SIM7100_AT Command Manual _V1.01

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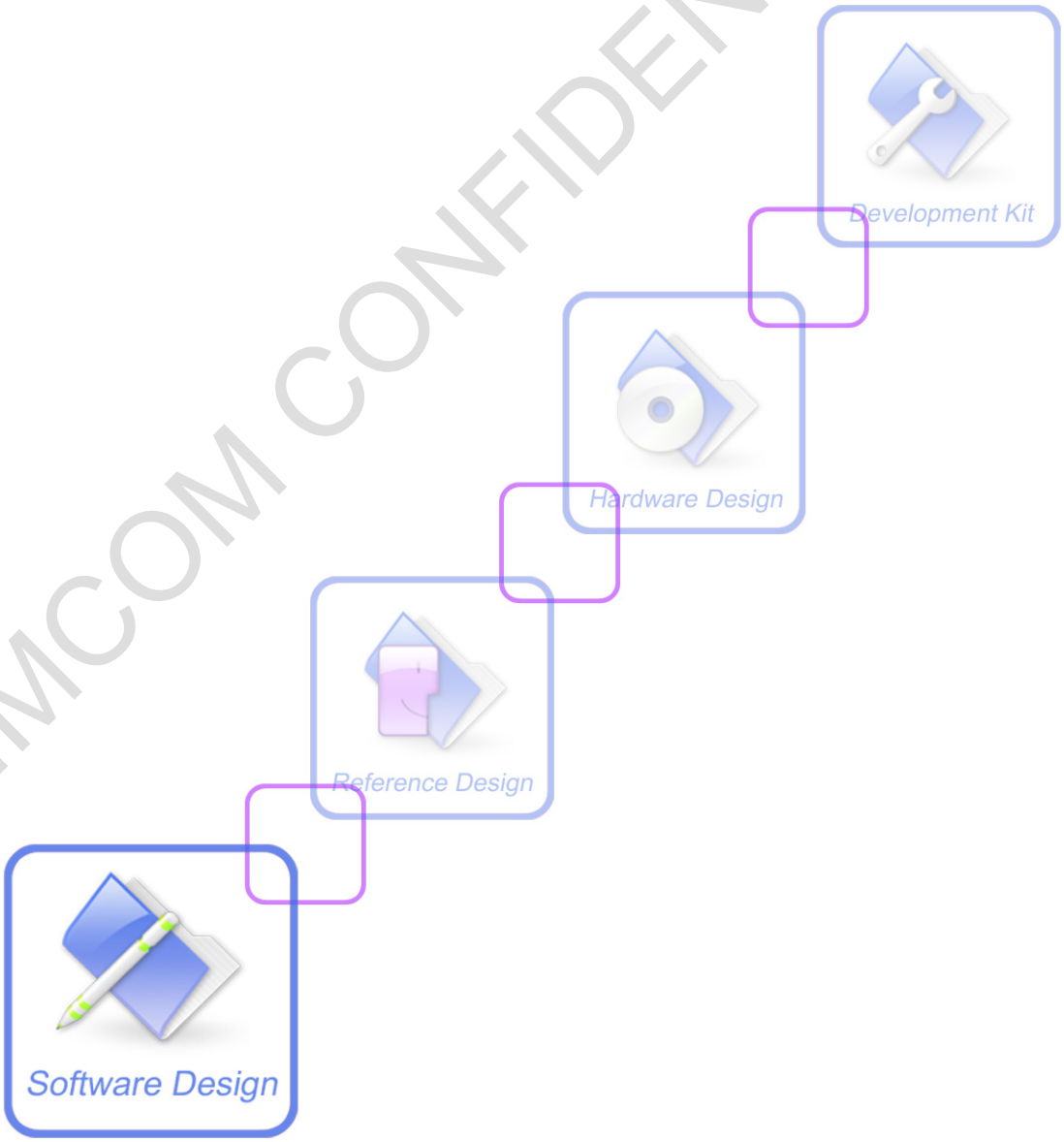

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Version History

Version	Chapter	Comments
V1.00		Initial version
V1.01	5.12 AT+CNBP	Modify this command
V1.01	14 AT Commands for File System	Add “D:” and “E:”
V1.01	20.1 AT+CREC 20.2 AT+CCMXPLAYWAV 20.4 AT+CCMXPLAY	Modify these commands
V1.01	13.7 AT+CGFUNC	Modify this command
V1.01	18 AT Commands for Open/Close Network	Add this chapter
V1.01	19.21 AT+CLBS 19.22 AT+CLBSCFG	Add these commands
V1.01	19.21 AT+CLBS	Modify this command
V1.01	17.3.2 AT+CFTPMODE	Modify this command
V1.01	13.2 AT+CFGRI	Modify this command
V1.01	18.4 Unsolicited Open/Close network command <err> Codes	Add this command
V1.01	19.21 AT+CLBS	Modify this command

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1 Introduction

1.1 Scope

The present document describes the AT Command Set for the SIMCom Module:

SIM7100

More information about the SIMCom Module which includes the Software Version information can be retrieved by the command ATI. In this document, a short description, the syntax, the possible setting values and responses, and some examples of AT commands are presented.

Prior to using the Module, please read this document and the Version History to know the difference from the previous document.

In order to implement communication successfully between Customer Application and the Module, it is recommended to use the AT commands in this document, but not to use some commands which are not included in this document.

1.2 References

The present document is based on the following standards:

[1] ETSI GSM 01.04: Abbreviations and acronyms.

[2] 3GPP TS 27.005: Use of Data Terminal Equipment – Data Circuit terminating Equipment (DTE – DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS).

[3] 3GPP TS 27.007: AT command set for User Equipment (UE).

[4] WAP-224-WTP-20010710-a

[5] WAP-230-WSP-20010705-a

[6] WAP-209-MMSEncapsulation-20010601-a

1.3 Terms and abbreviations

For the purposes of the present document, the following abbreviations apply:

- AT ATtention; the two-character abbreviation is used to start a command line to be sent from TE/DTE to TA/DCE
- CSD Circuit Switched Data
- DCE Data Communication Equipment; Data Circuit terminating Equipment
- DCS Digital Cellular Network
- DTE Data Terminal Equipment
- DTMF Dual Tone Multi–Frequency
- EDGE Enhanced Data GSM Environment

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- EGPRS Enhanced General Packet Radio Service
- GPIO General–Purpose Input/Output
- GPRS General Packet Radio Service
- GSM Global System for Mobile communications
- HSDPA High Speed Downlink Packet Access
- HSUPA High Speed Uplink Packet Access
- I2C Inter–Integrated Circuit
- IMEI International Mobile station Equipment Identity
- IMSI International Mobile Subscriber Identity
- ME Mobile Equipment
- MO Mobile–Originated
- MS Mobile Station
- MT Mobile–Terminated; Mobile Termination
- PCS Personal Communication System
- PDU Protocol Data Unit
- PIN Personal Identification Number
- PUK Personal Unlock Key
- SIM Subscriber Identity Module
- SMS Short Message Service
- SMS–SC Short Message Service – Service Center
- TA Terminal Adaptor; e.g. a data card (equal to DCE)
- TE Terminal Equipment; e.g. a computer (equal to DTE)
- UE User Equipment
- UMTS Universal Mobile Telecommunications System
- USIM Universal Subscriber Identity Module
- WCDMA Wideband Code Division Multiple Access
- FTP File Transfer Protocol
- HTTP Hyper Text Transfer Protocol
- POP3 Post Office Protocol Version 3
- POP3 client An client that can receive e-mail from POP3 server over TCP session
- RTC Real Time Clock
- SMTP Simple Mail Transfer Protocol
- SMTP client An client that can transfer text-based e-mail to SMTP server over TCP session
- URC Unsolicited Result Code
- MMS Multimedia message system

1.4 Definitions and conventions

1. For the purposes of the present document, the following syntactical definitions apply:

<CR> Carriage return character.

<LF> Linefeed character.

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<…>	Name enclosed in angle brackets is a syntactical element. Brackets themselves do not appear in the command line.
[…]	Optional subparameter of AT command or an optional part of TA information response is enclosed in square brackets. Brackets themselves do not appear in the command line. If subparameter is not given, its value equals to its previous value or the recommended default value.
underline	Underlined defined subparameter value is the recommended default setting or factory setting.

2. Document conventions:

- Display the examples of AT commands with *Italic* format.
- Not display *blank-line* between command line and responses or inside the responses.
- Generally, the characters <CR> and <LF> are intentionally omitted throughout this document.
- If command response is ERROR, not list the ERROR response inside command syntax.

NOTE: AT commands and responses in figures may be not following above conventions.

3. Special marks for commands or parameters:

SIM PIN – Is the command PIN protected?

YES – AT command can be used only when SIM PIN is READY.

NO – AT command can be used when SIM card is absent or SIM PIN validation is pending.

References – Where is the derivation of command?

3GPP TS 27.007 – 3GPP Technical Specification 127 007.

V.25ter – ITU–T Recommendation V.25ter.

Vendor – This command is supported by SIMCom.

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2 AT Interface Synopsis

2.1 Interface settings

Between Customer Application and the Module, standardized RS–232 interface is used for the communication, and default values for the interface settings as following:

115200bps, 8 bit data, no parity, 1 bit stop, no data stream control.

2.2 AT command syntax

The prefix “AT” or “at” (no case sensitive) must be included at the beginning of each command line (except A/ and +++), and the character <CR> is used to finish a command line so as to issue the command line to the Module. It is recommended that a command line only includes a command.

When Customer Application issues a series of AT commands on separate command lines, leave a pause between the preceding and the following command until information responses or result codes are retrieved by Customer Application, for example, “OK” is appeared. This advice avoids too many AT commands are issued at a time without waiting for a response for each command.

In the present document, AT commands are divided into three categories: Basic Command, S Parameter Command, and Extended Command.

1. Basic Command

The format of Basic Command is “AT<x><n>” or “AT&<x><n>”, “<x>” is the command name, and “<n>” is/are the parameter(s) for the basic command, and optional. An example of Basic Command is “ATE<n>”, which informs the TA/DCE whether received characters should be echoed back to the TE/DTE according to the value of “**<n>**”; “**<n>**” is optional and a default value will be used if omitted.

2. S Parameter Command

The format of S Parameter Command is “ATS<n>=<m>”, “<n>” is the index of the S–register to set, and “<m>” is the value to assign to it. “<m>” is optional; in this case, the format is “ATS<n>”, and then a default value is assigned.

3. Extended Command

The Extended Command has several formats, as following table list:

Table 2-1: Types of Extended Command

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Command Type	Syntax	Comments
Test Command	AT+<NAME>=?	Test the existence of the command; give some information about the command subparameters.
Read Command	AT+<NAME>?	Check the current values of subparameters.
Write Command	AT+<NAME>=<…>	Set user-definable subparameter values.
Execution Command	AT+<NAME>	Read non-variable subparameters determined by internal processes.

NOTE: The character "+" between the prefix "AT" and command name may be replaced by other character. For example, using "#" or "$"instead of "+".

2.3 Information responses

If the commands included in the command line are supported by the Module and the subparameters are correct if presented, some information responses will be retrieved by from the Module. Otherwise, the Module will report "ERROR" or "+CME ERROR" or "+CMS ERROR" to Customer Application.

Information responses start and end with <CR><LF>, i.e. the format of information responses is "<CR><LF><response><CR><LF>". Inside information responses, there may be one or more <CR><LF>. Throughout this document, only the responses are presented, and <CR><LF> are intentionally omitted.

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3 AT Commands According V.25TER

3.1 A/ Repeat last command

Description

This command is used for implement previous AT command repeatedly (except A/), and the return value depends on the last AT command. If A/ is issued to the Module firstly after power on, the response "OK" is only returned.

SIM PIN	References
NO	V.25ter

Syntax

Execution Command	Responses
A/	*The response the last AT command return*

Examples

```
AT+GCAP
+GCAP:+CGSM,+FCLASS,+DS
OK
A/
+GCAP:+CGSM,+FCLASS,+DS
OK
```

3.2 ATD Dial command

Description

This command is used to list characters that may be used in a dialling string for making a call or controlling supplementary services.

NOTE:

1. Support several "P" or "p" in the DTMF string but the valid auto-sending DTMF after characters "P" or "p" should not be more than 29.
2. Auto-sending DTMF after character "P" or "p" should be ASCII character in the set 0-9, *, #.

SIM PIN	References
NO	V25.ter

Syntax

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Execution Commands	Responses
ATD<n>[<mgsm>][;]	*Originate a voice call successfully:* OK VOICE CALL: BEGIN
	Originate a data call successfully: CONNECT [<text>]
	Originate a call unsuccessfully during command execution: ERROR
	Originate a call unsuccessfully for failed connection recovery: NO CARRIER
	Originate a call unsuccessfully for error related to the MT: +CME ERROR: <err>

Defined values

<n>
String of dialing digits and optionally V.25ter modifiers dialing digits: 0 1 2 3 4 5 6 7 8 9 * # + A B C Following V.25ter modifiers are ignored: , T P ! W @
<mgsm>
String of GSM modifiers: I Activates CLIR (disables presentation of own phone number to called party) i Deactivates CLIR (enables presentation of own phone number to called party) G Activate Closed User Group explicit invocation for this call only g Deactivate Closed User Group explicit invocation for this call only
<;>
The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax calls.
<text>
CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<err>
Service failure result code string; the string formats please refer +CME ERROR result code and AT+CMEE command.

Examples

ATD10086;
OK *VOICE CALL:BEGIN*

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3.3 ATD><mem><n> Originate call from specified memory

Description

This command is used to originate a call using specified memory and index number.

SIM PIN	References
NO	V.25ter

Syntax

Execution Commands	Responses
ATD><mem><n>[;]	*Originate a voice call successfully:* OK VOICE CALL: BEGIN
	Originate a data call successfully: CONNECT [<text>]
	Originate a call unsuccessfully during command execution: ERROR
	Originate a call unsuccessfully for failed connection recovery: NO CARRIER
	Originate a call unsuccessfully for error related to the MT: +CME ERROR: <err>

Defined values

<mem>
Phonebook storage: (For detailed description of storages see AT+CPBS) "DC" ME dialed calls list "MC" ME missed (unanswered received) calls list "RC" ME received calls list "SM" SIM phonebook "ME" UE phonebook "FD" SIM fixed dialing phonebook "ON" MSISDN list "LD" Last number dialed phonebook "EN" Emergency numbers
<n>
Integer type memory location in the range of locations available in the selected memory, i.e. the index returned by AT+CPBR.
<;>
The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax calls.

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<text>
CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<err>
Service failure result code string; the string formats please refer +CME ERROR result code and AT+CMEE command.

Examples

```
ATD>SM3;
OK
VOICE CALL: BEGIN
```

3.4 ATD><n> Originate call from active memory (1)

Description

This command is used to originate a call to specified number.

SIM PIN	References
NO	V.25ter

Syntax

Execution Commands	Responses
ATD><n>[;]	*Originate a voice call successfully:* OK VOICE CALL: BEGIN
	Originate a data call successfully: CONNECT [<text>]
	Originate a call unsuccessfully during command execution: ERROR
	Originate a call unsuccessfully for failed connection recovery: NO CARRIER
	Originate a call unsuccessfully for error related to the MT: +CME ERROR: <err>

Defined values

<n>
Integer type memory location in the range of locations available in the selected memory, i.e. the index number returned by AT+CPBR.
<;>
The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax

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calls.
<text>
CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<err>
Service failure result code string; the string formats please refer +CME ERROR result code and AT+CMEE command.

Examples

ATD>2;
OK
VOICE CALL: BEGIN

3.5 ATD><str> Originate call from active memory (2)

Description

This command is used to originate a call to specified number.

SIM PIN	References
NO	V.25ter

Syntax

Execution Commands	Responses
ATD><str>[;]	*Originate a voice call successfully:* OK VOICE CALL: BEGIN
	Originate a data call successfully: CONNECT [<text>]
	Originate a call unsuccessfully during command execution: ERROR
	Originate a call unsuccessfully for failed connection recovery: NO CARRIER
	Originate a call unsuccessfully for error related to the MT: +CME ERROR: <err>

Defined values

<str>
String type value, which should equal to an alphanumeric field in at least one phone book entry in the searched memories. <str> formatted as current TE character set specified by AT+CSCS.<str> must be double quoted.

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<;>
The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax calls.
<text>
CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<err>
Service failure result code string; the string formats please refer +CME ERROR result code and AT+CMEE command.

Examples

ATD>"Kobe";
OK
VOICE CALL: BEGIN

3.6 ATA Call answer

Description

This command is used to make remote station to go off-hook, e.g. answer an incoming call. If there is no an incoming call and entering this command to TA, it will be return "NO CARRIER" to TA.

SIM PIN	References
YES	V.25ter

Syntax

Execution Commands	Responses
ATA	*For voice call:* OK VOICE CALL: BEGIN
	For data call, and TA switches to data mode: CONNECT
	No connection or no incoming call: NO CARRIER

Examples

ATA
VOICE CALL: BEGIN
OK

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3.7 ATH Disconnect existing call

Description

This command is used to disconnect existing call. Before using ATH command to hang up a voice call, it must set AT+CVHU=0. Otherwise, ATH command will be ignored and "*OK*" response is given only.

This command is also used to disconnect CSD or PS data call, and in this case it doesn't depend on the value of AT+CVHU.

SIM PIN	References
NO	V.25ter

Syntax

Execution Command	Responses
ATH	*If AT+CVHU=0:* VOICE CALL: END: <time> OK
	OK

Defined values

<time>
Voice call connection time: Format – HHMMSS (HH: hour, MM: minute, SS: second)

Examples

```
AT+CVHU=0
OK
ATH
VOICE CALL:END:000017
OK
```

3.8 ATS0 Automatic answer incoming call

Description

The S-parameter command controls the automatic answering feature of the Module. If set to 000, automatic answering is disabled, otherwise it causes the Module to answer when the incoming call indication (RING) has occurred the number of times indicated by the specified value; and the setting will not be stored upon power-off, i.e. the default value will be restored after restart.

SIM PIN	References

SIMCOM CONFIDENTIAL FILE

YES	V.25ter

Syntax

Read Command	Responses
ATS0?	<n> OK
	ERROR
Write Command	Responses
ATS0=<n>	OK
	ERROR

Defined values

<n>	
000	Automatic answering mode is disable. (default value when power-on)
001–255	Enable automatic answering on the ring number specified.
NOTE: 1.The S-parameter command is effective on voice call and data call. 2.If <n> is set too high, the remote party may hang up before the call can be answered automatically.	

Examples

```
ATS0?
000
OK
ATS0=003
OK
```

3.9 +++ Switch from data mode to command mode

Description

This command is only available during a connecting CSD call or PS data call. The +++ character sequence causes the TA to cancel the data flow over the AT interface and switch to Command Mode. This allows to enter AT commands while maintaining the data connection to the remote device.

NOTE: To prevent the +++ escape sequence from being misinterpreted as data, it must be preceded and followed by a pause of at least 1000 milliseconds, and the interval between two '+' character can't exceed 900 milliseconds.

SIM PIN	References
YES	V.25ter

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Syntax

Execution Command	Responses
+++	OK

Examples

```
+++
OK
```

3.10 ATO Switch from command mode to data mode

Description

ATO is the corresponding command to the +++ escape sequence. When there is a CSD call or a PS data call connected and the TA is in Command Mode, ATO causes the TA to resume the data and takes back to Data Mode.

SIM PIN	References
YES	V.25ter

Syntax

Execution Command	Responses
ATO	*TA/DCE switches to Data Mode from Command Mode:* CONNECT [<baud rate>]
	If connection is not successfully resumed or there is not a connected CSD call: NO CARRIER
	ERROR

Examples

```
ATO
CONNECT 115200
```

3.11 ATI Display product identification information

Description

This command is used to request the product information, which consists of manufacturer identification, model identification, revision identification, International Mobile station Equipment Identity (IMEI) and overall capabilities of the product.

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SIM PIN	References
NO	V.25ter

Syntax

Execution Command	Responses
ATI	Manufacturer: <manufacturer> Model: <model> Revision: <revision> IMEI: <sn> +GCAP: list of <name>s OK

Defined values

<manufacturer>
The identification of manufacturer.
<model>
The identification of model.
<revision>
The revision identification of firmware.
<sn>
Serial number identification, which consists of a single line containing IMEI (International Mobile station Equipment Identity) number.
<name>
List of additional capabilities: +CGSM GSM function is supported +FCLASS FAX function is supported +DS Data compression is supported +ES Synchronous data mode is supported. +CIS707-A CDMA data service command set +CIS-856 EVDO data service command set +MS Mobile Specific command set

Examples

ATI
Manufacturer: SIMCOM INCORPORATED *Model: SIMCOM_SIM7100C* *Revision:* SIM*7100C* _V1.5 *IMEI: 351602000330570* *+GCAP: +CGSM,+FCLASS,+DS* *OK*

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3.12 AT+IPR Set local baud rate temporarily

Description

This command sets the baud rate of module's serial interface temporarily, after reboot the baud rate is set to value of IPREX.if set to 0,then support autobaud at now,and the value of the IPR will be changed to current baudrate when the autobaud is successful.

SIM PIN	References
NO	V.25ter

Syntax

Test Command	Responses
AT+IPR=?	+IPR: (list of supported<speed>s) OK
Read Command	Responses
AT+IPR?	+IPR: <speed> OK
Write Command	Responses
AT+IPR=<speed>	OK
	ERROR
Execution Command	Responses
AT+IPR	*Set default value 115200:* OK

Defined values

<speed>
Baud rate per second: 0, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800,921600, 3000000,3200000,3686400,4000000

Examples

```
AT+IPR?
+IPR: 115200
OK
AT+IPR=?
+IPR:(0,300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600,
3000000,3200000,3686400,4000000)
OK
AT+IPR=115200
OK
```

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AT+IPR=0
OK

3.13 AT+ICF Set control character framing

Description

This command sets character framing which contains data bit, stop bit and parity bit.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+ICF=?	+ICF: (list of supported<format>s), (list of supported<parity>s) OK
Read Command	Responses
AT+ICF?	+ICF: <format>,<parity> OK
Write Command	Responses
AT+ICF= <format>[,<parity>]	OK ERROR
Execution Command	Responses
AT+ICF	*Set default value:* OK

Defined values

<format>
Only support value "3" at moment: 3 – data bit 8, stop bit 1
<parity>
0 – Odd 1 – Even 2 – mark 3 – none

Examples

AT+ICF?
+ICF: 3,3
OK
AT+ICF=?

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+ICF: (3),(0-3)
OK
AT+ICF=3,3
OK

3.14 AT+IFC Set local data flow control

Description

The command sets the flow control mode of the module.

SIM PIN	References
NO	V.25ter

Syntax

Test Command	Responses
AT+IFC=?	+IFC: (list of supported<DCE>s), (list of supported<DTE>s) OK
	ERROR
Read Command	Responses
AT+IFC?	+IFC: <DCE>,<DTE> OK
	ERROR
Write Command	Responses
AT+IFC=<DCE>[,<DTE>]	OK
	ERROR
Execution Command	Responses
AT+IFC	*Set default value:* OK
	ERROR

Defined values

<DCE>
0 – none (default)
2 – RTS hardware flow control

<DTE>
0 – none (default)
2 – CTS hardware flow control

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Examples

```
AT+IFC?
+IFC: 0,0
OK
AT+IFC=?
+IFC: (0,2),(0,2)
OK
AT+IFC=2,2
OK
```

3.15 AT&C Set DCD function mode

Description

This command determines how the state of DCD PIN relates to the detection of received line signal from the distant end.

SIM PIN	References
NO	V.25ter

Syntax

Execution Command	Responses
AT&C[<value>]	OK
	ERROR

Defined values

<value>	
0	DCD line shall always be on.
1	DCD line shall be on only when data carrier signal is present.
2	Setting winks(briefly transitions off,then back on)the DCD line when data calls end.

Examples

```
AT&C1
OK
```

3.16 ATE Enable command echo

Description

This command sets whether or not the TA echoes characters.

SIM PIN	References

SIMCOM CONFIDENTIAL FILE

NO	V.25ter

Syntax

Execution Command	Responses
ATE[<value>]	OK
	ERROR

Defined values

<value>	
0	– Echo mode off
1	– Echo mode on

Examples

```
ATE1
OK
```

3.17 AT&V Display current configuration

Description

This command returns some of the base configuration parameters settings.

SIM PIN	References
YES	V.25ter

Syntax

Execution Command	Responses
AT&V	<TEXT>
	OK
	ERROR

Defined values

〈TEXT〉
All relative configuration information.

Examples

```
AT&V
&C: 0; &D: 2; &F: 0; E: 1; L: 0; M: 0; Q: 0; V: 1; X: 0; Z: 0; S0: 0;
S3: 13; S4: 10; S5: 8; S6: 2; S7: 50; S8: 2; S9: 6; S10: 14; S11: 95;
```

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+FCLASS: 0; +ICF: 3,3; +IFC: 2,2; +IPR: 115200; +DR: 0; +DS: 0,0,2048,6;
+WS46: 12; +CBST: 0,0,1;
……
OK

3.18 AT&D Set DTR function mode

Description

This command determines how the TA responds when DTR PIN is changed from the ON to the OFF condition during data mode.

SIM PIN	References
NO	V.25ter

Syntax

Execution Command	Responses
AT&D[<value>]	OK
	ERROR

Defined values

<value>	
0	TA ignores status on DTR.
1	ON->OFF on DTR: Change to Command mode with remaining the connected call
2	ON->OFF on DTR: Disconnect call, change to Command mode.During state DTR = OFF is auto-answer off.

Examples

AT&D1
OK

3.19 AT&S Set DSR function mode

Description

The command determines how the state of DSR pin works.

SIM PIN	References
YES	V.25ter

Syntax

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Execution Command	Responses
AT&S<value>	OK
	ERROR

Defined values

<value>	
0	DSR line shall always be on.
1	DSR line shall be on only when DTE and DCE are connected.

Examples

```
AT&S0
OK
```

3.20 ATV Set result code format mode

Description

This parameter setting determines the contents of the header and trailer transmitted with result codes and information responses.

NOTE: In case of using This command without parameter <value> will be set to 0.

SIM PIN	References
Yes	V.25ter

Syntax

Write Command	Responses
ATV[<value>]	*If <value> =0* 0 *If <value> =1* OK

Defined values

<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>

Examples

```
ATV1
```

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OK

3.21 AT&F Set all current parameters to manufacturer defaults

Description

This command is used to set all current parameters to the manufacturer defined profile.

NOTE: List of parameters reset to manufacturer default can be found in defined values, factory default settings restorable with AT&F[<value>].

Every ongoing or incoming call will be terminated.

SIM PIN	References
NO	V.250

Syntax

Execution Command	Responses
AT&F[<value>]	OK

Defined values

<value>

0 — Set some temporary TA parameters to manufacturer defaults. The setting after power on or reset is same as value 0.

default values

TA parameters	**VALUE**
AT+CATR	0
AT+CNMP	2
AT+CNAOP	7,9,5,3,11,2,4
AT+CNSDP	2
AT+CTZU	0
AT+CVALARM	0,3300,4300
AT+CSDVC	1
AT+CLVL ②	4
AT+CVAUXS	1
AT+CVAUXV	2950
AT+CGDCONT	1,"IPV4V6","","0.0.0.0",0,0
AT+CGPSSSL	0
AT+CGPSURL	""

①These audio parameters is discrepant in different Qualcomm platform version.

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Examples

```
AT&F
OK
```

3.22 ATQ Set Result Code Presentation Mode

Description

Specify whether the TA transmits any result code to the TE or not. Text information transmitted in response is not affected by this setting

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Write Command	Responses
ATQ<n>	If <n>=0: OK If <n>=1: ERROR
Execution Command	**Responses**
ATQ	*Set default value:0* OK ERROR

Defined values

<n>	
0	– DCE transmits result code
1	– DCE not transmits result code

Examples

```
ATQ0
OK
```

3.23 ATX Set CONNECT Result Code Format

Description

This parameter setting determines whether the TA transmits unsolicited result codes or not. The unsolicited result codes are

<CONNECT><SPEED><COMMUNICATION PROTOCOL>[<TEXT>]

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SIM PIN	References
YES	3GPP TS 27.005

Syntax

Write Command	Responses
ATX<VALUE>	OK ERROR
Execution Command	**Responses**
ATX	*Set default value:1* OK ERROR

Defined values

<value>
0 – CONNECT result code returned 1,2,3,4 – May be transmits extern result codes according to AT&E and AT\V settings. Refer to AT&E.

Examples

ATX1
OK

3.24 AT\V Set CONNECT Result Code Format About Protocol

Description

This parameter setting determines whether report the communication protocol. If PS call, it also determines wether report APN, uplink rate, downlink rate.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Write Command	Responses
AT\V<value>	OK ERROR
Execution Command	**Responses**
AT\V	*Set default value: 0* OK ERROR

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Defined values

<value>	
0	– Don't report
1	– Report communication protocol. And report APN, uplink rate, downlink rate if PS call. Refer to AT&E. The maybe communication protocol report include "NONE","PPPoverUD","AV32K","AV64K","PACKET". And APN in string format while uplink rate and downlink rate in integer format with kb unit.

Examples

```
AT\V0
OK
```

3.25 AT&E Set CONNECT Result Code Format About Speed

Description

This parameter setting determines to report Serial connection rate or Wireless connection speed. It is valid only ATX above 0.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Write Command	Responses
AT&E<value>	OK ERROR
Execution Command	**Responses**
AT&E	*Set default value: 1* OK

Defined values

<value>	
0	– Wireless connection speed in integer format.
1	– Serial connection rate in integer format. Such as: "115200"

Examples

```
AT&E0
OK
```

SIMCOM CONFIDENTIAL FILE

3.26 AT&W Save the user setting to ME

Description

This command will save the user settings to ME which set by ATE, ATQ, ATV, ATX, AT&C AT&D, AT&S, AT\V, AT+IFC and ATS0.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Write Command	Responses
AT&W<value>	OK ERROR
Execution Command	**Responses**
AT&W	*Set default value: 0* OK ERROR

Defined values

<value>
0 – Save

Examples

```
AT&W0
OK
```

3.27 ATZ Restore the user setting from ME

Description

This command will restore the user setting from ME which set by ATE, ATQ, ATV, ATX, AT&C AT&D, AT&S, AT\Q, AT\V, and ATS0.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Write Command	Responses
ATZ<value>	OK ERROR

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Execution Command	Responses
ATZ	*Set default value: 0* OK ERROR

Defined values

<value>
0 – Restore

Examples

ATZ0
OK

3.28 AT+CGMI Request manufacturer identification

Description

This command is used to request the manufacturer identification text, which is intended to permit the user of the Module to identify the manufacturer.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGMI=?	OK
Execution Command	Responses
AT+CGMI	<manufacturer> OK

Defined values

<manufacturer>
The identification of manufacturer.

Examples

AT+CGMI
SIMCOM INCORPORATED
OK

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3.29 AT+CGMM Request model identification

Description

This command is used to requests model identification text, which is intended to permit the user of the Module to identify the specific model.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGMM=?	OK
Execution Command	Responses
AT+CGMM	<model> OK

Defined values

<model>
The identification of model.

Examples

AT+CGMM
SIMCOM_SIM7100C *OK*

3.30 AT+CGMR Request revision identification

Description

This command is used to request product firmware revision identification text, which is intended to permit the user of the Module to identify the version.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGMR=?	OK
Execution Command	Responses

SIMCOM CONFIDENTIAL FILE

AT+CGMR	+CGMR: <revision> OK

Defined values

<revision>
The revision identification of firmware.

Examples

AT+CGMR
+CGMR: 1575B09SIM7100C *OK*

3.31 AT+CGSN Request product serial number identification

Description

This command requests product serial number identification text, which is intended to permit the user of the Module to identify the individual ME to which it is connected to.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGSN=?	OK
Execution Command	**Responses**
AT+CGSN	<sn> OK

Defined values

<sn>
Serial number identification, which consists of a single line containing the IMEI (International Mobile station Equipment Identity) number of the MT. If in CDMA/EVDO mode ,it will show ESN(Electronic Serial Number)

Examples

AT+CGSN
351602000330570 *OK*
AT+CGSN (CDMA/EVDO mode)

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0x8059D1F6
OK

3.32 AT+CSCS Select TE character set

Description

Write command informs TA which character set <chest> is used by the TE. TA is then able to convert character strings correctly between TE and MT character sets.

Read command shows current setting and test command displays conversion schemes implemented in the TA.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CSCS=?	+CSCS: (list of supported <chset>s) OK
Read Command	Responses
AT+CSCS?	+CSCS: <chset> OK
Write Command	Responses
AT+CSCS=<chset>	OK
	ERROR
Execution Command	Responses
AT+CSCS	*Set subparameters as default value:* OK

Defined values

<chest>
Character set, the definition as following: "IRA" International reference alphabet. "GSM" GSM default alphabet; this setting causes easily software flow control (XON /XOFF) problems. "UCS2" 16-bit universal multiple-octet coded character set; UCS2 character strings are converted to hexadecimal numbers from 0000 to FFFF.

Examples

AT+CSCS="IRA"

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```
OK
AT+CSCS?
+CSCS:"IRA"
OK
```

3.33 AT+CIMI Request international mobile subscriber identity

Description

Execution command causes the TA to return <IMSI>, which is intended to permit the TE to identify the individual SIM card which is attached to MT.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CIMI=?	OK ERROR
Execution Command	Responses
AT+CIMI	<IMSI> OK ERROR

Defined values

<IMSI>
International Mobile Subscriber Identity (string, without double quotes).

Examples

```
AT+CIMI
460010222028133
OK
```

3.34 AT+GCAP Request overall capabilities

Description

Execution command causes the TA reports a list of additional capabilities.

SIM PIN	References
YES	V.25ter

SIMCOM CONFIDENTIAL FILE

Syntax

Test Command	Responses
AT+GCAP=?	OK ERROR
Execution Command	**Responses**
AT+GCAP	+GCAP: (list of <name>s) OK ERROR

Defined values

<name>	
List of additional capabilities.	
+CGSM	GSM function is supported
+FCLASS	FAX function is supported
+DS	Data compression is supported
+ES	Synchronous data mode is supported.
+CIS707-A	CDMA data service command set
+CIS-856	EVDO data service command set
+MS	Mobile Specific command set

Examples

```
AT+GCAP
+GCAP:+CGSM,+FCLASS,+DS
OK
```

3.35 AT+SMEID Request Mobile Equipment Identifier

Description

Only task effect in 7100CE and 7100CF

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Read Command	Responses

SIMCOM CONFIDENITAL FILE

AT+SMEID?	+SMEID: <MEID> OK ERROR

Defined values

<MEID>
Mobile Equipment Identifier (string, without double quotes).

Examples

AT+SMEID?

+SMEID: A1000021A5906F

OK

SIMCOM CONFIDENITAL FILE

4 AT Commands for Status Control

4.1 AT+CFUN Set phone functionality

Description

This command is used to select the level of functionality <fun> in the ME. Level "full functionality" is where the highest level of power is drawn. "Minimum functionality" is where minimum power is drawn. Level of functionality between these may also be specified by manufacturers. When supported by manufacturers, ME resetting with <rst> parameter may be utilized.

NOTE: AT+CFUN=6 must be used after setting AT+CFUN=7. If module in offline mode, must execute AT+CFUN=6 or restart module to online mode.

NOTE: If AT+CFUN=0/4 is used after setting AT+CFUN=7, module will restart to online mode;

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CFUN=?	+CFUN: (list of supported <fun>s), (list of supported <rst>s) OK
	ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+CFUN?	+CFUN: <fun> OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CFUN=<fun>[,<rst>]	OK
	ERROR
	+CME ERROR: <err>

Defined values

<fun>		
0	–	minimum functionality
1	–	full functionality, online mode
4	–	disable phone both transmit and receive RF circuits

SIMCOM CONFIDENTIAL FILE

5 – Factory Test Mode 6 – Reset 7 – Offline Mode	
<rst>	
0 – do not reset the ME before setting it to <fun> power level 1 – reset the ME before setting it to <fun> power level. This value only takes effect when <fun> equals 1.	

Examples

AT+CFUN?
+CFUN: 1
OK
AT+CFUN=0
OK

4.2 AT+CPIN Enter PIN

Description

This command is used to send the ME a password which is necessary before it can be operated (SIM PIN, SIM PUK, PH-SIM PIN, etc.). If the PIN is to be entered twice, the TA shall automatically repeat the PIN. If no PIN request is pending, no action is taken towards MT and an error message, +CME ERROR, is returned to TE.

If the PIN required is SIM PUK or SIM PUK2, the second pin is required. This second pin, <newpin>, is used to replace the old pin in the SIM.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPIN=?	OK
Read Command	Responses
AT+CPIN?	+CPIN: <code> OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CPIN= <pin>[,<newpin>]	OK
	ERROR
	+CME ERROR: <err>

SIMCOM CONFIDENTIAL FILE

Defined values

<pin>
String type values.
<newpin>
String type values.
<code>
Values reserved by the present document: READY – ME is not pending for any password SIM PIN – ME is waiting SIM PIN to be given SIM PUK – ME is waiting SIM PUK to be given PH-SIM PIN – ME is waiting phone-to-SIM card password to be given SIM PIN2 – ME is waiting SIM PIN2 to be given SIM PUK2 – ME is waiting SIM PUK2 to be given PH-NET PIN – ME is waiting network personalization password to be given

Examples

AT+CPIN?
+CPIN: SIM PUK2 *OK*

4.3 AT+CICCID Read ICCID from SIM card

Description

This command is used to Read the ICCID from SIM card

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CICCID=?	OK
Execution Command	Responses
AT+CICCID	+ICCID: <ICCID> OK
	ERROR
	+CME ERROR: <err>

Defined values

<ICCID>

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Integrate circuit card identity, a standard ICCID is a 20-digit serial number of the SIM card, it presents the publish state, network code, publish area, publish date, publish manufacture and press serial number of the SIM card.

Examples

```
AT+CICCID
+ICCID: 89860070090 7A6019125
OK
```

4.4 AT+CSIM Generic SIM access

Description

This command is used to control the SIM card directly.

Compared to restricted SIM access command AT+CRSM, AT+CSIM allows the ME to take more control over the SIM interface.

For SIM–ME interface please refer 3GPP TS 11.11.

NOTE： The SIM Application Toolkit functionality is not supported by AT+CSIM. Therefore the following SIM commands can not be used: TERMINAL PROFILE, ENVELOPE, FETCH and TEMINAL RESPONSE.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CSIM=?	OK
Write Command	**Responses**
AT+CSIM= <length>,<command>	+CSIM: <length>, <response> OK
	ERROR
	+CME ERROR: <err>

Defined values

<length>
Interger type; length of characters that are sent to TE in <command> or <response>
<command>
Command passed from MT to SIM card.
<response>
Response to the command passed from SIM card to MT.

SIMCOM CONFIDENTIAL FILE

Examples

```
AT+CSIM=?
OK
```

4.5 AT+CRSM Restricted SIM access

Description

By using AT+CRSM instead of Generic SIM Access AT+CSIM, TE application has easier but more limited access to the SIM database.

Write command transmits to the MT the SIM <command> and its required parameters. MT handles internally all SIM-MT interface locking and file selection routines. As response to the command, MT sends the actual SIM information parameters and response data. MT error result code +CME ERROR may be returned when the command cannot be passed to the SIM, but failure in the execution of the command in the SIM is reported in <sw1> and <sw2> parameters.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CRSM=?	OK
Write Command	**Responses**
AT+CRSM=<command> [,<fileID>[,<p1>,<p2>, <p3> [,<data>]]]	+CRSM: <sw1>,<sw2>[,<response>] OK
	ERROR
	+CME ERROR: <err>

Defined values

<command>
Command passed on by the MT to the SIM: 176 – READ BINARY 178 – READ RECORD 192 – GET RESPONSE 214 – UPDATE BINARY 220 – UPDATE RECORD 242 – STATUS 203 – RETRIEVE DATA 219 – SET DATA
<fileID>
Identifier for an elementary data file on SIM, if used by <command>.

SIMCOM CONFIDENTIAL FILE

The following list the fileID hex value, user needs to convet them to decimal.

EFs under MF

0x2FE2	ICCID
0x2F05	Extended Language Preferences
0x2F00	EF DIR
0x2F06	Access Rule Reference

EFs under USIM ADF

0x6F05	Language Indication
0x6F07	IMSI
0x6F08	Ciphering and Integrity keys
0x6F09	C and I keys for pkt switched domain
0x6F60	User controlled PLMN selector w/Acc Tech
0x6F30	User controlled PLMN selector
0x6F31	HPLMN search period
0x6F37	ACM maximum value
0x6F38	USIM Service table
0x6F39	Accumulated Call meter
0x6F3E	Group Identifier Level
0x6F3F	Group Identifier Level 2
0x6F46	Service Provider Name
0x6F41	Price Per Unit and Currency table
0x6F45	Cell Bcast Msg identifier selection
0x6F78	Access control class
0x6F7B	Forbidden PLMNs
0x6F7E	Location information
0x6FAD	Administrative data
0x6F48	Cell Bcast msg id for data download
0x6FB7	Emergency call codes
0x6F50	Cell bcast msg id range selection
0x6F73	Packet switched location information
0x6F3B	Fixed dialling numbers
0x6F3C	Short messages
0x6F40	MSISDN
0x6F42	SMS parameters
0x6F43	SMS Status
0x6F49	Service dialling numbers
0x6F4B	Extension 2
0x6F4C	Extension 3
0x6F47	SMS reports
0x6F80	Incoming call information
0x6F81	Outgoing call information
0x6F82	Incoming call timer
0x6F83	Outgoing call timer

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0x6F4E	Extension 5
0x6F4F	Capability Config Parameters 2
0x6FB5	Enh Multi Level Precedence and Pri
0x6FB6	Automatic answer for eMLPP service
0x6FC2	Group identity
0x6FC3	Key for hidden phonebook entries
0x6F4D	Barred dialling numbers
0x6F55	Extension 4
0x6F58	Comparison Method information
0x6F56	Enabled services table
0x6F57	Access Point Name Control List
0x6F2C	De-personalization Control Keys
0x6F32	Co-operative network list
0x6F5B	Hyperframe number
0x6F5C	Maximum value of Hyperframe number
0x6F61	OPLMN selector with access tech
0x6F5D	OPLMN selector
0x6F62	HPLMN selector with access technology
0x6F06	Access Rule reference
0x6F65	RPLMN last used access tech
0x6FC4	Network Parameters
0x6F11	CPHS: Voice Mail Waiting Indicator
0x6F12,	CPHS: Service String Table
0x6F13	CPHS: Call Forwarding Flag
0x6F14	CPHS: Operator Name String
0x6F15	CPHS: Customer Service Profile
0x6F16	CPHS: CPHS Information
0x6F17	CPHS: Mailbox Number
0x6FC5	PLMN Network Name
0x6FC6	Operator PLMN List
0x6F9F	Dynamic Flags Status
0x6F92	Dynamic2 Flag Setting
0x6F98	Customer Service Profile Line2
0x6F9B	EF PARAMS - Welcome Message
0x4F30	Phone book reference file
0x4F22	Phone book synchronization center
0x4F23	Change counter
0x4F24	Previous Unique Identifier
0x4F20	GSM ciphering key Kc
0x4F52	GPRS ciphering key
0x4F63	CPBCCH information
0x4F64	Investigation scan
0x4F40	MExE Service table

SIMCOM CONFIDENITAL FILE

0x4F41	Operator Root Public Key
0x4F42	Administrator Root Public Key
0x4F43	Third party Root public key
0x6FC7	Mail Box Dialing Number
0x6FC8	Extension 6
0x6FC9	Mailbox Identifier
0x6FCA	Message Waiting Indication Status
0x6FCD	Service Provider Display Information
0x6FD2	UIM_USIM_SPT_TABLE
0x6FD9	Equivalent HPLMN
0x6FCB	Call Forwarding Indicator Status
0x6FD6	GBA Bootstrapping parameters
0x6FDA	GBA NAF List
0x6FD7	MBMS Service Key
0x6FD8	MBMS User Key
0x6FCE	MMS Notification
0x6FD0	MMS Issuer connectivity parameters
0x6FD1	MMS User Preferences
0x6FD2	MMS User connectivity parameters
0x6FCF	Extension 8
0x5031	Object Directory File
0x5032	Token Information File
0x5033	Unused space Information File

EFs under Telecom DF

0x6F3A	Abbreviated Dialing Numbers
0x6F3B	Fixed dialling numbers
0x6F3C	Short messages
0x6F3D	Capability Configuration Parameters
0x6F4F	Extended CCP
0x6F40	MSISDN
0x6F42	SMS parameters
0x6F43	SMS Status
0x6F44	Last number dialled
0x6F49	Service Dialling numbers
0x6F4A	Extension 1
0x6F4B	Extension 2
0x6F4C	Extension 3
0x6F4D	Barred Dialing Numbers
0x6F4E	Extension 4
0x6F47	SMS reports
0x6F58	Comparison Method Information
0x6F54	Setup Menu elements
0x6F06	Access Rule reference

SIMCOM CONFIDENITAL FILE

0x4F20	Image
0x4F30	Phone book reference file
0x4F22	Phone book synchronization center
0x4F23	Change counter
0x4F24	Previous Unique Identifier

<p1> <p2> <p3>

Integer type; parameters to be passed on by the Module to the SIM.

<data>

Information which shall be written to the SIM (hexadecimal character format, refer AT+CSCS).

<sw1> <sw2>

Status information from the SIM about the execution of the actual command. It is returned in both cases, on successful or failed execution of the command.

<response>

Response data in case of a successful completion of the previously issued command.
"STATUS" and "GET RESPONSE" commands return data, which gives information about the currently selected elementary data field. This information includes the type of file and its size.
After "READ BINARY" or "READ RECORD" commands the requested data will be returned.
<response> is empty after "UPDATE BINARY" or "UPDATE RECORD" commands.

Examples

```
AT+CRSM=?
OK
```

4.6 AT+SPIC Times remain to input SIM PIN/PUK

Description

This command is used to inquire times remain to input SIM PIN/PUK.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+SPIC=?	OK
Execution Command	**Responses**
AT+SPIC	+SPIC: <pin1>,<puk1>,<pin2>,<puk2> OK

Defined values

<pin1>

SIMCOM CONFIDENTIAL FILE

Times remain to input PIN1 code.
<puk1>
Times remain to input PUK1 code.
<pin2>
Times remain to input PIN2 code.
<puk2>
Times remain to input PUK2 code.

Examples

AT+SPIC=?
OK
AT+SPIC
+SPIC: 3,10,0,10
OK

4.7 AT+CSPN Get service provider name from SIM

Description

This command is used to get service provider name from SIM card.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSPN=?	OK
	ERROR
Read Command	**Responses**
AT+CSPN?	+CSPN: <spn>,<display mode> OK
	OK
	ERROR
	+CME ERROR: <err>

Defined values

<spn>
String type; service provider name on SIM
<display mode>

SIMCOM CONFIDENITAL FILE

0 – doesn't display PLMN. Already registered on PLMN.
1 – display PLMN

Examples

```
AT+CSPN=?
OK
AT+CSPN?
+CSPN: "CMCC",0
OK
```

4.8 AT+CSQ Query signal quality

Description

This command is used to return received signal strength indication <rssi> and channel bit error rate <ber> from the ME. Test command returns values supported by the TA as compound values.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CSQ=?	+CSQ: (list of supported <rssi>s),(list of supported <ber>s) OK
Execution Command	**Responses**
AT+CSQ	+CSQ: <rssi>,<ber> OK
	ERROR

Defined values

<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
100	–	-116 dBm or less
101	–	-115 dBm
102…191	–	-114... -26dBm
191	–	-25 dBm or greater
199	–	not known or not detectable

SIMCOM CONFIDENTIAL FILE

100…199 – expand to TDSCDMA, indicate RSCP received
<ber>
(in percent) 0 – <0.01% 1 – 0.01% --- 0.1% 2 – 0.1% --- 0.5% 3 – 0.5% --- 1.0% 4 – 1.0% --- 2.0% 5 – 2.0% --- 4.0% 6 – 4.0% --- 8.0% 7 – >=8.0% 99 – not known or not detectable

Examples

AT+CSQ
+CSQ: 22,0 *OK*

4.9 AT+AUTOCSQ Set CSQ report

Description

This command is used to enable or disable automatic report CSQ information, when automatic report enabled, the module reports CSQ information every five seconds or only after <rssi> or <ber> is changed, the format of automatic report is "+CSQ: <rssi>,<ber>".

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+AUTOCSQ=?	+AUTOCSQ: (list of supported<auto>s),(list of supported<mode>s) OK
Read Command	**Responses**
AT+AUTOCSQ?	+AUTOCSQ: <auto>,<mode> OK
Write Command	**Responses**
AT+AUTOCSQ=<auto>[,<mode>]	OK
	ERROR

SIMCOM CONFIDENTIAL FILE

Defined values

<auto>
0 – disable automatic report
1 – enable automatic report
<mode>
0 – CSQ automatic report every five seconds
1 – CSQ automatic report only after <rssi> or <ber> is changed_
NOTE: If the parameter of <mode> is omitted when executing write command, <mode> will be set to default value.

Examples

AT+AUTOCSQ=?
+AUTOCSQ: (0-1),(0-1)
OK
AT+AUTOCSQ?
+AUTOCSQ: 1,1
OK
AT+AUTOCSQ=1,1
OK
+CSQ: 23,0 (when <rssi> or <ber> changing)

4.10 AT+CATR Configure URC destination interface

Description

This command is used to configure the serial port which will be used to output URCs. We recommend configure a destination port for receiving URC in the system initialization phase, in particular, in the case that transmitting large amounts of data, e.g. use TCP/UDP/FTP(S)/HTTP(S)/SSL and MT SMS related AT command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CATR=?	+CATR: (list of supported <port>s) OK
Read Command	Responses
AT+CATR?	+CATR: <port> OK
Write Command	Responses

SIMCOM CONFIDENTIAL FILE

AT+CATR=<port>	OK
	ERROR

Defined values

<port>	
0	– all ports
1	– use UART port to output URCs
2	– use MODEM port to output URCs
3	– use ATCOM port to output URCs

Examples

```
AT+CATR=1
OK
AT+CATR?
+CATR: 1
OK
```

4.11 AT+CPOF Power down the module

Description

This command is used to power off the module. Once the AT+CPOF command is executed, The module will store user data and deactivate from network, and then shutdown.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPOF=?	OK
Execution Command	Responses
AT+CPOF	OK

Examples

```
AT+CPOF
OK
```

SIMCOM CONFIDENTIAL FILE

4.12 AT+CRESET Reset the module

Description

This command is used to reset the module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRESET=?	OK
Execute Command	Responses
AT+CRESET	OK

Examples

```
AT+CRESET=?
OK
AT+CRESET
OK
```

4.13 AT+CACM Accumulated call meter

Description

This command is used to reset the Advice of Charge related accumulated call meter value in SIM file EF_{ACM}.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CACM=?	OK
	ERROR
Read Command	Responses
AT+CACM?	+CACM: <acm> OK
	ERROR

SIMCOM CONFIDENTIAL FILE

	+CME ERROR: <err>
Write Command	Responses
AT+CACM=<passwd>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CACM	OK
	ERROR
	+CME ERROR: <err>

Defined values

<passwd>
String type, SIM PIN2.
<acm>
String type, accumulated call meter value similarly coded as <ccm> under +CAOC.

Examples

AT+CACM?
+CACM: "000000"
OK

4.14 AT+CAMM Accumulated call meter maximum

Description

This command is used to set the Advice of Charge related accumulated call meter maximum value in SIM file EF_{ACMmax}.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CAMM=?	OK
	ERROR
Read Command	Responses
AT+CAMM?	+CAMM: <acmmax> OK
	ERROR

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	+CME ERROR: <err>
Write Command	Responses
AT+CAMM=<acmmax>[,<passwd>]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CAMM	OK
	ERROR
	+CME ERROR: <err>

Defined values

<acmmax>
String type, accumulated call meter maximum value similarly coded as <ccm> under AT+CAOC, value zero disables ACMmax feature.
<passwd>
String type, SIM PIN2.

Examples

```
AT+CAMM?
+CAMM: "000000"
OK
```

4.15 AT+CPUC Price per unit and currency table

Description

This command is used to set the parameters of Advice of Charge related price per unit and currency table in SIM file EF_{PUCT}..

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPUC=?	OK
	ERROR
Read Command	Responses
AT+CPUC?	+CPUC: [<currency>,<ppu>] OK

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	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CPUC=<currency>, <ppu>[,<passwd>]	OK
	ERROR
	+CME ERROR: <err>

Defined values

<currency>
String type, three-character currency code (e.g. "GBP", "DEM"), character set as specified by command Select TE Character Set AT+CSCS.
<ppu>
String type, price per unit, dot is used as a decimal separator. (e.g. "2.66").
<passwd>
String type, SIM PIN2.

Examples

AT+CPUC?
+CPUC: "GBP", "2.66"
OK

4.16 AT+CCLK Real time clock management

Description

This command is used to manage Real Time Clock of the module.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CCLK=?	OK
Read Command	Responses
AT+CCLK?	+CCLK: <time>
	OK
Write Command	Responses
AT+CCLK=<time>	OK
	ERROR

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Defined values

<time>
String type value; 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; three last digits are mandatory, range -47…+48). E.g. 6th of May 2008, 14:28:10 GMT+8 equals to "08/05/06,14:28:10+32". **NOTE:** 1. Time zone is nonvolatile, and the factory value is invalid time zone. 2. Command +CCLK? will return time zone when time zone is valid, and if time zone is 00, command +CCLK? will return "+00", but not "-00".

Examples

AT+CCLK="08/11/28,12:30:33+32"
OK
AT+CCLK?
+CCLK: "08/11/28,12:30:35+32"
OK
AT+CCLK="08/11/26,10:15:00"
OK
AT+CCLK?
+CCLK: "08/11/26,10:15:02+32"
OK

4.17 AT+CMEE Report mobile equipment error

Description

This command is used to disable or enable the use of result code "+CME ERROR: <err>" or "+CMS ERROR: <err>" as an indication of an error relating to the functionality of ME; when enabled, the format of <err> can be set to numeric or verbose string.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CMEE=?	+CMEE: (list of supported <n>s) OK
Read Command	Responses
AT+CMEE?	+CMEE: <n> OK
Write Command	Responses

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AT+CMEE=<n>	OK
	ERROR
Execution Command	Responses
AT+CMEE	*Set default value:* OK

Defined values

<n>

0 – Disable result code,i.e. only "ERROR" will be displayed.

1 – Enable error result code with numeric values.

2 – Enable error result code with string values.

Examples

```
AT+CMEE?
+CMEE: 2
OK
AT+CPIN="1234","1234"
+CME ERROR: incorrect password
AT+CMEE=0
OK
AT+CPIN="1234","1234"
ERROR
AT+CMEE=1
OK
AT+CPIN="1234","1234"
+CME ERROR: 16
```

4.18 AT+CPAS Phone activity status

Description

This command is used to return the activity status <pas> of the ME. It can be used to interrogate the ME before requesting action from the phone.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPAS=?	+CPAS: (list of supported <pas>s) OK

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Execution Command	Responses
AT+CPAS	+CPAS: <pas> OK

Defined values

<pas>	
0	– ready (ME allows commands from TA/TE)
3	– ringing (ME is ready for commands from TA/TE, but the ringer is active)
4	– call in progress (ME is ready for commands from TA/TE, but a call is in progress)

Examples

```
RING (with incoming call)
AT+CPAS
+CPAS: 3
OK
AT+CPAS=?
+CPAS: (0,3,4)
OK
```

4.19 AT+SIMEI Set IMEI for the module

Description

This command is used to set the module's IMEI value.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+SIMEI=?	OK
Read Command	**Responses**
AT+SIMEI?	+SIMEI: <imei> OK
Write Command	**Responses**
AT+SIMEI=<imei>	OK
	ERROR

Defined values

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<imei>
The 15-digit IMEI value.

Examples

AT+SIMEI=357396012183170
OK
AT+SIMEI?
+SIMEI: 357396012183170
OK
AT+SIMEI=?
OK

4.20 AT+CSQDELTA Set RSSI delta change threshold

Description

This command is used to set RSSI delta threshold for signal strength reporting.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSQDELTA=?	+CSQDELTA: (list of supported <delta>s) OK
Read Command	Responses
AT+CSQDELTA?	+CSQDELTA: <delta> OK
	ERROR
Write Command	Responses
AT+CSQDELTA=<delta>	OK
	ERROR
Execution Command	Responses
AT+CSQDELTA	*Set default value（<delta>=5）:* OK

Defined values

<delta>
Range: from 0 to 5.

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Examples

```
AT+CSQDELTA?
+CSQDELTA: 5
OK
```

4.21 AT+CSVM Voice Mail Subscriber number

Description

Execution command returns the voice mail number related to the subscriber.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CSVM=?	+CSVM: (0-1), “(0-9,+)”, (128-255) OK
	ERROR
Read Command	Responses
AT+CSVM?	+CSVM: <valid>, “<number>”,<type> OK
	ERROR
Write Command	Responses
AT+CSVM=<valid>, “<number>”,<type>	OK
	ERROR

Defined values

<valid>
Whether voice mail number is valid: 0 – Voice mail number is invalid. 1 – Voice mail number is valid.
<number>
String type phone number of format specified by <type>.
<type>
Type of address octet in integer format. see also AT+CPBR <type>

Examples

```
AT+CSVM?
```

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```
+CSVM: 1 ,"13697252277",129
OK
```

4.22 Indication of EONS

This module supports EONS function; the following table shows the URC related EONS.

OPL INIT	Description
OPL DONE	This indication means EF-OPL has been read successfully. Only after this URC is reported, the AT+COPS? can query the network name that supports EONS function.
PNN INIT	Description
PNN DONE	This indication means EF-PNN has been read successfully
OPL UPDATING	Description
OPL UPDATING	This indication means the EF-OPL is updating using OTA message. After updating, the “OPL DONE” should report.
PNN UPDATING	Description
PNN UPDATING	This indication means the EF-PNN is updating using OTA message. After updating, the “PNN DONE” should report.
PNN UPDATING	This indication means the EF-PNN is updating using OTA message. After updating, the “PNN DONE” should report.

4.23 Indication of Voice Mail

This module supports voice mail function; the subscriber number is configured by AT+CSVM command, the following table shows the URC related Voice Mail.

Box Empty	Description
+VOICEMAIL: EMPTY	This indication means the voice mail box is empty
New Message	Description
+VOICEMAIL: NEW MSG	This indication means there is a new voice mail message notification received. This is for CPHS.
Voice Mail Status Updated	Description
+VOICEMAIL: WAITING, <count>	This indication means that there are <count> number of voice mail messages that needs to be got.

Defined values

< count>
Count of voice mail message that waits to be got.

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Examples

```
+VOICEMAIL: WAITING, <count>
+VOICEMAIL: WAITING, 5
```

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5 AT Commands for Network

5.1 AT+CREG Network registration

Description

This command is used to control the presentation of an unsolicited result code +CREG: <stat> when <n>=1 and there is a change in the ME network registration status, or code +CREG: <stat>[,<lac>,<ci>] when <n>=2 and there is a change of the network cell.

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 ME. Location information elements <lac> and <ci> are returned only when <n>=2 and ME is registered in the network.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CREG=?	+CREG: (list of supported <n>s) OK
Read Command	**Responses**
AT+CREG?	+CREG: <n>,<stat>[,<lac>,<ci>] OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CREG=<n>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CREG	*Set default value（<n>=0）:* OK

Defined values

<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:

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<stat>[,<lac>,<ci>]

<stat>

0 – not registered, ME is not currently searching a new operator to register to

1 – registered, home network

2 – not registered, but ME is currently searching a new operator to register to

3 – registration denied

4 – unknown

5 – registered, roaming

<lac>

Two byte location area code in hexadecimal format(e.g."00C3" equals 193 in decimal).

NOTE: The <lac> not supported in CDMA/HDR mode

<ci>

Cell Identify in hexadecimal format.

GSM : Maximum is two byte

WCDMA : Maximum is four byte

TDS-CDMA : Maximum is four byte

NOTE: The <ci> not supported in CDMA/HDR mode

Examples

AT+CREG?

+CREG: 0,1

OK

5.2 AT+COPS Operator selection

Description

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Write command forces an attempt to select and register the GSM/UMTS network operator. <mode> is used to select whether the selection is done automatically by the ME or is forced by this command to operator <oper> (it shall be given in format <format>). If the selected operator is not available, no other operator shall be selected (except <mode>=4). The selected operator name format shall apply to further read commands (AT+COPS?) also. <mode>=2 forces an attempt to deregister from the network. The selected mode affects to all further network registration (e.g. after <mode>=2, ME shall be unregistered until <mode>=0 or 1 is selected).

