

WizFi360

AT command examples

Version 1.0.2

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History

Ver	Date	Description
1.0.0	Aug2019	Initial version
1.0.1	Oct2019	Modified Typing error
1.0.2	Oct2019	Modified Overview description

Contents

1.	Overview	4
2.	Default setting value of AT command	5
3.	Using Serial Command	6
3.1	AT 모드 확인	6
3.2	Station/SoftAP/Station+SoftAP 모드	6
3.2.1	Station	6
3.2.2	SoftAP	7
3.2.3	Station+SoftAP	7
3.3	TCP/IP	8
3.3.1	TCP Server	8
3.3.2	TCP Client	8
3.3.3	UDP	9
3.3.4	SSL	9
3.3.5	SNTP	10

1. Overview

WizFi360 동작모드는 총 3 가지이며, 다음과 같다.

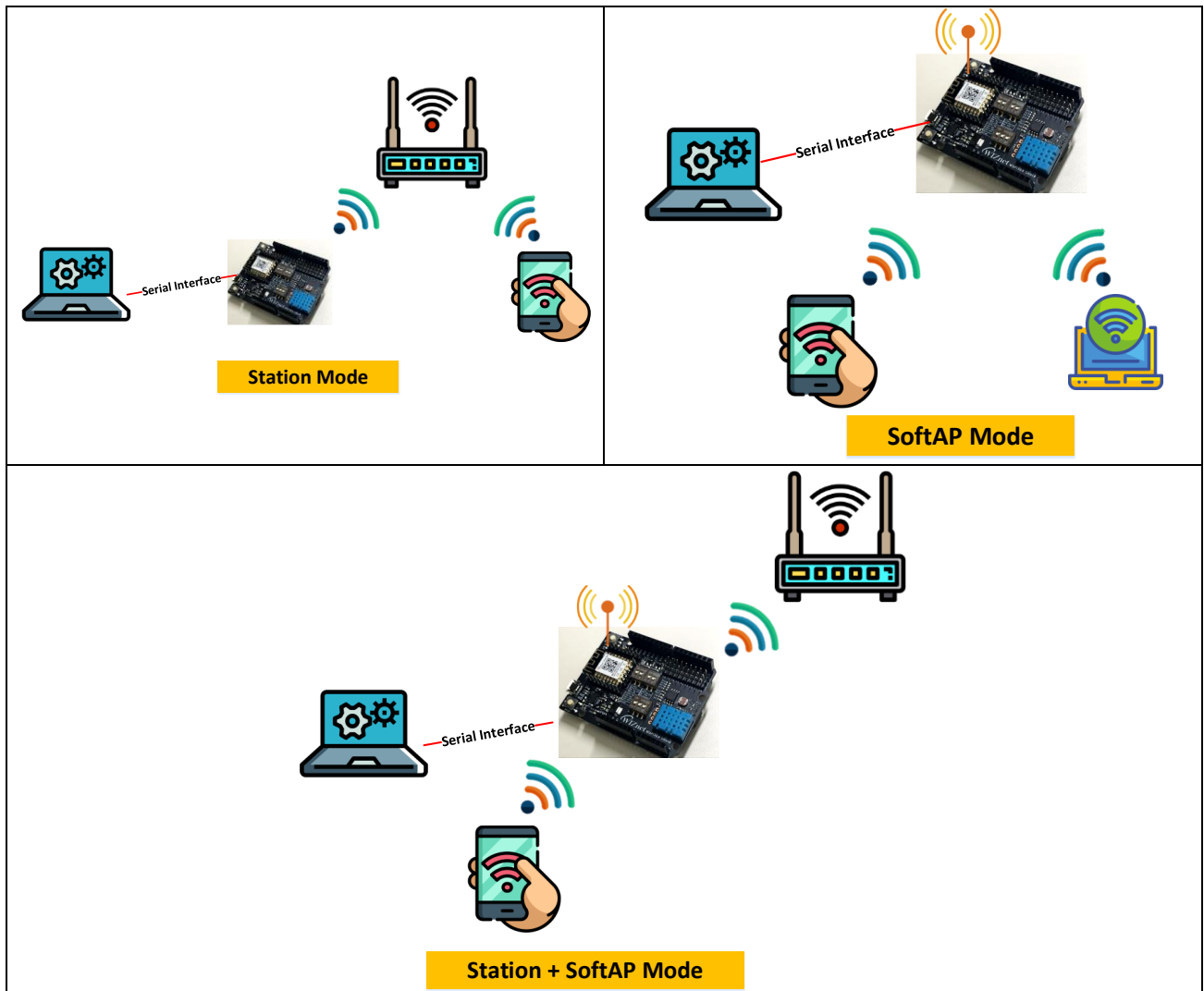
- Station mode
- SoftAP mode
- Station + SoftAP mode

