



SIM7020 Series_MQTT(S)_Application Note

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Related Documents

[1] SIM7020 Series AT Command Manual V1.03

This document applies to the following products:

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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 MQTT Introduction

MQTT (Message Queue Telemetry Transport) is a messaging protocol based on the publish/subscribe paradigm under the ISO standard (ISO/IEC PRF 20922). It works on the TCP/IP protocol suite and is a publish/subscribe messaging protocol designed for remote devices with poor hardware performance and poor network conditions.

The MQTT protocol is a protocol designed for the communication of remote sensors and control devices with limited computing power and working on low-bandwidth, unreliable networks. It has the following main features:

- 1) Use the publish/subscribe message mode to provide one-to-many message publishing and uncouple the application;
- 2) Message transmission for shielding the payload content;
- 3) Provide network connection using TCP/IP;
- 4) There are three types of message publishing service quality:
 - "At most once," message publishing relies entirely on the underlying TCP/IP network. Message loss or duplication can occur. This level can be used in the following situations, environmental sensor data, loss of a read record does not matter, because there will be a second transmission in the near future.
 - "At least once" to ensure that the message arrives, but message duplication may occur.
 - "Only once" to ensure that the message arrives once. This level can be used in situations where repeated or missing messages can result in incorrect results.
- 5) small transmission, low overhead (fixed length of the head is 2 bytes), protocol exchange is minimized to reduce network traffic;

- 6) Use the Last Will and Testament features to notify the parties about the mechanism of client abort.

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 OK	Check PS service
AT+CGACT?	+CGACT: 1,1 OK	Activated automatically
AT+COPS?	+COPS: 0,2,"46000",9 OK	Check operator information 46000 is Numeric <oper> 9 is NB-IOT network
AT+CGCONTRDP	+CGCONTRDP: 1,5,"cmnbiot","100.80.73.123.255.255.0" OK	Attached PS domain and got IP address automatically

3.2 APN Manual configuration

If not attached automatically, could configure correct APN setting.

AT Command	Response	Description
AT+CFUN=0	+CPIN: NOT READY OK	Disable RF
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 MQTT Service

4.1 MQTT Connect to a general MQTT server

AT Command	Response	Description
AT+CMQNEW=""test.mosquitto.org", "1883", 12000, 100	+CMQNEW: 0 OK	Create MQTT connection If succeed, MQTT id will return
AT+CMQCON=0,3,"myclient", 600, 0,0	OK	Send MQTT request
AT+CMQSUB=0,"mytopic", 1	OK	send subscribe topic
AT+CMQPUB=0,"mytopic", 1,0,0,8, "31323334"	OK	Public topic and message
	+CMQPUB: 0,"mytopic", 1,0,0,8, "31323334"	Got subscribed topic and message down from server
AT+CMQUNSUB=0,"mytopic"	OK	Unsubscribe topic
AT+CMQDISCON=0	OK	Disconnect MQTT connection with id

4.2 MQTT Connect Aliyun

AT Command	Response	Description
AT+CMQNEW="productKey.iot-as-mqtt.cn-shanghai.aliyuncs.com", "1883", 12000, 1024	+CMQNEW: 0 OK	Create TCP connection If succeed, MQTT id will return
AT+CMQALICFG=0,"productKey", "deviceName", "deviceSecret"	OK	Set the Alibaba Cloud device parameters, productkey, deviceName, and deviceSecret. These three parameters can be obtained from the Alibaba Cloud website.

AT+CMQALICON=0,600,1	OK	Send MQTT request to connect Aliyun.
AT+CMQSUB=0,"/productKey/deviceName/TEST1 ",1	OK	To subscribe to a topic, you need to subscribe to create this topic in the TOPIC list on the Alibaba Cloud device and give the device permissions for publishing and subscribing. Note that productKey and deviceName need to be replaced with these two values for the corresponding device.
AT+CMQPUB=0,"/productKey/deviceName/TEST1",1,0,0,16,"3132333435363738"	OK	Public topic and message
+CMQPUB:0,"/productKey/deviceName/TEST1",1,0,0,16,"3132333435363738"		Got subscribed topic and message down from server
AT+CMQUNSUB=0,"/productKey/deviceName/TEST1"	OK	Unsubscribe topic
AT+CMQDISCON=0	OK	Disconnect MQTT connection with id

