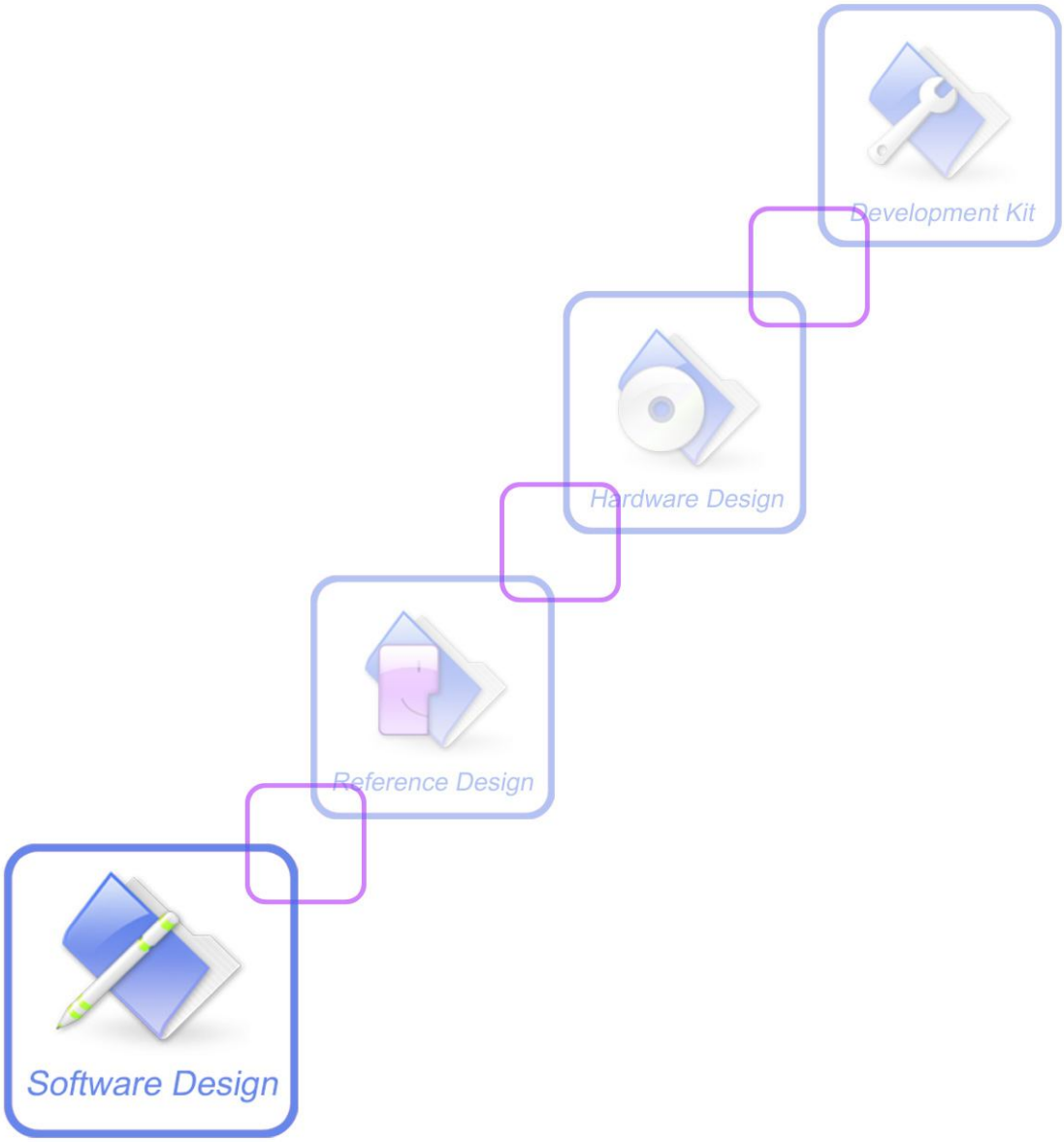
A company of SIM Tech

AT Command Set

SIM72X0_ATC_V0.01



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Version History

Version	Chapter	Comments
V0.01	New Version	Initital verison

Contents

1 Introduction

1.1 Scope

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

SIM72X0

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

- 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.

<…>	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 – The command is supported by SIMCom.

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

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.

3 General Commands

3.1 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.

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.

Examples

```
ATI
Manufacturer: SIMCOM INCORPORATED
Model: SIMCOM_SIM7250E
Revision: SIM7250E_V0.1
IMEI: 351602000330570
+GCAP: +CGSM,+FCLASS,+DS
OK
```

3.2 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
```

3.3 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_SIM7250 *OK*

3.4 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
AT+CGMR	+CGMR: <revision> OK

Defined values

<revision>

The revision identification of firmware.

Examples

```
AT+CGMR
+CGMR: 3535B01SIM7250E
OK
```

3.5 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.

Examples

```
AT+CGSN
351602000330570
OK
```

3.6 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"
OK
AT+CSCS?
+CSCS:"IRA" *OK*

3.7 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
Execution Command	Responses
AT+CIMI	<IMSI> OK

Defined values

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

Examples

```
AT+CIMI
460010222028133
OK
```

3.8 AT+GCAP Request overall capabilities

Description

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

SIM PIN	References
YES	V.25ter

Syntax

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

AT+GCAP	+GCAP: (list of <name>s) OK

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.

Examples

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

3.9 AT+CATR Configure URC destination interface

Description

This command is used to configure the interface which will be used to output URCs.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CATR=?	+CATR: (list of supported <port>s),(list of supported <save>s) OK
Read Command	Responses
AT+CATR?	+CATR: <port> OK
Write Command	Responses
AT+CATR=<port>[,<save>]	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
4-7 –	mapping to 0-3, the port mapping relation can be set by user
<save>	
0 –	set temporarily
1 –	set permanently

Examples

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

3.10 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.

References
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
```

4 Call Control Commands and Methods

4.1 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.

Examples

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

4.2 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
YES	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.