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, and other networks.

It is recommended (although optional) that after the operator list TA returns lists of supported <mode>s and <format>s. These lists shall be delimited from the operator list by two commas.

When executing AT+COPS=? , any input from serial port will stop this command.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+COPS=?	[+COPS: [list of supported (<stat>,long alphanumeric <oper> ,short alphanumeric <oper>,numeric <oper>[,< AcT>])s] [,,(list of supported <mode>s),(list of supported <format>s)]] OK
	ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+COPS?	+COPS: <mode>[,<format>,<oper>[,< AcT>]] OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+COPS=<mode>[,<format>[,<oper>[,< AcT>]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+COPS	OK

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Defined values

<mode>
0 – automatic 1 – manual 2 – force deregister 3 – set only <format> 4 – manual/automatic 5 – manual,but do not modify the network selection mode(e.g GSM,WCDMA) after module resets. NOTE: if <mode> is set to 1, 4, 5 in write command, the <oper> is needed.
<format>
0 – long format alphanumeric <oper> 1 – short format alphanumeric <oper> 2 – numeric <oper>
<oper>
string type, <format> indicates if the format is alphanumeric or numeric.
<stat>
0 – unknown 1 – available 2 – current 3 – forbidden
<AcT>
Access technology selected 0 – GSM 1 – GSM Compact 2 – UTRAN 7 – EUTRAN 8 – CDMA/HDR NOTE: the value 8 do not follow the 3gpp spec, we add this value to distinguish cdma/hdr.

Examples

AT+COPS?
+COPS: 0,0,"China Mobile Com",0 *OK*
AT+COPS=?
+COPS: (2,"China Unicom","Unicom","46001",0),(3,"China Mobile Com","DGTMPT","46000",0),,(0,1,2,3,4,5),(0,1,2) *OK*

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5.3 AT+CLCK Facility lock

Description

This command is used to lock, unlock or interrogate a ME or a network facility <fac>. Password is normally needed to do such actions. 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>.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CLCK=?	+CLCK: (list of supported <fac>s) OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CLCK=<fac>,<mode>[,<passwd>[,<class>]]	OK
	When <mode>=2 and command successful: +CLCK:<status>[,<class1>[<CR><LF> +CLCK: <status>,<class2> [...]] OK
	ERROR
	+CME ERROR: <err>

Defined values

<fac>	
"PF"	lock Phone to the very First inserted SIM card or USIM card
"SC"	lock SIM card or USIM card
"AO"	Barr All Outgoing Calls
"OI"	Barr Outgoing International Calls
"OX"	Barr Outgoing International Calls except to Home Country
"AI"	Barr All Incoming Calls
"IR"	Barr Incoming Calls when roaming outside the home country
"AB"	All Barring services (only for <mode>=0)
"AG"	All outGoing barring services (only for <mode>=0)
"AC"	All inComing barring services (only for <mode>=0)

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"FD"	SIM fixed dialing memory feature
"PN"	Network Personalization
"PU"	network subset Personalization
"PP"	service Provider Personalization
"PC"	Corporate Personalization

<mode>

0 – unlock

1 – lock

2 – query status

<status>

0 – not active

1 – active

<passwd>

Password.

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

<classX>

It is a sum of integers each representing a class of information (default 7):

1 – voice (telephony)

2 – data (refers to all bearer services)

4 – fax (facsimile services)

8 – short message service

16 – data circuit sync

32 – data circuit async

64 – dedicated packet access

128 – dedicated PAD access

255 – The value 255 covers all classes

Examples

```
AT+CLCK="SC",2
+CLCK: 0
OK
```

5.4 AT+CPWD Change password

Description

Write command sets a new password for the facility lock function defined by command Facility Lock AT+CLCK.

Test command returns a list of pairs which present the available facilities and the maximum length of their password.

SIM PIN	References

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YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPWD=?	+CPWD: (list of supported (<fac>,<pwdlength>)s) OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CPWD= <fac>,<oldpwd>,<newpwd>	OK
	ERROR
	+CME ERROR: <err>

Defined values

<fac>
Refer Facility Lock +CLCK for other values: "SC" SIM or USIM PIN1 "P2" SIM or USIM PIN2 "AB" All Barring services "AC" All inComing barring services (only for <mode>=0) "AG" All outGoing barring services (only for <mode>=0) "AI" Barr All Incoming Calls "AO" Barr All Outgoing Calls "IR" Barr Incoming Calls when roaming outside the home country "OI" Barr Outgoing International Calls "OX" Barr Outgoing International Calls except to Home Country
<oldpwd>
String type, it shall be the same as password specified for the facility from the ME user interface or with command Change Password AT+CPWD.
<newpwd>
String type, it is the new password; maximum length of password can be determined with <pwdlength>.
<pwdlength>
Integer type, max length of password.

Examples

AT+CPWD=?
+CPWD: ("AB",4),("AC",4),("AG",4),("AI",4),("AO",4),("IR",4),("OI",4),("OX",4),("SC",8),("P2",8)

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OK

5.5 AT+CCUG Closed user group

Description

This command allows control of the Closed User Group supplementary service. Set command enables the served subscriber to select a CUG index, to suppress the Outgoing Access (OA), and to suppress the preferential CUG.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CCUG=?	OK
	ERROR
Read Command	Responses
AT+CCUG?	+CCUG: <n>,<index>,<info> OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CCUG= <n>[,<index>[,<info>]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CCUG	*Set default value:* OK

Defined values

<n>	
0	– disable CUG temporary mode
1	– enable CUG temporary mode
<index>	
0...9	– CUG index
10	– no index (preferred CUG taken from subscriber data)
<info>	
0	– no information

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1 – suppress OA
2 – suppress preferential CUG
3 – suppress OA and preferential CUG

Examples

```
AT+CCUG?
+CCUG: 0,0,0
OK
```

5.6 AT+CUSD Unstructured supplementary service data

Description

This command allows control of the Unstructured Supplementary Service Data (USSD). 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.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CUSD=?	+CUSD: (list of supported <n>s) OK
Read Command	**Responses**
AT+CUSD?	+CUSD: <n> OK
Write Command	**Responses**
AT+CUSD= <n>[,<str>[,<dcs>]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CUSD	*Set default value (<n>=0):* OK

Defined values

<n>

0 – disable the result code presentation in the TA

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1 – enable the result code presentation in the TA 2 – cancel session (not applicable to read command response)
<str>
String type USSD-string.
<dcs>
Cell Broadcast Data Coding Scheme in integer format (default 0).
<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 4 – operation not supported 5 – network time out

Examples

AT+CUSD?
+CUSD: 1
OK
AT+CUSD=0
OK

5.7 AT+CAOC Advice of charge

Description

This command refers to Advice of Charge supplementary service that enables subscriber to get information about the cost of calls. With <mode>=0, the execute command returns the current call meter value from the ME.

This command also includes the possibility to enable an unsolicited event reporting of the CCM information. The unsolicited result code +CCCM: <ccm> is sent when the CCM value changes, but not more that every 10 seconds. Deactivation of the unsolicited event reporting is made with the same command.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CAOC=?	+CAOC: (list of supported <mode>s) OK
	ERROR

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Read Command	Responses
AT+CAOC?	+CAOC: <mode> OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CAOC=<mode>	+CAOC: <ccm> OK
	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+ CAOC	*Set default value (<mode>=1):* OK ERROR

Defined values

<mode>
0 – query CCM value 1 – deactivate the unsolicited reporting of CCM value 2 – 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.

Examples

```
AT+CAOC=0
+CAOC: "000000"
OK
```

5.8 AT+CSSN Supplementary service notifications

Description

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This command refers to supplementary service related network initiated notifications. The set command enables/disables the presentation of notification result codes from TA to TE.

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. 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.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CSSN=?	+CSSN: (list of supported <n>s),(list of supported <m>s) OK
	ERROR
Read Command	**Responses**
AT+CSSN?	+CSSN: <n>,<m> OK
	ERROR
Write Command	**Responses**
AT+CSSN=<n>[,<m>]	OK
	ERROR
	+CME ERROR: <err>

Defined values

<n>
Parameter sets/shows the +CSSI result code presentation status in the TA: 0 – disable 1 – enable
<m>
Parameter sets/shows the +CSSU result code presentation status in the TA: 0 – disable 1 – enable
<code1>

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0 – unconditional call forwarding is active 1 – some of the conditional call forwarding are active 2 – call has been forwarded 3 – call is waiting 5 – outgoing calls are barred	
<index>	
Refer "Closed user group +CCUG".	
<code2>	
0 – this is a forwarded call (MT call setup) 2 – call has been put on hold (during a voice call) 3 – call has been retrieved (during a voice call) 5 – call on hold has been released (this is not a SS notification) (during a voice call)	
<number>	
String type phone number of format specified by <type>.	
<type>	
Type of address octet in integer format; default 145 when dialing string includes international access code character "+", otherwise 129.	
<subaddr>	
String type sub address of format specified by <satype>.	
<satype>	
Type of sub address octet in integer format, default 128.	

Examples

AT+CSSN=1,1
OK
AT+CSSN?
+CSSN: 1,1
OK

5.9 AT+CPOL Preferred operator list

Description

This command is used to edit the SIM preferred list of networks.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPOL=?	+CPOL: (list of supported <index>s), (list of supported <format>s) OK

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	ERROR
Read Command	Responses
AT+CPOL?	[+CPOL:<index1>,<format>,<oper1>[<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>,<LTE_AcT1>][<CR><LF> +CPOL: <index2>,<format>,<oper2>[,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>,<LTE_AcT1>] [...]]] OK
	ERROR
Write Command	Responses
AT+CPOL=<index>[,<format>[,<oper>][,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>,<LTE_AcT1>]] **NOTE:** If using USIM card, the last four parameters must set.	OK
	ERROR
	+CME ERROR: <err>

Defined values

<index>
Integer type, the order number of operator in the SIM preferred operator list. If only input <index>, command will delete the value indicate by <index>.
<format>
0 – long format alphanumeric <oper> 1 – short format alphanumeric <oper> 2 – numeric <oper>
<operX>
String type.
<GSM_AcT*n*>
GSM access technology: 0 – access technology not selected 1 – access technology selected
<GSM_Compact_AcT*n*>
GSM compact access technology: 0 – access technology not selected 1 – access technology selected
<UTRA_AcT*n*>
UTRA access technology: 0 – access technology not selected

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1 – access technology selected
<LTE_AcT*n*>
LTE access technology: 0 – access technology not selected 1 – access technology selected

Examples

AT+CPOL?
+CPOL: 1,2,"46001",0,0,1,0
OK
AT+CPOL=?
+CPOL: (1-8),(0-2)
OK

5.10 AT+COPN Read operator names

Description

This command is used to return the list of operator names from the ME. Each operator code <numericX> that has an alphanumeric equivalent <alphaX> in the ME memory shall be returned.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+COPN=?	OK
	ERROR
Write Command	**Responses**
AT+COPN	+COPN:<numeric1>,<alpha1>[<CR><LF> +COPN: <numeric2>,<alpha2> [...]] OK
	ERROR
	+CME ERROR: <err>

Defined values

<numericX>
String type, operator in numeric format (see AT+COPS).
<alphaX>

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String type, operator in long alphanumeric format (see AT+COPS).

Examples

```
AT+COPN
+COPN: "46000","China Mobile Com"
+COPN: "46001"," China Unicom"
……
OK
```

5.11 AT+CNMP Preferred mode selection

Description

This command is used to select or set the state of the mode preference.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNMP=?	+CNMP: (list of supported <mode>s) OK
Read Command	**Responses**
AT+CNMP?	+CNMP: <mode> OK
Write Command	**Responses**
AT+CNMP=<mode>	OK *If <mode> not supported by module, this command will return ERROR.* ERROR

Defined values

<mode>

2 – Automatic
13 – GSM Only
14 – WCDMA Only
38 – LTE Only
59 – TDS-CDMA Only
9 – CDMA Only
10 – EVDO Only

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19 – GSM+WCDMA Only
22 – CDMA+EVDO Only
48 – Any modes but LTE
60 – GSM+TDSCDMA Only
61 – GSM+TDSCDMA+LTE
63 – GSM+WCDMA+TDSCDMA Only
67 – CDMA+EVDO+GSM+WCDMA+TDSCDMA Only

Examples

```
AT+CNMP=13
OK
AT+CNMP?
+CNMP: 2
OK
```

5.12 AT+CNBP Preferred band selection

Description

This command is used to select or set the state of the band preference.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNBP?	+CNBP: <mode>[,<lte_mode>][,<tds_mode>] OK
Write Command	**Responses**
AT+CNBP=<mode>[,<lte_mode>][,<tds_mode>]	OK
	ERROR

Defined values

<mode>

64bit number, the value is "1" << "<pos>", then or by bit.

Some special mode value declared below:

0x40000000 BAND_PREF_NO_CHANGE

<pos>

Value:

0xFFFFFFFF7FFFFFFF Any (any value)

7 GSM_DCS_1800

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8	GSM_EGSM_900
9	GSM_PGSM_900
16	GSM_450
17	GSM_480
18	GSM_750
19	GSM_850
20	GSM_RGSM_900
21	GSM_PCS_1900
22	WCDMA_IMT_2000
23	WCDMA_PCS_1900
24	WCDMA_III_1700
25	WCDMA_IV_1700
26	WCDMA_850
27	WCDMA_800
48	WCDMA_VII_2600
49	WCDMA_VIII_900
50	WCDMA_IX_1700

<lte_mode>

64bit number, the value is "1" << "<lte_pos>", then or by bit.

NOTE: FDD(band1 ~ band32), TDD(band33 ~ band42)

<lte_pos>

Value:

0x000007FF3FDF3FFF	Any (any value)
0	EUTRAN_BAND1(UL:1920-1980; DL:2110-2170)
1	EUTRAN_BAND2(UL:1850-1910; DL:1930-1990)
2	EUTRAN_BAND3(UL:1710-1785; DL:1805-1880)
3	EUTRAN_BAND4(UL:1710-1755; DL:2110-2155)
4	EUTRAN_BAND5(UL: 824-849; DL: 869-894)
5	EUTRAN_BAND6(UL: 830-840; DL: 875-885)
6	EUTRAN_BAND7(UL:2500-2570; DL:2620-2690)
7	EUTRAN_BAND8(UL: 880-915; DL: 925-960)
8	EUTRAN_BAND9(UL:1749.9-1784.9; DL:1844.9-1879.9)
9	EUTRAN_BAND10(UL:1710-1770; DL:2110-2170)
10	EUTRAN_BAND11(UL:1427.9-1452.9; DL:1475.9-1500.9)
11	EUTRAN_BAND12(UL:698-716; DL:728-746)
12	EUTRAN_BAND13(UL: 777-787; DL: 746-756)
13	EUTRAN_BAND14(UL: 788-798; DL: 758-768)
16	EUTRAN_BAND17(UL: 704-716; DL: 734-746)
17	EUTRAN_BAND18(UL: 815-830; DL: 860-875)
18	EUTRAN_BAND19(UL: 830-845; DL: 875-890)
19	EUTRAN_BAND20(UL: 832-862; DL: 791-821)
20	EUTRAN_BAND21(UL: 1447.9-1462.9; DL: 1495.9-1510.9)
22	EUTRAN_BAND23(UL: 2000-2020; DL: 2180-2200)

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23	EUTRAN_BAND24(UL: 1626.5-1660.5; DL: 1525 -1559)
24	EUTRAN_BAND25(UL: 1850-1915; DL: 1930 -1995)
25	EUTRAN_BAND26(UL: 814-849; DL: 859 -894)
26	EUTRAN_BAND27(UL: 807.5-824; DL: 852 -869)
27	EUTRAN_BAND28(703-748; DL: 758-803)
28	EUTRAN_BAND29(UL:1850-1910 or 1710-1755; DL:716-728)
29	EUTRAN_BAND30(UL: 2305-2315 ; DL: 2350 - 2360)
32	EUTRAN_BAND33(UL: 1900-1920; DL: 1900-1920)
33	EUTRAN_BAND34(UL: 2010-2025; DL: 2010-2025)
34	EUTRAN_BAND35(UL: 1850-1910; DL: 1850-1910)
35	EUTRAN_BAND36(UL: 1930-1990; DL: 1930-1990)
36	EUTRAN_BAND37(UL: 1910-1930; DL: 1910-1930)
37	EUTRAN_BAND38(UL: 2570-2620; DL: 2570-2620)
38	EUTRAN_BAND39(UL: 1880-1920; DL: 1880-1920)
39	EUTRAN_BAND40(UL: 2300-2400; DL: 2300-2400)
40	EUTRAN_BAND41(UL: 2496-2690; DL: 2496-2690)
41	EUTRAN_BAND42(UL: 3400-3600; DL: 3400-3600)
42	EUTRAN_BAND43(UL: 3600-3800; DL: 3600-3800)

<tds_mode>

64bit number, the value is "1" << "<tds_pos>", then or by bit.

<tds_pos>

Value:

0x000000000000003F	Any (any value)
0	TDS Band A (1900-1920 MHz, 2010-2020 MHz)
1	TDS Band B (1850-1910 MHz, 1930-1990 MHz)
2	TDS Band C (1910-1930 MHz)
3	TDS Band D (2570-2620 MHz)
4	TDS Band E (2300-2400 MHz)
5	TDS Band F (1880-1920 MHz)

<term_mode>

0 – term permanent

1 – term until a power cycle

Examples

```
AT+CNBP=0x000700000FFF0380
OK
AT+CNBP?
+CNBP: 0x0000000000400003,0x000007FF03DF3FFF,0x000000000000003F
OK
```

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5.13 AT+CNAOP Acquisitions order preference

Description

This command is used to reset the state of acquisitions order preference.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNAOP=?	+CNAOP: (list of supported <mode>s) OK
Read Command	Responses
AT+CNAOP?	+CNAOP: <mode>[,<sys_mode1>[,<sys_mode2>[...[,<sys_mode10>]]]] OK
Write Command	Responses
AT+CNAOP=<mode>[,<sys_mode1>[,<sys_mode2>[...[,<sys_mode10>]]]]	OK
	ERROR

Defined values

<mode>

0 – Automatic
1 – GSM,WCDMA
2 – WCDMA,GSM
7 – Acquistion by priority order list <sys_mode*n*>s.

<sys_mode*n*>

n belongs to 1 ~ 10
sys_mode values:
2 – CDMA
3 – GSM
4 – HDR
5 – WCDMA
9 – LTE
11 – TDSCDMA

Examples

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AT+CNAOP=1
OK
AT+CNAOP?
+CNAOP: 7,9,5,3
OK

5.14 AT+CNSDP Preferred service domain selection

Description

This command is used to reset the state of the service domain preference.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNSDP=?	+CNSDP: (list of supported <mode>s) OK
Read Command	**Responses**
AT+CNSDP?	+CNSDP: <mode> OK
Write Command	**Responses**
AT+CNSDP=<mode>	OK
	ERROR

Defined values

<mode>
0 – CS Only 1 – PS Only 2 – CS + PS

Examples

AT+CNSDP=2
OK
AT+CNSDP?
+CNSDP: 0
OK

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5.15 AT+CPSI Inquiring UE system information

Description

This command is used to return the UE system information.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPSI=?	+CPSI: (scope of <time>) OK
Read Command	**Responses**
AT+CPSI?	*If camping on a gsm cell:* +CPSI:<System Mode>,<Operation Mode>,<MCC>-<MNC>,<LAC>,<Cell ID>,<Absolute RF Ch Num>,<RxLev>, <Track LO Adjust>,<C1-C2> OK
	If camping on a wcdma cell: +CPSI: <System Mode>,<Operation Mode>,<MCC>-<MNC>,<LAC>,<Cell ID>,<Frequency Band>,<PSC>,<Freq>,<SSC>,<EC/IO>,<RSCP>,<Qual>,<RxLev>,<TXPWR> OK
	If camping on a tds-cdma cell: +CPSI: <System Mode>,<Operation Mode>,<MCC>-<MNC>,<LAC>,<Cell ID>,<Frequency Band>,<Uarfcn>,<Cpid> OK
	If camping on a lte cell: +CPSI: <System Mode>,<Operation Mode>,<MCC>-<MNC>,<TAC>,<SCellID>,<PCellID>,<Frequency Band>,<earfcn>,<dlbw>,<ulbw>,<RSRQ>,<RSRP>,<RSSI>,<RSSNR> OK
	If camping on a cdma/evdo cell: +CPSI: CDMA,<Operation Mode>[,<MCC>-<MNC>,<CDMA ch num>,<CDMA pilot PN>,<CDMA RX Chain 0 AGC>,<CDMA RX Chain 1 AGC>,<CDMA Chain 0 LNA>,<CDMA Chain 1 LNA>,<CDMA TX AGC>,<SID>,<NID>,<CDMA EC/IO>,<BID>] +CPSI: EVDO,<Operation Mode>[,<MCC>-<MNC>,<EVDO ch

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	num>,<EVDO RX Chain 0 AGC>,<EVDO RX Chain 1 AGC>,<EVDO TX AGC>,<EVDO Serving PN>,<EVDO Rel0 SCI>,<EVDO RelA SCI>,<EVDO EC/IO>] OK
	If no service: +CPSI: NO SERVICE, Online OK
	ERROR
Write Command	Responses
AT+CPSI=<time>	OK
	ERROR

Defined values

<time>
The range is 0-255, unit is second, after set <time> will report the system information every the seconds.
<System Mode>
System mode, values: “NO SERVICE”, “GSM”, “WCDMA”, “LTE”, “TDS”… If module in LIMITED SERVICE state and +CNLSA command is set to 1, the system mode will display as “GSM-LIMITED”, “WCDMA-LIMITED”…
<Operation Mode>
UE operation mode, values: “Online”,“Offline”,“Factory Test Mode”,“Reset”, “Low Power Mode”.
<MCC>
Mobile Country Code (first part of the PLMN code)
<MNC>
Mobile Network Code (second part of the PLMN code)
<LAC>
Location Area Code (hexadecimal digits)
<Cell ID>
Service-cell Identify.
<Absolute RF Ch Num>
AFRCN for service-cell.
<Track LO Adjust>
Track LO Adjust
<C1>
Coefficient for base station selection
<C2>
Coefficient for Cell re-selection
<Frequency Band>
Frequency Band of active set
<PSC>

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Primary synchronization code of active set.
<Freq>
Downlink frequency of active set.
<SSC>
Secondary synchronization code of active set
<EC/IO>
Ec/Io value
<RSCP>
Received Signal Code Power
<Qual>
Quality value for base station selection
<RxLev>
RX level value for base station selection
<TXPWR>
UE TX power in dBm. If no TX, the value is 500.
<Cpid>
Cell Parameter ID
<Pathloss>
Path loss
<TimingAdvance>
Timing advance
<TAC>
Tracing Area Code
<PCellID>
Physical Cell ID
<earfcn>
E-UTRA absolute radio frequency channel number for searching LTE cells
<dlbw>
Transmission bandwidth configuration of the serving cell on the downlink
<ulbw>
Transmission bandwidth configuration of the serving cell on the uplink
<RSRP>
Current reference signal received power in -1/10 dBm. Available for LTE
<RSRQ>
Current reference signal receive quality as measured by L1.
<RSSNR>
Average reference signal signal-to-noise ratio of the serving cell
<BID>
Base ID

Examples

AT+CPSI?

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+CPSI: GSM,Online,460-00,0x182d,12401,27 EGSM 900,-64,2110,42-42
OK
AT+CPSI?
+CPSI: WCDMA,Online,460-01,0xA809,11122855,WCDMA IMT 2000,279,10663,0,1.5,62,33,52,500
OK
AT+CPSI=?
+CPSI: (0-255)
OK

5.16 AT+CNSMOD Show network system mode

Description

This command is used to return the current network system mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNSMOD=?	+CNSMOD: (list of supported <n>s) OK
Read Command	**Responses**
AT+CNSMOD?	+CNSMOD: <n>,<stat> OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CNSMOD=<n>	OK
	ERROR
	+CME ERROR: <err>

Defined values

<n>		
0	–	disable auto report the network system mode information
1	–	auto report the network system mode information, command: +CNSMOD:<stat>
<stat>		
0	–	no service
1	–	GSM

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2 – GPRS
3 – EGPRS (EDGE)
4 – WCDMA
5 – HSDPA only(WCDMA)
6 – HSUPA only(WCDMA)
7 – HSPA (HSDPA and HSUPA, WCDMA)
8 – LTE
9 – TDS-CDMA
10 – TDS-HSDPA only
11 – TDS- HSUPA only
12 – TDS- HSPA (HSDPA and HSUPA)
13 – CDMA
14 – EVDO
15 – HYBRID (CDMA and EVDO)

Examples

```
AT+CNSMOD?
+CNSMOD: 0,2
OK
```

5.17 AT+CCINFO Show cell system information

Description

This command is used to inquire serving cell and neighbors cell system information.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCINFO=?	OK
Execution Command	Responses
AT+CCINFO	*When ME in idle mode for GSM:* +CCINFO: [<SCELL>],ARFCN: <arfcn>,MCC: <mcc>,MNC: <mnc>,LAC: <lac>,ID: <id>,BSIC: <bsic>,RXLev: <rxlev>,C1: <c1>,C2: <c2>,TA: <TA>,TXPWR: <TXPWR> [+CCINFO: [<NCELLn>],ARFCN: <arfcn>,MCC: <mcc>,MNC: <mnc>,LAC: <lac>,ID: <id>,BSIC: <bsic>,RXLev: <rxlev>,C1: <c1>,C2: <c2> […]] OK

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	When ME in dedicated mode for GSM: +CCINFO: [<SCELL>],ARFCN: <arfcn>,MCC: <mcc>,MNC: <mnc>,LAC: <lac>,ID: <id>,BSIC: <bsic>,RXLev: <rxlev>,C1: <c1>,C2: <c2>,TA: <TA>,TXPWR: <TXPWR> +CCINFO: [<NCELLn>],ARFCN: <arfcn>,BSIC: <bsic>,RXLev: <rxlev> […] OK *When not in GSM for GSM:* +CCINFO: NOT IN GSM OK
	When ME in CDMA/HDR mode for SIM7100CE: +CCINFO: [<SCELL>], MCC: <mcc>,MNC: <mnc>,SID:<sid>,NID:<nid>,BID:<bid>,SCYC:<scyc>,PREV:<prev>,BC:<band class>,CH:<CDMA ch num>,PN:<CDMA pilot PN>, ECIO:<CDMA EC/IO>,RXAGC:<CDMA RX Chain 0 AGC>dbm,<CDMA RX Chain 1 AGC>dbm,TXAGC:<CDMA TX AGC>dbm<CR><LF>[<CR><LF>+CCINFO:[<NCelln>]BC:<band class>,CH:<CDMA ch num>,PN:<CDMA pilot PN> <CR><LF>[…]] OK
	When not in GSM or CDMA/HDR for SIM7100CE: +CCINFO: NOT IN GSM or CDMA OK
	ERROR

Defined values

<SCELL>
indicate serving cell
<NCELLn>
available neighbour cell index
<arfcn>
assigned radio channel
<mcc>
mobile country code
<mnc>
mobile network code
<lac>
localization area code
<id>

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cell identifier
<bsic>
base station identification code
<rxlev>
received signal strength in dBm
<TA>
timing advance
<c1>
Coefficient for base station selection
<c2>
Coefficient for Cell re-selection
<TXPWR>
UE TX power in dBm. If no TX, the value is 0.
<sid>
Current system ID
<nid>
Current network ID
<bid>
Current base ID
<scyc>
Slot cycle index.
<prev>
Protocol revision number of the mobile station.
<band class>
CDMA band class
<CDMA ch num>
EVDO channel number
<CDMA pilot PN>
CDMA pilot PN offset
<CDMA EC/IO>
CDMA EC/IO in dB
<CDMA RX Chain 0 AGC>
CDMA RX Chain 0 AGC dBm
<CDMA RX Chain 1 AGC>
CDMA RX Chain 1 AGC dBm
<CDMA TX AGC>
CDMA TX AGC dBm

Examples

```
AT+CCINFO  (idle  mode)
+CCINFO:  [SCELL],ARFCN:  11,MCC:  460,MNC:  00,LAC:  6360,ID:  12402,BSIC:  52,RXLev:
 -68dBm,C1:  35,C2:  35,TA:  0,TXPWR:  0
```

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```
+CCINFO: [NCELL1],ARFCN: 29,MCC: 460,MNC: 00,LAC: 6360,ID: 12625,BSIC: 55,RXLe
 v:-81dBm,C1: 21,C2: 21
+CCINFO: [NCELL2],ARFCN: 28,MCC: 460,MNC: 00,LAC: 6360,ID: 8466,BSIC: 49,RXLe
v: -81dBm,C1: 21,C2: 21
+CCINFO: [NCELL3],ARFCN: 25,MCC: 460,MNC: 00,LAC: 6360,ID: 8498,BSIC: 40,RXLe
v: -81dBm,C1: 21,C2: 21
+CCINFO: [NCELL4],ARFCN: 2,MCC: 460,MNC: 00,LAC: 6362,ID: 24644,BSIC: 48,RXLe
v: -87dBm,C1: 15,C2: 15
+CCINFO: [NCELL5],ARFCN: 14,MCC: 460,MNC: 00,LAC: 6360,ID: 12403,BSIC: 54,RXLe
 v:-86dBm,C1: 16,C2: 16
+CCINFO: [NCELL6],ARFCN: 13,MCC: 460,MNC: 00,LAC: 6362,ID: 24705,BSIC: 51,RXLe
 v:-89dBm,C1: 13,C2: 13
OK
AT+CCINFO (CDMA mode for SIM7100CE)
+CCINFO: [SCELL],MCC:460,MNC:03,SID:13840,NID:16,BID:4508,SCYC:1,PREV:9,BC:0,C
 H:201,PN:44,ECIO:5,RXAGC:-1.6dbm,0.1dbm,TXAGC:-3276.8dbm,

+CCINFO:[NCell0]BC:0,CH:201,PN:108,

+CCINFO:[NCell1]BC:0,CH:201,PN:380,

+CCINFO:[NCell2]BC:0,CH:201,PN:212,

+CCINFO:[NCell3]BC:0,CH:201,PN:268,

+CCINFO:[NCell4]BC:0,CH:201,PN:440,

+CCINFO:[NCell5]BC:0,CH:201,PN:484,

+CCINFO:[NCell6]BC:0,CH:201,PN:468,

+CCINFO:[NCell7]BC:0,CH:201,PN:300,

+CCINFO:[NCell8]BC:0,CH:201,PN:52,

+CCINFO:[NCell9]BC:0,CH:201,PN:36,

+CCINFO:[NCell10]BC:0,CH:283,PN:430,

+CCINFO:[NCell11]BC:0,CH:283,PN:342,

+CCINFO:[NCell12]BC:0,CH:283,PN:486,
```

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```
+CCINFO:[NCell13]BC:0,CH:201,PN:16,

+CCINFO:[NCell14]BC:0,CH:201,PN:352,

+CCINFO:[NCell15]BC:0,CH:283,PN:46,

+CCINFO:[NCell16]BC:0,CH:201,PN:156,

+CCINFO:[NCell17]BC:0,CH:201,PN:244,

+CCINFO:[NCell18]BC:0,CH:201,PN:164,

+CCINFO:[NCell19]BC:0,CH:201,PN:500,

OK
```

5.18 AT+CRUS Show cell set system information

Description

This command is used to return the mobile phone system information in WCDMA.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRUS=?	OK
Execution Command	**Responses**
AT+CRUS	+CRUS: Active SET, <ActiveSET Cells Num>[, <ActiveSET Cell1 PSC>, <ActiveSET Cell1 Freq>, <ActiveSET Cell1 SSC> , <ActiveSET Cell1 Sttd> , <ActiveSET Cell1 TotEcio> , <ActiveSET Cell1 Ecio> , <ActiveSET Cell1 Rscp> , <UTMS_SETS Cell TPC>, <UTMS_SETS Cell SecCpichOvsf>, <ActiveSET Cell1 WinSize> […]] +CRUS: Sync Neighbor SET, <SyncSET Cells Num>[, <SyncSET Cell1 PSC>, <SyncSET Cell1 Freq>, < SyncSET Cell1 SSC> , < SyncSET Cell1 Sttd> , < SyncSET Cell1 TotEcio> , < SyncSET Cell1 Ecio> , < SyncSET Cell1 Rscp> , < SyncSET Cell1 WinSize> […]] +CRUS: Async Neighbor SET, <AsyncSET Cells Num>[, < AsyncSET Cell1 PSC>, < AsyncSET Cell1 Freq>, < AsyncSET

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	Cell1 SSC> , < AsyncSET Cell1 Sttd> , < AsyncSET Cell1 TotEcio> , < AsyncSET Cell1 Ecio> , < AsyncSET Cell1 Rscp> , < AsyncSET Cell1 WinSize> […]] OK ERROR

Defined values

<UTMS_SETS Cells Num>
cells number
<UTMS_SETS Cell 1-n PSC>
primary synchronization code of the cell
<UTMS_SETS Cell 1-n Freq>
downlink frequency of the cell
<UTMS_SETS Cell 1-n SSC>
secondary synchronization code
<UTMS_SETS Cell 1-n Sttd>
if the CPICH of this cell uses STTD
<UTMS_SETS Cell 1-n TotEcio>
the total Ec/Io in the best paths found in a sweep
<UTMS_SETS Cell 1-n 1 Ecio>
Ec/Io
<UTMS_SETS Cell 1-n Rscp>
CPICH RSCP
<UTMS_SETS Cell 1-n TPC>
Forward power control combination
<UTMS_SETS Cell 1-n SecCpichOvsf>
OVSF code of the secondary CPICH
<UTMS_SETS Cell 1-n WinSize>
search window size for this cell
UTMS_SETS contains: ActiveSET active set SyncSET neighbor (monitored) set for neighbors whose timing is known AsyncSET neighbor (monitored) set for neighbors whose timing is unknown

Examples

AT+CRUS
+CRUS: Active SET,1,2,10663,0,0,16,16,101,0,0,1536
+CRUS: Sync Neighbor SET,2,42,10663,0,0,34,33,109,1536,35,10663,0,0,26,26,106,1536
+CRUS: Async Neighbor SET,10,11,10663,0,0,0,49,121,0,6,10663,0,0,0,49,121,0,28, 10663, 0, 0,0, 49,121,0,247,10663,0,0,0,49,121,0,193,10663,0,0,0,49,121,0,493,10663,0,0,0,49,121,0,485,10663, 0,0,0,49,121,0,258,10663,0,0,0,49,121,0,109,10663,0,0,0,49,121,0,226,10663,0,0,38,49,121,1536
OK

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5.19 AT+CNLSA Network limited service allowed

Description

This command is used to set network operation allowed or not in limited service state

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNLSA=?	+ CNLSA: (list of supported <n>s) OK
Read Command	**Responses**
AT+CNLSA?	+CNLSA: <n> OK
	ERROR
Write Command	**Responses**
AT+CNLSA=<n>	OK
	ERROR

Defined values

<n>		
0	–	network operation not allowed in limited service state
1	–	network operation allowed in limited service state

Examples

```
AT+CNLSA?
+CNLSA: 0
OK
```

5.20 AT+CMGSI Inquiring mobile phone system information

Description

This command is used to inquire mobile phone system information

SIM PIN	References
NO	Vendor

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Syntax

Test Command	Responses
AT+CMGSI=?	+CMGSI: (list of supported <mode>s) OK
Write Command	**Responses**
AT+CMGSI=<mode>	*The write command return the <mode> related signal info;* *If <mode>=2, get GSM signal info:* +CMGSI: Main_Info,<mode>,<service_available>,<band>, <channel> +CMGSI: RX_Power,0x<rx_div_ind>,RX_Chain0,<is_radio_tuned>,<rx_pwr>,RX_Chain1,<is_radio_tuned>,<rx_pwr> +CMGSI: TX_Power,Not Supported +CMGSI: Phy_Cellid,<cellid_valid>,<cellid> +CMGSI: Log_Sinr10xdb,<sinr_valid>,<sinr> OK
	If <mode>=3, get WCDMA signal info: +CMGSI: Main_Info,<mode>,<service_available>,<band>, <channel> +CMGSI: RX_Power,0x<rx_div_ind>,RX_Chain0,<is_radio_tuned>,<rx_pwr>,<ecio>,<rscp>,RX_Chain1,<is_radio_tuned>,<rx_pwr>,<ecio>,<rscp> +CMGSI: TX_Power,<is_in_traffic>,<tx_pwr>,<pa_gain_state> +CMGSI: Phy_Cellid,<cellid_valid>,<cellid> +CMGSI: Log_Sinr10xdb,<sinr_valid>,<sinr> OK
	If <mode>=4, get LTE signal info: +CMGSI: Main_Info,<mode>,<service_available>,<band>, <channel> +CMGSI: RX_Power,0x<rx_div_ind>,RX_Chain0,<is_radio_tuned>,<rx_pwr>,<ecio>,<rsrp>,<phase>,RX_Chain1,<is_radio_tuned>,<rx_pwr>,<ecio>,<rsrp>,<phase> +CMGSI: TX_Power,<is_in_traffic>,<tx_pwr>,<pa_gain_state> +CMGSI: Phy_Cellid,<cellid_valid>,<cellid> +CMGSI: Log_Sinr10xdb,<sinr_valid>,<sinr> OK
	If <mode>=5, get TDS-CDMA signal info: +CMGSI: Main_Info,<mode>,<service_available>,<band>, <channel> +CMGSI: RX_Power,0x<rx_div_ind>,RX_Chain0,<is_radio_tune

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	d>,<rx_pwr>,<ecio>,<rscp>,RX_Chain1,<is_radio_tuned>,<rx_pwr>,<ecio>,<rscp> +CMGSI: TX_Power,<is_in_traffic>,<tx_pwr>,<pa_gain_state> +CMGSI: Phy_Cellid,<cellid_valid>,<cellid> +CMGSI: Log_Sinr10xdb,<sinr_valid>,<sinr> +CMGSI: Freq_DwPTSRssi,<pri_freq>,<scell_pri_freq_rssi_ch0>,< scell_pri_freq_rssi_ch1> +CMGSI: TX_Pwr_Info,<ul_tx_pwr0>,<ul_tx_pwr1>,<ul_tx_pwr2>,<ul_tx_pwr3>,<ul_tx_pwr4>,<ul_tx_pwr5> OK
	ERROR

Defined values

<mode>
2 – GSM 3 – WCDMA 4 – LTE 5 – TDS
<service_available>
0 – service not available 1 – service is available
<band>
Active band of the current system
<channel>
Active channel of the current system.
<rx_div_ind>
Diversity bitmask to show which Rx chain has valid signal information. 0x00000000 – NO Rx chain available 0x00000001 – Rx chain 0 available 0x00000002 – Rx chain 1 available 0x00000003 – Rx chain 0 and Rx chain 1 available
< is_radio_tuned >
Indicates whether the Rx is tuned to a channel 0 – radio is not tuned, delayed or invalid values are set depending on each technology 1 – radio is tuned, instantaneous values are set for the signal information fields
< rx_pwr >
Rx power value in 1/10 dBm resolution
< ecio >
Ec/Io in -1/10 dBm
< is_in_traffic >
Indicates whether the device is in traffic
< tx_pwr >

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	Tx power value in 1/10 dBm. only meaningful when the device is in traffic. When there is no traffic, tx_pwr is invalid
< pa_gain_state >	
	Power amplifier gain state
< cellid_valid >	
	Serving cell physical ID is valid 0 – cell ID is invalid 1 – cell ID is valid
< cellid >	
	Serving cell physical ID
< sinr_valid >	
	Serving cell SINR information measured in decibels 0 – SINR is invalid 1 – SINR is valid
< sinr >	
	Serving cell SINR information
< rscp >	
	Received signal code power in -1/10 dBm. Available for WCDMA
< rsrp >	
	Current reference signal received power in -1/10 dBm. Available for LTE
< phase >	
	Current phase in 1/100 degrees. Range: 0.00 to 360.00. Available for LTE only

Examples

```
AT+CMGSI=4
+CMGSI: Main_Info,4,1,39,38400
+CMGSI: RX_Power,0x00000003,RX_Chain0,1,-907,-98,-1175,0,RX_Chain1,1,-1039,-200,
-1400,0
+CMGSI: TX_Power,0,-32768,0
+CMGSI: Phy_Cellid,1,281
+CMGSI: Log_Sinr10xdb,1,143
OK
```

5.21 AT+CMGRMI Gets the neighbor measurement information

Description

This command is used to select or set the state of the mode preference.

SIM PIN	References
NO	Vendor

Syntax

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Test Command	Responses
AT+CMGRMI=?	+CMGRMI: (list of supported <mode>s) OK
Write Command	**Responses**
AT+CMGRMI=<mode>,[<info_type>]	*If <mode>=4, get LTE signal info:* [+CMGRMI: Main_Info,<mode>,<service_available>,<valid>, <idle>,<ra_rnti>,<c_rnti>,<cqi_wb>,<enb_num_tx_antenna>] [+CMGRMI: Serving_Cell,<earfcn>,<mcc>,<mnc>,<tac>,<num_mnc_digits>,<serving_cell_id>,<freq_band_ind>,<dl_bandwidth>,<ul_bandwidth>,<serv_rssnr>,<cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev>] [+CMGRMI: LTE_Intra,<sib3_received>,<earfcn>,<serving_cell_id>,<num_lte_cells> [+CMGRMI: LTE_Intra_Cell1, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev> [+CMGRMI: LTE_Intra_Cell2, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev> [… [+CMGRMI: LTE_Intra_Cell8, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev>]]]]] [+CMGRMI: LTE_Inter,<num_freqs>,Freq1,<earfcn>,<num_lte_cells>,<idle_threshX_low>,<idle_threshX_high>,<idle_cell_resel_priority>,Freq2,<earfcn>,<num_lte_cells>,<idle_threshX_low>,<idle_threshX_high>,<idle_cell_resel_priority> [+CMGRMI: LTE_InterFreq1_Cell1, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev> [+CMGRMI: LTE_InterFreq1_Cell2, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev> [… [+CMGRMI: LTE_InterFreq1_Cell8, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev>]]]] [+CMGRMI: LTE_InterFreq2_Cell1, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev> [+CMGRMI: LTE_InterFreq2_Cell2, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev> [… [+CMGRMI: LTE_InterFreq2_Cell8, <cell_pci>,<cell_rsrq>,<cell_rsrp>,<cell_rssi>,<cell_idle_srxlev>]]]]]

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[+CMGRMI: GSM_Info, <num_freq_groups>,Freq_Group1,<num_gsm_arfcn>,<idle_cell_resel_priority>,<idle_thresh_gsm_high>,<idle_thresh_gsm_low>,<idle_ncc_permitted>,Freq_Group2, <num_gsm_arfcn>,<idle_cell_resel_priority>,<idle_thresh_gsm_high>,<idle_thresh_gsm_low>,<idle_ncc_permitted>

[+CMGRMI: GSM_InfoFreq1_Cell1,<cell_arfcn>,<cell_band_1900>,<cell_id_valid>,<cell_bsic_id>,<cell_rssi>,<cell_idle_srxlev >

[+CMGRMI: GSM_InfoFreq1_Cell2,<cell_arfcn>,<cell_band_1900>,<cell_id_valid>,<cell_bsic_id>,<cell_rssi>,<cell_idle_srxlev >

[…

[+CMGRMI: GSM_InfoFreq1_Cell8,<cell_arfcn>,<cell_band_1900>,<cell_id_valid>,<cell_bsic_id>,<cell_rssi>,<cell_idle_srxlev >

]]]]

[+CMGRMI: GSM_InfoFreq2_Cell1,<cell_arfcn>,<cell_band_1900>,<cell_id_valid>,<cell_bsic_id>,<cell_rssi>,<cell_idle_srxlev >

[+CMGRMI: GSM_InfoFreq2_Cell2,<cell_arfcn>,<cell_band_1900>,<cell_id_valid>,<cell_bsic_id>,<cell_rssi>,<cell_idle_srxlev >

[…

[+CMGRMI: GSM_InfoFreq2_Cell8,<cell_arfcn>,<cell_band_1900>,<cell_id_valid>,<cell_bsic_id>,<cell_rssi>,<cell_idle_srxlev >

]]]]]

[+CMGRMI: WCDMA_Info,<num_wcdma_freqs>,Freq1,<uarfcn>,<num_wcdma_cells>,<idle_cell_resel_priority>,<idle_thresh_Xhigh>,<idle_thresh_Xlow>,Freq2,<uarfcn>,<num_wcdma_cells>,<idle_cell_resel_priority>,<idle_thresh_Xhigh>,<idle_thresh_Xlow>

[+CMGRMI: WCDMA_InfoFreq1_Cell1,<cell_psc>,<cell_cpich_rscp>,<cell_cpich_ecno>,<cell_idle_srxlev>

[+CMGRMI: WCDMA_InfoFreq1_Cell2,<cell_psc>,<cell_cpich_rscp>,<cell_cpich_ecno>,<cell_idle_srxlev>

[…

[+CMGRMI: WCDMA_InfoFreq1_Cell8,<cell_psc>,<cell_cpich_rscp>,<cell_cpich_ecno>,<cell_idle_srxlev>

]]]]

[+CMGRMI: WCDMA_InfoFreq2_Cell1,<cell_psc>,<cell_cpich_rscp>,<cell_cpich_ecno>,<cell_idle_srxlev>

[+CMGRMI: WCDMA_InfoFreq2_Cell2,<cell_psc>,<cell_cpich_rscp>,<cell_cpich_ecno>,<cell_idle_srxlev>

[…

[+CMGRMI: WCDMA_InfoFreq2_Cell8,<cell_psc>,<cell_cpich_rscp>,<cell_cpich_ecno>,<cell_idle_srxlev>

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]]]]]
[+CMGRMI: CDMA1x_Info,<num_cdma_freqs>,Freq1,<channel_num>,<band_class>,<num_cdma_cells>,Freq2, <channel_num>,<band_class>,<num_cdma_cells>
[+CMGRMI: CDMA1x_InfoFreq1_Cell1,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[+CMGRMI: CDMA1x_InfoFreq1_Cell2,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[…
[+CMGRMI: CDMA1x_InfoFreq1_Cell8,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
]]]]
[+CMGRMI: CDMA1x_InfoFreq2_Cell1,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[+CMGRMI: CDMA1x_InfoFreq2_Cell2,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[…
[+CMGRMI: CDMA1x_InfoFreq2_Cell8,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
]]]]]
[+CMGRMI: CDMAprpd_Info, <num_cdma_freqs>,Freq1,<channel_num>,<band_class>,<num_cdma_cells>,Freq2, <channel_num>,<band_class>,<num_cdma_cells>
[+CMGRMI: CDMAprpd_InfoFreq1_Cell1,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[+CMGRMI: CDMAprpd_InfoFreq1_Cell2,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[…
[+CMGRMI: CDMAprpd_InfoFreq1_Cell8,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
]]]]
[+CMGRMI: CDMAprpd_InfoFreq2_Cell1,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[+CMGRMI: CDMAprpd_InfoFreq2_Cell2,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
[…
[+CMGRMI: CDMAprpd_InfoFreq2_Cell8,<pilot_pn_offset>,<pilot_pn_phase>,<pilot_strength>
]]]]]
[+CMGRMI: CDrx_Cfg,<drx_enable>,<on_duration_timer>,<inactivity_timer>,<retx_timer>,<long_drx_cycle>,<long_drx_cycle_off

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	set>,<short_drx_cycle_enable>,<short_drx_cycle>,<short_drx_cycle_timer>] [+CMGRMI: Cqi_Cfg,<cqi_enable>,<cqi_reporting_mode_aperiodic_enable>,<cqi_reporting_mode_aperiodic>,<nom_pdsch_rs_epre_offset>,<cqi_reporting_periodic_present>,<cqi_periodic_enable>,<cqi_periodic_pucch_resource_index>,<cqi_periodic_cqi_pmi_cfg_index>,<cqi_periodic_format_indicator>,<cqi_periodic_subband_cqi_k>,<cqi_periodic_ri_cfg_index_enable>,<cqi_periodic_ri_cfg_index>,<cqi_periodic_sim_ack_nak_cqi>,<cqi_rel9_param_present>,<cqi_rel9_param_cqi_mask_enable>,<cqi_rel9_param_pmi_ri_report_configured>] [+CMGRMI: Ant_Cfg,<transmission_mode>,0x<codebook_subset_restriction>,<tx_antenna_selection_enabled>,<tx_antenna_selection_ctrl>] [+CMGRMI: Idle_Drx_Cfg,<paging_cycle>,<nb>,<ue_id>] OK
	ERROR

Defined values

<mode>

4 – LTE

<info_type>

32bit number, the value is "1" << "<pos>", then or by bit. If <mode> is TDS, returned ino will be as WCDMA. mode

<pos>

Value:

0xFFFFFFFF	Any (any value)
0	Main info for WCDMA/LTE, if this bit set, the related info returned as "+ CMGRMI: Main_Info, ..."
1	WCDMA intra info for WCDMA mode, if this bit set, the related info returned as "+ CMGRMI: WCDMA_Intra, ..." "+ CMGRMI: WCDMA_Intra_Nbr1, ..." "+ CMGRMI: WCDMA_Intra_Serv1, ..."
2	WCDMA inter info for WCDMA mode, if this bit set, the related info returned as "+ CMGRMI: WCDMA_Inter, ..." "+ CMGRMI: WCDMA_InterFreq1_Cell1, ..."
3	GSM info for WCDMA mode, if this bit set, the related info returned as "+ CMGRMI: GSM_Info, ..." "+ CMGRMI: GSM_Info_Cell1, ..."
4	LTE info for WCDMA mode, if this bit set, the related info returned as

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	"+ CMGRMI: LTE_Info, ..."
	"+ CMGRMI: LTE_InfoFreq1_Cell1, ..."
5	Serving cell info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: Serving_Cell, ..."
7	LTE intra info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: LTE_Intra, ..."
	"+ CMGRMI: LTE_Intra_Cell1, ..."
8	LTE inter info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: LTE_Inter, ..."
	"+ CMGRMI: LTE_InterFreq1_Cell1, ..."
9	GSM info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: GSM_Info, ..."
	"+ CMGRMI: GSM_InfoFreq1_Cell1, ..."
10	WCDMA info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: WCDMA_Info, ..."
	"+ CMGRMI: WCDMA_InfoFreq1_Cell1, ..."
11	CDMA1x info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: CDMA1x_Info, ..."
	"+ CMGRMI: CDMA1x_InfoFreq1_Cell1, ..."
12	CDMA high-rate packet data cell info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: CDMAprpd_Info, ..."
	"+ CMGRMI: CDMAprpd_InfoFreq1_Cell1, ..."
13	Connected DRX configuration info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: CDrx_Cfg, ..."
14	Channel quality indication configuration info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: Cqi_Cfg, ..."
15	Antenna configuration info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: Ant_Cfg, ..."
16	Idle DRX info for LTE mode, if this bit set, the related info returned as
	"+ CMGRMI: Idle_Drx_Cfg, ..."

<service_available>

0 – service not available

1 – service is available

<is_data_valid >

Indicates whether the fields in the following are valid

0 – None of the fields are valid

1 – One or more of the fields is valid

<s_intra_search >

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	Cell selection parameter for the intrafrequency cell
<s_inter_search >	
	Cell selection parameter for the interfrequency cell
< s_search_RAT >	
	Cell selection parameter for the GSM cell
< freq >	
	Camped cell frequency
< rxagc >	
	Receiver automatic gain control on the camped frequency
< num_nbr_cells >	
	Number of intrafrequency neighbor cells reported
<num_serv_cells >	
	Number of serving cells (cells when in a soft handover) reported
< cell_psc >	
	Primary scrambling code
< cell_ecio >	
	Instantaneous cell received energy per chip and interference level
< cell_rscp >	
	Instantaneous cell received signal code power
< cell_set >	
	Intrafrequency cell type
< cell_rank >	
	Intrafrequency cell ranking
<num_freq >	
	Number of frequencies
<num_cells >	
	Number of cells to report per frequency
< cell_arfcn >	
	Absolute radio frequency channel number. Range: 0 to 1023
< cell_bsic_id >	
	Base station identity code. Base station color code in least significant bit (or byte). Network color code in most significant bit (or byte)
< cell_rssi >	
	Received signal strength indicator. Range: 0 to -120
< cell_s_rxlev >	
	cell suitable receive level
< num_earfcn >	
	Number of LTE EARFCNs
< earfcn >	
	E-UTRA absolute radio frequency channel number for searching LTE cells
<priority>	
	Priority information. Invalid priority is -1
<cell_id>	

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Physical cell ID of the detected cell
< cell_rsrp >
Maximum reference signal received power combined across Tx-Rx pairs. In linear scale
< cell_rsrq >
Maximum reference signal received quality value combined across Tx-Rx pairs. In linear scale
< valid >
Indicates the validity of the structure fields 0 – None of the fields are valid 1 – One or more of the fields is valid
< idle >
Indicates whether the UE is in Idle mode 0 – All Idle mode substructs are considered invalid, except for serving cell information 1 – UE is in Idle mode. All Idle mode substructs are considered valid
< ra_rnti >
Random access radio network temporary ID
< c_rnti >
Connected state, common, and UE-specific search space radio network temporary identification
< cqi_wb >
Wideband CQI information
<enb_num_tx_antenna>
Number of Tx antenna on an LTE base station
< mcc >
Mobile country code
< mnc >
Mobile network code
< tac >
Total access communication
<num_mnc_digits >
Number of digits in mobile network code
< serving_cell_id >
LTE serving cell ID. This is the cell ID of the serving cell and can be found in the cell list. Range: 0 to 503
< freq_band_ind >
Operating band of the serving cell. Range: 1 to 64
< dl_bandwidth >
Transmission bandwidth configuration of the serving cell on the downlink. Range: 0 to 5
< ul_bandwidth >
Transmission bandwidth configuration of the serving cell on the uplink. Range: 0 to 5
< serv_rssnr >
Average reference signal signal-to-noise ratio of the serving cell over the last measurement period in decibels. Range: -10 to 30
<cell_pci>

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	Physical cell ID
<cell_idle_srxlev>	
	Suitable receive level
< scell_deact_timer >	
	SCell deactivation timer
< serving_cell_id >	
	LTE serving cell ID
< num_lte_cells >	
	Number of LTE cells
< idle_threshX_low >	
	To be considered for reselection, the suitable receive level value of an evaluated lower priority cell must be greater than this value
< idle_threshX_high >	
	To be considered for reselection, the suitable receive level value of an evaluated higher priority cell must be greater than this value
< idle_cell_resel_priority >	
	Cell reselection priority
< num_freq_groups >	
	Number of GSM frequency groups and the size of the frequency group array
< num_gsm_arfcn >	
	Number of GSM ARFCNs indicated, and the size of the GSM array
< idle_thresh_gsm_high >	
	Reselection threshold for high priority layers
<idle_thresh_gsm_low>	
	Reselection threshold for low priority layers
<idle_ncc_permitted>	
	Bitmask that specifies whether a neighbor with a particular network color code is to be reported. Bit n set to 1 means that a neighbor with NCC n is to be included in the report
< num_wcdma_freqs >	
	Number of WCDMA frequencies and the size of the freq array
< uarfcn >	
	WCDMA layer frequency
< num_wcdma_cells >	
	Number of WCDMA cells indicated and the size of the WCDMA array
< idle_thresh_Xhigh >	
	Cell reselection priority. Range: 0 to 7
< idle_thresh_Xlow >	
	Reselection threshold for high priority layers
< num_cdma_freqs >	
	Number of CDMA frequencies and the size of the freq array
< channel_num >	
	Channel number
< band_class >	

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Band class
< num_cdma_cells >
Number of CDMA cells indicated and the size of the CDMA array
< pilot_pn_offset >
Neighbor cell pilot PN offset. Range: 0 to 511
< pilot_pn_phase >
Neighbor cell pilot PN phase. Range: 0 to 32767
< pilot_strength >
Neighbor cell pilot Ec/Io. Range: 1 to 63
< drx_enable >
Indicates whether to enable the Dedicate mode DRX 0 – drx is not enabled 1 – drx is enabled
< on_duration_timer >
On Duration timer. The value is the number of PDCCH subframes. The psf1 value corresponds to one PDCCH subframe, psf2 corresponds to two PDCCH subframes, etc. Default: FFS
< inactivity_timer >
DRX Inactivity timer. The value is the number of PDCCH subframes. The psf1 value corresponds to one PDCCH subframe, psf2 corresponds to two PDCCH subframes, etc. Default: FFS
< retx_timer >
DRX Retransmission timer. The value is the number of PDCCH subframes
< long_drx_cycle >
DRX cycle
< long_drx_cycle_offset >
DRX start offset
< short_drx_cycle_enable >
Indicates whether short_drx_cycle is enabled
< short_drx_cycle >
Short DRX cycle.
< short_drx_cycle_timer >
DRX short cycle timer. The value is in multiples of short_drx_cycle. A value of 1 corresponds to one short_drx_cycle value, 2 corresponds to two short_drx_cycle values, etc.
< cqi_enable >
Indicates whether CQI reporting is enabled 0 – cqi is not enabled 1 – cqi is enabled
< cqi_reporting_mode_aperiodic_enable >
Indicates whether the CQI aperiodic reporting mode is enabled 0 – cqi aperiodic is not enabled 1 – cqi aperiodic is enabled
< cqi_reporting_mode_aperiodic >

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CQI aperiodic reporting mode
< nom_pdsch_rs_epre_offset >
Provides the nominal measurement offset in dB between the physical downlink shared channel and the reference signal energy per resource block used by the UE when computing CQI
< cqi_reporting_periodic_present >
Indicates whether the reporting periodic information is present
<cqi_periodic_enable>
Indicates whether periodic reporting is enabled
< cqi_periodic_pucch_resource_index >
Physical uplink control channel resource index. Range: 0 to 767.
< cqi_periodic_cqi_pmi_cfg_index >
CQI/PMI periodicity and offset configuration index. Range: 0 to 511
< cqi_periodic_format_indicator >
PUCCH CQI feedback type
< cqi_periodic_subband_cqi_k >
Parameter K. Used only if the CQI format indicator is set to CMAPI_LTE_L1_CQI_FORMAT_INDICATOR_PERIODIC_ SUBBAND. Range: 1 to 4
<cqi_periodic_ri_cfg_index_enable>
Indicates whether the rank indicator configuration index is enabled
< cqi_periodic_ri_cfg_index >
Rank indicator configuration index.
< cqi_periodic_sim_ack_nak_cqi >
Indicates whether the simultaneous transmission of ACK/NACK and CQI is allowed
< cqi_rel9_param_present >
Indicates whether the CQI Release 9 parameters are present
< cqi_rel9_param_cqi_mask_enable >
Indicates whether the CQI mask is enabled
< cqi_rel9_param_pmi_ri_report_configured >
Indicates whether the Precoding Matrix Indicator and Rank Indicator report is configured
< transmission_mode >
Antenna transmission mode for the PDSCH
< codebook_subset_restriction >
Bitmask of the codebook restriction. The bitmask is placed in the lower order bits The number of bits are: 2 – n2TxAntenna-tm3 4 – n4TxAntenna-tm3 6 – n2TxAntenna-tm4 64 – n4TxAntenna-tm4 4 – n2TxAntenna-tm5 16 – n4TxAntenna-tm5 4 – n2TxAntenna-tm6 16 – n4TxAntenna-tm6
< tx_antenna_selection_enabled >

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	Indicates whether the UE transmit antenna selection is enabled
< tx_antenna_selection_ctrl >	
	Indicates whether the UE transmit antenna selection control is closed loop or open loop
< paging_cycle >	
	UE paging cycle in milliseconds
< nb >	
	Used to derive the number of paging groups
< ue_id >	
	UE identity (IMSI) mod 1024

Examples

```
AT+CMGRMI=4
+CMGRMI: Main_Info,4,1,1,1,2,29631,5,0
+CMGRMI: Serving_Cell,75,460,11,23070,2,95334145,1,4,4,2,324,-95,-998,-716,30
+CMGRMI: LTE_Intra,1,75,324,2
+CMGRMI: LTE_Intra_Cell1,324,-95,-998,-716,30
+CMGRMI: LTE_Intra_Cell2,177,-152,-1041,-800,25
+CMGRMI: LTE_Inter,1,Freq1,1825,0,0,14,7,Freq2,0,0,0,0,0
+CMGRMI: GSM_Info,0,Freq_Group1,0,0,0,0,0,Freq_Group2,0,0,0,0,0
+CMGRMI: WCDMA_Info,0,Freq1,0,0,0,0,0,Freq2,0,0,0,0,0
+CMGRMI: CDMA1x_Info,0,Freq1,0,0,0,Freq2,0,0,0
+CMGRMI: CDMAprpd_Info,0,Freq1,0,0,0,Freq2,0,0,0
+CMGRMI: CDrx_Cfg,0,0,0,0,0,0,0,0,0
+CMGRMI: Cqi_Cfg,1,1,3,0,1,1,0,38,0,0,0,322,0,0,0,0
+CMGRMI: Ant_Cfg,1,0x0000000000000000,0,0
+CMGRMI: Idle_Drx_Cfg,1280,2,911
OK
```

5.22 AT+MONI Show cell system information

Description

This command is used to inquiring serving cell and neighbour cell system information in GSM

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+MONI=?	+MONI: <CellNo>, <CellSet> OK
Read Command	Responses

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AT+MONI?	*When extracting data for the serving cell and the network name is known:* +MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1: <C1>-C2: <C2> *When extracting data for an adjacent cell:* +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1: <C1>-C2: <C2> […] OK
	When the network name is unknown: +MONI:Cc:<cc>,Nc<nc>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1: <C1>-C2: <C2> *When extracting data for an adjacent cell:* +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1: <C1>-C2: <C2> […] OK *When not in GSM mode* OK
Write Command	Responses
AT+MONI=<CellSet>	*When = 0:* +MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1: <C1>-C2: <C2> OK
	When chosen in the range 1-6: +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1: <C1>-C2: <C2> […] OK
	When = 7: it is a special request to obtain information from the whole set of cells, just like AT+MONI? *When requested cell number less than actual existed:* +MONI: no cell OK *When not in GSM mode* OK
Execution Command	Responses
AT+MONI	*When extracting data for the serving cell and the network name is known:* +MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1: <C1>-C2: <C2>

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	When extracting data for an adjacent cell: +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1: <C1>-C2: <C2> […] OK *When the network name is unknown:* +MONI:Cc:<cc>,Nc<nc>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1: <C1>-C2: <C2> *When extracting data for an adjacent cell:* +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1: <C1>-C2: <C2> […] OK *When not in GSM mode* OK

Defined values

<CellNo >
available neighbour cells number currently received
< CellSet >
the last setting done with command, range is 0-7
<netname>
name of network operator
<cc>
country code
<nc>
network operator code
<n>
progressive number of adjacent cell
<bsic>
base station identification code
<qual>
quality of reception
<lac>
localization area code
<id>
cell identifier
<arfcn>
assigned radio channel
<dBm>
received signal strength in dBm

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Examples

```
AT+MONI?
+MONI: China Mobile,BSIC: 45,RXQual: 255,LAC: 6180,Id: 42545,ARFCN: 16,PWR: -74d
Bm,C1:30-C2:30
+MONI: Adj Cell1,[LAC: 6180,Id: 40995],ARFCN: 19,PWR: -86dBm,C1:16-C2:16
+MONI: Adj Cell2,[LAC: 6180,Id: 40994],ARFCN: 12,PWR: -96dBm,C1:6-C2:6
+MONI: Adj Cell3,[LAC: 6180,Id: 41057],ARFCN: 11,PWR: -95dBm,C1:7-C2:7
+MONI: Adj Cell4,[LAC: 6180,Id: 41073],ARFCN: 24,PWR: -94dBm,C1:8-C2:8
+MONI: Adj Cell5,[LAC: 6180,Id: 41074],ARFCN: 14,PWR: -92dBm,C1:10-C2:10
OK
```

5.23 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; in this latest case <AcT>, <tac> and <ci> are sent only if available.

