AT Command Set

SIM5360 _ATC_V0.19
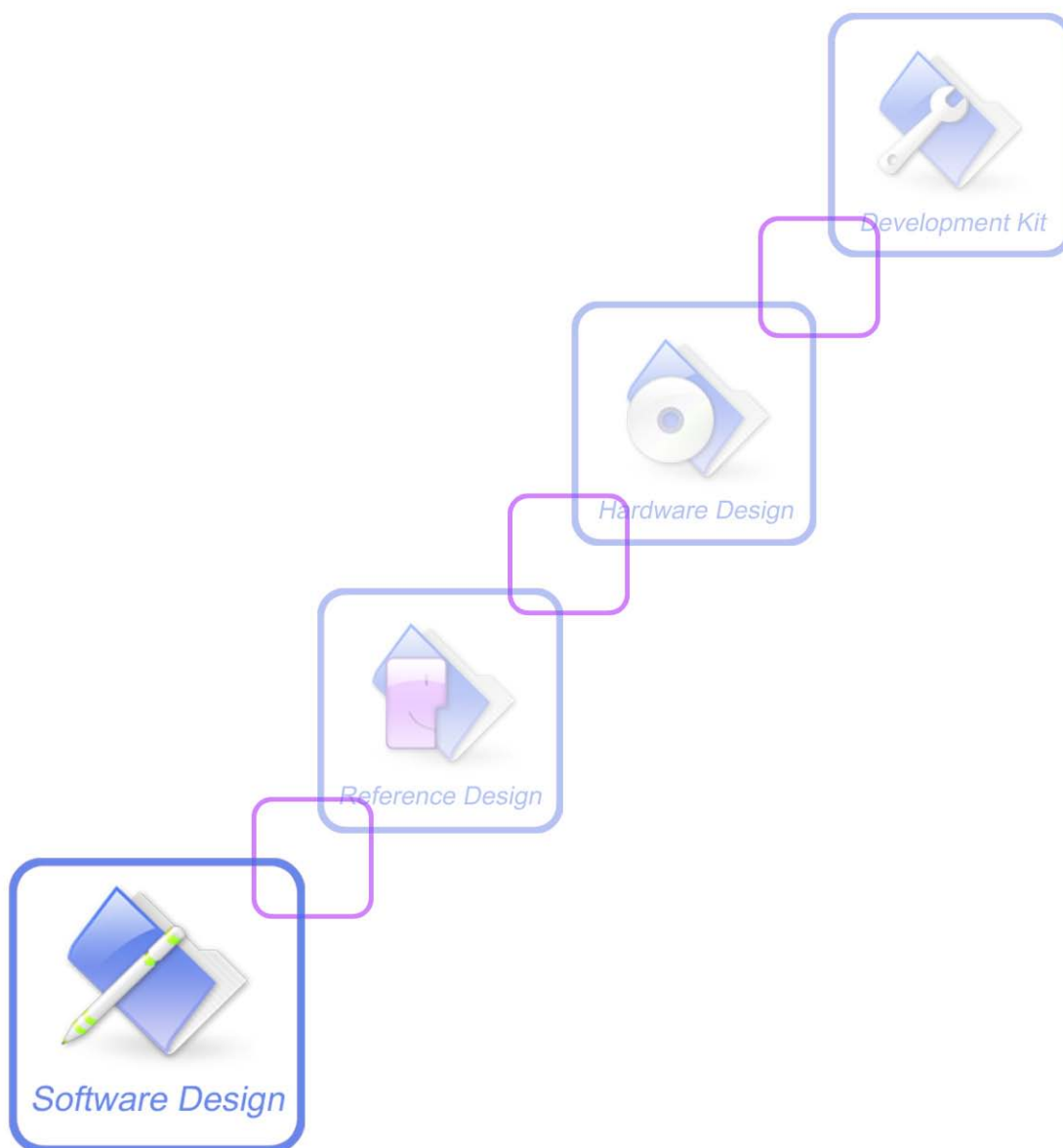
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Version History

Version	Chapter	Comments
V0.01	New Version	Initital verison
V0.02	22.1 Indication of EONS	Modify the description of PNN UPDATING.
V0.02	6.35 AT+CNSVUS	Modify the description of this command.
V0.02	6.36 AT+CNSVUN	Modify the description of this command.
V0.03	18.5.3 AT+CHTTPSOPSE	Modify the description of this command.
V0.03	11.2 AT+CPBS	Modify the description of this command.
V0.03	18.5.6AT+CHTTPSRECV	Modify the description of this command.
V0.03	MKBUG00004688	Modify pin value of at command
V0.03	20.9 AT+CGPSNMEA	Add GLONASS NMEA sentence
V0.03	16.34.1 Unsolicited TCP/IP command <err> Codes	Add err no.10 for timeout
V0.03	9.36 AT+CUSBSPD	Change default value from full speed to high speed
V0.03	9.42 AT+CMTE	Add the at command
V0.03	12.9AT+FSLOCA	Modify the description of this command.
V0.03	12 FS command	Modify File System Related Commands
V0.04	16.1 AT+CGSOCKCONT	Add type "IPV4V6" to <PDP_type>
V0.04	16.19 AT+CIPCLOSE	Add return error state for AT+CIPCLOSE? if net was not multi client
V0.04	19.20 AT+CMMSSYSSET	Change <max_pdu_size> from 102400 to 307712
V0.04	6.37 AT+CCGMDF	Change default value to 0
V0.04	18.3.7 AT+CFTPGETFILE 18.3.8 AT+CFTPPUTFILE 18.6.12 AT+CFTPSGETFILE 18.6.13 AT+CFTPSPUTFILE	Change dir value from 0 to 8
V0.04	18.10.6 AT+CSSLKEY	Modify the description of this command.
V0.04	16.34 Information elements related to TCP/IP	add explanation for <client_index> and <close_reason>
V0.04	15.3 AT+CGTFT	add explanation for <PDP_type>
V0.04	12.11 AT+FSFMT	Add the at command
V0.04	9.1 AT+CTXGAIN Set TX gain	Del ete the at command
V0.04	9.2 AT+CRXGAIN Set RX gain	Del ete the at command
V0.04	9.18 AT+CMICAMP1 Set value of micamp1	Del ete the at command
V0.04	9.20 AT+SIDET Digital attenuation of sidetone	Del ete the at command

V0.04	9.20 AT+SIDET Digital attenuation of sidetone	Del ete the at command
V0.05	16.12 AT+SERVERSTOP Stop TCP server	Modify "AT+SERVERSTOP=?" example
V0.05	6.18 AT+CNMP Preferred mode selection	Add the mode which value is "19 "
V0.05	14.11 AT&F Set all current parameters to manufacturer defaults	Modify AT+CNBP default value from 0x0002000000680380 to 0x0002000000E80380 Modify AT+CGSOCKCONT format of default value Delete the default value of command AT+CMICAMP1, AT+SIDET, AT+CTXGAIN, AT+CRXGAIN,. AT+CEMNLIST AT+CMMSSENDCFG, AT+CMMSCURL, AT+CMMSPROTO.
V0.05	6.30 AT+CPLMNWLIST Manages PLMNs allowed by customer	Add SIM PIN|References
V0.05	6.32 AT+CNSVSQ Network band scan quickly	Add Response type
V0.05	6.33 AT+CNSVS Network full band scan in string format	Add Response type
V0.05	6.34 AT+CNSVN Network full band scan in numeric format	Add Response type
V0.06	7.4 AT+CFUN Set phone functionality	Add Note
V0.07	24.1 AT+CSCRIPTSTART 24.2 AT+CSCRIPTSTOP 24.3 AT+ CSCRIPTCL 24.4 AT+ CSCRIPTPASS 24.5 AT+ CSCRIPTCMD 24.6 AT+ PRINTDIR 24.7 AT+ CSCRIPTAUTO 24.8 Unsolicited CSCRIPT codes	add
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V0.07	7.15 AT+CDELTA Write delta package to FOTA partition	Add AT+CDELTA command
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V0.09	24.1 AT+CSCRIPTSTART 24.6 AT+ PRINTDIR 24.7 AT+ CSCRIPTAUTO	Modify the description of the second parameter Modify default value Modify default value
V0.09	6.13 AT+CAOC 6.18 AT+CNMP 6.19 AT+CNBP 6.23 AT+CNSMOD 6.42 AT+MONI 6.43 AT+CNLSA	Modify write command results Modify the SIM PIN required. Modify the SIM PIN required. Modify the SIM PIN required Add command Add command
V0.09	16.3 AT+CSOCKAUTH Set type of authentication for PDP-IP connections of socket	Modify the parameter of test command
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V0.16	6.44 AT+CCLASS GRPS and EDGE class type 6.45 AT+CGSI GSM service cell information 6.46 AT+CWRRCR GRPS and EDGE class type 6.47 AT+CSGSNR Set SGSN version 6.48 AT+CMSCR Set MSC version 6.49 AT+CLDCH Lock UE at DCH state 6.50 AT+CFRAUR Force routing area update request 6.51 AT+CFLAUR Force location area update request 6.52 AT+REBOOT Reboot the system 6.53 AT+CMSSN Manual select specific network 6.54 AT#REBOOT Reboot the system 6.55 AT#MONI Show cell	Add these commands.

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V0.16	15.2 AT+CGDSCONT Define Secondary PDP Context	Modify Read Command
V0.16	14.11 AT&F Set all current parameters to manufacturer defaults	Modify default values
V0.16	9.42 AT+CPMVT Low and high voltage Power Off	Add AT+CPMVT
V0.16	9.5 AT+CVALARM Low and high voltage Alarm	Modify the parameter, add the high voltage threshold.
V0.16	9.18 AT+CECSET Set/Get the parameters of the EC	Modify the mistake
V0.17	16.16 AT+CIPTIMEOUT Set TCP/IP timeout value	Add this Command
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V0.18	15.9 AT+CGACT PDP context activate or deactivate	Modify the description of read command
V0.19	16.37 AT+CDNSSRV Get dns server ip address	Add this command

Contents

1 Introduction

1.1 Scope

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

SIM5360

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
- DPO   Dynamic Power Optimization
- DTE   Data Terminal Equipment
- DTMF   Dual Tone Multi–Frequency

- EDGE   Enhanced Data GSM Environment
- EGPRS   Enhanced General Packet Radio Service
- GNSS   Global Navigation Satellite System
- GPIO   General–Purpose Input/Output
- GPRS   General Packet Radio Service
- GPS   Global Positioning System
- 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
- NMEA   National Marine Electronics Association
- 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_SIM5360E
Revision: SIM5360_V3.5
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_SIM5360
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: 3535B01SIM5360E
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 |

3.11 AT+CFGRI Indicate RI when using URC

Description

This command is used to config whether pulling down the RI pin of UART when URC reported. If <status> is 1, host may be wake up by RI pin.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFGRI=?	+CFGRI: (range of supported <status>s), (range of supported <save>s) OK
Read Command	Responses
AT+CFGRI?	+CFGRI: <status>, <save> OK
Write Command	Responses
AT+CFGRI=<status>[,<save>]	OK
	ERROR
Execution Command	Responses
AT+CFGRI	*Set <status> = 1,<save> = 0:* OK

Defined values

<status>	
0	off
1	on

<save>	
0	<status> not saved in nonvolatile memory
1	<status> saved in nonvolatile memory.After it resets, <status> still takes effect.

Examples

AT+CFGRI=?
+CFGRI: (0-1),(0-1)
OK
AT+CFGRI?
+CFGRI: 0,0
OK
AT+CFGRI=1,1
OK
AT+CFGRI
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	*Set default value :*
	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

    <u>129</u>   –   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>
<u>0</u> –   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 @

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 +++   Switch from data mode to command mode

Description

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

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

SIM PIN	References
YES	V.25ter

Syntax

Execution Command	Responses
+++	OK

Examples

+++
OK

4.9 ATO   Switch from command mode to data mode

Description

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

SIM PIN	References
YES	V.25ter

Syntax

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

Examples

ATO
CONNECT 115200

4.10 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

4.11 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

4.12 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

4.13 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

4.14 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

4.15 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>
<u>0</u> –   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

4.16 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

4.17 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>
<u>0</u> – 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

4.18 AT+VTS   DTMF and tone generation

Description

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

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

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Write Command	Responses
AT+VTS=<dtmf> [,<duration>]	OK
AT+VTS=<dtmf-string>	ERROR

Defined values

<dtmf>
A single ASCII character in the set 0-9, *, #, A, B, C, D.
<duration>
Tone duration in 1/10 seconds, from 0 to 255. This is interpreted as a DTMF tone of different duration from that mandated by the AT+VTD command, otherwise, the duration which be set the AT+VTD command will be used for the tone (<duration> is omitted).
<dtmf-string>

A sequence of ASCII character in the set 0-9, *, #, A, B, C, D, and maximal length of the string is 29. The string must be enclosed in double quotes (""), and separated by commas between the ASCII characters (e.g. "1,3,5,7,9,*"). Each of the tones with a duration which is set by the AT+VTD command.

Examples

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

4.19 ATS0   Automatic answer

Description

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

SIM PIN	References
YES	V.25ter

Syntax

Read Command	Responses
ATS0?	<n>
	OK

Write Command	Responses
ATS0=<n>	OK

Defined values

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

automatically.

Examples

ATS0?
000
OK
ATS0=003
OK

4.20 AT+VTD   Tone duration

Description

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

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

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

Examples

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

AT+VTD?

+VTD: 0

OK

AT+VTD=5

OK

4.21 AT+CODEC   Set audio codec mode

Description

The command is used to configure audio codec mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CODEC=?	+CODEC: (list of supported <g_codec>s), (list of supported <w_codec>s) OK

Read Command	Responses
AT+CODEC?	+CODEC: <g_codec>, <w_codec> OK

Write Command	Responses
AT+CODEC=<g_codec>,<w_codec>	OK
	ERROR

Execution Command	Responses
AT+CODEC	*Set default value(31,7)* OK

Defined values

<g_codec>
1~63 – Sum of integers each representing a specific codec mode, default value is 31.

    1 – GSM FR

    2 – GSM HR

    4 – GSM EFR

    8 – GSM FR AMR

    16 – GSM HR AMR

    32 – GSM FR AMR-WB

<w_codec>

1~7 – Sum of integers each representing a specific codec mode.,default value is 7.
    1 – UMTS AMR
    2 – UMTS AMR2
    4 – UMTS AMR-WB

Examples

AT+CODEC=?
+CODEC: (1-63),(1-7)
OK
AT+CODEC?
+CODEC: 63,7
OK
AT+AUTOCSQ=31,7
OK

4.22   AT+CVOC   Get the current vocoder capability in a call

Description

This command is used to get the current vocoder capability in a call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CVOC=?	OK

Execution Command	Responses
AT+CVOC	+CVOC: <voc>,<amr_mode>,<DTX>,<SCR>
	OK

Defined values

<voc>
0x100   –   AMR codec
0x200   –   GSM EFR codec
0x400   –   GSM Full rate codec
0x800   –   GSM Half rate codec
0x1000000   –   AMR-WB vocoder
Other values is reserved
<amr_mode>
0   –   4.75kbit/s AMR

1	–	5.15kbit/s AMR
2	–	5.9kbit/s AMR
3	–	6.7kbit/s AMR
4	–	7.4kbit/s AMR
5	–	7.95kbit/s AMR
6	–	10.2kbit/s AMR
7	–	12.2kbit/s AMR
8	–	6.60kbit/s AMR-WB
9	–	8.85kbit/s AMR-WB
10	–	12.65kbit/s AMR-WB
11	–	14.25kbit/s AMR-WB
12	–	15.58kbit/s AMR-WB
13	–	18.25kbit/s AMR-WB
14	–	19.58kbit/s AMR-WB
15	–	23.05kbit/s AMR-WB
16	–	23.85kbit/s AMR-WB
17	–	undefined

<DTX>

0	–	Disable encoder DTX mode
1	–	Enable encoder DTX mode

<SCR>

0	–	Disable encoder SCR mode
1	–	Enable encoder SCR mode

Examples

AT+CVOC
+CVOC: 0x200,17,0,0
OK
AT+CVOC
+CVOC: 0x100,7,0,0
OK

4.23 AT+MORING   Enable or disable report MO ring URC

Description

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

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<mode>

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

Examples

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

4.24   AT+CSDVC   Switch voice channel device

Description

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

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses

| AT+CSDVC=? | +CSDVC: (list of supported <dev>s) |
| | OK |

Read Command	Responses
AT+CSDVC?	+CSDVC: <dev>
	OK

| Write Command | Responses |
| AT+CSDVC=<dev> | OK |

Defined values

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

Examples

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

4.25 AT+CMUT Microphone mute control

Description

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

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

| SIM PIN | References |
| NO | 3GPP TS 27.007 |

Syntax

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

	ERROR

Defined values

<mode>
<u>0</u> – mute off
1 – mute on

Examples

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

4.26　AT+CLVL　Loudspeaker volume level

Description

Write command is used to select the volume of the internal loudspeaker audio output of the device.

Test command returns supported values as compound value.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

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

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

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

Defined values

<level>
Integer type value which represents loudspeaker volume level. The range is from 0 to 7, and 0 represents the lowest loudspeaker volume level, 2 is default factory value.
NOTE: <level> is nonvolatile, and it is stored when restart.

Examples

AT+CLVL?	
+CLVL:2	
OK	
AT+CLVL=3	
OK	

4.27   AT+VMUTE   Speaker mute control

Description

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

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

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+VMUTE?	+VMUTE: <mode> OK

Write Command	Responses
AT+VMUTE=<mode>	OK
	ERROR

Defined values

<mode>
0 – mute off 1 – mute on

Examples

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

4.28   AT+CALM   Alert sound mode

Description

This command is used to select the general alert sound mode of the device. If silent mode is selected then incoming calls will not generate alerting sounds but only the unsolicited indications RING or +CRING. The value of <mode> will be saved to nonvolatile memory after write command is executed.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

<mode>
0 – normal mode (factory value)   1 – silent mode; no sound will be generated by the device

Examples

AT+CALM=0
OK
AT+CALM?
+CALM: 0
OK

4.29   AT+CRSL   Ringer sound level

Description

This command is used to select the incoming call ringer sound level of the device. The value of <level> will be saved to nonvolatile memory after write command is executed.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

<level>
Integer type value which represents the incoming call ringer sound level. The range is from 0 to 8, and 0 represents the lowest level, 2 is default factory value.
NOTE: <level> is nonvolatile, and it is stored when restart.

Examples

AT+CRSL=2
OK
AT+CRSL?
+CRSL:2
OK

4.30　AT+CPTONE　Play tone

Description

This command is used to play a DTMF tone or complex tone on local voice channel device which is selected by AT+CSDVC.

SIM PIN	References
NO	Vendor

Syntax

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

	OK
Write Command	**Responses**
AT+CPTONE=<tone>	OK
	[+RXDTMF: <key>] (when <tone> is between 1 and 16)

Defined values

<tone>		
0	–	Stop the sound tone
1	–	DTMF tone for 1 key, duration 100ms
2	–	DTMF tone for 2 key, duration 100ms
3	–	DTMF tone for 3 key, duration 100ms
4	–	DTMF tone for 4 key, duration 100ms
5	–	DTMF tone for 5 key, duration 100ms
6	–	DTMF tone for 6 key, duration 100ms
7	–	DTMF tone for 7 key, duration 100ms
8	–	DTMF tone for 8 key, duration 100ms
9	–	DTMF tone for 9 key, duration 100ms
10	–	DTMF tone for 0 key, duration 100ms
11	–	DTMF tone for A key, duration 100ms
12	–	DTMF tone for B key, duration 100ms
13	–	DTMF tone for C key, duration 100ms
14	–	DTMF tone for D key, duration 100ms
15	–	DTMF tone for # key, duration 100ms
16	–	DTMF tone for * key, duration 100ms
17	–	Subscriber busy sound, duration always
18	–	Congestion sound, duration always
19	–	Error information sound, duration 1330*3ms
20	–	Number unobtainable sound, duration 1330*3ms
21	–	Authentication failure sound, duration 1330*3ms
22	–	Radio path acknowledgement sound, duration 700*1ms
23	–	Radio path not available sound, duration 400*4ms
24	–	CEPT call waiting sound, duration 4000*2ms
25	–	CEPT ringing sound, duration always
26	–	CEPT dial tone, duration always

<key>		
1	–	<tone> value 1
2	–	<tone> value 2
3	–	<tone> value 3
4	–	<tone> value 4
5	–	<tone> value 5
6	–	<tone> value 6
7	–	<tone> value 7

8   –   <tone> value 8
9   –   <tone> value 9
0   –   <tone> value 10
A   –   <tone> value 11
B   –   <tone> value 12
C   –   <tone> value 13
D   –   <tone> value 14
–   <tone> value 15
*   –   <tone> value 16

Examples

AT+CPTONE= ?
+CPTONE:(0-26)
OK
AT+CPTONE=17
OK

4.31   AT+CPCM   External PCM codec mode configuration

Description

This command is used to enable PCM or disable PCM function. And configure different PCM mode. Because the PCM pins are multiplex on GPIO, it will switch the function between GPIO and PCM.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPCM=?	+CPCM: (list of supported <arg_1>s), (list of supported <arg_2>s) OK
Read Command	Responses
AT+CPCM?	+CPCM: <arg_1>,<arg_2> OK
Write Command	Responses
AT+CPCM=<arg_1>[,<arg_2>]	OK

Defined values

<arg_1>

0	–	disable PCM, switch to common GPIOs.
1	–	enable PCM, switch to PCM function.

<arg_2>		
0	–	Auxiliary master PCM, 128K clock and 8K synchronize clock.
1	–	Primary master PCM, 2M clock and 8K synchronize clock...
2	–	Primary slave PCM, clock provided by external codec.

Examples

AT+CPCM=1
OK
AT+CPCM=?
+CPCM : (0-1),(0-2)   *OK*
AT+CPCM?
+CPCM : 1,1   *OK*

4.32   AT+CPCMFMT   Change the PCM format

Description

This command is used to change the current PCM format, there are 3 formats currently supported: linear, u-law, a-law

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CPCMFMT?	+CPCMFMT: <format> OK

Write Command	Responses
AT+CPCMFMT=<format>	OK
	ERROR

Defined values

<format>	
0	u-law
1	a-law
2	linear

Examples

AT+CPCMFMT=?	
+CPCMFMT: (0-2)	
OK	
AT+CPCMFMT?	
+CPCMFMT: 1	
OK	
AT+CPCMFMT=2	
OK	

4.33   AT+CPCMREG   Control PCM data transfer by diagnostics port

Description

This command is used to control PCM data transfer by diagnostics port.First you should set diagnostics port as data mode by AT+DSWITCH.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPCMREG=?	+CPCMREG: (list of supported \<n\>s) OK

Read Command	Responses
AT+CPCMREG?	+CPCMREG: \<n\> OK

Write Command	Responses
AT+CPCMREG=\<n\>	OK
	ERROR

Defined values

\<n\>
Switch PCM data transfer by diagnostics port on/off
0   Disable PCM data transfer by diagnostics port
1   Enable PCM data transfer by diagnostics port

Examples

AT+CPCMREG=?
+CPCMREG: (0-1)
OK
AT+CPCMREG?
+CPCMREG: 0
OK
AT+CPCMREG=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. These values will be saved after the module restarts

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

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=	OK
<mode>[,<mides>[,<dcss>]]	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. These values will be saved after the module restarts

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.

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*	*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

<CTRL-Z/ESC>	*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>[,\<tooa>/\<toda>[,\<stat>]]\<CR> *Text is entered.* \<CTRL-Z/ESC>	+CMGW: \<index> OK
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).

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

5.17 AT+CMGRO   Read message only

Description

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

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGRO=?	OK

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

	OK
	If text mode(AT+CMGF=1), command successful and CBM storage: +CMGRO:\<stat>,\<sn>,\<mid>,\<dcs>,\<page>,\<pages><CR><LF>\<data> OK
	If PDU mode (AT+CMGF=0) and command successful: +CMGR: \<stat>,[\<alpha>],\<length><CR><LF>\<pdu> OK
	Otherwise: +CMS ERROR: \<err>

Defined values

Refer to command AT+CMGR.

Examples

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

5.18 AT+CMGMT   Change message status

Description

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

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGMT=?	OK

Write Command	Responses
AT+CMGMT=\<index>	OK
	ERROR
	+CMS ERROR: \<err>

Defined values

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

Examples

AT+CMGMT=1
OK

5.19 AT+CMVP   Set message valid period

Description

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

SIM PIN	References
YES	Vendor

Syntax

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

Defined values

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

Examples

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

5.20 AT+CMGRD   Read and delete message

Description

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

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGRD=?	OK

Write Command	Responses
AT+CMGRD=<index>	*If text mode(AT+CMGF=1),command successful and SMS-DE-LIVER:* +CMGRD:<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>, <sca>,<tosca>,<length>]<CR><LF><data> OK
	If text mode(AT+CMGF=1),command successful and SMS-SU-BMIT: +CMGRD:<stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>], <sca>,<tosca>,<length>]<CR><LF><data> OK
	If text mode(AT+CMGF=1),command successful and SMS-STA-TUS- REPORT: +CMGRD: <stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> OK
	If text mode(AT+CMGF=1),command successful and SMS-CO-MMAND: +CMGRD:<stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length><CR><LF><data>] OK
	If text mode(AT+CMGF=1),command successful and CBM sto-rage:

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

Defined values

Refer to command AT+CMGR.

Examples

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

5.21 AT+CMGSO   Send message quickly

Description

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

SIM PIN	References
YES	Vendor

Syntax

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

Defined values

<mr>
Message Reference
GSM 03.40 TP-Message-Reference in integer format.
<da>
Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.
<length>
Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+CMGF=0), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length).
<toda>
TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.
<text>
Content of message.
<pducontent>
Content of message.
NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

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

5.22 AT+CMGWO   Write message to memory quickly

Description

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

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGWO=?	OK

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

Defined values

\<index\>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.
\<da\>
Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by \<toda\>.
\<toda\>
TP-Destination-Address, Type-of-Address octet in integer format. (when first character of \<da\> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.
\<text\>
Content of message.
\<pducontent\>
Content of message.

Examples

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

5.23 AT+CMGSEX   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+CMGSEX=?	OK

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

Defined values

<da>
Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.
<toda>
TP-Destination-Address, Type-of-Address octet in integer format. (When first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.
<length>
Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+CMGF=0), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length)
<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
<msg_seg>
The segment number for long sms
<msg_total>
The total number of the segments for long sms. Its range is from 2 to 255.
NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: For single SMS, it is 160 characters if the 7 bit GSM coding scheme is used; For multiple long sms, it is 153 characters if the 7 bit GSM coding scheme is used.

Examples

AT+CMGSEX="13012832788", 190, 1, 2<CR>(TEXT MODE)

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

5.24 AT+CMGENREF   Generate a new message reference

Description

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

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMGENREF=?	OK

Execute Command	Responses
AT+CMGENREF	+CMGENREF: <mr> OK

Defined values

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

Examples

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

5.25 AT+CMSSEX   Send multi messages from storage

Description

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMSSEX=?	OK

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

Defined values

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

Examples

AT+CMSSEX=0,1
+CMSSEX: 239,240
OK
AT+CMSSEX=0,1
+CMSSEX: 238
+CMS ERROR: Invalid memory index

5.26 AT+CMSSEXM   Send message from storage to multi DA

Description

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

Test Command	Responses
AT+CMSSEXM=?	OK

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

Defined values

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

<storage>
Values reserved by the present document:

     "DC"   ME dialed calls list

                  Capacity: max. 10 entries

                  AT+CPBW command is not applicable to this storage.

