WG222 AT Instruction and Examples

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Contents

Introduction

Skylab WG222 module is an IoT development platform for RTOS based on MediaTek MT7697, a highly integrated SOC that features an ARM® Cortex®-M4 with floating point unit microprocessor that operates at up to 192MHz with low-power 1x1 802.11 b/g/n 2.4GHz Wi-Fi and Bluetooth Low Energy support.

This document introduces the WG222 AT commands, explains how to use them and provides examples of several common AT commands. The document is structured as follows:

Chapter	Title	Content
Chapter 1	Overview	Provides instructions on use AT commands.
Chapter 2	Basic AT Commands	Basic AT commands.
Chapter 3	Wi-Fi AT Commands	Lists Wi-Fi-related AT commands.
Chapter 4	BLE AT Commands	Lists BLE-related AT commands.
Chapter 5	AT Commands Examples	Gives examples of using WG222 AT Commands.
Chapter 6	WIFI NVDM group and data item	List some of the WiFi commands to use the NVDM group and data item.
Chapter 7	Contact us	Provides Skylab contact information.
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Chapter 1.Overview

This document introduces the WG222 AT commands, and explains how to use them.

The AT command set is divided into different categories: Basic AT commands, Wi-Fi AT commands and BLE AT commands, etc.

The WG222 module each command set contains four types of AT commands:

Type	Command Format	Description
Display Command	AT+<x>=?	Display the Set Commands internal parameters and their range of values.
Query Command	AT+<x>?	Returns the current value of parameters.
Set Command	AT+<x>=<…>	Sets the value of user-defined parameters in commands.
Execute Command	AT+<x>	Runs commands with no user-defined parameters.

Notice:

Not all AT commands support all four variations mentioned above. Refer to the specific instructions description.

- The users can choose to sends AT commands through UART1
- The default baud rate is 115200;data bits is 8;parity is None;stop bits is 1 and flow control is not enabled.
- Square brackets [ ] designate the default value; it is either not required or may not appear.
- String values need to be included in double quotation marks, for example: AT+CWJAP="ssid","password"
- AT commands must be capitalized and ended with a new-line (CR-LF), so the serial tool should be set into "New Line Mode".

Chapter 2. Basic AT Commands

AT -- Tests AT startup

Execute Command	AT
Response	OK
Parameters	--
Use	AT

AT+VER -- Checks version information

Query Command	AT+VER?
Response	+VER:V4.8.0.1,2019/03/20 OK
Parameters	• software version info
Use	AT+VER?

AT+RST -- Restarts WG222 module

Execute Command	AT+RST
Response	WG222 Ready
Parameters	--
Use	AT+RST

AT+GPIO -- Configure the specified GPIO pin level

Commands	Get Command	Set Command
	AT+GPIO=0,<pin>	AT+GPIO=1,<pin>,<level>
Response	+GPIO<pin>:<level> OK	OK or ERROR
Parameters	• <pin>: specified gpio pin; • <level>: ‣ 0: Low level ‣ 1: High level	
Use	example: set gpio pin 33 is high level AT+GPIO=1,33,1 example: get gpio pin 33 level AT+GPIO=0,33	

Other

Chapter 3. Wi-Fi AT Commands

AT+CWRADIO -- Configure the radio status of the Wi-Fi driver

Commands	Query Command	Set Command
	AT+CWRADIO?	AT+CWRADIO=<on_off>
Response	+CWRADIO:<on_off> OK	OK or ERROR
Parameters	• <on_off>: indicates the Wi-Fi radio is on or off ‣ 0: OFF, the Wi-Fi radio is turned off, and Wi-Fi TX/RX is disabled ‣ 1: ON, the Wi-Fi radio is turned on, and Wi-Fi TX/RX is enabled	
Use	example: get radio status AT+CWRADIO?	

