AT command Set

ZRG3M

Version 1.0

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v1.0

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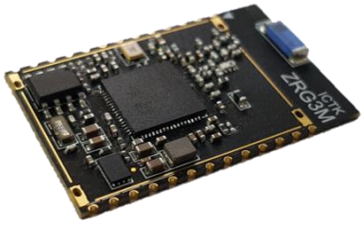
1. Overview

The ZRG3M is a Wi-Fi module that consists of the MT7697 and G3 security chip. ZRG3M sends and receives AT command messages during operation. This document provides the reference to the AT command set of ZWG3M and the detailed descriptions on the communication interface between ZRG3M and external host processor.



ZRG3M : Wi-Fi & BLE IoT Module

The AT commands and the features described by the present document are supported by the ZRG3M with firmware version equal or greater than the version below

Firmware version : **LE-201124C** (IoT Core)

Firmware version : **LE-201124D** (FreeRTOS Demo)

2. Command Description

Each command set contains four types of AT commands.

Type	Command format	Description
Test Command	AT+[XX] =?	Queries the Set Commands' internal parameters.
Query Command	AT+[XX]?	Return the current value of parameters
Set Command	AT+[XX] =[....]	Set the value of user-defined parameters in commands.

*note: Not all AT Commands support all three variations mentioned above.

3. Command Table

Commands	Description
AT+SYS=REBOOT	Restart the module.
AT+ENVDM=2	Initialize NV with default settings.
AT+VER	Get ZRG3M firmware version.
AT+AWS_EP	Set the AWS host URL.
AT+AWS_PN	Set port number.
AT+AWS_TN	Set the AWS Thing name.
AT+AWS_CID	Set the AWS Client ID.
AT+AWS_PUB	Publish messages to user directed topics.
AT+AWS_SUB	Subscription to user directed topics
AT+AWS_UNSUB	Unsubscribe to user directed topic.
AT+AWS_UPDATE	Publish updates to the AWS IoT Device Shadow.
AT+AWS_DELTA	Subscription to the AWS IoT Device Shadow Delta
AT+AWS_CONN	Connect/ Disconnect to AWS with TLS
AT+WIFI_SSID_STA	Set the SSID of the target STA.
AT+WIFI_SSID_AP	Set the SSID of the target AP.
AT+WIFI_PW_STA	Set the Password of the target STA.
AT+WIFI_PW_AP	Set the Password of the target AP.
AT+WIFI_MAC_STA	Set the MAC address of the STA.
AT+WIFI_MAC_AP	Set the MAC address of the AP.
AT+WIFI_MODE	Set the trasmission mode.
AT+WIFI_COUNTRY	Set WiFi Contry Code.
AT+WIFI_REGION	Set WiFi Region Code.
AT+WIFI_IP_STA	Get the current STA IP Address.
AT+WIFI_IP_AP	Get the current AP IP Address.
AT+WIFI_SECMODE_STA	Get the current STA Security mode.
AT+WIFI_SECMODE_AP	Get the current AP Security mode.

4. Basic AT Commands

AT+SYS=REBOOT

Command	AT+SYS=REBOOT

Response	OK
Note	This command reset the module with configured Wi-Fi and AWS parameters.

AT+ENVDM=2

Command	AT+ENVDM=2
Response	OK
Note	This commands initialize NV with default settings.

AT+VER

Command	AT+VER?
Response	+VER:b1910a OK
Note	This commands shows current firmware version.