     "MC"   ME missed (unanswered received) calls list

                  Capacity: max. 10 entries

                  AT+CPBW command is not applicable to this storage.

     "RC"   ME received calls list

                  Capacity: max. 10 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.

<pb_index>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

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

Examples

AT+CMSSEXM=0,"sm",1,3
+CMSSEXM: 1,241
+CMSSEXM: 3,242
OK
AT+CMSSEXM=0,"sm",1,2
+CMSSEXM: 1,invalid index
+CMSSEXM: 2,243
OK

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

Description

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

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSALPHA=?	+ CSALPHA: (list of supported \<setting\>s) OK
Read Command	Responses
AT+ CSALPHA?	+ CSALPHA: \< setting \> OK
Write Command	Responses
AT+ CSALPHA =\< setting \>	OK
Execution Command	Responses
AT+ CSALPHA	*Set default value (\<setting \>=1):* OK

Defined values

\< setting \>
0 – not to match alpha in PB   1 – try to match alpha in PB

Examples

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

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>
<u>0</u> – 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>
<u>0</u> – 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 |

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> [,<passwd>[,<class>]]	OK
	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):*
	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:
<u>0</u> – disable
1 – enable
<m>
<u>0</u> – 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=	OK
<n>[,<index>[,<info>]]	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	
255 – The value 255 covers all classes	
<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=	OK
<n>[,<str>[,<dcs>]]	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: <u>0</u> – 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\>
<u>0</u> – 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+CNMP   Preferred mode selection

Description

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

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CNMP?	+CNMP: <mode> OK

Write Command	Responses
AT+CNMP=<mode>	OK
	ERROR

Defined values

<mode>
<u>2</u>   –   Automatic
13 –   GSM Only
14 –   WCDMA Only

Examples

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

6.19 AT+CNBP   Preferred band selection

Description

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

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNBP?	+CNBP: <mode> OK

Write Command	Responses
AT+CNBP=<mode>	OK
	ERROR

Defined values

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

<pos>

Value:	
0xFFFFFFFF7FFFFFFF	Any (any value)
7	GSM_DCS_1800
8	GSM_EGSM_900
9	GSM_PGSM_900
16	GSM_450
17	GSM_480
18	GSM_750
19	GSM_850
20	GSM_RGSM_900
21	GSM_PCS_1900
22	WCDMA_IMT_2000
23	WCDMA_PCS_1900
24	WCDMA_III_1700
25	WCDMA_IV_1700
26	WCDMA_850
27	WCDMA_800
48	WCDMA_VII_2600
49	WCDMA_VIII_900
50	WCDMA_IX_1700

Examples

AT+CNBP=0x000700000FFF0380
OK
AT+CNBP?
+CNBP: 0xFFFFFFFF3FFFFFFF
OK

6.20 AT+CNAOP　Acquisitions order preference

Description

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

SIM PIN	References
YES	Vendor

Syntax

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

Read Command	Responses
AT+CNAOP?	+CNAOP: <mode>
	OK

Write Command	Responses
AT+CNAOP=<mode>	OK
	ERROR

Defined values

<mode>		
0	–	Automatic
1	–	GSM,WCDMA
2	–	WCDMA,GSM

Examples

AT+CNAOP=1
OK
AT+CNAOP?
+CNAOP: 2
OK

6.21 AT+CNSDP   Preferred service domain selection

Description

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

SIM PIN	References
YES	Vendor

Syntax

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

Read Command	Responses
AT+CNSDP?	+CNSDP: <mode> OK

Write Command	Responses
AT+CNSDP=<mode>	OK
	ERROR

Defined values

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

Examples

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

6.22 AT+CPSI   Inquiring UE system information

Description

This command is used to return the UE system information.

SIM PIN	References

NO	Vendor

Syntax

Test Command	Responses
AT+CPSI=?	+CPSI: (scope of <time>) OK

Read Command	Responses
AT+CPSI?	*If camping on a 2G cell:* +CPSI:<System Mode>,<Operation Mode>,<MCC>- <MNC> <LAC>,<Cell ID>,<Absolute RF Ch Num>, < RxLev >, <Track LO Adjust>,<C1-C2> OK
	If camping on a 3G cell: +CPSI: <System Mode>, <Operation Mode>, <MCC>- <MNC>,<LAC>,<Cell ID>,<Frequency Band>, <PSC>, <Freq>, <SSC>,<EC/IO>,< RSCP >,<Qual>,<RxLev>,<TXPWR> OK
	ERROR

Write Command	Responses
AT+CPSI=<time>	OK
	ERROR

Defined values

<time>
The range is 0-255, unit is second, after set <time> will report the system information every the seconds.
<System Mode>
System mode, values: "NO SERVICE", "GSM" or "WCDMA".
<Operation Mode>
UE operation mode, values: "Online","Offline","Factory Test Mode","Reset", "Low Power Mode".
<MCC>
Mobile Country Code (first part of the PLMN code)
<MNC>
Mobile Network Code (second part of the PLMN code)
<LAC>
Location Area Code (hexadecimal digits)
<Cell ID>
Service-cell ID.
<Absolute RF Ch Num>
AFRCN for service-cell.

<Track LO Adjust>
Track LO Adjust
<C1>
Coefficient for base station selection
<C2>
Coefficient for Cell re-selection
<Frequency Band>
Frequency Band of active set
<PSC>
Primary synchronization code of active set.
<Freq>
Downlink frequency of active set.
<SSC>
Secondary synchronization code of active set
<EC/IO>
Ec/Io value
<RSCP>
Received Signal Code Power
<Qual>
Quality value for base station selection
<RxLev>
RX level value for base station selection
<TXPWR>
UE TX power in dBm. If no TX, the value is 500.

Examples

AT+CPSI?
+CPSI: GSM,Online,460-00 0x182d,12401,27 EGSM 900,-64,2110,42-42
OK
AT+CPSI=?
+CPSI: WCDMA,Online,001-01,0xED2E ,WCDMA IMT 2000,0,9,10688,0,6,62,43,45,500
OK
AT+CPSI=?
+CPSI: (0-255)
OK

6.23 AT+CNSMOD   Show network system mode

Description

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

SIM PIN	References

NO	Vendor

Syntax

Test Command	Responses
AT+CNSMOD=?	+CNSMOD: (list of supported \<n\>s) OK

Read Command	Responses
AT+CNSMOD?	+CNSMOD: \<n\>,\<stat\> OK
	ERROR
	+CME ERROR: \<err\>

Write Command	Responses
AT+CNSMOD=\<n\>	OK
	ERROR
	+CME ERROR: \<err\>

Defined values

\<n\>
0 – disable auto report the network system mode information
1 – auto report the network system mode information, command: +CNSMOD:\<stat\>

\<state\>
0 – no service
1 – GSM
2 – GPRS
3 – EGPRS (EDGE)
4 – WCDMA
5 – HSDPA only
6 – HSUPA only
7 – HSPA (HSDPA and HSUPA)
30 – HSPA+

Examples

AT+CNSMOD?
+CNSMOD: 0,2
OK

6.24 AT+CTZU   Automatic time and time zone update

Description

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

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Read Command	Responses
AT+CTZU?	+CTZU: <onoff> OK

Write Command	Responses
AT+CTZU=<onoff>	OK
	ERROR

Defined values

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

Examples

AT+CTZU?   *+CTZU: 0*   *OK*   *AT+CTZU=1*

OK

6.25 AT+CTZR Time and time zone reporting

Description

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

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

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Read Command	Responses
AT+CTZR?	+CTZR: <onoff> OK

Write Command	Responses
AT+CTZR=<onoff>	OK
	ERROR

Execution Command	Responses
AT+CTZR	*Set default value:* OK

Defined values

<onoff>

Integer type value indicating:

    0 – Disable time zone change event reporting (default).

    1 – Enable time zone change event reporting.

+CTZV: <tz>[,<time>][,<dst>]

Unsolicited result code when time zone received from network isn't equal to local time zone, and if the informations from network don't include date and time, time zone will be only reported, and if network daylight saving time is present, it is also reported. For example:

    +CTZV: 32   *(Only report time zone)*

    +CTZV: 32,1   *(Report time zone and network daylight saving time)*

    +CTZV: 32,08/12/09,17:00:00   *(Report time and time zone)*

+CTZV: 32,08/12/09,17:00:00,1   *(Report time, time zone and daylight saving time)*

For more detailed informations about time and time zone, please refer 3GPP TS 24.008.

    <tz>   Local time zone received from network.

    <time> Universal time received from network, and the format is "yy/MM/dd,hh:mm:ss", where characters indicate year (two last digits), month, day, hour, minutes and seconds.

    <dst>   Network daylight saving time, and if it is received from network, it indicates the value that has been used to adjust the local time zone. The values as following:

        0 – No adjustment for Daylight Saving Time.

        1 – +1 hour adjustment for Daylight Saving Time.

        2 – +2 hours adjustment for Daylight Saving Time.

NOTE: Herein, <time> is Universal Time or NITZ time, but not local time.

Examples

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

6.26 AT+CCINFO   Show cell system information

Description

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

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCINFO=?	OK

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

OK

When ME in dedicated mode:

+CCINFO: [<SCELL>],ARFCN: <arfcn>,MCC: <mcc>,MNC: <mnc>,LAC: <lac>,ID: <id>,BSIC: <bsic>,RXLev: <rxlev>,C1: <c1>,C2: <c2>,TA: <TA>,TXPWR: <TXPWR>

+CCINFO: [<NCELLn>],ARFCN: <arfcn>,BSIC: <bsic>,RXLev: <rxlev>

[…]

OK

When not in GSM:

+CCINFO: NOT IN GSM

OK

ERROR

Defined values

<SCELL>	
indicate serving cell	
<NCELLn>	
available neighbour cell index	
<arfcn>	
assigned radio channel	
<mcc>	
mobile country code	
<mnc>	
mobile network code	
<lac>	
localization area code	
<id>	
cell identifier	
<bsic>	
base station identification code	
<rxlev>	
received signal strength in dBm	
<TA>	
timing advance	
<c1>	
Coefficient for base station selection	
<c2>	
Coefficient for Cell re-selection	
<TXPWR>	
UE TX power in dBm. If no TX, the value is 0.	

Examples

AT+CCINFO (idle mode)
+CCINFO: [SCELL],ARFCN: 11,MCC: 460,MNC: 00,LAC: 6360,ID: 12402,BSIC: 52,RXLev: -68dBm,C1: 35,C2: 35,TA: 0,TXPWR: 0
+CCINFO: [NCell1],ARFCN: 29,MCC: 460,MNC: 00,LAC: 6360,ID: 12625,BSIC: 55,RXLev: -81dBm,C1: 21,C2: 21
+CCINFO: [NCell2],ARFCN: 28,MCC: 460,MNC: 00,LAC: 6360,ID: 8466,BSIC: 49,RXLev: -81dBm,C1: 21,C2: 21
+CCINFO: [NCell3],ARFCN: 25,MCC: 460,MNC: 00,LAC: 6360,ID: 8498,BSIC: 40,RXLev: -81dBm,C1: 21,C2: 21
+CCINFO: [NCell4],ARFCN: 2,MCC: 460,MNC: 00,LAC: 6362,ID: 24644,BSIC: 48,RXLev: -87dBm,C1: 15,C2: 15
+CCINFO: [NCell5],ARFCN: 14,MCC: 460,MNC: 00,LAC: 6360,ID: 12403,BSIC: 54,RXLev: -86dBm,C1: 16,C2: 16
+CCINFO: [NCell6],ARFCN: 13,MCC: 460,MNC: 00,LAC: 6362,ID: 24705,BSIC: 51,RXLev: -89dBm,C1: 13,C2: 13
OK
AT+CCINFO (dedicated mode)
+CCINFO: [SCELL],ARFCN: 11,MCC: 460,MNC: 00,LAC: 6360,ID: 12402,BSIC: 52,RXLev: -61dbm,C1: 42,C2: 42,TXPWR: 29
+CCINFO: [NCell1],ARFCN: 25,BSIC: 40,RXLev: -81dbm
+CCINFO: [NCell2],ARFCN: 28,BSIC: 49,RXLev: -82dbm
+CCINFO: [NCell3],ARFCN: 29,BSIC: 55,RXLev: -82dbm
+CCINFO: [NCell4],ARFCN: 14,BSIC: 54,RXLev: -87dbm
+CCINFO: [NCell5],ARFCN: 2,BSIC: 48,RXLev: -89dbm
+CCINFO: [NCell6],ARFCN: 13,BSIC: 51,RXLev: -89dbm
OK

6.27 AT+CSCHN   Show cell channel information

Description

This command is used to inquire serving cell channel information in GSM.

SIM PIN	References
NO	Vendor

Syntax

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

AT+CSCHN	*When during a call:*
	+CSCHN: ARFCN: \<arfcn\>,BISC: \<bsic\>,HSN: \<hsn\>,MAIO:
	\<maio\>,TN: \<tn\>,HF: \<hf\>,TSC: \<tsc\>,TCH: \<tch\>
	OK
	When not in call
	OK
	When not in GSM:
	+CSCHN: NOT IN GSM
	OK
	ERROR

Defined values

\<arfcn\>
assigned radio channel
\<bsic\>
base station identification code
\<hsn\>
HSN
\<maio\>
MAIO
\<tn\>
timeslot number
\<hf\>
hopping flag
\<tsc\>
TSC
\<tch\>
channel type

Examples

AT+CSCHN
+CSCHN: ARFCN: 11, BISC: 52, HSN: 41, MAIO: 6, TN: 1, HF: 1, TSC: 4, TCH: 3
OK

6.28 AT+CSRP   Show serving cell radio parameter

Description

This command is used to inquire serving cell radio parameter in GSM.

SIM PIN	References

NO	Vendor

Syntax

Test Command	Responses
AT+CSRP=?	OK

Execution Command	Responses
AT+CSRP	*When during a call:* +CSRP: ARFCN: <arfcn>,RXLevFull: <rxlevfull>,RXLevSub: <rxlevsub>,RXQualFull: <rxqualfull>,RXQualSub: <rxqualsub>,PWRC: <pwrc>,DTX: <dtx>,RLT: <rlt> OK *When not in call:* OK *When not in GSM:* +CSRP: NOT IN GSM OK
	ERROR

Defined values

<arfcn>
assigned radio channel
<rxlevfull>
received full signal strength in dBm
<rxlevsub>
received sub signal strength in dBm
<rxqualfull>
full quality of reception
<rxqualsub>
sub quality of reception
<pwrc>
PWRC
<dtx>
DTX
<rlt>
radio link timeout

Examples

AT+CSRP
+CSRP: ARFCN: 11,RXLevFull: -88dbm,RXLevSub: -89dbm,RXQualFull: 7,RXQualSub: 7,P WRC: 1,DTX: 0,RLT: 32

OK

6.29 AT+CRUS   Show cell set system information

Description

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

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRUS=?	OK

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

Defined values

\<UTMS_SETS Cells Num\>
cells number
\<UTMS_SETS Cell 1-n PSC\>
primary synchronization code of the cell
\<UTMS_SETS Cell 1-n Freq\>
downlink frequency of the cell
\<UTMS_SETS Cell 1-n SSC\>

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

Examples

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

6.30 AT+CPLMNWLIST Manages PLMNs allowed by customer

Description

This command is used to manage the PLMN list allowed by customer. After setting the plmnwlist, the module needs to be restart.

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CPLMNWLIST?	+CPLMNWLIST: <plmnwlist>,<type>

	OK
Write Command	Responses
AT+CPLMNWLIST=<plmn wlist>[,<type>]	OK ERROR

Defined values

<plmnwlist>
The list of PLMN separated by semicolon. The maximum count of the items in the list is 20. Empty list represents no filter. If the CPASSMGR has set password for this command, the password must be verified before operating this command.
<type>

The type of PLMN filter:
    1 – filter by HPLMN.
    2 – filter by PLMN of the wireless network.
    3 – filter by both HPLMN and PLMN of the wireless network.

Examples

AT+CPLMNWLIST= "46000;46001"
OK
AT+CPLMNWLIST=""
OK
AT+CPLMNWLIST?
+CPLMNWLIST: "46000;46001", 1
OK

6.31 AT+CPASSMGR   Manage password

Description

This command is used to manage password for some AT commands.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CPASSMGR=<module>,"<password>"[, <new_password>]	OK ERROR

Defined values

<module>
The module for the password operation:
"cplmnwlist"   –   AT+CPLMNWLIST command
"portmode"   –   Used for locking DIAG port. No AT command affected.
"imei"   –   AT+SIMEI command
<password>
The password for the module. The maximum length is 8.
<new_password>
The new password for the module. The maximum length is 8.

Examples

AT+CPASSMGR="cplmnwlist", "", "12345678"
OK
AT+CPASSMGR="cplmnwlist", "12345678", "111111"
OK
AT+CPASSMGR="cplmnwlist","111111"
OK
AT+CPASSMGR="cplmnwlist","111111",""
OK

6.32　AT+CNSVSQ　Network band scan quickly

Description

This command is used to perform a quick survey through channels belonging to the band selected, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH (BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CNSVSQ: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CNSVSQ=<s>,<e>	Network survey started...
	For BCCH-Carrier:
	[arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>]
	[···]
	For non BCCH-Carrier:

	[arfch: <arfcn_value>,dBm: <dBm_value>]
	[···]
	Network survey end
	OK
	+CNSVSQ: NOT IN GSM
	OK
	+CNSVSQ: NETWORK BUSY
	OK
	+CNSVSQ: NOT ALLOW IN CALL
	OK
	ERROR
Execution Command	Responses
AT+CNSVSQ	Network survey started...
	For BCCH-Carrier:
	[arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>]
	[···]
	For non BCCH-Carrier:
	[arfch: <arfcn_value>,dBm: <dBm_value>]
	[···]
	Network survey end
	OK
	+CNSVSQ: NOT IN GSM
	OK
	+CNSVSQ: NETWORK BUSY
	OK
	+CNSVSQ: NOT ALLOW IN CALL
	OK
	ERROR

Defined values

<s>
starting channel.
<e>
ending channel.
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.

Examples

AT+CNSVSQ
Network survey started...
For BCCH-Carrier:
arfcn: 16,bsic: 45,dBm: -75
……
For non BCCH-Carrier:
arfcn: 89,dBm: -82
arfcn: 1011,dBm: -86
……
Network survey end
OK

6.33 AT+CNSVS   Network full band scan in string format

Description

This command is used to perform a quick survey through channels belonging to the band selected , starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CNSVS: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CNSVS?	+CNSVS: <count> OK
Write Command	Responses
AT+CNSVS=<s>,<e>	Network survey started… For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>, <[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>, <[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>] […]

	For non BCCH-Carrier:
	[arfch: <arfcn_value>,dBm: <dBm_value>]
	[…]
	Network survey end
	OK
	+CNSVS: NOT IN GSM
	OK
	+CNSVS: NETWORK BUSY
	OK
	+CNSVS: NOT ALLOW IN CALL
	OK
	ERROR
AT+CNSVS=<arfcn_index>	For BCCH-Carrier:
	arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>, <[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>, <[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>
	OK
	For non BCCH-Carrier:
	arfch: <arfcn_value>,dBm: <dBm_value>
	OK
	+CNSVS: NOT IN GSM
	OK
	+CNSVS: arfcn index invalid
	OK
	+CNSVS: NETWORK BUSY
	OK
	+CNSVS: NOT ALLOW IN CALL
	OK
	ERROR
Execution Command	Responses
AT+CNSVS	Network survey started…
	For BCCH-Carrier:
	[arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>, <[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>, <[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>]

	[…]
	For non BCCH-Carrier:
	[arfch: <arfcn_value>,dBm: <dBm_value>]
	[…]
	Network survey end
	OK
	+CNSVS: NOT IN GSM
	OK
	+CNSVS: NETWORK BUSY
	OK
	+CNSVS: NOT ALLOW IN CALL
	OK
	ERROR

Defined values

<count>
the count of arfcn.
<s>
starting channel.
<e>
ending channel.
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.
<mcc_value>
mobile country code.
<mnc_value>
mobile network code.
<lac_value>
localization area code.
<cellId>
cell identifier.
<cellStatus>
cell status, this parameter indicates the following statuses:
- CELL_SUITABLE indicates the C0 is a suitable cell.
- CELL_LOW_PRIORITY indicates the cell is low priority based on the system information received.
- CELL_FORBIDDEN indicates the cell is forbidden.

    - CELL_BARRED indicates the cell is barred based on the system information received.

    - CELL_LOW_LEVEL indicates the cell RXLEV is low.

    - CELL_OTHER indicates none of the above, e.g. exelusion timer running, no BCCH   available etc.

<num_arfcn>
number of valid channels
<list of arfcns>
list of arfcns BCCH allocation and the total number is <num_arfcn>
<num_channel>
number of valid channels
<list of channels>
list of channels, and the total number is <num_channels>
<arfcn_index>
the index of arfcn, and the minimum value is zero

Examples

AT+CNSVS
Network survey started...
For BCCH-Carrier:
arfcn: 600,bsic: 54,dBm: -98,mcc: 460,mnc: 0,lac: 6180,cellId: 49443,cellStatus: CELL_LOW _LEVEL, numArfcn: 6,arfcn: 518 521 542 547 574 600,numChannels: 25,array: 6 9 11 12 14 19 20 21 22 23 24 25 27 28 36 516 525 528 552 556 564 568 572 584 600
......
For non BCCH-Carrier:
arfcn: 694,dBm: -94
......
Network survey end
OK

6.34 AT+CNSVN   Network full band scan in numeric format

Description

This command is used to perform a quick survey through channels belonging to the band selected, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CNSVN: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CNSVN=<s>,<e>	Network survey started… *If BCCH-Carrier:* [<arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty]>,<[<num_channel>,<list of channels>] or [SIB2 not available]>] […] *If non BCCH-Carrier:* [<arfcn_value>,<dBm_value>] […] Network survey end OK
	+CNSVN: NOT IN GSM OK
	+CNSVN: NETWORK BUSY OK
	+CNSVN: NOT ALLOW IN CALL OK
	ERROR
AT+CNSVN=<arfcn_index>	*If BCCH-Carrier:* <arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty]>,<[<num_channel>,<list of channels>] or [SIB2 not available]> OK *If non BCCH-Carrier:* <arfcn_value>,<dBm_value> OK
	+CNSVN: NOT IN GSM OK
	+CNSVN: arfcn index invalid OK
	+CNSVN: NETWORK BUSY OK
	+CNSVN: NOT ALLOW IN CALL OK

	ERROR
Execution Command	Responses
AT+CNSVN	Network survey started…
	If BCCH-Carrier:
	[<arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty]>,<[<num_channel>,<list of channels>] or [SIB2 not available]>]
	[…]
	If non BCCH-Carrier:
	[<arfcn_value>,<dBm_value>]
	[…]
	Network survey end
	OK
	+CNSVN: NOT IN GSM
	OK
	+CNSVN: NETWORK BUSY
	OK
	+CNSVN: NOT ALLOW IN CALL
	OK
	ERROR

Defined values

<count>
the count of arfcn.
<s>
starting channel.
<e>
ending channel.
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.
<mcc_value>
mobile country code.
<mnc_value>
mobile network code.
<lac_value>

localization area code.	
<cellId>	
cell identifier.	
<cellStatus>	
cell status, this parameter indicates the following statuses:	

    0 –   Indicates the C0 is a suitable cell.

    1 –   Indicates the cell is low priority based on the system information received.

    2 –   Indicates the cell is forbidden.

    3 –   Indicates the cell is barred based on the system information received.

    4 –   Indicates the cell RXLEV is low.

    5 –   Indicates none of the above, e.g. exelusion timer running, no BCCH   available etc

<num_arfcn>	
number of valid channels.	
<list of arfcns>	
list arfcns BCCH allocation, and the total number is <num_arfcn>.	
<num_channel>	
number of valid channels.	
<list of channels>	
list channels, and the total number is <num_channels>.	
<arfcn_index>	
the index of arfcn, and the minimum value is zero.	

Examples

AT+CNSVN
Network survey started...
16,45,-82,460,0,6180,42545,0,5, 16 45 49 71 81,11, 11 12 14 16 19 20 21 22 24 26 27
......
694, -94
......
Network survey end
OK

6.35 AT+CNSVUS   Network band scan by channels in string

Description

This command is used to perform a quick survey of user defined channels. It scans the given channels. The result format is in string format.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CNSVUS: NOT IN GSM" will be returned.

SIM PIN	References

NO	Vendor

Syntax

Write Command	Responses
AT+CNSVUS=<ch1>,[<ch2>,[…[<ch10>]]]	Network survey started… For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>, <[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>, <[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]> […] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] […] Network survey end OK
	+CNSVUS: NOT IN GSM OK
	+CNSVUS: NETWORK BUSY OK
	+CNSVUS: NOT ALLOW IN CALL OK
	ERROR

Defined values

<chN>
channel number(arfcn). It *must be in an increasing order, and the range of "N" is from 1 to 10.*
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.
<mcc_value>
mobile country code.
<mnc_value>
mobile network code.
<lac_value>

localization area code.

<cellId>

cell identifier.

<cellStatus>

cell status, this parameter indicates the following statuses:

- CELL_SUITABLE indicates the C0 is a suitable cell.

- CELL_LOW_PRIORITY indicates the cell is low priority based on the system information received.

- CELL_FORBIDDEN indicates the cell is forbidden.

- CELL_BARRED indicates the cell is barred based on the system information received.

- CELL_LOW_LEVEL indicates the cell RXLEV is low.

- CELL_OTHER indicates none of the above, e.g. exelusion timer running, no BCCH available etc.

<num_arfcn>

number of valid channels.

<list of arfcns>

list arfcns BCCH allocation, and the total number is <num_arfcn>.

<num_channel>

number of valid channels.

<list of channels>

list channels, and the total number is <num_channels>.

Examples

AT+CNSVUS=16,20,86,96,109

Network survey started...

For BCCH-Carrier:

arfcn: 16,bsic: 45,dBm: -80,mcc: 460,mnc: 0,lac: 6180,cellId: 42545,cellStatus:CELL_SUITABLE,

numArfcn: 5,arfcn: 16 45 49 71 81,numChannels: 11,array: 11 12 14 16 19 20 21 22 24 26 27

For non BCCH-Carrier:

arfcn: 86,dBm: -97

Network survey end

OK

6.36 AT+CNSVUN   Network band scan by channels in numeric

Description

This command is used to performing a quick survey of user defined channels. It scans the given channels. The result is given in numeric format.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CNSVUN: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CNSVUN=<ch1>,[<ch2>,[…[<ch10>]]]	Network survey started… *For BCCH-Carrier:* [<arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty]>,<[<num_channel>,<list of channels>] or [SIB2 not available]>] […] *For non BCCH-Carrier:* [<arfcn_value>, <dBm_value>] […] Network survey end OK
	+CNSVUN: NOT IN GSM OK
	+CNSVUN: NETWORK BUSY OK
	+CNSVUN: NOT ALLOW IN CALL OK
	ERROR

Defined values

<chN>
channel number(arfcn). It *must be in a increasing order, and the range of "N" is from 1 to 10.*
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.
<mcc_value>
mobile country code.
<mnc_value>
mobile network code.
<lac_value>

localization area code.
<cellId>
cell identifier.
<cellStatus>

cell status, this parameter indicates the following statuses:
    0 – Indicates the C0 is a suitable cell.
    1 – Indicates the cell is low priority based on the system information received.
    2 – Indicates the cell is forbidden.
    3 – Indicates the cell is barred based on the system information received.
    4 – Indicates the cell RXLEV is low.
    5 – Indicates none of the above, e.g. exelusion timer running, no BCCH   available etc

<num_arfcn>
number of valid channels.
<list of arfcns>
list arfcns BCCH allocation, and the total number is <num_arfcn>.
<num_channel>
number of valid channels.
<list of channels>
list channels, and the total number is <num_channels>.