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.

SIM PIN	References
NO	3GPP TS 24.008 [8]

Syntax

Test Command	Responses
AT+CEREG=?	+CEREG: (list of supported <n>s) OK
	ERROR
Read Command	**Responses**
AT+CEREG?	+CEREG: <n>,<stat>[,<tac>,<ci>[,<AcT>]] OK
	ERROR

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Write Command	Responses
AT+CEREG=[<n>]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CEREG	*Set default value（<n>=0）:* OK ERROR

Defined values

<n>
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>]]
<stat>
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)
<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 identify in hexadecimal format
<AcT>
A numberic parameter that indicates the access technology of 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

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Examples

```
AT+CEREG?
+ CEREG: 0,4
OK
```

5.24 AT+CTZU Automatic time and time zone update

Description

This command is used to enable and disable automatic time and time zone update via NITZ

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CTZU=?	+CTZU: (list of supported <onoff>s) OK
Read Command	**Responses**
AT+CTZU?	+CTZU: <onoff> OK
Write Command	**Responses**
AT+CTZU=<onoff>	OK
	ERROR

Defined values

<onoff>

Integer type value indicating:

0 – Disable automatic time zone update via NITZ (default).

1 – Enable automatic time zone update via NITZ.

NOTE: 1. The value of <onoff> is nonvolatile, and factory value is 0.

2. For automatic time and time zone update is enabled (+CTZU=1):

If time zone is only received from network and it isn't equal to local time zone (AT+CCLK), time zone is updated automatically, and real time clock is updated based on local time and the difference between time zone from network and local time zone (Local time zone must be valid).

If Universal Time and time zone are received from network, both time zone and real time clock is updated automatically, and real time clock is based on Universal Time and time zone from network.

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Examples

<onoff>
Integer type value indicating: 0 – Disable automatic time zone update via NITZ (default). 1 – Enable automatic time zone update via NITZ. **NOTE:** 1. The value of <onoff> is nonvolatile, and factory value is 0. 2. For automatic time and time zone update is enabled (+CTZU=1): If time zone is only received from network and it isn't equal to local time zone (AT+CCLK), time zone is updated automatically, and real time clock is updated based on local time and the difference between time zone from network and local time zone (Local time zone must be valid). If Universal Time and time zone are received from network, both time zone and real time clock is updated automatically, and real time clock is based on Universal Time and time zone from network.

5.25 AT+CTZR Time and time zone reporting

Description

This command is used to enable and disable the time zone change event reporting. If the reporting is enabled the MT returns the unsolicited result code +CTZV: <tz>[,<time>][,<dst>]whenever the time zone is changed.

NOTE: The time zone reporting is not affected by the Automatic Time and Time Zone command AT+CTZU.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CTZR=?	+CTZR: (list of supported <onoff>s) OK
Read Command	Responses
AT+CTZR?	+CTZR: <onoff> OK
Write Command	Responses
AT+CTZR=<onoff>	OK
	ERROR
Execution Command	Responses
AT+CTZR	*Set default value:* OK

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Defined values

Test Command	Responses
AT+CTZR=?	+CTZR: (list of supported <onoff>s) OK
Read Command	Responses
AT+CTZR?	+CTZR: <onoff> OK
Write Command	Responses
AT+CTZR=<onoff>	OK
	ERROR
Execution Command	Responses
AT+CTZR	*Set default value:* OK

Examples

```
AT+CTZR?
+CTZR: 0
OK
AT+CTZR=1
OK
```

5.26 AT+CBVTBP Set 800-850 band indicator

Description

This command is used to set the band indicator to 800 or 850 for the common RF channels of 800 and 850.This command is only valid for SIM7100J series.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CBVTBP=?	+CBVTBP: (0,1) OK
Read Command	Responses
AT+CBVTBP?	+CBVTBP: <ind> OK
	ERROR

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Write Command	Responses
AT+CBVTBP=<ind>	OK
	ERROR

Defined values

<ind>	
0	– The common RF channels of 800/850 is regarded as 850
1	– The common RF channels of 800/850 is regarded as 800

Examples

```
AT+CBVTBP?
+CBVTBP: 1
OK
AT+CBVTBP=1
OK
```

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6 AT Commands for Call Control

6.1 AT+CVHU Voice hang up control

Description

Write command selects whether ATH or "drop DTR" shall cause a voice connection to be disconnected or not. By voice connection is also meant alternating mode calls that are currently in voice mode.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CVHU=?	+CVHU: (list of supported <mode>s) OK
Read Command	Responses
AT+CVHU?	+CVHU: <mode> OK
Write Command	Responses
AT+CVHU=<mode>	OK
	ERROR
Execution Command	Responses
AT+CVHU	*Set default value:* OK

Defined values

<mode>	
0	– "Drop DTR" ignored but OK response given. ATH disconnects.
1	– "Drop DTR" and ATH ignored but OK response given.

Examples

```
AT+CVHU=0
OK
AT+CVHU?
+CVHU: 0
OK
```

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6.2 AT+CHUP Hang up call

Description

This command is used to cancel voice calls. If there is no call, it will do nothing but OK response is given. After running AT+CHUP, multiple "VOICE CALL END: " may be reported which relies on how many calls exist before calling this command.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CHUP=?	OK
Execution Command	**Responses**
AT+CHUP	VOICE CALL: END: <time> [… VOICE CALL: END: <time>] OK
	No call: OK

Defined values

<time>
Voice call connection time. Format – HHMMSS (HH: hour, MM: minute, SS: second)

Examples

```
AT+CHUP
VOICE CALL:END: 000017
OK
```

6.3 AT+CBST Select bearer service type

Description

Write command selects the bearer service <name> with data rate <speed>, and the connection element <ce> to be used when data calls are originated. Values may also be used during mobile terminated data call setup, especially in case of single numbering scheme calls.

SIM PIN	References

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YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CBST=?	+CBST: (list of supported <speed>s), (list of supported <name>s), (list of supported <ce>s) OK
Read Command	Responses
AT+CBST?	+CBST: <speed>,<name>,<ce> OK
Write Command	Responses
AT+CBST= <speed>[,<name>[,<ce>]]	OK ERROR
Execution Command	Responses
AT+CBST	*Set default value:* OK

Defined values

<speed>		
0	–	autobauding(automatic selection of the speed; this setting is possible in case of 3.1 kHz modem and non-transparent service)
7	–	9600 bps (V.32)
12	–	9600 bps (V.34)
14	–	14400 bps(V.34)
16	–	28800 bps(V.34)
17	–	33600 bps(V.34)
39	–	9600 bps(V.120)
43	–	14400 bps(V.120)
48	–	28800 bps(V.120)
51	–	56000 bps(V.120)
71	–	9600 bps(V.110)
75	–	14400 bps(V.110)
80	–	28800 bps(V.110 or X.31 flag stuffing)
81	–	38400 bps(V.110 or X.31 flag stuffing)
83	–	56000 bps(V.110 or X.31 flag stuffing)
84	–	64000 bps(X.31 flag stuffing)
116	–	64000 bps(bit transparent)
134	–	64000 bps(multimedia)
<name>		
0	–	Asynchronous modem
1	–	Synchronous modem

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4	–	data circuit asynchronous (RDI)
<ce>		
0	–	transparent
1	–	non-transparent
NOTE: If <speed> is set to 116 or 134, it is necessary that <name> is equal to 1 and <ce> is equal to 0.		

Examples

```
AT+CBST=0,0,1
OK
AT+CBST?
+CBST:0,0,1
OK
```

6.4 AT+CRLP Radio link protocol

Description

Radio Link Protocol(RLP) parameters used when non-transparent data calls are originated may be altered with write command.

Read command returns current settings for each supported RLP version <verX>. Only RLP parameters applicable to the corresponding <verX> are returned.

Test command returns values supported by the TA as a compound value. If ME/TA supports several RLP versions <verX>, the RLP parameter value ranges for each <verX> are returned in a separate line.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CRLP=?	+CRLP: (list of supported <iws>s), (list of supported <mws>s), (list of supported <T1>s), (list of supported <N2>s) [,<ver1> [,(list of supported <T4>s)]][<CR><LF> +CRLP: (list of supported <iws>s), (list of supported <mws>s), (list of supported <T1>s), (list of supported <N2>s) [,<ver2> [,(list of supported <T4>s)]] [...]] OK
Read Command	Responses
AT+CRLP?	+CRLP: <iws>, <mws>, <T1>, <N2> [,<ver1> [, <T4>]][<CR><LF>

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	+CRLP:<iws>,<mws>,<T1>,<N2>[,<ver2>[,<T4>]] [...]] OK
Write Command	Responses
AT+CRLP=<iws> [,<mws>[,<T1>[,<N2> [,<ver>[,<T4>]]]]]	OK
	ERROR
Execution Command	Responses
AT+CRLP	OK

Defined values

<ver>, <verX>
RLP version number in integer format, and it can be 0, 1 or 2; when version indication is not present it shall equal 1.
<iws>
IWF to MS window size.
<mws>
MS to IWF window size.
<T1>
Acknowledgement timer.
<N2>
Retransmission attempts.
<T4>
Re-sequencing period in integer format.
NOTE: <T1> and <T4> are in units of 10 ms.

Examples

```
AT+CRLP?
+CRLP:61,61,48,6,0
+CRLP:61,61,48,6,1
+CRLP:240,240,52,6,2
OK
```

6.5 AT+CR Service reporting control

Description

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Write command controls whether or not intermediate result code "*+CR: <serv>*" is returned from the TA to the TE. If enabled, the intermediate result code is transmitted at the point during connect negotiation at which the TA has determined which speed and quality of service will be used, before any error control or data compression reports are transmitted, and before the intermediate result code CONNECT is transmitted.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CR=?	+CR: (list of supported <mode>s) OK
Read Command	Responses
AT+CR?	+CR: <mode> OK
Write Command	Responses
AT+CR=<mode>	OK
Execution Command	Responses
AT+CR	*Set default value:* OK

Defined values

<mode>		
0	–	disables reporting
1	–	enables reporting
<serv>		
ASYNC		asynchronous transparent
SYNC		synchronous transparent
REL ASYNC		asynchronous non-transparent
REL sync		synchronous non-transparent
GPRS [<L2P>]		GPRS

The optional <L2P> proposes a layer 2 protocol to use between the MT and the TE.

Examples

```
AT+CR?
+CR:0
OK
AT+CR=1
OK
```

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6.6 AT+CRC Cellular result codes

Description

Write command controls whether or not the extended format of incoming call indication or GPRS network request for PDP context activation is used. When enabled, an incoming call is indicated to the TE with unsolicited result code "+CRING: <type>" instead of the normal RING.
Test command returns values supported by the TA as a compound value.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CRC=?	+CRC: (list of supported <mode>s) OK
Read Command	**Responses**
AT+CRC?	+CRC: <mode> OK
Write Command	**Responses**
AT+CRC=<mode>	OK
Execution Command	**Responses**
AT+CRC	*Set default value:* OK

Defined values

<mode>	
0 – disable extended format	
1 – enable extended format	
<type>	
ASYNC	asynchronous transparent
SYNC	synchronous transparent
REL ASYNC	asynchronous non-transparent
REL SYNC	synchronous non-transparent
FAX	facsimile
VOICE	normal voice
VOICE/*XXX*	voice followed by data(*XXX* is ASYNC, SYNC, REL ASYNC or REL SYNC)
ALT VOICE/*XXX*	alternating voice/data, voice first
ALT *XXX*/VOICE	alternating voice/data, data first
ALT FAX/VOICE	alternating voice/fax, fax first

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GPRS	GPRS network request for PDP context activation

Examples

```
AT+CRC=1
OK
AT+CRC?
+CRC: 1
OK
```

6.7 AT+CLCC List current calls

Description

This command isused to return list of current calls of ME. If command succeeds but no calls are available, no information response is sent to TE.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CLCC=?	+CLCC: (list of supported <n>s) OK
Read Command	**Responses**
AT+CLCC?	+CLCC: <n> OK
Write Command	**Responses**
AT+CLCC=<n>	OK
Execution Command	**Responses**
AT+CLCC	+CLCC:<id1>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,<alpha>]][<CR><LF> +CLCC:<id2>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,<alpha>]] [...]] OK
	ERROR
	+CME ERROR: <err>

Defined values

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<n>
0 – Don't report a list of current calls of ME automatically when the current call status changes. 1 – Report a list of current calls of ME automatically when the current call status changes.
<idX>
Integer type, call identification number, 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) 6 – disconnect
<mode>
bearer/teleservice: 0 – voice 1 – data 2 – fax 9 – unknown
<mpty>
0 – call is not one of multiparty (conference) call parties 1 – call is one of multiparty (conference) call parties
<number>
String type phone number in format specified by <type>.
<type>
Type of address octet in integer format; 128 – Restricted number type includes unknown type and format 145 – International number type 161 – national number.The network support for this type is optional 177 – network specific number,ISDN format 129 – Otherwise
<alpha>
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 AT+CSCS.

Examples

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ATD10011;
OK
AT+CLCC
+CLCC: 1,0,0,0,0,"10011",129,"sm"
OK
RING (with incoming call)
AT+CLCC
+CLCC: 1,1,4,0,0,"02152063113",128,"gongsi"
OK

6.8 AT+CEER Extended error report

Description

Execution command causes the TA to return the information text <report>, which should offer the user of the TA an extended report of the reason for:

1 The failure in the last unsuccessful call setup(originating or answering) or in-call modification.
2 The last call release.
3 The last unsuccessful GPRS attach or unsuccessful PDP context activation.
4 The last GPRS detach or PDP context deactivation.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CEER=?	OK
Execution Command	Responses
AT+CEER	+CEER:<report> OK

Defined values

<report>
Wrong information which is possibly occurred.

Examples

AT+CEER
+CEER: Invalid/incomplete number

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OK

6.9 AT+CCWA Call waiting

Description

This command allows control of the Call Waiting supplementary service. 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>. Parameter <n> is used to disable/enable the presentation of an unsolicited result code +CCWA: <number>,<type>,<class> to the TE when call waiting service is enabled. Command should be abortable when network is interrogated.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CCWA=?	+CCWA: (list of supported <n>s) OK
Read Command	**Responses**
AT+CCWA?	+CCWA: <n> OK
Write Command	**Responses**
AT+CCWA= <n>[,<mode>[,<class>]]	*When <mode>=2 and command successful:* +CCWA:<status>,<class>[<CR><LF> +CCWA: <status>, <class>[...]] OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CCWA	*Set default value (<n>=0):* OK

Defined values

<n>
Sets/shows the result code presentation status in the TA 0 – disable 1 – enable
<mode>

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When <mode> parameter is not given, network is not interrogated:

0 – disable

1 – enable

2 – query status

<class>

It is a sum of integers each representing a class of information (default 7)

1 – voice (telephony)

2 – data (refers to all bearer services)

4 – fax (facsimile services)

7 – voice,data and fax(1+2+4)

8 – short message service

16 – data circuit sync

32 – data circuit async

64 – dedicated packet access

128 – dedicated PAD access

<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;

128 – Restricted number type includes unknown type and format

145 – International number type

129 – Otherwise

Examples

```
AT+CCWA=?
+CCWA:(0-1)
OK
AT+CCWA?
+CCWA: 0
OK
```

6.10 AT+CHLD Call related supplementary services

Description

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This command allows the control the following call related services:

1. A call can be temporarily disconnected from the ME but the connection is retained by the network.
2. Multiparty conversation (conference calls).
3. The served subscriber who has two calls (one held and the other either active or alerting) can connect the other parties and release the served subscriber's own connection.

Calls can be put on hold, recovered, released, added to conversation, and transferred. This is based on the GSM/UMTS supplementary services.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CHLD=?	+CHLD: (list of supported <n>s) OK
Write Command	**Responses**
AT+CHLD=<n>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CHLD *Default to <n>=2.*	OK
	ERROR
	+CME ERROR: <err>

Defined values

<n>		
0	–	Terminate all held calls; or set User Determined User Busy for a waiting call
1	–	Terminate all active calls and accept the other call (waiting call or held call)
1X	–	Terminate a specific call X
2	–	Place all active calls on hold and accept the other call (waiting call or held call) as the active call
2X	–	Place all active calls except call X on hold
3	–	Add the held call to the active calls
4	–	Connect two calls and cut off the connection between users and them simultaneously

Examples

```
AT+CHLD=?
+CHLD: (0,1,1x,2,2x,3,4)
OK
```

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6.11 AT+CCFC Call forwarding number and conditions

Description

This command allows control of the call forwarding supplementary service. Registration, erasure, activation, deactivation, and status query are supported.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CCFC=?	+CCFC: (list of supported <reason>s) OK
Write Command	**Responses**
AT+CCFC=<reason>,<mode>[,<number>[,<type>[,<class>[,<subaddr>[,<satype>[,<time>]]]]]]	*When <mode>=2 and command successful:* +CCFC: <status>,<class1>[,<number>,<type>[,<subaddr>,<satype>[,<time>]]][<CR><LF>+CCFC: <status>,<class2>[,<number>,<type>[,<subaddr>,<satype>[,<time>]]][...]] OK
	ERROR
	+CME ERROR:<err>

Defined values

<reason>		
0	–	unconditional
1	–	mobile busy
2	–	no reply
3	–	not reachable
4	–	all call forwarding
5	–	all conditional call forwarding
<mode>		
0	–	disable
1	–	enable
2	–	query status
3	–	registration
4	–	erasure
<number>		
String type phone number of forwarding address in format specified by <type>.		

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<type>
Type of address octet in integer format: 145 – dialing string <number> includes international access code character '+' 129 – otherwise
<subaddr>
String type sub address of format specified by <satype>.
<satype>
Type of sub address octet in integer format, default 128.
<classX>
It is a sum of integers each representing a class of information (default 7): 1 – voice (telephony) 2 – data (refers to all bearer services) 4 – fax (facsimile services) 16 – data circuit sync 32 – data circuit async 64 – dedicated packet access 128 – dedicated PAD access 255 – The value 255 covers all classes
<time>
1...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

Examples

AT+CCFC=?
+CCFC: (0,1,2,3,4,5)
OK
AT+CCFC=0,2
+CCFC: 0,255
OK

6.12 AT+CLIP Calling line identification presentation

Description

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This command refers to the GSM/UMTS 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.

Write command enables or disables the presentation of the CLI at the TE. It has no effect on the execution of the supplementary service CLIP in the network.

When the presentation of the CLI at the TE is enabled (and calling subscriber allows), +CLIP: <number>,<type>,,[,[<alpha>][,<CLI validity>]] response is returned after every RING (or +CRING: <type>; refer sub clause "Cellular result codes +CRC") result code sent from TA to TE. It is manufacturer specific if this response is used when normal voice call is answered.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CLIP=?	+CLIP: (list of supported <n>s) OK
Read Command	**Responses**
AT+CLIP?	+CLIP: <n>,<m> OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CLIP=<n>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CLIP	*Set default value(<n>=0):* OK

Defined values

<n>
Parameter sets/shows the result code presentation status in the TA: 0 – disable 1 – enable
<m>
0 – CLIP not provisioned 1 – CLIP provisioned 2 – unknown (e.g. no network, etc.)
<number>

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String type phone number of calling address in format specified by <type>.

<type>

Type of address octet in integer format;

128 – Restricted number type includes unknown type and format

145 – International number type

161 – national number.The network support for this type is optional

177 – network specific number,ISDN format

129 – Otherwise

<alpha>

String type alphanumeric representation of <number> corresponding to the entry found in phone book.

<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

Examples

```
AT+CLIP=1
OK
RING (with incoming call)
+CLIP: "02152063113",128,,,"gongsi",0
```

6.13 AT+CLIR Calling line identification restriction

Description

This command refers to CLIR-service that allows a calling subscriber to enable or disable the presentation of the CLI to the called party when originating a call.

Write command overrides the CLIR subscription (default is restricted or allowed) when temporary mode is provisioned as a default adjustment for all following outgoing calls. This adjustment can be revoked by using the opposite command.. If this command is used by a subscriber without provision of CLIR in permanent mode the network will act.

Read command gives the default adjustment for all outgoing calls (given in <n>), and also triggers an interrogation of the provision status of the CLIR service (given in <m>).

Test command returns values supported as a compound value.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses

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AT+CLIR=?	+CLIR: (list of supported <n>s) OK
Read Command	Responses
AT+CLIR?	+CLIR: <n>,<m> OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CLIR=<n>	OK
	ERROR
	+CME ERROR: <err>

Defined values

<n>		
0	–	presentation indicator is used according to the subscription of the CLIR service
1	–	CLIR invocation
2	–	CLIR suppression
<m>		
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

Examples

```
AT+CLIR=?
+CLIR:(0-2)
OK
```

6.14 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.

When enabled (and called subscriber allows), +COLP:<number>, <type> [,<subaddr>, <satype> [,<alpha>]] intermediate result code is returned from TA to TE before any +CR responses. It is

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manufacturer specific if this response is used when normal voice call is established.
When the AT+COLP=1 is set, any data input immediately after the launching of "ATDXXX;" will stop the execution of the ATD command, which may cancel the establishing of the call.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+COLP=?	+COLP: (list of supported <n>s) OK
Read Command	**Responses**
AT+COLP?	+COLP: <n>,<m> OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+COLP =<n>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+COLP	*Set default value(<n>=0, <m>=0):* OK

Defined values

<n>
Parameter sets/shows the result code presentation status in the TA: 0 – disable 1 – enable
<m>
0 – COLP not provisioned 1 – COLP provisioned 2 – unknown (e.g. no network, etc.)

Examples

```
AT+COLP?
+COLP: 1,0
OK
ATD10086;
VOICE CALL: BEGIN
```

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```
+COLP: "10086",129,,,

OK
```

6.15 AT+VTS DTMF and tone generation

Description

This command allows the transmission of DTMF tones and arbitrary tones which cause the Mobile Switching Center (MSC) to transmit tones to a remote subscriber. The command can only be used in voice mode of operation (active voice call).

NOTE: The END event of voice call will terminate the transmission of tones, and as an operator option, the tone may be ceased after a pre-determined time whether or not tone duration has been reached.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+VTS=?	+VTS: (list of supported<dtmf>s) OK
Write Command	**Responses**
AT+VTS=<dtmf>[,<duration>]	OK
AT+VTS=<dtmf-string>	ERROR

Defined values

<dtmf>
A single ASCII character in the set 0-9, *, #, A, B, C, D.
<duration>
Tone duration in 1/10 seconds, from 0 to 255. This is interpreted as a DTMF tone of different duration from that mandated by the AT+VTD command, otherwise, the duration which be set the AT+VTD command will be used for the tone (<duration> is omitted).
<dtmf-string>
A sequence of ASCII character in the set 0-9, *, #, A, B, C, D, and maximal length of the string is 29. The string must be enclosed in double quotes (“”), and separated by commas between the ASCII characters (e.g. “1,3,5,7,9,*”). Each of the tones with a duration which is set by the AT+VTD command.

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Examples

```
AT+VTS=1
OK
AT+VTS=1,20
OK
AT+VTS="1,3,5"
OK
AT+VTS=?
+VTS: (0-9,*,#,A,B,C,D)
OK
```

6.16 AT+VTD Tone duration

Description

This refers to an integer <n> that defines the length of tones emitted as a result of the AT+VTS command. A value different than zero causes a tone of duration <n>/10 seconds.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+VTD=?	+VTD: (list of supported <n>s) OK
Read Command	Responses
AT+VTD?	+VTD: <n> OK
Write Command	Responses
AT+VTD=<n>	OK

Defined values

<n>	
Tone duration in integer format, from 0 to 255, and 0 is factory value.	
0	Tone duration of every single tone is dependent on the network.
1…255	Tone duration of every single tone in 1/10 seconds.

Examples

```
AT+VTD=?
+VTD: (0-255)
```

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OK
AT+VTD?
+VTD: 0
OK
AT+VTD=5
OK

6.17 AT+CSTA Select type of address

Description

Write command is used to select the type of number for further dialing commands (ATD) according to GSM/UMTS specifications.

Read command returns the current type of number.

Test command returns values supported by the Module as a compound value.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CSTA=?	+CSTA:(list of supported <type>s) OK
Read Command	Responses
AT+CSTA?	+CSTA:<type> OK
Write Command	Responses
AT+CSTA=<type>	OK
	ERROR
Execution Command	Responses
AT+CSTA	OK

Defined values

<type>
Type of address octet in integer format: 145 – when dialling string includes international access code character "+" 161 – national number.The network support for this type is optional 177 – network specific number,ISDN format 129 – otherwise **NOTE:** Because the type of address is automatically detected on the dial string of dialing command, command AT+CSTA has really no effect.

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Examples

```
AT+CSTA?
+CSTA: 129
OK
AT+CSTA=145
OK
```

6.18 AT+CMOD Call mode

Description

Write command selects the call mode of further dialing commands (ATD) or for next answering command (ATA). Mode can be either single or alternating.

Test command returns values supported by the TA as a compound value.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CMOD=?	+CMOD: (list of supported <mode>s) OK
Read Command	**Responses**
AT+CMOD?	+CMOD: <mode> OK
Write Command	**Responses**
AT+CMOD=<mode>	OK
	ERROR
Execution Command	**Responses**
AT+CMOD	*Set default value:* OK

Defined values

<mode>
0 – single mode(only supported)
NOTE: The value of <mode> shall be set to zero after a successfully completed alternating mode call. It shall be set to zero also after a failed answering. The power-on, factory and user resets shall also set the value to zero. This reduces the possibility that alternating mode calls are originated or answered accidentally.

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Examples

```
AT+CMOD?
+CMOD: 0
OK
AT+CMOD=0
OK
```

6.19 AT+VMUTE Speaker mute control

Description

This command is used to control the loudspeaker to mute and unmute during a voice call or a video call which is connected. If there is not a connected call, write command can't be used.

When all calls are disconnected, the Module sets the subparameter as 0 automatically.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+VMUTE=?	+VMUTE: (list of supported <mode>s) OK
Read Command	Responses
AT+VMUTE?	+VMUTE: <mode> OK
Write Command	Responses
AT+VMUTE=<mode>	OK
	ERROR

Defined values

<mode>	
0	– mute off
1	– mute on

Examples

```
AT+VMUTE=1
OK
AT+VMUTE?
+VMUTE:1
OK
```

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6.20 AT+CMUT Microphone mute control

Description

This command is used to enable and disable the uplink voice muting during a voice call or a video call which is connected. If there is not a connected call, write command can't be used.

When all calls are disconnected, the Module sets the subparameter as 0 automatically.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CMUT=?	+CMUT: (list of supported <mode>s) OK
Read Command	Responses
AT+CMUT?	+CMUT: <mode> OK
Write Command	Responses
AT+CMUT=<mode>	OK
	ERROR

Defined values

<mode>	
0	– mute off
1	– mute on

Examples

```
AT+CMUT=1
OK
AT+CMUT?
+CMUT: 1
OK
```

6.21 AT+MORING Enable or disable report MO ring URC

Description

This command is used to enable or disable report MO ring URC

SIM PIN	References

SIMCOM CONFIDENTIAL FILE

NO	Vendor

Syntax

Test Command	Responses
AT+MORING=?	+MORING: (0-1) OK
Read Command	Responses
AT+MORING?	+ MORING: <mode> OK
Write Command	Responses
AT+MORING=<mode>	OK
	ERROR

Defined values

<mode>
Enable or disable report MO ring URC: 0 – disable 1 – enable.

Examples

AT+MORING=1
OK
AT+MORING?
+MORING:1
OK
AT+MORING=?
+MORING: (0-1)
OK

6.22 AT+CSDVC Switch voice channel device

Description

This command is used to switch voice channel device. After changing current voice channel device and if there is a connecting voice call, it will use the settings of previous device (loudspeaker volume level, mute state of loudspeaker and microphone, refer to AT+CLVL, AT+VMUTE, and AT+CMUT).

SIM PIN	References

SIMCOM CONFIDENTIAL FILE

NO	Vendor

Syntax

Test Command	Responses
AT+CSDVC=?	+CSDVC: (list of supported <dev>s) OK
Read Command	Responses
AT+CSDVC?	+CSDVC: <dev> OK
Write Command	Responses
AT+CSDVC=<dev>	OK

Defined values

<dev>
1 – handset 2 – headset 3 – speaker phone

Examples

```
AT+CSDVC=1
OK
AT+CSDVC?
+CSDVC:1
OK
```

6.23 AT+CLVL Loudspeaker volume level

Description

Write command is used to select the volume of the internal loudspeaker audio output of the device. Test command returns supported values as compound value.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CLVL=?	+CLVL: (list of supported <level>s)

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	OK
Read Command	Responses
AT+CLVL?	+CLVL: <level> OK
Write Command	Responses
AT+CLVL=<level>	OK ERROR

Defined values

<level>
Integer type value which represents loudspeaker volume level. The range is from 0 to 5, and 0 represents the lowest loudspeaker volume level, 4 is default factory value. **NOTE:** <level> is nonvolatile, and it is stored when restart.

Examples

AT+CLVL?
+CLVL:4
OK
AT+CLVL=3
OK

6.24 AT+SIDET Digital attenuation of sidetone

Description

This command is used to set digital attenuation of sidetone. Please refer to related hardware design document for more information.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+SIDET=?	+SIDET: (list of supported <en>s), (list of supported <st>s) OK
Read Command	Responses
AT+SIDET?	+SIDET:<en>,<st> OK
Write Command	Responses

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AT+SIDET=<en>,<st>	OK
	ERROR

Defined values

<en>
Digital control of sidetone, integer type in decimal format and nonvolatile.
Range: from 0 to 1.
Default value 1.
<st>
Digital attenuation of sidetone, integer type in hexadecimal format and nonvolatile.
Range: from 0x52 to 0x2000.
Default value 0x52.

Examples

AT+SIDET?
+SIDET: 1,0x52
OK
AT+SIDET=?
+SIDET: (0-1),(0,0x52-0x2000)
OK
AT+SIDET=1,0x1000
OK

6.25 AT+CACDBFN Change default ACDB filename

Description

This command is used to change default acdb filename.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CACDBFN=?	+CACDBFN: (acdb file(s) listed in /etc <acdb file>s) OK
Read Command	Responses
AT+CACDBFN?	+CACDBFN: <acdb file> OK

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Write Command	Responses
AT+CACDBFN=<acdb file>	OK
	ERROR

Defined values

<acdb file>
<acdb file> file(s) in the directory /etc with suffix: acdb.

Examples

AT+CACDBFN=*audio_cal.acdb*
OK
AT+CACDBFN*?*
+CACDBFN*: audio_cal.acdb*
OK
AT+CACDBFN=*?*
+CACDBFN*: (audio_cal.acdb,audio_cal_no_ec.acdb,audio_cal_with_ec.acdb)*
OK

6.26 AT+CPCMREG USB AUDIO control

Description

This command is used to start/stop usb audio function.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPCMREG=?	+CPCMREG: (list of supported < mode >s) OK
Read Command	Responses
AT+CPCMREG?	+CPCMREG: <mode> OK
Write Command	Responses
AT+CPCMREG=<mode>	OK
	ERROR

Defined values

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<mode>
0 – stop usb audio function,need used after call stop.
1 – start usb audio function,need used after call start(ATDxxx;)

Examples

```
AT+CPCMREG=1
OK
AT+CPCMREG?
+CPCMREG:1
OK
```

6.27 AT+CTXVOLEX Adjust TX voice mic volume

Description

This command is used to adjust mic gain. It modify the TX_VOICE_VOL in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CTXVOLEX=?	+CTXVOLEX: (list of supported <value>s) OK
Read Command	Responses
AT+CTXVOLEX?	+CTXVOLEX: <value> OK
Write Command	Responses
AT+CTXVOLEX=<value>	OK
	ERROR

Defined values

<value>
Gain value from 0x0000-0xffff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CTXVOLEX=0x1234
OK
```

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AT+CTXVOLEX?
+CTXVOLEX: 0x2d33
OK

6.28 AT+CTXMICGAIN Adjust TX voice mic gain

Description

This command is used to adjust mic gain. It modify the TX_VOICE_MIC_GAIN in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CTXMICGAIN=?	+CTXMICGAIN: (list of supported <mode>,<value>s) OK
Read Command	**Responses**
AT+CTXMICGAIN?	+CTXMICGAIN: <mode>,<value> OK
Write Command	**Responses**
AT+CTXMICGAIN=<mode>,<value>	OK ERROR

Defined values

<mode>
mode value from 0-1, default value is not a fixed value. It varies with different versions.
<value>
gain value from 0x0000-0xffff, default value is not a fixed value. It varies with different versions.

Examples

AT+CTXMICGAIN=1,0x1234
OK
AT+CTXMICGAIN?
+CTXMICGAIN: 1,0x2000
OK

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6.29 AT+CRXVOL Adjust RX voice output speaker volume

Description

This command is used to adjust digital Volume of output signal after speech decoder, before summation of sidetone and DAC. It modify the RX_VOICE_SPK_GAIN in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRXVOL=?	+CRXVOL: (list of supported <value>s) OK
Read Command	**Responses**
AT+CRXVOL?	+CRXVOL: <value> OK
Write Command	**Responses**
AT+CRXVOL=<value>	OK
	ERROR

Defined values

<value>
Gain value from 0x0000-0xffff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CRXVOL=0x1234
OK
AT+CRXVOL?
+CRXVOL: 0x3fd9
OK
```

6.30 AT+CECH Inhibit far-end echo

Description

This command is used to adjust additional muting gain applied in DES during far-end only. It modify the DENS_gamma_e_high of TX_VOICE_SMECNS in DSP. The bigger the value, the

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stronger the inhibition .This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CECH=?	+CECH: (list of supported <value>s) OK
Read Command	Responses
AT+CECH?	+CECH: <value> OK
Write Command	Responses
AT+CECH=<value>	OK
	ERROR

Defined values

<value>
Gain value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CECH=0x1234
OK
AT+CECH?
+CECH: 0x0200
OK
```

6.31 AT+CECDT Inhibit echo during doubletalk

Description

This command is used to adjust additional muting gain applied in DES during doubletalk. It modify the DENS_gamma_e_dt of TX_VOICE_SMECNS in DSP. The bigger the value, the stronger the inhibition .This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

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Test Command	Responses
AT+CECDT=?	+CECDT: (list of supported <value>s) OK
Read Command	Responses
AT+CECDT?	+CECDT: <value> OK
Write Command	Responses
AT+CECDT=<value>	OK ERROR

Defined values

<value>
Gain value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

AT+CECDT=0x1234
OK
AT+CECDT?
+CECDT: 0x0100
OK

6.32 AT+CECWB Inhibit echo in the high band

Description

This command is used to adjust the aggressiveness of EC in the high band (4 ~ 8 kHz). A higher value is more aggressive and suppresses more high-band echo. Q-format - Q4.11WB_gamma_E = 2048 * gammaWhere gamma is in the range [0,15]. It modify the WB_gamma_e of TX_VOICE_SMECNS in DSP. The bigger the value, the stronger the inhibition .This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CECWB=?	+CECWB: (list of supported <value>s) OK
Read Command	Responses

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AT+CECWB?	+CECWB: <value> OK
Write Command	Responses
AT+CECWB=<value>	OK
	ERROR

Defined values

<value>
Gain value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

AT+CECWB=0x1234
OK
AT+CECWB?
+CECWB: 0x0300 *OK*

6.33 AT+CNSN MIC NOISE suppression

Description

This command is used to adjust oversubtraction factor and bias compensation for noise estimation. It modify the DENS_gamma_n of TX_VOICE_SMECNS in DSP. The bigger the value, the stronger the noise suppression .This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNSN=?	+CNSN: (list of supported <value>s) OK
Read Command	Responses
AT+CNSN?	+CNSN: <value> OK
Write Command	Responses
AT+CNSN=<value>	OK
	ERROR

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Defined values

<value>
Gain value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CNSN=0x1234
OK
AT+CNSN?
+CNSN: 0x0258
OK
```

6.34 AT+CNSLIM MIC NOISE suppression

Description

This command is used to controls the maximum amount of noise suppression. It modify the DENS_limit_NS of TX_VOICE_SMECNS in DSP. The bigger the value, the stronger the noise suppression .This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNSLIM=?	+CNSLIM: (list of supported <value>s) OK
Read Command	Responses
AT+CNSLIM?	+CNSLIM: <value> OK
Write Command	Responses
AT+CNSLIM=<value>	OK
	ERROR

Defined values

<value>
Gain value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CNSLIM=0x1234
```

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OK
AT+CNSLIM?
+CNSLIM: 0x16c4
OK

6.35 AT+CFNSMOD Adjust parameter fnsMode of RX_VOICE_FNS

Description

This command is used to modify the fnsMode of RX_VOICE_FNS in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFNSMOD=?	+CFNSMOD: (list of supported <value>s) OK
Read Command	**Responses**
AT+CFNSMOD?	+CFNSMOD: <value> OK
Write Command	**Responses**
AT+CFNSMOD=<value>	OK ERROR

Defined values

<value>
Gain value is bellow, default value is not a fixed value. It varies with different versions. 0x00FF – Maximum NS 0x0073 – Basic stationary NS 0x00F3 – Enhanced stationary NS 0x01FF – Aggressive NS

Examples

AT+CFNSMOD=0x0073
OK
AT+CFNSMOD?
+CFNSMOD: 0x0073
OK

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6.36 AT+CFNSIN Adjust parameter fnsInputGain of RX_VOICE_FNS

Description

This command is used to modify the fnsInputGain of RX_VOICE_FNS in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFNSIN=?	+CFNSIN: (list of supported <value>s) OK
Read Command	Responses
AT+CFNSIN?	+CFNSIN: <value> OK
Write Command	Responses
AT+CFNSIN=<value>	OK
	ERROR

Defined values

<value>
Gain value from 0x2000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CFNSIN=0x2234
OK
AT+CFNSIN?
+CFNSIN: 0x2000
OK
```

6.37 AT+CFNSLVL Adjust parameter fnsTargetNS of RX_VOICE_FNS

Description

This command is used to modify the fnsTargetNS of RX_VOICE_FNS in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

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Syntax

Test Command	Responses
AT+CFNSLVL=?	+CFNSLVL: (list of supported <value>s) OK
Read Command	Responses
AT+CFNSLVL?	+CFNSLVL: <value> OK
Write Command	Responses
AT+CFNSLVL=<value>	OK
	ERROR

Defined values

<value>
Gain value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

AT+CFNSLVL=0x2234
OK
AT+CFNSLVL?
+CFNSLVL: 0x1000 *OK*

6.38 AT+CECRX Enable or disable VOICE_MOD_ENABLE

Description

This command is used to enable or disable VOICE_MOD_ENABLE. It modify the VOICE_MOD_ENABLE in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CECRX=?	+CECRX: (list of supported <value>s) OK
Read Command	Responses
AT+CECRX?	+CECRX: <value> OK

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Write Command	Responses
AT+CECRX=<value>	OK
	ERROR

Defined values

<value>
This default value is not a fixed value. It varies with different versions. 1: Enable 0: Disable

Examples

AT+CECRX=1
OK
AT+CECRX?
+CECRX: 1 *OK*

6.39 AT+CNLPPG Modify the NLPP_gain in DSP

Description

This command is used to modify the NLPP_gain of VOICE_ECRX_PARAM in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNLPPG=?	+CNLPPG: (list of supported <value>s) OK
Read Command	Responses
AT+CNLPPG?	+CNLPPG: <value> OK
Write Command	Responses
AT+CNLPPG =<value>	OK
	ERROR

Defined values

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<value>
Gain value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CNLPPG=0x1234
OK
AT+CNLPPG?
+CNLPPG: 0x1000
OK
```

6.40 AT+CNLPPL Modify the NLPP_limit in DSP

Description

This command is used to modify the NLPP_limit of VOICE_ECRX_PARAM in DSP. This command only be used during call and don't save the parameter after call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNLPPL=?	+CNLPPL: (list of supported <value>s) OK
Read Command	Responses
AT+CNLPPL?	+CNLPPL: <value> OK
Write Command	Responses
AT+CNLPPL =<value>	OK
	ERROR

Defined values

<value>
Value from 0x0000-0x7fff, default value is not a fixed value. It varies with different versions.

Examples

```
AT+CNLPPL=0x1234
OK
AT+CNLPPL?
```

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```
+CNLPPL: 0x7fff
OK
```

6.41 AT+CECM Adjust echo canceller

Description

This AT command is used to select the echo cancellation mode. Write command only be used during call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CECM=?	+CECM: (list of supported <value>s) OK
Read Command	**Responses**
AT+CECM?	+CECM: <value> OK
Write Command	**Responses**
AT+CECM=<value>	OK
	ERROR

Defined values

<value>
This default value is not a fixed value. It varies with different versions. 0: disable EC mode 1: EC mode recommended for Handset 2: EC mode recommended for Headset 3: EC mode recommended for HANDSFREE 4: EC mode recommended for Bluetooth (least aggressive) 5: EC mode recommended for Bluetooth (less aggressive) 6: EC mode recommended for Bluetooth 7: EC mode recommended for Speaker least aggressive 8: EC mode recommended for Speaker phone medium 9: EC mode recommended for Speaker phone aggressive

Examples

```
AT+CECM=1
OK
```

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```
AT+CECM?
+CECM: 1
OK
```

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7 AT Commands for SMS

7.1 AT+CSMS Select message service

Description

This command is used to select messaging service <service>.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CSMS=?	+CSMS: (list of supported <service>s) OK
Read Command	Responses
AT+CSMS?	+CSMS: <service>,<mt>,<mo>,<bm> OK
Write Command	Responses
AT+CSMS=<service>	+CSMS: <mt>,<mo>,<bm> OK
	ERROR
	+CMS ERROR: <err>

Defined values

<service>
0 – SMS at command is compatible with GSM phase 2.
1 – SMS at command is compatible with GSM phase 2+.
<mt>
Mobile terminated messages:
0 – type not supported.
1 – type supported.
<mo>
Mobile originated messages:
0 – type not supported.
1 – type supported.
<bm>

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Broadcast type messages:

0 – type not supported.

1 – type supported.

Examples

```
AT+CSMS=0
+CSMS:1,1,1
OK
AT+CSMS?
+CSMS:0,1,1,1
OK
AT+CSMS=?
+CSMS:(0-1)
OK
```

7.2 AT+CPMS Preferred message storage

Description

This command is used to select memory storages <mem1>, <mem2> and <mem3> to be used for reading, writing, etc.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CPMS=?	+CPMS: (list of supported <mem1>s), (list of supported <mem2>s), (list of supported <mem3>s) OK
Read Command	**Responses**
AT+CPMS?	+CPMS:<mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>,<mem3>,<used3>,<total3> OK
	ERROR
	+CMS ERROR: <err>
Write Command	**Responses**
AT+CPMS=<mem1>[,<mem2>[,<mem3>]]	+CPMS: <used1>,<total1>,<used2>,<total2>,<used3>,<total3> OK
	ERROR

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	+CMS ERROR: <err>

Defined values

<mem1>
String type, memory from which messages are read and deleted (commands List Messages AT+CMGL, Read Message AT+CMGR and Delete Message AT+CMGD). "ME" and "MT" FLASH message storage "SM" SIM message storage "SR" Status report storage （**not used in CDMA/EVDO mode**）
<mem2>
String type, memory to which writing and sending operations are made (commands Send Message from Storage AT+CMSS and Write Message to Memory AT+CMGW). "ME" and "MT" FLASH message storage "SM" SIM message storage "SR" Status report storage （**not used in CDMA/EVDO mode**）
<mem3>
String type, memory to which received SMS is preferred to be stored (unless forwarded directly to TE; refer command New Message Indications AT+CNMI). "ME" FLASH message storage "SM" SIM message storage
<usedX>
Integer type, number of messages currently in <memX>.
<totalX>
Integer type, total number of message locations in <memX>.

Examples

AT+CPMS=?
+CPMS: ("ME","MT","SM","SR"),("ME","MT","SM","SR"),("ME","SM")
OK
AT+CPMS?
+CPMS:"ME", 0, 23,"ME", 0, 23,"ME", 0, 23
OK
AT+CPMS="SM","SM","SM"
+CPMS:3,50,3,50,3,50
OK

7.3 AT+CMGF Select SMS message format

Description

This command is used to specify the input and output format of the short messages.

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SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMGF=?	+CMGF: (list of supported <mode>s) OK
	ERROR
Read Command	**Responses**
AT+CMGF?	+CMGF: <mode> OK
	ERROR
Write Command	**Responses**
AT+CMGF=<mode>	OK
	ERROR
Execution Command	**Responses**
AT+CMGF	*Set default value (<mode>=0):* OK ERROR

Defined values

<mode>	
0	– PDU mode
1	– Text mode

Examples

```
AT+CMGF?
+CMGF: 0
OK
AT+CMGF=?
+CMGF: (0-1)
OK
AT+CMGF=1
OK
```

7.4 AT+CSCA SMS service centre address

Description

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This command is used to update the SMSC address, through which mobile originated SMS are transmitted.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CSCA=?	OK
Read Command	Responses
AT+CSCA?	+CSCA: <sca>,<tosca> OK
Write Command	Responses
AT+CSCA=<sca>[,<tosca>]	OK

Defined values

<sca>
Service Center 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 to command AT+CSCS), type of address given by <tosca>.
<tosca>
SC address Type-of-Address octet in integer format, when first character of <sca> is + (IRA 43) default is 145, otherwise default is 129.

Examples

```
AT+CSCA="+8613012345678"
OK
AT+CSCA?
+CSCA: "+8613010314500", 145
OK
```

7.5 AT+CSCB Select cell broadcast message indication

Description

The test command returns the supported <mode>s as a compound value.

The read command displays the accepted message types.

Depending on the <mode> parameter, the write command adds or deletes the message types accepted.

Note: This command not support in CDMA/EVDO mode

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SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CSCB=?	+CSCB: (list of supported <mode>s) OK
	ERROR
Read Command	Responses
AT+CSCB?	+CSCB: <mode>,<mids>,<dcss> OK
	ERROR
Write Command	Responses
AT+CSCB= <mode>[,<mides>[,<dcss>]]	OK
	ERROR
	+CMS ERROR: <err>

Defined values

<mode>
0 – message types specified in <mids> and <dcss> are accepted.
1 – message types specified in <mids> and <dcss> are not accepted.
<mides>
String type; all different possible combinations of CBM message identifiers.
<dcss>
String type; all different possible combinations of CBM data coding schemes(default is empty string)

Examples

AT+CSCB=?
+CSCB: (0-1)
OK
AT+CSCB=0,"15-17,50,86",""
OK

7.6 AT+CSMP Set text mode parameters

Description

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

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CSMP=?	OK
Read Command	Responses
AT+CSMP?	+CSMP: <fo>,<vp>,<pid>,<dcs> OK
Write Command	Responses
AT+CSMP=[<fo>[,<vp>[,<pid>[,<dcs>]]]]	OK

Defined values

<fo>
Depending on the Command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format. SMS status report is supported under text mode if <fo> is set to 49.
<vp>
Depending on SMS-SUBMIT <fo> setting: GSM 03.40,TP-Validity-Period either in integer format (default 167), in time-string format, or if is supported, in enhanced format (hexadecimal coded string with quotes), (<vp> is in range 0... 255).
<pid>
GSM 03.40 TP-Protocol-Identifier in integer format (default 0).
<dcs>
GSM 03.38 SMS Data Coding Scheme (default 0), or Cell Broadcast Data Coding Scheme in integer format depending on the command or result code.

Examples

AT+CSMP=17,23,64,244
OK

7.7 AT+CSDH Show text mode parameters

Description

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This command is used to control whether detailed header information is shown in text mode result codes.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CSDH=?	+CSDH: (list of supported <show>s) OK
	ERROR
Read Command	**Responses**
AT+CSDH?	+CSDH: <show> OK
Write Command	**Responses**
AT+CSDH=<show>	OK
	ERROR
Execution Command	**Responses**
AT+CSDH	*Set default value (<show>=0):* OK ERROR

Defined values

<show>	
0	– do not show header values defined in commands AT+CSCA and AT+CSMP (<sca>, <tosca>, <fo>, <vp>, <pid> and <dcs>) nor <length>, <toda> or <tooa> in +CMT, AT+CMGL, AT+CMGR result codes for SMS-DELIVERs and SMS-SUBMITs in text mode; for SMS-COMMANDs in AT+CMGR result code, do not show <pid>, <mn>, <da>, <toda>, <length> or <data>
1	– show the values in result codes

Examples

```
AT+CSDH?
+CSDH: 0
OK
AT+CSDH=1
OK
```

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7.8 AT+CNMA New message acknowledgement to ME/TA

Description

This command is used to confirm successful receipt of a new message (SMS-DELIVER or SMS-STATUSREPORT) routed directly to the TE. If ME does not receive acknowledgement within required time (network timeout), it will send RP-ERROR to the network.

NOTE: The execute / write command shall only be used when AT+CSMS parameter <service> equals 1 (= phase 2+) and appropriate URC has been issued by the module, i.e.:

<+CMT> for <mt>=2 incoming message classes 0, 1, 3 and none;

<+CMT> for <mt>=3 incoming message classes 0 and 3;

<+CDS> for <ds>=1.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CNMA=?	*if text mode(AT+CMGF=1):* OK *if PDU mode (AT+CMGF=0):* +CNMA: (list of supported <n>s) OK
Write Command	**Responses**
AT+CNMA=<n>	OK
	ERROR
	+CMS ERROR: <err>
Execution Command	**Responses**
AT+CNMA	OK
	ERROR
	+CMS ERROR: <err>

Defined values

<n>
Parameter required only for PDU mode. 0 – Command operates similarly as execution command in text mode. 1 – Send positive (RP-ACK) acknowledgement to the network. Accepted only in PDU mode. 2 – Send negative (RP-ERROR) acknowledgement to the network. Accepted only in PDU mode.

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Examples

```
AT+CNMI=1,2,0,0,0
OK
+CMT:”1380022xxxx”,””,”02/04/03,11 :06 :38+32”<CR><LF>
Testing
(receive new short message)
AT+CNMA(send ACK to the network)
OK
AT+CNMA
+CMS ERROR：340
(the second time return error, it needs ACK only once)
```

7.9 AT+CNMI New message indications to TE

Description

This command is used to select the procedure how receiving of new messages from the network is indicated to the TE when TE is active, e.g. DTR signal is ON. If TE is inactive (e.g. DTR signal is OFF). If set <mt>=2, <mt>=3 or <ds>=1, make sure <mode>=1, otherwise it will return error.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CNMI=?	+CNMI: (list of supported <mode>s),(list of supported <mt>s),(list of supported <bm>s),(list of supported <ds>s),(list of supported <bfr>s) OK
Read Command	**Responses**
AT+CNMI?	+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr> OK
Write Command	**Responses**
AT+CNMI=<mode>[,<mt>[,<bm>[,<ds> [,<bfr>]]]]	OK
	ERROR
	+CMS ERROR: <err>
Execution Command	**Responses**
AT+CNMI	*Set default value:* OK

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Defined values

<mode>

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.

<mt>

The rules for storing received SMS depend on its data coding scheme, preferred memory storage (AT+CPMS) setting and this value:

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: <mem3>,<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>

(text mode enabled, about parameters in italics, refer command Show Text Mode Parameters AT+CSDH).

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> **（not used in CDMA/EVDO mode）**

The rules for storing received CBMs depend on its data coding scheme, the setting of Select CBM Types (AT+CSCB) and this value:

0 – No CBM indications are routed to the TE.

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)

<ds> **（not used in CDMA/EVDO mode）**

0 – No SMS-STATUS-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: <mem3>,<index>.

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<bfr>
0 – TA buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1 to 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 to 3 is entered.

Examples

AT+CNMI?
+CNMI: 0,0,0,0,0
OK
AT+CNMI=?
+CNMI: (0,1,2),(0,1,2,3),(0,2),(0,1,2),(0,1)
OK
AT+CNMI=2,1 (unsolicited result codes after received messages.)
OK

7.10 AT+CGSMS Select service for MO SMS messages

Description

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

The test command is used for requesting information on which services and service preferences can be set by using the AT+CGSMS write command

The read command returns the currently selected service or service preference.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGSMS=?	+CGSMS: (list of supported <service>s) OK
Read Command	**Responses**
AT+CGSMS?	+CGSMS: <service> OK
Write Command	**Responses**
AT+CGSMS=<service>	OK
	ERROR
	+CME ERROR: <err>

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Defined values

<service>
A numeric parameter which indicates the service or service preference to be used 0 – GPRS(value is not really supported and is internally mapped to 2) 1 – circuit switched(value is not really supported and is internally mapped to 3) 2 – GPRS preferred (use circuit switched if GPRS not available) 3 – circuit switched preferred (use GPRS if circuit switched not available)

Examples

AT+CGSMS?
+CGSMS: 3
OK
AT+CGSMS=?
+CGSMS: (0-3)
OK

7.11 AT+CMGL List SMS messages from preferred store

Description

This command is used to return messages with status value <stat> from message storage <mem1> to the TE.

If the status of the message is 'received unread', the status in the storage changes to 'received read'.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMGL=?	+CMGL: (list of supported <stat>s) OK
Write Command	**Responses**
AT+CMGL=<stat>	*If text mode (AT+CMGF=1), command successful and SMS-SUBMITs and/or SMS-DELIVERs:* +CMGL:<index>,<stat>,<oa>/<da>,[<alpha>],[<scts>][,<tooa>/<toda>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data>[<CR><LF> +CMGL:<index>,<stat>,<oa>/<da>,[<alpha>],[<scts>][,<tooa>/<toda>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data>[...]] OK

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	If text mode (AT+CMGF=1), command successful and SMS-STATUS-REPORTs: +CMGL:<index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>[<CR><LF> +CMGL:<index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>[...]] OK
	If text mode (AT+CMGF=1), command successful and SMS-COMMANDs: +CMGL: <index>,<stat>,<fo>,<ct>[<CR><LF> +CMGL: <index>,<stat>,<fo>,<ct>[...]] OK
	If text mode (AT+CMGF=1), command successful and CBM storage: +CMGL:<index>,<stat>,<sn>,<mid>,<page>,<pages> <CR><LF><data>[<CR><LF> +CMGL:<index>,<stat>,<sn>,<mid>,<page>,<pages> <CR><LF><data>[...]] OK
	If PDU mode (AT+CMGF=0) and Command successful: +CMGL:<index>,<stat>,[<alpha>],<length><CR><LF><pdu>[<CR><LF> +CMGL:<index>,<stat>,[<alpha>],<length><CR><LF><pdu> [...]] OK
	+CMS ERROR: <err>

Defined values

<stat>

1. Text Mode:

"REC UNREAD"	received unread message (i.e. new message)
"REC READ"	received read message
"STO UNSENT"	stored unsent message
"STO SENT"	stored sent message
"ALL"	all messages

2. PDU Mode:

0 – received unread message (i.e. new message)
1 – received read message
2 – stored unsent message
3 – stored sent message
4 – all messages

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<index>

Integer type; value in the range of location numbers supported by the associated memory and start with zero.

<oa>

Originating-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, type of address given by <tooa>.

<da>

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, type of address given by <toda>.

<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 Character Set AT+CSCS.

<scts>

TP-Service-Centre-Time-Stamp in time-string format (refer <dt>).

<tooa>

TP-Originating-Address, Type-of-Address octet in integer format. (default refer <toda>).

<toda>

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). The range of value is from 128 to 255.