5. AWS AT Commands

AT+AWS_EP

Command	Q) AT+AWS_EP? S) AT+AWS_EP=[end_point]
Parameters	[end_point] : host url address max length : 255byte
Response	Q)+AWS_EP:abcde-ats.iot.ap-northeast-.amazonaws.com OK S) OK
Example	AT+AWS_EP=aaabbbcccdddee-ats.iot.ap-northeast-2.amazonaws.com

AT+AWS_PN

Command	Q) AT+AWS_PN? S) AT+AWS_PN=[port_num]
Parameters	[port_num] : AWS Port number max length : 65535
Response	Q)+AWS_PC:8883 OK S) OK
Example	AT+AWS_PN=8883

AT+AWS_TN

Command	Q) AT+AWS_TN? S) AT+AWS_TN=[thing_name]
Parameters	[thing_name] : AWS Thing name max length : 20 byte
Response	Q)+AWS_TN:thignname OK S) OK
Example	AT+AWS_TN=ZRG3M_thing

AT+AWS_CID

Command	Q) AT+AWS_CID? S) AT+AWS_CID=[clientID]
Parameters	[clientID] : AWS Client ID max length : 80 byte
Response	Q)+AWS_CID: Client1 OK S) OK
Example	AT+AWS_CID=ZRG3M_clientID

AT+AWS_PUB

Command	AT+AWS_PUB=[topic],[QoS],[Payload]
Parameters	[topic] : topic name max length : 80 byte [QoS] : 0,1 (2 - not available) 0- This client will not acknowledge to the Drive Gateway that messages are received. 1- This client will acknowledge to the Device Gateway that messages are received. [Payload] : MQTT payload in JSON format max length : 300 byte
Response	SUCCEED OK EVET:PUB OK
Example	AT+AWS_PUB=$aws/things/ZRG3M_001/shadow/update,0, {"state":{"reported":{"temp":10}}}

AT+AWS_SUB

Command	AT+AWS_SUB=[topic],[QoS]
Parameters	[topic] : topic name max length : 80 byte [QoS] : 0,1 (2 - not available) 0- This client will not acknowlege to the Drive Gateway that messages are received. 1- This client will acknowlde to the Device Gateway that messages are

	received.
Response	SUCCEED OK EVERT:SUB OK *<When received the subscribe message>* EVENT:SUB,$aws/things/ZRG3M_001/shadow/update, your_message_here
Example	AT+AWS_SUB=$aws/things/ZRG3M_001/shadow/update,0

AT+AWS_UNSUB

Command	AT+AWS_SUB=[topic]
Parameters	[topic] : topic name max length : 80 byte
Response	SUCCEED OK EVERT:UNSUB OK
Example	AT+AWS_UNSUB=$aws/things/ZRG3M_001/shadow/update

AT+AWS_UPDATE

Command	AT+AWS_SUB=[act],[key],[type],[value]
Parameters	[act] : 0 reported 1 desired [key] : item name used for reported/desired state of the thing [type] : 1- int8 2- uint8 3- int16 4- uint16 5- int32 6-uint32 7- float 8- Boolean 9- String *Object and double is not supported [value] : item value which to be desired/reported state of the thing.
Response	SUCCEED OK EVERT:UPDATE OK EVENT:UPDATE Accepted
Example	AT+AWS_UPDATE=0,temp,2,23

AT+AWS_Delta

Command	AT+AWS_DELTA= [key],[type]
Parameters	[key] : item name used for reported/desired state of the thing [type] : 1- int8 2- uint8 3- int16 4- uint16 5- int32 6-uint32 7- float 8- Boolean 9- String *Object and double is not supported
Response	SUCCEED OK EVERT:DELTA OK
Example	AT+AWS_DELTA=temp,2

AT+AWS_CONN

Command	AT+AWS_CONN=[connection]
Parameters	[connection] : 1 Connect to AWS 0 Disconnect to AWS
Response	SUCCEED OK EVERT:SUB OK
Example	AT+AWS_CONN=1

6. Wi-Fi AT Commands

AT+WIFI_SSID_STA

Command	Q) AT+WIFI_SSID_STA? S) AT+WIFI_SSID_STA=[SSID]
Parameters	[SSID] : SSID of AP when module runs as a Station or Repeater mode. max length : 32 byte
Response	Q)+WIFI_SSID_STA:ICTK_AP OK S) OK
Example	AT+WIFI_SSID_STA=ICTK_AP