Examples

AT+CNSVUN=16,20,86,96,109 *Network survey started...* *14,51, -89, 460, 0, 6180, 41074,0, 8, 5 7 14 51 61 65 74 88, 24, 2 3 9 11 12 15 16 17 19 20 22 24 25* *26 27 28 36 81 516 520 525 532 556 600* *86, -97* *Network survey end* *OK*

6.37 AT+CCGMDF   Enable single mode in RAT balancing mode

Description

This command is used to enable or disable single mode in RAT balancing mode. This command supports SIM5360A only.. The default setting of RAT balancing depends on EF-RAT, and usually it is "Dual Mode". After calling AT+CCGMDF=1 and AT+CNMP=13 or 14, the mode can be changed to single mode.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCGMDF=?	+CCGMDF: (0,1) OK

Read Command	Responses
AT+CCGMDF?	+CCGMDF: \<mode> OK

Write Command	Responses
AT+CCGMDF=\<mode>	OK ERROR

Defined values

\<mode>

Whether to enable or disable single mode in RAT balancing condition (mode depends on AT+CNMP):
   0 – Disable.
   1 – Enable.

Examples

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

6.38 AT+CPLMNPASS Manage PLMN filter password

Description

This command is used to manage password for AT+CPLMNWLIST.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CPLMNPASS=\<password>[, \<new_password>]	OK ERROR

Defined values

<password>
The password for the module. Value field in string format, the maximum length is 8.
<new_password>
The new password for the module. Value field in string format, the maximum length is 8.

Examples

AT+CPLMNPASS = "", "12345678"
OK
AT+CPLMNPASS = "12345678", "111111"
OK
AT+CPLMNPASS ="111111"
OK
AT+CPLMNPASS ="111111",""
OK

6.39 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	
HSPA	
HSPA+	

Examples

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

6.40 AT+CELLLOCK   Lock on specified 2G cell

Description

This command is used to lock on specified 2G cell

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CELLLOCK=?	OK
Read Command	Responses
AT+CELLLOCK?	+CELLLOCK: <arfcn>,<state>

	OK
Execution Command	Responses
AT+CELLLOCK	*Set default value: 0,IDLE*
	OK
Write Command	Responses
AT+CELLLOCK=<arfcn>	OK
	[+CELLLOCKED]
	ERROR

Defined values

<arfcn>
The arfcn of the cell. User can use AT+CCINFO to get it.
<state>
The state of the locking action
IDLE – no locking
LOCKING – trying to lock on the target cell.
LOCKED – already locked on the target cell.

Examples

AT+CELLLOCK=736
OK
+CELLLOCKED
AT+CELLLOCK?
+CELLLOCK: 736, LOCKED
OK
AT+CELLLOCK=?
OK

6.41 AT+CRPAAO   Set Network Searching Preference on Power up

Description

This command is used to set network searching preference on power up. If this command only needs to be set once, it will take effect for ever.

Usually, when the module is power down normally, it will search the latest registered PLMN on next power up. But for some device, it sometimes does not power down normally, maybe just cut off the power, which may cause the module to search the network using unexpected order (like search the GSM first even the AT+CNAOP is set to WCDMA first. When set the AT+CRPAAO=1, it will try to search the network according to AT+CNAOP setting on power up.

SIM PIN	References

YES	Vendor

Syntax

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

Defined values

<state>
The State of the setting: 0 – Disable.   1 – Enable.

Examples

AT+CRPAAO=1
OK
AT+CRPAAO?
+CRPAAO:1
OK
AT+CRPAAO=?
+CRPAAO: (0,1)
OK

6.42   AT+MONI   Show cell system information

Description

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

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+MONI?	*When extracting data for the serving cell and the network name is known:* +MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2> *When extracting data for an adjacent cell:* +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1:<C1>-C2:<C2> […] OK
	When the network name is unknown: +MONI:Cc:<cc>,Nc<nc>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2> *When extracting data for an adjacent cell:* +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1:<C1>-C2:<C2> […] OK

Write Command	Responses
AT+MONI=<CellSet>	*When = 0:* +MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2> OK
	When chosen in the range 1-6: +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1:<C1>-C2:<C2> […] OK
	When = 7: it is a special request to obtain information from the whole set of cells, just like AT+MONI?

Execution Command	Responses
AT+MONI	*When extracting data for the serving cell and the network name is known:* +MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2> *When extracting data for an adjacent cell:* +MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:

<dBm>dBm, C1:<C1>-C2:<C2>

[…]

OK

When the network name is unknown:

+MONI:Cc:<cc>,Nc<nc>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>

,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2>

When extracting data for an adjacent cell:

+MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:

<dBm>dBm, C1:<C1>-C2:<C2>

[…]

OK

Defined values

<CellNo >
available neighbour cells number currently received

< CellSet >
the last setting done with command, range is 0-7

<netname>
name of network operator

<cc>
country code

<nc>
network operator code

<n>
progressive number of adjacent cell

<bsic>
base station identification code

<qual>
quality of reception

<lac>
localization area code

<id>
cell identifier

<arfcn>
assigned radio channel

<dBm>
received signal strength in dBm

Examples

AT+MONI?
+MONI: China Mobile,BSIC: 45,RXQual: 255,LAC: 6180,Id: 42545,ARFCN: 16,PWR: -74dbm,C1:30-C2:30

+MONI: Adj Cell1,[LAC: 6180,Id: 40995],ARFCN: 19,PWR: -86dbm,C1:16-C2:16
+MONI: Adj Cell2,[LAC: 6180,Id: 40994],ARFCN: 12,PWR: -96dbm,C1:6-C2:6
+MONI: Adj Cell3,[LAC: 6180,Id: 41057],ARFCN: 11,PWR: -95dbm,C1:7-C2:7
+MONI: Adj Cell4,[LAC: 6180,Id: 41073],ARFCN: 24,PWR: -94dbm,C1:8-C2:8
+MONI: Adj Cell5,[LAC: 6180,Id: 41074],ARFCN: 14,PWR: -92dbm,C1:10-C2:10
OK

6.43   AT+CNLSA   Network limited service allowed

Description

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

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CNLSA?	+CNLSA: <n>
	OK
	ERROR

Write Command	Responses
AT+CNLSA=<n>	OK
	ERROR

Defined values

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

Examples

AT+CNLSA?
+CNLSA: 0
OK

6.44   AT+CCLASS   GRPS and EDGE class type

Description

The command is used to set multi-slot class type of GPRS and EDGE for the ME, so that the ME could send and receive data at specified speeds of downlink and uplink.

Note: Once the class is set, UE must be reset by command (AT+REBOOT).

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CCLASS?	+CCLASS: <gclass>,<eclass> OK

Write Command	Responses
AT+CCLASS=<gclass>,<eclass>	+CCLASS: SUCCESS OK
	+CCLASS: FAIL OK

Defined values

<gclass>	
1 – 12, 30 – 34	GPRS Multi-slot Class
<eclass>	
1 – 12, 30 – 34	EDGE Multi-slot Class

Examples

AT+CCLASS?
+CCLASS:10,10
OK

6.45   AT+CGSI   GSM service cell information

Description

The command is used to check some information for service-cell in GSM

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CGSI?	+CGSI: <System Mode>[,<Location Area ID>,<Cell ID>,<Absolute RF Ch Num>,<ARFCN.band>] OK
	+CGSI: NO SERVICE OK

Defined values

< System Mode >
NO SERVICE   GSM   WCDMA
<Location Area ID>
LAI for service-cell, using the format of Hex or empty if PLMN is undefined
<Cell ID>
service-cell ID of GSM
<Absolute RF Ch Num>
AFRCN for service-cell
<ARFCN.band>
"ARFCN.band: EGSM 900"   "ARFCN.band: PGSM 900"   "ARFCN.band: PCS 1900"   "ARFCN.band: DCS 1800"   "ARFCN.band: CELL 850"   "ARFCN.band: INVALID BAND"   "ARFCN.band: UNKNOW BAND".

Examples

AT+CGSI?
+CGSI: GSM,0x1824,42545,16,ARFCN.band: EGSM 900
OK

6.46 AT+CWRRCR   Set WCDMA RRC version

Description

This command is used to set the WCDMA RRC version.

Note: Once the version is set, UE must be reset by command (AT+REBOOT).

SIM PIN	References

NO	Vendor

Syntax

Read Command	Responses
AT+CWRRCR?	+CWRRCR: <rel> OK

Write Command	Responses
AT+CWRRCR=<rel>	+CWRRCR: SUCCESS OK
	+CWRRCR: FAIL OK

Defined values

<rel>	
0	R99
1	R5 (default value)

Examples

AT+CWRRCR?
+CWRRCR: 1
OK

6.47   AT+CSGSNR   Set SGSN version

Description

This command is used to set the SGSN version.

Note: Once the version is set, UE must be reset by command (AT+REBOOT).

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CSGSNR?	+CSGSNR: <rel> OK
	+CSGSNR: SGSNR NOT ACTIVATION OK
Write Command	Responses

AT+CSGSNR=<rel>	+CSGSNR: SUCCESS
	OK
	+CSGSNR: FAIL
	OK

Defined values

<rel>
0   Forces the UE to behave as R97/R98, irrespective of the SGSNR bit
<u>1</u>   Forces the UE to behave as R99, irrespective of the SGSNR bit, default value
2   Causes the UE's behavior to be dynamic, in accordance with the SGSNR bit.
SGSNR = 0 – SGSN is Release 98 or older
SGSNR = 1 – SGSN is Release 99 or later

Examples

AT+CSGSNR?
+CSGSNR: 2
OK

6.48   AT+CMSCR   Set MSC version

Description

This command is used to set the MSC version. MSCR (MSC revision number).

Note: Once the version is set, UE must be reset by command (AT+REBOOT).

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CMSCR?	+CMSCR: <rel>
	OK
	+CMSCR: MSCR NOT ACTIVATION
	OK
Write Command	Responses
AT+CMSCR=<rel>	+CMSCR: SUCCESS
	OK
	+CMSCR: FAIL
	OK

Defined values

<rel>	
0	Forces the UE to always behave as a R97/R98 mobile, irrespective of the network's MSCR (MSC revision number)
<u>1</u>	Forces the UE to always behave as a R99 mobile, irrespective of the network's MSCR (MSC revision number), default value

2	Causes the UE's behavior to be dynamic, in accordance with the MSCR bit.
	   MSCR = 0 – MSC is Release 98 or older
	   MSCR = 1 – MSC is Release 99 or later

Examples

AT+CSGSNR?
+CSGSNR: 2
OK

6.49   AT+CLDCH   Lock UE at DCH state

Description

The command is used to set whether UE could do switch which is at DCH state or not. If AT+CLDCH=1 and UE is at DCH state, UE will not do any switch

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CLDCH?	+CLDCH: <mode> OK

Write Command	Responses
AT+CLDCH=<mode>	OK
	ERROR

Defined values

<mode>	
<u>0</u> –	unlock
1 –	lock

Examples

> *AT+CLDCH?*
> *+CLDCH: 0*
> *OK*

6.50   AT+CFRAUR Force routing area update request

Description

Execute this command to send routing area update request.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CFRAUR	OK

Defined values

Examples

> *AT+CFRAUR*
> *OK*

6.51   AT+CFLAUR Force location area update request

Description

Execute this command to send location area update request.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CFLAUR	OK

Defined values

Examples

AT+CFLAUR

OK

6.52   AT+REBOOT Reboot the system

Description

The command is used to reboot the system immediately.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+REBOOT	OK

Defined values

Examples

AT+REBOOT

OK

6.53   AT+CMSSN   Manual select specific network

Description

This command is used to manual select specific network, if the network is not available, the modem lock to no service

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CMSSN=<plmn>	OK
Execution Command	Responses
AT+CMSSN	OK

Defined values

<plmn>
    Appointed PLMN

Examples

AT+CMSSN=46001
OK

6.54   AT#REBOOT Reboot the system

Description

The command is used to reboot the system immediately.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT#REBOOT	OK

Defined values

Examples

AT#REBOOT
OK

6.55   AT#MONI   Show cell system information

Description

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

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT#MONI=?	#MONI: <CellNo>, <CellSet>
	OK
Read Command	Responses
AT#MONI?	*When extracting data for the serving cell and the network name is*

known:

#MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2>

When extracting data for an adjacent cell:

#MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1:<C1>-C2:<C2>

[…]

OK

When the network name is unknown:

#MONI:Cc:<cc>,Nc<nc>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2>

When extracting data for an adjacent cell:

#MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1:<C1>-C2:<C2>

[…]

OK

Write Command	Responses
AT#MONI=<CellSet>	*When = 0:* #MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2> OK
	When chosen in the range 1-6: #MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1:<C1>-C2:<C2> […] OK
	When = 7: it is a special request to obtain information from the whole set of cells, just like AT#MONI?
Execution Command	Responses
AT#MONI	*When extracting data for the serving cell and the network name is known:* #MONI:<netname>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2> *When extracting data for an adjacent cell:* #MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:<dBm>dBm, C1:<C1>-C2:<C2> […] OK *When the network name is unknown:* #MONI:Cc:<cc>,Nc<nc>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2>

	When extracting data for an adjacent cell: #MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR: <dBm>dBm, C1:<C1>-C2:<C2> […] OK

Defined values

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

Examples

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

6.56 AT+CGSETI GSM neighbor cells information

Description

The command is used to check neighbor-cells information in GSM.

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CGSETI?	+CGSETI: Cell ID: <Cell ID>,ARFCN: <Cell ARFCN>,BSIC: <Cell BSIC>[,Cell ID: <Cell ID>,ARFCN: <Cell ARFCN>,BSIC: <Cell BSIC>[…]] OK

Defined values

< Cell ID >
Cell ID
< Cell ARFCN >
Cell ARFCN
< Cell BSIC >
Cell BSIC

Examples

AT+CGSETI?
+CGSETI: Cell ID: 40994,ARFCN:12,BSIC: 51
+CGSETI: Cell ID: 41073,ARFCN:24,BSIC: 49
OK

6.57 AT+CUSI Check service cell information in UMTS

Description

This command is used to Check service cell information in UMTS.

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses

AT+CUSI?	*When in UMTS:*
	+CUSI: <Cell ID>,<PSC>,<Freq>
	OK
	When no active set cells:
	+CUSI: NONE
	OK
	When not in UMTS:
	+CUSI: NOT IN WCDMA
	OK
	ERROR

Defined values

<Cell ID>
service-cell ID
<PSC>
service-cell primary scramble code
<Freq>
service-cell frequency

Examples

AT+CUSI?
+CUSI: 2053300, 2,10663
OK

6.58   AT+ CUSETI   Cell sets information in UMTS

Description

The command is used to extract setting information in the UMTS

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CUSETI?	*When in UMTS:*
	+CUSETI: ActiveSET: <ActiveSET Cells Num>[,<PSC> <Freq> <ecio> <RSCP> […]],SyncSET: <SyncSET Cells Num>[,<PSC> <Freq> <ecio> <RSCP> […]],UnlistSET: <UnlistSET Cells Num>[,<PSC> <Freq> <ecio> <RSCP> […]],Add-Candid

	ateSET: <Add-Candidate Cells Num>[,<PSC> <Freq> <ecio> <RSCP> […]],Drop-CandidateSET: <Drop-Candidate Cells Num>[,<PSC> <Freq> <ecio> <RSCP> […]],HHOActiveSET: < HHOActiveSET Cells num>[,<PSC> <Freq> <ecio> <RSCP> […]] OK *When not in UMTS:* +CUSETI: NOT IN WCDMA OK ERROR

Defined values

<ActiveSET Cells Num>
active set cells number, and if it is NULL, <ActiveSET Cell 1-n PSC> and <ActiveSET Cell 1-n PSC> will be ignored
<PSC>
primary sramble code of the cell[1-n] of active set
<Freq>
downlink frequency of the cell[1-n]of active set
<ecio>
ec/io
<RSCP>
Received Signal Code Power
<SyncSET Cells Num>
sync neighbor set cells number, and if it is NULL, <SyncSET Cell 1-n PSC> and <SyncSET Cell 1-n Freq> will be ignored
<UnlistSET Cell Num>
unlist set cells number, and if it is NULL, <UnlistSET Cell 1-n PSC> and <UnlistSET Cell 1-n Freq> will be ignored
<Add-Candidate Cells Num>
add candidate set cells number, and if it is NULL, <Add-Candidate Cell 1-n PSC> and <Add-Candidate Cell 1-n Freq> will be ignored   *Notes: Cell belongs to Add-Candidate Set -- a SET containing cells that are originally from Sync SET or UnlistSET and whose energy is strong enough ,based on network-specified event criteria (1A, 1C, 1D & 1E),to be handoff candidates.*
<Drop-Candidate Cells Num>
drop candidate set cells number, and if it is NULL, <Drop-Candidate Cell 1-n PSC> and <Drop-Candidate Cell 1-n Freq> will be ignored
<HHOActiveSET Cells Num>
hard handover active set cells number, and if it is NULL, <HHOActiveSET Cell 1-n PSC> and <HHOActiveSET Cell 1-n Freq> will be ignored.

Examples

> *AT+CUSETI?*
>
> *+CUSETI: ActiveSET: 1,2 10663 33 109,SyncSET: 2,35 10663 26 106,11 10663 49 121,Unl*
> *istSET: NULL,Add-CandidateSET: NULL,Drop-CandidateSET: NULL,HHOActiveSET: NULL*
> *OK*

6.59   AT+CRUPSI Request cell system information in UMTS

Description

This command is used to request cell system information in UMTS.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CRUPSI?	*When in UMTS:* +CRUPSI: <Cells num>[,<Cell ID>,<PSC>,<Freq>,<Rscp> […]] OK
	When not in UMTS: +CRUPSI: NOT IN WCDMA OK
	ERROR

Write Command	Responses
AT+CRUPSI=<time>	OK
	ERROR

Defined values

> <time>
>
>   the range is 0-255, unit is second, after set <time> will report the system information
>   every the seconds
>
> <Cells num>
>
>   total number of stored cells

<Cell ID>
service-cell ID
<PSC>
service-cell primary scramble code
<Freq>
service-cell frequency
<Rscp>
RSCP

Examples

AT+CRUPSI?
+CRUPSI: 1,2053300,2,10663,99
OK

6.60   AT+CRUSET Inquiring system information

Description

This command is used to Inquiring system information for UMTS.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRUSET=?	+CRUSET: scope of <time> OK

Read Command	Responses
AT+CRUSET?	*When in UMTS:* +CRUSET: Active SET,<ActiveSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: Sync Neighbor SET,<SyncSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: Async Neighbor SET,<AsyncSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: UnlistSET,<UnlistSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize> […]] +CRUSET: Add-Candidate SET,<Add-Candidate Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSiz

	e>[…]] +CRUSET: Drop-Candidate SET,<Drop-Candidate Cells Num> [,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: After failed W2G SET,<ResumeSET Cells Num>[, <PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: DCH Only SET,<DCHOnlySET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: HHO Active SET,<HHOActiveSET Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: HHO Active NO PN SET,<HHOActiveNoPNSET Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: Candidate to Unliseted SET,<CandUSET Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] +CRUSET: Saved SET,<SavedSET Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[…]] OK
	When not in UMTS: +CRUSET: NOT IN WCDMA OK
	ERROR
Write Command	Responses
AT+CRUSET=<time>	OK
	ERROR

Defined values

<time>
the range is 0-255, unit is second, after set <time> will report the system information every the seconds
<ActiveSET Cells Num>
active set cells number
<PSC>
primary synchronization code of the cell
<Freq>
downlink frequency of the cell
<SSC>

	secondary synchronization code
<Sttd>	
	if the CPICH of this cell uses STTD
< TotEcio >	
	the total Ec/Io in the best paths found in a sweep
< Ecio >	
	Ec/Io
<Rscp>	
	CPICH RSCP
< WinSize >	
	search window size for this cell
<ActiveSET Cells Num>	
	active set cells number
< SyncSET Cells Num>	
	neighbor (monitored) set for neighbors whose timing is known cells number
< AsyncSET Cells Num>	
	neighbor (monitored) set for neighbors whose timing is unknown cells number
< UnlistSET Cells Num>	
	unlist set cells number
< Add-Candidate Cells Num>	
	add-candidate set cells number
< Drop-Candidate Cells Num>	
	drop-candidate set cells number
< ResumeSET Cells Num>	
	after failed W2G set or resume set cells number
< DCHOnlySET Cells Num>	
	DCH only set cells number
< HHOActiveSET Cells Num>	
	hard handover active set cells number
< HHOActiveNoPNSET Cells Num>	
	hard handover active no PN set cells number
< CandUSET Cells Num>	
	candidate to unlist set cells number
< SavedSET Cells Num>	
	saved set cells number

Examples

AT+CRUSET?

+CRUSET: Active SET,1,2,10663,0,0,16,16,101,1536

+CRUSET: Sync Neighbor SET,2,42,10663,0,0,34,33,109,1536,35,10663,0,0,26,26,106,1536

+CRUSET: Async Neighbor SET,10,11,10663,0,0,0,49,121,0,6,10663,0,0,0,49,121,0,28, 10663,0,

0,0 , 49,121,0,247,10663, 0,0,0,49,121,0,193,10663,0,0,0,49,121,0,493,10663,0,0,0,49,121, 0,485,

10663,

0,0,0,49,121,0,258,10663,0,0,0,49,121,0,109,10663,0,0,0,49,121,0,226,10663,0,0,38,49,121,1536

+CRUSET: Unlist SET,NULL

+CRUSET: Add-Candidate SET,NULL

+CRUSET: Drop-Candidate SET,NULL

+CRUSET: After failed W2G SET,NULL

+CRUSET: DCH Only SET,NULL

+CRUSET: HHO Active SET,NULL

+CRUSET: HHO Active No PN SET,NULL

+CRUSET: Candidate to Unlisted SET,NULL

+CRUSET: Saved SET,NULL

OK

6.61   AT+CLARFCN   Lock ARFCN for GSM

Description

Lock a specific service-cell through appointed AFRCN in GSM network

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CLARFCN=<arfcn>	OK
	+CLARFCN: NETWORK BUSY OK
	+CLARFCN: NOT IN GSM OK
	ERROR
Execution Command	Responses
AT+CLARFCN	*Set automatic mode* **OK**
	+CLARFCN: NETWORK BUSY OK
	ERROR

Defined values

<arfcn>

appointed AFRCN of service-cell that will be locked

Examples

AT+CLARFCN=110

OK

6.62   AT+CLGCELL Lock cell through AFRCN and BSIC in GSM

Description

Lock a specific service-cell through appointed AFRCN and BSIC in GSM network

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CLGCELL=<arfcn>,<bsic>	OK
	+CLGCELL: NOT IN GSM OK
	+CLGCELL: NETWORK BUSY OK
	ERROR
Execution Command	Responses
AT+CLGCELL	*Set automatic mode* **OK**
	+CLGCELL: NETWORK BUSY OK
	ERROR

Defined values

<arfcn>
appointed AFRCN of service-cell that will be locked
<bsic>
base station identification code. BSIC=NCC(Network Colour Code)+BCC(Base Station Colour Code)

Examples

AT+CLGCELL=46,51

OK

6.63   AT+CLUARFCN   Lock DL frequency for UMTS

Description

This command is used to lock frequency through appointed DL frequency in UMTS network

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CLUARFCN=<freq>	OK
	+CLUARFCN: NOT IN WCDMA OK
	+CLUARFCN: NETWORK BUSY OK
	ERROR
Execution Command	Responses
AT+CLUARFCN	*Set automatic mode* **OK**

Defined values

<freq>
      appointed DL frequency(UTRA absolute radio frequency channel number)

Examples

AT+CLUARFCN=10688
OK

6.64   AT+CLUCELL Lock cell through frequency and PSC in UMTS

Description

This command is used to lock a specific cell through appointed DL frequency and PSC in UMTS network

SIM PIN	References

NO	Vendor

Syntax

Write Command	Responses
AT+CLUCELL=<freq>,<psc>	OK
	+CLUCELL: NETWORK BUSY OK
	ERROR
Execution Command	Responses
AT+CLUCELL	*Set automatic mode* **OK**
	ERROR

Defined values

<freq>
appointed DL frequency
<psc>
appointed Primary Scramble Code

Examples

AT+CLUCELL=10688, 9
OK

6.65 AT+CSURV Network full band scan in string format

Description

This command is used to perform a quick survey through channels belonging to the band selected , starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CSURV: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CSURV?	+CSURV: <count> OK
Write Command	Responses
AT+CSURV=<s>,<e>	Network survey started… For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>, <[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>, <[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>] […] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] […] Network survey end OK
	+CSURV: NOT IN GSM OK
	+CSURV: NETWORK BUSY OK
	+CSURV: NOT ALLOW IN CALL OK
	ERROR
AT+CSURV=<arfcn_index>	For BCCH-Carrier: arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>, <[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>, <[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]> OK For non BCCH-Carrier: arfch: <arfcn_value>,dBm: <dBm_value> OK
	+CSURV: NOT IN GSM OK
	+CSURV: arfcn index invalid OK
	+CSURV: NETWORK BUSY

	OK

	+CSURV: NOT ALLOW IN CALL
	OK
	ERROR
Execution Command	Responses
AT+CSURV	Network survey started…
	For BCCH-Carrier:
	[arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>,
	<[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId:
	<cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>,
	<[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell
	allocation empty]>,<[numChannels: <num_channel>,array: <list of
	channels>] or [SIB2 not available]>]
	[…]
	For non BCCH-Carrier:
	[arfch: <arfcn_value>,dBm: <dBm_value>]
	[…]
	Network survey end
	OK
	+CSURV: NOT IN GSM
	OK
	+CSURV: NETWORK BUSY
	OK
	+CSURV: NOT ALLOW IN CALL
	OK
	ERROR

Defined values

<count>
the count of arfcn.
<s>
starting channel.
<e>
ending channel.
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.
<mcc_value>

mobile country code.

<mnc_value>

mobile network code.

<lac_value>

localization area code.

<cellId>

cell identifier.

<cellStatus>

cell status, this parameter indicates the following statuses:

   - CELL_SUITABLE indicates the C0 is a suitable cell.

   - CELL_LOW_PRIORITY indicates the cell is low priority based on the system information received.

   - CELL_FORBIDDEN indicates the cell is forbidden.

   - CELL_BARRED indicates the cell is barred based on the system information received.

   - CELL_LOW_LEVEL indicates the cell RXLEV is low.

   - CELL_OTHER indicates none of the above, e.g. exelusion timer running, no BCCH   available etc.

<num_arfcn>

number of valid channels

<list of arfcns>

list of arfcns BCCH allocation and the total number is <num_arfcn>

<num_channel>

number of valid channels

<list of channels>

list of channels, and the total number is <num_channels>

<arfcn_index>

the index of arfcn, and the minimum value is zero

Examples

AT+CSURV

Network survey started...

For BCCH-Carrier:

arfcn: 600,bsic: 54,dBm: -98,mcc: 460,mnc: 0,lac: 6180,cellId: 49443,cellStatus: CELL_LOW _LEVEL, numArfcn: 6,arfcn: 518 521 542 547 574 600,numChannels: 25,array: 6 9 11 12 14 19 20 21 22 23 24 25 27 28 36 516 525 528 552 556 564 568 572 584 600

......