5 MQTT with SSL

5.1 Connect using AT+CSETCA to set the certificate

AT Command	Response	Description
First Package: AT+CSETCA=0,1312,1,0,"-----BEGIN CERTIFICATE-----\r\nMIIDqjCCApKgAwIBAgIJAlImRX1 D4JhMMA0GCSqGSIb3DQEBDQUAMGoxFzAVBgNVB AMMDkFuIE1RVFQgYnJva2VyMRYwFAYDVQQKDA1Pd 25UcmFja3Mub3JnMRQwEgYDVQQLDAtnZW5lcmF0 ZS1DQTEhMB8GCSqGSIb3DQEJARYSbm9ib2R5QGv4 YW1wbGUubmV0MB4XDTE4MDgwMTA5NTIzMloXD TMyMDcyODA5NTIzMlowajEXMBUGA1UEAwOQW 4gTVFUVCBicm9rZXIxFjAUBGNVBAoMDU93blRyYWN rcy5vcmcxFDASBgNVBAsMC2dlbmVvYXRILUNBMSEw HwYJKoZIhvcNAQkBFhJub2JvZHIAXHhbXBsZS5uZXQ wggEiIMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoI BAQDBdvA5HF8hcvvZKCQjCezZQPpPzHUcqSQQCTcpJ nC2kb5DvA2EVnZ6bLKBtcfkv+40AZK3VXWoof0dmZw	OK	Use the "AT+CSETCA" command to set the server certificate The first parameter 0 represents the server certificate set. The second parameter 1312 represents the length of the server certificate. The third parameter 1 indicates that there is still unpacking data to be sent later, and if 0, it is the last packet.

hY1XTgxVMLxFeQwp9eW5h2UnDS278qcQsT93z9RZf
Vi7jyCc0eS6DQaMOLuKMefYM8dYYN73PWVTZejtRm
Bp8PrDlk/6xXqGFIIzGKRMboNjNc1HXd/7Cv0I27WYag
oRsArHC2rdoS+soxa+i9Cvdbp0dpjYnly6sNDV5mST2N
nK/tNtMiFQRKv1XWSRosGlyJxaHK6sEuFqspoC71IJzq
7lznOgxbe8v8Zyya2zXczCR4h05Kjf4vpLift3oWgxaD10
ZAgMBAAGjUzBRMBOGA1UdDgQWBBSHCqK2sT9GrZ
0n59I8b7Btm9IaPTAFBgNVHSMEGDAWgBShCqK2sT9
GrZ0n59I8b7Btm9IaPTAPBgNVHRMBAf8EBTADAQH/
MA0GCSqGSIB3DQEBDQUAA4IBAQA8tYQuZ9rr3T7Q
c+jiIK7yVtT5dSTyOOWYNjNBMD4I8DXadWpSeuj36"

Second Package:

AT+CSETCA=0,1312,0,0,"qfwTpSdAtMoJcUv2oAxAWN OK
9dSVkHxgfsdv1j/O6nstC4cErYfT6/pd603V+Fr+b+idk/
0LdxzhJfYI3uYVnKZrRarcPu0n1WAF0xDIpxAmXrDoz
CD4mHpOIIP/F8TFbDIMigyZ+QOPC+32KJZLq+MRnz0
DxGPsQ+z0NL/IRFmhwYkirncwhRdomeC+SePmL15TC
Q1YSzr/iSaYWMG55N0KqJdfY43xNuDL+kFT3PUQXb4
1Q4E/0+ChnAgs681lc+TVDceD6RPnHjGnyFikjXlWw5
eNtH9-----END CERTIFICATE-----"

First Package:

