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FIBOCOM L610 AT Commands_MQTT

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Applicability Type

No.	Type	Note
1	L610	NA

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Versions

Version	Author	Assessor	Approver	Update Date	Description
V1.0.0	Robin	Long Zhongyou	Long Zhongyou	2019-11-29	Initial version

Contents

1 MQTT Commands

1.1 +MQTTUSER, Set user name and password

1.1.1 Description

A connecting client can specify a user name and a password, this command should be set before open a MQTT connection. If the user name and password is incorrect, MQTT server will refuse the connection. This command is essential because of the server need these information to connect.

1.1.2 Syntax

Syntax	Possible response(s)
+MQTTUSER=<Client id>,<Username>,<Password>[,<ClientIDStr>]	OK or +CME ERROR: <err>
+MQTTUSER?	+MQTTUSER: <Client id>,<Username>,<Password>[,<ClientIDStr>] +MQTTUSER: <Client id>,<Username>,<Password>[,<ClientIDStr>] OK or +MQTTUSER: <Client id>,<Username>,<Password>[,<ClientIDStr>] OK or OK
+MQTTUSER=?	+MQTTUSER: (list of supported <Client id>s),<ulength>,<plength>[,<clength>] OK

1.1.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	< 1s

1.1.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1, 2.

<Username>: Registered Username for MQTT server, string type, the max length is 128 bytes.

<Password>: Registered Password for MQTT server, string type, the max length is 128 bytes.

<ClientIDStr>: Registered ClientID for MQTT server, string type, the max length is 23 bytes. It's a optional parameter, if not set, this field would be replaced by the IMEI of the module.

<ulength>: integer type value indicating the maximum length of field <Username>

<plength>:integer type value indicating the maximum length of field <Password>

<clength>:integer type value indicating the maximum length of field <ClientIDStr>

1.2 +MQTTOPEN, Establish a connection via MQTT/MQTT-SN* protocol

1.2.1 Description

This command is used for opening the connection between the module and MQTT Server or between the module and MQTT-SN Gateway.

1.2.2 Syntax

Command	Possible response(s)
+MQTTOPEN=<Clientid>,<Remote IP/URL>,<RemotePort>,<Cleansession flag>,<Keepalive time>	OK +MQTTOPEN: <Client id>,<Status> or +CME ERROR: <err>
+MQTTOPEN?	+MQTTOPEN: <Client id> OK for each client id that can be opened or +MQTTOPEN: 0 OK if there are no free client.
	+MPQTTOPEN: (list of supported <Client id>s),(<Remote IP/URL>),(range of supported

Command	Possible response(s)
+MQTTOPEN=?	<RemotePort>s),(range of supported <Cleansession flag>s),(range of supported <Keepalive Time>s) OK

1.2.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	< 1s

1.2.4 Defined Values

<Clientid>: A unique number that identifies a connection, integer type. Valid client id is 1, 2, 101, 102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Remote IP/URL>: String type.

IP: IP of the remote site in the format "AAA.BBB.CCC.DDD". The range of each octet is 0-255. Value can be written in 1, 2, or 3 digits.

Host name of remote site: The host-name convention should meet the rules as describe in RFC-1035 section: 2.3 Conventions. Syntax is not validated, except the maximum length (255 characters).

<Remote Port>: Port of remote site.

Port range: 1-65535 (decimal digits) for outgoing connection.

<CleansessionFlag>: integer type and valid valueis0,1.

Type of protocol stack.

0 information of client will not be cleaned when the connection is closed

1 information of client will be cleaned when the connection is closed

<KeepaliveTime>: Keepalive interval time, the range of time is 1-300(s).

<Status>: integer type and range 0-1.

0 fail.

1 success.

1.3 +MQTTCLOSE, Close the MQTT/MQTT-SN* connection

1.3.1 Description

This command causes the Module to free the socket accumulating buffer and to close the socket.