AT+CWMODE -- Configure the wireless operation mode of the Wi-Fi driver

Commands	Query Command	Set Command
	AT+CWMODE?	AT+CWMODE=<opmode>
Response	+ CWMODE:<opmode> OK	OK or ERROR
Parameters	• <opmode>: operation mode to set ‣ 1: WIFI_MODE_STA_ONLY ‣ 2: WIFI_MODE_AP_ONLY	
Note	Changing the WiFi operation mode needs reboot to take effect	
Use	AT+CWMODE=1 // set wifi operation mode is STA role AT+RST //reboot	

AT+CWJAP -- Connect to an AP

Commands	Query Command	Set Command
	AT+CWJAP?	AT+CWJAP=<ssid>,<pwd>
Response	+CWJAP:<ssid>,<bssid>,<chl>,<rssi> OK	OK or ERROR If OK, output the following information Connected Got IP:192.168.0.133
Parameters	• <ssid>: string parameter, the SSID of the target AP; • <pwd>: password, MAX: 64-byte ASCII; • <bssid>: the bssid of the target AP MAC address; • <chl>: channel id, the channel number range is from 1 to 14 for 2.4GHz; channel number is 149/161/157/153/165 for 5GHz; • <rssi>: signal strength;	
Use	AT+CWJAP=”APSSID”,”12345678”	

AT+CWSAP -- Sets the configuration of the WG222 module Soft-AP

Commands	Query Command	Set Command
	AT+CWSAP?	AT+CWSAP=<ssid>,<pwd>,<chl>
Response	+CWSAP:<ssid>,<pwd>,<chl>,<auth>,<max conn> OK	OK or ERROR
Parameters	• <ssid>: string parameter, SSID of AP; • <pwd>: string parameter, length of password: 8 ~ 64 bytes ASCII; • <ch>: channel id, the channel number range is from 1 to 14 for 2.4GHz bandwidth; channel number is 149/161/157/153/165 for 5GHz bandwidth; • <auth>: Authentication mode ‣ 0: Open mode ‣ 4: WPA_PSK ‣ 7: WPA2_PSK ‣ 9: WPA_WPA2_PSK • <max conn>: maximum number of Stations to which WG222 Soft-AP can be connected;	
Use	AT+CWSAP="WG222_AP","12345678",6	

AT+CWLAP -- Scanning around the available APs

Execute Command	AT+CWLAP
Response	+CWLAP:<ssid>,<bssid>,<chl>,<auth>,<encrypt>,<rssi> OK … Scan Done
Parameters	• <ssid>: string parameter, ssid of AP; • <bssid>: string parameter, mac address of the AP; • <chl>: channel id, the channel number range is from 1 to 14 for 2.4GHz bandwidth; channel number is 149/161/157/153/165 for 5GHz bandwidth; • <auth>: Authentication mode ‣ 0: Open mode ‣ 4: WPA_PSK ‣ 7: WPA2_PSK ‣ 9: WPA_WPA2_PSK • <encrypt>: encryption mode ‣ 0: WEP encryption. ‣ 4: TKIP encryption. ‣ 6: AES encryption. ‣ 8: TKIP or AES mix. • <rssi>: signal strength;
Use	AT+CWLAP

AT+CWQAP -- Immediately disconnects the current connection from the connected AP

Execute Command	AT+CWQAP
Response	OK or ERROR
Parameters	--
Note	this command is available only in the STA mode
Use	AT+CWQAP

AT+CWQSTA -- Disconnect a specified STA role

Set Command	AT+CWQSTA=<mac>
Response	OK or ERROR
Parameters	• <mac>: string parameter,mac address is station's MAC address
Note	This command is available only in the AP mode
Use	AT+CWQSTA=”30:eb:1f:02:e4:1c”

AT+CWMAC -- Query the MAC address

Query Command	AT+CWMAC?
Response	+CWMAC:00:0a:65:72:65:49 OK
Parameters	• <mac>: string parameter, mac address
Notes	If the current wifi opmode is AP, then the query mac address is AP mac; If the current wifi opmode is STA, then the query mac address is STA mac;
Use	AT+CWMAC?

AT+CWLIST -- Gets the station list associated with the Wi-Fi

Query Command	AT+CWLIST?
Response	+CWLIST:<sta_mac> OK or ERROR
Parameters	• <sta_mac>: string parameter,station mac address.
Note	This command is available only in the AP mode
Use	AT+CWCONNLIST?

