AT Command Manual

Release 9.0

RDA

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CONTENTS:

CHAPTER

ONE

1 INTRODUCTION

This document will describe all AT commands implemented in SDK. Due to the SDK will support various chips of RDA Microelectronics, and the SDK will support various product types. Not all AT commands will and can be supported in any one target.

1.1 1.1 AT Command Syntax

The `AT`, `at`, `aT` or `At` prefix must be set at the beginning of each command line. To terminate a command line enter <CR>.

`A/` is a special case. When `A/` is received, the previous command line will be handled immediately. Neither AT prefix nor <CR> are needed.

+++ is another special case. Strictly speaking, it is not an AT command. Rather, it is escape input sequnce to indicate DCE switch from data mode or PPP online mode to command mode.

AT commands can be split into three categories syntactically: *basic*, *S parameter* and *extended*.

Basic Syntax

These AT commands have the format of `AT<x><n>`, or `AT&<x><n>`, where `<x>` is the Command, and `<n>` is the argument for that Command. An example of this is `ATE<n>`, which tells the DCE whether received characters should be echoed back to the DTE according to the value of `<n>`. `<n>` is optional and a default will be used if missing.

S Parameter Syntax

These AT commands have the format of `ATS<n>=<m>`, where `<n>` is the index of the S register to set, and `<m>` is the value to assign to it. `<m>` is optional; if it is missing, then a default value is assigned.

Extended Syntax

These commands can operate in several modes, as in the following table:

Execution Command	`AT+<x>`
Write Command	`AT+<x>=<...>`
Read Command	`AT+<x>?`
Test Command	`AT+<x>=?`

1.2 1.2 AT Command Line

Several AT commands can be combined into one command line. AT command line if started with *AT* prefix, and terminated with <CR>. Extended commands should be separated by semicolon (`;`). And semicolon can't be inserted between basic commands or S parameter commands.

Empty AT command line (`AT<CR>`) is valid. DCE will return *OK*.

Before <CR> is encountered, AT command line is buffered, and no AT commands will be processed. The maximum size of AT command line buffer can be configured in SDK. When the maximum size is exceeded, buffered data will be dropped silently, and AT prefix will be searched again.

When all commands can be handled successfully, *OK* will be responded. When any command in the command line is failed, *ERROR* will be responded, and following commands in the command line will be dropped.

When a series of AT commands will be send to DCE in separated lines, DTE **MUST** wait final response of the previous command line before send next command line.

1.3 1.3 Character Set

The default character set of AT command interface is IRA character set. The following character sets are supported:

- GSM
- HEX
- PCCP936
- UCS2

CHAPTER

TWO

2 GENERAL COMMANDS

2.1 2.1 A/ Repeat last command

Command	Possible response(s)
A/	

Reference: V.25ter

Description

If the prefix "A/" or "a/" is received, the DCE shall immediately execute once again the body of the preceding command line. No editing is possible, and no termination character is necessary. A command line may be repeated multiple times through this mechanism, if desired. Responses to the repeated command line shall be issued using the parity and format

of the original command line, and the rate of the "A/". If "A/" is received before any command line has been executed, the preceding command line is assumed to have been empty (that results in an OK result code).

2.2 2.2 AT+CPOF Switch Off Mobile Station

Switch off mobile station.

Command	Possible response
Test Command	AT+CPOF=?
Read Command	AT+CPOF?
Exec Command	AT+CPOF

Description

Device will be switched off (power down mode) Do not send any command after this command.

Response

+CPOF: MS OFF

OK

+CME ERROR.

Test this command will lead to the dev board switch off. But as soon as

the board switches off, it will automatically power on.

Example

AT+CPOF

+CPOF: MS OFF

OK

[Device will be switched off (power down mode)]

2.3 2.3 ATS0 Automatic Answering

Description

This S-parameter controls the automatic answering feature of the DCE. If set to 0, automatic answering is disabled. If set to a non-zero value, the DCE shall cause the DCE to answer when the incoming call ringing has occurred the number of times indicated by the value.

Command	Possible response
ATS0=?	0-255
ATS0?	<n>
ATS0=[n]	OK

Parameter

<n>:

The auto answering times, range from 0~255.

Remark

If set to 0, auto answering is disabled. This command is specially used on data service in GPRS mode.

Example

```
ATS0=2
```

OK

```
ATS0=?
```

0-255

OK

```
ATS0?
```

2

OK

2.4 2.4 ATS3 Response Formatting Character

Description

This S-parameter represents the decimal IA5 value of the character recognized by the DCE from the DTE to terminate an incoming command line. It is also generated by the DCE as part of the header, trailer, and terminator for result codes and information text, along with the S4 parameter.

Command	Possible response
ATS3?	<n>

Parameter

<n>:

Command line termination character 0~13(default)~31

Remark

Using other value than 13 may cause problems when entering commands. If ATS3, ATS4, ATS5 be set to the same value, it may be cause some problem.

Example

2.5 2.5 ATS4 Response Formatting Character

Description

This S-parameter represents the decimal IA5 value of the character generated by the DCE as part of the header, trailer, and terminator for result codes and information text, along with the S3 parameter.

Command	Possible response
ATS4?	<n>

Parameter

<n>:

Command line termination character 0~10(default)~31

Remark

If ATS3, ATS4, ATS5 be set to the same value, it may be cause some problem.

Example

2.6 2.6 ATS5 Command Line Editing Character

Description

This S-parameter represents the decimal IA5 value of the character recognized by the DCE as a request to delete from the command line the immediately preceding character.

Command	Possible response
ATS5?	<n>

Parameter

<n>:

Command line termination character 0~8(default)~31

Remark

If ATS3, ATS4, ATS5 be set to the same value, it may be cause some problem.

Example

2.7 2.7 +++ Switch From Online Data Or Ppp Mode To Online Cmd Mode

Description

Return to online command state from online data state.

Command	Possible response
+++	OK

Response

OK If value is valid.

ERROR If value is not recognized or not supported.

Example

2.8 2.8 ATO Switch From Command Mode To Data Mode/ppp Online Mode

Description

Causes the DCE to return to online data state and issue a CONNECT or CONNECT text result code.

Command	Possible response
ATO[<value>]	CONNECT<text>

Parameter

<value>:

[0] Switch from command mode to data mode.

Remark

If ATS3, ATS4, ATS5 be set to the same value, it may be cause some problem.

Example

ATO0

CONNECT

2.9 2.9 AT&F Set All Current Parameters To Manufacturer Defaults

Description

This command instructs the DCE to set all parameters to default values specified by the manufacture, which may take hardware configuration switches and other manufacture-defined criteria into consideration.

Command	Possible response
AT&F[<value>]	OK

Parameter

<value>:

[0] Set all TA parameters to manufacturer defaults. (other) Reserved for manufacture proprietary use.

Remark

- List of parameters reset to manufacturer default can be found in Section.
- In addition to the default profile, you can store an individual one with AT&W. To alternate between the two profiles enter either ATZ (loads user profile) or AT&F (restores factory profile).

Example

```
AT&F
```

OK

2.10 2.10 ATV Set Result Code Format Mode

Description

The setting of this parameter determines the contents of the header and trailer transmitted with result codes and information responses. It also determines whether result codes are transmitted in a numeric form or an alphabetic (or "verbose") form. The text portion of information responses is not affected by this setting.

Command	Possible response
ATV[<value>]	0

Parameter

`<value>`:

- 0 Information response: <text><CR><LF> Short result code format: <numeric code><CR>
- 1 Information response: <CR><LF><text><CR><LF> Long result code format: <CR><LF><verbose code><CR><LF>

Remark

Following table shows the effect of the setting of this parameter on the format of information text and result codes. All references to cr mean "the character with the ordinal value specified in parameter S3"; all references to if likewise mean "the character with the ordinal value specified in parameter S4"

V0	V1
<text><cr><lf>	`<cr><lf> <text><cr><lf>`
<numeric code><cr>	`<cr><lf><verbose code><cr><lf>`

Example

```
ATV1
```

<CR><LF><text><CR><LF>

<CR><LF><verbose code><CR><LF>

2.11 2.11 ATE Enable Command Echo

Description

This setting determines whether or not the TA echoes characters received from TE during command state.

Command	Possible response
ATE[<value>]	OK

Parameter

<value>:

- 0 Echo mode off
- 1 Echo mode on

Remark

In case of using the command without parameter, <value> is set to 0.

Example

ATE

OK

2.12 2.12 AT&W Stores Current Configuration To User Defined Profile

Description

This command stores the currently set parameters to a user defined profile in the non-volatile memory.

Command	Possible response
AT&W[<value>]	OK

Parameter

<value>:

0 Profile number

Remark

- The user defined profile will be restored automatically after power-up. Use ATZ to restore user profile and AT&F to restore factory settings. Until the first use of AT&W, ATZ works as AT&F.
- A list of parameters stored to the user profile can be found in Section chapter 29, appendix B, AT Command Settings storable with AT&W.

Example

```
ATE
```

OK

2.13 2.13 ATQ Set Result Code Presentation Mode

Description

This parameter setting determines whether or not the DCE transmits result codes to the DTE.

Command	Possible response
ATQ[<value>]	`OK`

Parameter

`<value>`:

0 DCE transmits result code 1 Result codes are suppressed and not transmitted

Example

ATQ0

OK

ATQ1

ATQ

OK

2.14 2.14 ATX Set Connect Result Code Format And Call Monitoring

Description

This parameter setting determines whether or not the DCE detects the presence of dial tone and busy signal and whether or not DCE transmits particular result codes.

Command	Possible response
ATX[value]	`<value> = 0, 1, 2, 3, 4;`

Parameter

`<value>`:

- 0 CONNECT result code only returned; dial tone and busy detection are both disable.
- 1 CONNECT <text> result code only returned; dial tone and busy detection are both disable.
- 2 CONNECT <text> result code returned; dial tone detection is enabled, busy detection is disabled.
- 3 CONNECT <text> result code returned, dial tone detection is disabled, busy detection is enabled.
- 4 CONNECT <text> result code returned; dial tone and busy detection are both enabled.

2.15 2.15 ATZ Set All Current Parameters To User Defined Profile

Description

This command instructs the DCE to set all parameters to their factory defaults as specified by the manufactured.

Command	Possible response
ATZ[<value>]	OK

Parameter

<value>:

0 The default configure of the manufacturer. (other) Not be used.

Remark

- First the profile will be set to factory default (see AT&F). If there is a valid user profile (stored with AT&W), this profile will be loaded afterwards.
- Any additional commands on the same command line may be ignored. A delay of 300 ms is required before next command is sent; otherwise "OK" response may be corrupted.

2.16 2.16 AT+CFUN Set Phone Functionality

Description

Set command currently can only be used to switch off and on the CSW platform.

Command	Possible response
AT+CFUN=?	+CFUN : (list of supported <fun>s),(list of supported <rst>s)
AT+CFUN?	+CFUN:<fun>
AT+CFUN=<fun>[,<rst>]	OK

Parameter

<value>:

<fun>:

- 0 Minimum functionality
- 1 Full functionality
- 4 Disable phone both transmit and receive RF circuits

<rst>

- 0 Do not reset the MT before setting it to <fun> power level.
- 1 Reset the MT before setting it to <fun> power level.

NOTE: this shall be always default when <rst> is not given.

Remark

Current, only Parameter 0 and 1 is support. When <fun> equals to 0 and 1, the second parameter <rst> is ignored. For CSW only do the de-registering when switch off, when parameter is set by 0 or 1, CSW will operate the network job independent. If AT modem can't register the network when parameter is set to 5, please check pin1 status.

Example

AT+CFUN=0

OK

AT+CFUN?

+CFUN:0

OK

2.17 2.17 AT+CMEE Report Mobile Equipment Error

Description

This command controls the presentation of the result code +CME ERROR: <err> that indicates errors relating to ME functionality.

Command	Possible response
AT+CMEE=?	OK
AT+CMEE?	+CMEE:<n>
AT+CMEE=<n>	+CMEE:<n>

Parameter

<n>:

- 0 Disable +CME ERROR: <err> code and use ERROR instead
- 1 Enable +CME ERROR: <err> code and use numeric <err> values (refer next sub clause)
- 2 Enable +CME ERROR: <err> result code and use verbose <err> values refer next sub clause)

Remark

When enable the result code, MT related errors cause +CME ERROR: <err> final result code instead of the regular ERROR final result code. ERROR is returned normally when error is related to syntax, invalid parameters, or TA functionality.

Example

AT+CMEE=1

OK

AT+CMEE=5

+CME ERROR:53

at+cmee=?

+CMEE: (0-2)

OK

at+cmee?

+CMEE: 1

OK

2.18 2.18 AT+CSCS Select TE Character Set

Description

Write command informs DCE which character set <chset> is used by the TE. DCE is then able to convert character strings correctly between TE and ME character sets.

Command	Possible response
AT+CSCS=?	`+CSCS: (list of supported < chset >s)`
AT+CSCS?	`+CSCS: (list of supported < chset>s)`
AT+CSCS=[<chset>]	`OK`

Parameter

`<chset>`:

- "GSM" GSM 7 bit default alphabet (3GPP TS 23.038); this setting causes easily software flow control (XON/XOFF) problems.
- "UCS2" 16-bit universal multiple-octet coded character set (ISO/IEC10646 [32]); UCS2 character strings are converted to hexadecimal numbers from 0000 to FFFF; e.g. "004100620063" equals three 16-bit characters with decimal values 65, 98 and 99.
- "HEX" Hexadecimal mode. No character set used ; the user read or write directly hexadecimal values.
- "PCCP936" PC Set Chinese character.

Remark

This command is used to read and write phonebook entries. SMS doesn't effected by this command.

Example

AT+CSCS="UCS2"

OK

AT+CSCS?

+CSCS: "UCS2"

OK

AT+CSCS=?

+CSCS: ("GSM","HEX","PCCP936","UCS2")

OK

2.19 2.19 AT+CMUX Multiplexing Mode

Description

This command is used to enable the multiplexing protocol control channel.

Command	Possible response
AT+CMUX=?	+CMUX: (list of supported <transparency>s)
AT+CMUX?	+CMUX: <transparency>
AT+CMUX=<transparency>	OK

Parameter

<transparency>: 0 Basic option

Remark

At present we only support basic mode, if you want use this command, please contact RDA software engineer

Example

AT+CMUX=0

OK

AT+CMUX=?

+CMUX: (0)

OK

AT+CMUX?

+CMUX: 0

OK

2.20 2.20 AT+ICF DTE DCE Character Framing

Command	Possible response(s)
+ICF=[<format>[,<parity>]]	
+ICF?	+ICF: <format>,<parity>
+ICF=?	+ICF: (list of supported <format> values),(list of supported <parity> values)

Reference: V.25ter

Description

This extended-format compound parameter is used to determine the local serial port start-stop (asynchronous) character framing that the DCE shall use while accepting DTE commands and while transmitting information text and result code, if this is not automatically determined.

Parameters

<format> determines the number of bits in the data bits, the presence of a parity bit, and the number of stop bits in the start-stop frame.

0	auto detect
1	8 data, 2 stop
2	8 data, 1 parity, 1 stop
3	8 data, 1 stop
4	7 Data 2 Stop
5	7 Data 1 Parity 1 Stop
6	7 Data 1 Stop

<parity> determines how the parity bit is generated and checked, if present (when format is 2 or 5).

0	Odd
1	Even
2	Mark
3	Space

Note: chracter framing auto detect is not supported.

2.21 2.21 AT+IPR Set Fixed Local Rate

Command	Possible response(s)
`+IPR=<rate>`	
`+IPR?`	`+IPR: <rate>`
`+IPR=?`	`+IPR:` (list of supported autodetectable `<rate>` values)[,(list of fixed-only `<rate>` values)]

Reference: V.25ter

Description

This numeric extended-format parameter specifies the data rate at which the DCE will accept commands, in addition to 1200 bit/s or 9600 bit/s

Parameters

<rate> The <rate> value specified shall be the rate in bits per second at which the DTE-DCE interface should operate, e.g. “19 200” or “115 200”. The rates supported by a particular DCE are manufacturer-specific; however, the IPR parameter should permit the setting of any rate supported by the DCE during online operation. Rates which include a non-integral number of bits per second should be truncated to the next lower integer (e.g. 134.5 bit/s should be specified as 134; 45.45 bit/s should be specified as 45). If unspecified or set to 0, automatic detection is selected for the range determined by the DCE manufacturer.

2.21.1 2.21.1 Auto-bauding

2.22 2.22 AT+GSN Request TA Serial Number Identification | IMEI number

Description

This commandrequest TA serial number identification | IMEI number

Command	Possible response
AT+GSN=?	OK
AT+GSN=0	<sn>
AT+GSN=1	<imei>

Parameter

<sn>:

the total number of characters, including line terminators, in the information text shall not exceed 2048 characters.

<imei>:

International mobile equipment identity.

Example

AT+GSN=0

012345678901234

OK

2.23 2.23 AT+GMM Request TA Model Identification

Description

This command request TA model identification (may equal to +CGMM)

Command	Possible response
AT+GMM=?	OK
AT+GMM	<model>

Parameter

<model>:

the total number of characters, including line terminators, in the information text shall not exceed 2048 characters.

Example

AT+GMM

GSM Ultimate Data Device

OK

2.24 2.24 AT+CGMM Request Model Identification

Description

This command causes the TA to return one or more lines of information text <model>, determined by the MT manufacturer, which is intended to permit the user of the TA to identify the specific model of the MT to which it is connected to. Typically, the text will consist of a single line containing the name of the product, but manufacturers may choose to provide more information if desired. Refer to subclause 9.2 for possible <err> values.

Command	Possible response
AT+CGMM=?	`OK`
AT+CGMM	`<model>`

Parameter

`<model>`:

the total number of characters, including line terminators, in the information text shall not exceed 2048 characters.

Example

AT+CGMM

GSM Ultimate Data Device

OK

2.25 2.25 AT+GMR Request Revision Identification

Description

This command request TA revision identification (may equal to +CGMR)

Command	Possible response
AT+GMR=?	`OK`
AT+GMR	`<revision>`

Parameter

`<revision>`:

the total number of characters, including line terminators, in the information text shall not exceed 2048 characters.

Example

AT+GMR

3.00

OK

2.26 2.26 AT+ CGMR Request Revision Identification

Description

This command causes the TA to return one or more lines of information text <revision>, determined by the MT manufacturer, which is intended to permit the user of the TA to identify the version, revision level or date, or other pertinent information of the MT to which it is connected to. Typically, the text will consist of a single line containing the version of the product, but manufacturers may choose to provide more information if desired. Refer subclause 9.2 for possible <err> values.

Command	Possible response
AT+CGMR=?	OK
AT+CGMR	<revision>

Parameter

<revision>: the total number of characters, including line terminators, in the information text shall not exceed 2048 characters.

Example

AT+CGMR

3.00

OK

2.27 2.27 AT+GMI Request TA Manufacturer Identification

Description

Request TA manufacturer identification (may equal to +CGMI).

Command	Possible response
AT+GMI=?	OK
AT+GMI	<manufacturer>

Parameter

<manufacturer>:

the total number of characters, including line terminators, in the information text shall not exceed 2048 characters.

Remark

- The user defined profile will be restored automatically after power-up. Use ATZ to restore user profile and AT&F to restore factory settings. Until the first use of AT&W, ATZ works as AT&F.
- A list of parameters stored to the user profile can be found in Section chapter 29, appendix B, AT Command Settings storable with AT&W.

Example

AT+GMI

Manufacturer ABC

OK

2.28 2.28 AT+CGMI Request Manufacturer Identification

Description

This command causes the TA to return one or more lines of information text <manufacturer>, determined by the MT manufacturer, which is intended to permit the user of the TA to identify the manufacturer of the MT to which it is connected to. Typically, the text will consist of a single line containing the name of the manufacturer, but manufacturers may choose to provide more information if desired. Refer subclause 9.2 for possible <err> values.

Command	Possible response
AT+CGMI=?	`OK`
AT+CGMI	`<manufacturer>`

Parameter

<manufacturer>: the total number of characters, including line terminators, in the information text shall not exceed 2048 characters.

Example

AT+CGMI

Manufacturer ABC

OK

2.29 2.29 ATI Request Manufacturer Specific Information About The TA

Description

Request manufacturer specific information about the TA(software cannot use this command to determine the capabilities of a TA)

Command	Possible response
ATI	<module name> <module version>

Parameter

<value>:

may optionally be used to select from among multiple types of identifying information, specified by the manufacturer.. 0 return manufacturer identification, model identification and revision identification of software. (1-255) Reserved for manufacturer proprietary use

Example

ATI

RDA AT

3.0.0

OK

2.30 2.30 AT+CIMI Request International Mobile Subscriber Identity

Description

This command causes the TA to return <IMSI>, which is intended to permit the TE to identify the individual active application in the UICC (GSM or USIM) or SIM card which is attached to MT. Refer subclause 9.2 for possible <err> values.

Command	Possible response
AT+CIMI=?	OK
AT+CIMI	<IMSI>

Parameter

<IMSI>:

International Mobile Subscriber Identity (string without double quotes)

Example

AT+CIMI

460001033113523

OK

2.31 2.31 AT+EGMR Read And Write IMEI

Description

This command read IMEI from factory partition,also can write IMEI to factory patition.

Command	Possible response
+EGMR=?	`+EGMR: (0,1),(7)`
+EGMR=<mode>,<format>,<data>	`<IMEI>`

Parameter

<mode>: 1 write mode,2 read mode

<format>: 7 only can set this value,to match ap.:

<data>: IMEI number.

Example

AT+EGMR=1,7,"111111111111111"

+EGMR

OK

AT+EGMR=2,7;

+EGMR:11111111111

OK

2.32 2.32 AT+CALA Set An Alarm Time

Description

This command is used to set/list alarms or date/time in the ME.

Command	Possible response
AT+CALA=?	`+CALA: (list of supported <n>s ),(list of supported <type>s),<tlength>,<rlength>,(list of supported <silent>s)`
AT+CALA?	`[+CALA: <time>,<n1>,<type>,[<text>],[<recurr>],<silent><CR><LF>+CALA: <time>,<n2>,<type>,[<text>],[<recurr>],<silent>[...]]]`
AT+CALA=<time>[,<n>[,<type>[,<text>[,<recurr>[,<silent>]]]]]	OK

Parameter

<time>: string type value, the format is "yy/mm/dd,hh:mm:ss+zz", where characters indicate year (two last 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 -12...+13). E.g. 6th of May 2005, 22:10:00 GMT+2 hours equals to "05/05/06,22:10:00+08" Note: if <time> equals current date and time or is set to an earlier date, returns +CME ERROR: 21.

<n>, <n1>, <n2>: Integer type value Indicating the index of the alarm. Default is 1, in the range of 1~15.

<type>: Integer type value indicating the type of the alarm (e.g. sound, volume, LED); values and default is 0.

<text>: String type value indicating the text to be displayed when alarm time is reached; maximum length <tlength>

<tlength>: Integer type value indicating the maximum length of <text>

<recurr>: String type value indicating day of week for the alarm in one of the following formats: "<1..7>[,<1..7>[...]]" - Sets a recurrent alarm for one or more days in the week. The digits 1 to 7 corresponds to the days in the week, Monday (1),Sunday (7). Example: The string "1,2,3,4,5" may be used to set an alarm for all weekdays. "0" - Sets a recurrent alarm for all days in the week.

<rlength>: Integer type value indicating the maximum length of <recurr>

<silent>: Integer type value indicating if the alarm is silent or not. If set to 1 the alarm will be silent and the only result from the alarm is the unsolicited result code +CALV. If set to 0 the alarm will not be silent

Remark

- If you want set a recycle alarm,just import the time
- If don't input recur , it will consider it not a recyclable alarm
- If don't input index,the alarm index is 1 will be substitute
- String format of alarm: "yy/MM/dd,hh:mm:ss".
- Maximum number of alarms is 15. Seconds are not taken into account.

Example

AT+CALA="07/10/26,10:20:34",1,0,"alarm1"

<Note : Set alarm for Dec 26th, 2007 at 10:20:34 am, the alarm name is alarm1>

OK

<Note : the alarm is stored>

AT+CALA="18:02:10",2,0,"alarm2","2"

<Note : >

OK

<Note : the alarm is stored>

AT+CALA?

<Note : >

+CALA: "07/10/27,17:35:30",1,0,"alarm1","1,2,3,4,5,6,7" +CALA: "07/10/27,17:40:23",2,0,"alarm2","1,2,3,4,5,6,7" +CALA: "07/10/27,18:50:30",3,0,"alarm test","2,4,6,"" +CALA: "07/10/27,17:35:30",4,0,"alarm5","1,3,5,6,"" +CALA: "07/10/29,18:45:30",5,0,"222","1,3,5,""

OK

<Note : >

AT+CALA=?

<Note : >

+CALA: (1-15),(0),(32),(15)

OK

<Note : >

2.33 2.33 AT+VGR Receive Gain Selection

Description

This refers to the amplification by the TA of audio samples sent from the TA to the computer.

Command	Possible response
AT+VGR=?	+ VGR: (list of supported <n>s)
AT+VGR?	+ VGR:<n>
AT+VGR= <n>	OK

Parameter

<n>: range 5. . . 8. if value equal to 8, then receiver is mute..

Remark

Values larger than 128 indicate a larger gain than nominal. Values less than 128 indicate a smaller gain than nominal. The entire range of 0. . . 255 does not have to be provided. A value of zero implies the use of automatic gain control by the TA

Example

AT+ VGR =8

OK

AT+VGR?

+VGR: 7

OK

AT+VGR=?

+VGR: (5-8)

OK

2.34 2.34 AT+CLVL Loudspeaker Volume Level

Description

This command is used to select the volume of the internal loudspeaker of the MT.

Command	Possible response
AT+CLVL=?	`+CLVL: (list of supported <level>s)`
AT+ CLVL?	`+CLVL: <level>`
AT+CLVL= <level>	`OK`

Parameter

`<level>`:

integer type value with manufacturer specific range (smallest value represents the lowest sound level)

Example

AT+CLVL=5

OK

AT+CLVL?

+CLVL:5

OK

AT+CLVL=?

+CLVL: (5-8)

OK

2.35 2.35 AT+CMUT Mute Control

Description

This command is used to enable and disable the uplink voice muting during a voice call.

Command	Possible response
AT+CMUT=?	`+CMUT: (list of supported <n>s)`
AT+CMUT?	`+CMUT: <n>`
AT+CMUT= <n>	`OK`

Parameter

`<n>`:

0 mute off 1 mute on.

Example

AT+CMUT=1

OK

AT+CMUT?

+CMUT: 1

OK

2.36 2.36 AT+CCLK Real Time Clock

Description

This command stores the currently set parameters to a user defined profile in the non-volatile memory.

Command	Possible response
AT+CCLK?	`+CCLK: <time>`
AT+CCLK= <time>	`OK`

Parameter

`<time>`:

string type value, the format is "yy/mm/dd,hh:mm:ss+zz", where characters indicate year (two last 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 -12...+13). E.g. 6th of May 2005, 22:10:00 GMT+2 hours equals to "05/05/06,22:10:00+08" Note: if <time> equals current date and time or is set to an earlier date, returns +CME ERROR: 21.

Remark

If MT does not support time zone information then the three last characters of <time> are not returned by +CCLK? The format of <time> is specified by use of the +CSDF command The range of the year is from 2000 to 2070

Example

AT+CCLK="07/10/25,11:33:40+8"

OK

AT+CCLK?

+CCLK: "07/10/25,11:33:44+8"

OK

AT+CCLK=?

OK

2.37 2.37 AT+CALD Delete One Alarm

Description

Action command deletes an alarm in the MT

Command	Possible response
AT+CALD=?	+CALD: (list of supported <n>s)
AT+CALD= <n>	OK

Parameter

<n>:

Integer type value Indicating the index of the alarm. default is manufacturer specific

Example

AT+CALD=1

OK

AT+CALD=?

+CALD: 2 OK

2.38 2.38 AT+CBC Battery Charging / Discharging And Charge Control

Description

This command is used to set/list alarms or date/time in the ME.

Command	Possible response
AT+CBC=?	+CBC: (list of supported <bcs>s),(list of supported <bcl>s)
AT+CBC?	+CBC: <bcs>,<bcl><bcs>
AT+CBC	OK

Parameter

<bcl>: Defined values

<bcs>: 0 No charging adapter is connected 1 Charging adapter is connected 2 Charging adapter is connected, charging in progress 3 Charging adapter is connected, charging has finished 4 Charging error, charging is interrupted 5 False charging temperature, charging is interrupted while temperature is beyond allowed range

<bcl>: Battery capacity 0, 10,20, 30,40, 50,60, 70,80, 90,100 percent of remaining capacity (11 steps) 0 indicates that either the battery is exhausted or the capacity value is not available.

Example

AT+CBC?

+CBC: 0,100

OK

AT+CBC=?

+CBC: (0-5), (0,10,20,30,40,50,60,70,80,90,100)

OK

2.39 2.39 AT+CBCM Supply Information When Battery Capacity Changed

Description

This command control information display when battery capacity changed. But this command not support now

Command	Possible response
AT+CBCM=?	`+CBCM: list of supported <bNumber>s`
AT+CBCM	`+CBCM: <bNumber>`
AT+CBCM=<bNumber>	`OK`

Parameter

`<bNumber>`:

0 means the battery status event will not be reported initiatively 1 means the battery status event will be reported initiatively

Example

AT+CBC=1

OK

AT+CBC?

+CBC:0

OK

AT+CBC=?

+CBC: (0-1)

OK

2.40 2.40 AT+CMER Mobile Termination Event Reporting

Description

This command set or query the sending mode of unsolicited result codes from TA to TE.

Command	Possible response
AT+CMER=?	`+CMER: (list of supported <mode>s),(list of supported <keyp>s),(list of supported <disp>s),(list of supported <ind>s),(list of supported <bfr>s)`
AT+CMER?	`+CMER: <mode>,<keyp>,<disp>,<ind>,<bfr>`
AT+CMER=[<mode>[,<keyp>[,<disp>[,<ind>[,<bfr>]]]]]	OK

Parameter

<mode>: 0 buffer unsolicited result codes in the TA; if TA result code buffer is full, codes can be buffered in some other place or the oldest ones can be discarded 1 discard unsolicited result codes when TA TE link is reserved (e.g. in on line data mode); otherwise forward them directly to the TE 2 buffer unsolicited result codes in the TA when TA TE link is reserved (e.g. in on line data mode) and flush them to the TE after reservation; otherwise forward them directly to the TE 3 forward unsolicited result codes directly to the TE; TA TE link specific inband technique used to embed result codes and data when TA is in on line data mode

<keyp>: 0 no keypad event reporting 1 keypad event reporting using result code +CKEV: <key>,<press>. <key> indicates the key (refer IRA values defined in table in subclause "Keypad control +CKPD") and <press> if the key is pressed or released (1 for pressing and 0 for releasing). Only those key pressings, which are not caused by +CKPD shall be indicated by the TA to the TE. NOTE 1: When this mode is enabled, corresponding result codes of all keys currently pressed should be flushed to the TA regardless of <bfr> setting. 2 keypad event reporting using result code +CKEV: <key>,<press>. All key pressings shall be directed from TA to TE. NOTE 2: When this mode is enabled, corresponding result codes of all keys currently pressed should be flushed to the TA regardless of <bfr> setting.

<disp>: 0 no display event reporting 1 display event reporting using result code +CDEV: <elem>,<text>. <elem> indicates the element order number (as specified for +CDIS) and <text> is the new value of text element. Only those display events, which are not caused by +CDIS shall be indicated by the TA to the TE. Character set used in <text> is as specified by command Select TE Character Set +CSCS 2 display event reporting using result code +CDEV: <elem>,<text>. All display events shall be directed from TA to TE. Character set used in <text> is as specified by command Select TE Character Set +CSCS

<ind>: 0 no indicator event reporting 1 indicator event reporting using result code +CIEV: <ind>,<value>. <ind> indicates the indicator order number (as specified for +CIND) and <value> is the new value of indicator. Only those indicator events, which are not caused by +CIND shall be indicated by the TA to the TE 2 indicator event reporting using result code +CIEV: <ind>,<value>. All indicator events shall be directed from TA to TE

<bfr>: 0 TA buffer of unsolicited result codes defined within this command is cleared when <mode> 1...3 is entered 1 TA buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1...3 is entered (OK response shall be given before flushing the codes)

Example

AT+CMER=3,0,0,2

OK

+CIEV:battchg,5

+CIEV:signal,99

AT+CMER =?

+CMER:(3),(0),(0),(0,2)

OK

AT+CMER?

+CMER:3,0,0,2

OK

2.41 2.41 AT+CEER Extended Error Report

Description

This command causes the TA to return one or more lines of information text <report>, determined by the MT manufacturer, which should offer the user of the TA an extended report of the reason for - the failure in the last unsuccessful call setup (originating or answering) or in call modification; - the last call release; - the last unsuccessful GPRS attach or unsuccessful PDP context activation; - the last GPRS detach or PDP context deactivation. Typically, the text will consist of a single line containing the cause information given by GSM/UMTS network in textual format.

Command	Possible response
AT+CEER=?	OK
AT+CEER	+CEER: <report>

Parameter

<report>: the total number of characters, including line terminators, in the information text shall not exceed 2041 characters. Text shall not contain the sequence 0<CR> or OK<CR>

Example

AT+CEER = ?

OK

ATD13501275915;

OK

BUSY

AT+CEER

+CEER: CALL RELEASED, NETWORK SENT UDUB TO ME

OK

2.42 2.42 AT+CPAS Phone Activity Status

Description

This command returns the activity status <pas> of the MT. It can be used to interrogate the MT before requesting action from the phone. Refer subclause 9.2 for possible <err> values.

Command	Possible response
AT+CPAS=?	`+CPAS: (list of supported <pas>s)`
AT+CPAS	`+CPAS: <pas>`

Parameter

<pas>: 0 ready (MT allows commands from TA/TE) 1 unavailable (MT does not allow commands from TA/TE) 2 unknown (MT is not guaranteed to respond to instructions) 3 ringing (MT is ready for commands from TA/TE, but the ringer is active) 4 call in progress (MT is ready for commands from TA/TE, but a call is in progress) 5 asleep (MT is unable to process commands from TA/TE because it is in a low functionality state) also all other values below 128 are reserved by the present document.

Example

---

at+cpas=?

+cpas:0,1,3,4

Ok

At+cpas

+cpas:0

ok

2.43 2.43 AT+CTTS TTS Command

Description

This command is used to play audio stream.

Command	Possible response
AT+CTTS=?	`+CTTS: (list of supported <pas>s)`
AT+ CTTS=<mode>,"text"	`+ CTTS: < CTTS >`

Parameter

<pas>: 0 stop play 1 start play

Example

At+ctts=?

- ctts(0-2)

Ok

At+ ctts=2,”abcd”

ok

2.44 2.44 AT+CSCLK Set Low Clock Mode

Description

This command is used to set low clock mode.

Command	Possible response
AT+CSCLK=?	+ CSCLK: (list of supported <pas>s)
AT+ CSCLK =<n>	+ CSCLK: < CSCLK >

Parameter

<pas>: 0 Disable slow clock 1 Enable slow clock mode,use DTR to control slow clock , when DTR is set high, enable slow clock, otherwise disable slow clock. 2 Set slow clock mode automaticlly , disable slow clock when uart recieve or send data,otherwise enable slow clock.

Example

At+CSCLK=?

- CSCLK:(0,1,2)

OK

At+ CSCLK=1

OK

2.45 2.45 AT+CAM camera command

Description

This command is used to use camera capture image

Command	Possible response
AT+CAM=?	+CAM: (list of supported <pas>s)
AT+ SRD=<mode>	+CAM: < mode>

Parameter

<pas>: 0 open camera 1 capture image 2 send back image date 3 close camera

Example

---

at+cam=?

- cam(0-3)

Ok

At+ cam=0

Ok

At+ cam=1

Ok

At+ cam=2

Ok

At+ cam=3

Ok

2.46 2.46 AT+SRD Mic Record Command

Description

This command is used to record MIC sound

Command	Possible response
AT+SRD=?	+SRD: (list of supported <pas>s)
AT+ SRD=<mode>	+SRD: < mode>

Parameter

2 start record 3 stop record 8 play record file 9 buffer play 10 stop buffer play

Example

At+srd=?

- srd(2-3-8)

Ok

At+ srd=2

Ok

At+ srd=3

Ok

At+ srd=8

Ok

2.47 2.47 AT+IFC DTE-DCE local flow control

Description

This comomand is used to control DTE_DCE local flow

Command	Possible response
AT+IFC=?	+IFC: <rxfc>,<txfc> OK
AT+IFC=<rxfc>,<txfc>	OK
AT+IFC?	+IFC: (0,2),(0,2) OK

Parameter

<rxfc>:

0:disable rx flow control
2:enable rx flow control

<txfc>:

0:disable tx flow control
2:enable tx flow control

Example

AT+IFC=?

+IFC: 2,2

Ok

AT+IFC=0,0

Ok

AT+IFC?

+IFC: (0,2),(0,2)

Ok

2.48 2.48 AT+OTP do OTP

Description

This comomand is used to do OTP

Command	Possible response
AT+OTP=<n>	OK
AT+OTP=<n>,1	OK

Parameter

<n>: otp type

Example

AT+OTP=2

OK

AT+OTP=3,1

OK

2.49 2.49 AT+SFUN Set Phone Functionality

Description

Set command currently can only be used to switch off and on the CSW platform.

Command	Possible response
AT+SFUN=?	+SFUN : (list of supported <fun>s),(list of supported <rst>s)
AT+SFUN?	+SFUN:<fun>
AT+SFUN=<fun>[,<rst>]	OK

Parameter

<value>:

<fun>:

- 0 Minimum functionality
- 1 Full functionality
- 4 Disable phone both transmit and receive RF circuits

<rst>

- 0 Do not reset the MT before setting it to <fun> power level.
- 1 Reset the MT before setting it to <fun> power level.

NOTE: this shall be always default when <rst> is not given.

Remark

Current, only Parameter 0 and 1 is support. When <fun> equals to 0 and 1, the second parameter <rst> is ignored. For CSW only do the de-registering when switch off, when parameter is set by 0 or 1, CSW will operate the network job independent. If AT modem can't register the network when parameter is set to 5, please check pin1 status.

Example

AT+SFUN=0

OK

AT+SFUN?

+SFUN:0

OK

2.50 2.50 AT+CIND Set if the indication event send to ate

Description

Set if the indication event send to ate

Command	Possible response
AT+CIND=?	`+CIND: (\"battchg\",(0-5)), (\"signal\",(0-5)),(\"service\", (0-1)),(\"sounder\",\",(0-1)), (\"message\",(0-1)),(\"call\",(0-1)), (\"roam\",(0-1)),(\"smsfull\",(0-1))`
AT+CIND?	`+CIND:BatteryCharge, Signal, Service, Sounder, Message,Call, Roam,Smsfull`
AT+CIND=[<ind>[,<ind>[,...]]]	OK ERROR

Parameter

`<value>`:

`<ind>`:if the indication event send to ate 0 value 0 means that the indicator is off 1 value 1 means that indicator is on

Remark

Example

AT+CIND=1,1,1,0,1,1,1,1

OK

AT+CIND?

+CIND:5,0,0,0,1,0,0,0

OK

2.51 2.51 AT+NVSETRSRPOFFSET Set rsrpoffset

Description

Command	Possible response
AT+NVSETRSRPOFFSET=<x>	OK

Parameter

<x>:

- x value range 0~100, the true value is x-50

Remark

AT+NVSETRSRPOFFSET=0 sets rsrpoffset to -50 AT+NVSETRSRPOFFSET=50 set rsrpoffset to 0 AT+NVSETRSRPOFFSET=100 set rsrpoffset to 50

Example

CHAPTER

THREE

3 SIM/PBK COMMANDS

Contents

3.1 3.1 AT+SIM SIM status checking

Description

Set command to check and return the type and status of SIM specify by user.

Command	Possible response
AT+SIM=?	+SIM:(0-n)
AT+SIM?	ERROR
AT+SIM=<slot id>	+<type>:<status> OK

Parameter

<n>:

integer type, maximum slot identification.

<slot id>:

integer type, slot identification.

<type>:

string type, it should be “SIM” or “USIM” according to the SIM type.

<status>:

ABSENT there is no SIM card in the slot.
NORMAL the SIM in the slot is normal SIM card.
TEST the SIM in the slot is test SIM card.
ABNORMAL the SIM in the slot is abnormal SIM card.

Example

AT+SIM=?

+SIM = (0 - 1)

OK

AT+SIM=0

+USIM: NORMAL

OK

AT+SIM=1

+SIM: ABSENT

OK

AT+SIM?

+CME ERROR: 53

3.2 3.2 AT+SIMIF Request SIM type

Description

Execution command return the type of SIM.

Command	Possible response
AT^SIMIF=?	^SIMIF:<1>,<0,1>
AT^SIMIF?	^SIMIF:1,<value>
AT^SIMIF=1,<mode>	^SIMIF: <type> OK

Parameter

<value>:

0: SIM.
1: UICC.

<mode>:

0 value mod.
1 text mode.

<type>:

if mode == 0, SIM card return 0, USIM card return 1.
if mode == 1, SIM card return “SIM”, USIM card return “UICC”.

Example

AT^SIMIF=?

^SIMIF: (1), (0,1)

OK

AT^SIMIF?

^SIMIF: 1,0

OK

AT^SIMIF=1,0

^SIMIF: SIM

OK

3.3 3.3 AT+CCID Request ICC Identification

Description

Execution command causes the TA to return <ICCID> in the SIM card.

Command	Possible response
AT+CCID=?	ERROR
AT+CCID?	ERROR
AT+CCID	+CCID:<ccid> OK

Parameter

<ccid>:

string type, the ccid read from SIM card.

Example

AT+CCID

+CCID: 898601061401xxxxxxxx

OK

AT+CCID=?

+CME ERROR: 53

AT+CCID?

+CME ERROR: 53

3.4 3.4 AT+CPIN Pin Authentication

Description

Set command sends to the MT a password which is necessary before it can be operated (SIM PIN, SIM PUK, PH SIM PIN, etc.).

Command	Possible response
AT+CPIN =?	OK
AT+CPIN?	+CPIN: <code>
AT+CPIN=<pin>[,<newpin>]	OK

Parameter

<pin>, <newpin>:

string type values

<code>:

values reserved by the present document:

- READY MT is not pending for any password
- SIM PIN MT is waiting UICC/SIM PIN to be given
- SIM PUK MT is waiting UICC/SIM PUK to be given
- SIM PIN2 MT is waiting active application in the UICC (GSM or USIM)or SIM card PIN2 to be given (this <code> is recommended to be returnedonly when the last executed command resulted in PIN2 authentication failure (i.e. +CME ERROR: 17); if PIN2 is not entered right after the failure, it is recommended that MT does not block its operation)
- SIM PUK2 MT is waiting active application in the UICC (GSM or USIM)or SIM card PUK2 to be given (this <code> is recommended to be returned only when the last executed command resulted in PUK2 authentication failure (i.e. +CME ERROR: 18); if PUK2 and new PIN2 are not entered right after the failure, it is recommended that MT does not block its operation)

Remark

Commands which interact with MT that are accepted when MT is pending SIM PIN, SIM PUK, or PH SIM are: +CGMI, +CGMM, +CGMR, D112; (emergency call), +CPAS, +CFUN, +CPIN, +CDIS (read and test command only), and +CIND (read and test command only). Notes: After input three times wrong PIN, SIM card will be locked!

Example

AT+CPIN=”1234”

Ok

AT+CPIN=”5678”

+CME ERROR: 3

AT+CPIN=”00000000”,”2134”

+CME ERROR: 16

AT+CPIN=”123456578”,”1234”

OK

AT+CPIN?

+CPIN: READY

3.5 3.5 AT^CPINC Total Times Of Access The Sim Card

Description

Remaining times of access the sim card

Command	Possible response
AT^CPINC=?	^CPINC: PIN1&PIN2: (1-3), PUK1&PUK2: (1-10)
AT^CPINC	^CPINC: <rest time>

Example

AT^CPINC

^CPINC:3,10,3,10

OK

3.6 3.6 AT+CPIN2 Pin2 Authentication(for Sim)

Description

+CPIN2 controls network authentication of the MT.

Command	Possible response
AT+CPIN2=?	OK
AT+CPIN2?	+CPIN2: <code>
AT+CPIN2=<pin>[,<newpin>]	OK

Parameter

<pin>:

Password (string type), usually SIM PIN2 or, if requested, SIM PUK2

<new pin>:

If the requested code was SIM PUK2: new password (PIN2).

Example

AT+CPIN2=?

OK

AT+CPIN2?

+CPIN2: READY

OK

AT+CPIN2=”2345”

OK

3.7 3.7 AT+CLCK Facility Lock

Description

This command be used to lock or unlock some functions of the list that be supported by this ME.

Command	Possible response
AT+CLCK=?	`+CLCK: (list of supported <fac>s)`
AT+CLCK=<fac>,<mode>[,<passwd>[,<classx>]]	`+CLCK: <status>[,<class1>[<CR><LF>+CLCK:<status>, <class2>[...]]`

Parameter

`<fac>`:

Type: string type Meaning: values reserved by the present document: * “CS” CNTRL (lock Control surface (e.g. phone keyboard)) * “AO” BAOC (Barr All Outgoing Calls) (refer 3GPP TS 22.088 [6] clause 1) * “OI” BOIC (Barr Outgoing International Calls) (refer 3GPP TS 22.088 [6] clause 1) * “OX” BOIC exHC (Barr Outgoing International Calls except to Home Country) (refer 3GPP TS 22.088 [6] clause 1) * “FD” SIM card or active application in the UICC (GSM or USIM) fixed dialling memory feature (if PIN2

`<status>`:

Type: integer type Meaning: 0 not active 1 active

`<passwd>`:

Type: string type; Meaning: shall be the same as password specified for the facility from the MT user interface or with command Change Password +CPWD

`<classx>`:

Type: integer type Meaning: is a sum of integers each representing a class of information (default 7): 1 voice (telephony) 2 data (refers to all bearer services; with <mode>=2 this may refer only to some bearer service if TA does not support values 16, 32, 64 and 128) 4 fax (facsimile services) 8 short message service 16 data circuit sync 32 data circuit async 64 dedicated packet access 128 dedicated PAD access

Example

AT+CLCK=”SC”,1,”1234”

OK

Require lock status

AT+CLCK=”SC”,2

+CLCK: 1

OK

<Restart system>

AT+CPIN?

+CPIN: SIM PIN

OK

AT+CPIN=”1234”

OK

AT+CLCK=”SC”,0,”1234”

OK

< Restart system >

AT+CPIN?

+CPIN: READY

OK

<.FD: SIM fixed dialing memory, NO support for the moment > <Call barring>

AT+CLCK=”OI”,1,”0000”, 255

OK

ATD13560243602;

NO CARRIER

AT+CLCK=”OI”,2,”0000”

+CLCK: 1,1

+CLCK: 1,2

+CLCK: 1,4

OK

AT+CLCK=”AC”,0,”0000”,3

OK

3.8 3.8 AT+CPWD Change Password

Description

This command is used to change password [pin/pin2]

Command	Possible response
AT+CPWD=?	+CPWD: list of supported (<fac>,<pwdlength>)
AT+CPWD=<fac>,<oldpwd>,<newpwd>	+CPIN: <code>
AT+CPIN=<pin>[,<newpin>]	OK

Parameter

<fac>:

Type: string type Meaning: “P2” SIM PIN2 refer Facility Lock +CLCK for other values

<oldpwd>, <newpwd>:

Type: string type; Meaning: <oldpwd> shall be the same as password specified for the facility from the MT user interface or with command Change Password +CPWD and <newpwd> is the new password; maximum length of password can be determined with <pwdlength>

<pwdlength>:

Type: integer type Meaning: maximum length of the password for the facility

Example

AT+CPWD=”SC”,”3333”,”1234”

Ok

AT+CPIN=”5678”

+CME ERROR: 3

AT+CPINC

+CPINC: 2

OK

AT+CPWD=”SC”,”1234”,”0000”

OK

AT+CPWD=”P2”,”1111”,”1234”

+CME ERROR: 16

AT+CPINC

+CPINC: 2

OK

AT+CPWD=”P2”,”0000”,”1234”

OK

3.9 3.9 AT+QSPN Request Service Provider Name

Description

Execution command return Service Provider Name.

Command	Possible response
AT+QSPN=?	OK
AT+QSPN?	OK
AT+QSPN	+QSPN:<display mode> ,<spn> OK

Parameter

<display mode>:

0 doesn’t display PLMN
1 display PLMN

<spn>:

string type, Service Provider Name.

Example

AT+QSPN

+QSPN: 0, Banglalink

OK

AT+QSPN?

OK

3.10 3.10 AT+QGID Request SIM GID

Description

Execution command return SIM GID.

Command	Possible response
AT+QGID=?	OK
AT+QGID?	OK
AT+QGID	+QGID: <gid1>,<gid2> OK

Parameter

<gid1>,<gid2>: Group Identifier

Example

AT+QGID

+QGID: FFFFFFFF,FFFFFFFF

OK

AT+QGID?

OK

3.11 3.11 AT+CCHO not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

3.12 3.12 AT+CCHC not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

3.13 3.13 AT+CGLA not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

3.14 3.14 AT+CRSM Restricted Sim Access

Description

This command support limited access to SIM database.

Command	Possible response
AT+CRSM=?	OK
AT++CRSM=<command>[,<fileid>[,<P1>,<P2>,<P3>[,<data>]]]	+CRSM: <sw1>,<sw2>[,<response>]

Parameter

<command>:

following commands are used for SIM card.
176 READ BINARY
178 READ RECORD
192 GET RESPONSE
214 UPDATE BINARY
220 UPDATE RECORD
242 STATUS

commands above plus one are used for USIM card,e.g. read an record of USIM, the command is 179.
All other values are reserved

<fileid>:

for SIM card, it is integer type, e.g. read ADN fileid is 28474(6F3A in hex).
for USIM card, it is string type, e.g. read ADN fileid is 5F3A4F3A(5F3A is the path, 4F3A is the file id).
this is the identifier of a elementary datafile on SIM. Mandatory for every command except STATUS

<P1>, <P2>, <P3>:

integer type; parameters passed on by the MT to the SIM. These parameters are mandatory for every command, except GET RESPONSE and STATUS. The values are described in GSM 11.11 [28]

<data>:

information which shall be written to the SIM (hexadecimal character format; refer +CSCS)

<SW1>, <SW2>:

integer type; information from the SIM about the execution of the actual command. These parameters are delivered to the TE in both cases, on successful or failed execution of the command

<response>:

response of a successful completion of the command previously issued (hexadecimal character format; refer +CSCS). STATUS and GET RESPONSE return data, which gives information about the current elementary datafield. This information includes the type of file and its size (refer GSM 11.11 [28]). After READ BINARY or READ RECORD command the requested data will be returned. <response> is not returned after a successful UPDATE BINARY or UPDATE RECORD command

Example

AT+CRSM=192,28433,0,0,15

+CRSM:144,0,621E82054221001C0283026F40A503

OK

AT+CRSM=179,”5F3A4F3A”,1,4,28 //read ADN of USIM

+CRSM:144,0,616263FFFFFFFFFFFFFFFFFFFFFF038121F3FFFFFFFFFFFFFFFFFFFF

OK

3.15 3.15 AT+CRSML Read records of EF files on (U)SIM

Description

This command read some records of certain files on (U)SIM.

Command	Possible response
AT+CRSML=?	`OK`
AT++CRSML=<fileid>, <start record>, <count>	`+CRSML: <record1\n> <record2\n> ... <recordn\n>`

Parameter `<fileid>`:

integer type; This is the identifier of a elementary datafile on SIM.

`<start record>`:

integer type; First record read from.

`<count>`:

integer type; The number of records read from (U)SIM.

`<record1\n>, <record2\n> ... <recordn\n>`:

string type; record data from (U)SIM.

Example

AT+CRSML=28474, 1, 2 //read SIM ADN, 28474 is 6F3A(ADN EF ID) in decimal base

+CRSML:144,1,616263FFFFFFFFFFFFFFFFFFFFFF038121F3FFFFFFFFFFFFFFFFFFFF
+CRSML:144,2,FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF

OK AT+CRSML=1597656890, 1, 2 //read USIM ADN, 1597656890 is 5F3A4F3A(ADN and PATH ID) in decimal base +CRSML:144,1,616263FFFFFFFFFFFFFFFFFFFFFF038121F3FFFFFFFFFFFFFFFFFFFF
+CRSML:144,2,FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF

OK

3.16 3.16 AT+CNUM Subscriber Number

Description

The MS ISDN related to the subscriber.

Command	Possible response
AT+CNUM=?	OK
AT+CNUM	+CNUM: [<alpha1>],<number1>,<type1>[<CR><LF>]

Parameter

<alphax>: optional alphanumeric string associated with numberx used character set should be the one selected with command Select TE Character Set +CSCS

<numberx>: string type phone number of format specified by <typex>

<typex>: type of address octet in integer format

<text>: field of maximum length <tlength>; character set as specified by command +CSCS. The display of text depending to the storage format in the sim card. If we store the pbk entry with ucs2 format, we show Chinese string here, otherwise, we show NON-Chinese string. We do not care about charsets, it is decided by command +CSCS setting when we store them.

Example

AT+CNUM

+CNUM: “john”,”111”,129 (non-Chinese string) (with non-ucs2 of AT+CSCS setting as pbk storing)

+CNUM: “XXXXX”,”34”,129 (Chinese string) (with ucs2 of AT+CSCS setting as pbk storing)

Ok

3.17 3.17 AT+CPBR Read Current Phonebook

Description

Read phonebook entries in location number range <index1> <index2> form the current phonebook memory storage selected. If the <index2> is omitted, only the entry with index of <index1> is returned if exists.

Command	Possible response
AT+CPBR=?	+CPBR: (support<index>s),[<nlength>],[<tlength>]
+CPBR=<index1>[,<index2>]	+CPBR: <index1>,<number>,<type>,<text>[[...]<CR><LF>+CPBR: <index2>,<number>,<type>,<text>]]

Parameter

<index1>, <index2>:

Integer type values in the range of location numbers of phonebook memory

<number>:

Type: string type Meaning: phone number of format <type>

<type >:

Type: integer type Meaning: type of address octet in integer format (refer GSM 04.08 [8] sub clause 10.5.4.7) ; default 145 when dialing string includes international access code character "+", otherwise 129

<text >: Type: string type Meaning: character set as specified by command +CSCS. The display of text depending to the storage format in the sim card. If we store the pbk entry with ucs2 format, we show Chinese string here, otherwise, we show NON-Chinese string. We do not care about charsets, it is decided by command +CSCS setting when we store them.

<nlength>: Type: integer type Meaning: value indicating the maximum length of field <number>

<tlength>: Meaning: field of maximum length <tlength>

Remark

- If <index2> is smaller than <index1>, error should be returned.
- When DTE character set is "GSM" (set by +CSCS command), the target phonebook entry will be output in an (big-endian) UCS2 hex string form if it is not a pure ASCII (single byte encoding) string. If the DTE character set is "UCS2" it will always be output in UCS2 hex string form.

Example

AT+CPBR=1

+CPBR: 1,"111",129,"linda"

OK

AT+CPBR=2

+CPBR: 2,"+ 999999",145,"XXXXX" (Chinese string)

OK

3.18 3.18 AT+CPBS Select Phonebook Memory Storage

Description

Select a certain memory storage.

Command	Possible response
AT+CPBS=?	+CPBS: (list of supported <storage>s)
AT+CPBS?	+CPBS: <storage>[,<used>,<total>]
AT+CPBS=<storage>	OK

Parameter

<storage>: "SM" SIM/UICC phonebook "ON" active application in the UICC (GSM or USIM) or SIM card (or MT) own numbers (MSISDNs) list (reading of this storage may be available through +CNUM also) "DC" MT dialled calls list (+CPBW may not be applicable for this storage) "EN" active application in the UICC (GSM or USIM) or SIM card (or MT) emergency number (+CPBW is not be applicable for this storage) "FD" active application in the UICC (GSM or USIM) or SIM card fixdialling phonebook "LD" active application in the UICC (GSM or USIM) or

SIM card last dialling phonebook “MC” MT missed (unanswered received) calls list (+CPBW may not be applicable for this storage) “ME” MT phonebook “MT” combined MT and SIM/UICC phonebook “RC” MT received calls list (+CPBW may not be applicable for this storage) “TA” TA phonebook

<password>: string type value representing the PIN2-code required when selecting PIN2-code locked <storage>s above, e.g. “FD”.

<used>: integer type value indicating the number of used locations in selected memory

<total>: integer type value indicating the total number of locations in selected memory

Remark

- If we want to write to “FD” pbk, the pin2-code are required, otherwise operation is forbidden.
- Once we input pin2-code with “AT+CPIN2” or “AT+CLCK” or others operation related with inputing pin2-code, the pin2-code will keep active and will be lost when system restart.

Example

AT+CPBS=?

+CPBS: (“SM”,”ON”,”FD”,”LD”,”ME”)

OK

AT+CPBS?

+CPBS: “ON”,2,2

OK

AT+CPBS=”SM”

OK

AT+CPBS?

+CPBS: “SM”,1,250

OK

3.19 3.19 AT+CPBF Find Phonebook Entries

Description

The command returns phonebook entries with alphanumeric fielda starting with a given string. The AT+CPBF=”” command can be used to display all phonebook entries sorted in alphabetical order. This command is not allowed for “LD”,”RC”,”MC”,”SN” phonebooks and for the “EN” phonebook, which does not contain alphanumeric fields. It is possible to use this command with UCS2 strings. If a wrong UCS2 format is entered, the string is considered as an ASCII string..

Command	Possible response
AT+CPBF=?	`+CPBF: [<nlength>],[<tlength>]`
AT+CPBF=<findtext>	`+CPBF: <index1>,<number>,<type>,<text>[[...]<CR><LF>+CBPF: <index2>,<number>,<type>,<text>]]`

Parameter

<index1>, <index2>: Integer type values in the range of location numbers of phonebook memory

<number>: Type: string type Meaning: phone number of format <type>

<type>: Type: integer type Meaning: type of address octet in integer format (refer GSM 04.08 [8] sub clause 10.5.4.7) ; default 145 when dialing string includes international access code character "+", otherwise 129

<findtext>, <text>: Type: string type Meaning: character set as specified by command +CSCS. If we want to find Chinese string in the all pbk entry, we must set charset value with command +CSCS of "ucs2", otherwise we find non-Chinese string with command +CSCS of "non-ucs2". And now the ucs2 supported in our environment is big-ending Unicode, we must input big-ending Unicode string in the field if setting value of cscs is equal to "ucs2".

< nlength >: Type: integer type Meaning: value indicating the maximum length of field <number>

<tlength>: Type: integer type Meaning: value indicating the maximum length of field <text>

Remark

- If we want to write to "FD" pbk, the pin2-code are required, otherwise operation is forbidden.
- Once we input pin2-code with "AT+CPIN2" or "AT+CLCK" or others operation related with inputing pin2-code, the pin2-code will keep active and will be lost when system restart.

Example

AT+CPBF=?

+CPBF: 20,14

OK

AT+CSCS="non-ucs2 value"

OK

AT+CPBF="John"

+CPBF:3,"123434543",129," John"

OK

AT+CSCS="UCS2"

OK

AT+CPBF="XXXXX"

+CPBF:5,"+861382253",145,"XXXXX"(Chinese string)

OK

(note1: with ucs2 of AT+CSCS setting when we find Chinese storing) (note2: "XXXXX" = uncode big-ending string to input)

(if we found, "XXXXX" = local language, here is Chinese string)

3.20 3.20 AT+CPBW Write Phonebook Entries

Description

Writes phonebook entry in location number <index> in the current phonebook memory storage selected. if there is no index parameter in the command line, the record will be written to the free location.

If the current phonebook storage is "ON", modification is allowed, but deleting entry is forbidden.We can add entries to the "ON" phonebook when it have free location, otherwise add entry to "ON" is forbidden. If the current phonebook storage is "LD", deleting is allowed, but adding or modification entry is forbidden. If the current phonebook storage is "FD", which is locked by pin2, executing the command may be returned ERROR or relevant CME error. To continue the operation, please enter the relevant pin specified by "+cpin?". Input pin2, deleting or adding or modification entry is allowed. If the current phonebook storage is "SM", deleting or adding or modification entry is allowed.

Command	Possible response
AT+CPBW=?	`+CPBW: (list of supported <index>s),[<nlength>], (list of supported <type>s),[<tlength>]`
AT+CPBW=[<index>],<number> [,<type> [,<text>]]	`OK`

Parameter

`<pin>, <newpin>`:

<index>: Type: integer type Meaning: values in the range of location numbers of phonebook memory

<number>: Type: string type Meaning: phone number of format <type> Note: valid phone numbe chars are as follows: 0-9,*,#,+(+only can be the first position)

<type>: Type: integer type Meaning: type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7) ; default 145 when dialling string includes international access code character "+", otherwise 129

<text>: Type: string type Meaning: character set as specified by command +CSCS. If we want to find Chinese string in the all pbk entry, we must set charset value with command +CSCS of "ucs2", otherwise we find non-Chinese string with command +CSCS of "non-ucs2". And now the ucs2 supported in our environment is big-ending Unicode, we must input big-ending Unicode string in the field if setting value of cscs is equal to "ucs2".

<nlength>: Type: integer type Meaning: value indicating the maximum length of field <number>

<tlength>: Type: integer type Meaning: value indicating the maximum length of field <text>,counting in single byte char. Note: if phonebook characterset is "HEX", the supported UCS2 char count is smaller than that specified by <tlength> by 1.This is because UCS2 char storing flag occupies 1 byte.

Remark

- AT+CPBW=[<index>],<number>[,<type>[,<text>]],the number setting NULL is forbidden.
- Executed AT+CLCK and "FD" is locked, then operation of "SM" phonebooks are forbidden, but operation of other phonebooks is allowed.

Example

AT+CPBW=?

(query storage information of cpbw)

+CPBW: (1-250),20,(129,145,161),14

OK

AT+CSCS=”non-ucs2 value”

OK

AT+CPBW=1, “123”,129, “Linda”

OK

(note1:with non-ucs2 of AT+CSCS setting when we write non-Chinese storing) (note2: “non-ucs2 value” = “GSM”,or “HEX”,or “PCCP936”)

AT+CSCS=” UCS2”

OK

AT+CPBW=1,”+123”,145, “XXXXX”

OK

(note1: with ucs2 of AT+CSCS setting when we write Chinese storing) (note2: “XXXXX” = uncode big-ending string to input)

AT+CPBW=1

(not care about AT+CSCS setting when delete some one pbk entry whether it is Chinese string or not)

OK

CHAPTER

FOUR

4 CALL CONTROL COMMANDS

Contents

4.1 4.1 ATA Answer A Call

Description

This command is used to answer an incoming call.

Syntax

Command	Possible response
ATA	Success: OK Fail: ERROR NO CARRIER
Reference:ITU-T Recommandation V.25 ter	

Unsolicited Result Codes

URC1 RING: URC2 CIEV: SOUNDER 1 CIEV: CALL 1

Parameter

NONE:

Remark

This command should be used only when there is one call. When there are several calls, please use the AT+CHLD to answer a new call.

Example

The following examples show the typical application for this command

Command	Possible response
RING<incoming call> ATA	CONNECT

4.2 4.2 ATD Make A Call

Description

This command is used to make an outgoing call. The length of dial number is less than 20.

Syntax

Command	Possible response
ATD<number>;	Success: When the call is in progress: OK and NO ANSWER or NO CARRIER or //connection be released NO DAILTONE or BUSY Fail: ERROR
Reference:ITU-T Recommandation V.25 ter	

Unsolicited Result Codes

URC1
CONNECT:
URC2
CIEV: SOUNDER 1
CIEV: CALL 1

Parameter

<Number>:
Dialing digits, include 1,2,3,4,5,6,7,8,9,0,*,#,+,A,B,C,. . . .

