

BG95-S5 QCFG

AT Commands Manual

Satellite Communication Module Series

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1 Introduction

This document describes the **AT+QCFG** commands supported on BG95-S5 module.

2 AT Command Introduction

2.1. 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.

2.2. 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 commands implemented by BG95-S5 module are categorized as “Extended” syntax, as illustrated below:

Extended

There are several types of extended commands as shown in the following table.

Table 1: 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 entered parameter.

2.3. 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>
```

Or

```
<CR><LF><parameters><CR><LF>
<CR><LF>OK<CR><LF>
```

2.4. 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. The URLs, domain names, IP addresses, usernames/accounts, and passwords (if any) in the AT command examples are provided for illustrative and explanatory purposes only, and they should be modified to reflect your actual usage and specific needs.

3 Description of AT+QCFG Commands

3.1. AT+QCFG Extended Configuration Settings

The following Test Command shows the supported extended configuration settings of the module.

AT+QCFG Extended Configuration Settings	
Test Command	Response
AT+QCFG=?	+QCFG: "nwscanmode", (list of supported <scan_mode>s), (list of supported <effect>s) +QCFG: "servicedomain", (list of supported <service>s), (list of supported <effect>s) +QCFG: "nwscanseq", (list of supported <scanseq>s), (list of supported <effect>s) +QCFG: "band", (list of supported <GSM_bandval>s), (list of supported <eMTC_bandval>s), (list of supported <NB-IoT_bandval>s), (list of supported <NTN_NB-IoT_bandval>s), (list of supported <effect>s) +QCFG: "iotopmode", (list of supported <mode>s), (list of supported <effect>s) +QCFG: "celevel", (list of supported <level>s) +QCFG: "urc/ri/ring", (list of supported <typeRI>s), (list of supported <pulse_duration>s), (list of supported <active_duration>s), (list of supported <inactive_duration>s), (list of supported <ring_no_disturbing>s), (list of supported <pulse_count>s) +QCFG: "urc/ri/smsincoming", (list of supported <typeRI>s), (list of supported <pulse_duration>s), (list of supported <pulse_count>s) +QCFG: "urc/ri/other", (list of supported <typeRI>s), (list of supported <pulse_duration>s), (list of supported <pulse_count>s) +QCFG: "risignalttype", (list of supported <RI_signal_type>s) +QCFG: "urc/delay", (list of supported <enable>s) +QCFG: "ledmode", (list of supported <mode>s) +QCFG: "gpio", <mode>, <pin>[, [<dir>, <pull>, <drv>] / [<val>] [, <save>]]

+QCFG: "airplanecontrol", (list of supported <airplane_control>s)

+QCFG: "cmux/urcport", (list of supported <URC_port>s)

+QCFG: "apready", (list of supported <n>s), (list of supported <level>s), (list of supported <interval>s)

+QCFG: "nccconf", (list of supported <cap_val>s)

+QCFG: "psm/enter", (list of supported <mode>s)

+QCFG: "psm/urc", (list of supported <enable>s)

+QCFG: "simeffect", (list of supported <mode>s)

+QCFG: "lapiconf", (list of supported <mode>s), (list of supported <enable>s)

+QCFG: "nasconfig", (list of supported <conf_val>s)

+QCFG: "irat/timer", (list of supported <timer_value>s), (list of supported <alignment_value>s)

+QCFG: "nb1/bandprior", <band_priority_seq>

+QCFG: "emmcause", [(list of supported <display_format>s)]

+QCFG: "sibinfo"

+QCFG: "emmtimer"

+QCFG: "msclass", [(list of supported <GPRS_multislot_class>s), (list of supported <EGPRS_multislot_class>s)]

+QCFG: "snrscan", [(list of supported <level>s)]

+QCFG: "fgiconfig", [(list of supported <value>s)]

+QCFG: "sim/onchip", [(list of supported <mode>s), [(list of supported <effect>s)]]

+QCFG: "bip/auth", (list of supported <mode>s)

+QCFG: "timer", <timer_ID>

+QCFG: "timeupdate", (list of supported <mode>s), (list of supported <gps_mode>s)

+QCFG: "uartcfg", (list of supported <UART_cfg_mode>s)

+QCFG: "dbgctl", (list of supported <log_level>s)

+QCFG: "cmux/flowctrl", (list of supported <flow_ctrl>s)

+QCFG: "fast/poweroff", <pin>, (list of supported <enable>s)

+QCFG: "bandrestore"

+QCFG: "msc", (list of supported <msc>s)

+QCFG: "sgsn", (list of supported <sgsn>s)

+QCFG: "lte/bandprior", (list of supported <LTE_PRIOR_BAND_ID>s), (list of supported <LTE_PRIOR_BAND_ID>s), (list of supported <LTE_PRIOR_BAND_ID>s)

+QCFG: "pa_info"

+QCFG: "psm_rtc_adjust_ctrl", (list of supported <mode>s)

+QCFG: "rf/tuner_cfg", (list of supported <index>s), (list of supported <lte_band>s), (list of supported <gsm_band>s)

+QCFG: "timesave", (list of supported <mode>s)

	<p>+QCFG: "cmux/signal",(list of supported <pin_num>s),(list of supported <pin_enable>s),(list of supported <reserved_num>s) +QCFG: "urc/ri/level",(list of supported <level>s)</p> <p>OK</p>
Maximum Response Time	300 ms
Characteristics	-

3.1.1. Network Related AT Commands

3.1.1.1. AT+QCFG="nwscanmode" Configure RAT(s) to be Searched for

This Write Command configures the RAT(s) to be searched for or queries the current setting.

AT+QCFG="nwscanmode" Configure RAT(s) to be Searched for	
Write Command AT+QCFG="nwscanmode"[,<scan_mode>[,<effect>]]	<p>Response</p> <p>If the optional parameters are omitted, query the current setting: +QCFG: "nwscanmode",<scan_mode></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the RAT(s) to be searched for: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	<p><effect> determines when the command takes effect. The configurations are saved automatically.</p>

Parameter

<scan_mode>	Integer type. RAT(s) to be searched for. 0 Automatic (GSM and LTE) 1 GSM only 3 LTE only (including IoT-NTN)
<effect>	Integer type. When to take effect.

	0	Take effect after the module is rebooted
	1	Take effect immediately
<err>		Error code. See Chapter 4 for details.

3.1.1.2. AT+QCFG="servicedomain" Configure Service Domain to be Registered

This Write Command configures the service domain to be registered or queries the current setting.

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

Parameter

<service>	Integer type. Service domain to be registered.
	1 PS only
	2 CS & PS
<effect>	Integer type. When to take effect.
	0 Take effect after the module is rebooted
	1 Take effect immediately
<err>	Error code. See Chapter 4 for details.

3.1.1.3. AT+QCFG="nwscanseq" Configure RATs' Searching Sequence

This Write Command configures RATs' searching sequence or queries the current setting.

AT+QCFG="nwscanseq" Configure RATs Searching Sequence

Write Command AT+QCFG="nwscanseq"[,<scanseq>[,<effect>]]	<p>Response</p> <p>If the optional parameters are omitted, query the current setting: +QCFG: "nwscanseq",<scanseq></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the RAT searching sequence: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	<effect> determines when the command takes effect. The configurations are saved automatically.

Parameter

<scanseq>	Integer type. RATs' searching sequence, e.g., 02030104 stands for eMTC → NB-IoT → GSM → IoT-NTN. <ul style="list-style-type: none"> 00 Automatic (eMTC → NB-IoT → GSM → IoT-NTN) 01 GSM 02 eMTC 03 NB-IoT 04 IoT-NTN
<effect>	Integer type. When to take effect. <ul style="list-style-type: none"> 0 Take effect after the module is rebooted 1 Take effect immediately
<err>	Error code. See Chapter 4 for details.

3.1.1.4. AT+QCFG="band" Configure Frequency Bands

This Write Command configures the frequency bands to be searched for or queries the current setting.

AT+QCFG="band" Configure Frequency Bands

Write Command	Response
---------------	----------

<p>AT+QCFG="band"[,<GSM_bandval>,<eMTC_bandval>,<NB-IoT_bandval>,<NTN_NB-IoT_bandval>[,<effect>]]</p>	<p>If the optional parameters are omitted, query the current setting: +QCFG: "band",<GSM_bandval>,<eMTC_bandval>,<NB-IoT_bandval>,<NTN_NB-IoT_bandval></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the frequency bands to be searched for: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	<effect> determines when the command takes effect. The configurations are saved automatically.

Parameter

<GSM_bandval>	A hexadecimal value that specifies the GSM frequency band, e.g.: 0xa = 0x2(DCS1800) + 0x8(PCS1900). If it is set to 0, it means not to change GSM frequency band.	
	0	No change
	0x1	EGSM900
	0x2	DCS1800
	0x4	GSM850
	0x8	PCS1900
	0xF	All of the supported bands above
<eMTC_bandval>	A hexadecimal value that specifies the eMTC frequency band, e.g.: 0x15 = 0x1(LTE B1) + 0x4(LTE B3) + 0x10(LTE B5). If it is set to 0, it means not to change the eMTC frequency band.	
	0	No change
	0x1 (BAND_PREF_LTE_BAND1)	LTE B1
	0x2 (BAND_PREF_LTE_BAND2)	LTE B2
	0x4 (BAND_PREF_LTE_BAND3)	LTE B3
	0x8 (BAND_PREF_LTE_BAND4)	LTE B4
	0x10 (BAND_PREF_LTE_BAND5)	LTE B5
	0x80 (BAND_PREF_LTE_BAND8)	LTE B8
	0x800 (BAND_PREF_LTE_BAND12)	LTE B12
	0x1000 (BAND_PREF_LTE_BAND13)	LTE B13

	0x20000 (BAND_PREF_LTE_BAND18)	LTE B18
	0x40000 (BAND_PREF_LTE_BAND19)	LTE B19
	0x80000 (BAND_PREF_LTE_BAND20)	LTE B20
	0x1000000 (BAND_PREF_LTE_BAND25)	LTE B25
	0x2000000 (BAND_PREF_LTE_BAND26)	LTE B26
	0x4000000 (BAND_PREF_LTE_BAND27)	LTE B27
	0x8000000 (BAND_PREF_LTE_BAND28)	LTE B28
	0x2000000000000000 (BAND_PREF_LTE_BAND66)	LTE B66
	0x100000000000000000 (BAND_PREF_LTE_BAND85)	LTE B85