<length>

Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> in characters; or in PDU mode (AT+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)

<data>

In the case of SMS: TP-User-Data in text mode responses; format:

1. If <dcs> indicates that GSM 7 bit default alphabet is used and <fo> indicates that TP-User-Data-Header-Indication is not set:
   a. If TE character set other than "HEX": ME/TA converts GSM alphabet into current TE character set.
   b. If TE character set is "HEX": ME/TA converts each 7-bit character of GSM 7 bit default alphabet into two IRA character long hexadecimal numbers. (e.g. character Π (GSM 7 bit default alphabet 23) is presented as 17 (IRA 49 and 55))
2. If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal numbers. (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))
3. If <dcs> indicates that GSM 7 bit default alphabet is used:
   a. If TE character set other than "HEX": ME/TA converts GSM alphabet into current TE character set.
   b. If TE character set is "HEX": ME/TA converts each 7-bit character of the GSM 7 bit

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default alphabet into two IRA character long hexadecimal numbers. 4. If <dcs> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal numbers.
<fo>
Depending on the command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format. SMS status report is supported under text mode if <fo> is set to 49.
<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
<ra>
Recipient Address GSM 03.40 TP-Recipient-Address Address-Value field in string format;BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set(refer to command AT+CSCS);type of address given by <tora>
<tora>
Type of Recipient Address GSM 04.11 TP-Recipient-Address Type-of-Address octet in integer format (default refer <toda>)
<dt>
Discharge Time GSM 03.40 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.
<st>
Status GSM 03.40 TP-Status in integer format 0…255
<ct>
Command Type GSM 03.40 TP-Command-Type in integer format 0…255
<sn>
Serial Number GSM 03.41 CBM Serial Number in integer format
<mid>
Message Identifier GSM 03.41 CBM Message Identifier in integer format
<page>
Page Parameter GSM 03.41 CBM Page Parameter bits 4-7 in integer format
<pages>
Page Parameter GSM 03.41 CBM Page Parameter bits 0-3 in integer format
<pdu>

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

Examples

```
AT+CMGL=?
+CMGL: ("REC UNREAD","REC READ","STO UNSENT","STO SENT","ALL")
OK
AT+CMGL="ALL"
+CMGL: 1,"STO UNSENT","+10011",,,145,4
Hello World
OK
```

7.12 AT+CMGR Read message

Description

This command is used to return message with location value <index> from message storage <mem1> to the TE.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMGR=?	OK
Write Command	**Responses**
AT+CMGR=<index>	*If text mode (AT+CMGF=1), command successful and SMS-DELIVER:* +CMGR: <stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>, <tosca>, <length>]<CR><LF><data> OK
	If text mode (AT+CMGF=1), command successful and SMS-SUBMIT: +CMGR:<stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>],<sca>, <tosca>,<length>]<CR><LF><data> OK
	If text mode (AT+CMGF=1), command successful and SMS-STATUS-REPORT: +CMGR: <stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> OK

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	If text mode (AT+CMGF=1), command successful and SMS-COMMAND: +CMGR:<stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length>]<CR><LF><data> OK
	If text mode (AT+CMGF=1), command successful and CBM storage: +CMGR:<stat>,<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data> OK
	If PDU mode (AT+CMGF=0) and Command successful: +CMGR:<stat>,[<alpha>],<length><CR><LF><pdu> OK
	+CMS ERROR: <err>

Defined values

<index>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<stat>
1.Text Mode： "REC UNREAD" received unread message (i.e. new message) "REC READ" received read message "STO UNSENT" stored unsent message "STO SENT" stored sent message 2. PDU Mode： 0 – received unread message (i.e. new message) 1 – received read message. 2 – stored unsent message. 3 – stored sent message
<oa>
Originating-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, type of address given by <tooa>.
<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 Character Set AT+CSCS.
<scts>
TP-Service-Centre-Time-Stamp in time-string format (refer <dt>).
<tooa>
TP-Originating-Address, Type-of-Address octet in integer format. (default refer <toda>).

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<fo>

Depending on the command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format. SMS status report is supported under text mode if <fo> is set to 49.

<pid>

Protocol Identifier
GSM 03.40 TP-Protocol-Identifier in integer format
0…255

<dcs>

Depending on the command or result code: SMS Data Coding Scheme (default 0), or Cell Broadcast Data Coding Scheme in integer format.

<sca>

RP SC 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, type of address given by <tosca>.

<tosca>

RP SC address Type-of-Address octet in integer format (default refer <toda>).

<length>

Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+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).

<data>

In the case of SMS: TP-User-Data in text mode responses; format:

1 – If <dcs> indicates that GSM 7 bit default alphabet is used and <fo> indicates that TP-User-Data-Header-Indication is not set:
   a. If TE character set other than "HEX": ME/TA converts GSM alphabet into current TE character set.
   b. If TE character set is "HEX": ME/TA converts each 7-bit character of GSM 7 bit default alphabet into two IRA character long hexadecimal numbers. (e.g. character Π (GSM 7 bit default alphabet 23) is presented as 17 (IRA 49 and 55)).

2 – If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal numbers. (eg. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)).

3 – If <dcs> indicates that GSM 7 bit default alphabet is used:
   a. If TE character set other than "HEX": ME/TA converts GSM alphabet into current TE character set.
   b. If TE character set is "HEX": ME/TA converts each 7-bit character of the GSM 7 bit default alphabet into two IRA character long hexadecimal numbers.

4 – If <dcs> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal numbers.

<da>

Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default

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alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.

<toda>

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). The range of value is from 128 to 255.

<vp>

Depending on SMS-SUBMIT <fo> setting: TP-Validity-Period either in integer format (default 167) or in time-string format (refer <dt>).

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<ra>

Recipient Address

GSM 03.40 TP-Recipient-Address Address-Value field in string format;BCD numbers(or GSM default alphabet characters) are converted to characters of the currently selected TE character set(refer to command AT+CSCS);type of address given by <tora>

<tora>

Type of Recipient Address

GSM 04.11 TP-Recipient-Address Type-of-Address octet in integer format (default refer <toda>)

<dt>

Discharge Time

GSM 03.40 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.

<st>

Status

GSM 03.40 TP-Status in integer format

0…255

<ct>

Command Type

GSM 03.40 TP-Command-Type in integer format

0…255

<mn>

Message Number

GSM 03.40 TP-Message-Number in integer format

<sn>

Serial Number

GSM 03.41 CBM Serial Number in integer format

<mid>

Message Identifier

GSM 03.41 CBM Message Identifier in integer format

<page>

Page Parameter

GSM 03.41 CBM Page Parameter bits 4-7 in integer format

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<pages>
Page parameter GSM 03.41 CBM Page Parameter bits 0-3 in integer format
<pdu>
In the case of SMS: SC address followed by TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal numbers. (eg. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)).

Examples

```
AT+CMGR=1
+CMGR: "STO UNSENT","+10011",,145,17,0,0,167,"+8613800100500",145,4
Hello World
OK
```

7.13 AT+CMGS Send message

Description

This command is used to send message from a TE to the network (SMS-SUBMIT).

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMGS=?	OK
Write Command	**Responses**
If text mode (AT+CMGF=1): AT+CMGS=<da>[,<toda>]<*CR*>*Text is entered.* <CTRL-Z/ESC> *If PDU mode(AT+CMGF=0):* AT+CMGS=<length><CR>*PDU is entered* <CTRL-Z/ESC>	*If text mode (AT+CMGF=1) and sending successfully:* +CMGS: <mr> OK *If PDU mode(AT+CMGF=0) and sending successfully:* +CMGS: <mr> OK
	If sending fails: ERROR
	If sending fails: +CMS ERROR: <err>

Defined values

<da>

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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, type of address given by <toda>.
<toda>
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). The range of value is from 128 to 255.
<length>
integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+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)
<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

AT+CMGS="13012832788"<CR>(TEXT MODE)
> ABCD<ctrl-Z/ESC>
+CMGS: 46
OK

7.14 AT+CMSS Send message from storage

Description

This command is used to send message with location value <index> from preferred message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND).

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMSS=?	OK
Write Command	**Responses**
AT+CMSS= <index> [,<da>[,<toda>]]	+CMSS: <mr> OK
	ERROR
	If sending fails: +CMS ERROR: <err>

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Defined values

<index>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<da>
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, type of address given by <toda>.
<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
<toda>
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). The range of value is from 128 to 255.
NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

AT+CMSS=3
+CMSS: 0 *OK*
AT+CMSS=3,"13012345678"
+CMSS: 55 *OK*

7.15 AT+CMGW Write message to memory

Description

This command is used to store message (either SMS-DELIVER or SMS-SUBMIT) to memory storage <mem2>.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMGW=?	OK
Write Command	**Responses**
If text mode(AT+CMGF=1): AT+CMGW=<oa>/<da>[,<t	+CMGW: <index> OK

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ooa>/<toda>[,<stat>]]<CR> *Text is entered.* <CTRL-Z/ESC> *If PDU mode(AT+CMGF=0):* AT+CMGW=<length>[,<stat>]<CR>*PDU is entered.* <CTRL-Z/ESC>	ERROR
	+CMS ERROR: <err>

Defined values

<index>

Integer type; value in the range of location numbers supported by the associated memory and start with zero.

<oa>

Originating-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, type of address given by <tooa>.

<tooa>

TP-Originating-Address, Type-of-Address octet in integer format. (default refer <toda>).

<da>

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, type of address given by <toda>.

<toda>

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). The range of value is from 128 to 255.

<length>

Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+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>

1. Text Mode:
   "STO UNSENT" stored unsent message
   "STO SENT" stored sent message
2. PDU Mode:
   2 – stored unsent message
   3 – stored sent message

NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

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AT+CMGW="13012832788" <CR> (TEXT MODE)
ABCD<ctrl-Z/ESC>
+CMGW:1
OK

7.16 AT+CMGD Delete message

Description

This command is used to delete 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.

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMGD=?	+CMGD: (list of supported <index>s)[,(list of supported <delflag>s)] OK
Write Command	**Responses**
AT+CMGD=<index>[,<delflag>]	OK
	ERROR
	+CMS ERROR: <err>

Defined values

<index>

Integer type; value in the range of location numbers supported by the associated memory and start with zero.

<delflag>

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.

NOTE: If set <delflag>=1, 2, 3 or 4, <index> is omitted, such as AT+CMGD=,1.

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Examples

```
AT+CMGD=1
OK
```

7.17 AT+CMGRO Read message only

Description

This command is used to return message with location value <index> from message storage <mem1> to the TE, but the message's status does not change.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGRO=?	OK
Write Command	**Responses**
AT+CMGRO=<index>	*If text mode(AT+CMGF=1),command successful and SMS-DELIVER:* +CMGRO:<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>, <sca>,<tosca>,<length>]<CR><LF><data> OK
	If text mode (AT+CMGF=1),command successful and SMS-SUBMIT: +CMGRO:<stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>], <sca>,<tosca>,<length>]<CR><LF><data> OK
	If text mode(AT+CMGF=1),command successful and SMS-STATUS-REPORT: +CMGRO: <stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> OK
	If text mode (AT+CMGF=1),command successful and SMS-COMMAND: +CMGRO:<stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length><CR><LF><data>] OK
	If text mode(AT+CMGF=1), command successful and CBM storage:

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	+CMGRO:<stat>,<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data> OK
	If PDU mode (AT+CMGF=0) and command successful: +CMGR: <stat>,[<alpha>],<length><CR><LF><pdu> OK
	Otherwise: +CMS ERROR: <err>

Defined values

Refer to command AT+CMGR.

Examples

```
AT+CMGRO=6
+CMGRO:"REC  READ","+8613917787249",,"06/07/10,12:09:38+32",145,4,0,0,"+8613800210500",145,4
abcd
OK
```

7.18 AT+CMGMT Change message status

Description

This command is used to change the message status. If the status is unread, it will be changed read. Other statuses don't change.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGMT=?	OK
Write Command	**Responses**
AT+CMGMT=<index>	OK
	ERROR
	+CMS ERROR: <err>

Defined values

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<index>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.

Examples

```
AT+CMGMT=1
OK
```

7.19 AT+CMVP Set message valid period

Description

This command is used to set valid period for sending short message.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMVP=?	+CMVP: (list of supported <vp>s) OK
Read Command	Responses
AT+CMVP?	+CMVP:<vp> OK
Write Command	Responses
AT+CMVP=<vp>	OK
	ERROR
	+CMS ERROR: <err>

Defined values

<vp>
Validity period value: 0 to 143 (<vp>+1) x 5 minutes (up to 12 hours) 144 to 167 12 hours + (<vp>-143) x 30 minutes 168 to 196 (<vp>-166) x 1 day 197 to 255 (<vp>-192) x 1 week

Examples

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AT+CMVP=167
OK
AT+CMVP?
+CMVP: 167
OK

7.20 AT+CMGRD Read and delete message

Description

This command is used to read message, and delete the message at the same time. It integrate AT+CMGR and AT+CMGD, but it doesn't change the message status.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGRD=?	OK
Write Command	**Responses**
AT+CMGRD=<index>	*If text mode(AT+CMGF=1),command successful and SMS-DELIVER:* +CMGRD:<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>, <sca>,<tosca>,<length>]<CR><LF><data> OK
	If text mode(AT+CMGF=1),command successful and SMS-SUBMIT: +CMGRD:<stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>], <sca>,<tosca>,<length>]<CR><LF><data> OK
	If text mode(AT+CMGF=1),command successful and SMS-STATUS- REPORT: +CMGRD: <stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> OK
	If text mode(AT+CMGF=1),command successful and SMS-COMMAND: +CMGRD:<stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length><CR><LF><data>] OK
	If text mode(AT+CMGF=1),command successful and CBM storage:

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	+CMGRD:<stat>,<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data> OK
	If PDU mode(AT+CMGF=0) and command successful: +CMGRD: <stat>,[<alpha>],<length><CR><LF><pdu> OK
	ERROR
	+CMS ERROR: <err>

Defined values

Refer to command AT+CMGR.

Examples

```
AT+CMGRD=6
+CMGRD:"REC READ","+8613917787249",,"06/07/10,12:09:38+32",145,4,0,0,  "+8613800210500",145,4
How do you do
OK
```

7.21 AT+CMGSO Send message quickly

Description

This command is used to send message from a TE to the network (SMS-SUBMIT). But it's different from AT+CMGS. This command only need one time input, and wait for ">" needless.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGSO=?	OK
Write Command	**Responses**
If text mode (AT+CMGF=1): AT+CMGSO=<da>[,<toda>], <text> *If PDU mode (AT+CMGF*	+CMGSO: <mr> OK
	ERROR

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=0): AT+CMGSO=<length>,<pducontent>	+CMS ERROR: <err>

Defined values

<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
<da>
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, type of address given by <toda>.
<length>
Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+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).
<toda>
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). The range of value is from 128 to 255.
<text>
Content of message.
<pducontent>
Content of message.
NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

AT+CMGSO="10086","YECX"
+CMGSO: 128
OK

7.22 AT+CMGWO Write message to memory quickly

Description

This command stores message (either SMS-DELIVER or SMS-SUBMIT) to memory storage <mem2>. But it's different from AT+CMGW. This command only need one time input, and wait for ">" needless.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

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Syntax

Test Command	Responses
AT+CMGWO=?	OK
Write Command	Responses
If text mode (AT+CMGF=1): AT+CMGWO=<da>[,<toda>],<text>	+CMGWO: <index> OK
	ERROR
If PDU mode (AT+CMGF=0): AT+CMGWO=<length>,<pducontent>	+CMS ERROR: <err>

Defined values

<index>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<da>
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, type of address given by <toda>.
<toda>
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). The range of value is from 128 to 255.
<text>
Content of message.
<pducontent>
Content of message.

Examples

```
AT+CMGWO="13012832788","ABCD"
+CMGWO: 1
OK
```

7.23 AT+CMGSEX Send message

Description

This command is used to send message from a TE to the network (SMS-SUBMIT).

Note: This command not support in CDMA/EVDO mode

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SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMGSEX=?	OK
Write Command	**Responses**
If text mode (AT+CMGF=1): AT+CMGSEX=<da>[,<toda>][,<mr>, <msg_seg>, <msg_total>]<*CR*>*Text is entered.* <CTRL-Z/ESC> *If PDU mode(AT+CMGF=0):* AT+CMGSEX=<length><CR> *PDU is entered* <CTRL-Z/ESC>	*If text mode (AT+CMGF=1) and sending successfully:* +CMGSEX: <mr> OK *If PDU mode(AT+CMGF=0) and sending successfully:* +CMGSEX: <mr> OK
	If sending fails: ERROR
	If sending fails: +CMS ERROR: <err>

Defined values

<da>
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, type of address given by <toda>.
<toda>
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). The range of value is from 128 to 255.
<length>
Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+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)
<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
<msg_seg>
The segment number for long sms
<msg_total>
The total number of the segments for long sms. Its range is from 2 to 255.
NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: For single SMS, it is 160 characters if the 7 bit GSM coding scheme is used; For multiple long sms, it is

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153 characters if the 7 bit GSM coding scheme is used.

Examples

```
AT+CMGSEX="13012832788", 190, 1, 2<CR>(TEXT MODE)
> ABCD<ctrl-Z/ESC>
+CMGSEX: 190
OK
AT+CMGSEX="13012832788", 190, 2, 2<CR>(TEXT MODE)
> EFGH<ctrl-Z/ESC>
+CMGSEX: 190
OK
```

7.24 AT+CMGENREF Generate a new message reference

Description

This command is used to generate a new message reference which can be used by AT+CMGSEX.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGENREF=?	OK
Execute Command	**Responses**
AT+CMGENREF	+CMGENREF: <mr> OK

Defined values

<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.

Examples

```
AT+CMGENREF=?
OK
AT+CMGENREF
+CMGENREF:190
OK
```

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7.25 AT+CMSSEX Send multi messages from storage

Description

This command is used to send messages with location value <index1>,<index2>,<index3>… from preferred message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND).The max count of index is 13 one time.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMSSEX=?	OK
Write Command	**Responses**
AT+CMSSEX= <index> [,<index >[,…]]	+CMSSEX: <mr>[,<mr>[,…]] OK
	ERROR
	If sending fails: [+CMSSEX: <mr>[,<mr>[,…]]] +CMS ERROR: <err>

Defined values

<index>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

AT+CMSSEX=0,1
+CMSSEX: 239,240 *OK*
AT+CMSSEX=0,1
+CMSSEX: 238

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+CMS ERROR: Invalid memory index

7.26 AT+CMSSEXM Send message from storage to multi DA

Description

This command is used to send message with location value <index> from preferred message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND).The DA is the PB index in the specified PB storage max to 10.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMSSEXM=?	OK
Write Command	**Responses**
AT+CMSSEXM= <index>, <storage>,<pb_index1> [,<pb_index2>[,<…>]]	+CMSSEXM: <pb_index1>,<mr> +CMSSEXM: <pb_index2>,<mr> … OK
	ERROR
	If sending fails: +CMSSEXM: <pb_index1>,<err> +CMSSEXM: <pb_index2>,<err> ...

Defined values

<index>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<storage>
Values reserved by the present document: "DC" ME dialed calls list Capacity: max. 100 entries AT+CPBW command is not applicable to this storage. "MC" ME missed (unanswered received) calls list Capacity: max. 100 entries AT+CPBW command is not applicable to this storage.

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"RC"	ME received calls list Capacity: max. 100 entries AT+CPBW command is not applicable to this storage.
"SM"	SIM phonebook Capacity: depending on SIM card
"ME"	Mobile Equipment phonebook Capacity: max. 500 entries

<pb_index>

Integer type value in the range of location numbers of phonebook memory.

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

```
AT+CMSSEXM=0,"sm",1,3
+CMSSEXM: 1,241
+CMSSEXM: 3,242

OK
AT+CMSSEXM=0,"sm",1,2
+CMSSEXM: 1,invalid index
+CMSSEXM: 2,243

OK
```

7.27 AT+CSALPHA Set If Try To Match Alpha In PB

Description

This command is used to set if try to match alpha In PB when read message.

Note: This command not support in CDMA/EVDO mode

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSALPHA=?	+ CSALPHA: (list of supported <setting>s) OK

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Read Command	Responses
AT+CSALPHA?	+ CSALPHA: < setting > OK
Write Command	Responses
AT+CSALPHA =< setting >	OK
Execution Command	Responses
AT+CSALPHA	*Set default value (*<setting >*=1):* OK

Defined values

< setting >	
0	– not to match alpha in PB
1	– try to match alpha in PB

Examples

AT+ CSALPHA*?*
+ CSALPHA*: 0*
OK
AT+ CSALPHA *=?*
+ CSALPHA*: (0-1)*
OK
AT+ CSALPHA *=1*
OK

7.28 AT+CMGP Set cdma/evdo text mode parameters

Description

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

NOTE: take effect in CDMA/EVDO mode

SIM PIN	References
NO	3GPP TS 27.005

Syntax

Test Command	Responses
AT$QCSMP=?	OK
Read Command	Responses

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AT$QCSMP?	+CSMP: <tid>,<vpf>,<vp>,<ddtf>,<ddt> OK
Write Command	Responses
AT$QCSMP=[Tid][,<vpf>,<vp>[,<ddtf>,ddt]]	OK

Defined values

<tid>
Teleservice ID, value maybe 4095,4096,4097,4098,4099,4100,4101,4102 Default 4098
<vpf>
Valid Period Format 0, Absolute 1, Relative
<vp>
Valid Period “YY/MM/DD,HH/MM/SS” if vpf=0, Integer not exceed 248 if vpf=1
<ddtf>
Deferred Delivery Time Format 0, Absolute 1, Relative
<ddt>
Deferred Delivery Time “YY/MM/DD,HH/MM/SS” if ddtf=0, Integer not exceed 248 if ddtf=1

Examples

AT+CMGP=4098,0,”11/04/22,16:21:00”,1,12
OK

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8 AT Commands for Phonebook

8.1 AT+CPBS Select phonebook memory storage

Description

This command selects the active phonebook storage,i.e.the phonebook storage that all subsequent phonebook commands will be operating on.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPBS=?	+CPBS: (list of supported <storage>s) OK
Read Command	**Responses**
AT+CPBS?	+CPBS: <storage>[,<used>,<total>] OK
	+CME ERROR: <err>
Write Command	**Responses**
AT+CPBS=<storage>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CPBS	*Set default value "SM":* OK

Defined values

<storage>
Values reserved by the present document: "DC" ME dialed calls list Capacity: max. 100 entries AT+CPBW command is not applicable to this storage. "MC" ME missed (unanswered received) calls list Capacity: max. 100 entries AT+CPBW command is not applicable to this storage.

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"RC"	ME received calls list Capacity: max. 100 entries AT+CPBW command is not applicable to this storage.
"SM"	SIM phonebook Capacity: depending on SIM card
"ME"	Mobile Equipment phonebook Capacity: max. 500 entries
"FD"	SIM fixdialling-phonebook Capacity:depending on SIM card
"ON"	MSISDN list Capacity:depending on SIM card
"LD"	Last number dialed phonebook Capacity: depending on SIM card AT+CPBW command is not applicable to this storage
"EN"	Emergency numbers Capacity: depending on SIM card AT+CPBW command is not applicable to this storage.

<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.

Examples

```
AT+CPBS=?
+CPBS: ("SM","DC","FD","LD","MC","ME","RC","EN","ON")
OK
AT+CPBS=”SM”
OK
AT+CPBS?
+CPBS: "SM",1,200
OK
```

8.2 AT+CPBR Read phonebook entries

Description

This command gets the record information from the selected memory storage in phonebook. If the storage is selected as “SM” then the command will return the record in SIM phonebook, the same to others.

SIM PIN	References
YES	3GPP TS 27.007

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Syntax

Test Command	Responses
AT+CPBR=?	+CPBR: (<minIndex>-<maxIndex>), [<nlength>], [<tlength>] OK
	+CME ERROR: <err>
Write Command	**Responses**
AT+CPBR=<index1>[,<index2>]	[+CPBR: <index1>,<number>,<type>,<text>[<CR><LF> +CPBR: <index2>,<number>,<type>,<text>[…]]] OK
	ERROR
	+CME ERROR: <err>

Defined values

<index1>
Integer type value in the range of location numbers of phonebook memory.
<index2>
Integer type value in the range of location numbers of phonebook memory.
<index>
Integer type.the current position number of the Phonebook index.
<minIndex>
Integer type the minimum <index> number.
<maxIndex>
Integer type the maximum <index> number
<number>
String type, phone number of format <type>, the maximum length is <nlength>.
<type>
Type of phone number octet in integer format, default 145 when dialing string includes international access code character "+", otherwise 129.
<text>
String type field of maximum length <tlength>; often this value is set as name.
<nlength>
Integer type value indicating the maximum length of field <number>.
<tlength>
Integer type value indicating the maximum length of field <text>.

Examples

AT+CPBS?
+CPBS: "SM",2,200
OK

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```
AT+CPBR=1,10
+CPBR: 1,"1234567890",129,"James"
+CPBR: 2,"0987654321",129,"Kevin"
OK
```

8.3 AT+CPBF Find phonebook entries

Description

This command finds the record in phonebook (from the current phonebook memory storage selected with AT+CPBS) which alphanumeric field has substring <findtext>.If <findtext> is null, it will lists all the entries.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPBF=?	+CPBF: [<nlength>],[<tlength>] OK
	+CME ERROR: <err>
Write Command	**Responses**
AT+CPBF=[<findtext>]	[+CPBF: <index1>,<number>,<type>,<text>[<CR><LF> +CPBF: <indexN>,<number>,<type>,<text>[…]]] OK
	ERROR
	+CME ERROR: <err>

Defined values

<findtext>
String type, this value is used to find the record. Character set should be the one selected with command AT+CSCS.
<index>
Integer type values in the range of location numbers of phonebook memory.
<number>
String type, phone number of format <type>, the maximum length is <nlength>.
<type>
Type of phone number octet in integer format, default 145 when dialing string includes international access code character "+", otherwise 129.
<text>

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String type field of maximum length <tlength>; Often this value is set as name.
<nlength>
Integer type value indicating the maximum length of field <number>.
<tlength>
Integer type value indicating the maximum length of field <text>.

Examples

```
AT+CPBF=" James "
+CPBF: 1,"1234567890",129," James "
OK
```

8.4 AT+CPBW Write phonebook entry

Description

This command writes phonebook entry in location number <index> in the current phonebook memory storage selected with AT+CPBS.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPBW=?	+CPBW:(list of supported <index>s),[<nlength>], (list of supported <type>s),[<tlength>] OK
	+CME ERROR:<err>
Write Command	**Responses**
AT+CPBW=[<index>][,<number>[,<type>[,<text>]]]	OK
	ERROR
	+CME ERROR:<err>

Defined values

<index>
Integer type values in the range of location numbers of phonebook memory.If <index> is not given, the first free entry will be used. If <index> is given as the only parameter, the phonebook entry specified by <index> is deleted.If record number <index> already exists, it will be overwritten.
<number>
String type, phone number of format <type>, the maximum length is <nlength>.It must be an non-empty string.

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<type>

Type of address octet in integer format, The range of value is from 128 to 255. If <number> contains a leading "+" <type> = 145 (international) is used.Supported value are:

128 – Restricted number type includes unknown type and format

145 – when dialling string includes international access code character "+"

161 – national number.The network support for this type is optional

177 – network specific number,ISDN format

129 – otherwise

NOTE: Other value refer TS 24.008 [8] subclause 10.5.4.7.

<text>

String type field of maximum length <tlength>; character set as specified by command Select TE Character Set AT+CSCS.

<nlength>

Integer type value indicating the maximum length of field <number>.

<tlength>

Integer type value indicating the maximum length of field <text>.

NOTE: If the parameters of <type> and <text> are omitted and the first character of <number> is '+', it will specify <type> as 145(129 if the first character isn't '+') and <text> as NULL.

Examples

```
AT+CPBW=3,"88888888",129,"John"
OK
AT+CPBW=,"6666666",129,"mary"
OK
AT+CPBW=1
OK
```

8.5 AT+CNUM Subscriber number

Description

Execution command returns the MSISDNs related to the subscriber (this information can be stored in the SIM or in the ME). If subscriber has different MSISDN for different services, each MSISDN is returned in a separate line.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CNUM=?	OK

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Execution Command	Responses
AT+CNUM	[+CNUM: <alpha>,<number>,<type>[<CR><LF> +CNUM: <alpha>, <number>,<type> [...]]] OK
	+CME ERROR: <err>

Defined values

<alpha>
Optional alphanumeric string associated with <number>, used character set should be the one selected with command Select TE Character Set AT+CSCS.
<number>
String type phone number of format specified by <type>.
<type>
Type of address octet in integer format.see also AT+CPBR <type>

Examples

AT+CNUM
+CNUM: ,"13697252277",129 *OK*

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9 AT Commands for GPRS

9.1 AT+CGREG GPRS network registration status

Description

This command controls the presentation of an unsolicited result code "+CGREG: <stat>" when <n>=1 and there is a change in the MT's GPRS network registration status.

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.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGREG=?	+CGREG: (list of supported <n>s) OK
Read Command	Responses
AT+CGREG?	+CGREG: <n>,<stat>[,<lac>,<ci>] OK
Write Command	Responses
AT+CGREG=<n>	OK
Execution Command	Responses
AT+CGREG	*Set default value:* OK

Defined values

<n>		
0	–	disable network registration unsolicited result code
1	–	enable network registration unsolicited result code +CGREG: <stat>
2	–	there is a change in the ME network registration status or a change of the network cell: +CGREG: <stat>[,<lac>,<ci>]
<stat>		
0	–	not registered, ME is not currently searching an operator to register to
1	–	registered, home network
2	–	not registered, but ME is currently trying to attach or searching an operator to register to
3	–	registration denied

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4 – unknown 5 – registered, roaming
<lac>
Two bytes location area code in hexadecimal format (e.g.”00C3” equals 193 in decimal). NOTE: The <lac> not supported in CDMA/HDR mode
<ci>
Cell ID in hexadecimal format. GSM : Maximum is two byte WCDMA : Maximum is four byte TDS-CDMA : Maximum is four byte NOTE: The <ci> not supported in CDMA/HDR mode

Examples

AT+CGREG=?
+CGREG: (0-1)
OK
AT+CGREG?
+CGREG: 0,0
OK

9.2 AT+CGATT Packet domain attach or detach

Description

The write command is used to attach the MT to, or detach the MT from, the Packet Domain service. The read command returns the current Packet Domain service state.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGATT=?	+CGATT: (list of supported <state>s) OK
	ERROR
Read Command	Responses
AT+CGATT?	+CGATT: <state> OK

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	ERROR
Write Command	Responses
AT+CGATT=<state>	OK
	ERROR
	+CME ERROR: <err>

Defined values

<state>
Indicates the state of Packet Domain attachment: 0 – detached 1 – attached

Examples

AT+CGATT?
+CGATT: 0
OK
AT+CGATT=1
OK

9.3 AT+CGACT PDP context activate or deactivate

Description

The write command is used to activate or deactivate the specified PDP context (s).

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGACT=?	+CGACT: (list of supported <state>s) OK
Read Command	Responses
AT+CGACT?	+CGACT: [<cid>, <state> [<CR><LF> +CGACT: <cid>, <state> [...]]] OK
Write Command	Responses
AT+CGACT=<state> [,<cid>]	OK
	ERROR

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	+CME ERROR: <err>

Defined values

<state>
Indicates the state of PDP context activation: 0 – deactivated 1 – activated
<cid>
A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). 1…16

Examples

AT+CGACT?
+CGACT: 1,1
OK
AT+CGACT=?
+CGACT: (0,1)
OK
AT+CGACT=0,1
OK

9.4 AT+CGDCONT Define PDP context

Description

The set command specifies PDP context parameter values for a 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. A special form of the write command (AT+CGDCONT=<cid>) causes the values for context <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGDCONT=?	+CGDCONT: (range of supported<cid>s),<PDP_type>,,,(list of supported <d_comp>s),(list of supported <h_comp>s) OK
	ERROR

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Read Command	Responses
AT+CGDCONT?	+CGDCONT: [<cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp>[<CR><LF> +CGDCONT: <cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[...]]] OK
	ERROR
Write Command	Responses
AT+CGDCONT= <cid>[,<PDP_type> [,<APN>[,<PDP_addr> [,<d_comp>[,<h_comp>]]]]]	OK
	ERROR
Execution Command	Responses
AT+CGDCONT	OK
	ERROR

Defined values

<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) is returned by the test form of the command. 1…16
<PDP_type>
(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol. IP Internet Protocol PPP Point to Point Protocol IPV6 Internet Protocol Version 6 IPV4V6 Dual PDN Stack
<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.
<PDP_addr>
A string parameter that identifies the MT in the address space applicable to the PDP. Read 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 command AT+CGPADDR.
<d_comp>
A numeric parameter that controls PDP data compression, this value may depend on platform: 0 – off (default if value is omitted) 1 – on 2 – V.42bis
<h_comp>

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A numeric parameter that controls PDP header compression, this value may depend on platform:

0 – off (default if value is omitted)
1 – on
2 – RFC1144
3 – RFC2507
4 – RFC3095

Examples

```
AT+CGDCONT?
+CGDCONT: 1,"IP","","0.0.0.0",0,0
OK
AT+CGDCONT=?
+CGDCONT: (1-16),"IP",,,(0-2),(0-4)
+CGDCONT: (1-16),"PPP",,,(0-2),(0-4)
+CGDCONT: (1-16),"IPV6",,,(0-2),(0-4)
+CGDCONT: (1-16),"IPV4V6",,,(0-2),(0-4)

OK
```

9.5 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. A special form of the set command, AT+CGDSCONT=<cid> causes the values for context number <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGDSCONT=?	+CGDSCONT: (range of supported <cid>s),(list of <p_cid>s for active primary contexts), <PDP_type>,,, (list of supported <d_comp>s),(list of supported <h_comp>s) OK ERROR
Read Command	Responses

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AT+CGDSCONT?	+CGDSCONT: [<cid>,<p_cid>,<d_comp>,<h_comp> [<CR><LF>+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp> [...]]] OK
	ERROR
Write Command	Responses
AT +CGDSCONT=<cid>[,<p_cid>[,<d_comp>[,<h_comp>]]]]	OK
	ERROR

Defined values

<cid>
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) 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>
a numeric parameter which 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.
<PDP_type>
(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol. IP Internet Protocol PPP Point to Point Protocol IPV6 Internet Protocol Version 6 IPV4V6 Dual PDN Stack
<d_comp>
a numeric parameter that controls PDP data compression (applicable for SNDCPonly) (refer 3GPP TS 44.065 [61]) 0 off 1 on (manufacturer preferred compression) 2 V.42bis Other values are reserved.
<h_comp>
a numeric parameter that controls PDP header compression (refer 3GPP TS 44.065 [61] and

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3GPP TS 25.323 [62])

0 off
1 on (manufacturer preferred compression)
2 RFC1144 (applicable for SNDCP only)
3 RFC2507
4 RFC3095 (applicable for PDCP only)
Other values are reserved.

Examples

```
AT+CGDSCONT?
+CGDSCONT: 2,1,0,0

OK
AT+CGDSCONT=2,1
OK
AT+CGDSCONT=?
+CGDSCONT: (1-16),(1),"IP",,,(0-2),(0-4)
+CGDSCONT: (1-16),(1),"PPP",,,(0-2),(0-4)
+CGDSCONT: (1-16),(1),"IPV6",,,(0-2),(0-4)
+CGDSCONT: (1-16),(1),"IPV4V6",,,(0-2),(0-4)

OK
```

9.6 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.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses

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AT+CGTFT=?	+CGTFT: <PDP_type>,(list of supported <packet filter identifier>s),(list of supported <evaluation precedence index>s),(list of supported <source address and subnet mask>s),(list of supported <protocol number (ipv4) / next header (ipv6)>s),(list of supported <destination port range>s),(list of supported <source 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) [<CR><LF>+CGTFT: <PDP_type>,(list of supported <packet filter identifier>s),(list of supported <evaluation precedence index>s),(list of supported <source address and subnet mask>s),(list of supported <protocol number (ipv4) / next header (ipv6)>s),(list of supported <destination port range>s),(list of supported <source 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) [...]] OK ERROR
Read Command	Responses
AT+CGTFT?	+CGTFT: [<cid>,<packet filter identifier>,<evaluation precedence index>,<source address and subnet mask>,<protocol number (ipv4) / next header (ipv6)>,<destination port range>,<source port range>,<ipsec security parameter index (spi)>,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>,<flow label (ipv6)>,<direction> [<CR><LF>+CGTFT: <cid>,<packet filter identifier>,<evaluation precedence index>,<source address and subnet mask>,<protocol number (ipv4) / next header (ipv6)>,<destination port range>,<source port range>,<ipsec security parameter index (spi)>,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>,<flow label (ipv6)>,<direction> [...]]] OK

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	ERROR
Write Command	Responses
AT+CGTFT=<cid>[,[<packet filter identifier>,<evaluation precedence index>[,<source address and subnet mask>[,<protocol number (ipv4) / next header (ipv6)>[,<destination port range>[,<source port range>[,<ipsec security parameter index (spi)>[,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>[,<flow label (ipv6)>[,<direction>]]]]]]]]]	OK
	ERROR
Execute Command	Responses
AT+CGTFT	OK
	ERROR

Defined values

<cid>
a numeric parameter which specifies a particular PDP context definition (see theAT+CGDCONT and AT+CGDSCONT commands).
<PDP_type>
(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol. IP Internet Protocol PPP Point to Point Protocol IPV6 Internet Protocol Version 6 IPV4V6 Dual PDN Stack
<packet filter identifier>
a numeric parameter, value range from 1 to 16.
<evaluation precedence index>
a numeric parameter. The value range is from 0 to 255.
<source address and subnet mask>
string type The string is given as dot-separated numeric (0-255) parameters on the form: "a1.a2.a3.a4.m1.m2.m3.m4" for IPv4 or

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"a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16.m1.m2.m3.m4.m5.m6.m7.m8.m9.m10.m11.m12.m13.m14.m15.m16", for IPv6.
<protocol number (ipv4) / next header (ipv6)>
a numeric parameter, value range from 0 to 255.
<destination port range>
string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t".
<source port range>
string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t".
<ipsec security parameter index (spi)>
numeric value in hexadecimal format. The value range is from 00000000 to FFFFFFFF.
<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>
string type. The string is given as dot-separated numeric (0-255) parameters on the form "t.m".
<flow label (ipv6)>
numeric value in hexadecimal format. The value range is from 00000 to FFFFF. Valid for IPv6 only.
<direction>
a numeric parameter which specifies the transmission direction in which the packet filter shall be applied. 0 Pre-Release 7 TFT filter (see 3GPP TS 24.008 [8], table 10.5.162) 1 Uplink 2 Downlink 3 Birectional (Up & Downlink)

Examples

```
AT+CGTFT?
+CGTFT: 2,1,0,"74.125.71.99.255.255.255.255",0,0.0,0.0,0,0.0,0

OK
AT+CGTFT=2,1,0,"74.125.71.99.255.255.255.255"
OK
AT+CGTFT=?
+CGTFT: "IP",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)
+CGTFT: "PPP",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)
+CGTFT: "IPV6",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)
+CGTFT:"IPV4V6",(1-16),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)

OK
```

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9.7 AT+CGQREQ Quality of service profile (requested)

Description

This command allows the TE to specify a Quality of Service Profile that is used when the MT sends an Activate PDP Context Request message to the network.. A special form of the set command (AT+CGQREQ=<cid>) causes the requested profile for context number <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGQREQ=?	+CGQREQ: <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) [<CR><LF> +CGQREQ: <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
	ERROR
Read Command	Responses
AT+CGQREQ?	+CGQREQ: [<cid>, <precedence >, <delay>, <reliability>, <peak>, <mean>[<CR><LF> +CGQREQ: <cid>, <precedence >, <delay>, <reliability.>, <peak>, <mean>[…]]] OK
	ERROR
Write Command	Responses
AT+CGQREQ=<cid> [,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]]	OK
	ERROR
Execution Command	Responses
AT+CGQREQ	OK
	ERROR

Defined values

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<cid>

A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). The range is from 1 to 16.

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol
PPP Point to Point Protocol
IPV6 Internet Protocol Version 6
IPV4V6 Dual PDN Stack

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value
1 – high priority
2 – normal priority
3 – low priority

<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value
1 – delay class 1
2 – delay class 2
3 – delay class 3
4 – delay class 4

<reliability>

A numeric parameter which specifies 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>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value
1 – Up to 1000 (8 kbit/s)
2 – Up to 2000 (16 kbit/s)
3 – Up to 4000 (32 kbit/s)
4 – Up to 8000 (64 kbit/s)
5 – Up to 16000 (128 kbit/s)
6 – Up to 32000 (256 kbit/s)
7 – Up to 64000 (512 kbit/s)
8 – Up to 128000 (1024 kbit/s)
9 – Up to 256000 (2048 kbit/s)

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<mean>

A numeric parameter which specifies the mean throughput class:

0 – network subscribed value
1 – 100 (~0.22 bit/s)
2 – 200 (~0.44 bit/s)
3 – 500 (~1.11 bit/s)
4 – 1000 (~2.2 bit/s)
5 – 2000 (~4.4 bit/s)
6 – 5000 (~11.1 bit/s)
7 – 10000 (~22 bit/s)
8 – 20000 (~44 bit/s)
9 – 50000 (~111 bit/s)
10 – 100000 (~0.22 kbit/s)
11 – 200000 (~0.44 kbit/s)
12 – 500000 (~1.11 kbit/s)
13 – 1000000 (~2.2 kbit/s)
14 – 2000000 (~4.4 kbit/s)
15 – 5000000 (~11.1 kbit/s)
16 – 10000000 (~22 kbit/s)
17 – 20000000 (~44 kbit/s)
18 – 50000000 (~111 kbit/s)
31 – optimization

Examples

```
AT+CGQREQ?
+CGQREQ:
OK
AT+CGQREQ=?
+CGQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQREQ: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQREQ: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQREQ: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)

OK
```

9.8 AT+CGEQREQ 3G quality of service profile (requested)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allows the TE to specify a Quality of Service Profile for the context identified

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by the context identification parameter <cid> which is used when the MT sends an Activate PDP Context Request message to the network.

A special form of the write command, AT+CGEQREQ=<cid> causes the requested profile for context number <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
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) OK ERROR
Read Command	Responses
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>][<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>[…]] OK ERROR
Write Command	Responses

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AT+CGEQREQ=<cid>[,<Traffic class>[,<Maximum bit rate 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>]]]]]]]]]]]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGEQREQ	OK ERROR

Defined values

<cid>

Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands. The range is from 1 to 16.

<Traffic class>

0 – conversational
1 – streaming
2 – interactive
3 – background
4 – subscribed value

<Maximum bitrate UL>

This parameter 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,…).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Maximum bitrate DL>

This parameter indicates the maximum number of kbits/s delivered to 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,…).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/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,…).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

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<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to 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,…).

The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

The range is from 0 to 1520. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as "5E3"(e.g.AT+CGEQREQ=..,"5E3",…).

"0E0" – subscribed value

"1E2"

"7E3"

"1E3"

"1E4"

"1E5"

"1E6"

"1E1"

<Residual bit error ratio>

This parameter 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.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as "5E3"(e.g. AT+CGEQREQ=…,"5E3",..).

"0E0" – subscribed value

"5E2"

"1E2"

"5E3"

"4E3"

"1E3"

"1E4"

"1E5"

"1E6"

"6E8"

<Delivery of erroneous SDUs>

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This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no

1 – yes

2 – no detect

3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds.

The range is from 0 to 4000. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

The range is from 0 to 3. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

IPV4V6 Dual PDN Stack

Examples

```
AT+CGEQREQ?
+CGEQREQ:
OK
AT+CGEQREQ=?
+CGEQREQ: "IP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3) ,(0,1),(0,1)
+CGEQREQ: "PPP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1
E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1
E4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3) ,(0,1),(0,1)
+CGEQREQ: "IPV6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","
1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","
1E4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3) ,(0,1),(0,1)
+CGEQREQ:"IPV4V6",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0","1E1",
"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E
6","6E8"),(0-3),(0-4000),(0-3),(0,1),(0,1)

OK
```

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9.9 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,AT+CGQMIN=<cid> causes the minimum acceptable profile for context number <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGQMIN=?	+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) [<CR><LF> +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
	ERROR
Read Command	Responses
AT+CGQMIN?	+CGQMIN: [<cid>, <precedence >, <delay>, <reliability>, <peak>, <mean>[<CR><LF> +CGQMIN: <cid>, <precedence >, <delay>, <reliability.>, <peak>, <mean> […]]] OK
	ERROR
Write Command	Responses
AT+CGQMIN= <cid>[,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]]	OK
	ERROR
Execution Command	Responses
AT+CGQMIN	OK ERROR

Defined values

<cid>

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A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). The range is from 1 to 16.

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol
PPP Point to Point Protocol
IPV6 Internet Protocol Version 6
IPV4V6 Dual PDN Stack

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value
1 – high priority
2 – normal priority
3 – low priority

<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value
1 – delay class 1
2 – delay class 2
3 – delay class 3
4 – delay class 4

<reliability>

A numeric parameter which specifies 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>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value
1 – Up to 1000 (8 kbit/s)
2 – Up to 2000 (16 kbit/s)
3 – Up to 4000 (32 kbit/s)
4 – Up to 8000 (64 kbit/s)
5 – Up to 16000 (128 kbit/s)
6 – Up to 32000 (256 kbit/s)
7 – Up to 64000 (512 kbit/s)
8 – Up to 128000 (1024 kbit/s)
9 – Up to 256000 (2048 kbit/s)

<mean>

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A numeric parameter which specifies the mean throughput class:

0 – network subscribed value
1 – 100 (~0.22 bit/s)
2 – 200 (~0.44 bit/s)
3 – 500 (~1.11 bit/s)
4 – 1000 (~2.2 bit/s)
5 – 2000 (~4.4 bit/s)
6 – 5000 (~11.1 bit/s)
7 – 10000 (~22 bit/s)
8 – 20000 (~44 bit/s)
9 – 50000 (~111 bit/s)
10 – 100000 (~0.22 kbit/s)
11 – 200000 (~0.44 kbit/s)
12 – 500000 (~1.11 kbit/s)
13 – 1000000 (~2.2 kbit/s)
14 – 2000000 (~4.4 kbit/s)
15 – 5000000 (~11.1 kbit/s)
16 – 10000000 (~22 kbit/s)
17 – 20000000 (~44 kbit/s)
18 – 50000000 (~111 kbit/s)
31 – optimization

Examples

```
AT+CGQMIN?
+CGQMIN:
OK
AT+CGQMIN=?
+CGQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQMIN: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQMIN: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQMIN: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)

OK
```

9.10 AT+CGEQMIN 3G quality of service profile (minimum acceptable)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

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The write command allow the TE to specify a Quallity of Service Profile for the context identified by the context identification parameter <cid> which is checked by the MT against the negotiated profile returned in the Activate/Modify PDP Context Accept message.

A special form of the write command, AT+CGEQMIN=<cid> causes the requested for context number <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
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) OK ERROR
Read Command	Responses
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>][<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>[…]] OK ERROR
Write Command	Responses

SIMCOM CONFIDENTIAL FILE

AT+CGEQMIN=<cid>[,<Traffic class>[,<Maximum bit rate 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>]]]]]]]]]]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGEQMIN	OK ERROR

Defined values

<cid>
Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands. The range is from 1 to 16.
<Traffic class>
0 – conversational 1 – streaming 2 – interactive 3 – background 4 – subscribed value
<Maximum bitrate UL>
This parameter 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,…). The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.
<Maximum bitrate DL>
This parameter indicates the maximum number of kbits/s delivered to 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,…). The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.
<Guaranteed bitrate UL>
This parameter indicates the guaranteed number of kbit/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,…). The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

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<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to 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,…).

The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size inoctets.

The range is from 0 to 1520. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g.AT+CGEQMIN=..,”5E3”,…).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter 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.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g. AT+CGEQMIN=…,”5E3”,..).

“0E0” – subscribed value

“5E2”

“1E2”

“5E3”

“4E3”

“1E3”

“1E4”

“1E5”

“1E6”

“6E8”

<Delivery of erroneous SDUs>

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This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no
1 – yes
2 – no detect
3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds.

The range is from 0 to 4000. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

The range is from 0 to 3. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol
PPP Point to Point Protocol
IPV6 Internet Protocol Version 6
IPV4V6 Dual PDN Stack

Examples

```
AT+CGEQMIN?
+CGEQMIN:
OK
AT+CGEQMIN=?
+CGEQMIN: "IP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3) ,(0,1),(0,1)
+CGEQMIN: "PPP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1
E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1
E4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3) ,(0,1),(0,1)
+CGEQMIN: "IPV6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","
1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","
1E4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3) ,(0,1),(0,1)
+CGEQMIN:"IPV4V6",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0","1E1",
"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E
6","6E8"),(0-3),(0-4000),(0-3),(0,1),(0,1)

OK
```

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9.11 AT+CGDATA Enter data state

Description

The 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.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGDATA=?	+CGDATA: (list of supported <L2P>s) OK
	ERROR
Write Command	**Responses**
AT+CGDATA=[<L2P>,[<cid>]]	CONNECT [<text>]
	NO CARRIER
	OK
	ERROR
	+CME ERROR: <err>

Defined values

<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
<text>
CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<cid>
A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). 1…16

Examples

```
AT+CGDATA=?
+CGDATA: ("PPP")
OK
AT+CGDATA="PPP",1
CONNECT 115200
```

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9.12 AT+CGPADDR Show PDP address

Description

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

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGPADDR=?	[+CGPADDR: (list of defined <cid>s)] OK
	ERROR
Write Command	**Responses**
AT+CGPADDR= <cid>[,<cid>[,…]]	[+CGPADDR:<cid>,<PDP_addr>[<CR><LF> +CGPADDR: <cid>,<PDP_addr>[...]]] OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CGPADDR	[+CGPADDR: <cid>,<PDP_addr>] +CGPADDR: <cid>,<PDP_addr>[...]]] OK
	ERROR
	+CME ERROR: <err>

Defined values

<cid>
A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). If no <cid> is specified, the addresses for all defined contexts are returned. 1…16
<PDP_addr>
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 AT+CGDCONT command 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_addr> is omitted if none is available.

Examples

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AT+CGPADDR =?
+CGPADDR: (1)
OK
AT+CGPADDR=1
+CGPADDR: 1,"0.0.0.0"
OK

9.13 AT+CGCLASS GPRS mobile station class

Description

This command is used to set the MT to operate according to the specified GPRS mobile class.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGCLASS=?	+CGCLASS: (list of supported <class>s) OK
	ERROR
Read Command	**Responses**
AT+CGCLASS?	+CGCLASS: <class> OK
	ERROR
Write Command	**Responses**
AT+CGCLASS=<class>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CGCLASS	*Set default value:* OK
	ERROR

Defined values

<class>
A string parameter which indicates the GPRS mobile class (in descending order of functionality) A – class A (highest)

Examples

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```
AT+CGCLASS=?
+CGCLASS: ("A")
OK
AT+CGCLASS?
+CGCLASS: "A"
OK
```

9.14 AT+CGEREP GPRS event reporting

Description

The write command enables or disables sending of unsolicited result codes, "+CGEV" from MT to TE in the case of certain events occurring in the Packet Domain MT or the network. <mode> controls the processing of unsolicited result codes specified within this command. <bfr> controls the effect on buffered codes when <mode> 1 or 2 is entered. If a setting is not supported by the MT, ERROR or +CME ERROR: is returned.

Read command returns the current <mode> and buffer settings.

Test command returns the modes and buffer settings supported by the MT as compound values.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGEREP=?	+CGEREP: (list of supported <mode>s),(list of supported <bfr>s) OK
	ERROR
Read Command	**Responses**
AT+CGEREP?	+CGEREP: <mode>,<bfr> OK
	ERROR
Write Command	**Responses**
AT+CGEREP= <mode>[,<bfr>]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CGEREP	OK ERROR

Defined values

<mode>

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

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).

The following unsolicited result codes and the corresponding events are defined:

+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.

+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.

+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.

+CGEV: ME DEACT <PDP_type>, <PDP_addr>, [<cid>]

The mobile equipment has forced a context deactivation. The <cid> that was used to activate the context is provided if known to the MT.

+CGEV: NW DETACH

The network has forced a Packet Domain detach. This implies that all active contexts have been deactivated. These are not reported separately.

+CGEV: ME DETACH

The mobile equipment has forced a Packet Domain detach. This implies that all active contexts have been deactivated. These are not reported separately.

+CGEV: NW CLASS <class>

The network has forced a change of MS class. The highest available class is reported (see AT+CGCLASS).

+CGEV: ME CLASS <class>

The mobile equipment has forced a change of MS class. The highest available class is reported (see AT+CGCLASS).

Examples

AT+CGEREP=?

+CGEREP: (0-2),(0-1)

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OK

AT+CGEREP?

+CGEREP: 0,0

OK

9.15 AT+CGAUTH Set type of authentication for PDP-IP connections of GPRS

Description

This command is used to set type of authentication for PDP-IP connections of GPRS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CGAUTH=?	+CGAUTH:(range of supported <cid>s),(list of supported <auth _-type> s),, OK
	ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+CGAUTH?	+CGAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CGAUTH: <cid>,<auth_type>[,<user>]<CR><LF> … OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CGAUTH=<cid>[,<auth_type>[,<passwd>[,<user>]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CGAUTH	OK
	ERROR
	+CME ERROR: <err>

Defined values

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<cid>
Parameter specifies a particular PDP context definition. This is also used in other PDP context-related commands. 1…16
<auth_type>
Indicate the type of authentication to be used for the specified context. If CHAP is selected another parameter <passwd> needs to be specified. If PAP is selected two additional parameters <passwd> and <user> need to specified. 0 – none 1 – PAP 2 – CHAP 3 – PAP or CHAP
<passwd>
Parameter specifies the password used for authentication.
<user>
Parameter specifies the user name used for authentication.

Examples

AT+CGAUTH=?
+CGAUTH: (1-16),(0-3), *OK*
AT+CGAUTH=1,1,"123","SIMCOM"
OK

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10 Hardware Related Commands

10.1 AT+CVALARM Low and high voltage Alarm

Description

This command is used to open or close the low voltage alarm function.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CVALARM=?	+CVALARM: (list of supported <enable>s), (list of supported low <voltage>s), (list of supported high <voltage>s) OK
Read Command	Responses
AT+CVALARM?	+CVALARM: <enable>,<low voltage>, <high voltage> OK
Write Command	Responses
AT+CVALARM=<enable>[,<low voltage>],[<high voltage>]	OK
	ERROR

Defined values

<enable>

0 – Close

1 – Open. If voltage < < low voltage>, it will report “UNDER-VOLTAGE WARNNING” every 10s. If voltage > <high voltage>, it will report “OVER-VOLTAGE WARNNING” every 10s.

<low voltage>

Between 3300mV and 4000mV. Default value is 3300.

<high voltage>

Between 4000mV and 4300mV. Default value is 4300.

NOTE： The three parameters will be saved automatically.

Examples

```
AT+CVALARM=1,3400,4300
OK
```

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```
AT+CVALARM?
+CVALARM: 1,3400,4300
OK
AT+CVALARM=?
+CVALARM: (0,1),(3300-4000),(4000-4300)
OK
```

10.2 AT+CVAUXS Set state of the pin named VREG_AUX1

Description

This command is used to set state of the pin which is named VREG_AUX1.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CVAUXS=?	+CVAUXS: (list of supported <state>s) OK
Read Command	**Responses**
AT+CVAUXS?	+CVAUXS: <state> OK
Write Command	**Responses**
AT+CVAUXS=<state>	OK
	ERROR

Defined values

<state>	
0	– the pin is closed.
1	– the pin is opend(namely, open the pin)

Examples

```
AT+CVAUXS=1
OK
AT+CVAUXS?
+CVAUXS:1
OK
```

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10.3 AT+CVAUXV Set voltage value of the pin named VREG_AUX1

Description

This command is used to set the voltage value of the pin which is named VREG_AUX1.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CVAUXV=?	+CVAUXV: (list of supported <voltage>s) OK
Read Command	Responses
AT+CVAUXV?	+CVAUXV: <voltage> OK
Write Command	Responses
AT+CVAUXV=<voltage>	OK
	ERROR

Defined values

<voltage>
Voltage value of the pin which is named VREG_AUX1. The unit is in mV. And the value must the multiple of 50mv.

Examples

```
AT+CVAUXV=?
+CVAUXV:(2600-3050)
OK
AT+CVAUXV=2800
OK
AT+CVAUXV?
+CVAUXV: 2800
OK
```

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10.4 AT+CADC Read ADC value

Description

This command is used to read the ADC value from modem. ME supports 2 types of ADC, which are raw type and voltage type.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CADC=?	+CADC: (range of supported <adc>s) OK
Write Command	**Responses**
AT+CADC=<adc>	+CADC: <value> OK
	ERROR

Defined values

<adc>
ADC type: 0 – raw type. 2 – voltage type(mv)
<value>
Integer type value of the ADC.

Examples

```
AT+CADC=?
+CADC:(0,2)
OK
AT+CADC=0
+CADC: 187
OK
```

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10.5 +KEY Keypad result code

Description

URCs (Unsolicited Result Code) for keypad when keypad interface mode is active (refer to AT+CGFUNC). Both key press and key release generate a URC.

Refer to related HD document for more information about keypad.

SIM PIN	References
NO	Vendor

Syntax

Unsolicited Result Code
+KEY: <key>, [<key_row>, <key_column>], "<key_text>"

Defined values

<key>
Key code in hexadecimal fomat (e.g. 0x0A).
<key_row>
Key row number.
<key_column>
Key column number.
<key_text>
The key text on EVB (Evaluation Board) for reference.

KEY VALUE REFERENCE

<key>	<key_row>	<key_column>	<key_text>
0x01	2	4	"MSG"
0x02	1	3	"#"
0x03	1	1	"*"
0x04	1	2	"0"
0x05	4	1	"1"
0x06	4	2	"2"
0x07	4	3	"3"
0x08	3	1	"4"
0x09	3	2	"5"
0x0A	3	3	"6"
0x0B	2	1	"7"
0x0C	2	2	"8"
0x0D	2	3	"9"
0x0E	1	0	"BACK"
0x0F	4	0	"REJECT"

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0x10	3	4	"UP"
0x11	0	4	"DOWN"
0x12	1	4	"CALL"
0x13	3	0	"MENU"
0x14	4	4	"SELECT"
0x15	0	0	"HANDFREE"
0x16	0	2	"NAMES"
0x17	0	3	"V+"
0x18	0	1	"V-"
0x19	2	0	"SET"
0xFF	row and column is same as the key pressed		"RELEASE"

Examples

(Press the menu key, and then release the key):
+KEY: 0x13, [3, 0], "MENU"
+KEY: 0xFF, [3, 0], "RELEASE"

10.6 AT+CLEDITST Adjust the LED's intensity

Description

This command is used to adjust the intensity of the LED. It also can be used to disable the driver.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CLEDITST=?	+CLEDITST: (list of supported <val>s) OK
Read Command	**Responses**
AT+CLEDITST?	+CLEDITST: <val>
	OK
Write Command	**Responses**
AT+CLEDITST=<val>	OK
	ERROR

Defined values

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<val>
0 : 0mA (disable driver) 1 : 5mA 2 : 10mA 3 : 15mA 4 : 20mA 5 : 25mA 6 : 30mA 7 : 35mA 8 : 40mA

Examples

AT+CLEDITST=2
OK

10.7 AT+CADC2 Read ADC2 value

Description

This command is used to read the ADC2 value from modem. ME supports 2 types of ADC, which are raw type and voltage type.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CADC2=?	+CADC2: (range of supported <adc>s) OK
Write Command	**Responses**
AT+CADC2=<adc>	+CADC2: <value> OK
	ERROR

Defined values

<adc>
ADC2 type: 0 – raw type. 2 – voltage type(mv)
<value>

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Integer type value of the ADC2.

Examples

```
AT+CADC2=?
+CADC2:(0,2)
OK
AT+CADC2=0
+CADC2: 187
OK
```

10.8 AT+CMTE Control the module whether power shutdown when the module's temperature upon the critical temperature

Description

This command is used to control the module whether power shutdown when the module's temperature upon the critical temperature

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CMTE=?	+CMTE: (list of supported<on/off>s) OK
Read Command	**Responses**
AT+CMTE?	+CMTE: <on/off > OK
Write Command	**Responses**
AT+CMTE=<on/off >	OK
	ERROR

Defined values

<on/off>	
0	– Disable temperature detection
1	– Enable temperature detection

Examples

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AT+CMTE?
+CMTE: 1
OK
AT+CMTE=1
OK
AT+CMTE=?
+CMTE: 1
OK

NOTE:

- When temperature is extreme high or low, product will power off.
- URCs indicating the alert level "+CMTE:-1" or "+CMTE:1" are intended to enable the user to take appropriate
  precaution, such as protect the module from exposure to extreme conditions, or save or back up data etc.
- Level "+CMTE:-2"or "+CMTE:2" URCs are followed by immediate shutdown.

10.9 AT+CPMVT Low and high voltage Power Off

Description

This command is used to open or close the low and high voltage power off function.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPMVT=?	+CPMVT: (list of supported <enable>s), (list of supported low <voltage>s), (list of supported high <voltage>s) OK
Read Command	Responses
AT+CPMVT?	+CPMVT: <enable>,<low voltage>, <high voltage> OK
Write Command	Responses
AT+CPMVT=<enable>[,<low voltage>],[<high voltage>]	OK
	ERROR

Defined values

<enable>
0 – Close

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1 –	Open. If voltage < < low voltage>, it will report “UNDER-VOLTAGE WARNNING POWER DOWN” and power off the module. If voltage > <high voltage>, it will report “OVER-VOLTAGE WARNNING POWER DOWN” and power off the module
<low voltage>	
Between 3200mV and 4000mV. Default value is 3200.	
<high voltage>	
Between 4000mV and 4300mV. Default value is 4300.	
NOTE： The three parameters will be saved automatically.	

Examples

```
AT+CPMVT=1,3400,4300
OK
AT+CPMVT?
+CPMVT: 1,3400,4300
OK
AT+CPMVT=?
+CPMVT: (0-1),(3200-4000),(4000-4300)
OK
```

10.10 AT+CDELTA set the module go to recovery mode

Description

This command is used to set the module go to recovery mode.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CDELTA	OK
	ERROR

Defined values

NOTE： the command will write flag to the module and reboot the module, then the module will reboot and read the flag and enter recovery mode to update the firmware.

Examples

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```
AT+CDELTA
OK
```

10.11 AT+CUSBDELETEADB delete the interface of the usb composition

Description

This command is used to delete the adb and mass storage interface of the usb composition

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CUSBDELETEADB=?	+CUSBDELETEADB: (list of supported <enable>s)
Read Command	Responses
AT+CUSBDELETEADB?	+CUSBDELETEADB: <enable> OK
Write Command	Responses
AT+CUSBDELETEADB =<enable>	OK ERROR

Defined values

<enable>
0 – add the adb and mass storage interface
1 – deleta the adb and mass storage interface

Examples

```
AT+ CUSBDELETEADB =1
OK
```

10.12 AT+CRIIC Read values from register of IIC device

Description

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This command is used to read values from register of IIC device.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRIIC=?	OK
Write Command	Responses
AT+CRIIC= <addr>,<reg>,<len>	+CRIIC: <data> OK
	ERROR

Defined values

<addr>
Device address. Input format must be hex, such as 0xFF.
<reg>
Register address. Input format must be hex, such as 0xFF.
<len>
Read length. Range:1-4; unit:byte.
<data>
Data read. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

Examples

AT+CRIIC=0x34, 0x0F, 2
+CRIIC: FFFF *OK*

10.13 AT+CWIIC Write values to register of IIC device

Description

This command is used to write values to register of IIC device.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CWIIC=?	OK

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Write Command	Responses
AT+CWIIC=<addr>,<reg>,<data>,<len>	OK
	ERROR

Defined values

<addr>
Device address. Input format must be hex, such as 0xFF.
<reg>
Register address. Input format must be hex, such as 0xFF.
<len>
Read length. Range: 1-4; unit: byte.
<data>
Data written. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

Examples

AT+CWIIC=0x34, 0x0F, 0x1234, 2
+CWIIC: 0x1234
OK

10.14 AT+CBC Read the voltage value of the power supply

Description

This command is used to read the voltage value of the power supply

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CBC	+CBC: <vol> OK
	ERROR

Defined values

<vol>
The voltage value, such as 3.8.