Remark

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK CONNECT
AT+CLCC;	+CLCC: 1,0,0,0,0,”10086”,129 OK OK NO CARRIER
ATD112;	<Only an emergency call can be made when we do the test without SIM card. “NO CARRIER” will be returned when you press the “CANCEL”

4.3 4.3 AT+DLST Redial Last Mo Call

Description

Redial last outgoing call.

Syntax

Command	Possible response
AT+DLST	Success: When the call is in progress: OK and NO ANSWER or NO CARRIER or //connection be released NO DAILTONE or BUSY Fail: ERROR
Reference MRD document	

Unsolicited Result Codes

URC1 CONNECT:

Parameter

NONE:

Remark

The usage of the command is the same as the ATD. The other command following this command in the same line is omitted.

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK CONNECT
ATH	OK
AT+DLS	OK CONNECT

4.4 4.4 ATH Disconnect Existing Call

Description

Hang up all existing connected calls, including active, waiting and hold calls.

Syntax

Command	Possible response
ATH	Success: OK Fail: ERROR
Reference ITU-T V.25 ter(6.2.7): Result code suppression	

Unsolicited Result Codes

URC1 CIEV: SOUNDER 0 CIEV: CALL 0

Parameter

NONE:

Remark

When the link is established or ringing, the command will get OK. But for the establishing, the command will get error.

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK CONNECT
ATH	OK

4.5 4.5 AT+CHUP Hang Up All Existing Connected Calls

Description

Hang up all existing connected calls, including active, waiting and hold calls.

Syntax

Command	Possible response
Test command AT+CHUP=?	OK
Set command AT+CHUP	Success: OK Fail: ERROR
Reference 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

URC1 CIEV: SOUNDER 0 CIEV: CALL 0

Parameter

NONE:

Remark

This command implements the same behavior as ATH.

Example

The following examples show the typical application for this command.

Command	Possible response
<there are two connecting calls, one is active and the other is held> **AT+CHUP** <Both of the call was hang up>	OK

4.6 4.6 AT+CHLD Call Hold And Multiparty

Description

This command deal with call held, retrieve, multiparty and hang up functions and so on.

Syntax

Command	Possible response
Test command AT+CHLD=?	OK
Set command AT+CHUP=<n>	Success: OK Fail: ERROR
Reference 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

URC1 CSSU: <code2>,

Parameter

<n>:

0: Releases all held calls or sets User Determined User Busy (UDUB) for a waiting call.

1: Releases all active calls (if any exist) and accepts the other (held or waiting) call [waiting call is the first].

1X: Releases a specific call X it can be in active, hold or waiting state.

2: Places all active calls (if any exist) on hold and accepts the other (held or waiting) call.

2X: Places all active calls on hold except call X with which communication shall be supported.

3: Adds a held call to the conversation.

<code2>:

2: call has been put on hold (during a voice call).

3: call has been retrieved (during a voice call).

4: multiparty call entered (during a voice call).

Remark

The multiparty call has the MAX connection is 5, at the same time, the phone can also has a waiting call.

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK
RING	
+CCWA: “13501275915”,161,1,,255	
AT+CHLD=0	OK
AT+CHLD=2	OK
AT+CLCC	+CLCC: 1,0,1,0,0,”10086”,129 +CLCC: 2,1,0,0,0,”13501275915”,161 OK
<when there is a hold call and an active call>	
AT+CHLD=3	OK
AT+CLCC	+CLCC: 1,0,0,0,1,”10086”,129 +CLCC: 2,1,0,0,1,”13501275915”,161 OK
AT+CHLD=21	OK
AT+CLCC	+CLCC: 1,0,0,0,0,”10086”,129 +CLCC: 2,1,1,0,1,”13501275915”,161 OK
AT+CHLD=1	OK
AT+CLCC	+CLCC: 2,1,0,0,1,”13501275915”,161 OK
AT+CHLD=12<hang up connect 2>	OK
AT+CLCC	

4.7 4.7 AT+CLCC List Current Calls Of ME

Description

List all calls of ME.

Syntax

Command	Possible response
Test command AT+CHLD=?	OK
Set command AT+CLCC	Success: [+CLCC: <id1>, <dir>, <stat>, <mode>, <mpty>[, <number>,<type>][<CR><LF>+CLCC: <id2>, <dir>, <stat>, <mode>, <mpty>[, <number>,<type>]. . .] OK Fail: +CME ERROR: <err>
Reference 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<idx>:
integer type; call identification number as described in 3GPP TS 22.030 [19] sub clause 4.5.5.1; this number can be used in +CHLD command operations

<dir>:
0 mobile originated (MO) call

1 mobile terminated (MT) call

<stat>:(state of the call)
0 active

1 held

2 dialing (MO call)

3 alerting (MO call)

4 incoming (MT call)

5 waiting (MT call)

7 release (network release this call)

<mode> (bearer/teleservice)
0 voice

1 data

2 fax

3 voice followed by data, voice mode

4 alternating voice/data, voice mode

5 alternating voice/fax, voice mode

6 voice followed by data, data mode

7 alternating voice/data, data mode

8 alternating voice/fax, fax mode

9 unknown

<mpty>:

Remark

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK
RING	OK
+CCWA: “13501275915”,161,1,,255	
AT+CHLD=2	+CLCC: 1,0,1,0,0,”10086”,129 +CLCC: 2,1,0,0,0,”13501275915”,161
AT+CLCC	OK

4.8 4.8 AT+VTD Tone Duration

Description

Set tone duration.

Syntax

Command	Possible response
Test command AT+VTD=?	Success: +VTD:(1-10) OK Fail: ERROR
Read command AT+VTD?	Success: +VTD:<n> OK Fail: ERROR
Set command AT+VTD=<n>	Success: OK Fail: +CME ERROR: <err>
Reference 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<n>: Duration of the tone in 1/10 second

Remark

Example

The following examples show the typical application for this command.

Command	Possible response
AT+VTD=10	OK
AT+VTD?	+VTD:10 OK
AT+VTD=?	+VTD: (1-10) OK

4.9 4.9 AT+VTS DTMF And Tone Generation

Description

Sent the DTMF and generate the tone.

Syntax

Command	Possible response
Test command AT+VTS=?	Success: (list of supported <DTMF>s) OK Fail: ERROR
Set command AT+VTS=< DTMF>,<duration>	Success: OK Fail: +CME ERROR: <err>
Reference 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<DTMF>: A single ASCII character in the set 0 9, #,*,A D. This is interpreted as a single ACSII character whose duration is set by the +VTD command.
<duration>: time in 1/10 second

Remark

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK
AT+VTS=1	CONNECT
AT+VTS=2,10	OK
AT+VTS=?	+VTS: (0-9,*,#,A,B,C,D),(1-10) OK

4.10 4.10 AT+CALLREC Call record control command

Description

Control the call record function

Syntax

Command	Possible response
Test command AT+CALLREC=?	Success: +CALLREC: file record(1-0-2) OK Fail: ERROR
Set command AT+CALLREC=<nCallMode>	Success: OK Fail: +CME ERROR: <err>
Read command AT+CALLREC=?	Success: +CALLREC: <nstate> Fail: +CME ERROR: <err>

Unsolicited Result Codes

None

Parameter

<nCallMode>: A single ASCII character in the set 0,1,2
0: stop call record
1: start call record
2: plya call record

Remark

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK
AT+CALLREC=1	+CALLREC :state–1
AT+CALLREC=0	+CALLREC :state–0
AT+CALLREC=?	+CALLREC:0 OK

CHAPTER

FIVE

5 NETWORK SERVICE COMMANDS

Contents

5.1 5.1 AT+COPN Read Operator Names

Description

The AT Commands described in this chapter are related to various network services. More commands related to this area can be found in Chapter 10, Supplementary Service Commands.

Syntax

Command	Possible response
Test Command AT+COPN=?	OK
Exec Command AT+COPN	‘’+COPN: <numeric1>,<alpha1>” | ‘’[<CR><LF>+COPN: <numeric2>,<alpha2>” | ‘’[...]]’‘ OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

URC1
‘’+CALA: <text>’‘
‘’URC2’‘
‘’+SYSSTART ALARM MODE+CALA: <text>’‘

Parameter

<numeric>string type; operator in numeric format (see +COPS).
<alphan>string type; operator in long alphanumeric format (see +COPS).

Remark

‘’Execute command returns the list of operator names from the MT. Each operator code <numericn> that has an alphanumeric equivalent <alphan> in the MT memory shall be returned. ‘’

Example The following examples show the typical application for this command.

Command	Possible response
AT+COPN	+COPN:+COPN: 46000,"CMCC" +COPN:+COPN: 46001,"China Unicom" .....
<Note:..>	OK <Note:..>

5.2 5.2 AT+COPS Operator Selects

Description

This command be used to select the vender.

Syntax

Command	Possible response
Test Command AT+COPS=?	+COPS: [list of supported (<stat>,long alphanumeric <oper> ,short alphanumeric <oper>,numeric <oper>)s] [,,(list of supported <mode>s),(list of supported <format>s)] +CME ERROR: <err>
Read Command AT+COPS?	+COPS: <mode>[,<format>,<oper>] +CME ERROR: <err>
Set Command AT+COPS=mode[,<format>[,<oper>]]	+CME ERROR: <err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

URC1
+CALA: <text>
URC2
+SYSSTART ALARM MODE+CALA: <text>

Parameter

<mode>:
0 automatic (<oper> field is ignored)
1 manual (<oper> field shall be present)
2 deregister from network
3 set only <format> (for read command +COPS?), do not attempt registration/deregistration (<oper> field is ignored); this value is not applicable in read command response
4 manual/automatic (<oper> field shall be present); if manual selection fails, automatic mode (<mode>=0) is entered

<format>:
0 long format alphanumeric <oper>
2 numeric <oper>
<oper>: string type; <format> indicates if the format is alphanumeric or numeric; long alphanumeric format can be upto 16 characters long and short format up to 8 characters (refer GSM MoU SE.13 [9]); numeric format is the GSM Location Area Identification number (refer GSM 04.08 [8] subclause 10.5.1.3) which consists of a three BCD digit country code coded as in ITU T E.212 Annex A [10], plus a two BCD digit network code, which is administration specific; returned <oper> shall not be in BCD format, but in IRA characters converted from BCD; hence the number has structure: (country code digit 3)(country code digit 2)(country code digit 1)(network code digit 2)(network code digit 1)

<stat>:
0 unknown
1 available
2 current
3 forbidden

Remark

Set command forces an attempt to select and register the GSM/UMTS network <oper>. Mode is used to decide the register should be automatic or manual. If the selected mode is manual or manual first, the network should return with a list from which user can select one to register on.

Read command returns the current mode and the currently selected operator. If no operator is selected, <format> and <oper> are omitted.

Test command returns a list of quadruplets, each representing an operator present in the network. Quadruplet consists of an integer indicating the availability of the operator <stat>, long and short alphanumeric format of the name of the operator, and numeric format representation of the operator. Any of the formats may be unavailable and should then be an empty field. The list of operators shall be in order: home network, networks referenced in SIM/UICC, and other networks.

Example The following examples show the typical application for this command.

Command	Possible response
AT+COPS=? <Note : ..>	+COPS: (1,"D2",,"26202"),(2,"E-Plus",,"26203"),,(0-4),(0,2) OK <Note :..>
AT+COPS?	+COPS:0 OK <Note :..> Register network failed
AT+COPS=3,0 <Set oper format>	OK
AT+COPS?	+COPS: 0,0," CMCC " OK
AT+COPS=3,2	OK
AT+COPS?	+COPS: 0,0,46000 OK

5.3 5.3 AT+CREG Network Registration

Description

This command be used to query the register status.

Syntax

Command	Possible response
Test Command AT+CREG=?	+CREG: (list of supported <n>s)
Read Command AT+CREG?	+CREG: <n>,<stat>[,<lac>,<ci>] +CME ERROR: <err>
Set Command AT+CREG=<n>	OK
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

URC1 +CALA: <text> URC2 +SYSSTART ALARM MODE+CALA: <text>

Parameter

<n>: 0 disable network registration unsolicited result code 1 enable network registration unsolicited result code +CREG: <stat> 2 enable network registration and location information unsolicited result code +CREG: <stat>[,<lac>,<ci>]
<stat>: 0 not registered, MT is not currently searching a new operator to register to 1 registered, home network 2 not registered, but MT is currently searching a new operator to register to 3 registration denied 4 unknown 5 registered, roaming
<ci>: string type; two byte cell ID in hexadecimal format

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CREG=1 <Note : ..>	OK <reference URC: +CREG> <Note :..> 1: Enable URC +CREG:<stat> to report status change of network registration
AT+CREG?	+CREG:0,1 OK <reference URC: +CREG> <Note :..> Query the register status of the local and network

5.4 5.4 AT+CSQ Signal Quality

Description

This command be used to query the quality of the signal.s

Syntax

Command	Possible response
Test Command AT+CSQ=?	+CSQ: (list of supported <rssi>s),(list of supported <ber>s)
Read Command AT+CREG?	+CREG: <n>,<stat>[,<lac>,<ci>] +CME ERROR: <err>
Exec Command AT+CSQ	+CSQ: <rssi>,<ber> +CME ERROR: <err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

URC1
+CALA: <text>
URC2
+SYSSTART ALARM MODE+CALA: <text>

Parameter

<rssi>:
0 113 dBm or less
1 111 dBm
2...30 109... 53 dBm
31 51 dBm or greater
99 not known or not detectable

<ber>(in percent):
0...7 as RXQUAL values in the table in GSM 05.08 [20] sub clause 8.2.4
99 not known or not detectable

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CSQ	+CSQ: 13, 99 OK <Note :..>
AT+CSQ=?	+CSQ: (0-31,99),(0-7,99)

5.5 5.5 AT+CPOL Preferred Operator List

Description

This command is used to edit the user preferred list of networks in the active application on the UICC (GSM or USIM) or preferred list of networks in the SIM card. Execute command writes an entry in the SIM list of preferred operators (EFPLMNsel), when the SIM card is present or when the UICC is present with an active GSM application. When UICC is present with an active USIM application, execute commands writes an entry in the User controlled PLMN selector with Access Technology list (EFPLMNwAcT), only the PLMN field could be entered, the Access Technologies for each PLMN in this list is not accesible with this command (Note: new command for accessing the Access Technologies for each PLMN in this list is FFS). If <index> is given but <oper> is left out, entry is deleted. If <oper> is given but <index> is left out, <oper> is put in the next free location. If only <format> is given, the format of the <oper> in the read command is changed. Refer subclause 9.2 for possible <err> values.

Note: when adding preferred operater, <format> can only be 2.

Read command returns all used entries from the active application in the UICC (GSM or USIM) user preferred list of networks or SIM card list of preferred operators.

Note: if <format> is 0, but there is no relevant long format alphanumeric <oper>, the numeric <oper> will be returned.

Test command returns the whole index range supported by the active application in the UICC (GSM or USIM) user preferred list of networks or SIM card.

Syntax

Command	Possible response
Test Command AT+CPOL=?	+CPOL: (list of supported <index>s),(list of supported <format>s)+CME ERROR: <err>
Read Command AT+CPOL?	+CPOL: <index1>,<format>,<oper1> [<CR><LF>+CPOL: <index2>,<format>,<oper2>[...]] +CME ERROR: <err>
Set Command AT+CPOL=[<index>][, <format>[,<oper>]]	OK ERROR
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

URC1
+CALA: <text>
URC2
+SYSSTART ALARM MODE+CALA: <text>

Parameter

<indexn>:
integer type; the order number of operator in the active application in the UICC (GSM or USIM) user preferred list of networks or SIM card preferred operator list

<format>:
0 long format alphanumeric <oper>
1 short format alphanumeric <oper>
2 numeric <oper>

<opern>:
string type; <format> indicates if the format is alphanumeric or numeric (see +COPS)

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CPOL=?	+CPOL: (1-8),(0,2) OK
AT+CPOL?	+CPOL: 1,2,”46000” OK
AT+CPOL=2,2,”46001”	OK <Note : ..>Add a preferred operator
AT+CPOL?	+CPOL: 1,2,”46000” +CPOL: 2,2,”46001” OK
AT+CPOL=,0	OK <Note : ..>Set the display format as long format alphanumeric <oper>
AT+CPOL?	+CPOL: 1,0,”China Mobile” +CPOL: 2,0,”China Unicom” OK
AT+CPOL=1 AT+CPOL?	OK <Note : ..>Delete the preferred operator with index of 1 +CPOL: 2,0,”China Unicom”
<Note : ..>	OK

5.6 5.6 AT+QNITZ Indicate Network Time

Description

Enable or disable indicate network time.

Syntax

Command	Possible response
Test Command AT+QNITZ=?	+QNITZ(0,1) OK
Read Command AT+QNITZ?	+QNITZ<enable> OK
Set Command AT+QNITZ=<enable>Description	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<enable>: 0 disable sync network time 1 enable sync network time

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+QNITZ=0	OK
AT+ QNITZ=1	OK
AT+ QNITZ=?	+QNITZ:(0, 1)

5.7 5.7 AT+QLTS Query Last Time Satus

Description

Get the last time from network.

Syntax

Command	Possible response
Test Command AT+ QLTS =?	OK
Read Command AT+QLTS?	+QLTS:<time>,<ds> OK +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<time>: string format, yy/MM//dd,hh:mm:ss+zz, means year, month, day, hour, minute, second and time zone(local time and GMT time difference)
<ds>: daylight saving time

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+QLTS=?	OK
AT+ QLTS	+QLTS:17/5/27,8:37:52+32,0

5.8 5.8 AT+CTZU Automatic Update System Time Via Nitz

Description

Set command enables and disables automatic time zone update via NITZ. If setting fails in an MT error,

+CME ERROR: <err> is returned. Refer subclause 9.2 for possible <err> values.

Read command returns the current settings in the MT.
Test command returns supported on- and off-values as a compound value.

Syntax

Command	Possible response
Test Command AT+ CTZU =?	+CTZU(<mode>) OK
Read Command AT+CTZU?	+CTZU<mode> OK
Set Command AT+ CTZU =<enable>Description	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<mode>:
0: NITZ not update system time
1: NITZ update local time to system
2: NITZ update GMT time to system
3: same as 1
4: same as 2

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CTZU=?	+CTZU:0 OK
AT+CTZU?	+CTZU:0 OK
AT+ CTZU=0	AT+ CTZU=0 OK

5.9 5.9 AT+SETBND Set phone frequency band

Description

Set phone frequency band

Syntax

Command	Possible response
Set Command AT+SETBND=<get_set>[,band]	OK ERROR +CME ERROR:<err>

Unsolicited Result Codes

None

Parameter

<get_set>: 1: get current frequency band set 2: set current frequency band
<band>: can only used when get_set is 1, the frequency band value to set

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+SETBND=1	+SETBND:<value> OK
AT+SETBND=2,<value>	+SETBND:2 OK

5.10 5.10 AT+CTEC Set user prefferd rat

Description

Set user preffered rat(don't support in NBIOT project)

Syntax

Command	Possible response
Set Command AT+CTEC=<nCurrentRat>,<nPreferRat>	OK ERROR +CME ERROR:<err>
Read Command AT+CTEC?	OK ERROR +CME ERROR:<err>

Unsolicited Result Codes

None

Parameter

<nCurrentRat>: the current rat value
<nPreferRat>: the preffered rat value

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CTEC=1,2	OK
AT+CTEC=?	+CTEC: 1,1 OK

5.11 5.11 AT+QSCANF Set UE to scan

***Description**

Set UE to scan
Command to set to air plane mode before doing this
In NBIOT mode does not support this function

Syntax

Command	Possible response
Set Command AT+QSCANF=<band>,<freqs>	OK ERROR +CME ERROR:<err>
Test Command AT+QSCANF=?	+QSCANF:(0-3),(0-1023,9999)

Unsolicited Result Codes

None

Parameter

<band>: the band value to scan
<freqs>: the freqs value to scan

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+QSCANF=3,9999	OK
AT+QSCANF=?	+QSCANF:(0-3),(0-1023,9999) OK

5.12 5.12 AT+SDMBS Set Pseudo base station identification

***Description**

Set Pseudo base station identification

Syntax

Command	Possible response
Set Command AT+SDMBS=<n>	OK ERROR +CME ERROR:<err>
Test Command AT+SDMBS=?	+SDMBS:(0,1)

Unsolicited Result Codes

None

Parameter

<n>: if enable detect mbs 0: diable detect mbs 1: enable detect mbs

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+SDMBS=1	OK
AT+SDMBS=?	+SDMBS:(0,1) OK

5.13 5.13 AT+CNETSCAN UE get cell info

***Description**

UE get cell info

Syntax

Command	Possible response
Set Command AT+CNETSCAN=<n>	OK ERROR +CME ERROR:<err>
Test Command AT+CNETSCAN=?	+CNETSCAN:(0,1) OK
Read Command AT+CNETSCAN?	+CNETSCAN:<n> OK
Exe Command AT+CNETSCAN	OK

Unsolicited Result Codes

None

Parameter

<n>: if enable get cell info 0: diable get cell info 1: enable get cell info

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CNETSCAN=1	OK
AT+CNETSCAN=?	+CNETSCAN:(0,1) OK
AT+CNETSCAN?	+CNETSCAN:1 OK
AT+CNETSCAN	OK

5.14 5.14 AT+SNWR Set UE rat

***Description**

Set UE rat

Syntax

Command	Possible response
Set Command AT+SNWR=<mode>,<simid>[,<rat>]	OK ERROR +CME ERROR:<err>

Unsolicited Result Codes

None

Parameter

<mode>: get or set rat 0: get rat 1: set rat
<simid>: sim index
<rat>: only can set when mode is 1, rat what to set

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+SNWR=0,0	 +SNWR:1 OK
AT+SNWR=1,0,1	OK

5.15 5.15 AT+XCPUTEST not suport

Description

Parameter

Example

5.16 5.16 AT+WCPUTEST not suport

Description

Parameter

Example

CHAPTER

SIX

6 STK/SS COMMANDS

Contents

6.1 6.1 AT+CACM Accumulated Call Meter (acm) Reset Or Query

Description

The read command returns the current ACM value. The write command resets the Advice of Charge related to the accumulated call meter (ACM) value in SIM file EF(ACM). ACM contains the total number of home units for both the current and preceding calls

Command	Possible response
AT+CACM = ?	OK
AT+CACM?	+CACM: <acm>
AT+CACM = < password >	OK

Parameter

<passwd>: SIM PIN2 Note: the string length supported in our environment is no more than 4.

<acm>: string type; accumulated call meter value similarly coded as <ccm> under +CAOC

Remark

Set CMD reset ACM with parameter SIM PIN2, read CMD get current ACM, Test CMD not defined yet. Three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30); value is in home units Command AT+CCWE control the unsolicited result code: +CCWV to be sent shortly before the ACM maximum value reached.

Example

AT+CACM?

+CACM: "000000"

OK

< TA returns the current ACM value: 000000-FFFFFF (Total call fare)>

AT+CACM="1234"

OK

< TA resets the Advice of Charge related to the ACM value in SIM file EF(ACM). 1234 is SIM PIN2>

6.2 6.2 AT+CAMM Accumulated Call Meter Maximum (acmmax) Set Or Query

Description

The write command sets the Advice of Charge related to the accumulated call meter maximum value in SIM file EF (ACMmax). ACMmax contains the maximum number of home units allowed to be consumed by the subscriber.

Command	Possible response
AT+CAMM=?	OK
AT+CAMM?	+CAMM:<acmmax>
AT+CAMM =<acmmax>[,<passwd>]	OK

Parameter

<passwd>: SIM PIN2

<acmmax>: string type; accumulated call meter maximum value similarly coded as <ccm> under +CAOC; value zero disables ACMmax feature

Remark

Set CMD set the maximum of ACM with SIM PIN2, read command get the AMM, test CMD not defined yet. Three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30); value is in home units Shortly before ACM reaches AMM, the unsolicited result code +CCWV will be sent if AT+CCWE enables this operation. For some SIM card, if the PIN1 is verified, the SIM PIN2 is not used as password and ignored.

Example

AT+CAMM?

+CAMM: 1e

OK

AT+CAMM= "00001E", "2345"

< TA returns the current ACMmax value: 0-ffffff)>

OK

< TA sets the Advice of Charge related to the ACM maximum value in SIM file EF (ACMmax). 2345 is SIM PIN2>

6.3 6.3 AT+CAOC Advice Of Charge Information

Description

Execute command returns the current call meter value. (Currently not support) The write command sets the Advice of Charge supplementary service function mode.

Command	Possible response
AT+CAOC=?	[+CAOC: (list of supported <mode>s]
AT+CAOC?	+CAOC: <mode>
AT+CAOC[=<mode>]	+CAOC: <ccm>]

Parameter

<mode>: # query CCM value # deactivate the unsolicited reporting of CCM value # activate the unsolicited reporting of CCM value

<ccm>: string type; three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30); value is in home units and bytes are similarly coded as ACMmax value in the SIM card or in the active application in the UICC (GSM or USIM)

Remark

Set CMD set the maximum of ACM with SIM PIN2, read command get the AMM, test CMD not defined yet. Three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30); value is in home units Shortly before ACM reaches AMM, the unsolicited result code +CCWV will be sent if AT+CCWE enables this operation.

Example

AT+CAOC?

+CAOC: 0

OK

< TA returns the current call meter value: 000000-FFFFFF (Last call fare) >

6.4 6.4 AT+CPUC Price Per Unit And Currency Table

Description

Read command returns the current parameters of PUC. Write command sets the parameters of Advice of Charge related price per unit and currency table. SIM PIN2 is usually required to set the parameters. PUCT information can be used to convert the home units (as used in +CAOC, +CACM and +CAMM) into currency units

Command	Possible response
AT+CPUC=?	OK
AT+CPUC?	+CPUC:<currency>,<ppu>
AT+CPUC=<currency>,<ppu>,<password>	OK

Parameter

<currency>: string type; three-character currency code (e.g. "GBP", "DEM") Note: if the string length of <currency> is less than 3, null character(0x20) will be a complement defaultly. Null string is also be allowed.

<ppu>: string type; price per unit; dot is used as a decimal separator (e.g. "2.66"). Note: the supported string length is no more than 5, and the valid number is less than 4096

<passwd>: string type; SIM PIN2 Note: the string length supported in our environment is no more than 4.

Remark

For some SIM card, if the PIN1 is verified, the SIM PIN2 is not used as password and ignored.

Example

AT+CPUC="EUR","0.10","8888"

OK

AT+CPUC?

+CPUC: "EUR","0.10"

OK

6.5 6.5 AT+CCFC Call Forwarding Number And Condition

Description

This command Controls the call forwarding supplementary services. Registration, erasure, activation, deactivation and status query are supported.

Command	Possible response
AT+CCFC=?	+CCFC (list of supported<reason>s)
AT+CCFC=<reason>,<mode>,[<number>,[<type>,[<class>,[<subaddr>, [<satype>,[<time>]]]]]]	OK

Parameter

<reason>: 0 unconditional 1 mobile busy 2 no reply 3 not reachable 4 all call forwarding. Note: After setting, if quering the result, need set "reason" to 0. 5 all conditional call forwarding. This operation can finish the call forwarding for the reason that from 1 to 3 by one time, not need by three times. That means all the call forwarding can be done by one time except unconditional.

<mode>: When set mode=2, the range of "reason" is 0~3. For mode=2,reason 0, only the query of class =1 is support. The other will get error due to not support of the network. 0 disable 1 enable 2 query status 3 registration 4 erasure

<number>: string type phone number of forwarding address in format specified by <type>. The string length of <number> is 0-20.

<type>: type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7); default 145 when dialling string includes international access code character "+", otherwise 129

<satype>: type of subaddress octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.8); default 128, others should be defined by factory

<classx>: is a sum of integers each representing a class of information (default 1): 1 voice (telephony) 2 data (refers to all bearer services; with <mode>=2 this may refer only to some bearer service if TA does not support values 16, 32, 64 and 128) 4 fax (facsimile services) 8 short message service 16 data circuit sync 32 data circuit async 64 dedicated packet access 128 dedicated PAD access

<time>: 5...30 when "no reply" is enabled or queried, this gives the time in seconds to wait before call is forwarded, default value 20

<status>: 0 not active 1 active

<subaddr>: string type subaddress of format specified by <satype>

<satype>: type of subaddress octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.8); default 128

Remark

When setting the international call, the fourth parameter "type" must be filled. The "type" will be checked if presented. When the "mode" is set to "1", the third parameter "number" will be omitted and don't be checked. Except that non-number is input as "number". When the parameters are NULL, some will use the default parameters, some is omitted. The parameter "classx" is 1. the "subaddr" and "satype" is not used in current version. The "type" is determined by the "number".

Example

AT+CCFC=0,3,”13698754858”,145

OK

AT+CCFC=0,2

+CCFC:1,1,”+13698754858”,145

OK

6.6 6.6 AT+CCWA Set Call Waiting Control

Description

This command allows control of the Call Waiting supplementary service according to 3GPP TS 22.083 [5]. Activation, deactivation and status query are supported. The interaction of this command with other commands based on other GSM/UMTS supplementary services is described in the GSM/UMTS standards..

Command	Possible response
AT+CCWA=?	+CCWA: (list of supported<n>s)
AT+CCWA?	+CCWA: <n>
AT+CCWA=<n>[,<mode>[,<class>]]	OK

Unsolicited Result Codes

URC 1 CCWA; < number >,<type>,<class>,[<alpha>][,<CLI validity>]

Parameter

<n>: (sets/shows the result code presentation status in the MT/TA) 0 disable 1 enable

<mode>: (when <mode> parameter is not given, network is not interrogated) 0 disable 1 enable 2 query status

<classx>: is a sum of integers each representing a class of information (default 1) 1 voice (telephony)

<status>: 0 not active 1 active

<number>: string type phone number of calling address in format specified by <type>

<type>: type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7)

<alpha>: optional string type alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with command Select TE Character Set +CSCS

<CLI validity>: 0 CLI valid 1 CLI has been withheld by the originator. 2 CLI is not available due to interworking problems or limitations of originating network.

Remark

- AT+CPBW=[<index>],<number>[,<type>[,<text>]],the number setting NULL is forbidden.
- Executed AT+CLCK and “FD” is locked, then operation of “SM” phonebooks are forbidden, but operation of other phonebooks is allowed.

Example

AT+CCWA=1,1,1

OK

ATD1861;

OK

+CCWA: “02085563410”, 129, 1, “”, 0

AT+CCWA=0,1 ,1

OK

ATD1861;

OK

AT+CCWA=1,2

+CCWA: 0,1

+CCWA: 0,2

+CCWA: 0,4

OK

AT+CCWA=0,0,1

OK

AT+CCWA=1,1,1

OK

6.7 6.7 AT+ CLIP Calling Line Identification Presentation

Description

This command refers to the GSM supplementary service CLIP (Calling Line Identification Presentation) that enables a called subscriber to get the calling line identity (CLI) of the calling party when receiving a mobile terminated call

Command	Possible response
AT+CLIP=?	+CLIP: (list of supported<n>s))
AT+CLIP?	+CLIP: <n><m>
AT+CLIP=<n>	OK

Parameter

<n>: (sets/shows the result code presentation status in the MT/TA) 0 disable 1 enable

<m>: (parameter shows the subscriber CLIP service status in the network): 0 CLIP not provisioned 1 CLIP provisioned 2 unknown (e.g. no network, etc.)

<number>: string type phone number of calling address in format specified by <type>

<type>: type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7)

<alpha>: optional string type alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with command Select TE Character Set +CSCS

<CLI validity>: 0 CLI valid 1 CLI has been withheld by the originator. 2 CLI is not available due to interworking problems or limitations of originating network.

<subaddr>: string type subaddress of format specified by <satype>

<satype>:

type of subaddress octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.8)

Unsolicited Result Codes URC 1 +CLIP: <number>,<type>[,<subaddr>,<satype>[,[<alpha>][,<CLI validity>]]]

Remark

Parameter n may control the unsolicited result code +CLIP should be presented to TE or not

Example

AT+CLIP=1

OK

RING

+CLIP: “02085563192”,129,,,,0

<URC presentation>

6.8 6.8 AT+ CLIR Calling Line Identification Restriction

Description

The AT+CLIR command refers to the GSM supplementary service CLIR (Calling Line Identification Restriction).

Command	Possible response
AT+CLIR=?	+CLIR (list of supported<n>s))
AT+CLIR?	+CLIR: <n>,<m>
AT+CLIR=<n>	OK

Parameter

<n>: (parameter sets the adjustment for outgoing calls) 0 presentation indicator is used according to the subscription of the CLIR service 1 CLIR invocation 2 CLIR suppression

<m>: (parameter shows the subscriber CLIR service status in the network) 0 CLIR not provisioned 1 CLIR provisioned in permanent mode 2 unknown (e.g. no network, etc.) 3 CLIR temporary mode presentation restricted 4 CLIR temporary mode presentation allowed

Example

AT+CLIR=2

OK

AT+CLIR=?

+CLIR:(0,1,2)

OK

AT+CLIR?

+CLIR:2,0

OK

6.9 6.9 AT+ COLP Connected Line Identification Presentation

Description

This command refers to the GSM/UMTS supplementary service COLP (Connected Line Identification Presentation) that enables a calling subscriber to get the connected line identity (COL) of the called party after setting up a mobile originated call. The command enables or disables the presentation of the COL at the TE. It has no effect on the execution of the supplementary service COLR in the network

Command	Possible response
AT+COLP=?	+COLP: (list of supported<n>s))
AT+COLP?	+COLP: <n>,<m>
AT+COLP=<n>	OK

Parameter

<n>: (parameter sets/shows the result code presentation status in the MT/TA): 0 presentation indicator is used according to the subscription of the CLIR service 1 CLIR invocation

<m>: (parameter shows the subscriber COLP service status in the network): 0 COLP not provisioned 1 COLP provisioned 2 unknown (e.g. no network, etc.)

Example

AT+COLP=1

OK

AT+COLP=?

+COLP:(0,1)

OK

6.10 6.10 AT+ CSSN Supplementary Service Notifications

Description

The write command enables or disables the presentation of URCs for supplementary services.

Command	Possible response
AT+CSSN=?	`+CSSN: (list of supported <n>s),(list of supported<m>s)`
AT+CSSN?	*+CSSN:<n>,<m>‘*
AT+CSSN=<n>[,<m>]	*OK‘*

Parameter

<n>: (parameter sets/shows the +CSSI result code presentation status to the TE): 0 disable 1 enable

<m>: (parameter sets/shows the +CSSU result code presentation status to the TE): 0 disable 1 enable

<code1>: (it is manufacturer specific, which of these codes are supported): 0 unconditional call forwarding is active 1 some of the conditional call forwardings are active 2 call has been forwarded 3 call is waiting

<code2>: (it is manufacturer specific, which of these codes are supported): 0 this is a forwarded call (MT call setup) 1 this is a CUG call (also <index> present) (MT call setup) 2 call has been put on hold (during a voice call) 3 call has been retrieved (during a voice call) 4 multiparty call entered (during a voice call) 5 call on hold has been released (this is not a SS notification) (during a voice call)

Remark

When <n>=1 and a supplementary service notification is received after a mobile originated call setup, intermediate result code +CSSI: <code1>[,<index>] is sent to TE before any other MO call setup result codes presented in the present document or in V.25ter [14]. When several different <code1>s are received from the network, each of them shall have its own +CSSI result code. When <m>=1 and a supplementary service notification is received during a mobile terminated call setup or during a call, or when a forward check supplementary service notification is received, unsolicited result code +CSSU: <code2>[,<index>[,<number>,<type>[,<subaddr>,<satype>]]] is sent to TE. In case of MT call setup, result code is sent after every +CLIP result code (refer command “Calling line identification presentation +CLIP”) and when several different <code2>s are received from the network, each of them shall have its own +CSSU result code. Refer 27007 release99. The gray item of <code1> doesn’t been supported by CMCC and UMCC.S

Example

AT+CSSN=1,1

OK

6.11 6.11 AT+ CUSD Unstructured Supplementary Service Data

Description

This command allows control of the Unstructured Supplementary Service Data (USSD) according to GSM 02.90. Both network and mobile initiated operations are supported.

Command	Possible response
AT+CUSD=?	+CUSD: (list of supported <n>s)
AT+CUSD?	+ CUSD:<n>
AT+ CUSD=<n>[,<str>[,<dcs>]]	OK

Parameter

<n>: 0 disable the result code presentation to the TE 1 enable the result code presentation to the TE 2 cancel session (not applicable to read command response)

<m>: 0 no further user action required (network initiated USSD Notify, or no further information needed after mobile initiated operation) 1 further user action required (network initiated USSD Request, or further information needed after mobile initiated operation) 2 USSD terminated by network 3 other local client has responded 4 operation not supported 5 network time out

<str>: string type USSD string (when <str> parameter is not given, network is not interrogated): if <dcs> indicates that 3GPP TS 23.038 [25] 7 bit default alphabet is used: if TE character set other than "HEX" (refer command Select TE Character Set +CSCS): MT/TA converts GSM alphabet into current TE character set according to rules of 3GPP TS 27.005 [24] Annex A if TE character set is "HEX": MT/TA converts each 7 bit character of GSM alphabet into two IRA character long hexadecimal number (e.g. character (GSM 23) is presented as 17 (IRA 49 and 55)) if <dcs> indicates that 8 bit data coding scheme is used: MT/TA converts each 8 bit octet into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))

<DCS>: 3GPP TS 23.038 [25] Cell Broadcast Data Coding Scheme in integer format (default 0)

Remark

This command allows control of the Unstuctured Supplementary Service Data (USSD) according to 3GPP TS 22.090 [23]. Both network and mobile initiated operations are supported. Parameter <n> is used to disable/enable the presentation of an unsolicited result code (USSD response from the network, or network initiated operation) +CUSD: <m>[,<str>,<dcs>] to the TE. In addition, value <n>=2 is used to cancel an ongoing USSD session. When <str> is given, a mobile initiated USSD string or a response USSD string to a network initiated operation is sent to the network. The response USSD string from the network is returned in a subsequent unsolicited +CUSD result code. If the <dcs> parameter is input, the data will be transmitted as USSD vertion2, otherwise, it will be transmitted as USSD version 1.

Example

AT+CUSD=1

OK

AT+CUSD?

+CUSD: 1

OK

6.12 6.12 AT^STA SAT Interface Activation

Description

This command is used to ask the current running status of the RSAT and the character set used by the RSAT, and it can be used to set SAT and the AT interface to activation.

Command	Possible response
AT^STA=?	^STA: (list of supported <Alphabet>s)
AT^STA?	^STA: <Alphabet>, <allowedInstance>, <SatProfile>
AT^STA=<Alphabet>	OK

Parameter

<Alphabet>: 0 GSM character set 1 UCS2 character set

<allowedInstance>: 0 SAT This module has been started. 1 SAT This module can be started.

<SatProfile>:<SatProfile> SAT configuration data

Example

AT^STA?

^STA: 1,1,"7FFFFFFF7F0100DF1F"

OK

6.13 6.13 AT^STN STK Notification

Description

Proactive Command notification

Remark

Every time the SIM Application issues a Proactive Command, via the ME, the TA will receive a notification. This indicates the type of Proactive Command issued. AT^STGI must then be used by the TA to request the parameters of the Proactive Command from the ME. Upon receiving the^STGI response from the ME, the TA must send AT^STR to confirm the execution of the Proactive Command and provide any required user response, e.g. a selected menu item.

Example

Reference: URC:

^STN

6.14 6.14 AT^STGI Remote-SAT Get Information

Description

AT^STGI: This command is used after receiving URC ^STN notification,That can get the parameters of the proactive command, current command type or some information of the current proactive command.

Command	Possible response
AT^STGI=?	^STGI: (list of supported <cmdType>s)
AT^STGI?	^STGI: <cmdType>
AT^STGI=<cmdType>	OK

Response definition The event format: Command type =37 or 36: The first line: ^STGI: command type, 0, The number of the item," Alpha identifier", "nComQualifier" Other lines:^STGI: command type, Item type,"contents of menu,"nComQualifier"

Command type=16: ^STGI: command type, "text string", type of address, address, subadress, text in calling", scheme of the text, time unit when autodial, interval of "nComQualifier" Command type=33: ^STGI: command type, "text", scheme of text, "nComQualifier" Command type=19: ^STGI: command type, "text for display" , Type of address, "address of SMS, "contents of SMS" Command type=35: ^STGI: command type, "text", "Default text", scheme of text, max length of text, min length of text, "nComQualifier" Command type=38: ^STGI: command type, "nComQualifier"

Parameter

<pin>, <newpin>:

<Alphabet>: 0 GSM character set 1 UCS2 character set

<allowedInstance>: 0 SAT This module has started up. you can execute the read or test command. 1 SAT This module can be started.

<SatProfile>: SAT configuration data.

Remark < cmdType >:Proactive command

Example

AT^STGI=37

^STGI: 37,128,5,"51687403901A670D52A1",0,1,1,0 ^STGI: 37,1,"516C51714FE1606F670D52A1",0,0 ^STGI: 37,2,"8BC15238",0,0 ^STGI: 37,3,"624B673A94F6884C",0,0 ^STGI: 37,4,"5BA26237670D52A1",0,0 ^STGI: 37,5,"82F16C498BCD5178",0,0 OK

AT^STR=37,0 OK

AT^STR=211,0,1

OK

^STN: 36

AT^STGI=36 ^STGI: 36,0,3,"",0,0,0,0,0 ^STGI: 36,1,"59296C14988462A5",0,0 ^STGI: 36,2,"4EA4901A4FE1606F",0,0 ^STGI: 36,3,"65B095FB",0,0 OK

AT^STR=36,0,1

^STN: 35

AT^STGI=35

^STGI: 35,0,"957F9014533A53F7FF1F",3,5,"",0,0

OK

6.15 6.15 AT^STR Remote-SAT Response

Description

AT^STR: TA can use this command AT^STR to answer the AT^STGI command to tell the SIM that the result executed of the proactive command.

Command	Possible response
AT^STR=?	^STR: (list of supported <cmdType>s)
AT^STR?	^STR: <cmdType>
AT^STR=<cmdType>, <status>[, <inputNumber>][, <inputString>]	OK

Parameter

<cmdType>: Proactive command

<status>: The status response to the proactive command. 00 Command performed successfully 16 Proactive SIM session terminated by user 17 Backward move in the proactive SIM session requested by the user 18 No response from user 19 Help information required by the user 20 USSD/SS Transact terminated by user 32 ME currently unable to process command 132 ME currently unable to process command -screen is busy 34 User did not accept the proactive command 35 User cleared down call before connection or network release

<inputNumber>: Response number.

<inputString>: Response string.

Remark

- AT+CPBW=[<index>],<number>[,<type>[,<text>]],the number setting NULL is forbidden.
- Executed AT+CLCK and "FD" is locked, then operation of "SM" phonebooks are forbidden, but operation of other phonebooks is allowed.

Example

<Under main menu>

AT^STR=211,0,X

STK select submenu

6.16 6.16 AT^STNR not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

6.17 6.17 AT^STRC Remote-SAT Command process

Description

Process proactive command SETUP CALL, SEND SMS, SEND USSD.

Command	Possible response
AT^STRC=?	`^STRC: (list of supported <cmdType>s)`
AT^STRC?	`^STRC: <cmdType>`
AT^STRC=<action>, <cmdType>	`OK`

Parameter

<action>: process the proactive SIM command or terminate it. | 0 Terminate the proactive SIM session. | 1 Process the proactive SIM command.

<cmdType>: Proactive command id. | 16 SETUP CALL | 18 SEND SMS | 19 SEND USSD

Example

AT^STRC=?

^STRC: (16, 18, 19)

OK

AT^STRC?

^STRC: 37

OK

AT^STRC=1,19

OK

6.18 6.18 AT^STF Set Format Of Responses

Description

This command is used to set format of a response of SAT command.

Command	Possible response
AT^STF?	`^STF: [Current mode]`
AT^STF=<mode>	`OK`
AT^STF=?	`^STF: (0,1)`

Parameter

<mode>: 0: PDU mode 1: Text mode

Example

AT^STF?

^STF: PDU Mode

OK

AT^STF=1

Set STF to TEXT Mode

OK

6.19 6.19 AT^STSF SIM ToolKit Set Facilities

Description

This command allows SIM ToolKit facilities to be activated, deactivated or configured.

Command	Possible response
AT^STSF?	^STSF: <mode>,<profile>,<timeout>,<AutoResponse> OK
AT^STSF=<mode>[,<config>][,<Timeout>][,<AutoResponse>]	OK
AT^STSF=?	^STSF: (0-2),(160060C01F-5FFFFFFF7F),(1-255),(0-1) OK

Parameter

`<mode>`:

0: Deactivates the SIM Toolkit functionalities.
1: Activates the SIM Toolkit functionalities.
2: Configures the SIM Toolkit functionalities.

`<Config>`:

hex format: (160060C01F - 5FFFFFFF7F)

`<Timeout>`:

Range 1 to 255: Timeout for user responses (multiple of 10 seconds).

`<Autoresponse>`:

0: Automatic response is not activated
1: Automatic response is activated

Example

AT^STSF?

+STSF: 0,FFFFFF7F000000007F00000023090906030 00F,1,0

OK

AT^STSF=?

+STSF: (0-2),(160060C01F-5FFFFFFF7F),(1-255),(0-1)

OK

AT^STSF=0,FFFFFF7F000000007F00000023090906030 00F,1,0

OK

CHAPTER

SEVEN

7 SMS COMMANDS

Contents

7.1 7.1 AT+CSDH Show Text Mode Parameters (for SMS)

Description

Set command controls whether detailed header information is shown in text mode result codes.

Command	Possible response
AT+CSDH =?	list of supported <show>s OK
AT+CSDH?	+CSDH: <show>
AT+CSDH=<show>	OK

Parameter

<show>: Range: 0-1 0 do not show the values in result codes 1 show the values in result codes

Remark

Example

AT+CSDH=0

<not show the message header when list message at the storage, read message in the storage, or indicate to CMTI that new message recieved.>

OK

AT+CSDH=1

< show the message header when list message at the storage, read message in the storage, or indicate to CMTI that new message recieved.>

OK

7.2 7.2 AT+CSMP Set Text Mode Parameters

Description

Set command is used to select values for additional parameters needed when SM is sent to the network or placed in a storage when text format message mode is selected.

Command	Possible response
AT+CSMP =?	OK
AT+CSMP?	+CSMP:<fo>,<vp>,<pid>,<dcs> OK
AT+CSMP=<fo>[,<vp>[,pid>[,<dcs>]]]	OK

Parameter

fo

depending on the command or result code: first octet of 3G TS 23.040 [3] SMS-DELIVER[mt], SMS-SUBMIT[mo] (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format.

vp

depending on SMS-SUBMIT <fo> setting: 3G TS 23.040 [3] TP-Validity-Period either in integer format (default 167), in time-string format (refer <dt>), or if EVPF is supported, in enhanced format (hexadecimal coded string with double quotes)

pid

3G TS 23.040 [3] TP-Protocol-Identifier in integer format (default 0)-protocol identity [Different data storage protocol according to which services protocol used]

`dcs`

depending on the command or result code: 3G TS 23.038 [2] SMS Data Coding Scheme (default0),or Cell Broadcast Data Coding Scheme in integer format [supported there types of csw allowed,0,4,8]

Remark

Parameter <fo> <vp> <pid> and <dcs>, we recommend to set default value of them, but can use other values if need according to spec definite. if setting "fo" value for MO message,we must make sure the "mti" segment of "fo" (as 03.40 description) is "01", meanings that bit1 is "0" and bit0 is "1", otherwise exception would happened. 3. if setting "dcs" value for MO message, we must make sure that the dcs is equal to 0, or 4, or 8, other values is not allowed now.

Example

AT+CSMP=17,167,0,0

<in text mode, send message to others or write message to storage with 7bit encode>

OK

AT+CSMP=17,167,0,4

<in text mode, send message to others or write message to storage with 8bit encode>

OK

AT+CSMP=17,167,0,8

<in text mode, send message to others or write message to storage with 16bit encode, sometimes the Chinese string>

OK

7.3 7.3 AT+CMSS Send Message From Storage(for SMS)

Description

Execution command sends message with location value <index> from preferred message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND).

Command	Possible response
AT+CMSS =?	`list of supported <state>s OK`
AT+CMSS=<state>	`OK`

Parameter

`<index>`:

integer type; value in the range of location numbers supported by the associated memory

Remark

1. <toda>have there values:161,145,129

2. At PDU mode , wen can't send MT message.

Example

```
AT+CMGF=0
AT+CMGR=1
AT+CMSS=1
OK
+CMGR: 3,,21 0891683110102105F031010B8131201170l3F50000A707F4F29C9E769F0
+CMSS: 3
OK
AT+CMGF=0
AT+CMGR=1
AT+CMSS=1, "13466507607", 129
OK
+CMGR: 3,,21 0891683110102105F031010B8131201170l3F50000A707F4F29C9E769F0
+CMSS: 6
OK AT+CMGF=1
AT+CSDH=1
AT+CMGR=1
AT+CMSS=1
OK
OK
+CMGR: "STO SENT","13021107315",,129,17,0,0,167,"+8613010112500",145,7 testing
+CMSS: 7
OK
AT+CMGF=1
AT+CSDH=1
AT+CMGR=1
AT+CMSS=1, "13466507607", 129
OK
OK
+CMGR: "STO SENT","13021107315",,129,17,0,0,167,"+8613010112500",145,7 testing
+CMSS: 10
OK
```

7.4 7.4 +CMTI/+CMT Indication New Short Message [for SMS]

Description

When receive new short message ,send +CMTI or +CMT[+CDS are message report]

Possible response
+CMTI: <mem>,<index> or +CMT: [<alpha>],<length><CR><LF><pdu> (PDU mode enabled) +CMT: <oa>, [<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>, <length>]<CR><LF><data> (Text mode enbaled)

Parameter

<mem> string type; memory for storage new messages

<index>

integer type; value in the range of location numbers supported by the associated memory

<length>

integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)

<fo>

depending on the command or result code: first octet of 3G TS 23.040 [3] SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format

<vp>

depending on SMS-SUBMIT is supported, in enhanced format (hexadecimal coded string with double quotes)

<pid>

3G TS 23.040 [3] TP-Protocol-Identifier in integer format (default 0)

<dcs>

depending on the command or result code: 3G TS 23.038 [2] SMS Data Coding Scheme (default0), or Cell Broadcast Data Coding Scheme in integer format

<sca>

3G TS 24.011 [6] RP SC address Address-Value field in string format;

<tosca>

3G TS 24.011 [6] RP SC address Type-of-Address octet in integer format

<scts>

3G TS 23.040 [3] TP-Service-Centre-Time-Stamp in time-string format (refer <dt>)

<alpha>

string type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific; used character set should be the one selected with command Select TE Characte

Remark

If the initial PDP context is supported, the context with <cid>=0 is automatically defined at startup, see subclause 10.1.0. Any active PDP contexts will be automatically deactivated when the attachment state changes to detached. The read command returns the current Packet Domain service state. The test command is used for requesting information on the supported Packet Domain service states.

Example

AT+CNMI=0,1,0,0,0

+CMTI: "SM",7 OK

AT+CMGF=0

AT+CNMI=0,2,0,0,0

+CMT: ,27

0891683110102105F0240D91683120117013F50000807020619393000 7F4F29C9E769F01

OK

OK

AT+CMGF=1

AT+CSDH=1

AT+CNMI=0,2,0,0,0

+CMT: "+8613021107315",,"2008/07/02,16:40:24+00",145,17,0,0,"+8613010112500",145,8 Testing OK

OK

OK

AT+CMGF =1

AT+CNMI=0,0,0,1,0 (need status report)

AT+CMGS="13445555991"

+CDS: 2,12,"+8613021107315",145,"2008/07/02,16:42:22+00","2008/07/02,16:42:34+00",0 OK

OK

+CMGS: 12

OK

7.5 7.5 AT+CMGD Delete SMS Message

Description

Execution command deletes message from preferred message storage <mem1> location <index>. If <delflag> is present and not set to 0 then the ME shall ignore <index> and follow the rules for <delflag> shown below. If deleting fails, final result code +CMS ERROR: <err> is returned. See chapter Message Service Failure Result Code for <err> values.

Command	Possible response
AT+CMGD =?	+CMGD: (list of supported <index>s),(list of supported <delflag>s) OK
AT+CMGD=<index>[,<delflag>]	OK

Parameter

<Index>:

Index : indicate which message will be deleted

<delflag>: an integer indicating multiple message deletion request as follows:

0 (or omitted) Delete the message specified in <index> 1 Delete all read messages from preferred message storage, leaving unread messages and stored mobile originated messages (whether sent or not) untouched 2 Delete all read messages from preferred message storage and sent mobile originated messages, leaving unread messages and unsent mobile originated messages untouched 3 Delete all read messages from preferred message storage, sent and unsent mobile originated messages leaving unread messages untouched. 4 Delete all messages from preferred message storage including unread messages.

Remark

Test command .list of supported <index>s

Example

AT+CMGD=1

<note1:delete the specific index message in the storage> <note2: if have no message we specific to delete, just return "OK" only>

OK

7.6 7.6 AT+CMGF Select SMS Message Format

Description

Set command specifies the input and output format of the short messages. The input and output format of the short messages can be either PDU mode or Text mode.

Command	Possible response
AT+CMGF =?	list of supported <mode>s OK
AT+CMGF?	+CMGF:<mode>
AT+CMGF=<mode>	OK

Parameter

<mode>:

0 PDU mode (default when implemented) 1 text mode

Example

AT+CMGF=0

< PDU mode>

OK

7.7 7.7 AT+CMGL List SMS Messages From Preferred Store

Description

Execution command returns messages with status value <stat> from message storage <mem1> to the TE.

Command	Possible response
AT+CMGL =?	`list of supported <stat>s OK`
AT+CMGL=<state>	`OK`

Parameter

`<stat>`:

integer type in PDU mode (default 0), or string type in text mode (default "REC UNREAD"); indicates the status of message in memory; defined values: 0 "REC UNREAD" received unread message (i.e. new message) 1 "REC READ" received read message 2 "STO UNSENT" stored unsent message (only applicable to SMs) 3 "STO SENT" stored sent message (only applicable to SMs) 4 "ALL" all messages (only applicable to +CMGL command)

Remark

1. <alpha> is not supported now.
2. if PDU mode, each bit meaning of DCS byte are reference in chapter 11.10,5, CMGW remark.

Example

AT+CMGL=n

<note1: n=0,1,2,3,4, meaning as description of 11.7.4 parameters definition> <note2: if have no message we specific to list, just return "OK" only> <note3: don't care about the dcs value with at+csmp setting or charset value with at+cscs setting here, the display is only depending to formats when the message store.>

OK

7.8 7.8 AT+CMGR Read SMS Message

Description

Execution command returns message with location value <index> from preferred message storage <mem1> to the TE.

Command	Possible response
AT+CMGR =?	`OK`
AT+CMGR=<index>	`+CMGR:<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>, <sca>,<tosca>,<length>]<CR><LF><data> OK`

Parameter

<index>:

Indicate which message will be read.

Remark

1. <alpha> and <scts> is not supported now.
2. Can't read short message report now.
3. When DTE character set is "GSM" (set by +CSCS command),the SMS content will be output by an ASCII string form if it is an pure ASCII SMS,otherwize it will be output in an UCS2 hex string form. If the DET character set is "UCS2" it will always be output in UCS2 hex string form.
4. if PDU mode, each bit meaning of DCS byte are reference in chapter 11.10,5, CMGW remark.

Example

AT+CMGR=2

(the message store in the mem with 8bit encode of dcs) +CMGR: "STO UNSENT","456" testing

OK

7.9 7.9 AT+CMGS Send SMS Message

Description

The write command transmits a short message from TE to network (SMS-SUBMIT).After invoking the write command wait for the prompt ">" and then start to write the message. To send the message simply enter <CTRL-Z>

Command	Possible response
AT+CMGS =?	OK
AT+CMGS=<da>[,<toda>]<CR> text is entered <ctrl-Z/ESC>	+CMGS:<mr> OK

Parameter

<da>

3G TS 23.040 [3] TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set (refer command +CSCS in3G TS 27.007 [9]); type of address given by <toda>tring type; memory to which writing and sending operations are made

<toda>

3G TS 24.011 [6] TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129)

<length>

integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length) PDU is given: we can send pdu message depending to the dcs value of oct in the pdu header. the PDU shall be hexadecimal format (similarly as specified for <pdu>) and given in one line; ME/TA converts this coding into the actual octets of PDU.text is entered

- we should care about the dcs of at+csmp setting, if we set 7bit encode of dcs, we can send 7bit encode message with text mode.

If we set 8bit or 16bit encode of dcs, we can send 8bit or 16bit message with text mode.the entered text should be formatted as follows: - if <dcs> (set with +CSMP) indicates that 3GPP TS 23.038 [2] GSM 7 bit default alphabet is used and <fo> indicates that 3GPP TS 23.040 [3] TP-User-Data-Header-Indication is not set: - if TE character set other than "HEX" (refer command Select TE Character Set +CSCS in 3GPP TS 27.007 [9]): ME/TA converts the entered text into the GSM 7 bit default alphabet according to rules of Annex A; backspace can be used to delete last character and carriage returns can be used (previously mentioned four character sequence shall be sent to the TE after every carriage return entered by the user); - if TE character set is "HEX": the entered text should consist of two IRA character long hexadecimal numbers which ME/TA converts into the GSM 7 bit default alphabet characters. (e.g. 17 (IRA 49 and 55) will be converted to character ? (GSM 7 bit default alphabet 23)).

<mr>

Type: integer type Meaning: 3GPP TS 23.040 [3] TP-Message-Reference in integer format

Remark

1. Not support long short message.
2. <toda>have there values: 161,145,129
3. At PDU mode,wen can't send MT message.

Example

AT+CMGF=0

OK

AT+CMGS=17

(value of "dcs" is getting from dcs oct in the pdu header)

>0011000B813170862334F20000A70361F118<CTRL Z> +CMGS: 1

OK

AT+CMGF=1

OK

AT+CSMP=17,167,0,0

(7bit encode of message to store or send in text mode)

OK

AT+CMGS="13560243602"

>abc<CTRL Z> +CMGS: 5

OK

AT+CSMP=17,167,0,4 (8bit encode of message to store or send in text mode)

OK

AT+CMGS=”13560243602”,129

>abc<CTRL Z> +CMGS:3

OK

AT+CSMP=17,167,0,8

(16bit encode of message to store or send in text mode)

OK

AT+CMGS=”+13560243602”,145

>XXX<CTRL Z> (Chinese string) +CMGS:4

OK

7.10 7.10 AT+CMGW Write SMS Message To Memory

Description

Execution command stores message (either SMS-DELIVER or SMS-SUBMIT) to memory storage <mem2>. Memory location <index> of the stored message is returned.

Command	Possible response
AT+CMGW =?	OK
AT+CMGW [=<oa/da>[,<tooa/toda>[,<stat>]]]<CR> **text is entered** <ctrl-Z/ESC>	OK

Parameter

<index>

integer type; value in the range of location numbers supported by the associated memory

<da>

3G TS 23.040 [3] TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set (refer command +CSCS in3G TS 27.007 [9]); type of address given by <toda>tring type; memory to which writing and sending operations are made

<toda>

3G TS 24.011 [6] TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129)

<length>

integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)

<stat>

Integer type in PDU mode (default 2 for +CMGW), or string type in text mode (default .STO UNSENT. for +CMGW). Indicates the status of message in memory.

Remark

1.not support long message. 2.<toda> have three values: 161, 145 and 129. 3. if pdu mode, each bit meaning of the dcs byte are following: Dcs byte: bit7..bit0

bit7..bit4 - encode group

bit7 - reserved bit6 - reserved bit5 - 0:text uncompress 1: GSM default compress bit4 - 0: bit0 and bit1 no use 1: bit0 and bit1 useful

bit0: bit1: 0 0 class1 0 1 class2 1 0 class3 1 1 class4

bit2: bit3: 0 0 GSM default 7 bit encode 0 1 8 bit encode 1 0 16bit(UCS2) encode 1 1 reserved

4. At PDU mode ,if we want to write MT message at storage, we must specify the status of UNREAD or READ. And at PDU mode , wen can't write MT message which have status of UNSENT or SENT.

Example

AT+CMGF=0

OK

AT+CMGW=17 (value of "dcs" is getting from dcs oct in the pdu header)

>0011000B813170862334F20000A70361F118<CTRL Z> +CMGW: 1

OK

AT+CMGF=1

OK

AT+CSMP=17,167,0,0 (7bit encode of message to store or send in text mode)

OK

AT+CMGW="13560243602"

>abc<CTRL Z> +CMGW: 5 OK

AT+CSMP=17,167,0,4

OK

AT+CMGW="13560243602",129

>abc<CTRL Z> +CMGW:3

OK

AT+CSMP=17,167,0,8 (16bit encode of message to store or send in text mode)

OK

AT+CMGW="13560243602"

>XXX<CTRL Z> (Chinese string) +CMGW:4

OK

7.11 7.11 AT+CNMI New SMS Message Indications

Description

Set command selects the procedure, how receiving of new messages from the network is indicated to the TE when TE is active.

Command	Possible response
AT+CNMI =?	`+CNMI:(list of supported <mode>s),(list of supported <mt>s) OK`
AT+CNMI?	`+CNMI:<mode>,<mt>,<bm>,<ds>,<bfr> OK`
AT+CNMI=<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]	OK

Parameter

`<mode>`

support one value now : 0 0 Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications. 1 Discard indication and reject new received message unsolicited result codes when TA-TE link is reserved (e.g. in on-line data mode). Otherwise forward them directly to the TE. 2 Buffer unsolicited result codes in the TA when TA-TE link is reserved (e.g. in on-line data mode) and flush them to the TE after reservation. Otherwise forward them directly to the TE. 3 Forward unsolicited result codes directly to the TE. TA-TE link specific inband technique used to embed result codes and data when TA is in on-line data mode.

`<mt>`

support three values now: 0,1,2,and have no CLASS type.

0 No SMS DELIVER indications are routed to the TE.

1 If SMS DELIVER is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code:+CMTI: <mem>,<index> 2 SMS DELIVERs (except class 2 messages and messages in the message waiting indication group (store message)) are routed directly to the TE using unsolicited result code:+CMT: [<alpha>],<length><CR><LF><pdu> (PDU mode enabled) or +CMT: <oa>, [<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>, <length>]<CR><LF><data> 3 Class 3 SMS-DELIVERs are routed directly to TE using unsolicited result codes defined in <mt>=2. Messages of other data coding schemes result in indication as defined in <mt>=1.

`<bm>`

Broadcast-csw not supported 0 No CBM indications are routed to the TE. 1 If CBM is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code:+CBMI: <mem>,<index> 2 New CBMs are routed directly to the TE using unsolicited result code:+CBM: <length><CR><LF><pdu> (PDU mode enabled)or+CBM: <sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data> (text mode enabled) If ME supports data coding groups which define special routing also for messages other than class 3 (e.g. (U)SIM specific messages), ME may choose not to route messages of such data coding schemes into TE (indication of a stored CBM may be given as defined in <bm>=1). 3 Class 3 CBMs are routed directly to TE using unsolicited result codes defined in <bm>=2. If CBM storage is supported, messages of other classes result in indication as defined in <bm>=1.

`<ds>`:

message report can't be storaged,the value 2 is not supported now

0 No SMS TATUS-REPORTs are routed to the TE. 1 SMS STATUS-REPORTs are routed to the TE using unsolicited result code:+CDS: <length><CR><LF><pdu> (PDU mode enabled)or+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (text mode enabled) 2 If SMS STATUS-REPORT is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code:+CDSI: <mem>,<index>

<bfr>:

not supported

0 TA buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1...3 is entered (OK response shall be given before flushing the codes). 1 TA buffer of unsolicited result codes defined within this command is cleared when <mode> 1...3 is entered.