Examples

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

4.3 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

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*

4.4 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.
<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
```

4.5 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 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

4.6 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.
<;>
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

4.7 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
```

4.8 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

4.9 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

4.10 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

4.11 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
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
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
```

4.12 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> +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

4.13 AT+CR Service reporting control

Description

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
```

4.14 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
OK
```

4.15 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
GPRS	GPRS network request for PDP context activation

Examples

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

5 SMS Related Commands

5.1 +CMS ERROR Message service failure result code

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
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
```

5.2 AT+CSMS Select message service

Description

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

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>
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*

5.3 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
	+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
<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
<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:3,40,3,40,3,40
OK

5.4 AT+CMGF Select SMS message format

Description

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

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
```

5.5 AT+CSCA SMS service centre address

Description

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

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
```

5.6 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.

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

5.7 AT+CSDH Show text mode parameters

Description

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

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
```

5.8 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.

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.

Examples

AT+CNMI=1,2,0,0,0
OK
+CMT:"1380022xxxx","02/04/03,11 :06 :38",129,7,0<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)

5.9 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

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>

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>

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>.

<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

5.10 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
	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

<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 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>

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
```

5.11 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
	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>).

<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 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
<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
```

5.12 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>
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

5.13 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>

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*

5.14 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

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

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

5.15 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.

Examples

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

5.16 AT+CSMP Set text mode parameters

Description

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.

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

6 Network Service Related Commands

6.1 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: <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).
<ci>
Cell ID in hexadecimal format. GSM : Maximum is two byte WCDMA : Maximum is four byte

Examples

AT+CREG?
+CREG: 0,1
OK

6.2 AT+COPS Operator selection

Description

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

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.
<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

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

6.3 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
	+CME ERROR: <err>
Write Command	**Responses**
AT+CLCK=<fac>,<mode>	OK

[,<passwd>[,<class>]]	*When <mode>=2 and command successful:* +CLCK:<status>[,<class1>[<CR><LF> +CLCK: <status>,<class2> [...]] OK
	+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)
"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
```

6.4 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
YES	3GPP TS 27.007

Syntax

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

OK
```

6.5 AT+CLIP Calling line identification presentation

Description

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,<m>=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>
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
```

6.6 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
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
```

6.7 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 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

+COLP: "10086",129,,,

OK
```

6.8 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
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
1 – suppress OA
2 – suppress preferential CUG
3 – suppress OA and preferential CUG

Examples

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

6.9 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>.
<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*

6.10 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>
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 161 – national number.The network support for this type is optional

Examples

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

6.11 AT+CHLD Call related supplementary services

Description

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	OK

Default to <n>=2.	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
```

6.12 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 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

6.13 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
Read Command	**Responses**
AT+CAOC?	+CAOC: <mode> OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CAOC=<mode>	+CAOC: <ccm> OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+ CAOC	*Set default value (<mode>=1):* OK

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
```

6.14 AT+CSSN Supplementary service notifications

Description

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
Read Command	**Responses**
AT+CSSN?	+CSSN: <n>,<m> OK
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>
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

6.15 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

<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

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

6.16 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
Read Command	Responses
AT+CPOL?	[+CPOL:<index1>,<format>,<oper1>[<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>][<CR><LF> +CPOL: <index2>,<format>,<oper2>[,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>] [...]]] OK
Write Command	Responses
AT+CPOL=<index>[,<format>[,<oper>][,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>]] **NOTE:** If using USIM card, the last three 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

1 – access technology selected

Examples

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

6.17 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
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>
String type, operator in long alphanumeric format (see AT+COPS).

Examples

```
AT+COPN
+COPN: "46000","China Mobile Com"
```

```
+COPN: "46001"," China Unicom"
……
OK
```

6.18 AT*CNTI Query Network Mode

Description

This command is used to query the network mode of the module.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT*CNTI=?	*CNTI: (list of supported <CNTI_option>s) OK
Read Command	Responses
AT*CNTI?	*CNTI:<CNTI_option>, <network_mode> OK
Write Command	Responses
AT*CNTI = <CNTI_option>	*CNTI:<CNTI_option>, <network_mode>s OK ERROR

Defined values

<CNTI_option> Network query option.	
Value:	
0	Query the current network mode
1	Query the network mode available for the module now
2	Query the network mode supported by the module
<network_mode> The wireless access technologies separated by ‘,’. For some products, the HSDPA or HSUPA is not supported.	
Value:	
NONE	
GSM	
GPRS	

EDGE
UMTS
HSDPA
HSUPA
HSDPA+HSUPA
LTE

Examples

```
AT*CNTI =1
*CNTI: 1, UMTS
OK
AT*CNTI?
*CNTI: 1, GSM, GPRS
OK
```

7 Mobile Equipment Control and Status Commands

7.1 +CME ERROR Mobile Equipment error result code

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
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
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
214	Network error

"CME ERROR" codes of HTTP:

220	Unknown error fot 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

Examples

```
AT+CPIN="1234","1234"
+CME ERROR: incorrect password
```

7.2 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**
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

7.3 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
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

7.4 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.

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

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

7.5 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>

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*

7.6 AT+CSQ 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
<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
```

7.7 AT+AUTOCSQ Set CSQ report

Description

This command is used to disable or enable automatic report CSQ information, when we enable automatic report, 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

Defined values

<aoto>
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)

7.8 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
Read Command	Responses
AT+CACM?	+CACM: <acm>

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

7.9 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
Read Command	Responses
AT+CAMM?	+CAMM: <acmmax> OK
	ERROR

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

7.10 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
Read Command	Responses
AT+CPUC?	+CPUC: [<currency>,<ppu>] OK
	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

7.11 AT+CPOF Control phone to power down

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.

SIM PIN	References
NO	Vendor

Syntax

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

Examples

AT+CPOF
OK

7.12 AT+CCLK Real time clock

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

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 -96…+96). 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
```

7.13 AT+CRESET Reset ME

Description

This command is used to reset ME.