AT+CWSTATUS -- Query the current STA mode link up or link down connection status

Query Command	AT+CWSTATUS?
Response	+CWSTATUS:<link> OK
Parameters	• <link>: ‣ 0: disconnected ‣ 1: connected
Use	AT+CWSTATUS?

AT+CWSMTCN -- Smart connection

Set Command	AT+CWSMTCN=<en>
Response	OK or ERROR
Parameters	• <en>: ‣ 0: stop smart connect ‣ 1: start smart connection
Note	this command is available only in the STA mode
Use	AT+CWSMTCN=1

AT+CWPING -- Ping packge

Set Command	AT+CWPING=<domain or ip>
Response	OK or ERROR +CWPING:"ip"
Parameters	• <domain or ip>: string parameter,ping domain or ip address
Use	AT+CWPING=”www.baidu.com”

AT+CWTXPOWER -- Config tx power

Commands	Query Command	Set Command
	AT+CWTXPOWER?	AT+CWTXPOWER=<power>
Response	+CWTXPOWER:<power> OK	OK or ERROR
Parameters	• <power>: power is in a range from 64 to 190 that means chip configured -31.5dbm ~ +31.5dbm	
Use	AT+CWTXPOWER=160	

AT+CWSNTPSERVER -- Configuring time difference and sntp server

Set Command	AT+CWSNTPSERVER=< time difference>,<server0>,<server1>
Response	OK or ERROR
Parameters	• <time difference>: If the difference is set sometimes, otherwise, 0, the unit is second; • <server0> string parameter,sntp server 0; • <server1> string parameter,sntp server 1;
Note	The time formatting of the SNTP function is UTC
Use	AT+CWSNTPSERVER=28800,” cn.ntp.org.cn”,” tw.ntp.org.cn”

AT+CWSNTP -- Sntp time

Execute Command	AT+CWSNTP
Response	OK +CWSNTP:19/3/20 16:11:39
Use	AT+CWSNTP

AT+CWDHCP -- Enables/Disables DHCP

Commands	Query Command	Set Command
	AT+CWDHCP?	AT+CWDHCP=<en>
Response	+CWDHCP:<tag> OK	OK or ERROR
Parameters	• <tag>: string parameter,tag value is “DHCP” or “STATIC”; • <en>: ‣ 0: dhcp stop ‣ 1: dhcp start	
Use	AT+CWDHCP?	

AT+CWDHCPD -- DHCPD settings

Set Command	AT+CWDHCPD=<server_address>,<netmask>,<gateway>,<primary_dns>,<secondary_dns>,<ip_pool_start>,<ip_pool_end>
Response	OK or ERROR
Parameters	• <server_address>: string parameter,dhcpd specify server IP for AP; • <netmask>: string parameter,dhcpd specify netmask for AP; • <gateway>: string parameter,dhcpd specify gateway for AP; • <primary_dns>: string parameter,dhcpd specify primary DNS IP for AP; • <secondary_dns>: string parameter,dhcpd specify secondary DNS IP for AP;

	• <ip_pool_start>: string parameter,dhcpd specify starting IP for IP pool; • <ip_pool_end>: string parameter,dhcpd specify ending IP for IP pool;
Note	this command is available only in the AP mode
Use	AT+CWDHCPD="10.10.10.2","255.255.255.0","10.10.10.1","8.8.8.8","8.8.4.4","10.10.10.3","10.10.10.11"

AT+CWIP -- IP address of network interface

Commands	Query Command	Set Command
	AT+CWIP?	AT+CWIP=<ipaddr>,<netmask>,<gateway>
Response	+CWIP:<ipaddr>,<netmask>,<gateway> OK	OK or ERROR
Parameters	• <ipaddr>: string parameter, IP address; • <netmask>: string parameter,netmask; • <gateway>: string parameter,gateway;	
Use	AT+CWIP=”192.168.6.10”,”255.255.255.0”,”192.168.6.1”	

AT+CWFOTA -- Firmware Over-The-Air

Set Command	AT+CWFOTA=<url>
Response	OK or ERROR
Parameters	• <url>: string parameter,url of the firmware
Use	AT+CWFOTA=”http://120.76.42.194:8080/WG222/image_4_8_0_1.bin”