Remark

1. if PDU mode, each bit meaning of DCS byte are reference in chapter 11.10,5, CMGW remark.

Example

AT+CNMIi=0,1,0,0,0

+CMTI: “SM”,7

OK

AT+CMGF=0

OK

AT+CNMI=0,2,0,0,0

+CMT: ,27 0891683110102105F0240D91683120117013F500008070206193930007F4F29C9E769F01

OK

AT+CMGF=1

OK

AT+CSDH=1

OK

AT+CNMI=0,2,0,0,0

+CMT: “+8613021107315”,,”2008/07/02,16:40:24+00”,145,17,0,0,”+8613010112500”,145,8 testing

OK

AT+CMGF=1

OK

AT+CNMI=0,0,0,1,0

OK

AT+CMGS=”13445555991”

+CMGS: 12

OK

+CDS: 2,12,”+8613021107315”,145,”2008/07/02,16:42:22+00”,”2008/07/02,16:42:34+00”,0

7.12 7.12 AT+CPMS Preferred SMS Message Storag

Description

Set command selects memory storages <mem1>, <mem2> and <mem3> to be used for reading, writing, etc

Command	Possible response
AT+CPMS =?	`+CPMS: (list of supported <mem1>s),(list of supported <mem2>s),(list of supported <mem3>s)OK`
AT+CPMS?	`+CPMS: <mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>, <mem3>,<used3>,<total3> OK`
AT+CPMS=<mem1>[, <mem2>[,<mem3>]]	`+CPMS: <used1>,<total1>,<used2>,<total2>,<used3>, <total3> OK`

Parameter

`<mem1>` string type; mmory from which messages are read and deleted `<mem2>` string type; memory to which writing and sending operations are made `<mem3>` string type; memory to which received SMs are preferred to be stored `<used1>` integer type;number of messages currently in <mem1> `<used2>` integer type;number of messages currently in <mem2> `<used3>` integer type;number of messages currently in <mem3> `<total1>` integer type;number of messages storable in <mem1> `<total2>` integer type;number of messages storable in <mem2> `<total3>` integer type;number of messages storable in <mem3>

Remark

Parameters <mem1>,<mem2> and <mem3> have two kinds fo values:"SM","ME"

Example

AT+CPMS="SM","ME","SM"

<"SM" [SMS message storage in SIM, default>] +CPMS: 11,40,0,200,11,40

OK

AT+CPMS?

+CPMS: 11,40,0,200,11,40

OK

AT+CPMS="ME","ME","ME"

+CPMS: 0,200,0,200,0,200

OK

AT+CPMS?

+CPMS: 0,200,0,200,0,200

OK

AT+CPMS="SM","SM","SM"

+CPMS: 11,40,11,40,11,40

OK

AT+CPMS?

+CPMS: 11,40,11,40,11,40

OK

7.13 7.13 AT+CSCA SMS Service Center Address

Description

Set command updates the SMSC address.

Command	Possible response
AT+CSCA =?	OK
AT+CSCA?	+CSCA:<sca>,<tosca> OK
AT+CSCA==<sca>[,<tosca>]	OK

Parameter

<sca>

GSM 04.11 RP SC address Address-Value field in string format

<tosca>

GSM 04.11 RP SC address Type-of-Address octet in integer format

Remark

If the initial PDP context is supported, the context with <cid>=0 is automatically defined at startup, see subclause 10.1.0. Any active PDP contexts will be automatically deactivated when the attachment state changes to detached. The read command returns the current Packet Domain service state. The test command is used for requesting information on the supported Packet Domain service states.

Example

AT+CSCA="+8613800100500"

OK

AT+CSCA?

+CSCA: "+8613800100500",145

OK

7.14 7.14 AT+CDS Indicates SMS Status Report Has been Received

Description

Indicates that SMS status report has been received

Possible response
+CDS: <length><CR><LF><pdu> (PDU mode enabled)
+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (text mode enabled)

Parameter

<pdu>

In the case of SMS: 3G TS 24.011 [6] SC address followed by 3G TS 23.040 [3] TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))

<length>

integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)

<fo>

depending on the command or result code: first octet of 3G TS 23.040 [3] SMS-DELIVER, SMS-SUBMIT SMS-STATUS-REPORT, or SMS-COMMAND in integer format is supported, in enhanced format (hexadecimal coded string with double quotes)

<scts>

3G TS 23.040 [3] TP-Service-Centre-Time-Stamp in time-string format (refer <dt>)

<st>

3G TS 23.040 [3] TP-Status in integer format

<mr>

3G TS 23.040 [3] TP-Message-Reference in integer format

<ra>

3G TS 23.040 [3] TP-Recipient-Address Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set (refer command +CSCS in 3G TS 27.007 [9]); type of address given by <tora>

<dt>

3G TS 23.040 [3] TP-Discharge-Time in time-string format: "yy/MM/dd,hh:mm:ss:zz", where characters indicate year (two last digits), month, day, hour, minutes, seconds and time zone. E.g. 6th of May 1994, 22:10:00 GMT+2 hours equals to "94/05/06,22:10:00+08"

<tora>

3G TS 24.011 [6] TP-Recipient-Address Type-of-Address octet in integer format (default refer <toda>)

Remark

Please refer to +CNMI

Example

AT+CMGF =0

OK

AT+CNMI=0,0,0,1,0

+CDS: 34 91683110102105F006110D91683120117013F5807020812014008070208120740000

OK

AT+CMGF=1

OK

AT+CNMI=0,0,0,1,0

OK

AT+CMGS=”13466507607”

+CMGS: 12

OK

+CDS: 2,14,”+8613021107315”,145,”2008/07/02,17:30:50+00”,”2008/07/02,17:30:55+00 “,0

Note:

- NULL

7.15 7.15 AT+CMMS Set SMS Concat

Description Set SMS Concat include “long sms”(ture) and “common sms”(false)

Command	Possible response
Test Command AT+CMMS=?	+CMMS:(0,1) OK
Read Command AT+CMMS?	+CMMS<nConcat> OK
Set Command AT+CMMS=<nConcat>	OK

Unsolicited Result Codes None

Parameter

<nConcat>: integer type; indicates the concat value
0 command sms 1 long sms

Example The following examples show the typical application for this command.

Command	Possible response
AT+CMMS=?	 +CMMS:0 OK
AT+CMMS?	 +CMMS:(0,1) OK
AT+CMMS=0	OK

Note:

- NULL

7.16 7.16 AT+CSAS Not Support

Description

Unsolicited Result Codes None

Parameter

Example The following examples show the typical application for this command.

Note:

- NULL

7.17 7.17 AT+CRES Not Support

Description

Unsolicited Result Codes None

Parameter

Example The following examples show the typical application for this command.

Note:

- NULL

7.18 7.18 AT+CSCB Set Cell Broadcast function

Description Set Cell Broadcast function related paramter

Command	Possible response
Test Command AT+CSCB=?	+CSCB:(0,1),(0,1,5,320-478,922),(0-3,5) OK
Read Command AT+CSCB?	+CSCB:<mode>,<mids>,<dcss> OK
Set Command AT+CSCB=<mode>,<mids>,<dcss>	OK

Unsolicited Result Codes None

Parameter

<mode>: integer type; indicates the mode 0 deactive cell broadcast function 1 active cell broadcast function
<mids>: integer type; indicates the channel want to receive cell broadcast
<dcss>: integer type; indicates the dcss want to receive cell broadcast

Example The following examples show the typical application for this command.

Command	Possible response
AT+CSCB=?	+CSCB:(0,1),(0,1,5,320-478,922),(0-3,5) OK
AT+CSCB?	+CSCB:1,5,3 OK
AT+CSCB=1,5,3	OK

Note:

- NULL

CHAPTER

EIGHT

8 GPRS COMMANDS

Contents

8.1 8.1 AT+CGATT PS Attach Or Detach

Description

The execution command is used to attach the MT to, or detach the MT from, the Packet Domain service. After the command has completed, the MT remains in V.250 command state. If the MT is already in the requested state, the command is ignored and the OK response is returned. If the requested state cannot be achieved, an ERROR or +CME ERROR response is returned. Extended error responses are enabled by the +CMEE command.

Command	Possible response
AT+CGATT =?	`list of supported <state>s OK`
AT+CGATT?	`+CGATT: <state>`
AT+CGATT=<state>	`OK`

Parameter

`<state>`:

<state>: integer type; indicates the state of PS attachment 0 detached 1 attached

Remark

If the initial PDP context is supported, the context with <cid>=0 is automatically defined at startup, see subclause 10.1.0. Any active PDP contexts will be automatically deactivated when the attachment state changes to detached. The read command returns the current Packet Domain service state. The test command is used for requesting information on the supported Packet Domain service states.

Example

AT+CGATT=1

Ok

AT+CGATT=?

+CGATT:(0,1)

OK

8.2 8.2 AT+CGDCONT Define PDP Context

Description

This command be used to defined PDP context.

Command	Possible response
AT+CGDCONT =?	**+CGDCONT: (range of supported <cid>s), <PDP_type>,** [+CGDCONT: (range of supported <cid>s), <PDP_type>,(list of supported <d_comp>s), (list of supported <h_comp>s)] OK
AT+CGDCONT?	**+CGDCONT: <cid>, <PDP_type>, <APN>,<PDP_addr>, <d_** +CGDCONT: <cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp> OK
AT+CGDCONT=<cid> [,<PDP_type> [,<APN> [,<PDP_addr> [,<d_comp> [,<h_comp>]]]]]	OK

Parameter

<cid>

(PDP Context Identifier) a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1, maximum value =7) is returned by the test form of the command.

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol IP Internet Protocol (IETF STD 5) IPV6 Internet Protocol, version 6 (IETF RFC 2460) PPP Point to Point Protocol (IETF STD 51)

<APN>

(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network. If the value is null or omitted, then the subscription value will be requested.

<PDP_address>

a string parameter that identifies the MT in the address space applicable to the PDP. If the value is null or omitted, then a value may be provided by the TE during the PDP startup procedure or, failing that, a dynamic address will be requested. The read form of the command will continue to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using the +CGPADDR command.

<d_comp>

a numeric parameter that controls PDP data compression (applicable for SNDCP only) (refer 3GPP TS 04.65 [59]) 0 off (default if value is omitted) 1 on (manufacturer preferred compression) 2 V.42bis 3 V.44bis Other values are reserved.

<h_comp>

a numeric parameter that controls PDP header compression (refer 3GPP TS 04.65 [59]) 0 off (default if value is omitted) 1 on (manufacturer preferred compression) 2 RFC1144 3 RFC2507 4 RFC3095 Other values are reserved.

Example

AT+CGDCONT=?

+CGDCONT: (1..7), (IP,IPV6,PPP),(0..3),(0..4)

OK

AT+CGDCONT=1, “IP”,”cmnet”

OK

AT+CGDCONT? +CGDCONT:1,”IP”, “cmnet”, ,0,0

OK

8.3 8.3 AT+CGACT PDP Context Activate Or Deactivate

Description

This command is used to activate or deactivate the specified PDP context (s). After the command has completed, the MT remains in V.25ter command state. If any PDP context is already in the requested state, the state for that context remains unchanged. If the MT is not PS attached when the activation form of the command is executed, the MT first performs a PS attach and then attempts to activate the specified contexts. If no <cid>s are specified the activation form of the command activates all defined contexts or deactivates all active contexts

Command	Possible response
AT+CGACT =?	`+CGACT: (list of supported <state>s)` `OK`
AT+CGACT?	• `+CGACT: <state>` • `OK`
AT+ CGACT=<state> [,<cid>[,<cid>[]]]	`OK`

Parameter

`<state>`

State indicates the state of PS attachment 0 deactivated 1 activated

Other values are reserved and will result in an ERROR response to the execution command.

`<cid>`

A numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands). Range from 1 to 7.

Remark

1. Before activating, use command AT+CGATT=1 first to attach to the network.
2. Currently,only 3 active PDP contexts are allowed to exist simultaneity.

So the number of cid in this command is limited to 3. And if you have defined more than 3 cids with command AT+CGDCONT, only the first 3 will be acted on when you use AT+CGACT=1 to activate all cids.

Example

AT+CGACT=?

+CGACT: (0,1)

OK

AT+CGACT=1,1

OK

AT+CGACT?

+CGACT: (1,1)

OK

8.4 8.4 AT+CRC Cellular Result Codes

Description

This command is to control whether or not the extended format of incoming call indication or GPRS network request for PDP context activation or notification for VBS/VGCS calls is used. When enabled, an incoming call is indicated to the TE with unsolicited result code +CRING: <type> instead of the normal RING

Command	Possible response
AT+CRC =?	• `+CRC: (0,1)` • `OK`
AT+CRC?	• `+CRC: <mode>` • `OK`
AT+CRC=<mode>	`OK`

Parameter

`<mode>`:

0 disables extended format (default) 1 enables extended format

Remark

NULL

Example

AT+CRC=?

+CRC: (0,1)

OK

AT+CRC=1

OK

AT+CRC?

+CRC: 1

OK

8.5 8.5 AT+CGQMIN Quality Of Service Profile (Minimum Acceptable)

Description

This command allows the TE to specify a minimum acceptable profile which is checked by the MT against the negotiated profile returned in the Activate PDP Context Accept message. A special form of the set command, +CGQMIN=<cid> causes the minimum acceptable profile for context number <cid> to become undefined. In this case no check is made against the negotiated profile

Command	Possible response
AT+CGQMIN=?	• **Success:** – +CGQMIN: <PDP_type>, (list of supported <precedence>s), – (list of supported <delay>s), – (list of supported <reliability>s) , – (list of supported <peak>s), – (list of supported <mean>s) +CGQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) []] OK
AT+CGQMIN=<cid> [,<precedence > [,<delay> [,<reliability.>[,<peak> [,<mean>]]]]]	**Success:** OK
AT+CGQMIN?	**Success:** +CGQMIN: <cid>, <precedence >, <delay>, <reliability>, <peak>, <mean>[<CR><LF>+CGQMIN: <cid>, <precedence>, <delay>, <reliability.>, <peak>, <mean>[]] OK

Parameter

`cid`

a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

`precedence`

Specifies the precedence class 0 network subscribed value 1 High Priority. Service commitments shall be maintained ahead of precedence classes 2 and 3 2 Normal priority. Service commitments shall be maintained ahead of precedence class 3 3 Low priority. Service commitments shall be maintained ahead of precedence classes 1 and 2

`delay`

Specifies the delay class. 0 network subscribed value 1 < 0.5 2 < 5 3 < 50 4 Unspecified (Best Effort)

`reliability`

Specify the reliability class. 0 network subscribed value 1 Non real-time traffic, error-sensitive application that cannot cope with data loss 2 Non real-time traffic, error-sensitive application that can cope with infrequent data loss 3 Non real-time traffic, error-sensitive application that can cope with data loss, GMM/SM, and SMS 4 Real-time traffic, error-sensitive application that can cope with data loss 5 Real-time traffic, error non-sensitive application that can cope with data loss

`peak`

Specify the peak throughput class. Class Peak Throughput(in octets per second) 0 network subscribed value 1 Up to 1 000 (8 kbit/s) 2 Up to 2 000 (16 kbit/s). 3 Up to 4 000 (32 kbit/s) 4 Up to 8 000 (64 kbit/s) 5 Up to 16 000 (128 kbit/s) 6 Up to 32 000 (256 kbit/s) 7 Up to 64 000 (512 kbit/s) 8 Up to 128 000 (1 024 kbit/s) 9 Up to 256 000 (2 048 kbit/s)

`mean`

Class Peak Throughput(in octets per second) 0 network subscribed value 1 (in octets per hour) 100 (~0.22 bit/s) 2 200 (~0.44 bit/s) 3 500 (~1.11 bit/s) 4 1 000 (~2.2 bit/s) 5 2 000 (~4.4 bit/s) 6 5 000 (~11.1 bit/s) 7 10 000 (~22 bit/s) 8 20 000 (~44 bit/s) 9 50 000 (~111 bit/s) 10 100 000 (~0.22 kbit/s) 11 200 000 (~0.44 kbit/s) 12 500 000 (~1.11 kbit/s) 13 1 000 000 (~2.2 kbit/s) 14 2 000 000 (~4.4 kbit/s) 15 5 000 000 (~11.1 kbit/s) 16 10 000 000 (~22 kbit/s) 17 20 000 000 (~44 kbit/s) 18 50 000 000 (~111 kbit/s) 31 best effort

`PDP_type`

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol:
IP Internet Protocol (IETF STD 5) IPV6 Internet Protocol, version 6 (IETF RFC 2460) PPP Point to Point Protocol (IETF STD 51)

Example

AT+CGQMIN=?

+CGQMIN: (IP,PPP,IPV6), (0..3), (0..4), (0..5) , (0..9), (0..18,31)

OK

AT+CGQMIN=1,1,1,1,1,1

OK

AT+CGQMIN?

+CGQMIN: 1,1,1,1,1,1

+CGQMIN: 2,0,0,0,0,0

+CGQMIN: 3,0,0,0,0,0

OK

8.6 8.6 AT+CGPADDR Show PDP Address

Description

The execution command returns a list of PDP addresses for the specified context identifiers

Command	Possible response
AT+CGPADDR=?	+CGPADDR: (list of defined <cid>s) OK
AT+CGPADDR=<cid>[,<cid>[,]]	**Success:** +CGPADDR: <cid>,<PDP_addr>[<CR><LF> +CGPADDR: <cid>,<PDP_addr>[...]] OK

Parameter

`<cid>`

a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands). If no <cid> is specified, the addresses for all defined contexts are returned.

`<PDP_address>`

a string that identifies the MT in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the +CGDCONT and +CGDSCONT commands when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>. <PDP_address> is omitted if none is available

Example

AT+CGPADDR=?

+CGPADDR: (1,2,3)

OK

AT+CGPADDR=1

+CGPADDR: 1,"10.14.57.241"

OK

8.7 8.7 AT+CGAUTO Automatic Response To A Network Request For PDP Context Activation

Description

The set command disables or enables an automatic positive response (auto-answer) to the receipt of a Request PDP Context Activation message from the network. It also provides control over the use of the V.25ter basic commands 'S0', 'A and 'H' for handling network requests for PDP context activation. The setting does not affect the issuing of the unsolicited result code RING or +CRING

Command	Possible response
AT+CGAUTO=?	**Success:** +CGAUTO: (list of supported <n>s) OK
AT+CGAUTO?	**Success:** +CGAUTO: <n> OK
AT+ CGAUTO=<n>	**Success:** OK

Parameter

<n>

0 turn off automatic response for Packet Domain only 1 turn on automatic response for Packet Domain only 2 modem compatibility mode, Packet Domain only 3 modem compatibility mode, Packet Domain and circuit switched calls (default) For <n> = 0 Packet DomainS network requests are manually accepted or rejected by the +CGANS command. For <n> = 1 Packet Domain network requests are automatically accepted according to the description above. For <n> = 2, automatic acceptance of Packet Domain network requests is controlled by the 'S0' command. Manual control uses the 'A' and 'H' commands, respectively, to accept and reject Packet Domain requests. (+CGANS may also be used.) Incoming circuit switched calls can be neither manually nor automatically answered. For <n> = 3, automatic acceptance of both Packet Domain network requests and incoming circuit switched calls is controlled by the 'S0' command. Manual control uses the 'A' and 'H' commands, respectively, to accept and reject Packet Domain requests. (+CGANS may also be used.) Circuit switched calls are handled as described elsewhere in this specification.

Remark

When the +CGAUTO=0 command is received, the MT shall not perform a PS detach if it is attached. Subsequently, when the MT announces a network request for PDP context activation by issuing the unsolicited result code RING or +CRING, the TE may manually accept or reject the request by issuing the +CGANS command or may simply ignore the network request. When the +CGAUTO=1 command is received, the MT shall attempt to perform a PS attach if it is not already attached. Failure will result in ERROR or, if enabled, +CME ERROR being returned to the TE. Subsequently, when the MT announces a network request for PDP context activation by issuing the unsolicited result code RING or +CRING to the TE, this is followed by the intermediate result code CONNECT. The MT then enters V.25ter online data state and follows the same procedure as it would after having received a +CGANS=1 with no <L2P> or <cid> values specified.

Example

AT+CGAUTO=?

+CGAUTO: (0-3)

OK

AT+CGAUTO=0

OK

AT+CGAUTO?

+CGAUTO: 0

OK

8.8 8.8 AT+CGQREQ Quality Of Service Profile (requested)

Description

This AT command be used to set the parameters of the QoS when MT send the PDP context message for activation

Command	Possible response
AT+CGQREQ=?	**Success:** +CGQREQ: (list of supported) OK
AT+CGQREQ?	**Success:** +CGQREQ: <cid>,<precedence>,<delay>,<peak>,<mean> OK
AT+CGQREQ=<cid> [,<precedence > [,<delay> [,<reliability.> [,<peak> [,<mean>]]]]]	Success: OK

Parameter

`<cid>`

a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands) < precedence > Specifies the precedence class 0 network subscribed value 1 High Priority. Service commitments shall be maintained ahead of precedence classes 2 and 3 2 Normal priority. Service commitments shall be maintained ahead of precedence class 3 3 Low priority. Service commitments shall be maintained ahead of precedence classes 1 and 2

`<delay>`

Specifies the delay class 0 network subscribed value 1 < 0.5 2 < 5 3 < 50 4 Unspecified (Best Effort)

`<reliability>`

Specify the reliability class 0 network subscribed value 1 Non real-time traffic, error-sensitive application that cannot cope with data loss 2 Non real-time traffic, error-sensitive application that can cope with infrequent data loss 3 Non real-time traffic, error-sensitive application that can cope with data loss, GMM/SM, and SMS 4 Real-time traffic, error-sensitive application that can cope with data loss 5 Real-time traffic, error non-sensitive application that can cope with data loss

`<peak>`

Specify the peak throughput class 0 network subscribed value 1 Up to 1 000 (8 kbit/s). 2 Up to 2 000 (16 kbit/s) 3 Up to 4 000 (32 kbit/s). 4 Up to 8 000 (64 kbit/s) 5 Up to 16 000 (128 kbit/s) 6 Up to 32 000 (256 kbit/s) 7 Up to 64 000 (512 kbit/s) 8 Up to 128 000 (1 024 kbit/s) 9 Up to 256 000 (2 048 kbit/s)

`<mean>`

Specify the mean throughout class. 0 network subscribed value 1 (in octets per hour) 100 (~0.22 bit/s) 2 200 (~0.44 bit/s) 3 500 (~1.11 bit/s) 4 1 000 (~2.2 bit/s) 5 2 000 (~4.4 bit/s) 6 5 000 (~11.1 bit/s) 7 10 000 (~22 bit/s) 8 20 000 (~44 bit/s) 9 50 000 (~111 bit/s) 10 100 000 (~0.22 kbit/s) 11 200 000 (~0.44 kbit/s) 12 500 000 (~1.11 kbit/s) 13 1 000 000 (~2.2 kbit/s) 14 2 000 000 (~4.4 kbit/s) 15 5 000 000 (~11.1 kbit/s) 16 10 000 000 (~22 kbit/s) 17 20 000 000 (~44 kbit/s) 18 50 000 000 (~111 kbit/s) 31 best effort

`<PDP_type>`

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol:
IP Internet Protocol (IETF STD 5) IPV6 Internet Protocol, version 6 (IETF RFC 2460) PPP Point to Point Protocol (IETF STD 51)

Example

AT+CGQREQ=?

+CGQREQ: IP,(0..3),(0..4), (0..5),(0..9),(0..18,31)

OK

AT+CGQREQ=1,1,1,1,1,1

OK

AT+CGQREQ?

+CGQREQ: 1,1,1,1,1,1 +CGQREQ: 2,0,0,0,0,0 +CGQREQ: 3,0,0,0,0,0

OK

8.9 8.9 AT+CGREG GPRS Network Registration Status

Description

This AT command be used to set and show the register information of MT and the position information of the MT.

Command	Possible response
AT+CGREG=?	**Success:** +CGREG: (list of supported <n>s) OK
AT+CGREG?	**Success:** +CGREG: <n>,<stat>[,<lac>,<ci>] OK
AT+CGREG=<n>	Success: OK

Parameter

`<n>`

0 disable network registration unsolicited result code 1 enable network registration unsolicited result code +CGREG: <stat> 2 enable network registration and location information unsolicited result code +CGREG: <stat>[,<lac>,<ci>]

`<stat>`

0 not registered, MT is not currently searching an operator to register to The UE is in GMM state GMM-NULL or GMM-DEREGISTERED-INITIATED. The GPRS service is disabled, the UE is allowed to attach for GPRS if requested by the user. 1 registered, home network The UE is in GMM state GMM-REGISTERED or GMM-ROUTING-AREA-UPDATING-INITIATED INITIATED on the home PLMN.

2 not registered, but MT is currently trying to attach or searching an operator to register to The UE is in GMM state GMM-DEREGISTERED or GMM-REGISTERED-INITIATED. The GPRS service is enabled, but an allowable PLMN is currently not available. The UE will start a GPRS attach as soon as an allowable PLMN is available. 3 registration denied The UE is in GMM state GMM-NULL. The GPRS service is disabled, the UE is not allowed to attach for GPRS if requested by the user. 4 unknown 5 registered, roaming The UE is in GMM state GMM-REGISTERED or GMM-ROUTING-AREA-UPDATING-INITIATED on a visited PLMN.

`<lac>`

string type; two byte location area code in hexadecimal format (e.g. “00C3” equals 195 in decimal)

`<ci>`

string type; two byte cell ID in hexadecimal format

Example

AT+CGREG=?

+CGREG: (0-2)

OK

AT+CGREG=2

OK

AT+CGREG?

+CGREG: 2,1,”10DC”,”0D2B”

OK

8.10 8.10 ATD*99***1# Request GPRS Service

Description

Login the server, the IP of it be provided by DHCP of GGSN. This command causes the MT to perform whatever actions are necessary to establish communication between the TE and the external PDN. The V.25ter ‘D’ (Dial) command causes the MT to enter the V.25ter online data state and, with the TE, to start the specified layer 2 protocols. The MT shall return CONNECT to confirm acceptance of the command prior to entering the V.25ter online data state. No further commands may follow on the AT command line.

Command	Possible response
`D*<GPRS_SC_IP>[*<cid>[,<cid>[,]]]#`	• Success: • CONNECT • OK

Parameter

< called_address >

It's a string that identifies the called party in the address space applicable to the PDP. For communications software that does not support arbitrary characters in the dial string, a numeric equivalent may be used. Also, the character comma ',' may be used as a substitute for the character period '.'.

< L2P >

It's a string which indicates the layer 2 protocol to be used (see +CGDATA command). For communications software that does not support arbitrary characters in the dial string, the following numeric equivalents shall be used: "PPP"

< cid >

It's a digit string which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

Example

ATD*99***1#

CONNECT

dial GPRS service code and start up connecting.>

8.11 8.11 AT+CGSMS Select Service For MO SMS Messages

Description

The set command is used to specify the service or service preference that the MT will use to send MO SMS messages

Command	Possible response
AT+CGSMS=?	**Success:** +CGSMS: (list of supported <service>s) OK
AT+CGSMS?	**Success:** +CGSMS: <service> OK
AT+CGSMS=<service>	Success: OK

Parameter

< service >

a numeric parameter which indicates the service or service preference to be used 0 Packet Domain 1 circuit switched 2 Packet Domain preferred (use circuit switched if GPRS not available) 3 circuit switched preferred (use Packet Domain if circuit switched not available)

Remark

This command is NOT available now

Example

AT+CGSMS=?

+CGSMS: (0-3)

OK

AT+CGSMS=0

OK

AT+CGSMS?

+CGSMS: 0

OK

8.12 8.12 AT+CGANS PDP Manual Response To A Nw Req For PDP Context Activation

Description

The execution command requests the MT to respond to a network request for Packet Domain PDP context activation which has been signaled to the TE by the RING or +CRING: unsolicited result code. The <response> parameter allows the TE to accept or reject the request.Commands following the +CGANS command in the AT command line shall not be processed by the MT

Command	Possible response
AT+CGANS=?	• Success: • +CGANS: (list of supported <response>s), (list of supported <L2P>s) • OK
AT+CGANS=[<response>, [<L2P> ,[<cid>]]]	• Success: • OK

Parameter

`< response >`

Response is a numeric parameter which specifies how the request should be responded to. 0 reject the request (default value) 1 accept and request that the PDP context be activated

`< L2P >`

a string parameter which indicates the layer 2 protocol to be used (see +CGDATA command).

`< cid >`

a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

Example

AT+CGANS=?

+CGANS: (0-1)

OK

8.13 8.13 AT+CGEREP Packet Domain Event Reporting

Description

This command is to enables or disables sending of unsolicited result codes, +CGEV: XXX from MT to TE in the case of certain events occurring in the Packet Domain MT or the network

Command	Possible response
AT+CGEREP=?	**Success:** **+CGEREP: (list of supported <mode>s),(list of supported <bfr>s** OK
AT+CGEREP?	**Success:** +CGEREP: <mode>,<bfr> OK
AT+CGEREP=[<mode>[,<bfr>]]	Success: OK

Parameter

`< mode >`

0 buffer unsolicited result codes in the MT; if MT result code buffer is full, the oldest ones can be discarded. No codes are forwa

1 discard unsolicited result codes when MT TE link is reserved (e.g. in on line data mode); otherwise forward them directly to the TE 2 buffer unsolicited result codes in the MT when MT TE link is reserved (e.g. in on line data mode) and flush them to the TE when MT TE link becomes available; otherwise forward them directly to the TE

`< bfr >`

0 MT buffer of unsolicited result codes defined within this command is cleared when <mode> 1 or 2 is entered 1 MT buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1 or 2 is entered (OK response shall be given before flushing the codes)

Unsolicited Result Codes

`URC1`

+CGEV: REJECT <PDP_type>, <PDP_addr> A network request for PDP context activation occurred when the MT was unable to report it to the TE with a +CRING unsolicited result code and was automatically rejected...

`URC2`

+CGEV: NW REACT <PDP_type>, <PDP_addr>, [<cid>] The network has requested a context reactivation. The <cid> that was used to reactivate the context is provided if known to the MT...

`URC3`

+CGEV: NW DEACT <PDP_type>, <PDP_addr>, [<cid>] The network has forced a context deactivation. The <cid> that was used to activate the context is provided if known to the MT.

URC4

+CGEV: ME DEACT <PDP_type>, <PDP_addr>, [<cid>] The mobile termination has forced a context deactivation. The <cid> that was used to activate the context is provided if known to the MT...

URC5

+CGEV: NW DETACH The network has forced a PS detach. This implies that all active contexts have been deactivated. These are not reported separately...

URC6

+CGEV: ME DETACH The mobile termination has forced a PS detach. This implies that all active contexts have been deactivated. These are not reported separately...

URC7

+CGEV: NW CLASS <class> The network has forced a change of UE class. The highest available class is reported (see +CGCLASS)...

URC8

+CGEV: ME CLASS <class> The mobile termination has forced a change of UE class. The highest available class is reported (see +CGCLASS)...

Example

AT+CGEREP=?

+CGEREP: (0,2),(0)

OK

AT+CGEREP=2,0

OK

AT+CGEREP?

+CGEREP: 2,0

OK

8.14 8.14 AT+CGDATA Enter Data State

Description

The execution command causes the MT to perform whatever actions are necessary to establish communication between the TE and the network using one or more Packet Domain PDP types. This may include performing a PS attach and one or more PDP context activations. If the <L2P> parameter value is unacceptable to the MT, the MT shall return an ERROR or +CME ERROR response. Otherwise, the MT issues the intermediate result code CONNECT and enters V.25ter online data state.

Commands following +CGDATA command in the AT command line shall not be processed by the MT.

The context shall be activated using the matched value for PDP type and a static PDP address if available, together with the other information found in the PDP context definition. If a static PDP address is not available then a dynamic address is requested.

If no <cid> is given or if there is no matching context definition, the MT shall attempt to activate the context with whatever information is available to the MT. The other context parameters shall be set to their default values. If the activation is successful, data transfer may proceed.

After data transfer is complete, and the layer 2 protocol termination procedure has completed successfully, the V.25ter command state is re-entered and the MT returns the final result code OK. In the event of an erroneous termination or a failure to start up, the V.25ter command state is re-entered and the MT returns the final result code NO CARRIER or, if enabled, +CME ERROR. Attach, activate and other errors may be reported.

Command	Possible response
AT+CGDATA=?	**Success:** +CGDATA: (list of supported <L2P>s) OK
AT+CGDATA=<cid>[,<cid>[,]]	Success: CONNECT . . . (data transfer) OK

Parameter

`< L2P >`

a string parameter that indicates the layer 2 protocol to be used between the TE and MT PPP Point-to-point protocol for a PDP such as IP

`< cid >`

a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

Remark

This command may be used in both normal and modem compatibility modes. This command is NOT available now

Example

AT+CGDATA=?

+CGDATA:

OK

AT+CGDATA=1,1

CONNECT 115200

8.15 8.15 AT+CGCLASS GPRS Mobile Station Class

Description

The set command is used to set the MT to operate according to the specified mode of operation, see TS 23.060 [47]. If the requested mode of operation is not supported, an ERROR or +CME ERROR response is returned. Extended error responses are enabled by the +CMEE command

Command	Possible response
AT+CGCLASS =?	**Success:** +CGCLASS: (list of supported <class>s) OK
AT+CGCLASS?	**Success:** +CGCLASS: <class> OK
AT+CGCLASS =[<class>]	Success: OK

Parameter

`< class >`

a string parameter which indicates the mode of operation A Class-A mode of operation (A/Gb mode), or CS/PS mode of operation (Iu mode) (highest mode of operation) B Class-B mode of operation (A/Gb mode), (not applicable in Iu mode) CG Class-C mode of operation in PS only mode (A/Gb mode), or PS mode of operation (Iu mode) CC Class-C mode of operation in CS only mode (A/Gb mode), or CS (Iu mode) (lowest mode of operation) NOTE: <class> A means that the MT would operate simultaneous PS and CS service <class> B means that the MT would operate PS and CS services but not simultaneously <class> CG means that the MT would only operate PS services <class> CC means that the MT would only operate CS services Other values are reserved and will result in an ERROR response to the set command. If the MT is attached to the PS domain when the set command is issued with a <class> = CC specified, a PS detach shall be performed by the MT.

Example

AT+CGCLASS=?

+CGCLASS: (“CG”,”CC”,”B”)

OK

AT+CGCLASS=”B”

OK

AT+CGCLASS?

+CGCLASS: “B”

OK

Note:

- NULL

8.16 8.16 AT+QGPCLASS Get the GPRS class of UE support

Description

Get the GPRS class of UE support

Command	Possible response
AT+QGPCLASS=?	Success: +QGPCLASS: (list of supported <class>s) OK
AT+QGPCLASS?	Success: +CGCLASS: <class> OK
AT+CGCLASS =[<class>]	ERROR

Parameter

None

Note:

- NULL

8.17 8.17 AT+CGEQREQ 3G quality of service profile (requested)

Description

This command allows the TE to specify a UMTS Quality of Service Profile that is used when the MT activates a PDP context.

The set command specifies a profile for the context identified by the (local) context identification parameter, <cid>. The specified profile will be stored in the MT and sent to the network only at activation or MS-initiated modification of the related context. Since this is the same parameter that is used in the +CGDCONT and +CGDSCONT commands, the +CGEQREQ command is effectively an extension to these commands. The QoS profile consists of a number of parameters, each of which may be set to a separate value.

A special form of the set command, +CGEQREQ=<cid> causes the requested profile for context number <cid> to become undefined.

The read command returns the current settings for each defined context.

The test command returns values supported as compound values. If the MT supports several PDP types, the parameter value ranges for each PDP type are returned on a separate line.

Command	Possible response
AT+CGEQREQ=?	+CGEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of supported <Transfer delay>s),(list of supported <Traffic handling priority>s),(list of supported <Source statistics descriptor>s),(list of supported <Signalling indication>s) [<CR><LF>+CGEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of supported <Transfer delay>s),(list of supported <Traffic handling priority>s),(list of supported <Source statistics descriptor>s),(list of supported <Signalling indication>s) [. . .]]
AT+CGEQREQ?	[+CGEQREQ: <cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>, <Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer delay>,<Traffic handling priority>,<Source statistics descriptor>,<Signalling indication>] [<CR><LF>+CGEQREQ: <cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer delay>,<Traffic handling priority>,<Source Statistics Descriptor>,<Signalling Indication> [. . .]]
+CGEQREQ=[<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrate UL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>[,<Source statistics descriptor>[,<Signalling indication>]]]]]]]]]]]]]]]	

Parameter

<cid>: integer type; specifies a particular PDP context definition (see +CGDCONT and +CGDSCONT commands).
<PDP_type>: string type; specifies the type of packet data protocol (see the +CGDCONT command).
For the following parameters, see also 3GPP TS 23.107 [46].
<Traffic class>: integer type; indicates the type of application for which the UMTS bearer service is optimised (refer 3GPP TS 24.008 [8] subclause 10.5.6.5). 0 conversational 1 streaming 2 interactive 3 background 4 subscribed value
If the Traffic class is specified as conversational or streaming, then the Guaranteed and Maximum bitrate parameters should also be provided.
<Maximum bitrate UL>: integer type; indicates the maximum number of kbits/s delivered to UMTS (up-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=...,32,...). This parameter should be provided if the Traffic class is specified as conversational or streaming (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Maximum bitrate DL>: integer type; indicates the maximum number of kbits/s delivered by UMTS (down-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=...,32,...). If the parameter is set to '0' the subscribed value will be requested. This parameter should be provided if the Traffic class is specified as conversational or streaming (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Guaranteed bitrate UL>: integer type; indicates the guaranteed number of kbits/s delivered to UMTS (up-link traffic) at a SAP (provided that there is data to deliver). As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=...,32,...). If the parameter is set to '0' the subscribed value will be requested. This parameter should be provided if the Traffic class is specified as conversational or streaming (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Guaranteed bitrate DL>: integer type; indicates the guaranteed number of kbits/s delivered by UMTS (down-link traffic) at a SAP (provided that there is data to deliver). As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=...,32,...). If the parameter is set to '0' the subscribed value will be requested. This parameter should be provided if the Traffic class is specified as conversational or streaming (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Delivery order>: integer type; indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not (refer 3GPP TS 24.008 [8] subclause 10.5.6.5). 0 no 1 yes 2 subscribed value
<Maximum SDU size>: integer type; (1,2,3,...) indicates the maximum allowed SDU size in octets. If the parameter is set to '0' the subscribed value will be requested (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<SDU error ratio>: string type; indicates the target value for the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic. The value is specified as 'mEe'. As an example a target SDU error ratio of 5?10-3 would be specified as "5E3" (e.g. AT+CGEQREQ=...,"5E3",...). "0E0" means subscribed value (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Residual bit error ratio>: string type; indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested, Residual bit error ratio indicates the bit error ratio in the delivered SDUs. The value is specified as "mEe". As an example a target residual bit error ratio of 5?10-3 would be specified as "5E3" (e.g. AT+CGEQREQ=...,"5E3",...). "0E0" means subscribed value (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Delivery of erroneous SDUs>: integer type; indicates whether SDUs detected as erroneous shall be

Note:

- When in dual mode with EPS the MT provides a mapping function to EPS Quality of Service parameter used for an EPS bearer resource activation request.

8.18 8.18 AT+CGDSCONT Define secondary PDP context

Description

The set command specifies PDP context parameter values for a Secondary PDP context identified by the (local) context identification parameter, <cid>. The number of PDP contexts that may be in a defined state at the same time is given by the range returned by the test command.

In EPS the command is used to define traffic flows.

A special form of the set command, +CGDSCONT=<cid> causes the values for context number <cid> to become undefined.

NOTE: If the initial PDP context is supported, the context with <cid>=0 is automatically defined at startup, see subclause 10.1.0.

The read command returns the current settings for each defined context.

The test command returns values supported as compound values.

Command	Possible response
AT+CGDSCONT =?	Success: | +CGDSCONT: (range of supported <cid>s),(list of <p_cid>s for active primary contexts),(list of supported <d_comp>s),(list of supported <h_comp>s) OK
+CGDSCONT?	[+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp>][<CR><LF>+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp>[...]] OK
+CGDSCONT=[<cid>,<p_cid>[,<d_comp>[,<h_comp>]]]	Success: OK

Parameter

<cid>: integer type; which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command. NOTE: The <cid>s for network-initiated PDP contexts will have values outside the ranges indicated for the <cid> in the test form of the commands +CGDCONT and +CGDSCONT.
<p_cid>: integer type; specifies a particular PDP context definition which has been specified by use of the +CGDCONT command. The parameter is local to the TE-MT interface. The list of permitted values is returned by the test form of the command.
<d_comp>: integer type; controls PDP data compression (applicable for SNDCP only) (refer 3GPP TS 44.065 [61]) 0 off 1 on (manufacturer preferred compression) 2 V.42bis 3 V.44
<h_comp>: integer type; controls PDP header compression (refer 3GPP TS 44.065 [61] and 3GPP TS 25.323 [62]) 0 off 1 on (manufacturer preferred compression) 2 RFC 1144 [105] (applicable for SNDCP only) 3 RFC 2507 [107] 4 RFC 3095 [108] (applicable for PDCP only)
<IM_CN_Signalling_Flag_Ind>: integer type; indicates to the network whether the PDP context is for IM CN subsystem-related signalling only or not. 0 UE indicates that the PDP context is not for IM CN subsystem-related signalling only 1 UE indicates that the PDP context is for IM CN subsystem-related signalling only

Note:

- NULL

8.19 8.19 AT+CGTFT Traffic flow template

Description

This command allows the TE to specify a Packet Filter - PF for a Traffic Flow Template - TFT that is used in the GGSN in UMTS/GPRS and Packet GW in EPS for routing of packets onto different QoS flows towards the TE. The concept is further described in the 3GPP TS 23.060 [47]. A TFT consists of

from one and up to 16 Packet Filters, each identified by a unique <packet filter identifier>. A Packet Filter also has an <evaluation precedence index> that is unique within all TFTs associated with all PDP contexts that are associated with the same PDP address.

The set command specifies a Packet Filter that is to be added to the TFT stored in the MT and used for the context identified by the (local) context identification parameter, <cid>. The specified TFT will be stored in the GGSN in UMTS/GPRS and Packet GW in EPS only at activation or MS-initiated modification of the related context. Since this is the same parameter that is used in the +CGDCONT and +CGDSCONT commands, the +CGTFT command is effectively an extension to these commands. The Packet Filters consist of a number of parameters, each of which may be set to a separate value.

A special form of the set command, +CGTFT=<cid> causes all of the Packet Filters in the TFT for context number <cid> to become undefined. At any time there may exist only one PDP context with no associated TFT amongst all PDP contexts associated to one PDP address. At an attempt to delete a TFT, which would violate this rule, an ERROR or +CME ERROR response is returned. Extended error responses are enabled by the +CMEE command. Refer subclause 9.2 for possible <err> values.

The read command returns the current settings for all Packet Filters for each defined context.

The test command returns values supported as compound values. If the MT supports several PDP types, the parameter value ranges for each PDP type are returned on a separate line. TFTs shall be used for PDP-type IP and PPP only. For PDP-type PPP a TFT is applicable only when IP traffic is carried over PPP. If PPP carries header-compressed IP packets, then a TFT cannot be used.

Command	Possible response
AT+CGTFT =?	+CGTFT: <PDP_type>,(list of supported <packet filter identifier>s),(list of supported <evaluation precedence index>s),(list of supported <remote address and subnet mask>s),(list of supported <protocol number (ipv4) / next header (ipv6)>s),(list of supported <local port range>s),(list of supported <remote port range>s),(list of supported <ipsec security parameter index (spi)>s),(list of supported <type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>s),(list of supported <flow label (ipv6)>s),(list of supported <direction>s),(list of supported <local address and subnet mask>s) [<CR><LF>+CGTFT: <PDP_type>,(list of supported <packet filter identifier>s),(list of supported <evaluation precedence index>s),(list of supported <remote address and subnet mask>s),(list of supported <protocol number (ipv4) / next header (ipv6)>s),(list of supported <local port range>s),(list of supported <remote port range>s),(list of supported <ipsec security parameter index (spi)>s),(list of supported <type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>s),(list of supported <flow label (ipv6)>s),(list of supported <direction>s),(list of supported <local address and subnet mask>s) [. . .]] OK
+CGTFT?	[+CGTFT: <cid>,<packet filter identifier>,<evaluation precedence index>,<remote address and subnet mask>,<protocol number (ipv4) / next header (ipv6)>,<local port range>,<remote port range>,<ipsec security parameter index (spi)>,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>,<flow label (ipv6)>,<direction>,<local address and subnet mask>] [<CR><LF>+CGTFT: <cid>,<packet filter identifier>,<evaluation precedence index>,<remote address and subnet mask>,<protocol number (ipv4) / next header (ipv6)>,<local port range>, <remote port range>,<ipsec security parameter index (spi)>,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>,<flow label (ipv6)>,<direction>,<local address and subnet mask> [. . .]] OK
+CGTFT=[<cid>,[<packet filter identifier>,<evaluation precedence index>[,<remote address and subnet mask>[,<protocol number (ipv4) / next header (ipv6)>[,<local port range>[,<remote port range>[,<ipsec security parameter index (spi)>[,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>[,<flow label (ipv6)>[,<direction>[,<local address and subnet mask>]]]]]]]]]]	+CME ERROR: <err>

Parameter

<cid>: integer type; which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command. NOTE: The <cid>s for network-initiated PDP contexts will have values outside the ranges indicated for the <cid> in the test form of the commands +CGDCONT and +CGDSCONT.
<p_cid>: integer type; specifies a particular PDP context definition which has been specified by use of the +CGDCONT command. The parameter is local to the TE-MT interface. The list of permitted values is returned by the test form of the command.
<d_comp>: integer type; controls PDP data compression (applicable for SNDCP only) (refer 3GPP TS 44.065 [61]) 0 off 1 on (manufacturer preferred compression) 2 V.42bis 3 V.44
<h_comp>: integer type; controls PDP header compression (refer 3GPP TS 44.065 [61] and 3GPP TS 25.323 [62]) 0 off 1 on (manufacturer preferred compression) 2 RFC 1144 [105] (applicable for SNDCP only) 3 RFC 2507 [107] 4 RFC 3095 [108] (applicable for PDCP only)
<IM_CN_Signalling_Flag_Ind>: integer type; indicates to the network whether the PDP context is for IM CN subsystem-related signalling only or not. 0 UE indicates that the PDP context is not for IM CN subsystem-related signalling only 1 UE indicates that the PDP context is for IM CN subsystem-related signalling only
<cid>: integer type. Specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).
<PDP_type>: string type. Specifies the type of packet data protocol (see the +CGDCONT command).
For the following parameters, see also 3GPP TS 23.060 [47]:
<packet filter identifier>: integer type. Value range is from 1 to 16.
<evaluation precedence index>: integer type. The value range is from 0 to 255.
<remote address and subnet mask>: string type. The string is given as dot-separated numeric (0-255) parameters on the form:

Note:

- NULL

8.20 8.20 AT+CGPDNSADDR Get active pdp dns address

Description

This command allows the TE get all actived pdp dns address

Command	Possible response
AT+CGPDNSADDR =?	+CGPDNSADDR:(list cids of actived pdp) OK
+CGPDNSADDR=[<list cids>]	+CGPDNSADDR:[dns address] OK

Parameter

<list cids>: integer type; which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.

NOTE: The <cid>s for network-initiated PDP contexts will have values outside the ranges indicated for the <cid> in the test form of the commands +CGDCONT and +CGDSCONT.

Note:

- NULL

8.21 8.21 AT+CGEQMIN Not support

Description

This command allows the TE to specify a minimum acceptable profile, which is checked by the MT against the negotiated profile returned in the PDP context establishment and PDP contect modification procedures.

The set command specifies a profile for the context identified by the (local) context identification parameter, <cid>. The specified profile will be stored in the MT and checked against the negotiated profile only at activation or MS-initiated modification of the related context. Since this is the same parameter that is used in the +CGDCONT and +CGDSCONT commands, the +CGEQMIN command is effectively an extension to these commands. The QoS profile consists of a number of parameters, each of which may be set to a separate value.

A special form of the set command, +CGEQMIN=<cid> causes the minimum acceptable profile for context number <cid> to become undefined. In this case no check is made against the negotiated profile.

The read command returns the current settings for each defined context.

The test command returns values supported as compound values. If the MT supports several PDP types, the parameter value ranges for each PDP type are returned on a separate line.

Command	Possible response
AT+CGEQMIN =?	+CGEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of supported <Transfer delay>s),(list of supported <Traffic handling priority>s),(list of supported <Source statistics descriptor>s),(list of supported <Signalling indication>s) [<CR><LF>+CGEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of supported <Transfer delay>s),(list of supported <Traffic handling priority>s),(list of supported <Source statistics descriptor>s),(list of supported <Signalling indication>s) [. . .]]
AT+CGEQMIN?	[+CGEQMIN: <cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer delay>,<Traffic handling priority>,<Source statistics descriptor>,<Signalling indication>] [<CR><LF>+CGEQMIN: <cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer delay>,<Traffic handling priority>,<Source statistics descriptor>,<Signalling indication> [. . .]]
+CGEQMIN=[<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrate UL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs> [,<Transfer delay>[,<Traffic handling priority>[,<Source statistics descriptor>[,<Signalling indication>]]]]]]]]]]]]]]]	

Parameter

<cid>: integer type; specifies a particular PDP context definition (see +CGDCONT and +CGDSCONT commands).
<PDP_type>: string type; specifies the type of packet data protocol (see the +CGDCONT command).
For the following parameters, see also 3GPP TS 23.107 [46].
<Traffic class>: integer type; indicates the type of application for which the UMTS bearer service is optimised (refer 3GPP TS 24.008 [8] subclause 10.5.6.5). 0 conversational 1 streaming 2 interactive 3 background
<Maximum bitrate UL>: integer type; indicates the maximum number of kbits/s delivered to UMTS (up-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQMIN=. . . ,32,. . .) (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Maximum bitrate DL>: integer type; indicates the maximum number of kbits/s delivered by UMTS (down-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQMIN=. . . ,32,. . .) (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Guaranteed bitrate UL>: integer type; indicates the guaranteed number of kbits/s delivered to UMTS (up-link traffic) at a SAP (provided that there is data to deliver). As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQMIN=. . . ,32,. . .) (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Guaranteed bitrate DL>: integer type; indicates the guaranteed number of kbits/s delivered by UMTS (down-link traffic) at a SAP (provided that there is data to deliver). As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQMIN=. . . ,32,. . .) (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Delivery order>: integer type; indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not (refer 3GPP TS 24.008 [8] subclause 10.5.6.5). 0 no 1 yes
<Maximum SDU size>: integer type; (1,2,3,. . .) indicates the maximum allowed SDU size in octets (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<SDU error ratio>: string type; indicates the target value for the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic. The value is specified as "mEe". As an example a target SDU error ratio of 5?10-3 would be specified as "5E3" (e.g. AT+CGEQMIN=. . . ,"5E3",. . .) (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Residual bit error ratio>: string type; indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested, Residual bit error ratio indicates the bit error ratio in the delivered SDUs. The value is specified as "mEe". As an example a target residual bit error ratio of 5?10-3 would be specified as "5E3" (e.g. AT+CGEQMIN=. . . ,"5E3",. . .) (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Delivery of erroneous SDUs>: integer type; indicates whether SDUs detected as erroneous shall be delivered or not (refer 3GPP TS 24.008 [8] subclause 10.5.6.5). 0 no 1 yes 2 no detect
<Transfer delay>: integer type; (0,1,2,. . .) indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).
<Traffic handling priority>: integer type; (1,2,3,. . .) specifies the relative importance for handling of all SDUs belonging to the UMTS bearer compared to the SDUs of other bearers (refer 3GPP TS 24.008 [8] subclause 10.5.6.5).

Note:

- NULL

8.22 8.22 AT+DIRECTIPMODE configuration DirectIp mode

Description

Set whether to open the DirectIp mode

Command	Possible response
AT+DIRECTIPMODE =?	**Success:** **+DIRECTIPMODE: mode=[0-1] (0, use internal LwIP; 1-direct** OK
AT+DIRECTIPMODE?	**Success:** +DIRECTIPMODE: 0 OK
AT+DIRECTIPMODE=<mode>	Success: OK

Parameter

`< mode >`

default 0 0: uses the internal TCPIP protocol stack 1: UE transfers IP packets directly with external MCU, and does not use the TCPIP stack inside of UE

Unsolicited Result Codes

Remark

AT+CSODCP and AT+CRTDCP need to be tested in the open DirectIp mode. But for testing convenience, CSODCP can also be done without opening. Later, it will be adjusted to DirectIpMode and AT+CSODCP will fail.

Example

8.23 8.23 AT+PINGSTOP stops the ongoing AT+PING

Description

if you have an ongoing AT+PING, you can use this command to stop the existing Ping and return the statistical results of the AT+PING

Parameter

Note:

- NULL

Unsolicited Result Codes

Note:

- NULL

Remark

Note:

- NULL

Example

Note:

- NULL

8.24 8.24 AT+PSDATAOFF Not support

Description

Parameter

Example

Note:

- NULL

CHAPTER

NINE

9 TCP/IP COMMANDS

Contents

9.1 9.1 AT+CIPMUX Start Up Multi-IP Connection

Command	Possible response(s)
`+CIPMUX=<n>`	
`+CIPMUX?`	`+CIPMUX: <n>`
`+CIPMUX=?`	`+CIPMUX:` (show `<n>` values)

Reference:

Description

Parameters

<n> Connection mode

0	Single IP connection
1	Multi IP connection

Note:

- Only in IP initial state, AT+CIPMUX=1 is effective
- Only when multi IP connection and GPRS application are both shut down, AT+CIPMUX=0 is effective

---

Example

```
AT+CIPMUX=0
```

OK

```
AT+CIPMUX?
```

+CIPMUX:0

OK

AT+CIPMUX=?

+CIPMUX:(0,1)

OK

9.2 9.2 AT+CIPSTART Start Up TCP Or UDP Connection

Command	Possible response(s)
• **CIPMUX=0** – +CIPSTART=<mode>, <IP address>, <port> – +CIPSTART=<mode>, <domain name>, <port> • **CIPMUX=1** – +CIPSTART=<n>, <mode>, <IP address>, <port> – +CIPSTART=<n>, <mode>, <domain name>, <port>	• **CIPMUX=0** – OK – +CME ERROR <err> – ALREADY CONNECT – CONNECT OK – STATE: <state> CONNECT FAIL • **CIPMUX=1** – OK – +CME ERROR <err> – <n>,ALREADY CONNECT – <n>,CONNECT OK – <n>,CONNECT FAIL
+CIPSTART=?	• **CIPMUX=0** – +CIPSTART: (list of supported <mode>),(<IP address>),(<port>) • **CIPMUX=1** – +CIPSTART: (list of supported <n>),(list of supported <mode>),(<IP address>),(<port>)

Reference

Max Response Time:

75 seconds	When mode is multi-IP state
160 seconds	When mode is single state, and the state is IP INITIAL

Description

Parameters

<n> 0..5 A numeric parameter which indicates the connection number

<mode> A string parameter which indicates the connection type

"TCP"	Establish a TCP connection
"UDP"	Establish a UDP connection

<IP address> A string parameter which indicates remote server IP address

<port> Remote server port

<domain name> A string parameter which indicates remote server domain name

<state> A string parameter which indicates the progress of connecting

In Single IP state (CIPMUX=0):

0	IP INITIAL
1	IP START
2	IP CONFIG
3	IP GPRSACT
4	IP STATUS
5	TCP CONNECTING/UDP CONNECTING/SERVER LISTENING
6	CONNECT OK
7	TCP CLOSING/UDP CLOSING
8	TCP CLOSED/UDP CLOSED
9	PDP DEACT

In Multi-IP state (CIPMUX=1):

0	IP INITIAL
1	IP START
2	IP CONFIG
3	IP GPRSACT
4	IP STATUS
5	IP PROCESSING
9	PDP DEACT

Note:

- This command allows establishment of a TCP/UDP connection only when the state is IP INITIAL or IP STATUS when it is in single state. In multi-IP state, the state is in IP STATUS only. So it is necessary to process "`AT+CIPSHUT`" before user establishes a TCP/UDP connection with this command when the state is not IP INITIAL or IP STATUS.
- When module is in multi-IP state, before this command is executed, it is necessary to process "`AT+CSTT`, `AT+CIICR`, `AT+CIFSR`".

Example

```
AT+CIPSTART="TCP","111.205.140.139",6800
```

OK

CONNECT OK

```
AT+CIPSTART=1,"TCP","111.205.140.139",6800
```

OK

1,CONNECT OK

```
+CIPSTART=?
```

+CIPSTART: (“TCP”, “UDP”), (“(0-255).(0-255).(0-255).(0-255)”), (0-65535)

OK

```
+CIPSTART=?
```

+CIPSTART: (0-7), (“TCP”, “UDP”), (“(0-255).(0-255).(0-255).(0-255)”), (0-65535)

OK

9.3 9.3 AT+CIPSEND Send Data Through TCP Or UDP Connection

Command	Possible response(s)
• **CIPMUX=0** – `+CIPSEND=<length>` • **CIPMUX=1** – `+CIPSEND=<n>,<length>`	• **CIPMUX=0** – `+CME ERROR <err>` – `SEND OK` When +CIPQSEND=0 – `DATA ACCEPT:<length>` When +CIPQSEND=1 – `SEND FAIL` If sending fails • **CIPMUX=1** – `+CME ERROR <err>` – `<n>,SEND OK` When +CIPQSEND=0 – `DATA ACCEPT:<n>,<length>` When +CIPQSEND=1 – `<n>,SEND FAIL` If sending fails
`+CIPSEND?`	• **CIPMUX=0** – `+CIPSEND: <size>` – `OK` • **CIPMUX=1** – `+CIPSEND: <n>,<size>` – `OK`
`+CIPSEND=?`	• **CIPMUX=0** – `+CIPSEND: <length>` – `OK` • **CIPMUX=1** – `+CIPSEND: (0-5),<length>` – `OK`
`+CIPSEND`	• response >, then type data for send, tap `CTRL+Z` to send, tap `ESC` to cancel the operation • `+CME ERROR <err>` • `SEND OK` When +CIPQSEND=0 • `DATA ACCEPT:<length>` When +CIPQSEND=1 • `SEND FAIL` If sending fails

Reference

- The data length which can be sent depends on network status.
- Set the time that send data automatically with the Command of `AT+CIPATS`.
- Only send data at the status of established connection.
- When +CIPQSEND=0 and the remote server no response, after 645 seconds, `CLOSE` will be reported.

Description

Parameters

<n> 0..5 A numeric parameter which indicates the connection number

<length> A numeric parameter which indicates the length of sending data, it must be less than `<size>`

Note:

- `+CIPSEND` EXE Command can only be used in single IP connection mode (+CIPMUX=0) and to send data on the TCP or UDP connection that has been established already. `Ctrl-Z` is used as a termination symbol. `ESC` is used to cancel sending data. There are at most `<size>` bytes which can be sent at a time.

Example

```
AT+CIPSTART="TCP","111.205.140.139",6800
```

OK

CONNECT OK

`AT+CIPSEND` (CIPMUX=0)

> test *trontrol+z*

SEND OK

`AT+CIPSEND=10` (CIPMUX=01)

> abcdefghij

SEND OK

`AT+CIPSEND=1` (CIPMUX=1)

> test1 *trontrol+z*

1,SEND OK

`AT+CIPSEND=1,10` (CIPMUX=1)

> abcdefghij

1,SEND OK

9.4 9.4 AT+CIPQSEND Select Data Transmitting Mode

Command	Possible response(s)
`CIPQSEND=<n>`	• `OK`
`+CIPQSEND?`	• `+CIPQSEND: <n>` • `OK`
`+CIPQSEND=?`	• `+CIPQSEND: (0,1)` • `OK`

Reference

Description

Parameters

<n>

0	Normal mode – when the server receives TCP data, it will response `SEND OK`.
1	Quick send mode – when the data is sent to module, it will response `DATA ACCEPT:<n>,<length>`.

Note:

- NULL

Example

```
AT+CIPQSEND=0
```

OK

```
AT+CIPQSEND?
```

+CIPQSEND:0

OK

```
AT+CIPQSEND=?
```

+CIPQSEND:(0,1)

OK

9.5 9.5 AT+CIPACK Query Previous Connection Data Transmitting State

Command	Possible response(s)
• **CIPMUX=0** – +CIPACK • **CIPMUX=1** – +CIPACK=<n>	• **CIPMUX=0** – +CIPACK: <txlen>, <acklen>, <nacklen> – OK • **CIPMUX=1** – +CIPACK: <txlen>, <acklen>, <nacklen> – OK
+CIPACK=?	OK

Reference

Description

Parameters

<n> A numeric parameter which indicates the connection number

<txlen> The data amount which has been sent

<acklen> The data amount confirmed successfully by the server

<nacklen> The data amount without confirmation by the server

Note:

- NULL

Example

`AT+CIPACK` (CIPMUX=0)

+CIPACK:0,0,0

OK

`AT+CIPACK=1` (CIPMUX=1)

+CIPACK:0,0,0

OK

`AT+CIPACK=?`

OK

9.6 9.6 AT+CIPCLOSE Close TCP Or UDP Connection

Command	Possible response(s)
• **CIPMUX=0** – `+CIPCLOSE=<n>` • **CIPMUX=1** – `+CIPCLOSE=<id>,[<n>]`	• **CIPMUX=0** – `CLOSE OK` • **CIPMUX=1** – `<id>, CLOSE OK`
`+CIPCLOSE=?`	`OK`
`+CIPCLOSE`	• `CLOSE OK` If close is successfully • `+CME ERROR <err>` If close fails

Reference

- AT+CIPCLOSE only closes connection at corresponding status of TCP/UDP stack. To see the status use AT+CIPSTATUS command. Status should be:TCP CONNECTING,UDP CONNECTING, SERVER LISTENING or CONNECT OK in single-connection mode (see <state> parameter); CONNECTING or CONNECTED in multi-connection mode (see <client state>);OPENING or LISTENING in multi-connection mode (see <server state>).Otherwise it will return ERROR".

Description

Parameters

<id> 0..5 A numeric parameter which indicates the connection number

<n> Close Mode

0	Slow close
1	Quick close

Note:

- `+CIPCLOSE` EXE Command can only be used in single IP connection mode (+CIPMUX=0)

Example

`AT+CIPCLOSE` (CIPMUX=0)

CLOSE OK

`AT+CIPCLOSE=1` (CIPMUX=1)

1,CLOSE OK

`AT+CIPCLOSE=?`

OK

9.7 9.7 AT+CIPSHUT Disconnect Wireless Connection

Command	Possible response(s)
`+CIPSHUT=?`	`OK`
`+CIPSHUT`	• `SHUT OK` If close is successfully • `+CME ERROR <err>` If close fails

Reference

Max Response Time: 65 seconds

Description

Parameters

Note:

- **If this command is executed in multi-connection mode, all of the IP** connection will be shut.
- User can close gprs pdp context by `AT+CIPSHUT`. After it is closed, the status is IP INITIAL.
- If `+PDP: DEACT` urc is reported which means the gprs is released by the network, then user still needs to execute `AT+CIPSHUT` command to make PDP context come back to original state.