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
```

7.14 AT+SIMEI Set module IMEI

Description

This command is used to set module 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

<imei>
The 15-digit IMEI value.

Examples

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

7.15 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.

Examples

AT+CSQDELTA?
+CSQDELTA: 5
OK

8 SIMCard Related Commands

8.1 AT+CSIM Generic SIM access

Description

This command allows 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
YES	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 the characters that are sent to TE in <command> or <response>
<command>
Command passed on by the MT to the SIM.
<response>
Response to the command passed on by the SIM to the MT.

Examples

AT+CSIM=?

OK

8.2 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
YES	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>.

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
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
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
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

9 Phonebook Related Commands

9.1 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
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

9.2 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. 20 entries AT+CPBW command is not applicable to this storage.
"MC"	ME missed (unanswered received) calls list Capacity: max. 20 entries AT+CPBW command is not applicable to this storage.
"RC"	ME received calls list Capacity: max. 20 entries AT+CPBW command is not applicable to this storage.
"SM"	SIM phonebook

	Capacity: depending on SIM card
"ME"	Mobile Equipment phonebook
	Capacity: max. 100 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.
"SN"	Service Dialling 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","SN")
OK
AT+CPBS=”SM”
OK
AT+CPBS?
+CPBS: "SM",1,200
OK
```

9.3 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

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*
AT+CPBR=1,10

```
+CPBR: 1,"1234567890",129,"James"
+CPBR: 2,"0987654321",129,"Kevin"
OK
```

9.4 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> +CBPF: <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>
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
```

9.5 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.
<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:

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
```

10 V24-V25 Commands

10.1 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 default value.The default value is 115200.

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: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800,921600, 3200000,3686400,4000000

Examples

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

10.2 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=?
+ICF: (3),(0-3)
OK
AT+ICF=3,3
OK
```

10.3 AT+IFC Set local data flow control

Description

The command sets the flow control of the module.

NOTE

Before using this AT, please make sure ***AT+CGFUNC=11*** return **"*+CGFUNC: 1*",** Otherwise this AT will always report "RFR and CTS pin are not in FLOW CTRL mode!" .

SIM PIN	References
NO	V.25ter

Syntax

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

Defined values

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

Examples

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

10.4 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.

NOTE: After executing AT+CSUART=1 and AT+CGFUNC=10,1, it takes effect.

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
```

10.5 ATE Enable command echo

Description

This command sets whether or not the TA echoes characters.

SIM PIN	References
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
```

10.6 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

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

10.7 AT&D Set DTR function mode

Description

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

NOTE: After executing AT+CSUART=1,it takes effect.

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
```

10.8 AT&S Set DSR function mode

Description

The command determines how the state of DSR pin works.

SIM PIN	References
YES	V.25ter

Syntax

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
```

10.9 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
NO	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
OK
```

10.10 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.

1 — Set all TA parameters to manufacturer defaults.

NOTE: Module must reset after setting value 1, otherwise some unknown issue will happen.

default values

TA parameters	VALUE
AT+AUTOANSWER	0
AT+CATR	0
AT+CSUART	0
AT+CPCM	0,0
AT+CPCMFMT	2
AT+CPCMSLOT	0
AT+CNBP ①	0x0002000000680380
AT+CNMP	2
AT+CNAOP	2
AT+CNSDP	2
AT+CTZU	0
AT+CRSL	2
AT+CALM	0
AT+CEMNLIST	0, ""
AT+CVALARM	0,3400
AT+CRFEN	1
AT+CSDVC	1
AT+CLVL ②	2
AT+CVLVL ②	-200,1000,3000,5000,3000,4000,5000,5000
AT+CMICAMP1 ②	1
AT+SIDET ②	8000
AT+CTXGAIN ②	10000
AT+CRXGAIN ②	3000
AT+CTXVOL ②	10000
AT+CRXVOL ②	0
AT+CTXFTR ②	0, 0, 0, 0, 0, 0, 0
AT+CRXFTR ②	0, 0, 0, 0, 0, 0, 0
AT+CVAUXS	1

AT+CVAUXV	52
AT+CDTRISRS	0
AT+CDTRISRMD	0,0
AT+CGDCONT	1,"IP","","0.0.0.0",0,0
AT+CGSOCKCONT	+CGSOCKCONT: 1,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 2,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 3,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 4,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 5,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 6,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 7,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 8,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 9,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 10,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 11,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 12,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 13,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 14,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 15,"IP","","0.0.0.0",0,0 +CGSOCKCONT: 16,"IP","","0.0.0.0",0,0
AT+CPLMNWLIST	"", 1
AT+CPASSMGR	NULL (disable all passwords)
AT+CGPSSSL AT+CGPSURL	0 ""
AT+CMMSSENDCFG	6,3,0,0,2,4
AT+CMMSCURL	""
AT+CMMSPROTO	1,"0.0.0.0",0
AT+CGPSAUTO	0
AT+CGPSSWITCH	1
① SIM72X0E default value is 0x0002000000680380. SIM72X0A default value is 0x000000000CA80380.SIM72X0J default value is 0x000000000CE80380. ②These audio parameters is discrepant in different Qualcomm platform version.	

Examples

AT&F

OK

AT&F1

OK (then reset the module manually)

10.11 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:
Execution Command	**Responses**
ATQ	*Set default value:0* OK

Defined values

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

Examples

```
ATQ0
OK
```

10.12 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>]

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

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

10.13 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

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
```

10.14 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
```

10.15 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

Defined values

<value>
0 – Save

Examples

```
AT&W0
OK
```

10.16 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
Execution Command	Responses
ATZ	*Set default value: 0* OK

Defined values

<value>
0 – Restore

Examples

```
ATZ0
OK
```

11 Commands for Packet Domain

11.1 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
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>
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","CMNET","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

11.2 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),(list of supported <d_comp>s),(list of supported <h_comp>s) OK
Read Command	**Responses**
AT+CGDSCONT?	+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp> [<CR><LF>+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp> [...]] OK
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.

<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
3 V.44

Other values are reserved.

