EC2x&EG2x&EG9x&EM05 Series

QCFG AT Commands Manual

LTE Standard Module Series

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Quectel Wireless Solutions Co., Ltd.
Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: +86 21 5108 6236
Email: info@quectel.com

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About the Document

Revision History

Version	Date	Author	Description
-	2021-04-15	Wythe WANG/ Alessa TANG/ Colin CUI	Creation of the document
1.0	2022-05-30	Wythe WANG/ Alessa TANG/ Colin CUI	First official release

Contents

Table Index

1 Introduction

This document introduces Quectel QCFG commands applicable for EC2x series, EG9x series, EG2x-G and EM05 series modules to query and configure UE settings.

1.1. Applicable Modules

Table 1: Applicable Modules

Module Series	Module
EC2x	EC25 series
	EC21 series
	EC20-CE
EG9x	EG95 series
	EG91 series
EG2x-G	EG25-G
	EG21-G
EM05	EM05 series

NOTE

The actual support of the specific **AT+QCFG** commands is subject to the result of executing **AT+QCFG=?** by using the corresponding firmware version.

1.2. Definitions

- **<CR>** Carriage return character.
- **<LF>** Line feed character.
- **<...>** Parameter name. Angle brackets do not appear on the command line.
- **[...]** Optional parameter of a command or an optional part of TA information response. Square brackets do not appear on the command line. When an optional parameter is not given in a command, the new value equals its previous value or the default settings, unless otherwise specified.
- **Underline** Default setting of a parameter.

1.3. AT Command Syntax

All command lines must start with **AT** or **at** and end with **<CR>**. Information responses and result codes always start and end with a carriage return character and a line feed character: **<CR><LF><response><CR><LF>**. In tables presenting commands and responses throughout this document, only the commands and responses are presented, and **<CR>** and **<LF>** are deliberately omitted.

AT+QCFG implemented by EC2x series, EG9x series, EG2x-G and EM05 series modules is in "Extended" syntax, as illustrated below.

- **Extended**

Extended commands can be executed in several types, as shown in the following table:

Table 2: Types of AT Commands

Command Type	Syntax	Description
Test Command	**AT+<cmd>=?**	Test the existence of the corresponding command and return information about the type, value, or range of its parameter.
Read Command	**AT+<cmd>?**	Check the current parameter value of the corresponding command.
Write Command	**AT+<cmd>=<p1>[,<p2>[,<p3>[...]]]**	Set user-definable parameter value.
Execution Command	**AT+<cmd>**	Return a specific information parameter or perform a specific action.

Multiple commands can be placed on a single line using a semi-colon (**;**) between commands. In such cases, only the first command should have **AT** prefix. Commands can be in upper or lower case.

Spaces should be ignored when you enter AT commands, except in the following cases:

- Within quoted strings, where spaces are preserved;
- Within an unquoted string or numeric parameter;
- Within an IP address;
- Within the AT command name up to and including a **=**, **?** or **=?**.

On input, at least a carriage return is required. A newline character is ignored so it is permissible to use carriage return/line feed pairs on the input.

If no command is entered after the **AT** token, **OK** will be returned. If an invalid command is entered, **ERROR** will be returned.

Optional parameters, unless explicitly stated, need to be provided up to the last parameter being entered.

1.4. AT Command Responses

When the AT command processor has finished processing a line, it will output **OK**, **ERROR** or **+CME ERROR: <err>** to indicate that it is ready to accept a new command. Solicited information responses are sent before the final **OK**, **ERROR** or **+CME ERROR: <err>**.

Responses will be in the format of:

<CR><LF>+CMD1:<parameters><CR><LF>
<CR><LF>OK<CR><LF>

1.5. Declaration of AT Command Examples

The AT command examples in this document are provided to help you learn about the use of the AT commands introduced herein. The examples, however, should not be taken as Quectel's recommendations or suggestions about how to design a program flow or what status to set the module into. Sometimes multiple examples may be provided for one AT command. However, this does not mean that there is a correlation among these examples, or that they should be executed in a given sequence.

2 Test Command

2.1. AT+QCFG Extended Configuration Settings

AT+QCFG Extended Configuration Settings	
Test Command **AT+QCFG=?**	Response **…** **+QCFG: "apready",(**list of supported **<enable>**s**),(**list of supported **<level>**s**),(**range of supported **<interval>**s**)** **+QCFG: "sleepind/level",(**list of supported **<value>**s**)** **+QCFG: "wakeupin/level",(**list of supported **<value>**s**)** **+QCFG: "urc/ri/ring",(**list of supported **<typeri>**s**),(**range of supported **<pulse_duration>**s**),(**range of supported **<active_duration>**s**),** **(**range of supported **<inactive_duration>**s**),(**list of supported **<ring_no_disturbing>**s**),(**range of supported **<pulse_count>**s**)** **+QCFG: "urc/ri/smsincoming",(**list of supported **<typeri>**s**),(**list of supported **<pulse_duration>**s**),(**range of supported **<pulse_count>**s**)** **+QCFG: "urc/ri/other",(**list of supported **<typeri>**s**),(**range of supported **<pulse_duration>**s**),(**range of supported **<pulse_count>**s**)** **+QCFG: "risignaltype",(**list of supported **<RI_signal_type>**s**)** **+QCFG: "urc/delay",(**list of supported **<enable>**s**)** **+QCFG: "urc/cache",(**list of supported **<enable>**s**)** **+QCFG: "urc/poweron",(**list of supported **<n>**s**)** **+QCFG: "divct",(**list of supported **<sys_mode>**s**),(**range of supported **<diversity_info>**s**)** **+QCFG: "bootup",<name>,(**list of supported **<enable>**s**)** **+QCFG: "ppp/sleep_ri",(**list of supported **<on_off>**s**),(**range of supported **<RI_interval>**s**)** **+QCFG: "thermal/txpwrlmt"[,<on_off>,<sensor>,<temp_threshold>,<duration>,<trig_cnt>,<crl_cnt>]** **+QCFG: "thermal/modem"[,<level>,<trig>,<clr>]**

	+QCFG: "urc/ri/pin",(list of supported **<pin_name>**s**)** **+QCFG: "icf",(**range of supported **<data_bit>**s**),(**range of supported **<stop_bit>**s**),(**range of supported **<parity_mode>**s**)** **+QCFG: "thermal/limit_rates",[,<enable>]** **+QCFG: "urcdelay",(**list of supported **<mode>**s**),(**range of supported **<delay_time>**s**)** **+QCFG: "sarcfg",(**list of supported **<mode>**s**),max_power,row_grads,column_grads,[band]** **+QCFG: "fast/poweroff",(**list of supported **<n>**s**)** **+QCFG: "sleep/datactrl",(**range of supported **<dev>**s**),(**range of supported **<time_out>**s**),(**list of supported **<flag>**s**)** **+QCFG: "rf/tuner_cfg",<index>,<lte bands>,[<wcdma bands>,<gsm bands>]** **+QCFG: "mms_rec_control",(**list of supported **<n>**s**)** **+QCFG: "tone/incoming",(**range of supported **<enable>**s**)** **+QCFG: "pcmclk",(**list of supported **<enable>**s**)** **+QCFG: "codec/powsave",(**list of supported **<status>**s**)** **+QCFG: "gprsattach",(**list of supported **<attach_mode>**s**)** **+QCFG: "nwscanmode",(**range of supported **<scan_mode>**s**),(**list of supported **<effect>**s**)** **+QCFG: "servicedomain",(**list of supported **<service>**s**),(**list of supported **<effect>**s**)** **+QCFG: "band",(**range of supported **<bandval>**s**),(**range of supported **<ltebandval>**s**),(**range of supported **<tdsbandval>**s**),(**list of supported **<effect>**s**)** **+QCFG: "rrc",(**range of supported **<rrcr>**s**)** **+QCFG: "msc",(**range of supported **<mscr>**s**)** **+QCFG: "sgsn",(**range of supported **<sgsnr>**s**)** **+QCFG: "hsdpacat",(**list of supported **<HSDPA_cat>**s**)** **+QCFG: "hsupacat",(**list of supported **<HSUPA_cat>)** **+QCFG: "pdp/duplicatechk",(**list of supported **<enable>**s**)** **+QCFG: "disable_backoff_lte",(**list of supported **<value>**s**)** **+QCFG: "airplanecontrol",(**range of supported **<enable>**s**)** **+QCFG: "epcflag",(**list of supported **<n>**s**)** **+QCFG: "lte/bandprior",(**range of supported **<band1>**s**),(**range of supported **<band2>**s**),(**range of supported **<band3>**s**)** **+QCFG: "plmn/addinfbdn",**(list of supported **<enable>**s) **+QCFG: "cops_no_mode_change",(**list of supported **<value>**s**)**

	+QCFG: "hplmn/search_timer",(range of supported **<timer>**s**)** **+QCFG: "tdd/config",(**range of supported **<assign>**s**),(**range of supported **<pattern>s)** **+QCFG: "urc_cause_support",(**range of supported **<bit_mask_value>**s**)** **+QCFG: "dhcppktfltr",(**list of supported **<disable>**s**)** **+QCFG: "oostimer",<timer1>,<timer2>,<timer3>** **+QCFG: "apn/blocked",(**list of supported **<block_mode>**s**),(**list of supported **<NV_mode>**s**)** **+QCFG: "redir/3gtolte",(**list of supported **<redir_mode>**s**),(**list of supported **<NV_flag>**s**),**list of supported **<NV_value>**s**)** **+QCFG: "rssi",(**range of supported **<thereshold>**s**)** **+QCFG: "roamservice",(**list of supported **<roam_mode>**s**),(**list of supported **<effect>**s**)** **+QCFG: "fast_dormancy",(**list of supported **<op>**s**),(**range of supported **<duration>**s**)** **+QCFG: "airplane",(**range of supported **<n>**s**)** **+QCFG: "rrc/control",(**list of supported **<enable>**s**),(**range of supported **<crrc>**s**),(**range of supported **<trrc>**s**),(**range of supported **<wai_time>**s**),(**list of supported **<bar_opt>**s**),(**range of supported **<conn_est_latency>**s**)** **+QCFG: "nwscanmodeex",(**range of supported **<mode>**s**)** **+QCFG: "assign_plmn_in_limit_search",(**list of supported **<enable>s),<plmn>** **+QCFG: "iprulectl",(**list of supported **<type>**s**)** **+QCFG: "disrplmn",(**list of supported **<RPLMN_enable>**s**),(**list of supported **<RPLMNact_enable>**s**)** **+QCFG: "lte/preferfre",(**list of supported **<op>**s**),(**range of supported **<index>**s**),(**list of supported **<band>**s**),<bandwith>,<earfcn>,<mcc>,<mnc>** **+QCFG: "cops_control",(**list of supported **<enable>**s**)** **+QCFG: "map_rej_cause7_to_cause14",(**list of supported **<flag>**s**)** **+QCFG: "band/keep",(**list of supported **<n>**s**)** **+QCFG: "netmaskset",(**list of supported **<enable>**s**),<netmask>** **+QCFG: "pingdiscard",(**list of supported **<en>**s**)** **+QCFG: "urc/ri/restart",(**list of supported **<enable>**s**)** **+QCFG: "ping/ri",(**list of supported **<enable>**s**),(**list of supported **<mode>**s**)** **+QCFG: "defaultdns",(**list of supported **<enable>**s**),<dns**

	1>,<dns2> **+QCFG: "lpm/dataind",(**list of supported **<enable>**s**),<mask>** **+QCFG: "roamserviceex",(**range of supported **<roammode>**s**)** **+QCFG: "ntp",(**range of supported **<cnt>**s**),(**range of supported **<interval>**s**)** **+QCFG: "TCP/SendMode",(**range of supported **<mode>**s**)** **+QCFG: "tcp/windowsize",(**list of supported **<buffer>**s**),(**range of supported **<window_size>**s**)** **+QCFG: "amrcodec",(**list of supported **<preference>**s**)** **+QCFG: "frhrcodec",(**list of supported **<preference>**s**)** **+QCFG: "bip/auth",(**range of supported **<n>**s**)** **+QCFG: "sms/listmsgmap",(**list of supported **<msgtype>**s**)** **+QCFG: "ims/ut",(**list of supported **<n>**s**)** **+QCFG: "ims",(**range of supported **<ims_conf>**s**)** **+QCFG: "ltesms/format",(**list of supported **<n>**s**)** **+QCFG: "mwictl",(**list of supported **<n>s)** **+QCFG: "sms/omadm",(**list of supported **<n>**s**)** **+QCFG: "volte_disable",(**list of supported **<n>**s**)** **+QCFG: "imsreg/iptype",(**list of supported **<n>**s**)** **+QCFG: "sim/recovery",(**range of supported **<recovery_count>**s**),(**list of supported **<auto_detect_period>**s**),(**list of supported **<auto_detect_count>**s**)** **+QCFG: "siminvalirecovery",(**list of supported **<enable>**s**),(**list of supported **<timer>**s**),(**list of supported **<counter>**s**)** **+QCFG: "roaming/voicecall",(**list of supported **<voicecall_mode>**s**)** **+QCFG: "voice_busytone",(**list of supported **<mode>**s) **+QCFG: "call_control",(**list of supported **<disableMO>**s**),(**list of supported **<disableMT>**s**)** **+QCFG: "ppp/termframe",**(list of supported **<flag>**s) **+QCFG: "usbnet",**(range of supported **<net>**s) **+QCFG: "usbcfg",<vid>,<pid>,<diag>,<nmea>,<at_port>,<modem>,<rmnet>,<adb>,<uac>** **+QCFG: "usbee",<enable>** **+QCFG: "usbmode",(**list of supported **<n>**s**)** **+QCFG: "spi/set",(**range of supported **<flag>**s**)** **+QCFG: "usbenum/seoctl",(**list of supported **<flag>**s**)** **+QCFG: "cdma/pppauth",(**list of supported **<n>**s**)** **+QCFG: "ehrpd",(**list of supported **<mode>**s**)** **+QCFG: "cdmasms/cmtformat"[,(**list of supported **<n>**s**)]**

	+QCFG: "urcport/sms",(list of supported **<n>**s**)** **+QCFG: "sms_retry",(**range of supported **<interval>**s**),(**range of supported **<period>**s**)** **+QCFG: "sms_control",(**list of supported **<submit>**s**),(**list of supported**<deliver>**s**)** **…** **OK**
Maximum Response Time	300 ms
Characteristics	/

NOTE

The above only shows an example for the command response. The response of the command varies according to the module used.

3 General Commands

3.1. AT+QCFG="apready" Set AP_Ready Behavior

The command queries and configures the behavior of AP_READY pin. An external MCU can change the AP_READY pin level as needed.

When there is a URC to be reported, if the AP_READY pin level is invalid, the URC is buffered first, and the AP_READY pin level will be detected periodically with the configured detection period. The URC will be output when the AP_READY pin level becomes valid. The pulse signal generated on the MAIN_RI pin can still be output according to the configured mode, and the pulse signal will not be buffered.

AT+QCFG="apready" Set AP_Ready Behavior	
Write Command **AT+QCFG="apready"[,<enable>,<level>,[<interval>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "apready",<enable>,<level>,<interval>** **OK** If the optional parameters are specified, set the AP_Ready behavior: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	this command takes effect immediately. The configuration will not be saved

Parameter

<enable>	Integer type. Enable/disable AP_Ready behavior. 0 Disable 1 Enable
<level>	Integer type. Valid level of Indicator pin. This parameter only takes effect when the

	AP_READY detection function is enabled, and determines the default level of AP_READY. 0 Low level 1 High level
<interval>	Integer type. Detection period. Unit: ms. Range:100–3000. Default value: 500. This parameter only takes effect when AP_READY detection function is enabled. When AP_READY level is invalid and a URC is reported, this parameter is used as detection interval to check whether the indicator pin level is valid.

NOTE

1. Maximally 15 URCs can be buffered. When the number of URC exceeds 15, the oldest one in the buffer will be cleared to store the new URC.
2. The **RING** URC is buffered only once for each call process.

Example

```
AT+QCFG="apready",1,0,800
OK
AT+QCFG="apready"
+QCFG: "apready",1,0,800

OK
```

3.2. AT+QCFG="sleepind/level" Configure the Output Level of the SLEEP_IND Pin

This command configures the output level of the SLEEP_IND pin when the module is in sleep mode.