<NB-LoT_bandval>	A hexadecimal value that specifies the NB-LoT frequency band, e.g.: 0x15 = 0x1(LTE B1) + 0x4(LTE B3) + 0x10(LTE B5). If it is set to 0, it means not to change the NB-LoT frequency band.	
	0	No change
	0x1 (BAND_PREF_LTE_BAND1)	LTE B1
	0x2 (BAND_PREF_LTE_BAND2)	LTE B2
	0x4 (BAND_PREF_LTE_BAND3)	LTE B3
	0x8 (BAND_PREF_LTE_BAND4)	LTE B4
	0x10 (BAND_PREF_LTE_BAND5)	LTE B5
	0x80 (BAND_PREF_LTE_BAND8)	LTE B8
	0x800 (BAND_PREF_LTE_BAND12)	LTE B12
	0x1000 (BAND_PREF_LTE_BAND13)	LTE B13
	0x20000 (BAND_PREF_LTE_BAND18)	LTE B18
	0x40000 (BAND_PREF_LTE_BAND19)	LTE B19
	0x80000 (BAND_PREF_LTE_BAND20)	LTE B20
	0x1000000 (BAND_PREF_LTE_BAND25)	LTE B25
	0x8000000 (BAND_PREF_LTE_BAND28)	LTE B28
	0x2000000000000000 (BAND_PREF_LTE_BAND66)	LTE B66
	0x4000000000000000 (BAND_PREF_LTE_BAND71)	LTE B71
	0x100000000000000000 (BAND_PREF_LTE_BAND85)	LTE B85
<NTN_NB-LoT_bandval>	A hexadecimal value that specifies the LoT-NTN frequency band, e.g.: 0x7 = 0x1(NTN B23) + 0x2(NTN B255) + 0x4(NTN B256). If it is set to 0, it means not to change the LoT-NTN frequency band.	
	0	No change
	0x1 (BAND_PREF_LTE_BAND23)	NTN B23
	0x2 (BAND_PREF_LTE_BAND255)	NTN B255
	0x4 (BAND_PREF_LTE_BAND256)	NTN B256
	<u>0x7</u>	All of the supported bands above
<effect>	Integer type. When to take effect.	
	0	Take effect after the module is rebooted
	<u>1</u>	Take effect immediately
<err>	Error code. See Chapter 4 for details.	

3.1.1.5. AT+QCFG="iotopmode" Configure Network Category to be Searched for Under LTE RAT

This Write Command configures the network category to be searched for under LTE RAT or queries the current setting.

AT+QCFG="iotopmode" Configure Network Category to be Searched for Under LTE RAT	
Write Command AT+QCFG="iotopmode" [,<mode> [,<effect>]]	Response If the optional parameters are omitted, query the current setting: +QCFG: "iotopmode",<mode> OK If any of the optional parameters is specified, configure the network category to be searched for under LTE RAT: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	<effect> determines when the command takes effect. The configurations are saved automatically.

Parameter

<mode>	Integer type. Network category to be searched for under LTE RAT. 0 eMTC 1 NB-IoT 2 eMTC and NB-IoT 3 IoT-NTN only 4 eMTC and IoT-NTN 5 NB-IoT and IoT-NTN 6 eMTC, NB-IoT and IoT-NTN
<effect>	Integer type. When to take effect. 0 Take effect after the module is rebooted 1 Take effect immediately
<err>	Error code. See Chapter 4 for details.

3.1.1.6. AT+QCFG="celevel" Query NB-IoT Coverage Enhancement Level

This Write Command queries NB-IoT coverage enhancement level.

AT+QCFG="celevel" Query NB-IoT Coverage Enhancement Level	
Write Command AT+QCFG="celevel"	Response +QCFG: "celevel",<level> OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	-

Parameter

<level>	Integer type. NB-IoT coverage enhancement level. 0 CE level 0 1 CE level 1 2 CE level 2
<err>	Error code. See Chapter 4 for details.

3.1.1.7. AT+QCFG="nccconf" Configure NB-IoT Features

This Write Command configures NB-IoT features or queries the current setting.

AT+QCFG="nccconf" Configure NB-IoT Features	
Write Command AT+QCFG="nccconf"[,<cap_val>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "nccconf",<cap_val> OK If the optional parameter is specified, configure NB-IoT features: OK If there is an error related to ME functionality:

	+CME ERROR: <err>
	If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<cap_val>	Hexadecimal value. If any bit is set to 1, it means the corresponding feature is enabled, otherwise it is disabled. The NB-IoT features are as follows: Bit 0 Enable or disable the use of EMM_CP_CIOT Bit 1 Enable or disable the use of EMM_UP_CIOT Bit 2 Enable or disable the use of EMM_S1_U Bit 3 Enable or disable the use of EMM_ER_WITHOUT_PDN Bit 4 Enable or disable the use of EMM_HC_CP_CIOT Bit 5 Enable or disable the use of EMM_SMS_ONLY Bit 6 Enable or disable the use of EMM_PNB_CP_CIOT Bit 7 Enable or disable the use of EMM_PNB_UP_CIOT Bit 8 Enable or disable the use of EMM_EPCO_CIOT Bit 10 Enable or disable the use of EMM_CP_BACKOFF
<err>	Error code. See Chapter 4 for details.

3.1.1.8. AT+QCFG="psm/enter" Trigger the Module to Enter PSM Immediately

This Write Command configures whether to trigger the module to enter PSM immediately after the RRC connection release is received or queries the current setting.

When **<mode>=1**, the module skips active timer (T3324) and enters PSM immediately after the RRC connection release is received.

AT+QCFG="psm/enter" Trigger the Module to Enter PSM Immediately	
Write Command AT+QCFG="psm/enter"[,<mode>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "psm/enter",<mode> OK If the optional parameter is specified, configure whether to trigger the module into PSM immediately after the RRC connection release is received:

	<p>OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	<p>The command takes effect immediately.</p> <p>The configurations are not saved.</p>

Parameter

<mode>	<p>Integer type. Whether to trigger the module to enter PSM immediately.</p> <p><u>0</u> Enter PSM after T3324 expires</p> <p>1 Enter PSM immediately after RRC connection release is received.</p>
<err>	Error code. See Chapter 4 for details.

3.1.1.9. AT+QCFG="psm/urc" Enable/Disable PSM Entering Indication

This Write Command enables/disables the PSM entering indication URC **+QPSMTIMER: <TAU_timer>,<T3324_timer>** which is used to indicate the TAU timer and the duration the module stays active before entering PSM, or queries the current setting.

When PSM function is enabled and RRC connection release is received, the active timer (T3324) will be started, and the indication URC will be reported.

AT+QCFG="psm/urc" Enable/Disable PSM Entering Indication	
<p>Write Command</p> <p>AT+QCFG="psm/urc"[,<enable>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current setting: +QCFG: "psm/urc",<enable></p> <p>OK</p> <p>If the optional parameter is specified, enable/disable the PSM entering indication: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error:</p>

	ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<enable>	Integer type. Enable/disable PSM entering indication URC +QPSMTIMER: <TAU_timer>,<T3324_timer> . If enabled, the URC will be reported when RRC connection release is received. 0 Disable 1 Enable
<TAU_timer>	Integer type. The interval for periodic tracking area updating.
<T3324_timer>	Integer type. The duration the module stays active before entering PSM.
<err>	Error code. See Chapter 4 for details.

NOTE

When **AT+QCFG="psm/urc",1** and **AT+QCFG="psm/enter",1** are executed at the same time, there will be a possibility that the URC **+QPSMTIMER: <TAU_timer>,<T3324_timer>** cannot be outputted because the module enters PSM immediately.

3.1.1.10. AT+QCFG="simeffect" Enable/Disable RAT Search Order Stored in (U)SIM Card

This Write Command enables/disables the RAT search order stored in (U)SIM card or queries the current setting.

AT+QCFG="simeffect" Enable/Disable RAT Search Order Stored in (U)SIM Cards

Write Command AT+QCFG="simeffect"[,<mode>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "simeffect",<mode> OK If the optional parameter is specified, enable/disable the RAT search order stored in (U)SIM cards: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error:
--	--

	ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<mode>	Integer type. Enable/disable the RAT search order stored in (U)SIM card. 0 Disable <u>1</u> Enable
<err>	Error code. See Chapter 4 for details.

3.1.1.11. AT+QCFG="lapiconf" Configure LAPI Feature

This Write Command configures the LAPI (Low Access Priority Indication) feature or queries the current setting.

AT+QCFG="lapiconf" Configure LAPI Feature	
Write Command AT+QCFG="lapiconf" [,<mode> [,<enable>]]	Response If the optional parameters are omitted, query the current setting: +QCFG: "lapiconf",<mode> [,<enable>] OK If any of the optional parameters is specified, configure the LAPI feature: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<mode>	Integer type. Configure the LAPI feature.
---------------------	---

	0	Disable. Forced to disable
	1	Enable. Forced to enable
	2	Auto. Determined by (U)SIM/EFS
<enable>	Integer type. Whether <mode> takes effect. This parameter is valid only when <mode>=2 .	
	0	Do not take effect
	1	Take effect
<err>	Error code. See Chapter 4 for details.	

3.1.1.12. AT+QCFG="nasconfig" Configure NAS Related Parameters

This Write Command configures NAS related parameters or queries the current setting.

AT+QCFG="nasconfig" Configure NAS Related Parameters	
Write Command	Response
AT+QCFG="nasconfig" [,<conf_val>]	If the optional parameter is omitted, query the current setting: +QCFG: "nasconfig",<conf_val> OK If the optional parameter is specified, configure NAS related parameters: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<conf_val>	Hexadecimal value. If any bit is set to 1, it means the corresponding feature is enabled, otherwise it is disabled. The NAS related parameters are as follows:
Bit 0	Enable or disable the use of NAS_SIGNALLING_PRIORITY
Bit 1	Enable or disable the use of NMO_I_BEHAVIOUR
Bit 2	Enable or disable the use of ATTACH_WITH_IMSI
Bit 3	Enable or disable the use of MINIMUM_PERIODIC_SEARCH_TIMER
Bit 4	Enable or disable the use of EXTENDED_ACCESS_BARRING
Bit 5	Enable or disable the use of TIMER_T3245_BEHAVIOUR

Bit 6	Enable or disable the use of OVERRIDE_NAS_SIGNALLING_LOW_PRIORITY