Examples

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AT+CBC
+CBC: 3.591V
OK

10.15 AT+CPMUTEMP Read the Temperature of the Module

Description

This command is used to read the temperature of the module

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CPMUTEMP	+ CPMUTEMP: <temp> OK
	ERROR

Defined values

<temp>
The Temperature value, such as 29.

Examples

AT+CPMUTEMP
+CPMUTEMP: 29
OK

11 SPI Related Commands

11.1 AT+CSPISETCLK SPI clock rate setting

Description

This command is used to set SPI clock configuration and trigger mode.

SIM PIN	References
NO	Vendor

Syntax

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Test Command	Responses
AT+CSPISETCLK=?	+CSPISETCLK: (range of supported <polarity>s) OK
Read Command	Responses
AT+CSPISETCLK?	+CSPISETCLK: <polarity> OK
Write Command	Responses
AT+CSPISETCLK=<polarity>	OK
	ERROR

Defined values

<polarity>	
0	the SPI clock signal is low when the clock is idle
1	the SPI clock signal is high when the clock is idle

Examples

```
AT+CSPISETCLK =1
OK
AT+CSPISETCLK?
+CSPISETCLK: 1
OK
AT+CSPISETCLK=?
+CSPISETCLK: (0-1)
OK
```

11.2 AT+CSPISETCS SPI chip select setting

Description

This command is used to set SPI chip select polarity and mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPISETCS=?	+CSPISETCS: (range of supported <polarity>s) OK
Read Command	Responses
AT+CSPISETCS?	+CSPISETCS: <polarity>

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	OK
Write Command	Responses
AT+CSPISETCS=<polarity>	OK
	ERROR

Defined values

<polarity>	
0	the SPI chip select is active low
1	the SPI chip select is active high

Examples

```
AT+CSPISETCS =1
OK
AT+CSPISETCS?
+CSPISETCS: 1
OK
AT+CSPISETCS =?
+CSPISETCS: (0-1)
OK
```

11.3 AT+CSPISETF SPI clock frequency setting

Description

This command is used to set SPI clock frequency

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPISETF=?	+CSPISETF: (range of supported <max>s) OK
Read Command	Responses
AT+CSPISETF?	+CSPISETF: <max> OK
Write Command	Responses
AT+CSPISETF=<max>	OK
	ERROR

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Defined values

<max>
In master mode, set the maximum SPI clock frequency support: 96000, 4800000, 9600000, 15058800, 24000000

Examples

AT+CSPISETF =9600000
OK
AT+CSPISETF?
+CSPISETF:, 9600000
OK
AT+CSPISETF =?
*+CSPISETF: (*96000, 4800000, 9600000, 15058800, 24000000*)*
OK

11.4 AT+CSPISETPARA SPI transfer parameters setting

Description

This command is used to set SPI transfer parameters

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPISETPARA=?	+CSPISETPARA: (range of supported <bit>s) OK
Read Command	Responses
AT+CSPISETPARA?	+CSPISETPARA: <bit> OK
Write Command	Responses
AT+CSPISETPARA=<bit>	OK
	ERROR

Defined values

<bit>
set the number of bits to use per transfer unit support: 8, 16, 32

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Examples

```
AT+CSPISETPARA =16
OK
AT+CSPISETPARA?
+CSPISETPARA:16
OK
AT CSPISETPARA=?
+CSPISETPARA : (8, 16, 32)
OK
```

11.5 AT+CSPIW Write data to SPI

Description

This command is used to write data to SPI.

NOTE: If you want to write data only when you use SPI to connect to some special slave device, you can set <reg> to 0xFFFF.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPIW=?	OK
Write Command	Responses
AT+CSPIW=<reg>,<data>,<len>	OK
	ERROR

Defined values

<reg>
Register address. Input format must be hex, such as 0xFF.
<data>
Data written. Input format must be hex, such as 0xFF – 0xFFFFFFFF.
<len>
Read length.The unit is byte 1…4

Examples

```
AT+CSPIW=0x0F, 0x1234, 2
OK
```

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11.6 AT+CSPIR Read data from SPI

Description

This command is used to read data from SPI.

NOTE: If you want to read data only when you use SPI to connect to some special slave device, you can set <reg> to 0xFFFF.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPIR=?	OK
Write Command	**Responses**
AT+CSPIR=<reg>,<len>	+CSPIR: <data> OK
	ERROR

Defined values

<reg>
Register address. Input format must be hex, such as 0xFF.
<data>
Data read. Input format must be hex, such as 0xFF – 0xFFFFFFFF.
<len>
Read length.The unit is byte. 1…4

Examples

```
AT+CSPIR =0x0F, 2
+CSPIR : 0x1234
OK
```

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12 AT Commands for SIM Application Toolkit

12.1 AT+STIN SAT Indication

Description

Every time the SIM Application issues a Proactive Command, via the ME, the TA will receive an indication. 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+STGR to confirm the execution of the Proactive Command and provide any required user response, e.g. a selected menu item.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+STIN=?	OK
Read Command	Responses
AT+STIN?	+STIN: <cmd_id> OK

Unsolicited Result Codes

+STIN: <cmd_id>
Proactive Command notification 21 – display text 22 – get inkey 23 – get input 24 – select item
+STIN: 25
Notification that SIM Application has returned to main menu. If user doesn't do any action in 2 minutes, application will return to main menu automatically.

Defined values

<cmd_id>
21 – display text 22 – get inkey

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23	–	get input
24	–	select item
25	–	set up menu
0	–	none command

Examples

```
AT+STIN?
+STIN: 24
OK
```

12.2 AT+STGI Get SAT information

Description

Regularly this command is used upon receipt of an URC "+STIN" to request the parameters of the Proactive Command. Then the TA is expected to acknowledge the AT+STGI response with AT+STGR to confirm that the Proactive Command has been executed. AT+STGR will also provide any user information, e.g. a selected menu item. The Proactive Command type value specifies to which "+STIN" the command is related.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+STGI=?	OK
Write Command	**Responses**
AT+STGI=<cmd_id>	*If <cmd_id>=10:* OK
	If <cmd_id>=21: +STGI:21,<prio>,<clear_mode>,<text_len>,<text> OK
	If <cmd_id>=22: +STGI: 22,< rsp_format>,< help>,<text_len>,<text> OK
	If <cmd_id>=23: +STGI:23,<rsp_format>,<max_len>,<min_len>,<help>,<show>,<text_len>,<text> OK
	If <cmd_id>=24: +STGI:24,<help>,<softkey>,<present>,<title_len>,<title>,<item_n

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	um> +STGI:24,<item_id>,<item_len>,<item_data> […] OK
	If <cmd_id>=25: +STGI:25,<help>,<softkey>,<title_len>,<title>,<item_num> +STGI:25,<item_id>,<item_len>,<item_data> [...] OK

Defined values

<cmd_id>
21 – display text 22 – get inkey 23 – get input 24 – select item 25 – set up menu
<prio>
Priority of display text 0 – Normal priority 1 – High priority
<clear_mode>
0 – Clear after a delay 1 – Clear by user
<text_len>
Length of text
<rsp_format>
0 – SMS default alphabet 1 – YES or NO 2 – numerical only 3 – UCS2
<help>
0 – Help unavailable 1 – Help available
<max_len>
Maximum length of input
<min_len>
Minimum length of input
<show>
0 – Hide input text 1 – Display input text
<softkey>

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0 – No softkey preferred 1 – Softkey preferred
<present>
Menu presentation format available for select item 0 – Presentation not specified 1 – Data value presentation 2 – Navigation presentation
<title_len>
Length of title
<item_num>
Number of items in the menu
<item_id>
Identifier of item
<item_len>
Length of item
<title>
Title in ucs2 format
<item_data>
Content of the item in ucs2 format
<text>
Text in ucs2 format.

Examples

```
AT+STGI=25
at+stgi=25
+STGI:25,0,0,10,"795E5DDE884C59295730",15
+STGI:25,1,8,"8F7B677E95EE5019"
+STGI:25,2,8,"77ED4FE17FA453D1"
+STGI:25,3,8,"4F1860E05FEB8BAF"
+STGI:25,4,8,"4E1A52A17CBE9009"
+STGI:25,5,8,"8D448D3963A88350"
+STGI:25,6,8,"81EA52A9670D52A1"
+STGI:25,7,8,"8F7B677E5F6994C3"
+STGI:25,8,8,"8BED97F367425FD7"
+STGI:25,9,10,"97F34E506392884C699C"
+STGI:25,10,8,"65B095FB59296C14"
+STGI:25,11,8,"94C358F056FE7247"
+STGI:25,12,8,"804A59294EA453CB"
+STGI:25,13,8,"5F005FC34F1195F2"
+STGI:25,14,8,"751F6D3B5E388BC6"
+STGI:25,21,12,"00530049004D53614FE1606F"
OK
```

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12.3 AT+STGR SAT respond

Description

The TA is expected to acknowledge the AT+STGI response with AT+STGR to confirm that the Proactive Command has been executed. AT+STGR will also provide any user information, e.g. a selected menu item.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+STGR=?	OK
Write Command	Responses
AT+STGR=<cmd_id>[,<data>]	OK

Defined values

<cmd_id>

22 – get inkey
23 – get input
24 – select item
25 – set up menu
83 – session end by user
84 – go backward

<data>

If <cmd_id>=22:

Input a character

If <cmd_id>=23:

Input a string.

If <rsp_format> is YES or NO, input of a character in case of ANSI character set requests one byte, e.g. “Y”.

If <rsp_format> is numerical only, input the characters in decimal number, e.g. “123”

If <rsp_faomat> is UCS2, requests a 4 byte string, e.g. “0031”

<rsp_faomat> refer to the response by AT+STGI=23

If <cmd_id>=24:

Input the identifier of the item selected by user

If <cmd_id>=25:

Input the identifier of the item selected by user

If <cmd_id>=83:

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<data> ignore

Note: It could return main menu during Proactive Command id is not 22 or 23

If <cmd_id>= 84:

<data> ignore

Examples

```
AT+STGR=25,1
OK
+STIN: 24
```

12.4 AT+STK STK Switch

Description

This command is used to disable or enable the STK function. If the argument is 1, it is enabled. While if the argument is 0, it is disabled.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+STK=?	+STK: (list of supported <value>s) OK
Read Command	**Responses**
AT+STK?	+STK: <value> OK
Write Command	**Responses**
AT+STK=<value>	OK
	ERROR
Execution Command	**Responses**
AT+STK	*Set default value (<value>=1):* OK

Defined values

<value>	
0	– Disable STK
1	– Enable STK

Examples

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```
AT+STK=1
OK
```

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13 AT Commands for Hardware

13.1 AT+IPREX Set local baud rate permanently

Description

This command sets the baud rate of module's serial interface permanently, after reboot the baud rate is also valid, if set to 0, then support autobaud, and the value of the IPR will be changed to current baudrate when the autobaud is successful.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+IPREX=?	+IPREX: (list of supported<speed>s) OK
Read Command	Responses
AT+IPREX?	+IPREX: <speed> OK
Write Command	Responses
AT+IPREX=<speed>	OK
	ERROR
Execution Command	Responses
AT+IPREX	*Set default value 115200:* OK

Defined values

<speed>
Baud rate per second: 0, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800,921600, 3000000,3200000,3686400,4000000

Examples

```
AT+IPREX?
+IPREX: 115200
OK
AT+IPREX=?
```

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+IPREX: (0,300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600, 3000000,3200000,3686400,4000000)
OK
AT+IPREX=115200
OK
AT+IPREX=0
OK

13.2 AT+CFGRI Indicate RI when using URC

Description

This command is used to configure whether pulling down <URC time>milliseconds the RI pin of UART when URC reported. If <status> is 1, host may be wake up by RI pin, add setting <URC time>, <SMS time>pulling down time of RI pin.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFGRI=?	+CFGRI: (range of supported <status>s), (range of supported <URC time>s), (range of supported <SMS time>s) OK
Read Command	Responses
AT+CFGRI?	+CFGRI: <status>,<URC time>,<SMS time> OK
Write Command	Responses
AT+CFGRI=<status>,<URC time>,<SMS time>	OK
	ERROR
Execution Command	Responses
AT+CFGRI	*Set <status> = 0* *Set <URC time> = 60* *Set <SMS time> = 120* OK

Defined values

<status>
0 off
1 on
<URC time>
a numeric parameter which is number of milliseconds to assert RI delay to reset RI. The range is

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10 to *6000*.

<SMS time>

a numeric parameter which is number of milliseconds to assert RI delay to reset RI. The range is 10 to *6000*.

Examples

```
AT+CFGRI=?
+CFGRI: (0-1),(10-6000),(20-6000)
OK
AT+CFGRI?
+CFGRI: 0,60,120
OK
AT+CFGRI=1
OK
AT+CFGRI
OK
```

13.3 AT+CSCLK Control UART Sleep

Description

This command is used to enable UART Sleep or always work,
if set to 1, UART can sleep when DTR pull high
if set to 0, UART always work

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSCLK=?	+CSCLK: (range of supported <status>s) OK
Read Command	Responses
AT+CSCLK?	+CSCLK: <status> OK
Write Command	Responses
AT+CSCLK=<status>	OK
	ERROR
Execution Command	Responses
AT+CSCLK	*Set <status> = 0*

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	OK

Defined values

<status>
0 off
1 on

Examples

AT+CSCLK=*?*
+CSCLK*: (0-1)*
OK
AT+CSCLK*?*
+CSCLK*: 0*
OK
AT+CSCLK=*1*
OK
AT+CSCLK
OK

13.4 AT+CURCD Set delay time for UART DTR Sleep

Description

This command is used to set delay time(ms) for UART DTR sleep,

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CURCD=?	+CURCD: (range of supported <time>s) OK
Read Command	Responses
AT+CURCD?	+CURCD: < time > OK
Write Command	Responses
AT+CURCD=<time>	OK

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	ERROR
Execution Command	Responses
AT+CURCD	*Set <time> = 500* OK

Defined values

<time>
0-10000

Examples

AT+CURCD=*?*
+ CURCD*: (0-10000)*
OK
AT+CURCD*?*
+ CURCD*: 500*
OK\
AT+CURCD=*1000*
OK
AT+CURCD
OK

13.5 AT+CRIRS Reset RI pin of serial port

Description

This command is used to reset RI pin of serial port (Null modem Mode). After This command is executed, when a voice (csd, video) call or a SMS is coming or URC is reported, RI pin will be asserted. It can wake up host.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRIRS=?	OK
Write Command	Responses
AT+CRIRS	OK
	ERROR

Defined values

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None

Examples

```
AT+CRIRS
OK
```

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13.6 AT+CMUX Enable the multiplexer over the UART

Description

This command is used to enable the multiplexer over the UART, after enabled four virtual ports can be used as AT command port or MODEM port, the physical UART can no longer transfer data directly under this case.

By default all of the four virtual ports are used as AT command port.

Second serial port is not support this command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CMUX=?	+CMUX: (0),(0),(1-8),(1-1500),(0),(0),(2-1000) OK
Read Command	Responses
AT+CMUX?	+CMUX:<value>,<subset>,<port_speed>,<N1>,<T1>,<N2>,<T2> OK
Write Command	Responses
AT+CMUX=<value>[,<subset>[,<port_speed>[,<N1>[,<T1>[,<N2>[,<T2>]]]]]]	OK ERROR

Defined values

< value >:
0 – currently only 0 is supported (basic operation mode).
< subset >:
Currently omitted
< port_speed >:
Currently omitted, you can set speed before enable multiplexer
< N1>:
1-1500
< T1>:
Currently omitted
< N2>:
Currently omitted
< T2>:

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2-1000

Examples

AT+CMUX=?
+CMUX: (0),(0),(1-8),(1-1500),(0),(0),(2-1000)
OK
AT+CMUX?
+CMUX: 0,0,5,1500,0,0,600
OK
AT+CMUX=0
OK

NOTE: Currently only basic operation mode is supported.

13.7 AT+CGFUNC Enable/disable the function for the special GPIO

Description

SIM7100 supplies many GPIOs, all of which can be used as General Purpose Input/Output pin, interrupt pin and some of them can be used as function pin.

This command is used to enable/disable the function for the special GPIO. Please consult the document “SIM7100_GPIO_Application_note” for more details.

The configuration will be saved automatically.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGFUNC=?	+CGFUNC: (list of supported <GPIO>s),(list of supported <function>s) OK
Read Command	**Responses**
AT+CGFUNC=<gpio>	+CGFUNC: <gpio>,<function> OK
	ERROR
Write Command	**Responses**
AT+CGFUNC=<gpio>, <function>	OK ERROR

Defined values

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<GPIO>
40: GPIO40/PCM_MCLK
41: GPIO41/WAKEUP_HOST
43:GPIO43/WAKE_ME
44: GPIO44/SD_DET
<FUNC>
0 : gpio function.
1 : function1
2 : function2

Examples

AT+CGFUNC=41,1
OK
AT+CGFUNC=41
+CGFUNC: 41,1
OK

13.8 AT+CGDRT Set the direction of specified GPIO

Description

This command is used to set the specified GPIO to input or output state. If setting to input state, then this GPIO can not be set to high or low value.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CGDRT=<gpio_num>,<gpio_io>	OK
	ERROR

Defined values

<gpio_num>
40-44
<gpio_io>
0 – in
1 – out

Examples

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```
AT+CGDRT=43,0
OK
```

13.9 AT+CGSETV Set the value of specified GPIO

Description

This command is used to set the value of the specified GPIO to high or low.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CGSETV=<gpio_num>,<gpio_hl>	OK
	ERROR

Defined values

<gpio_num>
40-44
<gpio_hl>
0 – low
1 – high

Examples

```
AT+CGSETV=43,0
OK
```

13.10 AT+CGGETV Get the value of specified GPIO

Description

This command is used to get the value (high or low) of the specified GPIO.

SIM PIN	References
NO	Vendor

Syntax

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Write Command	Responses
AT+CGGETV=<gpio_num>	+CGGETV: <gpio_num>,<gpio_hl> OK
	ERROR

Defined values

<gpio_num>
40-44
<gpio_hl>
0 – low 1 – high **NOTE:** The GPIO must be set to GPIO FUNCTION through AT+CGFUNC, then it will set success.

Examples

```
AT+CGGETV=42
+CGGETV: 42,0
OK
```

13.11 AT+CGISR Set GPIO interrupt trigger condition

Description

The module supplies many GPIOs, all of which can be used as General Purpose Input/Oupt pin, interrupt pin and some of them can be used as function pin.

This command is used to set one GPIO pin as an interrupt source, and then set the detect type[optional] and polarity type[optional], and enable interrupt. Please consult the document "SIM7100_GPIO_Application_note" for more details.

SIM PIN	References
No	

Syntax

Read Command	Responses
AT+CGISR=<GPIO>	+CGISR: < GPIO >,<detect>,<polarity>,<URC> OK
Write Command	**Responses**
AT+CGISR=< GPIO >,<detect>,<polarity>,	OK

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[<URC>]	

Defined values

< GPIO >
GPIO number.
< detect >
0 – level detection.
1 – edge detection
< polarity >
0 – low level/edge detection
1 – high level/edge detection
<URC >
Your ISR string

Examples

AT+CGISR=41
+CGISR : 41,0,1,GPIO_41_ISR! If the pin ISR is opened
OK
+CGISR : 41,0,0,0 If the pin ISR is not opened
OK
AT+CGISR=41,0,1
OK

NOTE:

1. if the interruption is triggered SIM7100 will send the following URC to host, URC is your ISR string or GPIO_< GPIO >_ISR

2. Default <detect> is 0 and default <polarity> is 1.

3. *After* setting one GPIO pin as an interrupt source successfully, the setting will be saved.

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14 AT Commands for File System

The file system is used to store files in a hierarchical (tree) structure, and there are some definitions and conventions to use the Module.

Local storage space is mapped to "*C:*", "*D:*" for TF card, "*E:*" for multimedia.

NOTE: General rules for naming (both directories and files):

1 The length of actual fully qualified names of directories and files can not exceed 254.

2 Directory and file names can not include the following characters:

\ : * ? " < > | , ;

3 Between directory name and file/directory name, use character "/" as list separator, so it can not appear in directory name or file name.

4 The first character of names must be a letter or a numeral or underline, and the last character can not be period "." and oblique "/".

14.1 AT+FSCD Select directory as current directory

Description

This command is used to select a directory. The Module supports absolute path and relative path.

Read Command will return current directory without double quotation marks.support SDcard.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSCD=?	OK
Read Command	Responses
AT+FSCD?	+FSCD: <curr_path> OK
Write Command	Responses
AT+FSCD=<path>	+FSCD: <curr_path> OK
	ERROR

Defined values

<path>
String without double quotes, directory for selection.

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NOTE: If <path> is "..", it will go back to previous level of directory.
<curr_path>
String without double quotes, current directory.

Examples

```
AT+FSCD=C:
+FSCD: C:/
OK
AT+FSCD=C:/
+FSCD: C:/
OK
AT+FSCD?
+FSCD: C:/
OK
AT+FSCD=..
+FSCD: C:/
OK
AT+FSCD=D:
+FSCD: D:/
OK
AT+FSCD?
+FSCD:D:/
OK
```

14.2 AT+FSMKDIR Make new directory in current directory

Description

This command is used to create a new directory in current directory.Support SDcard.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSMKDIR=?	OK
Write Command	**Responses**
AT+FSMKDIR=<dir>	OK
	ERROR

Defined values

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<dir>
String without double quotes, directory name which does not already exist in current directory.

Examples

```
AT+FSMKDIR= SIMTech
OK
AT+FSCD?
+FSCD: C:/
OK
AT+FSLS
+FSLS: SUBDIRECTORIES:
SIMTech

OK
```

14.3 AT+FSRMDIR Delete directory in current directory

Description

This command is used to delete existing directory in current directory. Support SDcard.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSRMDIR=?	OK
Write Command	Responses
AT+FSRMDIR=<dir>	OK
	ERROR

Defined values

<dir>
String without double quotes.

Examples

```
AT+FSRMDIR=SIMTech
OK
AT+FSCD?
+FSCD: C:/
```

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OK
AT+FSLS
+FSLS: SUBDIRECTORIES:
Audio
Picture
Video
VideoCall
OK

14.4 AT+FSLS List directories/files in current directory

Description

This command is used to list informations of directories and/or files in current directory. Support SDcard.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSLS=?	+FSLS: (list of supported <type>s) OK
Read Command	Responses
AT+FSLS?	+FSLS: SUBDIRECTORIES:<dir_num>,FILES:<file_num> OK
Write Command	Responses
AT+FSLS=<type>	[+FSLS: SUBDIRECTORIES: <list of subdirectories> <CR><LF>] [+FSLS: FILES: <list of files> <CR><LF>] OK
Execution Command	Responses
AT+FSLS	[+FSLS: SUBDIRECTORIES: <list of subdirectories> <CR><LF>] [+FSLS: FILES: <list of files> <CR><LF>] OK

SIMCOM CONFIDENITAL FILE

Defined values

<dir_num>
Integer type, the number of subdirectories in current directory.
<file_num>
Integer type, the number of files in current directory.
<type>
0 – list both subdirectories and files 1 – list subdirectories only 2 – list files only

Examples

AT+FSLS?
+FSLS: SUBDIRECTORIES:2,FILES:2 *OK*
AT+FSLS
+FSLS: SUBDIRECTORIES: *FirstDir* *SecondDir* *+FSLS: FILES:* *image_0.jpg* *image_1.jpg* *OK*
AT+FSLS=2
+FSLS: FILES: *image_0.jpg* *image_1.jpg* *OK*

14.5 AT+FSDEL Delete file in current directory

Description

This command is used to delete a file in current directory. Before do that, it needs to use AT+FSCD select the father directory as current directory. Support SDcard.

SIM PIN	References
NO	Vendor

Syntax

SIMCOM CONFIDENTIAL FILE

Test Command	Responses
AT+FSDEL=?	OK
Write Command	Responses
AT+FSDEL=<filename>	OK
	ERROR

Defined values

<filename>
String with or without double quotes, file name which is relative and already existing. If <filename> is *.*, it means delete all files in current directory. If the file path contains non-ASCII characters, the filename parameter should contain a prefix of {non-ascii} and the quotation mark.

Examples

```
AT+FSDEL=image_0.jpg
OK
```

14.6 AT+FSRENAME Rename file in current directory

Description

This command is used to rename a file in current directory.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSRENAME=?	OK
Write Command	Responses
AT+FSRENAME=<old_name>,<new_name>	OK
	ERROR

Defined values

<old_name>
String with or without double quotes, file name which is existed in current directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.
<new_name>

SIMCOM CONFIDENTIAL FILE

New name of specified file, string with or without double quotes. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

Examples

```
AT+FSRENAME=image_0.jpg, image_1.jpg
OK
AT+FSRENAME= "my test.jpg", {non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
OK
```

14.7 AT+FSATTRI Request file attributes

Description

This command is used to request the attributes of file which exists in current directory.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSATTRI=?	OK
Write Command	Responses
AT+FSATTRI=<filename>	+FSATTRI: <file_size>, <create_date> OK

Defined values

<filename>
String with or without double quotes, file name which is in current directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.
<file_size>
The size of specified file, and the unit is in Byte.
<create_date>
Create date and time of specified file, the format is YYYY/MM/DD HH/MM/SS Week. Week – Mon, Tue, Wed, Thu, Fri, Sat, Sun

Examples

```
AT+FSATTRI=image_0.jpg
+FSATTRI: 8604, 2008/04/28 10:24:46 Tue
```

SIMCOM CONFIDENTIAL FILE

OK
AT+FSATTRI={non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
+FSATTRI: 6296, 2012/01/06 00:00:00 Sun
OK

14.8 AT+FSMEM Check the size of available memory

Description

This command is used to check the size of available memory. The response will list total size and used size of local storage space if present and mounted.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSMEM=?	OK
Execution Command	**Responses**
AT+FSMEM	+FSMEM: C:(<total>, <used>) OK

Defined values

<total>
The total size of local storage space.
<used>
The used size of local storage space.
NOTE: The unit of storage space size is in Byte.

Examples

AT+FSMEM
+FSMEM: C:(11348480, 2201600)
OK

14.9 AT+FSLOCA Select storage place

Description

This command is used to set the storage place for media files.

SIM PIN	References
NO	Vendor

SIMCOM CONFIDENTIAL FILE

Syntax

Test Command	Responses
AT+FSLOCA=?	+FSLOCA: (list of supported <loca>s) OK
Read Command	Responses
AT+FSLOCA?	+FSLOCA: <loca> OK
Write Command	Responses
AT+FSLOCA=<loca>	OK
	ERROR

Defined values

<loca>
0 – store media files to local storage space (namely "C:/")

Examples

AT+FSLOCA=0
OK
AT+FSLOCA?
+FSLOCA: 0 *OK*

14.10 AT+FSCOPY Copy an appointed file

Description

This command is used to copy an appointed file on C:/ to an appointed directory on C:/, the new file name should give in parameter.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSCOPY=?	OK
Write Command	Responses
AT+FSCOPY=<file1>,<file2>[<sync_mode>]	+FSCOPY: <percent> [+FSCOPY: <percent>] OK

SIMCOM CONFIDENTIAL FILE

	OK +FSCOPY: <percent> [+FSCOPY: <percent>] +FSCOPY: END
	If found any error: SD CARD NOT PLUGGED IN FILE IS EXISTING FILE NOT EXISTING DIRECTORY IS EXISTED DIRECTORY NOT EXISTED FORBID CREATE DIRECTORY UNDER \"C:/\" FORBID DELETE DIRECTORY INVALID PATH NAME INVALID FILE NAME SD CARD HAVE NO ENOUGH MEMORY EFS HAVE NO ENOUGH MEMORY FILE CREATE ERROR READ FILE ERROR WRITE FILE ERROR ERROR

Defined values

<file1>

The sources file name or the whole path name with sources file name. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<file2>

The destination file name or the whole path name with destination file name. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<percent>

The percent of copy done. The range is 0.0 to 100.0

<sync_mode>

The execution mode of the command:

0 – synchronous mode

1 – asynchronous mode

NOTE:

1. The <file1> and <file2> should give the whole path and name, if only given file name, it will refer to current path (AT+FSCD) and check the file's validity.

2. If <file2> is a whole path and name, make sure the directory exists, make sure that the file name does not exist or the file name is not the same name as the sub folder name, otherwise return error.

SIMCOM CONFIDENTIAL FILE

3. <percent> report refer to the copy file size. The big file maybe report many times, and little file report less.

4. If <sync_mode> is 1, the command will return OK immediately, and report final result with +FSCOPY: END.

Examples

```
AT+FSCD?
+FSCD: C:/
OK
AT+FSCOPY= C:/TESTFILE,COPYFILE    (Copy file TESTFILE on C:/ to C:/COPYFILE)
+FSCOPY: 1.0
+FSCOPY: 9.7
+FSCOPY: 19.4
...
+FSCOPY: 100.0
OK
AT+FSCOPY= "my test.jpg", {non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
+FSCOPY:1.0
+FSCOPY:100.0
OK
```

SIMCOM CONFIDENTIAL FILE

15 AT Commands for File Transmission

15.1 AT+CFTRANRX Transfer a file to EFS

Description

This command is used to transfer a file to EFS.Support SDcard.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFTRANRX=?	+CFTRANRX: [{non-ascii}]"FILEPATH" OK
Write Command	Responses
AT+CFTRANRX="<filepath>",<len>	> OK > ERROR ERROR

Defined values

<filepath>
The path of the file on EFS.
<len>
The length of the file data to send.
NOTE
The <filepath> must be a full path with the directory path.

Examples

AT+CFTRANRX="c:/MyDir/t1.txt",10
>testcontent
OK
AT+CFTRANRX="d:/MyDir/t1.txt",10
>testcontent
OK

SIMCOM CONFIDENTIAL FILE

15.2 AT+CFTRANTX Transfer a file from EFS to host

Description

This command is used to transfer a file from EFS to host. Before using this command, the AT+CATR must be used to set the correct port used. Support SDcard.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFTRANTX=?	+CFTRANTX: [{non-ascii}]"FILEPATH" OK
Write Command	Responses
AT+CFTRANTX="<filepath>"	[+CFTRANTX: DATA,<len> … +CFTRANTX: DATA,<len>] +CFTRANTX: 0 OK ERROR

Defined values

<filepath>
The path of the file on EFS.
<len>
The length of the following file data to output.
NOTE
The <filepath> must be a full path with the directory path.

Examples

AT+CFTRANTX="c:/MyDir/t1.txt"
+CFTRANTX: DATA, 10
Testcontent
+CFTRANTX: 0
OK
AT+CFTRANTX="d:/MyDir/t1.txt"
+CFTRANTX: DATA, 10
Testcontent
+CFTRANTX: 0
OK

SIMCOM CONFIDENTIAL FILE

16 AT Commands for MMS

The maximum of recipients, copy-to recipients, and secret recipients are respective 20. The maximum length of recipients' number is 60.

16.1 AT+CMMSCURL Set the URL of MMS center

Description

This command is used to set the URL of MMS center.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSCURL=?	+CMMSCURL:"URL" OK
Read Command	Responses
AT+CMMSCURL?	+CMMSCURL: "<mmscurl>" OK
Write Command	Responses
AT+CMMSCURL="<mmscurl>"	OK ERROR +CME ERROR: <err>

Defined values

<mmscurl>
The URI of MMS center, not including http://.The max length of <mmscurl> is 40 bytes.

Examples

```
AT+CMMSCURL="mmsc.monternet.com"
OK
AT+CMMSCURL?
+CMMSCURL:"mmsc.monternet.com"
OK
AT+CMMSCURL=?
+CMMSCURL:"URL"
```

SIMCOM CONFIDENITAL FILE

OK

16.2 AT+CMMSPROTO Set the protocol parameters and MMS proxy

Description

This command is used to set the protocol parameters and MMS proxy address.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSPROTO=?	+CMMSPROTO: (0,1),"(0-255).(0-255).(0-255).(0-255)",(0-65535) OK
Read Command	**Responses**
AT+CMMSPROTO?	+CMMSPROTO: <type>,<gateway>,<port> OK
Write Command	**Responses**
AT+CMMSPROTO=<type>[,<gateway>,<port>]	OK ERROR +CME ERROR: <err>

Defined values

<type>
The application protocol for MMS: 0 – WAP 1 – HTTP
<gateway>
IP address of MMS proxy. If empty, it is set to 255.255.255.255.
<port>
Port of MMS proxy. If empty, it is set to 65535.

Examples

AT+CMMSPROTO=0,"10.0.0.172",9201
OK
AT+CCMMSPROTO?
+CMMSPROTO: 0,"10.0.0.172",9201
OK
AT+CMMSPROTO=?

SIMCOM CONFIDENTIAL FILE

+CMMSPROTO: (0,1),"(0-255).(0-255).(0-255).(0-255)",(0-65535)
OK

16.3 AT+CMMSSENDCFG Set the parameters for sending MMS

Description

This command is used to set the parameters for sending MMS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSENDCFG=?	+CMMSSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4) OK
Read Command	Responses
AT+CMMSSENDCFG?	+CMMSSENDCFG: <valid>,<pri>,<sendrep>,<readrep>,<visible>,<class> OK
Write Command	Responses
AT+CMMSSENDCFG=<valid>,<pri>,<sendrep>,<readrep>,<visible>,<class>	OK ERROR +CME ERROR: <err>

Defined values

<valid>
The valid time of the sent MMS: 0 – 1 hour. 1 – 12 hours. 2 – 24 hour. 3 – 2 days. 4 – 1 week. 5 – maximum. 6 – Not set (default).
<pri>
Priority: 0 – lowest. 1 – normal. 2 – highest. 3 – Not set (default)
<sendrep>

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Whether need delivery report:

0 – No (default).

1 – Yes.

<readrep>

Whether need read report:

0 – No (default).

1 – Yes.

<visible>

Whether to show the address of the sender:

0 – hide the address of the sender.

1 – Show the address of the sender even if it is a secret address.

2 – Not set (default).

<class>

The class of MMS:

0 – personal.

1 – advertisement.

2 – informational.

3 – auto.

4 – Not set (default).

Examples

```
AT+CMMSSENDCFG=6,3,1,1,2,4
OK
AT+CMMSSENDCFG?
+CMMSSENDCFG:6,3,1,1,2,4
OK
AT+CMMSSENDCFG=?
+CMMSSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4)
OK
```

16.4 AT+CMMSEDIT Enter or exit edit mode

Description

This command is used to enter or exit edit mode of mms.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSEDIT=?	+CMMSEDIT: (0,1)

SIMCOM CONFIDENITAL FILE

	OK
Read Command	Responses
AT+CMMSEDIT?	+CMMSEDIT: <mode> OK
Write Command	Responses
AT+CMMSEDIT=<mode>	OK ERROR +CME ERROR: <err>

Defined values

<mode>
Whether to allow edit MMS: 0 – No. 1 – Yes.

Examples

AT+CMMSEDIT=0
OK
AT+CMMSEDIT?
+CMMSEDIT:0
OK
AT+CMMSEDIT=?
+CMMSEDIT:(0-1)
OK

16.5 AT+CMMSDOWN Download the file data or title from UART

Description

This command is used to download file data to MMS body. When downloading a text file or title from UART, the text file or title must start with \xFF\xFE , \xFE\xFF or \xEF\xBB\xBF to indicate whether it is UCS2 little endian, UCS2 big endian or UTF-8 format. Without these OCTETS, the text file or title will be regarded as UTF-8 format.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDOWN=?	+CMMSDOWN: “PIC”,(1-<max_pdu_size>),”NAME”

SIMCOM CONFIDENTIAL FILE

	+CMMSDOWN: “TEXT”,(1-<max_pdu_size>),”NAME” +CMMSDOWN: “AUDIO”,(1-<max_pdu_size>),”NAME” +CMMSDOWN: “VIDEO”,(1-<max_pdu_size>),”NAME” +CMMSDOWN: “SDP”,(1-<max_pdu_size>) +CMMSDOWN: “FILE”,(0),”FILENAME” +CMMSDOWN: “TITLE”,(1-40) OK
Write Command	Responses
AT+CMMSDOWN=<type>,<size>[,<name>] Or AT+CMMSDOWN=<type>,<dir>,<filename>	OK ERROR +CME ERROR: <err>

Defined values

<type>
The type of file to download: “PIC” – JPG/GIF/PNG/TIFF file. “TEXT" – plain text file. “AUDIO” – MIDI/WAV/AMR/MPEG file. “VIDEO” – 3GPP/MP4 file. “SDP” – application/sdp type “FILE" – file in the UE. “TITLE" – subject of the MMS.
<size>
The size of file data needs to download through AT interface.
<name>
The name of the file to download. When <type> is “TITLE” or “SDP”, this field is not needed. Otherwise, it cannot be omitted.
<dir>
The directory of the selected file: 0 – current directory[refer to AT+FSCD] 1 – “C:/Picture” directory 2 – “C:/Video” directory 3 – “C:/VideoCall” directory 7 – “C:/Audio” directory
<filename>
The name of the file existing in the UE to download.
<max_pdu_size>
The maximum size of MMS PDU permitted.

Examples

SIMCOM CONFIDENTIAL FILE

```
AT+CMMSDOWN=?
+CMMSDOWN: “PIC”,(1-102400),”NAME”
+CMMSDOWN: “TEXT”,(1-102400),”NAME”
+CMMSDOWN: “AUDIO”,(1-102400),”NAME”
+CMMSDOWN: “VIDEO”,(1-102400),”NAME”
+CMMSDOWN:"SDP",(1-102400)
+CMMSDOWN: “FILE”,(0),” FILENAME”
+CMMSDOWN: “TITLE”,(1-40)
OK
AT+CMMSDOWN=”PIC”,20112,”test1.jpg” <CR><LF>
>....(20112 bytes of data transferred in AT interface)
OK
AT+CMMSDOWN="FILE",2,” test2.wav”
OK
```

16.6 AT+CMMSDELFILE Delete a file within the editing MMS body

Description

This command is used to delete a file within the editing MMS body.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELFILE=?	OK
Write Command	**Responses**
AT+CMMSDELFILE=<index>	OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of the file to delete contains in the MMS body.

Examples

```
AT+CMMSDELFILE=2
OK
AT+CMMSDELFILE=?
OK
```

SIMCOM CONFIDENTIAL FILE

16.7 AT+CMMSSEND Send MMS

Description

This command is used to send MMS. It can only be performed in edit mode of MMS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSEND=?	+CMMSSEND=”ADDRESS” OK
Write Command	Responses
AT+CMMSSEND=<address> >	OK +CMMSSEND:0 ERROR +CME ERROR: <err> Or OK +CMMSSEND :<err>
Execute Command	Responses
AT+CMMSSEND	OK +CMMSSEND:0 ERROR +CME ERROR: <err> or OK +CMMSSEND :<err>

Defined values

<address>
Mobile phone number or email address. As mobile phone number, the max length is 40; As email address, the max length is 60;

Examples

SIMCOM CONFIDENTIAL FILE

AT+CMMSSEND=”13613623116”
OK
+CMMSSEND:0
AT+CMMSSEND
OK
+CMMSSEND:0
AT+CMMSSEND=” 13613623116”
OK
+CME ERROR: 190
AT+CMMSSEND=2,”13613623116”
+CME ERROR: 177

16.8 AT+CMMSRECP Add the recipients

Description

This command is used to add the recipients.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSRECP=?	+CMMSRECP: ”ADDRESS ” OK
Read Command	Responses
AT+CMMSRECP?	+CMMSRECP: (list of <addr>s) OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CMMSRECP=<addr>	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address. As mobile phone number, the max length is 40; As email address, the max length is 60;

Examples

SIMCOM CONFIDENITAL FILE

```
AT+CMMSRECP=?
+CMMSRECP: "ADDRESS"
OK
AT+CMMSRECP?
+CMMSRECP:"t1@test.com";"15813862534"
OK
AT+CMMSRECP="13818362596"
OK
```

16.9 AT+CMMSCC Add the cc recipients

Description

This command is used to add the cc recipients.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSCC=?	+CMMSCC: "ADDRESS " OK
Read Command	**Responses**
AT+CMMSCC?	+CMMSCC: (list of <addr>s) OK ERROR +CME ERROR: <err>
Write Command	**Responses**
AT+CMMSCC=<addr>	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address。 As mobile phone number, the max length is 40; As email address, the max length is 60;

Examples

```
AT+CMMSCC=?
+CMMSCC: "ADDRESS"
```

SIMCOM CONFIDENITAL FILE

OK
AT+CMMSCC?
+CMMSCC:"t1@test.com";"15813862534"
OK
AT+CMMSCC="13818362596"
OK

16.10 AT+CMMSBCC Add the secret recipients

Description

This command is used to add the secret recipients.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSBCC=?	+CMMSBCC: "ADDRESS" OK
Read Command	**Responses**
AT+CMMSBCC?	+CMMSBCC: (list of <addr>s) OK ERROR +CME ERROR: <err>
Write Command	**Responses**
AT+CMMSBCC=<addr>	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address. As mobile phone number, the max length is 40; As email address, the max length is 60;

Examples

AT+CMMSBCC=?
+CMMSBCC: "ADDRESS"
OK
AT+CMMSBCC?

SIMCOM CONFIDENITAL FILE

```
+CMMSBCC:"t1@test.com";"15813862534"
OK
AT+CMMSBCC="13818362596"
OK
```

16.11 AT+CMMSDELRECP Delete the recipients

Description

This command is used to delete the recipients. The execute command is used to delete all the recipients

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELRECP=?	+CMMSDELRECP: "ADDRESS " OK
Write Command	Responses
AT+CMMSDELRECP=<addr>	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELRECP	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address. As mobile phone number, the max length is 40; As email address, the max length is 60;

Examples

```
AT+CMMSDELRECP=?
+CMMSDELRECP: "ADDRESS"
OK
AT+CMMSDELRECP
OK
AT+CMMSDELRECP="13818362596"
```

SIMCOM CONFIDENTIAL FILE

OK

16.12 AT+CMMSDELCC Delete the cc recipients

Description

This command is used to delete the cc recipients. The execution command is used to delete all the cc recipients

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELCC=?	+CMMSDELCC: ”ADDRESS ” OK
Write Command	Responses
AT+CMMSDELCC=<addr>	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELCC	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address. As mobile phone number, the max length is 40; As email address, the max length is 60;

Examples

AT+CMMSDELCC=?

+CMMSDELCC: "ADDRESS"

OK

AT+CMMSDELCC

OK

AT+CMMSDELCC=”13818362596"

OK

SIMCOM CONFIDENTIAL FILE

16.13 AT+CMMSDELBCC Delete the secret recipients

Description

This command is used to delete the secret recipients. The execution command is used to delete all the secret recipients

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELBCC=?	+CMMSDELBCC: ”ADDRESS ” OK
Write Command	Responses
AT+CMMSDELBCC=<addr> >	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELBCC	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address. As mobile phone number, the max length is 40; As email address, the max length is 60;

Examples

```
AT+CMMSDELBCC=?
+CMMSDELRECP: "ADDRESS"
OK
AT+CMMSDELBCC
OK
AT+CMMSDELBCC=”13818362596"
OK
```

SIMCOM CONFIDENTIAL FILE

16.14 AT+CMMSRECV Receive MMS

Description

This command is used to receive MMS. It only can be perform in non-edit mode of MMS

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSRECV=?	+CMMSRECV: ”LOCATION” OK
Write Command	Responses
AT+CMMSRECV=<location>	OK +CMMSRECV: 0 ERROR +CME ERROR: <err> OK +CMMSRECV :<err>

Defined values

<location>
Reported by +WAP_PUSH_MMS message

Examples

AT+CMMSRECV=”http://211.136.112.84/MI76xou_anB”
OK
+CMMSRECV: 0
AT+CMMSRECV= http://211.136.112.84/MI76xou_anB”
OK
+CMMSRECV*: 190*
AT+CMMSRECV=”http://211.136.112.84/MI76xou_anB”
+CME ERROR: 177

16.15 AT+CMMSVIEW View the information of MMS from the inbox or the memory

Description

SIMCOM CONFIDENTIAL FILE

This command is used to view the information of MMS from the inbox or the memory. The title part of the MMS is formatted with UCS2 little endian character set.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSVIEW=?	+CMMSVIEW: (0,1) OK
Write Command	**Responses**
AT+CMMSVIEW=<index>	+CMMSVIEW:<mmstype>,"<sender>","<receipts>","<ccs>","<bccs>","<datetime>","<subject>",<size><CR><LF>list of [<fileIndex>, <name>, <type>, <filesize>]<CR><LF> OK ERROR +CME ERROR: <err>
Execute Command	**Responses**
AT+CMMSVIEW	+CMMSVIEW:<mmstype>,"<sender>","<receipts>","<ccs>","<bccs>","<datetime>","<subject>",<size><CR><LF>list of [<fileIndex>, <name>, <type>,<fileSize>]<CR><LF> OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of MMS.
<mmstype>
The state of MMS: 0 – Received MMS. 1 – Sent MMS. 2 – Unsent MMS.
<sender>
The address of the sender
<receipts>
The list of the recipients separated by ";"
<ccs>
The list of cc recipients separated by ";"
<bccs>
The list of secret recipients separated by ";"

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<datetime>
For received MMS, it is the time indication when you received the MMS. For other MMS, it is the time indication when you create the MMS.
<subject>
The title of MMS.
<size>
The data size of MMS.
<fileIndex>
The index of each file contained in the MMS body
<name>
The name of each file contained in the MMS body
<type>
The type of each file contained in the MMS body: 1 – unknown type. 2 – text. 3 – text/html. 4 – text/plain. 5 – image. 6 – image/gif. 7 – image/jpg. 8 – image/tif. 9 – image/png. 10 – audio/midi. 11 – audio/x-wav. 12 – audio /amr. 13 – audio /mpeg. 14 – video /mp4. 15 – video /3gpp. 29 – application/sdp. 30 – application/smil.
<fileSize>
The size of each file contained in the MMS body

Examples

AT+CMMSVIEW=?
+CMMSVIEW: (0,1)
OK
AT+CMMSVIEW
+CMMSVIEW:2,"",,,,"0000-00-00 00:00:00","dsidfisids",83867
0,"1.txt",4,10
1,"80.jpg",7,83794
OK

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```
AT+CMMSVIEW=1
+CMMSVIEW:0,"",,,,"2009-03-10 10:06:12","my title",83867
0,"1.txt",4,10
1,"80.jpg",7,83794
OK
```

16.16 AT+CMMSREAD Read the given file of MMS in the memory

Description

This command is used to read the given file of MMS in the memory. When reading a text file, it will be converted to UCS2 little endian before final UART output.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSREAD=?	OK
Write Command	**Responses**
AT+CMMSREAD=<index>	+CMMSREAD:<name>,<datSize> <FileContent> OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of the given file contained in the MMS body
<name>
The name of the given file contained in the MMS body
<datSize>
The size of the given file contained in the MMS body
<FileContent>
The content of the file to be read

Examples

```
AT+CMMSREAD=?
OK
```

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```
AT+CMMSREAD=3
+CMMSREAD:"1.jpg",83794
...(File Content)

OK
```

16.17 AT+CMMSSNATCH Snatch the given file in MMS

Description

This command is used to snatch the given file of MMS in memory, and save it to UE file system. If the input file name already exists in the selected directory, it will fail.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSNATCH=?	OK
Write Command	**Responses**
AT+CMMSSNATCH=<index>,<dir>,"<filename>"	OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of the given file contained in the MMS body
<dir>
The directory of the selected file: 0 – current directory[[refer to AT+FSCD]
<filename>
The name of the given file contained in the MMS body

Examples

```
AT+CMMSSNATCH=?
OK
AT+CMMSSNATCH=3,2,"mylocalfile.jpg"
OK
```

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16.18 AT+CMMSSAVE Save the MMS to a mail box

Description

This command is used to save the selected MMS into a mailbox.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSAVE=?	+CMMSSAVE: (0-1),(0-2) OK
Write Command	**Responses**
AT+CMMSSAVE=<index>[,<mmstype>]	+CMMSSAVE: <index> OK ERROR +CME ERROR: <err>
Execute Command	**Responses**
AT+CMMSSAVE	+CMMSSAVE: <index> OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of mail box is selected to save the MMS
<mmstype>
The status of MMS: 0 – Received MMS. 1 – Sent MMS. 2 – Unsent MMS.

Examples

```
AT+CMMSSAVE=?
+CMMSSAVE: (0-1),(0-2)
OK
AT+CMMSSAVE=1
+CMMSSAVE: 1
OK
```

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16.19 AT+CMMSDELETE Delete MMS in the mail box

Description

This command is used to delete MMS in the mailbox. The execute command is used to delete all MMS in the mailbox.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELETE=?	+CMMSDELETE: (0-1) OK
Write Command	Responses
AT+CMMSDELETE?	+CMMSDELETE: <mmsNum> OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CMMSDELETE=<index>	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELETE	OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of the mail box, where is selected to save the MMS.
<mmsNum>
The number of MMS saved in the mail box

Examples

AT+CMMSDELETE=?
+CMMSDELETE: (0-1)
OK
AT+CMMSDELETE
OK
AT+CMMSDELETE=1

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OK

16.20 AT+CMMSSYSSET Configure MMS transferring parameters

Description

This command is used to configure MMS transferring setting.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSYSSET=?	+CMMSSYSSET: (10240-<max_pdu_size>),(512-4096),(512-4096),(1-<wap_send_buf_count>) OK
Write Command	**Responses**
AT+CMMSSYSSET?	+CMMSSYSSET: <max_pdu_size>,<wap_send_buf_size>,<wap_recv_buf_size>,<wap_send_buf_count> OK
Write Command	**Responses**
AT+CMMSSYSSET=<max_pdu_size>[,<wap_send_buf_size>[,<wap_recv_buf_size>[,<wap_send_buf_count>]]]	OK ERROR +CME ERROR: <err>

Defined values

< max_pdu_size >
The maximum MMS pdu size allowed by operator.
<wap_send_buf_size>
The length of WTP PDU for sending
<wap_recv_buf_size>
The length of WTP PDU for receiving
<wap_send_buf_count>
The count of buffers for WTP sending in group

Examples

AT+CMMSSYSSET=?
+CMMSSYSSET: (10240-307712),(512-4096),(512-4096),(1-8)

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OK
AT+CMMSSYSSET?
+CMMSSYSSET:102400,1460,1500,6
OK
AT+CMMSSYSSET=102400,1430,1500,8
OK
AT+CMMSSYSSET=102400
OK

16.21 AT+CMMSINCLEN Increase the length of audio/video attachment header

Description

This command is used to increase the length of video/audio attachment header length in the length indicator field. This command is used to be compatible with some operators. This command must be set before calling AT+CMMSEDIT=1.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSINCLEN=?	+CMMSINCLEN: (0,1) OK
Read Command	Responses
AT+CMMSINCLEN?	+CMMSINCLEN: <mode> OK
Write Command	Responses
AT+CMMSINCLEN=<mode>	OK ERROR +CME ERROR: <err>

Defined values

<mode>
Whether to increase the length: 0 – No. 1 – Yes.

Examples

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AT+CMMSINCLEN=0
OK
AT+CMMSINCLEN?
+CMMSINCLEN:0
OK
AT+CMMSINCLEN=?
+CMMSINCLEN:(0-1)
OK

16.22 AT+CMMSUA Set the User-Agent of MMS packet

Description

This command is used to set the User-Agent of MMS packet.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSUA=?	+CMMSUA: "UserAgent" OK
Read Command	**Responses**
AT+CMMSUA?	+CMMSUA: "<useragent>" OK
Write Command	**Responses**
AT+CMMSUA="<useragent>"	OK ERROR +CME ERROR: <err>

Defined values

<useragent>
The User-Agent of MMS packet. The maximum length is 511 bytes.

Examples

AT+CMMSUA=" Test my UserAgent"
OK
AT+CMMSUA?
+CMMSUA: " Test my UserAgent"
OK
AT+CMMSUA=?

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+CMMSUA: " UserAgent"
OK

16.23 AT+CMMSPROFILE Set the User-Agent profile of MMS packet

Description

This command is used to set the User-Agent profile of MMS packet.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSPROFILE=?	+CMMSPROFILE:"UserAgentProfile" OK
Read Command	Responses
AT+CMMSPROFILE?	+CMMSPROFILE: "<profile>" OK
Write Command	Responses
AT+CMMSPROFILE="<profile>"	OK ERROR +CME ERROR: <err>

Defined values

<profile>
The User-Agent profile of MMS packet. The maximum length is 511 bytes.

Examples

AT+CMMSPROFILE=" Test my UserAgent profile"
OK
AT+CMMSPROFILE?
+CMMSUA:" Test my UserAgent profile"
OK
AT+CMMSPROFILE=?
+CMMSPROFILE:"UserAgent profile"
OK

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16.24 Supported Unsolicited Result Codes in MMS

Description

This section lists all the unsolicited result code in MMS module.

16.24.1 Indication of Sending/Receiving MMS

MMS Sending	Description
+CMMSSEND:<err>	This indication means the result of sending MMS. If successful, it reports +CMMSSEND:0, or else, it report +CMMSSEND:<err>
MMS Notification	Description
+WAP_PUSH_MMS:<sender>,<transaction_id>,<location>,<timestamp>,<class>,<size>	This indication means there is a new MMS received in the MMS center.
MMS Receiving	Description
+CMMSRECV:<err>	This indication means the result of receiving MMS. If successful, it reports +CMMSRECV:0, or else, it reports +CMMSRECV:<err>

Defined values

< sender>
The sender address of the received MMS
<transaction_id>
The X-Mms-Transaction-ID of the received MMS
<location>
The X-Mms-Content-Location of the received MMS
<timestamp>
The timestamp of the WAP push message
<class>
The X-Mms-Class of the received MMS 0 – Expired 1 – Retrieved 2 – Rejected 3 – Deferred 4 – Unrecognized
<size>
The size of the received MMS

Examples

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+WAP_PUSH_MMS

+WAP_PUSH_MMS: "15001844675","RROpJGJVyjeA","http://211.136.112.84/RROpJGJVyjeA" ,"09/03/17,17:14:41+32",0,13338

16.24.2 Summary of CME ERROR Codes for MMS

Code of <err>	Description
201	Unknown error for mms
171	MMS task is busy now
172	The mms data is over size
173	The operation is over time
174	There is no mms receiver
175	The storage for address is full
176	Not find the address
177	Invalid parameter
178	Failed to read mms
179	There is not a mms push message (reserved)
180	Memory error
181	Invalid file format
182	The mms storage is full
183	The box is empty
184	Failed to save mms
185	Busy editing mms now
186	Not allowed to edit now
187	No content in the buffer
188	Failed to receive mms
189	Invalid mms pdu
190	Network error
191	Failed to read file in UE

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17 AT Commands for Internet Service

17.1 Common

17.1.1 AT+CGSOCKCONT Define socket PDP context

Description

This command specifies socket PDP context parameter values for a 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. A special form of the write command (AT+CGSOCKCONT=<cid>) causes the values for context <cid> to become undefined.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CGSOCKCONT=?	+CGSOCKCONT: (range of supported<cid>s),<PDP_type>,,,(list of supported <d_comp>s),(list of supported <h_comp>s) OK
	ERROR
Read Command	Responses
AT+CGSOCKCONT?	+CGSOCKCONT: [<cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp>[<CR><LF> +CGSOCKCONT: <cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[...]]] OK
	ERROR
Write Command	Responses
AT+CGSOCKCONT=<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>]]]]]	OK
	ERROR
Execution Command	Responses
AT+CGSOCKCONT	OK
	ERROR

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Defined values

<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) is returned by the test form of the command.

1…16

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6(reserved)

IPV4V6 Dual PDN Stack

<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.

<PDP_addr>

A string parameter that identifies the MT in the address space applicable to the PDP.

Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure.

<d_comp>

A numeric parameter that controls PDP data compression:

0 – off (default if value is omitted)

1 – on

2 – V.42bis

<h_comp>

A numeric parameter that controls PDP header compression:

0 – off (default if value is omitted)

1 – on

2 – RFC1144

3 – RFC2507

4 – RFC3095

Examples

```
AT+CGSOCKCONT?
+CGSOCKDCONT: 1,"IP","","0.0.0.0",0,0
OK
AT+CGSOCKCONT=?
+CGSOCKCONT: (1-16),"IP",,,(0-2),(0-4)
+CGSOCKCONT: (1-16),"PPP",,,(0-2),(0-4)
+CGSOCKCONT: (1-16),"IPV6",,,(0-2),(0-4)
+ CGSOCKCONT: (1-16),"IPV4V6",,,(0-2),(0-4)
OK
```

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17.1.2 AT+CSOCKSETPN Set active PDP context's profile number

Description

This command sets default active PDP context's profile number. When we activate PDP by using AT+NETOPEN command, we need use the default profile number, and the context of this profile is set by AT+CGSOCKCONT command.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSOCKSETPN=?	+CSOCKSETPN: (list of supported <profile_number>s) OK
	ERROR
Read Command	Responses
AT+CSOCKSETPN?	+CSOCKSETPN: <profile_number> OK
	ERROR
Write Command	Responses
AT+CSOCKSETPN= <profile_number>	OK
	ERROR
Execution Command	Responses
AT+CSOCKSETPN	OK
	ERROR

Defined values

<profile_number>
A numeric parameter that identifies default profile number, the range of permitted values is one to sixteen. 1…16

Examples

```
AT+CSOCKSETPN=1
OK
```

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17.1.3 AT+CSOCKAUTH Set type of authentication for PDP-IP connections of socket

Description

This command is used to set type of authentication for PDP-IP connections of socket.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSOCKAUTH=?	+CSOCKAUTH:(range of supported <cid>s),(list of supported <auth _type> s), <passwd_len>,<user_len> OK
	ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+CSOCKAUTH?	+CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> … OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CSOCKAUTH=<cid>[,<auth_type>[,<passwd>[,<user>]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CSOCKAUTH	OK
	ERROR
	+CME ERROR: <err>

Defined values

<cid>
Parameter specifies a particular PDP context definition. This is also used in other PDP context-related commands. 1…16

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<auth_type>
Indicate the type of authentication to be used for the specified context. If CHAP is selected another parameter <passwd> needs to be specified. If PAP option is selected, two additional parameters, <passwd> and <user>, need to be specified. 0 – none 1 – PAP 2 – CHAP 3 – PAP or CHAP
<passwd>
Parameter specifies the password used for authentication.
<user>
Parameter specifies the user name used for authentication.
<passwd_len>
The maximum length of the password.
<user_len>
The maximum length of the user name.

