EC20 QuecLocator
AT Commands Manual

LTE Module Series

Rev. EC20_QuecLocator_AT_Commands_Manual_V1.0

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Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:

Quectel Wireless Solutions Co., Ltd.

Office 501, Building 13, No.99, Tianzhou Road, Shanghai, China, 200233

Tel: +86 21 5108 6236

Mail: info@quectel.com

Or our local office, for more information, please visit:

http://www.quectel.com/support/salesupport.aspx

For technical support, to report documentation errors, please visit:

http://www.quectel.com/support/techsupport.aspx

Or Email: Support@quectel.com

GENERAL NOTES

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About the Document

History

Revision	Date	Author	Description
1.0	2015-11-04	Jonathan WEN	Initial

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1 Introduction

EC20 provides QuecLocator to get location information by base station. This document is a reference guide to all the AT commands defined for QuecLocator.

1.1. General Process of QuecLocator

Step 1: Configure and activate the PDP context.
1) Configure the PDP context parameters of <apn>, <username>, <password> and other parameters by AT+QICSGP (Please refer to Quectel_EC20_TCPIP_AT_Commands_Manual for details). If QoS settings need to be updated, configure them by the commands AT+CGQMIN, AT+CGEQMIN, AT+CGQREQ, and AT+CGEQREQ (Please refer to Quectel_EC20_AT_ Commands_Manual for details).
2) Activate the PDP context by AT+QIACT.
3) Configure the PDP context ID for QuecLocator by AT+QLOCCFG="contextid",<contextID>.

Step 2: Get the location information by AT+QCELLLOC. Step 2 can be repeated.

1.2. Error Handling

1.2.1. Executing QuecLocator AT Command Fails

If you execute QuecLocator AT command and receive response "ERROR" from EC20 module, please check if the SIM card is inserted and AT+CPIN? is in "+CPIN: Ready" status.

1.2.2. PDP Activation Fails

If you failed to activate PDP context by AT+QIACT command, please check the following aspects:

1. Query whether the PS domain is attached by AT+CGATT? command or not. If not, please execute AT+CGATT=1 command to attach PS domain.
2. Query the CGREG status by AT+CGREG? and make sure the PS domain has been registered.
3. Query the PDP context parameters by AT+QICSGP command and make sure the APN of specified PDP context has been set.
4. Make sure the specified PDP context ID is neither used by PPP nor activated by AT+CGACT

command.

5. According to 3GPP specification, it only supports three PDP contexts activated simultaneously, so you must make sure the number of activated PDP contexts is less than 3.

If the result of checking is OK, but you still fail to activate PDP context by executing AT+QIACT command, please reboot the EC20 module to resolve this issue. After booting the EC20 module, please check the terms mentioned above at least three times and each time at an interval of 10 minutes to avoid frequently rebooting EC20 module.

1.2.3. Error Response of AT+QCELLLOC

If "+CME ERROR: <err> is returned after operating AT+QCELLLOC, please re-execute AT+QCELLLOC. If it fails again, you should deactivate the PDP context by AT+QIDEACT command, and try again (Please refer to Chapter 1.2.2).

2 Description of AT Command

2.1. AT+QLOCCFG   Configuration of QuecLocator

You can configure the PDP context ID and timeout value by AT+QLOCCFG.

AT+QLOCCFG Configuration of QuecLocator	
Test Command **AT+QLOCCFG=?**	Response **+QLOCCFG: "contextid",(1-16)** **+QLOCCFG: "timeout",(1-300)** **OK**
Read Command **AT+QLOCCFG?**	Response **+QLOCCFG: "contextid",<contextID>** **+QLOCCFG: "timeout",<timeout>** **OK**
Write Command **AT+QLOCCFG="contextid"[,<context ID>]**	Response If <contextID> is not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QLOCCFG: "contextid",<contextID>** **OK**
Write Command **AT+QLOCCFG="timeout"[,<timeout>]**	Response If <timeout> is not omitted: **OK** or **+CME ERROR: <err>** Else query the current settings: **+QLOCCFG: "timeout",<timeout>**

	OK

Parameter

<contextID>	Integer type, PDP context ID, the range is 1-16, default value is 1.
<timeout>	Integer type, the maximum time waiting for data from server. If there is no data coming from server within timeout value, it will return error. The default value is 60, unit is second. The range is 1-300.

2.2. AT+QCELLLOC   Get Location Information by QuecLocator

AT+QCELLLOC Get the Location Information by QuecLocator	
Test Command **AT+QCELLLOC=?**	Response **OK**
Write Command **AT+QCELLLOC**	Response **+QCELLLOC: <longitude>,<latitude>** **OK** or **+CME ERROR: <err>**

Parameter

<longitude>	Float type, the longitude of the location information. This value should be accurate to six after the decimal point, and the range is <-180.000000 to 180.000000>.
<latitude>	Float type, the latitude of the location information. This value should be accurate to six after the decimal point, and the range is <-90.000000 to 90.000000>.
<err>	Integer type, indicates the operation error code. It is the type of error (Please refer to the Chapter 4)

3 Example

3.1. Get the Location Information by QuecLocator

//Step 1: Configure and activate the PDP context.

AT+QICSGP=1,1,"UNIWAP","","",1   //Configure PDP context 1, APN is "UNIWAP" for
OK   China Unicom.
AT+QIACT=1   //Activate PDP context 1.
OK   //Activate successfully.
AT+QIACT?   //Query the state of PDP context.
+QIACT: 1,1,1,"10.7.157.1"

OK
AT+QLOCCFG="contextid",1   //Set the PDP context ID as 1. The PDP context ID
OK   must be activated first.
AT+QLOCCFG="contextid"   //Query the PDP context ID.
+QLOCCFG: "contextid",1

OK

//Step 2: Get the location information by QuecLocator.

AT+QCELLLOC   //Get the serving cell location.
+QCELLLOC: 117.206001,31.847601

OK

4 Summary of Error Codes

<err> indicates an error related to mobile equipment or network. The details about <err> are described in the following table.

Table 1: Summary of Error Codes

<err>	Meaning
701	HTTP unknown error
703	HTTP busy
706	HTTP network busy
707	HTTP network open fail
708	HTTP network no config
709	HTTP network deactivated
710	HTTP network error
714	HTTP DNS error
715	HTTP socket create error
716	HTTP socket connect error
717	HTTP socket read error
718	HTTP socket write error
719	HTTP socket close
720	HTTP data encode error
721	HTTP data decode error
722	HTTP read timeout

723	HTTP response fail
727	Wait data timeout
728	Wait HTTP response timeout
729	Alloc memory fail
730	Invalid parameter
731	Fail to get location
732	Timeout

5 Appendix A Reference

Table 2: Related Documents

SN	Document Name	Remark
[1]	Quectel_EC20_TCPIP_AT_Commands_Manual	Introduction about EC20 TCPIP AT commands
[2]	Quectel_EC20_AT_Commands_Manual	EC20 AT commands manual

Table 3: Related Documents

Abbreviation	Description
PDP	Packet Data Protocol
URL	Uniform Resource Locator