

Smart Module(Q)

AT Commands Manual

Smart Module Series

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About the Document

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1 Introduction

This document introduces the AT commands supported by Quectel Smart modules, including the functions, usages and the scope of AT commands.

Table 1: Applicable Modules

Module Series	Module
Smart Module (Q)	SC20 Series
	SC200E Series
	SC200R Series
	SC600T Series
	SC600Y Series
	SC606T Series
	SC66 Series
	SC680A Series
	SG560D Series

2 AT Command Description

2.1. AT Command Introduction

2.1.1. 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.

2.1.2. 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.

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.

2.1.3. 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.

2.2. AT+QCFG Extended Configuration Settings

AT+QCFG Extended Configuration Settings

Test Command AT+QCFG=?	Response +QCFG: "hotswap", (list of supported <sim1_stat>s),(list of supported <sim2_stat>s) +QCFG: "simInsertLevel", (list of supported <slot1_level>s),(list of supported <slot2_level>s) +QCFG: <free_space> +QCFG: "band", (range of supported <bandval>s),(range of supported <ltebandval>s),(range of supported <tdsbandval>s),(list of supported <effect>s) +QCFG: "simconfig", (list of supported <original_simconfig>s) +QCFG: "reset" +QCFG: "imeilock", (list of supported <stat>s),"<key word>" ... OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	/

2.2.1. AT+QCFG="hotswap" Enable/Disable Hot-swap

This command enables or disables the hot-swap function for SIM cards.

AT+QCFG="hotswap" Enable/Disable Hot-swap

Write Command AT+QCFG="hotswap"[,<sim1_stat>,<sim2_stat>]	Response If the optional parameters are omitted, query the current setting: +QCFG: "HOTSWAP",<sim1_stat>,<sim2_stat> OK If the optional parameters are specified, enable or disable hot-swap: OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<sim1_stat>	Integer type. Enable/disable the hot-swap of SIM slot 1. 0 Disable 1 Enable
<sim2_stat>	Integer type. Enable/disable the hot-swap of SIM slot 2. 0 Disable 1 Enable

NOTE

The hot-swap function can only be used when it is supported in the hardware design of the module. Otherwise, it may lead to problems such as failing to identify the SIM card.

Example

```
AT+QCFG="hotswap" //Query the current setting.
+QCFG: "HOTSWAP",1,1

OK
AT+QCFG="hotswap",1,1 //Enable the hot-swap of SIM slot 1 and SIM slot 2.
```

OK

2.2.2. AT+QCFG="simInsertLevel" Configure the Level of SIM Detect Pins

This command configures the level of SIM card detect pins.

AT+QCFG="simInsertLevel" Configure the Level of SIM Detect Pins

Write Command AT+QCFG="simInsertLevel",<slot1_level>,<slot2_level>	Response If the optional parameters are omitted, query the current setting: +QCFG: "simInsertLevel",<slot1_level>,<slot2_level> OK If the optional parameters are specified, configure the pin level of the SIM card: OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<slot1_level>	Integer type. Level of the detect pin when SIM card 1 is inserted. 0 Low level 1 High level
<slot2_level>	Integer type. Level of the detect pin when SIM card 2 is inserted. 0 Low level 1 High level

Example

AT+QCFG="simInsertLevel"	//Query the current setting.
+QCFG: "simInsertLevel",1,1	
OK	
AT+QCFG="simInsertLevel",0,0	//Configure the detect levels for the insertion of SIM card 1 and SIM card 2 to LOW.
OK	

2.2.3. AT+QCFG="EFS" Query the Remaining Space of EFS

This command queries the remaining space of EFS.

AT+QCFG="EFS" Query the Remaining Space of EFS

Write Command AT+QCFG="EFS"	Response +QCFG: <free_space> OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	/

Parameter

<free_space>	String type. The remaining space of EFS. Unit: KB; Format: <remaining space size> KB. <remaining space size> is of floating-point type.
---------------------------	---

Example

```
AT+QCFG="EFS" //Query the remaining space of EFS.
+QCFG: 191.500 KB
OK
```

2.2.4. AT+QCFG="band" Configure Frequency Band

This command specifies the supported frequency bands of the module, including frequency band of GSM/WCDMA/CDMA/LTE/TD-SCDMA network mode.