<h_comp>

a numeric parameter that controls PDP header compression (refer 3GPP TS 44.065 [61] and 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
```

11.3 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
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
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
Write Command	Responses
+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

Defined values

<cid>
a numeric parameter which specifies a particular PDP context definition (see theAT+CGDCONT and AT+CGDSCONT commands).
<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 "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",(1-16),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)
+CGTFT:"PPP",(1-16),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)
+CGTFT:"IPV6",(1-16),(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
```

11.4 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

<cid>
A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT 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

<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>

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
```

11.5 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 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
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
Write Command	Responses
AT+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 +CME ERROR: <err>
Execution Command	Responses

AT+CGEQREQ	OK

Defined values

<cid>
Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands. 1…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,…). 0 subscribed value 1kbps…63kbps – value needs to be divisible by 1 without remainder 64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps 576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps
<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,…). 0 subscribed value 1kbps…63kbps – value needs to be divisible by 1 without remainder 64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps 576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps
<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,…). 0 subscribed value 1kbps…63kbps – value needs to be divisible by 1 without remainder 64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps 576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps
<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,…). 0 subscribed value 1kbps…63kbps – value needs to be divisible by 1 without remainder 64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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.

0 – subscribed value

10…1520 (value needs to be divisible by 10 without remainder)

<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>

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.

0	–	subscribed value
10…150	–	value needs to be divisible by 10 without remainder
200…950	–	value needs to be divisible by 50 without remainder
1000…4000	–	value needs to be divisible by 100 without remainder

<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.

0 – subscribed value
1 –
2 –
3 –

<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),(0-5760),(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),(0,100-4000),(0-3),(0,1),(0,1)
+CGEQREQ:"PPP",(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),(0,100-4000),(0-3),(0,1),(0,1)
+CGEQREQ:"IPV6",(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),(0,100-4000),(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","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1)

OK
```

11.6 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

Defined values

<cid>
A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT

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

<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>

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
```

11.7 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.

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
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
Write Command	Responses
AT+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	OK
	ERROR

error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]	+CME ERROR: <err>
Execution Command	Responses
AT+CGEQMIN	OK

Defined values

<cid>

Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands.

1…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,…).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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,…).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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,…).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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,…).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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.

0 – subscribed value

10…1520 (value needs to be divisible by 10 without remainder)

<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>

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.

0 – subscribed value
10…150 – value needs to be divisible by 10 without remainder
200…950 – value needs to be divisible by 50 without remainder
1000…4000 – value needs to be divisible by 100 without remainder

<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.

0 – subscribed value
1 –
2 –
3 –

<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),(0-5760),(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),(0,100-4000),(0-3),(0,1),(0,1)
+CGEQMIN:"PPP",(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),(0,100-4000),(0-3),(0,1),(0,1)
+CGEQMIN:"IPV6",(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),(0,100-4000),(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),(0,100-4000),(0-3),(0,1),(0,1)

OK

11.8 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
Read Command	**Responses**
AT+CGATT?	+CGATT: <state> OK
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

11.9 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
	+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: 1,0
OK
AT+CGACT=?
+CGACT: (0,1)
OK
```

```
AT+CGACT=0,1
OK
```

11.10 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
Write Command	**Responses**
AT+CGDATA=[<L2P>,[<cid>]]	CONNECT
	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
<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
```

11.11 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
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

AT+CGPADDR =?

+CGPADDR: (1)
OK
AT+CGPADDR=1
+CGPADDR: 1,"0.0.0.0"
OK

11.12 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

AT+CGCLASS=?

```
+CGCLASS: ("A")
OK
AT+CGCLASS?
+CGCLASS: "A"
OK
```

11.13 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
Read Command	Responses
AT+CGEREP?	+CGEREP: <mode>,<bfr> OK
Write Command	Responses
AT+CGEREP= <mode>[,<bfr>]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGEREP	OK

Defined values

<mode>

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

OK

AT+CGEREP?

+CGEREP: 0,0

OK

11.14 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
4	–	unknown
5	–	registered, roaming
<lac>		
Two bytes location area code in hexadecimal format (e.g."00C3" equals 193 in decimal).		

<ci>
Cell ID in hexadecimal format. GSM : Maximum is two byte WCDMA : Maximum is four byte

Examples

AT+CGREG=?
+CGREG: (0-1) *OK*
AT+CGREG?
+CGREG: 0,0 *OK*

11.15 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.

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>

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
```

11.16 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

<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,”SIMCOM”,”123”
OK
```

11.17 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
YES	3GPP TS 24.008 [8]

Syntax

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

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 ID 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

Examples

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

11.18 AT+CGEQOS Set TPS Quality of Service parameters

Description

The set command allows the TE to specify the EPS Quality of Service parameters <cid>, <QCI>, [<DL_GBR> and <UL_GBR>] and [<DL_MBR> and <UL_MBR>] for a PDP context or Traffic Flows. When in UMTS/GPRS the MT applies a mapping function to UTMS/GPRS Quality of Service.

A special form of the set command, +CGEQOS= <cid> causes the values for context number <cid> to become undefined.

The read command returns the current settings for each defined QoS.

The test command returns the ranges of the supported parameters.

SIM PIN	References

YES	3GPP TS 23.203 [85]

Syntax

Test Command	Responses
AT+CGEQOS=?	+CGEQOS: (range of supported <cid>s),(list of supported <QCI>s),(list of supported <DL_GBR>s),(list of supported <UL_GBR>s),(list of supported <DL_MBR>s),(list of supported <UL_MBR>s)
Read Command	Responses
AT+CGEQOS?	+CGEQOS: <cid>,<QCI>,[<DL_GBR>,<UL_GBR>],[<DL_MBR>,<UL_MBR>] [<CR>>LF>+CGEQOS: <cid>,<QCI>,[<DL_GBR>,<UL_GBR>],[<DL_MBR>,<UL_MBR>] [...]]
	ERROR
Write Command	Responses
AT+CGEQOS=[<cid>[,<QCI>[,<DL_GBR>,<UL_GBR>[,<DL_MBR>,<UL_MBR]]]]	OK
	+CME ERROR: <err>

Defined values

<cid>
a numeric parameter which specifies a particular EPS Traffic Flows definition in EPS and a PDP Context definition in UMTS/GPRS (see the +CGDCONT and +CGDSCONT commands).
<QCI >
a numeric parameter that specifies a class of EPS QoS. (see 3GPP TS 23.203 [85]) 0 QCI is selected by network [1 – 4] value range for guranteed bit rate Traffic Flows [5 – 9] value range for non-guarenteed bit rate Traffic Flows eric parameter that specifies a class of EPS QoS. (see 3GPP TS 23.203 [85])
<DL_GBR>
a numeric parameter which indicates DL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.
< UL_GBR >
a numeric parameter which indicates UL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.
< DL_MBR >
a numeric parameter which indicates DL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.

< UL_MBR >
a numeric parameter which indicates UL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.

Examples