Bit 7	Enable or disable the use of OVERRIDE_EXTENDED_ACCESS_BARRING
Bit 8	Enable or disable the use of FAST_FIRST_HIGHER_PRIORITY_PLMN_SEARCH
Bit 9	Enable or disable the use of EUTRA_DISABLING_ALLOWED_FOR_EMM_CAUSE_15
Bit 10	Enable or disable the use of SM_RETRY_WAIT_TIME
Bit 11	Enable or disable the use of SM_RETRY_AT_RAT_CHANGE
Bit 12	Enable or disable the use of DEFAULT_DCN_ID
Bit 13	Enable or disable the use of EXCEPTION_DATA_REPORTING_ALLOWED
Bit 14	Enable or disable the use of LIGHT_CONNECTION

<err> Error code. See **Chapter 4** for details.

3.1.1.13. AT+QCFG="irat/timer" Configure High-Priority RAT Search Timer

This Write Command configures the high-priority RAT search timer or queries the current setting. If the module is in a low-priority RAT, it periodically attempts to obtain RAT services of higher priority, and the interval is <timer_value>.

AT+QCFG="irat/timer" Configure High-Priority RAT Search Timer	
Write Command AT+QCFG="irat/timer" [<timer_value>,<alignment_value>]	<p>Response</p> <p>If the optional parameters are omitted, query the current setting: +QCFG: "irat/timer",<timer_value>,<alignment_value></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the high-priority RAT search timer: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<timer_value>	Integer type. Timeout value for high-priority RAT search timer. Range: 5–300. Default: 60. Unit: minute.
<alignment_value>	Integer type. This parameter specifies the interval before eDRX paging when a scan should begin. Range: 5–20. Default: 20. Unit: minute.
<err>	Error code. See Chapter 4 for details.

3.1.1.14. AT+QCFG="nb1/bandprior" Configure Band Scan Priority Under NB-IoT

This Write Command configures the band scan priority under NB-IoT or queries the current setting.

AT+QCFG="nb1/bandprior" Configure Band Scan Priority Under NB-IoT	
Write Command AT+QCFG="nb1/bandprior" [,<band_p riority_seq>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "nb1/bandprior",<band_priority_seq> OK If the optional parameter is specified, configure the band scan priority under NB-IoT: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<band_priority_seq>	Hex string. NB-IoT band(s) of scan priority.
01	Band 1
02	Band 2
03	Band 3
04	Band 4
05	Band 5
08	Band 8
0C	Band 12

0D	Band 13
12	Band 18
13	Band 19
14	Band 20
19	Band 25
1C	Band 28
42	Band 66
47	Band 71
55	Band 85

<err> Error code. See **Chapter 4** for details.

3.1.1.15. AT+QCFG="emmcause" Query EMM Cause Value

This Write Command queries the EMM cause value for the rejected attach request.

AT+QCFG="emmcause" Query EMM Cause Value	
Write Command AT+QCFG="emmcause"[,<display_format>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "emmcause",<cause_value> OK If the optional parameter is specified, set the display format of EMM cause value: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are not saved.

Parameter

<display_format>	Integer type. The display format of EMM cause value. 0 Numeric value 1 Verbose value
<cause_value>	EMM cause value. See <i>3GPP 24.301</i> for details.
<err>	Error code. See Chapter 4 for details.

3.1.1.16. AT+QCFG="sibinfo" Query SIB Information

This Write Command queries the SIB information.

AT+QCFG="sibinfo" Query SIB Information	
Write Command AT+QCFG="sibinfo"	Response +QCFG: "sibinfo",<EARFCN>,<PCI>,<q_RX_lev_min>,<q_qual_min>,<s_intra_search>,<cell_resel_priority>,<thresh_serving_low>,<s_non_intra_search>,<idle_DRX_cycle_len> OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	-

Parameter

<EARFCN>	Integer type. EARFCN of the serving cell. Range: 0–65535.
<PCI>	Integer type. Physical cell ID. Range: 0–503.
<q_RX_lev_min>	Integer type. The minimum required RX level in the cell (in dB). See 3GPP 36.304.
<q_qual_min>	Integer type. The minimum required quality level in the cell (in dB). See 3GPP 36.304.
<s_intra_search>	Integer type. Cell selection parameter that specifies the Srxlev threshold (in dB) for intra-frequency measurements.
<cell_resel_priority>	Integer type. Cell reselection priority. Range: 0–7. Value 0 means lowest priority.
<thresh_serving_low>	Integer type. Specifies the suitable reception level threshold used by the UE on the serving cell when reselecting towards a lower-priority RAT/frequency. Unit: dB.
<s_non_intra_search>	Integer type. Threshold to control non-intra-frequency searches.
<idle_DRX_cycle_len>	Integer type. Idle DRX cycle length. Unit: ms.
<err>	Error code. See Chapter 4 for details.

3.1.1.17. AT+QCFG="emmtimer" Query EMM Timer

This Write Command queries EMM (EPS Mobility Management) timer.

AT+QCFG="emmtimer" Query EMM Timer	
Write Command AT+QCFG="emmtimer"	Response +QCFG: "emmtimer",<T3402_value>,<T3412_value> OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	-

Parameter

<T3402_value>	Integer type. T3402 timer value. Default: 720. Unit: s. See <i>3GPP 24.301</i> .
<T3412_value>	Integer type. T3412 timer value. Unit: s. See <i>3GPP 24.301</i> .
<err>	Error code. See Chapter 4 for details.

3.1.1.18. AT+QCFG="msclass" Configure Multislot Class

This Write Command queries or configures the multislot class.

AT+QCFG="msclass" Configure Multislot Class	
Write Command AT+QCFG="msclass" [<GPRS_multislot_class>,<EGPRS_multislot_class>]	Response If the optional parameters are omitted, query the current setting: +QCFG: "msclass",<GPRS_multislot_class>,<EGPRS_multislot_class> OK If the optional parameters are specified, configure GPRS and EGPRS multislot class: OK If there is an error related to ME functionality:

	<p>+CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<GPRS_multislot_class>	Integer type. GPRS multislot class. Range: 1–18, 30–34. Default: 12.
<EGPRS_multislot_class>	Integer type. EGPRS multislot class. Range: 1–34. Default: 12.
<err>	Error code. See Chapter 4 for details.

3.1.1.19. AT+QCFG="snrscan" Configure SNR Level of Band Scan Process Under NB-IoT

This command configures SNR (Signal Noise Ratio) level of band scan process under NB-IoT or queries the current setting.

AT+QCFG="snrscan" Configure SNR Level of Band Scan Process Under NB-IoT	
<p>Write Command</p> <p>AT+QCFG="snrscan"[,<level>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current setting: +QCFG: "snrscan",<level></p> <p>OK</p> <p>If the optional parameter is specified, configure SNR level of band scan process under NB-IoT: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<level>	Integer type. SNR level. 0 SNR level 0 1 SNR level 0 & 1 2 SNR level 0 & 1 & 2
<err>	Error code. See Chapter 4 for details.

3.1.1.20. AT+QCFG="fgiconfig" Configure FGI

This Write Command queries or configures FGI (Feature Group Indicators).

AT+QCFG="fgiconfig" Configure FGI	
Write Command AT+QCFG="fgiconfig"[,<value>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "fgiconfig",<value> OK If the optional parameter is specified, configure FGI: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<value>	Hexadecimal value. FGI (Feature group indicators). Range: 0–0xFFFFFFFF. See 3GPP 36.331.
<err>	Error code. See Chapter 4 for details.

3.1.1.21. AT+QCFG="sim/onchip" Enable/Disable On-Chip SIM

This Write Command queries or enables/disables the on-chip SIM.

AT+QCFG="sim/onchip" Enable/Disable On-Chip SIM	
Write Command AT+QCFG="sim/onchip"[,<mode>[,<effect>]]	Response If the optional parameters are omitted, query the current setting: +QCFG: "sim/onchip",<mode> OK If any of the optional parameters is specified, enables/disables the on-chip SIM: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	<effect> determines when the command takes effect. The configurations are saved automatically.

Parameter

<mode>	Integer type. Enable/disable the on-chip SIM. <u>0</u> Disable 1 Enable
<effect>	Integer type. When to take effect. 0 Take effect after the module is rebooted <u>1</u> Take effect immediately
<err>	Error code. See Chapter 4 for details.

3.1.1.22. AT+QCFG="bandrestore" Restore Default Band Configuration

This Write Command restores the default band configuration.

AT+QCFG="bandrestore" Restore Default Band Configuration	
Write Command AT+QCFG="bandrestore"	Response OK If there is an error related to ME functionality: +CME ERROR: <err>

	If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	-

Parameter

<err>	Error code. See Chapter 4 for details.
--------------------	---

3.1.1.23. AT+QCFG="bip/auth" Configure the Auth Type in BIP Process

This Write Command queries or configures the auth type in BIP process.

AT+QCFG="bip/auth" Configure the Auth Type in BIP Process	
Write Command AT+QCFG="bip/auth" [,<mode>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "bip/auth",<mode> OK If the optional parameter is specified, configure the auth type in BIP process: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<mode>	Integer type. Auth type. <u>0</u> None 1 PAP
---------------------	--

	2	CHAP
	3	PAP or CHAP
<err>	Error code. See Chapter 4 for details.	

3.1.1.24. AT+QCFG="timer" Query the T3402 Timer

This Write Command queries the T3402 timer.

AT+QCFG="timer" Query the T3402 Timer	
Write Command AT+QCFG="timer",<timer_ID>	Response +QCFG: <value> OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	-

Parameter

<timer_ID>	Integer type. 3402 T3402 timer. See <i>3GPP 24.301</i> for details.
<value>	Integer type. T3402 timer value. Default: 720. Unit: s.
<err>	Error code. See Chapter 4 for details.

Example