AT+QCFG="band" Configure Frequency 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, configure the preferred frequency bands to be searched:
---	--

	OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	<effect> determines when the command takes effect. The configurations are saved automatically.

Parameter

<bandval>	A hexadecimal value that specifies the GSM, WCDMA and CDMA frequency band. The reference band values are as follows: 0x0001 GSM_EGSM_900 0x0002 GSM_DCS_1800 0x0004 GSM_850 0x0008 GSM_PCS_1900 0x0010 WCDMA_I_IMT_2000 0x0020 WCDMA_II_PCS_1900 0x0040 WCDMA_V_850 0x0080 WCDMA_VIII_900 0x0100 WCDMA_VI_800 0x0200 WCDMA_IV_1700 0x0400 CDMA_BC0 0x0800 WCDMA_XIX_850 0xFFFF All frequency bands
<ltebandval>	A hexadecimal value that specifies the LTE frequency band. The reference band values are as follows: 1 (1<=0) LTE B1 2 (1<=1) LTE B2 4 (1<=2) LTE B3 2^n (1<=n) LTE B(n+1) 0x7FFFFFFFFFFFFFFF All frequency bands
<tdsbandval>	A hexadecimal value that specifies the TD-SCDMA frequency band. The reference band values are as follows: 0x1 TDS BCA 0x2 TDS BCB 0x4 TDS BCC 0x8 TDS BCD 0x10 TDS BCE 0x20 TDS BCF

<effect>	Integer type. Indicates when the configurations take effect.
	0 Take effect after the module is rebooted
	1 Take effect immediately

Example

```

AT+QCFG="band" //Query the current configuration.
+QCFG: "band",0x493,0x1e000000095,0x21

OK
AT+QCFG="band",493,1e000000095,21,1 //Disable LTE Band 1.
OK

```

NOTE

Interpretation of the parameters in the example above:

- +QCFG: "band",0x493,0x1e000000085,0x21** (parameters are in hex format):
0x493 = 0x0400 + (0x0080 + 0x0010) + (0x0002+0x0001), indicating that the current supported 2G and 3G bands are CDMA BC0, WCDMA B1, WCDMA B8, GSM1800, and GSM900.
0x1e000000085 = (0001 1110 0000 0000 0000 0000 0000 0000 1000 0101)₂ = $2^{(1-1)} + 2^{(3-1)} + 2^{(8-1)} + 2^{(38-1)} + 2^{(39-1)} + 2^{(40-1)} + 2^{(41-1)}$, indicating that the current supported 4G bands are B1, B3, B8, B38, B39, B40, and B41.
0x21 = 0x20 + 0x01, indicating that the current supported TD-SCDMA bands are B34 and B39.
- AT+QCFG="band",493,1e000000084,21,1:**
 Configure the supported bands to CDMA BC0, WCDMA B1/8, GSM900/1800, LTE B1/3/8/38/39/40/41, TDS B34/39 and to take effect immediately.

2.2.5. AT+QCFG="simconfig" Configure Single/Dual SIM Card

This command configures the modem to single SIM card or dual SIM card.

AT+QCFG="simconfig" Configure Single/Dual SIM Card

Write Command AT+QCFG="simconfig",<current_simconfig>	Response
	If the optional parameter is omitted, query the current setting: +QCFG: "simconfig",<original_simconfig>,<current_simconfig>
	OK
	If the optional parameter is specified, configure single SIM or dual SIM card: OK

	If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configuration is saved automatically.

Parameter

<original_simconfig>	Integer type. The original SIM configuration of the modem. 1 SINGLE_SIM 2 DUAL_SIM
<current_simconfig>	Integer type. The current SIM configuration of the modem. 1 SINGLE_SIM 2 DUAL_SIM

Example

```

AT+QCFG="simconfig"           //Query the current setting.
+QCFG: "simconfig",2,2

OK
AT+QCFG="simconfig",1         //Configure the modem to single SIM card.
OK

```

2.2.6. AT+QCFG="reset" Reset Modem

This command resets Modem.