AT+CSETCA=1,1520,1,0,"-----BEGIN OK
CERTIFICATE-----\r\nMIIERjCCAy6gAwIBAgIJAJUEubEo
Kmu2MA0GCSqGSIB3DQEBDQUAMGoxFzAVBgNVBA
MMMDkFulE1RVFQgYnJva2VyMRYwFAYDVQQKDA1Pd2
5UcmFja3Mub3JnMRQwEgYDVQQLDAtnZW5lcmFOZS
1DQTEhMB8GCSqGSIB3DQEJARYSbm9ib2R5QGv4Y
W1wbGUubmV0MB4XDTE4MDgwMTA5NTc0NloXDT
MyMDcyODA5NTc0NlowEzERMA8GA1UEAwwlbnJlbG
llbnQwggEiMA0GCSqGSIB3DQEBAQUAA4IBDwAwggE
KAoIBAQCvEKXoe2dkjuc1LMKQmwLELr175K+sKsdJ3
NylD/mwPr+Ls8esJPgtEwS7zcPKczl0P5oVhpeGNmkp4
Ti+9Xy5UcbU3lpjCnzFdvDUwg64fsByrRyE0T8NP0Kw+
Og0XBwX/3s/yg8k3SmXcp54+uoujRnTdtBbgiNbdTKyT
394d9nxVBRHeo5YmHi3GN8KRL7IujC6LB6sNokepm
WDRt5orc3shJ0Hk6pNEdQpo4vt4A/ISiMB89JPpq8x3f
4c+bnNWIUGujcWJBdgvYFxxnoM5odQU+wbmEEZl4+
16BN0obFxiYtrOHs+Xk6+CWi3/4/bXb9FtQE1LQMyp
wdDjfq7AgMBAAGjggFEMIIBQDAMBgNVHRMBAf8EA
jAAMAKGA1UdEQQCMAAwEQYJYIZIAyb4QgEBBAQD
AgWgMB0GA1UdJQQWMBQGCCsGAQUFBwMCBggr
BgEFBQcDBDALBgNVHQ8EBAMCA6gwKAYJYIZIAyb4Q
gENBBsWGUNsaWVudCBCcm9rZXIlgQ2VydGlmaWNh

The fourth parameter 0 indicates that the certificate input mode is string format. If it is 1, it indicates that it is HEX format.

The last parameter is the contents of the server certificate. The maximum length of each packet is 1000. If it exceeds 1000, it needs to be sent by packet. The length of this server certificate is 1312. It needs to be sent in two packets. The length of one packet is 1000, and the length of one packet is 312.

Use the "AT+CSETCA" command to set the client certificate

The first parameter 1 indicates that the client certificate is set. The second parameter 1520 represents the length of the client certificate.

The third parameter 1 indicates that there is still unpacking data to be sent later, and if 0, it is the last packet.

The fourth parameter 0 indicates that the certificate input mode is string format. If it is 1, it indicates that it is HEX format.

The last parameter is the content of the client certificate. The maximum length of each packet is 1000.

dGUwHQYDVR0OBByEFGleIFUHsSWR25+eXsStFgYt4
OMMIGcBgNVHSMegZQwgZGAFKEKoraxP0atnSfn2Xx
vsG2b0ho9oW6kbDBqMRcwFQYDVQDDA5BbIBNU
VRUIGJyb"

Second Package:

AT+CSETCA=1,1520,0,0,"2tlcjEWMBQGA1UECgwNT3
duVHJhY2tzLm9yZzEUMBIGA1UECwwLZ2VuZXJhdGU
tQ0ExITAFBgkqhkiG9w0BCQEWEm5vYm9keUBleGFtc
GxILm5ldlIJAIIlRX1D4JhMMA0GCSqGSIb3DQEBDQU
AA4IBAQA5a1nn4JxCF7TsSPSYDlxvYgJ3MIucfjGQFWj
zsNvhrAotBfuS2KPCxmo/350otqTHqISfy3upTAgMJire
AzVigZaVneMxS8GHAMzezlaittuxZRAO6jYUfn03OkX/
3MgssJxa81/5M6+OpQdDNK2iFmUjwf+iGjGVE9Kps
KLimW0TD9WBLfPCO7d20WQmg4+UM9I+xxp3CAmk
dD+FGQnBz7Zd2Js2MJ/QWD7ZEeOu++oT4/xq+rVzGy
xYuqnJbQWP/oayfEJn3rtm5jniAA2xEykqPnk3rm9KNV
zvlbHmDQxTcA774mlcvc4VILgJW2k9LnyCjYsAEp3blb3
D5Lp-----END CERTIFICATE-----"

OK

If it exceeds 1000, it needs to be sent in packets. The length of this client certificate is 1520. It needs to be sent in two packets. The length of one packet is 1000, and the length of one packet is 520.