AT+QCFG ="sleepind/level"	**Configure the Output Level of the SLEEP_IND Pin**
Write Command **AT+QCFG="sleepind/level"[,<value>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "sleepind/level",<value>** **OK** If the optional parameter is specified, set the output level of the SLEEP_IND pin: **OK** Or **ERROR**

Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<value>	Integer type. It indicates the output level after the module enters sleep mode. 0 When the module enters sleep mode, SLEEP_IND pin outputs high level. 1 When the module enters sleep mode, SLEEP_IND pin outputs low level.

Example

```
AT+QCFG="sleepind/level",0      //SLEEP_IND pin outputs high level.
OK
AT+QCFG="sleepind/level"
+QCFG: "sleepind/level",0       //Query the current setting.

OK
```

3.3. AT+QCFG="wakeupin/level" Configure Whether to Wake up the Module Through WAKEUP_IN Pin

This command configures whether to wake up the module through WAKEUP_IN pin.

AT+QCFG ="wakeupin/level" Configure Whether to Wake up the Module Through WAKEUP_IN Pin	
Write Command **AT+QCFG="wakeupin/level"[,<value>[,<enable>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "wakeupin/level",<value>,<enable>** **OK** If the optional parameters are specified, configure whether to wake up the module through WAKEUP_IN pin: **OK** Or **ERROR**
Maximum Response Time	300 ms

Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<value>	Integer type. Set WAKEUP_IN pin to low or high level to wake up the module. 0 Set WAKEUP_IN pin to low level 1 Set WAKEUP_IN pin to high level
<enable>	Integer type. Enable or disable whether to wake up the module through WAKEUP_IN pin. 0 Disable 1 Enable

Example

```
AT+QCFG="wakeupin/level",0      //Set WAKEUP_IN pin to low level to wake up the module.
OK
AT+QCFG="wakeupin/level"        //Query the current setting.
+QCFG: "wakeupin/level",0,0

OK
```

3.4. AT+QCFG="urc/ri/ring" Set RI Behavior When RING URC is Presented

AT+QCFG="urc/ri/ring", **AT+QCFG="urc/ri/smsincoming"**(***Chapter 3.5***) and **AT+QCFG="urc/ri/other"** (***Chapter 3.6***) control the RI (ring indicator) behavior when a URC is reported. These configurations will be stored into NV automatically.

The ring indicator is active low. **AT+QCFG="urc/ri/ring"** specifies the RI behavior when URC **RING** is presented to indicate an incoming call.

The sum of **<active_duration>** and **<inactive_duration>** determines the interval time of **RING** indications when a call is coming.

AT+QCFG="urc/ri/ring" Set RI Behavior When RING URC is Presented	
Write Command **AT+QCFG="urc/ri/ring"[,<typeri>[,<pulse_duration>[,<active_duration>[,<inactive_duration>[,<ring_no_disturbing>[,<pulse_count>]]]]]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "urc/ri/ring",<typeri>,<pulse_duration>,<active_duration>,<inactive_duration>,<ring_no_disturbing>,<**

	pulse_count> **OK** If the optional parameters are specified, set the RI behavior when **RING** URC is presented: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<typeri>	String type. RI behavior when URCs are presented. "off" No change. Ring indicator keeps inactive. "pulse" Pulse. Pulse width is determined by **<pulse_duration>**. "always" Change to active. RI behavior can be restored to inactive by **AT+QRIR**. See ***document [1]*** for details about the command. "auto" When "RING" is presented to indicate an incoming call, the ring indicator changes to and keeps active. When ring of the incoming call ends, either answering or hanging up the incoming call, the ring indicator will change to inactive. "wave" When **RING** is presented to indicate an incoming call. The ring indicator outputs a square wave. Both **<active_duration>** and **<inactive_duration>** are used to set parameters of the square wave. When the ring of incoming call ends, either answering or hanging up the incoming call, the ring indicator will change to inactive.
<pulse_duration>	Integer type. Set the pulse width. Range: 1–2000. Default value: 120. Unit: ms. This parameter is only valid when **<typeri>** is "pulse". If this parameter is not needed, it can be set as null.
<active_duration>	Integer type. The active duration of the square wave. Range: 1–10000. Default value: 1000. Unit: ms. This parameter is only valid when **<typeri>** is "wave".
<inactive_duration>	Integer type. Set the inactive duration of the square wave. Range: 1–10000. Default value: 5000. Unit: ms. This parameter is only valid when **<typeri>** is "wave".
<ring_no_disturbing>	String type. Set whether the ring indicator behavior could be disturbed. This

	parameter is only valid when **<typeri>** is configured to "auto" or "wave". For example, when **<typeri>** is "wave", if the square wave does not need to be disturbed by other URCs (including SMS related URCs), then **<ring_no_disturbing>** should be set to "on". "off" RI behavior can be disturbed by other URCs when the behavior is caused by an incoming call ringing. "on" RI behavior cannot be disturbed by other URCs when the behavior is caused by an incoming call ringing.
<pulse_count>	Integer type. The count of pulse. This parameter is only valid when **<typeri>** is "pulse". Range: 1–5. Default value: 1. The interval time between two pulses is equal to **<pulse_duration>**.
<err>	Error code. See ***Chapter 13***.

3.5. AT+QCFG="urc/ri/smsincoming" Set RI Behavior When Incoming SMS URCs are Presented

This command specifies the RI (ring indicator) behavior when related incoming message URCs are presented. Related incoming message URCs list: **+CMTI**, **+CMT**, **+CDS** and **+CBM**.

AT+QCFG="urc/ri/smsincoming" Set RI Behavior When Incoming SMS URCs are Presented	
Write Command **AT+QCFG="urc/ri/smsincoming"[,<typeri>[,<pulse_duration>[,<pulse_count>]]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "urc/ri/smsincoming",<typeri>,<pulse_duration>,<pulse_count>** **OK** If the optional parameters are specified, set the RI behavior when incoming SMS URCs are presented: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<typeri>	String type. RI behavior when URCs are presented. "off" No change. Ring indicator keeps inactive. "pulse" Pulse. Pulse width is determined by **<pulse_duration>**. "always" Change to active. RI behavior can be restored to inactive by **AT+QRIR**.
<pulse_duration>	Integer type. Set the width of pulse. Range: 1–2000. Default value: 120. Unit: ms. This parameter is only valid when **<typeri>** is "pulse".
<pulse_count>	Integer type. The count of pulse. This parameter is only valid when **<typeri>** is "pulse". Range: 1–5. Default value: 1. The interval time between two pulses is equal to **<pulse_duration>**.
<err>	Error code. See ***Chapter 13***.

3.6. AT+QCFG="urc/ri/other" Set RI Behavior When Other URCs are Presented

This command specifies the RI (ring indicator) behavior when other URCs are presented.

AT+QCFG="urc/ri/other" Set RI Behavior When Other URCs are Presented	
Write Command **AT+QCFG="urc/ri/other"[,<typeri>[,<pulse_duration>[,<pulse_count>]]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "urc/ri/other",<typeri>,<pulse_duration>,<pulse_count>** **OK** If the optional parameters are specified, set the RI behavior when other URCs are presented: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<typeri>	String type. RI behavior when URCs are presented。 "off" No change. Ring indicator keeps inactive. "pulse" Pulse. Pulse width is determined by **<pulse_duration>**.
<pulse_duration>	Integer type. Set the width of pulse. Range: 1–2000. Default value: 120. Unit: ms. This parameter is effect only when **<typeri>** is "pulse".
<pulse_count>	Integer type. The count of pulse. This parameter is only valid when **<typeri>** is "pulse". Range: 1–5. Default value: 1. The interval time between two pulses is equal to **<pulse_duration>**.
<err>	Error code. See ***Chapter 13***.

3.7. AT+QCFG="risignaltype" RI Signal Output Carrier

This command specifies the RI (ring indicator) signal output carrier.

AT+QCFG="risignaltype" RI Signal Output Carrier	
Write Command **AT+QCFG="risignaltype",[<RI_signal_type>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "risignaltype",<RI_signal_type>** **OK** If the optional parameter is specified, set the RI signal output carrier: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<RI_signal_type>	String type. RI signal output carrier. "respective" The ring indicator behaves on the port where URC is presented, and the port can be obtained by **AT+QURCCFG="urcport"**. See

		document [1] for details about the command. If URC is presented on UART port, it is physical ring line. If URC is presented on USB modem port, it is virtual ring line. If URC is presented on USB AT port, no ring line for USB AT port which does not support ring line.
	"physical"	No matter which port URC is presented on, the RI pin will have a ring jump.
<err>	Error code. See ***Chapter 13***.	

Example

```
AT+QCFG="risignaltype"
+QCFG: "risignaltype","respective"

OK
AT+QCFG="risignaltype","physical"
OK
AT+QCFG="risignaltype"
+QCFG: "risignaltype","physical"

OK
```

3.8. AT+QCFG="urc/delay" Delay URC Indication Output

This command delays the output of URC indication until ring indicator pulse ends.

AT+QCFG="urc/delay" Delay URC Indication Output	
Write Command **AT+QCFG="urc/delay"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "urc/delay",<enable>** **OK** If the optional parameter is specified, set when the URC indication is outputted: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**

Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<enable>	Integer type. 0 URC indication will be outputted when ring indicator pulse starts. 1 URC indication will be outputted when ring indicator pulse ends (only effective when the type of ring indicator is "pulse". See **AT+QCFG="urc/ri/ring"**, **AT+QCFG="urc/ri/smsincoming"** or **AT+QCFG="urc/ri/other"** for details).
<err>	Error code. See ***Chapter 13***.

3.9. AT+QCFG="urc/cache" Enable/Disable URC Cache

AT+QCFG="urc/cache" Enable/Disable URC Cache	
Write Command **AT+QCFG="urc/cache"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "urc/cache",<enable>** **OK** If the optional parameter is specified, enable/disable URC cache: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<enable>	Integer type. Enable/disable URC cache. 0 Disable 1 Enable

<err>	Error code. See ***Chapter 13***.

Example

```
AT+QCFG="urc/cache"
+QCFG: "urc/cache",0          //Disable URC cache.

OK
AT+QCFG="urc/cache",1         //Enable URC cache.
OK
AT+QCFG="urc/cache"
+QCFG: "urc/cache",1

OK

//Make a call and send two messages to the module.
AT+QCFG="urc/cache",0         //Disable URC cache.
OK
```

3.10. AT+QCFG="urc/poweron" Set Output URC of Power-on

AT+QCFG="urc/poweron" Set Output URC of Power-on	
Write Command **AT+QCFG="urc/poweron"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "urc/poweron",<n>** **OK** If the optional parameter is specified, set output URC of power-on: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect after rebooting. The configuration will be saved automatically.

Parameter

<n>	Integer type. Enable/disable URC output of power-on. 0 Enable 1 Disable

Example

```
AT+QCFG="urc/poweron"
+QCFG: "urc/poweron",0          //Query the current configuration of URC output.

OK
AT+CFUN=0
OK
AT+CFUN=1
OK

+CPIN: READY

+QUSIM: 1

+QIND: SMS DONE

+QIND: PB DONE
AT+QCFG="urc/poweron",1         //Disable URC output.
OK
AT+CFUN=0
OK
AT+CFUN=1
OK
//No URC output.
AT+QCFG="urc/poweron"
+QCFG: "urc/poweron",1

OK
```

3.11. AT+QCFG="divctl" Configure Primary and Rx-diversity under LTE/WCDMA

AT+QCFG="divctl" Configure Primary and Diversity under LTE/WCDMA	
Write Command **AT+QCFG="divctl",<sys_mode>[,<diversity_info>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG:"divctl",<sys_mode>,<diversity_info>** **OK** If the optional parameter is specified, configure primary and Rx-diversity under LTE/WCDMA: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	/

Parameter

<sys_mode>	String type. Network mode. "lte" LTE "wcdma" WCDMA
<diversity_info>	Integer type. Rx-diversity chain information. 0 Enable Rx-diversity chains 0 and 1 (PRX and DRX respectively) 1 Signal information is available on Rx-diversity chain 0 (PRX). 2 Signal information is available on Rx-diversity chain 1 (DRX).

Example

```
AT+QCFG="divctl","lte"                  //Query the current configuration under LTE.
+QCFG: "divctl","lte",0

OK

AT+QCFG="divctl","lte",1                //Open LTE PRX, and close DRX.
```

```
OK
```

3.12. AT+QCFG="bootup" Enable/Disable Services in Linux

This command enables/disables the services in Linux, such as the web services.

AT+QCFG="bootup" Enable/Disable Services in Linux	
Write Command **AT+QCFG="bootup"[,<name>,<enable>]**	Response If the optional parameter is omitted, list the range supported by **<name>**: **+QCFG: "bootup",<sfe,wlan-services,web-services>** **OK** If the optional parameter is specified, enable/disable services in Linux: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect after rebooting. The configuration will be saved automatically.

Parameter

<name>	String type. Service name.	
	sfe	Shortcut forward engine
	web-services	WEB service
	wlan-services	WLAN service
<enable>	Integer type. Set/query the services status.	
	0	Disable the services status
	1	Enable the services status
	2	Query the services status

Example

```
AT+QCFG="bootup"
+QCFG: "bootup",<sfe,wlan-services,web-services>

OK
```

```
AT+QCFG="bootup",web-services,0
OK
```

3.13. AT+QCFG="ppp/sleep_ri" Enable/Disable Waking up the Module through the RI Pin Indication after PPP Establishment

AT+QCFG="ppp/sleep_ri" Enable/Ddisable Waking up the Module through the RI Pin Indication after PPP Establishment	
Write Command **AT+QCFG="ppp/sleep_ri"[,<on_off>,<RI_interval>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "ppp/sleep_ri",<on_off>,<RI_interval>** **OK** If the optional parameters are specified, enable or disable waking up the module through the RI pin after PPP establishment: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<on_off>	Integer type. Enable/Disable waking up the module through the RI pin when receiving data after PPP establishment. 0 Disable 1 Enable
<RI_interval>	Integer type. RI level jump interval. Unit: ms. Range: 500–50000. Default value: 1000.

NOTE

Under PPP, when the module is awakened from the sleep, the RI pin always changes from high level to low level.

3.14. AT+QCFG="thermal/txpwrlmt" Configure Temperature Protection Strategy

This command configures temperature protection strategy to restrict the maximum transmission power of the module.

AT+QCFG="thermal/txpwrlmt"	Configure Temperature Protection Strategy
Write command **AT+QCFG="thermal/txpwrlmt"[,<on_off>,<sensor>,<temp_threshold>,<duration>,<trig_cnt>,<crl_cnt>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "thermal/txpwrlmt",<on_off>,<sensor>,<temp_threshold>,<duration>,<trig_cnt>,<crl_cnt>** **OK** If the optional parameters are specified, configure temperature protection strategy: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<on_off>	Integer type. Enable/disable the restriction for the maximum transmission power when a specified sensor reaches the temperature threshold. 1 Disable 0 Enable
<sensor>	Integer type. Sensor ID. Range: 0–7. 2 Modem temperature sensor 5 PA temperature senso 7 XO temperature sensors
<temp_threshold>	Integer type. Temperature threshold. Range: -150~150. Unit: ºC. Default value: 105.
<duration>	Integer type. Detect period. Range: 1000–360000. Unit: ms. Default value: 1000.
<trig_cnt>	Integer type. Trigger counter. Range: 1–10000. Default value: 3.
<clr_cnt>	Integer type. Clear counter. Range: 1–10000. Default value: 10.

3.15. AT+QCFG="thermal/modem" Configure Thermal Threshold

This command configures the thermal threshold to trigger the UL/DL rate descending.

AT+QCFG="thermal/modem" Configure Thermal Threshold	
Write Command **AT+QCFG="thermal/modem"[,<level>,<trig>,<clr>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "thermal/modem", 1,<trig>,<clr>** **+QCFG: "thermal/modem", 2,<trig>,<clr>** **+QCFG: "thermal/modem", 3,<trig>,<clr>** **OK** If the optional parameters are specified, set the thermal threshold to trigger the UL/DL rate descending. **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect after rebooting. The configuration will be saved automatically.