AT+QCFG="reset" Reset Modem

Write Command AT+QCFG="reset"	Response OK If there is any error: ERROR
Maximum Response Time	300 ms
Characteristics	/

Example

```

AT+QCFG="reset"               //Reset the modem. After the command is executed successfully, the
                              query result of AT+CFUN temporarily changes to 0.

```

OK

2.2.7. AT+QCFG="imeilock" Lock IMEI

This command locks IMEI.

AT+QCFG="imeilock" Lock IMEI

Write Command

AT+QCFG="imeilock"[,<stat>,<key_word>]]

Response

If the optional parameters are omitted, query the current setting:

+QCFG: "imeilock",<stat>

OK

If only <stat> is specified, lock IMEI but not set the password:

OK

If the optional parameters are specified, lock IMEI and set the password:

OK

If there is any error:

ERROR

Maximum Response Time

1000 ms

Characteristics

The command takes effect after the module is rebooted.
The configurations are saved automatically.

Parameter

<stat>	Integer type. Locking state of IMEI.
	0 Unlocked
	1 Locked
<key_word>	String type. The password for locking IMEI.

Example

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

OK

AT+QCFG="imeilock",1 //Lock IMEI but not set the password.

OK


```
AT+QCFG="imeilock",1,"123456" //Lock IMEI and set the password to 123456.
OK
```

2.3. AT+EGMR Query Module Information

This command queries module information, such as SN, IMEI, IMEI2 (in case of dual SIM) and MEID.

AT+EGMR Query Module Information	
Test Command AT+EGMR=?	Response +EGMR: (list of supported <stat>s),(list of supported <type>s) OK If there is any error: ERROR
Write Command AT+EGMR=<stat>,<type>[,<value>]	Response Currently, <stat>=0 and <value> does not need to be specified (query module information): +EGMR: <value> OK 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

<stat>	Integer type. The way to execute this command. 0 Query
<type>	Integer type. Types of production information. 5 SN 7 IMEI for SIM card 1. 8 MEID 9 IMEISV_SVN 10 IMEI2 for SIM card 2.
<value>	String type. Different value of <type> determines corresponding indication of <value>.

Example

```

AT+EGMR=? //Test Command.
+EGMR: (0,1),(5,7,8,9,10)

OK
AT+EGMR=0,5 //Read the SN of the current module.
+EGMR: "11111"

OK
AT+EGMR=0,7 ///Read the IMEI for SIM card 1.
+EGMR: "864430010001091"

OK

```

2.4. AT+QCSN Configure the SN of a Customer Device

This command configures the SN of a customer's device.

AT+QCSN Configure the SN of a Customer Device

Test Command AT+QCSN=?	Response +QCSN OK If there is any error: ERROR
Read Command AT+QCSN?	Response +QCSN: <qscn_info> OK If there is any error: ERROR
Write Command AT+QCSN=<qscn_info>	Response OK If there is any error: ERROR
Maximum Response Time	1000 ms

Characteristics	The command takes effect immediately. The configuration is saved automatically.
-----------------	--

Parameter

<qscn_info>	String type. SN of a customer's device. The maximum length is 64 bytes.
-------------	---

Example

```

AT+QCSN="11111"           //Configure the SN of a customer's device to 11111.
OK
AT+QCSN?                  //Query the current SN configured by a customer.
+QCSN: "11111"
OK

```

2.5. AT+QAPSUB Query Android Minor Version

This command queries Android minor version.

AT+QAPSUB Query Android Minor Version

Test Command AT+QAPSUB=?	Response OK If there is any error: ERROR
Read Command AT+QAPSUB?	Response APSubEdition: <subedition> OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	/

Parameter

<subedition> String type. Android minor version.

Example

AT+QAPSUB? //Query Android minor version.