```
AT+CGEQOS=?
+CGEQOS:    (1-16),(0-9),(0-100000),(0-50000),(0-100000),(0-50000)

OK
```

11.19 AT+CGCONTRDP Return the relevant information

Description

The execution command returns the relevant information <bearer_id>, <apn>, <source_addr and subnet_mask>, <gw_addr>, <DNS_prim_addr>, <DNS_sec_addr>, <P-CSCF_prim_addr>, <P-CSCF_sec_addr> and <IM_CN_Signalling_Flag> for a non secondary PDP Context established by the network with the primary context identifier <cid>. If the context cannot be found an ERROR response is returned.

If the MT has dual stack capabilities, two lines of information are returned per <cid>. First one line with the IPv4 parameters followed by one line with the IPv6 parameters.

SIM PIN	References
YES	3GPP TS 23.060 [47] -

Syntax

Write Command	Responses
AT+CGCONTRDP=[<cid>]	+CGCONTRDP: <cid>,<bearer_id>,<apn>[,<source_addr and subnet_mask>[,<gw_addr>[,<DNS_prim_addr>[,<DNS_sec_addr>[,<P-CSCF_prim_addr>[,<P-CSCF_sec_addr>[,<IM_CN_Signalling_Flag>]]]]]]] [<CR><LF>+CGCONTRDP: <cid>,<bearer_id>,<apn>[,<source_addr and subnet_mask>[,<gw_addr>[,<DNS_prim_addr>[,<DNS_sec_addr>[,<P-CSCF_prim_addr>[,<P-CSCF_sec_addr>[,<IM_CN_Signalling_Flag>]]]]]]][...]] OK
	ERROR
	+CME ERROR: <err>
Test Command	Responses

AT+CGCONTRDP=?	+CGCONTRDP: (list of <cid>s associated with active contexts) OK
	ERROR

Defined values

<cid>
a numeric parameter which specifies a particular non secondary PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands.
< bearer_id >
a numeric parameter which identifies the bearer, i.e. the EPS bearer in EPS and the NSAPI in UMTS/GPRS.
<APN>
a string parameter which is a logical name that was used to select the GGSN or the external packet data network.
<source_addr and subnet_mask>
string type. It shows the IP address and subnet mask of the MT. 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 "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. When +CGPIAF is supported, its settings can influence the format of this parameter returned with the execute form of +CGCONTRDP.
<gw_addr>
a string parameter which shows the Gateway Address of the MT. The string is given as dot-separated numeric (0-255) parameters When +CGPIAF is supported, its settings can influence the format of this parameter returned with the execute form of +CGCONTRDP.
<DNS_prim_addr>
a string parameter which shows the IP address of the primary DNS server. When +CGPIAF is supported, its settings can influence the format of this parameter returned with the execute form of +CGCONTRDP.
<DNS_sec_addr>
a string parameter which shows the IP address of the secondary DNS server. When +CGPIAF is supported, its settings can influence the format of this parameter returned with the execute form of +CGCONTRDP.
<P_CSCF_prim_addr>
a string parameter which shows the IP Address of the primary P-CSCF Server. When +CGPIAF is supported, it's settings can influence the format of this parameter returned with the execute form of +CGCONTRDP.
<P_CSCF_sec_addr>

a string parameter which shows the IP Address of the secondary P-CSCF Server.
When +CGPIAF is supported, its settings can influence the format of this parameter returned with the execute form of +CGCONTRDP.

<IM_CN_Signalling_Flag>

a numeric parameter used to show whether the PDP context is for IM CN subsystem-related signalling only or not.

0 PDP context is not for IM CN subsystem-related signalling only

1 PDP context is for IM CN subsystem-related signalling only

Examples