AT+WIFI_SSID_AP

Command	Q) AT+WIFI_SSID_STA? S) AT+WIFI_SSID_STA=[SSID]
Parameters	[SSID] : SSID when module runs as a AP or Repeater mode. max length : 32 byte
Response	Q)+WIFI_SSID_AP:ZRG3M OK S) OK
Example	AT+WIFI_SSID_AP=ZRG3M

AT+WIFI_PW_STA

Command	Q) AT+WIFI_PW_STA? S) AT+WIFI_PW_STA=[passphrase]
Parameters	[passphrase] : Pass phrase of AP when module runs as a Station or Repeater mode. length : >8 byte , < 63 byte
Response	Q)+WIFI_PW_STA=12345678 OK S) OK
Example	AT+WIFI_PW_STA=12345678

AT+WIFI_PW_AP

Command	Q) AT+WIFI_PW_STA? S) AT+WIFI_PW_STA=[passphrase]
Parameters	[passphrase] : pass phrase when module runs as a AP or Repeater mode. length : >8 byte , < 63 byte
Response	Q)+WIFI_PW_AP=12345678 OK S) OK
Example	AT+WIFI_PW_AP=12345678

AT+WIFI_MAC_STA

Command	Q) AT+WIFI_MAC_STA? S) AT+WIFI_MAC_STA=[mac_address]
Parameters	[mac_address] : MAC Address of the ZRG3M Station
Response	Q)+WIFI_MAC_STA=00:00:00:11:22:33 OK S) OK
Example	AT+WIFI_MAC_STA=00:00:00:11:22:33

AT+WIFI_MAC_AP

Command	Q) AT+WIFI_MAC_AP? S) AT+WIFI_MAC_AP=[mac_address]
Parameters	[mac_address] : MAC Address of the ZRG3M AP
Response	Q)+WIFI_MAC_AP=00:00:00:11:22:33 OK S) OK
Example	AT+WIFI_MAC_AP=00:00:00:11:22:33

AT+WIFI_Mode

Command	Q) AT+WIFI_Mode? S) AT+WIFI_Mode=[mode]
Parameters	[mode]] : 1- station 2- AP 3- Repeater

Response	Q)+WIFI_MODE: RPT OK S) OK
Example	AT+WIFI_MODE=1

AT+WIFI_COUNTRY

Command	Q) AT+WIFI_COUNTRY? S) AT+WIFI_COUNTRY=[country_code]
Parameters	[country_code] : Enter your country code KR-Korea, TW-Taiwan, US-United States , CN- China
Response	Q)+WIFI_COUNTRY: KR OK S) OK
Example	AT+WIFI_COUNTRY=KR

AT+WIFI_REGION

Command	Q) AT+WIFI_REGION? S) AT+WIFI_REGION=[region_code]
Parameters	[country_code] : Enter your region Range 0~22 , 30~37
Response	Q)+WIFI_REGION: 5 OK S) OK
Example	AT+WIFI_REGION=5

AT+WIFI_IP_STA

Command	AT+WIFI_IP_STA?
Response	mode: dhcp ip:111.222.3.44, netmask:555.555.555.0, gateway:111.111.0.1

AT+WIFI_SECMODE_STA

Command	AT+WIFI_SECMODE_STA?
Response	[ssid]: ICTK_STA, [Auth_Mode]: 7,[encrypt_type]: 6 AUTH MODE: 0 open, 4 WPA-PSK, 7 WPA2-PSK, 9 WPA-PSK/WPA-PSK2 ENC TYPE: 0 WEP, 1 WEP, 4 TKIP, 6 AES, 8 TKIP/AES

AT+WIFI_SECMODE_AP

Command	AT+WIFI_SECMODE_AP?
Response	[ssid]: ICTK_AP, [Auth_Mode]: 7,[encrypt_type]: 6 AUTH MODE: 0 open, 4 WPA-PSK, 7 WPA2-PSK, 9 WPA-PSK/WPA-PSK2 ENC TYPE: 0 WEP, 1 WEP, 4 TKIP, 6 AES, 8 TKIP/AES

7. Document Version History

Version	Date	Description
V1.0	2020.11.24	Initial Release

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