APSubEdition: V01

OK

2.6. AT+QFSGVERSION Query/Configure FSG File Information

This command queries and configures the FSG version date and identification in the module, including version dates of the software (SW), RF, and the FSG file as well as the FSG file identification (Tag).

AT+QFSGVERSION Query/Configure FSG File Information

Test Command
AT+QFSGVERSION=?

Response

OK

If there is any error:

ERROR

Read Command
AT+QFSGVERSION?

Response

SW: <date>

RF: <date>

Tag: <tag>

Date: <date>

OK

If there is any error:

ERROR

Write Command
AT+QFSGVERSION=<type>,<date>

Response

OK

If there is any error:

ERROR

Maximum Response Time

1000 ms

Characteristics

/

Parameter

<date>	String type. Version date. Format: "YYYYMMDD".
<tag>	String type. FSG identification.
<type>	String type. Query/configure type.
"SW"	Software version update date
"RF"	RF version update date
"TAG"	FSG identification
"DATE"	FSG file version update date

NOTE

ERROR is returned when the FSG file is lost, corrupted, or does not exist.

Example

```

AT+QFSGVERSION?                                     //Query the information of FSG file.
SW: 20180906
RF: 20190124
Tag: SC20-E-R06-DS
Date: 20190909

OK
AT+QFSGVERSION="DATE","20190909"                  //Configure the FSG file update date to 20190909.
OK

```

2.7. AT+QMBNCFG Configure MBN File

This command queries the list of MBN files, activated MBN file state and whether the MBN file is automatically activated by the (U)SIM card.

AT+QMBNCFG Configure MBN File

Test Command	Response
AT+QMBNCFG=?	+QMBNCFG: "List" +QMBNCFG: "Deactivate" +QMBNCFG: "AutoSel", (list of supported <activate>s)
	OK
	If there is any error:

	ERROR
Write Command Query the list of MBN files AT+QMBNCFG="List"	Response +QMBNCFG: "List",<ID>,<select>,<activate>,<name>,<version> [...] OK If there is any error: ERROR
Write Command Deactivate all activated MBN file AT+QMBNCFG="Deactivate"	Response OK If there is any error: ERROR
Write Command Query or configure whether the MBN file is automatically activated by the (U)SIM card AT+QMBNCFG="AutoSel",<activate> AT+QMBNCFG="AutoSel",<activate>	Response If the optional parameter is omitted, query the current setting: +QMBNCFG: "AutoSel",<activate> OK If the optional parameter is specified, configure whether the MBN file is automatically activated by the (U)SIM card: OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<ID>	Integer type. MBN file ID.
<activate>	Integer type. Enable or disable the automatic activation of MBN files by (U)SIM card. 0 Disable 1 Enable
<select>	Integer type. Whether the MBN file is selected to be activated after the module is rebooted. 0 Not selected 1 Selected

<name>	String type. MBN file name.
<version>	String type. MBN file version.

NOTE

AT+QMBNCFG="Deactivate" and AT+QMBNCFG="AutoSel",<activate> are only for debugging.

Example

```

AT+QMBNCFG="list"           //Query the list of MBN files.
+QMBNCFG: "List",0,0,0,"ROW_Gen_Commercial",0x05010804
+QMBNCFG: "List",1,0,0,"Commercial-EE",0x0501223A
+QMBNCFG: "List",2,0,0,"France-Commercial-Orange",0x05010B5B
+QMBNCFG: "List",3,0,0,"Commercial-DT-VOLTE",0x05011F30
+QMBNCFG: "List",4,0,0,"VF_Germany",0x05010433
+QMBNCFG: "List",5,0,0,"Commercial-VF-UK",0x0501043C
+QMBNCFG: "List",6,0,0,"TIM_Italy_VoLTE",0x05012B07

OK

AT+QMBNCFG="AutoSel"       //Query whether the MBN file is automatically activated.
+QMBNCFG: "AutoSel",1

OK

```

2.8. AT+QNVR Query the Data of NV

This command queries the data of the specified NV whose serial number is between 0 and 8004.