Parameter

<level>	Integer type. Working condition of module under thermal threshold. 1 Descending UL rate. 2 Descending DL and UL rate. 3 Service state limitation
<trig>	Integer type. Triggering threshold.
<clr>	Integer type. Clearing threshold.

NOTE

- When **<level>**=1, **<trig>**=100000 and **<clr>**=95000 by default.
  If the trigger threshold is higher than 100 degrees, the module enters Level1 to lower UL rate; If the clearing threshold is lower than 95 degrees, the module exits from Level 1.
- When **<level>**=2, **<trig>**=105000 and **<clr>**=100000 by default.
  If the trigger threshold is higher than 105 degrees, the module enters level 2 to lower UL and DL rate; If the clearing threshold is lower than 100 degrees, the module exits from level 2.
- When **<level>**=3, **<trig>**=115000 and **<clr>**=105000 by default.

If the trigger threshold is higher than 115 degrees, the module enters limitation service state; If the clearing threshold is lower than 100 degrees, the module exits from level 3.

3.16. AT+QCFG="urc/ri/pin" Configure UART Pins Corresponding to RI

AT+QCFG="urc/ri/pin" Configure UART Pins Corresponding to RI	
Write Command **AT+QCFG="urc/ri/pin"[,<pin_name>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "urc/ri/pin",<pin_name>** **OK** If the optional parameter is specified, configure UART pins corresponding to RI: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<pin_name>	String type. UART pin name. "uart_ri" "uart_dcd"

3.17. AT+QCFG="icf" Configure Main UART

This command configures the data bit, stop bit, parity bit of main UART.

AT+QCFG="icf" Configure Main UART	
Write Command **AT+QCFG="icf"[,<data_bit>,<stop_bit>,<parity_mode>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "icf",<data_bit>,<stop_bit>,<parity_mode>**

	OK If the optional parameters are specified, set the Main UART: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect after rebooting. The configuration will be saved automatically.

Parameter

<data_bit>	Integer type. The supported data bit per char. 0 5 data bits per char 1 6 data bits per char 2 7 data bits per char 3 8 data bits per char
<stop_bit>	Integer type. The supported stop bit. 0 0.5 stop bit 1 1 stop bit 2 1.5 stop bits 3 2 stop bits
<parity_mode>	Integer type. The supported parity mode. 0 NO_PARITY 1 ODD_PARITY 2 EVEN_PARITY 3 SPACE_PARITY

Example

```
AT+QCFG="icf"
+QCFG: "icf",3,1,0          //Default UART configuration: 8 data bits per char, 1 stop bits, NO_PARITY.
OK
AT+QCFG="icf",2,1,1         //Configure main UART: 7 data bits per char, 1 stop bits, ODD_PARITY.
OK
```

3.18. AT+QCFG="thermal/limit_rates" Enable/Disable the Rate Limit

This command enables/disables the rate limit under high temperature.

AT+QCFG="thermal/limit_rates"	Enable/Disable the Rate Limit
Write Command **AT+QCFG="thermal/limit_rates"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "thermal/limit_rates",<enable>** **OK** If the optional parameter is specified, enable/disable the rate limit: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect after rebooting. The configuration will be saved automatically.

Parameter

<enable>	Integer type. Enable/Disable the rate limit. 0 Disable 1 Enable

Example

```
AT+QCFG="thermal/limit_rates"
+QCFG: "thermal/limit_rates",0

OK
AT+QCFG="thermal/limit_rates",1
OK
```

3.19. AT+QCFG="urcdelay" Configure URC Delay

This command enables/disables URC delay report and URC delay time. When this feature is enabled, URC will be reported after the delay time.

AT+QCFG="urcdelay" Configure URC Delay	
Write Command **AT+QCFG="urcdelay"[,<mode>,<delay_time>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "urcdelay",<mode>,<delay_time>** **OK** If the optional parameters are specified, configure URC delay: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<mode>	Integer type. Disable/enable URC delay feature. 0 Disable 1 Enable
<delay_time>	Integer type. URC delay time. Range: 0–10000. Unit: ms. Default value: 100.

Example

```
AT+QCFG="urcdelay"
+QCFG: "urcdelay",0,0          //URC delay is disabled by default.

OK
AT+QCFG="urcdelay",1,3000    //Enable URC delay feature and delay URC for 3 s.
OK
```

3.20. AT+QCFG="sarcfg" Set SAR Transmission Power for LTE/WCDMA/GSM

This command sets the specific transmission power corresponding to the SAR power level for LTE/WCDMA/GSM.

AT+QCFG="sarcfg" Set SAR Transmission Power for LTE/WCDMA/GSM	
Write Command **AT+QCFG="sarcfg"[,<mode>[,<max_power>,<row_grads>,<column_grads>[,<band>]]]**	Response If **<mode>**, **<max_power>**, **<row_grads>**, **<column_grads>** and **<band>** are omitted, query the current configuration: **+QCFG: "sarcfg",<("lte_wcdma","gsm","lte","wcdma")>,<max_power>,<row_grads>,<column_grads>[,band]** **OK** If **<max_power>**, **<row_grads>**, **<column_grads>** and **<band>** are omitted, return the power for the network mode specified by **<mode>**: **+QCFG: "sarcfg",<("lte_wcdma","gsm","lte","wcdma")>,<max_power>,<row_grads>,<column_grads>** **OK** If **<max_power>**, **<row_grads>** and **<column_grads>** are omitted, return the power for the band under the network mode specified by **<mode>**: **+QCFG: "sarcfg",<("lte_wcdma","gsm","lte","wcdma")>,<max_power>,<row_grads>,<column_grads>[,band]** **OK** If all the optional parameters are specified, set SAR transmission power for LTE/WCDMA/GSM: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	/

Parameter

<mode>	String type. Network mode. "lte_wcdma" LTE&WCDMA "gsm" GSM only "lte" LTE only "wcdma" WCDMA only
<max_power>	Integer type. The transmission power corresponding to the maximum SAR level. When **<mode>** is "gsm", the range is 600–3000. Unit: 0.01 db. When **<mode>** is not "gsm", the range is 600–3000. Unit: 0.01 db.
<row_grads>	Integer type. Transmission power difference between adjacent SAR levels. The value is less than **<max_power>** configured in this command. Unit: 0.01 db.
<column_grads>	Integer type. The transmission power difference between adjacent slot levels. Range: 600–3000. Unit: 0.01db. The value is less than **<max_power>** configured in this command. This parameter is only valid when **<mode>** is "gsm". When **<mode>** is not "gsm", **<column_grads>** must be set to 0.
<band>	When **<mode>** is "lte" or "wcdma", a single band can be specified with **<band>**. If **<band>** is omitted, configure all the bands under LTE or WCDMA. **LTE**: 0 LTE B1 1 LTE B2 2 LTE B3 3 LTE B4 4 LTE B5 5 LTE B6 6 LTE B7 7 LTE B8 8 LTE B9 9 LTE B10 10 LTE B11 11 LTE B12 12 LTE B13 13 LTE B14 14 LTE B17 15 LTE B18 16 LTE B19 17 LTE B20 18 LTE B21 19 LTE B23 20 LTE B24 21 LTE B25 22 LTE B26 23 LTE B27 24 LTE B28

25	LTE B30	
26	LTE B31	
27	LTE B33	
28	LTE B34	
29	LTE B38	
30	LTE B39	
31	LTE B40	
32	LTE B41	
33	LTE B42	
43	LTE B43	
45	LTE B45	
66	LTE B66	
71	LTE B71	
WCDMA:		
35	WCDMA B1	WCDMA2100
36	WCDMA B2	WCDMA1900
37	WCDMA B4	WCDMA1700
38	WCDMA B5	WCDMA850
39	WCDMA B8	WCDMA900
40	WCDMA B9	WCDMA1700
41	WCDMA B11	WCDMA1500

NOTE

1. When **<max_power>** - **<row_grads>** × $SAR_{level(n)}$ < 0, transmission power of the $SAR_{level(n)}$ equals that of $SAR_{level(n-1)}$.
2. In LTE and WCDMA, by default, the transmission power of $SAR_{level(1)}$ to $SAR_{level(8)}$ corresponds to 23 dBm to 16 dBm respectively. **<max_power>** = 230 (23 dBm), **<row_grads>** = 10 (1 dBm).
3. In GSM, each SAR level is subdivided into 5 slots, and the power difference between each slot is determined by **<column_grads>**. For example, when **<column_grads>** = 100, it means that the power difference of the slot is 100/100 = 1 dBm.
   The power difference between each SAR level is determined by **<row_grads>**. For example, when **<row_grads>**=100, it means that the power difference of the SAR level is 100/100=1 dBm, that is, the transmission power of $SAR_{level(1)}$ to $SAR_{level(8)}$ corresponds to 28 dBm to 12 dBm respectively. The default values are: **<max_power>** = 2800 (28 dBm), **<row_grads>** = 100 (1 dBm). **<column_grads>** = 100 (1 dBm).

Example

```
AT+QCFG="sarcfg"                    //Query the current setting.
+QCFG: "sarcfg",("lte_wcdma","gsm","lte","wcdma"),max_power,row_grads,column_grads,[band]

OK
```

```
AT+QCFG="sarcfg","lte_wcdma"
+QCFG: "sarcfg","lte_wcdma",230,10,0

OK
AT+QCFG="sarcfg","lte",5
+QCFG: "sarcfg","lte",230,10,0

OK
AT+QCFG="sarcfg","lte_wcdma",230,10,0
OK
AT+QCFG="sarcfg","lte",230,10,0,5
OK
```

3.21. AT+QCFG="fast/poweroff" Enable/Disable Fast Power-Off

AT+QCFG="fast/poweroff" Enable/Disable Fast Power-Off	
Write Command **AT+QCFG="fast/poweroff"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "fast/poweroff",<n>** **OK** If the optional parameter is specified, enable/disable fast power-off: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<n>	Integer type. Enable/disable fast power-off. 0 Disable 1 Enable
<err>	Error code. See ***Chapter 13***.

Example

```
AT+QCFG="fast/poweroff"          //Query the current setting.
+QCFG: "fast/poweroff",0

OK
AT+QCFG="fast/poweroff",1        //Enable fast power-off.
OK
AT+QCFG="fast/poweroff"
+QCFG: "fast/poweroff",1         //Fast power-off is enabled.

OK
```

3.22. AT+QCFG="sleep/datactrl" Configure Data Cache Mode

This command configures data cache mode when the module is in sleep mode.

AT+QCFG="sleep/datactrl" Configure Data Cache Mode	
Write Command **AT+QCFG="sleep/datactrl"[,<dev>[,<time_out>[,<flag>]]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "sleep/datactrl",<dev>,<time_out>,<flag>** **OK** If the optional parameters are specified, set the data cache mode when the module is in sleep mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect immediately. The configuration will not be saved.

Parameter

<dev>	Integer type. The type of the device to be cached. (e.g. 5 = 1 + 4, indicates caching the data that from UART1 and USB AT port when the module is in sleep mode.) 0 No device. Disable data cache. 1 UART1 2 USB modem port (Not supported currently)

	4 USB AT port (Not supported currently)
<time_out>	Integer type. The maximum time to cache the data that from the specified output port. If time reaches the set time, the data will be output. Default value: 300. Unit: ms.
<flag>	Integer type. The flag of automatic sending data when USB status changes (not supported currently). 0 When the USB changes to the normal state, the data sending will not be triggered. 1 When USB changes from DISCONNECT or SUSPEND to CONFIGURED, the module will send the cached data immediately.
<err>	Error code. See ***Chapter 13***.

NOTE

When all the following conditions are met, the module judges that the host is in the sleep mode.

- DTR condition: DTR sleep control is enabled with high level. If DTR sleep control is disabled, this condition can be ignored.
- USB condition: the status of USB is DISCONNECT or SUSPEND.
- **AT+QSCLK** is configured to 1.

Example

```
AT+QCFG="sleep/datactrl",1,800,0    //Enable data caching when the module is in sleep mode.
                                      The caching port is UART1. Timeout is 800 ms.
OK
AT+QCFG="sleep/datactrl"
+QCFG: "sleep/datactrl",0,300,1      //Query the current setting, which is disabled.

OK
```

3.23. AT+QCFG="rf/tuner_cfg" Set the Mapping between RF Tuner and RF Bands

AT+QCFG="rf/tuner_cfg" Set the Mapping between RF Tuner and RF Bands	
Write Command **AT+QCFG="rf/tuner_cfg"[,<index>,<lte bands>,<wcdma bands>,<gsm bands>]**	Response If the optional parameters are omitted, query the current setting: **"rf/tuner_cfg",<index>,<lte bands>,<wcdma bands>,<gam bands>** **OK**

	If the optional parameters are specified, set the mapping between RF tuner and RF bands: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command takes effect after rebooting. The configuration will be saved automatically.

Parameter

<index>	Integer type. Pin level status. Range: 0–3. 0 Pin 144 at low level, pin 143 at low level 1 Pin 144 at low level, pin 143 at high level 2 Pin 144 at high level, pin 143 at low level 3 Pin 144 at high level, pin 143 at high level
<lte bands>	String type. LTE bands, and the separator is comma. E.g., "1,3,5", etc.
<wcdma bands>	String type. WCDMA bands, and the separator is comma. E.g., "1,3,5", etc.
<gsm bands>	String type. GSM bands, and the separator is comma. E.g., "1,3,5", etc.

Example

```
AT+QCFG="rf/tuner_cfg"              //Query the current setting.
+QCFG: "rf/tuner_cfg",0,"1,2,3,4,8,25,39","1,2,4,8","8,3,2"
"rf/tuner_cfg",1,"5,18,19,20,26","5,6,19","5"
"rf/tuner_cfg",2,"12,13,28"
"rf/tuner_cfg",3,"7,38,40,41"

OK

//Set the LTE bands, i.e., pin 144 at high level and pin 143 at low level.
AT+QCFG="rf/tuner_cfg",2,"2,12,13, 25,28","5, 8"
OK
AT+QCFG="rf/tuner_cfg"              //Query the current setting.
+QCFG: "rf/tuner_cfg", 0,"1, 3, 4, 8, 39","1, 2","8, 3, 2"
"rf/tuner_cfg",1,"5,18,19,20,26","5,6,19","5"
"rf/tuner_cfg",2,"2,12,13, 25,28","5,8"
"rf/tuner_cfg",3,"7,38,40,41"

OK
```

3.24. AT+QCFG="mms_rec_control" Save/Discard the MMS

AT+QCFG="mms_rec_control"	Save/Discard the MMS
Write Command **AT+QCFG="mms_rec_control"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "mms_rec_control",<n>** **OK** If the optional parameter is specified, set whether to discard the MMS: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configuration will be saved automatically.

Parameter

<n>	Integer type. Whether to discard the MMS.	
	0	Save the MMS
	1	Discard the received MMS

Example

```
AT+QCFG="mms_rec_control",1      //Discard the received MMS.
OK
AT+QCFG="mms_rec_control"        //Query the current setting.
+QCFG: "mms_rec_control",1

OK
```

4 Audio Commands

4.1. AT+QCFG="tone/incoming" Enable Ring Tone

AT+QCFG="tone/incoming" Enable Ring Tone	
Write Command **AT+QCFG="tone/incoming"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "tone/incoming",<enable>** **OK** If the optional parameter is specified, enable ring tone: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configuration will be saved automatically.

Parameter

<enable>	Integer type. Enable/disable the ring tone. 0 Disable ring tone 1 Enable Nokia ring tone 2 Enable ring tone
<err>	Error code. See ***Chapter 13***.

Example

```
AT+QCFG="tone/incoming"          //Ring tone is disabled.
+QCFG: "tone/incoming",0
```

```
OK
AT+QCFG="tone/incoming",1          //Enable the ring tone.
OK
AT+QCFG="tone/incoming"            //Ring tone is enabled.
+QCFG: "tone/incoming",1

OK
```

4.2. AT+QCFG="pcmclk" Configure PCM_CLK

This command enables or disables PCM_CLK.