AT+CIPDOMAIN -- Domain name resolution

Set Command	AT+CIPDOMAIN=<domain>
Response	+CIPDOMAIN:"ip" OK or ERROR
Parameters	• <domain>: string parameter, domain name • <ip>: string parameter, ip address after domain name resolution
Use	AT+CIPDOMAIN=”www.baidu.com”

AT+CIPMUX -- Configures the multiple connections mode

Commands	Query Command	Set Command
	AT+CIPMUX?	AT+CIPMUX=<mode>
Response	+CIPMUX:<mode> OK	OK
Parameters	• <mode>: ‣ 0: single connection ‣ 1: multiple connections	
Notes	1、The default mode is single connection mode. 2、Multiple connections can only be set when transparent transmission is disabled (AT+CIPMODE=0). 3、This mode can only be changed after all connections are disconnected. 4、If the TCP server is running, it must be deleted (AT+CIPSERVER=0) before the single connection mode is activated.	
Use	AT+CIPMUX=1	

AT+CIPMODE -- Configures the transmission mode

Commands	Query Command	Set Command
	AT+CIPMODE?	AT+CIPMODE=<mode>
Response	+CIPMODE:<mode> OK	OK
Parameters	• <mode>: ‣ 0: normal transmission mode. ‣1: UART-Wi-Fi passthrough mode (transparent transmission), which can only be enabled in TCP single connection mode or in UDP mode when the remote IP and port do not change.	
Notes	1、The configuration changes will NOT be saved in flash. 2、During the UART-Wi-Fi passthrough transmission, if the TCP connection breaks, WG222 will keep trying to reconnect until ++++++ is input to exit the transmission. If it is a normal TCP transmission and the TCP connection breaks, WG222 will give a prompt and will not attempt to reconnect.	
Use	AT+CIPMODE=1	

AT+CIPSTATUS -- Gets the socket status

Execute Command	AT+CIPSTATUS
Response	+CIPSTATUS:<link ID>,<type>,<remote IP>,<remote port>,<local port>,<tetype>
Parameters	• <link ID>: ID of the connection (0~4), used for multiple connections. • <type>: string parameter, "TCP" or "UDP". • <remote IP>: string parameter indicating the remote IP address. • <remote port>: the remote port number. • <local port>: WG222 module local port number. • <tetype>: ‣ 0: WG222 module runs as a client. ‣ 1: WG222 module runs as a server.
Use	AT+CIPSTATUS

AT+CIPSERVER -- Creates/Deletes tcp server

Set Command	AT+CIPSERVER=<en>[,<port>]
Response	OK
Parameters	• <en>: ‣ 0: delete server. ‣ 1: create server. • <port>: port number; 333 by default.
Notes	1、A TCP server can only be created when multiple connections are activated (AT+CIPMUX=1). 2、A server monitor will automatically be created when the TCP server is created. 3、When a client is connected to the server, it will take up one connection and be assigned an ID.
Use	AT+CIPMUX=1 AT+CIPSERVER=1

AT+CIPSTART -- Establishes tcp client connection or udp transmission

Establish TCP Client Connection

Set Command	Single connection (AT+CIPMUX=0)	Multiple Connections (AT+CIPMUX=1)
	AT+CIPSTART=<type>,<remoteIP>,<remoteport>	AT+CIPSTART=<linkID>,<type>,<remoteIP>,<remoteport>
Response	OK or ERROR	
Parameters	• <link ID>: ID of network connection (0~4), used for multiple connections;	

	• <type>: string parameter indicating the connection type: "TCP" or "UDP"; • <remote IP>: string parameter indicating the remote IP address; • <remote port>: the remote port number;
Use	AT+CIPSTART="TCP","xx.cn",8000 AT+CIPSTART="TCP","192.168.4.2",8000