Examples

AT+CSOCKAUTH=?
+CSOCKAUTH: (1-16),(0-3),127,127
OK
AT+CSOCKAUTH=1,2,"SIMCOM","123"
OK

17.1.4 AT+CGSOCKQREQ Quality of service profile (requested)

Description

This command allows the TE to specify a Quality of Service Profile that is used when the MT sends an Activate PDP Context Request message to the network. A special form of the set command (AT+CGSOCKQREQ=<cid>) causes the requested profile for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to AT+CGSOCKCONT).

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses

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AT+CGSOCKQREQ=?	+CGSOCKQREQ: <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) [<CR><LF> +CGSOCKQREQ: <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
	ERROR
Read Command	Responses
AT+CGSOCKQREQ?	+CGSOCKQREQ: [<cid>, <precedence >, <delay>, <reliability>, <peak>, <mean>[<CR><LF> +CGSOCKQREQ: <cid>, <precedence >, <delay>, <reliability.>, <peak>, <mean>[…]]] OK
	ERROR
Write Command	Responses
AT+CGSOCKQREQ=<cid> [,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]]	OK
	ERROR
Execution Command	Responses
AT+CGSOCKQREQ	OK
	ERROR

Defined values

<cid>
A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). The range is from 1 to 16.
<PDP_type>
(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol. IP Internet Protocol PPP Point to Point Protocol IPV6 Internet Protocol Version 6(reserved) IPV4V6 Dual PDN Stack (reserved)
<precedence>
A numeric parameter which specifies the precedence class: 0 – network subscribed value 1 – high priority 2 – normal priority 3 – low priority

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<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value
1 – delay class 1
2 – delay class 2
3 – delay class 3
4 – delay class 4

<reliability>

A numeric parameter which specifies 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>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value
1 – Up to 1000 (8 kbit/s)
2 – Up to 2000 (16 kbit/s)
3 – Up to 4000 (32 kbit/s)
4 – Up to 8000 (64 kbit/s)
5 – Up to 16000 (128 kbit/s)
6 – Up to 32000 (256 kbit/s)
7 – Up to 64000 (512 kbit/s)
8 – Up to 128000 (1024 kbit/s)
9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

0 – network subscribed value
1 – 100 (~0.22 bit/s)
2 – 200 (~0.44 bit/s)
3 – 500 (~1.11 bit/s)
4 – 1000 (~2.2 bit/s)
5 – 2000 (~4.4 bit/s)
6 – 5000 (~11.1 bit/s)
7 – 10000 (~22 bit/s)
8 – 20000 (~44 bit/s)
9 – 50000 (~111 bit/s)
10 – 100000 (~0.22 kbit/s)
11 – 200000 (~0.44 kbit/s)
12 – 500000 (~1.11 kbit/s)

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13 – 1000000 (~2.2 kbit/s)
14 – 2000000 (~4.4 kbit/s)
15 – 5000000 (~11.1 kbit/s)
16 – 10000000 (~22 kbit/s)
17 – 20000000 (~44 kbit/s)
18 – 50000000 (~111 kbit/s)
31 – optimization

Examples

```
AT+CGSOCKQREQ?
+CGSOCKQREQ:
OK
AT+CGSOCKQREQ=?
+CGSOCKQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQREQ: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQREQ: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQREQ: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)

OK
```

17.1.5 AT+CGSOCKEQREQ 3G quality of service profile (requested)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allows the TE to specify a Quality of Service Profile for the context identified by the context identification parameter <cid> which is used when the MT sends an Activate PDP Context Request message to the network.

A special form of the write command,AT+CGSOCKEQREQ=<cid> causes the requested profile for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to AT+CGSOCKCONT).

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses

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AT+CGSOCKEQREQ=?	+CGSOCKEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Deliv ery 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) [<CR><LF> +CGSOCKEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Deliv ery 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) […]] OK
Read Command	Responses
AT+CGSOCKEQREQ?	+CGSOCKEQREQ: [<cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum 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>][<CR><LF> +CGSOCKEQREQ: <cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum 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>[…]] OK
Write Command	Responses
AT+CGSOCKEQREQ=<cid>[,<Traffic class>[,<Maxim um bitrate UL>[,<Maximu m bitrate DL>[,<Guarantee	OK

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d bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGSOCKEQREQ	OK

Defined values

<cid>
Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands. The range is from 1 to 16.
<Traffic class>
0 – conversational 1 – streaming 2 – interactive 3 – background 4 – subscribed value
<Maximum bitrate UL>
This parameter 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+CGSOCKEQREQ=…,32,…). The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.
<Maximum bitrate DL>
This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQREQ=…,32,…). The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.
<Guaranteed bitrate UL>
This parameter indicates the guaranteed number of kbit/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+CGSOCKEQREQ=…,32,…). The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.
<Guaranteed bitrate DL>
This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a

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SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGSOCKEQREQ=…,32,…).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no
1 – yes
2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.
The range is from 0 to 1520. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as "5E3"(e.g.AT+CGSOCKEQREQ=..,"5E3",…).

"0E0" – subscribed value
"1E2"
"7E3"
"1E3"
"1E4"
"1E5"
"1E6"
"1E1"

<Residual bit error ratio>

This parameter 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.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as "5E3"(e.g. AT+CGSOCKEQREQ=…,"5E3",..).

"0E0" – subscribed value
"5E2"
"1E2"
"5E3"
"4E3"
"1E3"
"1E4"
"1E5"
"1E6"
"6E8"

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no

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1 – yes
2 – no detect
3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP in milliseconds.
The range is from 0 to 4000. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.
The range is from 0 to 3. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol
PPP Point to Point Protocol
IPV6 Internet Protocol Version 6(reserved)
IPV4V6 Dual PDN Stack (reserved)

Examples

```
AT+CGSOCKEQREQ?
+CGSOCKEQREQ:
OK
AT+CGSOCKEQREQ =?
+CGSOCKEQREQ: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4"
,"1E5","1E6","6E8"),(0-3),(0-4000),(0-3)
+CGSOCKEQREQ: "PPP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1
","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4
","1E5","1E6","6E8"),(0-3),(0-4000),(0-3)
+CGSOCKEQREQ: "IPV6",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3)
+CGSOCKEQREQ:"IPV4V6",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0",
"1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E
5","1E6","6E8"),(0-3),(0-4000),(0-3)

OK
```

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17.1.6 AT+CGSOCKQMIN 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,AT+CGSOCKQMIN=<cid> causes the minimum acceptable profile for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to AT+CGSOCKCONT).

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CGSOCKQMIN=?	+CGSOCKQMIN: <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) [<CR><LF> +CGSOCKQMIN: <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
	ERROR
Read Command	Responses
AT+CGSOCKQMIN?	+CGSOCKQMIN: [<cid>, <precedence >, <delay>, <reliability>, <peak>, <mean>[<CR><LF> +CGSOCKQMIN: <cid>, <precedence >, <delay>, <reliability.>, <peak>, <mean> […]]] OK
	ERROR
Write Command	Responses
AT+CGSOCKQMIN= <cid>[,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]]	OK
	ERROR
Execution Command	Responses
AT+CGSOCKQMIN	OK

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	ERROR

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). The range is from 1 to 16.

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6(reserved)

IPV4V6 Dual PDN Stack(reserved)

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value

1 – high priority

2 – normal priority

3 – low priority

<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value

1 – delay class 1

2 – delay class 2

3 – delay class 3

4 – delay class 4

<reliability>

A numeric parameter which specifies 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>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value

1 – Up to 1000 (8 kbit/s)

2 – Up to 2000 (16 kbit/s)

3 – Up to 4000 (32 kbit/s)

4 – Up to 8000 (64 kbit/s)

5 – Up to 16000 (128 kbit/s)

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6 – Up to 32000 (256 kbit/s)
7 – Up to 64000 (512 kbit/s)
8 – Up to 128000 (1024 kbit/s)
9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

0 – network subscribed value
1 – 100 (~0.22 bit/s)
2 – 200 (~0.44 bit/s)
3 – 500 (~1.11 bit/s)
4 – 1000 (~2.2 bit/s)
5 – 2000 (~4.4 bit/s)
6 – 5000 (~11.1 bit/s)
7 – 10000 (~22 bit/s)
8 – 20000 (~44 bit/s)
9 – 50000 (~111 bit/s)
10 – 100000 (~0.22 kbit/s)
11 – 200000 (~0.44 kbit/s)
12 – 500000 (~1.11 kbit/s)
13 – 1000000 (~2.2 kbit/s)
14 – 2000000 (~4.4 kbit/s)
15 – 5000000 (~11.1 kbit/s)
16 – 10000000 (~22 kbit/s)
17 – 20000000 (~44 kbit/s)
18 – 50000000 (~111 kbit/s)
31 – optimization

Examples

```
AT+CGSOCKQMIN?
+CGSOCKQMIN:
OK
AT+CGSOCKQMIN=?
+CGSOCKQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)

OK
```

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17.1.7 AT+CGSOCKEQMIN 3G quality of service profile (minimum acceptable)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allow the TE to specify a Quallity of Service Profile for the context identified by the context identification parameter <cid> which is checked by the MT against the negotiated profile returned in the Activate/Modify PDP Context Accept message.

A special form of the write command, AT+CGSOCKEQMIN=<cid> causes the requested for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to AT+CGSOCKCONT).

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CGSOCKEQMIN=?	+CGSOCKEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Deliv ery 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) [<CR><LF> +CGSOCKEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Deliv ery 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) […]] OK

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	ERROR
Read Command	Responses
AT+CGSOCKEQMIN?	+CGSOCKEQMIN: [<cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum 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>][<CR><LF>+CGSOCKEQMIN: <cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum 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>[…]] OK ERROR
Write Command	Responses
AT+CGSOCKEQMIN=<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGSOCKEQMIN	OK ERROR

Defined values

<cid>

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Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands. The range is from 1 to 16.

<Traffic class>

0 – conversational
1 – streaming
2 – interactive
3 – background
4 – subscribed value

<Maximum bitrate UL>

This parameter 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+CGSOCKEQMIN=…,32,…). (refer TS 24.008 [8] subclause 10.5.6.5).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Maximum bitrate DL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQMIN=…,32,…). (refer TS 24.008 [8] subclause 10.5.6.5).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/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+CGSOCKEQMIN=…,32,…). (refer TS 24.008 [8] subclause 10.5.6.5).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to 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+CGSOCKEQMIN=…,32,…). (refer to TS 24.008 [8] subclause 10.5.6.5).
The range is from 0 to 8460. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no
1 – yes
2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size inoctets. (refer to TS 24.008 [8] subclause 10.5.6.5).
The range is from 0 to 1520. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<SDU error ratio>

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This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as "5E3"(e.g.AT+CGSOCKEQMIN=..,"5E3",…).

"0E0" – subscribed value
"1E2"
"7E3"
"1E3"
"1E4"
"1E5"
"1E6"
"1E1"

<Residual bit error ratio>

This parameter 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.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as "5E3"(e.g. AT+ CGSOCKEQMIN =…,"5E3",..).

"0E0" – subscribed value
"5E2"
"1E2"
"5E3"
"4E3"
"1E3"
"1E4"
"1E5"
"1E6"
"6E8"

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no
1 – yes
2 – no detect
3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds. (refer TS 24.008 [8] subclause 10.5.6.5).
The range is from 0 to 4000. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.
The range is from 0 to 3. The default value is 0. If the parameter is set to '0' the subscribed value will be requested.

<PDP_type>

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(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6(reserved)

IPV4V6 Dual PDN Stack(reserved)

Examples

```
AT+CGSOCKEQMIN?
+ CGSOCKEQMIN:
OK
AT+CGSOCKEQMIN =?
+CGSOCKEQMIN: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4"
,"1E5","1E6","6E8"),(0-3),(0-4000),(0-3)
+CGSOCKEQMIN: "PPP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1
","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4
","1E5","1E6","6E8"),(0-3),(0-4000),(0-3)
+CGSOCKEQMIN: "IPV6",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0-4000),(0-3)
+CGSOCKEQMIN:"IPV4V6",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0","
1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5
","1E6","6E8"),(0-3),(0-4000),(0-3)

OK
```

17.1.8 AT+CENDUPPDP Duplicate PDP activation

Description

This command is used to enable or disable duplicate PDPs activation with the same APN.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CENDUPPDP=?	+CENDUPPDP: (list of supported <DUP_PDP_Enable>s) OK
Read Command	Responses

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AT+CENDUPPDP?	+CENDUPPDP:<DUP_PDP_Enable> OK
Write Command	Responses
AT+CENDUPPDP= <DUP_PDP_Enable>	OK ERROR

Defined values

<DUP_PDP_Enable>
a numeric parameter which sets whether enable duplicate PDPs activation with the same APN. 0 disable 1 enable

Examples

AT+CENDUPPDP=?
+CENDUPPDP: (0,1) *OK*
AT+CENDUPPDP=1
OK

17.1.9 AT+CIPDNSSET Set DNS query parameters

Description

This command is used to set DNS query parameters. The timeout value for performing DNS query is <net_open_time> + 3000ms + 1000ms*<dns_query_retry_counter>. Here <net_open_time> is the time for opening PS network. <dns_query_retry_counter> is the retry counter for sending DNS query using UDP packet.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CIPDNSSET=?	OK
Read Command	Responses
AT+CIPDNSSET?	+CIPDNSSET: <max_net_retries>, <net_timeout>, <max_query_retries> OK

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Write Command	Responses
AT+CIPDNSSET=[<max_net_retries>][,[<net_timeout>][,[<max_query_retries>]]]	OK ERROR

Defined values

<max_net_retries>
Maxmimum retry times for opening PS network to perform DNS query. The range is from 0 to 3. Default value is 3.
<net_timeout>
Timeout value for each opening PS network operation when performing DNS query. The range is from 3000ms to 120000ms. Default value is 30000ms.
<max_query_retries>
Maximum retry times for performing DNS query using UDP packet. The range is from 0 to 7. Default value is 7.

Examples

AT+CIPDNSSET?
+CIPDNSSET: 1,30000,3 *OK*
AT+CIPDNSSET=1,30000,1
OK

17.1.10 AT+CDNSGIP Query the IP address of given domain name

Description

This command is used to query the IP address of given domain name.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CDNSGIP=?	OK ERROR
Write Command	**Responses**
AT+CDNSGIP=<domain	*If successful,return:*

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name>	+CDNSGIP: 1,<domain name>,<IP address> OK
	If fail,return: +CDNSGIP: 0,<dns error code> ERROR
	ERROR

Defined values

<domain name>
A string parameter (string should be included in quotation marks) which indicates the do ma-in name.
<IP address>
A string parameter (string should be included in quotation marks) which indicates the IP address corresponding to the domain name.
<dns error code>
A numeric parameter which indicates the error code. 10 DNS GENERAL ERROR

Examples

AT+CDNSGIP=?
OK
AT+CDNSGIP=”www.google.com”
+CDNSGIP: 1,"www.google.com","203.208.39.99"
OK

17.1.11 AT+CDNSGHNAME Query the domain name of given IP address

Description

This command is used to query the domain name of given IP address.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CDNSGHNAME=?	OK
	ERROR

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Write Command	Responses
AT+CDNSGHNAME=<IP address>	*If successful,return:* +CDNSGHNAME: <index>,<domain name>,<IP address> OK
	If fail,return: +CDNSGHNAME: 0,<dns error code> ERROR
	ERROR

Defined values

<domain name>
A string parameter (string should be included in quotation marks) which indicates the do ma-in name.
<IP address>
A string parameter (string should be included in quotation marks) which indicates the IP address corresponding to the domain name.
<dns error code>
A numeric parameter which indicates the error code. 10 DNS GENERAL ERROR
<index>
A numeric parameter which indicates DNS result index. This value is always 1 if performing successfully. Currently only the first record returned from the DNS server will be reported.

Examples

AT+CDNSGHNAME=?
OK
AT+CDNSGHNAME=" 58.32.231.148"
+CDNSGHNAME: 1,"mail.sim.com","58.32.231.148" *OK*

17.1.12 AT+CPING Ping destination address

Description

This command is used to ping destination address.

SIM PIN	References
YES	Vendor

Syntax

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Test Command	Responses
AT+CPING=?	+CPING: IP address, (list of supported <dest_addr_type>s), (1-100), (4-188), (1000-10000),(10000-100000), (16-255) OK
	ERROR

Write Command	Responses
AT+CPING=<dest_addr>,<dest_addr_type>[,<num_pings>[,<data_packet_size>[,<interval_time>[,<wait_time>[,<TTL>]]]]]	OK *If ping's result_type = 1* +CPING: <result_type>,<resolved_ip_addr>,<data_packet_size>,<rtt>,<TTL> *If ping's result_type = 2* +CPING: <result_type> *If ping's result_type = 3* +CPING: <result_type>,<num_pkts_sent>,<num_pkts_recvd>,<num_pkts_lost>,<min_rtt>,<max_rtt>,<avg_rtt> ERROR

Defined values

<dest_addr>
The destination is to be pinged; it can be an IP address or a domain name.
<dest_addr_type>
Integer type. Address family type of the destination address 1 – IPv4. 2 – IPv6(reserved)
<num_pings>
Integer type. The num_pings specifies the number of times the ping request (1-100) is to be sent. The default value is 4.
<data_packet_size>
Integer type. Data byte size of the ping packet (4-188). The default value is 64 bytes.
<interval_time>
Integer type. Interval between each ping. Value is specified in milliseconds (1000ms-10000ms). The default value is 2000ms.
<wait_time>
Integer type. Wait time for ping response. An ping response received after the timeout shall not be processed. Value specified in milliseconds (10000ms-100000ms). The default value is 10000ms.

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<TTL>
Integer type. TTL(Time-To-Live) value for the IP packet over which the ping(ICMP ECHO Request message) is sent (16-255), the default value is 255.
<result_type>
1 – Ping success 2 – Ping time out 3 – Ping result
<num_pkts_sent>
Indicates the number of ping requests that were sent out.
<num_pkts_recvd>
Indicates the number of ping responses that were received.
<num_pkts_lost>
Indicates the number of ping requests for which no response was received.
<min_rtt>
Indicates the minimum Round Trip Time(RTT).
<max_rtt>
Indicates the maximum RTT.
<avg_rtt>
Indicates the average RTT.
<resolved_ip_addr>
Indicates the resolved ip address.
< rtt>
Round Trip Time.

Examples

```
AT+CPING=?
+CPING:IP address,(1,2), (1-100), (4-188),(1000-10000),(10000-100000), (16-255)
OK
AT+CPING="www.baidu.com",1,4,64,1000,10000,255
OK

+CPING: 1,119.75.217.56,64,410,255

+CPING: 1,119.75.217.56,64,347,255

+CPING: 1,119.75.217.56,64,346,255

+CPING: 1,119.75.217.56,64,444,255

+CPING: 3,4,4,0,346,444,386
```

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17.1.13 AT+CPINGSTOP Stop an ongoing ping session

Description

This command is used to stop an ongoing ping session.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CPINGSTOP	+CPING: <result_type>,<num_pkts_sent>,<num_pkts_recvd>,<num_pkts_lost>,<min_rtt>,<max_rtt>,<avg_rtt> OK OK ERROR
Test Command	Responses
AT+CPINGSTOP=?	OK

Defined values

<result_type>
1 – Ping success 2 – Ping time out 3 – Ping result
<num_pkts_sent>
Indicates the number of ping requests that were sent out.
<num_pkts_recvd>
Indicates the number of ping responses that were received.
<num_pkts_lost>
Indicates the number of ping requests for which no response was received.
<resolved_ip_addr>
Indicates the resolved ip address.
<min_rtt>
Indicates the minimum Round Trip Time (RTT).
<max_rtt>
Indicates the maximum RTT.
<avg_rtt>
Indicates the average RTT.

Examples

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AT+CPINGSTOP
OK

17.1.14 AT+CTCPFIN Configure TCP FIN

Description

This command is used to configure whether the module should wait for TCP_FIN in TCP_FINWAIT2 state.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CTCPFIN=?	+CTCPFIN: (list of supported <TCP_FIN_Enable>s) OK
	ERROR
Read Command	Responses
AT+CTCPFIN?	+CTCPFIN:<TCP_FIN_Enable> OK
	ERROR
Write Command	Responses
AT+CTCPFIN= <TCP_FIN_Enable>	OK ERROR

Defined values

< TCP_FIN_Enable >
a numeric parameter which sets whether waiting for TCP_FIN inTCP_FINWAIT2 state. 0 not waiting 1 waiting

Examples

AT+CTCPFIN=?
+CTCPFIN: (0,1)
OK
AT+CTCPFIN=1

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OK

17.1.15 AT+CTCPKA Conigure TCP heartbeat

Description

This command is used to set TCP heartbeat parameters..

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CTCPKA=?	+CTCPKA: (list of supported <TCP_KA_Enable>s),(list of supported <KeepIdleTm>s) ,(list of supported <KeepAliveMaxTry>s) OK
Read Command	Responses
AT+CTCPKA?	+CTCPKA:<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry> OK
Write Command	Responses
AT+CTCPKA=<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry>	OK ERROR

Defined values

< TCP_KA_Enable >
a numeric parameter which sets whether enable TCP heartbeat function or not. 0 disable 1 enable
<KeepIdleTm>
a numeric parameter which is number of minutes to delay after last time of sending TCP data. The range is 1 to 120.
<KeepAliveMaxTry>
Maximum times for sending Keep-Alive checking. The range is 1 to 10.

Examples

AT+CTCPKA=?

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```
+CTCPKA: (0,1),(1-120) ,(1-10)
OK
AT+CTCPKA=1,3,3
OK
```

17.1.16 AT+CTEUTP Set unknown incoming TCP packet echo

Description

This command is used to enable or disable unknown incoming TCP packet echo.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CTEUTP=?	+CTEUTP: (list of supported <Echo_Unknown_TCP_Enable>s) OK
	ERROR
Read Command	**Responses**
AT+CTEUTP?	+CTEUTP:<Echo_Unknown_TCP_Enable> OK
	ERROR
Write Command	**Responses**
AT+CTEUTP = <Echo_Unknown_TCP_Enable>	OK ERROR

Defined values

<Echo_Unknown_TCP_Enable>
a numeric parameter which sets whether enable or disable unknown incoming TCP packet echo option. 0 disable 1 enable

Examples

```
AT+CTEUTP=?
+CTEUTP: (0,1)
```

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```
OK
AT+CTEUTP=1
OK
```

17.1.17 AT+CUPURE Set UDP port unreachable ICMP echo

Description

This command is used to enable or disable UDP port unreachable echo.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CUPURE=?	+CUPURE: (list of supported <UDP_PORT_UNREACHABLE_Enable>s) OK
	ERROR
Read Command	**Responses**
AT+CUPURE?	+CUPURE:< UDP_PORT_UNREACHABLE_Enable> OK
	ERROR
Write Command	**Responses**
AT+CUPURE=<UDP_PORT_UNREACHABLE_Enable>	OK ERROR

Defined values

<UDP_PORT_UNREACHABLE_Enable>
a numeric parameter which sets whether enable or disable UDP port unreachable ICMP echo option. 0 disable 1 enable

Examples

```
AT+CUPURE=?
+CUPURE: (0,1)
```

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OK

AT+CUPURE=1

OK

17.1.18 AT+CINICMPALLOW Preferred ICMP filter

Description

This command is used to filter the incoming ICMP packets that are not allowed.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CINICMPALLOW=?	+ CINICMPALLOW: (list of supported <mode>s) OK
	ERROR
Read Command	Responses
AT+CINICMPALLOW?	+CINICMPALLOW: <mode> OK
	ERROR
Write Command	Responses
AT+CINICMPALLOW=<mode>	OK
	ERROR

Defined values

<mode>

64bit number, the value is “1” << “<pos>” , then or by bit.

<pos>

Flag value from 0 to 63.

Value:

0	ICMP ECHO REPLY
3	ICMP DESTINATION UNREACH
4	ICMP SOURCE QUENCH
5	ICMP REDIRECT
8	ICMP ECHO REQUEST
9	MIP AGENT ADVERTISEMENT
10	MIP AGENT SOLICITATION
11	TIME-TO-ALIVE EXCEEDED

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12	PARAMETER PROBLEM
13	ICMP TIMESTAMP
14	ICMP TIME REPLY
15	INFORMATION REQUEST
16	INFORMATION REPLY
17	ADDRESS MASK REQUEST
18	ADDRESS MASK REPLY
37	DOMAIN NAME REQUEST
38	DOMAIN NAME REPLY

Examples

```
AT+CINICMPALLOW=0xFFFFFFFFFFFFFEFF
OK
AT+CINICMPALLOW?
+CINICMPALLOW: 0xFFFFFFFFFFFFFEFF
OK
```

17.1.19 AT+CDNSSRV Get dns server ip address

Description

The write command is used to query the dns server ip address of the specified PDP context (s).

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Read Command	Responses
AT+CDNSSRV?	[+CDNSSRV: [<cid>, <ip_addr>,<prm_dns>,<sec_dns> [<CR><LF> + CDNSSRV: <cid>, <ip_addr>,<prm_dns>,<sec_dns> [...]]]] OK

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command).

1…16

<ip_addr>

A string that identifies the IP address when the PDP context is activaed.

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<pri_dns>
A string that identifies the primary DNS server address when the PDP context is activaed.
<sec_dns>
A string that identifies the secondary DNS server address when the PDP context is activaed.

Examples

```
AT+CDNSSRV?
+CDNSSRV: 1, "10.85.202.25","210.22.70.3","211.95.1.97"
OK
```

17.2 TCP/UDP

17.2.1 AT+CIPCCFG Configure parameters of socket

Description

This command is used to configure parameters of socket. For the write command, the parameter part cannot be empty.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPCCFG=?	+CIPCCFG: (list of supported <NmRetry>s),(list of supported <DelayTm>s),(list of supported <Ack>s),(list of supported <errMode>s),(list of supported <HeaderType>s), (list of supported <AsyncMode>s), (list of supported <TimeoutVal>s) OK
	ERROR
Read Command	**Responses**
AT+CIPCCFG?	+CIPCCFG:<NmRetry>,<DelayTm>,<Ack>,<errMode>,<Header-Type>,<AsyncMode>,<TimeoutVal> OK
	ERROR
Write Command	**Responses**
AT+CIPCCFG=	OK

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[<NmRetry>][,[<DelayTm>][,[<Ack>][,[<errMode>][,]<HeaderType>][,[[<AsyncMode>][,[<TimeoutVal>]]]]]]]	ERROR
Execution Command	Responses
AT+CIPCCFG	*Set default value:* OK

Defined values

<NmRetry>
a numeric parameter which is number of retransmission to be made for an IP packet.The default value is 10.
<DelayTm>
a numeric parameter which is number of milliseconds to delay to output data of Receiving.The default value is 0.
<Ack>
NOTE: This parameter is only used to be compatible with old TCP/IP command set.
<errMode>
a numeric parameter which sets mode of reporting error result code. 0 error result code with numeric values 1 error result code with string values
< HeaderType >
a numeric parameter that select which data header of receiving data, it only takes effect in multi-client mode. 0 add data header, the format is "+IPD<data length>" 1 add data header, the format is "+RECEIVE,<link num>,<data length>"
< AsyncMode >
NOTE: This parameter is only used to be compatible with old TCP/IP command set.
< TimeoutVal >
a numeric parameter that set the minimum retransmission timeout value for TCP connection. The unit is millisecond. The range is 500-120000.

Examples

AT+CIPCCFG=?
+CIPCCFG: (0-10),(0-1000),(0),(0-1),(0-1) ,(0) ,(500-120000)
OK
AT+CIPCCFG=3,500,1,1,1,0,500
OK

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17.2.2 AT+CIPSENDMODE Select sending mode

Description

This command is used to sending wait peer TCP ACK mode or sending without waiting peer TCP ACK mode. The default mode is sending without waiting peer TCP ACK mode.

NOTE: Currently SIMCom 3G modules support both new TCP/IP command set and old TCP/IP command set, the new TCP/IP command set support multiple TCP connections, and backward compatible with the old command set. When the AT+NETOPEN command called with parameters(like AT+NETOPEN=”TCP”) according to the old command set, the sending mode configured by this command will be ignore, and the TCP data sending will wait for TCP ACK always.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CIPSENDMODE=?	+CIPSENDMODE: (list of supported <mode>s) OK
Read Command	Responses
AT+CIPSENDMODE?	+CIPSENDMODE: <mode> OK
Write Command	Responses
AT+CIPSENDMODE=<mode>	OK ERROR

Defined values

<mode>	
0	– sending without waiting peer TCP ACK mode
1	– sending wait peer TCP ACK mode

Examples

```
AT+CIPSENDMODE?
+CIPSENDMODE: 1
OK
AT+CIPSENDMODE=1
OK
AT+CIPSENDMODE=?
+CIPSENDMODE: (0,1)
```

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OK

17.2.3 AT+CIPTIMEOUT Set TCP/IP timeout value

Description

This command is used to set timeout value for AT+NETOPEN/AT+CIPOPEN/AT+CIPSEND.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CIPTIMEOUT=?	OK
Read Command	Responses
AT+CIPTIMEOUT?	+CIPTIMEOUT: <netopen_timeout>, <cipopen_timeout>, <cipsend_timeout> OK
Write Command	Responses
AT+CIPTIMEOUT=[<netopen_timeout>][,[<cipopen_timeout>][,[<cipsend_timeout>]]]	OK ERROR

Defined values

<netopen_timeout>
Timeout value for AT+NETOPEN, default value is 120000 milliseconds.The range of this value is from 3000ms to 120000ms.
<cipopen_timeout>
Timeout value for AT+CIPOPEN, default value is 120000 milliseconds. The range of this value is from 3000ms to 120000ms.
<cipsend_timeout>
Timeout value for AT+CIPSEND, default value is 120000 milliseconds. The range of this value is from 3000ms to 120000ms.

Examples

AT+CIPTIMEOUT?

+CIPTIMEOUT: 30000,20000,40000

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OK

AT+CIPTIMEOUT=30000,20000,40000

OK

17.2.4 AT+CIPHEAD Add an IP head when receiving data

Description

This command is used to add an IP head when receiving data.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPHEAD=?	+CIPHEAD: (list of supported<mode>s) OK
	ERROR
Read Command	Responses
AT+CIPHEAD?	+CIPHEAD: <mode> OK
	ERROR
Write Command	Responses
AT+CIPHEAD=<mode>	OK
	ERROR
Execution Command	Responses
AT+CIPHEAD	*Set default value:* OK

Defined values

<mode>
a numeric parameter which indicates whether adding an IP header to received data or not 0 – not add IP header 1 – add IP header, the format is "+IPD(data length)"

Examples

AT+CIPHEAD=?

+CIPHEAD: (0-1)

OK

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AT+CIPHEAD=0
OK

17.2.5 AT+CIPSRIP Show Remote IP address and Port

Description

This command is used to set whether display IP address and port of sender when receiving data.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPSRIP=?	+CIPSRIP: (list of supported <mode>s) OK
	ERROR
Read Command	**Responses**
AT+CIPSRIP?	+CIPSRIP: <mode> OK
	ERROR
Write Command	**Responses**
AT+CIPSRIP=<mode>	OK
	ERROR
Execution Command	**Responses**
AT+CIPSRIP	*Set default value:* OK

Defined values

<mode>
a numeric parameter which indicates whether show the prompt of where the data received or not before received data. 0 – do not show the prompt 1 – show the prompt,the format is as follows: "RECV FROM:<IP ADDRESS>:<PORT>"

Examples

AT+CIPSRIP=?
+CIPSRIP: (0-1)
OK
AT+CIPSRIP=1

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OK

17.2.6 AT+CIPMODE Select TCP/IP application mode

Description

This command is used to select transparent mode (data mode) or non-transparent mode (command mode).The default mode is non-transparent mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CIPMODE=?	+CIPMODE: (list of supported <mode>s) OK
Read Command	**Responses**
AT+CIPMODE?	+CIPMODE: <mode> OK
Write Command	**Responses**
AT+CIPMODE=<mode>	OK
	ERROR
Execution Command	**Responses**
AT+CIPMODE	*Set default value（<mode>=0）:* OK

Defined values

<mode>
0 – Non transparent mode
1 – Transparent mode

Examples

```
AT+CIPMODE?
+CIPMODE: 1
OK
AT+CIPMODE=1
OK
AT+CIPMODE=?
+CIPMODE: (0-1)
OK
```

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AT+CIPMODE
OK

17.2.7 AT+NETOPEN Open socket

Description

This command opens packet network,

NOTE: The test command and the write command of AT+NETOPEN is reserved for being compatible with old TCP/IP command set, and the old TCP/IP command set is not recommended to be used any longer.

SIM PIN	References
YES	Vendor

Syntax

Read Command	Responses
AT+NETOPEN?	+NETOPEN:<net_state> OK
	ERROR
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+NETOPEN	OK +NETOPEN: <err>
	+NETOPEN: <err> OK
	+NETOPEN: <err> ERROR
	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<net_state>
a numeric parameter that indicates the state of PDP context activation: 0 network close (deactivated) 1 network open(activated)
<err >
The result of operation, 0 is success, other value is failure.

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<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+NETOPEN
OK
+NETOPEN: 0
AT+NETOPEN?
+NETOPEN: 1, 1
OK

17.2.8 AT+NETCLOSE Close socket

Description

This command closes network. Before calling this command, all opened sockets must be closed first.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+NETCLOSE=?	OK ERROR
Execution Command	**Responses**
AT+NETCLOSE	OK +NETCLOSE: <err>
	+NETCLOSE: <err> OK
	+NETCLOSE: <err> ERROR
	+IP ERROR: <error message> ERROR
	ERROR

Defined values

<err>
The result of operation, 0 is success, other value is failure.

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<error message>
The list of all error message: Invalid parameter Operation not supported No data

Examples

AT+NETCLOSE
OK *+NETCLOSE: 0*

17.2.9 AT+IPADDR Inquire socket PDP address

Description

This command inquires the IP address of current active socket PDP.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+IPADDR=?	OK ERROR
Execution Command	Responses
AT+IPADDR	+IPADDR: < ip_address> OK
	+IP ERROR:<err_info> ERROR
	ERROR

Defined values

<ip_address>
A string parameter that identifies the IP address of current active socket PDP.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+IPADDR
+IPADDR: 10.71.155.118

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OK

17.2.10 AT+CIPFILTERSET IP filter configuration

Description

This command is used to enable the IP filter feature in the multi-PDP mode. The IP filter is a feature which to support embedded TCP/IP protocol applications while the mobile device is in a PPP call.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPFILTERSET=?	+CIPFILTERSET: (0-9),(0,1) OK
	ERROR
Read Command	**Responses**
AT+CIPFILTERSET?	+CIPFILTERSET: <enabled_flag> +CIPFILTERSET: 0,<enabled_flag> +CIPFILTERSET: 1,<enabled_flag> … OK
Write Command	**Responses**
AT+CIPFILTERSET=<link_num>,<enabled_flag> Or AT+CIPFILTERSET=<enabled_flag>	OK
	If ERROR occurred
	+IP ERROR: <error message> ERROR

Defined values

<link_num>

A numeric parameter that identifies a connection. The range of permitted values is 0 to 9. This parameter is used for multi clients.

<enabled_flag>

A numeric flag parameter that show the <link_num> connection whether or not to use the IP filter feature. The default value is 0.

0: disable the IP filter feature.

1: enable the IP filter feature.

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NOTE:

1. The execution command must be executed before opening network.
2. If you want to use the PPP dial and socket data at the same time, set the IP filter flag enabled. In this usage, the PPP dial operation must be executed before the socket command.

Examples

```
AT+CIPFILTERSET=?
+CIPFILTERSET: (0-9),(0,1)

OK
AT+CIPFILTERSET =0,1
OK
AT+CIPFILTERSET =1
OK
AT+CIPFILTERSET?
+CIPFILTERSET: 1
+CIPFILTERSET: 0,1
+CIPFILTERSET: 1,0
+CIPFILTERSET: 2,0
+CIPFILTERSET: 3,0
+CIPFILTERSET: 4,0
+CIPFILTERSET: 5,0
+CIPFILTERSET: 6,0
+CIPFILTERSET: 7,0
+CIPFILTERSET: 8,0
+CIPFILTERSET: 9,0

OK
```

17.2.11 AT+SERVERSTART Startup TCP server

Description

This command starts up TCP server, and the server can receive the request of TCP client. After the command executes successfully, an unsolicited result code is returned when a client tries to connect with module and module accepts request. The unsolicited result code is +CLIENT: <link_num >,<server_index>,<client_IP>:<port>.

SIM PIN	References
YES	Vendor

Syntax

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Test Command	Responses
AT+SERVERSTART=?	OK +SERVERSTART: (list of supported <port>), (list of supported < server_index >) OK ERROR
Read Command	**Responses**
AT+SERVERSTART?	[+SERVERSTART: <server_index>,< port > …] OK +CIPERROR: <err> ERROR ERROR +IP ERROR: <error message> ERROR
Write Command	**Responses**
AT+SERVERSTART=<port >,<server_index>[,<backlog >]	OK +CIPERROR: <err> ERROR ERROR

Defined values

<server_index>
The TCP server index(The range of permitted values is 0 to 3).
<backlog>
The maximum connections can be queued in listen queue. The range is from 1 to 3. Default is 3.
<err>
The result of operation, 0 is success, other value is failure.
<error message>
The list of all error message: Invalid parameter Operation not supported No data

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Examples

```
AT+SERVERSTART?
+SERVERSTART: 0, 1000
+SERVERSTART: 2, 2000

OK
```

17.2.12 AT+SERVERSTOP Stop TCP server

Description

This command stops TCP server. Before stopping a TCP server, all sockets with <server_index> equals to the closing TCP server index must be closed first.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SERVERSTOP=?	OK
	ERROR
Execution Command	**Responses**
AT+SERVERSTOP=<server_index>	+SERVERSTOP: <server_index>,<err> OK
	OK +SERVERSTOP: <server_index>,<err>
	+SERVERSTOP: <server_index>,<err> ERROR
	ERROR

Defined values

<server_index>
The TCP server index(The range of permitted values is 0 to 3).
<err>
The result of operation, 0 is success, other value is failure.

Examples

```
AT+SERVERSTOP=?
```

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OK
AT+SERVERSTOP=0
+SERVERSTOP: 0,0
OK

17.2.13 AT+CIPOPEN Establish connection in multi-socket mode

Description

This command is used to establish a connection with TCP server and UDP server, The sum of all of connections is 10。

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPOPEN=?	+CIPOPEN: (list of supported <link_num>s), (list of supported <type>s) OK
	ERROR
Read Command	**Responses**
AT+CIPOPEN?	+CIPOPEN: <link_num> [,<type>,<serverIP>,<serverPort>,<index>] +CIPOPEN: <link_num> [,<type>,<serverIP>,<serverPort>,<index>] […] OK
	ERROR
	+IP ERROR: <error message> ERROR
Write Command	**Responses**
AT+CIPOPEN=<link_num>,"TCP",<serverIP>,<serverPort>[,<localPort>]	OK +CIPOPEN: <link_num>,<err>
	Open connection successfully in transparent mode: CONNECT [<text>]
	Open connection failed in transparent mode: CONNECT FAIL
	+CIPOPEN: <link_num>,<err> ERROR

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	ERROR
AT+CIPOPEN=<link_num>,"UDP",,,<localPort>	+CIPOPEN: <link_num>,<err> OK(*if udp open*)
	+CIPOPEN: <link_num>,<err> ERROR
	ERROR

Defined values

<link_num>
a numeric parameter that identifies a connection. The range of permitted values is 0 to 9. If AT+CIPMODE=1 is set, the <link_num> is restricted to be only 0.
<type>
a string parameter that identifies the type of transmission protocol. TCP Transfer Control Protocol UDP User Datagram Protocol If AT+CIPMODE=1 is set, the <type> is restricted to be only "TCP".
<serverIP>
A string parameter that identifies the IP address of server.The IP address format consists of 4 octets,separated by decimal point:"AAA.BBB.CCC.DDD". Also the domain name is supported here. If the domain name is input here, the timeout value for the AT+CIPOPEN shall be decided by AT+CIPDNSSET.
<serverPort>
a numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535. **NOTE:** When open port as TCP, the port must be the opened TCP port; When open port as UDP, the port may be any port. But, for Qualcomm, connecting the port 0 is as an invalid operation.
<localPort>
a numeric parameter that identifies the port of local socket, the range of permitted values is 0 to 65535.
<index>
a numeric parameter that identifies the server index that the client linked when as a TCP server. -1 Not as a TCP server 0-3 TCP server index
<text>
CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<err>
The result of operation, 0 is success, other value is failure.
<error message>
The list of all error message: Invalid parameter

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Operation not supported
No data

Examples

```
AT+CIPOPEN=0,"TCP","116.228.221.51",100
OK
+CIPOPEN: 0,0
AT+CIPOPEN=1,"UDP",,,8080
+CIPOPEN: 0,0
OK
AT+CIPOPEN=?
+CIPOPEN: (0-9), ("TCP", "UDP")
OK
AT+CIPOPEN?
+CIPOPEN: 0, "TCP", "116.228.221.51", 100, -1
+CIPOPEN: 1
+CIPOPEN: 2
+CIPOPEN: 3
+CIPOPEN: 4
+CIPOPEN: 5
+CIPOPEN: 6
+CIPOPEN: 7
+CIPOPEN: 8
+CIPOPEN: 9
OK
```

17.2.14 AT+CIPSEND Send data through TCP or UDP connection

Description

This command is used to send data to remote side. The <length> field can be empty, when it is empty, Each <Ctrl+Z> character present in the data should be coded as <ETX><Ctrl+Z>. Each <ESC> character present in the data should be coded as <ETX><ESC>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the input data. Single <ESC> is used to cancel the sending.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A, <ESC> is 0x1B.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses

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AT+CIPSEND=?	+CIPSEND: (list of supported <link_num>s), (list of supported <length >s) OK
	+CIPERROR: <err> ERROR
	ERROR
Read Command	Responses
AT+CIPSEND?	OK
	ERROR
Write Command	Responses
AT+CIPSEND=<link_num>,[<length>]<CR>*data for send* *(If the <length> field is empty, the <ctrl+z> needs to be entered after all data is input. <ESC> is use to cancel the sending.)* (This format is for TCP connect)	OK +CIPSEND: <link_num>,<reqSendLength>, <cnfSendLength>
	+CIPERROR: <err> ERROR
	ERROR
AT+CIPSEND=<link_num>,[<length>],<serverIP>,<serverPort><CR>*data for send* *(If the <length> field is empty, the <ctrl+z> needs to be entered after all data is input. <ESC> is use to cancel the sending.)* (This format is for UDP connect)	*If sending successfully(udp sending):* OK +CIPSEND: <link_num>, <reqSendLength>, <cnfSendLength>
	+CIPERROR: <err> ERROR
	ERROR

Defined values

<link_num>
a numeric parameter that identifies a connection. The range of permitted values is 0 to 9.
<length>
a numeric parameter which indicates the length of sending data, it must be between1 and 1500.
<serverIP>
A string parameter that identifies the IP address of server.The IP address format consists of 4 octets,separated by decimal point:"AAA.BBB.CCC.DDD".

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<serverPort>

a numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535.

NOTE: When open port as TCP, the port must be the opened TCP port;
When open port as UDP, the port may be any port.
But, for Qualcomm, connecting the port 0 is as an invalid operation.

<reqSendLength>

a numeric parameter that requested number of data bytes to be transmitted.

<cnfSendLength>

a numeric parameter that confirmed number of data bytes to be transmitted.

-1 the connection is disconnected.

0 own send buffer or other side's congestion window are full.

Note: If the <cnfSendLength> is not equal to the <reqSendLength>, the socket then cannot be used further.

<err_info>

A string parameter that displays the cause of occurring error.

Examples

```
AT+CIPSEND=0,1
> S
OK

+CIPSEND: 0, 1, 1
AT+CIPSEND=1,1,"116.236.221.75",6775
> S
OK

+CIPSEND: 1, 1, 1
AT+CIPSEND=2,
>Hello<Ctrl+Z>
OK

+CIPSEND: 2,5,5
AT+CIPSEND=3,,"116.236.221.75",6775
>Hello World<Ctrl+Z>
OK

+CIPSEND: 2,11,11
AT+CIPSEND=2,
>Hello<ESC>
ERROR
```

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AT+CIPSEND=?
+CIPSEND: (0-9), (1-1500)
OK

17.2.15 AT+CIPRXGET Get the network data manually

Description

This command is used to get the network data manually.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPRXGET=?	+CIPRXGET: (0-4),(0-9),(1-1500) OK
	ERROR
Read Command	**Responses**
AT+CIPRXGET?	+CIPRXGET: <mode> OK
	ERROR
Execution Command	**Responses**
(AT+CIPRXGET=1): AT+CIPRXGET=<mode>,<cid>[,<len>]	*1. If <mode> = 0 or 1:* OK *2. If <mode> = 2 or 3:* +CIPRXGET: <mode>,<cid>,<read_len>,<rest_len> <data> OK *3. If<mode> = 4:* +CIPRXGET: 4,<cid>,<rest_len> OK
	If ERROR occurred
	ERROR
	+IP ERROR: <error message> ERROR

SIMCOM CONFIDENTIAL FILE

Defined values

<mode>
0 – set the way to get the network data automatically 1 – set the way to get the network data manually 2 – read data, the max read length is 1500 3 – read data in HEX form, the max read length is 750 4 – get the rest data length
<cid>
A numeric parameter that identifies a connection. The range of permitted values is 0 to 9.
<len>
The data length to be read. Not required, the default value is 1500 when <mode>=2, and 750 when <mode>=3.
<read_len>
The length of the data that have read.
<rest_len>
The data length which not read in the buffer.
< data >
The read data.
<error message>
The list of all error message: Invalid parameter Operation not supported No data
NOTE: 1. When <mode> is set to 1 and the 2-4 mode will take effect. 2. If AT+CIPRXGET=1, it will report +CIPRXGET: 1,<cid>(multi client) when received data and the buffer is empty.

Examples

AT+CIPRXGET=?
+CIPRXGET: (0-4),(1-1500) *OK*
AT+CIPRXGET?
+CIPRXGET: 1 *OK*
AT+CIPRXGET=1
OK
AT+CIPRXGET=2,100
+CIPRXGET: 2,100,1300 *012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789*

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```
01234567890123456789

OK
AT+CIPRXGET=3,100
+CIPRXGET: 3,100,1200
30313233343536373839303132333435363738393031323334353637383930313233343536373839
30313233343536373839303132333435363738393031323334353637383930313233343536373839
30313233343536373839303132333435363738393031323334353637383930313233343536373839

OK
AT+CIPRXGET=4
+CIPRXGET: 4,1200

OK
AT+CIPRXGET=2,0,100
+CIPRXGET: 2,0,100,1300
01234567890123456789012345678901234567890123456789012345678901234567890123456789
01234567890123456789

OK
AT+CIPRXGET=3,0,100
+CIPRXGET: 3,0,100,1200
30313233343536373839303132333435363738393031323334353637383930313233343536373839
30313233343536373839303132333435363738393031323334353637383930313233343536373839
30313233343536373839303132333435363738393031323334353637383930313233343536373839

OK
AT+CIPRXGET=4,0
+CIPRXGET: 4,0,1200

OK
```

17.2.16 AT+CIPCLOSE Close TCP or UDP socket

Description

This command is used to close TCP or UDP socket.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses

SIMCOM CONFIDENTIAL FILE

AT+CIPCLOSE=?	+CIPCLOSE: (list of supported <link_num>s) OK ERROR
Read Command	Responses
AT+CIPCLOSE?	+CIPCLOSE:<link0_state>,<link1_state>,<link2_state>, <link3_state>,<link4_state>,<link5_state>,<link6_state>, <link7_state>,<link8_state>,<link9_state> OK
	+CIPCLOSE: <link_num>,<err> ERROR
	ERROR
Write Command	Responses
AT+CIPCLOSE= <link_num>	OK +CIPCLOSE: <link_num>,<err>
	+CIPCLOSE: <link_num>,<err> OK
	+CIPCLOSE: <link_num>,<err> ERROR
	ERROR

Defined values

<link_num>
a numeric parameter that identifies a connection. The range of permitted values is 0 to 9.
<linkx_state>
a numeric parameter that identifies state of <link_num>. the range of permitted values is 0 to 1. 0 disconnected 1 connected
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+CIPCLOSE?
+CIPCLOSE: 1, 0, 0, 0, 0, 0, 0, 0, 0, 0
OK
AT+CIPCLOSE=?
+CIPCLOSE: (0-9)
OK
AT+CIPCLOSE=0
OK
+CIPCLOSE: 0,0

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17.2.17 AT+CIPSTAT Inquire the total size of data sent or received

Description

This command is used to inquire the total size of data sent or received for a socket in multiple socket modes (Only valid for client TCP socket mode).

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPSTAT=?	+CIPSTAT: (list of supported <link_num>s) OK
Write Command	**Responses**
AT+CIPSTAT=<link_num>	+CIPSTAT: <sent_size>, <recv_size> OK
	+IP ERROR: <err_info> ERROR

Defined values

< link_num>	
a numeric parameter that identifies a connection. The range of permitted values is 0 to 9.	
<sent_size>	
Total size of sent data.	
<recv_size>	
Total size of received data.	
<err_info>	
A string parameter that displays the cause of occurring error.	

Examples

```
AT+CIPSTAT=0
+CIPSTAT: 10, 20
OK
AT+CIPSTAT=?
+CIPSTAT: (0-9)
OK
```

17.2.18 Information elements related to TCP/IP

The following table lists information elements which may be reported.

SIMCOM CONFIDENTIAL FILE

Information	Description
+CIPEVENT: NETWORK CLOSED UNEXPECTEDLY	Network is closed for network error(Out of service, etc). When this event happens, user's application needs to check and close all opened sockets, and then uses AT+NETCLOSE to release the network library if AT+NETOPEN? shows the network library is still opened.
+IPCLOSE: <client_index>, <close_reason>	Socket is closed passively. <client_index> is the link number. <close_reason>: 0 - Closed by local, active 1 - Closed by remote, passive 2 - Closed for sending timeout
+CLIENT: <link_num >,<server_index>,<client_IP>:<port>	TCP server accepted a new socket client, the index is <link_num>, the TCP server index is <server_index>. The peer IP address is <client_IP>, the peer port is <port>.

17.2.19 Unsolicited TCP/IP command <err> Codes

0	operation succeeded
1	Network failure
2	Network not opened
3	Wrong parameter
4	Operation not supported
5	Failed to create socket
6	Failed to bind socket
7	TCP server is already listening
8	Busy
9	Sockets opened
10	Timeout
11	DNS parse failed for AT+CIPOPEN
255	Unknown error

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17.3 FTP

17.3.1 AT+CFTPPORT Set FTP server port

Description

This command is used to set FTP server port.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPORT=?	+CFTPPORT: (list of supported <port>s) OK
Read Command	Responses
AT+CFTPPORT?	+CFTPPORT: <port> OK
Write Command	Responses
AT+CFTPPORT=<port>	OK
	+CME ERROR

Defined values

<port>
The FTP server port, from 1 to 65535, and default value is 21.

Examples

```
AT+CFTPPORT=21
OK
AT+CFTPPORT?
+CFTPPORT:21
OK
AT+CFTPPORT=?
+CFTPPORT: (1-65535)
OK
```

17.3.2 AT+CFTPMODE Set FTP mode

Description

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This command is used to set FTP passive/proactive mode. Default is passive mode.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPMODE=?	+CFTPMODE: (list of supported <mode>s) OK
Read Command	Responses
AT+CFTPMODE?	+CFTPMODE: <mode> OK
Write Command	Responses
AT+CFTPMODE=<mode>	OK
	+CME ERROR

Defined values

<mode>
The FTP access mode: 0 – proactive mode. 1 – passive mode.

Examples

```
AT+CFTPMODE=1
OK
AT+CFTPMODE?
+CFTPMODE: 1
OK
AT+CFTPMODE=?
+CFTPMODE: (0,1)
OK
```

17.3.3 AT+CFTPTYPE Set FTP type

Description

This command is used to set FTP type. Default is binary type.

SIM PIN	References
YES	Vendor

SIMCOM CONFIDENTIAL FILE

Syntax

Test Command	Responses
AT+CFTPTYPE=?	+CFTPTYPE: (list of supported <type>s) OK
Read Command	Responses
AT+CFTPTYPE?	+CFTPTYPE: <type> OK
Write Command	Responses
AT+CFTPTYPE=<type>	OK
	+CME ERROR

Defined values

<type>
The FTP type: I – binary type. A – ASCII type.

Examples

AT+CFTPTYPE=A
OK
AT+CFTPTYPE?
+CFTPTYPE: A *OK*
AT+CFTPTYPE=?
+CFTPTYPE: (A,I) *OK*

17.3.4 AT+CFTPSERV Set FTP server domain name or IP address

Description

This command is used to set FTP server domain name or IP address.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSERV=?	+CFTPSERV: “ADDRESS” OK

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Read Command	Responses
AT+CFTPSERV?	+CFTPSERV: ”<address>”
	OK
Write Command	Responses
AT+CFTPSERV=	OK
”<address>”	+CME ERROR

Defined values

<address>
The FTP server domain name or IP address. The maximum length is 100.

Examples

AT+CFTPSERV=”www.mydomain.com”
OK
AT+CFTPSERV?
+CFTPSERV: “www.mydomain.com”
OK
AT+CFTPSERV=?
+CFTPSERV: ”ADDRESS”
OK
AT+CFTPSERV=”10.0.0.127”
OK

17.3.5 AT+CFTPUN Set user name for FTP access

Description

This command is used to set user name for FTP server access.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPUN=?	+CFTPUN: “NAME”
	OK
Read Command	Responses
AT+CFTPUN?	+CFTPUN: “<name>”
	OK
Write Command	Responses
AT+CFTPUN=“<name>”	OK

SIMCOM CONFIDENTIAL FILE

	+CME ERROR

Defined values

<name>
The user name for FTP server access. The maximum length is 30.

Examples

AT+CFTPUN=”myname”
OK
AT+CFTPUN=”anonymous”
OK
AT+CFTPUN?
+CFTPUN: “myname”
OK
AT+CFTPUN=?
+CFTPUN: ”NAME”
OK

17.3.6 AT+CFTPPW Set user password for FTP access

Description

This command is used to set user password for FTP server access.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPW=?	+CFTPPW: “PASSWORD” OK
Read Command	Responses
AT+CFTPPW?	+CFTPPW: “<password>” OK
Write Command	Responses
AT+CFTPPW=“<password>”	OK
	+CME ERROR

Defined values

<password>

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The user password for FTP server access. The maximum length is 40.

Examples

```
AT+CFTPPW=”mypass”
OK
AT+CFTPPW?
+CFTPPW: “mypass”
OK
AT+CFTPPW=?
+CFTPPW: ”mypass”
OK
```

17.3.7 AT+CFTPGETFILE Get a file from FTP server to EFS

Description

This command is used to download a file from FTP server to module EFS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPGETFILE=?	+CFTPGETFILE: [{non-ascii}]“FILEPATH”, (list of supported <dir>s) [, (list of supported <rest_size>s)] OK
Write Command	**Responses**
AT+CFTPGETFILE=“<filepath>”,<dir>[,<rest_size>]	OK +CFTPGETFILE: 0
	+CME ERROR
	OK +CFTPGETFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn’t contain ”/”, this command transfers file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>
The directory to save the downloaded file: 0 – current directory [refer to AT+FSCD]

SIMCOM CONFIDENTIAL FILE

<rest_size>
The value for FTP “REST” command which is used for broken transfer when transferring failed last time. The range is from 0 to 2147483647.
<err>
The error code of FTP operation.

Examples

```
AT+CFTPGETFILE=”/pub/mydir/test1.txt”,0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE=” test2.txt”,0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE={non-ascii}” B2E2CAD42E747874”,0
OK
...
+CFTPGETFILE: 0
```

17.3.8 AT+CFTPPUTFILE Upload a file from module EFS to FTP server

Description

This command is used to upload a file from the module EFS to FTP server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPUTFILE=?	+CFTPPUTFILE: [{non-ascii}] “FILEPATH”, (list of supported <dir>s)[, (list of supported <rest_size>s)] OK
Write Command	**Responses**
AT+CFTPPUTFILE=“<filepath>”,<dir>[,<rest_size>]	OK +CFTPPUTFILE: 0
	+CME ERROR
	OK +CFTPPUTFILE: <err>

Defined values

SIMCOM CONFIDENTIAL FILE

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>
The directory that contains the file to be uploaded: 0 – current directory [refer to AT+FSCD]
<rest_size>
The value for FTP "REST" command which is used for broken transfer when transferring failed last time. The range is from 0 to 2147483647.
<err>
The error code of FTP operation.

Examples

AT+CFTPPUTFILE="/pub/mydir/test1.txt",0, 10
OK *+CFTPPUTFILE: 0*
AT+CFTPPUTFILE=" test2.txt",0
OK *...* *+CFTPPUTFILE: 0*
AT+CFTPPUTFILE={non-ascii}" B2E2CAD42E747874",0
OK *...* *+CFTPPUTFILE: 0*

17.3.9 AT+CFTPGET Get a file from FTP server and output it to SIO

Description

This command is used to get a file from FTP server and output it to serial port. This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPGET=?	+CFTPGET: [{non-ascii}] "FILEPATH" [, (list of supported <rest_size>s)] OK

SIMCOM CONFIDENTIAL FILE

Write Command	Responses
AT+CFTPGET="<filepath>"[,<rest_size>,<cache>]	OK +CFTPGET: DATA,<len> … +CFTPGET: DATA, <len> … … +CFTPGET: 0
	If the file size is 0: OK +CFTPGET: 0
	OK [+CFTPGET: DATA, <len> … +CFTPGET: DATA, <len> … …] +CFTPGET: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfer file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<rest_size>
The value for FTP "REST" command which is used for broken transfer when transferring failed last time. The range is from 0 to 2147483647.
<cache>
Download the delta package from the FTP server into dir cache (maintainly for AT+CDELTA update the module software version)
<len>
The length of FTP data contained in this packet.
<err>
The error code of FTP operation.

Examples

AT+CFTPGET="/pub/mydir/test1.txt", 10
OK +CFTPGET: DATA, 1020, …

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+CFTPGET: DATA, 1058,
…
…
+CFTPGET: 0
AT+CFTPGET={non-ascii}"/2F74657374646972/B2E2CAD42E747874"
OK
+CFTPGET: DATA, 1020,
…
+CFTPGET: 0
AT+CFTPGET= " update_ota0427.zip",0, " /cache"
OK
AT+CFTPGET=?
+CFTPGET: [{non-ascii}]"FILEPATH" [,(0-2147483647)]
OK

17.3.10 AT+CFTPPUT Upload the DATA from SIO to FTP server

Description

This command is used to upload the DATA from serial port to FTP server as a file . Each <Ctrl+Z> character present in the data flow of serial port when downloading FTP data will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the FTP data.
<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPUT=?	+CFTPPUT: [{non-ascii}] "FILEPATH" [, (list of supported <rest_size>s)] OK
Execution Command	**Responses**
AT+CFTPPUT="<filepath>" [,<rest_size>]	+CFTPPUT: BEGIN OK
	+CME ERROR
	[+CFTPPUT: BEGIN] +CFTPPUT: <err_code> ERROR

Defined values

SIMCOM CONFIDENTIAL FILE

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<rest_size>
The value for FTP "REST" command which is used for broken transfer when transferring failed last time. The range is from 0 to 2147483647.
<err_code>
Refer to "Unsolicited FTP Codes".

Examples

AT+CFTPPUT="/pub/mydir/test1.txt", 20
+CFTPPUT: BEGIN
.....<Ctrl+Z>
OK
AT+CFTPPUT={non-ascii}"/2F74657374646972/B2E2CAD42E747874"
+CFTPPUT: BEGIN
.....<Ctrl+Z>
OK
AT+CFTPPUT=?
+CFTPPUT: [{non-ascii}]"FILEPATH" [,(0-2147483647)]
OK

17.3.11 AT+CFTPLIST List the items in the directory on FTP server

Description

This command is used to list the items in the specified directory on FTP server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPLIST=?	+CFTPLIST: [{non-ascii}] "FILEPATH" OK
Write Command	**Responses**
AT+CFTPLIST="<dir>"	OK [+CFTPLIST: DATA,<len> …] +CFTPLIST:<err>

SIMCOM CONFIDENTIAL FILE

	+CME ERROR

Defined values

<dir>
The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<len>
The length of data reported
<err>
The result code of the listing

Examples