```
AT+CGCONTRDP =?
+ CGCONTRDP: (1-16),(0-3),
OK
AT+ CGCONTRDP =1
OK
```

11.20 AT+CGSCONTRDP Return the relevant information of secondary PDP context

Description

The execution command returns <p_cid>, <bearer_id> and <IM_CN_Signalling_Flag> for a given <cid>. If the context cannot be found an ERROR response is returned.

If the parameter <cid> is omitted, the <cid>, <p_cid>, <bearer_id> and <IM_CN_Signalling_Flag> are returned for all established PDP contexts.

In EPS, the Traffic Flow parameters are returned.

NOTE: Parameters for network initiated PDP contexts are returned as well. The dynamic part of the PDP context will only exist if established by the network.

The test command returns a list of <cid>s associated with active contexts.

SIM PIN	References
YES	3GPP TS 23.203 [85]

Syntax

Test Command	Responses
AT+CGSCONTRDP =?	+CGSCONTRDP: (list of <cid>s associated with active contexts) OK

Write Command	Responses
AT+CGSCONTRDP =[<cid>]	+CGSCONTRDP: <cid>,<p_cid>,<bearer_id>[,<IM_CN_Signalling_Flag>] [<CR><LF>+CGSCONTRDP: <cid>,<p_cid>,<bearer_id>[,<IM_CN_Signalling_Flag>] [...]] OK
	+CME ERROR: <err>

Defined values

<cid>
a numeric parameter which specifies a particular PDP context or Traffic Flows definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands (see the +CGDCONT and +CGDSCONT commands).
<p_cid>
a numeric parameter which specifies a particular PDP context definition or default EPS context Identifier which has been specified by use of the +CGDCONT command. The parameter is local to the TE-MT interface (see the +CGDSCONT command).
<bearer_id>
a numeric parameter which identifies the bearer, EPS Bearer in EPS and NSAPI in UMTS/GPRS.
<IM_CN_Signalling_Flag>
a numeric parameter used to show whether the PDP context is for IM CN subsystem-related signalling only or not. 0 PDP context is not for IM CN subsystem-related signalling only 1 PDP context is for IM CN subsystem-related signalling only

Examples

AT+CGSCONTRDP=?
OK

11.21 AT+CGTFTRDP Return the relevant information of the traffic flow template

Description

The execution command returns the relevant information about Traffic Flow Template of `<cid>` together with the additional network assigned values when established by the network. If the context cannot be found an `ERROR` response is returned.

If the parameter <cid> is omitted, the Traffic Flow Templates for all established PDP contexts are returned.
Parameters of both network and MT/TA initiated PDP contexts will be returned.
The test command returns a list of <cid>s associated with active contexts.

SIM PIN	References
YES	3GPP TS 23.203 [85]

Syntax

Test Command	Responses
AT+ CGTFTRDP=?	+CGTFTRDP: (list of <cid>s associated with active contexts) OK
	ERROR
Write Command	**Responses**
AT+ CGTFTRDP = <cid>	+CGTFTRDP: <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>,<NW packet filter Identifier> [<CR><LF>+CGTFTRDP: <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>,<NW packet filter Identifier> [...]] OK
	ERROR

Defined values

<cid>
a numeric parameter which specifies a particular PDP context definition or Traffic Flows definition (see +CGDCONT and +CGDSCONT commands).
< packet filter identifier >
a numeric parameter. The value range is 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 "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. When +CGPIAF is supported, it's settings can influence the format of this parameter returned with the execute form of +CGTFTRDP.
< 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 Bidirectional (Used for Uplink and Downlink)
<NW packet filter Identifier>
a numeric parameter. The value range is from 1 to 16. In EPS the value is assigned by the network when established

Examples

AT+CGTFTRDP=?
OK

11.22 AT+CGEQOSRDP Return the relevant information of the Quality of Service parameters

Description

The execution command returns the Quality of Service parameters <QCI>, [<DL_GBR> and <UL_GBR>] and [<DL_MBR> and <UL_MBR>]of the established PDP Context associated to the provided context identifier <cid>. If the context cannot be found an ERROR response is returned.
If the parameter <cid> is omitted, the Quality of Service parameters for all established PDP contexts are returned.
The test command returns a list of <cid>s associated with active contexts.
Parameters of both network and MT/TA initiated PDP contexts will be returned.

SIM PIN	References
YES	3GPP TS 23.203 [85]

Syntax

Test Command	Responses
AT+CGEQOSRDP =?	+CGEQOSRDP: (list of <cid>s associated with active contexts) OK
	ERROR
Write Command	**Responses**
AT+CGEQOSRDP =<cid>	+CGEQOSRDP: <cid>,<QCI>,[<DL_GBR>,<UL_GBR>],[<DL_MBR>,<UL_MBR>] [<CR>>LF>+CGEQOSRDP: <cid>,<QCI>,[<DL_GBR>,<UL_GBR>],[<DL_MBR>,<UL_MBR>] [...]] OK
	ERROR

Defined values

<cid>
a numeric parameter which specifies a particular Traffic Flows definition in EPS and a PDP Context definition in UMTS/GPRS (see the +CGDCONT and +CGDSCONT commands).
<QCI>
a numeric parameter that specifies a class of EPS QoS. 0 QCI is selected by network [1 – 4] value range for guranteed bit rate Traffic Flows [5 – 9] value range for non-guarenteed bit rate Traffic Flows
< DL_GBR >
a numeric parameter which indicates DL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.
< UL_GBR >
a numeric parameter which indicates UL GBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.

< DL_MBR >
a numeric parameter which indicates DL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.
< UL_MBR >
a numeric parameter which indicates UL MBR in case of GBR QCI. The value is in kbit/s. This parameter is omitted for a non-GBR QCI.

Examples

AT+CGEQOSRDP=?
OK

11.23 AT+CEMODE Set the ME to operate according to the specified mode

Description

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

The read command returns the mode of operation set by the TE, independent of the current serving cell capability and independent of the current serving cell Access Technology.

The test command is used for requesting information on the supported MT mode of operation.

SIM PIN	References
YES	3GPP TS 23.203 [85]

Syntax

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

	ERROR

Defined values

<mode>
a numeric parameter which indicates the mode of operation
0 PS mode 2 of operation
1 CS/PS mode 1 of operation
2 CS/PS mode 2 of operation
3 PS mode 1 of operation

Examples

AT+CEMODE?
+CEMODE: 1
OK
AT+ CEMODE =?
+CEMODE: (0-3)
OK

12 TCP/IP Related Commands

12.1 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

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)
<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
<h_comp>
A numeric parameter that controls PDP header compression: 0 – off (default if value is omitted) 1 – on

Examples

```
AT+CGSOCKCONT?
+CGSOCKDCONT: 1,"IP","","0.0.0.0",0,0
OK
AT+CGSOCKCONT=?
+CGSOCKCONT: (1-16),"IP",,,(0,1),(0,1)
+CGSOCKCONT: (1-16),"PPP",,,(0,1),(0,1)
+CGSOCKCONT: (1-16),"IPV6",,,(0,1),(0,1)
OK
```

12.2 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

12.3 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>	OK

[,<auth_type>[,<passwd>[,<user>]]]	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
<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),132,132
OK
AT+CSOCKAUTH=1,2,"SIMCOM","123"
OK

12.4 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
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).

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)

<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>

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+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)
OK
```

12.5 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
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>[,<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+CGSOCKEQREQ	OK

Defined values

<cid>
Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands. 1…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,…). 0 subscribed value 1kbps…63kbps – value needs to be divisible by 1 without remainder 64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps 576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps
<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,…).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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,…).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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+CGSOCKEQREQ=…,32,…).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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.

0 – subscribed value

10…1520 (value needs to be divisible by 10 without remainder)

<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
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.

0 – subscribed value
10…150 – value needs to be divisible by 10 without remainder
200…950 – value needs to be divisible by 50 without remainder
1000…4000 – value needs to be divisible by 100 without remainder

<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.

0 – subscribed value
1 –
2 –
3 –

<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)

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),(0,100-4000),(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),(0,100-4000),(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),(0,100-4000),(0-3)
OK
```

12.6 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

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT 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)

<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>

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)
OK
```

12.7 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
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
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

Defined values

<cid>

Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands.

1…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).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<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).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

<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).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

<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).

0 subscribed value

1kbps…63kbps – value needs to be divisible by 1 without remainder

64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64kbps

576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

<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).