AT+QCFG="pcmclk" Configure PCM_CLK	
Write Command **AT+QCFG="pcmclk"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "pcmclk",<enable>** **OK** If the optional parameter is specified, configure PCM_CLK: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configuration will not be saved.

Parameter

<enable>	Integer type. Enable/disable PCM_CLK. 0 Disable PCM_CLK. In decimal, the value is 0; In hexadecimal, the value is 0x0. 1 Enable PCM_CLK. In decimal, the value is 1; In hexadecimal, the value is 0x1.
<err>	Error code. See ***Chapter 13***.

NOTE

The output frequency depends on **<clock>** of **AT+QDAI**. If enabled, PCM_CLK will be able to output square wave, and the frequency is 2048 KHz; the PCM_SYNC will be able to output pulse shape, and the frequency is 8 KHz. See ***document [1]*** for the details of the command.

4.3. AT+QCFG="codec/powsave" Set PSM for ALC5616 Codec

The command enables/disables the PSM (power saving mode) for ALC5616 Codec.

AT+QCFG="codec/powsave" Set PSM for ALC5616 Codec	
Write Command **AT+QCFG="codec/powsave"[,<status>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "codec/powsave",<status>** **OK** If the optional parameter is specified, enable/disable PSM for ALC5616 Codec: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configuration will not be saved.

Parameter

<satus>	Integer type. Enable/disable the PSM. 0 Disable 1 Enable
<err>	Error code. See ***Chapter 13***.

NOTE

The configuration will take effect during the next calling.

Example

```
AT+QCFG="codec/powsave",1          //Enable the PSM for ALC5616 Codec.
OK
AT+QCFG="codec/powsave"            //Query the current power saving mode.
+QCFG: "codec/powsave",1

OK
```

5 Network Commands

5.1. AT+QCFG="gprsattach" Configure GPRS Attach Mode

This command specifies the mode to attach GPRS when UE is powered on. This configuration is valid only after the module is restarted.

AT+QCFG="gprsattach" Configure GPRS Attach Mode	
Write Command **AT+QCFG="gprsattach"[,<attach_mode>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "gprsattach",<attach_mode>** **OK** If the optional parameter is specified, set the GPRS attach mode: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<attach_mode>	Integer type. The mode to attach GRPS when UE is powered on. 0 Attach manually 1 Attach automatically
<err>	Error code. See ***Chapter 13***.

5.2. AT+QCFG="nwscanmode" Configure Network Search Mode

This command specifies the network mode to be searched.

AT+QCFG="nwscanmode" Configure Network Search Mode	
Write Command **AT+QCFG="nwscanmode"[,<scan_mode>[,<effect>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "nwscanmode",<scan_mode>** **OK** If the optional parameters are specified, set the network mode to be searched: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	**<effect>** determines when will the command take effect. The configuration will be saved automatically.

Parameter

<scan_mode>	Integer type. RAT. 0 AUTO 1 GSM only 2 WCDMA only 3 LTE only 4 TD-SCDMA only 5 UMTS only 6 CDMA only 7 HDR only 8 CDMA and HDR only
<effect>	Integer type. When the command to take effect. 0 Take effect after UE is rebooted 1 Take effect immediately
<err>	Error code. See ***Chapter 13***

5.3. AT+QCFG="servicedomain" Configure Service Domain

This command queries and configures the registered service domain.

AT+QCFG="servicedomain" Configure Service Domain	
Write Command **AT+QCFG="servicedomain"[,<service>[,<effect>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "servicedomain",<service>** **OK** If the optional parameters are specified, set the service domain of UE: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	**<effect>** determines when will the command take effect. The configuration will be saved automatically.

Parameter

<service>	Integer type. Service domain of UE. 0 CS only 1 PS only 2 CS & PS
<effect>	Integer type. When to take effect. 0 Take effect after UE is rebooted 1 Take effect immediately
<err>	Error code. See ***Chapter 13***.

5.4. AT+QCFG="band" Configure Band

This command specifies the preferred frequency bands to be searched of UE.

AT+QCFG="band" Configure Band	
Write Command **AT+QCFG="band"[,<bandval>,<ltebandval>,<tdsbandval>[,<effect>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "band",<bandval>,<ltebandval>,<tdsbandval>** **OK** If the optional parameters are specified, set the band: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	**<effect>** determines when will the command take effect. The configuration will be saved automatically.

Parameter

<bandval>	A hexadecimal value that specifies the GSM and WCDMA frequency bands. e.g. 00000013 = 00000001 (GSM 900) + 00000002 (GSM 1800) + 00000010 (WCDMA 2100) 00000000 No change 00000001 GSM 900 MHz 00000002 GSM 1800 MHz 00000004 GSM 850 MHz 00000008 GSM 1900 MHz 00000010 WCDMA 2100 MHz 00000020 WCDMA 1900 MHz 00000040 WCDMA 850 MHz 00000080 WCDMA 900 MHz 00000100 WCDMA 800 MHz 00000200 WCDMA 1700 MHz 0000FFFF Any frequency band
<ltebandval>	A hexadecimal value that specifies the LTE frequency band. If it is set to 0 or 0x40000000, it means not to change LTE frequency band.

	(e.g.: 0x15 = 0x1 (LTE B1) + 0x4 (LTE B3) + 0x10 (LTE B5) 0x1 (CM_BAND_PREF_LTE_EUTRAN_BAND1) LTE B1 0x4 (CM_BAND_PREF_LTE_EUTRAN_BAND3) LTE B3 0x10 (CM_BAND_PREF_LTE_EUTRAN_BAND5) LTE B5 0x40 (CM_BAND_PREF_LTE_EUTRAN_BAND7) LTE B7 0x80 (CM_BAND_PREF_LTE_EUTRAN_BAND8) LTE B8 0x80000(CM_BAND_PREF_LTE_EUTRAN_BAND20) LTE B20 0x7FFFFFFFFFFFFFFF(CM_BAND_PREF_ANY) Any frequency band
<tdsbandval>	A hexadecimal value that specifies the TD-SCDMA frequency band. If it is set to 0 or 0x40000000, it means not to change TD-SCDMA frequency band. e.g.: 0x21 = 0x1 (TDS BCA) + 0x20 (TDS BCF) 0x1 (CM_BAND_PREF_TDS_BANDA) TDS BCA 0x2 (CM_BAND_PREF_TDS_BANDB) TDS BCB 0x4 (CM_BAND_PREF_TDS_BANDC) TDS BCC 0x8 (CM_BAND_PREF_TDS_BANDD) TDS BCD 0x10 (CM_BAND_PREF_TDS_BANDE) TDS BCE 0x20 (CM_BAND_PREF_TDS_BANDF) TDS BCF
<effect>	Integer type. When to take effect 0 Take effect after UE is rebooted 1 Take effect immediately
<err>	Error code. See ***Chapter 13***.

5.5. AT+QCFG="rrc" Configure RRC Release Version

This command specifies the RRC release version.

AT+QCFG="rrc" Configure RRC Release Version	
Write Command **AT+QCFG="rrc"[,<rrcr>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "rrc",<rrcr>** **OK** If the optional parameter is specified, set the RRC release version: **OK** Or **ERROR** If there is any error related to ME functionality:

	+CME ERROR: <err>
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<rrcr>	Integer type. RRC release version. 0 R99 1 R5 2 R6 3 R7 4 R8 5 R9
<err>	Error code. See ***Chapter 13***.

5.6. AT+QCFG="msc" Configure MSC Release Version

This command specifies the UE MSC release version.

AT+QCFG="msc" Configure MSC Release Version	
Write Command **AT+QCFG="msc"[,<mscr>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "msc",<mscr>** **OK** If the optional parameter is specified, set the MSC release version: **OK** Or **ERROR** If there is an error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms

Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<mscr>	Integer type. MSC release version. 0 Forces the UE to always behave as an R97/R98 mobile 1 Forces the UE to always behave as an R99 mobile 2 Causes the UE's behavior to be dynamic
<err>	Error code. See ***Chapter 13***.

5.7. AT+QCFG="sgsn" Configure UE SGSN Release Version

This command specifies the UE SGSN release version. This configuration is valid only after the module is restarted.

AT+QCFG="sgsn" Configure UE SGSN Release Version	
Write Command **AT+QCFG="sgsn"[,<sgsnr>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "sgsn",<sgsnr>** **OK** If the optional parameter is not omitted, set the SGSN release version: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<sgsnr>	Integer type. SGSN release version. 0 Forces the UE to always behave as an R97/R98 mobile

	1	Forces the UE to always behave as an R99 mobile
	2	Causes the UE's behavior to be dynamic
<err>	Error code. See ***Chapter 13***.	

5.8. AT+QCFG="hsdpacat" Configure HSDPA Category

This command specifies the HSDPA category.

AT+QCFG="hsdpacat" Configure HSDPA Category	
Write Command **AT+QCFG="hsdpacat"[,<HSDPA_cat>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "hsdpacat",<HSDPA_cat>** **OK** If the optional parameter is not omitted, set the HSDPA category: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<HSDPA_cat>	Integer type. HSDPA category.	
	6	Category 6
	8	Category 8
	10	Category 10
	12	Category 12
	14	Category 14
	18	Category 18
	20	Category 20
	24	Category 24
<err>	Error code. See ***Chapter 13***.	

5.9. AT+QCFG="hsupacat" Configure HSUPA Category

This command specifies the HSUPA category. This configuration is valid only after the module is restarted.

AT+QCFG="hsupacat" Configure HSUPA Category	
Write Command **AT+QCFG="hsupacat"[,<HSUPA_cat>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "hsupacat",<HSUPA_cat>** **OK** If the optional parameter is not omitted, set the HSUPA category: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<HSUPA_cat>	Integer type. HSUPA category. 5 Category 5 6 Category 6
<err>	Error code. See ***Chapter 13***.

5.10. AT+QCFG="PDP/duplicatechk" Establish Multi-PDN with Same APN

This command allows/refuses establishing multi-PDN with the same APN profile.

AT+QCFG="pdp/duplicatechk" Establish Multi-PDN with Same APN	
Write Command **AT+QCFG="pdp/duplicatechk"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "pdp/duplicatechk",<enable>** **OK** If the optional parameter is not omitted, allow/refuse establishing multi-PDN with the same APN profile: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300ms
Characteristics	The command takes effect immediately. The configuration will be saved automatically.

Parameter

<enable>	Integer type.	
	0	Refuse to establish multi-PDN with the same APN profile
	1	Allowed to establish multi-PDN with the same APN profile
<err>	Error code. See ***Chapter 13***.	

5.11. AT+QCFG="disable_backoff_lte" Disable Backoff LTE

This command configures whether to disable backoff LTE when Voice/SMS is not available because of the unavailable SRLTE.

AT+QCFG="disable_backoff_lte"	Disable Backoff LTE
Write Command **AT+QCFG="disable_backoff_lte"[,<value>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "disable_backoff_lte",<value>** **OK** If the optional parameter is specified, disable backoff LTE: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<value>	Integer type. Enable/disable backoff LTE.	
	1	Enable
	0	Disable

5.12. AT+QCFG="airplanecontrol" Enter/Exit Airplane Mode via W_DISABLE# Pin

This command enters or exits airplane mode via the W_DISABLE# pin and queries the current setting. If the airplane mode is enabled, the module enters the airplane mode when the pin is pulled down and enters normal mode when the pin is pulled up. Also, URC **+QIND: airplanestatus,<status>** is outputted before module entering or exiting the airplane mode.

AT+QCFG="airplanecontrol"	Enter/Exit Airplane Mode via W_DISABLE# Pin
Write Command **AT+QCFG="airplanecontrol"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "airplanecontrol",<enable>,<status>**

	OK If the optional parameter is specified, module enters/exits airplane mode via W_DISABLE# pin: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<enable>	Integer type. Whether to enable airplane mode. 0 Disable airplane mode 1 Enable airplane mode. Enter airplane mode when W_DISABLE# pin changes to active and exits airplane mode when W_DISABLE# pin changes to inactive. URC **+QIND: airplanestatus,<status>** is reported when W_DISABLE# pin status changes. It is not allowed to exit airplane mode by **AT+CFUN=1** when W_DISABLE# pin is active. 2 Enable airplane mode. Enter airplane mode when W_DISABLE# pin changes to active and exit airplane mode when W_DISABLE# pin changes to inactive. URC **+QIND: airplanestatus,<status>** is reported when W_DISABLE# pin status changes. It is not allowed to exit airplane mode by **AT+CFUN=1** or QMI when W_DISABLE# pin is active.
<status>	Integer type. Enter/exit airplane mode. 0 Exit 1 Enter

NOTE

See the corresponding hardware design of each module for more information about W_DISABLE# pin.

Example

```
AT+QCFG="airplanecontrol"        //Query the current setting.
+QCFG: "airplanecontrol",0,0

OK
```

```
//Pull down W_DISABLE# pin.
AT+QCFG="airplanecontrol",1     //Enable airplane mode.
OK

+QIND: airplanestatus,1         //Enter airplane mode because W_DISABLE# pin is pulled down.

AT+CFUN?                        //In airplane mode.
+CFUN: 4

OK

//Pull up W_DISABLE# pin.
+QIND: airplanestatus,0         //Exit airplane mode.

AT+CFUN?                        //In normal mode.
+CFUN: 1

OK
//Reboot the modem.
AT+QCFG="airplanecontrol"       //Query the current setting. This setting still takes effect after reboot.
+QCFG: "ariplanecontrol",1,0

OK

//Pull down W_DISABLE# pin.
+QIND: airplanestatus,1         //Enter airplane mode.

AT+CFUN?                        //In airplane mode.
+CFUN: 4

OK
```

5.13. AT+QCFG="epcflag" Set EPC Capability Value in Attach Request

AT+QCFG="epcflag" Set EPC Capability Value in Attach Request	
Write Command **AT+QCFG="epcflag"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "epcflag",<n>** **OK**

	If the optional parameter specified, set EPC capability value in attach request: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<n>	Integer type. Value of EPC capability. 0 In LTE mode, set value of EPC capability in attach request information to 0. 1 In LTE mode, set value of EPC capability in attach request information to 1.

Example

```
AT+QCFG="epcflag"          //Query the value of EPC capability.
+QCFG: "epcflag",1

OK
AT+QCFG="epcflag",0        //Set value of EPC capability to 0.
OK
AT+QCFG="epcflag"
+QCFG: "epcflag",0         //Query the value of EPC capability.

OK
```

5.14. AT+QCFG="lte/bandprior" Set Searching Priority of LTE Band

AT+QCFG="lte/bandprior" Set Searching Priority of LTE Band	
Write Command **AT+QCFG="lte/bandprior"[,<band1>][,<band2>][,<band3>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "lte/bandprior",<band1>[,<band2>][,<band3>]** **OK** If the optional parameters are specified, set the searching priority of LTE band:

	OK Or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<band1>	Integer type. Band ID of the first preferred LTE band. Range: 1–43.
<band2>	Integer type. Band ID of the second preferred LTE band. Range: 1–43.
<band3>	Integer type. Band ID of the third preferred LTE band. Range: 1–43.
<err>	Error code. See ***Chapter 13***.

Example

```
AT+QCFG="lte/bandprior",7,5,41          //Set searching order priority of LTE band.
OK
//Reboot the module.
AT+QCFG="lte/bandprior"                 //Read searching priority of LTE band.
+QCFG: "lte/bandprior",07,05,41

OK
```

5.15. AT+QCFG="plmn/addinfbdn" Add Current PLMN to FPLMN

AT+QCFG =AT+QCFG="plmn/addinfbdn" Add Current PLMN to FPLMN	
Write Command **AT+QCFG="plmn/addinfbdn"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "plmn/addinfbdn",<enable>** **OK** If the optional parameter is specified, add the current PLMN to FPLMN: **OK** Or

	ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations will not be saved.

