



A76XX Series_MQTT EX_ Application Note

LTE Module

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About Document

Version History

Version	Date	Owner	What is new
V1.00	2022.04.25	Nanan.zhao	New version

Scope

Based on module AT command manual, this document will introduce MQTT EX application process. Developers could understand and develop application quickly and efficiently based on this document. This document applies to ASR1803S Series, ASR1603 Series, ASR1606 Series,

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1 Introduction

1.1 Purpose of the document

Based on module AT command manual, this document will introduce MQTT EX application process. Developers could understand and develop application quickly and efficiently based on this document.

1.2 Related documents

[1] A76XX Series_AT Command Manual

2 AT Commands for MQTT EX

2.1 Overview of AT Commands for MQTT EX

Command	Description
AT+CMQTTCFG	Configure the MQTT Context
AT+CMQTTSUB	Subscribe a message to server
AT+CMQTTUNSUB	Unsubscribe a message to server
AT+CMQTTPUB	Publish a message to server
AT+CMQTTDISC	Disconnect from server

2.2 Detailed Description of AT Commands for MQTT EX

2.2.1 AT+CMQTTCFG Configure the MQTT Context

It must be called before AT+CMQTTCONNECT and after AT+CMQTTACCQ. The setting will be cleared after AT+CMQTTREL

AT+CMQTTCFG Configure the MQTT Context	
Write Command	Response
AT+CMQTTCFG="argtopic",<client_index>,<arg_topic>,<payload_len_enable>]	OK or ERROR
Parameter Saving Mode	-
Reference	

Defined Values

<client_index>	A numeric parameter that identifies a client. The range of permitted values is 0 to 1
<arg_topic>	A numeric parameter that identifies topic set by parameters of AT Command for SUB,UNSUB and PUB. If set to 1,the received PUB

	<p>message from brokers will notified as following URC +CMQTTRECV: <client_index>,"<topic>"[,<payload_len>],"<payload>"</p> <p><u>0</u> - topic input by edit mode</p> <p>1 - topic input by parameter of AT Command</p>
<payload_len_enable>	<p>A numeric parameter that identifies report payload length.</p> <p><u>0</u> - notify PUB message without payload length</p> <p>1 - notify PUB message with payload length</p>

Example

```

AT+CMQTTSUB=0,"topic1",2
OK

+CMQTTSUB: 0,0
AT+CMQTTSUB=0,"topic1",2,1
OK

+CMQTTSUB: 0,0

```

2.2.2 AT+CMQTTSUB Subscribe a message to server

AT+CMQTTSUB Subscribe a message to server	
<p>Write Command</p> <p>/* arg_topic should set to 1*/</p> <p>AT+CMQTTSUB=<client_index>,"<topic>",<qos>[,<dup>]</p>	<p>Response</p> <p>OK</p> <p>+CMQTTSUB: <client_index>,<err></p> <p>or</p> <p>+CMQTTSUB: <client_index>,<err></p> <p>ERROR</p> <p>or</p> <p>ERROR</p>

Defined Values

<client_index>	A numeric parameter that identifies a client. The range of permitted values is 0 to 1
<topic>	String type parameter that identifies the subscribe topic data, the range of length is 1 to 500 bytes.

<qos>	The sub message's qos. The range is from 0 to 2. 0 – at most once 1 – at least once 2 – exactly once
<dup>	The dup flag to the message. The value is 0 or 1. The default value is 0. The flag is set when the client or server attempts to re-deliver a message.

Example

```
AT+CMQTTCFG="argtopic",0,1
OK
AT+CMQTTSUB=0,"topic",1
OK

+CMQTTSUB: 0,0
```

2.2.3 AT+CMQTTUNSUB Unsubscribe a message to server

AT+CMQTTUNSUB Unsubscribe a message to server	
Write Command	Response
/* arg_topic should set to 1*/	OK
AT+CMQTTUNSUB=<client_index>,"<topic>",<dup>]	+CMQTTUNSUB: <client_index>,<err> or +CMQTTUNSUB: <client_index>,<err>
	ERROR or ERROR

Defined Values

<client_index>	A numeric parameter that identifies a client. The range of permitted values is 0 to 1.
<topic>	String type parameter that identifies the unsubscribe topic data, the range of length is 1 to 500 bytes.
<dup>	The dup flag to the message. The value is 0 or 1. The default value is 0. The flag is set when the client or server attempts to re-deliver a message.