1.3.2 Syntax

Command	Possible response(s)
+MQTTCLOSE=<Client id>	OK +MQTTCLOSE: <Client id>,<Status> or ERROR
+MQTTCLOSE?	+MQTTCLOSE: <Client id> OK for each client id that can be closed or +MQTTCLOSE: 0 OK if there are no free client id.
+MQTTCLOSE=?	+MQTTCLOSE: (list of supported <Client id>s) OK

1.3.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	< 1s

1.3.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1, 2, 101, 102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Status>: integer type and range 0-1.

0 fail.

1 success.

1.4 +MQTTBREAK, MQTT/MQTT-SN* disconnect report

1.4.1 Description

This is an unsolicited command, which is reported when the MQTT/MQTT-SN disconnected unexpected.

1.4.2 Syntax

Command	Possible response(s)
Unsolicited Response	+MQTTBREAK: <Client id>,<cause>

1.4.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	N/A	N/A	N/A	N/A

1.4.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1, 2, 101, 102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<cause>: The cause of the MQTT disconnected, integer type and the range of the cause is 1-3.

1: MQTT disconnected by accident, such as the server initiative to disconnect the current connection or the client disconnect because of the ping request no response.

2: Wireless Link disconnected, such as the valid IP address disappeared owing to the network failure.

3: GPRS network not registered, such as the report of the CGREG or CEREG is 0.

1.5 +MQTTSUB, Subscribe A topic

1.5.1 Description

After the client is connected with MQTT server, you could subscribe one or more topic to MQTT server or MQTT-SN Gateway.

1.5.2 Syntax

Command	Possible response(s)
+MQTTSUB=<Client id>,<Topic/Topic id>,<Qos>	OK +MQTTSUB: <Client id>,<Status> or ERROR
+MQTTSUB=?	+MQTTSUB: (list of supported <Client id>s),<tlength/Topic id>,(range of supported <Qos>s) OK

1.5.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	< 1s

1.5.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1,2,101,102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Topic>: The topic should be printable ASCII characters, string type and the range of the topic length is 1-255.

If the module has connected to a MQTT-SN Gateway, the topic can be a Short -Topic and the range of Short-Topic length is 2.

<Topic id>: Topic id should be integer number, range 1-65535. When you need to use Topic id, the Client id must be 101 or 102.

<Qos>: The quality of service, integer type, range 0-2.

0 At most once, the message may not be delivered

1 At least once, the message will be delivered, but may be delivered more than once in some circumstances.

2 Once and one only, the message will be delivered exactly one.

<Status>: integer type and range 0-1.

0 fail.

1 success.

<tlength>: integer type value indicating the maximum length of field <Topic>.

1.6 +MQTTUNSUB, Unsubscribe A topic

1.6.1 Description

This command will unsubscribe the specific topic from the server.

1.6.2 Syntax

Command	Possible response(s)
+MQTTUNSUB=<Client id>,<Topic/Topic id>	OK +MQTTUNSUB: <Client id>,<Status> or ERROR
+MQTTUNSUB=?	+MQTTUNSUB: (list of supported <Client id>s),<tlength/Topic id>

Command	Possible response(s)
	OK

1.6.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	< 1s

1.6.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1,2,101,102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Topic>: The topic should be printable ASCII characters, string type and the range of the topic length is 1-255.

If the module has connected to a MQTT-SN Gateway, the topic can be a Short -Topic and the range of Short-Topic length is 2.

<Topic id>: Topic id should be integer number, range 1-65535. When you need to use Topic id, the Client id must be 101 or 102.

<Status>: integer type and range 0-1

0 unsubscribe fail

1 unsubscribe success

<tlength>: integer type value indicating the maximum length of field <Topic>.

1.8 +MQTTCONF, Configure form of receive message

1.8.1 Description

After subscribe a topic, this command is decided to the form of the unsolicited event when any message about the topic is received.

1.8.2 Syntax

Command	Possible response(s)
+MQTTCONF=<mode>	OK or +CME ERROR: <err>
+MQTTCONF?	+MQTTCONF: <mode> OK
	+MQTTCONF: (list of supported <mode>s)

Command	Possible response(s)
+MQTTCONF=<mode>	OK or +CME ERROR: <err>
+MQTTCONF=?	 OK

1.8.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	< 1s

1.8.4 Defined Values

<mode>: the form of the unsolicited message, integer type, range 0,1.