Establish UDP Transmission

Set Command	Single connection (AT+CIPMUX=0)	Multiple Connections (AT+CIPMUX=1)
	AT+CIPSTART=<type>,<remoteIP>,<remote port>[,(<UDP local port>),(<UDP mode>)]	AT+CIPSTART=<linkID>,<type>,<remoteIP>,<remote port>[,(<UDP local port>),(<UDP mode>)]
Response	OK or ERROR If TCP is already connected, the response is: ALREADY CONNECT	
Parameters	• <link ID>: ID of network connection (0~4), used for multiple connections; • <type>: string parameter indicating the connection type: "TCP" or "UDP"; • <remote IP>: string parameter indicating the remote IP address. • <remote port>: the remote port number.	
Note	To use <UDP mode> , <UDP local port> must be set first.	
Use	AT+CIPSTART="UDP","192.168.4.2",8000,1002,2	

AT+CIPCLOSE -- Closes TCP Client/UDP connection

Commands	Set Command for multiple connections	Execute Command for single connection
	AT+CIPCLOSE =<link ID>	AT+CIPCLOSE
Response	OK	
Parameters	• <link ID>: ID number of connections to be closed; when ID=5, all connections will be closed.	
Use	AT+CIPCLOSE	

AT+CIPSEND -- Sends data

Commands	Set Command	Execute Command
	1.Single connection(+CIPMUX=0) AT+CIPSEND=<len> 2.Multiple connections(+CIPMUX=1) AT+CIPSEND=<link ID>,<len>	AT+CIPSEND
Response	Send data of designated length.Wrap return > after the set command. Begin receiving serial data. When the	Wrap return > after executing this command. Enter transparent transmission, with a 100-ms interval between each packet, and a

	requirement of data length is met, the transmission of data starts.If the connection cannot be established or gets disrupted during data transmission, the system returns: ERROR If data is transmitted successfully, the system returns: SEND OK	maximum of 2048 bytes per packet.When a single packet containing ++++++ is received,WG222 returns to normal command mode. Please wait for at least one second before sending the next AT command. This command can only be used in transparent transmission mode which requires single connection.
Parameters	• <link ID>: ID of the connection (0~4), for multiple connections. • <len>: data length, MAX: 2048 bytes.	
Use	AT+CIPSEND	

+IPD -- Receives Network Data

Commands	Single connection(AT+CIPMUX=0)	multiple connections(AT+CIPMUX=1)
	+IPD,<len>,<data>	+IPD, <linkID>,<len>,<data>
Parameters	The command is valid in normal command mode. When the module receives network data, it will send the data through the serial port using the +IPD command. • <link ID>: ID number of connection. • <len>: data length. • <data>: data received.	

Other

Chapter 4. BLE AT Commands

AT+CBPOWER -- Bluetooth Low Energy power

Set Commands	Set Command
	AT+BLEPOWER=<tag>
Response	OK or ERROR
Parameters	• <tag>: ‣ 0: power off ‣ 1: power on
Notes	1、This command before calling any other ble commands 2、Default is power on
Use	AT+CBPOWER=1

AT+CBADDR -- BLE device's address

Commands	Query Command	Set Command
	AT+CBADDR?	AT+CBADDR=<random_addr>
Response	to get the BLE public address. +CBADDR:<public_address> OK	to set the BLE random address. OK
Parameters	• <random_addr>: string parameter, BLE random address; • <public_address>: string parameter, BLE public address;	

Use	//set random address
	AT+CBADDR="08:7f:46:65:1c:f5"
	//get public address
	AT+CBADDR?	

AT+CBNAME -- Sets BLE device's name

Commands	Query Command	Set Command
	AT+CBNAME?	AT+CBNAME=<name>
Response	+CBNAME:<name> OK	OK
Parameters	• <name>: string parameter, the BLE device name	
Notes	1. The default BLE device name is "WG222_BLE". 2. This configuration sets the device name characteristic of GAP service, it is the device name we canget after BLE connection is established, more details are in BLE core v4.2 vol.3 part C 12.1. 3. If user wants to set the device name while advertising, it is the command AT+CBADVDATA that should be used.	
Use	AT+CBNAME="WG222_BLE"	

AT+CBSCANPARAM -- Sets parameters of BLE scanning

Commands	Query Command	Set Command
	AT+CBSCANPARAM?	AT+CBSCANPARAM=<scan_type>,<own_addr_type>,<filter_policy>,<scan_interval>,<scan_window>
Response	+CBSCANPARAM:<scan_type>,<own_addr_type>,<filter_policy>,<scan_interval>,<scan_window> OK	OK or ERROR