Example

```
AT+CIPSHUT
```

SHUT OK

```
AT+CIPSHUT=?
```

OK

9.8 9.8 AT+CLPORT Set Local Port

Command	Possible response(s)
• **CIPMUX=0** – +CLPORT=<mode>,<port> • **CIPMUX=1** – +CLPORT=<n>,<mode>,<port>	• OK • +CME ERROR <err>
+CLPORT?	• **CIPMUX=0** – +CLPORT: <TCP port>,<UDP port> – OK • **CIPMUX=1** – +CLPORT: 0,<TCP port>,<UDP port> – +CLPORT: 1,<TCP port>,<UDP port> – +CLPORT: 2,<TCP port>,<UDP port> – +CLPORT: 3,<TCP port>,<UDP port> – +CLPORT: 4,<TCP port>,<UDP port> – +CLPORT: 5,<TCP port>,<UDP port> – OK
+CLPORT=?	• **CIPMUX=0** – +CLPORT: ("TCP","UDP"),(0-65535) – OK • **CIPMUX=1** – +CLPORT: (0-5),("TCP","UDP"),(0-65535) – OK

Reference

Description

Parameters

<n> 0..5 A numeric parameter which indicates the connection number

<mode> A string parameter which indicates the connection type

"TCP"	TCP local port
"UDP"	UDP local port

<port> 0-65535 A numeric parameter which indicates the local port. Default value is 0, a port can be dynamically allocated a port.

Note:

- This command will be effective when module is set as a Client.

Example

`AT+CLPORT="TCP",23400` (CIPMUX=0)

OK

`AT+CLPORT=?` (CIPMUX=0)

+CLPORT:(“TCP”,”UDP”),(0-65535)

OK

`AT+CLPORT?`

+CLPORT: TCP:23400,UDP:0

`AT+CLPORT=1,"TCP",23400` (CIPMUX=1)

OK

`AT+CLPORT=?` (CIPMUX=1)

+CLPORT: (0-7),(“TCP”,”UDP”),(0-65535)

OK

`AT+CLPORT?`

+CLPORT:0,TCP:0,UDP:0

+CLPORT:1,TCP:23400,UDP:0

+CLPORT:2,TCP:0,UDP:0

+CLPORT:3,TCP:0,UDP:0

+CLPORT:4,TCP:0,UDP:0

+CLPORT:5,TCP:0,UDP:0

+CLPORT:6,TCP:0,UDP:0

+CLPORT:7,TCP:0,UDP:0

OK

9.9 9.9 AT+CSTT Start Task And Set APN, User ID, Password

Command	Possible response(s)
+CSTT=<apn>, <username>, <password>	• OK • +CME ERROR <err>
+CSTT?	• +CSTT: <apn>,<user name>,<password> • OK
+CSTT=?	• +CSTT: "APN","USER","PWD" • OK
+CSTT	• OK • +CME ERROR <err>

Reference

Description

Parameters

<apn> A string parameter which indicates the GPRS access point name. The max length is 50 bytes. Default value is "CMNET".

<user name> A string parameter which indicates the GPRS user name. The max length is 50 bytes

<password> A string parameter which indicates the GPRS password. The max length is 50 bytes.

Note:

- The write command and execution command of this command is valid only at the state of IP INITIAL. After this command is executed, the state will be changed to IP START.

Example

```
AT+CSTT="CMNET","",""
```

OK

```
AT+CSTT=?
```

+CSTT: "APN", "USER", "PWD"

OK

```
AT+CSTT?
```

+CSTT: "CMNET", "", ""

OK

9.10 9.10 AT+CIICR Bring Up Wireless Connection With GPRS

Command	Possible response(s)
+CIICR=?	OK
+CIICR	• OK • +CME ERROR <err>

Reference

Max Response Time: 85 seconds

Description

Parameters

Note:

- AT+CIICR only activates moving scene at the status of IP START, after operating this Command is executed, the state will be changed to IP CONFIG.
- After module accepts the activated operation, if it is activated successfully, module state will be changed to IP GPRSACT, and it responds OK, otherwise it will respond ERROR.

Example

```
AT+CIICR=?
```

OK

```
AT+CSTT
```

OK

9.11 9.11 AT+CIFSR Get Local IP Address

Command	Possible response(s)
+CIFSR=?	OK
+CIFSR	• <IP address> • OK

Reference

Description

Parameters

<IP address> A string parameter which indicates the IP address assigned from GPRS or CSD.

Note:

- Only after PDP context is activated, local IP address can be obtained by AT+CIFSR, otherwise it will respond ERROR. To see the status use AT+CIPSTATUS command. Status should be:IP GPRSACT, TCP CONNECTING, UDP CONNECTING, SERVER LISTENING, IP STATUS, CONNECT OK, TCP CLOSING, UDP CLOSING, TCP CLOSED, UDP CLOSED in single-connection mode (see<state> parameter);IP STATUS, IP PROCESSING in multi-connection mode (see <state>parameter).

Example

```
AT+CIFSR
```

10.203.20.202

OK

```
AT+CIFSR=?
```

OK

9.12 9.12 AT+CIPSTATUS Query Current Connection Status

Command	Possible response(s)
+CIPSTATUS=?	OK
• **CIPMUX=1** – +CIPSTATUS=<n>	• +CIPSTATUS: <n>,<bearer>,<TCP/UDP>,<IP address>, <port>,<client state> • OK
AT+CIPSTATUS	• **CIPMUX=0** – OK – <state> • **CIPMUX=1** – OK – <state> – S: 0, <bearer>, <port>, <server state> If the module is set as server – C:0,<bearer>,<TCP/UDP>,<IP address>, <port>,<client state> – C:1,<bearer>,<TCP/UDP>,<IP address>, <port>,<client state> – C:2,<bearer>,<TCP/UDP>,<IP address>, <port>,<client state> – C:3,<bearer>,<TCP/UDP>,<IP address>, <port>,<client state> – C:4,<bearer>,<TCP/UDP>,<IP address>, <port>,<client state> – C:5,<bearer>,<TCP/UDP>,<IP address>, <port>,<client state>

Reference

Description

Parameters

<n> 0-5 A numeric parameter which indicates the connection number

<bearer> 0-1 GPRS bearer, default is 0

<server state>

	OPENING
	LISTENING
	CLOSING

<client state>

	INITIAL
	CONNECTING
	CONNECTED
	REMOTE CLOSING
	CLOSING
	CLOSED

<state> A string parameter which indicates the progress of connecting

In Single IP state (CIPMUX=0):

0	IP INITIAL
1	IP START
2	IP CONFIG
3	IP GPRSACT
4	IP STATUS
5	TCP CONNECTING/UDP CONNECTING/SERVER LISTENING
6	CONNECT OK
7	TCP CLOSING/UDP CLOSING
8	TCP CLOSED/UDP CLOSED
9	PDP DEACT

In Multi-IP state (CIPMUX=1):

0	IP INITIAL
1	IP START
2	IP CONFIG
3	IP GPRSACT
4	IP STATUS
5	IP PROCESSING
9	PDP DEACT

Note:

- NULL

Example

`AT+CIPSTATUS` (CIPMUX=0)

OK

STATE:IP INITIAL

`AT+CIPSTATUS` (CIPMUX=1)

OK

STATE:IP INITIAL

C:0,0,TCP,,0,IP INITIAL

C:1,0,TCP,,0,IP INITIAL

C:2,0,TCP,,0,IP INITIAL

C:3,0,TCP,,0,IP INITIAL

C:4,0,TCP,,0,IP INITIAL

C:5,0,TCP,,0,IP INITIAL

C:6,0,TCP,,0,IP INITIAL

C:7,0,TCP,,0,IP INITIAL

9.13 9.13 AT+CDNSCFG Configure Domain Name Server

Command	Possible response(s)
+CDNSCFG=<pri_dns>[,<sec_dns>]	• OK • +CME ERROR <err>
+CDNSCFG?	• PrimaryDns: <pri_dns> • SecondaryDns: <sec_dns> • OK
+CDNSCFG=?	• +CDNSCFG: ("Primary DNS"),("Secondary DNS") • OK

Reference

Description

Parameters

<pri_dns> A string parameter which indicates the IP address of the primary domain name server. Default value is 0.0.0.0.

<sec_dns> A string parameter which indicates the IP address of the secondary domain name server. Default value is 0.0.0.0.

Note:

- NULL

Example

```
AT+CDNSCFG?
```

PrimaryDns: <168.48.6.0>

SecondaryDns: <0.0.0.0>

OK

```
AT+CDNSCFG=?
```

+CDNSCFG: “PrimaryDNS”,”SecondaryDNS”

OK

```
AT+CDNSCFG="168.48.6.0","8.8.8.8"
```

OK

9.14 9.14 AT+CDNSGIP Query The IP Address Of Given Domain Name

Command	Possible response(s)
+CDNSGIP=<domain name>	• OK • +CME ERROR <err> • +CDNSGIP: 1, <domain name>,<IP1>[,<IP2>] If successful • +CDNSGIP:0,<dns error code> If fail
+CDNSGIP=?	OK

Reference

Description

Parameters

<domain name> A string parameter which indicates the domain name

<IP1> A string parameter which indicates the first IP address corresponding to the domain name

<IP2> A string parameter which indicates the second IP address corresponding to the domain name

<dns error code> A numeric parameter which indicates the error code

8	DNS COMMON ERROR
3	NETWORK ERROR

There are some other error codes as well.

Note:

- NULL

Example

```
AT+CDNSGIP=?
```

OK

```
AT+CDNSGIP="www.baidu.com"
```

OK

+CDNSGIP: 1,"www.baidu.com","111.13.100.92","111.13.100.91"

9.15 9.15 AT+CIPHEAD Add an IP head at the beginning of a package received

Command	Possible response(s)
`+CIPHEAD=<mode>`	• `OK` • `+CME ERROR <err>`
`+CIPHEAD?`	• `+CIPHEAD: <mode>` • `OK`
`+CIPHEAD=?`	• `+CIPHEAD:` (list of supported `<mode>` s) • `OK`

Reference

CIPHEAD=1 the format is:

- **For single IP connection (`+CIPMUX=0`)** `+IPD,<data length>:`
- **For multi IP connection (`+CIPMUX=1`)** `+RECEIVE,<n>,<data length>:`

Description

Parameters

<mode> A numeric parameter which indicates whether an IP header is added to the received data or not.

0	Not add IP header
1	Add IP header

Note:

- NULL

Example

```
AT+CIPHEAD?
```

+CIPHEAD:0

OK

```
AT+CIPHEAD=?
```

+CIPHEAD:(0,1)

OK

```
AT+CIPHEAD=1
```

OK

9.16 9.16 AT+CIPATS Set Auto Sending Timer

Command	Possible response(s)
+CIPATS=<mode>,[<time>]	• OK • +CME ERROR <err>
+CIPATS?	• +CIPATS: <mode>,<time> • OK
+CIPATS=?	• +CIPATS: (list of supported <mode> s),(list of supported <time>) • OK

Reference

Description

Parameters

<mode> A numeric parameter which indicates whether set timer when module is sending data

0	Not set timer when module is sending data
1	Set timer when module is sending data

<time> 1..100 A numeric parameter which indicates the seconds after which the data will be sent

Note:

- When the mode is set to 0, the second parameter time should not be set; when the mode is set to 1, the time should be set.

Example

```
AT+CIPATS=?
```

+CIPATS:(0,1),(1-100)

OK

```
AT+CIPATS=1,50
```

OK

```
AT+CIPATS?
```

+CIPATS:1,50

OK

9.17 9.17 AT+CIPSPRT Set Prompt Of '>' When Module Sends Data

Command	Possible response(s)
+CIPSPRT=<send prompt>	• OK • +CME ERROR <err>
+CIPSPRT?	• +CIPSPRT: <send prompt> • OK
+CIPSPRT=?	• +CIPSPRT: (list of supported <send prompt> s) • OK

Reference

Description

Parameters

<send prompt>

A numeric parameter which indicates whether to echo prompt '>' after module issues AT+CIPSEND command.

0	It shows "send ok" but does not prompt echo '>' when sending is successful.
1	It prompts echo '>' and shows "send ok" when sending is successful.
2	It neither prompts echo '>' nor shows "send ok" when sending is successful.

Note:

- NULL

Example

```
AT+CIPSPRT=?
```

+CIPSPRT:(0,1,2)

OK

```
AT+CIPSPRT=2
```

OK

```
AT+CIPSPRT?
```

+CIPSPRT:2

OK

9.18 9.18 AT+CIPSERVER Configure Module As Server

Command	Possible response(s)
+CIPSERVER=<mode>[,<port>]	• OK • +CME ERROR <err>
+CIPSERVER?	• +CIPSERVER: <mode>[,<port>,<channel id>,<bearer>] • OK
+CIPSERVER=?	• +CIPSERVER: (0-CLOSE SERVER, 1-OPEN SERVER), (1-65535) • OK

Reference

Description

Parameters

<mode>

0	Close server
1	Open server

<port> 1..65535 Listening port

<channel id> Channel id

<bearer> GPRS bearer

Note:

- This command is allowed to establish a TCP server only when the state is IP INITIAL or IP STATUS when it is in single state. In multi-IP state, the state is in IP STATUS only.

Example

```
AT+CIPSERVER=?
```

+CIPSERVER:(0-CLOSE SERVER,1-OPEN SERVER),(1,65535)

OK

```
AT+CIPSERVER=1,10254
```

OK

SERVER OK

```
AT+CIPSERVER?
```

+CIPSERVER:1,10254

OK

9.19 9.19 AT+CIPCSGP Set CSD Or GPRS For Connection Mode

Command	Possible response(s)
+CIPCSGP=<mode>[,(<apn>,<username>,<password>),(<dial number>,<user name>,<password>,<rate>)]	• OK • +CME ERROR <err>
+CIPCSGP?	• +CIPCSGP: <mode>, <apn>, <user name>, <password>[,<rate>] • OK
+CIPCSGP=?	• +CIPCSGP:0-CSD,DIALNUMBER,USERNAME,PASSWORD, RATE(0-3) • +CIPCSGP: 1-GPRS,APN,USER NAME,PASSWORD • OK

Reference

Description

Parameters

<mode> A numeric parameter which indicates the wireless connection Mode

0	set CSD as wireless connection mode
1	set GPRS as wireless connection mode

GPRS parameters:

<apn> A string parameter which indicates the access point name

<user name> A string parameter which indicates the user name

<password> A string parameter which indicates the password

CSD parameters:

<dial number> A string parameter which indicates the CSD dial numbers

<user name> A string parameter which indicates the CSD user name

<password> A string parameter which indicates the CSD password

<rate> A numeric parameter which indicates the CSD connection rate

0	2400
1	4800
2	9600
3	14400

Note:

- NULL

Example

```
AT+CIPCSGP=1,"CMNET","",""
```

OK

```
AT+CIPCSGP?
```

+CIPCSGP:1,”CMNET”,””,””

OK

```
AT+CIPCSGP=?
```

+CIPCSGP: 0-CSD,DIALNUMBER,USER NAME,PASSWORD,RATE(0-3) – NOT SUPPORT

+CIPCSGP: 1-GPRS,APN,USER NAME,PASSWORD

OK

9.20 9.20 AT+CIPSRIP Show Remote IP Address And Port When Received Data

Command	Possible response(s)
+CIPSRIP=<mode>	• OK • +CME ERROR <err>
+CIPSRIP?	• +CIPSRIP: <mode> • OK
+CIPSRIP=?	• +CIPSRIP: (list of supported <mode> s) • OK

Reference

CIPSRIP=1 the format is:

- **For single IP connection (+CIPMUX=0)** +RECV FROM:<IP ADDRESS>:<PORT>
- **For multi IP connection (+CIPMUX=1)** +RECEIVE,<n>,<data length>,<IP ADDRESS>:<PORT>

Description

Parameters

<mode> A numeric parameter which shows remote IP address and port.

0	Do not show the prompt
1	Show the prompt

Note:

- NULL

Example

```
AT+CIPSRIP=?
```

+CIPSRIP:(0,1)

OK

```
AT+CIPSRIP=1
```

OK

```
AT+CIPSRIP?
```

+CIPSRIP:1

OK

9.21 9.21 AT+CIPDPDP Set Whether To Check State Of GPRS Network Timing (Not supported yet)

Command	Possible response(s)
+CIPDPDP=<mode>[,<interval>,<timer>]	• OK • +CME ERROR <err>
+CIPDPDP?	• +CIPDPDP: <mode>, <interval>, <timer> • OK
+CIPDPDP=?	• +CIPDPDP: (list of supported <mode> s, list of supported <interval> , list of supported <timer>) • OK

Reference

Description

Parameters <mode>

0	Not set detect PDP
1	Set detect PDP

<interval> 1-180(s), default value is 10.

<timer> 1-10, default value is 3.

Note:

- If +PDP: DEACT urc is reported because of module not attaching to gprs for a certain time or other reasons, user still needs to execute AT+CIPSHUT command makes PDP context come back to original state.
- This command is not supported yet.

9.22 9.22 AT+CIPMODE Select TCPIP Application Mode

Command	Possible response(s)
+CIPMODE=<mode>	• OK • +CME ERROR <err>
+CIPMODE?	• +CIPDPDP: <mode> • OK
+CIPMODE=?	• +CIPMODE: (0-NORMAL MODE, 1-TRANSPARENT MODE) • OK

Reference

Description

Parameters <mode>

0	Normal mode
1	Transparent mode

Note:

- NULL

Example

```
AT+CIPMODE?
```

+CIPMODE:0

OK

```
AT+CIPMODE=?
```

+CIPMODE: (0-NORMAL MODE, 1-TRANSPARENT MODE)

OK

```
AT+CIPMODE=0
```

OK

9.23 9.23 AT+CIPCCFG Configure Transparent Transfer Mode

Command	Possible response(s)
+CIPCCFG=<NmRetry>,<WaitTm>,<SendSz>,<esc>[,<Rxmode>,<RxSize>,<Rxtimer>]	• OK • +CME ERROR <err>
+CIPCCFG?	• +CIPCCFG:<NmRetry>,<WaitTm>,<SendSz>,<esc>,<Rxmode>,<RxSize>,<Rxtimer> • OK
+CIPCCFG=?	• +CIPCCFG:(NmRetry:3-8),(WaitTm:1-10),(SendSz:1-1460),(esc:0,1) , (Rxmode:0,1),(RxSize:50-1460),(Rxtimer:20-1000) • OK

Reference

Description

Parameters

<NmRetry> Number of retries to be made for an IP packet.Default value is 5.

<WaitTm> Number of 100ms intervals to wait for serial input before sending the packet. Default value is 2.

<SendSz> Size in bytes of data block to be received from serial port before sending. Default value is 1024.

<esc> Whether turn on the escape sequence, default is TRUE.

0	Turn off the escape sequence
1	Turn on the escape sequence

<Rxmode> Whether to set time interval during output data from serial port.

0	output data to serial port without interval
1	output data to serial port within <Rxtimer> interval.

<RxSize> Output data length for each time. Default value is 1460.

<Rxtimer> Time interval (ms) to wait for serial port to output data again. Default value: 50ms

---

Note:

- This command will be effective only in single connection mode (+CIPMUX=0)

Example

```
AT+CIPCCFG?
```

+CIPCCFG:5,2,1024,1,0,1460,50

OK

AT+CIPCCFG=?

+CIPCCFG: (NmRetry:3-8),(WaitTm:1-10),(SendSz:1-1460),(esc:0,1),(Rxmode:0,1),(RxSize:50-1460),(Rxtimer:20-1000)

OK

AT+CIPCCFG=4,2,1024,1,0,1440,80

OK

9.24 9.24 AT+CIPSHOWTP Display Transfer Protocol In IP Head When Received Data

Command	Possible response(s)
+CIPSHOWTP=<mode>	• OK • +CME ERROR <err>
+CIPSHOWTP?	• +CIPSHOWTP: <mode> • OK
+CIPSHOWTP=?	• +CIPSHOWTP: (list of supported <mode> s) • OK

Reference

if +CIPSHOWTP=1 The format is +IPD,<data size>,<TCP/UDP>:<data>

Description

Parameters

<mode> A numeric parameter which indicates whether to display transfer protocol in IP header to received data or not

0	Not display transfer protocol
1	Display transfer protocol

Note:

- This command will be effective only in single connection mode (+CIPMUX=0)
- Only when +CIPHEAD is set to 1, the setting of this command will Work.

Example

```
AT+CIPSHOWTP?
```

+CIPSHOWTP:0

OK

```
AT+CIPSHOWTP=?
```

+CIPSHOWTP: (0,1)

OK

```
AT+CIPSHOWTP=0
```

OK

9.25 9.25 AT+CIPUDPMODE UDP Extended Mode

Command	Possible response(s)
• **CIPMUX=0** – `+CIPUDPMODE=<mode>[,<IPaddress>,<Port>]` • **CIPMUX=1** – `+CIPUDPMODE=<n>,<mode>[,<IPaddress>,<Port>]`	• **CIPMUX=0** – OK – +CME ERROR <err> • **CIPMUX=1** – OK – +CME ERROR <err>
• **CIPMUX=0** – `+CIPUDPMODE?` • **CIPMUX=1** – `+CIPUDPMODE?`	• **CIPMUX=0** – +CIPUDPMODE: <mode>[,<IP address>,<Port>] – OK • **CIPMUX=1** – +CIPUDPMODE: 0, <mode>[,<IP address>,<Port>] – +CIPUDPMODE: 1,<mode>[,<IP address>,<Port>] – +CIPUDPMODE: 2,<mode>[,<IP address>,<Port>] – +CIPUDPMODE: 3,<mode>[,<IP address>,<Port>] – +CIPUDPMODE: 4,<mode>[,<IP address>,<Port>] – +CIPUDPMODE: 5,<mode>[,<IP address>,<Port>] – OK
• **CIPMUX=0** – `+CIPUDPMODE=?` • **CIPMUX=1** – `+CIPUDPMODE=?`	• **CIPMUX=0** – +CIPUDPMODE: (0-2),(“(0-255).(0-255).(0-255).(0-255)”),(1-65535) – OK • **CIPMUX=1** – +CIPUDPMODE: (0-5),(0-2),(“(0-255).(0-255).(0-255).(0-255)”),(1-65535) – OK

Reference

Description

Parameters

<n> 0..5 A numeric parameter which indicates the connection number

<mode>

0	UDP Normal Mode
1	UDP Extended Mode
2	Set UDP address to be sent

<IP address> A string parameter which indicates remote IP address

<Port> Remote port

Note:

- NULL

Example

```
AT+CIPUDPMODE=?
```

+CIPUDPMODE: (0-2),(“(0-255).(0-255).(0-255).(0-255)”),(1-65535)

OK

```
AT+CIPUDPMODE=2,"192.168.1.108",4500
```

OK

```
AT+CIPUDPMODE?
```

+CIPUDPMODE:0,192.168.1.108,4500

OK

9.26 9.26 AT+CIPRXGET Get Data From Network Manually

Command	Possible response(s)
• **CIPMUX=0** – `+CIPRXGET=<mode>[,<reqlength>]` • **CIPMUX=1** – `+CIPRXGET=<mode>[,<id>,<reqlength>]`	• **CIPMUX=0** – AT+CIPRXGET=0 – OK – +CME ERROR <err> – 1)For single IP connection – If "AT+CIPSRIP=1" is set, IP address and port are contained. – if <mode>=1 – AT+CIPRXGET=1 – +CIPRXGET: 1[,<IP ADDRESS>:<PORT>] – if <mode>=2 – AT+CIPRXGET=2,<reqlength> – +CIPRXGET: 2,<reqlength>,<cnflength>[,<IP ADDRESS>:<PORT>] – 1234567890... – OK – if <mode>=3 – AT+CIPRXGET=3,<reqlength> – +CIPRXGET: 3,<reqlength>,<cnflength>[,<IP ADDRESS>:<PORT>] – 5151... – OK – if <mode>=4 – AT+CIPRXGET=4 – +CIPRXGET: 4, <cnflength> – OK • **CIPMUX=1** – For multi IP connection – If "AT+CIPSRIP=1" is set, IP address and port is contained. – if <mode>=1 – AT+CIPRXGET=1 – +CIPRXGET: 1[,<id>,<IP ADDRESS>:<PORT>] – if <mode>=2 – AT+CIPRXGET=2,<id>,<reqlength> – +CIPRXGET: 2,<id>,<reqlength>,<cnflength>[,<IPADDRESS>:<PORT>] – 1234567890... – OK – if <mode>=3 – AT+CIPRXGET=3,<id>,<reqlength> – +CIPRXGET: 3,<id>,<reqlength>,<cnflength>[,<IPADDRESS>:<PORT>] – 5151... – OK – if <mode>=4 – AT+CIPRXGET=4,<id> – +CIPRXGET: 4, <id>,<cnflength> – OK
AT+CIPRXGET?	• +CIPRXGET: <mode> • OK
• **CIPMUX=0** • **CIPMUX=1** AT+CIPRXGET=?	• **CIPMUX=0** • **CIPMUX=1** – +CIPRXGET: (list of supported <mode>s),(list of supported <reqlength>) – OK

Reference

Description

Parameters

<mode> 0 Disable getting data from network manually, the module is set to normal mode, data will be pushed to TE directly. 1 Enable getting data from network manually. 2 The module can get data, but the length of output data can not exceed 1460 bytes at a time. 3 Similar to mode 2, but in HEX mode, which means the module can get 730 bytes maximum at a time. 4 Query how many data are not read with a given ID.

<id> A numeric parameter which indicates the connection number

<reqlength> Requested number of data bytes (1-1460 bytes)to be read

<cnflength> Confirmed number of data bytes to be read. 0 indicates that no data can be read.

Note:

- To enable this function, parameter <mode> must be set to 1 before connection.

9.27 9.27 AT+CIPSCONT Save TCPIP Application Context

Command	Possible response(s)
`AT+CIPSCONT?`	• `+CIPTKA: <mode>,<keepIdle>,<keepInterval>, <keepCount>` • `+CIPSCONT: <mode0>` • `+CIPCSGP: <mode>` • `Gprs Config APN: <apn>` • `Gprs Config UserId: <user name>` • `Gprs Config Password: <password>` • `+CIPHEAD: <mode>` • `+CIPSHOWTP: <mode>` • `+CIPSRIP: <mode>` • `+CIPATS: <mode>,<time>` • `+CIPSPRT: <send prompt>,<notshowsendok>` • `+CIPQSEND: <n>` • `+CIPMODE: <mode>` • `+CIPCCFG:<NmRetry>,<WaitTm>,<SendSz>,<esc>, <Rxmode>,<RxSize>,<Rxtimer>` • `+CIPMUX: <n>` • `+CIPDPDP: <mode>, <interval>, <timer>` • `+CIPRXGET: <mode>` • `+CIPRDTIMER: <rdsigtimer>,<rdmuxtimer>` • `OK`
`AT+CIPSCONT`	• `OK` If success Module saves current TCPIP Application Contexts to NVRAM. When system is rebooted, the parameters will be loaded automatically. • `ERROR` If error is related to ME functionality

Reference

Description

Parameters

<mode0>

0	Saved, the value from NVRAM
1	Unsaved, the value from RAM

Note:

- NULL

9.28 9.28 AT+CIPRDTIMER Set Remote Delay Timer

Command	Possible response(s)
`AT+CIPRDTIMER=<rdsigtimer>,<rdmuxtimer>`	• `OK` If success • `ERROR` If error is related to ME functionality
`AT+CIPRDTIMER?`	• `+CIPRDTIMER: <rdsigtimer>,<rdmuxtimer>` • `OK`
`AT+CIPRDTIMER=?`	• `+CIPRDTIMER: (100-4000),(100-7000)` • `OK`

Reference

Description

Parameters

<rdsigtimer> Remote delay timer of single connection. Default value is 2000.

<rdmuxtimer> Remote delay timer of multi-connections. Default value is 3500.

Note:

- This command is used to shorten the disconnect time locally when the remote server has been disconnected.

9.29 9.29 AT+CIPSGTXT Select GPRS PDP Context

Command	Possible response(s)
AT+CIPSGTXT=<mode>	• OK If success • ERROR If error is related to ME functionality
AT+CIPSGTXT=?	• +CIPSGTXT: (0,1,2) • OK

Reference

Description

Parameters

<mode>

0	Select first PDP context
1	Select second PDP context
2	Select WIFI context

Note:

- If select PDP context(0,1), must set multi IP connection (+CIPMUX=1) first.
- If select the WIFI context(2), the WIFI must be connect first

9.30 9.30 AT+CIPTKA Set TCP Keep-alive Parameters

Command	Possible response(s)
AT+CIPTKA=<mode>[,<keepIdle>[,<keepInterval>[,<keepCount>]]]	• OK If success • ERROR If error is related to ME functionality
AT+CIPTKA?	• +CIPTKA: <mode>,<keepIdle>,<keepInterval>,<keepCount> • OK
AT+CIPTKA=?	• +CIPTKA: (list of supported <mode>s),(list of supported<keepIdle>s),(list of supported <keepInterval>),(list ofsupported <keepCount>s) • OK

Reference

Description

Parameters

<mode> Set TCP keepalive option. 0 Disable TCP keep alive mechanism 1 Enable TCP keep alive mechanism

<keepIdle> Integer type; Idle time (in second) before TCP send the initial keepalive probe. 30-7200 Default: 7200

<keepInterval> Interval time (in second) between keepalive probesretransmission.30-600 Default: 75

<keepCount> Integer type; Maximum number of keepalive probes to be sent. 1-9 Default: 9

Note:

- NULL

9.31 9.31 AT^NETIF Show Net Interface Information

Command	Possible response(s)
AT^NETIF?	• default netif: <netif> • [<netif0>: • inet4 addr: <ip address> • inet6 addr0: <ip address> • inet6 addr1: <ip address> • gw addr: <ip address> • mask addr <ip address> • dns addr <ip address> • dns2 addr <ip address> • [...]] • OK

Reference

Description

Parameters

Note:

- NULL

9.32 9.32 AT+PING Start Ping IP Address Or Host

Command	Possible response(s)
• AT+PING=<IP address>, [<timeout>, <packet_length>, <ping_count>] • AT+PING=<domain name>,[<timeout>, <packet_length>, <ping_count>]	• OK • Reply from <IP address>: bytes= <nbyte> time = < replyTime >(ms), TTL = <ttl> • Reply from <IP address>: bytes= <nbyte> time = < replyTime >(ms), TTL = <ttl> • [...] • Ping statistics for <IP address>:Packets: Sent = <nsendPackage>, Received = < nreceivePackage >, Lose = <nlostPackage><<lostRange>%>
AT+PING=?	+PING: (DNS/IP address),(list of supported<timeout>s),(list of supported <packet_length>),(list of supported <ping_count>s)

Reference

Description

Parameters

<IP address> A string parameter which indicates ping IP address

<domain name> A string parameter which indicates ping domain name

<timeout> Ping ICMP package timeout (1~255)

<packet_length> Ping ICMP package size (36~1500 ipv4) (56~1500 ipv6)

<ping_count> Ping ICMP package send times (1~65535)

<nbyte> Ping package size

< replyTime > Time, in units of ms, required to receive the response

<ttl> Time to live

<nsendPackage> Send package number

< nreceivePackage > Receive package number

<nlostPackage> Lost package number

<lostRange> Lost package range

Note:

- NULL

9.33 9.33 AT+PINGSTOP Stop Ping IP Address Or Host

Command	Possible response(s)
AT+PINGSTOP	OK

Reference

Description

Parameters

Note:

- `AT+PINGSTOP` can stop AT+PING in <ping_count>

9.34 9.34 Example of TCP Client (Single IP connection)

1. `AT+CIPMUX=0`

   OK

2. `AT+CSTT="CMNET","",""`

   OK

3. `AT+CIICR`

   OK

4. `AT+CIPSTART="TCP","111.205.140.139",6800`

   OK

   CONNECT OK

5. `AT+CIPSEND`

   > `Just test ``Control+z``

   SEND OK

6. `AT+CIPCLOSE`

   CLOSE OK

7. `AT+CIPSHUT`

   SHUT OK

9.35 9.35 Example of TCP Client (Multi IP connection)

1. `AT+CIPMUX=1`

   OK

2. `AT+CSTT="CMNET","",""`

   OK

3. `AT+CIICR`

   OK

4. `AT+CIPSTART=1,"TCP","111.205.140.139",6800`

OK

1,CONNECT OK

5. `AT+CIPSTART=2,"UDP","111.205.140.139",7000`

   OK

   2,CONNECT OK

6. `AT+CIPSEND=1`

   > `Just test 1 `Control+z``

   1,SEND OK

7. `AT+CIPSEND=2`

   > `Just test 2 `Control+z``

   2,SEND OK

8. `AT+CIPCLOSE=1`

   1,CLOSE OK

9. `AT+CIPCLOSE=2`

   2,CLOSE OK

10. `AT+CIPSHUT`

    SHUT OK

9.36 9.36 Example of TCP Server

1. `AT+CSTT="CMNET","",""`

   OK

2. `AT+CIICR`

   OK

3. `AT+CIPSERVER=1,11003`

   OK

   SERVER OK

4. `AT+CIPSERVER=0`

   OK

   SERVER CLOSED

5. `AT+CIPSHUT`

   SHUT OK

CHAPTER

TEN

10 UDP COMMANDS

Contents

10.1 10.1 AT+TSOCR Create DGRAM type socket

Command	Possible response(s)
+TSOCR=<type>,<protocol>,<listen port>[,<receive control>]	• <socket> • +CME ERROR:<err>

Reference

Description

Parameters

<type> Socket type. Support DGRAM only,quotation mark is required.

<protocol> The protocol definition of standard internet. For example: UDP is 17.

<listen port> Local port, 0-65535(except 5683), this is used to send /receive message.

<receive control> when set to 1, Incoming messages will be received; while when set to 0, Incoming messages will be ignored. The default value is 1(receive messages).

<socket> Socket id, it cannot less than 0.

Example

AT+TSOCR=”DGRAM”,17,56,1

1

OK

Note:

1. Before this command executed, it is necessary to process ”AT+CGACT=1” to activate PDP.
2. The socket would not be created successfully with the protocol and port which have been used to create a socket successfully before .

10.2 10.2 AT+TSOST Send UDP message

Command	Possible response(s)
+TSOST=<socket>, <remote_addr>, <remote_port>,<length>, <data>	• <socket>,<length> • +CME ERROR:<err>

Reference

Description

Parameters

<socket> The socket id which +TSOCR command returned.

<remote addr> IPv4 IP address.

<remote port> Remote port, 0-65535.

<length> Decimal length of the data to be send.

<data> The data to be send, data format could be Hexadecimal or string with quotation marks.

Example

AT+TSOST=1,”111.205.140.139”,7000,7,”testrda”

1,7

OK

AT+TSOST=1,”111.205.140.139”,7000,3,1A2B3C

1,3

OK

Note:

1. Before this command executed, it is necessary to process ”AT+TSOCR”
2. This command returns the socket id and the number of bytes of sent data .The length we want to send should fit for the data length.

10.3 10.3 AT+TSORF Receive UDP message

Command	Possible response(s)
AT+TSORF=<socket>, <req_length>, [<timeout>]	• <socket>,<ip_addr>,<port>,<length>,<data>, <remaining_length> • +CME ERROR:<err>

Reference

Description

Parameters

<socket> The socket id +TSOCR command returned.

<req_length> Max length of received message.

<timeout> The maximum waiting time for receiving data,unit of time(second).(optional parameters,default is 30 s)

<ip_addr> IPv4 IP address where the message send from.

<port> Remote port, 0-65535.

<length> The actual length of the received data.If the <req_length> is smaller than the length of received data actully,the length is req_length.

<data> Received data, display in Hexadecimal format.

<remaining_length> Remaining length of the received data. If the <req_length> is larger than the length we received actually, the Remaining length is 0;if contrary, the remaining length is the length of the rest data.

Example

AT+TSORF=1,2

1,111.205.140.139,7000, 2,7465,5

Note:

1. Before this command is executed, it is necessary to process ”AT+TSOCR”,and the last parmeter of “+TSOCR” should be 0.

10.4 10.4 AT+TSOCL Close socket

Command	Possible response(s)
AT+TSOCL=<socket>	• OK • +CME ERROR:<err>

Reference

Description

Parameters

<socket> The socket id +TSOCR command returned.

Example

AT+TSOCL=1

OK

Note: Before this command is executed, it is necessary to process "AT+TSOCR"

10.5 10.5 AT+TPING Connect between IP net and remote host

Command	Possible response(s)
AT+TPING=<remote_address>[,<p_size>[,<timeout>]]	• +TPING:<remote_address>,<ttl>,<rtt> • +TPINGERR:<err>

Reference

Description

Parameters

<remote addr> IPv4 Address the data packets will be send to.

<p_size> The size of echo packet payload (8-1460), 8 is the default value.

<timeout> Max time to wait the response(ms), (10-60000), 1000 is the default.

<ttl> Receive from response packets.

<rtt> The minimum duration time from when the packets be send to when the response packets received(ms).

<err> An int value, providing some information about the reason for the failure of PING request: 1, Remote host doesn't respond in schedule time. 2, Ping request send fail.

Example

AT+TPING="111.205.140.139"

OK

+TPING: 111.205.140.139, 255, 906

Note: This command will send ICMP data packet to Specified host address. If connect successful to remote host, return a data packet as response. If connect failed, there will be no response from remote host, then try again, if still no response in limited time , return error.

CHAPTER

ELEVEN

11 CMIOT COMMANDS

Contents

11.1 11.1 AT+CIOTSTART Start sending data to IoT

Command	Possible response(s)
AT+CIOTSTART=<encrypt>	• **If success:** – OK – CIOT CONNECT OK/CIOT ENCRYPT CONNECT OK • **If failed:** – +CME ERROR:<err>

Parameters

<encrypt>

0	don't use encryption
1	use encryption

Note: OneNET public version only in single channel mode to use.Encryption mode takes more traffic and time.After enable encryption,it will use the longest time for the first time to execute the encrypt instruction,and must be waiting for the return to execute the next command.

11.2 11.2 AT+CIOTDAT Send small data to IoT

Command	Possible response(s)
AT+CIOTDAT=<msg_id>,<num>,<data>	• **If success:** – OK – [+CIOTACK:<msg_id>] • **If failed:** – +CME ERROR:<err>

Parameters

<msg_id> range:(0-65535). if msg_id=0 or msg_id=65535,response from server,else not.

<num> msg number

<data> data content,format: key_1,time_1,value_1;key_2,...Value_n-1;key_n,time_n,Value_n

<key> data sampling name

<time> data sampling time

<value> data sampling value

Note: time format:2016-01-01 00:00:00 if don't have time,format is key,,value;

11.3 11.3 AT+CIOTBINSET Set the information of the uploaded binary file

Command	Possible response(s)
AT+CIOTBINSET=<msg_id>,<des>,<bin_lens>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

1.Set the header information sent by the binary file. Due to thelimitation of the data buffer size, the EDP header is passed tothe server before uploading, and then the binary file data is uploaded.(AT+CIOTBINSET,AT+CIOTBINSEND)

2.If set msg_id,return after AT+CIOTBINSEND continuous sending.

Parameters

<msg_id> range:(0-65535). if msg_id=0 or msg_id=65535,there is no response code from server.

<des> datastream of the binary file

<bin_lens> length of file

Note: You can use this command only if you have a non-encrypted connection with the cloud server, otherwise you wil receive error.

11.4 11.4 AT+CIOTBINSEND Send content of the binary file

Command	Possible response(s)
AT+CIOTBINSEND=<bin_lens>, <bin_data>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

Correct response +OK means sending data success.When the length of data sent has been meet the setting length of AT+CIOTBINSET,this uploading finished,print +CIOTBINSEND: SEND OVER

Parameters

<bin_len> data length that is sending this time

<bin_data> Hex data ,example:01AA55 is OX01,OXAA,OX55

11.5 11.5 AT+CIOTPING Heartbeat instruction

Command	Possible response(s)
AT+CIOTPING	• **If success:** – OK – +CIOTPING:OK • **If failed:** – +CME ERROR:<err>

Note: 1. Only after establishing connection with the cloud server,then to use this command, otherwise it will report error.

2. The timeout of connection is 300S,the interval of sending one heatbeat packet should be less then 300S,otherwise it may interrupt the connection.(Suggest sending a heartbeat packet interval less then 150S,and in a timeout period,it can receive at least two heartbeat package.)

11.6 11.6 AT+CIOTQUIT Disconnect from IoT

Command	Possible response(s)
AT+CIOTQUIT	• **If success:** – +CIOTQUIT:OK – OK • **If failed:** – +CME ERROR:<err>

Note: EDP protocol don't have the datagram to disconnect from server,AT+CIOTQUIT is to realize disconnecting with TCP in the serverdirectly,and neead to matching use swith AT+CIOTSTART.

11.7 11.7 AT+CIOTSEND Send small data to IoT on single time

Command	Possible response(s)
AT+CIOTSEND=<encrypt>, <msg_id>,<num>, <data>	• **If success:** – OK – CIOT CONNECT OK/CIOT ENCRYPT CONNECT OK – [+CIOTACK:<msg_id>] – +CIOTQUIT:OK • **If failed:** – +CME ERROR:<err>

Reference

1.Time format:2016-01-01 00:00:00.If don't have time,format is key,,value;

2.Separator as a comma in a data record,data record delimiter is a semicolon.

3.It is disconnected when sending finished.

Parameters

<encrypt>

0	don't use encryption
1	use encryption

<msg_id> range:(0-65534). if msg_id=0 ,there is no response code from server.

<num> msg number

<data> data content,format: key_1,time_1,value_1;key_2,. . . Value_n-1;key_n,time_n,Value_n

<key> data sampling name

<time> data sampling time

<value> data sampling value

Note: You could use this command only when establishing connection with server.

11.8 11.8 AT+CIOTBINEND End the binary file

Command	Possible response(s)
AT+CIOTBINEND	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

11.9 11.9 AT+CIOT Query params storaged in flash

Command	Possible response(s)
AT+CIOT	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CIOT?

OK

Note: Module need to storage three params include masterkey,deviceid and apikey. At present,the length of apikey is 28 bytes.But the length of apikey and deviceid is possibility to extend.

11.10 11.10 AT+CIOTMKEY Set and Query masterkey

Command	Possible response(s)
AT+CIOTMKEY?	• **If success:** – +CIOTMKEY:<mkey> – OK
AT+CIOTMKEY=<mkey>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CIOTMKEY=”ycWcSOLH=afZju0HHfc4iB9Uquk=”

OK

AT+CIOTMKEY?

+CIOTMKEY:ycWcSOLH=afZju0HHfc4iB9Uquk=

OK

Parameters

<mkey> Masterkey

11.11 11.11 AT+CIOTCONNECTPARA Set server login params

Command	Possible response(s)
AT+CIOTCONNECTPARA?	• **If success:** – +CIOTCONNECTPARA:<mode>,[devid]/[projectid],[mapikey]/[authinfo] – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTCONNECTPARA=<mode>,[devid]/[projectid],[mapikey]/[authinfo]	• **If success:** – OK

Reference

1.When mode == 0,the set command is AT+CIOTCONNECTPARA=0,”1088826”,”syp2wjH2rowlyX1H7bqwynVVnK8”; when mode == 1,the set command is AT+CIOTCONNECTPARA=1,”40440”,”DCVgB46ZaAGAZmTlUbCvnNK=12”

2.The params that is setted by this command will be saved to flash.

3.default mode == 1

AT+CIOTCONNECTPARA=0,”10088826”,”ycWcSOLH=afZju0HHfc4iB9Uquk=”

OK

AT+CIOTCONNECTPARA?

+CIOTCONNECTPARA:0,10088826,ycWcSOLH=afZju0HHfc4iB9Uquk=

OK

AT+CIOTCONNECTPARA=1,”40440”,”rdatest”

OK

AT+CIOTCONNECTPARA?

+CIOTCONNECTPARA:1,40440,rdatest

OK

Parameters

<Module> connection mode

<devid> device ID

<projectid> product ID

<mapikey> Master apikey

<authinfo> authentication information

11.12 11.12 AT+CIOTIP Set and Query server IP

Command	Possible response(s)
AT+CIOTIP?	• **If success:** – +CIOTIP:<server> – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTIP=<server>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CIOTIP=”123.22.42.65”

OK

AT+CIOTIP?

+CIOTIP:123.22.42.65

OK

Parameters

<server> The domain name of OneNET server

11.13 11.13 AT+CIOTPORT Set server port

Command	Possible response(s)
AT+CIOTPORT?	• **If success:** – +CIOTPORT:<port> – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTPORT=<port>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CIOTPORT=80

OK

AT+CIOTPORT?

+CIOTPORT:80

OK

Parameters

<port> The port number of OneNET server

11.14 11.14 AT+CIOTPROID Set and Query product ID

Command	Possible response(s)
AT+CIOTPROID?	• **If success:** – +CIOTPROID:[<proid>] – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTPROID=<proid>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CIOTPROID=”12345678”

OK

AT+CIOTPROID?

+CIOTPROID:12345678

OK

Parameters

<proid> product ID

11.15 11.15 AT+CIOTSPLIT Set split of uploaded information

Command	Possible response(s)
AT+CIOTSPLIT?	• **If success:** – +CIOTSPLIT:<us>,<rs> – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTSPLIT=<us>, <rs>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CIOTSPLIT=”,”,”;”

OK

AT+CIOTSPLIT?

OK

Parameters

<us> domain separator ,default is comma

<us> interdomain separator ,default is semicolon

11.16 11.16 AT+CIOTID Set and Query device ID

Command	Possible response(s)
AT+CIOTID?	• **If success:** – +CIOTID:<dev_id> – OK • **If failed:** – +CME ERROR:<err>
+CIOTID=<dev_id>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CIOTMKEY=”IPEn1Mc=00UQ9oRwboqYPYUddng=”

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/25797326”

OK

+CMHTTPSET:”183.230.40.33”

AT+CIOTID? //query deviceid

+CIOTID:25797326

OK

AT+CMHTTPTERM

OK

Parameters

<dev_id> device ID

11.17 11.17 AT+CCIOTIDC Delete device ID

Command	Possible response(s)
AT+CCIOTIDC	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CIOTMKEY=”IPEn1Mc=00UQ9oRwboqYPYUddng=”

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/25797326”

OK

+CMHTTPSET:”183.230.40.33”

AT+CIOTIDC //delete deviceid

OK

AT+CMHTTPTERM

OK

11.18 11.18 AT+CIOTKEY Set and Query device apikey

Command	Possible response(s)
AT+CIOTKEY?	• **If success:** – +CIOTKEY:<api-key> – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTKEY=<api-key>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGATT=1

+CGATT:1

OK

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CIOTMKEY=”IPEn1Mc=00UQ9oRwboqYPYUddng=”

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/keys?key=3NvQGPZ=eUNzhnlnbiZ0MfynPNI=”

OK +CMHTTPSET:”183.230.40.33”

AT+CIOTKEY? //query apikey

+CIOTKEY:3NvQGPZ=eUNzhnlnbiZ0MfynPNI=

OK

AT+CIOTKEY=”3NvQGPZ=eUNzhnlnbiZ0MfynPNI=” //set apikey

OK

AT+CMHTTPTERM

OK

Parameters

<api-key> device apikey

11.19 11.19 AT+CIOTKEYC Delete device apikey

Command	Possible response(s)
AT+CIOTKEYC	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGATT=1

+CGATT:1

OK

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CIOTMKEY=”IPEn1Mc=00UQ9oRwboqYPYUddng=”

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/keys/3NvQGPZ=eUNzhnlnbiZ0MfynPNI=” //delete apikey

OK

AT+CIOTKEYC

OK

AT+CMHTTPTERM

OK

11.20 11.20 AT+CIOTSTATUS Query connection status

Command	Possible response(s)
AT+CIOTSTATUS	• **If success:** – +CIOTSTATUS:<state> – OK

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/device/status?devIds=23085734”

OK

+CMHTTPSET:”183.230.40.33”

AT+CIOTSTATUS

+CIOTSTATUS:0

OK

AT+CMHTTPTERM

OK

Parameters

<state>

1	the device login in
0	the device don’t login in

11.21 11.21 AT+CIOTLOC Report loaction information

Command	Possible response(s)
AT+CIOTLOC	• **If success:** – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTLOC=<lon>, <lat>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

The execution instruction uploads the lac(location area code) and cell_id(distruct number)

The setting instruction uploads longitude and latitude which must be collected by the customer

AT+CGATT=1

+CGATT:1

OK

AT+CGACT=1,1

OK

AT^NETIF?

default netif: GP0

GP0: sim:0 - cid:1

inet4 addr: 100.123.46.140

inet6 addr0:

inet6 addr1:

gw addr: 0.0.0.0

mask addr 0.0.0.0

dns addr 0.0.0.0

dns2 addr 0.0.0.0

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”183.230.40.33”,80,”/devices/25802952”

OK

+CMHTTPSET:”183.230.40.33”

AT+CIOTMKEY=”IPEn1Mc=00UQ9oRwboqYPYUddng=”

OK

AT+CIOTLOC=55,66

OK

AT+CIOTLOC

OK

AT+CMHTTPTERM

OK

Parameters

<lon> longitude

<lat> latitude

11.22 11.22 AT+CIOTAUTHINFO Set and Query auth_info

Command	Possible response(s)
AT+CIOTAUTHINFO?	• **If success:** – +CIOTAUTHINFO:<authinfo> – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTAUTHINFO=<authinfo>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/24785888”

OK

+CMHTTPSET:”183.230.40.33”

AT+CIOTAUTHINFO=”RDATEST”

OK

AT+CIOTAUTHINFO?

+CIOTAUTHINFO:RDATEST

OK

AT+CMHTTPTERM

OK

Parameters

<authinfo> Authentication infomation(it can be used as product serial number)

11.23 11.23 AT+CIOTINIT Set and Query device title and description

Command	Possible response(s)
AT+CIOTINIT?	• **If success:** – +CIOTINIT:<title>,<desc> – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTINIT=<title>, <desc>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>
AT+CIOTINIT	• **If success:** – OK – +CIOTID:<devid> – +CIOTKEY:<apikey> • **If failed:** – +CME ERROR:<err>

Reference

(1)resgister device

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CIOTMKEY=”IPEn1Mc=00UQ9oRwboqYPYUddng=”

OK

AT+CIOTAUTHINFO=”ASDFGHJKL”

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices”

OK

AT+CIOTINIT

OK

+CIOTID”25802952”

+CIOTKEY”3NvQGPZ=eUNzhnlnbiZ0MfynPNI=”

AT+CMHTTPTERM

OK

(2)Set device title and description

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/25802952”

OK

+CMHTTPSET:”183.230.40.33”

AT+CIOTMKEY=”IPEn1Mc=00UQ9oRwboqYPYUddng=”

OK

AT+CIOTAUTHINFO=”ASDFGHJKL”

OK

AT+CIOTPROID=”89172”

OK

AT+CIOTINIT=”TV1”,”tv1 test”

OK

AT+CIOTINIT?

+CIOTINIT:”TV1”“tv1 test”

OK

AT+CMHTTPTERM

OK

Parameters

<title> device ID.It is unique within the user scope

<desc> device description.It provides additional infomation for the registration

<devid> the device ID applied from cloud platform

<apikey> the device ID applied from cloud platform

11.24 11.24 AT+CMHTTPSET set HTTP parameters

Command	Possible response(s)
AT+CMHTTPSET=<server>,<port>,<request url>[,<delay>][,<urc>]	• **If success:** – OK – +CMHTTPSET:"<IP>" • **If failed:** – +CMHTTPSET:DNS FAIL
AT+CMHTTPSET=?	• **If success:** – +CMHTTPSET=<server>,<port>,<request url>[,<delay>][,<urc>] – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/23253561/datapoints?type=3”

OK

+CMHTTPSET:”183.230.40.33”

AT+CMHTTPTERM

OK

Description

Parameters

<server> The server domain name or IP address

<port> The server port

<request url> The request URL of GET or POST method.

<delay> Optionally, the period between packets get form HTTP server. default 0ms, RANGE(0-65535ms)

<urc> Optionally, weather or not to insert downloading statistics between each packet, RANGE(0 or 1)

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPINIT”.

11.25 11.25 AT+CMHTTPGET Get HTTP resouces

Command	Possible response(s)
AT+CMHTTPGET	• **If success:** – CONNECT OK – + CMHTTPGET:<total>,<cur> – OK • **If failed:** – CONNECT FAIL
AT+CMHTTPGET=?	• **If success:** – +CMHTTPGET – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”111.205.140.139”,1080,”/index.html”,0,1

OK

+CMHTTPSET:”183.230.40.33”

AT+CMHTTPGET

CONNECT OK

<223>,<0>

OK

AT+CMHTTPTERM

OK

Description

Parameters

<total> Total length of HTTP response

<cur> If urc is SET, this param shows the size of this packet, when cur == 0, it means transport done.

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPSET”.

11.26 11.26 AT+CMHTTPPOST Post data to HTTP server

Command	Possible response(s)
AT+CMHTTPPOST = <post content>	• **If success:** – CONNECT OK – + CMHTTPPOST:<total>,<cur> – OK • **If failed:** – CONNECT FAIL
AT+CMHTTPPOST=?	• **If success:** – +CMHTTPPOST =<post content> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”111.205.140.139”,1080,”/index.html”,0,1

OK

+CMHTTPSET:”183.230.40.33”

AT+CMHTTPPOST=”helloworld”

CONNECT OK

<223>,<0>

OK

AT+CMHTTPTERM

OK

Description

Parameters

<post content> Body content which needs to be posted to server

<total> Total length of HTTP response

<cur> If urc is SET, this param shows the size of this packet, when cur == 0, it means transport done.

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPSET”.

11.27 11.27 AT+CMHTTPDL Download data from HTTP server

Command	Possible response(s)
AT+CMHTTPDL	• **If success:** – CONNECT OK – + CMHTTPDL:<total>,<sum>,<cur> – OK • **If failed:** – CONNECT FAIL
AT+CMHTTPDL=?	• **If success:** – +CMHTTPDL – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”111.205.140.139”,1080,”/webdav1/put2.txt”,0,1

OK

+CMHTTPSET:”111.205.140.139”

AT+CMHTTPDL

CONNECT OK

helloworld

<10>,<10>,<10>

AT+CMHTTPTERM

OK

Description

Parameters

<sum> Total length of all packets we get

<total> If HTTP headers include (content length), total == content length , else total == 0.

<cur> If urc is SET, this param shows the size of this packet, when cur == 0, it means transport done.

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPSET”.

11.28 11.28 AT^ONENETPOST Post data to ONENET server

Command	Possible response(s)
AT^ONENETPOST=<post content>,<api-key>	• **If success:** – CONNECT OK – + <mesg> • **If failed:** – +CME ERROR: <err>
AT^ONENETPOST=?	• **If success:** – ^ONENETPOST=<post content>,<api-key> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/23253561/datapoints?type=3”

OK

+CMHTTPSET:”183.230.40.33”

AT^ONENETPOST=”{“temperature”:22.5,”humidity”:”95.2%”}”,”api-key:qnx1RqyuLFOfIiMXmwe243HUZeo=”

CONNECT OK

HTTP/1.1 200 OK

DateWed, 28 Feb 2018 07:09:11 GMT

Content-Typeapplication/json

Content-Length26

Connectionkeep-alive

ServerApache-Coyote/1.1

Pragmano-cache

{“errno”:0,”error”:”succ”}

OK

AT+CMHTTPTERM

OK

Description

Parameters

<post content> Body content which needs to be posted to server, this param must be JSON format

<api-key> Masterkey of the product or api-key of this device

<mesg> Response from ONENET server

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPSET”.

11.29 11.29 AT^ONENETREGISTER Auto regist device in ONENET server

Command	Possible response(s)
`AT^ONENETREGISTER=<post content>`	• **If success:** – CONNECT OK – + <mesg> • **If failed:** – +CME ERROR: <err>
`AT^ONENETREGISTER=?`	• **If success:** – ^ONENETREGISTER=<post content> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/register_de?register_code=xTMaSHAzdAS0sR4b”

OK

+CMHTTPSET:”183.230.40.33”

AT^ONENETREGISTER=”{“sn”:”2018030802”,”title”:”reg_test1”}”

CONNECT OK

HTTP/1.1 200 OK

DateThu, 08 Mar 2018 07:20:29 GMT

Content-Typeapplication/json

Content-Length95

Connectionkeep-alive

ServerApache-Coyote/1.1

Pragmano-cache

{“errno”:0,”data”:{“device_id”:”25909988”,”key”:”UvUC33gPhwIuFKlbRET6ForXPLU=”},”error”:”succ”}

OK

AT+CMHTTPTERM

OK

Description

Parameters

<post content> Body content which needs to be posted to server, this param must be JSON format

<mesg> Response from ONENET server

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPSET”.
2. In the step AT+CMHTTPSET, xTMaSHAzdAS0sR4b is <register_code>. It is your product <register_code> in onenet server and should be replaced by yours.

11.30 11.30 AT^ONENETGET Get data from ONENET server

Command	Possible response(s)
AT^ONENETGET=<api-key>	• **If success:** – CONNECT OK – + <mesg> • **If failed:** – +CME ERROR: <err>
AT^ONENETGET=?	• **If success:** – ^ONENETGET=<api-key> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/23253561/datapoints?type=3”

OK

+CMHTTPSET:”183.230.40.33”

AT^ONENETGET=”api-key:qnx1RqyuLFOfIiMXmwe243HUZeo=”

CONNECT OK

HTTP/1.1 200 OK

DateWed, 28 Feb 2018 07:08:39 GMT

Content-Typeapplication/json

Content-Length661

Connectionkeep-alive

ServerApache-Coyote/1.1

Pragmano-cache

{“errno”:0,”data”:{“count”:8,”datastreams”:[{“datapoints”:[{“at”:”2017-12-14 17:55:06.970”,”value”:66}],”id”:”qq”},{“datapoints”:[{“at”:”2017-12-14 15:43:36.899”,”value”:22.5}],”id”:”1”},{“datapoints”:[{“at”:”2017-12-14 15:43:36.901”,”value”:”95.2%”}],”id”:”2”},{“datapoints”:[{“at”:”2017-12-14 17:10:24.000”,”value”:67}],”id”:”3”},{“datapoints”:[{“at”:”2018-01-17 10:34:14.981”,”value”:22.5}],”id”:”temperature”},{“datapoints”:[{“at”:”2018-01-17 10:34:15.012”,”value”:”95.2%”}],”id”:”humidity”},{“datapoints”:[{“at”:”2017-12-15 15:55:56.561”,”value”:”temp”}],”id”:”id”},{“datapoints”:[{“at”:”2017-12-15 15:55:56.564”,”value”:1}],”id”:”value”}]},”error”:”succ”}

OK

AT+CMHTTPTERM

OK

Description

Parameters

<api-key> Masterkey of the product or api-key of this device

<mesg> Response from ONENET server

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPSET”.

11.31 11.31 AT^ONENETDELETE Delete data from ONENET server

Command	Possible response(s)
AT^ONENETDELETE=<api-key>	• **If success:** – CONNECT OK – + <mesg> • **If failed:** – +CME ERROR: <err>
AT^ONENETDELETE=?	• **If success:** – ^ONENETDELETE=<api-key> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+CMHTTPINIT

OK

AT+CMHTTPSET=”api.heclouds.com”,80,”/devices/23253561/datapoints?type=3”

OK

+CMHTTPSET:”183.230.40.33”

AT^ONENETDELETE=”api-key:qnx1RqyuLFOfIiMXmwe243HUZeo=”

CONNECT OK

HTTP/1.1 200 OK

DateWed, 28 Feb 2018 07:11:17 GMT

Content-Typeapplication/json

Content-Length26

Connectionkeep-alive

ServerApache-Coyote/1.1

Pragmano-cache

{“errno”:0,”error”:”succ”}

OK

AT+CMHTTPTERM

OK

Description

Parameters

<api-key> Masterkey of the product or api-key of this device

<mesg> Response from ONENET server

Note:

1. Before this command is executed, it is necessary to process ”AT+CMHTTPSET”.

11.32 11.32 AT+CMHTTPINIT Initialize HTTP service

Command	Possible response(s)
AT+CMHTTPINIT	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT+CMHTTPINIT=?	• **If success:** – +CMHTTPINIT – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CMHTTPINIT

OK

Description

Parameters

NULL

Note:

1. Before this command executed, it is necessary to process ”AT+CGACT”.
2. AT+CMHTTPINIT should first be executed to initialize the HTTP service.

11.33 11.33 AT+CMHTTPTERM Terminate HTTP service

Command	Possible response(s)
AT+CMHTTPTERM	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT+CMHTTPTERM=?	• **If success:** – +CMHTTPTERM – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CMHTTPTERM

OK

Description

Parameters

NULL

Note:

1. Before this command executed, it is necessary to process "AT+CMHTTPINIT".
2. AT+CMHTTPTERM should last be executed to terminate the HTTP service.

11.34 11.34 AT+FTPOPEN Create a ftp connection

Command	Possible response(s)
AT+FTPOPEN=<pdp_id>, <server_ip/ url:port@user:pwd>, <username>, <password>,<mode>, <timeout>,<datatype>	• **If success:** – OK – +FTPOPEN: 1 • **If failed:** – +CME ERROR:<err>
AT+FTPOPEN?	• **If success:** – +FTPOPEN: <state> – OK • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPOPEN=1,"183.230.40.150:36003","ftptest","wk_ftp_123",1,30,1
- OK
- +FTPOPEN: 1

Description The command is used to read FTP state or set the FTP parameters, to create FTP connection and log in FTP server

Parameters

<pdp_id>: The pdp id is used for FTP connection, range 1-7

<server_ip/url:port@user:pwd>: The remote site FTP ip address or URL, the max length of URL is 255B, the default port for FTP is 21

<username> The username for FTP login

<password> The password for FTP login

<mode>: 0 : Active FTP mode, 1 : Passive FTP mode (default)

<timeout> The timeout of FTP (5-180s), 30s is default

<datatype>: 0 : Binary, 1 : Text

<state>: 0 : Close, 1 : Open

Note: 1, You cann't use the following FTP command if the return value of FTPOPEN is not OK

11.35 11.35 AT+FTPCLOSE Logout and disconnect a FTP

Command	Possible response(s)
AT+FTPCLOSE	• **If success:** – OK – +FTPQUIT: 1 • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPCLOSE
- OK
- +FTPQUIT: 1

11.36 11.36 AT+FTPSIZE Get the file data size in bytes.

Command	Possible response(s)
AT+FTPSIZE=<file_path>	• **If success:** – +FTPSIZE: <size> – OK • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPSIZE="test_dn.txt"
- +FTPSIZE: 10
- OK

Parameters

<file_path>: The file path in FTP server

<size>: The file data size in bytes

11.37 11.37 AT+FTPGET Download the specified file

Command	Possible response(s)
AT+FTPGET=<file_path>[, <file_offset>, <data_length>]	• **If success:** – +FTPGET: <revLen> – <data> – OK • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPGET="test_dn.txt"
- +FTPGET: 10
- 1234567890
- OK

Parameters

<file_path>: The file path in FTP server

<file_offset>: The address of file offset , you can download file from the offset, default is the beginning of the file.(Optional)

<data_length>: The data length to download, default is download the whole file.(Optional)

<revLen>: The data length had been received.(bytes)

11.38 11.38 AT+FTPPUT Upload data to the specified FTP file

Command	Possible response(s)
AT+FTPPUT=<file_path>,<data_length>,<EOF>	• **If success:** – > Waiting for input – +FTPPUT: <sentLen> or +FTPPUT: DONE • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPPUT=”test_up.txt”,10,0
- > 1234567890
- +FTPPUT: 10
- AT+FTPPUT=”test_up.txt”,10,1
- > 1234567890
- +FTPPUT: DONE

Parameters

<file_path>: The file path in FTP server

<data_length>: The data length to upload

<EOF>: End Of File, 0 means uploading is to be continue, 1 means uploading will be over

<sentLen> The length of data had been uploaded successfully

11.39 11.39 AT+FTPSTAT Get the information of FTP session state

Command	Possible response(s)
AT+FTPSTAT=[<file_path>]	• **If success:** – +FTPSTAT: – <status> – OK • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPSTAT=”“
- +FTPSTAT:
- **211 - FTP server status:**
  - Connected to 117.136.43.146
  - Logged in as ftptest
  - TYPE: ASCII

        - No session bandwidth limit
        - Session timeout in seconds is 300
        - Control connection is plain text
        - Data connections will be plain text
        - At session startup, client count was 1
        - vsFTPd 2.2.2 - secure, fast, stable
    - 211 End of status
    - OK
    -
    - AT+FTPSTAT=”test_up.txt”
    - +FTPSTAT:
    - **213-Status follows:**
        - -rw-r–r– 1 519 519 110 May 19 02:51 test_up.txt
    - 213 End of status
    - OK

Parameters

<file_path>: The file path in FTP server(Optional). Return the state of server if null. Return the file state if non-null.