Station mode 는 WizFi360 이 AP(공유기)에 접속하는 방식이다. AP 로부터 DHCP 를 통해 IP 를 할당 받거나 Static IP 를 설정하여 사용한다.

SoftAP mode 는 WizFi360 이 AP 로써 동작하며, 다른 장치들이 Station 으로서 WizFi360 에 연결된다. WizFi360 은 연결된 장치들에 IP 를 할당하며, Local 망에서의 통신만 가능하다.

Station + SoftAP mode 는 WizFi360 이 Station, AP 역할을 모두 한다.

해당모드는 아래의 그림을 참고한다.



WizFi360 에는 normal transmission mode 와 transparent mode 가 있다.

Normal Transmission mode 에서는 AT Command 를 사용할 수 있으며 Command 를 통해 Data 를 송수신한다. SEND 명령을 통해 데이터를 전송하며, +IPD 를 통해 Data Size 와 함께 Data 를 수신한다.

Transparent Transmission mode 에서는 AT Command 를 사용할 수 없으며, AT+CIPSEND Command 이후 전송할 Data 만 입력을 받는다. Data 수신시에도 Normal Transmission mode 와 달리 +IPD 없이 Data 를 수신한다. AT Command 를 수행하고 싶은 경우 "+++"를 입력하여 Normal Transmission mode 로 변경한다.

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>	UART 설정
+CIPDNS_DEF:192.168.1.1<CR><LF>	DNS 주소 설정
+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>	Station mode일 때 사용하는 네트워크 정보
+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>	SoftAP mode 일 때 사용하는 네트워크 정보
+CIPSTAMAC_DEF:"00:08:dc:a1:b2:33"<CR><LF>	Station mode 일 때 MAC address
+CWDHCPS_CUR:120,"192.168.36.2","192.168.36.101"<CR><LF>	SoftAP mode 일 때, DHCP Server로써 IP 주소 할당영역 지정
+CWSAP_CUR:"WizFi360","",11,0,0,0<CR><LF>	SoftAP mode일 때, SSID, PW등 AP설정
+CIPMODE:0<CR><LF>	데이터전송모드 중 AT 모드
+CIFSR:APIP,"192.168.36.1"<CR><LF> +CIFSR:APMAC,"02:08:dc:a1:b2:33"<CR><LF>	SoftAP mode일 때, IP/MAC 주소