AT+QNVR Query the Data of NV

Test Command AT+QNVR=?	Response +QNVR: (0-<maxitem>),<maxlength> OK If there is any error: ERROR
Write Command AT+QNVR=<item>,<index>	Response +QNVR: <value> OK

	If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	/

Parameter

<item>	Integer type. Series number of an NV item. Range: 0–8004. Not all serial numbers are valid. If an SN is invalid, ERROR is returned.
<index>	Integer type. Array index, when an NV item data is longer than 128 bytes, it will be stored in the array structure, starting from 0. When an NV item data is less than 128 bytes, <index>=0.
<maxitem>	Integer type. Maximum of <item>. This value cannot exceed 8004.
<maxlength>	Integer type. Maximum length of NV item data, which cannot exceed 256. Unit: byte.
<value>	String type. NV data in hexadecimal.

Example

```
AT+QNVR=1877,0           //Query the data of NV whose SN is 1877.
+QNVR: "8003780500000200"
OK
```

2.9. AT+QNVW Write Data to NV Item

This command writes data to NV item.

AT+QNVW Write Data to NV Item

Test Command AT+QNVW=?	Response +QNVR: (0-<maxitem>),<maxlength> OK If there is any error: ERROR
Write Command AT+QNVW=<item>,<index>,<value>	Response OK

	If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<item>	Integer type. Series number of an NV item. Range: 0–8004. Not all serial numbers are valid. If an SN is invalid, ERROR is returned.
<index>	Integer type. Array index, when an NV item data is longer than 128 bytes, it will be stored in the array structure, starting from 0. When an NV item data is less than 128 bytes, <index>=0.
<maxitem>	Integer type. Maximum of <item>. This value cannot exceed 8004.
<maxlength>	Integer type. Maximum length of NV item data, which cannot exceed 256. Unit: bytes.
<value>	String type. NV data in hexadecimal.

NOTE

Before issuing this command, execute **AT+QNVW=<item>,<index>** to query the data of NV, and then write the data to NV item according to the data type and structure of the returned data.

Example

```
AT+QNVW=1877,1,"8003780500000200" //Configure NV1877.
OK
AT+QNVW=1877,1 //Query the value of NV1877. If the returned value is the
+QNVW: "8003780500000200" same as the configured one before, the setting is successful.
OK
```

2.10. AT+QNVFR Query EFS Information

This command queries EFS information.

AT+QNVFR Query EFS Information

Test Command AT+QNVFR=?	Response +QNVFR: <efs_files>
----------------------------	---------------------------------

	OK
Write Command AT+QNVFR=<efs_files>	Response +QNVFR: <value> OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	/

Parameter

<efs_files>	String type with double quotation marks. Path of EFS.
<hex_str>	String type. Value of EFS in hexadecimal format.

Example

```
AT+QNVFR="/nv/item_files/modem/mmode/lte_bandpref" //Query EFS information in the specified path.
+QNVFR: D5000800A0010000
OK
```

2.11. AT+QNVFW Configure EFS Information

This command configures EFS Information.

AT+QNVFW Configure EFS Information	
Test Command AT+QNVFW=?	Response +QNVFW: <efs_files>,<hex_str> OK If there is any error: ERROR
Write Command AT+QNVFW=<efs_files>,<hex_str>	Response OK

	If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<efs_files>	String type with double quotation marks. Path of EFS.
<hex_str>	String type. Value of EFS in hexadecimal format.

Example

```

AT+QNVFW="/nv/item_files/modem/mmode/lte_bandpref",D5000800A0010000 //Configure the value
of EFS in the path.
OK
AT+QNVFR="/nv/item_files/modem/mmode/lte_bandpref" //Query the EFS information. If the
returned value is the same as the
configured one before, the setting is
successful.
+QNVFR: D5000800A0010000
OK

```

2.12. AT+QGMR Query the Internal Version of the Module

This command queries the internal version of the module, including the version of AP and BP.

AT+QGMR Query the Internal Version of the Module

Test Command AT+QGMR=?	Response OK If there is any error: ERROR
Execution Command AT+QGMR	Response Quectel <module> <version> OK

	If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	/

Parameter

<module>	String type. Model name of Quectel Smart modules.
<version>	String type. Internal version number. Format: <software version>_<BP version>_<AP version>.