First Package:

AT+CSETCA=2,1656,1,0,"-----BEGIN RSA PRIVATE
KEY-----\r\nMIIEpAIBAAKCAQEArcCl6HtnZI7nNSzCkJs
Cx69e+SvrCrHSdzcHf5sD6/i7PHrCT4LRMEu83DynM
5dD+aFYXqRjZpKeEyPvV8uVHG1NyKYwp8xXbw1MIO
uH7Acq0chNE/DT9CsPtINFwcf/97P8oPJN0pl3KeePrq
Lo0Z03bQW4ljW3Uysk9/eHfZ8VQUR3qOWJh4txjfCkS
+5bowuiwerDaJHqZlg0beak3N7ISdB5OqTRHUKaOL7
eAPyEojAfPST6avMd3+HPm7zViFBro3FiQXYL2Bcv56
DOaHUFPSG5hBGZePtegTdkGxcYmLazh7PI5Ovglot/+
P212/RbUBNSODMj8HQYX6uwIDAQABAoIBAQCUAL
iwOGCZEYX8IV1F3fZP+K2EXprRadCTNstEzEmzYXGp/
ERghgukzuXQrhaOdvC6dpsg9CyF2IFI/wEuin9yqMcZ
m8gmEcv8gRc+srTM2WkDbJknzp9CpRpZ6d9jLm7mC
Qso7j143w8K4zKnubJAEVrP7Gbc4S013pKwWb1Aoh
nFKkXyVpNLEk2Dh8WkqGAPSp7WDFd8rybRAEpDU
hKolfRmV71q+Y4JGqkwRrRAn3S/2JhvX29/xqi95oTPk
LOULMQj0vP2tGtY7Djr1bb3FeY4a/dfz93nNUgutX1
1du2MPYJRyRfB97gNac8XMMmqO+i5lXrGGmPw8EYlx
AoGBANYMBUBcR92ZVlhNqvNe/WUzn0edBtKpdjdr1
6FTA7iag!RuRltwLVyq9dRlbe0YnywEPsDhaUGauo5W
98f3MpzD/MPn3DmGgI6+ZHIB/hthkPb+tcuGNt0fhKZ
xgdKHaz9JDIFf7vQHqngqVMWWSg798Rbl68ZBx4NK
aRyYmAUtAoGBANFgrY4jiz5yoMZjZsfNdQYja02as4d5
QjMZ1YwPkSkDy9HdUkwMvjLyll+d5MR152xP5KimY"

OK

Use the "AT+CSETCA" command to set the client KEY. The first parameter 2 indicates that the client KEY is set. The second parameter 1656 represents the length of the client KEY. The third parameter 1 indicates that there is still unpacking data to be sent later, and if 0, it is the last packet. The fourth parameter 0 indicates that the client KEY is in string format. If it is 1, it indicates that it is HEX format. The last parameter is the client KEY content. The maximum length of each packet is 1000. If it exceeds 1000, it needs to be sent in packets. The length of this client KEY is 1656, which needs to be sent in two packets. The length of one

Second Package:

```
AT+CSETCA=2,1656,0,0,"kHnL4o+V9oRM82hGVJeH4
KVIW2r0JBglm7QzeHXiykMVRIO3SWP+gj65D7NzFBw
0Fyw3MXY+GGwQZAm3k9av7HbIMWdnRecECHAoG
AlGmJkgInSIMjbdB1Bo1nyZ9biziYA+J9gD7wVBmCar5
C5g4cixDdjZ7FwvfpAXItCDIMGGKJ0clgXpWEx98C5wl
2kGPX0U4wwWzLQjFgHT1U+IHvrXYRcMKJD7s4cWzY
LKkfH6Q7XvCaPB+DptVFOafyJgS2zzq+v37RE+d3fbECg
YEAghK3f1gghKjdrKHQFkxTaQ7T+JAK/AKe17Qy8Clzof
FTy/rcx6YBYwFF3fzvRAWjUayldyV2Yyqvm4tE8LqMFN
bfhTURf+vW+oK1eknLGSWVSoF0P3N5md7wcltu1D6
Md7M5ZIZgUOaE+ZkMWe0nOUUI0ToQoFsv1Hg9+qk
4vz0CgYAOaPbpuTXbPViDo1uL11Mt4UdlndfgzL4jpnV
Fus3SAJue9wrrKFclRU5vb3irDRZ0d9Tewf+fT2g5x5xF
AeSIVJeEWijk0ddDz9yOhnr6M7jneuzvuVBUQ/E5Q+S
45XXkBTwUdCOpfbuMJpKyijWseh0VGvpOyuPyV9tcn
NVZ5Q==-----END RSA PRIVATE KEY-----"
```

packet is 1000, and the length of one packet is 656.