```
AT+QCFG="timer",3402
+QCFG: 720

OK
```

3.1.1.25. AT+QCFG="timeupdate" Enable/Disable Automatic Time Update via NITZ or GNSS

This Write Command queries or enables/disables the automatic time update via NITZ or GNSS. After receiving the NITZ message from network, or after the GNSS is located successfully, UE will decode the timestamp and update it to local RTC by default.

AT+QCFG="timeupdate" Enable/Disable Automatic Time Update via NITZ or GNSS

Write Command AT+QCFG="timeupdate" [<mode> [<gps_mode>]]	Response If the optional parameters are omitted, query the current setting: +QCFG: "timeupdate", <mode>, <gps_mode> OK If any of the optional parameters is specified, enable/disable the automatic time update via NITZ or GNSS: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<mode>	Integer type. Enable/disable the automatic time update via NITZ. 0 Disable <u>1</u> Enable
<gps_mode>	Integer type. Enable/disable the automatic time update via GNSS. 0 Disable <u>1</u> Enable
<err>	Error code. See Chapter 4 for details.

NOTE

1. If **<gps_mode>** is set to 1, the RTC time is synchronized only once after the GNSS is successfully located, unless the module restarts or reboots the firmware.
2. When both **<mode>** and **<gps_mode>** are set to 1 at the same time, the NITZ time is synchronized first if network injection is completed, and the GNSS time is synchronized first if GNSS is located successfully.

Example

```

AT+CCLK? //Query the current time.
+CCLK: "80/01/06,23:57:28"

OK
AT+QCFG="timeupdate",1 //The time synchronization from NITZ to RTC is enabled.
OK
//Network injection
...
AT+CCLK? //Query the current time.
+CCLK: "23/02/14,15:32:28"

OK
AT+CCLK? //Query the current time.
+CCLK: "80/01/06,23:57:28"

OK
AT+QCFG="timeupdate",0,1 //The time synchronization from GNSS to RTC is enabled.
OK
//Successful location
...
AT+CCLK? //Query the current time.
+CCLK: "23/02/14,15:35:14"