Parameters	• <scan_type>: ‣ 0: passive scan ‣ 1: active scan • <own_addr_type>: ‣ 0: public address ‣ 1: random address ‣ 2: RPA public address ‣ 3: RPA random address • <filter_policy>: ‣ 0: BLE_SCAN_FILTER_ALLOW_ALL ‣ 1: BLE_SCAN_FILTER_ALLOW_ONLY_WLST ‣ 2: BLE_SCAN_FILTER_ALLOW_UND_RPA_DIR ‣ 3: BLE_SCAN_FILTER_ALLOW_WLIST_PRA_DIR • <scan_interval>: scan interval • <scan_window>: scan window
Note	<scan_window> CANNOT be larger than <scan_interval>
Use	AT+CBSCANPARAM=0,0,0,100,50

AT+CBSCAN -- BLE scanning

Set Command	AT+CBSCAN=<en>
Response	+BLESCAN:<addr>,<rssi>,<adv_data> OK
Parameters	• <enable>: ‣ 0: stop scanning ‣ 1: start scanning • <addr>: BLE address • <rssi>: signal strength • <adv_data>: advertising data
Use	AT+CBSCAN=1 //start ble scanning AT+CBSCAN=0 //stop ble scanning

AT+CBSCANRSPDATA -- Sets BLE scan response

Set Command	AT+CBSCANRSPDATA=<scan_rsp_data>
Response	OK
Parameters	• <scan_rsp_data>: string parameter, scan response data is a HEX string. For example, to set the response data as 12345, the command should be AT+CBSCANRSPDATA=”3132333435"
Note	The maximum length of the scan response data is 31 bytes.
Use	AT+CBSCANRSPDATA=”3132333435”

AT+CBADVPARAM -- Sets parameters of BLE advertising

Commands	Query Command	Set Command
	AT+CBADVPARAM?	AT+CBADVPARAM=<adv_int_min>,<adv_int_max>,<adv_type>,<own_addr_type>,<channel_map>[,<adv_filter_policy>,<peer_addr_type>,<peer_addr>]
Response	+BLEADVPARAM:<adv_int_min>,<adv_int_max>,<adv_type>,<own_addr_type>,<channel_map>,<adv_filter_policy>,<peer_addr_type>,<peer_addr> OK	OK
Parameters	• <adv_int_min>: minimum value of advertising interval; range: 0x0020 ~ 0x4000 • <adv_int_max>: maximum value of advertising interval; range: 0x0020 ~ 0x4000 • <adv_type>: ‣ 0: ADV_TYPE_IND ‣ 1: ADV_TYPE_DIRECT_IND_HIGH ‣ 2: ADV_TYPE_SCAN_IND ‣ 3: ADV_TYPE_NONCONN_IND • <own_addr_type>: own BLE address type ‣ 0: BLE_ADDR_TYPE_PUBLIC ‣ 1: BLE_ADDR_TYPE_RANDOM • <channel_map>: channel of advertising ‣ 1: ADV_CHNL_37 ‣ 2: ADV_CHNL_38 ‣ 4: ADV_CHNL_39 ‣ 7: ADV_CHNL_ALL • [<adv_filter_policy>](optional parameter): filter policy of advertising ‣ 0: ADV_FILTER_ALLOW_SCAN_ANY_CON_ANY ‣ 1: ADV_FILTER_ALLOW_SCAN_WLST_CON_ANY	

	‣ 2: ADV_FILTER_ALLOW_SCAN_ANY_CON_WLST ‣ 3: ADV_FILTER_ALLOW_SCAN_WLST_CON_WLST • [<peer_addr_type>](optional parameter): remote BLE address type ‣ 0: PUBLIC ‣ 1: RANDOM • [<peer_addr>](optional parameter): string parameter,remote BLE address
Note	<adv_filter_policy>,<peer_addr_type>,<peer_addr> these three parameters should be set together, or be omitted together.
Use	AT+CBADVPARAM=50,50,0,0,7,0,0,"12:34:45:78:66:88"