Parameter

<enable>	Integer type. Configure whether to add the current PLMN into FPLMN event if it is in the EHPLMN. 0 Do not add 1 Add

Example

```
AT+QCFG="plmn/addinfbdn"          //Query the current value.
+QCFG: "plmn/addinfbdn",0

OK
AT+QCFG="plmn/addinfbdn",1        //Add the current PLMN to FPLMN event.
OK
AT+QCFG="plmn/addinfbdn"          //Query the current value.
+QCFG: "plmn/addinfbdn",1

OK
```

5.16. AT+QCFG="cops_no_mode_change" Enable/Disable the Switch under AT+COPS=1

AT+QCFG="cops_no_mode_change" Enable/Disable the Switch under AT+COPS=1	
Write Command **AT+QCFG="cops_no_mode_change"[,<value>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "cops_no_mode_change",<value>** **OK** If the optional parameter is specified, enable/disable the switch under **AT+COPS=1**: **OK**

	Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations will be saved automatically.

Parameter

<value>	Integer type. Enable/disable the switch under automatic mode in **AT+COPS=1** (See ***document [1]*** for details about the command). 1 Disable 0 Enable

5.17. AT+QCFG="hplmn/search_timer" Configure HPLMN Search Interval

AT+QCFG="hplmn/search_timer"	Configure HPLMN Search Interval
Write Command **AT+QCFG="hplmn/search_timer"[,<timer>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "hplmn/search_timer",<timer>** **OK** If the optional parameter is specified, set HPLMN search interval: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations will not be saved.

Parameter

<timer>	Integer type. HLPMN search interval. Range: 1–71582. Unit: minute.

NOTE

The HPLMN search timer is started if the PLMN registered by the UE is different from HPLMN and EHPLMN.

5.18. AT+QCFG="tdd/config" Get the LTE-TDD Configuration

This command gets the LTE-TDD configuration.

AT+QCFG="tdd/config" Get the LTE-TDD Configuration	
Write Command **AT+QCFG="tdd/config"**	Response **+QCFG: "tdd/config",<assign>,<pattern>** **OK**
Maximum Response Time	300 ms
Characteristics	/

Parameter

<assign>	Integer type. LTE-TDD subframe assignment. Range: 0–6.
<pattern>	Integer type. LTE-TDD special subframe pattern. Range: 0–8.

5.19. AT+QCFG="urc_cause_support" Report Rejection Cause

This command controls whether to report the URC of the cause (ESM/EMM/CP) when the network rejects the module.

AT+QCFG="urc_cause_support"	Report Rejection Cause
Write Command **AT+QCFG="urc_cause_support"[,<bit_mask_value>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG="urc_cause_support",<bit_mask_value>** **OK** If the optional parameter is specified, report the rejection code: **OK**

	Or **ERROR**
Maximum Response Time	300 ms
Characteristics	/

Parameter

<bit_mask_value>	Hex format. Indicate the value of the setting. Range: 0–31. 0 Do not report network rejection code. Bit 0: 0x01 namely value 1. Support ESM cause report. Bit 1: 0x02 namely value 2. Support EMM cause report. Bit 2: 0x04 namely value 4. Support CP cause report. Bit 3: 0x08 namely value 8. Support GMM cause report. Bit 4: 0x10 namely value 16. Support MM cause report. Certain reports above-mentioned can be freely combined.

5.20. AT+QCFG="dhcppktfltr" Filter DHCP Package

This command configures whether DHCP package is filtered.

AT+QCFG="dhcppktfltr" Filter DHCP Package	
Write Command **AT+QCFG="dhcppktfltr"[,<disable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "dhcppktfltr",<disable>** **OK** If the optional parameter is specified, filter DHCP package: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configuration will not be saved.

Parameter

<disable>	Integer type.

0	The UDP DHCP package is parsed by local stack after the module gets IP address.
1	The UDP DHCP package is shipped to the external network after the module gets IP address.

Example

```
AT+QCFG="dhcppktfltr"                //Query the current value.
+QCFG: "dhcppktfltr",0

OK
AT+QCFG="dhcppktfltr",1              //Ship the UDP DHCP package to the external network after the
                                       module gets IP address.
OK
AT+QCFG="dhcppktfltr"                //Current value is changed to 1.
+QCFG: "dhcppktfltr",1

OK
```

5.21. AT+QCFG="oostimer" Set Mode for OOS Network Searching

AT+QCFG="oostimer" Set Mode for OOS Network Searching	
Write Command **AT+QCFG="oostimer"[,<timer1>,<timer2>,<timer3>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "oostimer",<timer1>,<timer2>,<timer3>** **OK** If the optional parameters are specified, set the mode for OOS network searching: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configuration will be saved automatically.

Parameter

<timer1>	Integer type. In OOS state, search the network 10 times with **<timer1>** as a cycle first. Default value: 30. Unit: second.
<timer2>	Integer type. If the network cannot be found within **<timer1>**, search the network 10 times with **<timer2>** as a cycle. Default value: 45. Unit: second.
<timer2>	Integer type. If the network cannot be found within **<timer2>**, keep searching the network with **<timer3>** as a cycle. Default value: 60. Unit: second.

Example

```
AT+QCFG="oostimer",5,5,5
OK
```

5.22. AT+QCFG="apn/blocked" Configure APN Block Mode

AT+QCFG="apn/blocked" Configure APN Block Mode	
Write Command **AT+QCFG="apn/blocked"[,<block_mode>[,<NV_mode>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG:"apn/blocked",<block_mode>,<NV_mode>** **OK** If the optional parameters are specified, configure APN block mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations will be saved automatically.

Parameter

<block_mode>	Integer type. Configure whether all the APNs blocked by the network is allowed to be written to NV. 0 Allowed 1 Not allowed
<NV_mode>	Integer type.

0	Query all APNs that are blocked
1	Delete all APNs that are blocked

Example

```
AT+QCFG="apn/blocked"                  //Query the current setting.
+QCFG: "apn/blocked",0,0

OK
AT+QCFG="apn/blocked",0,1              //All the APNs blocked by the network are allowed to be written to
                                         NV, and delete them.
OK
```

5.23. AT+QCFG="redir/3gtolte" Configure Redirection Mode

AT+QCFG="redir/3gtolte" Configure Redirection Mode	
Write Command **AT+QCFG="redir/3gtolte"[,<redir_mode>[,<NV_flag>,<NV_value>]]**	Response If the optional parameter is omitted, query the current setting: **+QCFG:"redir/3gtolte",<redir_mode>,<NV_flag>,<NV_value>** **OK** If the optional parameter is specified, set redirection mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<redir_mode>	Integer type. Configure the redirection mode. 0 Do not allow the module to redirect LTE from 3G once it is rejected by the network when try to register LTE 1 Allow the module to redirect LTE from 3G if it is rejected by the network when it tries to register to LTE
<NV_flag>	Integer type. EPS storage supported flag.

	0	Not get EPS storage supported value from NV
	1	Get EPS storage supported value from NV
<NV_value>	Integer type. Indicate whether to support EPS storage.	
	0	Not support
	1	Support

Example

```
AT+QCFG="redir/3gtolte"                 //Query the current setting.
+QCFG: "redir/3gtolte",0,0,0

OK
AT+QCFG="redir/3gtolte",1               //Allow the module to redirect LTE from 3G.
OK
```

5.24. AT+QCFG="rssi" Configure Delta Threshold of RSSI Change

AT+QCFG="rssi" Configure Delta Threshold of RSSI Change	
Write Command **AT+QCFG="rssi"[,<thereshold>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "rssi",<thereshold>** **OK** If the optional parameter is specified, configure delta threshold of RSSI change: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations will not be saved.

Parameter

<thereshold>	Integer type. The delta threshold of RSSI change. Range: 0–20. Default value: 5. Unit: dBm.

5.25. AT+QCFG="roamservice" Configure Roaming Service

This command enables or disables the roaming service.

AT+QCFG="roamservice" Configure Roaming Service	
Write Command **AT+QCFG="roamservice"[,<roam_mode>[,<effect>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "roamservice",<roam_mode>** **OK** If the optional parameters are specified, set the roaming service: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	**<effect>** determines when will the command take effect. The configuration will be saved automatically.

Parameter

<roam_mode>	Integer type. The roaming service mode. 1 Disable roaming service 2 Enable roaming service 255 Auto mode
<effect>	Integer type. When the command take effect. 0 Take effect after UE reboots 1 Take effect immediately
<err>	Error code. See ***Chapter 13***.

5.26. AT+QCFG="fast_dormancy" Dynamically Control the RRC Connection

This command dynamically controls the RRC connection under WCDMA network.

AT+QCFG="fast_dormancy"	Dynamically Control the RRC Connection
Write Command **AT+QCFG="fast_dormancy"[,<op>[,<duration>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "fast_dormancy",<op>[,<duration>]** **OK** If the optional parameters are specified, dynamically control the RRC connection: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately; Whether to save the parameter configuration is determined by **<op>**.

Parameter

<op>	Integer type. 0 Disable the feature of fast dormancy. 1 Query whether there is data in the period of **<duration>**; If not, disconnect RRC automatically. 2 Disconnect RRC immediately 3 If the network support T323 timer, query if there is data in the period of T323 timer; If not, disconnect RRC automatically.
<duration>	Integer type. Only valid when **<op>** is 1. Range: 1–65535. Default value: 5. Unit: second.

5.27. AT+QCFG="airplane" Configure Airplane Mode

AT+QCFG="airplane"	Configure Airplane Mode
Write Command **AT+QCFG="airplane",<n>**	Response If the optional parameter is omitted, query the current setting:

	+QCFG: "ariplane",<n> **OK** If the optional parameter is specified, set the airplane mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<n>	Integer type. Airplane mode. 0 Use default setting at EFS file 1 Force to enter airplane mode 2 Force to exit airplane mode

Example

```
AT+QCFG="airplane"          //Query the current setting.
+QCFG: "airplane",0

OK
AT+QCFG="airplane",1        //Force to enter airplane mode.
OK
//Reboot the modem.
AT+QCFG="airplane"          //It is forced to enter airplane mode.
+QCFG: "ariplane",1

OK
```

5.28. AT+QCFG="rrc/control" Configure the Feature of RRC Connection Control

AT+QCFG="rrc/control" Configure the Feature of RRC Connection Control	
Write Command **AT+QCFG="rrc/control"[,<enable>,<c**	Response If the optional parameters are omitted, query the current

rrc>,<trrc>,<wait_time>,<bar_opt>,<conn_est_latency>]	setting: **+QCFG: "rrc/control",<enable>,<crrc>,<trrc>,<wait_time>,<bar_opt>,<conn_est_latency>** **OK** If the optional parameters are specified, set the feature of RRC connection control: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<enable>	Integer type. Enable/disable RRC connection control. 0 Disable 1 Enable
<crrc>	Integer type. Counter to track number of RRC connection failures. Range: 0–60. Default value: 0.
<trrc>	Integer type. Amount of time the serving cell is barred after **<crrc>** occurs. Range: 0–60. Default value: 0.
<wait_time>	Integer type. The waiting time to add the cell blacklist after RRC failure. Range: 0–300. Default value: 0.
<bar_opt>	Integer type. Enable/disable barring optimization. 0 Disable 1 Enable
<conn_est_latency>	Integer type. The delay time to start a new RRC connection establishment procedure. Range: 0-60. Default value: 0.

NOTE

The cause of the random-access failure reported by the RRC to the NAS layer is fixed into LTE RRC CONN_EST_FAILURE_CONN_REJECT when the barring optimization is enabled with the remaining time. Remaining time = **<wait_time>** - elapsed time from the first RRC connection failure, unless it is configured with **<conn_est_latency>** by the OEM.

5.29. AT+QCFG="nwscanmodeex" Configure Network Searching Mode

AT+QCFG="nwscanmodeex" Configure Network Searching Mode	
Write Command **AT+QCFG="nwscanmodeex"[,<mode>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "nwscanmodeex",<mode>** OK If the optional parameter is specified, set the network searching mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configuration will be saved automatically.

Parameter

<mode>	Integer type. Network searching mode. Range: 0–63. Default value: 63.

NOTE

When Bit 0 to Bit 5 are all set to 1, it corresponds to **<scan_mode>**=0 in **AT+QCFG="nwscanmode"**.
Bit 0: CDMA2000 1X
Bit 1: CDMA2000 HRPD (1xEVDO)
Bit 2: GSM
Bit 3: WCDMA
Bit 4: LTE
Bit 5: TD-SCDMA
For example, to configure network searching mode to LTE only, it indicates to set **<mode>** to 16, corresponding to 0001 0000 in hex.

Example

```
AT+QCFG="nwscanmodeex",28   //In hex, 28 is 0001 1100. Configure network searching mode to GSM, WCDMA, LTE.
OK
AT+QCFG="nwscanmodeex"      //Query the current setting.
```

```
+QCFG: "nwscanmode",28

OK
```

5.30. AT+QCFG="assign_plmn_in_limit_search" Specify Operator for Camping on a Cell with Limited Service

The command specifies an operator for the module to camp on a cell with limited service when no (U)SIM card is inserted.

AT+QCFG="assign_plmn_in_limit_search" Specify Operator for Camping on a Cell with Limited Service	
Write Command **AT+QCFG="assign_plmn_in_limit_search"[,<enable>[,<plmn>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "assign_plmn_in_limit_search",<enable>,<plmn>** **OK** If the optional parameters are specified, enable/disable specifying an operator for the module to camp on a cell with limit service when no (U)SIM card is inserted: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect after the module is rebooted or **AT+CFUN=0/1**. The configurations will be saved automatically.

Parameter

<enable>	Integer type. Enable/disable the feature of specifying an operator for the module to camp on a cell with limit service when no (U)SIM card is inserted. 0 Disable 1 Enable
<plmn>	String type. Operator code. For example, "46000" indicates China Mobile.

Example

```
AT+QCFG="assign_plmn_in_limit_search",1,"46000"  //Specify China Mobile.
OK
AT+QCFG="assign_plmn_in_limit_search"            //Query current setting.
+QCFG: "assign_plmn_in_limit_search",1,46000

OK
AT+QCFG="assign_plmn_in_limit_search",0          //Disable the feature of specifying an operator
                                                   for the module to camp on a cell with limit
                                                   service when no (U)SIM card is inserted.
OK
```

5.31. AT+QCFG="iprulectl" Configure the Gateway Address Generation Rule

The command configures the gateway address generation rule when the module is used as a network card.

AT+QCFG="iprulectl" Configure the Gateway Address Generation Rule	
Write Command **AT+QCFG="iprulectl"[,<type>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "iprulectl",<type>** **OK** If the optional parameter is specified, set the gateway address generation rule: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately (The client needs re-connecting). The configurations will be saved automatically.

Parameter

<type>	Integer type. Gateway address generation rule.	
	0	If the IP address is an odd integer, the gateway address is IP address plus 1. If the IP address is an even integer, the gateway address is IP address minus 1.
	1	The gateway address is equal to IP address minus 1.

Example

```
AT+QCFG="iprulectl"
+QCFG: "iprulectl",0

OK
AT+QCFG="iprulectl",1
OK
```

5.32. AT+QCFG="disrplmn" Configure RPLMN and RPLMNACT for Network Searching

This command configures whether to use RPLMN and RPLMNACT when searching network. If RPLMN is used when searching network, RPLMNACT must be used too.

AT+QCFG="disrplmn" Configure RPLMN and RPLMNACT for Network Searching	
Write Command **AT+QCFG="disrplmn"[,<RPLMN_enable>,<RPLMNACT_enable>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "disrplmn",<RPLMN_enable>,<RPLMNACT_enable>** **OK** If the optional parameters are specified, set whether to use RPLMN and RPLMNACT when searching network: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristic	The command takes effect after the module is rebooted.

	The configuration will be saved automatically.

Parameter

<RPLMN_enable>	Integer type. Whether to use RPLMN when searching network. 0 Do not use 1 Use
<RPLMNACT_enable>	Integer type. Whether to use RPLMNACT when searching network. 0 Do not use 1 Use
<err>	Error code. See ***Chapter 13***.

NOTE

1. <RPLMNact_enable>can be set only if **<RPLMN_enable>**=0.
2. The combination of **<RPLMN_enable>**=0 and **<RPLMNact_enable>**=0 is invalid.

5.33. AT+QCFG="lte/preferfre" Set Preferred Frequency

This command sets preferred frequency for searching network.