OK
    
```

3.1.1.26. AT+QCFG="msc" Configure UE MSC Release Version

This Write Command queries or configures the UE MSC release version.

AT+QCFG="msc" Configure UE MSC Release Version

Write Command	Response
AT+QCFG="msc" [<msc>]	If the optional parameter is omitted, query the current setting: +QCFG: "msc",<msc>
	OK
	If the optional parameter is specified, configure the UE MSC release version: OK
	If there is an error related to ME functionality:

	<p>+CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<msc>	Integer type. UE MSC release version. 0 R97 1 R99 2 Dynamic
<err>	Error code. Please refer to Chapter 4 for details.

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

This Write Command queries or configures the UE SGSN release version.

AT+QCFG="sgsn" Configure UE SGSN Release Version	
<p>Write Command AT+QCFG="sgsn" [<sgsn>]</p>	<p>Response</p> <p>If the optional parameter is omitted, query the current setting: +QCFG: "sgsn",<sgsn></p> <p>OK</p> <p>If the optional parameter is specified, configure the UE SGSN release version: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<sgsn>	Integer type. UE SGSN release version. 0 R97 1 R99 2 Dynamic
<err>	Error code. Please refer to Chapter 4 for details.

3.1.1.28. AT+QCFG="lte/bandprior" Configure LTE Band Priority

The command queries and configures LTE band priority.

AT+QCFG="lte/bandprior" Configure LTE Band Priority	
Write Command AT+QCFG="lte/bandprior" [<LTE_PRIOR_BAND_ID1> [<LTE_PRIOR_BAND_ID2> [<LTE_PRIOR_BAND_ID3>]]]	Response If the optional parameters are omitted, query the current setting: +QCFG: "lte/bandprior", <LTE_PRIOR_BAND_ID1>, <LTE_PRIOR_BAND_ID2>, <LTE_PRIOR_BAND_ID3> OK If any of the optional parameters is specified, configure up to three LTE bands for preferred searching: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<LTE_PRIOR_BAND_ID>	Integer type. LTE band ID. Range: 1–43. 1 Band1 2 Band2 3 Band3 42 Band42
----------------------------------	--

43 Band43

<err>

Error code. Please refer to **Chapter 4** for details.

3.1.1.29. AT+QCFG="psm_rtc_adjust_ctrl" Enable/disable RTC Adjustment in PSM

This command enables/disables RTC adjustment in PSM.

AT+QCFG="psm_rtc_adjust_ctrl" Enable/disable RTC Adjustment in PSM	
Execution Command AT+QCFG="psm_rtc_adjust_ctrl" [<mode>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "psm_rtc_adjust_ctrl", <mode> OK If the optional parameter is specified, enable/disable RTC adjustment in PSM: OK If there is any error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<mode>	Integer type. Enable/disable RTC adjustment in PSM. <u>0</u> Disable 1 Enable
---------------------	---

3.1.1.30. AT+QCFG="rf/tuner_cfg" Set Mapping Between RF Tuner and RF Bands

This command sets the mapping between the RF tuner and RF bands.

AT+QCFG="rf/tuner_cfg" Set Mapping Between RF Tuner and RF Bands	
Write Command AT+QCFG="rf/tuner_cfg" [<index>, <lte_bands>, <gsm_bands>]	Response If the optional parameters are omitted, query the current configuration: +QCFG: "rf/tuner_cfg", <index>, <lte_bands>, <gsm_bands> S> ...

	<p>OK</p> <p>If the optional parameters are specified, set the mapping between the RF tuner and RF bands:</p> <p>OK</p> <p>If there is any error:</p> <p>ERROR</p>
Maximum Response Time	300 ms
Characteristics	This command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<index>	Hexadecimal type. Pin level status. Range: 0–3, F. 0 Pin 84 (GRFC2) at low level, and pin 83 (GRFC1) at low level 1 Pin 84 at low level, and pin 83 at high level 2 Pin 84 at high level, and pin 83 at low level 3 Pin 84 at high level, and pin 83 at high level F Reset to default configuration
<lte_bands>	String type. LTE bands, and the separator is comma, e.g., "1,3,5".
<gsm_bands>	String type. GSM bands, and the separator is comma, e.g., "2,3,5". 2 PCS1900 3 DCS1800 5 GSM850 8 EGSM900

Example

```

AT+QCFG="rf/tuner_cfg" //Query the current setting.
+QCFG: "rf/tuner_cfg",0,"1,2,3,4,8,25,66","8,3,2"
+QCFG: "rf/tuner_cfg",1,"12,13,28,85",""
+QCFG: "rf/tuner_cfg",2,"5,18,19,20,26,27","5"
+QCFG: "rf/tuner_cfg",3,"71",""

OK
//Set the LTE band 12 and EGSM900, i.e., pin 84 at high level and pin 83 at low level.
AT+QCFG="rf/tuner_cfg",2,"12","8"
OK
AT+QCFG="rf/tuner_cfg" //Query the current setting.
+QCFG: "rf/tuner_cfg",0,"1,2,3,4,8,25,66","3,2"
+QCFG: "rf/tuner_cfg",1,"13,28,85",""
+QCFG: "rf/tuner_cfg",2,"5,12,18,19,20,26,27","8,5"
    