AT+CMQTTNEW="117.131.85.139","6001",60000,1024	OK +CMQTTNEW: 0	Create MQTT connection If succeed, MQTT id will return
AT+CMQCON=0,3,"simcom",600,1,0	OK	Send MQTT request
AT+CMQSUB=0,"mytopic",1	OK	send subscribe topic
AT+CMQPUB=0,"mytopic",1,0,0,10,"3132333439"	OK +CMQPUB: 0,"mytopic",1,0,0,1 0,"3132333439"	Public topic and message Got subscribed topic and message down from server
AT+CMQUNSUB=0,"mytopic"	OK	Unsubscribe topic
AT+CMQDISCON=0	OK	Disconnect MQTT connection with id

5.2 Long command to create an MQTT with SSL instance

AT Command	Response	Description
First Package:		
AT+CMQTTNEWEXT=1,9284,1000,"117.131.85.139,6001,12000,1024,2700,2d2d2d2d2d424547494e2043455254494649434154452d2d2d2d0d0a4d494944716a434341704b67417749424167494a4149496d52583144344a684d4d413047435371475349623344514542445155414d476f78467a415642674e560d0a42414d4d446b46754945315256465167596e4a76613256794d525977464159445651514b4441	OK	Multi-packages create MQTT with SSL instances, where the server certificate package, client certificate package, and client key package are split into 10 AT command packets for transmission.

```
315064323555636d466a61334d7562334a6e4d525
177456759440d0a5651514c4441746e5a57356c63
6d46305a533144515445684d42384743537147534
962334451454a41525953626d3969623252355147
563459573177624755750d0a626d56304d4234584
45445344d4467774d5441354e54497a4d6c6f5844
544d794d4463794f4441354e54497a4d6c6f77616a
45584d425547413155454177774f0d0a515734675
456465556434269636d39725a584978466a415542
674e5642416f4d44553933626c527959574e72637
93576636d63784644415342674e564241734d0d0a
4332646c626d56795958526c4c554e424d5345774
877594a4b6f5a496876634e41516b4246684a7562
324a765a486c415a586868625842735a5335755a5
851770d0a676745694d4130474353714753496233
445145424151554141344942447741776767454b4
16f49424151444264764135484638686376765a4b
"
```

Second Package:

```
AT+CMQTTTSNEWEXT=1,9284,1000,"43516a43657a
5a0d0a515070507a48556371535151435463704a6
e43326b62354476413245566e5a36624c4b425463
666b762b3430415a4b335658576f6f6630646d5a77
68593158540d0a6778564d4c78466551777039655
7356832556e4453323738716351735439337a3952
5a665669376a794363306553364451614d4f4c754
b4d6566594d386459590d0a4e3733505756545a65
6a74526d4270385072446c6b2f367858714746494
95a674b524d626f4e6a4e63314858642f374376306
c3237575961676f5273417248430d0a3272646f532
b736f78612b693943766462703064706a596e6c59
36734e4456356d5354324e6e4b2f744e744d69465
1524b7631585753526f73476c794a7861480d0a4b
36734575467173706f433731494a7a71376c7a6e4f
677862653876385a797961327a58637a435234683
0354b6a663476704c496674336f57677861443130
5a0d0a41674d424141476a557a42524d423047413
15564446751574242536843714b3273543947725a
306e35396c38623742746d3949615054416642674
e5648534d450d0a474441576742536843714b3273
543947725a306e35396c38623742746d394961505
4415042674e5648524d4241663845425441444151
482f4d413047435371470d0a53496233445145424
```

OK

The first parameter: 1 means that there is still unpacked data to be sent later; 0 means the last packet of data.

The second parameter: the total length of the multi-package data, here
 $9284=1000+1000+1000+1000+1000+1000+1000+1000+1000+284$

The third parameter: indicates the data length of the current unpacking command, that is, the length of the content in the quotation marks.

The fourth parameter: 117.131.85.139 is the mqttts server address

The fifth parameter: 6001 is the mqttts server port number

The sixth parameter: 12000 is the set timeout time

The seventh parameter: 1024 is the bufsize for sending and receiving.

