

EC25&EC21

AT Commands Manual

LTE Module Series

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About the Document

History

Revision	Date	Author	Description
1.0	2016-05-30	James CAI/ Bonnie ZHAO	Initial
1.1	2017-01-18	Ivan ZHANG/ Sophie ZHU	<ol style="list-style-type: none"> Added the following AT commands: +QRIR/+QINDCFG/+QINISTAT/+QLTS/+QSPN/ +QHUP/+QEEC/+QSIDET/+QMIC/+QRXGAIN/ +QIIC/+QADC Added AT+QCFG commands shown as below: "urc/ri/ring"/"urc/ri/smsincoming"/"urc/ri/other"/"risignatype"/"urc/delay"/"urc/cache" Updated the description for <Act> parameter in AT+COPS command: added the value 100 which indicates CDMA network
1.2	2017-11-14	Jessica GENG	<ol style="list-style-type: none"> Added commands AT+QTONEDT, AT+QLDTMF, AT+QLTONE and AT+QCFG="tone/incoming" Updated the description of parameter <ci> in commands AT+CREG, AT+CGREG and AT+CEREG Deleted command AT+QCFG="tdscsq" and the description of +QURCCFG? in command AT+QURCCFG Updated the description of commands AT+QUCCFG, AT+CTZU, AT+QDAI, AT+QEEC, AT+QIIC and AT+QCFG="band" Updated the examples of commands AT+QIIC and AT+COPS Deleted some related information about CDMA Updated the supported baud rates of command AT+IPR
1.3	2018-09-20	Alessa TANG/ Jessica GENG/	<ol style="list-style-type: none"> Added Chapters 14~20. Added "ccinfo" as a supported value of <urctype>

Demi QU	in AT+QINDCFG.
	3. Updated the range of <index> in AT+QEEC.
	4. Updated the default value description of <st_gain> in AT+QSIDET.

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1 Introduction

1.1. Scope of the Document

This document presents the AT Commands Set for Quectel cellular engines EC25 & EC21.

1.2. AT Command Syntax

The “AT” or “at” prefix must be set at the beginning of each command line. To terminate a command line enter **<CR>**. Commands are usually followed by a response that includes “**<CR><LF><response><CR><LF>**”. Throughout this document, only the responses are presented, “**<CR><LF>**” are omitted intentionally.

The AT Commands Set implemented by EC25 & EC21 is a combination of 3GPP TS 27.007, 3GPP TS 27.005 and ITU-T recommendation V.25ter as well as the AT Commands developed by Quectel.

All these AT commands can be split into three categories syntactically: “**basic**”, “**S parameter**”, and “**extended**”. They are listed as follows:

- **Basic syntax**

These AT commands have the format of “**AT<x><n>**”, or “**AT&<x><n>**”, where “**<x>**” is the command, and “**<n>**” is/are the argument(s) for that command. An example of this is “**ATE<n>**”, which tells the DCE whether received characters should be echoed back to the DTE according to the value of “**<n>**”. “**<n>**” is optional and a default will be used if it is missing.

- **S parameter syntax**

These AT commands have the format of “**ATS<n>=<m>**”, where “**<n>**” is the index of the **S** register to set, and “**<m>**” is the value to assign to it.

- **Extended syntax**

These commands can be operated in several modes, as following table:

Table 1: Types of AT Commands and Responses

Test Command	AT+<x>=?	This command returns the list of parameters and value ranges set by the corresponding Write Command or internal processes.
Read Command	AT+<x>?	This command returns the currently set value of the parameter or parameters.
Write Command	AT+<x>=<...>	This command sets the user-definable parameter values.
Execution Command	AT+<x>	This command reads non-variable parameters affected by internal processes in the UE.

1.3. Supported Character Sets

EC25 & EC21 AT command interface defaults to the **GSM** character set. EC25 & EC21 modules support the following character sets:

- GSM format
- UCS2
- IRA

The character set can be configured and interrogated by using the **AT+CSCS** command (3GPP TS 27.007) and it is defined in 3GPP TS 27.005. The character set affects transmission and reception of SMS and SMS Cell Broadcast Messages, as well as the entry and display of phone book entries text field.

1.4. AT Command Interface

EC25 & EC21 AT command interface includes two USB ports (USB MODEM port and USB AT port) and one main UART port. The main UART port and two USB ports support AT command communication and data transfer.

1.5. Unsolicited Result Code

As an Unsolicited Result Code and a report message, URC is not issued as part of the response related to an executed AT command. URC is issued by the EC25 & EC21 without being requested by the TE and it is issued automatically when a certain event occurs. Typical events leading to URCs are incoming calls (**RING**), received short messages, high/low voltage alarm, high/low temperature alarm, etc.

1.6. Turn off Procedure

It is recommended to execute **AT+QPOWD** command to turn off the module, as it is the safest and best way. This procedure is realized by letting the module log off from the network and allowing the software to enter into a secure and safe data state before disconnecting the power supply.

After sending **AT+QPOWD**, do not enter any other AT commands. The module outputs message, **POWERED DOWN** and sets the STATUS pin as low to enter into the shutdown state. In order to avoid data loss, it is suggested to wait for 1s to switch off the VBAT after the STATUS pin is set as low and the URC **POWERED DOWN** is outputted. If **POWERED DOWN** has not been received after 65s, the VBAT shall be switched off compulsorily.