0 default value, report the content of the topic and payload directly by the MQTTMSG command.

1 report the length of the topic and payload by the MQTTMSGI command.

1.7 +MQTTPUB, Publish a topic

1.7.1 Description

After the client is connected with MQTT server or MQTT-SN Gateway, you can publish a message with a specific topic.

1.7.2 Syntax

Syntax	Possible response(s)
+MQTTPUB=<Client id>,<Topic/Topic id>,<Qos>,<Retain flag>,<Payload/Datasize>	OK +MQTTPUB: <Client id>,<Status> or ERROR
+MQTTPUB=?	+MQTTPUB: (list of supported <Client id>s),<tlength/Topic id>,(range of supported <Qos>s),(range of supported <Retain flag>s),<plength> OK

1.7.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	< 1s

1.7.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type and valid client id is 1,2,101,102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Topic>: The topic should be printable ASCII characters, string type and the range of the topic length is 1-255.

If the module has connected to a MQTT-SN Gateway, the topic can be a Short -Topic and the range of Short-Topic length is 2.

<Topic id>: Topic id should be integer number, range 1-65535. When you need to use Topic id, the Client id must be 101 or 102.

<Qos>: The quality of service, integer type, range 0-2.

0 At most once, the message may not be delivered

1 At least once, the message will be delivered, but may be delivered more than once in some circumstances.

2 Once and one only, the message will be delivered exactly one.

<Retain flag>: Retain flag, integer type, range 0, 1.The Retain flag indicates whether the server should retain the message which is published by the server.

0 this message should not be retained by the MQTT server

1 the MQTT server should retain a copy of the message

<Payload>: The message should be printable ASCII characters, string type and the range of message length is 0-1024.

<Datasize>: Integer type and range 1-1024

This command cause data will be sending in HEX. After command received, Module will respond "><CR><LF>". Send any data in HEX. The data buffer range is 1<=Datasize<=1024 bytes. When Module receive the corresponding length data, the data will be push automatic and returns to regular AT command mode.

<Status>: integer type and range 0-1

0 publish fail

1 publish success

<tlength>:integer type value indicating the maximum length of field <Topic>

<plength>: integer type value indicating the maximum length of field <Payload>

1.9 +MQTTMSG, Receive a message from server

1.9.1 Description

After subscribe a topic, this unsolicited event will be sent by the Module to the terminal when any message about the topic is received. This command will show the content of the message.

1.9.2 Syntax

Command	Possible response(s)
Unsolicited Response	+MQTTMSG: <Client id>,<Qos>,<Topic/Topic id>,<Payload>

1.9.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	N/A	N/A	N/A	N/A

1.9.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1,2,101,102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Qos>: The quality of service, integer type, range 0-2.

0 At most once, the message may not be delivered

1 At least once, the message will be delivered, but may be delivered more than once in some circumstances.

2 Once and one only, the message will be delivered exactly one.

<Topic>: The topic should be printable ASCII characters, string type and the range of the topic length is 1-255.

<Topic id>: Topic id should be integer number, range 1-65535. When you need to use Topic id, the Client id must be 101 or 102.

<Payload>: The message should be printable ASCII characters, string type and the range of message length is 0-1500.

1.10 +MQTTMSGI, Receive a message's length from server

1.10.1 Description

After subscribe a topic, this unsolicited event will be sent by the Module to the terminal when any message about the topic is received. This command will show the length of the topic and payload about the message.

1.10.2 Syntax

Command	Possible response(s)
Unsolicited Response	+MQTTMSGI: <Client id>,<Qos>,<tlength/Topic id>,<plength>

1.10.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	N/A	N/A	N/A	N/A

1.10.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1,2,101,102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Qos>: The quality of service, integer type, range 0-2.

0 At most once, the message may not be delivered

1 At least once, the message will be delivered, but may be delivered more than once in some circumstances.

2 Once and one only, the message will be delivered exactly one.

<Topic id>: Topic id should be integer number, range 1-65535. When you need to use Topic id, the Client id must be 101 or 102.

<tlength>: integer type value indicating the received length of the topic.

<plength>: integer type value indicating the received length of the payload.