The eighth parameter: 2700 is the length of the server certificate, here is the HEX format.

The ninth parameter: the contents of the server certificate, which includes:

1) The server certificate part of the first packet data of
 AT+CMQTTTSNEWEXT "2d2d2d...65a4b"

45155414134494241514138745951755a39727233

"

Third Package:

AT+CMQTTTSNEWEXT=1,9284,1000,"543751632b6a 6a494b377956745435645354794f4f57594e6a4e42 4d443449384458610d0a6457705365756a3336716 6775470536441744d6f4a635576326f417841574e3 96453566b48786766736476316a2f4f366e7374433 4634572596654362f7064360d0a3033562b46722b 622b69646b2f304c64787a684a6659496c33755956 4e4b5a72526172635075306e31574146307844497 078416d5872446f7a4344346d48704f0d0a6c49502 f463854466244494d6967795a2b514f50432b33324 b4a5a4c712b4d526e7a304478475073512b7a304e 4c2f6c52466d6877596b69726e63776852646f0d0a 6d65432b5365506d4c31355443513159537a722f6 9536159574d4735354e304b714a6466593433784e 75444c2b6b465433505551586234315134452f302 b43680d0a6e41677336383149632b545644636544 3652506e486a49476e7946696b6a584c775735654 e7448390d0a2d2d2d2d454e4420434552544946 49434154452d2d2d2d,3128,2d2d2d2d2d42454 7494e2043455254494649434154452d2d2d2d0d 0a4d494945526a434341793667417749424167494 a414a55457562456f4b6d75324d41304743537147 5349623344514542445155414d476f78467a41564 2674e560d0a42414d4d446b467549453152564651 67596e4a76613256794d525977464159445651"

OK

Forth Package:

AT+CMQTTTSNEWEXT=1,9284,1000,"514b44413150 6432355636d466a61334d7562334a6e4d5251774 56759440d0a5651514c4441746e5a57356c636d46 305a533144515445684d423847435371475349623 34451454a41525953626d39696232523551475634 59573177624755750d0a626d56304d42345844544 5344d4467774d5441354e5463304e6c6f5844544d 794d4463794f4441354e5463304e6c6f77457a4552 4d41384741315545417777490d0a62586c6a62476 c6c626e5177676745694d41304743537147534962 33445145424151554141344942447741776767454 b416f494241514376454b586f6532646b0d0a6a756 3314c4d4b516d774c454c723137354b2b734b7364

OK

2) The second packet data content of AT+CMQTTTSNEWEXT "43516a... 727233"

3) The server certificate part of the third package data of AT+CMQTTTSNEWEXT is "543751... 2d2d2d2d"

The 10th parameter: the length of the client certificate, here 3218, in the third packet of AT+CMQTTTSNEWEXT data.

The eleventh parameter: the contents of the client certificate, which includes:

- 1) The client certificate part in the third packet data of AT+CMQTTTSNEWEXT is "2d2d2d2d2d4245474.... 445651"
- 2) The 4th packet data content of "AT+CMQTTTSNEWEXT" "514b44... 677659"
- 3) The 5th package data content of "AT+CMQTTTSNEWEXT" "467858... 55426c"
- 4) The content of the client certificate in the 6th package data of AT+CMQTTTSNEWEXT is "654746... 54452d2d2d2d2d"

The 12th parameter: the length of the client key, here 3408, in the 6th packet data of AT+CMQTTTSNEWEXT.

The 13th parameter: the contents of the client key, which includes:

- 1) The client key part of the 6th packet data of AT+CMQTTTSNEWEXT is "2d2d2d2d2d424547.... 445651"

4a334e7949642f6d7750722b4c733865734a50677
4457753377a63504b637a6c3050356f5668657047
0d0a4e6d6b703454492b395879355563625533497
06a436e7a46647644557767363466734279725279
453054384e50304b772b306730584277582f33732f
7967386b0d0a33536d58637035342b756f756a526
e546474426267694e6264544b795433393464396e
7856425248656f35596d486933474e384b524c376
c756a43364c4236730d0a4e6f6b65706d574452743
56f72633373684a30486b36704e456451706f34767
434412f4953694d4238394a507071387833663463
2b62764e57495547756a63570d0a4a4264677659"