For non BCCH-Carrier:

arfcn: 694,dBm: -94

......

Network survey end

OK

6.66 AT+CSURCHQ   Network band scan quickly

Description

This command is used to perform a quick survey through channels belonging to the band selected, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH (BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CSURCHQ: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CSURCHQ=<s>,<e>	Network survey started... For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>] [···] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] [···] Network survey end OK
	+CSURCHQ: NOT IN GSM OK
	+CSURCHQ: NETWORK BUSY OK
	+CSURCHQ: NOT ALLOW IN CALL OK
	ERROR
Execution Command	Responses
AT+CSURCHQ	Network survey started... For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>] [···] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] [···] Network survey end

	OK
	+CSURCHQ: NOT IN GSM
	OK
	+CSURCHQ: NETWORK BUSY
	OK
	+CSURCHQ: NOT ALLOW IN CALL
	OK
	ERROR

Defined values

<s>
starting channel.
<e>
ending channel.
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.

Examples

AT+CSURCHQ
Network survey started...
For BCCH-Carrier:
arfcn: 16,bsic: 45,dBm: -75
……
For non BCCH-Carrier:
arfcn: 89,dBm: -82
arfcn: 1011,dBm: -86
……
Network survey end
OK

6.67 AT+CSURVC   Network full band scan in numeric format

Description

This command is used to perform a quick survey through channels belonging to the band selected, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed.

After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CSURVC: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CSURVC=<s>,<e>	Network survey started… *If BCCH-Carrier:* [<arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty],<[<num_channel>,<list of channels>] or [SIB2 not available]>] […] *If non BCCH-Carrier:* [<arfcn_value>,<dBm_value>] […] Network survey end OK
	+CSURVC: NOT IN GSM OK
	+CSURVC: NETWORK BUSY OK
	+CSURVC: NOT ALLOW IN CALL OK
	ERROR
AT+CSURVC=<arfcn_index >	*If BCCH-Carrier:* <arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty],<[<num_channel>,<list of channels>] or [SIB2 not available]> OK *If non BCCH-Carrier:* <arfcn_value>,<dBm_value> OK
	+CSURVC: NOT IN GSM

	OK
	+CSURVC: arfcn index invalid OK
	+CSURVC: NETWORK BUSY OK
	+CSURVC: NOT ALLOW IN CALL OK
	ERROR
Execution Command	Responses
AT+CSURVC	Network survey started… *If BCCH-Carrier:* [<arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty]>,<[<num_channel>,<list of channels>] or [SIB2 not available]>] […] *If non BCCH-Carrier:* [<arfcn_value>,<dBm_value>] […] Network survey end OK +CSURVC: NOT IN GSM OK +CSURVC: NETWORK BUSY OK +CSURVC: NOT ALLOW IN CALL OK ERROR

Defined values

<count>
the count of arfcn.
<s>
starting channel.
<e>
ending channel.
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.

<dBm_value>
the value of dBm.
<mcc_value>
mobile country code.
<mnc_value>
mobile network code.
<lac_value>
localization area code.
<cellId>
cell identifier.
<cellStatus>

cell status, this parameter indicates the following statuses:
    0 – Indicates the C0 is a suitable cell.
    1 – Indicates the cell is low priority based on the system information received.
    2 – Indicates the cell is forbidden.
    3 – Indicates the cell is barred based on the system information received.
    4 – Indicates the cell RXLEV is low.
    5 – Indicates none of the above, e.g. exelusion timer running, no BCCH available etc

<num_arfcn>
number of valid channels.
<list of arfcns>
list arfcns BCCH allocation, and the total number is <num_arfcn>.
<num_channel>
number of valid channels.
<list of channels>
list channels, and the total number is <num_channels>.
<arfcn_index>
the index of arfcn, and the minimum value is zero.

Examples

AT+CSURVC
Network survey started…
16,45,-82,460,0,6180,42545,0,5, 16 45 49 71 81,11, 11 12 14 16 19 20 21 22 24 26 27
……
694, -94
……
Network survey end
OK

6.68 AT+CSURVU   Network band scan by channels in string

Description

This command is used to perform a quick survey of user defined channels. It scans the given channels. The result format is in string format.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CSURVU: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CSURVU=<ch1>,[<ch2>,[…[<ch10>]]]	Network survey started… For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>, <[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>, <[numArfcn: <num_afrcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]> […] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] […] Network survey end OK
	+CSURVU: NOT IN GSM OK
	+CSURVU: NETWORK BUSY OK
	+CSURVU: NOT ALLOW IN CALL OK
	ERROR

Defined values

<chN>
channel number(arfcn). It *must be in an increasing order, and the range of "N" is from 1 to 10.*
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>

the value of dBm.	
<mcc_value>	
mobile country code.	
<mnc_value>	
mobile network code.	
<lac_value>	
localization area code.	
<cellId>	
cell identifier.	
<cellStatus>	
cell status, this parameter indicates the following statuses: - CELL_SUITABLE indicates the C0 is a suitable cell. - CELL_LOW_PRIORITY indicates the cell is low priority based on the system information received. - CELL_FORBIDDEN indicates the cell is forbidden. - CELL_BARRED indicates the cell is barred based on the system information received. - CELL_LOW_LEVEL indicates the cell RXLEV is low. - CELL_OTHER indicates none of the above, e.g. exelusion timer running, no BCCH available etc.	
<num_arfcn>	
number of valid channels.	
<list of arfcns>	
list arfcns BCCH allocation, and the total number is <num_arfcn>.	
<num_channel>	
number of valid channels.	
<list of channels>	
list channels, and the total number is <num_channels>.	

Examples

AT+CSURVU=16,20,86,96,109
Network survey started...
For BCCH-Carrier:
arfcn: 16,bsic: 45,dBm: -80,mcc: 460,mnc: 0,lac: 6180,cellId: 42545,cellStatus:CELL_SUITABLE,
numArfcn: 5,arfcn: 16 45 49 71 81,numChannels: 11,array: 11 12 14 16 19 20 21 22 24 26 27
For non BCCH-Carrier:
arfcn: 86,dBm: -97
Network survey end
OK

6.69 AT+CSURVUC   Network band scan by channels in numeric

Description

This command is used to performing a quick survey of user defined channels. It scans the given channels. The result is given in numeric format.

Note: Before scanning the network, make sure the prefferd network mode in GSM ONLY state; If not, please use command AT+CNMP=13 to change it; If this command executed not in GSM ONLY state, the response "+CSURVUC: NOT IN GSM" will be returned.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CSURVUC=<ch1>,[<ch2>,[…[<ch10>]]]	Network survey started… *For BCCH-Carrier:* [<arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>, <mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>, <[<num_afrcn>,<list of arfcns>] or [cell allocation empty]>,<[<num_channel>,<list of channels>] or [SIB2 not available]>] […] *For non BCCH-Carrier:* [<arfcn_value>, <dBm_value>] […] Network survey end OK
	+CSURVUC: NOT IN GSM OK
	+CSURVUC: NETWORK BUSY OK
	+CSURVUC: NOT ALLOW IN CALL OK
	ERROR

Defined values

<chN>
channel number(arfcn). It *must be in a increasing order, and the range of "N" is from 1 to 10.*
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.

<mcc_value>
mobile country code.
<mnc_value>
mobile network code.
<lac_value>
localization area code.
<cellId>
cell identifier.
<cellStatus>
cell status, this parameter indicates the following statuses:

<div style="padding-left:2em">

0 – Indicates the C0 is a suitable cell.

1 – Indicates the cell is low priority based on the system information received.

2 – Indicates the cell is forbidden.

3 – Indicates the cell is barred based on the system information received.

4 – Indicates the cell RXLEV is low.

5 – Indicates none of the above, e.g. exelusion timer running, no BCCH available etc
</div>

<num_arfcn>
number of valid channels.
<list of arfcns>
list arfcns BCCH allocation, and the total number is <num_arfcn>.
<num_channel>
number of valid channels.
<list of channels>
list channels, and the total number is <num_channels>.

Examples

> AT+CSURVUC=16,20,86,96,109
>
> Network survey started...
>
> 14,51, -89, 460, 0, 6180, 41074,0, 8, 5 7 14 51 61 65 74 88, 24, 2 3 9 11 12 15 16 17 19 20 22 24 25 26 27 28 36 81 516 520 525 532 556 600
>
> 86, -97
>
> Network survey end
>
> OK

6.70 AT+CSURCH   Network full band scan in string format

Description

The command is used to perform a quick survey through channels belonging to the band selected by last AT+/#BND command issue, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed.

After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CSURCH=<s>,<e>	Network survey started… For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>] […] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] […] Network survey end OK
Execution Command	Responses
AT+CSURCH	Network survey started… For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>] […] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] […] Network survey end OK

Defined values

<s>
Starting channel
<e>
ending channel
<arfcn_value>
carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>
base station identification code.
<dBm_value>
the value of dBm.

Examples

AT+CSURCH

AT+CSURCH
Network survey started...
For BCCH-Carrier:
arfcn: 16,bsic: 45,dBm: -75
For non BCCH-Carrier:
arfcn: 89,dBm: -82
arfcn: 1011,dBm: -86
Network survey end
OK

6.71 AT+BND   Set band preference

Description

This command is used to set the band to the <band> value

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+BND?	+BND: <band> OK

Write Command	Responses
AT+BND=<band>	*The <band> range is limited as 1-10* OK
	ERROR

Execution Command	Responses
AT+BND	*Set all band for module* OK

Defined values

<band>

    0   –   GSM 900MHz + DCS 1800MHz

    1   –   GSM 900MHz + PCS 1900MHz

    2   –   GSM 850MHz + DCS 1800MHz (available only on quadri-band modules)

    3   –   GSM 850MHz + PCS 1900MHz (available only on quadri-band modules)

4	–	GSM 850MHz
5	–	GSM 900MHz
6	–	DCS 1800MHz
7	–	PCS 1900MHz
8	–	UMTS 850MHz
9	–	UMTS 1900MHz
10	–	UMTS 2100MHz
11	–	UMTS 850MHz + UMTS 1900MHz
12	–	UMTS 850MHz + UMTS 2100MHz
13	–	UMTS 1900MHz + UMTS 2100MHz
14	–	UMTS 850MHz + UMTS 1900MHz + UMTS 2100MHz

Examples

AT+BND=0,11
OK
AT+BND?
+BND: 0,11
OK

6.72 AT#BND   Set band preference

Description

This command is used to set the band to the <band> value

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT#BND=?	#BND: (list of supported <band>s)
	OK
Read Command	**Responses**
AT#BND?	#BND: <band>
	OK
Write Command	**Responses**
AT#BND=<band>	*The <band> range is limited as 1-10*
	OK
	ERROR
Execution Command	Responses

AT#BND	*Set all band for module*
	OK

Defined values

<band>
0 – GSM 900MHz + DCS 1800MHz
1 – GSM 900MHz + PCS 1900MHz
2 – GSM 850MHz + DCS 1800MHz (available only on quadri-band modules)
3 – GSM 850MHz + PCS 1900MHz (available only on quadri-band modules)
4 – GSM 850MHz
5 – GSM 900MHz
6 – DCS 1800MHz
7 – PCS 1900MHz
8 – UMTS 850MHz
9 – UMTS 1900MHz
10 – UMTS 2100MHz
11 – UMTS 850MHz + UMTS 1900MHz
12 – UMTS 850MHz + UMTS 2100MHz
13 – UMTS 1900MHz + UMTS 2100MHz
14 – UMTS 850MHz + UMTS 1900MHz + UMTS 2100MHz

Examples

AT+BND=0,11
OK
AT+BND?
+BND: 0,11
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.
<u>2</u> – 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.

NOTE: If module reset from online mode to offline mode, the SIM card will be powered off if existed; If module reset from offline mode to online mode, the SIM card will be powered on if existed; And SIM card status will be reported as +CPIN: <code>

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 after setting it to <fun> power level

1 – reset the ME after 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=	OK
<pin>[,<newpin>]	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>			
<u>0</u>	–	disable automatic report	
1	–	enable automatic report	
<mode>			
<u>0</u>	–	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=	OK
<acmmax>[,<passwd>]	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+CDELTA   Write delta package to FOTA partition

Description

This command is used to write delta package to FOTA partition. After writting successfully，it will set flag for update.After the module reset and checked the flag, it starts to update firmware. The delta package is saved as a file in file system.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CDELTA=?	OK

Write Command	Responses
AT+CDELTA=<delta_package>	*If successful,return:* +CDELTA: 1 OK
	If fail,return: +CDELTA: 0,<err_code> OK

Defined values

<delta_package>
File name of delta package (string type). <delta_package> must be double quoted.

Please refer to "NOTE" section for more detail.

<err_code>

The error code of writing delta package.

      0   The delta package does not exist

      1   Error occurs when reading delta package

      2   Error occurs when writing delta package to FOTA partition

      3   Set the flag of updating unsuccessfully

Examples

AT+CDELTA=?

OK

AT+CDELTA="delta_1_2.mld"

+CDELTA: 1

OK

NOTE:

1. Delta package can be saved in the module EFS, this command will lookup the package under current directory. BTW you can use +FSCD to change current directory.

2. After the command finished one need to reset the module to start the updating process, during the process the status led will blink for attention. Please refer   to "SIM5360_Delta_Package_Update_Application_note_V0.01.doc" for more detail.

7.16 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+CICCID　Read ICCID in SIM card

Description

This command is used to Read the ICCID in SIM card

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CICCID=?	OK

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

Defined values

〈ICCID〉

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

Examples

AT+CICCID
+ICCID: 898600700907A6019125
OK

8.2　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

8.3 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 wAcc 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

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

Description

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

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+SPIC=?	OK

Execution Command	Responses
AT+SPIC	+SPIC: <pin1>,<puk1>,<pin2>,<puk2>
	OK

Defined values

<pin1>
Times remain to input PIN1 code.

<puk1>
Times remain to input PUK1 code.

<pin2>
Times remain to input PIN2 code.

<puk2>
Times remain to input PUK2 code.

Examples

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

8.5 AT+CSPN   Get service provider name from SIM

Description

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

SIM PIN	References
YES	Vendor

Syntax

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

Defined values

<spn>
String type; service provider name on SIM
<display mode>
0 – doesn't display PLMN.Already registered on PLMN.
1 – display PLMN

Examples

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

8.6 AT+CRFSIM   Reinitialize the SIM card

Description

This command is used to reload and initialize the SIM card.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRFSIM=?	OK

Execute Command	Responses
AT+CRFSIM	OK ERROR

Examples

AT+CRFSIM=?
OK
AT+CRFSIM
OK

9 Hardware Related Commands

9.1 AT+CTXVOL Set TX volume

Description

This command is used to set audio path parameter – TX volume, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CTXVOL?	+CTXVOL: <tx_vol> OK

Write Command	Responses
AT+CTXVOL=<tx_vol>	OK

Defined values

<tx_vol>
TX volume level which is from 0 to 65535.

Examples

AT+CTXVOL=1234
OK

9.2 AT+CRXVOL Set RX volume

Description

This command is used to set audio path parameter – RX volume, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<rx_vol>
RX volume level which is from -100 to 100.

Examples

AT+CRXVOL=12
OK

9.3 AT+CTXFTR   Set TX filter

Description

This command is used to set audio path parameter – TX filter, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CTXFTR=?	+CTXFTR: (list of supported <tx_ftr_*N*>s) OK
Read Command	Responses
AT+CTXFTR?	+CTXFTR: <tx_ftr_*1*>,<…>,<tx_ftr_*7*> OK
Write Command	Responses

AT+CTXFTR=	OK
<tx_ftr_*1*>,<...>,<tx_ftr_*7*>	

Defined values

<tx_ftr_*N*>
TX filter level which is from 0 to 65535. (*N* is from 1 to 7)

Examples

AT+CTXFTR=1111,2222,3333,4444,5555,6666,7777
OK

9.4 AT+CRXFTR   Set RX filter

Description

This command is used to set audio path parameter – RX filter, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRXFTR=?	+CRXFTR: (list of supported <rx_ftr_*N*>s)
	OK
Read Command	**Responses**
AT+CRXFTR?	+CRXFTR: <rx_ftr_*1*>,<...>,<rx_ftr_*7*>
	OK
Write Command	**Responses**
AT+CRXFTR=	OK
<rx_ftr_*1*>,<...>,<rx_ftr_*7*>	

Defined values

<rx_ftr_*N*>
RX filter level which is from 0 to 65535. (*N* is from 1 to 7)

Examples

AT+CRXFTR=1111,2222,3333,4444,5555,6666,7777
OK

9.5 AT+CVALARM Low and high voltage Alarm

Description

This command is used to open or close the low voltage alarm function.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CVALARM=?	+CVALARM: (list of supported <enable>s), (list of supported low <voltage>s), (list of supported high <voltage>s) OK

Read Command	Responses
AT+CVALARM?	+CVALARM: <enable>,<low voltage>, <high voltage> OK

Write Command	Responses
AT+CVALARM=<enable>[,<low voltage>],[<high voltage>]	OK
	ERROR

Defined values

<enable>

    0 – Close

    1 – Open. If voltage < < low voltage>, it will report "UNDER-VOLTAGE WARNNING" every 20s. If voltage > <high voltage>, it will report "OVER-VOLTAGE WARNNING" every 20s.

<low voltage>

    Between 2800mV and 4300mV. Default value is 3300.

<high voltage>

    Between 4000mV and 4700mV. Default value is 4700.

NOTE：The three parameters will be saved automatically.

Examples

AT+CVALARM=1,3400,4500
OK
AT+CVALARM?
+CVALARM: 1,3400,4500
OK
AT+CVALARM=?

9.6 AT+CRIIC Read values from register of IIC device

Description

This command is used to read values from register of IIC device.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRIIC=?	OK

Write Command	Responses
AT+CRIIC= <addr>,<reg>,<len>	+CRIIC: <data> OK
	ERROR

Defined values

<addr>
Device address. Input format must be hex, such as 0xFF.
<reg>
Register address. Input format must be hex, such as 0xFF.
<len>
Read length. Range:1-4; unit:byte.
<data>
Data read. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

Examples

AT+CRIIC=0x0F, 0x0F, 2
+CRIIC: FFFF
OK

9.7 AT+CWIIC Write values to register of IIC device

Description

This command is used to write values to register of IIC device.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CWIIC=?	OK

Write Command	Responses
AT+CWIIC= <addr>,<reg>,<data>,<len>	OK
	ERROR

Defined values

<addr>
Device address. Input format must be hex, such as 0xFF.
<reg>
Register address. Input format must be hex, such as 0xFF.
<len>
Read length. Range: 1-4; unit: byte.
<data>
Data written. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

Examples

AT+CWIIC=0x0F, 0x0F, 0x1234, 2
OK

9.8 AT+CVAUXS   Set state of the pin named VREG_AUX1

Description

This command is used to set state of the pin which is named VREG_AUX1.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CVAUXS?	+CVAUXS: <state> OK

Write Command	Responses
AT+CVAUXS=<state>	OK

	ERROR

Defined values

<state>
0	–	the pin is closed.
1	–	the pin is opend(namely, open the pin)

Examples

AT+CVAUXS=1
OK
AT+CVAUXS?
+CVAUXS: 1
OK

9.9 AT+CVAUXV   Set voltage value of the pin named VREG_AUX1

Description

This command is used to set the voltage value of the pin which is named VREG_AUX1.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<voltage>
Voltage value of the pin which is named VREG_AUX1. The unit is in 50*mV.

Examples

AT+CVAUXV=?	
+CVAUXV:(30-61)	
OK	
AT+CVAUXV=40	
OK	
AT+CVAUXV?	
+CVAUXV: 40	
OK	

9.10 AT+CGPIO   Set GPIO0 interrupt trigger mode

Description

This command is used to set GPIO0 interrupt trigger mode.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CGPIO=<detect>, <polarity>[,<save>]	OK
	ERROR

Defined values

<detect>	
0 – LEVEL trigger mode	
1 – EDGE trigger mode	
<polarity>	
0 – trigger when low level	
1 – trigger when high level	
<save>	
0 – not save the setting	
1 – save the setting	
NOTE: If the parameter of <save> is omitted, it will save the setting.	

Examples

AT+CGPIO=1,1,0
OK

9.11 AT+CGDRT   Set the direction of specified GPIO

Description

This command is used to set the specified GPIO to input or output state. If setting to input state, then this GPIO can not be set to high or low value.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CGDRT=<gpio_num>, <gpio_io>[,<save>]	OK
	ERROR

Defined values

<gpio_num>
0-15, 33-37,40-44,50-51,60-63

<gpio_io>
0 – in
1 – out

<save>
0 – not save the setting
1 – save the setting

NOTE: If the parameter of <save> is omitted, it will save the direction of specified GPIO.the GPIO must be set to GPIO FUNCTION through AT+CGFUN, then it will set success.

Examples

AT+CGDRT=3,0,0
OK

9.12 AT+CGSETV   Set the value of specified GPIO

Description

This command is used to set the value of the specified GPIO to high or low.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CGSETV=<gpio_num>, <gpio_hl>[,<save>]	OK
	ERROR

Defined values

<gpio_num>
0-15, 33-37,40-44,50-51,60-63
<gpio_hl>
0 – low   1 – high
<save>
0 – not save the setting   <u>1</u> – save the setting
NOTE: If the parameter of <save> is omitted, it will save the value of specified GPIO. the GPIO must be set to GPIO FUNCTION through AT+CGFUN, then it will set success.

Examples

AT+CGSETV=3,0,0
OK

9.13 AT+CGGETV   Get the value of specified GPIO

Description

This command is used to get the value (high or low) of the specified GPIO.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CGGETV=<gpio_num>	+CGGETV: <gpio_hl> OK
	ERROR

Defined values

<gpio_num>
0-15, 33-37,40-44,50-51,60-63
<gpio_hl>
0 – low

1 – high

NOTE: The GPIO must be set to GPIO FUNCTION through AT+CGFUN, then it will set success.

Examples

AT+CGGETV=3
+CGGETV: 0
OK

9.14 AT+CGISR   Set GPIO interrupt trigger condition

Description

The module supplies many GPIOs, all of which can be used as General Purpose Input/Oupt pin, interrupt pin and some of them can be used as function pin.

This command is used to set one GPIO pin as an interrupt source, and then set the detect type[optional] and polarity type[optional], and enable interrupt. Please consult the document "SIM52xx_GPIO_Application_note" for more details.

SIM PIN	References
No	

Syntax

Read Command	Responses
AT+CGISR=<GPIO>	+CGISR: < GPIO >[<detect>,<polarity>] OK

Write Command	Responses
AT+CGISR=< GPIO >,<detect>,<polarity>	OK

Defined values

< GPIO >
GPIO number.
< detect >
0 – level detection.   1 – edge detection
< polarity >
0 – low level/edge detection   1 – high level/edge detection

Examples

AT+CGISR=1
+CGISR : 1[0,1]
OK
AT+CGISR=1,0,1
OK

NOTE:

1. *if the interruption is triggered SIM5360 will send the following URC to host.*

GPIO[0] Interrupt Alarm!value:0

2. Default <detect> is 0 and default <polarity> is 1.

3. *After* setting one GPIO pin as an interrupt source successfully, the setting will be saved.

9.15 AT+CADC   Read ADC value

Description

This command is used to read the ADC value from modem. ME supports 3 types of ADC, which are raw type, temperature type and voltage type.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CADC=?	+CADC: (range of supported <adc>s) OK

Write Command	Responses
AT+CADC=<adc>	+CADC: <value> OK
	ERROR

Execution Command	Responses
AT+CADC	*Same as AT+CADC= 0:* +CADC: <value> OK

Defined values

<adc>
ADC type:
    0 – raw type.
    1 – temperature type.

2 – voltage type(mv)	
<value>	
Integer type value of the ADC.	

Examples

AT+CADC=?
+CADC:(0-2)
OK
AT+CADC=0
+CADC: 187
OK

9.16 AT+CVLVL   Set value of sound level

Description

This command is used to set audio path parameter – RX volume. This command is different from CRXVOL (command CRXVOL will modify the values of all sound levels offset we provided together). You can change the value of each sound level based on your design separately through this command. Please refer to related hardware design document for more information.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CVLVL=?	+CVLVL: (list of supported <lvl>s),(list of supported <lvl_value>s) OK
Read Command	**Responses**
AT+CVLVL?	+CVLVL: <lvl_value1>,<lvl_value2>,<lvl_value3>,<lvl_value4>， <lvl_value5>,<lvl_value6>,<lvl_value7>,<lvl_value8> OK
Write Command	**Responses**
AT+CVLVL=<lvl>,<lvl_value>	+CVLVL: lvl_value OK
	ERROR

Defined values

<lvl>
Sound level number which is from 1 to 8.
<lvl_value>
Sound level value which is from -5000 to 5000.
<lvl_value1>
Sound level value that sound level number equals 1.
<lvl_value2>
Sound level value that sound level number equals 2.
<lvl_value3>
Sound level value that sound level number equals 3.
<lvl_value4>
Sound level value that sound level number equals 4.
<lvl_value5>
Sound level value that sound level number equals 5.
<lvl_value6>
Sound level value that sound level number equals 6.
<lvl_value7>
Sound level value that sound level number equals 7.
<lvl_value8>
Sound level value that sound level number equals 8.

Examples

AT+CVLVL=1,-2000
+CVLVL: -2000
OK
AT+CVLVL?
+CVLVL: -1500,-1200,-900,-600,-300,0,300,600
OK
AT+ CVLVL=?
+CVLVL: (1-8),(-5000-5000)
OK

NOTE: Currently level 7 and level 8 are the same, which means the value set for one level also will set for the other automatically(they have the same values).

9.17 AT+CECM   Enable/Disable Echo Canceller

Description

This command is used to select the echo cancellation mode. Each audio channel has own default echo cancellation mode. For example:

Handset: at+cecm=1(default open)

Headset: at+cecm=2(default open)

Speaker: at+cecm=4(default open)

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CECM?	+CECM: <enable>
	OK

Write Command	Responses
AT+CECM=<enable>	OK
	ERROR

Defined values

<enable>:
0 : disable EC mode
1 : EC mode recommended for HANDSET
2 : EC mode recommended for HEADSET
3 : EC mode recommended for HANDSFREE
4 : EC mode recommended for SPEAKER
5 : EC mode recommended for BT HEADSET

NOTE:

1. User should use this AT command together with other related audio AT commands like "CSDVC ", "CPCM" and so on.

Examples

AT+CECM=0
OK
AT+ CECM =1
OK

9.18 AT+CECSET Set/Get the parameters of the EC

Description

This command is used to set/get the parameters of the nextgen echo cancellation. The total count of the configurable parameters is 49, and each parameter is uint16. This command will get all the 49 parameters and set each of them one by one. Please refer to related hardware design document for more information.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CECSET=?	+CECSET: (list of supported <index>s),(list of supported <index_value>s) OK
Read Command	Responses
AT+CECSET?	+CECSET: Echo cancellation mode is :<ec_mode> <index0> -> <index0_value> <index1> -> <index1_value> <index2> -> <index2_value> ...... <index47> -> <index1_value> <index48> -> <index2_value> OK
Write Command	Responses
AT+CECSET=<index>,<index_value>	OK
	ERROR

Defined values

<index>
The index number of the parameters of the nextgen EC.
<index_value>
The value corresponding to the index of the parameters of the nextgen EC.
<ec_mode>
The current EC mode. Which is set by AT+CECM.

