



SIM7020 Series_TLS_Application Note

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About Document

Document Information

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Revision	Date	Owner	Status / Comments
1.00	April10, 2018	Chengliang Wang	First Release.
1.01	June8, 2018	Albert Meng	Revised

Related Documents

[1] SIM7020 Series AT Command Manual V1.0.pdf

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

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Contents

About Document	2
Document Information.....	2
Revision History.....	2
Related Documents.....	2
Contents.....	3
1 Purpose of this document	4
2 Bearer Configuration	4
2.1 PDN Auto-activation.....	4
2.2 APN Manual configuration.....	5
3 TLSProcedure	6
Contact.....	8

1 Purpose of this document

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

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

2 Bearer Configuration

Usually module will register PS service automatically.

2.1 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 OK	Check PS service
AT+CGACT?	+CGACT: 1,1 OK	Activated automatically
AT+COPS?	+COPS: 0,0,"CHN-UNICOM",9 OK	Check operator info CHN-UNICOM is operator's name 9 is NB-IOT network
AT+CGCONTRDP	+CGCONTRDP: 1,5,"shnbiot","10.250.0.213.255.255.0" OK	Get APN and IP address from network

2.2 APN Manual configuration

If not attached, could configure correct APN setting.

AT Command	Response	Description
AT+CFUN=0	+CPIN: NOT READY OK	Disable RF
AT*MCGDEFCONT="IP","3GNET"	OK	Configure new APN
AT+CFUN=1	OK +CPIN: READY	Enable RF
AT+CGREG?	+CGREG: 0,1 OK	Inquiry PS service
AT+CGCONTRDP	+CGCONTRDP: 1,5,"3GNET","10.250.0.253.255.255.0" OK	Attached PS domain and got IP address automatically

3 TLSProcedure

AT Command	Response	Description
AT+CTLSCFG=1,1,"182.150.27.42",2,50090,3,0,4,0,5,2	OK	Configure TLS server instance, parameters include, <tid>:1 ;<server name>: 1; server ip: 182.150.27.42; <prot>: 2; <port>: 50090; <socket type>:3 for 0 –tcp; <Authentication mode>: 4, value is 0-none; <debug level> : 5, value is 2.
AT+CTLSCFG=1,6,1344,1,"-----BEGIN CERTIFICATE-----\r\nMIIDhzCCAm+gAwIBAgI BADANBgkqhkiG9w0BAQUFADA7MQswCQY DVQQGEwJOTDER\r\nMA8GA1UEChMIUG9s YXJTU0wxGTAXBgNVBAMTEFBvbGFyU1NMI Fric3QgQ0EwHhcN\r\nMTEwMjE5MTQ0ND AwwHcNMjEwMjE5MTQ0NDAwWjA7MQswC QYDVQQGEwJOTDERMA8G\r\nA1UEChMIU G9sYXJTU0wxGTAXBgNVBAMTEFBvbGFyU1 NMIFRlc3QgQ0EwggeiMA0G\r\nCSqGSIb3DQ EBAQUAA4IBDwAwggEKAoIBAQDA3zf8F7v gl p0/ht6WMn1EpRagzSHx\r\nnmdTs6st8GFgllK Xsm8WL3xoemTiZhx57wI053zhdchGhH057Zk +i5clHFzqMwUqny\r\n50BwFMtEonLLwuVA+ T7lpg6z+exKY8C4KQB0nFc7qKUEk"	OK	Configure TLS server CA, parameters: <tid>:1 <server CA certificate>:6 <Certificate length>: 1344 bytes <more>: 1
AT+CTLSCFG=1,6,1344,1,"HHxvYPZP9al4jwqj +8n\r\nYMPGn8u67GB9t+aEMr5P+1gmIgNb 1LTV+/Xjli5wwOQuvfwu7uJBVcA0Ln0kcmnL\r\nr7EUQIN9Z/SG9jGr8XmksrUuEvmEF/Biby c+E1ixVA0hmnM3oTDPb5Lc9un8rNsu\r\nKN F+AksjoBXyOGVkcEoMbo4bF6BxyLObyavpw /LPh5aPgAlynpIYb6LVAgMBAAGj\r\nngZUwgZ lwDAYDVR0TBAUwAwEB/zAdBgNVHQ4EFgQ UtFrkpbPe0IL2udWmlQ/rPrzH\r\nf8wYwYD VR0jBFwwWoAUtFrkpbPe0IL2udWmlQ/rPrz H/f+hP6Q9MDsxCzAJBgNV\r\nBAYTAK5MMR EwDwYDVQQKEwhQb2xhcINTTDEZMBcGA1 UEAxMQUG9sYXJTU0wgVGZz\r\nndCBDQYIB ADANBgkqhkiG9w0BAQUFAAOCAQEAuP1U2 ABUKlslsCfdl"	OK	

<p>AT+CTLSCFG=1,6,1344,0,"c2i94QHHYeJ\r\nSs R4EdgHtdciUI5I62J6Mom+Y0dT/7a+8S6MV MCZP6C5NyNyXw1GWY/YR82XTJ8H\r\nDBJi CTok5DbZ6SzaONBzdWHXwWwmi5vg1dxn7 YxrM9d0IjxM27WNKs4sDQhZBQkF\r\nnpjmfs 2cb4oPI4Y9T9meTx/lvdkRYEug61Jfn6cA+qHp yPYdTH+UshITnmp5/Ztkf\r\nnm/UTSLBNFNH esiTZeh31NcxYGdHSme9Nc/gfidRa0FLOCFW xRIFqAI47zG9jAQCZ\r\n7Z2mCGDNMhjQc+B Ycdnl0IPXjdDK6V0qCg1dVewhUBcW5gZkzV7 e9+DpVA==\r\n-----END CERTIFICATE-----"</p>	<p>OK</p>	<p>Configure TLS server CA. No more input after this.</p>
<p>AT+CTLSCONN=1,1</p>	<p>OK</p>	<p>Create TLS connection Parameters <tid>: 1 <cid>:1</p>
<p>AT+CTLSEND=1,75,"GET https://182.150.27.42/test.html HTTP/1.1\r\nHost: 182.150.27.42\r\n\r\n"</p>	<p>OK</p>	<p>Send data, parameters <tid>:1 <payload length>: 75 <payload></p>
	<p>+CTLSEND:1,69</p>	<p>URC report <tid> : 1 <ret> : 69</p>
<p>AT+CTLSRECV=1,100,801</p>	<p>OK +CTLSRECV:1,106,"HTTP/1.1 200 OK\r\nDate: Thu, 30 Nov 2017 11:16:24 GMT\r\nServer: Apache/2.4.27 (Win32) OpenSSL/1.0.2\r\n"</p>	<p>Receive data, parameters <tid>:1 <data length>: 100 bytes <code type>: 801 (string)</p>
<p>AT+CTLSCLOSE=1</p>	<p>OK +CTLSCLOSE:1,1</p>	<p>Terminate TLS connection Parameters, <tid>:1 URC report: <tid>:1 <ret>:1, means succeed</p>

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