- 2) The data content of the 7th package of AT+CMQTTTSNEWEXT "537a43... 80d0a4b"
- 3) The 8th packet data content of "AT+CMQTTTSNEWEXT" "347a4b... 4267496d"
- 4) The data content of the 9th package of AT+CMQTTTSNEWEXT "654746... 54452d2d2d2d"
- 5) The 10th packet data content of "AT+CMQTTTSNEWEXT" "306439... 2d2d2d2d2d"

Fifth Package:

AT+CMQTTTSNEWEXT=1,9284,1000,"4678586e6f4d
356f6451552b77626d45455a6c342b3136424e306f
624678695974724f48732b586b362b435769332f3
42f6258623946745145310d0a4c514d7950776444
4a66713741674d424141476a676746454d4949425
144414d42674e5648524d4241663845416a41414d
416b4741315564455151434d4141770d0a4551594
a59495a4941596234516745424241514441675767
4d423047413155644a5151574d425147434373474
151554642774d434267677242674546425163440d
0a4244414c42674e564851384542414d434136677
74b41594a59495a49415962345167454e42427357
47554e736157567564434243636d39725a5849675
13256790d0a64476c6d61574e6864475577485159
445652304f4242594546474965694655487353575
232352b65587353744649675974344f4d4d494763
42674e5648534d450d0a675a5177675a4741464b4
54b6f726178503061746e53666e32587876734732
6230686f396f57366b624442714d52637746515944
56515144444135426269424e0d0a5556525549474
a796232746c636a45574d42514741315545436777
4e5433647556484a685932747a4c6d39795a7a455
54d42494741315545437774c5a3256750d0a5a58
4a6864475574513045784954416642676b71686b6
9473977304243514557456d3576596d396b655542
6c"

OK

Sixth Package:

AT+CMQTTTSNEWEXT=1,9284,1000,"654746746347
786c4c6d356c6449494a4149496d0d0a525831443

OK

44a684d4d41304743537147534962334451454244
515541413449424151413561316e6e344a7843463
7547353505359446c787659476a334d4975630d0a
666a475146576a7a734e766872416f74426675533
24b5043786d6f2f3335306f74715448716c5366793
375705441674d4a697265417a5669675a61566e65
4d780d0a53384748414d7a657a6c6169747475785
a52414f366a5955666e30334f6b582f334d6773734
a786138312f354d362b4f705164444e4b4b3269466
d556a77662b0d0a69476a475645394b70734b4c69
6d573054443957424c6650434f3764323057516d6
7342b554d396c2b7878703343416d6b64442b4647
516e427a375a64324a730d0a324d4a2f515744375
a45654f752b2b6f54342f78712b72567a477978597
5716e4a625157502f6f617966454a6e3372746d356
a6e694141327845796b71506e6b0d0a33726d394b
4e567a766c62486d4451785463413737346d49637
6633456494c676a57326b394c6e79436a59734145
7033626c623344354c700d0a2d2d2d2d454e442
043455254494649434154452d2d2d2d,3408,2d2
d2d2d2d424547494e205253412050524956415445
204b45592d2d2d2d0d0a4d49494570414942414
14b43415145417278436c3648746e5a49376e4e"

Seventh Package:

AT+CMQTTTSNEWEXT=1,9284,1000,"537a436b4a73 OK
4378433639652b53767243724853647a636948663
57344362f693750480d0a724354344c524d457538
3344796e4d3564442b6146595871526a5a704b654
5795076563875564847314e794b59777038785862
77314d494f75483741637130630d0a684e452f4454
3943735074494e467763462f393750386f504a4e30
706c334b65655072714c6f305a303362515734496a
57335579736b392f6548665a385651550d0a52337
14f574a683474786a66436b532b35626f777569776
57244614a48715a6c67306265614b334e37495364
42354f71545248554b614f4c3765415079456f6a0d
0a41665053543661764d64332b48506d377a56694
642726f3346695158594c324263563536444f61485
546507347356842475a655074656754644b477863
596d4c0d0a617a6837506c354f76676c6f742f2b50
3231322f526255424e5330444d6a3848517958367
577494441514142416f494241514355414c456977
4f47435a4559580d0a384956314633665a502b4b3

24558707252616443544e5374457a456d7a595847
702f4552476867756b7a7558517268614f64764336
64707367394379463249460d0a492f774575696e3
979714d635a6d38676d456376386752632b737254
4d32576b44624a6b6e7a7039437052705a3664396
a4c6d376d4351736f376a31343377380d0a4b"

