

QuecLocator

AT Commands Manual

UMTS/HSPA Module Series

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About the Document

History

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1 Introduction

Quectel 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. Scope of the Document

QuecLocator function is applicable to the following modules:

- UC20 UMTS/HSPA+ series
- UC15 UMTS/HSDPA series

1.2. 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_UC20_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_UC20_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.

1.3. Error Handling

1.3.1. Executing QuecLocator AT Command Fails

If you execute QuecLocator AT command and receive response "ERROR" from UC20 module, please check if the SIM card is inserted and AT+CPIN? is in "+CPIN: Ready" status.

1.3.2. 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 UC20 module to resolve this issue. After booting the UC20 module, please check the terms mentioned above at least three times and each time at an interval of 10 minutes to avoid frequently rebooting UC20 module.

1.3.3. 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 1.3.2).

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,"UNINET","",1

OK

AT+QIACT=1

OK

AT+QIACT?

+QIACT: 1,1,1,"10.7.157.1"

OK

AT+QLOCCFG="contextid",1

OK

AT+QLOCCFG="contextid"

+QLOCCFG: "contextid",1

OK

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

AT+QCELLLOC

+QCELLLOC: 117.206001,31.847601

OK

//Configure PDP context 1, APN is "UNINET" for China Unicom.

//Activate PDP context 1.

//Activate successfully.

//Query the state of PDP context.

//Set the PDP context ID as 1. The PDP context ID must be activated first.

//Query the PDP context ID.

//Get the serving cell location.

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
721	Decode error
730	Invalid parameter
731	Failed to get location
732	Timeout

5 Appendix A Reference

Table 2: Related Documents

SN	Document Name	Remark
[1]	Quectel_UC20_TCPIP_AT_Commands_Manual	UC20 TCPIP AT commands
[2]	Quectel_UC20_AT_Commands_Manual	UC20 AT commands manual

Table 3: Related Documents

Abbreviation	Description
PDP	Packet Data Protocol
URL	Uniform Resource Locator