3. Using Serial Command

3.1 AT 모드 확인

AT command	Terminal
AT	<pre> AT<CR><LF> <CR><LF> OK<CR><LF> </pre>

3.2 Station/SoftAP/Station+SoftAP 모드

3.2.1 Station

AT command	Terminal
AT AT+CWMODE_CUR=1 AT+CWDHCP_CUR=1,1 AT+CWLAP AT+CWLAP_CUR="wizms1","maker0701" AT+CIPSTA_CUR?	<pre> AT<CR><LF> <CR><LF> OK<CR><LF> AT+CWMODE_CUR=1<CR><LF> <CR><LF> OK<CR><LF> AT+CWDHCP_CUR=1,1<CR><LF> <CR><LF> OK<CR><LF> AT+CWLAP<CR><LF> +CWLAP: (4,"DIR-815_Wiznet",-59,"",1)<CR><LF> +CWLAP: (0,"ESP_574935",-71,"",1)<CR><LF> +CWLAP: (3,"#WIZnet_irina",-46,"",1)<CR><LF> +CWLAP: (3,"Matthew2.4",-63,"",2)<CR><LF> +CWLAP: (3,"rena",-46,"",3)<CR><LF> +CWLAP: (0,"iptime",-67,"",4)<CR><LF> +CWLAP: (3,"Dap",-63,"",5)<CR><LF> +CWLAP: (0,"ESP_577CC7",-67,"",6)<CR><LF> +CWLAP: (3,"wizms1",-63,"",6)<CR><LF> +CWLAP: (0,"Wizfi360",-69,"",6)<CR><LF> +CWLAP: (4,"DLINK-IPV6",-55,"",10)<CR><LF> +CWLAP: (0,"iptime",-59,"",11)<CR><LF> +CWLAP: (3,"WIZnet_Scott",-51,"",11)<CR><LF> +CWLAP: (0,"WizFi360_A1B2D1",-69,"",11)<CR><LF> +CWLAP: (3,"Teddy_AP",-57,"",13)<CR><LF> <CR><LF> OK<CR><LF> AT+CWLAP_CUR="wizms1","maker0701"<CR><LF> WIFI_DISCONNECT<CR><LF> WIFI_CONNECTED<CR><LF> WIFI_GOT_IP<CR><LF> <CR><LF> OK<CR><LF> AT+CIPSTA_CUR?<CR><LF> +CIPSTA_CUR:ip:"192.168.1.120"<CR><LF> +CIPSTA_CUR:gateway:"192.168.1.1"<CR><LF> +CIPSTA_CUR:netmask:"255.255.255.0"<CR><LF> <CR><LF> OK<CR><LF> </pre>

3.2.2 SoftAP

AT command	Terminal
AT AT+CWMODE_CUR=2 AT+CWDHCP_CUR=0,1 AT+CWSAP_CUR="WizFi360_ffffff","0123456789",1,3,4,0 AT+CIPAP_CUR="192.168.36.1","192.168.36.1","255.255.255.0" AT+CWDHCPS_CUR=1,120,"192.168.36.100","192.168.36.200"	<pre> AT<CR><LF> <CR><LF> OK<CR><LF> AT+CWMODE_CUR=2<CR><LF> <CR><LF> OK<CR><LF> AT+CWDHCP_CUR=0,1<CR><LF> <CR><LF> OK<CR><LF> AT+CWSAP_CUR="WizFi360_ffffff","0123456789",1,3,4,0<CR><LF> <CR><LF> OK<CR><LF> AT+CIPAP_CUR="192.168.36.1","192.168.36.1","255.255.255.0"<CR><LF> <CR><LF> OK<CR><LF> AT+CWDHCPS_CUR=1,120,"192.168.36.100","192.168.36.200"<CR><LF> <CR><LF> OK<CR><LF> </pre>

3.2.3 Station+SoftAP

AT command	Terminal
AT+CWMODE_CUR=3 AT+CWDHCP_CUR=2,1 AT+CWDHCPS_CUR=1,120,"192.168.36.100","192.168.36.200" AT+CWSAP_CUR="WizFi360_ffffff","0123456789",1,3,4,0 AT+CIPAP_CUR="192.168.36.1","192.168.36.1","255.255.255.0" AT+CWJAP_CUR="wizms1","maker0701"	<pre> AT+CWMODE_CUR=3<CR><LF> <CR><LF> OK<CR><LF> AT+CWDHCP_CUR=2,1<CR><LF> <CR><LF> OK<CR><LF> AT+CWDHCPS_CUR=1,120,"192.168.36.100","192.168.36.200"<CR><LF> <CR><LF> OK<CR><LF> AT+CWSAP_CUR="WizFi360_ffffff","0123456789",1,3,4,0<CR><LF> <CR><LF> OK<CR><LF> AT+CIPAP_CUR="192.168.36.1","192.168.36.1","255.255.255.0"<CR><LF> <CR><LF> OK<CR><LF> AT+CWJAP_CUR="wizms1","maker0701"<CR><LF> WIFI CONNECTED<CR><LF> WIFI GOT IP<CR><LF> <CR><LF> OK<CR><LF> </pre>