1.11 +MQTTREAD, Read the received message

1.11.1 Description

After received a message by the MQTTMSGI command, this command is used to read the content of the message.

1.11.2 Syntax

Command	Possible response(s)
	+MQTTREAD: <Client id>,0,0,0

Command	Possible response(s)
+MQTTREAD=<Client id>	OK if the client id is not received message or +MQTTREAD: <Client id>,<Qos>,<tlength>,<plength>, <Topic/Topic id>,<Payload> OK if the client id has received message or +CME ERROR: <err>
+MQTTREAD=?	+MQTTREAD: (list of supported <Client id>s) OK

1.11.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	< 1s

1.11.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 1,2,101,102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Qos>: The quality of service, integer type, range 0-2.

0 At most once, the message may not be delivered

1 At least once, the message will be delivered, but may be delivered more than once in some circumstances.

2 Once and one only, the message will be delivered exactly one.

<tlength>: integer type value indicating the received length of the topic.

<plength>: integer type value indicating the received length of the payload.

<Topic>: The topic should be printable ASCII characters, string type and the range of the topic length is 1-255.

<Topic id>: Topic id should be integer number, range 1-65535. When you need to use Topic id, the Client id must be 101 or 102.

<Payload>: The message should be printable ASCII characters, string type and the range of message length is 0-1024.

1.12 +MQTTWILL, Set MQTT/MQTT-SN* will

1.12.1 Description

This command is option, and is needed to set before open a MQTT or MQTT-SN connection. If set the will message, When the client disconnect abnormally from server, the will message will be sent to the client that subscribe the will topic.

1.12.2 Syntax

Command	Possible response(s)
+MQTTWILL=<Client id>,<Topic>,<Qos>,<Retain flag>,<Payload>	OK or ERROR
+MQTTWILL?	+MQTTWILL: <Client id>,<Topic>,<Qos>,<Retain flag>,<Payload> +MQTTWILL: <Client id>,<Topic>,<Qos>,<Retain flag>,<Payload> OK or +MQTTWILL: <Client id>,<Topic>,<Qos>,<Retain flag>,<Payload> OK or OK
+MQTTWILL=?	+MQTTWILL: (list of supported <Client id>s),<tlength>,(range of supported <Qos>s),(range of supported <Retain flag>s),<plength> OK

1.12.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	< 1s

1.12.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type and valid client id is 1,2,101,102.

Client id is 1 or 2, the module will connect a MQTT Server.

Client id is 101 or 102, the module will connect a MQTT-SN Gateway.

<Topic>: The topic should be printable ASCII characters, string type and the range of the topic length is 1-255.

<Qos>: The quality of service, integer type, range 0-2.

0 At most once, the message may not be delivered

1 At least once, the message will be delivered, but may be delivered more than once in some circumstances.

2 Once and one only, the message will be delivered exactly one.

<Retain flag>: Retain flag, integer type, range 0, 1.The Retain flag indicates whether the server should retain the Will message which is published by the server.

0 this message should not be retained by the MQTT server

1 the MQTT server should retain a copy of the message

<Payload>: The payload message should be printable ASCII characters, string type and the range of will message length is 0-1024.

<tlength>: integer type value indicating the maximum length of field <Topic>.

<plength>: integer type value indicating the maximum length of field <Payload>.

1.13 +MQTTSNCID* Set Client ID String

1.13.1 Description

A connecting client would set client ID string, this command should be set before open a MQTT-SN connection. If the client ID string not be set，there will set a default client ID by IMEI number.

1.13.2 Syntax

Syntax	Possible response(s)
+MQTTSNCID=<Client id>,<ClientIDStr>	OK or ERROR
+MQTTSNCID?	+MQTTSNCID: <Client id>,<ClientIDStr> +MQTTSNCID: <Client id>,<ClientIDStr> OK

Syntax	Possible response(s)
	or +MQTTSNCID: <Client id>, <ClientIDStr> OK or OK
+MQTTSNCID=?	+MQTTSNCID: (list of supported <Client id>s), <clength> OK

1.13.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	< 1s

1.13.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 101, 102.