Eighth Package:

AT+CMQTTTSNEWEXT=1,9284,1000,"347a4b6e7562 OK
4a4145567250374762433453303133704b7757623
1416f686e464b6b587956704e4c45786b32446838
576b71474150537037574466443872790d0a62524
145704455684b6f6c66526d563731712b59344a47
716b77527252416e33532f324a68765832392f7871
6939356f54506b4c4f554c4d51496a30765032740d
0a4774545937446a723162623346655934612f646
67a39336e4e556775745831316475324d50594a52
797246623937674e616338584d4d714f2b6935497
87247470d0a6d50773845596c78416f4742414e59
4d425542635239325a5649684e71764e652f57557
a6e30656442744b50646a64723136465441376961
676c5275524974770d0a4c5679713964526c62653
0596e7977455053446861554761756f3557393866
334d707a442f4d506e33446d476749362b5a486c4
22f6874686b50622b746375470d0a4e743066684b
5a7867644b48617a394a4449464637765148716e7
16777564d57536737393852624936385a4278344e
4b615279596d415574416f4742414e46670d0a725
9346a695a35796f4d5a6a5a73664e6451596a61303
26173346435516a4d5a315977506b536b44793948
64556b776d566a4c796c6c2b64354d52313532785
00d0a354b696d596b4a486e4c346f2b56396f524d3
8326847564a6548344b5649573272304a4267496d
"

Ninth Package:

AT+CMQTTTSNEWEXT=1,9284,1000,"37517a654858 OK
69796b4d56526c30335357502b676a363544370d0
a4e7a46427730467977334d58592b474777515a41
6d336b396176374862494d57646e5265634543484
16f474149476d4a6b676c6e53494d6a6264423142
6f316e0d0a795a3962697a6959412b4a396744377
756426d434172354335673463697844646a5a3746
777666704158497443446c4d47474b4a30636c675

8705745783938430d0a357749326b475058305534
 7777577a4c51694667485431552b6c48767258595
 2634d4b4a4437733463577a594c4b6b6648365137
 5876436150422b44707456460d0a4f6166796a675
 3327a7a712b76333752452b643366624543675945
 4167684b3366316767684b6a64724b4851466b785
 4615137542b4a416b2f414b65313751790d0a3843
 497a6f664654792f7263783659425977464633667a
 765241576a5561794964795632595971766d34744
 5384c714d464e626668545552662b76572b6f4b31
 0d0a656b6e4c47735756536f663050334e356d643
 777634c74753144364d64374d355a495a67554f61
 452b5a6b4d5765306e4f55556c30546f516f467376
 314867390d0a2b716b34767a30436759414f61506
 27075545862505669446f31754c31314d74345564
 6c6e6664677a4c346a706e564675733353414a756
 5397772724b46636c0d0a52553576623369724452
 5a"

Tenth Package:

AT+CMQTTSNEWEXT=0,9284,284,"3064395465776
 62b6654326735783578464165536c564a65455749
 6a6b306464447a39794f688e72364d376a6e65757
 a76755642550d0a512f4535512b53343558586b42
 54775564434f706662754d4a704b59696a5773656
 830564776704f79755079563974636e4e565a3551
 3d3d0d0a2d2d2d2d454e4420525341205052495
 6415445204b45592d2d2d2d2d"

+CMQTTSNEWEXT:
 0
 OK

The long command creates an MQTT with SSL instance successfully. If it fails, it will return error.

AT+CMQCON=0,3,"simcom",600,1,0

OK

Send MQTT request

AT+CMQSUB=0,"mytopic",1

OK

send subscribe topic

AT+CMQPUB=0,"mytopic",1,0,0,10,"3132333439"

OK

Public topic and message

+CMQPUB:
 0,"mytopic",1,0,0,1
 0,"3132333439"

Got subscribed topic and message down from server

AT+CMQUNSUB=0,"mytopic"

OK

Unsubscribe topic

AT+CMQDISCON=0

OK

Disconnect MQTT connection with id

Contact

SIMCom Wireless Solutions Co.,Ltd

Address: Building B, 6F, No.633 Jinzhong Road, Changning District, Shanghai P.R.China 200335

Tel: +86 21 3157 5126

Email: support@simcom.com

Website: www.simcom.com