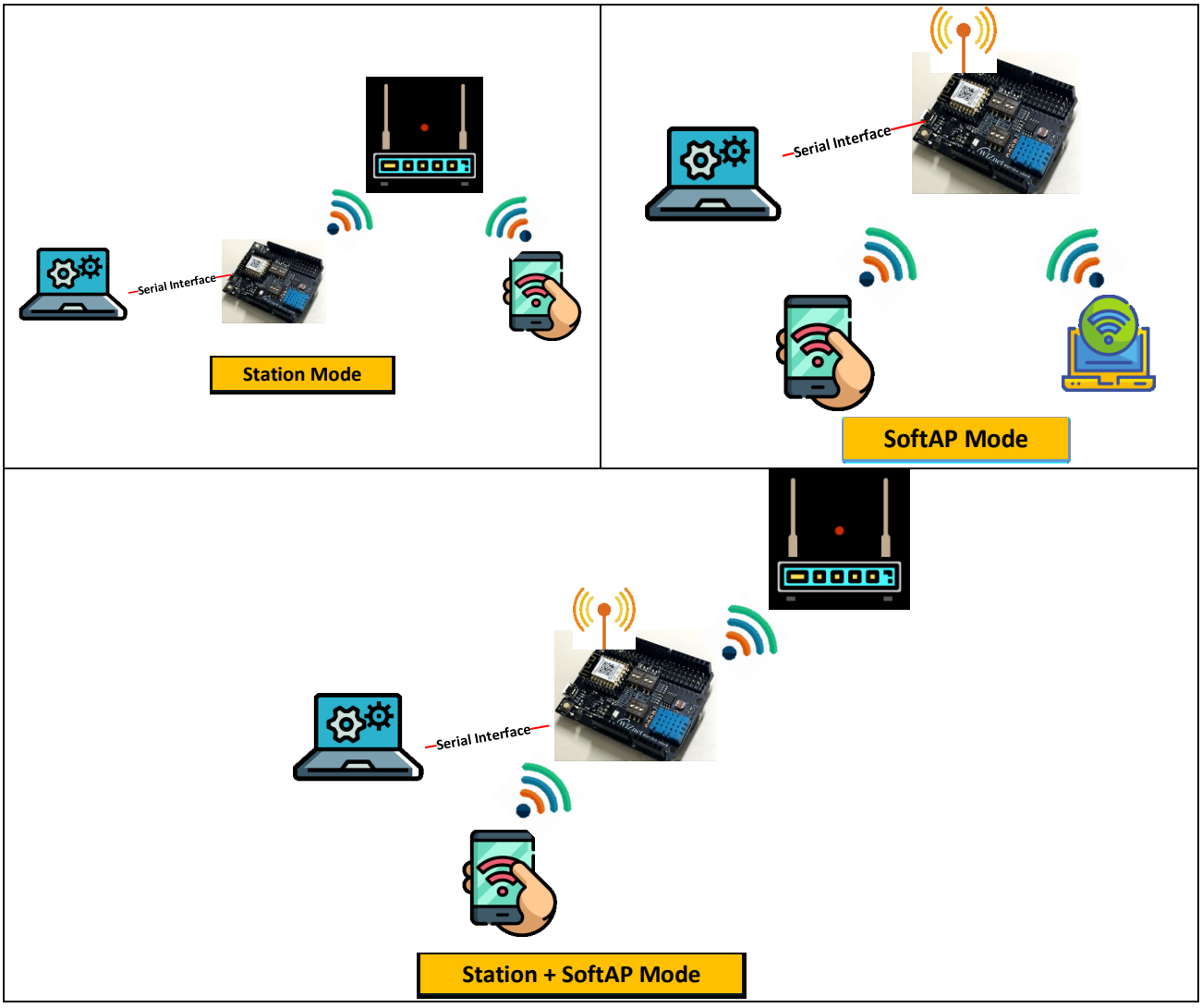
- Station mode
- SoftAP mode
- Station + SoftAP mode

In Station mode, WizFi360 Connects to the AP (Access Point). WizFi360 obtain IP via DHCP from AP or set Static IP.

In SoftAP mode, WizFi360 runs as AP and other devices connect to WizFi360 as Station. WizFi360 assigns IP to connected devices and can only communicate in local network.

In Station + SoftAP mode, WizFi360 operates both Station and SoftAP mode.

Please refer to the figure below that modes.



WizFi360 has a Normal Transmission mode and a Transparent Transmission mode.

In Normal Transmission mode, AT Command can be used to send and receive data through Command. Data is sent through SEND command, and data is received with data size through +IPD.

In Transparent Transmission mode, AT command cannot be used. WizFi360 only receives serial input to be sent after AT+CIPSEND command. When receiving data, unlike the normal transmission mode, it receives data without +IPD. If you want to execute AT Command, enter "+++" to change to Normal Transmission mode.