```

```
+QCFG: "rf/tuner_cfg",3,"71","
```

```
OK
```

3.1.1.31. AT+QCFG="timesave" Enable/Disable Automatic NITZ Timestamp Saving

This command enables/disables automatic NITZ timestamp saving. After the NITZ message from network is received, UE will decode the timestamp first. If this feature is enabled, UE will store the timestamp to local file system.

AT+QCFG="timesave" Enable/Disable Automatic NITZ Timestamp Saving	
Execution Command AT+QCFG="timesave"[,<mode>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "timesave",<mode> OK If <mode> is set to 0 or 1, enable/disable automatic NITZ timestamp saving: OK If <mode> is set to 2, query the saved NITZ timestamp: +QCFG: "timesave",<timestamp> OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically

Parameter

<mode>	Integer type. <u>0</u> Disable automatic NITZ timestamp saving. 1 Enable automatic NITZ timestamp saving. 2 Query the stored timestamp.
<timestamp>	String type. Format: "yy/MM/dd,hh:mm:ss±zz", where characters

indicate the year (the last two digits), month, day, hour, minutes, seconds and time zone (indicates the difference, expressed in quarters of an hour, between the local time and GMT; range: -48~+48), e.g., 6th of May 2004, 22:10:00 GMT+2 hours indicates "04/05/06,22:10:00+08"
 Error code. Please refer to **Chapter 4** for details.

<err>

3.1.2. Platform Related AT Commands

Among the following AT commands, **AT+QCFG="urc/ri/ring"**, **AT+QCFG="urc/ri/smsincoming"** and **AT+QCFG="urc/ri/other"** control the behavior of MAIN_RI pin when a URC is reported. MAIN_RI is active low.

3.1.2.1. AT+QCFG="urc/ri/ring" Configure Behavior of MAIN_RI Pin in Case of URC RING

This Write Command queries or configures the behavior of MAIN_RI pin implemented when the 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" Configure Behavior of MAIN_RI Pin in Case of URC RING

Write Command	Response
AT+QCFG="urc/ri/ring" [,<typeRI>,<pulse_duration>,<active_duration>,<inactive_duration>,<ring_no_disturbing>,<pulse_count>]]]]]]	<p>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></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the behavior of MAIN_RI pin implemented when the URC RING is presented to indicate an incoming call: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately.

The configurations are saved automatically.

Parameter

<typeRI>	String type. The behavior of MAIN_RI pin when URC RING is presented to indicate an incoming call. "off" No change. MAIN_RI pin keeps inactive (high level). "pulse" Pulse. Pulse width is determined by <pulse_duration> . "always" Change to active. The behavior of MAIN_RI pin can be restored to inactive by AT+QRIR (see document [1] for details). "auto" When RING is presented to indicate an incoming call, MAIN_RI pin changes to active and keeps active. When the ring of the incoming call ends, either answering or hanging up the incoming call changes MAIN_RI pin to inactive. "wave" When RING is presented to indicate an incoming call, MAIN_RI pin outputs a square wave. Both <active_duration> and <inactive_duration> are used to set the square wave. When the ring of incoming call ends, either answering or hanging up the incoming call changes MAIN_RI pin to inactive.
<pulse_duration>	Integer type. The width of pulse. Range: 1–2000. Default: 120. Unit: ms. This parameter is valid only when <typeRI>="pulse" .
<active_duration>	Integer type. The active duration of square wave. Range: 1–10000. Default: 1000. Unit: ms. This parameter is valid only when <typeRI>="wave" .
<inactive_duration>	Integer type. The inactive duration of square wave. Range: 1–10000. Default: 5000. Unit: ms. This parameter is valid only when <typeRI>="wave" .
<ring_no_disturbing>	String type. Set whether the behavior of MAIN_RI pin could be disturbed. This parameter is valid only when <typeRI>="auto" or "wave" . For example, when <typeRI>="wave" , if you want the square wave not to be disturbed by other URCs (including SMS related URCs), then <ring_no_disturbing> should be set to "on". "off" The behavior of MAIN_RI pin can be disturbed by other URCs when the behavior is caused by an incoming call ringing. "on" The behavior of MAIN_RI pin 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 valid only when <typeRI>="pulse" . Range: 1–5. Default: 1. The interval time between two pulses is equal to <pulse_duration> .
<err>	Error code. See Chapter 4 for details.

3.1.2.2. AT+QCFG="urc/ri/smsincoming" Configure Behavior of MAIN_RI Pin in Case of Incoming Message URCS

This Write Command queries or configures the behavior of MAIN_RI pin implemented when related incoming message URCS are presented. Incoming message URCS include **+CMTI**, **+CMT**, **+CDS**, and **+CBM**. For more details, please refer to *document [1]*.

AT+QCFG="urc/ri/smsincoming" Configure Behavior of MAIN_RI Pin in Case of Incoming Message URCS	
Write Command	Response
AT+QCFG="urc/ri/smsincoming" [<typeRI>,<pulse_duration>,<pulse_count>]]]	<p>If the optional parameters are omitted, query the current setting: +QCFG: "urc/ri/smsincoming",<typeRI>,<pulse_duration>,<pulse_count></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the behavior of MAIN_RI pin implemented when incoming message URCS are presented: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<typeRI>	String type. The behavior of MAIN_RI pin implemented when related incoming message URCS are presented. "off" No change. MAIN_RI pin keeps inactive (high level). "pulse" Pulse. Pulse width is determined by <pulse_duration> . "always" Change to active. The behavior of MAIN_RI pin can be restored to inactive by AT+QRIR (see <i>document [1]</i> for details).
<pulse_duration>	Integer type. The width of pulse. Range: 1–2000. Default: 120. Unit: ms. This parameter is valid only when <typeRI>="pulse" .
<pulse_count>	Integer type. The count of pulse. It is valid only when <typeRI>="pulse" . Range: 1–5. Default: 1. The interval time between two pulses is equal to <pulse_duration> .

<err> Error code. See **Chapter 4** for details.

3.1.2.3. AT+QCFG="urc/ri/other" Configure Behavior of MAIN_RI Pin in Case of Other URCs

This Write Command queries or configures the behavior of MAIN_RI pin when other URCs are presented.

AT+QCFG="urc/ri/other" Configure MAIN_RI Behavior in Case of Other URCs

Write Command AT+QCFG="urc/ri/other"[,<typeRI>[,<pulse_duration>[,<pulse_count>]]]	<p>Response</p> <p>If the optional parameters are omitted, query the current setting: +QCFG: "urc/ri/other",<typeRI>,<pulse_duration>,<pulse_count></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the MAIN_RI behavior when other URCs are presented: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<typeRI>	String type. The behavior of MAIN_RI pin when other URCs are presented. "off" No change. MAIN_RI pin keeps inactive (high level). "pulse" Pulse. Pulse width is determined by <pulse_duration> .
<pulse_duration>	Integer type. The width of pulse. Range: 1–2000. Default: 120. Unit: ms. This parameter is valid only when <typeRI>="pulse" .
<pulse_count>	Integer type. The count of pulse. This parameter is valid only when <typeRI>="pulse" . Range: 1–5. Default: 1. The interval time between two pulses is equal to <pulse_duration> .
<err>	Error code. See Chapter 4 for details.

3.1.2.4. AT+QCFG="risignalttype" Configure Signal Output Carrier of MAIN_RI Pin

This Write Command queries or configures the signal output carrier of MAIN_RI pin.

AT+QCFG="risignalttype" Configure Signal Output Carrier of MAIN_RI Pin	
Write Command AT+QCFG="risignalttype"[,<RI_signal_type>]	<p>Response</p> <p>If the optional parameter is omitted, query the current setting: +QCFG: "risignalttype",<RI_signal_type></p> <p>OK</p> <p>If the optional parameter is specified, configure the signal output carrier of MAIN_RI pin: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<RI_signal_type>	<p>String type. Signal output carrier of MAIN_RI pin.</p> <p>"respective" The behavior of MAIN_RI pin on the port where URC is presented. For example, if URC is presented on UART port, it is a physical ring indication signal. If URC is presented on USB modem port, it is a virtual ring indication signal. AT+QURCCFG="urcport" can get the port on which URC is presented, and see document [1] for details of the AT command.</p> <p>"physical" No matter on which port the URC is presented, it only causes the behavior of physical ring indication signal.</p>
<err>	Error code. See Chapter 4 for details.

3.1.2.5. AT+QCFG="urc/delay" Configure When to Output URC

This Write Command queries or configures when to output the URC.

AT+QCFG="urc/delay" Configure When to Output URC	
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, configure when to output the URC: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<enable>	Integer type. When to output the URC. <u>0</u> Output URC when ring indication pulse starts. 1 Output URC when ring indication pulse ends (effective only when <typeRI>="pulse" . Refer to AT+QCFG="urc/ri/ring" , AT+QCFG="urc/ri/smsincoming" and AT+QCFG="urc/ri/other" for more details).
<err>	Error code. See Chapter 4 for details.

3.1.2.6. AT+QCFG="ledmode" Configure Output Mode of NET_STATUS pin

This Write Command queries or configures the output mode of NET_STATUS pin.

AT+QCFG="ledmode" Configure Output Mode of NET_STATUS pin	
Write Command When <mode> is 0, 1 or 3: AT+QCFG="ledmode"[,<mode>[,<timer_on>,<timer_off>]]	Response If the optional parameters are omitted, query the current setting: +QCFG: "ledmode",<mode>[,<timer_on>,<timer_off>]

	<p>OK</p> <p>If any of the optional parameters is specified, configure the output mode of NET_STATUS pin:</p> <p>OK</p> <p>If there is an error related to ME functionality:</p> <p>+CME ERROR: <err></p> <p>If there is any other error:</p> <p>ERROR</p>
<p>When <mode> is 4: AT+QCFG="ledmode"[,<mode>[,<searching_timer_on>,<searching_timer_off>,<idle_timer_on>,<idle_timer_off>,<datatrans_timer_on>,<datatrans_timer_off>]]</p>	<p>Response</p> <p>If the optional parameters are omitted, query the current setting:</p> <p>+QCFG: "ledmode",<mode>[,<searching_timer_on>,<searching_timer_off>,<idle_timer_on>,<idle_timer_off>,<datatrans_timer_on>,<datatrans_timer_off>]</p> <p>OK</p> <p>If any of the optional parameters is specified, configure the output mode of NET_STATUS pin:</p> <p>OK</p> <p>If there is an error related to ME functionality:</p> <p>+CME ERROR: <err></p> <p>If there is any other error:</p> <p>ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<mode>	<p>Integer type. Output mode of NET_STATUS pin.</p> <p><u>0</u> Flicker mode. Network searching: LED is on for 200 ms (high level); LED is off for 1800 ms (low level) Idle: LED is on for 1800 ms (high level); LED is off for 200 ms (low level) Data transfer is ongoing: LED is on for 125 ms (high level); LED is off for 125 ms (low level)</p>
--------	--

	Voice calling: always high
	1 Output high level when attaching to the network and low level in other conditions.
	3 Set NET_STATUS pin as customization mode
	4 Set NET_STATUS pin as full customization mode
<timer_on>	Integer type. The high-level duration of NET_STATUS pin in customization mode. Range: 0–60000. Default: 500. Unit: ms.
<timer_off>	Integer type. The low-level duration of NET_STATUS pin in customization mode. Range: 0–60000. Default: 500. Unit: ms.
<searching_timer_on>	Integer type. The high-level duration of NET_STATUS pin in full customization mode when the module is searching network. Range: 0–60000. Default: 500. Unit: ms.
<searching_timer_off>	Integer type. The low-level duration of NET_STATUS pin in full customization mode when the module is searching network. Range: 0–60000. Default: 500. Unit: ms.
<idle_timer_on>	Integer type. The high-level duration of NET_STATUS pin in full customization mode when the module is in idle state. Range: 0–60000. Default: 500. Unit: ms.
<idle_timer_off>	Integer type. The low-level duration of NET_STATUS pin in full customization mode when the module is in idle state. Range: 0–60000. Default: 500. Unit: ms.
<datatrans_timer_on>	Integer type. The high-level duration of NET_STATUS pin in full customization mode when the module is in data transmission. Range: 0–60000. Default: 500. Unit: ms.
<datatrans_timer_off>	Integer type. The low-level duration of NET_STATUS pin in full customization mode when the module is in data transmission. Range: 0–60000. Default: 500. Unit: ms.
<err>	Error code. See Chapter 4 for details.

Example

```

AT+QCFG="ledmode",1 //Set the mode of NET_STATUS pin.
OK
AT+QCFG="ledmode" //Query the current configuration.
+QCFG: "ledmode",1