<status>: The information of state

11.40 11.40 AT+FTPLST List the content of FTP directory

Command	Possible response(s)
AT+FTPLST=<dir_path>	• **If success:** – <list_info> – OK • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPLST=”“
- -rw-r–r– 1 519 519 10 May 16 09:04 test_dn.txt
- -rw-r–r– 1 519 519 110 May 19 02:51 test_up.txt
- OK
-
- AT+FTPLST=”../”
- drwxr-xr-x 2 519 519 4096 May 16 09:07 ftp
- OK

Parameters

<file_path>: The file path in FTP server(Optional). Return the current directory if null.

<list_info>: The list of file information.

11.41 11.41 AT+FTPURC Used to set or get the FTP statistics report option

Command	Possible response(s)
AT+FTPURC=<urc_en>[,<delay>]	• **If success:** – OK • **If failed:** – +CME ERROR:<err>
AT+FTPURC?	• **If success:** – +FTPURC: <urc_en>,<delay> – OK • **If failed:** – +CME ERROR:<err>

Reference

- AT+FTPURC=0
- OK
-
- AT+FTPURC?
- +FTPURC: 0,200
- OK

Parameters

<urc_en>: 0 is close the FTP statistics report, 1 is open

<delay>: Interval time of output data

11.42 11.42 Example of EDP long connection mode

1) Activate net

1. AT+CGACT=1,1

   OK

2) Set module end parameters according to the registration information of the platform end

1. AT+CIOTIP=”183.230.40.39”
2. AT+CIOTPORT=876
3. AT+CIOTMKEY=”=ZF38ygYRfnPbCMvFjYOK4kj1jA=” //set Masterkey

4. AT+CIOTINIT="TV1","tv1 test" //set device name and description
5. AT+CIOTID="7377439" //set device ID
6. AT+CIOTKEY="dH=Z8tXZVT3ODYrf0nddhDQ77HA=" //set device APIKEY

3) Set connection mode and relative parameters

Mode one :

AT+CIOTCONNECTPARA=0,"7377439","=ZF38ygYRfnPbCMvFjYOK4kj1jA=" //devid+mapikey mode

Mode two :

AT+CIOTCONNECTPARA=1,"89172","ASDFGHJKL"//projectid +authinfo mode

4) Short connection upload small data on single time

1. AT+CIOTSEND=1,361,3,"teet1,,22.5;teet2,,35%;teet3,,89"//encryption, response mode, response code: 361

   OK

   +CIOT CONNECT OK

   +CIOTACK:361

   +CIOTQUIT:OK

   OK

2. AT+CIOTSEND=0,0,3,"teet1,,22.5;teet2,,35%;teet3,,89"//unencryption, non response mode

   OK

   +CIOT CONNECT OK

   +CIOTQUIT:OK

   OK

5) Long connection upload small data circultary

1. AT+CIOTSTART=0 //start data transmission

   OK

   +CIOT CONNECT OK

2. AT+CIOTDAT=0,3,"te,,22.5;hy,,35%;pm,,89" //upload small data in NON response mode

   OK

OR

2. AT+CIOTDAT=65534,3,"te,,10.5;hy,,12%;pm,,9" //upload small data in response mode, response code 65534

   OK

   +CIOTACK:65534

3. AT+CIOTQUIT//stop data transmission

   +CIOTQUIT:OK

   OK

Note: In this process , user can continue to upload data, If want EDP connection to be maintained, AT+CIOTPING shouled be used.Or the connection will be closed after the max connection hold time.

6) Upload binary file

1. AT+CIOTSTART=0 //non encrypted mode
2. AT+CIOTBINSET=0,"test",3 //set the binary file, NON response mode

   OK

OR

2. AT+CIOTBINSET=1,"test",3 //set the binary file, response mode, response code 1

   OK

3. AT+CIOTBINSEND=1,1a

   AT+CIOTBINSEND=1,2b

   AT+CIOTBINSEND=1,3c

   +CIOTBINSEND: SEND OVER

   +CIOTACK:1

CHAPTER

TWELVE

12 HTTP COMMANDS

Contents

12.1 12.1 HTTP COMMANDS OVERVIEW

Description Two sets of HTTP Commands is provided in this chapter. One form chapter2~10, the Other is chapter11~21. Before the AT Commands in chapter2~9 is executed, AT+HTTPINIT should be executed first.

The Commands in chapter2~9 should be used in combination, a complete example is show in chapter10. Before the AT Commands in chapter10~20 is executed, AT+INITHTTP should be executed first. The

Commands in chapter11~21 can be used in separate, every chapter has its own example.

If need to use https,see the example in chapter 12.11 .

12.2 12.2 AT+HTTPINIT Initialize HTTP service

Command	Possible response(s)
AT+HTTPINIT	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT+HTTPINIT=?	• **If success:** – +HTTPINIT – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+HTTPINIT

OK

Description

Parameters

NULL

Note:

1. Before this command executed, it is necessary to process ”AT+CGACT”.
2. HTTPINIT should first be executed to initialize the HTTP service.

12.3 12.3 AT+HTTPTERM Terminate HTTP service

Command	Possible response(s)
AT+HTTPTERM	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT+HTTPTERM=?	• **If success:** – +HTTPTERM – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+HTTPTERM

OK

Description

Parameters

NULL

Note:

1. Before this command executed, it is necessary to process ”AT+HTTPINIT”.
2. HTTPTERM should last be executed to terminate the HTTP service.

12.4 12.4 AT+HTTPPARA Set HTTP parameters value

Command	Possible response(s)
AT+HTTPPARA=<HTTPParamTag>, <HTTPParamValue>	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT+HTTPPARA=?	• **If success:** – +HTTPPARA=<HTTPParamTag>, <HTTPParamValue> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+HTTPPARA=”CID”,”1”

OK

Description

Parameters

<HTTPParamTag> Name of HTTP parameter. parameter list:

“CID” (Mandatory Parameter) Bearer profile identifier

“URL” (Mandatory Parameter) HTTP client URL: “http://’server’/’path’:’tcpPort’”. “server”: FQDN or IP-address, “path”: path of file or directory, “tcpPort”: default value is 80. Refer to “IETF-RFC 2616”.

“UA” The user agent string which is set by the application to identify the mobile. Usually this parameter is set as operation system and software version information. Default value is “RDA8955”.

“PROIP” The IP address of HTTP proxy server

“PROPORT” The port of HTTP proxy server

“REDIR” This flag controls the redirection mechanism of the RDA8955 when it is acting as HTTP client (numeric). If the server sends a redirect code (range 30x), the client will automatically send a new HTTP request when the flag is set to (1).

“BREAK” Parameter for HTTP method “GET”, used for resuming broken transfer.

“BREAKEND” Parameter for HTTP method “GET”, used for resuming broken transfer. which is used together with “BREAK”,If the value of “BREAKEND” is bigger than “BREAK”, the transfer scope is from “BREAK” to “BREAKEND”. If the value of “BREAKEND” is smaller than “BREAK”, the transfer scope is from “BREAK” to the end of the file.

“TIMEOUT” If both “BREAKEND” and “BREAK” are 0, the resume broken transfer function is disabled. HTTP session timeout value, scope: 30-1000 second.Default value is 120 seconds. HTTP Parameter value. Type and supported content depend on related <HTTPParamTag>.

“CONTENT” Used to set the “Content-Type” field in HTTP header.

“USERDATA” User data

<HTTPParamValue> HTTP Parameter value.Type and supported content depend on related <HTTPParamTag>.

Note:

1. Before this command is executed, it is necessary to process ”AT+HTTPINIT”.
2. Not all the HTTP Server supports “BREAK” and “BREAKEND” parameters.

12.5 12.5 AT+HTTPDATA Input HTTP data

Command	Possible response(s)
AT+HTTPDATA	• **If success:** – >\ – OK • **If failed:** – +CME ERROR: <err>
AT+HTTPDATA=?	• **If success:** – +HTTPDATA – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+HTTPDATA

>

1234567

->

OK

Description

Parameters

<'>'> When receive this parameters, you can enter your data in send box and send out. When you send out your data, you should focus your cursor in receive box and use combination key: "CTRL+Z" to finish this command.

Note:

1. Before this command is executed, it is necessary to process "AT+HTTPINIT"

12.6 12.6 AT+HTTPSSETCRT Set HTTPS certificates

Command	Possible response(s)
AT+ HTTPSSETCRT= <crtFlag>	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPSSETCRT=?	• **If success:** – + HTTPSSETCRT= <crtFlag> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+ HTTPSSETCRT= 0

OK

Description

Parameters

<crtFlag> 0 Set CA certificate 1 Set client certificate 2 Set client private key

Note: 1.After this command is executed, it is necessary to process ”AT+HTTPDATA” to finish set CRT.

12.7 12.7 AT+HTTPACTION HTTP method action

Command	Possible response(s)
AT+HTTPACTION=<method_code>	• **If success:** – OK – <method_code>,<status_code>, <content_length> • **If failed:** – +CME ERROR: <err>
AT+HTTPACTION=?	• **If success:** – +HTTPACTION=<method_code> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+HTTPACTION=0

OK

0,200,10

Description

Parameters

<method_code> HTTP methods. 0 GET 1 POST 2 HEAD 3 DELETE 4 DELETE(for onenet) 5 PUT(for onenet)

<status_code> HTTP Status Code responded by remote server, it identifier refer to HTTP1.1(RFC2616) 100 Continue

101 Switching Protocols

200 OK

201 Created

202 Accepted

203 Non-Authoritative Information

204 No Content

205 Reset Content

206 Partial Content

300 Multiple Choices

301 Moved Permanently

302 Found

303 See Other

304 Not Modified

305 Use Proxy

307 Temporary Redirect

400 Bad Request

401 Unauthorized

402 Payment Required

403 Forbidden

404 Not Found

405 Method Not Allowed

406 Not Acceptable

407 Proxy Authentication Required

408 Request Time-out

409 Conflict

410 Gone

411 Length Required

412 Precondition Failed

413 Request Entity Too Large

414 Request-URI Too Large

415 Unsupported Media Type

416 Requested range not satisfiable

417 Expectation Failed

500 Internal Server Error

501 Not Implemented

502 Bad Gateway

503 Service Unavailable

504 Gateway Time-out

505 HTTP Version not supported

600 Not HTTP PDU

601 Network Error

602 No memory

603 DNS Error

604 Stack Busy

<content_length> HTTP content_length responded by remote server.

Note:

1. Before this command is executed, it is necessary to process "AT+HTTPPARA"
2. The <content_length> will be 0 except GET method.

12.8 12.8 AT+HTTPREAD Read the HTTP server response

Command	Possible response(s)
AT+HTTPREAD=<start_address>,<byte_size>	• **If success:** – OK – +HTTPREAD:<data_len>,<data> • **If failed:** – +CME ERROR: <err>
AT+HTTPREAD=?	• **If success:** – AT+HTTPREAD=<start_address>,<byte_size> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+HTTPREAD=2,8

OK

+HTTPREAD:8

12345678

Description

Parameters

<start_address> The starting point for data output. 0-319488 (bytes)

<byte_size> The length for data output.1-319488 (bytes)

<data_len> The actual length for data output.

<data> Data from HTTP server or user input.

Note:

1. Read data when AT+HTTPACTION=0 or AT+HTTPDATA is executed. If<byte_size> is bigger than the data size received, module will only Return actual data size.
2. It is strongly recommended to set enough time to input all data with the length of <byte_size>.

12.9 12.9 AT+HTTPSTATUS Read HTTP status

Command	Possible response(s)
AT+HTTPSTATUS	• **If success:** – OK – +HTTPSTATUS: <mode>,<status>, <finish>,<remain> • **If failed:** – +CME ERROR: <err>
AT+HTTPSTATUS=?	• **If success:** – +HTTPSTATUS: <mode>,<status>, <finish>,<remain> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+HTTPSTATUS

GET,1,210,0

OK

Description

Parameters

<mode> GET POST HEAD

<status> 0 idle 1 receiving 2 sending

<finish> The amount of data which have been transmitted

<remain> The amount of data remaining to be sent or received

Note:

1. Before this command is executed, it is necessary to process ”AT+HTTPACTION”

12.10 12.10 AT+HTTPGET Get HTTP resouces

Command	Possible response(s)
AT+ HTTPGET	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPGET=?	• **If success:** – +HTTPGET – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+HTTPINIT

OK

AT+HTTPPARA=”CID”,”1”

OK

AT+HTTPPARA=”URL”,”http://111.205.140.139:1080/”

OK

AT+HTTPGET

Date

Wed, 28 Feb 2018 03:23:38 GMT

Server

Apache/2.4.25 (Win64) OpenSSL/1.0.2k

Last-Modified

Thu, 20 Apr 2017 08:19:31 GMT

ETag

“df-54d94cce976c8”

Accept-Ranges

bytes

Content-Length

223

Content-Type

text/html

<html>

<head>

<title>RDA POST TEST!</title>

</head>

<body>

<form> login

<input name = “post” type = “text” maxlength = “8” size = “5” value = “typeing…”>

</form>

<h1>http test. It works!</h1>

</body>

</html>

OK

AT+HTTPTERM

OK

Description

Parameters

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process ”AT+CGACT”

12.11 12.11 AT+HTTPDOWNLOAD Download files from HTTP server

Command	Possible response(s)
AT+HTTPDOWNLOAD	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPDOWNLOAD	• **If success:** – +HTTPDOWNLOAD – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+HTTPINIT

OK

AT+HTTPPARA="CID","1"

OK

AT+HTTPPARA="URL","http://111.205.140.139:1080/webdav1/put2.txt"

OK

AT+HTTPDOWNLOAD

helloworld

OK

AT+HTTPTERM

OK

Description

Parameters

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process "AT+CGACT"

12.12 12.12 Example for chapter2~9

1) Activate net

AT+CGACT=1,1

OK

2) Init HTTP DATA structure

AT+HTTPINIT

OK

3) Set parameters according to the app info

AT+HTTPPARA = “CID”,”1”

OK

AT+HTTPPARA = “URL”,”http://api.heclouds.com/devices/25336211/datapoints?type=5”

OK

AT+HTTPPARA=”CONTENT”,”application/json”

OK

AT+HTTPPARA=”API_KEY”,”qnx1RqyuLFOfIiMXmwe243HUZeo=”

OK

AT+HTTPDATA

>

,;temperature,2015-03-22T22:31:12,22.5;102;pm2.5,89;10

->

OK

4) executed HTTP action

AT+HTTPACTION =1

OK

1 200 26

5) Read the response data

AT+HTTPREAD = “0”,”26”

OK

+HTTPREAD: 26

{“errno”:0,”error”:”succ”}

6) Term HTTP DATA structure

AT+HTTPTERM

OK

Another HTTP ACTION in step 4

AT+HTTPACTION = 0

0 200 223

OK

After this action we can get the action status use AT+HTTPSTATUS, the HTTPSTATUS only support action 0~3

AT+HTTPSTATUS

GET 1 223 0

OK

12.13 12.13 Example for HTTPS

1) active network

AT+CGACT=1,1

OK

2) set ca certificate,send by ctrl+z

AT+HTTPSSETCRT=0

>

—–BEGIN CERTIFICATE—–

MIICvTCCAiagAwIBAgIJAP60GSWlAKIAMA0GCSqGSIb3DQEBCwUAMHYxCzAJBgNV BAY-
TAkNOMQswCQYDVQQIDAJUSjEQMA4GA1UEBwwHdGlhbmppbjEMMAoGA1UECgwD UkRB-
MQwwCgYDVQQLDANSREExDDAKBgNVBAMMA1JEQTEeMBwGCSqGSIb3DQEJARYP
Y2FAcmRhbWljcm8uY29tMB4XDTE4MDEwMzA5MjQzM1oXDTI4MDEwMTA5MjQzM1ow djEL-
MAkGA1UEBhMCQ04xCzAJBgNVBAgMAlRKMRAwDgYDVQQHDAd0aWFuamluMQww CgY-
DVQQKDANSREExDDAKBgNVBAsMA1JEQTEMMAoGA1UEAwwDUkRBMR4wHAYJKoZI
hvcNAQkBFg9jYUByZGFtaWNyby5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJ
AoGBAOAb6LrGRRSYO6ckemz597tx1tH+TSykIDUISHZYo8n50rEm6plCB8fp4rUQ
vbi8oMm5bqgKHOyGoYUJJ8yFHeNxllGaDhe4ZxyFhgVeQDBZ8vl1MYpAnliMeVGZ
dFOItdTQ6XmIKgMi5gOX++/Guwyvq3Si9L5L3kTC2luOieeVAgMBAAGjUzBRMB0G
A1UdDgQWBBSniKsXob3VbrPQzv58g9mXd57hjjAfBgNVHSMEGDAWgBSniKsXob3V br-
PQzv58g9mXd57hjjAPBgNVHRMBAf8EBTADAQH/MA0GCSqGSIb3DQEBCwUAA4GB
AEDx50ZilQDhfBV6qVBmqR6iQC+uOwyORpCrGytSyAKgFzxeu01YbJkV/wkrhEJo
QMSu+GltzriVaJNhCz0vrdhZliDhIZD2gSgwOzapZeyCF4udxTbIMlRV7IOqb1XD

yCaGbj2MfmuLSlXJ3nWS3y/f7zVEPWmSj5vEhVSp0fBj

—–END CERTIFICATE—–

OK

3) set client certificate,send by ctrl+z

AT+HTTPSSETCRT=1

>

Certificate:

Data: Version: 3 (0x2) Serial Number: 18 (0x12)

Signature Algorithm: sha256WithRSAEncryption Issuer: C=CN, ST=TJ, L=tianjin, O=RDA, OU=RDA, CN=RDA/emailAddress=ca@rdamicro.com Validity

Not Before: Sep 15 00:00:00 2017 GMT

Not After : Sep 15 00:00:00 2018 GMT

Subject: C=CN, ST=TJ, O=RDA, OU=RDA, CN=RDA/emailAddress=client@rdamicro.com

Subject Public Key Info:

Public Key Algorithm: rsaEncryption Public-Key: (1024 bit) Modulus:

00:ac:03:cd:98:fb:81:95:e9:7b:31:00:ed:00:24: 39:6c:e4:2b:cb:73:f6:ed:15:a8:9e:41:18:6b:2b: 74:f1:24:a7:b4:c4:2a:48:c2:90:90:0e:fc:c8:69: cd:68:55:c8:38:18:43:cd:de:f4:cd:ef:33:06:42: 47:74:12:18:5d:7e:be:c2:9c:0d:6f:b4:48:2f:10: 3e:37:3b:7e:be:0f:27:7c:c6:59:45:39:19:7c:5c: 88:76:9e:ad:47:2e:fa:55:d5:70:05:13:b5:0a:6b: 67:b9:a9:48:c1:ab:8a:fe:db:ee:fa:25:eb:15:52: 4a:2a:09:10:a7:2b:8f:0a:15

Exponent: 65537 (0x10001)

X509v3 extensions:

X509v3 Basic Constraints: CA:FALSE

Netscape Comment: OpenSSL Generated Certificate

X509v3 Subject Key Identifier: 56:1C:4A:BD:64:1A:32:EC:4B:19:8B:3B:E9:36:19:8D:27:79:6C:EB

X509v3 Authority Key Identifier: keyid:A7:88:AB:17:A1:BD:D5:6E:B3:D0:CE:FE:7C:83:D9:97:77:9E:E1:8E

Signature Algorithm: sha256WithRSAEncryption 5c:31:31:47:a7:aa:3d:87:14:97:11:2e:69:7e:66:dd:bf:87: 8d:42:3f:9e:be:c3:d7:40:aa:fb:af:c7:25:37:a5:9c:d9:ee: da:a7:a8:6d:66:44:c4:0d:71:88:3c:3d:73:ac:4a:7a:7b:10: e9:4b:c8:fa:d6:9a:9b:7a:63:d1:93:b3:6c:e1:e3:89:58:1b: d0:3c:a9:e7:bd:56:bc:c3:86:e8:61:51:4c:fd:90:8b:31:b3: 80:0a:bc:f3:12:35:1f:ef:b0:e7:ce:77:34:d9:bc:13:30:b0: b5:fb:f6:7e:04:87:7b:5a:f8:ed:7a:00:b5:83:ae:4a:48:01: b4:5c

——BEGIN CERTIFICATE——

MIICzzCCAjigAwIBAgIBEjANBgkqhkiG9w0BAQsFADB2MQswCQYDVQQGEwJDTjEL
MAkGA1UECAwCVEoxEDAOBgNVBAcMB3RpYW5qaW4xDDAKBgNVBAoMA1JEQTEMMAoG
A1UECwwDUkRBMQwwCgYDVQQDDANSREExHjAcBgkqhkiG9w0BCQEWD2NhQHJkYW1p
Y3JvLmNvbTAeFw0xNzA5MTUwMDAwMDBaFw0xODA5MTUwMDAwMDBaMGgxCzAJBgNV
BAYTAkNOMQswCQYDVQQIDAJUSjEMMAoGA1UECgwDUkRBMQwwCgYDVQQLDANSREEx
DDAKBgNVBAMMA1JEQTEiMCAGCSqGSIb3DQEJARYTY2xpZW50QHJkYW1pY3JvLmNv
bTCBnzANBgkqhkiG9w0BAQEFAAOBjQAwgYkCgYEArAPNmPuBlel7MQDtACQ5bOQr
y3P27RWonkEYayt08SSntMQqSMKQkA78yGnNaFXIOBhDzd70ze8zBkJHdBIYXX6+ wp-
wNb7RILxA+Nzt+vg8nfMZZRTkZfFyIdp6tRy76VdVwBRO1CmtnualIwauK/tvu +iXr-
FVJKKgkQpyuPChUCAwEAAaN7MHkwCQYDVR0TBAIwADAsBglghkgBhvhCAQ0E
HxYdT3BlblNTTCBHZW5lcmF0ZWQgQ2VydGlmaWNhdGUwHQYDVR0OBBYEFFYcSr1k
GjLsSxmLO+k2GY0neWzrMB8GA1UdIwQYMBaAFKeIqxehvdVus9DO/nyD2Zd3nuGO
MA0GCSqGSIb3DQEBCwUAA4GBAFwxMUenqj2HFJcRLml+Zt2/h41CP56+w9dAqvuv
xyU3pZzZ7tqnqG1mRMQNcYg8PXOsSnp7EOlLyPrWmpt6Y9GTs2zh44lYG9A8qee9 VrzDhuh-
hUUz9kIsxs4AKvPMSNR/vsOfOdzTZvBMwsLX79n4Eh3ta+O16ALWDrkpI AbRc

——END CERTIFICATE——

OK

4) set client private key,send by ctrl+z

AT+HTTPSSETCRT=2

>

——BEGIN RSA PRIVATE KEY——

MIICXQIBAAKBgQCsA82Y+4GV6XsxAO0AJDls5CvLc/btFaieQRhrK3TxJKe0xCpI
wpCQDvzIac1oVcg4GEPN3vTN7zMGQkd0Ehhdfr7CnA1vtEgvED43O36+Dyd8xllF
ORl8XIh2nq1HLvpV1XAFE7UKa2e5qUjBq4r+2+76JesVUkoqCRCnK48KFQIDAQAB AoG-
BAKUZSV5KF4iBfmH8V31JR2zCW159QUUxApRSOlOydB13ZxfTKBqJ1CLQn8Lj +ejoXLGqaHnSQvjd-
WwXo25gGPib7x+hI1cNhdz6I6hzSxvJ4on8dLpm7Jni4Hv6T GeMJklCtcR4+p6L30UyKM1/YUg61G+k34DQDSHRmraTGhuNJAkE
Fo61RmrH1/JgR8nBEn8i8ye0kSqHS2i18kIAOqOm8bisv8CHnVHujGTOR+6wRgFJ

Nal4bqSr6wJBANBxHVRJAuBHyUgugvieocCTilUCRfsva1UtMManOxvuLfEGsH9p
A24CrPr73+sZyXmJrGrccnKr37bVLQL7of8CQH11FOPRrW8KkajdsKsTqIAGUMTw

/DZGx/OMRb/beKMAmOQ367jnDLIJkJUC+cYkLLy09IdlKMs54kb60Ckso2cCQQC4
VI+/TaHBfTo/HwKron0gtFkMvCnu7AxbEs+jnZfkJ0lxcJz8z308+BjJC50FZ5SI anuTNM-
fxKJV6NiLMFIM5AkA/5LD4+6NXK9AWYwfZTCY26FwqIxFYz/2HDcW+xzvw

Hzh5qIBqlc9XGyOP0+2uuHn+b5D7czwEVOFEHZ98AK0k

—–END RSA PRIVATE KEY—–

OK

5) get from https url

AT+INITHTTP

OK

AT+HTTPGET=”https://111.205.140.139:1443/”

Date

Thu, 01 Mar 2018 07:52:10 GMT

Server

Apache/2.4.25 (Win64) OpenSSL/1.0.2k

Last-Modified

Tue, 21 Feb 2017 01:25:24 GMT

ETag

“3a-549004119e375”

Accept-Ranges

bytes

Content-Length

58

Content-Type

text/html

<html><body><h1>https test. It works!</h1></body></html>

OK

AT+TERMHTTP

OK

12.14 12.14 AT+INITHTTP Initialize HTTP service

Command	Possible response(s)
AT+INITHTTP	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT+INITHTTP=?	• **If success:** – +INITHTTP – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+INITHTTP

OK

Description

Parameters

NULL

Note:

1. Before this command executed, it is necessary to process "AT+CGACT".
2. INITHTTP should first be executed to initialize the HTTP service.

12.15 12.15 AT+TERMHTTP Terminate HTTP service

Command	Possible response(s)
AT+TERMHTTP	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT+TERMHTTP=?	• **If success:** – +TERMHTTP – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+TERMHTTP

OK

Description

Parameters

NULL

Note:

1. Before this command executed, it is necessary to process "AT+HTTPINIT".
2. TERMHTTP should last be executed to terminate the HTTP service.

12.16 12.16 AT+HTTPAUTHOR Set HTTP authority

Command	Possible response(s)
AT+HTTPAUTHOR = <url>, <username>,<password>	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPAUTHOR=?	• **If success:** – +HTTPAUTHOR: <url>,<username>, <password> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+INITHTTP

OK

AT+HTTPAUTHOR="http://111.205.140.139:1080/webdav/index.html","crethdom","123456"

OK

Date

Wed, 28 Feb 2018 03:17:27 GMT

Server

Apache/2.4.25 (Win64) OpenSSL/1.0.2k

Last-Modified

Tue, 01 Aug 2017 06:54:36 GMT

ETag

“e3-555ab9ee0f9cb”

Accept-Ranges

bytes

Content-Length

227

Content-Type

text/html

<html>

<head>

<title>RDA Author TEST!</title>

</head>

<body>

<form> login

<input name = “post” type = “text” maxlength = “8” size = “5” value = “typeing…”>

</form>

<h1>Author test. It works!</h1>

</body>

</html>

AT+TERMHTTP

OK

Description

Parameters

<url> HTTP client URL: “http://’server’/’path’:’tcpPort’”. “server”: FQDN or IP-address, “path”: path of file or directory, “tcpPort”: default value is 80. Refer to “IETF-RFC 2616”.

<username> Your username

<password> Your password

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process ”AT+CGACT”

12.17 12.17 AT+HTTPPOST Post data to HTTP server

Command	Possible response(s)
AT+HTTPPOST = <url>, <content_type>, <body_content>	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPPOST=?	• **If success:** – +HTTPPOST: <url>,<content_type>, <body_content> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+INITHTTP

OK

AT+HTTPPOST="http://111.205.140.139:1080/","text/plain","helloworld"

Date

Wed, 28 Feb 2018 02:46:56 GMT

Server

Apache/2.4.25 (Win64) OpenSSL/1.0.2k

Last-Modified

Thu, 20 Apr 2017 08:19:31 GMT

ETag

"df-54d94cce976c8"

Accept-Ranges

bytes

Content-Length

223

Content-Type

text/html

<html>

<head>

<title>RDA POST TEST!</title>

</head>

<body>

<form> login

<input name = “post” type = “text” maxlength = “8” size = “5” value = “typeing. . . ”>

</form>

<h1>http test. It works!</h1>

</body>

</html>

Content_Type: text/plain

Content_Length: 10

helloworld

OK

AT+TERMHTTP

OK

Description

Parameters

<url> HTTP client URL: “http://’server’/’path’:’tcpPort’”. “server”: FQDN or IP-address, “path”: path of file or directory, “tcpPort”: default value is 80. Refer to “IETF-RFC 2616”.

<content_type> type of HTTP body_content

<body_content> HTTP body_content

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process ”AT+CGACT”
2. HTTPPOST: send data to HTTP server.

12.18 12.18 AT+HTTPPUT Put data to files on HTTP server

Command	Possible response(s)
AT+HTTPPUT=<url>, <content_type>, <content_name>, <body_content>	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPPUT=?	• **If success:** – +HTTPPUT=<url>,<content_type>, <content_name>,<body_content> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+INITHTTP

OK

AT+HTTPPUT="http://111.205.140.139:1080/webdav1/","text/plain","put2.txt","helloworld"

success,file created

OK

AT+TERMHTTP

OK

Description

Parameters

<url> HTTP client URL: "http://'server'/'path':'tcpPort'". "server": FQDN or IP-address, "path": path of file or directory, "tcpPort": default value is 80. Refer to "IETF-RFC 2616".

<content_type> type of HTTP body_content

<content_name> file name (body_content will be write in this file in server)

<body_content> HTTP body_content

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process "AT+CGACT"
2. HTTPPUT: send data to file which on the server

12.19 12.19 AT+HTTPHEAD Read the HTTP header information of server

Command	Possible response(s)
AT+HTTPHEAD = <url>	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPHEAD=?	• **If success:** – +HTTPHEAD = <url> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+INITHTTP

OK

AT+HTTPHEAD="http://111.205.140.139:1080/webdav/index.html"

OK

Date

Wed, 28 Feb 2018 03:21:07 GMT

Server

Apache/2.4.25 (Win64) OpenSSL/1.0.2k

WWW-Authenticate

Basic realm="DAV-upload"

Content-Type

text/html; charset=iso-8859-1

AT+TERMHTTP

OK

Description

Parameters

<url> HTTP client URL: "http://'server'/'path':'tcpPort'". "server": FQDN or IP-address, "path": path of file or directory, "tcpPort": default value is 80. Refer to "IETF-RFC 2616".

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process ”AT+CGACT”

12.20 12.20 AT+HTTPOPTIONS Query HTTP supported methods

Command	Possible response(s)
AT+HTTPOPTIONS = <url>	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
AT+HTTPOPTIONS=?	• **If success:** – +HTTPOPTIONS = <url> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+INITHTTP

OK

AT+HTTPOPTIONS=”http://111.205.140.139:1080/”

OK

Date

Wed, 28 Feb 2018 03:21:44 GMT

Server

Apache/2.4.25 (Win64) OpenSSL/1.0.2k

Allow

GET,HEAD,POST,OPTIONS,HEAD,HEAD,TRACE

Content-Length

0

Content-Type

text/html

AT+TERMHTTP

OK

Description

Parameters

<url> HTTP client URL: "http://'server'/'path':'tcpPort'". "server": FQDN or IP-address, "path": path of file or directory, "tcpPort": default value is 80. Refer to "IETF-RFC 2616".

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process "AT+CGACT"

12.21 12.21 AT+HTTPTRACE Get the requested path of HTTP server

Command	Possible response(s)
`AT+HTTPTRACE = <url>`	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
`AT+HTTPTRACE=?`	• **If success:** – +HTTPTRACE = <url> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+INITHTTP

OK

AT+HTTPTRACE="http://111.205.140.139:1080/webdav/index.html"

OK

Date

Wed, 28 Feb 2018 03:20:33 GMT

Server

Apache/2.4.25 (Win64) OpenSSL/1.0.2k

Transfer-Encoding

chunked

Content-Type

message/http

Content-Length

95

TRACE /webdav/index.html HTTP/1.1

HOST: 111.205.140.139:1080

User-Agent: mUPnP-HTTP/3.0.2

AT+TERMHTTP

OK

Description

Parameters

<url> HTTP client URL: "http://'server'/'path':'tcpPort'". "server": FQDN or IP-address, "path": path of file or directory, "tcpPort": default value is 80. Refer to "IETF-RFC 2616".

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process "AT+CGACT"

12.22 12.22 AT+HTTPDELETE Delete HTTP resources

Command	Possible response(s)
`AT+HTTPDELETE = <url>`	• **If success:** – OK – <response_data> • **If failed:** – +CME ERROR: <err>
`AT+HTTPDELETE=?`	• **If success:** – +HTTPDELETE = <url> – OK • **If failed:** – +CME ERROR:<err>

Reference

AT+CGACT=1,1

OK

AT+INITHTTP

OK

AT+HTTPDELETE="http://111.205.140.139:1080/webdav1/","put.txt"

success,file deleted

OK

AT+TERMHTTP

OK

Description

Parameters

<url> HTTP client URL: “http://’server’/’path’:’tcpPort’”. “server”: FQDN or IP-address, “path”: path of file or directory, “tcpPort”: default value is 80. Refer to “IETF-RFC 2616”.

<response_data> Response from HTTP server

Note:

1. Before this command is executed, it is necessary to process ”AT+CGACT”

CHAPTER

THIRTEEN

13 ONENET MIPL COMMANDS

Contents

13.1 13.1 AT+MIPLCREATE Create a basic communication suite instance

Command	Possible response(s)
AT+MIPLCREATE	+MIPLCREATE:0 OK
AT+MIPLCREATE=<totalsize>,<config>,<index>,<currentsize>,<flag>	OK or +CME ERROR: <err>
AT+MIPLCREATE=?	OK
OTHER	+CME ERROR: 52

Parameters

<totalsize> Config file total length

<config> Config file

<index> Config file index

<currentsize> Current config file length

<flag> Message flag

0 Last config file

1 First config file

2 Middle config file

Note: 1.AT+MIPLCREATE is the standard command, it stores the host address and port data at code, if suite has beed created, an error will be returned 2.AT+MIPLCREATE=<totalsize>,<config>,<index>,<currentsize>,<flag> is the old standard at command, but we always keep it

---

13.2 13.2 AT+MIPLDELETE Delete a basic communication suite instance

Command	Possible response(s)
AT+MIPLDELETE=<ref>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

Note: 1.Ref must be a unsigned integer

13.3 13.3 AT+MIPLOPEN Register to the OneNet platform

Command	Possible response(s)
AT+MIPLOPEN=<ref>, <lifetime>[,<timeout>]	If success it returns OK, +MIPLEVENT: 0,4, +MIPLEVENT: 0,6, +MIPLDISCOVER:0,msgid,objectid, +MIPLOBSERVE:0,msgid,1,objectid,instanceid,-1, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<lifetime> Client register lifetime, the lifetime must be greater than or equal to 15s

<timeout> Timeout duration of registration, it is not set, the default value is 60, min value is 15

13.4 13.4 AT+MIPLCLOSE Send a de-register request to the OneNet platform

Command	Possible response(s)
AT+MIPLCLOSE=<ref>	If success it returns OK, if error ir returns +CME ERROR: <err>

13.5 13.5 AT+MIPLADDOBJ Add a dynamic object for communication suite instance

Command	Possible response(s)
AT+MIPLADDOBJ=<ref>, <objectid>, <instancecount>, <instancebitmap>, <attributecount>, <actioncount>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<objectid> Object id

<objectid> Object instance id

<instancecount> Object instance count

<instancebitmap> How many instance the object need to create

<attributecount> The attrubute count of writable and readable resource

<actioncount> The attrubute count of executable resource

13.6 13.6 AT+MIPLDELOBJ Delete a dynamic object for communication suite instance

Command	Possible response(s)
AT+MIPLDELOBJ=<ref>, <objectid>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

13.7 13.7 AT+MIPLNOTIFY Notify OneNet platform a value change

Command	Possible response(s)
AT+MIPLNOTIFY=<ref>, <msgid>,<objectid>, <instanceid>, <resourceid>,<valuetype>, <len>,<value>,<index>, <flag>[,<ackid>]	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<objectid> Message id

<objectid> Object id

<instanceid> Object instance id

<resourceid> Object instance resource id

<valuetype> Resource data type

1 String

2 Opaque

3 Integer

4 Float

5 Bool

<len> Resource data length

<value> Resource data

<index> The N message combination is a complete instruction, and the index is numbered from N-1 to 0, and when the index number is 0, the local Notify instruction is finished.

<flag> Message flag

0 Last config file

1 First config file

2 Middle config file

<ackid> MCU will report message by CON

13.8 13.8 AT+MIPLREADRSP Read specific object resource value

Command	Possible response(s)
AT+MIPLREADRSP=<ref>, <msgid>,<result>, <objectid>,<instanceid>, <resourceid>,<valuetype>, <len>,<value>,<index>, <flag>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<result> 2.05 Content read success

11 4.00 Bad Request

12 4.01 Unauthorized

13 4.04 Not Found

14 4.05 Method Not Allowed

15 4.06 Not Acceptable

<msgid> Message id

<objectid> Message id

<instanceid> Object instance id

<resourceid> Object instance resource id

<valuetype> Resource data type

1 String

2 Opaque

3 Integer

4 Float

5 Bool

<len> Resource data length

<value> Resource data

<index> The N message combination is a complete instruction, and the index is numbered from N-1 to 0, and when the index number is 0, the local Notify instruction is finished.

<flag> Message flag 0 Last config file

1 First config file

2 Middle config file

Note: 1.After receive the report command +MIPLREAD, it will send this AT command

---

13.9 13.9 AT+MIPLWRITERSP Change specific object resource value

Command	Possible response(s)
AT+MIPLWRITERSP=<ref>,<msgid>,<result>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<msgid> Message id

<result> Write resource result

2 2.04 Changed

11 4.00 Bad Request

12 4.01 Unauthorized

13 4.04 Not Found

14 4.05 Method Not Allowed

Note: 1.After receive the report command +MIPLWRITE, it will send this AT command

13.10 13.10 AT+MIPLEXECUTERSP Perform on individual resources

Command	Possible response(s)
AT+MIPLEXECUTERSP=<ref>,<msgid>,<result>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<msgid> Message id

<result> Execute resource result

0 error

1 success

Note: 1.After receive the report command +MIPLEXECUTE, it will send this AT command

13.11 13.11 AT+MIPLOBSERVERSP Determine whether the observation command is valid

Command	Possible response(s)
AT+MIPLOBSERVERSP=<ref>,<msgid>,<result>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<msgid> Message id

<result> Observe resource result

0 error

1 success

Note: 1.After receive the report command +MIPLOBSERVERSP, it will send this AT command 2.The new msgid will overwrite the old msgid

13.12 13.12 AT+MIPLDISCOVERRSP Discover all attributes attached to an Object

Command	Possible response(s)
AT+MIPLDISCOVERRSP=<ref>,<msgid>,<result>,<length>,<valuestring>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<msgid> Message id

<result> the discover result

1 2.05 Content

11 4.00 Bad Request

12 4.01 Unauthorized

13 4.04 Not Found

14 4.05 Method Not Allowed

15 4.06 Not Acceptable

<length> Valuestring length

<valuestring> Object property requirements, comma partition, for example "1101;1102;1103"

Note: 1.After receive the report command +MIPLDISCOVER, it will send this AT command 2.The count of discovering resource must not be more than the actual resource count, but it can less than the actual resource count

13.13 13.13 AT+MIPLPARAMETERRSP Notify the result for communication suite instances

Command	Possible response(s)
AT+MIPLPARAMETERRSP=<ref>,<msgid>,<result>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<msgid> Message id

<result> The operation result

0 error

1 success

Note: 1.After receive the report command +MIPLPARAMETERRSP, it will send this AT command

13.14 13.14 AT+MIPLUPDATE Update register informaton

Command	Possible response(s)
AT+MIPLUPDATE=<ref>, <lifetime>, <withObjectFlag>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<ref> Basic communication suite instance index

<lifetime> new lifetime

<withObjectFlag> Whether or not update the registered object

13.15 13.15 AT+MIPLVER Get communication suite instances version information

Command	Possible response(s)
AT+MIPLVER?	+MIPLVER:VER <err>

13.16 13.16 Example of OneNet lwm2m

1) Activate net

1. AT+CGATT=1

   OK

2. AT+CGDCONT=1,"IP","cmnet"

   OK

3. AT+CGACT=1,1

   OK

2) Get device IMEI and IMSI

1. at+egmr=1,7,"862391039046100" // set device IMEI, if the IMET exists, ignore this step

   OK

2. at+egmr=2,7 // get device IMEI

+EGMR:862391039046100

OK

3. at+cimi // get device IMSI

460111175062972

OK

Note: After we get the IMEI and IMSI, we should create device in the ONENET platform with the IMEI and IMSI

---

3) Create a basic communication suite instance

1. AT+MIPLCREATE

+MIPLCREATE:0

OK

4) Add a dynamic object for communication suite instance

1. AT+MIPLADDOBJ=0,3303,2,"11",6,1

OK

2. AT+MIPLADDOBJ=0,3306,1,"1",5,0

OK

5) Register to the OneNet platform

1. AT+MIPLOPEN=0,3600,30

OK

+MIPLEVENT: 0, 0x06 // Register success

2. +MIPLDISCOVER:0,61350,3303 // Get object 3303 resource id

AT+MIPLDISCOVERRSP=0,61350,1,34,"5700;5601;5602;5603;5604;5701;5605"

OK

3. +MIPLDISCOVER:0,61351,3306

AT+MIPLDISCOVERRSP=0,61351,1,24,"5850;5851;5852;5853;5750"

OK

4. +MIPLOBSERVE:0,4937,1,3303,0,-1

AT+MIPLOBSERVERSP=0,4937,1

OK

5. +MIPLOBSERVE:0,4938,1,3306,0,-1

AT+MIPLOBSERVERSP=0,4938,1

OK

Note: +MIPLDISCOVER and +MIPLOBSERVE are report command, and after receive these commands, MCU will send AT+MIPLDISCOVERRSP and AT+MIPLOBSERVERSP command.

---

6) Read resource value

1. +MIPLREAD:0,39279,3303,0,5700 // Read one resource

   AT+MIPLREADRSP=0,39279,1,3303,0,5700,4,13,”6.92655815081”,0,0

   OK

2. +MIPLREAD:0,39280,3303,0,-1,7 // Read one instance resources

   AT+MIPLREADRSP=0,39280,1,3303,0,5700,4,13,”7.57421538099”,6,0

   AT+MIPLREADRSP=0,39280,1,3303,0,5601,4,13,”5.67451324594”,5,0

   AT+MIPLREADRSP=0,39280,1,3303,0,5602,4,13,”5.58077212636”,4,0

   AT+MIPLREADRSP=0,39280,1,3303,0,5603,4,13,”6.73103056235”,3,0

   AT+MIPLREADRSP=0,39280,1,3303,0,5604,4,13,”3.28244762159”,2,0

   AT+MIPLREADRSP=0,39280,1,3303,0,5701,1,5,”9Y5FC”,1,0

   AT+MIPLREADRSP=0,39280,1,3303,0,5605,1,5,”UXDPF”,0,0

Note: +MIPLREAD is report command, when server wants to read object all resources, it will read every instance resources like step two, it will send different instance id

---

7) Write resource

1. +MIPLWRITE:0,43357,3306,0,5850,2,1,01,0,0

   AT+MIPLWRITERSP=0,43357,2

Note: The value must be hex string

---

8) Observe resource value

1. +MIPLPARAMETER:0,41208,3303,0,5700,34,pmin=15; pmax=60; gt=0; lt=0; st=0

   AT+MIPLPARAMETERRSP=0,41208,3303,0,5700,”pmin=15; pmax=60; gt=0; lt=0; st=0”,34

   OK

2. +MIPLOBSERVE:0,39283,0,3303,0,5700 // one resource

   AT+MIPLOBSERVERSP=0,39283,1

   OK

3. +MIPLOBSERVE:0,39284,0,3303,0,-1 // instance resource

   AT+MIPLOBSERVERSP=0,39284,1

   OK

4. +MIPLOBSERVE:0,39285,0,3303,-1,-1 // object resource

   AT+MIPLOBSERVERSP=0,39285,1

   OK

9) Cancel observe

1. +MIPLOBSERVE:0,1063,0,3303,0,5700

   AT+MIPLOBSERVERSP=0,1063,1

   OK

2. +MIPLOBSERVE:0,1064,0,3303,0,-1

   AT+MIPLOBSERVERSP=0,1064,1

   OK

3. +MIPLOBSERVE:0,1065,0,3303,-1,-1

   AT+MIPLOBSERVERSP=0,1065,1

10) Notify data

1. AT+MIPLNOTIFY=0,5555,3303,0,5700,4,3,"9.8",0,0,15

   OK

   +MIPLEVENT:0,0x0b,15

Note: After we change resource value, and it has a watcher, it will read the value, and report to server

---

11) Update register

1. AT+MIPLUPDATE=0,3600,0

   +MIPLEVENT:0,0x0a

   OK

12) Delete object

1. AT+MIPLDELOBJ=0,3306

   OK

13) De-register

1. AT+MIPLCLOSE=0

   OK

14) Delete combination suite

1. AT+MIPLDELETE=0

   OK

15) Data report

1. AT+MIPLNOTIFY=0,5555,3303,0,5700,4,3,8.8,0,0,15

   OK

16) BootStrap

1. AT+MIPLCREATE="-n sda18810;da18810 -h 183.230.40.39 -b -p 5683 -4 -t 60"

   0

   OK

   +MIPLEVENT: 0,0x01

   +MIPLEVENT: 0,0x02

   +MIPLEVENT: 0,0x04

   +MIPLEVENT: 0,0x06

Note: other operation refer to step 1

CHAPTER

FOURTEEN

14 WIFI COMMANDS

Contents

14.1 14.1 AT^WOPEN Open Or Close WiFi

Command	Possible response(s)
^WOPEN=<enable>	• **If success** – OK • **If failed** – +CME ERROR <err>
^WOPEN?	• +WOPEN: <enable> • OK

Reference:

AT^WOPEN=1

OK

AT^WOPEN?

+WPOWER: 1

OK

Description

Open or close wifi

Parameters

<enable> Open or close wifi

0	Open wifi
1	Close wifi

Note:

- NULL

14.2 14.2 AT^WROLE Set WiFi Work Mode

Command	Possible response(s)
^WROLE=<role>	• **If success** – OK • **If failed** – +CME ERROR <err>
^WROLE?	• +WROLE: <role> • OK
^WROLE=?	• +WROLE: <role> value list • OK

Reference:

AT^WROLE=0

OK

AT^WROLE?

+WROLE: 0

OK

AT^WROLE=?

+WROLE:

0

1

2

OK

Description

Set wifi work mode

Parameters

<role> Wifi work mode

0	Station Mode
1	SoftAP Mode
2	Station + SoftAP Mode

Note:

- NULL

14.3 14.3 AT^WSCAN Scan WiFi Network

Command	Possible response(s)
^WSCAN=?	• OK
^WSCAN	• **If success:** – +WSCAN:<count> – <ssid>,<ecn>,<rssi>,<mac>,<channel> – ...... – OK • **If failed:** – +CME ERROR: <err>

Reference:

AT^WSCAN

+WSCAN:5

RDA-Proxy,3,178,a8:9d:21:ee:03:74,1

videotest2,0,176,60:d8:19:cf:e6:7f,1

RDA-Visitor,3,177,a8:9d:21:ee:03:72,1

RDA-Employee,3,176,a8:9d:21:ee:03:73,1

RDA-zhizhen7F,3,172,a8:9d:21:ee:03:71,1

OK

AT^WSCAN=?

OK

Description

Scan wifi network

Parameters

<count> Available ap number

<ssid> Service set identifier

<ecn> encryption

0	open
1	wep
2	wpa_psk(trip)
3	wpa2_psk(aes)
4	wpa_wpa2_psk

<rssi> signal strength

<mac> mac address

<channel> wifi channel

Note:

- NULL

14.4 14.4 AT^WJOIN Join AP

Command	Possible response(s)
^WJOIN=<ssid>, <pwd>[,<bssid>]	• **If success** – OK • **If failed** – +CME ERROR <err>
^WJOIN?	• **If success** – +WJOIN: <ssid>,<bssid>,<rssi>,<channel> – OK • **If failed** – +CME ERROR <err>
^WJOIN=?	• **If success** – +WJOIN:<ssid>,<pwd>,<bssid> – OK • **If failed** – +CME ERROR <err>

Reference:

AT^WJOIN=”RDA-Visitor”,”H1guest#RDA”

OK

AT^WJOIN?

+WJOIN: RDA-Visitor,a8:9d:21:ee:03:72,185,1

OK

AT^WJOIN=?

+WJOIN: RDA-Vistor,H1guest#RDA,a8:9d:21:ee:03:72

OK

Description

Join ap

Parameters

<ssid> Service set identifier

<bssid> Ssid's mac address

<rssi> signal strength

<channel> wifi channel

Note:

- NULL

14.5 14.5 AT^WLEAV Quit AP

Command	Possible response(s)
^WLEAV	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Reference:

AT^WLEAV

OK

Description

Quit ap

Parameters

Note:

- NULL

14.6 14.6 AT^WMODE Set WiFi auto open and auto join

Command	Possible response(s)
^WMODE=<autoon>, <autojoin>	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
^WMODE?	• +WMODE:<autoon>,<autojoin> • OK
^WMODE=?	• +WMODE:<autoon>,<autojoin> • OK

Reference:

AT^WMODE=1,1

OK

AT^WMODE?

+WMODE: 0,0

OK

AT^WMODE=?

+WMODE: 0,0

OK

Description

Set wifi auto open and auto join

Parameters

<autoon> Auto open wifi

0	disable auto open wifi
1	enable auto open wifi

<autojoin> Auto join wifi

0	disable auto join wifi
1	enable auto join wifi

Note:

- NULL

14.7 14.7 AT^WMAC Check Mac Address

Command	Possible response(s)
^WMAC=?	• OK
^WMAC	• +WMAC:<mac> • OK

Reference:

AT^WMAC

+WMAC: 0050c25e1066

OK

AT^WMAC=?

OK

Description

Check mac address

Parameters

<mac> mac address

Note:

- NULL

14.8 14.8 AT^WADDR Set ip address

Command	Possible response(s)
^WADDR=<ipmode>, <ip>[,<gateway>, <netmask>]	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
^WADDR?	• **If success:** – +WADDR:<ip> – OK • **If failed:** – +CME ERROR: <err>
^WADDR	• gateway: <gateway> • ipaddr: <ip> • netmask: <netmask> • dns: <dns> • OK
^WADDR=?	• +WADDR:<ipmode> • OK

Reference:

AT^WADDR

gateway: 10.250.192.1 ipaddr: 10.250.193.139 netmask: 255.255.254.0 dns: 202.106.0.20

OK

AT^WADDR?

+WADDR: 10.250.193.139

OK

AT^WADDR=?

+WADDR:0

OK

AT^WADDR=1,”10.250.193.149”,”10.250.192.1”,”255.255.254.0”

OK

AT^WADDR=0

OK

Description

Set ip address

Parameters

<ipmode> ip mode

0	automatic alloction
1	manual alloction

<ip> ip address

<gateway> gateway

<network> netmask

Note:

- NULL

14.9 14.9 AT^WSTATUS Check WiFi Status

Command	Possible response(s)
^WSTATUS	• **If success:** – <status>[,<ssid>,<bssid>[,<rssi>,<channel>]] – OK • **If failed:** – +CME ERROR: <err>

Reference:

AT^WSTATUS

+WSTATUS:5, RDA-Visitor,a8:9d:21:ee:03:72,184,1

OK

Description

Check wifi status

Parameters

<status> wifi current status

0	closed
1	opened
2	scanning
3	scan done
4	joining ap
5	join ap success
6	join ap fail

Note:

- NULL

14.10 14.10 AT^WSMARTCONFIG Start WiFi Smartconfig

Command	Possible response(s)
^WSMARTCONFIG=<mode>	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
^WSMARTCONFIG?	• +WSMARTCONFIG:<mode> • OK

Reference:

AT^WSMARTCONFIG=1

OK

AT^WSMARTCONFIG?

+WSMARCONFIG:1

OK

Description

Start wifi smartconfig, currently we support CHEERZING only.

Parameters

<mode> smartconfig mode

1	CHEERZING
2	AirKiss
3	CHEERZING + AirKiss

Note:

- NULL

14.11 14.11 AT^WSCONT Check WiFi Settings

Command	Possible response(s)
^WSCONT	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
^WSCONT?	• +WSCONT:<autoon>,<autojoin>,<role>,<ipmode>[,<ip>,<gateway>,<netmask>] • OK

Reference:

AT^WSCONT

OK

AT^WSCONT?

+WSCONT:1,1,0,0,10.250.193.139,10.250.192.1,255.255.254.0

OK

Description

Check wifi Settings

Parameters

<autoon> see AT^WMODE command

<autojoin> see AT^WMODE command

<role> see AT^WROLE command

<ipmode> see AT^WADDR command

<ip> see AT^WADDR command

<gateway> see AT^WADDR command

<netmask> see AT^WADDR command

Note:

- NULL

CHAPTER

FIFTEEN

15 FILESYSTEM COMMANDS

Contents

15.1 15.1 AT+FSDWNFILE Write File

Command	Possible response(s)
+FSDWNFILE=<filename>, <size>[,<tag>] > text	OK
+FSDWNFILE=?	+FSDWNFILE: filename,size[,tag]

Example:

```
AT+FSDWNFILE="test",10

> 1234567890

OK
```

Description

Stores(writes) a file into the file system. The stream of bytes can be entered after the > prompt has been provided to the user. The file transfer is terminated exactly when <size> bytes have been sent entered and either "OK" final result code or an error result code is returned. The feed process cannot be interrupted i.e. the command mode is re-entered once the user has provided the declared the number of bytes.

In implementation, <size> is limited to `AT_CMD_LINE_BUFF_LEN` (5KB by default). When <size> is larger than `AT_CMD_LINE_BUFF_LEN`, it will return error.

Parameters

<filename> File's name

<size> File size expressed in bytes, must larger than zero, and smaller than `AT_CMD_LINE_BUFF_LEN`.

<tag> Option parameter that specifies the application file type

<text> Stream of bytes

15.2 15.2 AT+FSLSTFILE List Files Information

Command	Possible response(s)
List files stored on file system: `+FSLSTFILE=[0[,<tag>]]`	`+FSLSTFILE:[<filename1>[,<filename2>[...[,<filenameN>]]]] OK`
Remaining file system free space in bytes: `+FSLSTFILE=1[,<tag>]`	`+FSLSTFILE:<free_fs_space> OK`
Size of specified file: `+FSLSTFILE=2,<filename>[,<tag>]`	`+FSLSTFILE:<file_size> OK`
`+FSLSTFILE=?`	`+FSLSTFILE: [(0,1,2)[,param1[,param2]]`

Example:

```
AT+FSLSTFILE=0

+FSLSTFILE: AT_CFG_TCPIP.BIN,AT_CFG_0.BIN,AT_CFG_AUTOSAVE.BIN,sms_dm_nv.bin,cfw_nv.bin

OK


AT+FSLSTFILE=1

+FSLSTFILE:353408

OK


AT+FSLSTFILE=2,"cfw_nv.bin"

+FSLSTFILE: 2468

OK
```

Description

Retrieves some information about the file system. Depending on the specified <op_code>, it can print:

- List of files stored into the file system
- Remaining free file system space expressed in bytes
- Size of the specified file expressed in bytes

Parameters

<op_code> Option code

0	lists the files belonging to <tag> file type
1	gets the free space for the specific <tag> file type
2	gets the file size expressed in bytes,belonging to <tag> type(if specified)

<tag> Specifies the application file type

<filename(1~N)> File name

<free_fs_space> Available free space on FS in bytes

<file_size> Size of the file specified with the <filename> parameter

15.3 15.3 AT+FSRDFILE Read File

Command	Possible response(s)
+FSRDFILE=<filename>[,<tag>]	+FSRDFILE:<filename>,<size>,<data> OK
+FSRDFILE=?	+FSRDFILE: filename[,tag]

Example:

```
AT+FSRDFILE="test"

+FSRDFILE: test,10,1234567890

OK

AT+FSRDFILE="test2"

+FSRDFILE: test2,100000,

OK
```

Description

Retrieves a file from the file system. When the file size is larger than AT_CMD_LINE_BUFF_LEN, only the file name and size will be output, and the file data will be ignored.

Parameters

<tag> Specifies the application file type

<filename> File name

<data> File content

<size> File size, in bytes

15.4 15.4 AT+FSRDBLOCK Partial Read File

Command	Possible response(s)
+FSRDBLOCK=<filename>, <offset>,<size>[,<tag>]	+FSRDBLOCK:<filename>,<size>,<data> OK
+FSRDBLOCK=?	+FSRDBLOCK: filename,offset,size[,tag]

Example:

```
AT+FSRDBLOCK="test",5,5

+FSRDBLOCK: test,5,67890

OK
```

Description

Retrieves a file from the file system. this command allows the user to read only a portion of the file. <size> should be larger than zero, and smaller than AT_CMD_LINE_BUFF_LEN.

When <offset> is larger than or equal to file size, it will return error.

The returned <size> is the real data size. It may less than the <size> in parameter.

Parameters

<filename> File name

<offset> Offset in bytes from the beginning of the file

<size> Number of bytes to be read starting from the <offset>

<data> Content of the file read

<tag> Specifies the application file type

15.5 15.5 AT+FSDELFILE Delete File

Command	Possible response(s)
+FSRDELFILE=<filename>[,<tag>]	OK
+FSRDELFILE=?	+FSRDELFILE: filename[,tag]

Example:

```
AT+FSDELFILE="test"

OK
```

Description

Deletes a stored file from the file system.

Parameters

<filename> File name

<tag> Specifies the application file type

CHAPTER

SIXTEEN

16 FTP COMMANDS

Contents

16.1 16.1 AT^FTPOPEN Open ftp connect

Command	Possible response(s)
AT^FTPOPEN=<url>, <username>,<password>, <mode>,<tout>,<type>	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT^FTPOPEN?	• **Get the opened status, If had opened:** – ^FTPOPEN:1 • **Get the opened status, If not opened yet:** – ^FTPOPEN:0
AT^FTPOPEN=?	• **If success:** – ^FTPOPEN:<url>,<username>,<password>, <mode>,<tout>,<type> – OK • **If failed:** – +CME ERROR: <err>

Parameters

<url> <string> Server address (ex. “192.168.1.101:21”).

<username> <string> The username for FTP authentication.

<password> <string> The password for FTP authentication.

<mode> <int> 0 Active FTP mode, 1 Passive FTP mode

<tout> <int> 5~180(s) The device will logout in background when no FTP operation during the “tout”.

<type> <int> 1 for FTP Binary sessions, 0 for ascii session.

Reference

- AT^FTPOPEN=”192.168.1.101:21”,”username”,”passwd”,0,180,0
- OK
-
- AT^FTPOPEN?
- ^FTPOPEN:1
- OK
-
- AT^FTPOPEN=?
- ^FTPOPEN:<url>,<username>,<password>,<mode>,<tout>,<type>
- OK

Note:

1. The commands executed before, must connect to net with “GPRS” or “WIFI”

16.2 16.2 AT^FTPCLOSE Close ftp connect

Command	Possible response(s)
AT^FTPCLOSE	• **If success:** – OK – “^URCFTP:0” • **If failed:** – +CME ERROR: <err>

Parameters

NULL

Reference

- AT^FTPCLOSE
- OK
- ^URCFTP:0

Note: NULL

16.3 16.3 AT^FTPGETSET Set GET Params

Command	Possible response(s)
AT^FTPGETSET=<filename>, [offset, [size]]	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT^FTPGETSET?	• **If success:** – ^FTPGETSET:<filename>, <offset>, <size> – OK • **If failed:** – +CME ERROR: <err>
AT^FTPGETSET=?	• **If success:** – ^FTPGETSET:<filename>, [offset, [size]] – OK • **If failed:** – +CME ERROR: <err>

Parameters

<filepath> <string> The file with full path in FTP server.

<offset> <int> Download offset from the file, if this parameter is empty, download from file begin (optional).

<size> <int> Download length from the file <offset> or begin. if this parameter is empty, download file from <offset> or begin to end (optional).

Reference

- AT^FTPGETSET=”/file.1M”,1024,256
- OK
-
- AT^FTPGETSET?
- ^FTPGETSET:”/file.1M”,1024,256
- OK
-
- AT^FTPGETSET=?
- ^FTPGETSET:<filename>, [offset, [size]]
- OK

Note:

- 1. If run the command AT^FTPGETSET with 1 parameter, then the parameter must be <filepath> value.

- 2. If run the command AT^FTPGETSET with 2 parameters, then the parameter must be <filepath> and <offset> value.
- 3. You cannot use the command such as AT^FTPGETSET=”/file.1M”,,256 to skip the second parameter. Instead of you can run the command AT^FTPGETSET with 3 parameters AT^FTPGETSET=”/file.1M”,0,256.

16.4 16.4 AT^FTPGET Get file

Command	Possible response(s)
AT^FTPGET=<mode>[, reqlength]	• **If success, when "mode = 1":** – OK – ^FTPGET:1,1 – ^FTPGET=2,reqlength – ... //output data – ^FTPGET=2,0 • **If success, when "mode = 2 & reqlength = 0":** – OK – ^FTPGET=2,0 • **If failed:** – +CME ERROR: <err>

Parameters

<mode>: <int>

- 1: if mode is 1, reqlength is unused, to start the transfer
- 2: if mode is 2, reqlength must be 0, to stop the transfer

<reqlength>: <int> when mode is 2, requlength is 0, stop the transfers

Reference

- AT^FTPGET=1
- OK
- ^FTPGET:1,1
- ^FTPGET=2,1440
- . . . //output data
- ^FTPGET=2,1440
- . . . //output data
- ^FTPGET=2,1440
- . . . //output data
- ^FTPGET=2,0 // finish
-
- AT^FTPGET=2,0

- OK
- ^FTPGET=2,0 // finish

Note:

- 1. The info "^FTPGET=2,1440" means received the 1440 bytes data from server.
- 2. The command "AT^FTPGET=2,0" must be run when data is received now. If the transfers is over, running this command will return fails.

16.5 16.5 AT^FTPPUTSET Set PUT Params

Command	Possible response(s)
AT^FTPPUTSET=<filename>	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT^FTPPUTSET?	• **If success:** – ^FTPPUTSET:<filename> – OK • **If failed:** – +CME ERROR: <err>
AT^FTPPUTSET=?	• **If success:** – ^FTPPUTSET:<filename> – OK • **If failed:** – +CME ERROR: <err>

Parameters

<filename> : <string> The file name with full path will stored in FTP server.

Reference

- AT^FTPPUTSET="/put.txt"
- OK
-
- AT^FTPPUTSET?
- ^FTPPUTSET:"/put.txt"
- OK
-
- AT^FTPPUTSET=?
- ^FTPPUTSET:<filename>

- OK

Note: NULL

16.6 16.6 AT^FTPPUT Put file

Command	Possible response(s)
AT^FTPPUT= :<mode>[,<reqlength>]	• **If success, when "mode = 1":** – OK – ^FTPPUT:1,3072 • **If success, when "mode = 2 & reqlength != 0":** – ... //input data – OK • **If success, when "mode = 2 & reqlength = 0":** – OK – ^FTPPUT:2,0 • **If failed:** – +CME ERROR: <err>
AT^FTPPUT=?	• **If success:** – ^FTPPUT: mode[,<reqlength>] – OK • **If failed:** – +CME ERROR: <err>

Parameters

<mode>: <int>

- 1: start trans file
- 2: transfer data.