3.3 TCP/IP

3.3.1 TCP Server

AT command	Terminal
AT+CIPMUX=1 AT+CIPSERVER=1,5000 AT+CIPSENDERBUF=0,10 0123456789 => 10byte data AT+CIPSENDEX=0,10 012W0 => 3byte data	AT+CIPMUX=1<CR><LF> <CR><LF> OK<CR><LF> AT+CIPSERVER=1,5000<CR><LF> <CR><LF> OK<CR><LF> 0,CONNECT<CR><LF> AT+CIPSENDERBUF=0,10<CR><LF> 1,0<CR><LF> <CR><LF> OK<CR><LF> > 0123456789 <CR><LF> Recv 10 bytes<CR><LF> <CR><LF> 0,1,SEND OK<CR><LF> AT+CIPSENDEX=0,10<CR><LF> <CR><LF> OK<CR><LF> > 012\0 <CR><LF> Recv 3 bytes<CR><LF> <CR><LF> SEND OK<CR><LF>

3.3.2 TCP Client

AT command	Terminal
AT+CIPSTART="TCP","192.168.1.74",5000 AT+CIPSENDERBUF=10 0123456789 => 10byte data AT+CIPSENDEX=10 012W0 => 3byte data	AT+CIPSTART="TCP","192.168.1.74",5000<CR><LF> CONNECT<CR><LF> <CR><LF> OK<CR><LF> AT+CIPSENDERBUF=10<CR><LF> 1,0<CR><LF> <CR><LF> OK<CR><LF> > 0123456789 <CR><LF> Recv 10 bytes<CR><LF> <CR><LF> 1,SEND OK<CR><LF> AT+CIPSENDEX=10<CR><LF> <CR><LF> OK<CR><LF> > 012\0 <CR><LF> Recv 3 bytes<CR><LF> <CR><LF> SEND OK<CR><LF>

3.3.3 UDP

AT command	Terminal
AT+CIPSTART="UDP","192.168.1.74",5000,8888 AT+CIPSEND=10 0123456789 => 10byte data AT+CIPSEND=10,"192.168.1.74",5000 0123456789 => 10byte data AT+CIPSENDEX=10 012W0 => 3byte data	<pre> AT+CIPSTART="UDP","192.168.1.74",5000,8888<CR><LF> CONNECT<CR><LF> <CR><LF> OK<CR><LF> AT+CIPSEND=10<CR><LF> <CR><LF> OK<CR><LF> > 0123456789 <CR><LF> Recv 10 bytes<CR><LF> <CR><LF> SEND OK<CR><LF> AT+CIPSEND=10,"192.168.1.74",5000<CR><LF> <CR><LF> OK<CR><LF> > 0123456789 <CR><LF> Recv 10 bytes<CR><LF> <CR><LF> SEND OK<CR><LF> AT+CIPSENDEX=10<CR><LF> <CR><LF> OK<CR><LF> > 012\0 <CR><LF> Recv 3 bytes<CR><LF> <CR><LF> SEND OK<CR><LF> </pre>

3.3.4 SSL

AT command	Terminal
AT+CIPSTART="SSL","facebook.com",443 AT+CIPSEND=18 GET / HTTP/1.1{0x0d}{0x0a} => Data보냄	<pre> AT+CIPSTART="SSL","facebook.com",443<CR><LF> CONNECT<CR><LF> <CR><LF> OK<CR><LF> AT+CIPSEND=18<CR><LF> <CR><LF> OK<CR><LF> > GET / HTTP/1.1{0x0d}{0x0a} <CR><LF> Recv 18 bytes<CR><LF> <CR><LF> SEND OK<CR><LF> </pre>