OK
AT+QCFG="ledmode",4,1000,1000,2200,2000,500,500
OK
AT+QCFG="ledmode"
+QCFG: "ledmode",4,1000,1000,2200,2000,500,500

OK
    
```

3.1.2.7. AT+QCFG="gpio" Configure GPIO Status

This Write Command queries or configures the GPIO status.

AT+QCFG="gpio" Configure GPIO Status	
Write Command Query the formats of the command AT+QCFG="gpio"	Response +QCFG: "gpio",<mode>,<pin>[,<dir>,<pull>,<drv>]/[<val>][,<save>]] OK
Write Command AT+QCFG="gpio",<mode>,<pin>[,<dir>,<pull>,<drv>]/[<val>][,<save>]]	Response If <mode>=2, then all optional parameters should be omitted: +QCFG: "gpio",<val> OK If <mode>=1, then <val> should be omitted: OK If <mode>=3, then <dir>, <pull> and <drv> should be omitted: OK If there is an error related to ME functionality: +CME ERROR: <err>
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. <save> determines whether the configurations are saved.

Parameter

<mode>	Integer type. Command mode. 1 Initialize GPIO status 2 Query GPIO status 3 Configure GPIO status
<pin>	Integer type. The corresponding pin number of the module's GPIO. BG95-S5 module supports the following pin numbers: 4 5 6 7 18 19

22	
23	
25	
26	
27	
28	
30	
36	
37	
38	
39	
40	
41	
64	
65	
66	
85	
86	
87	
88	
<dir>	Integer type. GPIO pin direction.
	0 Input
	1 Output
<pull>	Integer type. GPIO pin pull type.
	0 No pull
	1 Pull down
	2 Keeper
	3 Pull up
<drv>	Integer type. GPIO pin drive strength.
	0 2 mA
	1 4 mA
	2 6 mA
	3 8 mA
	4 10 mA
	5 12 mA
	6 14 mA
	7 16 mA
<val>	Integer type. The value read from or write to a GPIO.
	0 Low level
	1 High level
<save>	Integer type. Whether to save the configurations.
	0 Not save
	1 Save
<err>	Error code. See Chapter 4 for details.

NOTE

1. **<save>** means whether the module will save the current configuration and whether the configuration will be used to configure the related GPIO at the next power-up.
2. **<save>** is valid only when **<mode>** is 1 or 3.
3. For the value of **<pin>**, see the module hardware design for details.
4. Pin numbers 30, 36, 37, 38, 39 are used for main UART by default; if they are used for GPIO function, please disable DCD/RI/DTR/RTS/CTS function first through **AT+QCFG="uartcfg"**.

3.1.2.8. AT+QCFG="airplanecontrol" Enable/Disable Airplane Mode Control via W_DISABLE# Pin

This Write Command enables/disables the airplane mode control via the W_DISABLE# pin or queries the current setting. If the function is enabled, the module enters the airplane mode when the pin is pulled down and enters the normal mode when the pin is pulled up. Also, related URC will be outputted before the module enters or exits the airplane mode.

When the W_DISABLE# pin level becomes valid, the pulse signal generated on the MAIN_RI pin will still be outputted according to the configured mode, and the pulse signal will not be buffered.

AT+QCFG="airplanecontrol" Enable/Disable Airplane Mode Control via W_DISABLE# Pin	
Write Command AT+QCFG="airplanecontrol"[,<airplane_control>]	Response If the optional parameter is omitted, query whether airplane mode control via W_DISABLE# pin is enabled and the current status of the module: +QCFG: "airplanecontrol",<airplane_control>,<airplane_status> OK If the optional parameter is specified, enable/disable the airplane mode control via W_DISABLE# pin: OK Or ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<airplane_control>	Integer type. Enable/disable the airplane mode control via W_DISABLE# pin. 0 Disable 1 Enable The following URC will be reported when W_DISABLE# pin is pulled up or down if airplane mode control via W_DISABLE# pin is enabled: +QIND: "airplanestatus",<airplane_status>
<airplane_status>	Integer type. The current status of the module. 0 In normal mode 1 In airplane mode

NOTE

1. The status of the W_DISABLE# pin may affect the validity of **AT+CFUN** (see *document [1]*). When the airplane mode control via W_DISABLE# pin is enabled and the pin is pulled down, the module enters the airplane mode no matter which status the module is configured to via **AT+CFUN**, and also the module's functionality level cannot be switched with **AT+CFUN**.
2. For more details about the W_DISABLE# pin, see the module hardware design.

Example

```

AT+QCFG="airplanecontrol",1 //Enable the airplane mode control via W_DISABLE# pin.
OK
//Pull down W_DISABLE# pin
+QIND: "airplanestatus",1 //URC indicating that the module enters the airplane mode.

AT+QCFG="airplanecontrol" //Query whether the airplane mode control via W_DISABLE# pin is
//enabled and the current status of the module.
+QCFG: "airplanestatus",1,1 //Airplane mode control via W_DISABLE# pin is enabled and the
//module is in airplane mode currently.

OK
//Pull up W_DISABLE# pin
+QIND: "airplanestatus",0 //The module exits from the airplane mode.

AT+QCFG="airplanecontrol" //Query whether the airplane mode control via W_DISABLE# pin is
//enabled and the current status of the module.
+QCFG: "airplanestatus",1,0 //The Airplane mode control via W_DISABLE# pin is enabled and the
//module is in normal mode currently.