Example

```
AT+CMQTTCFG="argtopic",0,1
OK
```

```
AT+CMQTTUNSUB=0,"topic"
```

```
OK
```

```
+CMQTTUNSUB: 0,0
```

2.2.4 AT+CMQTTTPUB Publish a message to server

AT+CMQTTTPUB Publish a message to server

Write Command	Response
/* arg_topic should set to 1*/	OK
AT+CMQTTTPUB=<client_index>,"<topic>",<qos>[,<req_length>[,<retained>]]	+CMQTTTPUB: <client_index>,<err> or +CMQTTTPUB: <client_index>,<err>
	ERROR or ERROR

Defined Values

<client_index>	A numeric parameter that identifies a client. The range of permitted values is 0 to 1.
<topic>	String type parameter that identifies the publish topic data, the range of length is 1 to 500 bytes.
<qos>	The publish message's qos. The range is from 0 to 2. 0 – at most once 1 – at least once 2 – exactly once
<req_length>	The length of input message data. The publish message should be UTF-encoded string, the range of length is 0 to 10240. The default value is 0 when not set.
<retained>	The retain flag of the publish message. The value is 0 or 1. The default value is 0. When a client sends a PUBLISH to a server, if the retain flag is set to 1, the server should hold on to the message after it has been delivered to the current subscribers

Example

```
AT+CMQTTCFG="argtopic",0,1,1
```

```
OK
```

```
AT+CMQTTSUB=0,"topic",1
```

```
OK
```

```
+CMQTTSUB: 0,0
AT+CMQTTPUB=0,"topic",2,10
>ssssssssss
OK

+CMQTTRECV: 0,"topic",10,"ssssssssss"

+CMQTTPUB: 0,0
```

2.2.5 AT+CMQTTDISC Disconnect from server

AT+CMQTTDISC Disconnect from server	
Test Command AT+CMQTTDISC=?	Response: +CMQTTDISC: (0-1),(0,1-180) OK
Read Command AT+CMQTTDISC?	Response: +CMQTTDISC: 0,<disc_state> +CMQTTDISC: 1,<disc_state> OK
Write Command AT+CMQTTDISC=<client_index>,<timeout>	Response 1)If disconnect successfully: +CMQTTDISC: <client_index>,0 OK 2)If disconnect successfully: OK 3)If failed: OK +CMQTTDISC: <client_index>,<err> 4)If failed: ERROR 5)If failed: +CMQTTDISC: <client_index>,<err> ERROR
Parameter Saving Mode	-
Max Response Time	-
Reference	

Defined Values

<client_index>	A numeric parameter that identifies a client. The range of permitted values is 0 to 1.
<timeout>	The timeout value for disconnection. The unit is second. The range is 1s to 180s. The default value is 0s (not set the timeout value).
<disc_state>	1 disconnection 0 connection

NOTE

The topic will be clean after execute AT+CMQTTTTPUB.

When execute AT+CMQTTTCFG="argtopic",<client_index>,<arg_topic>[,<payload_len_enable>] that <arg_topic> set to 1, if you want to stop MQTT, just to execute AT+CMQTTTSTOP after execute AT+CMQTTDISC and not need to execute AT+CMQTTREL.

2.3 Summary of result codes for MQTT EX

Unsolicited codes	Description
+CMQTTTRECVR: <client_index>,"<topic>"[,<payload_len>], "<payload>"	when arg_topic set to 1, the publish message received from brokers will be notified by CMQTTTRECVR. <client_index>: A numeric parameter that identifies a client. The range of permitted values is 0 to 1 <topic>: topic data of this received publish message <payload_len>: payload length of this received publish message, will report if <payload_len_enable> set to 1.

2.4 Example how to use MQTT EX

AT+CMQTTTSTART

OK

+CMQTTTSTART: 0

AT+CMQTTTACCQ=0,"a1accq",0

OK

AT+CMQTTCFG="argtopic",0,1,1

//using one command to subscribe, unsubscribe
and publish a message after using this command.

OK

AT+CMQTTCONNECT=0,"tcp://120.27.2.154:
1883",20,1

OK

+CMQTTCONNECT: 0,0

AT+CMQTTSUB=0,"znn11",2,1

//using one command to subscribe a message

OK

+CMQTTSUB: 0,0

+CMQTTRECV: 0,"znn11",16,"one message
come"

// receive a message

AT+CMQTTTPUB=0,"znn11",1,10

// using one command to publish a message

>

//input message

OK

+CMQTTTPUB: 0,0

AT+CMQTTUNSUB=0,"znn11",1

//using one command to unsubscribe a message

OK

+CMQTTUNSUB: 0,0

AT+CMQTTDISC=0,120

//disconnect from server

OK

+CMQTTDISC: 0,0

AT+CMQTTSTOP

OK

+CMQTTSTOP: 0