<ClientIDStr>: Client name, string type, the max length is 23 bytes. if not set, this field would be replaced by the IMEI of the module.

<clength>: integer type value indicating the maximum length of field < ClientIDStr >

1.14 +MQTTSNREG*, Register a topic-ID for a topic Name

1.14.1 Description

The Register message is sent by a client to a MQTT-SN Gateway for requesting a topic id value for the included topic name. It is also sent by a GW to inform a client about the topic id value it has assigned to the included topic name. This command can only be executed after MQTT-SN establishes a connection.

1.14.2 Syntax

Command	Possible response(s)
+MQTTSNREG=<Client id>,<TopicName>	OK +MQTTSNREG: <Client

Command	Possible response(s)
	id>,<Status>[,<TopicID>][<TopicName>] or ERROR
+MQTTSNREG?	OK or OK +MQTTSNREG: <Client id>,<TopicID>,<TopicName> … list all registed TopicID and TopicName, the module store max 5 groups of data for each connection.
+MQTTSNREG=?	+MQTTSNREG: (list of supported <ClientID>s),<tlength> OK

1.14.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	NO	Yes	< 1s

1.14.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type. Valid client id is 101,102.

<TopicName>: The topic name should be printable ASCII characters, string type and the range of the topic length is 1-255.

<Status>: integer type and range 0-2.

0 fail.

1 client register success.

2 gateway inform client register message success.

<TopicID>: If <Status> is 1, the client register a topic name successfully. AN integer number, range is 1-65535.

<tlength>: integer type value indicating the maximum length of field <TopicName>

1.15 +MQTTWTOPICUD*, Update MQTT-SN will topic

1.15.1 Description

This command is used by a client to update its Will topic name stored in the MQTT-SN Gateway. This command can only be executed after MQTT-SN establishes a connection.

1.15.2 Syntax

Command	Possible response(s)
+MQTTWTOPICUD=<Client id>,<Qos>,<Retainflag>,<WilltopicName>	OK + MQTTWTOPICUD: <Client id>,<Status> or ERROR: <err>
+MQTTWTOPICUD =?	+ MQTTWTOPICUD: (list of supported <Client id>s),(range of supported <Qos>s),(range of supported <Retain flag>s),<tlength> OK

1.15.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	< 1s

1.15.4 Defined Values

<Client id>: A unique number that identifies a connection, integer type and valid client id is 101, 102.

<Qos>: The quality of service, integer type, range 0-2.

0 At most once, the message may not be delivered

1 At least once, the message will be delivered, but may be delivered more than once in some circumstances.

2 Once and one only, the message will be delivered exactly one.

<Retain flag>: Retain flag, integer type, range 0, 1.The Retain flag indicates whether the server should retain the Will message which is published by the server.

0 this message should not be retained by the MQTT server

1 the MQTT server should retain a copy of the message

<WilltopicName>: The will topic name should be printable ASCII characters, string type and the range of will message length is 1-255.

<Status>: integer type and range 0-1

0 fail

1 success

<tlength>: integer type value indicating the maximum length of field <WilltopicName>.

1.16 +MQTTWMSGUD*, Update MQTT-SN will message

1.16.1 Description

This command is used by a client to update its Will message stored in the MQTT-SN Gateway. This command can only be executed after MQTT-SN establishes a connection.

1.16.2 Syntax

Command	Possible response(s)
+MQTTWMSGUD=<Client id>,<WillMessage>	OK + MQTTWMSGUD: <Client id>,<Status> or ERROR
+MQTTWMSGUD =?	+ MQTTWMSGUD: (list of supported <Client id>s),<plength> OK

1.16.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	< 1s

1.16.4 Defined Values

<ClientID>: A unique number that identifies a connection, integer type and valid client id is 101, 102.

<WillMessage>: The will message should be printable ASCII characters, string type and the range of will message length is 1-1024.

<Status>: integer type and range 0-1

0 fail

1 success

<plength>: integer type value indicating the maximum length of field <Payload>.

2 MQTT Error

Parameter	Description
<Err>	700 "Unacceptable protocol version " 701 "Identifier rejected" 702 "Server unavailable" 703 "Bad user name or password" 704 "Not authorized"