SIM7020 Series_LWM2M_Application Note

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About Document

Document Information

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Revision	Date	Owner	Status / Comments
1.00	April 10, 2018	Linshu Guan	First Release.
1.01	June 7, 2018	Albert Meng	Revised
1.02	May 10, 2019	Wenjie.lai	Update bear configuration

Related Documents

[1] SIM7020 Series AT Command Manual V1.03

This document applies to the following products:

Name	Type	Size (mm)	Comments
SIM7020C	NB1	17.6*15.7	Band 1/3/5/8
SIM7020E	NB1	17.6*15.7	Band 1/3/5/8/20/28
SIM7020G	NB2	17.6*15.7	Band 1/2/3/4/5/8/12/13/17/18/19/20/25/26/28/66/70/71/85
SIM7060G	NB2+GNSS	24*24	Band 1/2/3/4/5/8/12/13/17/18/19/20/25/26/28/66/70/71/85

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1 Purpose of this document

Based on module AT command manual, this document will introduce LWM2M application process.

Developers could understand and develop application quickly and efficiently based on this document.

2 LWM2M Introduction

The full name of LwM2M is Lightweight Machine-To-Machine, which is an Internet of things protocol defined by OMA (open Mobile Alliance). It can be used on embedded devices with limited resources (including storage, power consumption, etc.).

The LwM2M protocol has the following features:
1) The protocol is based on the REST architecture.
2) The protocol delivery is achieved through the CoAP protocol.
3) The protocol defines a compact, efficient and scalable data model.

LWM2M defines three logical entities:
1) LWM2M Server.
2) LWM2M client is responsible for executing the server commands and reporting the execution results.
3) LWM2M boot server The Bootstrap server is responsible for configuring the LWM2M client.

3 Bearer Configuration

Usually module will register PS service automatically.

3.1 PDN Auto-activation

AT Command	Response	Description
AT+CPIN?	+CPIN:READY OK	Check SIM card status
AT+CSQ	+CSQ: 20,0 OK	Check RF signal

AT+CGREG?	+CGREG: 0,1	Check PS service
	OK	
AT+CGACT?	+CGACT: 1,1	Activated automatically
	OK	
AT+COPS?	+COPS: 0,2,"46000",9	Check operator information
		46000 is Numeric <oper>
	OK	9 is NB-IOT network
AT+CGCONTRDP	+CGCONTRDP: 1,5,"cmnbiot","100.80.73.123.255.255.255.0"	Attached PS domain and got IP address automatically
	OK	

3.2   APN Manual configuration

If not attached automatically, could configure correct APN setting.

AT Command	Response	Description
AT+CFUN=0	+CPIN: NOT READY	Disable RF
	OK	
AT*MCGDEFCONT="IP","cmnbiot"	OK	Set the APN manually
AT+CFUN=1	OK	Enable RF
	+CPIN: READY	
AT+CGREG?	+CGREG: 0,1	Inquiry PS service
	OK	
AT+CGCONTRDP	+CGCONTRDP: 1,5,"cmnbiot","100.80.73.123.255.255.255.0"	Attached PS domain and got IP address automatically
	OK	

4 LWM2M Service

AT Command	Response	Description
AT+CLMCONF="182.150.27.21","5683","1222","sim7020test","IPv4",100	+CLMCONF: 0	Create LWM2M connection.
	OK	If succeed, LWM2M server instance id will return
AT+CLMADDOBJ=0,5,2,8,0,1,2,3,4,5	OK	Create object

,6,7

Command	Response	Description
AT+CLMDELOBJ=0,5	OK	Delete object
	+CLMREAD: 0,5,2,1,1	Got READ message
AT+CLMREAD=0,5,2,1,1,"S",5,"abcde"	OK	Read
	+CLMWRITE: 0,5,2,1,1,"S",4,"abcd"	Got WRITE message
AT+CLMWRITE=0,0	OK	Write
	+CLMEXECUTE: 0,5,2,1,3,"abc"	Got execute message
AT+CLMEXECUTE=0,0	OK	Execute
	+CLMOBSERVE: 0,0,5,2,3	Got OBSERVE message
	+CLMPARAMETER:0,5,2,3,1,0,200,300,2.0,5.0,1	With parameters
AT+CLMNOTIFY=0,5,2,3	OK	Notify configuration
AT+CLMDEL=0	OK	Disconnect and delete instance

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