2. Default setting value of AT command

AT Command	Description
ATE1	Echo Enable
+CWMODE:2<CR><LF>	SoftAP mode
+UART_DEF:115200,8,1,0,0<CR><LF>	Setting UART
+CIPDNS_DEF:192.168.1.1<CR><LF>	Setting DNS address
+CIPSTA_DEF:ip:"192.168.1.1"<CR><LF> **+CIPSTA_DEF:gateway:"192.168.1.1"**<CR><LF> **+CIPSTA_DEF:netmask:"255.255.255.0"**<CR><LF>	Used network information in Station mode
+CIPAP_CUR:ip:"192.168.36.1"<CR><LF> **+CIPAP_CUR:gateway:"192.168.36.1"**<CR><LF> **+CIPAP_CUR:netmask:"255.255.255.0"**<CR><LF>	Used network information in SoftAP mode
+CIPSTAMAC_DEF:"00:08:dc:a1:b2:33"<CR><LF>	Setting MAC address in Station mode
+CWDHCPS_CUR:120,"192.168.36.2","192.168.36.101"<CR><LF>	Setting IP allocation area as DHCP server
+CWSAP_CUR:"WizFi360","",11,0,0,0<CR><LF>	Setting SSID, PW, etc in SoftAP mode
+CIPMODE:0<CR><LF>	AT command mode in data transparent mode
+CIFSR:APIP,"192.168.36.1"<CR><LF> **+CIFSR:APMAC,"02:08:dc:a1:b2:33"**<CR><LF>	Setting IP/MAC address in SoftAP mode

3. Using Serial Command

3.1 AT Command mode

3.1.1 Tests AT Startup

Request	AT
Response	OK

3.2 Station/SoftAP/Station+SoftAP mode

3.2.1 Station

3.2.1.1 Set Station Mode

Request	AT+CWMODE_CUR=1
Response	OK

3.2.1.2 Enable DHCP

Request	AT+CWDHCP_CUR=1,1
Response	OK

3.2.1.3 Check the list of available APs

Request	AT+CWLAP
Response	+CWLAP:([<ecn>,<ssid>,<rssi>,<mac>,<channel>,<wps>)) ... OK

3.2.1.4 Connect to the AP

Request	AT+CWJAP_CUR="SSID","PWD"
Response	WIFI CONNECTED WIFI GOT IP OK

3.2.1.5 Check the current network information

Request	AT+CIPSTA_CUR?
Response	+CIPSTA_CUR:ip:"192.168.1.88" // Current IP +CIPSTA_CUR:gateway:"192.168.1.1" // Current Gateway +CIPSTA_CUR:netmask:"255.255.255.0" // Current Subnet mask

	OK

3.2.2 SoftAP

3.2.2.1 Set SoftAP mode

Request	AT+CWMODE_CUR=2
Response	OK

3.2.2.2 Set SoftAP and enable DHCP

Request	AT+CWDHCP_CUR=0,1
Response	OK

3.2.2.3 Configure WizFi360 as SoftAP

Request	AT+CWSAP_CUR="WizFi360_ffffff","0123456789",1,3,4,0
Response	OK

3.2.2.4 Set the network information

Request	AT+CIPAP_CUR="192.168.36.1"," 192.168.36.1","255.255.255.0"
Response	OK

3.2.2.5 Set the IP address range for DHCP in SoftAP mode

Request	AT+CWDHCPS_CUR=1,120,"192.168.36.100"," 192.168.36.200"
Response	OK

3.2.3 Station+SoftAP

3.2.3.1 Set Station+SoftAP mode

Request	AT+CWMODE_CUR=3
Response	OK

3.2.3.2 Set SoftAP+Station and enable DHCP

Request	AT+CWDHCP_CUR=2,1
Response	OK

3.2.3.3 Set the IP address range for DHCP

Request	AT+CWDHCPS_CUR=1,120,"192.168.36.100"," 192.168.36.200"
Response	OK

3.2.3.4 Configure WizFi360 as SoftAP

Request	AT+CWSAP_CUR="WizFi360_ffffff","0123456789",1,3,4,0
Response	OK

3.2.3.5 Set the network information

Request	AT+CIPAP_CUR="192.168.36.1"," 192.168.36.1","255.255.255.0"
Response	OK

3.2.3.6 Connect to the AP

Request	AT+CWJAP_CUR="SSID","PWD"
Response	WIFI CONNECTED WIFI GOT IP OK

3.3 TCP/IP

3.3.1 TCP Server

3.3.1.1 Enable Multiple connections

Request	AT+CIPMUX=1
Response	OK

3.3.1.2 Create TCP Server

Request	AT+CIPSERVER=1,5000
Response	OK

3.3.1.3 After connect, send data to TCP Client

Request	AT+CIPSENDBUF=0,10 //Send in multiple connection
Response	OK >
Request	0123456789
Response	Recv 10 bytes SEND OK