0 – subscribed value

10…1520 (value needs to be divisible by 10 without remainder)

<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+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).

0	–	subscribed value
10…150	–	value needs to be divisible by 10 without remainder
200…950	–	value needs to be divisible by 50 without remainder
1000…4000	–	value needs to be divisible by 100 without remainder

<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.

0 – subscribed value
1 –
2 –
3 –

<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)

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),(0,100-4000),(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),(0,100-4000),(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),(0,100-4000),(0-3)
OK
```

12.8 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
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
OK

12.9 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>, <mode> OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses

AT+NETOPEN	OK +NETOPEN: <err>
	+NETOPEN: <err> OK
	+NETOPEN: <err> 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)
<mode>
a numeric parameter that module is used which mode.At present, it supports three mode,such as single-client, tcp-server and multi-client.if <mode> is 1,then <sock_type> and <port> are ignored. 0 single-client or tcp-server, this is only used to be compatible with old TCP command set 1 multi-client
<err >
The result of operation, 0 is success, other value is failure.

Examples

AT+NETOPEN
OK
+NETOPEN: 0
AT+NETOPEN?
+NETOPEN: 1, 1
OK

12.10 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
Execution Command	Responses
AT+NETCLOSE	OK +NETCLOSE: <err>
	+NETCLOSE: <err> OK
	+NETCLOSE: <err> ERROR
	ERROR

Defined values

<err>
The result of operation, 0 is success, other value is failure.

Examples

AT+NETCLOSE
OK
+NETCLOSE: 0

12.11 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

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
Write Command	Responses
AT+SERVERSTART=<port >,<server_index>	OK
	+CIPERROR: <err> ERROR

Defined values

<server_index>
The TCP server index.
<err>
The result of operation, 0 is success, other value is failure.

Examples

AT+SERVERSTART
OK
AT+SERVERSTART?
+SERVERSTART: 0, 1000 *+SERVERSTART: 2, 2000* *OK*

12.12 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
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.
<err>
The result of operation, 0 is success, other value is failure.

Examples

AT+SERVERSTOP=?	*AT+SERVERSTART*
OK	*OK*
AT+SERVERSTOP=0	*AT+SERVERSTART?*
+SERVERSTOP: 0 *OK*	*+SERVERSTART: 0, LISTENING* *+SERVERSTART: 1, NOT LISTENING* *OK*

12.13 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
NO	Vendor

Syntax

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

AT+CIPHEAD?	+CIPHEAD: <mode> OK
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
AT+CIPHEAD=0
OK

12.14 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
NO	Vendor

Syntax

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

12.15 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
NO	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
Read Command	Responses
AT+CIPCCFG?	+CIPCCFG:<NmRetry>,<DelayTm>,<Ack>,<errMode>,<Header-Type>,<AsyncMode>,<TimeoutVal>

	OK
Write Command	Responses
AT+CIPCCFG=[<NmRetry>][,[<DelayTm>][,[<Ack>][,[<errMode>][,]<HeaderType>][,[[<AsyncMode>][,[<TimeoutVal>]]]]]]]	OK 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>
a numeric parameter which sets whether reporting a string "Send ok" when sending some data as a tcp connection. 0 not reporting 1 reporting 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 >
a numeric parameter which sets mode of executing command AT+NETOPEN, AT+NETCLOSE, AT+CIPOPEN, AT+CIPCLOSE in multi-client mode. 0 synchronous command executing 1 asynchronous command executing, ok/error return first, then report +IP OK or +IP ERROR.

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),(0-1),(0-1),(0-1) ,(0-1) ,(500-120000)

OK

AT+CIPCCFG=3,500,1,1,1,0,500

OK

12.16 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.

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)
OK

12.17 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 are 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
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
	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".In the latest software version,it already Supports DNS query, so it may be a string like "www.google.com.".
<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.

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

12.18 AT+CIPSEND Send data through TCP or UDP connection

Description

This command is used to send data to remote side.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
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* (This format is for TCP connect)	OK +CIPSEND: <link_num>,<reqSendLength>, <cnfSendLength>
	+CIPERROR: <err> ERROR
	ERROR
AT+CIPSEND=<link_num>,<length>,<serverIP>,<server Port><CR>*data for send* (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".
<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, and should be closed.
<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=?
+CIPSEND: (0-9), (1-1500) *OK*

12.19 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
AT+CIPCLOSE=?	+CIPCLOSE: (list of supported <link_num>s) OK
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

12.20 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
Write Command	Responses

AT+CDNSGIP=<domain name>	*If successful,return:* +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*

12.21 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
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*

12.22 AT+CIPMODE Select TCPIP 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
AT+CIPMODE
OK
```

12.23 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
NO	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*

12.24 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
NO	Vendor

Syntax

Test Command	Responses

AT+CTCPFIN=?	+CTCPFIN: (list of supported <TCP_FIN_Enable>s),(list of supported <DelayTm>s) OK
Read Command	Responses
AT+CTCPFIN?	+CTCPFIN:<TCP_FIN_Enable>,<DelayTm> OK
Write Command	Responses
AT+CTCPFIN= <TCP_FIN_Enable>, <DelayTm>	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
<DelayTm>
a numeric parameter which is number of seconds to delay before closing the PS network. This parameter only affects the AT+NETCLOSE command when using single TCP/UDP mode. The range is 0 to 10.

Examples

```
AT+CTCPFIN=?
+CTCPFIN: (0,1),(0-10)
OK
AT+CTCPFIN=1,2
OK
```

12.25 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
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

12.26 AT+CTCPKA Conigure TCP heartbeat

Description

This command is used to set TCP heartbeat parameters..

SIM PIN	References
NO	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=?
+CTCPKA: (0,1),(1-120) ,(1-10) *OK*
AT+CTCPKA=1,3,3
OK

12.27 AT+CPING Ping destination address

Description

This command is used to ping destination address.