AT+QCFG="lte/preferfre" Set Preferred Frequency	
Write Command **AT+QCFG="lte/preferfre"[,<op>,<index>,<band>,<bandwith>,<earfcn>,<mcc>,<mnc>]**	Response If the optional parameters are omitted, query the current setting: **[+QCFG: "lte/preferfre",<index>,<band>,<bandwith>,<earfcn>,<mcc>,<mnc>]** **OK** If the optional parameters are specified, set preferred frequency for searching network: **OK** Or **ERROR**
Maximum Response Time	250 ms
Characteristic	The command takes effect after the module is rebooted. The configurations will be saved automatically.

Parameter

<op>	Integer type. Operation type. 0 Add a preferred frequency 1 Delete a preferred frequency
<index>	Integer type. Preferred frequency index. Range: 1–10.
<band>	Integer type. Band index. Range: 0–41, 60–62. 0 Band 1 1 Band 2 2 Band 3 … 41 Band 42 60 Band 125 61 Band 126 62 Band 127
<bandwith>	Integer type. Reserved. Always be 101.
<earfcn>	Integer type. Frequency point.
<mcc>	Integer type. Mobile country code.
<mnc>	Integer type. Mobile network code.

Example

```
AT+QCFG="lte/preferfre",1,1,6,101,2452,460,03      //Delete the preferred frequency with index 1.

OK
AT+QCFG="lte/preferfre"
OK
```

5.34. AT+QCFG="cops_control" Enable/Disable Configurations of AT+COPS

This command enables or disables the configurations of **AT+COPS**.

AT+QCFG="cops_control" Enable/Disable Configurations of AT+COPS	
Write Command **AT+QCFG="cops_control"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "cops_control",<enable>** **OK** If the optional parameter is specified, enable/disable the

	configurations of **AT+COPS**: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	This command takes effect immediately. The configurations will not be saved into NVRAM.

Parameter

<enable>	Integer type. Enable/disable the configurations of **AT+COPS**. 0 Disable 1 Enable

Examples

```
AT+QCFG="cops_control",1    //Enable the configurations of AT+COPS.
OK
AT+QCFG="cops_control"
+QCFG: "cops_control",1

OK
```

5.35. AT+QCFG="map_rej_cause7_to_cause14" Enable/Disable Network Rejection Cause Mapping

This command enables or disables network rejection cause mapping. When using roaming card, **GPRS NOT ALLOWED** is returned under the roaming network. After receiving the rejection code, the module marks the roaming card as PS INVALID, and stops searching PLMN. This command controls whether to modify REJECT CAUSE 7 to REJECT CAUSE 14 to make the module search PLMN continuously after receiving the rejection code.

AT+QCFG="map_rej_cause7_to_cause14" Enable/Disable Network Rejection Cause Mapping	
Read command **AT+QCFG="map_rej_cause7_to_cause14"[,<flag>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "map_rej_cause7_to_cause14",<flag>** **OK** If the optional parameter is specified, enable/disable network

	rejection cause mapping: **OK** Or **ERROR**
Maximum Response Time	250 ms
Characteristic	The command takes effect after the module is rebooted. The configurations will be saved automatically.

Parameter

<flag>	Integer type. Enable/Disable network rejection cause mapping. 0 Disable 1 Enable

Example

```
AT+QCFG="map_rej_cause7_to_cause14"          //Query the current setting.
+QCFG: "map_rej_cause7_to_cause14",0

OK
AT+QCFG="map_rej_cause7_to_cause14",1        //Enable network rejection cause mapping.
OK
```

5.36. AT+QCFG="netmaskset" Enable/Disable Customized Netmask

This command enables or disables customer to set the netmask.

AT+QCFG="netmaskset" Enable/Disable Customized Netmask	
Write Command **AT+QCFG="netmaskset"[,<enable>[,<netmask>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "netmaskset",<enable>** **OK** If any of the optional parameters is specified, enable or disable customized netmask: **OK** Or **ERROR**
Maximum Response Time	300 ms

Characteristic	This command takes effect after reconnecting the network card. The configurations will be saved automatically.

Parameter

<enable>	Integer type. Enable/ disable customized netmask. 0 Disable. Netmask is set by the rule inside the module. 1 Enable. Netmask is set by **<netmask>**.
<netmask>	String type. Customized netmask. Only valid when **<enable>**=1. For example: "255.255.255.0".

Example

```
AT+QCFG="netmaskset"                    //Query whether customized netmask is enabled.
+QCFG: "netmaskset",0                   //Customized netmask is disabled

OK
AT+QCFG="netmaskset",1, "255.255.255.0" //Enable customized netmask and set netmask.
OK
AT+QCFG="netmaskset"
+QCFG: "netmaskset",1

OK
AT+QCFG="netmaskset",0                  //Disable customized netmask and set netmask.
OK
```

5.37. AT+QCFG="pingdiscard" Configure Whether to Discard Ping Packet

This command configures whether to discard the Ping packet.

AT+QCFG="pingdiscard" Configure Whether to Discard Ping Packet	
Write Command **AT+QCFG="pingdiscard"[,<en>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "pingdiscard",<en>** **OK** If the optional parameter is specified, configure whether to discard the Ping packet:

	OK Or **ERROR**
Maximum Response Time	300 ms
Characteristic	This command takes effect immediately. The configurations will not be saved.

Parameter

<en>	Integer type. Whether to discard Ping packet. 0 Do not discard 1 Discard Ping echo request packet sent from network

5.38. AT+QCFG="urc/ri/restart" Configure RI Pulse Timer

This command enables or disables restarting RI pulse timer when a new URC is reported but the last URC RI pulse is finished.

AT+QCFG="urc/ri/restart" Configure RI Pulse Timer	
Write Command **AT+QCFG="urc/ri/restart"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG:"urc/ri/restart",<enable>** **OK** If the optional parameter is specified, configure RI pulse timer: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configuration will not be saved.

Parameter

<enable>	Integer type. Enable/disable restarting RI pulse timer when a new URC is reported but the last URC RI pulse is finished. 0 Disable 1 Enable

Example

```
AT+QCFG="urc/ri/restart"          //Query the current setting.
+QCFG:"urc/ri/restart",1

OK
AT+QCFG="urc/ri/restart",1        //Enable restarting RI pulse timer when a new URC is reported but
                                    the last URC RI pulse is finished.
OK
```

5.39. AT+QCFG="ping/ri" Configure Ping Detection Function

This command configures Ping detection function.

AT+QCFG="ping/ri" Configure Ping Detection Function	
Writer Command **AT+QCFG="ping/ri"[,<enable>[,<mode>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "ping/ri",<enable>,<mode>** **OK** If the optional parameters are specified, configure Ping detection function: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configurations will be saved automatically.

Parameter

<enable>	Integer type. Enable/disable Ping detection function. The value occupies one byte. 0 Disable 1 Enable
<mode>	Integer type. Reporting mode if Ping packet is detected. The value occupies one byte. 0 Report URC **ping/ri** 1 Pull RI pin without reporting URC

Example

```
AT+QCFG="ping/ri"          //Query the current setting.
+QCFG: "ping/ri",0,0

OK
AT+QCFG="ping/ri",1,0      //Enable Ping detection and set reporting URC if Ping packet is detected.
OK
AT+QCFG="ping/ri"
+QCFG: "ping/ri",1,0

OK
```

5.40. AT+QCFG="defaultdns" Configure Default DNS for PDP Context

This command configures the default DNS for PDP context.

AT+QCFG="defaultdns" Configure Default DNS for PDP Context	
Write Command **AT+QCFG="defaultdns"[,<enable>[,<dns1>[,<dns2>]]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "defaultdns",<enable>,<dns1>,<dns2>** **OK** If **<enable>** is specified to 0, disable configuring default DNS for PDP context: **OK** If **<enable>** is specified to 1 and other optional parameters are omitted, set primary DNS to "8.8.8.8" and ignore secondary DNS: **OK**

	If only **<enable>** and **<dns1>** are specified, configure primary DNS, and set the secondary DNS to "8.8.8.8": **OK** If the optional parameters are specified, set default DNS for PDP context: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configurations will not be saved.

Parameter

<enable>	Integer type. Enable/disable configuring default DNS for PDP context. 0 Disable 1 Enable
<dns1>	String type. Customized primary DNS. For example: "8.8.8.8".
<dns2>	String type. Customized secondary DNS. For example: "114.114.114.114".

Example

```
AT+QCFG="defaultdns"
+QCFG: "defaultdns",0,"0.0.0.0","0.0.0.0"

OK
AT+QCFG="defaultdns",1
OK
AT+QCFG="defaultdns"
+QCFG: "defaultdns",1,"8.8.8.8","0.0.0.0"

OK
AT+QCFG="defaultdns",1, "114.114.114.114"
OK
AT+QCFG="defaultdns"
+QCFG: "defaultdns",1,"114.114.114.114","8.8.8.8"

OK
AT+QCFG="defaultdns",1,"8.8.4.4","114.114.114.114"
OK
```

```
AT+QCFG="defaultdns"
+QCFG: "defaultdns",1,"8.8.4.4","114.114.114.114"

OK
AT+QCFG="defaultdns",0
OK
```

5.41. AT+QCFG="lpm/dataind" Configure Wake-up Mechanism

This command configures wake-up mechanism.

AT+QCFG="lpm/dataind" Configure Wake-up Mechanism	
Write Command **AT+QCFG="lpm/dataind"[,<enable>,<mask>]**	Response If the optional parameters are enabled, query the current setting: **+QCFG: "lpm/dataind",<enable>,<mask>** **OK** If the optional parameters are specified, configure wake-up mechanism: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configurations will be saved automatically.

Parameter

<enable>	Integer type. Enable/disable the wake-up mechanism. The value occupies one byte. 0 Disable 1 Enable
<mask>	Integer type. Wake-up trigger mask. The value occupies one byte. If the corresponding bit is set to 1, the module is woken up when SCLK/DTR/USB receives data. Bit0 1 indicates detecting SLCK. If it is TRUE, wakes up the module 0 indicates ignoring SLCK. Bit1 1 indicates detecting DTR. If it is TRUE, wakes up the module 0 indicates ignoring DTR. Bit2 1 indicates detecting USB. If it is TRUE, wakes up the module 0 indicates ignoring USB Bit3–Bit7 Reserved. Always be 0.

Example

```
AT+QCFG="lpm/dataind"
+QCFG: "lpm/dataind",0,0

OK
AT+QCFG="lpm/dataind",1,0
OK
AT+QCFG="lpm/dataind"
+QCFG: "lpm/dataind",1,0

OK
```

5.42. AT+QCFG="roamserviceex" Control Relevant Functions in Roaming State

AT+QCFG="roamserviceex"	Control Relevant Functions in Roaming State
Write Command **AT+QCFG="roamserviceex"[,<roammode>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "roamserviceex",<roammode>** **OK** If the optional parameter is specified, control the relevant functions in roaming state: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect after the module is rebooted. The configurations will be saved automatically.

Parameter

<roammode>	Integer type. Each bit corresponds to a feature. Set the bit to 1 indicates disabling the corresponding function. Range: 0–3. Default value: 0. Bit 1 Disable dial-up internet access function when UE is in roaming state Bit 2 Disable voice call function when UE is in roaming state

Example

```
AT+QCFG="roamserviceex",1      //Disable dial-up internet access when UE is in roaming mode.
OK
AT+QCFG="roamserviceex"
+QCFG: "roamserviceex",1

OK
AT+QCFG="roamserviceex",2      //Disable voice call when UE is in roaming mode.
OK
AT+QCFG="roamserviceex"
+QCFG: "roamserviceex",2

OK
```

6 PS Commands

6.1. AT+QCFG="ntp" Specify the Maximum Re-transmission Counts and the Interval for NTP

The command specifies the maximum re-transmission times and the interval of NTP.

AT+QCFG="ntp" Specify the Maximum Re-transmission Counts and the Interval for NTP	
Write Command **AT+QCFG="ntp"[,<cnt>,<interval>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "ntp",<cnt>,<interval>** **OK** If the optional parameters are not omitted, specify the maximum re-transmission counts and the interval for NTP: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configurations will be saved automatically.

Parameter

<cnt>	Integer type. NTP re-transmission counts. Range: 1–10. Default value: 3.
<interval>	Integer type. NTP re-transmissions interval. Range: 5–60. Default value: 15.

Example

```
AT+QCFG="ntp"          //Query the current setting.
+QCFG: "ntp",3,15
```

```
OK
AT+QCFG="ntp",5,20      //Set NTP re-transmission counts and interval.
OK
AT+QCFG="ntp"
+QCFG: "ntp",5,20       //Query the current setting.

OK
```

6.2. AT+QCFG="TCP/SendMode" Configure TCP Sending Mode

This command configures TCP sending mode.

AT+QCFG="TCP/SendMode" Configure TCP Sending Mode	
Write Command **AT+QCFG="TCP/SendMode"[,<mode>]**	Response If optional parameter is omitted, query the current setting: **+QCFG: "TCP/SendMode",<mode>** **OK** If the optional parameter is specified, configure TCP sending mode: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configuration will not be saved.

Parameter

<mode>	Integer type. Determine when to send **SEND OK**. 0 **SEND OK** is sent immediately after TCP socket sends data from serial port. 1 **SEND OK** is sent after receiving an ACK from the remote TCP socket. 2 **<SocketID>,SEND OK** is sent after receiving an ACK from the remote TCP socket.
<err>	Error code. See ***Chapter 13***.

Example

```
AT+QCFG="TCP/SendMode"
+QCFG: "TCP/SendMode",0

OK
AT+QCFG="TCP/SendMode",1
OK
```

6.3. AT+QCFG="tcp/windowsize" Configure TCP Window Available Size

This command configures the available size of TCP window when sending/receiving data.

AT+QCFG="tcp/windowsize"	Configure TCP Window Available Size
Write Command **AT+QCFG="tcp/windowsize",<buffer>[,<window_size>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "tcp/windowsize",<buffer>,<window_size>** **OK** If the optional parameter is specified, configure TCP window available size: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configuration will not be saved.

Parameter

<buffer>	Integer type. Set the receiving and sending buffer sizes. 0 Receiving buffer size 1 Sending buffer size
<window_size>	Integer type. TCP window available size. Range: 16–100. Default value: 16.
<err>	Error code. See ***Chapter 13***.

7 CS Commands

7.1. AT+QCFG="amrcodec" Configure AMR Codec

This command configures the bandwidth, rate, and byte alignment of the voice codec AMR in different network states. Parameter can be multi-selected (calculate incoming parameters with &).

AT+QCFG="amrcodec"	Configure AMR Codec
Write Command **AT+QCFG="amrcodec"[,<preference>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "amrcodec",<preference>** **OK** If the optional parameter is specified, configure AMR codec: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<preference>	Integer type. Configure AMR codec in ORed. e.g. 7 = 1 + 2 + 4 means GSM AMR NB & GSM AMR WB & GSM HR AMR. 0 No AMR configuration 1 GSM AMR NB 2 GSM AMR WB 4 GSM HR AMR 8 WCDMA AMR WB 16 IMS AMR WB (Mode Set) 32 IMS AMR WB (Octet aligned mode) 63 All above six AMR configurations 64 Reserved 128 Reserved

Example

```
AT+QCFG="AMRCODEC"
+QCFG: "amrcodec",5

OK
AT+QCFG="amrcodec",63
OK
AT+QCFG="amrcodec"
+QCFG: "amrcodec",63

OK
```

NOTE

The default value of **<preference>** varies between different modules.

7.2. AT+QCFG="frhrcodec" Configure GSM EFR/HR/FR Codec

This command configures GSM EFR/HR/FR codec.

AT+QCFG="frhrcodec" Configure GSM EFR/HR/FR Codec	
Write Command **AT+QCFG="frhrcodec"[,<preference>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "frhrcodec",<preference>** **OK** If the optional parameter is specified, configure GSM EFR/HR/FR codec: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	The command takes effect after the module is rebooted. The configuration will be saved automatically.

Parameter

<preference>	Integer type. Configure GSM EFR/HR/FR codec in ORed. e.g. 7 = 1 + 2 + 4, means GSM EFR/HR/FR are selected. Default value: 7. 0 No codec configuration 1 GSM FR 2 GSM HR 4 GSM EFR

Example

```
AT+QCFG="frhrcodec"
+QCFG: "frhrcodec",7

OK
AT+QCFG="frhrcodec",3
OK
AT+QCFG="frhrcodec"
+QCFG: "frhrcodec",3

OK
```

7.3. AT+QCFG="bip/auth" Configure PDP Authentication Type in BIP Process

This command configures PDP authentication type in BIP data transmission process.