Examples

AT+CECSET=0, 32767
OK
AT+CECSET?
+CECSET: echo cancellation mode is :1 0 -> 32767 1 -> 2048 2 -> 32767

```
3 -> 4255
4 -> 0
5 -> 20
6 -> 2048
7 -> 8192
8 -> 8192
9 -> 250
10 -> 70
11 -> 1
12 -> 767
13 -> 64
14 -> 32
15 -> 18000
16 -> 64
17 -> 16800
18 -> 2048
19 -> 99
20 -> 20000
21 -> 20000
22 -> 1
23 -> 19000
24 -> 6000
25 -> 0
26 -> 256
27 -> 256
28 -> 1024
29 -> 512
30 -> 1024
31 -> 768
32 -> 486
33 -> 400
34 -> 10361
35 -> 450
36 -> 12000
37 -> 4000
38 -> 20
39 -> 8192
40 -> 250
41 -> 70
42 -> 1
43 -> 767
44 -> 32767
45 -> 32767
```

```
46 -> 4096
47 -> 8
48 -> 1


OK
AT+CECSET=?
+CECSET: (0-49), (0-65535)
OK
```

9.19 AT+CNSM   Enable/Disable Noise Suppression

Description

This command is used to enable/disable noise suppression. The default value is enabled.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CNSM?	+CNSM: <enable>
	OK

Write Command	Responses
AT+CNSM=<enable>	OK
	ERROR

Defined values

<enable>:
  0 : disable this feature
  1 : enable this feature

NOTE: User should use this AT command together with other related audio AT commands like "CSDVC ", "CPCM" and so on.

Examples

AT+CNSM=0	
OK	
AT+ CNSM =1	
OK	

9.20 AT+CRIRS   Reset RI pin of serial port

Description

This command is used to reset RI pin of serial port (Null modem Mode). After This command executed, when a voice (csd, video) call or a SMS is coming or URC is reported, RI pin will be asserted. It can wake up host.

Second serial port is not support this command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRIRS=?	OK

Write Command	Responses
AT+CRIRS	OK
	ERROR

Defined values

None

Examples

AT+CRIRS
OK

9.21 AT+IPR2 Set UART2 baud rate temporarily

Description

This command sets the baud rate of module's second 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+IPR2=?	+IPR2: (list of supported<speed>s)
	OK
Read Command	Responses
AT+IPR2?	+IPR2: <speed>
	OK
Write Command	Responses
AT+IPR2=<speed>	OK
	ERROR
Execution Command	Responses
AT+IPR2	*Set default value 115200:*
	OK

Defined values

<speed>
Baud rate per second:
4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800

Examples

AT+IPR2?
+IPR: 115200
OK
AT+IPR2=?
+IPR:(4800,9600,19200,38400,57600,115200,230400,460800)
OK
AT+IPR2=115200
OK

9.22 AT+CSUART   Switch UART line mode

Description

This command is used to switch UART line mode between 3 lines mode (Null modem) and 7 lines mode (Full modem).

Second serial port is not support this command.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<mode>		
0	–	3 lines mode
1	–	7 lines mode
<save>		
0	–	don't save the setting
1	–	save the setting

Examples

AT+CSUART=1
OK

9.23   AT+CSCLK UART sleep mode

Description

This command is used to enable/disable UART DTR pin sleep mode, the command only in effect on 3 line mode, Uart will be enter sleep mode if enable UART sleep mode and DTR pin High,then module will be sleep when it not have any work.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+ CSCLK =?	+CSCLK: (0-1)
	OK
	ERROR
Read Command	Responses

AT+ CSCLK?	+ CSCLK: < mode >
	OK
	ERROR
Write Command	Responses
AT+ CSCLK =< mode >	OK
	ERROR

Defined values

| < mode >: |
| 0   : disable UART DTR pin sleep mode |
| 1   : enable UART DTR pin sleep mode |

Examples

| *AT+* CSCLK=*0* |
| *OK* |
| *AT+* CSCLK=*1* |
| *OK* |

9.24 AT+CMUX   Enable the multiplexer over the UART

Description

This command is used to enable the multiplexer over the UART, after enabled four virtual ports can be used as DIAG port, NMEA port, AT command port or MODEM port(configured by +CMUXSRVPORT command) , the physical UART can no longer transfer data directly under this case.

By default all of the four virtual ports are used as AT command port.

Second serial port is not support this command.

| SIM PIN | References |
| NO | Vendor |

Syntax

Test Command	Responses
AT+CMUX=?	+CMUX: (0)
	OK
Write Command	Responses
AT+CMUX=	OK
<value>［,<subset>［,<port	ERROR

_speed>[,<N1>[,<T1>[, <N2>[,<T2>[,<T3>[,<k >]]]]]]]]]	

Defined values

< value >:
0 – currently only 0 is supported (basic operation mode).
< subset >:
Currently omitted
< port_speed >:
Currently omitted, you can set speed before enable multiplexer
< N1>:
Currently omitted
< T1>:
Currently omitted
< N2>:
Currently omitted
< T2>:
Currently omitted
< T3>:
Currently omitted
< k >:
Currently omitted

Examples

AT+CMUX=0
OK

NOTE: Currently only basic operation mode is supported.

9.25 AT+CMUXSRVPORT   Configure the specified virtual port to the appropriate service

Description

     This command is used to configure the right service for the certain virtual com port; the setting is savable and will be enabled on the next startup time.

     Default all of the virtual com ports are configured as DATA service.

     Second serial port is not support this command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses	
AT+CMUXSRVPORT=?	+CMUXSRVPORT: (0-3),(0,1,5)	
	OK	
Read Command	Responses	
AT+CMUXSRVPORT?	virtual port <[port]> - <service>	
	OK	
Write Command	Responses	
AT+CMUXSRVPORT=<port>,<service>	OK	
	ERROR	

Defined values

<port>: *virtual com port*
0 – 3 currently support 4 virtual com ports index from 0 to 3. [port] is the format of responses.
<service>: *valid service*
0 – DIAG Service
1 – DATA(MODEM) Service
5 – NMEA Service

Examples

AT+CMUXSRVPORT=0,1
OK
AT+CMUXSRVPORT=?
+CMUXSRVPORT: (0-3),(0,1,5)
OK

NOTE:

1. NMEA service only supported on SIM5360.

2. DIAG and NMEA service are exclusively, so it is forbidden to configure the DIAG or NMEA service to more than one virtual com port.

9.26 AT+CUARTWD   Configure the interval time for the stable-timer

Description

This command is used to configure a delay time used while UART waken up change to sleep mode. during this delay time, any data received from UART will be ignored.
The default value is 0.

Note:

If module coming call when in sleep mode, it will be wakeup and send URC to host, module will be auto sleep when URC send complete and DTR is high then this delay time.

Set AT+CSCLK=1,host change DTR form low to high,module need delay this time,then into sleep mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CUARTWD=?	+CUARTWD: (0-10000)
	OK

Read Command	Responses
AT+CUARTWD?	+CUARTWD: \<interval\>
	OK

Write Command	Responses
AT+ CUARTWD =<	OK
interval >	ERROR

Defined values

< interval >: unit: ms
0 : disable the stable-timer
Value: interval time for the stable-timer

Examples

AT+CUARTWD=0
OK
AT+ CUARTWD =200
OK

9.27 AT+CBC   Battery charge

Description

The command is used to query the current voltage of power supply.

NOTE If Module is not allow the detection of battery used,then \<bcs\> and \<bcl\> may be ignored.You can get the current voltage of power supply by \<vol\>.

SIM PIN	References

NO	3GPP TS 07.07

Syntax

Test Command	Responses
AT+CBC=?	+CBC: (list of supported \<bcs\>s),(list of supported \<bcl\>s) OK
Execution Command	Responses
AT+CBC	+CBC: \<bcs\>,\<bcl\>,\<vol\>V OK
	+CME ERROR: \<err\>

Defined values

\<bcs\>
0   Battery powered
\<bcl\>
0…100   Battery charge level
\<vol\>
Current voltage value (V).

Examples

AT+CBC=?
+CBC: (0),(0-100)
OK
AT+CBC
+CBC: 0,75,3.810V
OK

9.28 AT+CDTRISRMD   Configure the trigger condition for DTR's interrupt.

Description

This command is used to set the appropriate trigger condition for DTR's interrupt, which will finally waking up the module.

This command is only valid for NULL modem.

The interrupt is low level triggered by default.

Second serial port is not support this command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CDTRISRMD=?	+CDTRISRMD: (list of supported <detect>s),(list of supported <polarity>s) OK
Read Command	Responses
AT+CDTRISRMD?	+CDTRISRMD: <detect>,<polarity> OK
Write Command	Responses
AT+CDTRISRMD =<detect>,<polarity>	OK ERROR

Defined values

<detect>	
0	Level trigger
1	Edge trigger
<polarity>	
0	Low trigger
1	High trigger

Examples

AT+CDTRISRMD=0,1
OK
AT+CDTRISRMD=0,0
OK

9.29 AT+CDTRISRS   Enable/disable the pin of DTR's awakening function

Description

This command is used to enable or disable the function of waking up the module by means of UART's DTR pin which to trigger an interrupt
This command is only valid for NULL modem.
The function is disabled by default.
Second serial port is not support this command.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<switch>
0   disable such function
1   enable such function

Examples

AT+CDTRISRS=1
OK
AT+CDTRISRS=0
OK

9.30 AT+CGFUNC Enable/disable the function for the special GPIO.

Description

SIM5360 supplies many GPIOs, all of which can be used as General Purpose Input/Output pin, interrupt pin and some of them can be used as function pin.

This command is used to enable/disable the function for the special GPIO. Please consult the document "SIM5360_GPIO_Application_note" for more details.

The configuration will be saved automatically.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGFUNC=?	+CGFUNC: (list of supported <function>s),(list of supported <switch>s)
	OK
Read Command	Responses

AT+CGFUNC=<function>	+CGFUNC: <switch>
	OK
	ERROR
Write Command	Responses
AT+CGFUNC=<function>, <switch>	OK
	ERROR

Defined values

<function>
1 : function status led.
2 : function wakeup me
3 : function wakeup host
7 : function keypad
9 : function rf switch
10 : function uart1 dcd
11 : function uart1 flow control
12: function wake up SIM5360 module by GPIO43
13: function wake up host by GPIO41
14:function module power up status(GPIO40)
17:function RI line 2G mode control, please see the detail from NOTE
18:function UART DTR sleep mode
19:function SPI
20:function I2C
21:function Uart2
<switch>
0 : disable the function.
1 : enable the function

Examples

AT+CGFUNC=1,1
OK
AT+CGFUNC=1
+CGFUNC: 1
OK

NOTE:
1. *Not all of the Modules of SIM5XXX series have the whole upper functions; some may have camera function while others may have keypad function and so on, please refer the Module SPEC for more details.*
2. *If **AT+CGFUNC=17,1** then assert 60ms when have urc reported;assert 120m when have sms received;and always asserted during the ring(incoming call).*
3. *Functions 21 and 19 is opponent,*
   a) *if AT+CGFUNC =19,1 then at +CGFUNC =21 will be get disable.*
   b) *if AT+CGFUNC =21,1 then at +CGFUNC =19 will be get disable.*

9.31 AT+CGWHOST   Reset GPIO 41 to high level

Description

This command resets GPIO41 to high lever after waking up the HOST.

GPIO41 status:

Low level: Wake up the HOST.

High level: the default status, and HOST use this AT to reset GPIO41 to high level.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGWHOST	OK

Examples

AT+CGWHOST
OK

9.32 AT+CGWISRMD   Configure   the   trigger   condition   for GPIO43's

Description

This command is used to set the appropriate trigger condition for GPIO43's interrupt, which will finally waking up the module.

The interrupt is low level triggered by default.

NOTE: Before using this AT to set triggered mode, please use "AT+CGFUNC=12,0" to disable the function of GPIO43's interrupt. After setting triggered mode, then use "AT+CGFUNC=12,1" to enable this function.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGWISRMD=?	+CGWISRMD: (list of supported <detect>s),(list of supported <polarity>s)

	OK
Read Command	Responses
AT+CGWISRMD?	+CGWISRMD: <detect>,<polarity>
	OK
Write Command	Responses
AT+CGWISRMD	OK
=<detect>,<polarity>	ERROR

Defined values

<detect>	
0	Level trigger
1	Edge trigger
<polarity>	
0	Low trigger
1	High trigger

Examples

AT+CGWISRMD=0,1
OK
AT+CGWISRMD=0,0
OK

9.33 +KEY   Keypad result code

Description

URCs (Unsolicited Result Code) for keypad when keypad interface mode is active (refer to AT+CGFUNC). Both key press and key release generate a URC.

Refer to related HD document for more information about keypad.

SIM PIN	References
NO	Vendor

Syntax

Unsolicited Result Code
+KEY: <key>, [<key_row>, <key_column>], "<key_text>"

Defined values

<key>

Key code in hexadecimal fomat (e.g. 0x0A).			
<key_row>			
Key row number.			
<key_column>			
Key column number.			
<key_text>			
The key text on EVB (Evaluation Board) for reference.			

KEY VALUE REFERENCE

<key>	<key_row>	<key_column>	<key_text>
0x01	2	4	"MSG"
0x02	1	3	"#"
0x03	1	1	"*"
0x04	1	2	"0"
0x05	4	1	"1"
0x06	4	2	"2"
0x07	4	3	"3"
0x08	3	1	"4"
0x09	3	2	"5"
0x0A	3	3	"6"
0x0B	2	1	"7"
0x0C	2	2	"8"
0x0D	2	3	"9"
0x0E	1	0	"BACK"
0x0F	4	0	"REJECT"
0x10	3	4	"UP"
0x11	0	4	"DOWN"
0x12	1	4	"CALL"
0x13	3	0	"MENU"
0x14	4	4	"SELECT"
0x15	0	0	"HANDFREE"
0x16	0	2	"NAMES"
0x17	0	3	"V+"
0x18	0	1	"V-"
0x19	2	0	"SET"
0xFF	row and column is same as the key pressed		"RELEASE"

Examples

(Press the menu key, and then release the key):
+KEY: 0x13, [3, 0], "MENU"
+KEY: 0xFF, [3, 0], "RELEASE"

9.34 AT+CUSBSPD   Switch USB high or full speed

Description

This command is used to switch the speed of USB between high speed and full speed.

This configuration will take effect after reboot.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+CUSBSPD?	+CUSBSPD: <speed> OK

Write Command	Responses
AT+CUSBSPD=<speed>	OK
	ERROR

Defined values

<speed>
Integer type and nonvolatile value.
0   –   High speed (default value)
1   –   Full speed

Examples

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

9.35 AT+CLEDITST   Adjust the LED's intensity

Description

This command is used to adjust the intensity of the LED. It also can be used to disable the driver.

The configuration will be save automatically and the default value is 10 (100mA).

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CLEDITST=?	+CLEDITST: (list of supported <led_type>s), (list of supported <val>s) OK
Read Command	**Responses**
AT+CLEDITST?	+CLEDITST: <val> OK
Write Command	**Responses**
AT+CLEDITST=<led_type>,<val>	OK
	ERROR

Defined values

<led_type>
0 : LCD

<val>
0 : 0mA (disable driver)
1 : 10mA
2 : 20mA
3 : 30mA
4 : 40mA
5 : 50mA
6 : 60mA
7 : 70mA
8 : 80mA
9 : 90mA
10 : 100mA
11 : 110mA
12 : 120mA
13 : 130mA
14 : 140mA
15 : 150mA

Examples

AT+CLEDITST=0,0

OK

AT+ CLEDITST =0,10

OK

9.36 AT+CADCA   Read the value from the second ADC

Description

The ME supports two ADCs, and this command is used to read the voltage value from the second ADC.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CADCA	+CADCA: <value> OK

Defined values

<value>
Integer type value of the voltage.

Examples

AT+CADCA

+CADCA: 1100

OK

9.37 AT+CAPWRON   Auto power on setting

Description

This command is used to set the module to be powered on automatically at the appointed time.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CAPWRON=?	+CAPWRON: (0-23), (0-59),(0-1)

	OK
Read Command	Responses
AT+CAPWRON?	+CAPWRON: <hour>,<minute>,<repeated>
	OK
Write Command	Responses
AT+CAPWRON=<hour>,< minute>,<repeated>	OK
	ERROR

Defined values

<hour>
0 – 23 : the hour to power on
<minute>
0 – 59 : the minute to power on
<repeated>
0 : not repeated.
1 : repeated every day.

Examples

AT+CAPWRON=8,30,0
OK
AT+CAPWRON?
+CAPWRON: 8,30,0
OK
AT+CAPWRON=?
+CAPWRON: (0-23),(0-59),(0-1)
OK

NOTE: User can use the command AT+CAPWRON=255,255,255 to disable this function.

9.38 AT+CAPWROFF   Auto power off setting

Description

This command is used to set the module to be powered off automaticly at the appointed time.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CAPWROFF=?	+CAPWROFF: (0-23), (0-59),(0-1)

	OK
Read Command	Responses
AT+CAPWROFF?	+CAPWROFF: \<hour>,\<minute>,\<repeated>
	OK
Write Command	Responses
AT+CAPWROFF=\<hour>,\< minute>,\<repeated>	OK
	ERROR

Defined values

\<hour>
0 – 23 : the hour to power off
\<minute>
0 – 59 : the minute to power off
\<repeated>
0 : not repeated.
1 : repeated every day.

Examples

AT+CAPWROFF=22,30,0
OK
AT+CAPWROFF?
+CAPWROFF: 22,30,0
OK
AT+CAPWROFF=?
+CAPWROFF: (0-23),(0-59),(0-1)
OK

NOTE: User can use the command AT+CAPWROFF=255,255,255 to disable this function

9.39 AT+CBVTBP Set 800-850 band indicator

Description

This command is used to set the band indicator to 800 or 850 for the common RF channels of 800 and 850.This command is only valid for SIM5360J.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses

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

Defined values

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

Examples

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

9.40 AT+CMTE   Set critical temperature operating mode or query temperature

Description

This command is used to set critical temperature operating mode or query temperature.

SIM PIN	References
NO	Vendor

Syntax

Read Command	Responses
AT+CMTE?	+CMTE: <mode> <temperature>

	OK
	ERROR
Write Command	Responses
AT+CMTE=<mode>	OK
	ERROR

Defined values

<mode>
0 –   Disable temperature detection   1 –   Enable temperature detection
<temperature>
Range of -40 to 85

Examples

AT+CMTE?
+CMTE: 0,29
OK
AT+CMTE=1
OK

NOTE:
- When temperature is extreme high or low, product will power off.
- URCs indicating the alert level "1" or "-1" are intended to enable the user to take appropriate precaution, such as protect the module from exposure to extreme conditions, or save or back up data etc.
- Level "2"or "-2" URCs are followed by immediate shutdown.

9.41 AT+CSWITCHMBIM   Switch MBIM mode

Description

This command is used to switch mbim mode, but need reboot the module after set this command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSWITCHMBIM =?	OK
Read Command	Responses
AT+CSWITCHMBIM?	+ CSWITCHMBIM: <mode>
	OK
	ERROR
Write Command	Responses
AT+CSWITCHMBIM =<mode>	OK
	ERROR

Defined values

<mode>
0 – Disable mbim
1 – Enable mbim

Examples

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

9.42 AT+CPMVT   Low and high voltage Power Off

Description

This command is used to open or close the low and high voltage power off function.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPMVT=?	+CPMVT: (list of supported <enable>s), (list of supported low <voltage>s), (list of supported high <voltage>s)

	OK
Read Command	Responses
AT+CPMVT?	+CPMVT: <enable>,<low voltage>, <high voltage> OK
Write Command	Responses
AT+CPMVT=<enable>[,<low voltage>],[<high voltage>]	OK
	ERROR

Defined values

<enable>
<u>0</u> – Close   1 – Open. If voltage < < low voltage>, it will report "UNDER-VOLTAGE WARNNING POWER DOWN" and power off the module. If voltage > <high voltage>, it will report "OVER-VOLTAGE WARNNING POWER DOWN" and power off the module
<low voltage>
Between 2800mV and 4300mV. Default value is 3200.
<high voltage>
Between 4000mV and 4800mV. Default value is 4800.
NOTE：The three parameters will be saved automatically.

Examples

AT+CPMVT=1,3400,4500
OK
AT+CPMVT?
+CPMVT: 1,3400,4500
OK
AT+CPMVT=?
+CPMVT: (0-1),(2800-4300),(4000-4800)
OK

10 SPI Related Commands

10.1 AT+CSPISETCLK   SPI clock rate setting

Description

This command is used to set SPI clock configuration and trigger mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPISETCLK=?	+CSPISETCLK: (range of supported <polarity>s), (range of supported <mode>s),(range of supported <trigger mode>s) OK
Read Command	Responses
AT+CSPISETCLK?	+CSPISETCLK: <polarity>,<mode>,<trigger mode> OK
Write Command	Responses
AT+CSPISETCLK=<polarity>,<mode>,<trigger mode>	OK
	ERROR

Defined values

<polarity>	
0	the SPI clock signal is low when the clock is idle
1	the SPI clock signal is high when the clock is idle

<mode>	
0	the SPI clock runs only during a transfer unit
1	the SPI clock runs continuously from the start of the transfer

<trigger mode>	
0	the SPI data input signal is sampled on the leading clock edge
1	the SPI data input signal is sampled on the trailing clock edge

Examples

AT+CSPISETCLK =1,0,1
OK

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

10.2 AT+CSPISETCS   SPI chip select setting

Description

This command is used to set SPI chip select polarity and mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPISETCS=?	+CSPISETCS: (range of supported <mode>s), (range of supported <polarity>s) OK
Read Command	Responses
AT+CSPISETCS?	+CSPISETCS: <mode>,<polarity> OK
Write Command	Responses
AT+CSPISETCS=<mode>,<polarity>	OK
	ERROR

Defined values

<mode>

  0   the SPI chip select is de-asserted between transfer units

  1   the SPI chip select is kept asserted between transfer units

<polarity>

  0   the SPI chip select is active low

  1   the SPI chip select is active high

Examples

AT+CSPISETCS =1,0
OK
AT+CSPISETCS?
+CSPISETCS: 1,0

OK

AT+CSPISETCS =?

+CSPISETCS: (0-1),(0-1)

OK

10.3 AT+CSPISETF   SPI clock frequency setting

Description

This command is used to set SPI clock frequency

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPISETF=?	+CSPISETF: (range of supported <min>s), (range of supported <max>s),(range of supported <de-assertion time>s) OK
Read Command	Responses
AT+CSPISETF?	+CSPISETF: <min>,<max>,<de-assertion time> OK
Write Command	Responses
AT+CSPISETF=<min>,<max>,<de-assertion time>	OK
	ERROR

Defined values

<min>
In master mode, set the minimum SPI clock frequency by the slave device   0…26000000
<max>
In master mode, set the maximum SPI clock frequency by the slave device   0…26000000
<de-assertion time>
In master mode, set the minimum time to wait between transfer units in nanoseconds   0…64

Examples

AT+CSPISETF =960000,10000000,0

OK

AT+CSPISETF?

+CSPISETF: 960000,10000000,0

OK

AT+CSPISETF =?

+CSPISETF: (0-26000000), (0-26000000),(0-64)

OK

10.4 AT+CSPISETPARA   SPI transfer parameters setting

Description

This command is used to set SPI transfer parameters

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPISETPARA=?	+CSPISETPARA: (range of supported <bit>s), (range of supported <input packed>s),(range of supported <output unpacked>s) OK
Read Command	Responses
AT+CSPISETPARA?	+CSPISETPARA: <bit>,<input packed>,<output unpacked> OK
Write Command	Responses
AT+CSPISETPARA=<bit>, <input packed>,<output unpacked>	OK
	ERROR

Defined values

<bit>
set the number of bits to use per transfer unit, only support 8,16,32 bits   0…32
<input packed>
0   data should be not packed into the user input buffer   1   data should be packed into the user input buffer
<output unpacked>
0   data should be not packed from the user output buffer   1   data should be packed from the user output buffer

Examples

AT+CSPISETPARA =16,0,1

OK

AT+CSPISETPARA?

+CSPISETPARA:16,0,1

OK

AT CSPISETPARA=?

+CSPISETPARA : (0-32), (0-1),(0-1)

OK

10.5 AT+CSPIW   Write data to SPI

Description

This command is used to write data to SPI.

NOTE: If you want to write data only when you use SPI to connect to some special slave device, you can set <reg> to 0xFFFF.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPIW=?	OK

Write Command	Responses
AT+CSPIW=<reg>,<data>,< len>	OK
	ERROR

Defined values

<reg>
   Register address. Input format must be hex, such as 0xFF.

<data>
   Data written. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

<len>
   Read length.The unit is byte
     1…4

Examples

AT+CSPIW=0x0F, 0x1234, 2

OK

10.6 AT+CSPIR   Read data from SPI

Description

This command is used to read data from SPI.

NOTE: If you want to read data only when you use SPI to connect to some special slave device, you can set <reg> to 0xFFFF.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSPIR=?	OK

Write Command	Responses
AT+CSPIR=<reg>,<len>	+CSPIR: <data>
	OK
	ERROR

Defined values

<reg>
Register address. Input format must be hex, such as 0xFF.

<data>
Data read. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

<len>
Read length.The unit is byte.
1…4

Examples

AT+CSPIR =0x0F, 2
+CSPIR : 0x1234
OK

11 Phonebook Related Commands

11.1 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

11.2 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

11.3 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

11.4 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

11.5 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 |

11.6 AT+CEMNLIST   Set the list of emergency number

Description

This command allows user to define emergency number list which stored in ME.
NOTE: These emergency numbers in this list only be available without SIMCard or with PIN l ocked.Once SIM card is here without pin locked, this list will not be accessable, but customer could access another emergency number list from phone book on "EN" entry, please refer to co mmand AT+CPBS. This "EN" list is usually released by SIM card provider.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CEMNLIST=?	+CEMNLIST: (list of supported <mode>s), <nlength>,<total>

	OK
Read Command	Responses
AT+CEMNLIST?	+CEMNLIST: <mode>,<emergency numbers>
	OK
Write Command	Responses
AT+CEMNLIST=<mode>[, <emergency numbers>]	OK

Defined values

<mode>	
0	disable
1	enable
2	edit emergency numbers
<nlength>	
Integer type value indicating the maximum length of single emergency number.	
<total>	
Integer type value indicating the total number of emergency numbers.	
<emergency numbers>	
Emergency numbers list, string type.	
<emergency number> includes all of emergency numbers,every emergency number is seperated by comma,for example "911,112".	

Examples

AT+CEMNLIST=?
+CEMNLIST: (0-2),10,30
OK
AT+CEMNLIST?
+CEMNLIST: 1,"911,112"
OK
AT+CEMNLIST=1
OK
AT+CEMNLIST=2,"911,112"
OK

12 File System Related Commands

The file system is used to store files in a hierarchical (tree) structure, and there are some definitions and conventions to use the Module.

Local storage space is mapped to "C:", and storage space of present storage card is mapped to "D:". In

both "*C:*" and "*D:*" directories, module creates four directories named "*Picture*", "*Audio*", "*Video*" and "*VideoCall*" automatically; "*Picture*" is used to store static image when taking picture by camera, "*Audio*" is used to store audio file, "*Video*" is used to store video file when recording by camera, and "*VideoCall*" is used to store media file which is recorded during a video call.