```
AT+CFTPLIST=”/testd”
OK
+CFTPLIST: DATA,193
drw-rw-rw-    1 user      group            0 Sep    1 18:01 .
drw-rw-rw-    1 user      group            0 Sep    1 18:01 ..
-rw-rw-rw-    1 user      group         2017 Sep    1 17:24 19800106_000128.jpg

+CFTPLIST: 0
```

17.3.12 AT+CFTPMKD Create a new directory on FTP server

Description

This command is used to create a new directory on the FTP server. The maximum length of the full path name is 256.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPMKD=?	+CFTPMKD: [{non-ascii}]”DIR” OK
Write Command	**Responses**
AT+CFTPMKD=”<dir>”	OK
	+CFTPMKD:<err> ERROR

SIMCOM CONFIDENTIAL FILE

Defined values

<dir>
The directory to be created. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<err>
The result code of the command

Examples

AT+CFTPMKD="/testdir"
OK
AT+CFTPMKD={non-ascii}"74657374646972"
OK

17.3.13 AT+CFTPRMD Delete a directory on FTP server

Description

This command is used to delete a directory on FTP server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPRMD=?	+CFTPRMD: [{non-ascii}]"DIR" OK
Write Command	Responses
AT+CFTPRMD="<dir>"	OK
	+CFTPRMD:<err> ERROR

Defined values

<dir>
The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<err>
The result code of the command

Examples

SIMCOM CONFIDENTIAL FILE

AT+CFTPRMD=”/testdir”
OK
AT+CFTPRMD={non-ascii}”74657374646972”
OK

17.3.14 AT+CFTPDELE Delete a file on FTP server

Description

This command is used to delete a file on FTP server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPDELE=?	+CFTPDELE: [{non-ascii}]”FILENAME” OK
Write Command	**Responses**
AT+CFTPDELE=”<filename>”	OK
	+CFTPDELE:<err> ERROR

Defined values

<filename>
The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.
<err>
The result code of the command

Examples

AT+CFTPDELE=”test”
OK
AT+CFTPDELE={non-ascii}”74657374”
OK

17.3.15 Unsolicited FTP Codes (Summary of CME ERROR Codes)

Code of <err>	Description

SIMCOM CONFIDENTIAL FILE

201	Unknown error for FTP
202	FTP task is busy
203	Failed to resolve server address
204	FTP timeout
205	Failed to read file
206	Failed to write file
207	Not allowed in current state
208	Failed to login
209	Failed to logout
210	Failed to transfer data
211	FTP command rejected by server
212	Memory error
213	Invalid parameter
214	Network error
215	Failed to connect socket
216	Failed to send data using socket
217	Failed to receive data using socket
218	Failed to verify user name and password
219	Socket connect timeout

17.4 FTPS

These AT Command of FTPS related need the AT+CATR command to be set with the used port. AT+CATR=0 may cause some problem.

17.4.1 AT+CFTPSSTART Acquire FTPS protocol stack

Description

This command is used to acquire FTPS protocol stack.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CFTPSSTART	OK +CFTPSSTART: <err>
	+CFTPSSTART: <err> OK
	ERROR

SIMCOM CONFIDENTIAL FILE

Defined values

<err>
The result code of the acquiring FTP/FTPS stack. 0 is success. Other values are failure.

Examples

```
AT+CFTPSSTART
OK
+CFTPSSTART: 0
```

17.4.2 AT+CFTPSSTOP Stop FTPS protocol stack

Description

This command is used to stop FTPS protocol stack. Currently only explicit FTPS mode is supported.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CFTPSSTOP	OK +CFTPSSTOP: <err>
	+CFTPSSTOP: <err> OK
	ERROR

Defined values

<err>
The result code of the stopping FTP/FTPS stack. 0 is success. Other values are failure.

Examples

```
AT+CFTPSSTOP
OK
+CFTPSSTOP: 0
```

17.4.3 AT+CFTPSLOGIN Login the FTPS server

Description

SIMCOM CONFIDENTIAL FILE

This command is used to login the FTPS server. Each time, AT+CFTPSSTART command must be executed before executing AT+CFTPSLOGIN command.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CFTPSLOGIN="<host>",<port>,"<username>", "<password>"[<server_type>]	OK +CFTPSLOGIN: <err>
	+CFTPSLOGIN: <err> OK
	ERROR

Defined values

<host>
The host address, maximum length is 256
<port>
The host listening port for SSL, the range is from 1 to 65535
<username>
The user name, maximum length is 256
<password>
The user password, maximum length is 256
<server_type>
The type of server: 0 – FTP server. 1 – Explicit FTPS server with AUTH SSL. 2 – Explicit FTPS server with AUTH TLS. 3 – Implicit FTPS server.
<err>
The result code of the FTP/FTPS login. 0 is success. Other values are failure.

Examples

```
AT+CFTPSLOGIN="www.myftpsserver.com",990, "myname", "mypassword",3
OK
+CFTPSLOGIN: 0
```

17.4.4 AT+CFTPSLOGOUT Logout the FTPS server

Description

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This command is used to logout the FTPS server.

Syntax

Execute Command	Responses
AT+CFTPSLOGOUT	OK +CFTPSLOGOUT: <err>
	+CFTPSLOGOUT: <err> OK
	ERROR

Defined values

<err>
The result code of FTP/FTPS logout. 0 is success. Other values are failure.

Examples

AT+CFTPSLOGOUT
OK *+CFTPSLOGOUT: 0*

17.4.5 AT+CFTPSMKD Create a new directory on FTPS server

Description

This command is used to create a new directory on the FTPS server. The maximum length of the full path name is 256.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSMKD=?	+CFTPSMKD: ”DIR” OK
Write Command	**Responses**
AT+CFTPSMKD=”<dir>”	OK
	+CFTPSMKD: <err> ERROR
	ERROR

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Defined values

<dir>
The directory to be created

Examples

```
AT+CFTPSMKD=”testdir”
OK
AT+CFTPSMKD={non-ascii}”74657374646972”
OK
```

17.4.6 AT+CFTPSRMD Delete a directory on FTPS server

Description

This command is used to delete a directory on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSRMD=?	+CFTPSRMD: ”DIR” OK
Write Command	Responses
AT+CFTPSRMD=”<dir>”	OK +CFTPSRMD: <err> ERROR ERROR

Defined values

<dir>
The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

Examples

```
AT+CFTPSRMD=”testdir”
OK
AT+CFTPSRMD={non-ascii}”74657374646972”
OK
```

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17.4.7 AT+CFTPSDELE Delete a file on FTPS server

Description

This command is used to delete a file on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSDELE=?	+CFTPSDELE: ”FILENAME” OK
Write Command	Responses
AT+CFTPSDELE=”<filename>”	OK
	+CFTPSDELE: <err> ERROR
	ERROR

Defined values

<filename>
The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.

Examples

```
AT+CFTPSDELE=”test”
OK
AT+CFTPDELE={non-ascii}”74657374”
OK
```

17.4.8 AT+CFTPSCWD Change the current directory on FTPS server

Description

This command is used to change the current directory on FTPS server

SIM PIN	References
YES	Vendor

Syntax

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Test Command	Responses
AT+CFTPSCWD=?	+CFTPSCWD: ”DIR” OK
Write Command	Responses
AT+CFTPSCWD=”<dir>”	OK
	+CFTPSCWD: <err> ERROR
	ERROR

Defined values

<dir>
The directory to be changed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

Examples

AT+CFTPSCWD=”testdir”
OK
AT+CFTPSCWD={non-ascii}”74657374646972”
OK

17.4.9 AT+CFTPSPWD Get the current directory on FTPS server

Description

This command is used to get the current directory on FTPS server.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CFTPSPWD	+CFTPSPWD: ”<dir>” OK +CFTPSPWD: <err> ERROR ERROR

Defined values

<dir>
The current directory on FTPS server.

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Examples

```
AT+CFTPSPWD
+CFTPSPWD: "/testdir"
OK
```

17.4.10 AT+CFTPSTYPE Set the transfer type on FTPS server

Description

This command is used to set the transfer type on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSTYPE=?	+CFTPSTYPE: (A,I) OK
Read Command	Responses
AT+CFTPSTYPE?	+CFTPSTYPE: <type> OK
Write Command	Responses
AT+CFTPSTYPE=<type>	OK +CFTPSTYPE: <err> ERROR ERROR

Defined values

<type>
The type of transferring: A – ASCII. I – Binary.

Examples

```
AT+CFTPSTYPE=A
OK
```

17.4.11 AT+CFTPSLIST List the items in the directory on FTPS server

Description

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This command is used to list the items in the specified directory on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CFTPSLIST=”<dir>”[,<using_cache>]	*If the <using_cache> is 0 (default):* OK +CFTPSLIST: DATA,<len> … +CFTPSLIST:<err> *If the <using_cache> is 1:* OK +CFTPS: RECV EVENT AT+CFTPSCACHERD? +CFTPSCACHERD: 102400 OK //output cached data now AT+CFTPSCACHERD +CFTPSLIST: DATA,<len> … OK ..... +CFTPSLIST:<err> ERROR
Execute Command	Responses
AT+CFTPSLIST	OK +CFTPSLIST: DATA,<len> … +CFTPSLIST:<err> OK +CFTPSLIST:<err> +CFTPSLIST:<err> ERROR

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	ERROR

Defined values

<dir>
The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<len>
The length of data reported
<err>
The result code of the listing
<using_cache>
0 – Do not use cache 1 – Use cache(Data will be output using AT+CFTPSCACHERD command)

Examples

AT+CFTPSLIST=”/testd”
OK
+CFTPSLIST: DATA,193
drw-rw-rw- 1 user group 0 Sep 1 18:01 .
drw-rw-rw- 1 user group 0 Sep 1 18:01 ..
-rw-rw-rw- 1 user group 2017 Sep 1 17:24 19800106_000128.jpg
+CFTPSLIST: 0
AT+CFTPSLIST
OK
+CFTPSLIST: DATA,193
drw-rw-rw- 1 user group 0 Sep 1 18:01 .
drw-rw-rw- 1 user group 0 Sep 1 18:01 ..
-rw-rw-rw- 1 user group 2017 Sep 1 17:24 19800106_000128.jpg
+CFTPSLIST: 0

17.4.12 AT+CFTPSGETFILE Get a file from FTPS server to EFS

Description

This command is used to download a file from FTPS server to module EFS.

SIM PIN	References
YES	Vendor

Syntax

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Test Command	Responses
AT+CFTPSGETFILE=?	+CFTPSGETFILE: [{non-ascii}]"FILEPATH",(0)[,(0-2147483647)] OK
Write Command	Responses
AT+CFTPGETFILE= "<filepath>",<dir>[,<rest_size>]	OK +CFTPSGETFILE: 0
	+CFTPSGETFILE: <err> ERROR
	ERROR
	OK +CFTPSGETFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>
The directory to save the downloaded file, refer to AT+FSCD.
<rest_size>
The rest size of the file.
<err>
The error code of FTPS operation.

Examples

AT+CFTPSGETFILE="/pub/mydir/test1.txt",1
OK
...
+CFTPSGETFILE: 0
AT+CFTPSGETFILE=" test2.txt",2
OK
...
+CFTPSGETFILE: 0
AT+CFTPSGETFILE={non-ascii}" B2E2CAD42E747874",2
OK
...
+CFTPSGETFILE: 0
AT+CFTSPGETFILE=?
OK

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17.4.13 AT+CFTPSPUTFILE Upload a file in module EFS to FTPS server

Description

This command is used to upload a file in the module EFS to FTPS server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSPUTFILE=?	+CFTPSPUTFILE: [{non-ascii}]"FILEPATH",(0)[,(0-2147483647)] OK
Write Command	**Responses**
AT+CFTPSPUTFILE= "<filepath>",<dir>[,<rest_size>]	OK +CFTPSPUTFILE: 0
	+CFTPSPUTFILE: <err> ERROR
	ERROR
	OK +CFTPSPUTFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>
The directory that contains the file to be uploaded, refer to AT+FSCD.
<rest_size>
The rest size of the file.
<err>
The error code of FTPS operation.

Examples

AT+CFTPSPUTFILE="/pub/mydir/test1.txt",1
OK
AT+CFTPSPUTFILE=" test2.txt",1
OK ... *+CFTPSPUTFILE: 0*

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AT+CFTPSPUTFILE={non-ascii}" B2E2CAD42E747874",1
OK
...
+CFTPSPUTFILE: 0
AT+CFTPSPUTFILE=?
OK

17.4.14 AT+CFTPSGET Get a file from FTPS server to serial port

Description

This command is used to get a file from FTPS server and output it to serial port. This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSGET=?	OK
Write Command	**Responses**
AT+CFTPSGET="<filepath>"[,<rest_size>[,<using_cache>][,<cache>]]	*If the <using_cache> is 0 (default):* OK +CFTPSGET: DATA,<len> … +CFTPSGET: DATA, <len> … … +CFTPSGET: 0 *If the <using_cache> is 1:* OK +CFTPS: RECV EVENT AT+CFTPSCACHERD? +CFTPSCACHERD: 102400 OK //output cached data now: AT+CFTPSCACHERD +CFTPSGET: DATA,<len> …

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	OK ..... +CFTPSGET: 0
	+CFTPSGET: <err> ERROR
	ERROR
	+CFTPSGET: DATA, <len> … +CFTPSGET: DATA, <len> … … +CFTPSGET: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfer file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<rest_size>
The rest size of the file.
<using_cache>
0 – Do not use cache 1 – Use cache(Data will be output using AT+CFTPSCACHERD command)
<cache>
Download delta package from the FTP/FTPS server into dir /cache (mainly for AT+CDELTA update the module software version)
<len>
The length of FTPS data contained in this packet.
<err>
The error code of FTPS operation.

Examples

AT+CFTPSGET="/pub/mydir/test1.txt" *OK* *+CFTPSGET: DATA, 1020,* *…* *+CFTPSGET: DATA, 1058,* *…* *…*

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```
+CFTPSGET: 0
AT+CFTPSGET={non-ascii}”/2F74657374646972/B2E2CAD42E747874”
OK
+CFTPSGET: DATA, 1020,
…
+CFTPSGET: 0
AT+CFTPSGET= "/update_ota.zip",0,0,"/cache"
OK
AT+CFTPSGET=?
OK
```

17.4.15 AT+CFTPSPUT Put a file to FTPS server

Description

This command is used to put a file to FTPS server through serial port. The AT+CFTPSPUT=[“<filepath>”,]<len>[,<rest_size>] is used to download the data to be sent. The AT+CFTPSPUT is used to wait the result of sending. Only parameter “<filepath>” is provided, <rest_size> is optional, in other case <rest_size> is not used.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSPUT=?	OK
Read Command	Responses
AT+CFTPSPUT?	+CFTPSPUT: <unsent_len> OK
Write Command	Responses
AT+CFTPSPUT=[“<filepath>”,]<len>[,<rest_size>]	> OK +CFTPSPUT: <result> ERROR ERROR
Execute Command	Responses
AT+CFTPSPUT	OK +CFTPSPUT: <result> ERROR

Defined values

<filepath>

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The path of the file on FTPS server.
<unsent_len>
The length of the data in the sending buffer which is waiting to be sent.
<len>
The length of the data to send, the maximum length is 1024.
<rest_size>
The rest size of the file.
<result>
The final result of the sending.

Examples

AT+CFTPSPUT=”t1.txt”,10
>testcontent
OK
AT+CFTPSPUT
OK
+CFTPSSPUT: 0
AT+CFTPSPUT?
+CFTPSPUT: 88
OK

17.4.16 AT+CFTPSSINGLEIP Set FTPS data socket address type

Description

This command is used to set FTPS server data socket IP address type

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSSINGLEIP=?	+CFTPSSINGLEIP: (0,1) OK
Read Command	Responses
AT+CFTPSSINGLEIP?	+ CFTPSSINGLEIP: <singleip> OK
Write Command	Responses
AT+CFTPSSINGLEIP=<singleip>	OK
	ERROR

Defined values

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<singleip>
The FTPS data socket IP address type: 0 – decided by PORT response from FTPS server 1 – the same as the control socket.

Examples

AT+CFTPSSINGLEIP=1
OK
AT+CFTPSSINGLEIP?
+CFTPSSINGLEIP:1
OK
AT+CFTPSSINGLEIP=?
+CFTPSSINGLEIP: (0,1)
OK

17.4.17 AT+CFTPSCACHERD Output cached data to MCU

Description

This command is used to output cached data(generated by AT+CFTPSGET/AT+CFTPSLIST) to MCU.

SIM PIN	References
YES	Vendor

Syntax

Read Command	Responses
AT+CFTPSCACHERD?	+CFTPSCACHERD: <len> OK
Execute Command	Responses
AT+CFTPSCACHERD	*If cache data is AT+CFTPSGET:* +CFTPSGET: DATA,<out_len><CR><LF> … OK *If the cache data is AT+CFTPSLIST:* +CFTPSLIST: DATA,<out_len><CR><LF> … OK
	ERROR

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Defined values

<len>
The bytes of data cached in FTPS module.
<out_len>
The bytes of data to output. The maximum value is 1024 for each AT+CFTPSCACHERD calling.

Examples

AT+CFTPSCACHERD?
+CFTPSCACHERD: 102400
OK
AT+CFTPSCACHERD
+CFTPSGET: DATA, 1024
…
OK

17.4.18 Unsolicited FTPS Codes

Code	Description
+CFTPSNOTIFY: PEER CLOSED	The FTPS session is closed by the server.

17.4.19 Unsolicited FTPS command <err> Codes

0	FTPS operation succeeded
1	SSL verify alert
2	Unknown FTPS error
3	FTPS busy
4	FTPS server closed connection
5	Timeout
6	FTPS transfer failed
7	FTPS memory error
8	Invalid parameter
9	Operation rejected by FTPS server
10	Network error

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17.5 HTTP

17.5.1 AT+CHTTPACT Launch a HTTP operation

Description

This command is used to launch a HTTP operation like GET or POST. Each <Ctrl+Z> character presented in the data flow of serial port will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the HTTP request data or end of the HTTP responded data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

For this command there may be a lot of DATA which need to be transferred to DTE using serial port, it is recommended that the AT+CATR will be used.

NOTE: For HTTP/HTTPS operation, The "Secure Hyper Text Transfer Protocol Service" chapter AT set is recommended to be used. The AT+CHTTPACT is only used to support old HTTP application.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTTPACT=?	+CHTTPACT: "ADDRESS", (1-65535) OK
Write Command	**Responses**
AT+CHTTPACT= "<address>",<port>	+CHTTPACT: REQUEST +CHTTPACT: DATA, <len> … +CHTTPACT: DATA, <len> … … +CHTTPACT: 0
	+CME ERROR
	+CHTTPACT: <err> ERROR
	+CHTTPACT: REQUEST +CHTTPACT: <err> ERROR
	+CHTTPACT: REQUEST

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	+CHTTPACT: DATA, <len> … +CHTTPACT: DATA, <len> … … +CHTTPACT: <err> ERROR

Defined values

<address>
The HTTP server domain name or IP address.
<port>
The HTTP server port.
<len>
The length of HTTP data in the packet.
<err>
The error code of HTTP operation.

Examples

AT+CHTTPACT=”www.mywebsite.com”,80
+CHTTPACT: REQUEST
GET http://www.mywebsite.com/index.html HTTP/1.1
Host: www.mywebsite.com
User-Agent: MY WEB AGENT
Content-Length: 0
<Ctrl+Z>
OK
+CHTTPACT: DATA, 249
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 57
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>test</header>
<body>
Test body
</body>

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```
+CHTTPACT: 0
AT+CHTTPACT=”www.mywebsite.com”,80
+CHTTPACT: REQUEST
POST http://www.mywebsite.com/mydir/test.jsp HTTP/1.1
Host: www.mywebsite.com
User-Agent: MY WEB AGENT
Accept: */*
Content-Type: application/x-www-form-urlencoded
Cache-Control: no-cache
Accept-Charset: utf-8, us-ascii
Pragma: no-cache
Content-Length: 29

myparam1=test1&myparam2=test2<Ctrl+Z>
OK
+CHTTPACT: DATA, 234
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 54
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>result</header>
<body>
Result is OK
</body>
+CHTTPACT: 0
AT+CHTTPACT=?
+CHTTPACT: “ADDRESS”,(1-65535)
OK
```

17.5.2 Unsolicited HTTP codes (summary of CME ERROR codes)

Code of <err>	Description
220	Unknown error for HTTP
221	HTTP task is busy
222	Failed to resolve server address

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223	HTTP timeout
224	Failed to transfer data
225	Memory error
226	Invalid parameter
227	Network error

17.6 HTTPS

17.6.1 AT+CHTTPSSTART Acquire HTTPS protocol stack

Description

This command is used to acquire HTTPS protocol stack.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CHTTPSSTART	OK
	ERROR

Examples

```
AT+CHTTPSSTART
OK
```

17.6.2 AT+CHTTPSSTOP Stop HTTPS protocol stack

Description

This command is used to stop HTTPS protocol stack.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CHTTPSSTOP	OK
	ERROR

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Examples

```
AT+CHTTPSSTOP
OK
```

17.6.3 AT+CHTTPSOPSE Open HTTPS session

Description

This command is used to open a new HTTPS session. Every time, AT+CHTTPSSTART command must be executed before executing AT+CHTTPSOPSE command.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CHTTPSOPSE=”<host>”,<port>[,<server_type>]	OK
	ERROR

Defined values

<host>
The host address
<port>
The host listening port for SSL
<server_type>
The type of server: 1 – HTTP server. 2 – HTTPS server with SSL3.0/TLS1.0/TLS1.1/TLS1.2 supported.

Examples

```
AT+CHTTPSOPSE=”www.mywebsite.com”,443
OK
```

17.6.4 AT+CHTTPSCLSE Close HTTPS session

Description

This command is used to close the opened HTTPS session.

SIM PIN	References
YES	Vendor

SIMCOM CONFIDENTIAL FILE

Syntax

Execute Command	Responses
AT+CHTTPSCLSE	OK
	ERROR

Examples

```
AT+CHTTPSCLSE
OK
```

17.6.5 AT+CHTTPSSEND Send HTTPS request

Description

This command is used to send HTTPS request. The AT+CHTTPSSEND=<len> is used to download the data to be sent. The AT+CHTTPSSEND is used to wait the result of sending.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTTPSSEND=?	+CHTTPSSEND: (1-4096) OK
	ERROR
Read Command	Responses
AT+CHTTPSSEND?	+CHTTPSSEND: <unsent_len> OK
	ERROR
Write Command	Responses
AT+CHTTPSSEND=<len>[,<"filename">]	> OK
	ERROR
Execute Command	Responses
AT+CHTTPSSEND	OK +CHTTPSSEND: <result>
	ERROR

Defined values

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<unsent_len>
The length of the data in the sending buffer which is waiting to be sent.
<len>
The length of the data to send
<filename>
The name of the file which will be sent to HTTPS server (when you use this command,you need to switch to the dir where the file being sent is)
<result>
The final result of the sending. 0 – ok 1 – unknown error 2 – busy 3 – server closed 4 – timeout 5 – transfer failed 6 – memory error 7 – invalid parameter 8 – network error

Examples

AT+CHTTPSSEND=88
>GET / HTTP/1.1 *Host: www.mywebsite.com* *User-Agent: MY WEB AGENT* *Content-Length: 0* *OK*
AT+CHTTPSSEND
OK *+CHTTPSSEND: 0*
AT+CHTTPSSEND=88,"https.txt"(note:we need to use the command AT+FSCD=D:/ switch to d directory, if https.txt is in the root dir of sdcard)
OK
AT+CHTTPSSEND?
+CHTTPSSEND: 88 *OK*

17.6.6 AT+CHTTPSRECV Receive HTTPS response

Description

This command is used to receive HTTPS response after sending HTTPS request.

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SIM PIN	References
YES	Vendor

Syntax

Read Command	Responses
AT+CHTTPSRECV?	+CHTTPSRECV: LEN, <cache_len> OK
	ERROR
Write Command	**Responses**
AT+CHTTPSRECV=<max_recv_len>[,<"filename">]	OK +CHTTPSRECV: DATA,<len> … +CHTTPSRECV: DATA,<len> … +CHTTPSRECV:<result>
	+CHTTPSRECV:<result> ERROR
	ERROR

Defined values

<len>
The length of the data received.
<max_recv_len>
Maximum bytes of data to receive in the current AT+CHTTPSRECV calling. Minimum is 1.
<filename>
The name of the file where the HTTPS data received will be write in (when you use this command,you need to switch to the dir where the file will be written to)
<cache_len>
The cache length
<result>
The final result of the receiving. 0 – ok 1 – unknown error 2 – busy 3 – server closed 4 – timeout 5 – transfer failed 6 – memory error 7 – invalid parameter 8 – network error

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Examples

```
AT+CHTTPSRECV=249
OK
+CHTTPSRECV: DATA,249
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 57
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>test</header>
<body>
Test body
</body>

+CHTTPSRECV: 0
AT+CHTTPSRECV=249,"recv.txt (note:if we need to save the data to sdcard,we need to use the command AT+FSCD=D:/ to switch to dir d )"
OK

+CHTTPSRECV:0
```

17.6.7 AT+CHTTPSSTATE Get the state of HTTPS stack

Description

This command is used to get the state of HTTPS stack.

SIM PIN	References
NO	Vendor

Syntax

Execute Command	Responses
AT+CHTTPSSTATE	+CHTTPSSTATE: <state> OK
	ERROR

Defined values

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<state>
0 – None 1 – Accquired HTTPS 2 – Opening network 3 – Closing network 4 – Opened network 5 – Closing session 6 – Opening session 7 – Opened session.

Examples

AT+CHTTPSSTATE
+CHTTPSSTATE: 0 *OK*

17.6.8 Unsolicited HTTPS Codes

Code	Description
+CHTTPS: RECV EVENT	When the AT+CHTTPSRECV is not called, and there is data cached in the receiving buffer, this event will be reported.
+CHTTPSNOTIFY: PEER CLOSED	The HTTPS session is closed by the server.

17.6.9 Unsolicited HTTPS command <err> Codes

0	Operation succeeded
1	Unknown error
2	Busy
3	Server closed
4	Operation timeout
5	Transfer failed
6	Memory error
7	Invalid parameter
8	Network error

17.7 HTP

These AT Commands of HTP related are used to synchronize system time with HTTP server.

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17.7.1 AT+CHTPSERV Set HTP server info

Description

This command is used to add or delete HTP server information. There are maximum 16 HTP servers.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTPSERV=?	+CHTPSERV:"ADD","HOST",(1-65535),(0-1)[,"PROXY",(1-65535)] +CHTPSERV: "DEL",(0-15) OK
Read Command	**Responses**
AT+CHTPSERV?	+CHTPSERV:<index>"<host>",<port>,<http_version>[,"<proxy>",<proxy_port>] … +CHTPSERV:<index>"<host>",<port>[,"<proxy>",< proxy_port>] OK
	OK *(if HTP server not setted)*
Write Command	**Responses**
AT+CHTPSERV="<cmd>","<host_or_idx>"[,<port>,<http_version>[,"<proxy>",<proxy_port>]]	OK
	ERROR

Defined values

<cmd>
This command to operate the HTP server list. "ADD": add a HTP server item to the list "DEL": delete a HTP server item from the list
<host_or_idx>
If the <cmd> is "ADD", this field is the same as <host>, needs quotation marks; If the <cmd> is "DEL", this field is the index of the HTP server item to be deleted from the list, does not need quotation marks.
<host>
The HTP server address.
<port>

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The HTP server port.
<http_version>
The HTTP version of the HTP server: 0- HTTP 1.0 1- HTTP 1.1
<proxy>
The proxy address
<proxy_port>
The port of the proxy
<index>
The HTP server index.

Examples

AT+CHTPSERV="ADD","www.google.com",80,1
OK

17.7.2 AT+CHTPUPDATE Updating date time using HTP protocol

Description

This command is used to updating date time using HTP protocol.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTPUPDATE=?	OK
Read Command	Response
AT+CHTPUPDATE?	+CHTPUPDATE:<status> OK
Execute Command	Responses
AT+CHTPUPDATE	OK +CHTPUPDATE: <err>
	ERROR

Defined values

<status>
The status of HTP module: Updating: HTP module is synchronizing date time

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NULL: HTP module is idle now
<err>
The result of the HTP updating

Examples

```
AT+CHTPUPDATE
OK
+CHTPUPDATE: 0
```

17.7.3 Unsolicited HTP Codes

Code of <err>	Description
0	Operation succeeded
1	Unknown error
2	Wrong parameter
3	Wrong date and time calculated
4	Network error

17.8 POP3

17.8.1 AT+POP3SRV POP3 server and account

Description

This synchronous command is used to set all parameters to get and e-mail from POP3 server, including server address, port number, user name and password. If POP3 client isn't free, the command will return "ERROR" directly.

Read command returns current all information about POP3 server and account.

Execution command will clear POP3 server address, user name and password, and set server's port number as default value.

NOTE: After an e-mail is sent successfully or unsuccessfully, POP3 server and account information won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3SRV=?	+POP3SRV: (list of supported <port>s) OK

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	ERROR
Read Command	Responses
AT+POP3SRV?	+POP3SRV: <server>, <user>, <pwd>, <port> OK
	ERROR
Write Command	Responses
AT+POP3SRV=<server>, <user>, <pwd>[, <port>]	OK
	ERROR
Execution Command	Responses
AT+POP3SRV	OK
	ERROR

Defined values

<server>
POP3 server address, non empty string with double quotes, mandatory and ASCII text string up to 128 characters.
<user>
User name to log in POP3 server, non empty string with double quotes, and up to 128 characters.
<pwd>
Password to log in POP3 server, string with double quotes, and up to 128 characters.
<port>
Port number of POP3 server in decimal format, from 1 to 65535, and default port is 110 for POP3.

Examples

```
AT+POP3SRV=?
+POP3SRV: (1-65535)
OK
AT+POP3SRV?
+POP3SRV: "", "", "", 110
OK
AT+POP3SRV="pop3.server.com", "user_name", "password", 110
OK
AT+POP3SRV?
+POP3SRV: "pop3.server.com", "user_name", "password", 110
OK
AT+POP3SRV
OK
AT+POP3SRV?
+POP3SRV: "", "", "", 110
OK
```

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17.8.2 AT+POP3IN Login POP3 server

Description

This asynchronous command is used to log in POP3 server and establish a session after POP3 server and account information are set rightly. If the POP3 client logs in POP3 server successfully, the response "+POP3: SUCCESS" will be returned to TE; if no POP3 operation for a long time after the session is ready, POP3 server may release the session.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3IN=?	OK
	ERROR
Read Command	Responses
AT+POP3IN?	+POP3IN: "<server>" OK
	+POP3IN: NULL OK
	ERROR
Execute Command	
AT+POP3IN	+POP3: SUCCESS OK
	OK +POP3: SUCCESS
	+POP3: <code> ERROR
	ERROR

Defined values

<code>	
NETWORK ERROR	Invalid POP3 server or network is bad for establishing session or sending data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time.
INVALID UN	Invalid user name to log in POP3 server.

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INVALID UN/PWD	Invalid user name and password combination to log in POP3 server.
<server>	
The address of the POP3 server currently logged in.	

Examples

```
AT+POP3IN=?
OK
AT+POP3IN
+POP3: SUCCESS
OK
```

17.8.3 AT+POP3NUM Geat e-mail number and total size

Description

This asynchronous command is used to get e-mail number and total size on the specified POP3 server after the POP3 client logs in POP3 server successfully and no other POP3 operation is ongoing.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3NUM=?	OK
	ERROR
Execution Command	**Responses**
AT+POP3NUM	+POP3: <num>, <tsize> OK
	+POP3: <code> ERROR
	ERROR

Defined values

<num>	
The e-mail number on the POP3 server, decimal format.	
<tsize>	
The total size of all e-mail and the unit is in Byte.	
<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.

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SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time.

Examples

```
AT+POP3NUM=?
OK
AT+POP3NUM
+POP3: 1, 3057
OK
```

17.8.4 AT+POP3LIST List e-mail ID and size

Description

This asynchronous command is used to list e-mail number and total size, e-mail ID and each e-mail's size after the POP3 client logs in POP3 server successfully and no other POP3 operation is ongoing. The e-mail ID may be used to do those operations: get e-mail header, get the whole e-mail, and mark an e-mail to delete from POP3 server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3LIST=?	OK
	ERROR
Write Command	**Responses**
AT+POP3LIST=<msg_id>	+POP3: <msg_id>, <size> OK
	ERROR
	+POP3: <code> ERROR
Execution Command	**Responses**
AT+POP3LIST	+POP3: [<msg_id> <size> [<CR><LF>…]] OK
	+POP3: EMPTY OK

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	+POP3: <code> ERROR
	ERROR

Defined values

<msg_id>	
The e-mail's ID.	
<size>	
The size of e-mail <msg_id>, and the unit is in Byte.	
<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

Examples

AT+POP3LIST=?
OK
AT+POP3LIST
+POP3: *1 3056* *OK*
AT+POP3LIST=1
+POP3: 1, 3056 *OK*

17.8.5 AT+POP3HDR Get e-mail header

Description

This asynchronous command is used to retrieve e-mail's sender address, date and sender address, which are present in the mail's header.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3HDR=?	OK

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	ERROR
Write Command	Responses
AT+POP3HDR=<msg_id>	Ok +POP3: <code> From: [<from>] Date: [<date>] Subject: [<sub>]
	OK +POP3: <code>
	+POP3: <code> ERROR
	ERROR

Defined values

<msg_id>	
The e-mail's ID.	
<from>	
E-mail's sender name and sender address from mail	
<date>	
E-mail's date from mail header.	
<sub>	
E-mail's subject from mail header.	
<code>	
SUCCESS	POP3 client gets an e-mail header from POP3 server successfully.
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

Examples

```
AT+POP3HDR=1
OK

+POP3: SUCCESS
From: lin <mail_simcom@126.com>
Date: Mon, 4 Mar 2013 17:26:55 +0800 (CST)
Subject: test
```

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17.8.6 AT+POP3GET Get an e-mail from POP3 server

Description

This command is used to retrieve specified e-mail from the POP3 server. After retrieving an e-mail successfully, POP3 client will create a directory and save the e-mail's header and body into file system as file "EmailYYMMDDHHMMSS*XYZ*.TXT", and save each attachment as a file under the same directory.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3GET=?	OK
	ERROR
Write Command	**Responses**
AT+POP3GET=<msg_id>,[<get_type>]	OK +POP3: <code> <mail_dir>, <mail_file>
	+POP3: <code> ERROR
	OK +POP3: <code>
	ERROR

Defined values

<msg_id>
The e-mail's ID.
<mail_dir>
The directory for e-mail and attachment, string type without double quotes and the format is "YYMMDDHHMMSS" which is generated according to module's RTC. According to the setting of command +FSLOCA (refer to file system commands), TE can select the location (local file system or storage card) in which POP3 client saves e-mail file and attachment.
<mail_file>
If the <get_type> is 1 or 3, it is the file to save e-mail's header and body, string type without double quotes. Usually, this file name is "EMAIL110511102353000.TXT", and if e-mail includes an attachment whose name is the same as the e-mail file, the first twelve digits of the number in the e-mail is generated according to the module's RTC with format "YYMMDDHHMMSS" and the last three digits of the number in the e-mail file name will be increase by 1, usually it is "000" for

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the body file of the email. If the <get_type> is 2, the <mail_file> should be YYMMDDHHMMSS.eml. If the <get_type> is 3, the eml file is not reported.	
<code>	
NETWORK ERROR	Network is bad for sending or receiving data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. POP3 client gives wrong e-mail's ID.
FILE SYSTEM ERROR	File system is bad for saving e-mail or attachment or storage card is pulled out. If POP3 client encounters this error, POP3 client will close the session with POP3 server.
SUCCESS	POP3 client gets an e-mail from POP3 server successfully.
FAILURE	POP3 client gets an e-mail unsuccessfully.
<get_type>	
The type to save when getting message from POP3 server: 1 – Save parsed body file and attachments 2 – Save the whole message as a ".eml" file. 3 – Save the parsed body file, attachments and eml file.	

Examples

```
AT+POP3GET=1
OK

+POP3: SUCCESS
C:/Email/090901120000/, EMAIL1109090112000000.TXT
AT+POP3GET=1,2
OK

+POP3: SUCCESS
C:/Email/090901120000/, 090901120000.eml
AT+POP3GET=2
OK

+POP3: FAILURE
```

17.8.7 AT+POP3DEL Mark an e-mail to delete from POP3 server

Description

This asynchronous command is used to mark an e-mail to delete from POP3 server. The operation only marks an e-mail on the server to delete it, and after POP3 client logs out POP3 server and closes the session normally, the marked e-mail is deleted on the server. Otherwise, the e-mail isn't

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deleted.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3DEL=?	OK
	ERROR
Write Command	**Responses**
AT+POP3DEL=<msg_id>	+POP3: SUCCESS OK
	+POP3: <code> ERROR
	ERROR

Defined values

<msg_id>	
E-mail's ID for mark to delete it on POP3 server.	
<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

Examples

```
AT+POP3DEL=1
+POP3: SUCCESS
OK
```

17.8.8 AT+POP3OUT Log out POP3 server

Description

This command is used to log out the POP3 server and close the session, and if there are some e-mails which are marked to delete, it also informs POP3 server to delete the marked e-mails.

SIM PIN	References

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YES	Vendor

Syntax

Test Command	Responses
AT+POP3OUT=?	OK
	ERROR
Execution Command	**Responses**
AT+POP3OUT	+POP3: SUCCESS OK
	ERROR
	+POP3: <code> ERROR

Defined values

<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

Examples

```
AT+POP3OUT
+POP3: SUCCESS
OK
```

17.8.9 AT+POP3STOP Force to stop receiving e-mail/close the session

Description

This synchronous command is used to force to close the session, and if the process of receiving e-mail is ongoing, the command also stops the operation. Otherwise, the command will return "ERROR" directly. If an e-mail has been marked to delete, POP3 server won't delete the e-mail after the session is closed.

SIM PIN	References
YES	Vendor

Syntax

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Test Command	Responses
AT+POP3STOP=?	OK
	ERROR
Execution Command	Responses
AT+POP3STOP	OK
	ERROR

Examples

AT+POP3STOP
OK

17.8.10 AT+POP3READ Read an e-mail from file system

Description

This command is used to read an e-mail from file system. If the process of receiving e-mail is ongoing, the command can't read an e-mail.

Execution command is used to read the e-mail which is received just now.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3READ=?	OK
	ERROR
Write Command	Responses
AT+POP3READ=<location>,<mail_file>[,<start_pos>,<size>]	<e-mail> OK
	ERROR
Execution Command	Responses
AT+POP3READ	<e-mail> OK
	ERROR

Defined values

<location>
The location from which TE reads an e-mail.

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a) – Local file system.
b) – SD CARD.

<mail_file>
The e-mail's file name, string type with double quotes and including a directory name and a text file name separated by the list separator "/", e.g. "090901103000/EMAIL000.TXT".

<start_pos>
The start position of the file to read.

<size>
The num of bytes to read from file.

<e-mail>
The content of e-mail, including e-mail header and body.

Examples

```
AT+POP3READ=0,"800106072758/EMAIL800106072758000.TXT"
Subject: =?utf-8?B?TWFpbCBUZXN0?=
Date: Mon, 02 Jul 2012 16:01:11 +0800
From: SIMCom-3G <hello@163.com>
To: 3G-SIMCom <hello@163.com>

VGhpcyBpcyBhIHRlc3QgbWFpbCBmcm9tIExVQSB0ZXN0IHNjcmlwdC4=

OK
AT+POP3READ=0,"1.txt",0,100

at+pop3read=0,"1.txt",0,100
From: =?gb2312?B?v+zHrg==?= <service@account.99bill.com>
Date: Sun, 6 Jan 2013 14:54:02 +0800 (CST)
OK
```

17.9 SMTP

17.9.1 AT+SMTPSRV Set SMTP server address and port number

Description

This synchronous command is used to set SMTP server's address and server's port number. SMTP client will initiate TCP session with the specified server to send an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server address and port number.

Execution command will clear SMTP server address and set the port number as default value.

NOTE: After an e-mail is sent successfully or unsuccessfully, SMTP server address and port

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number won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSRV=?	+SMTPSRV: (list of supported <port>s) OK
	ERROR
Read Command	Responses
AT+SMTPSRV?	+SMTPSRV: <server>, <port> OK
	ERROR
Write Command	Responses
AT+SMTPSRV=<server>[, <port>]	OK
	ERROR
Execution Command	Responses
AT+SMTPSRV	OK
	ERROR

Defined values

<server>
SMTP server address, non empty string with double quotes, mandatory and ASCII text string up to 128 characters.
<port>
Port number of SMTP server in decimal format, from 1 to 65535, and default port is 25 for SMTP.

Examples

```
AT+SMTPSRV="smtp.server.com",25
OK
AT+SMTPSRV?
+SMTPSRV: "smtp.server.com", 25
OK
AT+SMTPSRV
OK
AT+SMTPSRV?
```

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```
+SMTPSRV: "", 25
OK
```

17.9.2 AT+SMTPAUTH SMTP server authentication

Description

This synchronous command is used to control SMTP authentication during connection with SMTP server. If SMTP server requires authentication while logging in the server, TE must set the authentication control flag and provide user name and password correctly before sending an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server authentication control flag, if the flag is 0, both <user> and <pwd> are empty strings.

Execution Command cancels SMTP server authentication and clear user name and password.

NOTE: After an e-mail is sent successfully or unsuccessfully, server authentication won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPAUTH=?	+SMTPAUTH: (list of supported <flag>s) OK
	ERROR
Read Command	**Responses**
AT+SMTPAUTH?	+SMTPAUTH: <flag>, <user>, <pwd> OK
	ERROR
Write Command	**Responses**
AT+SMTPAUTH=<flag>[, <user>, <pwd>]	OK
	ERROR
Execution Command	**Responses**
AT+SMTPAUTH	OK
	ERROR

Defined values

<flag>
SMTP server authentication control flag, integer type. 0 – SMTP server doesn't require authentication, factory value. 1 – SMTP server requires authentication.

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<user>
User name to be used for SMTP authentication, non empty string with double quotes and up to 128 characters.
<pwd>
Password to be used for SMTP authentication, string with double quotes and up to 128characters.
NOTE: If <flag> is 0, <user> and <pwd> must be omitted (i.e. only <flag> is present).

Examples

AT+SMTPAUTH?
+SMTPAUTH: 0, “”, “”
OK
AT+SMTPAUTH=1,”username”,”password”
OK
AT+SMTPAUTH?
+SMTPAUTH: 1, ”username”, ”password”
OK
AT+SMTPAUTH
OK
AT+SMTPAUTH?
+SMTPAUTH: 0, “”, “”
OK

17.9.3 AT+SMTPFROM Sender address and name

Description

This synchronous command is used to set sender’s address and name, which are used to construct e-mail header. The sender’s address must be correct if the SMTP server requries, and if the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current sender’s address and name.

Execution command will clear sender’s address and name.

NOTE: After an e-mail is sent successfully or unsuccessfully, sender address and name won’t be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPFROM=?	OK
	ERROR
Read Command	Responses

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AT+SMTPFROM?	+SMTPFROM: <saddr>, <sname> OK
	ERROR
Write Command	Responses
AT+SMTPFROM=<saddr>[,<sname>]	OK
	ERROR
Execution Command	Responses
AT+SMTPFROM	OK
	ERROR

Defined values

<saddr>
E-mail sender address (MAIL FROM), non empty string with double quotes, mandatory and ASCII text up to 128 characters. <saddr> will be present in the header of the e-mail sent by SMTP client in the field: "*From:* ".
<sname>
E-mail sender name, string with double quotes, and alphanumeric ASCII text up to 64 characters. <sname> will be present in the header of the e-mail sent by SMTP client in the field: "*From:* ".

Examples

```
AT+SMTPFROM="senderaddress@server.com","sendername"
OK
AT+SMTPFROM?
+SMTPFROM: "senderaddress@server.com", "sendername"
OK
AT+SMTPFROM
OK
AT+SMTPFROM?
+SMTPFROM: "", ""
OK
```

17.9.4 AT+SMTPRCPT Recipient address and name (TO/CC/BCC)

Description

This synchronous command is used to set recipient address/name and kind (TO/CC/BCC). If only the parameter of "kind" is present, the command will clear all recipients of this kind, and if only parameters of "kind" and "index" are present, the command will clear the specified recipient. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current recipient address/name and kind list.

Execution command will clear all recipient information.

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NOTE: After an e-mail is sent successfully, all recipients will be cleared, if unsuccessfully, they won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPRCPT=?	+SMTPRCPT: (list of supported <kind>s), (list of supported <index>s) OK
	ERROR
Read Command	**Responses**
AT+SMTPRCPT?	[+SMTPRCPT: <kind>, <index>, <raddr>, <rname> [<CR><LF>…]] OK
	OK
	ERROR
Write Command	**Responses**
AT+SMTPRCPT=<kind>[,<index>[,<raddr>[,<rname>]]]	OK
	ERROR
Execution Command	**Responses**
AT+SMTPRCPT	OK
	ERROR

Defined values

<kind>
Recipient kind, the kinds of TO and CC are used to construct e-mail header in the field: "*To:* " or "*Cc:* ". 0 – TO, normal recipient. 1 – CC, Carbon Copy recipient. 2 – BCC, Blind Carbon Copy recipient.
<index>
Index of the kind of recipient, decimal format, and from 0 to 4.
<raddr>
Recipient address, non empty string with double quotes, and up to 128 characters.
<rname>
Recipient name, string type with double quotes, and up to 64characters.

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Examples

```
AT+SMTPRCPT=0, 0, “rcptaddress_to@server.com”, “rcptname_to”
OK
AT+SMTPRCPT?
+SMTPRCPT: 0, 0, “rcptaddress_to@server.com”, “rcptname_to”
OK
AT+SMTPRCPT=1, 0, “rcptaddress_cc@server.com”, “rcptname_cc”
OK
AT+SMTPRCPT?
+SMTPRCPT: 0, 0, “rcptaddress_to@server.com”, “rcptname_to”
+SMTPRCPT: 1, 0, “rcptaddress_cc@server.com”, “rcptname_cc”
OK
```

17.9.5 AT+SMTPSUB E-mail subject

Description

This synchronous command is used to set the subject of e-mail, which is used to construct e-mail header. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current e-mail subject.

Execution command will clear the subject.

NOTE: After an e-mail is sent successfully, the subject will be cleared, if unsuccessfully, it won’t be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSUB=?	OK
	ERROR
Read Command	Responses
AT+SMTPSUB?	+SMTPSUB: <subject> OK
	ERROR
Write Command	Responses
AT+SMTPSUB=<subject>	OK
	ERROR
Execution Command	Responses
AT+SMTPSUB	OK

SIMCOM CONFIDENTIAL FILE

	ERROR

Defined values

<subject>
E-mail subject, string with double quotes, and ASCII text up to 512 characters. <subject> will be present in the header of the e-mail sent by SMTP client in the field: "*Subject:* ". For write command, if the subject contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

Examples

AT+SMTPSUB?
+SMTPSUB: ""
OK
AT+SMTPSUB="THIS IS A TEST MAIL"
OK
AT+SMTPSUB={non-ascii}"E6B58BE8AF95E982AEE4BBB6"
OK
AT+SMTPSUB?
+SMTPSUB: "THIS IS A TEST MAIL"
OK

17.9.6 AT+SMTPBODY E-mail body

Description

This command is used to set e-mail body, which will be sent to SMTP server with text format.

Read command returns current e-mail body. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Execute command will switch the serial port from command mode to data mode, so TE can enter more ASCII text as e-mail body (up to 5120), and CTRL-Z (ESC) is used to finish (cancel) the input operation and switch the serial port back to command mode.

NOTE: After an e-mail is sent successfully, the body will be cleared, if unsuccessfully, it won't be cleared. When execute command AT+SMTPBODY, and display ">>", the prevenient body will be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPBODY=?	OK

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	ERROR
Read Command	Responses
AT+SMTPBODY?	+SMTPBODY: <body> OK
	ERROR
Write Command	Responses
AT+SMTPBODY=<body>	OK
	ERROR
Execution Command	Responses
AT+SMTPBODY	>>
	ERROR

Defined values

<body>
E-mail body, string with double quotes, and printable ASCII text up to 512 or 5120 characters.
NOTE: In data mode, “BACKSPACE” can be used to cancel an ASCII character.

Examples

```
AT+SMTPBODY=”THIS IS A TEST MAIL FROM SIMCOM MODULE”
OK
AT+SMTPBODY?
+SMTPBODY: ”THIS IS A TEST MAIL FROM SIMCOM MODULE”
OK
AT+SMTPBODY
>> This is a test mail.<CTRL-Z>
OK
AT+SMTPBODY?
+SMTPBODY: ”This is a test mail.”
OK
AT+SMTPBODY
>> This is a test mail.<ESC>
OK
AT+SMTPBODY?
+SMTPBODY: “”
OK
```

17.9.7 AT+SMTPBCH E-mail body character set

Description

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This synchronous command is used to set the body character set of e-mail. If the process sending an e-mail is ongoing, the command will return “ERROR” directly.
Read command returns current e-mail body character set.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPBCH=?	+SMTPBCH: ”CHARSET” OK
	ERROR
Read Command	**Responses**
AT+SMTPBCH?	+SMTPBCH: <charset> OK
	ERROR
Write Command	**Responses**
AT+SMTPBCH=<charset>	OK
	ERROR
Execution Command	**Responses**
AT+SMTPBCH	OK
	ERROR

Defined values

<charset>
E-mail body character, string with double quotes. By default, it is “utf-8”. The maximum length is 30 bytes.

Examples

AT+SMTPBCH=?
+SMTPBCH: “CHARSET”
OK
AT+SMTPBCH=”gb2312”
OK
AT+SMTPBCH?
+SMTPBCH: “gb2312”
OK

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17.9.8 AT+SMTPFILE Select attachment

Description

The synchronous command is used to select file as e-mail attachment. If the process sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current all selected attachments with full path.

Execute command will clear all attachments.

NOTE: After an e-mail is sent successfully, attachment will be cleared, if unsuccessfully, it won't be cleared. The same file can't be selected twice.

AT+SMTPFILE=<index> is used to delete the relevant attachments.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPFILE=?	+SMTPFILE: (list of supported <index>s) OK
	ERROR
Read Command	**Responses**
AT+SMTPFILE?	[+SMTPFILE: <index>, <filename>, <filesize> [<CR><LF>…]] OK
	ERROR
Write Command	**Responses**
AT+SMTPFILE=<index>[, <filename>]	OK
	[+SMTP: OVERSIZE] ERROR
	ERROR
Execution Command	**Responses**
AT+SMTPFILE	OK
	ERROR

Defined values

<index>
Index for attachments, from 1 to 10. According to the sequence of <index>, SMTP client will encode and send all attachments.
<filename>
String type with double quotes, the name of a file which is under current directory (refer to file system commands). SMTP client doesn't allow two attachments with the same file name. For write

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command, if the file name contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.
<filesize>
File size in decimal format. The total size of all attachments can't exceed 10MB.

Examples

```
AT+SMTPFILE=1,"file1.txt"
OK
AT+SMTPFILE=1,{non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
OK
AT+SMTPFILE?
+SMTPFILE: 1, "C:/file1.txt"
OK
AT+SMTPFILE=2,"file2.txt"
OK
AT+SMTPFILE?
+SMTPFILE: 1, "C:/file1.txt"
+SMTPFILE: 2, "C:/file2.txt"
OK
```

17.9.9 AT+SMTPSEND Initiate session and send e-mail

Description

This asynchronous command is used to initiate TCP session with SMTP server and send an e-mail after all mandatory parameters have been set correctly. After SMTP client has connected with specified SMTP server and SMTP client receives an indication that indicates SMTP server is working well, the command will return "+SMTP: OK", but it doesn't indicate that the e-mail is already sent successfully.

After the e-mail is sent and the session is closed, an Unsolicited Result Code (URC) will be returned to TE, "+SMTP: SUCCESS" indicates the e-mail is sent successfully, and other URCs indicate a failed result and the session is closed.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSEND=?	OK
	ERROR
Read Command	**Responses**
AT+SMTPSEND?	+SMTPSEND: <ongoing>

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	OK
	ERROR
Execution Command	Responses
AT+SMTPSEND	OK +SMTP: OK +SMTP: <code>
	+SMTP: OK +SMTP: <code> OK
	+SMTP: <code> ERROR
	ERROR

Defined values

<ongoing>	
Whether or not an e-mail is sent in process. If the process of sending an e-mail is ongoing, SMTP client can't send the e-mail again. 0 – Not ongoing. 1 – Ongoing.	
<code>	
SUCCESS	SMTP client has sent the e-mail successfully.
ONGOING	The process of sending an e-mail is ongoing.
PARAM ERROR	Mandatory parameter isn't set (SMTP server, or sender/recipient address)
NETWORK ERROR	Invalid SMTP server. Network is bad for establishing session or sending data to SMTP server.
SERVER ERROR	SMTP server released the session. SMTP server rejects the operation with wrong response. SMTP server doesn't give SMTP client a response in time.
AUTH REQUIRED	Authentication is required by SMTP server.
AUTH ERROR	SMTP server rejects the session because of bad user name and password combination.
USER CANCEL	User called AT+SMTPSTOP.

Examples

AT+SMTPSEND?
+SMTPSEND: 0 *OK*
AT+SMTPSEND
+SMTP: OK

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```
OK

+SMTP: SUCCESS
```

17.9.10 AT+SMTPSTOP Force to stop sending e-mail

Description

The synchronous command is used to force to stop sending e-mail and close the TCP session while sending an e-mail is ongoing. Otherwise, the command will return "ERROR" directly.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSTOP=?	OK
	ERROR
Execution Command	**Responses**
AT+SMTPSTOP	OK
	ERROR

Examples

```
AT+SMTPSEND?
+SMTPSEND: 1
OK
AT+SMTPSTOP
OK
```

17.10 SMTPS

This chapter supports SMTP / SMTPS two kinds server. The old SMTP only supports SMTP server, and the old SMTP AT commands are for compatibility with previous customers. New customers are recommended to use the commands in this chapter.

17.10.1 AT+CSMTPSSRV Set SMTP server address and port number

Description

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This command is used to set SMTP server address and server's port number. SMTP client will initiate TCP session with the specified server to send an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.
Read command returns current SMTP server address and port number.
Execution command will clear SMTP server address and set the port number as default value.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSRV=?	OK
	ERROR
Read Command	Responses
AT+CSMTPSSRV?	+CSMTPSSRV: <server>,<port>,<server_type> OK
	ERROR
Write Command	Responses
AT+CSMTPSSRV=<server>, <port>[, <server_type>]	OK
	ERROR
Execution Command	Responses
AT+CSMTPSSRV	OK
	ERROR

Defined values

<server>
SMTP server address, non empty string with double quotes, mandatory and ASCII text string up to 127 characters.
<port>
Port number of SMTP server in decimal format, from 1 to 65535, and default port is 465 for SMTPS.
<server_type>
The type of server: 1 – SMTP server. 2 – SMTPS server with SSL3.0/TLS1.0/TLS1.1/TLS1.2 supported 3 – SMTPS server with STARTTLS supported.

Examples

AT+CSMTPSSRV="smtp.server.com",425
OK

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```
AT+CSMTPSSRV?
+CSMTPSSRV: "smtp.server.com",425,2
OK
AT+CSMTPSSRV
OK
AT+CSMTPSSRV?
+CSMTPSSRV: "",465,2
OK
```

17.10.2 AT+CSMTPSAUTH SMTP server authentication

Description

This synchronous command is used to control SMTP authentication during connection with SMTP server. If SMTP server requires authentication while logging in the server, TE must set the authentication control flag and provide user name and password correctly before sending an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server authentication control flag, if the flag is 0, both <user> and <pwd> are empty strings.

Execution Command clears user name and password.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSAUTH=?	+CSMTPSAUTH: (list of supported <flag>s) OK
	ERROR
Read Command	**Responses**
AT+CSMTPSAUTH?	+CSMTPSAUTH: <flag>, <user>, <pwd> OK
	ERROR
Write Command	**Responses**
AT+CSMTPSAUTH= <flag>[, <user>, <pwd>]	OK ERROR
Execution Command	**Responses**
AT+CSMTPSAUTH	OK ERROR

Defined values

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<flag>
SMTP server authentication control flag, integer type. 0 – SMTP server doesn't require authentication, factory value. 1 – SMTP server requires authentication.
<user>
User name to be used for SMTP authentication, non empty string with double quotes and up to 127 characters.
<pwd>
Password to be used for SMTP authentication, string with double quotes and up to 127 characters. **NOTE:** If <flag> is 0, <user> and <pwd> must be omitted (i.e. only <flag> is present).

Examples

AT+CSMTPSAUTH?
+CSMTPSAUTH: 0, "", ""
OK
AT+CSMTPSAUTH=1,"username","password"
OK
AT+CSMTPSAUTH?
+CSMTPSAUTH: 1, "username", "password"
OK
AT+CSMTPSAUTH
OK
AT+CSMTPSAUTH?
+CSMTPSAUTH: 0, "", ""
OK

17.10.3 AT+CSMTPSFROM Sender address and name

Description

This synchronous command is used to set sender's address and name, which are used to construct e-mail header. The sender's address must be correct if the SMTP server requries, and if the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current sender's address and name.

Execution command will clear sender's address and name.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSFROM=?	OK

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	ERROR
Read Command	Responses
AT+CSMTPSFROM?	+CSMTPSFROM: <saddr>, <sname> OK ERROR
Write Command	Responses
AT+CSMTPSFROM= <saddr>[, <sname>]	OK ERROR
Execution Command	Responses
AT+CSMTPSFROM	OK ERROR

Defined values

<saddr>
E-mail sender address (MAIL FROM), non empty string with double quotes, mandatory and ASCII text up to 127 characters. <saddr> will be present in the header of the e-mail sent by SMTP client in the field: "*From:* ".
<sname>
E-mail sender name, string with double quotes, and alphanumeric ASCII text up to 63 characters. <sname> will be present in the header of the e-mail sent by SMTP client in the field: "*From:* ".

Examples

```
AT+CSMTPSFROM="senderaddress@server.com","sendername"
OK
AT+CSMTPSFROM?
+CSMTPSFROM: "senderaddress@server.com", "sendername"
OK
AT+CSMTPSFROM
OK
AT+CSMTPSFROM?
+CSMTPSFROM: "", ""
OK
```

17.10.4 AT+CSMTPSRCPT Recipient address and name (TO/CC/BCC)

Description

This synchronous command is used to set recipient address/name and kind (TO/CC/BCC). If only the parameter of "kind" is present, the command will clear all recipients of this kind, and if only parameters of "kind" and "index" are present, the command will clear the specified recipient. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current recipient address/name and kind list.

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Execution command will clear all recipient information.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSRCPT=?	+CSMTPSRCPT: (list of supported <kind>s), (list of supported <index>s) OK
	ERROR
Read Command	**Responses**
AT+CSMTPSRCPT?	[+CSMTPSRCPT: <kind>, <index>, <raddr>, <rname> [<CR><LF>…]] OK
	OK
	ERROR
Write Command	**Responses**
AT+CSMTPSRCPT=<kind>[, <index>[,<raddr>[,<rname>]]]	OK ERROR
Execution Command	**Responses**
AT+CSMTPSRCPT	OK ERROR

Defined values

<kind>
Recipient kind, the kinds of TO and CC are used to construct e-mail header in the field: "*To:* " or "*Cc:* ". 0 – TO, normal recipient. 1 – CC, Carbon Copy recipient. 2 – BCC, Blind Carbon Copy recipient.
<index>
Index of the kind of recipient, decimal format, and from 0 to 4.
<raddr>
Recipient address, non empty string with double quotes, and up to 127 characters.
<rname>
Recipient name, string type with double quotes, and up to 63 characters.