AT+QCFG= bip/auth" Configure PDP Authentication Type in BIP Process	
Write Command **AT+QCFG="bip/auth"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "bip/auth",<n>** **OK** If the optional parameter is specified, set the type of PDP authentication in the BIP process: **OK** Or **ERROR**
Maximum Response Time	300 ms

Characteristic	This command takes effect immediately. The configuration will be saved automatically.

Parameter

<n>	Integer type. PDP authentication type. 0 No PDP authentication 1 PAP 2 CHAP

NOTE

1. PDP in BIP process generally does not require authentication.
2. Currently this command is only supported for IDEMIA operator.

Example

```
AT+QCFG="bip/auth"
+QCFG: "bip/auth",0
OK
AT+QCFG="bip/auth",1    //Set PDP authentication type as PAP in the BIP process.
OK
AT+QCFG="bip/auth"
+QCFG: "bip/auth",1

OK
```

7.4. AT+QCFG="SMS/ListMsgMap" List Message Map

This command lists the message map with **<msgtype>** in the storage **<mem1>** specified by **AT+CPMS**. See ***document [1]*** for details about the command.

AT+QCFG="SMS/ListMsgMap"	List Message Map
Write Command **AT+QCFG="SMS/ListMsgMap",<msgtype>**	Response **+QCFG: "SMS/ListMsgMap",<msgtype>,<msgmap>** **OK** Or **ERROR** If error is related to ME functionality:

	+CME ERROR: <err>
Maximum Response Time	300 ms
Characteristic	/

Parameter

<msgtype>	String type. Message type. "REC UNREAD" Received unread messages "REC READ" Received read messages "STO UNSENT" Stored unsent messages "STO SENT" Stored sent messages
<msgmap>	String type. Bit map of total messages in the storage specified by **<mem1>** of **AT+CPMS**. If the bit is 1, it means the message is on the type specified by **<msgtype>**. If the bit is 0, it means the message is not on the type specified by **<msgtype>**; The position of the bit in bit map specified by **<msgtype>** indicates the message index in the storage specified by **<mem1>** of **AT+CPMS**.
<err>	Error code. See ***Chapter 13***.

Example

```
AT+CPMS?
+CPMS: 24,40,24,40,24,40

OK
AT+QCFG="sms/listmsgmap","REC UNREAD"    //List the received unread message map.
+QCFG: "sms/listmsgmap","REC UNREAD","000F5B0000"

OK
```

7.5. AT+QCFG="ims/ut" Enable/Disable IMS/UT Function

This command configures IMS/UT function.

AT+QCFG="ims/ut" Enable/Disable IMS/UT Function	
Write Command **AT+QCFG="ims/ut"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "ims/ut",<n>,<ICS>,<USSD>** **OK**

	If the optional parameter is specified, enable/disable the IMS/UT Function: **OK** or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristic	This command takes effect after the module is rebooted. The configurations will be saved automatically.

Parameter

<n>	Integer type. Enable/disable IMS/UT function. 0 Disable 1 Enable
<ICS>	Integer type. Supplementary service over LTE state is available or not. 0 Unavailable 1 Available
<USSD>	Integer type. USSD over LTE state is available or not. 0 Unavailable 1 Available
<err>	Error code. See ***Chapter 13***.

NOTE

1. UT is a sub function of IMS function. UT is running over IMS, and IMS is running over LTE.
2. If IMS/UT function is disabled, **<ICS>** MUST be 0 and supplementary service (eg: CCFC/CCWA) over LTE is unavailable and use CSFB instead.

Example

```
AT+QCFG="ims/ut"
+QCFG: "ims/ut",1,1,0    //UT is enabled, Supplementary service over LTE is available, and USSD over LTE is unavailable

OK
AT+QCFG="ims/ut",0       //Disable IMS/UT function and supplementary service uses CSFB.
OK
AT+QCFG="ims/ut"
+QCFG: "ims/ut",0,0,0

OK
```

7.6. AT+QCFG="ims" Configure IMS Function

This command configures IMS function.

AT+QCFG="ims" Configure IMS Function	
Write Command **AT+QCFG="ims"[,<ims_conf>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "ims",<ims_conf>,<volte_cap>** **OK** If the optional parameter is specified, configure IMS function: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristic	This command takes effect after the module is rebooted. The configurations will be saved automatically.

Parameter

<ims_conf>	Integer type. Configure IMS function. 0 Do not configure IMS. The default setting at MBN file is used. 1 Forcedly enable IMS function 2 Forcedly disable IMS function
<volte_cap>	Integer type. Enabled/disable VoLTE. 0 Disable 1 Enable

Example

```
AT+QCFG="ims"
+QCFG: "ims",0,0

OK
AT+QCFG="ims",1
OK
AT+QCFG="ims"
+QCFG: "ims",1,1
```

```
OK
```

7.7. AT+QCFG="ltesms/format" Set SMS Format in LTE Mode

This command sets the SMS format in LTE mode.

AT+QCFG="ltesms/format"	Set SMS Format in LTE Mode
Write Command **AT+QCFG="ltesms/format"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "ltesms/format",<n>** **OK** If the optional parameter is specified, set SMS format in LTE mode: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristic	The command takes effect immediately. The configuration will not be saved.

Parameter

<n>	Integer type. SMS format in LTE mode. For EC21-V and EC25-V modules, the default value is 0; for other modules, the default value is 1. 0 CDMA format 1 GSM format
<err>	Error code. See ***Chapter 13***.

Example

```
AT+CMGF=1
OK
AT+QCFG="ltesms/format",0          //Set CDMA format for SMS in LTE mode.
OK
AT+CMGS="15021012496"              //Send CDMA format SMS in LTE mode.
> This is a test from Quectel
```

```
+CMGS: 24

OK
AT+QCFG="ltesms/format",1                    //Set GSM format for SMS in LTE mode.
OK
AT+CMGS="15021012496"                        //Send GSM format SMS in LTE mode.
> This is a test from Quectel
+CMGS: 25

OK
```

7.8. AT+QCFG="volte_disable" Enable/Disable VoLTE

This command enables or disables VoLTE.

AT+QCFG="volte_disable" Enable/Disable VoLTE	
Write Command **AT+QCFG="volte_disable"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG="volte_disable",<n>** **OK** If the optional parameter is specified, enable/disable VoLTE function: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	This command takes effect after the module is rebooted. The configurations will be saved automatically.

Parameter

<n>	Integer type. Enable/disable VoLTE. 0 Enable 1 Disable

Example

```
AT+QCFG="volte_disable"
+QCFG: "volte_disable",0
```

```
OK
AT+QCFG="volte_disable",1        //VoLTE is disabled.
OK
```

7.9. AT+QCFG="sms/omadm" Set OMADM Message Parsing Mode

This command sets OMADM message parsing mode.

AT+QCFG="sms/omadm" Set OMADM Message Parsing Mode	
Write Command **AT+QCFG="sms/omadm"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG="sms/omadm",<n>** **OK** If the optional parameter is specified, set the OMADM massage parsing mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristic	This command takes effect after the module is rebooted. The configurations will be saved automatically.

Parameter

<n>	Integer type. OMADM message parsing mode. 0 OMADM short message is parsed 1 OMADM short message is not parsed

Example

```
AT+QCFG="sms/omadm"              //Query the current setting.
+QCFG: "sms/omadm",0

OK
AT+QCFG="sms/omadm",1            //Set the value of OMADM SMS to 1.
OK
AT+QCFG="sms/omadm"
+QCFG: "sms/omadm",0
```

```
OK
```

7.10. AT+QCFG="imsreg/iptype" Configure the IP Type for IMS Registration

This command configures the IP type for IMS registration.

AT+QCFG="imsreg/iptype"	Configure the IP Type for IMS Registration
Write Command **AT+QCFG="imsreg/iptype"[,<n>]**	Response If the optional parameters are omitted, query the current configuration: **+QCFG="imsreg/iptype",<n>** **OK** If the optional parameters are specified, set the IP type for IMS registration: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<n>	Integer type. Configure IP type for IMS registration.	
	0	IPv4
	1	IPv6

Example

```
AT+QCFG="imsreg/iptype"
+QCFG: "imsreg/iptype",0          //The current configuration is IPv4.

OK
AT+QCFG="imsreg/iptype",1         //Configure the IP type when IMS registering to IPv6.
OK
```

```
AT+QCFG="imsreg/iptype"
+QCFG: "imsreg/iptype",1

OK
```

7.11. AT+QCFG="sim/recovery" Configure (U)SIM Card Hot-plug

This command configures (U)SIM card hot-plug.

AT+QCFG="sim/recovery" Configure (U)SIM Card Hot-plug	
Write Command **AT+QCFG="sim/recovery"[,<recovery_count>,<auto_detect_period>,<auto_detect_count>]**	Response If the optional parameters are omitted, query the current configuration: **+QCFG: "sim/recovery",<recovery_count>,<auto_detect_period>,<auto_detect_count>** **OK** If the optional parameters are specified, configure (U)SIM card hot-plug: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<recovery_count>	Integer type. The number of times to resend an APDU immediately after sending an APDU to receive an error response.
<auto_detect_period>	Integer type. Automatic detection cycle. Unit: second.
<auto_detect_count>	Integer type. The number of times of automatic detection.
<err>	Error code. See ***Chapter 13***.

NOTE

This command is a software hot-plug implementation, which corresponds to the hardware hot-plug implementation through **AT+QSIMDET**.

Example

```
AT+QCFG="sim/recovery"
+QCFG: "sim/recovery",3,0,0          //The feature of software hot-plug is disabled.

OK
```

7.12. AT+QCFG="siminvalirecovery" Enable/Disable Re-attach Request

This command enables/disables re-attach request after (U)SIM card attachment failure.

AT+QCFG="siminvalirecovery"	Enable/Disable Re-attach Request
Write Command **AT+QCFG="siminvalirecovery"[,<enable>,<timer>,<counter>]**	Response If the optional parameters are omitted, query the current configuration: **+QCFG: "siminvalirecovery",<enable>,<timer>,<counter>** **OK** If the optional parameters are specified, enable/disable re-attach request after (U)SIM card attachment failure: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<enable>	Integer type. Enable/disable re-attach request. 1 Enable 0 Disable
<timer>	Integer type. Time interval between two attach requests. Unit: s. Range: 1–60. Default

	value: 5. This parameter is only valid when **<enable>**=1.
<counter>	Integer type. The maximum number of attaching request. Range: 1–255. Default value: 5. When the value is 255, it indicates unlimited number of attaching requests.

NOTE

An invalid (U)SIM card is required when testing this command.

Example

```
AT+QCFG="siminvalirecovery"
+QCFG: "siminvalirecovery",208,0,72

OK
```

7.13. AT+QCFG="roaming/voicecall" Enable/Disable Voice Call in Roaming Mode

This command enables/disables the feature of voice call in roaming mode.

AT+QCFG="roaming/voicecall"	Enable/Disable Voice Call in Roaming Mode
Write Command **AT+QCFG="roaming/voicecall"[,<voicecall_mode>]**	Response If the optional parameter is omitted, query the current configuration: **+QCFG: "roaming/voicecall",<voicecall_mode>** **OK** If the optional parameter is specified, enable/disable the feature of voice call in roaming mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<voicecall_mode>	Integer type. Enable/disable the feature of Voice Call when UE is in the roaming mode. 0 Enable 1 Disable

7.14. AT+QCFG="voice_busytone" Control Busy Tone Playback

When the module registers on the MCC/MNC (311/480) network, and initiates a call to peer, but the peer hangs up the call caused by on call, busy tone will appear. This command controls busy tone playback.

AT+QCFG="voice_busytone" Control Busy Tone Playback	
Write Command **AT+QCFG="voice_busytone"[,<mode>]**	Response If the optional parameter is omitted, query the current configuration: **+QCFG: "voice_busytone",<mode>** **OK** Or **ERROR** If the optional parameter is specified, control busy tone playback: **OK** Or **ERROR**
Maximum Response Time	250 ms
Characteristics	The command takes effect immediately; the configuration will be saved automatically.

Parameter

<mode>	Integer type. Enable/disable busy tone playback. 0 Disable 1 Enable

NOTE

1. Busy tone control is enabled by default if the module registers on the MCC/MNC (311/480) network. Disable this function through **AT+QCFG="voice_busytone",0**.
2. If this function has not been configured by the module through Write Command before, **ERROR** will be returned by Read Command.

Example

```
AT+QCFG=?                          //Return the supported parameter range.
…
+QCFG: "voice_busytone",(0,1)
…

OK
AT+QCFG="voice_busytone"           //Query the current setting.
+QCFG: "voice_busytone",0

OK
AT+QCFG="voice_busytone",1         //Enable busy tone playback.
OK
```

7.15. T+QCFG="call_control" Enable/Disable Module Voice Call Feature

This command enables/disables MO and MT voice call feature of the module.

AT+QCFG="call_control" Enable/Disable Module Voice Call Feature	
Write Command **AT+QCFG="call_control"[,<disableMO>,<disableMT>]**	Response If the optional parameters are omitted, query the current configuration: **+QCFG: "call_control",<disableMO>,<disableMT>** **OK** If the optional parameter is specified, enable/disable MO and MT voice call feature of the module: **OK** Or **ERROR**
Maximum Response Time	300 ms

Characteristics	The command takes effect immediately; the configuration will be saved automatically.

Parameter

<disableMO>	Integer type. Indicate whether to disable MO voice call feature. 0 Do not disable 1 Disable
<disableMT>	Integer type. Indicate whether to disable MT voice call feature. 0 Do not disable 1 Disable

Example

```
AT+QCFG=?

…
+QCFG: "call_control",(0,1),(0,1)
…
OK
AT+QCFG="call_control"
+QCFG: "call_control",0,0

OK

ATD10086;       //Make a MO voice call.
OK

ATH
OK

AT+QCFG="call_control",1,0
OK

ATD10086;       //Failed to make a MO voice call.
ERROR
```

8 PPP Command

8.1. AT+QCFG="ppp/termframe" Enable/Disable the PPP TERM Frame Sending

This command enables/disables the PPP TERM frame sending when PPP is hung up by module itself.

AT+QCFG="ppp/termframe" Enable/Disable the PPP TERM Frame Sending	
Write Command **AT+QCFG="ppp/termframe"[,<flag>]**	Response If the optional parameter is omitted, query the current configuration: **+QCFG: "ppp/termframe",<flag>** **OK** If the configuration parameter is specified, enable/disable the PPP TERM frame sending: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<flag>	Integer type. Enable/disable TERM frame sending when hang up PPP by module itself. 0 Disable 1 Enable
<err>	Error code. See ***Chapter 13***.

NOTE

If **AT+QPPPDROP** hangs up PPP with TERM frame, module will send TERM frame to MCU no matter whether **<flag>** is 0 or 1.

Example

```
AT+QCFG="ppp/termframe",1
OK
AT+QCFG="ppp/termframe"
+QCFG: "ppp/termframe",1

OK
```

9 USB Commands

9.1. AT+QCFG="usbnet" Configure the Network Card Type Interface

This command configures the network card type interface.

AT+QCFG ="usbnet" Configure the Network Card Type Interface	
Write Command **AT+QCFG="usbnet"[,<net>]**	Response If the optional parameter is omitted, query the current configuration: **+QCFG: "usbnet",<net>** **OK** If the configuration parameter is specified, set the network card type interface: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<net>	Integer type. Network card type interface. 0 RmNet interface 1 ECM interface 2 MBIM interface 3 RNIDS interface
<err>	Error code. See ***Chapter 13***.

9.2. AT+QCFG="usbcfg" Configure VID, PID and Porting Settings

The command configures VID, PID and porting settings for the module.