> **NOTE:** General rules for naming (both directories and files):

> 1   The length of actual fully qualified names of directories and files can not exceed 254. For example: the length of "C:/Picture/first_image.jpg ("C:/" should be replaced by "/MultiMedia/" , and "D:/" should be replaced by "/mmc1/")" don't exceed 254.

> 2   Directory and file names can not include the following characters:
>
>   \   :   *   ?   "   <   > | ,   ;

> 3   Between directory name and file/directory name, use character "/" as list separator, so it can not appear in directory name or file name.

> 4   The first character of names must be a letter or a numeral or underline, and the last character can not be period "." and oblique "/".

> 5   Case sensitive in "C:", but not case sensitive in "D:" if storage card is present.

12.1   AT+FSCD   Select directory as current directory

Description

This command is used to select a directory. The Module supports absolute path and relative path.

Read Command will return current directory without double quotation marks.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSCD=?	OK

Read Command	Responses
AT+FSCD?	+FSCD: <curr_path>
	OK

Write Command	Responses
AT+FSCD=<path>	+FSCD: <curr_path>
	OK
	ERROR

Defined values

<path>
String without double quotes, directory for selection.
NOTE   If <path> is "..", it will go back to previous level of directory. If current directory is D:/ or

in D:/ and SD card is removed and unmounted, it will set current directory C:/ automatically after a moment.

<curr_path>

String without double quotes, current directory.

Examples

AT+FSCD=C:
+FSCD: C:/
OK
AT+FSCD=C:/
+FSCD: C:/
OK
AT+FSCD?
+FSCD: C:/
OK
AT+FSCD=..
+FSCD: C:/
OK

12.2 AT+FSMKDIR   Make new directory in current directory

Description

This command is used to create a new directory in current directory.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSMKDIR=?	OK

Write Command	Responses
AT+FSMKDIR=<dir>	OK
	ERROR

Defined values

<dir>

String without double quotes, directory name which does not already exist in current directory.

Examples

AT+FSMKDIR= SIMTech

OK

AT+FSCD?

+FSCD: C:/

OK

AT+FSLS

+FSLS: SUBDIRECTORIES:

SIMTech

OK

12.3 AT+FSRMDIR   Delete directory in current directory

Description

This command is used to delete existing directory in current directory.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSRMDIR=?	OK

Write Command	Responses
AT+FSRMDIR=<dir>	OK
	ERROR

Defined values

<dir>
String without double quotes.

Examples

AT+FSRMDIR=SIMTech

OK

AT+FSCD?

+FSCD: C:/

OK

AT+FSLS

+FSLS: SUBDIRECTORIES:

Audio
Picture
Video
VideoCall
OK

12.4 AT+FSLS   List directories/files in current directory

Description

This command is used to list informations of directories and/or files in current directory.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+FSLS?	+FSLS: SUBDIRECTORIES:<dir_num>,FILES:<file_num>
	OK

Write Command	Responses
AT+FSLS=<type>	[+FSLS: SUBDIRECTORIES:
	<list of subdirectories>
	<CR><LF>]
	[+FSLS: FILES:
	<list of files>
	<CR><LF>]
	OK

Execution Command	Responses
AT+FSLS	[+FSLS: SUBDIRECTORIES:
	<list of subdirectories>
	<CR><LF>]
	[+FSLS: FILES:
	<list of files>
	<CR><LF>]
	OK

Defined values

Integer type, the number of subdirectories in current directory.	
<file_num>	
Integer type, the number of files in current directory.	
<type>	
0 – list both subdirectories and files	
1 – list subdirectories only	
2 – list files only	

Examples

AT+FSLS?
+FSLS: SUBDIRECTORIES:2,FILES:2
OK
AT+FSLS
+FSLS: SUBDIRECTORIES:
FirstDir
SecondDir
+FSLS: FILES:
image_0.jpg
image_1.jpg
OK
AT+FSLS=2
+FSLS: FILES:
image_0.jpg
image_1.jpg
OK

12.5 AT+FSDEL   Delete file in current directory

Description

This command is used to delete a file in current directory. Before do that, it needs to use AT+FSCD select the father directory as current directory.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSDEL=?	OK

Write Command	Responses
AT+FSDEL=<filename>	OK
	ERROR

Defined values

<filename>
String with or without double quotes, file name which is relative and already existing. If <filename> is *.*, it means delete all files in current directory. If the file path contains non-ASCII characters, the filename parameter should contain a prefix of {non-ascii} and the quotation mark.

Examples

AT+FSDEL=image_0.jpg *OK*

12.6 AT+FSRENAME   Rename file in current directory

Description

This command is used to rename a file in current directory.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSRENAME=?	OK

Write Command	Responses
AT+FSRENAME= <old_name>,<new_name>	OK
	ERROR

Defined values

<old_name>
String with or without double quotes, file name which is existed in current directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.
<new_name>
New name of specified file, string with or without double quotes. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the

quotation mark.

Examples

AT+FSRENAME=image_0.jpg, image_1.jpg

OK

AT+FSRENAME= "my test.jpg", {non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"

OK

12.7 AT+FSATTRI   Request file attributes

Description

This command is used to request the attributes of file which exists in current directory.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSATTRI=?	OK
Write Command	**Responses**
AT+FSATTRI=<filename>	+FSATTRI: <file_size>, <create_date> OK

Defined values

<filename>

String with or without double quotes, file name which is in current directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<file_size>

The size of specified file, and the unit is in Byte.

<create_date>

Create date and time of specified file, the format is YYYY/MM/DD HH/MM/SS Week.

    Week –   Mon, Tue, Wed, Thu, Fri, Sat, Sun

Examples

AT+FSATTRI=image_0.jpg

+FSATTRI: 8604, 2008/04/28 10:24:46 Tue

OK

AT+FSATTRI={non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"

+FSATTRI: 6296, 2012/01/06 00:00:00 Sun
OK

12.8 AT+FSMEM   Check the size of available memory

Description

The command is used to check the size of available memory. The response will list total size and used size of local storage space and SD card if present and mounted.

If SD card exist, the write command can set a limit value. The URC will report automatically when SD card space less than <limit>. After receiving the URC, you can delete the old or useless files for saving the space.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSMEM=?	*If SD card exist:* +FSMEM: (list of supported <limit>s),(list of supported <timer>s) OK
	If SD card doesn't exist: OK
Read Command	Responses
AT+FSMEM?	*If SD card exist:* +FSMEM: <limit>,<timer> OK
	If SD card doesn't exist: ERROR
Write Command	Responses
AT+FSMEM=<limit>,<timer>	*If SD card exist:* OK *If SD card space less than <limit>, report URC automatically:* +FSMEM: C:(<total>, <used>), D:(<total>,<used>)
	If SD card doesn't exist: ERROR
Execution Command	Responses
AT+FSMEM	*If SD card exist:*

+FSMEM: C:(\<total\>, \<used\>), D:(\<total\>,\<used\>) OK *If SD card doesn't exist:* +FSMEM: C:(\<total\>, \<used\>) OK

Defined values

\<total\>
The total size of local storage space or SD card.
\<used\>
The used size of local storage space or SD card.
\<limit\>
0 – Close memery check   \<max\> – The limit space of SD card. The max value refers to the SD card size (It's only available when SD card exist!)
\<timer\>
The range is 0-255, unit is second, after set \<time\> will report the URC when SD card's available space less than \<limit\> every the seconds. (It's only available when SD card exist!)
NOTE   1.The unit of storage space size is in Byte.   2. The unit of \<limit\> space of SD card is in MB.

Examples

AT+FSMEM
+FSMEM: C:(11348480, 2201600), D:(255533056, 42754048) *OK*
AT+FSMEM=?
+FSMEM: (0-243),(0-255) *OK*
AT+FSMEM=10,5
OK *+FSMEM: C:(11348480, 2201600), D:(255533056, 245535421)*

12.9 AT+FSLOCA Select storage place

Description

The command is used to set the storage place for media files. If the storage card is not present, it can not set storage place as storage card. When the Module is power on, the value of <loca> is 0.

NOTE

1. Static image taken by camera is stored in "C:/Picture" or "D:/Picture" directory.
2. Video file recorded by camera is stored in "C:/Video" or "D:/Video" directory.
3. Media file recorded during a video call is stored in "C:/VideoCall" or "D:/Videocall" directory.

4. Audio file recorded is stored in "C:/Audio" or "D:/Audio" directory.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+FSLOCA?	+FSLOCA: <loca> OK

Write Command	Responses
AT+FSLOCA=<loca>	OK
	ERROR

Defined values

<loca>
0 – store media files to local storage space (namely "C:/")   1 – store media files to storage card (namely "D:/")   **NOTE** If <loca>=1 and SD card is removed and unmounted, it will set <loca>=0 automatically after a moment.

Examples

AT+FSLOCA=0
OK
AT+FSLOCA?
+FSLOCA: 0
OK

12.10   AT+FSCOPY   Copy an appointed file

Description

This command is used to copy an appointed file on C:/ to an appointed directory on C:/, the new file name should give in parameter.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSCOPY=?	OK

Write Command	Responses
AT+FSCOPY=<file1>,<file2>[<sync_mode>]	+FSCOPY: <percent> [+FSCOPY: <percent>] OK
	OK +FSCOPY: <percent> [+FSCOPY: <percent>] +FSCOPY: END
	If found any error: SD CARD NOT PLUGGED IN FILE IS EXISTING FILE NOT EXISTING DIRECTORY IS EXISTED DIRECTORY NOT EXISTED FORBID CREATE DIRECTORY UNDER \"C:/\" FORBID DELETE DIRECTORY INVALID PATH NAME INVALID FILE NAME SD CARD HAVE NO ENOUGH MEMORY EFS HAVE NO ENOUGH MEMORY FILE CREATE ERROR READ FILE ERROR WRITE FILE ERROR ERROR

Defined values

<file1>

The sources file name or the whole path name with sources file name. If the file path contains

non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<file2>

The destination file name or the whole path name with destination file name. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<percent>

The percent of copy done. The range is 0.0 to 100.0

<sync_mode>

The execution mode of the command:

    <u>0</u> – synchronous mode

    1 – asynchronous mode

NOTE:

    1. The <file1> and <file2> should give the whole path and name, if only given file name, it will refer to current path (AT+FSCD) and check the file's validity.

    2. If <file2> is a whole path and name, make sure the directory exists, make sure that the file name does not exist or the file name is not the same name as the sub folder name, otherwise return error.

    3. <percent> report refer to the copy file size. The big file maybe report many times, and little file report less.

    4. If <sync_mode> is 1, the command will return OK immediately, and report final result with +FSCOPY: END.

Examples

AT+FSCD?

+FSCD: C:/

OK

AT+FSCOPY= C:/TESTFILE,COPYFILE   (Copy file TESTFILE on C:/ to C:/COPYFILE)

+FSCOPY: 1.0

+FSCOPY: 9.7

+FSCOPY: 19.4

...

+FSCOPY: 100.0

OK

AT+FSCOPY= "my test.jpg", {non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"

+FSCOPY:1.0

+FSCOPY:100.0

OK

12.11 AT+FSFMT   Format the storage card

Description

The command is used to format storage card which is plugged in. After formatting and remounting, it will create four directories of "Picture", "Video", "VideoCall" and "Audio" automatically.

If current directory is in D:/ but not one of D:/Picture, D:/Video, D:/Audio and D:/VideoCall, it will set current directory D:/ after formatting.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSFMT=?	OK

Execution Command	Responses
AT+FSFMT	OK

Examples

AT+FSFMT
OK

13 File Transmission Related Commands

The module supports file transmission between the Module and host over Xmodem protocol, and the transmission is bidirectional.

13.1 AT+CTXFILE   Select file transmitted to host

Description

This command is used to select a file which will be transmitted from the module to host. After selecting the file successfully, use HyperTerminal to get the file over Xmodem protocol [refer AT Commands Samples: File transmission to host].

NOTE: If available memory is not enough, file transmission will fail. If user uses HyperTerminal Applet (MS), please make sure the storage path to host can not include Non-ASCII character, but file name can include Non-ASCII character.

SIM PIN	References

NO	Vendor

Syntax

Test Command	Responses
AT+CTXFILE=?	+CTXFILE: (list of supported <dir_type>s), (list of supported <protocol>s) OK

Write Command	Responses
AT+CTXFILE=<file_name> [,<dir_type>[,<protocol>]]	OK
	FILE NOT EXISTING ERROR

Defined values

<filename>
String with double quotes, file name to be transmitted to PC host which already exists. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.   **NOTE:** The path name only supports ASCII character.
<dir_type>
0 –   file to be transmitted is in current directory; before AT+CTXFILE execution, it needs to set current directory [refer AT+FSCD]

NOTE: If <dir_type> is omitted, it will select a file to be transmitted which is in current directory. AT+FSCD and AT+FSLS being used in combination can help user to check the file selected whether existing or not.
 <protocol>
     0 –   Xmodem
     1 –   1K Xmodem

Examples

AT+CTXFILE="image_0.jpg", 0,1
OK
……
AT+FSCD=C:/
+FSCD: C:/
OK
AT+FSLS=2
+FSLS: FILES:
video_2.mp4
image_1.jpg
OK

AT+CTXFILE="video_2.mp4"

OK

....

13.2 AT+CRXFILE   Set name of file received from host

Description

This command is used to set file name which is received from host to file system of module. After setting successfully, use HyperTerminal to send the file over Xmodem protocol [refer AT Commands Samples: File received from host].

SIM PIN	References
NO	Vendor

Syntax

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

Write Command	Responses
AT+CRXFILE=<file_name> [,<dir_type>]	OK
	FILE IS EXISTING ERROR

Defined values

<file_name>

String with double quotes, file name which is received from host. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir_type>

Specify storage location of file which is received from host. If this parameter is omitted, it will save the file to current directory [refer AT+FSCD]

    0 – save file received from host to current directory; before AT+CTXFILE execution, it needs to set current directory [refer AT+FSCD]

Examples

AT+CRXFILE="image_8.jpg",0

OK

......

AT+FSCD=C:/

+FSCD: C:/

OK

AT+CRXFILE="video.mp4"

OK

....

13.3 AT+CMWAIT config the waiting seconds before xmodem start receiving

Description

This command is used to config the waiting seconds when setup a xmodem receiving task. Set to zero means no wait and start receive process. Ought to be used together with +CRXFILE command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CMWAIT=?	+CMWAIT: (0-60) OK

Read Command	Responses
AT+CMWAIT?	+CMWAIT: <value> OK
	ERROR

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

Execution Command	Responses
AT+CMWAIT	+CMWAIT: 10 OK

Defined values

< value >:

0 – 60 second

Examples

AT+FSCD=C:/Video

+FSCD: C:/Video/

OK

AT+CMWAIT=5

OK

AT+CRXFILE="1.txt"

OK

...

NOTE:

    1. The default < value > is 10 second, it can be set to any positive integer value, 0~60 is permitted..

    2. The < value > cann't be saved, will be set to default value when the device restart later.

13.4 AT+CFTRANRX   Transfer a file to EFS

Description

    This command is used to transfer a file to EFS.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFTRANRX=?	+CFTRANRX: [{non-ascii}]"FILEPATH" OK
Write Command	Responses
AT+CFTRANRX="<filepath>",<len>,<fileappend>	> OK > ERROR ERROR

Defined values

<filepath>
The path of the file on EFS.
<len>
The length of the file data to send.
<fileappend>
1：enable the append function
0：disable the append function
NOTE
The <filepath> must be a full path with the directory path.
If the <fileappend> is missed the append function will be disable.

Examples

AT+CFTRANRX="c:/MyDir/t1.txt",10,1

>testcontent

OK

13.5 AT+CFTRANTX   Transfer a file from EFS to host

Description

This command is used to transfer a file from EFS to host. Before using this command, the AT+CATR must be used to set the correct port used.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFTRANTX=?	+CFTRANTX: [{non-ascii}]"FILEPATH" OK
Write Command	Responses
AT+CFTRANTX="\<filepath\>"	[+CFTRANTX: DATA,\<len\> … +CFTRANTX: DATA,\<len\> …] +CFTRANTX: 0 OK ERROR

Defined values

\<filepath\>
The path of the file on EFS.
\<len\>
The length of the following file data to output.
NOTE
The \<filepath\> must be a full path with the directory path.

Examples

AT+CFTRANTX="c:/MyDir/t1.txt"

+CFTRANTX: DATA, 10

Testcontent
+CFTRANTX: 0
OK

14 V24-V25 Commands

14.1 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,if set to 0,then support autobaud at now.
If host run this command on second serial port, it will be only change local baudrate.

SIM PIN	References
NO	V.25ter

Syntax

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

Read Command	Responses
AT+IPR?	+IPR: <speed> OK

Write Command	Responses
AT+IPR=<speed>	OK
	ERROR
Execution Command	Responses
AT+IPR	*Set default value 115200:* OK

Defined values

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

Examples

AT+IPR?

+IPR: 115200

OK

AT+IPR=?

+IPR:(0,300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600,

3200000, 3686400, 4000000)

OK

AT+IPR=115200

OK

AT+IPR=0

OK

14.2 AT+IPREX   Set local baud rate permanently

Description

This command sets the baud rate of module's serial interface permanently, after reboot the baud rate is also valid, if set to 0, then support autobaud.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<speed>

Baud rate per second:

0,300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, <u>115200</u>, 230400, 460800,921600, 3200000,3686400,4000000

Examples

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

14.3 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=	OK
<format>[,<parity>]	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

14.4 AT+IFC   Set local data flow control

Description

The command sets the flow control of the module.

NOTE

Second serial port is not support fow control.

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:0,0 OK

Defined values

<DCE>
<u>0</u> – none (default)
2 – RTS hardware flow control
<DTE>
<u>0</u> – 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
If this command running on second serial port,it will be have
AT+IFC=?
+IFC: (0),(0)
OK

14.5 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

14.6 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

14.7 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

14.8 AT&D   Set DTR function mode

Description

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

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

14.9   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

14.10   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

14.11 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 一 Set some temporary TA parameters to manufacturer defaults. The setting after power on or reset is same as value 0.

default values	
TA parameters	**VALUE**

AT+AUTOANSWER	0,0
AT+CATR	0
AT+CSUART	0
AT+CPCM	1,1
AT+CPCMFMT	2
AT+CNBP ①	0x0002000000E80380
AT+CNMP	2
AT+CNAOP	2
AT+CNSDP	2
AT+CTZU	0
AT+CRSL	2
AT+CALM	0
AT+CVALARM	0,3400
AT+CSDVC	1
AT+CLVL ②	2
AT+CVLVL ②	-200,1000,3000,5000,3000,4000,5000,5000
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	57
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
AT+CPLMNWLIST	"", 1
AT+CGPSSSL	0
AT+CGPSURL	""
AT+CGPSAUTO	0
AT+CGPSSWITCH	1,115200

① SIM5360E default value is 0x0002000000680380. SIM5360A default value is 0x000000000CA80380.SIM5360J default value is 0x000000000CE80380.

②These audio parameters is discrepant in different Qualcomm platform version.

Examples

AT&F
OK

14.12   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

14.13   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

14.14   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

14.15   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

14.16   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

14.17   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

15 Commands for Packet Domain

15.1 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:

    <u>0</u> – 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:

    <u>0</u> – 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

15.2 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
```

15.3 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 the AT+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

  <u>3</u> Birectional (Up & Downlink)

<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+CGTFT?

+CGTFT: 2,1,0,"74.125.71.99.255.255.255.255",0,0.0.0.0.0,0,0.0,0

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

15.4 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

15.5 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	OK
	ERROR

error ratio>[,<Delivery of e rroneous SDUs>[,<Transfer delay>[,<Traffic handling p riority>]]]]]]]]]]]]	+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 　　<u>4</u>　–　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,…). 　　<u>0</u>　　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,…). 　　<u>0</u>　　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,…). 　　<u>0</u>　　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,…).

   <u>0</u>   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
   <u>2</u>   –   subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

   <u>0</u>   –   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",…).

   <u>"0E0"</u>   –   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",..).

   <u>"0E0"</u>   –   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

    <u>3</u> –   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.

    <u>0</u>   –   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.

    <u>0</u> –   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","6 E8"),(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","1E 2","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","1 E2","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","1E

6",''6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1)

OK

15.6 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

15.7 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 bit rate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrate UL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGEQMIN	OK

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
<u>4</u> – 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,…).
<u>0</u>   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,…).
<u>0</u>   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,…).

 <u>0</u> 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,…).

 <u>0</u> 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

 <u>2</u> – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size inoctets.

 <u>0</u> – 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",…).

 <u>"0E0"</u> – 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",..).

 <u>"0E0"</u> – 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.

    <u>0</u> – 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.

    <u>0</u>   –   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.

    <u>0</u> – 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","1E6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1)

OK

15.8 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
<u>1</u> – attached

Examples

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

15.9   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: 1,1		
OK		
AT+CGACT=?		
+CGACT: (0,1)		
OK		
AT+CGACT=0,1		
OK		

15.10 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 [<baud rate>]
	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 115200

15.11 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

15.12   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

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

15.13 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

15.14 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: (0-2)
OK
AT+CGREG?
+CGREG: 0,0
OK

15.15   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

15.16 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

16 TCP/IP Related Commands

16.1   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)
    IPV4V6   Dual PDN Stack

<APN>
(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.
<PDP_addr>
A string parameter that identifies the MT in the address space applicable to the PDP. Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure.
<d_comp>

A numeric parameter that controls PDP data compression, this value may depend on platform:
    <u>0</u> – 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:
    <u>0</u> – off (default if value is omitted)
    1 – on
    2 – RFC1144
    3 – RFC2507
    4 – RFC3095

Examples

AT+CGSOCKCONT?
+CGSOCKDCONT: 1,"IP","","0.0.0.0",0,0
OK
AT+CGSOCKCONT=?
+CGSOCKCONT: (1-16),"IP",,,(0,1),(0,1)
+CGSOCKCONT: (1-16),"PPP",,,(0,1),(0,1)
+CGSOCKCONT: (1-16),"IPV6",,,(0,1),(0,1)
+ CGSOCKCONT: (1-16),"IPV4V6",,,(0-2),(0-4)
OK

16.2 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

16.3 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), , OK
	ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+CSOCKAUTH?	+CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> … OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CSOCKAUTH=<cid>[,<auth_type>[,<passwd>[,<user>]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CSOCKAUTH	OK
	ERROR
	+CME ERROR: <err>

Defined values

<cid>

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

    1…16

<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), ,
OK
AT+CSOCKAUTH=1,2, "123", "SIMCOM"
OK

16.4 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)
　IPV4V6　Dual PDN Stack (reserved)

<precedence>

A numeric parameter which specifies the precedence class:

　0 –　network subscribed value
　1 –　high priority
　2 –　normal priority

3 – low priority

<delay>

A numeric parameter which specifies the delay class:

 <u>0</u> – 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:

 <u>0</u> – 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:

 <u>0</u> – 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:

 <u>0</u> – 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)
+CGSOCKQREQ: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
OK

16.5 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>[,<Maxim um bitrate UL>[,<Maximu m bitrate DL>[,<Guarantee	OK

d bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery ord er>[,<Maximum SDU size> [,<SDU	ERROR
error ratio>[,<Residual bit error ratio>[,<Delivery of e rroneous SDUs>[,<Transfer delay>[,<Traffic handling p riority>]]]]]]]]]]]]	+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
    <u>4</u> – 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,…).
    <u>0</u>   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,…).
    <u>0</u>   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,…).

    <u>0</u>   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,…).

    <u>0</u>   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

    <u>2</u> – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

    <u>0</u> – 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",…).

    <u>"0E0"</u> – 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",..).

    <u>"0E0"</u> – 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

    <u>3</u> – 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.

    <u>0</u>   –   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.

    <u>0</u> – 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)

    IPV4V6 Dual PDN Stack (reserved)

Examples

AT+CGSOCKEQREQ?

+CGSOCKEQREQ:

OK

AT+CGSOCKEQREQ =?

+CGSOCKEQREQ:"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","1 E6","6E8"),(0-3),(0,100-4000),(0-3)

+CGSOCKEQREQ:"PPP",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0","1E

1","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),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0","1
E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5"
,"1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQREQ:"IPV4V6",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0",
"1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E
5","1E6","6E8"),(0-3),(0,100-4000),(0-3)

OK

16.6 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)
IPV4V6   Dual PDN Stack(reserved)
<precedence>
A numeric parameter which specifies the precedence class:
0   –   network subscribed value
1   –   high priority
2   –   normal priority
3   –   low priority
<delay>
A numeric parameter which specifies the delay class:
0   –   network subscribed value
1   –   delay class 1
2   –   delay class 2
3   –   delay class 3
4   –   delay class 4
<reliability>
A numeric parameter which specifies the reliability class:
0   –   network subscribed value
1   –   Non real-time traffic,error-sensitive application that cannot cope with data loss
2   –   Non real-time traffic,error-sensitive application that can cope with infrequent data loss
3   –   Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-

SM,and SMS

4 – Real-time traffic,error-sensitive application that can cope with data loss

5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value

1 – Up to 1000 (8 kbit/s)

2 – Up to 2000 (16 kbit/s)

3 – Up to 4000 (32 kbit/s)

4 – Up to 8000 (64 kbit/s)

5 – Up to 16000 (128 kbit/s)

6 – Up to 32000 (256 kbit/s)

7 – Up to 64000 (512 kbit/s)

8 – Up to 128000 (1024 kbit/s)

9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

0 – network subscribed value

1 – 100 (~0.22 bit/s)

2 – 200 (~0.44 bit/s)

3 – 500 (~1.11 bit/s)

4 – 1000 (~2.2 bit/s)

5 – 2000 (~4.4 bit/s)

6 – 5000 (~11.1 bit/s)

7 – 10000 (~22 bit/s)

8 – 20000 (~44 bit/s)

9 – 50000 (~111 bit/s)

10 – 100000 (~0.22 kbit/s)

11 – 200000 (~0.44 kbit/s)

12 – 500000 (~1.11 kbit/s)

13 – 1000000 (~2.2 kbit/s)

14 – 2000000 (~4.4 kbit/s)

15 – 5000000 (~11.1 kbit/s)

16 – 10000000 (~22 kbit/s)

17 – 20000000 (~44 kbit/s)

18 – 50000000 (~111 kbit/s)

31 – optimization

Examples

AT+CGSOCKQMIN?

+CGSOCKQMIN:

OK

```
AT+CGSOCKQMIN=?
+CGSOCKQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)