AT+CBADVDATA -- Sets advertising data

Set Command	AT+CBADVDATA=<adv_data>
Response	OK
Parameters	• <adv_data>: string parameter, adv data is a HEX string. For example, to set the advertising data as device name WG222_BLE, the command should be AT+CBADVDATA=”0201060A0957473232325F424C45”
Note	The maximum length of the advertising data is 31 bytes.
Use	AT+CBADVDATA=”0201060A0957473232325F424C45”

AT+CBADV -- BLE advertising

Execute Command	AT+CBADV=<en>
Response	OK
Parameters	• <en>: ‣ 0: stop advertising ‣ 1: start advertising
Notes	1. If advertising parameters are NOT set by command AT+CBADVPARAM=<adv_parameter> the defaultparameters will be used. 2. If advertising data is NOT set by command AT+CBADVDATA=<adv_data>, the all zeros data will be sent.
Use	AT+CBADV=1

AT+CBSSEND -- BLE slave send data to master

Execute Command	AT+CBSSEND=<data>
Response	OK
Parameters	• <data>: string parameter
Use	AT+CBSSEND="hello ble master"

+CBRECV -- BLE slave recv data from master

Command	+CBRECV:<data>
Parameters	• <data>: data is slave recv data from master
Notes	1、Service UUID 16bit 0xFFA0 and Characteristic UUID 16bit 0xFFA1 is ble config WiFi station connect to SoftAP setting channel; 2、Service UUID 16bit 0xFFB0 and Characteristic UUID 16bit 0xFFB1 is ble data transmission channel

BLE master config wifi station connect SoftAP setting

Service UUID 16bit 0xFFA0 and Characteristic UUID 16bit 0xFFA1 is ble config WiFi station connect to SoftAP setting channel, command is 16 binary system

Describe	Command	Length	Parameter
ssid	0x01	max len is 32 bytes	ssid
password	0x02	len is 8 ~ 64 bytes	password
wireless mode	0x03	1byte	0x00 is 2.4G; 0x01 is 5G;
Use	0x0108534B594C41423033 //setting station connect SoftAP ssid is SKYLAB03,len is 8 bytes 0x020A31323334353637383930 //setting password is 1234567890,len is 10 bytes 0x030101 //setting wireless mode is 5G		

AT+CBCONN -- Establishes BLE connection

Set Commands	AT+CBCONN=<addr>
Response	OK or ERROR
Parameters	• <addr>: string parameter, device address
Use	AT+CBCONN=”24:0a:c4:09:34:23”

AT+CBCONNPARAM -- Updates parameters of BLE connection

Commands	Query Command	Set Command
	AT+CBCONNPARAM?	AT+CBCONNPARAM=<min_interval>,<max_interval>,<latency>,<timeout>
Response	+CBCONNPARAM:<min_interval>,<max_interval>,<latency>,<timeout> OK	OK or ERROR

Parameters	• <min_interval>: minimum value of connecting interval; range: 0x0006 ~ 0x0190 • <max_interval>: maximum value of connecting interval; range: 0x0006 ~ 0x0190 • <latency>: slave latency for the connection; range: 0x0000 ~ 0x01F3 • <timeout>: supervision timeout for the LE link; range: 0x000A ~ 0x0C80
Note	This commands supports the client only when updating its connection parameters. Of course, the connection has to be established first.
Use	AT+CBCONNPARAM=12,14,1,500

AT+CBDISCONN -- Disconnect BLE connection

Execute Command	AT+CBDISCONN
Response	OK
Parameters	--
Use	AT+CBDISCONN

AT+CBDATALEN -- Sets BLE Data Packet Length

Set Commands	AT+CBDATALEN=<tx_octets>,<tx_time>
Response	OK or ERROR
Parameters	• <tx_octets>: TX octets; range: 0x001B ~ 0x00FB • <tx_time>: TX time; range: 0x0148 ~ 0x0848
Use	AT+CBDATALEN=48,1280

AT+CBCFGMTU -- GATT MTU length

Set Commands	AT+CBCFGMTU=<mtu_size>
Response	OK or ERROR
Parameters	• <mtu_size>: MTU length
Note	Only the client can call this command to set the length of MTU. However, the BLE connection has to beestablished first.
Use	AT+CBCFGMTU=300

Other

Chapter 5. Contact us

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