SIM PIN	References
YES	Vendor

Syntax

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
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.
<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
```

12.28 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

```
AT+CPINGSTOP
OK
```

12.29 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
NO	Vendor

Syntax

Test Command	Responses
AT+CTEUTP=?	+CTEUTP: (list of supported <Echo_Unknown_TCP_Enable>s) OK
Read Command	Responses
AT+CTEUTP?	+CTEUTP:<Echo_Unknown_TCP_Enable> OK
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)
OK
AT+CTEUTP=1
OK
```

12.30 AT+CUPURE Set UDP port unreachable ICMP echo

Description

This command is used to enable or disable UDP port unreachable echo.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CUPURE=?	+CUPURE: (list of supported <UDP_PORT_UNREACHABLE_Enable>s) OK
Read Command	Responses
AT+CUPURE?	+CUPURE:< UDP_PORT_UNREACHABLE_Enable> OK
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)
OK
AT+CUPURE=1
OK
```

12.31 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
Read Command	Responses
AT+CINICMPALLOW?	+CINICMPALLOW: <mode> OK
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
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

12.32 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=?	*1. If single-client:* +CIPRXGET: (0-4), (1-1500) OK *2. If multi-client:* +CIPRXGET: (0-4),(0-9),(1-1500) OK
	ERROR
Read Command	**Responses**
AT+CIPRXGET?	<mode> OK
Execution Command	**Responses**
1. If single-client (AT+CIPRXGET=0): AT+CIPRXGET=<mode>[,<len>] *2. If multi-client (AT+CIPRXGET=1):* AT+CIPRXGET=<mode>,<cid>[,<len>]	*1. If <mode> = 0 or 1:* OK *2. If <mode> = 2 or 3:* *a. If single-client:* +CIPRXGET: <mode>,<read_len>,<rest_len> <data> OK *b. If multi-client:* +CIPRXGET: <mode>,<cid>,<read_len>,<rest_len> <data> OK *3. If<mode> = 4:* *a. If single-client:* +CIPRXGET: 4,<rest_len> OK *b. If multi-client:*

	+CIPRXGET: 4,<cid>,<rest_len> OK
	If ERROR occurred
	+IP ERROR: <error message> ERROR

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(single client) or +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
0123456789012345678901234567890123456789012345678901234567890123456789
0123456789012345678901234567890123456789012345678901234567890123456789
0123456789012345678901234567890123456789012345678901234567890123456789

OK
AT+CIPRXGET=3,100
+CIPRXGET: 3,100,1200
3031323334353637383930313233343536373839303132333435363738393031323334
3536373839303132333435363738393031323334353637383930313233343536373839
3031323334353637383930313233343536373839303132333435363738393031323334
3536373839303132333435363738393031323334353637383930313233343536373839

OK
AT+CIPRXGET=4
+CIPRXGET: 4,1200

OK
AT+CIPRXGET=2,0,100
+CIPRXGET: 2,0,100,1300
0123456789012345678901234567890123456789012345678901234567890123456789
0123456789012345678901234567890123456789012345678901234567890123456789

OK
AT+CIPRXGET=3,0,100
+CIPRXGET: 3,0,100,1200
3031323334353637383930313233343536373839303132333435363738393031323334
3536373839303132333435363738393031323334353637383930313233343536373839
3031323334353637383930313233343536373839303132333435363738393031323334
3536373839303132333435363738393031323334353637383930313233343536373839

OK
AT+CIPRXGET=4,0
+CIPRXGET: 4,0,1200

OK
```

12.33 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
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. It's range is 0 to 3. Default value is 3.
<net_timeout>
Timeout value for each opening PS network operation when performing DNS query. It's range is from 3000ms to 120000ms. Default value is 30000ms.
<max_query_retries>
Maximum retry times for performing DNS query using UDP packet. It's range is from 0 to 7. Default value is 7.

Examples

AT+CIPDNSSET?
+CIPDNSSET: 1,30000,3 *OK*

```
AT+CIPDNSSET=1,30000,1
OK
```

12.34 Information elements related to TCP/IP

The following table lists information elements which may be reported.

Information	Description
+CIPEVENT: NETWORK CLOSED UNEXPECTEDLY	Network is closed for network error(Out of service, etc). When this event happens, user application needs to check and close all opened sockets, and then use 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>: a numeric parameter that identifies a connection. The range of permitted values is 0 to 9. <close_reason>: a numeric parameter that identifies the reason to close a client 0– close connection forwardly 1– closed connection passively 2– reset connection because of timeout of sending data
+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>.

12.34.1Unsolicited 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
255	Unknown error

13 GPS Related Commands

13.1 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>
	ERROR

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

Examples

AT+CGPS?
OK
AT+CGPS=1,1
OK

13.2 AT+CGPSINFO Get GPS fixed position information

Description

This command is used to get current position information.

SIM PIN	References
NO	Vendor

Syntax

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

```
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
```

13.3 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
```

13.4 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

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

Examples

AT+CGPSHOT=?
OK
AT+CGPSHOT
OK

13.5 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

13.6 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
```

13.7 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

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
```

13.8 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

	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 – PSTIS (proprietary string at the beginning of each GNSS session) 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

13.9 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> 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
```

13.10 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

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

13.11 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

13.12 AT+CGPSNOTIFY LCS respond positioning request

Description

This command is used to respond to the incoming request for positioning request message.

NOTE: This command is only for SIM5360A.

SIM PIN	References
NO	Vendor

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
```

13.13 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
```

13.14 AT+CGPSXD Download XTRA assistant file

Description

This command is used to download the GPS XTRA assistant file from network through http 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

13.15 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.

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

13.16 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>) 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 31. Default value is 0. 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) 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),(0-31)
OK
AT+CGPSINFOCFG=10,31
OK
*$GPGSV,4,1,16,04,53,057,44,02,55,334,44,10,61,023,44,05,45,253,43*7D*
*$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*

13.17 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>
Range – 1 to 127, default is 127 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) 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

13.18 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
OK
```

13.19 AT+CGPSHOR Configure positioning desired accuracy

Description

This 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>) OK
Read Command	Responses
AT+CGPSHOR?	+CGPSHOR: <acc> OK
Write Command	Responses

AT+CGPSHOR=<acc>	OK
	ERROR

Defined values

<acc>
Range – 0 to 1800000 Default value is 50

Examples

AT+CGPSHOR=50
OK

14 Result codes

14.1 12.1 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

14.2 12.2 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
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
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
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
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

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