<reqlength>: <int> Request length of data bytes to be transmitted, if reqlength is 0, stop transfer.

Reference

- AT^FTPPUT=1 //start transfer
- OK
- ^FTPPUT:1,3072
-
- AT^FTPPUT=2,10
- … // input data, size is 10
- OK
-

- AT^FTPPUT=2,0
- OK
- ^FTPPUT:2,0 //transfer finish confirm
-
- AT^FTPPUT=?
- ^FTPPUT: mode[,<reqlength>]
- OK

Note:

- 1. The command "AT^FTPPUT=2,10" means there are 10 bytes data will upload to server.
- 2. When "AT^FTPPUT=2,10" running successfully, user can't input bytes data more than 10.
- 3. The command "AT^FTPPUT=2,0" must be run when data is transmitted now. If the transfers is over, running this command will return fails.

16.7 16.7 AT^FTPSIZE Get file size

Command	Possible response(s)
AT^FTPSIZE=<filename>	• **If success:** – ^FTPSIZE:xxx – OK • **If failed:** – +CME ERROR: <err>

Parameters

<filename>: <string> The file name with full path which stored in FTP server.

Reference

- AT^FTPSIZE="size.txt"
- ^FTPSIZE:xxx
- OK

Note: NULL

16.8 16.8 AT^FTPSSETCERT Set FTPS certificates

Command	Possible response(s)
AT^FTPSSETCERT=<crtFlag>	• **If success:** – >\n– ... //input data\n– OK • **If failed:** – +CME ERROR: <err>
AT^FTPSSETCERT?	• **If success:** – ... //output data\n– OK • **If failed:** – +CME ERROR:<err>
AT^FTPSSETCERT=?	• **If success:** – ^FTPSSETCERT=<crtFlag>\n– OK • **If failed:** – +CME ERROR:<err>

Parameters

<crtFlag>

- 0 Set CA certificate
- 1 Set client certificate
- 2 Set client private key

Reference

- AT^FTPSSETCERT=0
- >
- 123 // input data, enter "Ctrl+Z" to finish
- OK
-
- AT^FTPSSETCERT?
- 123 // output data
- OK
-
- AT^FTPSSETCERT=?
- ^FTPSSETCERT=<crtFlag>
- OK

Note:

1. Before run the command of "AT^FTPSSETCERT?", you should run "AT^FTPSSETCERT=<crtFlag>" firstly
2. When you run the command of "AT^FTPSSETCERT=<crtFlag>", you can enter "Ctrl+Z" to finish or "ESC" to exit

16.9 16.9 AT^FTPSOPEN Open ftps connect

Command	Possible response(s)
AT^FTPSOPEN=<url>, <username>,<password>, <mode>,<tout>,<type>	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT^FTPSOPEN?	• **Get the opened status, If had opened:** – ^FTPOPEN:1 • **Get the opened status, If not opened yet:** – ^FTPOPEN:0
AT^FTPSOPEN=?	• **If success:** – ^FTPOPEN:<url>,<username>,<password>, <mode>,<tout>,<type> – OK • **If failed:** – +CME ERROR: <err>

Parameters

<url> <string> Server address (ex. "192.168.1.101:21").

<username> <string> The username for FTPS authentication.

<password> <string> The password for FTPS authentication.

<mode> <int>

- 0 : Active FTPS mode, without data encrypted.
- 1 : Passive FTPS mode, without data encrypted.
- 2 : Active FTPS mode, with data encrypted.
- 3 : Passive FTPS mode, with data encrypted.

<tout> <int> 5~180(s) The device will logout in background when no FTPS operation during the "tout".

<type> <int> 1 for FTPS Binary sessions, 0 for ascii session.

Reference

- AT^FTPSOPEN="192.168.1.101:21","username","passwd",0,180,0
- OK

-
- AT^FTPSOPEN?
- ^FTPOPEN:1
- OK
-
- AT^FTPSOPEN=?
- ^FTPOPEN:<url>,<username>,<password>,<mode>,<tout>,<type>
- OK

Note:

1. The commands executed before, must connect to net with “GPRS” or “WIFI”
2. The commands executed before, must set the server ca certificate by run the “AT^FTPSSETCERT=0”

16.10 16.10 AT^FTPSCLOSE Close ftps connect

Command	Possible response(s)
AT^FTPSCLOSE	• **If success:** – OK – “^URCFTP:0” • **If failed:** – +CME ERROR: <err>

Parameters

NULL

Reference

- AT^FTPSCLOSE
- OK
- ^URCFTP:0

Note: NULL

16.11 16.11 AT^FTPSGETSET Set GET Params

Command	Possible response(s)
AT^FTPSGETSET=<filename>, [offset, [size]]	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT^FTPSGETSET?	• **If success:** – ^FTPGETSET:<filename>, <offset>, <size> – OK • **If failed:** – +CME ERROR: <err>
AT^FTPSGETSET=?	• **If success:** – ^FTPGETSET:<filename>, [offset, [size]] – OK • **If failed:** – +CME ERROR: <err>

Parameters

<filepath> <string> The file with full path in FTPS server.

<offset> <int> Download offset from the file, if this parameter is empty, download from file begin (optional).

<size> <int> Download length from the file <offset> or begin. if this parameter is empty, download file from <offset> or begin to end (optional).

Reference

- AT^FTPSGETSET=”/file.1M”,1024,256
- OK
-
- AT^FTPSGETSET?
- ^FTPGETSET:”/file.1M”,1024,256
- OK
-
- AT^FTPSGETSET=?
- ^FTPGETSET:<filename>, [offset, [size]]
- OK

Note:

- 1. If run the command AT^FTPSGETSET with 1 parameter, then the parameter must be <filepath> value.

- 2. If run the command AT^FTPSGETSET with 2 parameters, then the parameter must be <filepath> and <offset> value.
- 3. You cannot use the command such as AT^FTPSGETSET=”/file.1M”,,256 to skip the second parameter. Instead of you can run the command AT^FTPSGETSET with 3 parameters AT^FTPSGETSET=”/file.1M”,0,256.

16.12 16.12 AT^FTPSGET Get file

Command	Possible response(s)
AT^FTPSGET=<mode>[, reqlength]	• **If success, when "mode = 1":** – OK – ^FTPGET:1,1 – ^FTPGET=2,reqlength – ... //output data – ^FTPGET=2,0 • **If success, when "mode = 2 & reqlength = 0":** – OK – ^FTPGET=2,0 • **If failed:** – +CME ERROR: <err>

Parameters

<mode>: <int>

- 1: if mode is 1, reqlength is unused, to start the transfer
- 2: if mode is 2, reqlength must be 0, to stop the transfer

<reqlength>: <int> when mode is 2, requlength is 0, stop the transfers

Reference

- AT^FTPSGET=1
- OK
- ^FTPGET:1,1
- ^FTPGET=2,1440
- . . . //output data
- ^FTPGET=2,1440
- . . . //output data
- ^FTPGET=2,1440
- . . . //output data
- ^FTPGET=2,0 // finish
-
- AT^FTPSGET=2,0

- OK
- ^FTPGET=2,0 // finish

Note:

- 1. The info "^FTPGET=2,1440" means received the 1440 bytes data from server.
- 2. The command "AT^FTPSGET=2,0" must be run when data is received now. If the transfers is over, running this command will return fails.

16.13 16.13 AT^FTPSPUTSET Set PUT Params

Command	Possible response(s)
AT^FTPSPUTSET=<filename>	• **If success:** – OK • **If failed:** – +CME ERROR: <err>
AT^FTPSPUTSET?	• **If success:** – ^FTPPUTSET:<filename> – OK • **If failed:** – +CME ERROR: <err>
AT^FTPSPUTSET=?	• **If success:** – ^FTPPUTSET:<filename> – OK • **If failed:** – +CME ERROR: <err>

Parameters

<filename> : <string> The file name with full path will stored in FTPS server.

Reference

- AT^FTPSPUTSET="/put.txt"
- OK
-
- AT^FTPSPUTSET?
- ^FTPPUTSET:"/put.txt"
- OK
-
- AT^FTPSPUTSET=?
- ^FTPPUTSET:<filename>

- OK

Note: NULL

16.14 16.14 AT^FTPSPUT Put file

Command	Possible response(s)
AT^FTPSPUT= :<mode>[,<reqlength>]	• **If success, when "mode = 1":** – OK – ^FTPPUT:1,3072 • **If success, when "mode = 2 & reqlength != 0":** – ... //input data – OK • **If success, when "mode = 2 & reqlength = 0":** – OK – ^FTPPUT:2,0 • **If failed:** – +CME ERROR: <err>
AT^FTPSPUT=?	• **If success:** – ^FTPPUT: mode[,<reqlength>] – OK • **If failed:** – +CME ERROR: <err>

Parameters

<mode>: <int>

- 1: start trans file
- 2: transfer data.

<reqlength>: <int> Request length of data bytes to be transmitted, if reqlength is 0, stop transfer.

Reference

- AT^FTPSPUT=1 //start transfer
- OK
- ^FTPPUT:1,3072
-
- AT^FTPSPUT=2,10
- … // input data, size is 10
- OK
-

- AT^FTPSPUT=2,0
- OK
- ^FTPPUT:2,0 //transfer finish confirm
-
- AT^FTPSPUT=?
- ^FTPPUT: mode[,<reqlength>]
- OK

Note:

- 1. The command "AT^FTPSPUT=2,10" means there are 10 bytes data will upload to server.
- 2. When "AT^FTPSPUT=2,10" running successfully, user can't input bytes data more than 10.
- 3. The command "AT^FTPSPUT=2,0" must be run when data is transmitted now. If the transfers is over, running this command will return fails.

16.15 16.15 AT^FTPSSIZE Get file size

Command	Possible response(s)
AT^FTPSSIZE=<filename>	• **If success:** – OK – ^FTPSIZE:xxx • **If failed:** – +CME ERROR: <err>

Parameters

<filename>: <string> The file name with full path which stored in FTPS server.

Reference

- AT^FTPSSIZE="size.txt"
- OK
- ^FTPSIZE:xxx

Note: NULL

CHAPTER

SEVENTEEN

17 NB-IOT COMMANDS

Contents

17.1 17.1 Common Commands

17.1.1 17.1.1 AT+CGMI Manufacturer identification

17.1.2 17.1.2 AT+CGMM Model recognition

17.1.3 17.1.3 AT+CGMR Version identification

17.1.4 17.1.4 AT+CGSN Product serial number identification

Description

Execution command causes the TA to return IMEI (International Mobile station Equipment Identity number) and related information to identify the MT that the TE is connected to. Refer subclause 9.2 for possible <err> values. Test command returns values supported as a compound value. For a TA which does not support <snt>, only OK is returned.

Command	Possible response
AT+CGSN[=<snt>]	`+CGSN: <sn> /<imei>`
AT+CGSN=?	`+CGSN: (list of supported <snt>s)`

Parameter

`<snt>`:

integer type indicating the serial number type that has been requested. * 0 returns <sn> * 1 returns the IMEI (International Mobile station Equipment Identity)

`<sn>`:

one or more lines of information text determined by the MT manufacturer. Typically, the text will consist of a single line containing the IMEI number of the MT, but manufacturers may choose to provide more information if desired. The total number of characters, including line terminators, in the information text shall not exceed 2048 characters. Text shall not contain the sequence 0<CR> or OK<CR>

`<imei>`:

string type in decimal format indicating the IMEI; refer 3GPP TS 23.003 [7], subclause 6.2.1. IMEI is composed of Type Allocation Code (TAC) (8 digits), Serial Number (SNR) (6 digits) and the Check Digit (CD) (1 digit). Character set used in <imei> is as specified by command Select TE Character Set +CSCS.

17.1.5 17.1.5 AT+CIMI International mobile user identity

17.2 17.2 Network service related commands

17.2.1 17.2.1 AT+COPS PLMN select

17.2.2 17.2.2 AT+CPSMS PSM settings

Description

The set command controls the setting of the UEs power saving mode (PSM) parameters. The command controls whether the UE wants to apply PSM or not, as well as the requested extended periodic RAU value and the requested GPRS READY timer value in GERAN/UTRAN, the requested extended periodic TAU value in E-UTRAN and the requested Active Time value. See the unsolicited result codes provided by commands +CGREG for the Active Time value, the extended periodic RAU value and the GPRS READY timer value that are allocated to the UE by the network in GERAN/UTRAN and +CEREG for the Active Time value and the extended periodic TAU value that are allocated to the UE by the network in E-UTRAN.

A special form of the command can be given as +CPSMS= (with all parameters omitted). In this form, the parameter <mode> will be set to 0, the use of PSM will be disabled and data for all parameters in command +CPSMS will be removed or, if available, set to the manufacturer specific default values.

Refer subclause 9.2 for possible <err> values.

The read command returns the current parameter values.

The test command returns the supported <mode>s and the value ranges for the requested extended periodic RAU value and the requested GPRS READY timer value in GERAN/UTRAN, the requested extended periodic TAU value in E-UTRAN and the requested Active Time value as compound values.

Syntax

Command	Possible response
Test Command AT+CPSMS =?	+CPSMS: (list of supported <mode>s),(list of supported <Requested_Periodic-RAU>s),(list of supported <Requested_GPRS-READY-timer>s),(list of supported <Requested_Periodic-TAU>s),(list of supported <Requested_Active-Time>s) OK Fail: +CME ERROR: <err>
Read Command AT+CPSMS?	+CPSMS: <mode>,[<Requested_Periodic-RAU>],[<Requested_GPRS-READY-timer>],[<Requested_Periodic-TAU>],[<Requested_Active-Time>] OK Fail: +CME ERROR: <err>
Set Command AT+ CPSMS =[<mode>[,<Requested_Periodic-RAU>[,<Requested_GPRS-READY-timer>[,<Requested_Periodic-TAU>[,<Requested_Active-Time>]]]]]	OK Fail: +CME ERROR: <err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<mode>:integer type. Indication to disable or enable the use of PSM in the UE.

0 Disable the use of PSM

1 Enable the use of PSM

2 Disable the use of PSM and discard all parameters for PSM or,if available,reset to the manufacturer specific default valueDisable the use of PSM and discard all parameters for PSM or,if available,reset to the manufacturer specific default values.

<Requested_Periodic-RAU>:

string type; one byte in an 8 bit format. Requested extended periodic RAU value (T3312) to be allocated to the UE in GERAN/UTRAN. The requested extended periodic RAU value is coded as one byte (octet 3) of the GPRS Timer 3 information element coded as bit format (e.g. “01000111” equals 70 hours). For the coding and the value range, see the GPRS Timer 3 IE in 3GPP TS 24.008 [8] Table 10.5.163a/3GPP TS 24.008. See also 3GPP TS 23.682 [149] and 3GPP TS 23.060 [47]. The default value, if available, is manufacturer specific

<Requested_GPRS-READY-timer>:

string type; one byte in an 8 bit format. Requested GPRS READY timer value (T3314) to be allocated to the UE in GERAN/UTRAN. The requested GPRS READY timer value is coded as one byte (octet 2) of the GPRS Timer information element coded as bit format (e.g. “01000011” equals 3 decihours or 18 minutes). For the coding and the value range, see the GPRS Timer IE in 3GPP TS 24.008 [8] Table 10.5.172/3GPP TS 24.008. See also 3GPP TS 23.060 [47]. The default value, if available, is manufacturer specific.

<Requested_Periodic-TAU>:

string type; one byte in an 8 bit format. Requested extended periodic TAU value (T3412) to be allocated to the UE in E-UTRAN. The requested extended periodic TAU value is coded as one byte (octet 3) of the GPRS Timer 3 information element coded as bit format (e.g. “01000111” equals 70 hours). For the coding and the value range, see the GPRS Timer 3 IE in 3GPP TS 24.008 [8] Table 10.5.163a/3GPP TS 24.008. See also 3GPP TS 23.682 [149] and 3GPP TS 23.401 [82]. The default value, if available, is manufacturer specific.

<Requested_Active-Time>:

string type; one byte in an 8 bit format. Requested Active Time value (T3324) to be allocated to the UE. The requested Active Time value is coded as one byte (octet 3) of the GPRS Timer 2 information element coded as bit format (e.g. “00100100” equals 4 minutes). For the coding and the value range, see the GPRS Timer 2 IE in 3GPP TS 24.008 [8] Table 10.5.163/3GPP TS 24.008. See also 3GPP TS 23.682 [149], 3GPP TS 23.060 [47] and 3GPP TS 23.401 [82]. The default value, if available, is manufacturer specific.

Remark

None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CPSMS =?	
AT+CPSMS?	+ CPSMS: enbale=[0-2], periodicRAU=”8bitStringofByte eg. 01000111”,periodicTAU=” 8bitStringofByte eg. 01000111”,GPRSReadyTimer=”8bitStringofByte eg. 01000111”,activeTimer=”8bitStringofByte eg. 01000111” OK
AT+ CPSMS	

17.2.3 17.2.3 AT+CEDRXS eDRX settings

Description

The set command controls the setting of the UEs eDRX parameters. The command controls whether the UE wants to apply eDRX or not, as well as the requested eDRX value for each specified type of access technology.

The set command also controls the presentation of an unsolicited result code +CEDRXP: <AcT-type>[,<Requested_eDRX_value>[,<NW-provided_eDRX_value>[,<Paging_time_window>]]] when <n>=2 and there is a change in the eDRX parameters provided by the network.

A special form of the command can be given as +CEDRXS=3. In this form, eDRX will be disabled and data for all parameters in the command +CEDRXS will be removed or, if available, set to the manufacturer specific default values.

The read command returns the current settings for each defined value of <AcT-type>.The test command returns the supported <mode>s and the value ranges for the access technology and the requested eDRX value as compound values.

Syntax

Command	Possible response
Test Command AT+CEDRXS =?	+CEDRXS: (list of supported <mode>s),(list of supported <AcT-type>s),(list of supported <Requested_eDRX_value>s) OK
Read Command AT+CEDRXS?	[+CEDRXS: <AcT-type>,<Requested_eDRX_value>[<CR><LF>+CEDRXS: <AcT-type>,<Requested_eDRX_value>[. . .]]] OK
Set Command CEDRXS=[<mode>,[,<AcT-type>[,<Requested_eDRX_value>]]]	OK ERROR +CME ERROR: <err>
Reference: 3GPP TS 27.007 V14.5.0	

Unsolicited Result Codes

None

Parameter

<mode>:
integer type, indicates to disable or enable the use of eDRX in the UE. This parameter is applicable to all specified types of access technology, i.e. the most recent setting of <mode> will take effect for all specified values of <AcT>.
0 Disable the use of eDRX
1 Enable the use of eDRX
2 Enable the use of eDRX and enable the unsolicited result code
+CEDRXP: <AcT-type>[,<Requested_eDRX_value>[,<NW-provided_eDRX_value>[,<Paging_time_window>]]]
3 Disable the use of eDRX and discard all parameters for eDRX or, if available, reset to the manufacturer specific default values.

<AcT-type>:
integer type, indicates the type of access technology. This AT-command is used to specify the relationship between the type of access technology and the requested eDRX value.
0 Access technology is not using eDRX. This parameter value is only used in the unsolicited result code.
1 EC-GSM-IoT (A/Gb mode)
2 GSM (A/Gb mode)
3 UTRAN (Iu mode)
4 E-UTRAN (WB-S1 mode)
5 E-UTRAN (NB-S1 mode)

<Requested_eDRX_value>:
string type; half a byte in a 4 bit format. The eDRX value refers to bit 4 to 1 of octet 3 of the Extended DRX parameters information element (see subclause 10.5.5.32 of 3GPP TS 24.008 [8]). For the coding and the value range, see Extended DRX parameters information element in 3GPP TS 24.008 [8] Table 10.5.5.32/3GPP TS 24.008. The default value, if available, is manufacturer specific.

<NW-provided_eDRX_value>:
string type; half a byte in a 4 bit format. The eDRX value refers to bit 4 to 1 of octet 3 of the Extended DRX parameters information element (see subclause 10.5.5.32 of 3GPP TS 24.008 [8]). For the coding and the value range, see Extended DRX parameters information element in 3GPP TS 24.008 [8] Table 10.5.5.32/3GPP TS 24.008.

<Paging_time_window>:
string type; half a byte in a 4 bit format. The paging time window referes to bit 8 to 5 of octet 3 of the Extended DRX parameters information element (see subclause 10.5.5.32 of 3GPP TS 24.008 [8]). For the coding and the value range, see the Extended DRX parameters information element in 3GPP TS 24.008 [8] Table 10.5.5.32/3GPP TS 24.008.

Remark

None

Example

None

17.2.4 17.2.4 AT+CEDRXRDP eDRX dynamic parameter reads

Description

The execution command returns <AcT-type> and <Requested_eDRX_value>, <NW-provided_eDRX_value> and <Paging_time_window> if eDRX is used for the cell that the MS is currently registered to.

If the cell that the MS is currently registered to is not using eDRX, AcT-type=0 is returned.

Syntax

Command	Possible response
Test Command AT+CEDRXRDP =?	+CEDRXRDP: <AcT-type>[,<Requested_eDRX_value>[,<NW-provided_eDRX_value>[,<Paging_time_window>]]] OK +CME ERROR: <err>
Read Command AT+CEDRXRDP?	[+CEDRXRDP: <AcT-type>,<Requested_eDRX_value>[<CR><LF> OK +CME ERROR: <err>
Test Command AT+CEDRXRDP=?	OK
Reference: 3GPP TS 27.007 V14.5.0	

Unsolicited Result Codes

None

Parameter

<AcT-type>: integer type, indicates the type of access technology. This AT-command is used to specify the relationship between the type of access technology and the requested eDRX value. 0 Access technology is not using eDRX 1 EC-GSM-IoT (A/Gb mode) 2 GSM (A/Gb mode) 3 UTRAN (Iu mode) 4 E-UTRAN (WB-S1 mode) 5 E-UTRAN (NB-S1 mode)
<Requested_eDRX_value>: string type; half a byte in a 4 bit format. The eDRX value refers to bit 4 to 1 of octet 3 of the Extended DRX parameters information element (see subclause 10.5.5.32 of 3GPP TS 24.008 [8]). For the coding and the value range, see Extended DRX parameters information element in 3GPP TS 24.008 [8] Table 10.5.5.32/3GPP TS 24.008.
<NW-provided_eDRX_value>: string type; half a byte in a 4 bit format. The eDRX value refers to bit 4 to 1 of octet 3 of the Extended DRX parameters information element (see subclause 10.5.5.32 of 3GPP TS 24.008 [8]). For the coding and the value range, see Extended DRX parameters information element in 3GPP TS 24.008 [8] Table 10.5.5.32/3GPP TS 24.008.
<Paging_time_window>: string type; half a byte in a 4 bit format. The paging time window referes to bit 8 to 5 of octet 3 of the Extended DRX parameters information element (see subclause 10.5.5.32 of 3GPP TS 24.008 [8]). For the coding and the value range, see the Extended DRX parameters information element in 3GPP TS 24.008 [8] Table 10.5.5.32/3GPP TS 24.008

Remark

None

Example

None

17.3 17.3 Terminal status and control commands

17.3.1 17.3.1 AT+CFUN Set phone features

17.3.2 17.3.2 AT+CSQ Signal quality

17.3.3 17.3.3 AT+CCLK Clock

17.3.4 17.3.4 AT+CLAC lists all available at commands

Description

Execution command causes the MT to return one or more lines of AT Commands. Refer subclause 9.2 for possible <err> values.

Command	Possible response
AT+CLAC	<AT Command1>[<CR><LF><AT Command2>[...]]
AT+CLAC=?	OK

Parameter

<AT Command>:

Defines the AT command including the prefix AT. Text shall not contain the sequence 0<CR> or OK<CR>

17.3.5 17.3.5 AT+CTZR Time zone report

Description

This set command controls the time zone change event reporting. If reporting is enabled the MT returns the unsolicited result code +CTZV: <tz>, +CTZE: <tz>,<dst>,[<time>], or +CTZEU: <tz>,<dst>,[<utime>] whenever the time zone is changed. The MT also provides the time zone upon network registration if provided by the network. If setting fails in an MT error, +CME ERROR: <err> is returned. Refer subclause 9.2 for possible <err> values. Read command returns the current reporting settings in the MT. Test command returns supported <reporting>-values as a compound value.

Command	Possible response
AT+CTZR=[<reporting>]	OK
AT+CTZR?	+CTZR:<reporting>
AT+CTZR=?	+CTZR: (list of supported <reporting>s)

Parameter

<tz>: string type value representing the sum of the local time zone (difference between the local time and GMT expressed in quarters of an hour) plus daylight saving time. The format is "zz", expressed as a fixed width, two digit integer with the range -48 ... +56. To maintain a fixed width, numbers in the range -9 ... +9 are expressed with a leading zero, e.g. "-09", "+00" and "+09".

<dst>:

integer type value indicating whether <tz> includes daylight savings adjustment; * 0 <tz> includes no adjustment for Daylight Saving Time * 1 <tz> includes +1 hour (equals 4 quarters in <tz>) adjustment for daylight saving time * 2 <tz> includes +2 hours (equals 8 quarters in <tz>) adjustment for daylight saving time

<time>:

string type value representing the local time. The format is "YYYY/MM/DD,hh:mm:ss", expressed as integers representing year (YYYY), month (MM), date (DD), hour (hh), minute (mm) and second (ss). The local time can be derived by the MT from information provided by the network at the time of delivering time zone information and will be present in the unsolicited result code for extended time zone and local time reporting if the universal time is provided by the network.

<utime>:

string type value representing the universal time. The format is "YYYY/MM/DD,hh:mm:ss", expressed as integers representing year (YYYY), month (MM), date (DD), hour (hh), minute (mm) and second (ss). The universal time can be provided by the network at the time of delivering time zone information and will be present in the unsolicited result code for extended time zone and universal time reporting if provided by the network.

17.3.6 17.3.6 AT+CMEE Report MT error

17.3.7 17.3.7 AT+CEER Extended error reporting

17.4 17.4 Group Fields Command

17.4.1 17.4.1 AT+CGDCONT PDP context definition

17.4.2 17.4.2 AT+CGATT PS attach or deattach

17.4.3 17.4.3 AT+CGACT PDP context activation and activation

17.4.4 17.4.4 AT+CGPADDR Show PDP address

17.4.5 17.4.5 AT+CEREG EPS network registration status

17.4.6 17.4.6 AT+CSCON Signaling connection status

17.4.7 17.4.7 AT+CSODCP Send initial data through the control surface

Description

The set command is used by the TE to transmit data over control plane to network via MT. Context identifier <cid> is used to link the data to particular context.

This command optionally indicates that the application on the MT expects that the exchange of data:

- will be completed with this uplink data transfer; or

- will be completed with the next received downlink data.

This command also optionally indicates whether or not the data to be transmitted is an exception data.

This command causes transmission of an ESM DATA TRANSPORT message, as defined in 3GPP TS 24.301 [83].

Refer subclause 9.2 for possible <err> values.

Test command returns range of supported <cid>s, the maximum number of bytes of user data indicated by <cpdata_length>, supported <RAI>s and supported <type_of_user_data>s as compound values.

Syntax

Command	Possible response
Test Command AT+CSODCP =?	+CSODCP: (range of supported <cid>s),(maximum number of octets of user data indicated by <cpdata_length>),(list of supported <RAI>s),(list of supported <type_of_user_data>s) OK
Set Command AT+CSODCP=<cid>,<cpdata_length>,<cpdata>[,<RAI>[,<type_of_user_data>]]	OK +CME ERROR: <err>
Reference: 3GPP TS 27.007 V14.5.0	

Unsolicited Result Codes

None

Parameter

<cid>: integer type. A numeric parameter which specifies a particular PDP context or EPS bearer context definition. The <cid> parameter is local to the TE-MT interface and identifies the PDP or EPS bearer contexts which have been setup via AT command (see the +CGDCONT and +CGDSCONT commands)
<cpdata_length>: integer type. Indicates the number of octets of the <cpdata> information element. When there is no data to transmit, the value shall be set to zero.
<cpdata>: string of octets. Contains the user data container contents (refer 3GPP TS 24.301 [83] subclause 9.9.4.24). When there is no data to transmit, the <cpdata> shall be an empty string (“”). This parameter shall not be subject to conventional character conversion as per +CSCS. The coding format of the user data container and the maximum length of <cpdata> are implementation specific
<RAI>: integer type. Indicates the value of the release assistance indication, refer 3GPP TS 24.301 [83] subclause 9.9.4.25. 0 No information available. 1 The MT expects that exchange of datawill be completed with the transmission of the ESM DATA TRANSPORT message. 2 The MT expects that exchange of data will be completed with the receipt of an ESM DATA TRANSPORT message.
<type_of_user_data>: integer type. Indicates whether the user data that is transmitted is regular or exceptional. 0 Regular data. 1 Exception data.

Remark

None

Example

None

17.4.8 17.4.8 AT+CRTDCP Escalate the finalization data through the control surface

Description

The set command is used to enable and disable reporting of data from the network to the MT that is transmitted via the control plane in downlink direction. If reporting is enabled, the MT returns the unsolicited result code +CRTDCP: <cid>,<cpdata_length>,<cpdata> when data is received from the network. Refer subclause 9.2 for possible <err> values.

Read command returns the current settings.

Test command returns supported values as compound values.

Syntax

Command	Possible response
Test Command AT+CRTDCP =?	+CRTDCP: (list of supported <reporting>s),(range of supported <cid>s),(maximum number of octets of user dataindicated by <cpdata_length>) OK +CME ERROR: <err>
Read Command AT+CRTDCP?	+CRTDCP: <reporting> OK +CME ERROR: <err>
Set Command AT+CRTDCP=[<reporting>]	OK +CME ERROR: <err>
Reference: 3GPP TS 27.007 V14.5.0	

Unsolicited Result Codes

None

Parameter

<reporting>: integer type, controlling reporting of mobile terminated control plane data events 0 Disable reporting of MT control plane data. 1 Enable reporting of MT control plane data by the unsolicited result code +CRTDCP.
<cid>: integer type. A numeric parameter which specifies a particular PDP context or EPS bearer context definition. The <cid> parameter is local to the TE-MT interface and identifies the PDP or EPS bearer contexts which have been setup via AT command (see the +CGDCONT and +CGDSCONT commands).
<cpdata_length>: integer type. Indicates the number of octets of the <cpdata> information element. When there is no data to transmit, the value shall be set to zero.
<cpdata>: i string of octets. Contains the user data container contents (refer 3GPP TS 24.301 [83] subclause 9.9.4.24). When there is no data to transmit, the <cpdata> shall be an empty string (“”). This parameter shall not be subject to conventional character conversion as per +CSCS. The coding format of the user data container and the maximum length of <cpdata> are implementation specific.

Remark

None

Example

None

17.5 17.5 Text mode commands

17.5.1 17.5.1 AT+CSMS Select message service

Description

Set command selects messaging service <service>. It returns the types of messages supported by the ME: <mt> for mobile terminated messages, <mo> for mobile originated messages and <bm> for broadcast type messages. If chosen service is not supported by the ME (but is supported by the TA), final result code +CMS ERROR: <err> shall be returned. See chapter Message Service Failure Result Code for a list of <err> values. Also read command returns supported message types along the current service setting. Test command returns a list of all services supported by the TA.

Command	Possible response
AT+CSMS=?	+CSMS: (list of supported <service>s)
AT+CSMS?	+CSMS: <service>,<mt>,<mo>,<bm>
+CSMS=<service>	+CSMS: <mt>,<mo>,<bm>

Parameter

<service>: integer type

- 0 3GPP TS 23.040 [3] and 3GPP TS 23.041 [4]
- 1 3GPP TS 23.040 [3] and 3GPP TS 23.041 [4]the requirement of <service> setting 1 is mentioned under corresponding command descriptions)
- 2. . . 127 reserved
- 128. . . manufacturer specific

<mt>, <mo>, <bm>:

integer type * 0 type not supported * 1 type supported

17.5.2 17.5.2 AT+CNMA ME/TA new message acknowledgement for

Description

Execution command confirms correct reception of a new message (SMS-DELIVER or SMS-STATUS-REPORT) which is routed directly to the TE (refer command +CNMI table 3.4.1-3 and table 3.4.1-5). This acknowledgement command (causing ME to send RP-ACK to the network) shall be used when +CSMS parameter <service> equals 1. TA shall not send another +CMT or +CDS result code to TE before previous one is acknowledged. If ME does not get acknowledgement within required time (network timeout), ME should respond as specified in 3GPP TS 24.011 [6] to the network. ME/TA shall automatically disable routing to TE by setting both <mt> and <ds> values of +CNMI to zero. If command is executed, but no acknowledgement is expected, or some other ME related error occurs, final result code +CMS ERROR: <err> is returned. See chapter Message Service Failure Result Code for a list of <err> values.

Command	Possible response
if text mode (+CMGF=1):	+CNMA

17.5.3 17.5.3 AT+CSCA Service center address

17.5.4 17.5.4 AT+CMGS Send message

17.5.5 17.5.5 AT+CMGC Send command

Description

Execution command sends a command message from a TE to the network (SMS-COMMAND). The entering of text (3GPP TS 23.040 [3] TP-Command-Data) is done similarly as specified in command Send Message +CMGS, but the format is fixed to be a sequence of two IRA character long hexadecimal numbers which ME/TA converts into 8-bit octets (refer +CMGS). Message reference value <mr> is returned to the TE on successful message delivery. Optionally (when +CSMS <service> value is 1 and network supports) <scts> is returned. Values can be used to identify message upon unsolicited delivery status report result code. If sending fails in a network or an ME error, final result code +CMS ERROR: <err>

is returned. See chapter Message Service Failure Result Code for a list of <err> values. This command should be abortable.

Command	Possible response
+CMGC=<fo>,<ct>[,<pid>[,<mn>[,<da>[,<toda>]]]]<CR>text is entered<ctrl-Z/ESC>	`+CMGC: <mr>[,<scts>]`

17.6 17.6 Test Command

17.6.1 17.6.1 AT+TRB (optional) Restart

Description

Execution command restart the module.

Command	Possible response
AT+TRB	`REBOOTING`

17.6.2 17.6.2 AT+TUESTATS (optional) Query UE status

Description

Execution command query UE status

Command	Possible response
AT+TUESTATS=<type>	''UE status''

Parameter

`<type>`:

String

- RADIO radio specific information
- CELL per-cell information for the top 8 cells
- BLER block error rate information
- THP throughput
- ALL all information. The value of <type> output is the correct one for each data type.

<type> = RADIO

- <signal power in centibels>
- <total power in centibels>
- <current TX power level in centibels >
- <total TX time since last reboot in millisecond>
- <total RX time since last reboot in millisecond>
- <last SIB1 cell ID>
- <last ECL value>

- < last snr value>
- < last earfcn value>
- < last pci value>
- <rsrq in centibels>

<type> = CELL per-cell information for the top 5 cells. Returned entries are of the form:

- <earfcn>,<physical cell id>,<primary cell>,<rsrp>,<rsrq>,<rssi>
- <earfcn> absolute radio-frequency channel number
- <physical cell id> physical id of the cell
- <primary cell> 1 indicates the current serving cell
- <rsrp> reference signal received power
- <rsrq> reference signal received quality
- <rssi> received signal strength indicator
- <snr> signal to noise ratio

<type> = BLER

block error rate

- <rlc_ul_bler> RLC layer block error rate (uplink). Integer %
- <rlc_dl_bler> RLC layer block error rate (downlink). Integer %
- <mac_ul_bler> physical layer block error rate (uplink). Integer %
- <mac_dl_bler> physical layer block error rate (downlink). Integer %
- <total bytes transmitted>
- <total bytes received>
- <transport blocks sent>
- <transport blocks received>
- <transport blocks retransmitted>
- <total ack/nack messages received>

<type> = THP

throughput

- <rlc_ul> RLC layer throughput (uplink). Integer bps
- <rlc_dl> RLC layer throughput (downlink). Integer bps
- <mac_ul> physical layer throughput (uplink). Integer bps
- <mac_dl> physical layer throughput (downlink). Integer bps

17.6.3 17.6.3 AT+TSOCR Create socket

17.6.4 17.6.4 AT+TSOST Send data

17.6.5 17.6.5 AT+TSORF UDP receive message

17.6.6 17.6.6 AT+TSOCL Close socket

17.6.7 17.6.7 AT+TPING Test IP network connection to remote host

17.7 17.7 AT+NIPDATA send nonIP data

Description

The execution command is used to send nonIP data

Command	Possible response
AT+NIPDATA =?	`+NIPDATA:cid,"This is Non-IP data"`
AT+CGATT=cid,"string"	`OK`

Parameter

<cid>: integer type. A numeric parameter which specifies a particular PDP context or EPS bearer context definition. The <cid> parameter is local to the TE-MT interface and identifies the PDP or EPS bearer contexts which have been setup via AT command (see the +CGDCONT and +CGDSCONT commands).

<string>: data to be sent

Remark

Should active NONIP PDF firstly before send data

- 1. AT+CGDCONT=1,"Non-IP","apn_name"
- 2. AT+CGACT=1,1
- 3. AT+NIPDATA=1, "I am RDA"

17.8 17.8 AT+NVSETRRCRLSTIMER10 set RRC connection release waiting time

Description

The execution command is used to set RRC connection release waiting time

Command	Possible response
AT+NVSETRRCRLSTIMER10 =?	`1`
AT+NVSETRRCRLSTIMER10 =value	`OK`

Parameter

<value>:

- 0 set 1s

- 1 set 10s

17.9 17.9 AT+CSODCP Sending of originating data via the control plane

Description

The set command is used by the TE to transmit data over control plane to network via MT. Context identifier <cid> is used to link the data to particular context. This command optionally indicates that the application on the MT expects that the exchange of data: - will be completed with this uplink data transfer; or - will be completed with the next received downlink data. This command also optionally indicates whether or not the data to be transmitted is an exception data. This command causes transmission of an ESM DATA TRANSPORT message, as defined in 3GPP TS 24.301 [83]. Refer subclause 9.2 for possible <err> values. Test command returns range of supported <cid>s, the maximum number of bytes of user data indicated by <cpdata_length>, supported <RAI>s and supported <type_of_user_data>s as compound values.

Command	Possible response
+CSODCP=<cid>,<cpdata_length>,<cpdata>[,<RAI>[,<type_of_user_data>]]	OK
AT+CSODCP=?	`+CSODCP: (range of supported <cid>s),(maximum number of octets of user data indicated by <cpdata_length>),(list of supported <RAI>s),(list of supported <type_of_user_data>s)`

Parameter

`<cid>`:

integer type. A numeric parameter which specifies a particular PDP context or EPS bearer context definition. The <cid> parameter is local to the TE-MT interface and identifies the PDP or EPS bearer contexts which have been setup via AT command (see the +CGDCONT and +CGDSCONT commands).

`<cpdata_length>`:

integer type. Indicates the number of octets of the <cpdata> information element. When there is no data to transmit, the value shall be set to zero.

<cpdata>: string of octets. Contains the user data container contents (refer 3GPP TS 24.301 [83] subclause 9.9.4.24). When there is no data to transmit, the <cpdata> shall be an empty string (“”). This parameter shall not be subject to conventional character conversion as per +CSCS. The coding format of the user data container and the maximum length of <cpdata> are implementation specific.

`<RAI>`:

integer type. Indicates the value of the release assistance indication, refer 3GPP TS 24.301 [83] subclause 9.9.4.25.V

- 0 No information available.
- 1 The MT expects that exchange of datawill be completed with the transmission of the ESM DATA TRANSPORT message.
- 2 The MT expects that exchange of data will be completed with the receipt of an ESM DATA TRANSPORT message.

`<type_of_user_data>`:

integer type. Indicates whether the user data that is transmitted is regular or exceptional.

- 0 Regular data.
- 1 Exception data.

17.10 17.10 AT+CRTDCP Reporting of terminating data via the control plane

Description

The set command is used to enable and disable reporting of data from the network to the MT that is transmitted via the control plane in downlink direction. If reporting is enabled, the MT returns the unsolicited result code +CRTDCP: <cid>,<cpdata_length>,<cpdata> when data is received from the network. Refer subclause 9.2 for possible <err> values. Read command returns the current settings. Test command returns supported values as compound values.

Command	Possible response
AT+CRTDCP=[<reporting>]	OK
AT+CRTDCP?	+CRTDCP: <reporting>
AT+CRTDCP=?	+CRTDCP: (list of supported <reporting>s),(range of supported <cid>s),(maximum number of octets of user dataindicated by <cpdata_length>)

Parameter

<reporting>:

integer type, controlling reporting of mobile terminated control plane data events

- 0 Disable reporting of MT control plane data.
- 1 Enable reporting of MT control plane data by the unsolicited result code +CRTDCP.

<cid>:

integer type. A numeric parameter which specifies a particular PDP context or EPS bearer context definition. The <cid> parameter is local to the TE-MT interface and identifies the PDP or EPS bearer contexts which have been setup via AT command (see the +CGDCONT and +CGDSCONT commands).

<cpdata_length>:

integer type. Indicates the number of octets of the <cpdata> information element. When there is no data to transmit, the value shall be set to zero.

<cpdata>:

string of octets. Contains the user data container contents (refer 3GPP TS 24.301 [83] subclause 9.9.4.24). When there is no data to transmit, the <cpdata> shall be an empty string (“”). This parameter shall not be subject to conventional character conversion as per +CSCS. The coding format of the user data container and the maximum length of <cpdata> are implementation specific.

17.11 17.11 AT+CGAPNRC APN rate control

Description

This execution command returns the APN rate control parameters (see 3GPP TS 24.008 [8]) associated to the provided context identifier <cid>. If the parameter <cid> is omitted, the APN rate control parameters for all active PDP contexts

are returned. The test command returns a list of <cid>s associated with secondary and non secondary active PDP contexts.

Command	Possible response
AT+CGAPNRC=[<cid>]	+CGAPNRC: <cid>[,<Additional_exception_reports>[,<Uplink_time_unit>[,<Maximum_uplink_rate>]]] [<CR><LF>+CGAPNRC: <cid>[,<Additional_exception_reports>[,<Uplink_time_unit>[,<Maximum_uplink_rate>]]] [ ]]]
AT+CGAPNRC=?	+CGAPNRC: (list of <cid>s associated with active contexts)

Parameter

<cid>:

integer type; specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

<Additional_exception_reports>:

integer type; indicates whether or not additional exception reports are allowed to be sent when the maximum uplink rate is reached. This refers to bit 4 of octet 1 of the APN rate control parameters IE as specified in 3GPP TS 24.008 [8] subclause 10.5.6.3.2.

- 0 Additional_exception_reports at maximum rate reached are not allowed to be sent.
- 1 Additional_exception_reports at maximum rate reached are allowed to be sent.

<Uplink_time_unit>:

integer typ; specifies the time unit to be used for the maximum uplink rate. This refers to bits 1 to 3 of octet

- 1 of the APN rate control parameters IE as specified in 3GPP TS 24.008 [8] subclause 10.5.6.3.2.
- 0 unrestricted
- 1 minute
- 2 hour
- 3 day
- 4 week

<Maximum_uplink_rate>:

integer type; specifies the maximum number of messages the UE is restricted to send per uplink time unit. This refers to octet 2 to 4 of the APN rate control parameters IE as specified in 3GPP TS 24.008 [8] subclause 10.5.6.3.2.

17.12 17.12 AT+CRCES Reading Coverage Enhancement Status

Description

This command returns the coverage enhancement status of the MT. The terminal can consider the coverage enhancement status prior to deciding to transmit data (see e.g. subclause 10.1.43). Depending on the coverage enhancement status the terminal can refrain from transmitting data. The coverage enhancement status is only provided by the MT if the access technology of the serving cell

is E-UTRAN, EC-GSM-IoT or E-UTRAN (NB-S1 mode). If the access technology of the serving cell is different, <Act>=0 is indicated.

Command	Possible response
+CRCES	+CRCES: <AcT>,<CE_level>,<CC>

Parameter

<AcT>:

integer type; access technology of the serving cell.

- 0 Serving cell has no coverage enhancement
- 1 E-UTRAN
- 2 EC-GSM-IoT (A/Gb mode) (see NOTE 1)
- 3 E-UTRAN (NB-S1 mode) (see NOTE 2)

NOTE 1: 3GPP TS 44.018 [156] specifies the EC-SCH INFORMATION message which, if present, indicates that the serving cell supports EC-GSM-IoT. NOTE 2: 3GPP TS 36.331 [86] specifies the System Information blocks which give the information about whether the serving cell supports NB-IoT, which corresponds to E-UTRAN (NB-S1 mode).

<CE_level>:

integer type; Coverage Enhancement (CE) level of the MT in the serving cell. Applicable only if <Act>=1 (E-UTRAN) or <Act>=3 (E-UTRAN (NB-S1 mode)). The Coverage Enhancement levels are defined and specified in 3GPP TS 36.331 [86].

- 0 No Coverage Enhancement in the serving cell
- 1 Coverage Enhancement level 0
- 2 Coverage Enhancement level 1
- 3 Coverage Enhancement level 2
- 4 Coverage Enhancement level 3

<CC>:

integer type; Coverage Class (CC) of the MT in the serving cell. Applicable only if <Act>=2 (EC-GSM-IoT). The Coverage Classes are defined and specified in 3GPP TS 43.064 [13].

- 0 No Coverage Class in the serving cell
- 1 Coverage Class 1
- 2 Coverage Class 2
- 3 Coverage Class 3
- 4 Coverage Class 4
- 5 Coverage Class 5

17.13 17.13 AT+NVSETPM PM1/3 set PM1/3

Description

The execution command is used to set PM1/3

Command	Possible response
AT+NVSETPM =?	OK
AT+NVSETPM=value	OK

Parameter

<value>:

- 0 close PM1 & PM3
- 1 Open PM1
- 2 Open PM1 & PM3

AT+CFGDFTPDN set default PDN

Description

The execution command is used to set and get default PDN type and apn

Command	Possible response
AT+CFGDFTPDN =<mode>[,<apn>]	OK
AT+CFGDFTPDN=?	+CFGDFTPDN: nooip=[1,2,3,5],apn="string"
AT+CFGDFTPDN?	+CFGDFTPDN: <defaultPdnType>;[0] <pdnType><apn>; [1]<pdnType><apn>;[2]<pdnType><apn>;[3]<pdnType><apn>;

Parameter

<defaultPdnType>:

- 1 pdnType is IPv4
- 2 pdnType is IPv6
- 3 pdnType is IPv4v6
- 5 pdnType is NonIP

Remark

Currently, you can save these two kinds of PdnType apn content at the same time.If the user has already configured a APN,just want to switch the PDNTYPE of the mode,you can not enter the PDN content.

AT +CFGHCCP set the HC-CPCIot

Description

The execution command is used to set the HC-CPCIot

Command	Possible response
AT+CFGHCCP=<mode>[,<profile>[,<maxcid>]]	OK
AT+CFGHCCP?	+CFGHCCP:<mode>[,<profile>[,<maxcid>]]
AT+CFGHCCP=?	+CFGHCCP:enable=[0,1],profile=[0-15], maxcid=[1,16383]

Parameter

<mode>:

- 0 Support HC-CPCiot
- 1 Not Support HC-CPCiot

<profile>:

Set profile's bitmap, only 3/2/0 bits play a role. Corresponding value TCP/IP/UDP.

AT+NASCFG NAS profile setting

Description

The execution command is used to set NAS profile

Command	Possible response
AT+NASCFG =[<LowPriority>[<T3245>]]	OK
AT+NASCFG?	+NASCFG:[<LowPriority>[<T3245>[,<ExceptionData>]]]
AT+NASCFG=?	+NASCFG: LowPriority=[0-2],T3245=[0-1],ExceptionData=[0-1]

Parameter

<LowPriority>:

Integer,the range of value [0-1],whether the configuration terminal supports LowPriority and Override LowPriority

- 0: LowPriority and Override LowPriority are not supported.
- 1: Support LowPriority,but do not support Override LowPriority
- 2: Support LowPriority and Override LowPriority

<T3245>:

Integer,the range of value [0-1],whether the configuration terminal to use the T3245 feature

- 0: Do not use T3245
- 1: Use T3245

<ExceptionData>:

Integer,the range of value [0-1],whether the configuration terminal to use the ExceptionData feature

- 0: Do not use ExceptionData
- 1: Use ExceptionData

17.14 17.14 AT+IPFLT set packet filtering mode

Description

The execution command is used to set packet filtering mode.It is best to set the packet filtering mode with the AT command.bit1 is iperf5001,bit2 is internet,bit3 is ftp, bit4 is ping

Command	Possible response
AT+IPFLT=value	OK

Parameter

<value>:

- 1 it is only iperf,and the port must be set to 5001, and the other types of packets are filtered
- 2 it is only on the internet
- 4 you only do ftp
- 8 you only do ping
- 3 you do iperf+internet
- 5 you do iperf+ftp

Remark

The command cannot be saved,and every boot is default without packet filtering. Be careful: The 084 version can be used to do TCP,and it is recommended to set up AT+IPFLT=1,and the port range must be set to 5001-5031.Sending iperf -c 192.168.0.1 -p5001 -l1000 -t300 -i1

17.15 17.15 AT+NVSWITCHBS Scan Band

Description

Switch scan band status

Syntax

Command	Possible response
Test Command AT+NVSWITCHBS =?	+NVSWITCHBS: <status> OK
Set Command AT+NVSWITCHBS=<status>	+NVSWITCHBS: <status> OK

Parameter

<status>

0	scan band off
1	scan band on

Remark

Example

17.16 17.16 AT+NVSETSCMODE Set scrambling code state

Description

Set the protocol version followed by the scrambling code used by the UE to scramble MIB and SIB1

Syntax

Command	Possible response
Test Command AT+NVSETSCMODE=?	+NVSETSCMODE: <version> OK
Set Command AT+NVSETSCMODE=<version>	+NVSETSCMODE: <version> OK

Parameter

<version>

0	old protocol version
1	new protocol version

Remark

Example

17.17 17.17 AT+CFGCIOT CIOT feature configuration

Description

Configure and query the CIOT parameters.

Syntax

Command	Possible response
Test Command AT+CFGCIOT=?	AT+CFGCIOT=[0-1],[0-1],[0-2],[0-2],[0-1],[0-1],[0-1] OK
Set Command +CFGCIOT: <nonip>[,<cpciot>[,<upciot>[,<erwopdn>[,<sms_wocomb_att>[,<apn_rate_control>[,epco>]]]]]]	OK
Read Command +CFGCIOT?	+CFGCIOT: <nonip>[,<cpciot>[,<upciot>[,<erwopdn>[,<sms_wocomb_att>[,<apn_rate OK

Parameter

<nonip> Configure NonIP

0	not support NonIP
1	support NonIP

<cpciot> Configure CPCIOT

0	not support CPCIoT, this value is not configured for NB-IoT
1	support CPCIoT

<upciot>

Configure whether the UPCIoT feature is supported and preferred.

0	not support S1uData and UPCIoT
1	support S1uData, not support UPCIoT
2	Supports but does not optimize UPCIoT (CP mode is preferred for PDN services that can use both CP and up)
3	Supports and optimizes UPCIoT (preferred up method for PDN business that can use both CP and UP)

Note: About 2 and 3 is the preference for Upciot, which affects:
a) The EMM indicates prefer in the Additionupdatetypeie which way;
b) for the PDN business where CP and up can be used, RABM takes precedence over which way

<erwopdn> Configure whether the ERwoPDN is supported and preferred.

0	not support ERwoPDN
1	supports but does not optimize ERwoPDN (attach process necessarily carries PDN)
2	support and optimize ERwoPDN (when attach process can not carry PDN, do not carry PDN);

<sms_wocomb_att> Configure whether the SmsWithoutCombinedAttach is supported.

0	not support SmsWithoutCombinedAttach
1	support SmsWithoutCombinedAttach

<apn_rate_control> Configure whether the ApnRateControl is supported.

0	not support ApnRateControl
1	support ApnRateControl

<epco>

Configure whether the ePCO is supported.

0	not support ePCO
1	support ePCO

Note that for Nbiot, the EPCO must be used in accordance with the Protocol, but the actual test found that some vendor protocol versions are older and do not support EPCO, so add the configuration entry.

Remark

Example

17.18 17.18 AT+CCIOTOP Parameters configure

Description

Configure and query CIoT parameters, switch CIoT report function

Syntax

Command	Possible response
Test Command AT+CCIOTOPT=?	AT+CCIOTOPT=(0-3),[0-3],[0-2] OK
Set Command +CCIOTOPT:[<n>[,<supported_UE_opt>[,<preferred_UE_opt>]]]	OK
Read Command +CCIOTOPT?	+CCIOTOPT: <n>,<supported_UE_opt>,<preferred_UE_opt> OK

Parameter

<n>

Integer, Value collection (0,1,3), configuring the Ciot escalation feature.

0	Turn off the escalation function;
1	Turn on the reporting function;
3	Turn off the escalation feature and set the Ciot parameter to the factory default value.

<supported_UE_opt>:

integer, Value range [0-3], representing the Ciot parameters supported by the UE.

0	CP and up Ciot are not supported (because Nbiot must support CP Ciot, so configuring this value will be ignored);
1	only supports CP Ciot, does not support up Ciot;
2	Only up Ciot is supported and CP Ciot is not supported (because Nbiot must support CP Ciot, so configuring this value will be ignored);
3	Support for CP Ciot and up Ciot.

<preferred_UE_opt>:

integer, Value range [0-2], representing the UE preferred Ciot parameter.

0	No preference information;
1	priority CP Ciot;
2	Priority up Ciot (takes effect only if you have configured support for Upciot).

<supported_Network_opt>:

Integer, Range [0-3], reporting the CI of the network

Remark

Example

17.19 17.19 AT+CFGEDRX EDRX features configure

Description

Configure and query EDRX parameters

Syntax

Command	Possible response
Test Command AT+CFGEDRX=?	AT+CFGEDRX=[0-1],[0-15],[0-15] OK
Set Command +CFGEDRX:[<enable>[,<ptw>[,<edrx_val>]]]	OK
Read Command +CFGEDRX?	+CFGEDRX: <enable>[,<ptw>[,<edrx_val>]] OK

Parameter

<enable>

integer, Value range [0-1], configured to support EDRX functionality.

0	Edrx is not supported, and <ptw> and <edrx_val> are invalid when the value is taken;
1	Support Edrx;

<ptw>

integer, Value range [0-15], to configure the index value of the UE requested paging time Window length. See 24.008

17.20 17.20 AT+NVCFGARFCN Set a prior frequency

Description

Query the current state: AT+NVCFGARFCN?
Set a prior frequency: 1 No a prior frequency: AT+NVCFGARFCN=0 2 Set one prior frequency: AT+NVCFGARFCN=1,3625,19 3 Set three priors frequency: AT+NVCFGARFCN=3,3701,19,3702,20,3703,21

Syntax

None

Unsolicited Result Codes

None

Parameter

None

Remark

The number of prior frequency points currently supports up to 3.
Offset is the number in the AT command minus 20.
After setting,AT+CFUN=0 will be executed.
The use of locking function,if you want to return to normal test,need to use AT+NVSETLOCKFREQ=0 to close the locking function

Example

None

17.21 17.21 AT+NVSETLOCKFREQ lock frequency

Description

Query the current state: AT+NVSETLOCKFREQ?
Setup of locking freq(parameter three cases): 1 Close the lock freq: AT+NVSETLOCKFREQ=0 2 Open the lock cell: AT+NVSETLOCKFREQ=1,3701,19,1 3 Open the lock freq: AT+NVSETLOCKFREQ=2,3,3701,19,3702,20,3703,21

Syntax

None

Unsolicited Result Codes

None

Parameter

None

Remark

When the lock freq,maximum support 9.

Example

None

17.22 17.22 AT+CNVCFGARFCN Set a prior frequency

Description

Query the current state: AT+CNVCFGARFCN?
Set a prior frequency: 1 No a prior frequency: AT+CNVCFGARFCN=0 2 Set one prior frequency: AT+CNVCFGARFCN=1,3625,19 3 Set three priors frequency: AT+CNVCFGARFCN=3,3701,19,3702,20,3703,21

Syntax

None

Unsolicited Result Codes

None

Parameter

None

Remark

The number of prior frequency points currently supports up to 3.
Offset is the number in the AT command minus 20.
After setting,AT+CFUN=0 will be executed.
The use of locking function,if you want to return to normal test,need to use AT+NVSETLOCKFREQ=0 to close the locking function

Example

None

17.23 17.23 AT+NVSETLOCKFREQ lock frequency

Description

Query the current state: AT+NVSETLOCKFREQ?
Setup of locking freq(parameter three cases): 1 Close the lock freq: AT+NVSETLOCKFREQ=0 2 Open the lock cell: AT+NVSETLOCKFREQ=1,3701,19,1 3 Open the lock freq: AT+NVSETLOCKFREQ=2,3,3701,19,3702,20,3703,21

Syntax

None

Unsolicited Result Codes

None

Parameter

None

Remark

When the lock freq,maximum support 9.

Example

None

17.24 17.24 AT+NVSETBAND Set band

Description

None

Syntax

Read Command AT+NVSETBAND?	OK Fail: +CME ERROR: <err>
Set Command AT+ NVSETBAND =[<totalband>,<band1>,<band2>]	OK Fail: +CME ERROR: <err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<totalband>: The total number of band numbers to be set
<band1>: The number of band,the range of 1-6
<band2>: The number of band,the range of 1-3,5,8,20

Remark

None

Example The following examples show the typical application for this command.

Command	Possible response
AT+NVSETBAND=2,1,3	OK

CHAPTER

EIGHTEEN

18 VOLTE COMMANDS

Contents

18.1 18.1 AT+CEMODE UE modes of operation for EPS

Description

The set command is used to set the MT to operate according to the specified mode of operation for EPS. If the requested mode of operation is not supported, an ERROR or +CME ERROR response is returned. Extended error responses are enabled by the +CMEE command. Refer subclause Appendix A for possible <err> values.

The read command returns the mode of operation set by the TE, independent of the current serving cell capability and independent of the current serving cell Access Technology.

The test command is used for requesting information on the supported MT modes of operation as a compound value.

Syntax

Command	Possible response
Test Command AT+CEMODE=?	+CEMODE(list of supported <mode>s)) OK
Read Command AT+CEMODE?	+CEMODE<mode> OK
Set Command AT+CEMODE=[<mode>]	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<mode>: integer type; indicates the mode of operation. The default value is manufacturer specific.
0 PS mode 2 of operation 1 CS/PS mode 1 of operation 2 CS/PS mode 2 of operation 3 PS mode 1 of operation

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CEMODE=?	+CEMODE:0 OK
AT+CEMODE?	+CEMODE:(0,1,2,3) OK
AT+CEMODE=0	OK

18.2 18.2 AT+CGEQOS Define EPS quality of service

Description

The set command allows the TE to specify the EPS Quality of Service parameters <cid>, <QCI>, [<DL_GBR> and <UL_GBR>] and [<DL_MBR> and <UL_MBR>] for a PDP context or Traffic Flows (see 3GPP TS 24.301 [83] and 3GPP TS 23.203 [85]). When in UMTS/GPRS the MT applies a mapping function to UTMS/GPRS Quality of Service. Refer subclause Appendix A for possible <err> values.

A special form of the set command, +CGEQOS= <cid> causes the values for context number <cid> to become undefined.

The read command returns the current settings for each defined QoS.

The test command returns the ranges of the supported parameters as compound values.

Syntax

Command	Possible response
Test Command `AT+CGEQOS=?`	`+CGEQOS: (range of supported <cid>s),(list of supported <QCI>s),(list of supported <DL_GBR>s),(list of supported <UL_GBR>s),(list of supported <DL_MBR>s),(list of supported <UL_MBR>s)`
Read Command `AT+CGEQOS?`	`[+CGEQOS: <cid>,<QCI>, [<DL_GBR>,<UL_GBR>],[<DL_MBR>, <UL_MBR>]][<CR><LF>+CGEQOS: <cid>,<QCI>,[<DL_GBR>,<UL_GBR>], [<DL_MBR>,<UL_MBR>][...]]`

Set Command
`AT+CGEQOS=[<cid>[,<QCI>[, <DL_GBR>,<UL_GBR>[,<DL_MBR>, <UL_MBR]]]]`
	`OK`
	`ERROR`
	`+CME ERROR:<err>`

Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<cid>: integer type; specifies a particular EPS Traffic Flows definition in EPS and a PDP Context definition in UMTS/GPRS (see the +CGDCONT and +CGDSCONT commands).

<QCI>: integer type; specifies a class of EPS QoS (see 3GPP TS 23.203 [85] and 3GPP TS 24.301 [83]).
0 QCI is selected by network
[1 - 4] value range for guaranteed bit rate Traffic Flows
[5 - 9] value range for non-guarenteed bit rate Traffic Flows
[128 - 254] value range for Operator-specific QCIs
The QCI values 65, 66, 69 and 70 are not allowed to be requested by the UE. If the TE requests a QCI parameter 65, 66, 69 or 70, the MT responds with result code +CME ERROR: 181 (unsupported QCI value).

<DL_GBR>: integer type; indicates DL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL_GBR>: integer type; indicates UL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<DL_MBR>: integer type; indicates DL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL_MBR>: integer type; indicates UL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
`AT+CGEQOS=?`	`CGEQOS:2,3`
`AT+CGEQOS?`	`+CGEQOS: (1..11),(0..9), , , ,` `OK`
`AT+CGEQOS=2,3`	`OK`

18.3 18.3 AT+CGEQOSRDP EPS quality of service read dynamic parameters

Description

The execution command returns the Quality of Service parameters <QCI>, [<DL_GBR> and <UL_GBR>] and [<DL_MBR> and <UL_MBR>] of the active secondary or non secondary PDP context associated to the provided context identifier <cid>.

If the parameter <cid> is omitted, the Quality of Service parameters for all secondary and non secondary active PDP contexts are returned.

The test command returns a list of <cid>s associated with secondary or non secondary active PDP contexts.

Parameters of both network and MT/TA initiated PDP contexts will be returned.

Syntax

Command	Possible response
Test Command AT+CGEQOSRDP=?	+CGEQOSRDP: (list of <cid>s associated with active contexts)
Set Command AT+CGEQOSRDP[=<cid>]	[+CGEQOSRDP: <cid>,<QCI>,[<DL_GBR>,<UL_GBR>],[<DL_MBR>,<UL_MBR>][,<DL_AMBR>,<UL_AMBR>]][<CR><LF>+CGEQOSRDP: <cid>,<QCI>,[<DL_GBR>,<UL_GBR>],[<DL_MBR>,<UL_MBR>][,<DL_AMBR>,<UL_AMBR>][...]]
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<cid>: integer type; specifies a particular Traffic Flows definition in EPS and a PDP Context definition in UMTS/GPRS (see the +CGDCONT and +CGDSCONT commands).

<QCI>: integer type; specifies a class of EPS QoS (see 3GPP TS 23.203 [85] and 3GPP TS 24.301 [83]).
0 QCI is selected by network
[1 - 4] value range for guranteed bit rate Traffic Flows
[65 - 66] value range for guaranteed bit rate Traffic Flows
[5 - 9] value range for non-guarenteed bit rate Traffic Flows
[69 - 70] value range for non-guaranteed bit rate Traffic Flows
[128 - 254] value range for Operator-specific QCIs

<DL_GBR>: integer type; indicates DL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL_GBR>: integer type; indicates UL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<DL_MBR>: integer type; indicates DL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<UL_MBR>: integer type; indicates UL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI (see 3GPP TS 24.301 [83]).

<DL_AMBR>: integer type; indicates DL APN aggregate MBR (see 3GPP TS 24.301 [83]). The value is in kbit/s.