OK
    
```

3.1.2.9. AT+QCFG="cmux/urcport" Configure Output Port of CMUX URCs

This Write Command queries or configures the output port of CMUX URCs.

AT+QCFG="cmux/urcport" Configure Output Port of CMUX URCs	
Write Command AT+QCFG="cmux/urcport"[,<URC_port>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "cmux/urcport",<URC_port> OK If the optional parameter is specified, configure the output port of CMUX URCs: OK If there is an error related to ME functionality: +CME ERROR: <err> If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<URC_port>	Integer type. Output port of CMUX URCs. 0 All ports 1 Virtual port 1 2 Virtual port 2 3 Virtual port 3 4 Virtual port 4
<err>	Error code. See Chapter 4 for details.

3.1.2.10. AT+QCFG="apready" Configure Behavior of AP_READY Pin

This Write Command queries or configures the behavior of AP_READY pin. An external MCU can change the AP_READY pin level as needed.

When a URC is 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 based on the configured detection period. The URC will be outputted when the AP_READY pin level becomes valid. The pulse signal generated on the MAIN_RI pin can still be outputted based on the configured mode, and the pulse signal will not be buffered.

AT+QCFG="apready" Configure Behavior of AP_READY Pin

<p>Write Command AT+QCFG="apready" [,<n>[,<level>[,<interval>]]]</p>	<p>Response</p> <p>If the optional parameters are omitted, query the current setting: +QCFG: "apready",<n>,<level>,<interval></p> <p>OK</p> <p>If any of the optional parameters is specified, configure the behavior of AP_READY pin: OK</p> <p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
<p>Maximum Response Time</p>	<p>300 ms</p>
<p>Characteristics</p>	<p>The command takes effect immediately. The configurations are saved automatically.</p>

Parameter

<n>	<p>Integer type. Enable/disable the AP_READY pin for AP sleep state detection.</p> <p><u>0</u> Disable 1 Enable</p>
<level>	<p>Integer type. Valid level of AP_READY pin. The parameter is valid only when the AP_READY pin detection function is enabled.</p> <p><u>0</u> Low level 1 High level</p>
<interval>	<p>Integer type. Detection interval. Range: 100–3000. Default: 500. Unit: ms. This parameter is valid only when the AP_READY pin detection function is enabled.</p>
<err>	<p>Error code. See Chapter 4 for details.</p>

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 URC **RING** is buffered only once for each call process.
3. For details about AP_READY pin, see the module’s hardware design.

3.1.2.11. AT+QCFG="uartcfg" Enable/Disable DCD/RI/DTR/RTS/CTS Function

This Write Command enables/disables DCD/RI/DTR/RTS/CTS function.

AT+QCFG="uartcfg" Enable/Disable DCD/RI/DTR/RTS/CTS Function	
Write Command AT+QCFG="uartcfg" [<UART_cfg_mode>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "uartcfg",<UART_cfg_mode> OK If the optional parameter is specified, enable/disable DCD/RI/DTR/RTS/CTS function: OK If there is any other error: ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<UART_cfg_mode>	Hexadecimal value. Enable/Disable DCD/RI/DTR/RTS/CTS function.
<u>0x00</u>	Enable DCD/RI/DTR/RTS/CTS function
0x01	Disable DCD function
0x02	Disable RI function
0x04	Disable DTR function
0x08	Disable RTS function
0x10	Disable CTS function

NOTE

For more details about DCD/RI/DTR/RTS/CTS pin, see the module hardware design.

3.1.2.12. AT+QCFG="dbgctl" Configure Debug Log Output Level

This Write Command queries or configures the debug log output level.

AT+QCFG="dbgctl" Configure Debug Log Output level	
Write Command AT+QCFG="dbgctl"[,<log_level>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "dbgctl",<log_level> OK If the optional parameter is specified, configure the debug log output level: OK Or ERROR
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are saved automatically.

Parameter

<log_level>	Integer type. Debug log output level. 0 Enable the debug log output 1 Partially prohibit the debug log output 2 Disable the protocol stack log output
--------------------------	--

3.1.2.13. AT+QCFG="cmux/flowctrl" Enable/Disable Hardware Flow Control for CMUX Mode

This Write Command queries or enables/disables the hardware flow control for CMUX Mode.

AT+QCFG="cmux/flowctrl" Enable/Disable Hardware Flow Control for CMUX Mode	
Write Command AT+QCFG="cmux/flowctrl"[,<flow_ctrl>]	Response If the optional parameter is omitted, query the current setting: +QCFG: "cmux/flowctrl",<flow_ctrl> OK If the optional parameter is specified, enable/disable the hardware flow control for CMUX mode: OK

	<p>If there is an error related to ME functionality: +CME ERROR: <err></p> <p>If there is any other error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	<p>The command takes effect immediately. The configurations are not saved.</p>

Parameter

<flow_ctrl>	<p>Integer type. Enable/disable the hardware flow control for CMUX mode.</p> <p><u>0</u> Disable</p> <p>1 Enable</p>
--------------------------	--

3.1.2.14. AT+QCFG="fast/poweroff" Enable/Disable Fast Shutdown Function

This Write Command enables/disables the fast shutdown function triggered by the specified pin.

AT+QCFG="fast/poweroff" Enable/Disable Fast Shutdown Function	
<p>Write Command</p> <p>AT+QCFG="fast/poweroff" [<pin>,<enable>]</p>	<p>Response</p> <p>If the optional parameters are omitted, query the current setting: +QCFG: "fast/poweroff",<pin>,<enable></p> <p>OK</p> <p>If the optional parameters are specified, enable/disable the fast shutdown function triggered by the specified pin: OK Or ERROR</p>
Maximum Response Time	300 ms
Characteristics	<p>The command takes effect immediately. The configurations are saved automatically.</p>

Parameter

<pin>	<p>Integer type. The corresponding pin number of the GPIO which has an input and pull-up mode and can be triggered by a falling edge for fast shutdown.</p>
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<enable>	The corresponding pin number for BG95-S5: 25 Integer type. Enable/disable the fast shutdown function. <u>0</u> Disable 1 Enable
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NOTE

For more details about the pin number, see the module's hardware design.

3.1.2.15. AT+QCFG="pa_info" Query Module PA Information

This command queries the module PA (Power Amplifier) information.

AT+QCFG="pa_info" Query Module PA information	
Execution Command AT+QCFG="pa_info"	Response +QCFG: "pa_info",<model1>,<MID1>,<PID1> +QCFG: "pa_info",<model2>,<MID2>,<PID2> ... OK If there is any error: ERROR
Maximum Response Time	300 ms
Characteristics	-

Parameter

<model>	String type. PA model type.
<MID>	String type. PA manufacture ID.
<PID>	String type. PA product ID.

NOTE

Currently, this command does not support obtaining the PA information in 450 M band.

3.1.2.16. AT+QCFG="cmux/signal" Configure Behavior of DCD/RI Pin

This command configures whether DCD/RI pin triggers a level transition or not when the module receives PPP data in CMUX mode.

AT+QCFG="cmux/signal" Configure Behavior of DCD/RI Pin	
Write Command AT+QCFG="cmux/signal",[<pin_num>,<pin_enable>[,<reserved_num>]]	<p>Response</p> <p>If the optional parameters are omitted, query the current setting: +QICFG: "cmux/signal",<pin_num>,<pin_enable>,<reserved_num></p> <p>OK</p> <p>If the optional parameters are specified, configure the behavior of DCD/RI pin: OK</p> <p>If there is any error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	The command takes effect immediately. The configurations are not saved.

Parameter

<pin_num>	<p>Integer type.</p> <p>26 Select the DCD pin to trigger a level transition</p> <p>49 Select the RI pin to trigger a level transition</p>
<pin_enable>	<p>Integer type.</p> <p>0 Pin level transitions are allowed</p> <p>1 Pin level transitions are not allowed</p>
<reserved_num>	Integer type. Not supported currently.

3.1.2.17. AT+QCFG="urc/ri/level" Configure Default Level of RI Pin

This command configures the default level of RI pin.

AT+QCFG="urc/ri/level" Configure Default Level of RI Pin	
Write Command AT+QCFG="urc/ri/level",[<ri_level>]	<p>Response</p> <p>If the optional parameter is omitted, query the current setting: +QICFG: "urc/ri/level",<ri_level></p> <p>OK</p> <p>If the optional parameter is specified, set the default level of RI pin:</p>

	<p>OK</p> <p>If there is any error: ERROR</p>
Maximum Response Time	300 ms
Characteristics	<p>The command takes effect after the module is rebooted.</p> <p>The configurations are saved automatically.</p>

Parameter

<ri_level>	<p>Integer type. Default level of RI pin.</p> <p>0 Low level</p> <p><u>1</u> High level</p>
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4 Summary of CME ERROR Codes

Final result code **+CME ERROR: <err>** indicates an error related to mobile equipment or network. The operation is similar to **ERROR** result code.

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

Table 2: Summary of CME ERROR Codes

<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	(U)SIM not inserted
11	(U)SIM PIN required
12	(U)SIM PUK required
13	(U)SIM failure
14	(U)SIM busy
15	(U)SIM wrong

16	Incorrect password
17	(U)SIM PIN2 required
18	(U)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

5 Appendix References

Table 3: Related Document

Document Name
[1] Quectel_BG95-S5_AT_Commands_Manual

Table 4: Terms and Abbreviations

Abbreviation	Description
AP	Application Processor
BIP	Bearer Independent Protocol
CE	Coverage Enhancement
CHAP	Challenge Handshake Authentication Protocol
CDS	Common Data Service
CME	Command Error
CMUX	Connection Multiplexing (Multiplexing Protocol)
CS	Circuit Switched
CTS	Clear To Send
DCD	Data Carrier Detection
DCS	Data Coding Scheme
DRX	Discontinuous Reception
DTR	Data Terminal Ready
EARFCN	E-UTRA Absolute Radio Frequency Channel Number
eDRX	extended Discontinuous Reception

EFS	Encrypting File System
EGPRS	Enhanced General Packet Radio Service
EGSM	Enhanced Global System for Mobile Communications
EMM	EPS Mobility Management
eMTC	enhanced Machine-Type Communication
EPS	Evolved Packet System
FGI	Feature Group Indicators
GPIO	General-purpose Input/Output
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communication
IMS	IP Multimedia Subsystem
LAPI	Low Access Priority Indication
LED	Light Emitting Diode
LTE	Long Term Evolution
MCU	Microcontroller Unit
ME	Mobile Equipment
NAS	Non-Access Stratum
NB-IoT	Narrowband Internet of Things
NITZ	Network Identity and Time Zone
PAP	Password Authentication Protocol
PCI	Physical Cell Identity
PCS	Personal Communications Service
PIN	Personal Identification Number
PS	Packet Switched
PSM	Power Saving Mode

PUK	PIN Unlock Key
RAT	Radio Access Technology
RI	Ring Indicator
RRC	Radio Resource Control
RTC	Real-Time Clock
RTS	Request to Send
RX	Receive
SIB	System Information Block
SIM	Subscriber Identity Module
SMS	Short Message Service
SNR	Signal-to-Noise Ratio
TA	Terminal Adapter
TAU	Tracking Area Update
UART	Universal Asynchronous Receiver/Transmitter
UE	User Equipment
URC	Unsolicited Result Code
(U)SIM	Universal Subscriber Identity Module
VoLTE	Voice (voice calls) over LTE