Examples

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```
AT+CSMTPSRCPT=0, 0, “rcptaddress_to@server.com”, “rcptname_to”
OK
AT+CSMTPSRCPT?
+CSMTPSRCPT: 0, 0, “rcptaddress_to@server.com”, “rcptname_to”
OK
AT+CSMTPSRCPT=1, 0, “rcptaddress_cc@server.com”, “rcptname_cc”
OK
AT+CSMTSPRCPT?
+CSMTPSRCPT: 0, 0, “rcptaddress_to@server.com”, “rcptname_to”
+CSMTPSRCPT: 1, 0, “rcptaddress_cc@server.com”, “rcptname_cc”
OK
```

17.10.5 AT+CSMTPSSUB E-mail subject

Description

This synchronous command is used to set the subject of e-mail, which is used to construct e-mail header. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current e-mail subject.

Execution command will clear the subject.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSUB=?	OK
	ERROR
Read Command	Responses
AT+CSMTPSSUB?	+CSMTPSSUB: <subject_len>,<subject_character><CR><LF>[<subject>] OK
	ERROR
Write Command	Responses
AT+CSMTPSSUB=<subject_len>[,<subject_character>]	> OK ERROR
Execution Command	Responses
AT+CSMTPSSUB	OK ERROR

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Defined values

<subject>
E-mail subject, string with double quotes, and ASCII text up to 511 characters. <subject> will be present in the header of the e-mail sent by SMTPS client in the field: "*Subject:* ". For write command, it can input any binary data.
<subject_len>
The length of subject content
<subject_character>
The character set of subject. Default is utf-8. The maximum length is 19 bytes.

Examples

AT+CSMTPSSUB?
+CSMTPSSUB: 0,"utf-8"
OK
AT+CSMTPSSUB=19, "utf-8"
> THIS IS A TEST MAIL
OK
AT+CSMTPSSUB?
+CSMTPSSUB: 19, "utf-8"
THIS IS A TEST MAIL
OK

17.10.6 AT+CSMTPSBODY E-mail body

Description

This command is used to set e-mail body, which will be sent to SMTP server with text format.

Read command returns current e-mail body. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly. Execution command clears email body.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSBODY=?	OK
	ERROR
Read Command	**Responses**
AT+CSMTPSBODY?	+CSMTPSBODY: <body_len><CR><LF> [<body>] OK

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	ERROR
Write Command	Responses
AT+CSMTPSBODY=<body_len>	> OK ERROR
Execution Command	Responses
AT+CSMTPSBODY	OK ERROR

Defined values

<body>
E-mail body, up to 5120 characters.
<body_len>
The length of email body.

Examples

```
AT+CSMTPSBODY=38
> THIS IS A TEST MAIL FROM SIMCOM MODULE
OK
AT+CSMTPSBODY?
+CSMTPSBODY: 38
THIS IS A TEST MAIL FROM SIMCOM MODULE
OK
```

17.10.7 AT+CSMTPSBCH E-mail body character set

Description

This synchronous command is used to set the body character set of e-mail. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current e-mail body character set.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSBCH=?	OK
	ERROR

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Read Command	Responses
AT+CSMTPSBCH?	+CSMTPSBCH: <charset> OK
	ERROR
Write Command	Responses
AT+CSMTPSBCH=<charset>	OK ERROR
Execution Command	Responses
AT+CSMTPSBCH	OK ERROR

Defined values

<charset>
E-mail body character, string with double quotes. By default, it is "utf-8". The maximum length is 19 bytes.

Examples

AT+CSMTPSBCH=?
OK
AT+CSMTPSBCH="gb2312"
OK
AT+CSMTPSBCH?
+CSMTPSBCH: "gb2312"
OK

17.10.8 AT+CSMTPSFILE Select attachment

Description

The synchronous command is used to select file as e-mail attachment. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current all selected attachments with full path.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSFILE=?	+CSMTPSFILE: (list of supported <index>s) OK

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	ERROR
Read Command	Responses
AT+CSMTPSFILE?	[+CSMTPSFILE: <index>, <filename>, <filesize> [<CR><LF>…]] OK
	ERROR
Write Command	Responses
AT+CSMTPSFILE= <index>[, <filename>]	OK
	[+CSMTPS: <err>] ERROR
	ERROR
Execution Command	Responses
AT+CSMTPSFILE	OK ERROR

Defined values

<index>
Index for attachments, from 1 to 10. According to the sequence of <index>, SMTP client will encode and send all attachments.
<filename>
String type with double quotes, the name of a file which is under current directory (refer to file system commands). SMTP client doesn't allow two attachments with the same file name. For write command, if the file name contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.
<filesize>
File size in decimal format. The total size of all attachments can't exceed 10MB.
<err>
The error information.

Examples

AT+CSMTPSFILE=1,"file1.txt"
OK
AT+CSMTPSFILE=1,{non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
OK
AT+CSMTPSFILE?
+CSMTPSFILE: 1,"C:/file1.txt" ,1402
OK
AT+CSMTPSFILE=2,"file2.txt" ,902
OK
AT+CSMTPSFILE?

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```
+CSMTPSFILE: 1, “C:/file1.txt” ,1402
+CSMTPSFILE: 2, “C:/file2.txt” ,902
OK
```

17.10.9 AT+CSMTPSSEND Initiate session and send e-mail

Description

This asynchronous command is used to initiate TCP/SSL session with SMTP server and send an e-mail after all mandatory parameters have been set correctly.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSEND=?	OK
	ERROR
Execution Command	**Responses**
AT+CSMTPSSEND	OK +CSMTPSSEND: <err>
	ERROR
	+CSMTPSSEND: <err> ERROR

Defined values

<err>
The error information. 0 indicates success. Other values indicate failure.

Examples

```
AT+CSMTPSSEND
OK

+CSMTPSSEND: 0
```

17.10.10 AT+CSMTPSSTOP Force to stop sending e-mail

Description

The synchronous command is used to force to stop sending e-mail and close the TCP/SSL session while sending an e-mail is ongoing. Otherwise, the command will return “ERROR” directly.

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SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSTOP=?	OK
	ERROR
Execution Command	Responses
AT+CSMTPSSTOP	OK
	ERROR

Examples

```
AT+CSMTPSSTOP
OK
```

17.10.11 AT+CSMTPSCLEAN Clean mail content and setting

Description

The synchronous command is used to clean mail content and setting.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSCLEAN=?	OK
	ERROR
Execution Command	Responses
AT+CSMTPSCLEAN	OK
	ERROR

Examples

```
AT+CSMTPSCLEAN
OK
```

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17.10.12 Unsolicited SMTPS command <err> Codes

0	SMTPS operation succeeded
1	Busy
2	Over size
3	Duplicate file
4	Time out
5	Transfer failed
6	Memory error
7	Invalid parameter
8	Network error
9	EFS operation error
10	SMTP server error
11	Authentication failure
12	User cancel
255	Unknown error

17.11 Common Channel Service

The common channel related AT commands needs the AT+CATR to be set to the used port. AT+CATR=0 may cause some problem.

17.11.1 AT+CCHSTART Acquire common channel service

Description

This command is used to acquire common channel service.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CCHSTART	OK +CCHSTART: <err> +CCHSTART: <err>

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	OK ERROR

Defined values

<err>
The result code of the acquiring common channel service. 0 is success. Other values are failure.

Examples

AT+CCHSTART
OK *+CCHSTART: 0*

17.11.2 AT+CCHSTOP Stop common channel service

Description

This command is used to stop common channel service.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CCHSTOP	OK +CCHSTOP: <err> +CCHSTOP: <err> OK ERROR

Defined values

<err>
The result code of the stoping common channel service. 0 is success. Other values are failure.

Examples

AT+CCHSTOP
OK *+CCHSTOP: 0*

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17.11.3 AT+CCHOPEN Open a channel

Description

This command is used to connect peer using common channel service.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCHOPEN=?	+CCHOPEN: (0,1), ” ADDRESS”, list of <port>s [,list of <channel_type>s [,list of <bind_port>s]] OK
	ERROR
Write Command	Responses
AT+CCHOPEN=<session_id>, ”<host>”,<port>[<channel_type>,[<bind_port>]]	OK +CCHOPEN: <session_id>,<err>
	+CCHOPEN: <session_id>,<err> OK
	Open channel successfully in transparent mode: CONNECT [<text>]
	Open channel failed in transparent mode: CONNECT FAIL
	ERROR

Defined values

<session_id>
The session index to operate. It’s from 0 to 1. In transparent mode, only 0 is valid.
<host>
The host address, maximum length is 256
<port>
The peer port for channel, the range is from 1 to 65535
<channel_type>
The type of channel: 0 – UDP. 1 – TCP client. 2 – SSLv3.0/TLSv1.0/TLSv1.1/TLSv1.2 client.
<bind_port>
The local port for channel, the range is from 1 to 65535
<text>

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CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<err>
The result code of the opening common channel. 0 is success. Other values are failure.

Examples

```
AT+CCHOPEN=0, "www.myserver.com",443,2
OK
+CCHOPEN: 0 0
AT+CCHOPEN=0, "www.myserver.com",443,1
OK
+CCHOPEN: 0,0
```

17.11.4 AT+CCHCLOSE Close a channel

Description

This command is used to disconnect from peer.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CCHCLOSE=<session_id>	OK +CCHCLOSE: <session_id>,<err> +CCHCLOSE: <session_id>,<err> OK ERROR

Defined values

<session_id>
The session index to operate. It's from 0 to 1.
<err>
The result code of the closing common channel. 0 is success. Other values are failure.

Examples

```
AT+CCHCLOSE=0
OK
+CCHCLOSE: 0,0
```

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17.11.5 AT+CCHSEND Send data to peer

Description

This command is used to send data to peer. If the first parameter of AT+CCHSET is set to 1, the +CCHSEND: <session_id>, <err> will be reported after AT+CCHSEND is finished.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCHSEND=?	+CCHSEND: (0,1),(1-2048) OK ERROR
Read Command	Responses
AT+CCHSEND?	+CCHSEND: 0,<unsent_len_0>,1,<unsent_len_1> OK ERROR
Write Command	Responses
AT+CCHSEND =<session_id>,<len>	> OK ERROR

Defined values

<session_id>
The session index to operate. It's from 0 to 1.
<len>
The length of data to send. Its range is from 1 to 2048.
<unsent_len_0>
The data of channel session 0 cached in DS layer which is waiting to be sent.
<unsent_len_1>
The data of channel session 1 cached in DS layer which is waiting to be sent.

Examples

```
AT+CCHSEND=0, 125
>GET / HTTP/1.1
Host: www.google.com.hk
User-Agent: MAUI htp User Agent
Proxy-Connection: keep-alive
Content-Length: 0
```

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OK

17.11.6 AT+CCHRECV Receive data from the channel

Description

This command is used to receive data from the channel.

SIM PIN	References
YES	Vendor

Syntax

Read Command	Responses
AT+CCHRECV?	+CCHRECV: LEN,<cache_len_0>,<cache_len_1> OK ERROR
Write Command	**Responses**
AT+CCHRECV=<session_id>[,<max_recv_len>]	OK [+CCHRECV: DATA, <session_id>,<len> … +CCHRECV: DATA, <session_id>,<len> …] +CCHRECV: <session_id>, <result> ERROR

Defined values

<session_id>
The session index to operate. It's from 0 to 1.
<max_recv_len>
Maximum bytes of data to receive in the current AT+CCHRECV calling. 0 means maximum 2048 bytes.
<cache_len_0>
The length of RX data cached for session 0.
<cache_len_1>
The length of RX data cached for session 1.
<result>
The final result of the receiving. 0 – ok 1 – unknown error 2 – busy 3 – server closed

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4 – timeout
5 – transfer failed
6 – memory error
7 – invalid parameter
8 – network error

<len>
The length of data followed.

Examples

```
AT+CCHRECV=1
OK
+CCHRECV: DATA,1,249
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 57
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>test</header>
<body>
Test body
</body>

+CCHRECV:1, 0
```

17.11.7 AT+CCHSET Set the parameter of common channel service

Description

This command is set the parameter of common channel service. It must be called before AT+CCHSTART.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCHSET=?	+CCHSET: (0,1),(0,1) OK

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	ERROR
Read Command	Responses
AT+CCHSET?	+CCHSET: <report_send_result>,<recv_mode> OK ERROR
Write Command	Responses
AT+CCHSET =<report_send_result>[,<recv_mode>]	OK ERROR

Defined values

<report_send_result>
Whether to report result of CCHSEND: 0 – No. 1 – Yes.
<recv_mode>
The receiving mode: 0 – Output the data to MCU whenever received data. 1 – Module caches the received data and notify MCU with +CCHEVENT: <session_id>, RECV EVENT. MCU can use AT+CCHRECV to receive the cached data(manual receiving mode).

Examples

AT+CCHSET=1,1
OK

17.11.8 AT+CCHADDR Get the IPv4 address for common channel service

Description

This command is used to get the IPv4 address after calling AT+CCHSTART.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CCHADDR	+CCHADDR: < ip_address> OK ERROR

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Defined values

<ip_address>
A string parameter that identifies the IPv4 address of the common channel service when connecting to Packet network.

Examples

```
AT+CCHADDR
+CCHADDR: 10.71.155.118
OK
```

17.11.9 AT+CCHMODE Set the mode of common channel service

Description

This command is set the mode of common channel service. This AT command must be called before calling AT+CCHSTART.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCHMODE=?	+CCHMODE: (0,1) OK ERROR
Read Command	Responses
AT+CCHMODE?	+CCHMODE: <mode> OK ERROR
Write Command	Responses
AT+ CCHMODE =<mode>	OK ERROR

Defined values

<mode>
The mode of common channel service: 0 – Normal. 1 – Transparent mode.

Examples

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```
AT+CCHMODE=1
OK
```

17.11.10 AT+CCHSTATE Get the **state of common channel**

Description

This command is used to get the state of common channel.

SIM PIN	References
NO	Vendor

Syntax

Execute Command	Responses
AT+CCHSTATE	+CCHSTATE: <network_state>,<session0_state>,<session1_state> OK ERROR

Defined values

<network_state>

0 – None
1 – Accquired stack
2 – Opening network
3 – Closing network
4 – Opened network

<session0_state> & <session1_state>

0 – None
1 – Created session
2 – Closing session
3 – Opening session
4 – Opened session

Examples

```
AT+CCHSTATE
+CCHSTATE: 0,0,0
OK
```

17.11.11 Unsolicited common channel Codes

Code	Description

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+CCHEVENT: <session_id>, RECV EVENT	In manual receiving mode, when new data of a channel arriving to the module, this unsolicited result code will be reported to MCU.
+CCH_PEER_CLOSED: <session_id>	The channel is closed by the peer.

17.11.12 Unsolicited common channel command <err> Codes

0	Operation succeeded
1	Alerting state(reserved)
2	Unknown error
3	Busy
4	Peer closed
5	Operation timeout
6	Transfer failed
7	Memory error
8	Invalid parameter
9	Network error

17.12 SSL Certificate & Key Management

17.12.1 AT+CCERTDOWN Transfer a certificate file to Module

Description

This command is used to transfer a certificate or key file to the module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCERTDOWN=?	OK
Write Command	Responses
AT+CCERTDOWN="<filename>",<len>	> OK > ERROR ERROR

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Defined values

<filename>
The name of the certificate/key file. The file name must have type like ".der" or ".pem", and the .pem file cannot be protected using password.
<len>
The length of the file data to send.

Examples

AT+CCERTDOWN="client_key.der",611
>file content...
OK

17.12.2 AT+CCERTLIST List certificate/key in module

Description

This command is used to list certificate/key files which has already been downloaded to the module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCERTLIST=?	OK
Execution Command	**Responses**
AT+CCERTLIST	[<list of files> with "+CCERTLIST:" header <CR><LF>] OK

Defined values

<list of files>
The certificate/key files which has been downloaded to the module.

Examples

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```
AT+CCERTLIST=?
OK
AT+CCERTLIST
+CCERTLIST: "ca_cert.der"
+CCERTLIST: "client_cert.der"
+CCERTLIST: "client_key.der"
+CCERTLIST: "server_cert.pem"
+CCERTLIST: "server_key.pem"

OK
```

17.12.3 AT+CCERTDELE Delete certificate/key in the module

Description

This command is used to delete a certificate/key file in the module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCERTDELE=?	OK
Write Command	Responses
AT+CCERTDELE=<filename>	OK ERROR

Defined values

<filename>
String with or with double quotes, file name which is relative and already existing.

Examples

```
AT+CCERTDELE=”server_key.pem”
OK
```

17.12.4 AT+CSSLCA Set the CA used in the module

Description

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This command is used to set the CA used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSSLCA=?	OK
Read Command	Response
AT+CSSLCA?	(list of +CSSLCA: <chain_index>,<filename>s) OK
	ERROR
Write Command	Responses
AT+CSSLCA=<chain_index>,<filename>	OK
	ERROR

Defined values

<chain_index>
The index of CA in the chain. The range is from 0 to 3.
<filename>
The name of the CA file.

Examples

```
AT+CSSLCA=0, "rootca.der"
OK
AT+CSSLCA=1,"intermediate.der"
OK
```

17.12.5 AT+CSSLCERT Set the certificate file used in the module

Description

This command is used to set the certificate file used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

SIM PIN	References
NO	Vendor

SIMCOM CONFIDENTIAL FILE

Syntax

Test Command	Responses
AT+CSSLCERT=?	OK
Read Command	Response
AT+CSSLCERT?	+CSSLCERT: <filename>,<ca_chain_index> OK
	ERROR
Write Command	Responses
AT+CSSLCERT=<filename>,<ca_chain_index>	OK
	ERROR

Defined values

<ca_chain_index>
The index of CA file in the chain. The range is from 0 to 3. The <filename> certificate file has been signed using this CA file.
<filename>
The name of the certificate file.

Examples

```
AT+CSSLCERT="mycert.der",0
OK
```

17.12.6 AT+CSSLKEY Set the key file used in the module

Description

This command is used to set the key file used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSSLKEY=?	OK
Read Command	Response
AT+CSSLKEY?	+CSSLKEY: <filename>,<sll_key_type>

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	OK
	ERROR
Write Command	Responses
AT+CSSLKEY=<filename>[,<sll_key_type>]	OK
	ERROR

Defined values

<filename>
The name of the key file. <sll_key_type> 0 - SSL_KEY_TYPE_RSA 1 - SSL_KEY_TYPE_DSA

Examples

AT+CSSLKEY="myKEY.der",0
OK

17.12.7 AT+CSSLLOADCK Load certificate/key

Description

This command is used to load the certificate/key files which has been set using AT+CSSLCA/AT+CSSLCERT/AT+CSSLKEY. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSSLLOADCK=?	OK
Execution Command	Responses
AT+CSSLLOADCK	OK
	ERROR

Examples

AT+CSSLLOADCK=?
OK

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AT+CSSLLOADCK
OK

17.12.8 AT+CCERTVERIFY Set ssl server cert verify flag

Description

The command is used to set the ssl server cert verify flag. Default is not verified.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCERTVERIFY=?	+CCERTVERIFY: (0,1) OK
Read Command	Responses
AT+CCERTVERIFY?	+CCERTVERIFY: <enable_flag> OK
Write Command	Responses
AT+CCERTVERIFY=<enable_flag>	OK
	+CME ERROR

Defined values

<enable_flag>
The cert verify enable flag: 0 – not verify the server cert. 1 – verify the server cert.
NOTE:
If enable the cert verified flag(AT+CCERTVERIFY=1), it need the server cert, user must load cert file to the efs before execute the relate open operation..

Examples

AT+CCERTVERFY=1
OK
AT+CCERTVERFY?
+CCERTVERFY: 1
OK
AT +CCERTVERFY =?
+CCERTVERFY: (0,1)
OK

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18 AT Commands for Open/Close Network

18.1 AT+CNETSTART Open network

Description

This command opens packet network.

SIM PIN	References
YES	Vendor

Syntax

Read Command	Responses
AT+CNETSTART?	+CNETSTART: <net_state> OK
	ERROR
Execution Command	**Responses**
AT+CNETSTART	OK +CNETSTART: <err>
	+ CNETSTART: <err> OK
	+CNETSTART: <err> ERROR
	ERROR

Defined values

<net_state>
a numeric parameter that indicates the state of PDP context activation: 0 network close (deactivated) 1 network is opening 2 network open(activated) 3 network is closing
<err >

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The result of operation, 0 is success, other value is failure.

Examples

```
AT+CNETSTART
OK

+CNETSTART: 0
AT+CNETSTART?
+CNETSTART: 2

OK
```

18.2 AT+CNETSTOP Close network

Description

This command closes network. Before calling this command, all opened sockets must be closed first.

SIM PIN	References
YES	Vendor

Syntax

Execution Command	Responses
AT+CNETSTOP	OK +CNETSTOP: <err>
	+CNETSTOP: <err> OK
	+CNETSTOP: <err> ERROR
	ERROR

Defined values

<err>
The result of operation, 0 is success, other value is failure.

Examples

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AT+CNETSTOP
OK *+CNETSTOP: 0*

18.3 AT+CNETIPADDR Inquire PDP address

Description

This command inquires the IP address of current active PDP.

SIM PIN	References
YES	Vendor

Syntax

Read Command	Responses
AT+CNETIPADDR?	+CNETIPADDR: < ip_address> OK
	+CNETIPADDR: <err_info> ERROR
	ERROR

Defined values

<ip_address>
A string parameter that identifies the IP address of current active socket PDP.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+CNETIPADDR?
+CNETIPADDR: 10.71.155.118 *OK*

18.4 Unsolicited Open/Close network command <err> Codes

0	Operation succeeded
1	Unknown error

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2	Open network error
3	Close network error
4	Network not opened
5	Operation not supported
6	Busy
7	Network has been opened
8	In use

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19 AT Commands for GPS

19.1 AT+CGPS Start/Stop GPS session

Description

This command is used to start or stop GPS session.

NOTE:

1. Output of NMEA sentences is automatic; no control via AT commands is provided. At present the module only supports standalone mode. If executing AT+CGPS=1, the GPS session will choose cold or hot start automatically.
2. UE-based and UE-assisted mode depend on URL (AT+CGPSURL) and certificate (AT+CGPSSSL). When UE-based mode fails, it will switch standalone mode.
3. UE-assisted mode is singly fixed. Standalone and UE-based mode is consecutively fixed.
4. After the GPS closed, it should to wait about 2s~30s for start again. Reason：If the signal conditions are right (strong enough signals to allow ephemeris demodulation) or ephemeris demodulation is on going, sometimes MGP will stay on longer in order to demodulate more ephemeris. This will help the engine provide faster TTFF and possibly better yield later (up to 2 hours), because it has the benefit of more ephemeris available.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPS=?	+CGPS: (list of supported <on/off>s),(list of supported <mode>s) OK
Read Command	**Responses**
AT+CGPS?	+CGPS: <on/off>,<mode> OK
Write Command	**Responses**
AT+CGPS=<on/off>[,<mode>]	OK *If UE-assisted mode, when fixed will report indication:* +CAGPSINFO:<lat>,<lon>,<alt>,<date>,<time> *If <off>, it will report indication:* +CGPS: 0
	ERROR

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Defined values

<on/off>
0 – stop GPS session
1 – start GPS session
<mode>
Ignore - standalone mode
1 – standalone mode
2 – UE-based mode
3 – UE-assisted mode
<lat>
Latitude of current position. Unit is in 10^8 degree
<log>
Longitude of current position. Unit is in 10^8 degree
<alt>
MSL Altitude. Unit is meters.
<date>
UTC Date. Output format is ddmmyyyy
<time>
UTC Time. Output format is hhmmss.s
< unconfidence >
Unconfidence of the location, GPS fixed report 39, cell fixed report 100.
< uncertainty_meter >
Uncertainty meters.

Examples

AT+CGPS?
+CGPS: 0,1 OK
AT+CGPS=1,1
OK

19.2 AT+CGPSINFO Get GPS fixed position information

Description

This command is used to get current position information.

SIM PIN	References
NO	Vendor

Syntax

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Test Command	Responses
AT+CGPSINFO=?	+CCGPSINFO: (scope of <time>) OK
Read Command	Responses
AT+CGPSINFO?	+CCGPSINFO: <time> OK
Write Command	Responses
AT+CGPSINFO=<time>	OK +CGPSINFO: [<lat>],[<N/S>],[<log>],[<E/W>],[<date>],[<UTC time>],[<alt>],[<speed>],[<course>]
	OK *(if <time>=0)*
Execution Command	Responses
AT+CGPSINFO	+CGPSINFO: [<lat>],[<N/S>],[<log>],[<E/W>],[<date>],[<UTC time>],[<alt>],[<speed>],[<course>] OK

Defined values

<lat>
Latitude of current position. Output format is ddmm.mmmmmm
<N/S>
N/S Indicator, N=north or S=south
<log>
Longitude of current position. Output format is dddmm.mmmmmm
<E/W>
E/W Indicator, E=east or W=west
<date>
Date. Output format is ddmmyy
<UTC time>
UTC Time. Output format is hhmmss.s
<alt>
MSL Altitude. Unit is meters.
<speed>
Speed Over Ground. Unit is knots.
<course>
Course. Degrees.
<time>
The range is 0-255, unit is second, after set <time> will report the GPS information every the seconds.

Examples

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```
AT+CGPSINFO=?
+CGPSINFO: (0-255)
OK
AT+CGPSINFO?
+CGPSINFO: 0
OK
AT+CGPSINFO
+CGPSINFO:3113.343286,N,12121.234064,E,250311,072809.3,44.1,0.0,0
OK
```

19.3 AT+CGPSCOLD Cold start GPS

Description

This command is used to cold start GPS session.

NOTE: Before using this command,it must use AT+CGPS=0 to stop GPS session.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSCOLD=?	OK
Execution Command	Responses
AT+CGPSCOLD	OK

Examples

```
AT+CGPSCOLD=?
OK
AT+CGPSCOLD
OK
```

19.4 AT+CGPSHOT Hot start GPS

Description

This command is used to hot start GPS session

NOTE: Before using this command, AT+CGPS=0 must be used to stop GPS session.

SIM PIN	References
NO	Vendor

Syntax

SIMCOM CONFIDENTIAL FILE

Test Command	Responses
AT+CGPSHOT=?	OK
Execution Command	Responses
AT+CGPSHOT	OK

Examples

```
AT+CGPSHOT=?
OK
AT+CGPSHOT
OK
```

19.5 AT+CGPSURL Set AGPS default server URL

Description

This command is used to set AGPS default server URL. It will take effect only after restarting.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSURL=?	OK
Read Command	Responses
AT+CGPSURL?	+CGPSURL: <URL> OK
Write Command	Responses
AT+CGPSURL=<URL>	OK ERROR

Defined values

<URL>
AGPS default server URL. It needs double quotation marks.

Examples

```
AT+CGPSURL="123.123.123.123:8888"
OK
AT+CGPSURL?
+CGPSURL: "123.123.123.123:8888"
OK
```

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19.6 AT+CGPSSSL Set AGPS transport security

Description

This command is used to select transport security, used certificate or not. The certificate gets from local carrier. If the AGPS server doesn't need certificate, execute AT+CGPSSSL=0.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSSSL=?	+CGPSSSL: (list of supported <SSL>s) OK
Read Command	Responses
AT+CGPSSSL?	+CGPSSSL: <SSL> OK
Write Command	Responses
AT+CGPSSSL=<SSL>	OK
	ERROR

Defined values

<SSL>		
0	–	don't use certificate
1	–	use certificate

Examples

```
AT+CGPSSSL=0
OK
```

19.7 AT+CGPSAUTO Start GPS automatic

Description

This command is used to start GPS automaticly when module powers on, GPS is closed defaultly.

NOTE: If GPS start automatically, its operation mode is standalone mode.

SIM PIN	References
NO	Vendor

Syntax

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Test Command	Responses
AT+CGPSAUTO=?	+CGPSAUTO:(list of supported <auto>s) OK
Read Command	Responses
AT+CGPSAUTO?	+CGPSAUTO:<auto> OK
Write Command	Responses
AT+CGPSAUTO=<auto>	OK
	ERROR

Defined values

<auto>	
0	– Non-automatic
1	– automatic

Examples

```
AT+CGPSAUTO=1
OK
```

19.8 AT+CGPSNMEA Configure NMEA sentence type

Description

This command is used to configure NMEA output sentences which are generated by the gpsOne engine when position data is available.

NOTE: If bit 2 GPGSV doesn't configure, GPGSV sentence also doesn't output on AT/modem port even set AT+CGPSFTM=1.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSNMEA=?	+CGPSNMEA: (scope of <nmea>) OK
Read Command	Responses
AT+CGPSNMEA?	+CGPSNMEA: <nmea> OK
Write Command	Responses
AT+CGPSNMEA=<nmea>	OK

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	If GPS engine is running: ERROR

Defined values

<nmea>
Range – 0 to 511 Each bit enables an NMEA sentence output as follows: Bit 0 – GPGGA (global positioning system fix data) Bit 1 – GPRMC (recommended minimum specific GPS/TRANSIT data) Bit 2 – GPGSV (GPS satellites in view) Bit 3 – GPGSA (GPS DOP and active satellites) Bit 4 – GPVTG (track made good and ground speed) Bit 5 –PQXFI (Global Positioning System Extended Fix Data.) Bit 6 – GNGNS (fix data for GNSS receivers; output for GPS-only, GLONASS-only, hybrid GLONASS+GPS fixes, or even AFLT fixes) Bit 7 – GNGSA (DOP and GLONASS satellites; GPS+GLONASS or GLONASS-only fixes. Contains DOP information for all active satellites, but other information is GLONASS-only) Bit 8 – GLGSV (GLONASS satellites in view GLONASS fixes only) Set the desired NMEA sentence bit(s). If multiple NMEA sentence formats are desired, “OR” the desired bits together.

Examples

AT+CGPSNMEA=511
OK

19.9 AT+CGPSMD Configure AGPS MO method

Description

This command specifies if the Mobile-Originated (MO) GPS session should use the control plane session or user plane session.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSMD=?	+CGPSMD: (scope of <method>) OK
Read Command	**Responses**
AT+CGPSMD?	+CGPSMD: <method>

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	OK
Write Command	Responses
AT+CGPSMD=<method>	OK
	If GPS engine is running: ERROR

Defined values

<method>
0 – Control plane 1 – User plane

Examples

AT+CGPSMD=1
OK

19.10 AT+CGPSFTM Start GPS test mode

Description

This command is used to start GPS test mode.

NOTE:

1. If test mode starts, the URC will report on AT port, Modem port and UART port.
2. If testing on actual signal, <SV> should be ignored, and GPS must be started by AT+CGPS, AT+CGPSCOLD or AT+CGPSHOT.
3. If testing on GPS signal simulate equipment, <SV> must be choiced, and GPS will start automatically.
4. URC sentence will report every 1 second.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSFTM=?	OK
Read Command	Responses
AT+CGPSFTM?	+CGPSFTM: <on/off> OK
Write Command	Responses
AT+CGPSFTM=<on/off>	OK
	ERROR

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Defined values

<on/off>
0 – Close test mode 1 – Start test mode
<CNo>
Satellite CNo value. Floating value.
URC format
$GPGSV[,<SV>,<CNo>][...]

Examples

AT+CGPSFTM=1
OK
$GPGSV,3,44.5,13,45.6,32,35.3,19,39.1,23,42.5,21,38.8
$GPGSV,3,44.9,13,45.5,32,35.5,19,39.8,23,42.9,21,38.7

19.11 AT+CGPSDEL Delete the GPS information

Description

This command is used to delete the GPS information. After executing the command, GPS start is cold start.

NOTE: This command must be executed after GPS stopped.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSDEL=?	OK
Execution Command	**Responses**
AT+CGPSDEL	OK
	ERROR

Examples

AT+CGPSDEL=?
OK
AT+CGPSDEL
OK

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19.12 AT+ CGPSXE Enable/Disable GPS XTRA function

Description

This command is used to enable/disable the GPS XTRA function.

NOTE: The function will take effect after restarting the module. XTRA function must download the assistant file from network by HTTP, so the APN must be set by AT+CGSOCKCONT command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSXE=?	+CGPSXE: (list of supported <on/off>s) OK
Read Command	**Responses**
AT+CGPSXE?	+CGPSXE: <on/off> OK
Write Command	**Responses**
AT+CGPSXE=<on/off>	OK
	ERROR

Defined values

<on/off>	
0	– Disable GPS XTRA
1	– Enable GPS XTRA

Examples

```
AT+CGPSXE=?
+CGPSXE: (0,1)
OK
AT+CGPSXE=0
OK
```

19.13 AT+CGPSXD Download XTRA assistant file

Description

This command is used to download the GPS XTRA assistant file from network through http

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protocol. Module will download the latest assistant file form server and write the file into module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSXD=?	+CGPSXD: (list of supported <server>s) OK
Read Command	**Responses**
AT+CGPSXD?	+CGPSXD: <server> OK
Write Command	**Responses**
AT+CGPSXD=<server>	OK +CGPSXD: <resp>
	+CGPSXD: <resp> ERROR

Defined values

<server>
0 – XTRA primary server (precedence)
1 – XTRA secondary server
2 – XTRA tertiary server
<resp>
refer to Unsolicited XTRA download Codes

Examples

```
AT+CGPSXD=?
+CGPSXD: (0-2)
OK
AT+CGPSXD=0
OK
+CGPSXD: 0
```

19.14 AT+CGPSXDAUTO Download XTRA assistant file automatically

Description

This command is used to control download assistant file automatically or not when GPS start. XTRA function must enable for using this command. If assistant file doesn't exist or check error, the module will download and inject the assistant file automatically.

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SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSXDAUTO=?	+CGPSXDAUTO: (list of supported <on/off>s) OK
Read Command	Responses
AT+CGPSXDAUTO?	+CGPSXDAUTO: <on/off> OK
Write Command	Responses
AT+CGPSXDAUTO=<on/off>	OK
	ERROR

Defined values

<on/off>
0 – disable download automatically 1 – enable download automatically **NOTE:** Some URCs will report when downloading, it's same as AT+CGPSXD command.

Examples

```
AT+CGPSXDAUTO=?
+CGPSXDAUTO: (0,1)
OK
AT+CGPSXDAUTO=0
OK
```

19.15 AT+CGPSINFOCFG Report GPS NMEA-0183 sentence

Description

This command is used to report NMEA-0183 sentence.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSINFOCFG=?	+CGPSINFOCFG: (scope of <time>),(scope of <config>)

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	OK
Read Command	Responses
AT+CGPSINFOCFG?	+CGPSINFOCFG: <time>, <config> OK
Write Command	Responses
AT+CGPSINFOCFG=<time>[,<config>]	OK (NMEA-0183 Sentence) ……
	OK *(if <time>=0)*

Defined values

<time>
The range is 0-255, unit is second, after set <time> will report the GPS NMEA sentence every the seconds. If <time>=0, module stop reporting the NMEA sentence.
<config>
Range – 0 to 511 Each bit enables an NMEA sentence output as follows: Bit 0 – GPGGA (global positioning system fix data) Bit 1 – GPRMC (recommended minimum specific GPS/TRANSIT data) Bit 2 – GPGSV (GPS satellites in view) Bit 3 – GPGSA (GPS DOP and active satellites) Bit 4 – GPVTG (track made good and ground speed) Bit 5 –PQXFI (Global Positioning System Extended Fix Data.) Bit 6 – GNGNS (fix data for GNSS receivers; output for GPS-only, GLONASS-only, hybrid GLONASS+GPS fixes, or even AFLT fixes) Bit 7 – GNGSA (DOP and GLONASS satellites; GPS+GLONASS or GLONASS-only fixes. Contains DOP information for all active satellites, but other information is GLONASS-only) Bit 8 – GLGSV (GLONASS satellites in view GLONASS fixes only) Set the desired NMEA sentence bit(s). If multiple NMEA sentence formats are desired, “OR” the desired bits together. For example: If want to report GPRMC sentence by 10 seconds, should execute AT+CGPSINFOCFG=10,2

Examples

AT+CGPSINFOCFG=?
+CGPSINFO: (0-255),(0-511) *OK*
AT+CGPSINFOCFG=10,31
OK

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```
$GPGSV,4,1,16,04,53,057,44,02,55,334,44,10,61,023,44,05,45,253,43*7D
$GPGSV,4,2,16,25,10,300,40,17,25,147,40,12,22,271,38,13,28,053,38*77
$GPGSV,4,3,16,26,09,187,35,23,06,036,34,24,,,,27,,,*7A
$GPGSV,4,4,16,09,,,,31,,,,30,,,,29,,,*7D
$GPGGA,051147.0,3113.320991,N,12121.248076,E,1,10,0.8,47.5,M,0,M,,*45
$GPVTG,NaN,T,,M,0.0,N,0.0,K,A*42
$GPRMC,051147.0,A,3113.320991,N,12121.248076,E,0.0,0.0,211211,,,A*66
$GPGSA,A,3,02,04,05,10,12,13,17,23,25,26,,,1.4,0.8,1.2*3B
```

19.16 AT+CGPSPMD Configure positioning mode

Description

This command is used to configure the positioning modes support.

NOTE: Need to restart the module after setting the mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSPMD=?	+CGPSPMD: (scope of <mode>) OK
Read Command	**Responses**
AT+CGPSPMD?	+CGPSPMD: <mode> OK
Write Command	**Responses**
AT+CGPSPMD=<mode>	OK
	ERROR

Defined values

<mode>
Default is 0xFF7F Each bit enables a supported positioning mode as follows: Bit 0 – Standalone Bit 1 – UP MS-based Bit 2 – UP MS-assisted Bit 3 – CP MS-based (2G) Bit 4 – CP MS-assisted (2G) Bit 5 – CP UE-based (3G) Bit 6 – CP UE-assisted (3G)

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Bit 7 – NOT USED
Bit 8 – UP MS-based (4G)
Bit 9 – UP MS-assisted(4G)
Bit 10 – CP MS-based (4G)
Bit 11 – CP MS-assisted (4G)
Set the desired mode sentence bit(s). If multiple modes are desired, "OR" the desired bits together.
Example, support standalone, UP MS-based and UP MS-assisted, set Binary value 0000 0111, is 7.

Examples

```
AT+CGPSPMD=127
OK
```

19.17 AT+CGPSMSB Configure based mode switch to standalone

Description

This command is used to configure AGPS based mode switching to standalone mode automatically or not.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSMSB=?	+CGPSMSB: (scope of <mode>) OK
Read Command	**Responses**
AT+CGPSMSB?	+CGPSMSB: <mode> OK
Write Command	**Responses**
AT+CGPSMSB=<mode>	OK
	ERROR

Defined values

<mode>	
0	– Don't switch to standalone mode automatically
1	– Switch to standalone mode automatically

Examples

```
AT+CGPSMSB=0
```

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OK

19.18 AT+CGPSHOR Configure positioning desired accuracy

Description

The command is used to configure the positioning desired accuracy threshold in meters.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSHOR=?	+CGPSHOR: (scope of <acc>), (scope of < acc_f >) OK
Read Command	Responses
AT+CGPSHOR?	+CGPSHOR: <acc>,<acc_f> OK
Write Command	Responses
AT+CGPSHOR=<acc>[,<acc_f>]	OK
	ERROR

Defined values

<acc>
Range – 0 to 1800000 Default value is 50
<acc_f>
Reserved

Examples

```
AT+CGPSHOR=50
OK
```

19.19 AT+CGPSNOTIFY LCS respond positioning request

Description

This command is used to respond to the incoming request for positioning request message.

SIM PIN	References
NO	Vendor

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Syntax

Test Command	Responses
AT+CGPSNOTIFY=?	+CGPSNOTIFY: (list of supported <resp>s) OK
Write Command	Responses
AT+CGPSNOTIFY=<resp>	OK
	ERROR

Defined values

<resp>		
0	–	LCS notify verify accept
1	–	LCS notify verify deny
2	–	LCS notify verify no response

Examples

```
AT+CGPSNOTIFY=?
+CGPSNOTIFY: (0-2)
OK
AT+CGPSNOTIFY=0
OK
```

19.20 Unsolicited XTRA download Codes

Code of <err>	Description
0	Assistant file download successfully
1	Assistant file doesn't exist
2	Assistant file check error
220	Unknown error for HTTP
221	HTTP task is busy
222	Failed to resolve server address
223	HTTP timeout
224	Failed to transfer data
225	Memory error
226	Invalid parameter
227	Network error
220~227 codes are same as Unsolicited HTTP codes	

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19.21 AT+CLBS Base station location

Description

The write command is used to base station location.

NOTE:

1. The LBS is only support in GSM/WCDMA/CDMA/LTE net mode.

2. It needs to execute AT+CNETSTART to open network before execute the AT+CLBS write command. It needs to execute AT+CNETSTOP to close network after complete the LBS operation.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CLBS=?	+CLBS: (1,2,3,4,9),(1-16),(-180.000000-180.000000),(-90.000000-90.000000),(0,1) OK
Write Command	**Responses**
AT+CLBS=<type>,<cid>,[[<longitude>,<latitude>],[<lon_type>]]	OK 1)type = 1,get longitude and latitude +CLBS: <ret_code>[,<longitude>,<latitude>,<acc>] 2)type = 2,get detail address +CLBS: <ret_code>[,<detail_addr>] 3)type = 3,get access times +CLBS: <ret_code>[,<times>] 4)type = 4,get longitude latitude and date time +CLBS: <ret_code>[,<longitude>,<latitude>,<acc>,<date>,<time>] 5)type = 9, report positioning error +CLBS: <ret_code>

Defined values

<type>
A numeric parameter which specifies the location type.

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1 use 3 cell's information
2 get detail address
3 get access times
4 get longitude latitude and date time
9 report positioning error

<cid>
A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command).
1…16

<longitude>
Current longitude in degrees.

<latitude>
Current latitude in degrees.

<detail_addr>
Current detail address. It based the UCS2 coding. Each 4 characters in the URC is for one UCS2 character.

<acc>
Positioning accuracy.

<lon_type>
The type of longitude and latitude
0 WGS84，the default type
1 GCJ02.

<times>
access service times.

<data>
service date(UTC, the format is YYYY/MM/DD,HH:MM:SS).

<time>
service time(UTC, the format is YYYY/MM/DD,HH:MM:SS).

<ret_code>
The result code.
0 Success
1 Parameter error returned by server.
2 Service out of time returned by server.
3 Location failed returned by server.
4 Query timeout returned by server.
5 Certification failed returned by server.
6 Server LBS error success.
7 Server LBS error failed.
80 Report LBS to server success
81 Report LBS to server parameter error
82 Report LBS to server failed
110 Other Error

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8	LBS is busy.
9	Open network error.
10	Close network error.
11	Operation timeout.
12	DNS error.
13	Create socket error.
14	Connect socket error.
15	Close socket error.
16	Send data error.
17	Receive data error.
18	NONET error.

Examples

```
AT+CLBS=?
+CLBS: (1,2,3,4,9),(1-16),(-180.000000-180.000000),(-90.000000-90.000000),(0,1)

OK
AT+CLBS=1
OK

+CLBS: 0,31.228525,121.380295,500
AT+CLBS=2
OK

+CLBS: 0,
4e0a6d775e020020957f5b81533a002091d1949f8def002097608fd166688baf79d162805927697c
AT+CLBS=3
OK

+CLBS: 0,22
AT+CLBS=4
OK

+CLBS: 0,31.228525,121.380295,500,2025/06/07,10:49:08
AT+CLBS=9
OK

+CLBS: 80
```

19.22 AT+CLBSCFG Base station location configure

Description

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The write command is used to set and query the base station location configure.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CLBSCFG=?	+CLBSCFG: (0-1), (1-3),"Param Value" OK
Write Command	**Responses**
AT+CLBSCFG=<operate>,<para>[,<value>]	+CLBSCFG: 0,<para>,<value> OK
	OK
	ERROR
	If error is related to ME functionality: +CME ERROR: <err>

Defined values

<operate>
A numeric parameter which specifies the operator. 0 read operator 1 write operator
<para>
A numeric parameter which specifies the operator parameter. 1 customer ID 2 Times have used positioning command 3 Server's address lbs-simcom.com:3002
<value>
The value of parameter. If <**operate**> is 1 and <**para**> is 3, <**value**> can be set. Note Server's address of "lbs-simcom.com:3002" is free.

Examples

AT+CLBSCFG=?
+CLBSCFG: (0-1),(1-3),"Param Value"

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```
OK
AT+CLBSCFG=0,1
+CLBSCFG: 0,1,""

OK
AT+CLBSCFG=0,2
+CLBSCFG: 0,2,0

OK
AT+CLBSCFG=0,3
+CLBSCFG: 0,3,"lbs-simcom.com:3002"

OK
AT+CLBSCFG=1,3,"lbs-simcom.com:3002"
OK
```

20 AT Commands Samples

20.1 SMS commands

Commands and Responses	Comments
AT+CMGF=1 OK	Set SMS system into text mode, as opposed to PDU mode.
AT+CPMS="SM","SM","SM" +CPMS: 0,40,0,40,0,40 OK	Select memory storages.
AT+CNMI=2,1 OK	Set new message indications to TE.
AT+CMGS="+861358888xxxx" >This is a test <*Ctrl+Z*> +CMGS:34 OK	Set new message indications to TE.
+CMTI:"SM",1	Unsolicited notification of the SMS arriving.
AT+CMGR=1 +CMGR: "REC UNREAD", "+86135888xxxx", ,"08/01/30, 20:40:31+00" This is a test	Read SMS message that has just arrived. **NOTE:** The number should be the same as that given in the +CMTI notification.

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OK	
AT+CMGR=1 +CMGR: “REC READ”, “+861358888xxxx”,,“08/01/30 , 20:40:31+00” This is a test OK	Reading the message again changes the status to “READ” from “UNREAD”.
AT+CMGS=“+861358888xxxx” >Test again<*Ctrl+Z*> +CMGS:35 OK	Send another SMS to myself.
+CMTI:“SM”,2	Unsolicited notification of the SMS arriving.
AT+CMGL=“ALL” +CMGL: 1, “REC READ”, “+861358888xxxx”, , “08/01/30,20:40:31+00” This is a test +CMGL: 2, “REC UNREAD”,””, “+861358888xx xx”, , “08/01/30,20:45:12+00” Test again OK	Listing all SMS messages.
AT+CMGD=1 OK	Delete an SMS message.
AT+CMGL=“ALL” +CMGL: 2,“REC READ”,“+861358888xxxx”, “08/01/30,20:45:12+00” Test again OK	List all SMS messages to show message has been deleted.

20.2 MMS commands

Set the parameters	**Comments**
AT+CMMSCURL=”mmsc.monternet.com” OK	Set the MMS center URL without “http://”
AT+CMMSPROTO=1,”10.0.0.172”,80 OK	Use http protocol to send MMS and set the IP address and port of MMS proxy to “10.0.0.172” and 80
AT+CMMSSENDCFG=6,3,0,0,2,4 OK	Set the parameter of MMS to send. This is unnecessary to set.
Send MMS	Comments

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AT+CGSOCKCONT=1,”IP”,”cmwap” OK	Set the PDP context profile.
AT+CMMSEDIT=1 OK	Set the edit mode to 1.
AT+CMMSDOWN=”TITLE”,10 >Test title OK	Set the title of MMS to “Test title”.
AT+CMMSDOWN=”FILE”,3,” 1.jpg” OK	Add the “1.jpg” in UE to the MMS body.
AT+CMMSDOWN=”TEXT”,120,”t1.txt” >My test content….(file content, 120 bytes) OK	Add a text file named “t1.txt” with length of 120 bytes.
AT+CMMSRECP=”13918181818” OK	Add a recipient of “13918181818”
AT+CMMSRECP=”T1@TEST.COM” OK	Add a recipient of T1@TEST.COM
AT+CMMSCC=”15013231222” OK	Add a copy recipient of ”15013231222”
AT+CMMSSAVE=1 +CMMSSAVE: 1 OK	Save the MMS to mail box of index 1.
AT+CMMSSEND=”13318882322” OK +CMMSSEND:0	Send the MMS including new recipient ”13318882322” After MMS is sent successfully. This command indicates success of sending. If failed, +CME ERROR:<err> will be reported.
Receive MMS	Description
+WAP_PUSH_MMS: "15001844675","RROpJGJVyjeA","http://211.136 .112.84/RROpJGJVyjeA" ,"09/03/17,17:14:41+32",0,13338	Receiving a new MMS notification.
AT+CGSOCKCONT=1,”IP”,”cmwap” OK	Set the PDP context profile.

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AT+CMMSEDIT=0 OK	Set the mms edit mode to 0.
AT+CMMSRECV="http://211.136.112.84/RROpJGJVyjeA" OK	Receive MMS using the location contained in +WAP_PUSH_MMS indication.
+CMMSRECV:0	After MMS is received successfully, this command indicates success of receiving. If failed, +CME ERROR:<err> will be reported.
AT+CMMSSAVE=0 +CMMSSAVE: 0 OK	If receiving successfully, save it to mail box.

21 Audio Application Commands

21.1 AT+CREC record wav audio file

Description

This command is used to record a wav audio file. It can record wav file during a call or not, the record file should be put into the “E:/”.

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CREC?	+CREC: <status> OK
Write Command	**Responses**
AT+CREC=<record_path>,<filename>	+CREC:1 OK
AT+CREC=<mode>	+CREC:0 OK

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Defined values

<file_name>
The name of wav audio file.
< record _path>
1 – local path
2 – remote path
<status>
0 – free
1 – busy
<mode>
0 – stop record

Examples

AT+CREC=1," E:*/record.wav"*
+CREC: 1
OK

AT+CREC=0
+CREC: 0
OK

21.2 AT+CCMXPLAYWAV Play wav audio file

Description

This command is used to play a wav audio file. It can play wav file during a call or not.

NOTE Wav file format require mono channel, 8kHz sampling frequency, 16bit sampling size, 128kbps.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXPLAYWAV=?	+CCMXPLAYWAV: (list of supported <play_path>s),(list of supported <repeat>s) OK
Write Command	Responses

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AT+CCMXPLAYWAV=<file_name>,<play_path>	+WAVSTATE: wav play OK *Report URC automatically after playing end* +WAVSTATE: wav play stop
	ERROR

Defined values

<file_name>
The name of wav audio file.
<play_path>
1 – remote path 2 – local path
<repeat>
This parameter is reserved.

Examples

AT+CCMXPLAYWAV="E:/record.wav",2
+WAVSTATE: wav play
OK

21.3 AT+CCMXSTOPWAV Stop playing **wav audio file**

Description

This command is used to stop playing wav audio file. Execute this command during wav audio playing.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXSTOPWAV=?	OK
Execution Command	Responses
AT+CCMXSTOPWAV	[+WAVSTATE: wav play stop] OK

Examples

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AT+CCMXSTOPWAV
+CCMXSTOPWAV:
OK

21.4 AT+ CCMXPLAY Play audio file

Description

The command is used to play an audio file.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXPLAY=?	+CCMXPLAY: (list of supported <play_path>s),(list of supported <repeat>s) OK
Write Command	**Responses**
AT+CCMXPLAY=<file_name>[,<play_path>[,<repeat>]]	+AUDIOSTATE: audio play OK
	ERROR

Defined values

<file_name>
The name of audio file. Support audio file format midi, mp3, aac, amr, qcp, wav.
<play_path>
0 – local path
<repeat>
0 – don't play repeat. Play only once.
1…255 – play repeat times. E.g. <repeat>=1, audio will play twice.

Examples

at+ccmxplay="E:/ring.mp3",0,255
+ CCMXPLAY:
OK

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21.5 AT+ CCMXSTOP Stop playing audio file

Description

The command is used to stop playing audio file. Execute this command during audio playing.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CCMXSTOP	+ *CCMXSTOP*: OK

Examples

```
AT+CCMXSTOP
+CCMXSTOP:
OK
```

22 Appendixes

22.1 Verbose code and numeric code

Verbose result code	Numeric (V0 set)	Description
OK	0	Command executed, no errors, Wake up after reset
CONNECT	1	Link established
RING	2	Ring detected
NO CARRIER	3	Link not established or disconnected
ERROR	4	Invalid command or command line too long
NO DIALTONE	6	No dial tone, dialing impossible, wrong mode
BUSY	7	Remote station busy
NO ANSWER	8	Connection completion timeout

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22.2 Response string of AT+CEER

Number	Response string
CS internal cause	
0	Phone is offline
21	No service available
25	Network release, no reason given
27	Received incoming call
29	Client ended call
34	UIM not present
35	Access attempt already in progress
36	Access failure, unknown source
38	Concur service not supported by network
29	No response received from network
45	GPS call ended for user call
46	SMS call ended for user call
47	Data call ended for emergency call
48	Rejected during redirect or handoff
100	Lower-layer ended call
101	Call origination request failed
102	Client rejected incoming call
103	Client rejected setup indication
104	Network ended call
105	No funds available
106	No service available
108	Full service not available
109	Maximum packet calls exceeded
301	Video connection lost
302	Video call setup failure
303	Video protocol closed after setup
304	Video protocol setup failure
305	Internal error
CS network cause	
1	Unassigned/unallocated number
3	No route to destination
6	Channel unacceptable
8	Operator determined barring
16	Normal call clearing
17	User busy
18	No user responding
19	User alerting, no answer

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21	Call rejected
22	Number changed
26	Non selected user clearing
27	Destination out of order
28	Invalid/incomplete number
29	Facility rejected
30	Response to Status Enquiry
31	Normal, unspecified
34	No circuit/channel available
38	Network out of order
41	Temporary failure
42	Switching equipment congestion
43	Access information discarded
44	Requested circuit/channel not available
47	Resources unavailable, unspecified
49	Quality of service unavailable
50	Requested facility not subscribed
55	Incoming calls barred within the CUG
57	Bearer capability not authorized
58	Bearer capability not available
63	Service/option not available
65	Bearer service not implemented
68	ACM >= ACMmax
69	Requested facility not implemented
70	Only RDI bearer is available
79	Service/option not implemented
81	Invalid transaction identifier value
87	User not member of CUG
88	Incompatible destination
91	Invalid transit network selection
95	Semantically incorrect message
96	Invalid mandatory information
97	Message non-existent/not implemented
98	Message type not compatible with state
99	IE non-existent/not implemented
100	Conditional IE error
101	Message not compatible with state
102	Recovery on timer expiry
111	Protocol error, unspecified
117	Interworking, unspecified
CS network reject	
2	IMSI unknown in HLR

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3	Illegal MS
4	IMSI unknown in VLR
5	IMEI not accepted
6	Illegal ME
7	GPRS services not allowed
8	GPRS & non GPRS services not allowed
9	MS identity cannot be derived
10	Implicitly detached
11	PLMN not allowed
12	Location Area not allowed
13	Roaming not allowed
14	GPRS services not allowed in PLMN
15	No Suitable Cells In Location Area
16	MSC temporarily not reachable
17	Network failure
20	MAC failure
21	Synch failure
22	Congestion
23	GSM authentication unacceptable
32	Service option not supported
33	Requested service option not subscribed
34	Service option temporarily out of orde
38	Call cannot be identified
40	No PDP context activated
95	Semantically incorrect message
96	Invalid mandatory information
97	Message type non-existent
98	Message type not compatible with state
99	Information element non-existent
101	Message not compatible with state
161	RR release indication
162	RR random access failure
163	RRC release indication
164	RRC close session indication
165	RRC open session failure
166	Low level failure
167	Low level failure no redial allowed
168	Invalid SIM
169	No service
170	Timer T3230 expired
171	No cell available
172	Wrong state
173	Access class blocked

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174	Abort message received
175	Other cause
176	Timer T303 expired
177	No resources
178	Release pending
179	Invalid user data

PS internal cause lookup	
0	Invalid connection identifier
1	Invalid NSAPI
2	Invalid Primary NSAPI
3	Invalid field
4	SNDCP failure
5	RAB setup failure
6	No GPRS context
7	PDP establish timeout
8	PDP activate timeout
9	PDP modify timeout
10	PDP inactive max timeout
11	PDP lowerlayer error
12	PDP duplicate
13	Access technology change
14	PDP unknown reason

PS network cause	
25	LLC or SNDCP failure
26	Insufficient resources
27	Missing or unknown APN
28	Unknown PDP address or PDP type
29	User Aauthentication failed
30	Activation rejected by GGSN
31	Activation rejected, unspecified
32	Service option not supported
33	Requested service option not subscribed
34	Service option temporarily out of order
35	NSAPI already used (not sent)
36	Regular deactivation
37	QoS not accepted
38	Network failure
39	Reactivation required
40	Feature not supported
41	Semantic error in the TFT operation
42	Syntactical error in the TFT operation

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43	Unknown PDP context
44	PDP context without TFT already activated
45	Semantic errors in packet filter
46	Syntactical errors in packet filter
81	Invalid transaction identifier
95	Semantically incorrect message
96	Invalid mandatory information
97	Message non-existent/not implemented
98	Message type not compatible with state
99	IE non-existent/not implemented
100	Conditional IE error
101	Message not compatible with state
111	Protocol error, unspecified

22.3 Summary of CME ERROR codes

Description

This result code is similar to the regular ERROR result code. The format of <err> can be either numeric or verbose string, by setting AT+CMEE command.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

+CME ERROR: <err>

Defined values

<err>

Values (numeric format followed by verbose format):

0	phone failure
1	no connection to phone
2	phone adaptor link reserved
3	operation not allowed
4	operation not supported
5	PH-SIM PIN required
6	PH-FSIM PIN required
7	PH-FSIM PUK required
10	SIM not inserted
11	SIM PIN required
12	SIM PUK required
13	SIM failure

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14	SIM busy
15	SIM wrong
16	incorrect password
17	SIM PIN2 required
18	SIM PUK2 required
20	memory full
21	invalid index
22	not found
23	memory failure
24	text string too long
25	invalid characters in text string
26	dial string too long
27	invalid characters in dial string
30	no network service
31	network timeout
32	network not allowed - emergency calls only
40	network personalization PIN required
41	network personalization PUK required
42	network subset personalization PIN required
43	network subset personalization PUK required
44	service provider personalization PIN required
45	service provider personalization PUK required
46	corporate personalization PIN required
47	corporate personalization PUK required
100	Unknown
103	Illegal MESSAGE
106	Illegal ME
107	GPRS services not allowed
111	PLMN not allowed
112	Location area not allowed
113	Roaming not allowed in this location area
132	service option not supported
133	requested service option not subscribed
134	service option temporarily out of order
148	unspecified GPRS error
149	PDP authentication failure
150	invalid mobile class
257	network rejected request
258	retry operation
259	invalid deflected to number
260	deflected to own number
261	unknown subscriber
262	service not available

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263	unknown class specified
264	unknown network message
273	minimum TFTS per PDP address violated
274	TFT precedence index not unique
275	invalid parameter combination

“CME ERROR” codes of MMS:

170	Unknown error for mms
171	MMS task is busy now
172	The mms data is over size
173	The operation is overtime
174	There is no mms receiver
175	The storage for address is full
176	Not find the address
177	Invalid parameter
178	Failed to read mss
179	There is not a mms push message
180	Memory error
181	Invalid file format
182	The mms storage is full
183	The box is empty
184	Failed to save mms
185	It’s busy editing mms now
186	It’s not allowed to edit now
187	No content in the buffer
188	Failed to receive mms
189	Invalid mms pdu
190	Network error
191	Failed to read file
192	None

“CME ERROR” codes of FTP:

201	Unknown error for FTP
202	FTP task is busy
203	Failed to resolve server address
204	FTP timeout
205	Failed to read file
206	Failed to write file
207	It’s not allowed in current state
208	Failed to login
209	Failed to logout
210	Failed to transfer data
211	FTP command rejected by server
212	Memory error
213	Invalid parameter

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214	Network error

Examples

```
AT+CPIN="1234","1234"
+CME ERROR: incorrect password
```

22.4 Summary of CMS ERROR codes

Description

Final result code +CMS ERROR: <err> indicates an error related to mobile equipment or network. The operation is similar to ERROR result code. None of the following commands in the same command line is executed. Neither ERROR nor OK result code shall be returned. ERROR is returned normally when error is related to syntax or invalid parameters. The format of <err> can be either numeric or verbose. This is set with command AT+CMEE.

SIM PIN	References
---	3GPP TS 27.005

Syntax

```
+CMS ERROR: <err>
```

Defined values

<err>	
300	ME failure
301	SMS service of ME reserved
302	Operation not allowed
303	Operation not supported
304	Invalid PDU mode parameter
305	Invalid text mode parameter
310	SIM not inserted
311	SIM PIN required
312	PH-SIM PIN required
313	SIM failure
314	SIM busy
315	SIM wrong
316	SIM PUK required
317	SIM PIN2 required
318	SIM PUK2 required
320	Memory failure
321	Invalid memory index
322	Memory full

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330	SMSC address unknown
331	no network service
332	Network timeout
340	NO +CNMA ACK EXPECTED
341	Buffer overflow
342	SMS size more than expected
500	unknown error

Examples

```
AT+CMGS=02112345678
+CMS ERROR: 304
```

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Contact us:

Shanghai SIMCom Wireless Solutions Ltd.

Add: Building B, SIM Technology Building, No.633, Jinzhong Road, Changning District 200335

Tel: +86 21 3157 5100\3157 5200

Email: simcom@simcom.com, simcom@sim.com

Website: www.simcomm2m.com

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