Example

```

AT+QGMR //Query the internal version of the module.
Quectel
SC20E
SC20ESAR09A01_BP01.001_Linux3.18.071.01.001
OK

```

2.13. AT+QRFTESTMODE Enter/Exit FTM

This command makes the module enter or exit FTM.

AT+QRFTESTMODE Enter/Exit FTM

Test Command AT+QRFTESTMODE=?	Response +QRFTESTMODE: (list of supported <ftm_mode>s) OK If there is any error: ERROR
Read Command AT+QRFTESTMODE?	Response +QRFTESTMODE: <ftm_mode> OK If there is any error: ERROR

Write Command AT+QRFTESTMODE=<ftm_mode>	Response OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect immediately. The configuration is not saved.

Parameter

<ftm_mode>	Integer type. Enter or exit FTM.
<u>0</u>	Exit FTM
1	Enter FTM

Example

```

AT+QRFTESTMODE?           //Query the current FTM state.
+QRFTESTMODE: 0

OK
AT+QRFTESTMODE=1          //Make the module enter FTM.
OK

```

2.14. AT+QRFTEST Transmit in FTM

This command forces the module to transmit in FTM.

AT+QRFTEST Transmit in FTM

Test Command AT+QRFTEST=?	Response OK If there is any error: ERROR
Write Command For GSM AT+QRFTEST=<BAND>[,<CHANNEL>,<TX_ENABLE>,<TX_BURST>,<RGI>]	Response If <TX_ENABLE>="ON" , turn on Tx test in FTM: All is up OK

	If <TX_ENABLE>="OFF", turn off Tx test in FTM: All is off OK If there is any error: ERROR
Write Command For WCDMA AT+QRFTEST=<BAND>[,<CHANNEL>,<TX_ENABLE>,<PDM>,<WAVEFORM>]	Response If <TX_ENABLE>="ON", turn on Tx test in FTM: All is up OK If <TX_ENABLE>="OFF", turn off Tx test in FTM: All is off OK If there is any error: ERROR
Write Command For LTE AT+QRFTEST=<BAND>[,<CHANNEL>,<TX_ENABLE>,<TX_GAIN>,<WAVEFORM>]	Response If <TX_ENABLE>="ON", turn on Tx test in FTM: All is up OK If <TX_ENABLE>="OFF", turn off Tx test in FTM: All is off OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect immediately. The configuration is not saved.

Parameter

<BAND>	String type. The supported bands in GSM/WCDMA/LTE. GSM Bands: "GSM850"
---------------------	---

"GSM900"

"GSM1800"

"GSM1900"

WCDMA Bands:

"WCDMA BAND1"

"WCDMA BAND2"

"WCDMA BAND3"

"WCDMA BAND4"

"WCDMA BAND5"

"WCDMA BAND6"

"WCDMA BAND7"

"WCDMA BAND8"

"WCDMA BAND9"

"WCDMA BAND19"

LTE Bands:

"LTE BAND1"

"LTE BAND2"

"LTE BAND3"

"LTE BAND4"

"LTE BAND5"

"LTE BAND7"

"LTE BAND8"

"LTE BAND9"

"LTE BAND10"

"LTE BAND11"

"LTE BAND12"

"LTE BAND13"

"LTE BAND17"

"LTE BAND18"

"LTE BAND19"

"LTE BAND20"

"LTE BAND25"

"LTE BAND26"

"LTE BAND28"

"LTE BAND34"

"LTE BAND38"

"LTE BAND39"

"LTE BAND40"

"LTE BAND41"

<CHANNEL> Integer type. Center frequency of the receiving channel. Refer to the modem code file *QUECTEL_QRFTEST_ATC.C* for the specific value range of each frequency band.

<TX_ENABLE> String type. Turn on/off the transmission in FTM.