<UL_AMBR>: integer type; indicates UL APN aggregate MBR (see 3GPP TS 24.301 [83]). The value is in kbit/s.

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CGEQOSRDP=?	+CGEQOS:1,2 OK
AT+CGEQOSRDP?	+ CGEQOS: (1..11),(0..9), , , , OK
AT+CGEQOSRDP=1,3	OK

18.4 18.4 AT+CGCMOD PDP context modify

Description

The execution command is used to modify the specified PDP context (s) with repect to QoS profiles and TFTs. After the command has completed, the MT returns to V.250 online data state. If the requested modification for any specified context cannot be achieved, an ERROR or +CME ERROR response is returned. Extended error responses are enabled by the +CMEE command. Refer subclause Appendix A for possible <err> values.

For EPS, the modification request for an EPS bearer resource will be answered by the network by an EPS bearer modification request. The request must be accepted by the MT before the PDP context is effectively changed.

If no <cid>s are specified the activation form of the command modifies all active contexts.

The test command returns a list of <cid>s associated with active contexts.

Syntax

Command	Possible response
Test Command AT+CGCMOD=?	+CGCMOD:(list of <cid>s associated with active contexts)
Set Command AT+CGCMOD [=<cid>[,<cid>[,...]]]	OK +CME ERROR: <err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<cid>: integer type; specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CGCMOD=?	+CGCMOD:1 OK
AT+CGCMOD?	+CGCMOD: (1,.....7) OK
AT+CGCMOD=1	OK

18.5 18.5 AT+CEREG EPS network registration status

Description

The set command controls the presentation of an unsolicited result code +CEREG: <stat> when <n>=1 and there is a change in the MT's EPS network registration status in E-UTRAN, or unsolicited result code +CEREG: <stat>[,[<tac>],[<ci>],[<AcT>]] when <n>=2 and there is a change of the network cell in E-UTRAN. The parameters <AcT>, <tac> and <ci> are provided only if available.The value <n>=3 further extends the unsolicited result code with [,<cause_type>,<reject_cause>], when available, when the value of <stat> changes.

If the UE wants to apply PSM for reducing its power consumption, see +CPSMS command and 3GPP TS 23.682 [149], the set command controls the presentation of an unsolicited result code+CEREG: <stat>[,[<tac>],[<ci>],[<AcT>][,[<cause_type>],[<reject_cause>][,[<Active-Time>],[<Periodic-TAU>]]]]. When <n>=4 the unsolicited result code will provide the UE with additional information for the Active Time value and the extended periodic TAU value if there is a change of the network cell in E-UTRAN. The value <n>=5 further enhances the unsolicited result code with <cause_type> and <reject_cause> when the value of <stat> changes. The parameters <AcT>, <tac>, <ci>, <cause_type>, <reject_cause>, <Active-Time> and <Periodic-TAU> are provided only if available.

Refer subclause 9.2 for possible <err> values.

NOTE 1: If the EPS MT in GERAN/UTRAN/E-UTRAN also supports circuit mode services and/or GPRS services, the +CREG command and +CREG: result codes and/or the +CGREG command and +CGREG: result codes apply to the registration status and location information for those services.

The read command returns the status of result code presentation and an integer <stat> which shows whether the network has currently indicated the registration of the MT. Location information elements <tac>, <ci> and <AcT>, if available, are returned only when <n>=2 and MT is registered in the network. The parameters [,<cause_type>,<reject_cause>], if available, are returned when <n>=3.

Test command returns values supported as a compound value.

Syntax

Command	Possible response
Test Command AT+CEREG=?	+CEREG: (list of supported <n>s) OK
Read Command AT+CEREG?	when <n>=0, 1, 2 or 3 and command successful: +CEREG: <n>,<stat>[,[<tac>],[<ci>],[<AcT>[,<cause_type>,<reject_cause>]]] when <n>=4 or 5 and command successful: +CEREG: <n>,<stat>[,[<lac>],[<ci>],[<AcT>],[<rac>][,[<cause_type>],[<reject_cause>][,[<Active-Time>],[<Periodic-TAU>]]]] OK
Set Command AT+CEREG=[<n>]	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<n>: integer type

0 disable network registration unsolicited result code

1 enable network registration unsolicited result code +CEREG: <stat>

2 enable network registration and location information unsolicited result code +CEREG: <stat>[,[<tac>],[<ci>],[<AcT>]]

3 enable network registration, location information and EMM cause value information unsolicited result code +CEREG: <stat>[,[<tac>],[<ci>],[<AcT>][,<cause_type>,<reject_cause>]]

4 For a UE that wants to apply PSM, enable network registration and location information unsolicited result code +CEREG: <stat>[,[<tac>],[<ci>],[<AcT>][,,[,[<Active-Time>],[<Periodic-TAU>]]]]

5 For a UE that wants to apply PSM, enable network registration, location information and EMM cause value information unsolicited result code +CEREG: <stat>[,[<tac>],[<ci>],[<AcT>][,[<cause_type>],[<reject_cause>][,[<Active-Time>],[<Periodic-TAU>]]]]

<stat>: integer type; indicates the EPS registration status

0 not registered, MT is not currently searching an operator to register to

1 registered, home network

2 not registered, but MT is currently trying to attach or searching an operator to register to

3 registration denied

4 unknown (e.g. out of E-UTRAN coverage)

5 registered, roaming

6 registered for "SMS only", home network (not applicable)

7 registered for "SMS only", roaming (not applicable)

8 attached for emergency bearer services only (See NOTE 2)

9 registered for "CSFB not preferred", home network (not applicable)

10 registered for "CSFB not preferred", roaming (not applicable)

NOTE 2: 3GPP TS 24.008 [8] and 3GPP TS 24.301 [83] specify the condition when the MS is considered as attached for emergency bearer services.

<tac>: string type; two byte tracking area code in hexadecimal format (e.g. "00C3" equals 195 in decimal)

<ci>: string type; four byte E-UTRAN cell ID in hexadecimal format

<AcT>: integer type; indicates the access technology of the serving cell

0 GSM (not applicable)

1 GSM Compact (not applicable)

2 UTRAN (not applicable)

3 GSM w/EGPRS (see NOTE 3) (not applicable)

4 UTRAN w/HSDPA (see NOTE 4) (not applicable)

5 UTRAN w/HSUPA (see NOTE 4) (not applicable)

6 UTRAN w/HSDPA and HSUPA (see NOTE 4) (not applicable)

7 E-UTRAN

NOTE 3: 3GPP TS 44.060 [71] specifies the System Information messages which give the information about whether the serving cell supports EGPRS.

NOTE 4: 3GPP TS 25.331 [74] specifies the System Information blocks which give the information about whether the serving cell supports HSDPA or HSUPA.

<cause_type>: integer type; indicates the type of <reject_cause>.

0 Indicates that <reject_cause> contains an EMM cause value, see 3GPP TS 24.301 [83] Annex A.

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CEREG=?	 +CEREG:0 OK
AT+CEREG?	 +CEREG:(0-5) OK
AT+CEREG	OK

18.6 18.6 AT+CSCON Signalling connection status

Description

The set command controls the presentation of an unsolicited result code +CSCON. If <n>=1, +CSCON: <mode> is sent from the MT when the connection mode of the MT is changed. If <n>=2 and there is a state within the current mode, +CSCON: <mode>[,<state>] is sent from the MT. If <n>=3, +CSCON: <mode>[,<state>[,<access>]] is sent from the MT. If setting fails, an MT error, +CME ERROR: <err> is returned. Refer subclause 9.2 for possible <err> values.

When the MT is in UTRAN or E-UTRAN, the mode of the MT refers to idle when no PS signalling connection and to connected mode when a PS signalling connection between UE and network is setup. When the UE is in GERAN, the mode refers to idle when the MT is in either the IDLE state or the STANDBY state and to connected mode when the MT is in READY state.

The <state> value indicates the state of the MT when the MT is in GERAN, UTRAN connected mode or E-UTRAN.

The read command returns the status of result code presentation and an integer <mode> which shows whether the MT is currently in idle mode or connected mode. State information <state> is returned only when <n>=2. Radio access type information <access> is returned only when <n>=3.

Test command returns supported values as a compound value.

Syntax

Command	Possible response
Test Command AT+CSCON=?	+CSCON: (list of supported <n>s) OK
Read Command AT+CSCON?	+CSCON: <n>,<mode>[,<state>] CME ERROR: <err>
Set Command AT+CSCON=[<n>]	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<n>: integer type
0 disable unsolicited result code 1 enable unsolicited result code +CSCON: <mode> 2 enable unsolicited result code +CSCON: <mode>[,<state>] 3 enable unsolicited result code +CSCON: <mode>[,<state>[,<access>]]
<mode>: integer type; indicates the signalling connection status
0 idle 1 connected
<state>: integer type; indicates the CS or PS state while in GERAN and the RRC state information if the MT is in connected Mode while in UTRAN and E-UTRAN.
0 UTRAN URA_PCH state 1 UTRAN Cell_PCH state 2 UTRAN Cell_FACH state 3 UTRAN Cell_DCH state 4 GERAN CS connected state 5 GERAN PS connected state 6 GERAN CS and PS connected state 7 E-UTRAN connected state
<access>: integer type; indicates the current radio access type.
0 Indicates usage of radio access of type GERAN, see 3GPP TS 45.001 [146]. 1 Indicates usage of radio access of type UTRAN TDD, see 3GPP TS 25.212 [144]. 2 Indicates usage of radio access of type UTRAN FDD, see 3GPP TS 25.212 [144]. 3 Indicates usage of radio access of type E-UTRAN TDD, see 3GPP TS 36.300 [145]. 4 Indicates usage of radio access of type E-UTRAN FDD, see 3GPP TS 36.300 [145].

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CSCON=?	+CSCON:1 OK
AT+CSCON?	+CSCON: (1-3) OK
AT+CSCON=1	OK

18.7 18.7 AT+CISRVCC IMS single radio voice call continuity

Description

SRVCC provides the ability to have a seamless handover of a voice call between the PS domain and the CS domain for calls that are anchored in IMS, when the UE is capable of transmitting/receiving on only one of those access networks (PS or CS) at a given time, see 3GPP TS 23.221 [90] subclause 7.2a, annex A.1 and annex A.2

Set command informs MT about the SRVCC Support. MT normally updates the network when changing this parameter. Refer subclause 9.2 for possible <err> values.

Read command returns the status of the MT stored SRVCC Support.

Test command returns supported values as a compound value.

Syntax

Command	Possible response
Test Command `AT+CISRVCC=?`	`+CISRVCC:(list of supported <uesrvcc>s)` `OK`
Read Command `AT+CISRVCC?`	`+CISRVCC: <uesrvcc>`

Set Command
`AT+CISRVCC=[<uesrvcc>]`
	`OK`
	`ERROR`
	`+CME ERROR:<err>`

Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

`<uesrvcc>: integer type. SRVCC support status`
0 The UE does not have SRVCC support 1 The UE has SRVCC support

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CISRVCC=?	+CISRVCC: 0,1 OK
AT+CISRVCC?	+CISRVCC: 0,1 OK
AT+CISRVCC=1	OK

18.8 18.8 AT+CEUS UE'S usage setting for EPS

Description

The set command is used to set the MT to operate according to the specified UE's usage setting for EPS, see 3GPP TS 24.301 [83].

The read command returns the usage setting set by the TE.

The test command is used for requesting information on the supported MT setting(s) as a compound value.

Syntax

Command	Possible response
Test Command AT+CEUS=?	+CEUS: (list of supported <setting>s) OK
Read Command AT+CEUS?	+CEUS: <setting>
Set Command AT+CEUS=[<setting>]	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<setting>: integer type; indicates the usage setting of the UE. The default value is manufacturer specific.
0 voice centric 1 data centric

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CEUS=?	+CEUS: (0,1) OK
AT+CEUS?	+CEUS: (0,1) OK
AT+CEUS=1	OK

18.9 18.9 AT+CEVDP UE'S voice domain preference E-UTRAN

Description

The set command is used to set the MT to operate according to the specified voice domain preference for E-UTRAN.

The read command returns the setting, independent of the current serving cell capability and independent of the current serving cell's access technology.

The test command returns supported values as a compound value.

Syntax

Command	Possible response
Test Command AT+CEVDP=?	+CEVDP:(list of supported <setting>s) OK
Read Command AT+CEVDP?	+CEVDP: <setting>
Set Command AT+CEVDP=[<setting>]	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes None

Parameter

<setting>: integer type; indicates the voice domain preference of the UE. The default value is manufacturer specific.
1 CS Voice only 2 CS Voice preferred, IMS PS Voice as secondary 3 IMS PS Voice preferred, CS Voice as secondary 4 IMS PS Voice only

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CEVDP =?	+CEVDP: 1..4 OK
AT+CEVDP?	+CEVDP: 1..4 OK
AT+CEVDP=1	OK

18.10 18.10 AT+CDU Dial URI

Description

Execution command can be used to dial a URI (with <action>=1) for initiating communication using the specified communication client with the specified media profile. With <action>=0 the command can query which clients are supported for the URI types supported.

When the command is used to query the supported URI types (i.e. <action>=0), the URI types are provided by +CDUT: <URI_scheme>. When the command is used to dial a URI (i.e. <action>=1) and the dialling succeeds the command is terminated by +CDU: <ccidx> and OK. The parameters <CLIR_OIR> and <CUG_pointer> are used to set the per call basis values of the supplementary services CLIR / OIR and CUG.

The unsolicited result code +CDUU: <ccidx>,<code> can be subsequently provided to give further basic information about the call as it progresses. The value of the <ccidx> is kept until the call is released. See command +CMCCS and unsolicited result code +CMCCSI for provision of additional information about the call setup.

If "Call control by USIM" see 3GPP TS 31.111 [92] subclause 4.5 is activated by the USIM, it is the responsibility of the communication client to perform any required call control verification according to the procedures defined in 3GPP TS 31.111 [92] subclause 7.3 prior to the execution of the call setup.

When call control by USIM is applicable, the communication client shall perform the call control (for example by using the Commands for USIM application toolkit, see clause 12) and act upon the result of the call control as follows:

- if call control by USIM performs no modifications to the call request, the call setup shall be executed without any changes to the data;

- if call control by USIM modifies the call request, the call setup shall be executed using the modified data as provided by the call control;

- if call control by USIM modifies the call request to a different service, the appropriate AT command(s) for that service shall be executed; and

- if call control by USIM rejects the call request, the call setup shall not be executed.

If the attempt to dial does not succeed, the command is terminated by ERROR / CME ERROR or +CDUI: <cause> and OK. Refer subclause 9.2 for possible <err> values.

Test command returns values supported as a compound value.

Syntax

Command	Possible response

Set Command
`AT+CDU=<action>[,<URI>[,<client>[,<mpidx>[,<CLIR_OIR>[,<CUG_pointer>[,<type_of_call>]]]]]]`
	`OK`
	`ERROR`
	`+CME ERROR:<err>`

Unsolicited Result Codes None

Parameter

<action>: integer type
0 Query supported communication clients for the supported URI types. Execution command +CDU=0 returns a line of intermediate result code +CDUT: <URI_scheme>[,<client>] for every supported <URI_scheme>. 1 Dial <URI> using the indicated communication client with the indicated media profile.
<URI>: string type. URI including the prefix specifying the URI type. The URI may include URI parameters. The used character set should be the one selected with Select TE Character Set +CSCS.
<CLIR_OIR>: integer type. Indicates per call basis changes provided to the supplementary service CLIR / OIR. See +CLIR for further information of the related parameters.
0 No per call based changes to CLIR / OIR, the settings with +CLIR apply. 1 Restrict the CLI presentation for the current call (CLIR / OIR invocation) 2 Allow CLI presentation for the current call (CLIR / OIR suppression)
<CUG_pointer>: integer type. Indicates per call basis changes provided to the supplementary service closed user group. See +CECUG for further information of the related parameters.
0 No per call basis changes to CUG 1-n Indicates the CUG index to use for this call. The CUG index and corresponding values used as set with command +CECUG (enable CUG temporary mode). The maximum value of n is implementation specific.
<type_of_call>: integer type. Indicates type of call on per call basis.
0 Normal call 1 Dual radio voice call continuity call
<URI_scheme>: string type represented with IRA characters. Parameter identifies supported URI scheme. This parameter shall not be subject to conventional character conversion as per +CSCS.
sip Internet Assigned Number Authority (IANA) registry as per RFC 3969 [113], used with Session Initiation Protocol (SIP), see RFC 3261 [111]. tel Internet Assigned Number Authority (IANA) registry as per RFC 5341 [114], used with SIP, see RFC 3966 [112] | urn Internet Assigned Number Authority (IANA) registry according to RFC 2141 [116], only used with SIP in combination with a suitable uniform resource name (URN) namespace.
<client>: integer type. Communication client indication. The default value is implementation specific.
0 MMTel. The UE procedures in 3GPP TS 24.173 [87] apply. 128-255 Reserved for vendor specific communication clients..
<mpidx>: integer type. Media profile identification number. The parameter is local to the TE-MT interface. The range of permitted values (minimum value = 1) is returned by the test form of the command +CDEFMP. When +CDU is used for dialling (i. e. with <action>=1) this number can be provided to point to a particular media profile. The provided media profile identification

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CDU=1,"tel:+47-123-45678" • +CDU: 2	OK

18.11 18.11 AT+CHCCS Hangup of current calls

Description

Execution command causes the TA to initiate hangup and subsequently perform call clearing of the call for which a <ccidx> was provided when the call was detected in the MT. The parameter <cause> can be added to indicate particular information on the cause for call clearing. Setting the parameter <cause> to values 2 or 3 is typically relevant for call clearing before a call has been established (e.g. an incoming or waiting call). The parameter <cause> is ignored by the lower layers if it is not according to the signalling procedures in question. A special form of the execution command, +CHCCS=0, causes the TA to initiate hangup and subsequently perform call clearing of all calls for which a <ccidx> was provided when the call was detected in the MT. The parameter <cause> will be ignored if <ccidx>=0. The information text +CHCCSI: <ccidx> is provided for each call where a successful hangup is initiated as result of the +CHCCS. If no hangup is initiated, no information text is provided before OK is returned.

Syntax

Command	Possible response
Read Command AT+CHCCS=?	OK
Set Command AT+CHCCS=<ccidx>[,<cause>]	OK ERROR +CME ERROR:<err>
Reference: 3GPP TS 27.007 V13.2.3	

Unsolicited Result Codes None

Parameter

<ccidx>: integer type. Call identification number as described in 3GPP TS 22.030 [19] subclause 6.5.5.1. This number can be used in +CHLD command operations. Value range is from 1 to N. N, the maximum number of simultaneous call control processes is implementation specific
<cause>: integer type. Proposed cause value for call clearing.
1 No particular cause indicated 2 Cause "Normal call clearing" (value 16), see 3GPP TS 24.008 [8] table 10.5.123 or BYE request, see RFC 3261 [111] subclause 15.1 3 Cause "Call rejected" (value 21), see 3GPP TS 24.008 [8] table 10.5.123 or "488 Not Acceptable Here", see RFC 3261 [111] subclause 21.4.26 4 Cause "User busy" (value 17), see 3GPP TS 24.008 [8] table 10.5.123 or "486 Busy Here", see RFC 3261 [111] subclause 21.4.24

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CHCCS=?	+CHCCS: (0-n) OK
AT+CHCCS=2 • +CHCCSI: 2	OK

18.12 18.12 AT+CCFCU Communication forwarding number and conditions with URI support

Description

The command allows control of the communication forwarding supplementary service according to 3GPP TS 22.072 [31], 3GPP TS 22.082 [4] and 3GPP TS 24.604 [132]. This command is an extended version of AT commands +CCFC and +CTFR which also supports numbers of the SIP URI format. Registration, erasure, activation, deactivation, and status query are supported. When querying the status of a network service (<mode>=2) the response line for 'not active' case (<status>=0) should be returned only if service is not active for any <class>.

Test command returns reason values supported as a compound value.

Syntax

Command	Possible response
Set Command AT+CCFCU=<reason>,<mode>[, <numbertype>,<ton>,<number>[, <class>,<ruleset>[,<subaddr>[, <satype>[,<time>]]]]]	OK ERROR +CME ERROR:<err>
Read Command AT+CCFCU=?-|+CCFCU: (list of supported <reason>s)	OK

Unsolicited Result Codes None

Parameter

<reason>: integer type
0 communication forwarding unconditional – CFU, refer 3GPP TS 22.082 [4] and 3GPP TS 24.604 [132] 1 communication forwarding on busy user – CFB, refer 3GPP TS 22.082 [4] and 3GPP TS 24.604 [132] 2 communication forwarding on no reply – CFNR, refer 3GPP TS 22.082 [4] and 3GPP TS 24.604 [132] 3 communication forwarding on subscriber not reachable – CFNRc, refer 3GPP TS 22.082 [4] and 3GPP TS 24.604 [132] 4 all call forwarding (refer to "all CF" in 3GPP TS 22.030 [19]) 5 all conditional call forwarding (refer to "all conditional CF" in 3GPP TS 22.030 [19]) 6 communication deflection – CD, refer 3GPP TS 22.072 [31] and 3GPP TS 24.604 [132] 7 communication forwarding on not logged-in – CFNL, refer 3GPP TS 24.604 [132
<mode>: integer type
0 disable 1 enable 2 query status 3 registration 4 erasure
<numbertype>: integer type. Indicating type of information in parameter <number>
0 No valid information in parameter <number>. <number> shall then be set to empty string (""). 1 Number in <number> according to URI including the prefix specifying the URI type (see command +CDU). Parameter <ton> has no relevant information and is set to zero. 2 Number in <number> according to one of the formats supported by 3GPP TS 24.008 [8] subclause 10.5.4.7)
<ton>: type of number in integer format (refer 3GPP TS 24.008 [8] subclause 10.5.4.7). The parameter is also set to zero when it has no meaningful content, e.g. when <numbertype>=1.
<number>: string type phone number in format specified by <numbertype>. The used character set should be the one selected with Select TE Character Set +CSCS. When no number is available, <number> shall be set to empty string ("").
<subaddr>: string type subaddress of format specified by <satype>
<satype>: type of subaddress octet in integer format (refer 3GPP TS 24.008 [8] subclause 10.5.4.8); default 128
<classx> is a sum of integers each representing a class of information (default 7 – voice, data and fax):
0 communication forwarding without differentiation on class of information 1 voice (telephony) 2 data (refers to all bearer services; with <mode>=2 this may refer only to some bearer service if TA does not support values 16, 32, 64 and 128) 4 fax (facsimile services) 8 short message service 16 data circuit sync 32 data circuit async 64 dedicated packet access

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+CCFCU=1,1,"931123456" • +CDU: 2	OK
AT+CCFCU=? • +CCFCU:(0-7)	OK

18.13 18.13 AT+SETVOLTE Disable/Enable VOLTE

Description

Disable/Enable VOLTE.

Syntax

Command	Possible response
Test Command AT+SETVOLTE=?	+SETVOLTE: (list of supported <setting>s) OK
Set Command AT+SETVOLTE=[<setting>]	OK ERROR +CME ERROR:<err>

Unsolicited Result Codes None

Parameter

<setting>: integer type;
0 Disable VOLTE 1 Enable VOLTE.

Remark None

Example The following examples show the typical application for this command.

Command	Possible response
AT+SETVOLTE=?	+SETVOLTE: :0,1 OK
AT+SETVOLTE?	+SETVOLTE: :0,1 OK
AT+SETVOLTE=1	OK

CHAPTER

NINETEEN

19 QUECTEL_TCPIP COMMANDS

Contents

19.1 19.1 AT+QIOPEN Start Up TCP Or UDP Connection

Command	Possible response(s)
`AT+QIOPEN=?`	• `+QIOPEN:` (list of supported `<mode>`),(`<IP address>/<domain name>`),(`<port>`) • • `OK`
`AT+QIOPEN=[<index>,]<mode>,<IP address>/<domain name>,<port>`	• If format is right, respond: `OK` • Otherwise, respond: `ERROR` • If the connection has already existed, respond `ALREADY CONNECT` • And then if connection is successful, respond: `CONNECT OK` • Otherwise, respond: `CONNECT FAIL`

Reference

// QIMUX=0 : ("index" default)

AT+QIOPEN="TCP","111.205.140.139",6800

OK

CONNECT OK

Description

Parameters

<index> A numeric parameter which indicates the connection number

<mode> A string parameter which indicates the connection type

"TCP"	Establish a TCP connection
"UDP"	Establish a UDP connection

<IP address> A string parameter which indicates remote server IP address

<port> Remote server port

<domain name> A string parameter which indicates remote server domain name

Note:

1. Max Response Time: 75s – CONNECT FAIL/CONNECT OK; 300ms – OK/ERROR/ALREADY CONNECT
2. ME state must be "IP INITIAL"/"IP STATUS"/"IP CLOSE", otherwise execute "AT+QIDEACT"/"AT+QICLOSE"
3. "AT+QIOPEN" was repeatedly execute, return "ALREADY CONNECT"

19.2 19.2 AT+QISEND Send Data Through TCP Or UDP Connection

Command	Possible response(s)
`AT+QISEND=?`	• `+QISEND:<length>` • `OK`
`AT+QISEND`	• `SEND OK` When send success • `SEND FAIL` When send fail • `ERROR` When connection does not exist
QIMUX=0 • `AT+QISEND=<length>` **QIMUX=1** • `AT+QISEND=<index>[,<length>]`	• `SEND OK` When send success • `SEND FAIL` When send fail • `ERROR` When connection does not exist

Reference

// QIMUX=0 : ("index" default)

AT+QISEND

1234567890 //use "ctrl+z" to send

SEND OK

Description

Parameters

<index> A numeric parameter which indicates the connection number

<length> A numeric parameter which indicates the length of sending data, it must be less than 1460

Note:

1. Execute "AT+QISEND", must "AT+QIMUX=0".
2. "AT+QISEND" don't send empty string, return "SEND FAIL"

3. When send data, must exist connection of TCP/UDP.
4. "SEND OK" is means send data, doesn't mean that response. Please execute "AT+QISACK" query.
5. Max Response Time: 300ms.

19.3 19.3 AT+QICLOSE Close TCP Or UDP Connection

Command	Possible response(s)
AT+QICLOSE=?	• OK
AT+QICLOSE	• CLOSE OK If close is successfully • ERROR If close fails
AT+QICLOSE=<index>	• <index>, CLOSE OK If close is successfully • ERROR If close fails

Reference

AT+QICLOSE

CLOSE OK

Description

Parameters

<index> A numeric parameter which indicates the connection number

Note:

1. Max Response Time: 300ms.
2. AT+QICLOSE
   - When "AT+QISRVC=1 && AT+QIMUX=0", return "CLOSE OK". It means "ME" as client and close connection.
   - When "AT+QISRVC=1 && AT+QIMUX=1", return "ERROR".
   - When "AT+QISRVC=2 && AT+QIMUX=0", return "CLOSE OK". It means "ME" as server and close connection.
   - When "AT+QISRVC=2 && AT+QIMUX=1", return "CLOSE OK". It means "ME" as server and close all connection.
3. AT+QICLOSE=<index>
   - Must "AT+QIMUX=1"
   - When "AT+QISRVC=1 && AT+QIMUX=1", it means "ME" close <index> connection as client and "ME" reservation connection as server.
   - When "AT+QISRVC=2 && AT+QIMUX=1", it means "ME" close <index> connection as server.

- When “AT+QISRVC=1 && AT+QIMUX=0”: If “AT+QISTAT” is “CONNECTING”/”CONNECT OK”, return “CLOSE OK”. Otherwise return “ERROR”.

19.4 19.4 AT+QIDEACT Close CPRS/CSD PDP

Command	Possible response(s)
`AT+QIDEACT=?`	• `OK`
`AT+QIDEACT`	• `DEACT OK` If close is successfully • `ERROR` If close fails

Reference

AT+QIDEACT

DEACT OK

Description

Parameters

Note:

1. Max Response Time: 40s.
2. “AT+QIDEACT” is return “DEACT OK”, state is “IP INITIAL”.
3. “AT+QIMUX=0” is close connect/PDP current.
4. “AT+QIMUX=0” is close all connect/PDP.

19.5 19.5 AT+QIPORT Set Local Port

Command	Possible response(s)
AT+QILPORT=?	• **CIPMUX=0** – +QILPORT: ("TCP","UDP"),(0-65535) – OK • **CIPMUX=1** – +QILPORT: (0-7),("TCP","UDP"),(0-65535) – OK
AT+QILPORT?	• <mode>:<port> • <CR><LF><mode>:<port> • • OK
• **CIPMUX=0** – +QILPORT=<mode>,<port> • **CIPMUX=1** – +QILPORT=<n>,<mode>,<port>	• OK • +CME ERROR <err>

Reference

AT+QILPORT=”TCP”,1234

OK

Description

Parameters

<n> 0..7 A numeric parameter which indicates the connection number

<mode> A string parameter which indicates the connection type

“TCP”	TCP local port
“UDP”	UDP local port

<port> 0-65535 A numeric parameter which indicates the local port.

Note: Max Response Time: 300ms.

19.6 19.6 AT+QIREGAPP Start task and Set APN, username, password

Command	Possible response(s)
AT+QIREGAPP=?	• +QIREGAPP:"APN","USER","PWD" • • OK
AT+QIREGAPP?	• +QIREGAPP:<apn>,<user name>,<password> • • OK
AT+QIREGAPP=<apn>, <user name>, <password>[,<rate>]	• OK • ERROR

Reference

AT+QIREGAPP

OK

Description

Parameters

<apn> Strings parameter which GPRS/CSD name

<user name> Strings parameter which GPRS/CSD user name

<password> Strings parameter which GPRS/CSD user password

<rate> CSD tx rate

Note:

1. Max Response Time: 300ms
2. "ME" state must be "IP INITIAL". Return "OK", "ME" state is "IP START".

19.7 19.7 AT+QIACT Activating the mobile scene (Start a wireless connection in GPRS/CSD)

Command	Possible response(s)
AT+QIACT=?	• OK
AT+QIACT	• OK • ERROR

Reference

AT+QIACT

OK

Description

Parameters

Note:

1. Max Response Time: 150s
2. "ME" state must be "IP START". Return "OK", "ME" state is "IPCONFIG".

19.8 19.8 AT+QILOCIP Get local ip address

Command	Possible response(s)
`AT+QILOCIP=?`	• `OK`
`AT+QILOCIP`	• `<IP address>` • `ERROR`

Reference

AT+QILOCIP

10.196.188.19

OK

Description

Parameters

<IP address> Strings parameter which local ip address

Note:

1. Max Response Time: 300ms
2. PDP active state muse be "IP GPRSACT"/"TCP/UDP CONNECTING"/"CONNECT OK"/"IP CLOSE", otherwise return "ERROR".

19.9 19.9 AT+QISTAT Query the current connection state

Command	Possible response(s)
AT+QISTAT=?	• OK
AT+QISTAT	• **AT+QIMUX=0** – OK – STATE:<state> • **AT+QIMUX=1** – (+QISTAT:<index>,<mode>,<addr>,<port><CR><LF>) – list ...... – OK

Reference

AT+QISTAT

OK

STATE:IP STATUS

Description

Parameters

<state> Strings parameter which connect state

“IP INITIAL”	initialization
“IP START”	start task
“IP CONFIG”	configuration scene
“IP IND”	active GPRS/CSD
“IP GPRSACT”	config receiving scene
“IP STATUS”	get local ip addrs
“TCP CONNECTING”	TCP connecting
“UDP CONNECTING”	UDP connecting
“IP CLOSE”	TCP/UDP connection close
“CONNECT OK”	TCP/UDP connection success
“PDP DEACT”	GPRS/CSD scene abnormal closed

In ATV0:

0	“IP INITIAL”
1	“IP START”
2	“IP CONFIG”
3	“IP IND”
4	“IP GPRSACT”
6	“TCP CONNECTING” or “UDP CONNECTING”
7	“IP CLOSE”
8	“CONNECT OK”
9	“PDP DEACT”

<index> 0~5

<mode> Connection type “TCP” TCP connection “UDP” UDP connection

<addr> ip address

<port> port

Note: Max Response Time: 300ms

19.10 19.10 AT+QISTATE Query the connection status of the current access

Command	Possible response(s)
AT+QISTATE=?	• OK
AT+QISTATE	• **AT+QIMUX=0** – OK – +QISTATE:<state> • **AT+QIMUX=1** – OK – STATE:<state> – +QISTATE: – <index>,<mode>,<addr>,<port><socketstate> • ERROR

Reference

AT+QISTAT

OK

STATE:IP STATUS

Description

Parameters

<state> Strings parameter which connect state

When AT+QIMUX=0 :

“IP INITIAL”	initialization
“IP START”	start task
“IP CONFIG”	configuration scene
“IP IND”	active GPRS/CSD
“IP GPRSACT”	config receiving scene
“IP STATUS”	get local ip addrs
“TCP CONNECTING”	TCP connecting
“UDP CONNECTING”	UDP connecting
“IP CLOSE”	TCP/UDP connection close
“CONNECT OK”	TCP/UDP connection success
“PDP DEACT”	GPRS/CSD scene abnormal closed

When AT+QIMUX=1 :

“IP INITIAL”	initialization
“IP START”	start task
“IP CONFIG”	configuration scene
“IP IND”	active GPRS/CSD
“IP GPRSACT”	config receiving scene
“IP STATUS”	get local ip addrs
“IP PROCESSING”	data processing
“PDP DEACT”	GPRS/CSD scene abnormal closed

<index> 0~5

<mode> Connection type “TCP” TCP connection “UDP” UDP connection

<addr> ip address

<port> port

<socketstate> connection status of the current access, “INITIAL”,”CONNECTED”

Note: Max Response Time: 300ms

19.11 19.11 AT+QISSTAT Query the current server state

Command	Possible response(s)
`AT+QISSTAT=?`	• `OK`
`AT+QISSTAT`	• **AT+QIMUX=0** – `OK` – `S:<ServerState>` • **AT+QIMUX=1** – `OK` – `S:<ServerState>` – `C:<index>,<mode>,<addr>,<port>` • `ERROR`

Reference

AT+QISSTAT

OK

S:INITIAL

Description

Parameters

<ServerState> Strings parameter which connect state

"INITIAL"	initialization
"OPENNING"	start task
"LISTENING"	listening state
"CLOSING"	closing

<index> 0~4

<mode> Connection type "TCP" TCP connection "UDP" UDP connection

<addr> ip address

<port> port

Note: Max Response Time: 300ms

19.12 19.12 AT+QIDNSCFG Configure DNS

Command	Possible response(s)
AT+QIDNSCFG=?	• OK
AT+QIDNSCFG?	• PrimaryDns:<pri_dns> • SecondaryDns:<sec_dns> • OK
AT+QIDNSCFG=<pri_dns>[,<sec_dns>]	• OK • ERROR

Reference

AT+QIDNSCFG?

PrimaryDns: <211.137.160.5>

SecondaryDns: <211.137.160.185>

OK

Description

Parameters

<pri_dns> Master domain server

<sec_dns> Second domain server

Note:

1. Max Response Time: 300ms

19.13 19.13 AT+QIDNSGIP DNS

Command	Possible response(s)
AT+QIDNSGIP=?	• OK
AT+QIDNSGIP=<domain name>	• OK • when return "OK", and dns success • <IP address> • when return "OK", and dns fails • ERROR:<err> • STATE:<state> • • ERROR

Reference

AT+QIDNSGIP="www.baidu.com"

OK

111.13.100.91

Description

Parameters

<domain name> domain name

<IP address> ip address

<err> error number, 1~8

<state> reference AT+QISTAT

Note: Max Response Time: 14s

19.14 19.14 AT+QIDNSIP Config use ip address or use domain

Command	Possible response(s)
AT+QIDNSIP=?	• +QIDNSIP:(<mode>list) • OK
AT+QIDNSIP?	• +QIDNSIP:<mode> • OK
AT+QIDNSIP=<mode>	• OK • ERROR

Reference

AT+QIDNSIP=0

OK

Description

Parameters

<mode>

- 0: use ip address
- 1: use domain

Note: Max Response Time: 300ms

19.15 19.15 AT+QIHEAD Show ip head when recv data

Command	Possible response(s)
AT+QIHEAD=?	• +QIHEAD:(<mode>list) • OK
AT+QIHEAD?	• +QIHEAD:<mode> • OK
AT+QIHEAD=<mode>	• OK • ERROR

Reference

AT+QIHEAD=0

OK

If QIHEAD=1 the format is:

- For single IP connection (`+QIMUX=0`) `+IPD(data length):`
- For multi IP connection (`+QIMUX=1`) `+RECEIVE(n)(data length):`

Description

Parameters

<mode>

- 0: don't show ip head
- 1: show ip head

Note: Max Response Time: 300ms

19.16 19.16 AT+QIAUTOS Set auto send TCP/UDP time of data

Command	Possible response(s)
`AT+QIAUTOS=?`	• `+QIAUTOS:(<mode>list),(<time>list)` • `OK`
`AT+QIAUTOS?`	• `+QIAUTOS:<mode>,<time>` • `OK`
`AT+QIAUTOS=<mode>[,<time>]`	• `OK` • `ERROR`

Reference

AT+QIAUTOS=0

OK

Description

Parameters

<mode>

- 0: don't set auto send (default)
- 1: set auto send

<time>

- time of auto send

Note: Max Response Time: 300ms

19.17 19.17 AT+QIPROMPT Set show ">"&"SEND OK" when send data

Command	Possible response(s)
AT+QIPROMPT=?	• +QIPROMPT:(<send prompt>list) • OK
AT+QIPROMPT?	• +QIPROMPT:<send prompt> • OK
AT+QIPROMPT=<send prompt>	• OK • ERROR

Reference

AT+QIPROMPT=0

OK

Description

Parameters

<send prompt>

- 0: Don't show ">" when send data success, return "SEND OK"
- 1: Show ">" when send data success, return "SEND OK"
- 2: Don't show ">" when send data success, return null

Note: Max Response Time: 300ms

19.18 19.18 AT+QISERVER Config server

Command	Possible response(s)
AT+QISERVER=?	• OK
AT+QISERVER?	• +QISERVER:<mode>,<num> • OK
AT+QISERVER	• OK • ERROR • When Config server success,return: • SERVER OK • When Config server fails,return: • CONNECT FAIL
AT+QISERVER=<type>[,<max>]	• OK • ERROR

Reference

AT+QISERVER

OK

SERVER OK

Description

Parameters

<mode>

- 0: Not configured to become server
- 1: Configured to become server

<num>

- client number, 1~5

<type>

- 0: TCP server
- 1: UDP server

<max>

- max connection number,default 1.(1~5)

Note:

1. Max Response Time: 150s
2. When “AT+QIMUX=0”, param “max” is null.

19.19 19.19 AT+QICSGP Set CSD or GPRS

Command	Possible response(s)
AT+QICSGP=?	• +QICSGP:0-CSD,DIAL NUMBER,USER NAME,PASSWORD, RATE(0-3) • +QICSGP:1-GPRS,APN,USER NAME,PASSWORD • OK
AT+QICSGP?	• +QICSGP:<mode> • OK
AT+QICSGP	• +QICSGP:<mode> • OK
AT+QICSGP=<mode>[,(<apn>,<user name>,<password>)/(<dial number>,<user name>,<password>,<rate>)]	• OK • ERROR

Reference

AT+QICSGP=1,"CMNET"

OK

Description

Parameters

<mode>

- 0: CSD
- 1: GPRS

GPRS:

- <apn> : access point name
- <user name> : user name
- <password> : user password

CSD:

- <dial number> : CSD number
- <user name> : user name
- <password> : user password
- **<rate> :**

0	2400
1	4800
2	9600(default)
3	14400

Note: Max Response Time: 300ms

19.20 19.20 AT+QISRVC Select connection

Command	Possible response(s)
AT+QISRVC=?	• +QISRVC:(<connection> list) • OK
AT+QISRVC?	• +QISRVC:<connection> • OK
AT+QISRVC=<connection>	• OK • ERROR

Reference

AT+QISRVC=2

OK

Description

Parameters

<connection>

- 1: ME as Client
- 2: ME as Server

Note:

1. Max Response Time: 300ms
2. When “ME” as Server and “ME” as Client, param is “1” select client connection, param is “2” select server connection.

19.21 19.21 AT+QISHOWRA Show remote ip address and port when recv data

Command	Possible response(s)
AT+QISHOWRA=?	• +QISHOWRA:(<mode> list) • OK
AT+QISHOWRA?	• +QISHOWRA:<mode> • OK
AT+QISHOWRA=<mode>	• OK • ERROR

Reference

AT+QISHOWRA=0

OK

Description

Parameters

<mode>

- 0: don't show (default)
- 1: show, format RECV FROM:<IP ADDRESS>:<PORT>

Note: Max Response Time: 300ms

19.22 19.22 AT+QISCON Save TCPIP scene

Command	Possible response(s)
AT+QISCON=?	• OK
AT+QISCON?	• SHOW APPTCPIP CONTEXT • +QIDNSIP:<mode> • +QIPROMPT:<sendprompt> • +QIHEAD:<iphead> • QISHOWRA:<srip> • QICSGP:<csgp> • Gprs Config APN:<apn> • Gprs Config UserId:<gusr> • Gprs Config Password:<gpwd> • Gprs Config inactivity Timeout:<timeout> • CSD Dial Number:<cnum> • CSD Config UserId:<cusr> • CSD Config Password:<cpwd> • CSD Config rate:<crate> • App Tcpip Mode:<mode> • In Transparent Transfer Mode • Number of Retry:<nmRetry> • Wait Time:<waitTm> • Send Size:<sendSz> • esc:<esc> • • OK
AT+QISCON	• OK

Reference

AT+QISCON?

SHOW APPTCPIP CONTEXT

+QIPROMPT: 0

+QIPHEAD: 0

+QISHOWRA: 0

OK

Description

Parameters

<mode> : reference AT+QIDNSIP

<sendprompt> : reference AT+QIPROMPT

<iphead> : reference AT+QIHEAD

<srip> : reference AT+QISHOWRA

<csgp> : reference AT+QICSGP

<apn> : reference AT+QICSGP

<gusr> : reference AT+QICSGP

<gpwd> : reference AT+QICSGP

<timeout> : reference AT+QICSGP

<cnum> : reference AT+QICSGP

<cusr> : reference AT+QICSGP

<cpwd> : reference AT+QICSGP

<crate> : reference AT+QICSGP

<nmRetry> : reference AT+QITCFG

<waitTm> : reference AT+QITCFG

<sendSz> : reference AT+QITCFG

<esc>: reference AT+QITCFG

Note: Max Response Time: 300ms

19.23 19.23 AT+QIMODE Config TCPIP mode

Command	Possible response(s)
AT+QIMODE=?	• +QIMODE:(0-NORMAL MODE,1-TRANSPARENT MODE) • OK
AT+QIMODE?	• +QIMODE:<mode> • OK
AT+QIMODE=<mode>	• OK • ERROR

Reference

AT+QIMODE=0

OK

Description

Parameters

<mode> :

- 0 : normal mode
- 1 : transparent mode

Note: Max Response Time: 300ms

19.24 19.24 AT+QITCFG Config transparent mode

Command	Possible response(s)
AT+QITCFG=?	• +QITCFG: • (<NmRetry>list,<WaitTm>list,<SendSz>list,<esc>list) • OK
AT+QITCFG?	• +QITCFG:<NmRetry>,<WaitTm>,<SendSz>,<esc> • OK
AT+QITCFG=<NmRetry>,<WaitTm>,<SendSz>,<esc>	• OK • ERROR

Reference

AT+QITCFG=3,1,1460,0

OK

Description

Parameters

<NmRetry> : Retry times

<WaitTm> : interval, unit 100ms

<SendSz> : bytes of send data

<esc> : null

Note:

1. Max Response Time: 300ms
2. <SendSz> max is 1460
3. Must be "AT+QIMUX=0"

19.25 19.25 AT+QISHOWTP Show transport protocol when recv ip head

Command	Possible response(s)
AT+QISHOWTP=?	• +QISHOWTP:(<mode> list) • OK
AT+QISHOWTP?	• +QISHOWTP:<mode> • OK
AT+QISHOWTP=<mode>	• OK • ERROR

Reference

AT+QISHOWTP=0

OK

If QISHOWTP=1 the format is:

- For single IP connection (+QIMUX=0) +IPD(data length)(TCP/UDP):
- For multi IP connection (+QIMUX=1) +RECEIVE(n)(data length):

Description

Parameters

<mode>

- 0: don't show (default)
- 1: show, format: +IPD(data length)(TCP/UDP):

Note:

1. Max Response Time: 300ms
2. If param is "1" is valid, must be "AT+QIHEAD=1".
3. This command will be effective only in single connection mode (+QIMUX=0)

19.26 19.26 AT+QIMUX Start Up Multi-IP Connection

Command	Possible response(s)
AT+QIMUX=?	• +QIMUX:(<mode>list) • OK
AT+QIMUX?	• +QIMUX: <mode> • OK
AT+QIMUX=<mode>	• OK • ERROR

Reference:

AT+QIMUX=0

OK

Description

Parameters

<mode> Connection mode

0	Single IP connection
1	Multi IP connection

Note: Max Response Time: 300ms

19.27 19.27 AT+QISHOWLA Show local ip address

Command	Possible response(s)
AT+QISHOWLA=?	• +QISHOWLA:(<mode> list) • OK
AT+QISHOWLA?	• +QISHOWLA:<mode> • OK
AT+QISHOWLA=<mode>	• OK • ERROR

Reference

AT+QISHOWLA=0

OK

Description

Parameters

<mode>

- 0: don't show (default)
- 1: show, format: TO:<IP ADDRESS>

Note: Max Response Time: 300ms

19.28 19.28 AT+QIFGCNT Config scene

Command	Possible response(s)
AT+QIFGCNT=?	• +QIFGCNT:(<id> list) • OK
AT+QIFGCNT?	• +QIFGCNT:<id>,<channel> • OK
AT+QIFGCNT=<id>	• OK • ERROR

Reference

AT+QIFGCNT=0

OK

Description

Parameters

<id> Scene number, range 0-1

<channel>

0	VIRTUAL_UART_1
1	VIRTUAL_UART_2
2	VIRTUAL_UART_3
3	VIRTUAL_UART_4
255	NULL

Note: Max Response Time: 300ms

19.29 19.29 AT+QISACK Query the sending of data information

Command	Possible response(s)
AT+QISACK=?`	• OK
AT+QISACK?	• +QISACK:<sent>,<acked>,<nAcked> • OK
AT+QISACK=<n>	• +QISACK:<sent>,<acked>,<nAcked> • OK

Reference

AT+QISACK?

+QISACK:4,4,0

OK

Description

Parameters

<n> Query connection number

<sent> send data size

<acked> recv data size in remote

<nAcked> remote don't recv data size of send data

Note:

1. Max Response Time: 300ms
2. Execute command is valid, when "AT+QIMUX=0".
3. Config command is valid, when "AT+QIMUX=1".

19.30 19.30 AT+QINDI Cache recv data

Command	Possible response(s)
AT+QINDI=?	• +QINDI:(<m>list) • OK
AT+QINDI?	• +QINDI:<m> • OK
AT+QINDI=<m>	• OK • ERROR

Reference

AT+QINDI=1

OK

Description

Parameters

<m>

- 0 : don't cache
- 1 : cache

Note: Max Response Time: 300ms

19.31 19.31 AT+QIRD Read data of cache recv

Command	Possible response(s)
AT+QIRD=?	• +QIRD:(<ipAddr>list,<port>list,<type>list,<length>list) • OK
AT+QIRD=<id>,<sc>,<sid>,<len>	• +QIRD:(<ipAddr>:<port>,<type>,<length>) • <data> • OK • • ERROR

Reference

AT+QIRD=0,1,0,30

+QIRD:111.205.140.139:6800,TCP,30 1234567890abcdefghijklmnopqrst

OK

Description

Parameters

<id> Scenc number, range 0~1

<sc> 1:ME as Client; 2:ME as Server

<sid> Socket numbet, range 0~5

<len> read data langth, range 1~1500

<ipAddr> ip address

<port> port

<type> "TCP" or "UDP"

<length> real data size of read

<data> data

Note: Max Response Time: 300ms

19.32 19.32 AT+QISDE Ctrl "AT+QISEND" echo data

Command	Possible response(s)
AT+QISDE=?	• +QISDE:(<m> list) • OK
AT+QISDE?	• +QISDE:<m> • OK
AT+QISDE=<m>	• OK • ERROR

Reference

AT+QISDE=0

OK

Description

Parameters

<m>

- 0: don't echo
- 1: echo

Note: Max Response Time: 300ms

19.33 19.33 AT+QPING Ctrl “AT+QPING” ping server of remote

Command	Possible response(s)
AT+QPING=?	• +QPING:"HOST",(<timeout> list),(<pingnum> list) • OK
AT+QPING="<host>"[,[<timeout>][,<pingnum>]]	• OK • [+QPING:<result>[,<ipAddr>,<bytes>,<time>,<ttl>]...] • +QPING:<finresult>[,<sent>,<rcvd>,<lost>,<min>,<max>,<avg>] • ERROR

Reference AT+QPING=”www.baidu.com”,1,1

OK

+QPING: 0, 111.13.100.92, 36, 985, 255

+QPING: 0, 111.13.100.92, 36, 257, 255

+QPING: 0, 111.13.100.92, 36, 281, 255

+QPING: 0, 111.13.100.92, 36, 281, 255

+QPING: 2, 4, 4, 0, 257, 985, 451

Description

Parameters

<host>

- Ipaddr or domain of remote server.

<timeout>

- Default 1s. Range 1-255.

<pingnum>

- Ping count. Default 4. Range 1-10

<result>

- 0 : Recv response of remote server. Display:<ipAdr>,<bytes>,<time>,<ttl>
- 1 : Ping timeout.

<ipAdr>

- Ipaddr of remote server.

<bytes>

- Langth of ping send data.

<time>

- Request time consuming of ping. Unit ms.

<ttl>

- Current time of ping response.

<finresult>

- 2 : Success of active GPRS.
- 3 : TCP/IP protocol stack busy.
- 4 : Not find of remote server.
- 5 : Fail of active PDP.

<sent>

- Send counts of ping.

<rcvd>

- Send counts of ping and recv response times.

<lost>

- Timeout times of ping.

<min>

- Min response time. Unit : ms.
- Max response time. Unit : ms.

<avg>

- Average response time. Unit : ms.

Note: Max Response Time: param "timeout"

19.34 19.34 AT+QNTP Ctrl "AT+QNTP" Synchronization time by internet.

Command	Possible response(s)
AT+QNTP=?	• +QNTP:"SERVER",(<timeout> list) • OK
AT+QNTP?	• +QNTP:"<server>",<port> • OK
AT+QNTP	• OK • +QNTP:<result> • ERROR
AT+QNTP="<server>"[,<timeout>]	• OK • +QNTP:<result> • ERROR

Reference

Max Response Time: 120s.

Description

Parameters

<server>

- Ipaddr or domain of remote time server.

<port>

- Port of remote time server.

<result>

- 0 : Success of synchronization time by internet.
- 1 : Fail of synchronization time by internet, unknown error.
- 2 : No response of remote time server.
- 3 : TCP/IP protocol stack busy.
- 4 : Not find of remote time server.
- 5 : Fail of active PDP.

Note:

1. This command does not support!
2. Default : Remote time server : “210.72.145.44”, Port : “123”.

19.35 19.35 EXAMLPE

Reference

FUNCTION 1:

1. AT^WOPEN
   - AT^WOPEN=1
   - OK
2. AT^WSCAN
   - AT^WSCAN
   - +WSCAN:9
   - YangYang,3,190,d8:15:0d:48:10:2e,1
   - OK
3. AT^WJOIN
   - AT^WJOIN=”YangYang”,”0711xiaoyue”
   - OK
4. AT^WADDR

- AT^WADDR
- gateway: 192.168.1.1
- ipaddr: 192.168.1.110
- netmask: 255.255.255.0
- dns: 10.102.208.5
- OK

5. AT+QISGTXT=2
   - AT+QISGTXT=2
   - OK
6. AT+QILOCIP
   - AT+QILOCIP
   - 192.168.1.110
   - OK
7. AT+QIOPEN, step 7~9 as client by tcp. start connection
   - AT+QIOPEN=”TCP”,”111.205.140.139”,6800
   - OK
   - CONNECT OK
8. AT+QISEND, input data and press ctrl+z to send
   - AT+QISEND
   - test!!!!
   - SEND OK
9. AT+QICLOSE, close client
   - AT+QICLOSE
   - CLOSE OK
10. AT+QISRVC, step 10~14 as server by tcp. switch server. param=1:switch client; param=2:switch server
    - AT+QISRVC=2
    - OK
11. AT+QILPORT, set protocol & port
    - AT+QILPORT=”TCP”,1234
    - OK
12. AT+QISERVER, start server
    - AT+QISERVER
    - OK
    - SERVER OK
13. AT+QISEND, send data
    - AT+QISEND

- test!!!!
- SEND OK

14. AT+QICLOSE, close server
    - AT+QICLOSE
    - OK
    - SERVER CLOSED
15. AT+QISRVC=2, step 15~20 by UDP. switch server
    - AT+QISRVC=2
    - OK
16. AT+QILPORT, set protocol & port
    - AT+QILPORT=”UDP”,5678
    - OK
17. AT+QISERVER, set server mode is udp server,default tcp server
    - AT+QISERVER=1
    - OK
18. AT+QISERVER, start server
    - AT+QISERVER
    - OK
    - SERVER OK
19. AT+QISEND, send data
    - AT+QISEND
    - test!!!!
    - SEND OK
20. AT+QICLOSE, close server
    - AT+QICLOSE
    - OK
    - SERVER CLOSED
21. AT+QINDI, step 21~23 recv data for tcp/udp/server/client. default 0 (bypass). 1 is means use buffer
    - AT+QINDI=1
    - OK
22. +QIRDI, automatic report, support when “AT+QINDI=1”
    - +QIRDI:0,1,0
23. AT+QIRD=id,sc,sid,readlen // support when “AT+QINDI=1”, read revc data in buffer
    - AT+QIRD=0,1,0,8
    - +QIRD:192.168.1.130:6800,TCP,8
    - 12345678 //received data

- OK

FUNCTION 2:

1. AT+CGATT
   - AT+CGATT=1
   - +CGATT:1
   - OK
2. AT+CGACT
   - AT+CGACT=1,1
   - OK
3. AT+QICSGP
   - AT+QICSGP=1,"CMNET"
   - OK
4. AT+QIREGAPP
   - AT+QIREGAPP
   - OK
5. AT+QIACT , active GPRS
   - AT+QIACT
   - OK
6. Reference FUNCTION 1 step 6~20.
7. AT+QICLOSE, close server/client. if execute already, ignore.
8. AT+QIDEACT, close GPRS
   - AT+QIDEACT
   - DEACT OK

CHAPTER

TWENTY

20 COAP COMMANDS

Contents

20.1 20.1 AT^COAPGET Get the resource from COAP server

Command	Possible response(s)
AT^COAPGET=<url>, <cmdline>,[timer]	If success it returns the resource length, contents and OK, if error ir returns +CME ERROR: <err>

Parameters

<url> A string parameter which is the address of the resource, usually the url includes uri-host, uri-port, uri-path and uri- query.

<cmdline> A string parameter which includes many optional parameters, each optional parameter must be followed by an optional tag.

[timer] A integer parameter which indicates the execution cycle of the request, and if timeout request must be terminated and clear the request.

<n> The length of the <string> response from COAP server.

<string> The response content from COAP server.

Max Response Time

If [timer] is not set, the max response time 90 seconds.

If [timer] is set, the max response time [timer]+5 seconds.

Note: GPRS or WIFI must be connected before AT+COAPGET executed.

20.2 20.2 AT^COAPPUT Update the resource from COAP server

Command	Possible response(s)
AT^COAPPUT=<url>,<cmdline>,[timer],[data]	If success it returns the resource length, contents and OK, if error ir returns +CME ERROR: <err>

Parameters

<url> A string parameter which is the address of the resource, usually the url includes uri-host, uri-port, uri-path and uri- query.

<cmdline> A string parameter which includes many optional parameters, each optional parameter must be followed by an optional tag.

[timer] A integer parameter which indicates the execution cycle of the request, and if timeout request must be terminated and clear the request.

[data]

- 0 No need data input
  - 1 need input data
  - 1 default value

<n> The length of the <string> response from COAP server.

<string> The response content from COAP server.

Max Response Time

If [timer] is not set, the max response time 90 seconds.

If [timer] is set, the max response time [timer]+5 seconds.

Note: Before executed COAPPUT needs GPRS or WIFI connect and data input, use AT^COAPDATA prepare the input resource data.

20.3 20.3 AT^COAPPOST Create the resource on the server

Command	Possible response(s)
AT^COAPPOST=<url>,<cmdline>,[timer],[data]	If success it returns the resource length, post contents and OK, if error ir returns +CME ERROR: <err>

Parameters

See AT^COAPPUT command

20.4 20.4 AT^COAPDELETE Delete the resource on the server

Command	Possible response(s)
AT^COAPDELETE=<url>, <cmdline>,[timer]	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

See AT^COAPGET command

20.5 20.5 AT^COAPDATA Input the data from serial port or sscom tool

Command	Possible response(s)
AT^COAPDATA=<length>, [timer]	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<length> 1 to 319488 The data length of input.

[timer] Timer is the data input cycle, if timeout data input must be terminated. The <length> is input data already.

Max Response Time

If [timer] is not set, the max response time 90 seconds.

If [timer] is set, the max response time [timer]+5 seconds.

Note: If auto input end with resource or length or timer, if manual end with ctrl+z.

20.6 20.6 AT^COAPREG Configuration data register to the server

Command	Possible response(s)
AT^COAPREG=<reset>	If success it returns OK, if error ir returns +CME ERROR: <err>

Parameters

<reset> 1 Update the ICCID saved in NV item.

0 ICCID saved in NV item without updated.

Note: GPRS or WIFI must be connected before AT^COAPREG executed.

20.7 20.7 Parameters and response explanation

cmdline

- Cmdline include many optional parameters, each optional parameter must be followed by an optional tag, and cmdline also include must parameter uri, uri doesn't need tag but must be at the end of cmdline.
- General tag: -t content-format –p port -k psk –u userId

Content-Format

- The payload type of the coap message.
- 1: plain
- 2: text/plain
- 3: link
- 4: link-format
- 5: application/link-format
- 6: xml
- 7: binary
- 8: octet-stream
- 9: application/octet-stream
- 10: exi
- 11: application/exi
- 12: json
- 13: application/json

psk

- Pre-shared key for the specified user. This argument required with PSK to be available.

userId

- User identity for pre-shared key mode. This argument requires DTLS with PSK to be available.

port

- The coap default port is 5683.While coaps default port is 5684 which requires DTLS to be available.

url

- The address of the resource:
- 1: Uri-Host Option specifies the Internet host of the resource being requested.
- 2: Uri-Port Option specifies the transport-layer port number of the resource.
- 3: Uri-Path Option specifies one segment of the absolute path to the resource.
- 4: Uri-Query Option specifies one argument parameterizing the resource.

Server response error

- Client Error 4.xx
- 4.00 Bad Resuest
- 4.01 Unauthorized

- 4.02 Bad Option
- 4.03 Forbidden
- 4.04 Not Found
- 4.05 Method Not Allowed
- 4.06 Not Acceptable
- 4.12 Precondition Failed
- 4.13 Request Entity Too Large
- 4.15 Unsupported Content-Format
- Server Error 5.xx
- 5.00 Internal Server Error
- 5.01 Not Implemented
- 5.02 Bad Gateway
- 5.03 Service Unavailable
- 5.05 Proxying Not Supported

20.8 20.8 Example of COAP client

GPRS connected

1. *AT+CGATT=1*
   - +CGATT:1
   - OK
2. *AT+CGDCONT=1,"IP","cmnet"*
   - OK
3. *AT+CGACT=1,1*
   - OK

COAP command

1. *AT^COAPGET="coap://californium.eclipse.org:5683/","-p 5683"*
   - +COAP(448):
   - **
   - CoAP RFC 7252 Cf 2.0.0-SNAPSHOT
   - **
   - This server is using the Eclipse Californium (Cf) CoAP framework published under EPL+EDL: http://www.eclipse.org/californium/(c) 2014, 2015, 2016 Institute for Pervasive Computing, ETH Zurich and others
   - **
   - OK
2. *AT^COAPDATA=11*

- testforpost
- OK

AT^COAPPOST=”coap://californium.eclipse.org:5683/large-post”,”-t text/plain -p 5683”,20,1

- +COAP(11):TESTFORPOST
- OK

3. *AT^COAPDELETE=”coap://californium.eclipse.org:5683/obs”,”-p 5683”,20,1*
   - OK
4. *AT^COAPDATA=10*
   - testforput
   - OK

AT^COAPPUT=”coap://californium.eclipse.org:5683/large-update”,”-t text/plain -p 5683”,20,1

- OK

CHAPTER

TWENTYONE

21 CMIOT_TCP/IP COMMANDS

Contents

21.1 21.1 AT+IPSTART Start Up TCP Or UDP Connection

Command	Possible response(s)
• **WRITE COMMAND** - AT+IPSTART=[<index>,]<mode>, <IPaddress>/ <domain name>,<port>	• **if connection already exist** – OK – ALREADY CONNECT • **if connect success** – OK – CONNECT OK • **if connect fail** – OK – CONNECT FAIL
• **TEST COMMAND** -AT+IPSTART=?	• **CMMUX=0** – +IPSTART:("TCP"/"tcp","UDP"/"udp"), ((0-255).(0-255).(0-255).(0-255)), (0-65536) • **CMMUX=1** – +IPSTART:[(0~4),]("TCP"/"tcp","UDP"/ "udp"),((0-255).(0-255).(0-255).(0-255)), (0-65536)

Reference

Max Response Time:

75 seconds	When mode is multi-IP state
160 seconds	When mode is single state, and the state is IP INITIAL

Parameters

<index> 0..4 A numeric parameter which indicates the connection number

<mode> A string parameter which indicates the connection type

"TCP"	Establish a TCP connection
"UDP"	Establish a UDP connection

<IP address> A string parameter which indicates remote server IP address.

<domain name> A string parameter which indicates remote server domain name.

<port> Remote server port.

Note:

- This command allows establishment of a TCP/UDP connection only when the state is IP INITIAL or IP STATUS when it is in single state. In multi-IP state, the state is in IP STATUS only. So it is necessary to process "AT+CIPSHUT" before user establishes a TCP/UDP connection with this command when the state is not IP INITIAL or IP STATUS.

21.2 21.2 AT+IPSEND Send Data Through TCP Or UDP Connection

Command	Possible response(s)
AT+IPSEND	• **if connection exist and send success** – SEND OK • **if send fail** – SEND FAIL • **if TCP/UDP disconnect** – CONNECTION CLOSE
CMMUX=0 • AT+IPSEND=<length> **CMMUX=1** • AT+IPSEND=<index>, <length>	• **if connection exist and send success** – SEND OK • **if send fail** – SEND FAIL • **if TCP/UDP disconnect** – CONNECTION CLOSE

Reference

- Response >, then type data for send, tap CTRL+Z to send, tap ESC to cancel the operation
- The data length which can be sent depends on network status.
- Only send data at the status of established connection.

Parameters

<index> 0..4 A numeric parameter which indicates the connection number

<length> A numeric parameter which indicates the length of sending data, MAX size 1460

Note:

- +IPSEND EXE Command can only be used in single IP connection mode (+CMMUX=0) and to send data on the TCP or UDP connection that has been established already. Ctrl-Z is used as a termination symbol. ESC is used to cancel sending data. There are at most 1460 bytes which can be sent at a time.

21.3 21.3 AT+IPCLOSE Close TCP Or UDP Connection

Command	Possible response(s)
AT+IPCLOSE=[<index>]	• **if connection closed successfully** – OK
AT+IPCLOSE=?	OK

Parameters

<indexd> 0..4 A numeric parameter which indicates the connection number

Note:

- Use the "AT+IPSTART" command to establish a connection, regardless of the success or timeout, after used must call "AT+IPCLOSE" to release the resources. If the server is disconected will response CONNECTION CLOSED:<index>, alse need to excute "AT+IPCLOSE" release the resources.