	<pre> <CR><LF> +IPD,1500:HTTP/1.1 400 Bad Request<CR><LF> Content-Type: text/html; charset=utf-8<CR><LF> Date: Thu, 11 Jul 2019 07:21:45 GMT<CR><LF> Connection: close<CR><LF> Content-Length: 2959<CR><LF> <CR><LF> <!DOCTYPE html><LF> <html lang="en" id="facebook"><LF> <head><LF> <title>Facebook Error</title><LF> <meta charset="utf-8"><LF> <meta http-equiv="cache-control" content="no-cache"><LF> <meta http-equiv="cache-control" content="no-store"><LF> <meta http-equiv="cache-control" content="max-age=0"><LF> <meta http-equiv="expires" content="1"><LF> <meta http-equiv="pragma" content="no-cache"><LF> <meta name="robots" content="noindex,nofollow"><LF> </style><LF> <html body {<LF> color: #141823;<LF> background-color: #e9eae2;<LF> font-family: Helvetica, Lucida Grande, Arial,<LF> Tahoma, Verdana, sans-serif;<LF> margin: 0;<LF> padding: 0;<LF> text-align: center;<LF> }<LF> <LF> <#header {<LF> height: 30px;<LF> padding-bottom: 10px;<LF> padding-top: 10px;<LF> text-align: center;<LF> }<LF> <LF> <#icon {<LF> width: 30px;<LF> }<LF> <LF> <h1 {<LF> font-size: 18px;<LF> }<LF> <LF> <p {<LF> font-size: 13px;<LF> }<LF> <LF> <#footer {<LF> border-top: 1px solid #ddd;<LF> color: #9197a3;<LF> font-size: 12px;<LF> padding: 5px 8px 6px 0;<LF> }<LF> </style><LF> </head><LF> <body><LF> <div id="header"><LF> <LF> <LF> <LF> </div><LF> <div id="core"><LF> <h1 id="sorry">Sorry<CR><LF> <p id="promise"><LF> We're working on it and we'll get it fixed as soon as we can.<LF> </p><LF> <p id="back-link"><LF> Go Back<LF> </p><LF> </div><LF> <div id="footer"><LF> Facebook<LF> <LF> &copy; 2019<LF> <LF> <LF> &#183;<LF> Help Center<LF> <LF> </div><LF> </div><LF> <script><LF> document.getElementById('back').onclick = function() {<LF> if (history.length > 1) {<LF> history.back();<LF> return false;<LF> }<LF> };<LF> </script><LF> <!-- Adjust the display based on the window size<LF> if (window.innerHeight < 80 window.innerWidth < 80) {<LF> // Blank if window is too small<LF> document.body.style.display = 'none';<LF> }<LF> if (window.innerWidth < 200 window.innerHeight < 150) {<LF> document.getElementById('back-link').style.display = 'none';<LF> document.getElementById('help-link').style.display = 'none';<LF> }<LF> if (window.innerWidth < 200) {<LF> document.getElementById('sorry').style.fontSize = '16px';<LF> }<LF> if (window.innerWidth < 150) {<LF> document.getElementById('promise').style.display = 'none';<LF> }<LF> if (window.innerHeight < 150) {<LF> document.getElementById('sorry').style.margin = '4px 0 0 0';<LF> document.getElementById('sorry').style.fontSize = '14px';<LF> document.getElementById('promise').style.display = 'none';<LF> }<LF> </script><LF> </body><LF> </html><LF> <CR><LF> +IPD,2:<SOH>=<NUL><CLOSED><CR><LF> </pre>
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3.3.5 SNTP

AT command	Terminal
AT+CIPSNTPCFG=1,8	AT+CIPSNTPCFG=1,8<CR><LF>
AT+CIPSNTPTIME?	OK<CR><LF>
	AT+CIPSNTPTIME?<CR><LF>
	+CIPSNTPTIME:Wed Aug 07 08:21:19 2019<LF><CR><LF>
	OK<CR><LF>