3.3.1.4 Send data to TCP Client

Request	AT+CIPSENDEX=0,10 //Send in multiple connection

Response	OK >
Request	012₩0
Response	Recv 3 bytes SEND OK

3.3.2 TCP Client

3.3.2.1 Connect to TCP Server

Request	AT+CIPSTART="TCP","192.168.1.74",5000 //Enter user TCP server IP
Response	OK

3.3.2.2 Send data to TCP Server

Request	AT+CIPSENDBUF=10 //Send in single connection
Response	OK >
Request	0123456789
Response	Recv 10 bytes SEND OK

3.3.2.3 Send data to TCP Server

Request	AT+CIPSENDEX=10 //Send in single connection
Response	OK >
Request	012₩0
Response	Recv 3 bytes SEND OK

3.3.3 Auto TCP Connection on Transparent Mode

A brief AT command describe for Auto TCP Connection on Transparent Mode. Auto Configuration must be preceded before this process. It shows how to connect Wi-Fi AP and TCP Server automatically. Also, it describes how to send data on transparent mode and turn off the mode.

3.3.3.1 Set Auto Configuration

3.3.3.1.1 Set station Mode saved in Flash

Request	AT+CWMODE_DEF=1
Response	OK

3.3.3.1.2 Enable DHCP saved in Flash

Request	AT+CWDHCP_DEF=1,1
Response	OK

3.3.3.1.3 Save AP information(ssid & pw) in the Flash

Request	AT+CWJAP_DEF="SSID","PASSWORD" // Wi-Fi SSID & PW
Response	WIFI CONNECTED WIFI GOT IP OK

- ***Notice :***

  The above response is normal. The connection is made first then saved the AP information.

3.3.3.1.4 Set AUTO CONNECT to AP

Request	AT+CWAUTOCONN=1
Response	OK

3.3.3.2 Open TCP Server from PC which is connected to the same Wi-Fi AP that WizFi360 is connected to. Ex) IP : 192.168.10.100 Port : 5000

3.3.3.3 Set TCP Transparent Transmission Link saved in Flash

Request	AT+SAVETRANSLINK=1,"IP address",Port,"TCP",0 // mode, "IP", port, "type", TCP keep alive
Response	OK

- ***Notice :***

  <mode>

  0: WizFi360 will not enter UART-Wi-Fi pass-through mode on power-up (factory default)

  1: WizFi360 will enter UART-Wi-Fi pass-through mode on power up

  <TCP keep alive>

  0: Disable the TCP keep-alive function

  1~7200: keep-alive detection time interval; unit: second(s)

3.3.3.4 Reset WizFi360

Request	AT+RST

Response	OK ready WIFI CONNECTED WIFI GOT IP OK // AP successfully connected CONNECT OK // TCP successfully connected

◆ ***Notice :***

Response describes that WizFi360 is automatically connected to Wi-Fi AP and TCP after press the reset button.

3.3.3.5 WizFi360 sends data to the TCP Server after reset WizFi360

Request	Hello // enter the data, no <CR><LF>, Send data in transparent mode.
Response	N/A

3.3.3.6 When WizFi360 received data from TCP Server, it will prompt message below

Response	Hi // If TCP server Sends "Hi" data

3.3.3.7 Set normal transmission mode

Request	+++
Response	N/A

◆ ***Notice***

No needs <CR><LF>

3.3.3.8 Check normal transmission mode

Request	AT
Response	OK

3.3.4 UDP

3.3.4.1 Configure UDP mode and remote IP, PORT

Request	AT+CIPSTART="UDP","192.168.1.74",5000,8888 //Enter target UDP Server IP, port
Response	CONNECT OK

3.3.4.2 Send data

Request	AT+CIPSEND=10 //Send in single connection
Response	OK >
Request	0123456789
Response	Recv 10 bytes SEND OK

3.3.4.3 Send data with remote IP&PORT

Request	AT+CIPSEND=10,"192.168.1.74",5000 //Send in single connection
Response	OK >
Request	0123456789
Response	Recv 10 bytes SEND OK

3.3.4.4 Send data

Request	AT+CIPSENDEX=10 //Send in single connection
Response	OK >
Request	012₩0
Response	Recv 3 bytes SEND OK

3.3.5 SSL

3.3.5.1 Connect to facebook via SSL

Request	AT+CIPSTART="SSL","facebook.com",443
Response	CONNECT OK

3.3.5.2 Send HTTP GET method

Request	AT+CIPSEND=18 //Send in single connection
Response	OK >
Request	GET / HTTP/1.1{0x0d}{0x0a}

Response	Recv 18 bytes SEND OK (receive facebook page data)

3.3.6 SNTP

3.3.6.1 Configure SNTP parameter

Request	AT+CIPSNTPCFG=1,8
Response	OK

3.3.6.2 Check the SNTP time

Request	AT+CIPSNTPTIME?
Response	+CIPSNTPTIME:Wed Aug 07 08:21:19 2019 //Current Time data OK