OK
```

16.7 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>[,<Maxim um bitrate UL>[,<Maximu m bitrate DL>[,<Guarantee d bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery ord er>[,<Maximum SDU size> [,<SDU	OK
error ratio>[,<Residual bit error ratio>[,<Delivery of e rroneous SDUs>[,<Transfer delay>[,<Traffic handling p riority>]]]]]]]]]]]]]	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

    <u>4</u> –   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).

    <u>0</u>   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).

    <u>0</u>   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).

    <u>0</u>   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).

    <u>0</u>   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
    <u>2</u> – 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).

    <u>0</u> – 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",…).

    <u>"0E0"</u> – 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",..).

    <u>"0E0"</u> – 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.

    <u>0</u> – 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)

IPV4V6   Dual PDN Stack(reserved)

Examples

AT+CGSOCKEQMIN?

+ CGSOCKEQMIN:

OK

AT+CGSOCKEQMIN =?

+CGSOCKEQMIN:"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","1 E6","6E8"),(0-3),(0,100-4000),(0-3)

+CGSOCKEQMIN:"PPP",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0","1E 1","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),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0","1E 1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5"," 1E6","6E8"),(0-3),(0,100-4000),(0-3)

+CGSOCKEQMIN:"IPV4V6",(0-4),(0-5760),(0-14000),(0-5760),(0-14000),(0-2),(0-1520),("0E0"," 1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5 ","1E6","6E8"),(0-3),(0,100-4000),(0-3)

OK

16.8 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

16.9   AT+CIPFILTERSET   IP filter configuration

Description

This command is used to enable the IP filter feature in the multi-PDP mode. The IP filter is a feature which to support embedded TCP/IP protocol applications while the mobile device is in a PPP call.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses	
AT+CIPFILTERSET=?	+CIPFILTERSET: (0-9),(0,1)/(0,1) OK	
	ERROR	
Read Command	Responses	
AT+CIPFILTERSET?	+CIPFILTERSET: 0,<enabled_flag> +CIPFILTERSET: 1,<enabled_flag> … OK	
Execution Command	Responses	
AT+CIPFILTERSET=<link_num>[,<enabled_flag>] Or AT+CIPFILTERSET=<enabled_flag>	OK	
	If ERROR occurred	
	+IP ERROR: <error message> ERROR	

Defined values

<link_num>
A numeric parameter that identifies a connection. The range of permitted values is 0 to 9. This parameter is used for multi clients.
<enabled_flag>

A numeric flag parameter that show the <link_num> connection whether or not to use the IP filter feature.
    0: disable the IP filter feature.
    1: enable the IP filter feature.

NOTE:
1. The execution command must be executed before opening network. 2. If you want to use the PPP dial and socket data at the same time, set the IP filter flag enabled. In this usage, the PPP dial operation must be executed before the socket command.

Examples

AT+CIPFILTERSET=?
+CIPFILTERSET: (0-9),(0,1)/(0,1)
 OK
AT+CIPFILTERSET =0,1
OK
AT+CIPFILTERSET =1

OK

AT+CIPFILTERSET?	
+CIPFILTERSET: 1	
+CIPFILTERSET: 0,1	
+CIPFILTERSET: 1,0	
+CIPFILTERSET: 2,0	
+CIPFILTERSET: 3,0	
+CIPFILTERSET: 4,0	
+CIPFILTERSET: 5,0	
+CIPFILTERSET: 6,0	
+CIPFILTERSET: 7,0	
+CIPFILTERSET: 8,0	
+CIPFILTERSET: 9,0	
OK	

16.10   AT+CSETDNSSRV   Set the DNS servers' IP address

Description

This command is used to set the DNS servers' IP address.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSETDNSSRV=?	+CSETDNSSRV: "a.b.c.d", "a.b.c.d" OK
	ERROR
Read Command	Responses
AT+CSETDNSSRV?	+CSETDNSSRV: "a.b.c.d", "a.b.c.d" OK
Execution Command	Responses
AT+CSETDNSSRV =<prim_addr>[,<sec_addr>]	OK
	If ERROR occurred
	+IP ERROR: <error message> ERROR

Defined values

< prim_addr >
A string parameter that identifies the primary DNS server IP address.
< sec_addr >
A string parameter that identifies the second DNS server IP address.

Examples

AT+CSETDNSSRV=?
+CSETDNSSRV: "a.b.c.d","a.b.c.d"
OK
AT+ CSETDNSSRV="210.22.70.3","211.95.1.97"
OK
AT+ CSETDNSSRV?
+ CSETDNSSRV: "210.22.70.3","211.95.1.97"
OK

16.11   AT+NETOPEN   Open socket

Description

This command opens packet network,

NOTE: The test 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)
<err >
The result of operation, 0 is success, other value is failure.
<mode >
This value is legacy.

Examples

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

16.12   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

16.13   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 ERROR

Defined values

<server_index>
The TCP server index (The range of permitted values is 0 to 3).
<err>
The result of operation, 0 is success, other value is failure.

Examples

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

16.14   AT+SERVERSTOP   Stop TCP server

Description

This command stops TCP server. Before stopping a TCP server, all sockets with <server_index> equals to the closing TCP server index must be closed first.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SERVERSTOP =?	OK
	ERROR
Execution Command	Responses
AT+SERVERSTOP=<server _index>	+SERVERSTOP: <server_index>,<err> OK
	OK

	+SERVERSTOP: <server_index>,<err>
	+SERVERSTOP: <server_index>,<err> ERROR
	ERROR

Defined values

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

Examples

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

16.15   AT+CIPHEAD   Add an IP head when receiving data

Description

This command is used to add an IP head when receiving data.

SIM PIN	References
YES	Vendor

Syntax

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

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
<u>1</u> –   add IP header, the format is "+IPD(data length)"

Examples

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

16.16   AT+CIPSRIP   Show Remote IP address and Port

Description

This command is used to set whether display IP address and port of sender when receiving data.

SIM PIN	References
YES	Vendor

Syntax

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

16.17   AT+CIPCCFG   Configure parameters of socket

Description

This command is used to configure parameters of socket. For the write command, the parameter part cannot be empty.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPCCFG=?	+CIPCCFG: (list of supported <NmRetry>s),(list of supported <DelayTm>s)**,** (list of supported <Ack>s), (list of supported <errMode>s),(list of supported <HeaderType>s), (list of supported < AsyncMode >s), (list of supported <TimeoutVal>s) OK

Read Command	Responses
AT+CIPCCFG?	+CIPCCFG:<NmRetry>,<DelayTm>,<Ack>,<errMode>,<Header-Type>,< AsyncMode >,<TimeoutVal> OK

Write Command	Responses
AT+CIPCCFG= [<NmRetry>][,[<DelayTm>]	OK ERROR

[,[<Ack>][,[<errMode>][,]< HeaderType>][,[[<AsyncMo de>][,[<TimeoutVal>]]]]]]]]]	
Execution Command	Responses
AT+CIPCCFG	*Set default value:* OK

Defined values

<NmRetry>
a numeric parameter which is number of retransmission to be made for an IP packet.The default value is 10.
<DelayTm>
a numeric parameter which is number of milliseconds to delay to output data of Receiving.The default value is 0.
<Ack>
NOTE: This parameter is legacy and only used to be compatible with old TCP/IP command set.
<errMode>

a numeric parameter which sets mode of reporting error result code.
    0   error result code with numeric values
    1   error result code with string values

< HeaderType >

a numeric parameter that select which data header of receiving data, it only takes effect in multi-client mode.
    0   add data header, the format is "+IPD<data length>"
    1   add data header, the format is "+RECEIVE,<link num>,<data length>"

< AsyncMode >
NOTE: This parameter is legacy and only used to be compatible with old TCP/IP command set.
< TimeoutVal >
a numeric parameter that set the minimum retransmission timeout value for TCP connection. The unit is millisecond. The range is 500-120000.

Examples

AT+CIPCCFG=?
+CIPCCFG: (0-10),(0-1000),(0),(0-1),(0-1),(0),(500-120000)
OK
AT+CIPCCFG=3,500,0,1,1,0,500
OK

16.18   AT+CIPTIMEOUT   Set TCP/IP timeout value

Description

This command is used to set timeout value for AT+NETOPEN/AT+CIPOPEN/AT+CIPSEND.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CIPTIMEOUT=?	OK

Read Command	Responses
AT+CIPTIMEOUT?	+CIPTIMEOUT: <netopen_timeout>, <cipopen_timeout>, <cipsend_timeout> OK

Write Command	Responses
AT+CIPTIMEOUT=[<netopen_timeout>][, [<cipopen_timeout>][, [<cipsend_timeout>]]]	OK ERROR

Defined values

<netopen_timeout>
Timeout value for AT+NETOPEN, default value is 120000 milliseconds.The range of this value is from 3000ms to 120000ms.
<cipopen_timeout>
Timeout value for AT+CIPOPEN, default value is 120000 milliseconds. The range of this value is from 3000ms to 120000ms.
<cipsend_timeout>
Timeout value for AT+CIPSEND, default value is 120000 milliseconds. The range of this value is from 3000ms to 120000ms.

Examples

AT+CIPTIMEOUT?
+CIPTIMEOUT: 30000,20000,40000
OK
AT+CIPTIMEOUT=30000,20000,40000
OK

16.19　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

16.20　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
	IF connection not opened in single-client mode +IP ERROR: <err_info> ERROR
	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. <err_info> A string parameter that displays the cause of occurring error.

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

16.21   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	*If sending successfully(udp sending):* OK

Port><CR>*data for send* (This format is for UDP connect)	+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

16.22   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
	If not multi client: +IP ERROR: <err_info> 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

16.23   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

16.24   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

16.25   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

16.26   AT+CIPSTAT   Inquire the total size of data sent or received

Description

This command is used to inquire the total size of data sent or received for a socket in multiple socket modes (Only valid for client TCP socket mode).

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses

AT+CIPSTAT=?	+CIPSTAT: (list of supported <link_num>s)
	OK
Write Command	Responses
AT+CIPSTAT=<link_num>	+CIPSTAT: <sent_size>, <recv_size>
	OK
	+IP ERROR: <err_info>
	ERROR

Defined values

< link_num>
a numeric parameter that identifies a connection. The range of permitted values is 0 to 9.
<sent_size>
Total size of sent data.
<recv_size>
Total size of received data.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+CIPSTAT=0
+CIPSTAT: 10, 20
OK
AT+CIPSTAT=?
+CIPSTAT: (0-9)
OK

16.27　AT+CTCPFIN　Configure TCP FIN

Description

This command is used to configure whether the module should wait for TCP_FIN in TCP_FINWAIT2 state.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CTCPFIN=?	+CTCPFIN: (list of supported <TCP_FIN_Enable>s),(list of supported <DelayTm>s)

	OK
Read Command	Responses
AT+CTCPFIN?	+CTCPFIN:<TCP_FIN_Enable>,<DelayTm>
	OK
Write Command	Responses
AT+CTCPFIN=	OK
<TCP_FIN_Enable>,	
<DelayTm>	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

16.28   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

16.29   AT+CTCPKA   Conigure TCP heartbeat

Description

This command is used to set TCP heartbeat parameters..

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CTCPKA=?	+CTCPKA: (list of supported <TCP_KA_Enable>s),(list of supported <KeepIdleTm>s) ,(list of supported <KeepAliveMaxTry>s)
	OK

Read Command	Responses
AT+CTCPKA?	+CTCPKA:<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry> OK
Write Command	Responses
AT+CTCPKA= <TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry>	OK ERROR

Defined values

< TCP_KA_Enable >

a numeric parameter which sets whether enable TCP heartbeat function or not.
    0   disable
    1   enable

<KeepIdleTm>
a numeric parameter which is number of minutes to delay after last time of sending TCP data. The range is 1 to 120.
<KeepAliveMaxTry>
Maximum times for sending Keep-Alive checking. The range is 1 to 10.

Examples

AT+CTCPKA=? *+CTCPKA: (0,1),(1-120) ,(1-10)* *OK*
AT+CTCPKA=1,3,3 *OK*

16.30   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

16.31   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

16.32   AT+CTEUTP   Set unknown incoming TCP packet echo

Description

This command is used to enable or disable unknown incoming TCP packet echo.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CTEUTP=?	+CTEUTP: (list of supported <Echo_Unknown_TCP_Enable>s) OK
Read Command	**Responses**
AT+CTEUTP?	+CTEUTP:<Echo_Unknown_TCP_Enable> OK
Write Command	**Responses**
AT+CTEUTP = <Echo_Unknown_TCP_Ena ble>	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   <u>1</u>   enable

Examples

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

16.33   AT+CUPURE   Set UDP port unreachable ICMP echo

Description

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

SIM PIN	References
YES	Vendor

Syntax

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

16.34　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

16.35   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
012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789
01234567890123456789

OK
AT+CIPRXGET=3,100
+CIPRXGET: 3,100,1200
303132333435363738393031323334353637383930313233343536373839303132333435363738390313233343536373839
30313233343536373839303132333435363738393031323334353637383930313233343536373839303132333435363738039
3031323334353637383930313233343536373839

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

OK
AT+CIPRXGET=2,0,100
+CIPRXGET: 2,0,100,1300
012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789
01234567890123456789

OK
AT+CIPRXGET=3,0,100
+CIPRXGET: 3,0,100,1200
3031323334353637383930313233343536373839303132333435363738393031323334353637383930313233343536373839
3031323334353637383930313233343536373839303132333435363738393031323334353637383930313233343536373839
3031323334353637383930313233343536373839

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

OK
```

16.36 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>
Maximum 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

16.37 AT+CDNSSRV   Get dns server ip address

Description

The write command is used to query the dns server ip address of the specified PDP context (s).

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Read Command	Responses
AT+CDNSSRV?	[+CDNSSRV: [<cid>, <ip_addr>,<prm_dns>,<sec_dns> [<CR><LF> + CDNSSRV: <cid>, <ip_addr>,<prm_dns>,<sec_dns> [...]]]] OK

Defined values

<cid>

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

    1…16

<ip_addr>

    A string that identifies the IP address when the PDP context is activaed.

<pri_dns>

    A string that identifies the primary DNS server address when the PDP context is activaed.

<sec_dns>

    A string that identifies the secondary DNS server address when the PDP context is activaed.

Examples

AT+CDNSSRV?

+CDNSSRV: 1, "10.85.202.25","210.22.70.3","211.95.1.97"

OK

16.38   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>.

16.38.1 Unsolicited TCP/IP command <err> Codes

0	operation succeeded
1	Network failure
2	Network not opened
3	Wrong parameter
4	Operation not supported
5	Failed to create socket
6	Failed to bind socket
7	TCP server is already listening
8	Busy
9	Sockets opened
10	Timeout
11	DNS parse failed
255	Unknown error

17 SIM Application Toolkit (SAT) Commands

17.1 AT+STIN SAT Indication

Description

Every time the SIM Application issues a Proactive Command, via the ME, the TA will receive an indication. This indicates the type of Proactive Command issued.

AT+STGI must then be used by the TA to request the parameters of the Proactive Command from the ME. Upon receiving the +STGI response from the ME, the TA must send AT+STGR to confirm the execution of the Proactive Command and provide any required user response, e.g. a selected menu item.

Note: if SAT not available in the SIM card, the <cmd_id> value 0 will be returned.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+STIN=?	OK

Read Command	Responses
AT+STIN?	+STIN: <cmd_id>
	OK

Unsolicited Result Codes

+STIN: <cmd_id>

Proactive Command notification

     0   –   none command
   21   –   display text
   22   –   get inkey
   23   –   get input
   24   –   select item

+STIN: 25

Notification that SIM Application has returned to main menu. If user doesn't do any action in 2 minutes, application will return to main menu automatically.

Defined values

<cmd_id>		
0	–	none command
21	–	display text
22	–	get inkey
23	–	get input
24	–	select item
25	–	set up menu

Examples

AT+STIN?
+STIN: 24
OK

17.2 AT+STGI Get SAT information

Description

Regularly this command is used upon receipt of an URC "+STIN" to request the parameters of the Proactive Command. Then the TA is expected to acknowledge the AT+STGI response with AT+STGR to confirm that the Proactive Command has been executed. AT+STGR will also provide any user information, e.g. a selected menu item. The Proactive Command type value specifies to which "+STIN" the command is related.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+STGI=?	OK

Write Command	Responses
AT+STGI=<cmd_id>	*If <cmd_id>=10:* OK
	If <cmd_id>=21: +STGI:21,<prio>,<clear_mode>,<text_len>,<text> OK
	If <cmd_id>=22: +STGI: 22,< rsp_format>,< help>,<text_len>,<text> OK
	If <cmd_id>=23: +STGI:23,<rsp_format>,<max_len>,<min_len>,<help>,<show>,<text_len>,<text>

	OK
	If <cmd_id>=24:
	+STGI:24,<help>,<softkey>,<present>,<title_len>,<title>,<item_num>
	+STGI:24,<item_id>,<item_len>,<item_data>
	[...]
	OK
	If <cmd_id>=25:
	+STGI:25,<help>,<softkey>,<title_len>,<title>,<item_num>
	+STGI:25,<item_id>,<item_len>,<item_data>
	[...]
	OK

Defined values

<cmd_id>
21 – display text
22 – get inkey
23 – get input
24 – select item
25 – set up menu
<prio>
Priority of display text
0 – Normal priority
1 – High priority
<clear_mode>
0 – Clear after a delay
1 – Clear by user
<text_len>
Length of text
<rsp_format>
0 – SMS default alphabet
1 – YES or NO
2 – numerical only
3 – UCS2
<help>
0 – Help unavailable
1 – Help available
<max_len>
Maximum length of input
<min_len>
Minimum length of input
<show>

0	–	Hide input text
1	–	Display input text

<softkey>

0	–	No softkey preferred
1	–	Softkey preferred

<present>

Menu presentation format available for select item

0	–	Presentation not specified
1	–	Data value presentation
2	–	Navigation presentation

<title_len>

Length of title

<item_num>

Number of items in the menu

<item_id>

Identifier of item

<item_len>

Length of item

<title>

Title in ucs2 format

<item_data>

Content of the item in ucs2 format

<text>

Text in ucs2 format.

Examples

AT+STGI=25

at+stgi=25

+STGI:25,0,0,10,"795E5DDE884C59295730",15

+STGI:25,1,8,"8F7B677E95EE5019"

+STGI:25,2,8,"77ED4FE17FA453D1"

+STGI:25,3,8,"4F1860E05FEB8BAF"

+STGI:25,4,8,"4E1A52A17CBE9009"

+STGI:25,5,8,"8D448D3963A88350"

+STGI:25,6,8,"81EA52A9670D52A1"

+STGI:25,7,8,"8F7B677E5F6994C3"

+STGI:25,8,8,"8BED97F367425FD7"

+STGI:25,9,10,"97F34E506392884C699C"

+STGI:25,10,8,"65B095FB59296C14"

+STGI:25,11,8,"94C358F056FE7247"

+STGI:25,12,8,"804A59294EA453CB"

+STGI:25,13,8,"5F005FC34F1195F2"

+STGI:25,14,8,"751F6D3B5E388BC6"
+STGI:25,21,12,"00530049004D53614FE1606F"
OK

17.3 AT+STGR SAT respond

Description

The TA is expected to acknowledge the AT+STGI response with AT+STGR to confirm that the Proactive Command has been executed. AT+STGR will also provide any user information, e.g. a selected menu item.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+STGR=?	OK

Write Command	Responses
AT+STGR=<cmd_id>[,<data>]	OK

Defined values

<cmd_id>

    22 – get inkey
    23 – get input
    24 – select item
    25 – set up menu
    83 – session end by user
    84 – go backward

<data>

If <cmd_id>=22:

    Input a character

If <cmd_id>=23:

    Input a string.

    If <rsp_format> is YES or NO, input of a character in case of ANSI character set requests one byte, e.g. "Y".

    If <rsp_format> is numerical only, input the characters in decimal number, e.g. "123"

    If <rsp_faomat> is UCS2, requests a 4 byte string, e.g. "0031"

    <rsp_faomat> refer to the response by AT+STGI=23

If <cmd_id>=24:

    Input the identifier of the item selected by user

If <cmd_id>=25:

Input the identifier of the item selected by user

If <cmd_id>=83:

<data> ignore

Note: It could return main menu during Proactive Command id is not 22 or 23

If <cmd_id>= 84:

<data> ignore

Examples

AT+STGR=25,1

OK

+STIN: 24

17.4 AT+STK STK Switch

Description

This command is to disable or enable the STK function. If the argument is 1, it is enabled. While if the argument is 0, it is disabled.

SIM PIN	References
NO	Vendor

Syntax

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

Read Command	Responses
AT+STK?	+STK: <value>
	OK

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

Execution Command	Responses
AT+STK	*Set default value (<value>=1):*
	OK

Defined values

<value>

0 – Disable STK

1	–	Enable STK

Examples

AT+STK=1
OK

18 Internet Service Command

18.1 Simple mail transfer protocol service

18.1.1 AT+SMTPSRV Set SMTP server address and port number

Description

This synchronous command is used to set SMTP server address and server's port number. SMTP client will initiate TCP session with the specified server to send an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server address and port number.

Execution command will clear SMTP server address and set the port number as default value.

NOTE: After an e-mail is sent successfully or unsuccessfully, SMTP server address and port number won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSRV=?	+SMTPSRV: (list of supported <port>s) OK
Read Command	Responses
AT+SMTPSRV?	+SMTPSRV: <server>, <port> OK
Write Command	Responses
AT+SMTPSRV=<server> [, <port>]	OK
Execution Command	Responses
AT+SMTPSRV	OK

Defined values

<server>
SMTP server address, non empty string with double quotes, mandatory and ASCII text string up to 128 characters.
<port>
Port number of SMTP server in decimal format, from 1 to 65535, and default port is 25 for SMTP.

Examples

AT+SMTPSRV="smtp.server.com",25
OK
AT+SMTPSRV?
+SMTPSRV: "smtp.server.com", 25
OK
AT+SMTPSRV
OK
AT+SMTPSRV?
+SMTPSRV: "", 25
OK

18.1.2 AT+SMTPAUTH SMTP server authentication

Description

This synchronous command is used to control SMTP authentication during connection with SMTP server. If SMTP server requires authentication while logging in the server, TE must set the authentication control flag and provide user name and password correctly before sending an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server authentication control flag, if the flag is 0, both <user> and <pwd> are empty strings.

Execution Command cancels SMTP server authentication and clear user name and password.

NOTE: After an e-mail is sent successfully or unsuccessfully, server authentication won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

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

Read Command	Responses
AT+SMTPAUTH?	+SMTPAUTH: <flag>, <user>, <pwd>
	OK

Write Command	Responses
AT+SMTPAUTH= <flag>[, <user>, <pwd>]	OK
Execution Command	Responses
AT+SMTPAUTH	OK

Defined values

<flag>
SMTP server authentication control flag, integer type.

     0   –   SMTP server doesn't require authentication, factory value.

     1   –   SMTP server requires authentication.

<user>
User name to be used for SMTP authentication, non empty string with double quotes and up to 128 characters.

<pwd>
Password to be used for SMTP authentication, string with double quotes and up to 128 characters.

NOTE: If <flag> is 0, <user> and <pwd> must be omitted (i.e. only <flag> is present).

Examples

AT+SMTPAUTH?

+SMTPAUTH: 0, "", ""

OK

AT+SMTPAUTH=1,"username","password"

OK

AT+SMTPAUTH?

+SMTPAUTH: 1, "username", "password"

OK

AT+SMTPAUTH

OK

AT+SMTPAUTH?

+SMTPAUTH: 0, "", ""

OK

18.1.3 AT+SMTPFROM   Sender address and name

Description

This synchronous command is used to set sender's address and name, which are used to construct e-mail header. The sender's address must be correct if the SMTP server requries, and if the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current sender's address and name.

Execution command will clear sender's address and name.

NOTE: After an e-mail is sent successfully or unsuccessfully, sender address and name won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPFROM=?	OK
Read Command	**Responses**
AT+SMTPFROM?	+SMTPFROM: <saddr>, <sname>
	OK
Write Command	**Responses**
AT+SMTPFROM=	OK
<saddr>[, <sname>]	
Execution Command	**Responses**
AT+SMTPFROM	OK

Defined values

<saddr>
E-mail sender address (MAIL FROM), non empty string with double quotes, mandatory and ASCII text up to 128 characters. <saddr> will be present in the header of the e-mail sent by SMTP client in the field: "*From:* ".
<sname>
E-mail sender name, string with double quotes, and alphanumeric ASCII text up to 64 characters. <sname> will be present in the header of the e-mail sent by SMTP client in the field: "*From:* ".

Examples

AT+SMTPFROM="senderaddress@server.com","sendername"
OK
AT+SMTPFROM?
+SMTPFROM: "senderaddress@server.com", "sendername"
OK
AT+SMTPFROM
OK
AT+SMTPFROM?
+SMTPFROM: "", ""
OK

18.1.4   AT+SMTPRCPT Recipient address and name (TO/CC/BCC)

Description

This synchronous command is used to set recipient address/name and kind (TO/CC/BCC). If only the parameter of "kind" is present, the command will clear all recipients of this kind, and if only parameters of "kind" and "index" are present, the command will clear the specified recipient. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current recipient address/name and kind list.

Execution command will clear all recipient information.

NOTE: After an e-mail is sent successfully, all recipients will be cleared, if unsuccessfully, they won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

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

Read Command	Responses
AT+SMTPRCPT?	[+SMTPRCPT: <kind>, <index>, <raddr>, <rname> [<CR><LF>…]] OK
	OK

Write Command	Responses
AT+SMTPRCPT= <kind>[, <index> [,<raddr>[,<rname>]]]	OK

Execution Command	Responses
AT+SMTPRCPT	OK

Defined values

<kind>
Recipient kind, the kinds of TO and CC are used to construct e-mail header in the field: "*To:* " or "*Cc:* ".   0 – TO, normal recipient.   1 – CC, Carbon Copy recipient.   2 – BCC, Blind Carbon Copy recipient.
<index>

Index of the kind of recipient, decimal format, and from 0 to 4.

<raddr>

Recipient address, non empty string with double quotes, and up to 128 characters.

<rname>

Recipient name, string type with double quotes, and up to 64 characters.

Examples

AT+SMTPRCPT=0, 0, "rcptaddress_to@server.com", "rcptname_to"

OK

AT+SMTPRCPT?

+SMTPRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"

OK

AT+SMTPRCPT=1, 0, "rcptaddress_cc@server.com", "rcptname_cc"

OK

AT+SMTPRCPT?

+SMTPRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"

+SMTPRCPT: 1, 0, "rcptaddress_cc@server.com", "rcptname_cc"

OK

18.1.5   AT+SMTPSUB E-mail subject

Description

This synchronous command is used to set the subject of e-mail, which is used to construct e-mail header. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly. Read command returns current e-mail subject.

Execution command will clear the subject.

NOTE: After an e-mail is sent successfully, the subject will be cleared, if unsuccessfully, it won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSUB=?	OK

Read Command	Responses
AT+SMTPSUB?	+SMTPSUB: <subject>
	OK

Write Command	Responses
AT+SMTPSUB=<subject>	OK

Execution Command	Responses

AT+SMTPSUB	OK

Defined values

<subject>
E-mail subject, string with double quotes, and ASCII text up to 512 characters. <subject> will be present in the header of the e-mail sent by SMTP client in the field: "*Subject:* ". For write command, if the subject contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

Examples

AT+SMTPSUB?
+SMTPSUB: ""
OK
AT+SMTPSUB="THIS IS A TEST MAIL"
OK
AT+SMTPSUB={non-ascii}"E6B58BE8AF95E982AEE4BBB6"
OK
AT+SMTPSUB?
+SMTPSUB: "THIS IS A TEST MAIL"
OK

18.1.6   AT+SMTPBODY   E-mail body

Description

This command is used to set e-mail body, which will be sent to SMTP server with text format.

Read command returns current e-mail body. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Execute command will switch the serial port from command mode to data mode, so TE can enter more ASCII text as e-mail body (up to 5120), and CTRL-Z (ESC) is used to finish (cancel) the input operation and switch the serial port back to command mode.

NOTE: After an e-mail is sent successfully, the body will be cleared, if unsuccessfully, it won't be cleared. When execute command AT+SMTPBODY, and display ">>", the prevenient body will be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPBODY=?	OK

Read Command	Responses
AT+SMTPBODY?	+SMTPBODY: <body> OK
Write Command	Responses
AT+SMTPBODY=<body>	OK
Execution Command	Responses
AT+SMTPBODY	>>

Defined values

<body>
E-mail body, string with double quotes, and printable ASCII text up to 512 or 5120 characters.   **NOTE:** In data mode, "BACKSPACE" can be used to cancel an ASCII character.