AT+QCFG="usbcfg" Configure VID, PID and Porting Settings	
Write Command **AT+QCFG="usbcfg"[,<vid>,<pid>,<diag>,<nmea>,<at_port>,<modem>,<rmnet>,<adb>,<uac>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG:"usbcfg",<vid>,<pid>,<diag>,<nmea>,<at_port>,<modem>,<rmnet>,<adb>,<uac>** **OK** If the optional parameters are specified, configure VID, PID and porting settings: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<vid>	Integer type. Vendor ID of USB device. The maximum value is 65535.
<pid>	Integer type. Product ID of USB device. The maximum value is 65535.
<diag>	Integer type. Status of USB DIAG port. 0 Disable 1 Enable
<nmea>	Integer type. Status of USB NMEA port. 0 Disable 1 Enable
<at_port>	Integer type. Status of USB AT port. 0 Disable 1 Enable
<modem>	Integer type. Status of USB Modem port. 0 Disable 1 Enable
<rmnet>	Integer type. Status of USB net device. 0 Disable 1 Enable
<adb>	Integer type. Status of USB ADB device.

	0	Disable
	1	Enable
<uac>	Integer type. UAC status.	
	0	Disable
	1	Enable

Example

```
AT+QCFG="usbcfg",0x2C7C,0x0125,1,1,1,1,1,0,0
OK
AT+QCFG="usbcfg"
+QCFG: "usbcfg",0x2C7C,0x125,1,1,1,1,1,0,0

OK
```

9.3. AT+QCFG="usbee" Control the USB Device Loading

The command controls whether USB device loading needs to wait for modem to start.

AT+QCFG="usbee" Control the USB Device Loading	
Write Command **AT+QCFG= "usbee"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "usbee",<enable>** **OK** If the optional parameter is specified, control whether USB device loading needs to wait for modem to start: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<enable>	Integer type.	
	0	The USB device loading not need to wait for Modem to start
	1	The USB device loading need to wait for Modem to start

9.4. AT+QCFG="usbmode" Get USB Mode

This command queries USB mode or enables/disables the module to automatically report URCs about bus mode change.

AT+QCFG=usbmode" Get USB Mode	
Write Command **AT+QCFG="usbmode"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG:"usbmode",<n>,<state>** **OK** If the optional parameter is specified, query USB mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<n>	Integer type. Enable/disable to automatically report URCs about USB mode change. 0 Disable 1 Enable
<state>	String type. Indicate the USB mode. "SUSPEND" "CONFIGURED" "DISCONNECTED" "CONNECTED" "UNKNOWN"

NOTE

1. When **<n>**=1, URCs can be reported to UART1.
2. Only when **<state>**="CONFIGURED", data can be transferred via USB.
3. Only when VBUS of USB PHY is connected (such as charger), **<state>** can be switched to "CONNECTED".

Example

```
AT+QCFG="usbmode"
+QCFG:"usbmode",0,"SUSPEND"

OK
AT+QCFG="usbmode",1                    //Set <n> to 1 for report URCs about bus mode
                                         change.
OK
+QCFG:"usbmode",1,"CONFIGURED"         //The URC about USB mode "CONFIGURED".
```

9.5. AT+QCFG="spi/set" Configure SPI or UART Driver

AT+QCFG="spi/set" Configure SPI or UART Driver	
Read command **AT+QCFG="spi/set"[,<flag>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "spi/set",<flag>** **OK** If the optional parameter is specified, set SPI or UART driver: **OK** Or **ERROR**
Maximum Response Time	250 ms
Characteristics	This command takes effect after rebooting. The configuration will be saved automatically.

Parameter

<flag>	Integer type. Configure pin feature. 0 Configure pin as general GPIO 1 Initialize pin as uart6 2 initialize pin as spi6

Example

```
AT+QCFG=?                    //Query the range of this command.
....
+QCFG: "spi/set",(0-2)

OK
AT+QCFG="spi/set",1          //Initialized pins as uart6.
OK
AT+QCFG="spi/set"            //Query the current setting.
+QCFG: "spi/set",1

OK
```

9.6. AT+QCFG="usbenum/seoctl" Enable Optimization of USB Enumeration Failure

AT+QCFG="usbenum/seoctl" Enable Optimization of USB Enumeration Failure	
Write Command **AT+QCFG="usbenum/seoctl"[,<enable>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "usbenum/seoctl",<enable>** **OK** If the optional parameter is specified, enable optimization of USB enumeration failure: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	This command will take effect after rebooting. The configuration will be saved automatically.

Parameter

<enable>	Integer type. Indicate whether to enable optimizing USB enumeration failure. 0 Disable 1 Enable

Example

```
AT+QCFG=?                          //Test command.
…
+QCFG: "usbenum/seoctl",(0,1)
…

OK
AT+QCFG="usbenum/seoctl",1         //Enable optimizing USB enumeration failure.
OK
AT+QCFG="usbenum/seoctl"           //Query the current setting.
+QCFG: "usbenum/seoctl",1

OK
```

10 CDMA Commands

10.1. AT+QCFG="cdma/pppauth" Enable/Disable PPP Authentication Optimization under CDMA

This command enables/disables the PPP authentication optimization under CDMA.

AT+QCFG="cdma/pppauth" Enable/Disable PPP Authentication Optimization under CDMA	
Write Command **AT+QCFG="cdma/pppauth"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "cdma/pppauth",<n>** **OK** If the optional parameter is specified, enable/disable the PPP authentication optimization under CDMA: **OK** Or **ERROR** If there is any error related to ME functionality: **+CME ERROR: <err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately; The configuration will not be saved.

Parameter

<n> Integer type. Whether to enable the PPP authentication optimization under CDMA.
- 0 Disable
- 1 Enable

<err> Error code. See ***Chapter 13***.

Example

```
AT+QCFG="cdma/pppauth"
+QCFG: "cdma/pppauth",0      //The PPP authentication optimization is disabled by default.

OK
AT+QCFG="cdma/pppauth",1     //Enable the PPP authentication optimization under CDMA.
OK
AT+QCFG="cdma/pppauth"
+QCFG: "cdma/pppauth",1

OK
```

10.2. AT+QCFG="ehrpd" Configure CDMA Mode

This command configures the CDMA network mode which the module expects to use.

AT+QCFG="ehrpd" Configure CDMA Mode	
Write Command **AT+QCFG="ehrpd"[,<mode>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG:"ehrpd",<mode>** **OK** If the optional parameter is specified, set the CDMA mode: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<mode>	Integer type. Configure the network mode. 0 HDRSCP_REV0_PROTOCOLS_ONLY 1 HDRSCP_REVA_PROTOCOLS_WITH_MFPA 2 HDRSCP_REVA_PROTOCOLS_WITH_MFPA_AND_EMPA 3 HDRSCP_REVB_PROTOCOLS_WITH_MMPA 4 HDRSCP_REVA_PROTOCOLS_WITH_EHRPD 5 HDRSCP_REVB_PROTOCOLS_WITH_EHRPD 6 HDRSCP_REVA_PROTOCOLS_WITH_EHRPD_AND_IRAT

7	HDRSCP_REVB_PROTOCOLS_WITH_EHRPD_AND_IRAT

NOTE

If this NV is not set, the module will use HDRSCP_REVA_PROTOCOLS_WITH_MFPA by default.

Example

```
AT+QCFG="ehrpd"                 //Query the current network mode.
+QCFG: "ehrpd",2

OK
AT+QCFG="ehrpd",2               //Configure the network mode.
OK
```

10.3. AT+QCFG="cdmasms/cmtformat" Set CMT Format of CDMA SMS PDU

This command sets CMT format of CDMA SMS PDU.

AT+QCFG ="cdmasms/cmtformat"	Set CMT Format of CDMA SMS PDU
Write Command **AT+QCFG="cdmasms/cmtformat"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "cdmasms/cmtformat",<n>** **OK** If the optional parameter is specified, set CMT format of CDMA SMS PDU: **OK** Or **ERROR** If error is related to ME functionality: **+CME ERROR:<err>**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<n>	Integer type. CMT format of CDMA SMS PDU. 0 CDMA 1 GSM
<err>	Error code. See ***Chapter 13***.

Example

```
AT+CMGF=0
OK
AT+CNMI=2,2                                    //Show CDMA SMS content directly and not store it.
OK
AT+QCFG="cdmasms/cmtformat",0                  //Set CDMA format.
OK

//Receive a new CDMA SMS
^HCMT: ,46
0000021002020702C6155968C69C0601FC081B00031D2B8001061022E8312580030616101021282308
01000A0100
AT+QCFG="cdmasms/cmtformat",1                  //Set GSM format.
OK

//Receive a new CDMA SMS.
+CMT: ,24
00000B818155563001F70000610101128232000 4AE207109
```

11 SMS Commands

11.1. AT+QCFG="urcport/sms" Set URC Output Port of Short Message

This command sets URC output port of short message.

AT+QCFG="urcport/sms"	Set URC Output Port of Short Message
Write Command **AT+QCFG="urcport/sms"[,<n>]**	Response If the optional parameter is omitted, query the current setting: **+QCFG: "urcport/sms"** **OK** If the optional parameter is specified, set URC output port of short message: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately; The configuration will be saved automatically.

Parameter

<n>	Integer type. URC output port of short message.	
	0	Using default URC output port
	1	Set URC output port of short message as "uart2"

NOTE

Use **AT+QDIAGPORT=1** to configure debug UART port as AT port and restart module. See ***document [1]*** for details about the command.

Example

```
AT+QDIAGPORT=1                    //Configure debug UART port as AT port.
OK

//Restart module

AT+QURCCFG="urcport","uart1" //Configuration of URC output port is "uart1".
OK
AT+QCFG="urcport/sms"
+QCFG: "urcport/sms",0            //Query URC output port of short message.

OK
AT+QCFG="urcport/sms",1       //Set URC output port of short message as "uart2".
OK
AT+QCFG="urcport/sms"
+QCFG: "urcport/sms",1          //Query URC output port of short message as "uart2".

OK
```

11.2. AT+QCFG="sms_retry" Configure SMS Retry Period and Interval

This command configures SMS retry period and interval.

AT+QCFG="sms_retry" Configure SMS Retry Period and Interval	
Write Command **AT+QCFG="sms_retry"[,<interval>[,<period>]]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "sms_retry",<interval>,<period>** **OK** If any of the optional parameters is specified, configure SMS retry period and interval: **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect after rebooting; The configuration will be saved automatically.

Parameter

<interval>	Integer type. SMS retry interval. Range: 0–255. Unit: second.
<period>	Integer type. SMS retry period. Range: 0–255. Unit: second.

NOTE

If **<period>** is set to 0, SMS will not retry when an error occurs.

Example

```
AT+QCFG=?
…
+QCFG: "sms_retry",(0-255),(0-255)
…

OK
AT+QCFG="sms_retry"
+QCFG: "sms_retry",45,180

OK
AT+QCFG="sms_retry",5
OK
AT+QCFG="sms_retry"
+QCFG: "sms_retry",5,180

OK
AT+QCFG="sms_retry",5,30
OK

AT+QCFG="sms_retry"
+QCFG: "sms_retry",5,30

OK
```

11.3. AT+QCFG="sms_control" Enable/Disable Delivering or Submitting SMS

This command enables/disables delivering or submitting SMS.

AT+QCFG="sms_control" Enable/Disable Delivering or Submitting SMS	
Write Command **AT+QCFG="sms_control"[,<submit>,<deliver>]**	Response If the optional parameters are omitted, query the current setting: **+QCFG: "sms_control",<submit>,<deliver>** **OK** If the optional parameters are specified, enable/disable delivering or submitting SMS. **OK** Or **ERROR**
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately; The configuration will be saved automatically.

Parameter

<submit>	Integer Type. Enable/disable submitting SMS. 0 Disable 1 Enable
<deliver>	Integer Type. Enable/disable delivering SMS. 0 Disable 1 Enable

NOTE

1. After disabling sending SMS, **AT+CMGS/AT+CMSS** will return an error. See ***document [1]*** for details about the two commands.
2. This command takes effect in both 3GPP and 3GPP2 messages.

Example

```
AT+QCFG="sms_control"                  //Query SMS control configuration.
+QCFG: "sms_control",1,1

OK
AT+QCFG="sms_control",0,1              //Disable submitting SMS.
OK
AT+CMGS="17301836745"
+CMS ERROR: 302                        //The operation is not allowed.
AT+QCFG="sms_control",0,0              //Disable sending and receiving SMS.
OK
```

12 Appendix A References

Table 3: Related Document

Document Name
[1] Quectel_EC2x&EG9x&EG2x-G&EM05_Series_AT_Commands_Manual

Table 4: Terms and Abbreviations

Abbreviation	Description
3GPP	3rd Generation Partnership Project
AP	Application Processor
AMR	Adaptive Multi-Rate
APDU	Application Protocol Data Unit
APN	Access Point Name
BIP	Bearer Independent Protocol
CDMA	Code Division Multiple Access
CHAP	Challenge-Handshake Authentication Protocol
CS	Circuit Switching
CSFB	Circuit Switched Fallback
CP	Control Plane
DHCP	Dynamic Host Configuration Protocol
EFR	Enhanced Full Rate Speed Encoding
EPC	Evoloved Packet Core

ETWS	Earthquake and Tsunami Warning System
ESM	EPS Session Management
EFS	Embedded File System
FPLMN	Forbidden Public Land Mobile Network
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
HSDPA	High Speed Downlink Packet Access
HSUPA	High Speed Uplink Packet Access
HPLMN	Home Public Land Mobile Network
LTE	Long-Term Evolution
MCC/MNC	Mobile Country Code
ME	Mobile Equipment
MNC	Mobile Network Code
MS	Mobile Station
MSC	Microsoft Snap-In Control
MO	Mobile Originated
MT	Mobile Terminated
NTP	Network Time Protocol
NVRAM	Non-Volatile Random Access Memory
OEM	Original Equipment Manufacturer
OMADM	Open Mobile Alliance Device Management
PAP	Password Authentication Protocol
PS	Packet Switching
PDN	Packet Data Network
PDP	Packet Data Protocol

PLMN	Public Land Mobile Network
PPP	Point to Point Protocol
RRC	Radio Resource Control
PCM	Pulse Code Modulation
PDU	Packet Data Unit
QMI	Qualcomm Message Interface
RX	Receive
SAR	Specific Absorption Rate
SGSN	Serving GPRS Support Node
SMS	Short Message Service
SRLTE	Single Radio LTE
TA	Terminal Adapter
TDD	Time Division Duplex
TCP	Transmission Control Protocol
UE	User Equipment
UMTS	Universal Mobile Telecommunications System
URC	Unsolicited Result Code
UDP	User Datagram Protocol
USB	Universal Serial Bus
(U)SIM	(Universal) Subscriber Identity Module
VoLTE	Voice (voice calls) over LTE
VID	Vendor ID
WCDMA	Wideband Code Division Multiple Access

13 Appendix B Summary of <err> Code

Final result code **+CME ERROR: <err>** indicates an error related to mobile equipment or network. The operation is similar to **ERROR** result code. None of the following commands in the same command line is executed. Neither **ERROR** nor **OK** result code shall be returned.

<err> values are mostly used by common message commands. The following table lists most of general and GRPS related **ERROR** codes. For some GSM protocol failure cause described in GSM specifications, the corresponding **ERROR** codes are not included.

Table 5: Different Coding Schemes of +CME ERROR: <err>

Code of <err>	Meaning
0	Phone failure
1	No connection to phone
2	Phone-adaptor link reserved
3	Operation not allowed
4	Operation not supported
5	PH-SIM PIN required
6	PH-FSIM PIN required
7	PH-FSIM PUK required
10	SIM not inserted
11	SIM PIN required
12	SIM PUK required
13	SIM failure
14	SIM busy

15	SIM wrong
16	Incorrect password
17	SIM PIN2 required
18	SIM PUK2 required
20	Memory full
21	Invalid index
22	Not found
23	Memory failure
24	Text string too long
25	Invalid characters in text string
26	Dial string too long
27	Invalid characters in dial string
30	No network service
31	Network timeout
32	Network not allowed - emergency calls only
40	Network personalization PIN required
41	Network personalization PUK required
42	Network subset personalization PIN required
43	Network subset personalization PUK required
44	Service provider personalization PIN required
45	Service provider personalization PUK required
46	Corporate personalization PIN required
47	Corporate personalization PUK required
901	Audio unknown error
902	Audio invalid parameters

903	Audio operation not supported
904	Audio device busy