	"ON"	Turn on Tx in FTM
	"OFF"	Turn off Tx in FTM
<TX_BURST>	Integer type. Transmit waveform in Tx.	
	0	constant_rx
	1	burst_rx
<RGI>	Integer type. Transmit power in GSM.	
<PDM>	Integer type. Transmit power in WCDMA.	
<TX_GAIN>	Integer type. Transmit power in LTE.	
<WAVEFORM>	Integer type. Transmit waveform in Tx.	
	0	constant_rx
	1	burst_rx

Example

```

AT+QRFTEST="GSM850",190,"ON",0,100 //Turn on FTM Tx in GSM850.
All is up

OK
AT+QRFTEST="GSM850",190,"OFF" //Turn off FTM Tx in GSM850.
All is off

OK
AT+QRFTEST="WCDMA BAND1",9750,"ON",50,1 //Turn on FTM Tx in WCDMA B1.
All is up

OK
AT+QRFTEST="LTE BAND1",18300,"ON",60,1 //Turn on FTM Tx in LTE B1.
All is up

OK

```

2.15. AT+QRXFTM Receive in FTM

This command forces the module to receive in FTM.

AT+QRXFTM Receive in FTM

Test Command	Response
AT+QRXFTM=?	OK
	If there is any error:
	ERROR

Write Command AT+QRXFTM=<oper_mode>,<band_index>,<channel>,<div_enable>,<gain_stages>[,<bandwidth>]	Response +QRXFTM: <agc_val>,<rssi_val> OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect immediately. The configuration is not saved.

Parameter

<oper_mode>	Integer type. Network mode. 0 GSM 1 WCDMA 2 LTE
<band_index>	String type. The supported bands in GSM/WCDMA/LTE. GSM Bands: "GSM_850" "GSM_900" "GSM_1800" "GSM_1900" WCDMA Bands: "WCDMA_2100" WCDMA B1 "WCDMA_1900" WCDMA B2 "WCDMA_BC3" WCDMA B3 "WCDMA_BC4" WCDMA B4 "WCDMA_800" WCDMA B5 "WCDMA_BC6" WCDMA B6 "WCDMA_BC7" WCDMA B7 "WCDMA_900" WCDMA B8 "WCDMA_BC9" WCDMA B9 "WCDMA_BC11" WCDMA B11 "WCDMA_BC19" WCDMA B19 LTE Bands: "LTE BAND1" "LTE BAND2" "LTE BAND3" "LTE BAND4" "LTE BAND5"

	"LTE BAND7"
	"LTE BAND8"
	"LTE BAND9"
	"LTE BAND10"
	"LTE BAND11"
	"LTE BAND12"
	"LTE BAND13"
	"LTE BAND17"
	"LTE BAND18"
	"LTE BAND19"
	"LTE BAND20"
	"LTE BAND25"
	"LTE BAND26"
	"LTE BAND28"
	"LTE BAND34"
	"LTE BAND38"
	"LTE BAND39"
	"LTE BAND40"
	"LTE BAND41"
<channel>	Integer type. Center frequency of the receiving channel.
<div_enable>	Integer type. Select burst and constant Rx mode in GSM network and configure whether diversity reception is turned on in other network modes. For GSM: 0 constant_rx 1 burst_rx For network modes except GSM: 0 Turn off diversity reception 1 Turn on diversity reception
<gain_stages>	Integer type. Gain stage.
<bandwidth>	LTE received signal bandwidth. Unit: MHz. When the network mode is WCDMA, this parameter is set to 0; when the network mode is GSM, this parameter is omitted.
<agc_val>	Integer type. RSSI.
<rssi_val>	Integer type. Rx Power.

Example

```

AT+QRXFTM=0,"GSM_900",38,0,0           //Test downlink at center frequency 38 of GSM900.
+QRXFTM: 15019, -91

OK
AT+QRXFTM=1,"WCDMA_2100",10700,1,0,0    //Test downlink at center frequency 10700 for
+QRXFTM: -126, -68                      WCDMA2100.

```

```

OK
AT+QXFTM=2,"LTE BAND1",300,1,0,2           //Test downlink frequency 300 for LTE Band1.
+QXFTM: -508, -50

OK

```

2.16. AT+QATTSUNSETCFG Enable/Disable AT&T 3G 3G Sunset and AT&T IMS

This command enables or disables AT&T 3G sunset and AT&T IMS.