21.4 21.4 AT+CMDNSGIP Query The IP Address Of Given Domain Name

Command	Possible response(s)
AT+CMDNSGIP=<domain name>	• OK • **If successful** – +CMDNSGIP: <IP address> • **If fail** – +CMDNSGIP:0,<dns error code>
AT+CMDNSGIP=?	OK

Parameters

<domain name> A string parameter which indicates the domain name

<IP address> A string parameter which indicates the first IP address corresponding to the domain name

<dns error code> A numeric parameter which indicates the error code

8	DNS COMMON ERROR
3	NETWORK ERROR

There are some other error codes as well.

Note:

- NULL

21.5 21.5 AT+CMPROMPT Set show “>” & “SEND OK” when send data

Command	Possible response(s)
AT++CMPROMPT=<send prompt>	• OK • +CME ERROR
AT++CMPROMPT?	• +CMPROMPT: <send prompt> • OK
AT++CMPROMPT=?	• +CMPROMPT:(0,3) • OK

Parameters

<send prompt> A numeric parameter which indicates whether to echo prompt “>” after module issues AT+CIPSEND command.

0	It shows “SEND OK” but does not prompt echo “>” when sending is successful.
1	It prompts echo “>” and shows “SEND OK” when sending is successful.
2	It neither prompts echo “>” nor shows “SEND OK” when sending is successful. 3 It prompts echo “>” and shows “<index>, SEND OK” when sending is successful.

<indexd> 0..4 A numeric parameter which indicates the connection number

Note:

- NULL

21.6 21.6 AT+CMMODE Select TCPIP Application Mode

Command	Possible response(s)
AT++CMMODE=<mode>	• OK • +CME ERROR
AT++CMMODE?	• +CMMODE: <mode> • OK
AT++CMMODE=?	• +CMMODE: (0,1) • OK

Parameters

<mode>

0	Normal mode
1	Transparent mode

In transparent mode, after connection established, UART will be waiting data. Input data will be send to server, and data received from server will be output UART directly,exit waiting data with "+++", after exit call AT+IPCLOSE release the resources.

Note:

- 1. Transparent mode can be set only in single IP connection mode.
- 2. In transparent mode use AT+IPSTART establish connection automatically enter the data transparent mode.
- 3. In transparent mode establish connection success will return CONNECT, else return FAIL.
- 4. If the connection disconected, the transparent mode exit also, then need to excute "AT+IPCLOSE" release the resources.
- 5. Exit transparent mode with "+++", after exit call AT+IPCLOSE release the resources.

21.7 21.7 AT+CMMUX Start Up Multi-IP Connection

Command	Possible response(s)
AT+CMMUX=<mode>	• OK • ERROR
AT+CMMUX?	• +CMMUX: <mode> • OK
AT+CMMUX=?	• +CMMUX:(0,1) • OK

Parameters

<mode> Connection mode

0	Single IP connection
1	Multi IP connection

Note:

- In transparent mode not allowed multi IP connection. MAX 5 connections can be established at the same time.

21.8 21.8 AT+CMSACK Query Previous Connection Data Transmitting State

Command	Possible response(s)
• **CMMUX=0** – AT+CMSACK?	• **CMMUX=0** – +CMSACK:<totalSend>,<totalRecv>,<sent>,<acked>,<nAcked> – OK
AT+CMSACK=?	OK
• **CMMUX=1** – AT+CMSACK=<n>	• **CMMUX=1** – +CMSACK:<totalSend>,<totalRecv>,<sent>,<acked>,<nAcked> – OK

Reference

Max Response Time: 300ms

Description

Parameters

<n> A numeric parameter which indicates the connection number

<totalSend> The data amount which has been sent from setup

<totalRecv> The data amount which has been received from setup

<sent> The data amount which has been sent

<acked> The data amount confirmed successfully by the server

<nAcked> The data amount without confirmation by the server

Note:

- AT+CMSACK? can be excuted only in the single mode.
- AT+CMSACK=<n> can be excuted only in the multi mode.

21.9 21.9 AT+CMNDI Cache recv data

Command	Possible response(s)
`AT+CMNDI=?`	• `+CMNDI:(0,1),(0,1)` • `OK`
`AT+CMNDI?`	• `+CMNDI:<m>[,<sw>]` • `OK`
`AT+CMNDI=<m>[,<sw>]`	• `OK` • `ERROR`

Description

Parameters

<m>

- 0 : don't cache
- 1 : cache and response to UART with +CMRD:<sid>,<len>,<total>

[sw]

- 0 : close cache URC
- 1 : open cache URC

The parameter can be no set, default is 1

<sid> 0..4 A numeric parameter which indicates the connection number, when AT+CMMUX=0,<sid>=0

<len> The data amount which has been received at this time

<total> The data amount which has been cached

Note: NULL

21.10 21.10 AT+CMRD Read data of cache recv

Command	Possible response(s)
AT+CMRD=?	• +CMRD:(0,4),(0,4096) • OK
AT+CMRD=<sid>,<len>	• <data> • OK
AT+CMRD?	+CMRD:<sid>,<lenlr>,<lentl>

Reference

Max Response Time: 300ms

Description

Parameters

<sid> A numeric parameter which indicates the connection number, range 0~4(when AT+CMMUX=0, <sdi>=0)

<len> Read data length, range 1~4096

<data> Data

<lenlr> Read data langth last time

<lentl> The rest of the data amount from cached data

Note: NULL

21.11 21.11 AT+CMPING Ctrl "AT+CMPING" ping server of remote

Command	Possible response(s)
AT+CMPING=?	• +PING:DNS/IP address • OK
AT+CMPING="<host>"	• OK • [+CMPING:<result>[,<ipAddr>,<bytes>,<time>,<ttl>]...] • +CMPING:<finresult>[,<sent>,<rcvd>,<lost>,<min>,<max>,<avg>] • ERROR

Reference

Max Response Time: param "timeout"

Description

Parameters

<host> Ipaddr or domain of remote server.

<timeout> Default 1s. Range 1-255.

<pingnum> Ping count. Default 4. Range 1-10

<result>

- 0 : Recv response of remote server. Display:<ipAdr>,<bytes>,<time>,<ttl>
- 1 : Ping timeout.

<ipAdr> Ipaddr of remote server.

<bytes> Langth of ping send data.

<time> Request time consuming of ping. Unit ms.

<ttl> Current time of ping response.

<finresult>

- 2 : Success of active GPRS.
- 3 : TCP/IP protocol stack busy.
- 4 : Not find of remote server.
- 5 : Fail of active PDP.

<sent> Send counts of ping.

<rcvd> Send counts of ping and recv response times.

<lost> Timeout times of ping.

<min>

- Min response time. Unit : ms.
- Max response time. Unit : ms.

<avg> Average response time. Unit : ms.

Note: NULL

21.12 21.12 AT+CMHEAD Add an IP head at the beginning of a package received

Command	Possible response(s)
AT+CMHEAD=<mode>	• OK • +CME ERROR <err>
AT+CMHEAD?	• +CMHEAD: <mode> • OK
AT+CMHEAD=?	• +CMHEAD:(0,1) • OK

Reference

Max Response Time: 100ms

Description

Parameters

<mode> A numeric parameter which indicates whether an IP header is added to the received data or not.

0	Not add IP header
1	Add IP header

Note:

- NULL

21.13 21.13 AT+CMSHOWRA Show Remote IP Address And Port When Received Data

Command	Possible response(s)
`AT+CMSHOWRA=<mode>`	• `OK` • `+CME ERROR <err>`
`AT+CMSHOWRA?`	• `+CMSHOWRA: <mode>` • `OK`
`AT+CMSHOWRA=?`	• `+CMSHOWRA:(0,1)` • `OK`

Reference

CMSHOWRA=1 the format is:`+RECV FROM:<IP ADDRESS>:<PORT>`

Description

Parameters

<mode> A numeric parameter which shows remote IP address and port.

0	Do not show the prompt
1	Show the prompt

Note:

- This command will be effective only in single connection mode (`+CMMUX=0`)
- Only when `+CMHEAD` is set to 1, the setting of this command will Work.

21.14 21.14 AT+CMSHOWTP Display Transfer Protocol In IP Head When Received Data

Command	Possible response(s)
AT+CMSHOWTP=<mode>	• OK • +CME ERROR <err>
AT+CMSHOWTP?	• +CMSHOWTP: <mode> • OK
AT+CMSHOWTP=?	• +CMSHOWTP:(0,1) • OK

Reference

- If +CMSHOWTP=1, the format is +IPD,<data size>,<TCP/UDP>:<data>

Description

Parameters

<mode> A numeric parameter which indicates whether to display transfer protocol in IP header to received data or not

0	Not display transfer protocol
1	Display transfer protocol

Note:

- This command will be effective only in single connection mode (+CMMUX=0)
- Only when +CMHEAD is set to 1, the setting of this command will Work.

21.15 21.15 AT+CMSHOWLA Show remote ip address when send data

Command	Possible response(s)
AT+CMSHOWLA=?	• +CMSHOWLA:(0,1) • OK
AT+CMSHOWLA?	• +CMSHOWLA:<mode> • OK
AT+CMSHOWLA=<mode>	• OK • ERROR

Reference

Max Response Time: 300ms

Description

Parameters

<mode>

- 0: don't show (default)
- 1: show, format: TO:<IP ADDRESS>

Note:

- This command will be effective only in single connection mode (`+CMMUX=0`)
- Only when `+CMHEAD` is set to 1, the setting of this command will Work.

21.16 21.16 AT+CMIPMODE Config IPSEND data mode in normal mode (CMMODE=0)

Command	Possible response(s)
`AT+CMIPMODE=?`	• `+CMIPMODE:(0,1)` • `OK`
`AT+CMIPMODE?`	• `+CMIPMODE:<mode>` • `OK`
`AT+CMIPMODE=<mode>`	• `OK` • `ERROR`

Reference

Max Response Time: 300ms

Description

Parameters

<mode> :

The data send mode with AT+IPSEND

- 0 : string data
- 1 : hex data

Note: The max data length of sending is 1k

21.17 21.17 AT+CMSTATE Query the connection status of the current access

Command	Possible response(s)
AT+CMSTATE=?	• OK
AT+CMSTATE	• **AT+CMMUX=0** – +CMSTATE:<index>,<mode>,<addr>,<port>,<socketstate> – OK • **AT+CMMUX=1** – +CMSTATE:<index>,<mode>,<addr>,<port>,<state><CR><LF>) – list ...... – OK

Reference

Max Response Time: 300ms

Description

Parameters

<state> Strings parameter which connect state

When AT+CMMUX=0 :

“IP INITIAL”	initialization
“IP START”	start task
“IP CONFIG”	configuration scene
“IP IND”	active GPRS/CSD
“IP GPRSACT”	config receiving scene
“IP STATUS”	get local ip addrs
“TCP CONNECTING”	TCP connecting
“UDP CONNECTING”	UDP connecting
“IP CLOSE”	TCP/UDP connection close
“CONNECT OK”	TCP/UDP connection success
“PDP DEACT”	GPRS/CSD scene abnormal closed

When AT+CMMUX=1 :

“IP INITIAL”	initialization
“IP START”	start task
“IP CONFIG”	configuration scene
“IP IND”	active GPRS/CSD
“IP GPRSACT”	config receiving scene
“IP STATUS”	get local ip addrs
“IP PROCESSING”	data processing
“PDP DEACT”	GPRS/CSD scene abnormal closed

<index> 0~4

<mode> Connection type “TCP” TCP connection “UDP” UDP connection

<addr> ip address

<port> port

<socketstate> connection status of the current access, “INITIAL”,”CONNECTED”

Note: NULL

21.18 21.18 AT+CMLPORT Get Local Port

Command	Possible response(s)
AT+CMLPORT?	• +CMLPORT: <index>,<port><CR><LF> • list ...... • OK
AT+CMLPORT=<index>, <port>	• OK • ERROR

Reference

Max Response Time: 300ms

Description

Parameters

<index> 0..4 A numeric parameter which indicates the connection number

<port> 0-65535 A numeric parameter which indicates the local port. Default value is 0, a port can be dynamically allocated a port.

Note:

- This command will be effective when +CMMUX=1.

21.19 21.19 AT+CMLOCIP Get Local IP Address

Command	Possible response(s)
AT+CMLOCIP=?	OK
AT+CMLOCIP	• <IP address> • OK • ERROR

Reference

Max Response Time: 300ms

Description

Parameters

<IP address> A string parameter which indicates the IP address assigned from GPRS or CSD.

Note:

- Only after PDP context is activated, local IP address can be obtained by `AT+CMLOCIP`, otherwise it will respond ERROR. To see the status use `AT+CMSTATE` command. Status should be:IP GPRSACT, TCP CONNECTING, UDP CONNECTING, SERVER LISTENING, IP STATUS, CONNECT OK, TCP CLOSING, UDP CLOSING, TCP CLOSED, UDP CLOSED in single-connection mode (see<state> parameter);IP STATUS, IP PROCESSING in multi-connection mode (see <state>parameter).

21.20 21.20 AT+CMSTAT Query the current connection state

Command	Possible response(s)
`AT+CMSTAT=?`	• `OK`
`AT+CMSTAT`	• **AT+CMMUX=0** – `STATE:<index>,<mode>,<addr>,<port>` – `OK` • **AT+CMMUX=1** – `(+CMSTAT:<index>,<mode>,<addr>, <port><CR><LF>)` – `list ......` – `OK`

Reference

Max Response Time: 300ms

Description

Parameters

<state> Strings parameter which connect state

“IP INITIAL”	initialization
“IP START”	start task
“IP CONFIG”	configuration scene
“IP IND”	active GPRS/CSD
“IP GPRSACT”	config receiving scene
“IP STATUS”	get local ip addrs
“TCP CONNECTING”	TCP connecting
“UDP CONNECTING”	UDP connecting
“IP CLOSE”	TCP/UDP connection close
“CONNECT OK”	TCP/UDP connection success
“PDP DEACT”	GPRS/CSD scene abnormal closed

In ATV0:

0	“IP INITIAL”
1	“IP START”
2	“IP CONFIG”
3	“IP IND”
4	“IP GPRSACT”
6	“TCP CONNECTING” or “UDP CONNECTING”
7	“IP CLOSE”
8	“CONNECT OK”
9	“PDP DEACT”

<index> 0~5

<mode> Connection type “TCP” TCP connection “UDP” UDP connection

<addr> ip address

<port> port

Note: NULL

21.21 21.21 EXAMLPE

Reference

1. AT+CGATT

- AT+CGATT=1
- +CGATT:1
- OK

2. AT+CGDCONT

- AT+CGDCONT=1,”IP”,”cmnet”
- OK

2. AT+CGACT

- AT+CGACT=1,1

- OK

4. AT+IPSTART

- AT+IPSTART=”TCP”,”111.205.140.139”,6800
- OK
- CONNECT OK

5. AT+IPSEND, input data and press ctrl+z to send

- AT+IPSEND=4
- test
- SEND OK

6. AT+IPCLOSE, close client

- AT+IPCLOSE
- OK

7. AT+CMLPORT, set protocol & port

- AT+CMLPORT=”TCP”,1234
- OK

8. AT+QILPORT, set protocol & port

- AT+QILPORT=”UDP”,5678
- OK

9. AT+CMRD=id,sc,sid,readlen // support when “AT+QINDI=1”, read revc data in buffer

- AT+CMRD=0,1,0,8
- +CMRD:192.168.1.130:6800,TCP,8
- 12345678 //received data
- OK

CHAPTER

TWENTYTWO

22 MQTT COMMANDS

Contents

22.1 22.1 AT+MQTTCONN Create MQTT connection

Command	Possible response(s)
`AT+MQTTCONN=<host>, <port>,<clientid>, <keepalive>, <cleansession>, [username],[password]`	• **`success:`** `OK` • **`fail:`** `+CME ERROR: <err>`

Parameters

<host> host name of MQTT server.

<port> port of MQTT server.

<clientid> client ID.

<keepalive> keep-alive of mqtt connection; time in milliseconds.

<cleansession> whether clean session.

[username] user name.

[password] password.

22.2 22.2 AT+MQTTSUBUNSUB Subscribe or Unsubscribe a MQTT topic

Command	Possible response(s)
AT+MQTTSUBUNSUB=<topic>, <sub flag>,<qos>	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<topic> topic of mqtt

<sub flag>

1: subscribe 0: unsubscribe

<qos> quality of service values include 0, 1, 2

22.3 22.3 AT+MQTTPUB Publish a MQTT message on topic

Command	Possible response(s)
AT+MQTTPUB=<topic>, <message>,<qos>, <duplicate>,<retain>	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<topic> topic of MQTT, see note for max length

<message> message to publish, see note for max length

<qos> quality of service values include 0, 1, 2

<duplicate> duplicate flag of MQTT, value inclue 0, 1

<retain> retain flag of MQTT, value include 0, 1

Note: the max length of mqtt publish package is set to 256. the total lenght of topic, message and other mqtt package data must be no larger than it, other mqtt package data may use 9 byte at max, so the max length of topic and message is the length of mqtt publish package subtract the length of other mqtt package data

22.4 22.4 AT+MQTTDISCONN Disconnect the MQTT connection

Command	Possible response(s)
AT+MQTTDISCONN	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters no

22.5 22.5 Examples to use MQTT

1) Connect to mosquito

1. **Craete MQTT connection** AT+MQTTCONN=”test.mosquitto.org”,1883,”rdatest”,90,0
2. **Subscribe a MQTT topic** AT+MQTTSUBUNSUB=”/rda/test_topic”,1,1
3. **Publish a MQTT message on topic** AT+MQTTPUB=”/rda/test_topic”,”hello mqtt message published by RDA”,1,0,0
4. **Unsubscribe a MQTT topic** AT+MQTTSUBUNSUB=”/rda/test_topic”,0
5. **Disconnect MQTT connection** AT+MQTTDISCONN

1) Connect to onenet

To connection to onenet, firstly we should register account on onenet website: https://open.iot.10086.cn, and create product and device, then we will get product id, device id, and auth_info; use device id to fill clientid, product id to fill username, and auth_info to fill password.

1. **Craete MQTT connection** AT+MQTTCONN=”183.230.40.39”,6002,”23036025”,120,0,”112333”,”ABC123RDA”
2. **Subscribe a MQTT topic** AT+MQTTSUBUNSUB=”RDATEST_TOPIC”,1,1
3. **Publish a MQTT message on topic** AT+MQTTPUB=”RDATEST_TOPIC”,”hello mqtt published by rda”,1,0,0
4. **Unsubscribe a MQTT topic** AT+MQTTSUBUNSUB=”RDATEST_TOPIC”,0
5. **Disconnect MQTT connection** AT+MQTTDISCONN

CHAPTER

TWENTYTHREE

23 ALIMQTT COMMANDS

Contents

23.1 23.1 AT+ CLOUDAUTH Authenticate for aliyun IOT

Command	Possible response(s)
`AT+CLOUDAUTH=<product key>,<device name>, <device key>`	• **`success:`** `OK` • **`fail:`** `+CME ERROR: <err>`

Parameters

<product key> product key provided by aliyun.

<device name> device name

<device key> device key provided by aliyun.

Note: To get product key, device name, device key, Regist a account on website iot.console.aliyun.com, Create product to get product key, Create device to get device name and device key

23.2 23.2 AT+CLOUDCONN Create MQTT connection to aliyun

Command	Possible response(s)
AT+CLOUDCONN=<keep-alive>,<qos>,<version>	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<keep-alive> keep-alive of MQTT connection, time in milliseconds.

<qos> qos of MQTT

<version> MQTT Version, only support 4, MQTT3.1.1

Note: Before use this command, authentication must be executed, see AT+CLOUDAUTH

23.3 23.3 AT+CLOUDSUB Subscribe a MQTT topic from aliyun

Command	Possible response(s)
AT+CLOUDSUB=<topic>,<qos>	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<topic> MQTT topic to subsribe

<qos > qos of MQTT

Note: Before use this command, MQTT connection must be created, see AT+CLOUDCONN

23.4 23.4 AT+CLOUDPUB Publish a MQTT message on topic to aliyun

Command	Possible response(s)
AT+CLOUDPUB =<topic>,<qos>,<message>	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<topic> MQTT topic to publish

<qos > qos of MQTT

<message> message to publish

Note: Before use this command, MQTT connection must be created, see AT+CLOUDCONN

23.5 23.5 AT+CLOUDUNSUB Unsubscribe a MQTT topic from aliyun

Command	Possible response(s)
AT+CLOUDUNSUB=<topic>	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<topic> MQTT topic to unsubscribe

Note: Before use this command, MQTT connection must be created, see AT+CLOUDCONN

23.6 23.6 AT+CLOUDDISCONN Disconnect the connecton from aliyun

Command	Possible response(s)
AT+CLOUDDISCONN	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters no

23.7 23.7 Examples to use ALIMQTT

1) Connect to aliyun

To connect to aliyun, firstly we should register an account on aliyun websit: https://iot.console.aliyun.com; create product to get product key, and create device to get device name and device key

1. **aliyun authentication** AT+CLOUDAUTH=”yfTuLfBJTiL”,”TestDeviceForDemo”,”fSCl9Ns5YPnYN8Ocg0VEel1kXFnRlV6c”
2. **Craete MQTT connection** AT+CLOUDCONN=160,0,4
2. **Subscribe a MQTT topic** AT+CLOUDSUB=”/yfTuLfBJTiL/TestDeviceForDemo/data”,1
3. **Publish a MQTT message on topic** AT+CLOUDPUB=”/yfTuLfBJTiL/TestDeviceForDemo/data”,1,”hello MQTT publish”
4. **Unsubscribe a MQTT topic** AT+CLOUDUNSUB=”/yfTuLfBJTiL/TestDeviceForDemo/data”
5. **Disconnect MQTT connection** AT+CLOUDDISCONN

CHAPTER

TWENTYFOUR

24 OCEANCONNECT COMMANDS

Contents

24.1 24.1 AT+NCDPOPEN Bind device to OceanConnect server

Command	Possible response(s)
`AT+NCDPOPEN=<ip_addr>[,<port>][,<psk>]`	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<ip_addr> OceanConnect server IP address

<port> OceanConnect server IP port. Defaut is 5683 when not set or set to 0.

<psk> For safety device. Dynamic generated by OceanConnect or set by user when Bind devices to server.

Notes

IMEI must be set first. Then register devices at https://180.101.147.135:8843. NodeID must be set as IMEI

24.2 24.2 AT+NCDPCLOSE Unbind device from OceanConnect server

Command	Possible response(s)
AT+NCDPCLOSE	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters no

24.3 24.3 AT+NMGS Send message to OceanConnect server.

Command	Possible response(s)
AT+NMGS=<length>,<data>	• **success:** OK • **fail:** +CME ERROR: <err>

Parameters

<length> Decimal length of message

<data> Data to be transmitted in hex string format

24.4 24.4 AT+NMGR Get a Message that have been received from OceanConnect server

Command	Possible response(s)
AT+NMGR	• **If success:** – <length>,<data> – OK • **If failed:** – +CME ERROR:<err>

Description

The command returns the oldest buffered message and deletes from the buffer.If new message indications (AT+NNMI) are truned on then received messages will not be avaiable via this command.

Parameters

<length> Decimal length of message

<data> Data to be transmitted in hex string format

24.5 24.5 AT+NNMI New Message Indications

Command	Possible response(s)
AT+NNMI?	• **If success:** – +NNMI:<status> – OK • **If failed:** – +CME ERROR:<err>
AT+NNMI=<status>	• **If success:** – OK • **If failed:** – +CME ERROR:<err>

Description

The command sets or gets new message indications that are sent. New message indications can be sent when a downstream message is received by the terminal from the OceanConnect server.

When new message indications and message are enabled (AT+NNMI=1),all currently buffered messages will be returned in the format of "+NNMI: <length>,<data>".

If indications alone are turned on (AT+NNMI=2),each newly received message triggers an indication that a mew datagram is waiting using the unsolicited informational response. The buffered messages can be collected using AT+NMGR.The format of response is: "+NNMI".

The default setting is 0,which indicates no indications are sent.

Parameters

<status>

0	No indications,the default setting
1	Indications and message
2	Indications only

24.6 24.6 Examples

1. *AT+CGACT=1,1*

   OK

2. *at+egmr=1,7,"862391039046100"* //set IMEI

   OK

3. *AT+NCDPOPEN="180.101.147.115" // AT+NCDPOPEN="180.101.147.115",5684,"0ad6ba6e4719bb376f3c40fff154221b"*

   OK

4. *AT+NNMI=1*

   OK

   AT+NMGS=7,010548454c4c4f

OK

+NNMI: 4,aaaa0000

5. *AT+NNMI=0*

   OK

   AT+NMGS=7,010548454c4c4f

   OK

   AT+NMGR

   4,aaaa0000

   OK

6. *AT+NCDPCLOSE*

   OK

CHAPTER

TWENTYFIVE

25 GPS COMMANDS

Contents

25.1 25.1 AT+QGNSSC Control Power Supply of GNSS Module

Description

The command is used to control the power supply of GNSS module.

Syntax

Command	Possible response
Test Command AT+QGNSSC=?	+QGNSSC: (list of supported <mode>s) OK
Read Command AT+QGNSSC?	+QGNSSC: <mode> OK
Set Command AT+QGNSSC=<mode>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<mode>	0 Power off GNSS module 1 Power on GNSS module

Remark

In Stand-alone solution, the power supply of GNSS is controlled by an external circuit rather than the PIN GNSS_VCC_EN. In such case, command AT+QGNSSC cannot be used and thus can be ignored.

Example

AT+QGNSSC? +QGNSSC: 0 OK
AT+QGNSSC=1 OK

25.2 25.2 AT+QGNSSRD Read GNSS Navigation Information

Description

The command is used to get the GNSS navigation information.

Syntax

Command	Possible response
Test Command AT+QGNSSRD=?	+QGNSSRD: (list of supported <item>s) OK
Read Command AT+QGNSSRD?	+QGNSSRD: (information of all supported <item>s) OK
Set Command AT+QGNSSRD=(information of <item>s)	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<item>	“NMEA/GGA”: Get GGA sentence “NMEA/GLL”: Get GLL sentence “NMEA/GSA”: Get GSA sentence “NMEA/GSV”: Get GSV sentence “NMEA/RMC”: Get RMC sentence “NMEA/VTG”: Get VTG sentence

Example

AT+QGNSSRD?

+QGNSSRD: $GNRMC,033836.000,A,3150.8272,N,11711.9889,E,0.00,140.50,140716,,,D*72
$GNVTG,140.50,T,,M,0.00,N,0.00,K,D*26
$GNGGA,033836.000,3150.8272,N,11711.9889,E,2,10,0.96,166.6,M,0.0,M,,*4A
$GPGSA,A,3,28,16,09,27,08,07,30,,,,,,1.52,0.96,1.17*01
$BDGSA,A,3,04,07,10,,,,,,,,,,1.52,0.96,1.17*1F
$GPGSV,3,1,10,08,64,016,51,07,61,300,28,42,42,134,34,30,34,315,42*7E
$GPGSV,3,2,10,27,32,043,45,16,25,085,43,09,17,227,39,28,08,294,30*7D
$GPGSV,3,3,10,26,02,102,,193,,,*76
$BDGSV,3,1,09,10,76,324,44,08,76,235,,07,73,125,44,15,48,226,28*6A
$BDGSV,3,2,09,01,47,141,27,12,41,240,27,02,38,231,,04,32,119,39*69
$BDGSV,3,3,09,05,18,252,27*5D
$GNGLL,3150.8272,N,11711.9889,E,033836.000,A,D*40
OK

AT+QGNSSRD=”NMEA/RMC”

+QGNSSRD: $GNRMC,033837.000,A,3150.8272,N,11711.9889,E,0.00,140.50,140716,,,D*73
OK

AT+QGNSSRD=”NMEA/GSA”

+QGNSSRD: $GPGSA,A,3,28,16,09,27,08,07,30,,,,,,1.52,0.96,1.17*01
$BDGSA,A,3,04,07,10,,,,,,,,,,1.52,0.96,1.17*1F
OK

25.3 25.3 AT+QGNSSCMD Send Commands to GNSS Module

Description

The command is used to send commands to GNSS module, which allows customers to optionally use some functions to meet application demands.

Syntax

Command	Possible response
Test Command AT+QGNSSCMD=?	+QGNSSCMD: (0,1),"cmdString" OK
Set Command AT+QGNSSCMD=<cmdType>,<cmdString>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<cmdType> 0 NMEA style command 1 Hex style command
<cmdString> Command string

Remark

Currently only <cmdType>=0 is supported.

Example

```
AT+QGNSSCMD=0, “PGKC030,3,1”

OK
```

25.4 25.4 AT+QGNSSTS Get Time Synchronization Status for GNSS Module

Description

The command is used to get time synchronization status for GNSS module. Time plays a very important role in EPOTM function.

Syntax

Command	Possible response
Test Command AT+QGNSSTS=?	+QGNSSTS: <status> OK
Read Command AT+QGNSSTS?	+QGNSSTS: <status> OK

Parameter

<status> 0 Time is not synchronized 1 Time is synchronized successfully

Remark

Exact time is very important to EPOTM function. So customers must ensure the time is valid before using EPOTM function.

Example

AT+QGNSSTS=? +QGNSSTS: (0,1) OK
AT+QGNSSTS? +QGNSSTS: 1 OK

25.5 25.5 AT+QGNSSEPO Enable/Disable EPOTM Function

Description

The command is used to enable or disable EPOTM function.

Syntax

Command	Possible response
Test Command AT+QGNSSEPO=?	+QGNSSEPO: (list of supported <mode>s) OK
Read Command AT+QGNSSEPO?	+QGNSSEPO: <mode> OK
Set Command AT+QGNSSEPO=<mode>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<mode> 0 Disable EPOTM function 1 Enable EPOTM function

Remark

The EPOTM function should be enabled after the time is synchronized successfully.

Example

AT+QGNSSEPO=? +QGNSSEPO: (0,1) OK
AT+QGNSSEPO=1 OK
AT+QGNSSEPO? +QGNSSEPO: 1 OK

25.6 25.6 AT+QGREFLOC Set Reference Location Information for QuecFastFix Online

Description

The command is used to set reference location information for QuecFastFix Online function.

Syntax

Command	Possible response
Test Command AT+QGREFLOC=?	+QGREFLOC: <ref_latitude>,<ref_longitude> OK
Read Command AT+QGREFLOC?	+QGREFLOC: <ref_latitude>,<ref_longitude> OK
Set Command AT+QGREFLOC=<ref_latitude>,<ref_longitude>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<ref_latitude> Latitude information of the reference location
<ref_longitude> Longitude information of the reference location

Remark

1. The range of <ref_latitude> is -90~90 North Latitude, and the range of <ref_longitude> is -180~180 East Longitude. The input format of the parameter should retain 6 decimal places, and the unit is degree.
2. The command works for QuecFastFix Online function and should be set before executing AT+QGNSSEPO=1.

Example

AT+QGREFLOC=? +QGREFLOC: <ref_latitude>,<ref_longitude> OK
AT+QGREFLOC=”31.507985”,”117.119750” OK

25.7 25.7 AT+QGEPOAID Trigger EPOTM Function

Description

The command is used to trigger EPOTM function.

Syntax

Command	Possible response
Test Command AT+QGEPOAID=?	OK
Execution Command AT+QGEPOAID	OK If there is an error related to ME functionality: +CME ERROR: <err>

Remark

1. If GNSS is powered on already, customers could use this command to trigger EPOTM function after executing AT+QGNSSEPO=1.
2. If execute AT+QGNSSEPO=1 first and then power on GNSS, executing this command will not trigger EPOTM function.

Example

```
AT+QGEPOAID

OK
```

25.8 25.8 AT+QGEPOF EPOTM File Operation

Description

The command is used to operate EPOTM related files, including deleting related files, getting file size and querying validity period of EPOTM files.

Syntax

Command	Possible response
Test Command AT+QGEPOF=?	+QGEPOF: (list of supported <mode>s) OK
Set Command AT+QGEPOF=<mode>	If <mode> is 0, response: +QGEPOF: <size> OK If <mode> is 1, response: OK If <mode> is 2, response: +QGEPOF: <time> OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<mode> Operation mode 0 Get EPOTM file size 1 Delete EPOTM file 2 Query validity period of EPOTM files
<size> Integer value. Positive numbers indicate the file size, and negative numbers indicate failed file operation. 0-4032 Size of the EPOTM file containing 6 hours of data -9 File not found
<time> String type. The queried validity period of EPOTM files The format is "yyyy-MM-dd hh:mm:ss" (UTC time), and the characters indicate year, month, day, hour, minute and second respectively. -9 File not found

Remark

If the EPOTM files are deleted, there is a need to trigger EPOTM function again.

Example

AT+QGEPOF=? +QGEPOF: (0-2) OK
AT+QGEPOF=0 +QGEPOF: 3332 OK
AT+QGEPOF=2 +QGEPOF: 2018-3-7 00:00:00 OK
AT+QGEPOF=1 OK
AT+QGEPOF=0 +QGEPOF: -9 OK
AT+QGEPOF=2 +QGEPOF: -9 OK

25.9 25.9 AT+GPS Control GPS module

Description

This command is to control GPS module.Turn GPS module on/off, input UTC time/reference latitude and longitude/ephemeris to GPS module, query GPS status.

Syntax

Command	Possible response
Test Command AT+GPS=?	+QGNSSC: (list of supported <cmd>s) OK
Read Command AT+GPS?	+QGNSSC: <mode>,<state>,<latitude>,<lat N/S>,<longitude>,<lng E/W> OK
Set Command AT+GPS=<cmd>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<cmd>
"ON" turn on GPS "OFF" turn off GPS "EPH" input ephemeris to GPS "UTC" input UTC to GPS "RFLOC" input ref lat/lng to GPS

Example

AT+GPS? +GPS:ON,LBS,3150.8558,N,11711.8781,E, OK
AT+GPS="ON" OK

25.10 25.10 AT+GPSRD Read GPS NMEA

Description

The command is used to get the NMEA information.

Syntax

Command	Possible response
Test Command AT+GPSRD=?	+GPSRD: (list of supported <type>s) OK
Set Command AT+GPSRD=<type>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<type>
“ALL” get all GPS NMEA “GGA” get GGA “GSA” get GSA “GSV” get GSV “RMC” get RMC “VTG” get VTG

Example

```
AT+GPSRD=”RMC”

$GPRMC,001125.669,V,,,,,0.00,0.00,010104,,,N*47
OK
```

25.11 25.11 AT+GPSCMD Send Commands to GNSS Module

Description

The command is used to send commands to GNSS module, which allows customers to optionally use some functions to meet application demands.

Syntax

Command	Possible response
Test Command AT+GPSCMD=?	+GPSCMD: "cmdString" OK
Set Command AT+GPSCMD=<cmdString>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<cmdString> Command string

Example

AT+GPSCMD=0, “PGKC030,3,1” OK

25.12 25.12 AT+EPH Read EPH status

Description

This command is used to read EPH status.

Syntax

Command	Possible response
Read Command AT+EPH?	+EPH:<state> OK

Parameter

<state>
“INVALID” EPH is invalid “VALID” EPH is valid

Example

```
AT+EPH?

+EPH:INVALID
OK
```

25.13 25.13 AT+LBS Get UTC/REF LOC/EPH from network

Description

This command is used to get UTC/REF LOC/EPH from network.

Syntax

Command	Possible response
Test Command AT+LBS=?	+LBS: (list of supported <mode>s) OK
Set Command AT+LBS=<mode>	OK If there is an error related to ME functionality: +CME ERROR: <err>

Parameter

<mode>
“EPH” get EPH from network “RFLOC” get UTC and location info

Example

AT+LBS=”RFLOC” OK download OK
AT+LBS=”EPH” OK download OK

CHAPTER

TWENTYSIX

26 EXTEND COMMANDS

26.1 26.1 AT_QTDMOD Set DTMF detection mode

Description

Set DTMF detection mode

Syntax

Command	Possible Responses
Test Command AT+QTDMOD=?	+QTDMOD:<operatefunction> OK
Read Command AT+QTDMOD?	+QTDMOD:<operatefunction>,<functionstatus> OK
Set Command +QTDMOD:<operatefunction>,<functionstatus>	OK

Parameter

<operatefunction>

1	Set DTMF Detection Range

<functionstatus>

0	when <operatefunction> = 1, all DTMF tones ar detected. contains 1400 and 2300 handover signal When <operatefunction> = 2, the general algorithm goes to detect the sound
1	when <operatefunction> = 1, only the signal that detects 1400 and 2300 is supported When <operatefunction> = 2, not supported

26.2 26.2 AT+QTONEDET DTMF Detection

Description

DTMF detection

Syntax

Command	Possible Responses
Test Command AT+QTONEDET=?	+QTONEDET:(<mode-list>) OK
Read Command AT+QTONEDET?	+QTONEDET:<mode> OK
Set Command +QTONEDET:<mode>	OK

Parameter

<mode>

0	Close DTMF detection
1	Open DTMF detection
5	Open debug mode

Note:

If mode = 5, dtmf report message is
+QTONEDET:<dtmfcode>,<persistencetime>,eg
+QTONEDET:50,100

26.3 26.3 AT+AUEND End audio cycle test

Description

End audio cycle test

Syntax

Command	Possible Responses
Exec Command AT+AUEND	OK

26.4 26.4 AT+CBCE End audio cycle test

Description

Set battery info report state the info is <nBcs>,<nBcl>

Syntax

Command	Possible Responses
Set Command AT+CBCE=<echo_mode>	OK

Parameter

<echo_mode>

0	start battery info report
1	stop battery info report

<nBcs>

0	No charging adapter is connected
1	Charging adapter is connected
2	Charging adapter is connected, charging in progress
3	Charging adapter is connected, charging has finished
4	Charging error, charging is interrupted
5	False charging temperature, charging is interrupted while temperature is beyond allowed range

<nBcl>

0 battery is exhausted, or does not have a battery connected
20, 40, 60, 80, 100 percent of remaining capacity.
The percent is not accurate ,but a estimated expression.

26.5 26.5 AT+GCHS Get csw and cos heap space of remaining

Description

Get csw and cos heap space of remaining

Syntax

Command	Possible Responses
Exe Command AT+GCHS	+GCHS:CSW:<size>,COS:<size> OK

26.6 26.6 AT+CEAUART Configure uart

Description

Configure modem uart

Syntax

Command	Possible Responses
Test Command AT+CEAUART=?	+CEAUART: (0,1),(0,2400,4800,9600,14400,19200,28800,33600,38400,57600,115200,2 6),(0-3) OK
Read Command AT+CEAUART?	+CEAUART:<enable>,<baud>,<format>,<parity> OK
Set Command +CEAUART:<enable>[,<baud>[,<format>[,<parity>]]]	OK

Parameter

<enable>

0	start uart
1	stop uart

<baud>

Uart baudrate

2400,4800,9600,14400,19200,28800,33600,38400,57600,115200,230400,460800,921600

<format>

Data format 0 - 6

0	auto detect
1	8N2
2	811
3	8N1
4	7N2
5	711
6	7N1

<parity>

0	Odd
1	Even
2	Mark
3	Space

26.7 26.7 AT+CURCCH Set URC report channel

Description

Set URC report channel

Syntax

Command	Possible Responses
Test Command AT+CURCCH=?	+CURCCH:<1-10> OK
Read Command AT+CURCCH?	+CURCCH:<dlci> OK
Set Command +CURCCH:<dlci>	OK

Parameter

<dlci>

range:1-10, when enable CMUX, set dlci as URC report channel

26.8 26.8 AT+TSTK Stk test

Description

Stk test, send a stk command

Syntax

Command	Possible Responses
Set Command +TSTK:<num_str>	OK

Parameter

<num_str>

STK command string.

26.9 26.9 AT+SNFS Select audio hardware set

Description

Select audio mode

Syntax

Command	Possible Responses
Test Command AT+SNFS=?	+SNFS:(0-2) OK
Read Command AT+SNFS?	+SNFS:<mode> OK
Set Command +SNFS:<mode>	OK

Parameter

<mode>

0	handset mode
1	earpiece mode
2	loudspeaker mode

26.10 26.10 AT+UPTIME Get update time of system in milliseconds

Description

Get update time of system in milliseconds

Syntax

Command	Possible Responses
Exec Command +UPTIME	^UPTIME:<milliseconds> OK

Parameter

NULL

26.11 26.11 AT+LWIPTEST LWIP test command

Description

LWIP test command

Syntax

Command	Possible Responses
Set Command +LWIPTEST:<index>,<start>	OK

Parameter

<index>

0	COAP test
1	MQTT test
6	libWM2M test

26.12 26.12 AT+CAUDPLAY Play audio file

Description

Play audio file.

Syntax

Command	Possible Responses
Test Command AT+CAUDPLAY=?	+CAUDPLAY:(1-2)[,(filename),(0-2),(0),(1-100)] OK
Read Command AT+CAUDPLAY?	+CAUDPLAY:<mode> OK
Set Command +CAUDPLAY:<mode>[,<filename>,<format>,<channel>,<volume>]	OK

Parameter

<mode>

1	play
2	stop play

<filename>

audio file path

<format>

audio file type

0	wav file
1	amr file
2	mp3 file

<channel>

audio channel

0	earpiece
1	loudspeaker

<volume>

play audio volume

26.13 26.13 AT+DTAM Set TTS mix state

Description

Setcar tts mix state

Syntax

Command	Possible Responses
Test Command AT+DTAM=?	+DTAM:(0-2) OK
Read Command AT+DTAM?	+DTAM:<mode> OK
Set Command +DTAM:<mode>	OK

Parameter

<mode>

0	mix remote
1	mix local
2	mix all

26.14 26.14 AT+CADTF Dump pcm data to T-Flash

Description

Dump pcm data to T-Flash, the data file maybe resData.pcm,spkData.pcm,micData.pcm

Syntax

Command	Possible Responses
Set Command +CADTF:<itf>[,<ctrl>]	OK

Parameter

<itf>

always be 0

<ctrl>

0	stop dump pcm data
1	start dump pcm data

26.15 26.15 AT+KEYHOLD Send a key event

Description

Send long press event of a key

Syntax

Command	Possible Responses
Set Command +KEYHOLD:<key>	OK

Parameter

<key>

0	KEY_0
1	KEY_1
2	KEY_2
3	KEY_3
4	KEY_4
5	KEY_5
6	KEY_6
7	KEY_7
8	KEY_8
9	KEY_9
10	KEY_LSK
11	KEY_RSK
12	KEY_UP_ARROW
13	KEY_DOWN_ARROW
14	KEY_LEFT_ARROW
15	KEY_RIGHT_ARROW
16	KEY_SEND
17	KEY_END
18	KEY_CLEAR
19	KEY_STAR
20	KEY_POUND
21	KEY_VOL_UP
22	KEY_VOL_DOWN
23	KEY_QUICK_ACS
24	KEY_CAMERA
25	KEY_ENTER
26	KEY_IP
27	KEY_WAP
28	MAX_KEYS
29	KEY_INVALID

26.16 26.16 AT+LCDON LCD color test

Description

LCD color test

Syntax

Command	Possible Responses
Set Command +LCDON:<color>	OK

Parameter

<color>

0	auto
1	red
2	green
3	blue
4	white
5	black

26.17 26.17 AT+LCDOFF Set LCD off

Description

Set LCD off

Syntax

Command	Possible Responses
Exe Command +LCDOFF	OK

26.18 26.18 AT+KPON Set keypad light on

Description

Set keypad light on

Syntax

Command	Possible Responses
Exe Command +KPON	OK

26.19 26.19 AT+KPOFF Set keypad light off

Description

Set keypad light off

Syntax

Command	Possible Responses
Exe Command +KPOFF	OK

26.20 26.20 AT+LCDBKON Set LCD backlight on

Description

Set LCD backlight on

Syntax

Command	Possible Responses
Exe Command +LCDBKON	OK

26.21 26.21 AT+LCDBKOFF Set LCD backlight off

Description

Set LCD backlight off

Syntax

Command	Possible Responses
Exe Command +LCDBKOFF	OK

26.22 26.22 AT+MIC Record and play pcm test with receiver

Description

Record and play pcm test with reciver

Syntax

Command	Possible Responses
Exe Command +MIC	OK

26.23 26.23 AT+SPEAKER Record and play pcm test with loudspeaker

Description

Record and play pcm test with loudspeaker

Syntax

Command	Possible Responses
Exe Command +SPEAKER	OK

26.24 26.24 AT+RECEIVER Record and play pcm test with reciver

Same with +MIC

26.25 26.25 AT+HEADSET Record and play pcm test with earpiece

Description

Record and play pcm test with earpiece

Syntax

Command	Possible Responses
Exe Command +HEADSET	OK

26.26 26.26 AT+SBBI not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.27 26.27 AT+SBBR not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.28 26.28 AT+NBBR not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.29 26.29 AT+SBBW not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.30 26.30 AT+NBBW not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.31 26.31 AT+FLASHON not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.32 26.32 AT+FLASHOFF not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.33 26.33 AT+VIBON not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.34 26.34 AT+VIBOFF not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.35 26.35 AT+FMON not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.36 26.36 AT+FMOFF not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.37 26.37 AT+CAMERA not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.38 26.38 AT+SWVERSION not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.39 26.39 AT+CALIBFLAG not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.40 26.40 AT+KEYPAD not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.41 26.41 AT+VOLTAG not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.42 26.42 AT+CHARGEON not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.43 26.43 AT+CHARGEOFF not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.44 26.44 AT+BTST not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.45 26.45 AT+BTSH not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.46 26.46 AT+BTPR not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.47 26.47 AT+CAVCP not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.48 26.48 AT+CACCP not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.49 26.49 AT+CAMCP not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.50 26.50 AT+CAWTF not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.51 26.51 AT+CAIET not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.52 26.52 AT+CAVCT not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.53 26.53 AT+FACTMBSN not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.54 26.54 AT+SUPS not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.55 26.55 AT+SFUN not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.56 26.56 AT+UPGRADE not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.57 26.57 AT+NIPDATA not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.58 26.58 AT+VERCTRL not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.59 26.59 AT+CFGCIOT not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.60 26.60 AT+CCIOTOPT not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.61 26.61 AT+CGAPNRC not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.62 26.62 AT+CFGEDRX not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.63 26.63 AT+CFGDFTPDN not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.64 26.64 AT+CFGHCCP not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.65 26.65 AT+NASCFG not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.66 26.66 AT+CRCES not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.67 26.67 AT+CRSL Set UE volume level

Description

Set UE volue level

Syntax

Command	Possible Responses
Test Command AT+CRSL=?	+CRSL: (0-15) OK
Read Command AT+CRSL?	+CRSL:<level> OK
Set Command +CRSL:<level>	OK

Parameter

<level> 0-15 volume level

26.68 26.68 AT+CRMP play call sound

Description

play call sound

Syntax

Command	Possible Responses
Test Command AT+CRMP=?	+CRMP: (0-3),(0-15),0,(0-11) OK
Set Command +CRMP:<calltype>,[,<volume>[,[type[,index]]]]	OK

Parameter

<calltype> 0-3 0 and 3 is same now, and 1,2 do nothing
<volume> sound volume level
<type> should be 0 now
<index> 0-11, sound index to play

26.69 26.69 AT+VTSEX not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.70 26.70 AT+ECSQ Whether to report ECSQ

Description

Whether to report ECSQ.

Syntax

Command	Possible Responses
Test Command AT+ ECSQ=?	+ECSQ: (0,1) OK
Set Command AT+ ECSQ =[<state>]	OK
Read Command AT+ ECSQ?	+ECSQ: <state> OK

Parameter

<state>: integer type

0	not support to reoprt ECSQ
1	support to reoprt ECSQ

26.71 26.71 AT+CCED Cell environment description

Description

This command can be used by the application to retrieve the cell parameters of the main cell and of up to six neighbour cells. Two ways may exist for the external application to know these cell parameters:on request of the application, or automatically by the module every 5 seconds. The automatic mode is not supported during communication or registration.

Syntax

Command	Possible Responses
Test Command AT+ CCED=?	+CCED: (0),(1,2,8) OK
Set Command AT+ CCED =<mode>[, <requested dump>]	OK

Parameter

<mode>: integer type

0	Stop automatic shots
1	Automatic shots requested

<requested dump>: integer type

1	Main Cell: MCC, MNC, LAC, CI, BSIC, BCCH Freq (absolute), RxLev,RxLev Full, RxLev Sub, RxQual, RxQual Full, RxQual Sub, Idle TS
2	Neighbour1 to Neighbour6: MCC, MNC, LAC, CI, BSIC, BCCH Freq (absolute), RxLev
8	Main cell RSSI indications(Rxlev)from 0 to 31.

26.72 26.72 AT^CCED Cell environment description

Description

This command can be used by the application to retrieve the cell parameters of the main cell and of up to six neighbour cells. Two ways may exist for the external application to know these cell parameters:on

request of the application, or automatically by the module every 5 seconds. The automatic mode is not supported during communication or registration.

Syntax

Command	Possible Responses
Test Command AT+ CCED=?	+CCED: (0),(1,2,8) OK
Set Command AT+ CCED =<mode>[, <requested dump>]	OK

Parameter

<mode>: integer type

0	Stop automatic shots
1	Automatic shots requested

<requested dump>: integer type

1	Main Cell: MCC, MNC, LAC, CI, BSIC, BCCH Freq (absolute), RxLev,RxLev Full, RxLev Sub, RxQual, RxQual Full, RxQual Sub, Idle TS
2	Neighbour1 to Neighbour6: MCC, MNC, LAC, CI, BSIC, BCCH Freq (absolute), RxLev
8	Main cell RSSI indications(Rxlev)from 0 to 31.

26.73 26.73 AT+CBINDARFCN Bind the Arfcn

Description Bind the Arfcn.

Syntax

Command	Possible Responses
Test Command AT+ CBindArfcn=?	OK
Set Command AT+ CBindArfcn=<data>	OK
Read Command AT+ CBindArfcn?	+CBindArfcn:<data> OK

Parameter

<data>: integer type Refers to the arfcn.

26.74 26.74 AT+SAVECLIR Save the calling line identification restriction

Description

Save the calling line identification restriction.

Syntax

Command	Possible Responses
Test Command AT+SAVECLIR =?	+CLIR:(0,1,2) OK
Read Command AT+SAVECLIR ?	+SAVECLIR:<clir> OK
Set Command AT+ SAVECLIR =<clir>	OK

Parameter

<clir>: integer type

0	presentation indicator is used according to the subscription of the CLIR service
1	CLIR invocation
2	CLIR suppression

26.75 26.75 AT+COLR Connected line identification restriction status

Description

This command refers to the supplementary service COLR (Connected Line Identification Restriction) according to 3GPP TS 22.081 [3] and supplementary service TIR (Terminating Identification Restriction) according to 3GPP TS 24.608 [120] that enables a called subscriber to restrict the possibility of presentation of connected line identity (COL) to the calling party after receiving a mobile terminated call. The command displays the status of the COL presentation in the network. It has no effect on the execution of the supplementary services COLR / TIR in the network. The command triggers an interrogation of the activation status of the COLR supplementary service according to 3GPP TS 22.081 [3] and the TIR supplementary service according to 3GPP TS 24.608 [120] (given in <m>). Activation, deactivation, registration and erasure of the supplementary service COLR / TIR are not applicable.

Syntax

Command	Possible Responses
Test Command AT+COLR =?	+COLR :<0,2> OK
Read Command AT+COLR ?	+COLR :<m> OK

Parameter

<m>: integer type (parameter shows the subscriber COLR / TIR service status in the network).

0	COLR / TIR not provisioned
1	COLR / TIR provisioned
2	unknown (e.g. no network, etc.)

26.76 26.76 AT+SPBR Read Current Phonebook

Description

Read phonebook entries in location number range <index1> <index2> form the current phonebook memory storage selected. If the <index2> is omitted, only the entry with index of <index1> is returned if exists.

Syntax

Command	Possible Responses
Test Command AT+SPBR=?	+SPBR: (support<index>s),[<nlength>], [<tlength>] OK
Set Command AT+SPBR=<index1>[,<index2>]	[+SPBR: <index1>,<number>,<type>, <text>[[...]<CR><LF>+SPBR: <index2>,<number>,<type>,<text>]] OK

Parameter

<index1>, <index2>:

Integer type values in the range of location numbers of phonebook memory

<number>:

Type: string type Meaning: phone number of format <type>

<type >:

Type: integer type Meaning: type of address octet in integer format (refer GSM 04.08 [8] sub clause 10.5.4.7) ; default 145 when dialing string includes international access code character "+", otherwise 129

<text >: Type: string type Meaning: character set as specified by command +CSCS. The display of text depending to the storage format in the sim card. If we store the pbk entry with ucs2 format, we show Chinese string here, otherwise, we show NON-Chinese string. We do not care about charsets, it is decided by command +CSCS setting when we store them.

<nlength>: Type: integer type Meaning: value indicating the maximum length of field <number>

<tlength>: Meaning: field of maximum length <tlength>

Remark

- If <index2> is smaller than <index1>, error should be returned.
- When DTE character set is "GSM" (set by +CSCS command), the target phonebook entry will be output in an (big-endian) UCS2 hex string form if it is not a pure ASCII (single byte encoding) string. If the DTE character set is "UCS2" it will always be output in UCS2 hex string form.

26.77 26.77 AT+SPBW Write Phonebook Entries

Description

Writes phonebook entry in location number <index> in the current phonebook memory storage selected. if there is no index parameter in the command line, the record will be written to the free location.

If the current phonebook storage is "ON", modification is allowed, but deleting entry is forbidden.We can add entries to the "ON" phonebook when it have free location, otherwise add entry to "ON" is forbidden. If the current phonebook storage is "LD", deleting is allowed, but adding or modification entry is forbidden. If the current phonebook storage is "FD", which is locked by pin2, executing the command may be returned ERROR or relevant CME error. To continue the operation, please enter the relevant pin specified by "+cpin?". Input pin2, deleting or adding or modification entry is allowed. If the current phonebook storage is "SM", deleting or adding or modification entry is allowed.

Syntax

Command	Possible Responses
Test Command AT+SPBW=?	+SPBW: (list of supported <index>s),[<nlength>],(list of supported <type>s),[<tlength>] OK
Set Command	AT+SPBW=[<index>],<number> [,<type> [,<text>]] OK

Parameter

<pin>, <newpin>:

<index>: Type: integer type Meaning: values in the range of location numbers of phonebook memory

<number>: Type: string type Meaning: phone number of format <type> Note: valid phone numbe chars are as follows: 0-9,*,#,+(+only can be the first position)

<type>: Type: integer type Meaning: type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7) ; default 145 when dialling string includes international access code character "+", otherwise 129

<text>: Type: string type Meaning: character set as specified by command +CSCS. If we want to find Chinese string in the all pbk entry, we must set charset value with command +CSCS of "ucs2", otherwise we find non-Chinese string with command +CSCS of "non-ucs2". And now the ucs2 supported in our environment is big-ending Unicode, we must input big-ending Unicode string in the field if setting value of cscs is equal to "ucs2".

<nlength>: Type: integer type Meaning: value indicating the maximum length of field <number>

<tlength>: Type: integer type Meaning: value indicating the maximum length of field <text>,counting in single byte char. Note: if phonebook characterset is "HEX", the supported UCS2 char count is smaller than that specified by <tlength> by 1.This is because UCS2 char storing flag occupies 1 byte.

Remark

- AT+SPBW=[<index>],<number>[,<type>[,<text>]],the number setting NULL is forbidden.
- Executed AT+CLCK and "FD" is locked, then operation of "SM" phonebooks are forbidden, but operation of other phonebooks is allowed.

26.78 26.78 AT+CGBV baseband version

Description

Get baseband version.

Syntax

Command	Possible Responses
Test Command AT+ CGBV=?	OK
Exec Command AT+ CGBV	+CGBV: RDA<Version> OK

Parameter

None

26.79 26.79 AT+LOCKBCCH lock the bcch

Description

lock the bcch.

Syntax

Command	Possible Responses
Test Command AT+ LOCKBCCH=?	+LockBCCH: mode(0,1),bcch1,bcch2.... OK
Set Command AT+ LOCKBCCH=[[mode],[bcch1],[bcch2]...]	OK
Read Command AT+ LOCKBCCH?	+LockBCCH: <locbcch> <Count> OK

Parameter

<mode>:integer type.

0	unlock the bcch
1	lock the bcch

<bcch>:string. The value of the BCCH.

26.80 26.80 AT+CRESET SIM reset

Description

Make the SIM reset.

Syntax

Command	Possible Responses
Test Command AT+CRESET=?	^CRESET: OK
Exec Command AT+CRESET?	OK +CME ERROR:11

Parameter None

Remark None

Example

The following examples show the typical application for this command.

Command	Possible Responses
Test Command AT+CRESET=?	^CRESET: OK
Exec Command AT+CRESET?	OK +CME ERROR:11

26.81 26.81 AT+CSST service status

Description

Get the status of the service.

Syntax

Command	Possible Responses
Test Command AT+CSST=?	+CSST: OK
Set Command AT+CSST = <Service>	Services<allocated>,<activated> OK

Parameter

<Service>::integer type. Refers to the service number.

26.82 26.82 AT+ACLB calibration

Description

calibration.

Syntax

Command	Possible Responses
Exec Command AT+ACLB=?	OK

26.83 26.83 AT+CDTMF DTMF And Tone Generation

Description

Sent the DTMF and generate the tone.

Syntax

Command	Possible response
Test command AT+CDTMF=?	Success: (list of supported <DTMF>s) OK Fail: ERROR
Set command AT+CDTMF=< DTMF>,<duration>	Success: OK Fail: +CME ERROR: <err>
Reference 3GPP TS 27.007 V3.12.0	

Unsolicited Result Codes

None

Parameter

<DTMF>: A single ASCII character in the set 0 9, #,*,A D. This is interpreted as a single ACSII character whose duration is set by the +VTD command.
<duration>: time in 1/10 second

Remark

Example

The following examples show the typical application for this command.

Command	Possible response
ATD10086;	OK
AT+CDTMF=1	CONNECT
AT+CDTMF=2,10	OK
AT+CDTMF=?	+CDTMF: (0-9,*,#,A,B,C,D),(1-10) OK

26.84 26.84 AT+CAUDIO audio

Description

Open or close audio.

Syntax

Command	Possible Responses
Test Command AT+CAUDIO=?	+CAUDIO: (0-1) OK
Set Command AT+CAUDIO = <mode>	OK

Parameter

<mode>:integer type.

0	close audio
1	open audio

Remark None

26.85 26.85 AT+DTMF not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

26.86 26.86 AT+QLTONE Produce local custom frequency tone

Description

Produce Local custom frequency tone

Syntax

Command	Possible Responses
Test Command +QLTONE:(0,1),(425,950,1400,1800),(1-25500),(0-25500),(1-25500)	OK
Set Command +QLTONE:<mode>,<frequency>,<periodOn>,<periodOff>,<duration>	OK

Parameter

<mode>

0	play stop
1	play start

<frequency> supported frequency tone:425HZ,950HZ,1400HZ,1800HZ

<periodon> the period of play custom tone in ms

<periodoff> the period of stop custom tone in ms

<duration> When the specified frequency tone is started, the module will continue to play the tone <periodon>time long, and then stop playing tone <periodoff> ,loop sequentially, until <duration>time is over.

26.87 26.87 AT+QWDTMF Play DTMF in a call

Description

Play DTMF in a call

Syntax

Command	Possible Responses
Test Command +QWDTMF:(0-7),(0-7),(, ,),(0),(0)	OK
Set Command AT+QWDTMF=<ul_volume>,<dl_volume>,("<dtmfcode>,<continuancetime>,<mutetime>")[,<channel>][,<mode>]	OK

Parameter

<ul_volume> Control the volume the remote, 0 Mute, 7 Max volume value

<dl_volume> Control the volume the local, 0 Mute, 7 Max volume value

<dtmf_code>

'0' DTMF 0
'1' DTMF 1
'2' DTMF 2
'3' DTMF 3
'4' DTMF 4
'5' DTMF 5
'6' DTMF 6
'7' DTMF 7
'8' DTMF 8
'9' DTMF 9
'A' DTMF A
'B' DTMF B
'C' DTMF C
'D' DTMF D
'*' DTMF *
'#' DTMF #
'E' 1400Hz
'F' 2300Hz
'G' 1KHz

<continuancetime> Play each tone time length, Unit ms

<mutetime> the length of quiet time for each tone interval when playing tone strings, Unit ms

<playcode> play success or failure prompt A value of 5 indicates a successful playback and other failures

<channel> the playback channel, which only works when not talking. Talk with the voice of the same channel, that is, AT+QAUDCH control Business. When this parameter defaults, the playback channel is also controlled by AT+QAUDCH.

0 Main channel (default)
1 Headphone Channel

2 main hands-free channel

Now we only supported is 0

<mode> DTMF sound synthesis algorithm. The default is 0.

Note:

Example:
at+qwdtmf=7,0, “0a5,50,50,1,55,50,23,100,50”
Send DTMF ‘ 0 ‘ tone 50ms, mute 50ms; send DTMF ‘ A ‘ tone 50ms, mute 50ms; send DTMF ‘ 5 ‘ tone 50ms, Mute 50ms; send DTMF ‘ 1 ‘ tone 55ms, mute 50ms; send DTMF ‘ 2 ‘ tone 100ms, mute 50ms; DTMF ‘ 3 ‘ tone 100ms, mute 50ms;

26.88 26.88 AT+QLDTMF Produce local DTMF tones

Description

Produce local DTMF tones

Syntax

Command	Possible Responses
Test Command +QLDTMF:(1-1000),(0-9,A-D,*,#)	OK
Set Command AT+QLDTMF=<n>[,<DTMF string>]	OK

Parameter

<n> Numeric parameter 1~1000, indicating the duration of all DTMF tones in 1/10 seconds

<DTMF-string> string parameters, maximum input of 20 DTMF tones, separated by commas, DTMF for ASCII characters, including 0-9,#,*,A-D

26.89 26.89 AT+CMIC Change mic gain level

Description

Change mic gain level

Syntax

Command	Possible Responses
Test Command +CMIC:(0),(0-15)	OK
Set Command +CMIC:<channel>,<level>	OK

Parameter

<channel> we only support main channel 0

<level> mic gain level range 0-15

26.90 26.90 AT+VGT Set audio mute

Description

Set audio mute.

Syntax

Command	Possible Responses
Test Command AT+VGT =?	+VGT :16 OK
Read Command AT+VGT ?	+VGT :<m> OK

Parameter

<m>: integer type

16	Mute Sounds

26.91 26.91 AT+CGCID Get the free CID

Description

Get the free CID.

Syntax

Command	Possible Responses
Test Command AT+CGCID =?	+CGCID: (1-7) OK
Exec Command AT+CGCID ?	+CGCID: <n> OK

26.92 26.92 AT+CGSEND not supported on this module

Description

The command is not supported on this module in principle and strongly recommends not to use this command.

CHAPTER

TWENTYSEVEN

27 APPENDIX: NOT MAINTAINED AT COMMANDS

The following AT commands appear in modem SDK. However, they are not tested and not maintained. **Don't** use them in products.

CHAPTER

TWENTYEIGHT

28 OPERATOR SELE-REGISTER COMMANDS

Contents

28.1 28.1 AT+SELFREGISTER Set the flag of operator self-register

Command	Possible response(s)
AT+SELFREGISTER=<OPERATOR>,<FLAG>	OK or ERROR
OTHER	OK

Parameters

<OPERATOR> operator name

0 CMCC

1 UNICOM

2 CTCC

<FLAG> flag

0 turn off self-register

1 turn on self-register

CHAPTER

TWENTYNINE

INDIES AND TABLES

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