AT+QATTSUNSETCFG Enable/Disable AT&T 3G Sunset and AT&T IMS

Test Command AT+QATTSUNSETCFG=?	Response +QATTSUNSETCFG: (list of supported <ATT_sunset_switch>),(list of supported <ATT_IMS_switch>) OK If there is any error: ERROR
Read Command AT+QATTSUNSETCFG?	Response +QATTSUNSETCFG: <ATT_sunset_switch>,<ATT_IMS_switch> OK If there is any error: ERROR
Write Command AT+QATTSUNSETCFG=<ATT_sunset_switch>,<ATT_IMS_switch>	Response OK If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configurations are saved automatically.

Parameter

<ATT_sunset_switch>	Integer type. Enable or disable AT&T 3G sunset.	
	0	Disable
	1	Enable
<ATT_ims_switch>	Integer type. Enable or disable AT&T IMS.	
	0	Disable
	1	Enable

Example

```

AT+QATTSUNSETCFG=?
+QATTSUNSETCFG: (0,1),(0,1)

OK
AT+QATTSUNSETCFG?           //Query the current configuration of AT&T 3G sunset and AT&T IMS.
+QATTSUNSETCFG: 1,1

OK
AT+QATTSUNSETCFG=1,0       //Enable AT&T 3G sunset and disable AT&T IMS.
OK

```

2.17. AT+QMNOSUNSET Enable/Disable an Operator's PLMN List

This command enables or disables an operator's PLMN list.

AT+QMNOSUNSET Enable/Disable an Operator's PLMN List

Test Command AT+QMNOSUNSET=?	Response +QMNOSUNSET: <operator_name>,(list of supported <enable>s) ... OK
Write Command AT+QMNOSUNSET=<operator_name>[,<enable>]	Response If the optional parameter is omitted, query the current setting: +QMNOSUNSET: <operator_name>,<enable> OK If the optional parameter is specified, enables or disables an operator's PLMN list: OK

	If there is any error: ERROR
Maximum Response Time	1000 ms
Characteristics	The command takes effect after the module is rebooted. The configuration is saved automatically.

Parameter

<operator_name>	String type. Operator name.
<enable>	Integer type. Enable or disable an operator's PLMN list.
	0 Disable
	1 Enable

Example

```

AT+QMNOSUNSET=?
+QMNOSUNSET: "BELL",(0,1)
+QMNOSUNSET: "ROGERS",(0,1)
+QMNOSUNSET: "SPRINT",(0,1)
+QMNOSUNSET: "TELUS",(0,1)
+QMNOSUNSET: "TMO",(0,1)
+QMNOSUNSET: "USCC",(0,1)
+QMNOSUNSET: "VERSION",(0,1)

OK
AT+QMNOSUNSET="BELL"           //Query the current setting.
+QMNOSUNSET: "BELL",1

OK
AT+QMNOSUNSET="BELL",1         //Enable BELL PLMN list.
OK

```

3 Appendix Terms and Abbreviations

Table 3: Terms and Abbreviations

Abbreviation	Description
3GPP	3rd Generation Partnership Project
AP	Application Processor
APN	Access Point Name
AT&T	American Telephone & Telegraph
BB	Baseband
BP	Baseband Processor
CDMA	Code-Division Multiple Access
EFS	Embedded File System
FTM	Factory Test Mode
GSM	Global System for Mobile Communications
IMEI	International Mobile Equipment Identity
IMS	IP Multimedia Subsystem
LTE	Long-Term Evolution
MEID	Mobile Equipment Identifier
PA	Power Amplifier
PLMN	Public Land Mobile Network
PMIC	Power Management IC
RF	Radio Frequency
RSSI	Received Signal Strength Indicator

Rx	Receive
SIM	Subscriber Identity Module
SN	Serial Number
Tx	Transmit/Transmission
WCDMA	Wideband Code Division Multiple Access