Examples

AT+SMTPBODY="THIS IS A TEST MAIL FROM SIMCOM MODULE"
OK
AT+SMTPBODY?
+SMTPBODY: "THIS IS A TEST MAIL FROM SIMCOM MODULE"
OK
AT+SMTPBODY
>> This is a test mail.<CTRL-Z>
OK
AT+SMTPBODY?
+SMTPBODY: "This is a test mail."
OK
AT+SMTPBODY
>> This is a test mail.<ESC>
OK
AT+SMTPBODY?
+SMTPBODY: ""
OK

18.1.7 AT+SMTPBCH   E-mail body character set

Description

This synchronous command is used to set the body character set of e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current e-mail body character set.

SIM PIN	References

YES	Vendor

Syntax

Test Command	Responses
AT+SMTPBCH=?	+SMTPBCH: "CHARSET" OK

Read Command	Responses
AT+SMTPBCH?	+SMTPBCH: \<charset> OK

Write Command	Responses
AT+SMTPBCH=\<charset>	OK ERROR

Execution Command	Responses
AT+SMTPBCH	OK ERROR

Defined values

\<charset>
E-mail body character, string with double quotes. By default, it is "utf-8". The maximum length is 30 bytes.

Examples

AT+SMTPBCH=?
+SMTPBCH: "CHARSET"
OK
AT+SMTPBCH="gb2312"
OK
AT+SMTPBCH?
+SMTPBCH: "gb2312"
OK

18.1.8   AT+SMTPFILE Select attachment

Description

The synchronous command is used to select file as e-mail attachment. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current all selected attachments with full path.

Execute command will clear all attachments.

NOTE: After an e-mail is sent successfully, attachment will be cleared, if unsuccessfully, it won't

be cleared. The same file can't be selected twice.

AT+SMTPFILE=<index> is used to delete the relevant attachments.

SIM PIN	References
YES	Vendor

Syntax

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

Read Command	Responses
AT+SMTPFILE?	[+SMTPFILE: <index>, <filename>, <filesize> [<CR><LF>…]] OK

Write Command	Responses
AT+SMTPFILE= <index>[, <filename>]	OK
	[+SMTP: OVERSIZE] ERROR

Execution Command	Responses
AT+SMTPFILE	OK

Defined values

<index>

Index for attachments, from 1 to 10. According to the sequence of <index>, SMTP client will encode and send all attachments.

<filename>

String type with double quotes, the name of a file which is under current directory (refer to file system commands). SMTP client doesn't allow two attachments with the same file name. For write command, if the file name contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

<filesize>

File size in decimal format. The total size of all attachments can't exceed 10MB.

Examples

AT+SMTPFILE=1,"file1.txt"
OK
AT+SMTPFILE=1,{non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
OK
AT+SMTPFILE?
+SMTPFILE: 1, "C:/file1.txt"

OK

AT+SMTPFILE=2,"file2.txt"

OK

AT+SMTPFILE?

+SMTPFILE: 1, "C:/file1.txt"

+SMTPFILE: 2, "C:/file2.txt"

OK

18.1.9 AT+SMTPSEND   Initiate session and send e-mail

Description

This asynchronous command is used to initiate TCP session with SMTP server and send an e-mail after all mandatory parameters have been set correctly. After SMTP client has connected with specified SMTP server and SMTP client receives an indication that indicates SMTP server is working well, the command will return "+SMTP: OK", but it doesn't indicate that the e-mail is already sent successfully.

After the e-mail is sent and the session is closed, an Unsolicited Result Code (URC) will be returned to TE, "+SMTP: SUCCESS" indicates the e-mail is sent successfully, and other URCs indicate a failed result and the session is closed.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSEND=?	OK

Read Command	Responses
AT+SMTPSEND?	+SMTPSEND: <ongoing> OK

Execution Command	Responses
AT+SMTPSEND	OK +SMTP: OK +SMTP: <code>
	+SMTP: OK +SMTP: <code> OK
	+SMTP: <code> ERROR

Defined values

<ongoing>
Whether or not an e-mail is sent in process. If the process of sending an e-mail is ongoing, SMTP client can't send the e-mail again.
0 – Not ongoing.
1 – Ongoing.

<code>	
SUCCESS	SMTP client has sent the e-mail successfully.
ONGOING	The process of sending an e-mail is ongoing.
PARAM ERROR	Mandatory parameter isn't set (SMTP server, or sender/recipient address)
NETWORK ERROR	Invalid SMTP server.
	Network is bad for establishing session or sending data to SMTP server.
SERVER ERROR	SMTP server released the session.
	SMTP server rejects the operation with wrong response.
	SMTP server doesn't give SMTP client a response in time.
AUTH REQUIRED	Authentication is required by SMTP server.
AUTH ERROR	SMTP server rejects the session because of bad user name and password combination.

Examples

AT+SMTPSEND?
+SMTPSEND: 0
OK

AT+SMTPSEND
+SMTP: OK
OK
+SMTP: SUCCESS

18.1.10 AT+SMTPSTOP   Force to stop sending e-mail

Description

The synchronous command is used to force to stop sending e-mail and close the TCP session while sending an e-mail is ongoing. Otherwise, the command will return "ERROR" directly.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SMTPSTOP=?	OK

Execution Command	Responses
AT+SMTPSTOP	OK
	ERROR

Examples

AT+SMTPSEND?
+SMTPSEND: 1
OK
AT+SMTPSTOP
OK

18.2   Post Office Protocol 3 Service

18.2.1   AT+POP3SRV   POP3 server and account

Description

This synchronous command is used to set all parameters to get and e-mail from POP3 server, including server address, port number, user name and password. If POP3 client isn't free, the command will return "ERROR" directly.

Read command returns current all information about POP3 server and account.

Execution command will clear POP3 server address, user name and password, and set server's port number as default value.

NOTE: After an e-mail is sent successfully or unsuccessfully, POP3 server and account information won't be cleared.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3SRV=?	+POP3SRV: (list of supported <port>s)
	OK
Read Command	Responses
AT+POP3SRV?	+POP3SRV: <server>, <user>, <pwd>, <port>
	OK
Write Command	Responses
AT+POP3SRV=<server>, <user>, <pwd>[, <port>]	OK
Execution Command	Responses
AT+POP3SRV	OK

Defined values

<server>
POP3 server address, non empty string with double quotes, mandatory and ASCII text string up to 128 characters.
<user>
User name to log in POP3 server, non empty string with double quotes, and up to 128 characters.
<pwd>
Password to log in POP3 server, string with double quotes, and up to 128 characters.
<port>
Port number of POP3 server in decimal format, from 1 to 65535, and default port is 110 for POP3.

Examples

AT+POP3SRV=?
+POP3SRV: (1-65535)
OK
AT+POP3SRV?
+POP3SRV: "", "", "", 110
OK
AT+POP3SRV="pop3.server.com", "user_name", "password", 110
OK
AT+POP3SRV?
+POP3SRV: "pop3.server.com", "user_name", "password", 110
OK
AT+POP3SRV
OK
AT+POP3SRV?
+POP3SRV: "", "", "", 110
OK

18.2.2   AT+POP3IN   Log in POP3 server

Description

This asynchronous command is used to log in POP3 server and establish a session after POP3 server and account information are set rightly. If the POP3 client logs in POP3 server successfully, the response "+POP3: SUCCESS" will be returned to TE; if no POP3 operation for a long time after the session is ready, POP3 server may release the session.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3IN=?	OK
Read Command	Responses
AT+POP3IN?	+POP3IN: "<server>" OK
	+POP3IN: NULL OK
Execute Command	
AT+POP3IN	+POP3: SUCCESS OK
	OK +POP3: SUCCESS
	+POP3: <code> ERROR
	ERROR

Defined values

<code>	
NETWORK ERROR	Invalid POP3 server or network is bad for establishing session or sending data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time.
INVALID UN	Invalid user name to log in POP3 server.
INVALID UN/PWD	Invalid user name and password combination to log in POP3 server.
<server>	
The address of the POP3 server currently logged in.	

Examples

AT+POP3IN=?
OK
AT+POP3IN
+POP3: SUCCESS
OK

18.2.3　AT+POP3NUM　　Get e-mail number and total size

Description

This asynchronous command is used to get e-mail number and total size on the specified POP3 server after the POP3 client logs in POP3 server successfully and no other POP3 operation is

ongoing.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3NUM=?	OK

Execution Command	Responses
AT+POP3NUM	+POP3: <num>, <tsize> OK
	+POP3: <code> ERROR

Defined values

<num>
The e-mail number on the POP3 server, decimal format.

<tsize>
The total size of all e-mail and the unit is in Byte.

<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.

Examples

AT+POP3NUM=?
OK
AT+POP3NUM
+POP3: 1, 3057
OK

18.2.4   AT+POP3LIST   List e-mail ID and size

Description

This asynchronous command is used to list e-mail number and total size, e-mail ID and each e-mail's size after the POP3 client logs in POP3 server successfully and no other POP3 operation is ongoing. The e-mail ID may be used to do those operations: get e-mail header, get the whole e-mail, and mark an e-mail to delete from POP3 server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3LIST=?	OK

Write Command	Responses
AT+POP3LIST=<msg_id>	+POP3: <msg_id>, <size> OK
	ERROR
	+POP3: <code> ERROR

Execution Command	Responses
AT+POP3LIST	+POP3: [<msg_id> <size> [<CR><LF>…]] OK
	+POP3: EMPTY OK
	+POP3: <code> ERROR

Defined values

<msg_id>
The e-mail's ID.
<size>
The size of e-mail <msg_id>, and the unit is in Byte.
<code>
NETWORK ERROR   Network is bad for sending data to POP3 server. SERVER ERROR   POP3 server released the session.   POP3 server rejects the operation with wrong response.   POP3 server doesn't give POP3 client a response in time.   POP3 client gives wrong e-mail's ID.

Examples

AT+POP3LIST=?
OK
AT+POP3LIST
+POP3:

1 3056
OK
AT+POP3LIST=1
+POP3: 1, 3056
OK

18.2.5   AT+POP3HDR   Get e-mail header

Description

This asynchronous command is used to retrieve e-mail's sender address, date and sender address, which are present in the mail's header.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3HDR=?	OK

Write Command	Responses
AT+POP3HDR=<msg_id>	Ok +POP3: <code> From: [<from>] Date: [<date>] Subject: [<sub>]
	OK +POP3: <code>
	+POP3: <code> ERROR

Defined values

<msg_id>	
The e-mail's ID.	
<from>	
E-mail's sender name and sender address from mail	
<date>	
E-mail's date from mail header.	
<sub>	
E-mail's subject from mail header.	
<code>	
SUCCESS	POP3 client gets an e-mail header from POP3 server successfully.
NETWORK ERROR	Network is bad for sending data to POP3 server.

SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

Examples

AT+POP3HDR=1
OK

+POP3: SUCCESS
From: lin <mail_simcom@126.com>
Date: Mon, 4 Mar 2013 17:26:55 +0800 (CST)
Subject: test

18.2.6   AT+POP3GET   Get an e-mail from POP3 server

Description

This command is used to retrieve specified e-mail from the POP3 server. After retrieving an e-mail successfully, POP3 client will create a directory and save the e-mail's header and body into file system as file "EmailYYMMDDHHMMSS*XYZ*.TXT", and save each attachment as a file under the same directory.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3GET=?	OK

Write Command	Responses
AT+POP3GET=<msg_id>,[<get_type>]	OK +POP3: <code> <mail_dir>, <mail_file>
	+POP3: <code> ERROR
	OK +POP3: <code>

Defined values

The e-mail's ID.

<mail_dir>

The directory for e-mail and attachment, string type without double quotes and the format is "YYMMDDHHMMSS" which is generated according to module's RTC.

According to the setting of command +FSLOCA (refer to file system commands), TE can select the location (local file system or storage card) in which POP3 client saves e-mail file and attachment.

<mail_file>

If the <get_type> is 1 or 3, it is the file to save e-mail's header and body, string type without double quotes. Usually, this file name is "EMAIL110511102353000.TXT", and if e-mail includes an attachment whose name is the same as the e-mail file, the first twelve digits of the number in the e-mail is generated according to the module's RTC with format "YYMMDDHHMMSS" and the last three digits of the number in the e-mail file name will be increase by 1, usually it is "000" for the body file of the email. If the <get_type> is 2, the <mail_file> should be YYMMDDHHMMSS.eml. If the <get_type> is 3, the eml file is not reported.

<code>

NETWORK ERROR	Network is bad for sending or receiving data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.
FILE SYSTEM ERROR	File system is bad for saving e-mail or attachment or storage card is pulled out. If POP3 client encounters this error, POP3 client will close the session with POP3 server.
SUCCESS	POP3 client gets an e-mail from POP3 server successfully.
FAILURE	POP3 client gets an e-mail unsuccessfully.

<get_type>

The type to save when getting message from POP3 server:

    1 – Save parsed body file and attachments

    2 – Save the whole message as a ".eml" file.

    3 – Save the parsed body file, attachments and eml file.

Examples

AT+POP3GET=1
OK
+POP3: SUCCESS
C:/Email/090901120000/, EMAIL11090901120000000.TXT
AT+POP3GET=1,2
OK
+POP3: SUCCESS
C:/Email/090901120000/, 090901120000.eml

AT+POP3GET=2

OK

+POP3: FAILURE

18.2.7 AT+POP3DEL   Mark an e-mail to delete from POP3 server

Description

This asynchronous command is used to mark an e-mail to delete from POP3 server. The operation only marks an e-mail on the server to delete it, and after POP3 client logs out POP3 server and closes the session normally, the marked e-mail is deleted on the server. Otherwise, the e-mail isn't deleted.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3DEL=?	OK

Write Command	Responses
AT+POP3DEL=<msg_id>	+POP3: SUCCESS OK
	+POP3: <code> ERROR

Defined values

<msg_id>
E-mail's ID for mark to delete it on POP3 server.

<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

Examples

AT+POP3DEL=1

+POP3: SUCCESS

OK

18.2.8 AT+POP3OUT   Log out POP3 server

Description

This command is used to log out the POP3 server and close the session, and if there are some e-mails which are marked to delete, it also informs POP3 server to delete the marked e-mails.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3OUT=?	OK

Execution Command	Responses
AT+POP3OUT	+POP3: SUCCESS OK
	ERROR
	+POP3: <code> ERROR

Defined values

<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

Examples

AT+POP3OUT
+POP3: SUCCESS
OK

18.2.9 AT+POP3STOP   Force to stop receiving e-mail/close the session

Description

This synchronous command is used to force to close the session, and if the process of receiving e-mail is ongoing, the command also stops the operation. Otherwise, the command will return "ERROR" directly. If an e-mail has been marked to delete, POP3 server won't delete the e-mail after the session is closed.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3STOP=?	OK
Execution Command	Responses
AT+POP3STOP	OK
	ERROR

Examples

AT+POP3STOP
OK

18.2.10 AT+POP3READ   Read an e-mail from file system

Description

This command is used to read an e-mail from file system. If the process of receiving e-mail is ongoing, the command can't read an e-mail.

Execution command is used to read the e-mail which is received just now.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+POP3READ=?	OK
Write Command	Responses
AT+POP3READ= <location>, <mail_file>[,<start_pos>,<size>]	<e-mail> OK
	ERROR
Execution Command	Responses
AT+POP3READ	<e-mail> OK
	ERROR

Defined values

<location>
The location from which TE reads an e-mail.

    0   –   Local file system.

    1   –   SD CARD.

<mail_file>
The e-mail's file name, string type with double quotes and including a directory name and a text file name separated by the list separator "/", e.g. "090901103000/EMAIL000.TXT".
<start_pos>
The start position of the file to read.
<size>
The num of bytes to read from file.
<e-mail>
The content of e-mail, including e-mail header and body.

Examples

AT+POP3READ=0,"800106072758/EMAIL800106072758000.TXT"

Subject: =?utf-8?B?TWFpbCBUZXN0?=

Date: Mon, 02 Jul 2012 16:01:11 +0800

From: SIMCom-3G <hello@163.com>

To: 3G-SIMCom <hello@163.com>

VGhpcyBpcyBhIHRlc3QgbWFpbCBmcm9tIExUQSB0ZXN0IHNjcmlwdC4=

OK

AT+POP3READ=0,"1.txt",0,100

at+pop3read=0,"1.txt",0,100

From: =?gb2312?B?v+zHrg==?= <service@account.99bill.com>

Date: Sun, 6 Jan 2013 14:54:02 +0800 (CST)

OK

18.3   File Transfer Protocol Service

18.3.1   AT+CFTPPORT   Set FTP server port

Description

This command is used to set FTP server port.

SIM PIN	References
YES	Vendor

Syntax

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

Defined values

<port>

The FTP server port, from 1 to 65535, and default value is 21.

Examples

AT+CFTPPORT=21
OK
AT+CFTPPORT?
+CFTPPORT:21
OK
AT+CFTPPORT=?
+CFTPPORT: (1-65535)
OK

18.3.2 AT+CFTPMODE   Set FTP mode

Description

This command is used to set FTP passive/proactive mode. Default is passive mode.

SIM PIN	References
YES	Vendor

Syntax

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

	OK
Write Command	Responses
AT+CFTPMODE=<mode>	OK
	+CME ERROR

Defined values

<mode>

The FTP access mode:
    0 – proactive mode.
    1 – passive mode.

Examples

AT+CFTPMODE=1
OK
AT+CFTPMODE?
+CFTPMODE: 1
OK
AT+CFTPMODE=?
+CFTPMODE: (0,1)
OK

18.3.3 AT+CFTPTYPE   Set FTP type

Description

This command is used to set FTP type. Default is binary type.

SIM PIN	References
YES	Vendor

Syntax

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

Defined values

<type>
The FTP type:
<u>I</u> – binary type.
A – ASCII type.

Examples

AT+CFTPTYPE=A
OK
AT+CFTPTYPE?
+CFTPTYPE: A
OK
AT+CFTPTYPE=?
+CFTPTYPE: (A,I)
OK

18.3.4   AT+CFTPSERV   Set FTP server domain name or IP address

Description

This command is used to set FTP server domain name or IP address.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSERV=?	+CFTPSERV: "ADDRESS"
	OK
Read Command	Responses
AT+CFTPSERV?	+CFTPSERV: "<address>"
	OK
Write Command	Responses
AT+CFTPSERV=	OK
"<address>"	+CME ERROR

Defined values

<address>
The FTP server domain name or IP address. The maximum length is 100.

Examples

AT+CFTPSERV="www.mydomain.com"

OK

AT+CFTPSERV?

+CFTPSERV: "www.mydomain.com"

OK

AT+CFTPSERV=?

+CFTPSERV: "ADDRESS"

OK

AT+CFTPSERV="10.0.0.127"

OK

18.3.5   AT+CFTPUN   Set user name for FTP access

Description

This command is used to set user name for FTP server access.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPUN=?	+CFTPUN: "NAME" OK
Read Command	**Responses**
AT+CFTPUN?	+CFTPUN: "<name>" OK
Write Command	**Responses**
AT+CFTPUN="<name>"	OK
	+CME ERROR

Defined values

<name>

The user name for FTP server access. The maximum length is 30.

Examples

AT+CFTPUN="myname"

OK

AT+CFTPUN="anonymous"

OK

AT+CFTPUN?

+CFTPUN: "myname"

OK

AT+CFTPUN=?

+CFTPUN: "NAME"

OK

18.3.6 AT+CFTPPW   Set user password for FTP access

Description

This command is used to set user password for FTP server access.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPW=?	+CFTPPW: "PASSWORD" OK
Read Command	Responses
AT+CFTPPW?	+CFTPPW: "\<password\>" OK
Write Command	Responses
AT+CFTPPW="\<password\>" "	OK
	+CME ERROR

Defined values

\<password\>

The user password for FTP server access. The maximum length is 40.

Examples

AT+CFTPPW="mypass"

OK

AT+CFTPPW?

+CFTPPW: "mypass"

OK

AT+CFTPPW=?

+CFTPPW: "mypass"

OK

18.3.7 AT+CFTPGETFILE   Get a file from FTP server to EFS

Description

This command is used to download a file from FTP server to module EFS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPGETFILE=?	+CFTPGETFILE: [{non-ascii}]"FILEPATH", (list of supported <dir>s) [, (list of supported <rest_size>s)] OK
Write Command	Responses
AT+CFTPGETFILE= "<filepath>",<dir>[,<rest_siz e>]	OK +CFTPGETFILE: 0
	+CME ERROR
	OK +CFTPGETFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>

The directory to save the downloaded file:
   0 – current directory [refer to AT+FSCD]
   1 – "*C:/Picture*" directory
   2 – "*C:/Video*" directory
   3 – "*C:/VideoCall*" directory
   4 – "*D:/Picture*" directory
   5 – "*D:/Video*" directory
   6 – "*D:/VideoCall*" directory
   7 – "C:/Audio" directory
   8 – "D:/Audio" directory

<rest_size>
The value for FTP "REST" command which is used for broken transfer when transferring failed last time.   It's range is 0 to 2147483647.
<err>
The error code of FTP operation.

Examples

AT+CFTPGETFILE="/pub/mydir/test1.txt",0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE=" test2.txt",0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE={non-ascii}" B2E2CAD42E747874",0
OK
...
+CFTPGETFILE: 0

18.3.8   AT+CFTPPUTFILE   Upload a file from module EFS to FTP server

Description

This command is used to upload a file from the module EFS to FTP server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPUTFILE=?	+CFTPPUTFILE: [{non-ascii}] "FILEPATH", (list of supported <dir>s)[, (list of supported <rest_size>s)] OK
Write Command	Responses
AT+CFTPPUTFILE= "<filepath>",<dir>[,<rest_size>]	OK +CFTPPUTFILE: 0
	+CME ERROR
	OK +CFTPPUTFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>

The directory that contains the file to be uploaded:

- 0 – current directory [refer to AT+FSCD]
- 1 – "*C:/Picture*" directory
- 2 – "*C:/Video*" directory
- 3 – "*C:/VideoCall*" directory
- 4 – "*D:/Picture*" directory
- 5 – "*D:/Video*" directory
- 6 – "*D:/VideoCall*" directory
- 7 – "C:/Audio" directory
- 8 – "D:/Audio" directory

<rest_size>

The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<err>

The error code of FTP operation.

Examples

AT+CFTPPUTFILE="/pub/mydir/test1.txt",0, 10
OK
+CFTPPUTFILE: 0
AT+CFTPPUTFILE=" test2.txt",0
OK
...
+CFTPPUTFILE: 0
AT+CFTPPUTFILE={non-ascii}" B2E2CAD42E747874",0
OK
...
+CFTPPUTFILE: 0

18.3.9 AT+CFTPGET Get a file from FTP server and output it to SIO

Description

This command is used to get a file from FTP server and output it to serial port. This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses

AT+CFTPGET=?	+CFTPGET: [{non-ascii}] "FILEPATH" [, (list of supported <rest_size>s)] OK
Write Command	Responses
AT+CFTPGET= "<filepath>"[,<rest_size>]	OK +CFTPGET: DATA,<len> … +CFTPGET: DATA, <len> … … +CFTPGET: 0
	If the file size is 0: OK +CFTPGET: 0
	OK [+CFTPGET: DATA, <len> … +CFTPGET: DATA, <len> … …] +CFTPGET: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfer file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<rest_size>
The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.
<len>
The length of FTP data contained in this packet.
<err>
The error code of FTP operation.

Examples

AT+CFTPGET="/pub/mydir/test1.txt", 10
OK   +CFTPGET: DATA, 1020,   …

+CFTPGET: DATA, 1058,

…

…

+CFTPGET: 0

AT+CFTPGET={non-ascii}"/2F74657374646972/B2E2CAD42E747874"

OK

+CFTPGET: DATA, 1020,

…

+CFTPGET: 0

AT+CFTPGET=?

+CFTPGET: [{non-ascii}]"FILEPATH" [,(0-2147483647)]

OK

18.3.10 AT+CFTPPUT   Upload the DATA from SIO to FTP server

Description

This command is used to upload the DATA from serial port to FTP server as a file . Each <Ctrl+Z> character present in the data flow of serial port when downloading FTP data will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the FTP data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPUT=?	+CFTPPUT: [{non-ascii}] "FILEPATH" ,<len> [, (list of supported <rest_size>s)] OK
Execution Command	Responses
AT+CFTPPUT="<filepath>" , <len> [,<rest_size>]	+CFTPPUT: BEGIN OK
	+CME ERROR
	[+CFTPPUT: BEGIN] +CFTPPUT: <err_code> ERROR

Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfers file to the

current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<len>

The length of the data to send

<rest_size>

The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<err_code>

Refer to "Unsolicited FTP Codes".

Examples

AT+CFTPPUT="/pub/mydir/test1.txt", 20

+CFTPPUT: BEGIN

.....<Ctrl+Z>

OK

AT+CFTPPUT={non-ascii}"/2F74657374646972/B2E2CAD42E747874"

+CFTPPUT: BEGIN

.....<Ctrl+Z>

OK

AT+CFTPPUT=?

+CFTPPUT: [{non-ascii}]"FILEPATH", <len> [,(0-2147483647)]

OK

18.3.11 AT+CFTPLIST   List the items in the directory on FTP server

Description

This command is used to list the items in the specified directory on FTP server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPLIST=?	+CFTPLIST: [{non-ascii}] "FILEPATH" OK
Write Command	Responses
AT+CFTPLIST="<dir>"	OK [+CFTPLIST: DATA,<len> …] +CFTPLIST:<err>

	+CME ERROR

Defined values

<dir>
The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<len>
The length of data reported
<err>
The result code of the listing

Examples

AT+CFTPLIST="/testd"
OK
+CFTPLIST: DATA,193
drw-rw-rw-   1 user   group   0 Sφ 1 18:01 .
drw-rw-rw-   1 user   group   0 Sφ 1 18:01 ..
-rw-rw-rw-   1 user   group   2017 Sφ 1 17:24 19800106_000128.jpg
+CFTPLIST: 0

18.3.12 AT+CFTPMKD   Create a new directory on FTP server

Description

This command is used to create a new directory on the FTP server. The maximum length of the full path name is 256.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPMKD=?	+CFTPMKD: [{non-ascii}]"DIR"
	OK
Write Command	Responses
AT+CFTPMKD="<dir>"	OK
	+CFTPMKD:<err>
	ERROR

Defined values

<dir>
The directory to be created. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<err>
The result code of the command

Examples

AT+CFTPMKD="/testdir"
OK
AT+CFTPMKD={non-ascii}"74657374646972"
OK

18.3.13 AT+CFTPRMD   Delete a directory on FTP server

Description

This command is used to delete a directory on FTP server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPRMD=?	+CFTPRMD: [{non-ascii}]"DIR" OK
Write Command	Responses
AT+CFTPRMD="<dir>"	OK +CFTPRMD:<err> ERROR

Defined values

<dir>
The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<err>
The result code of the command

Examples

AT+CFTPRMD="/testdir"

OK

AT+CFTPRMD={non-ascii}"74657374646972"

OK

18.3.14 AT+CFTPDELE   Delete a file on FTP server

Description

This command is used to delete a file on FTP server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPDELE=?	+CFTPDELE: [{non-ascii}]"FILENAME" OK
Write Command	Responses
AT+CFTPDELE="<filename>"	OK +CFTPDELE:<err> ERROR

Defined values

<filename>
The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.
<err>
The result code of the command

Examples

AT+CFTPDELE="test"

OK

AT+CFTPDELE={non-ascii}"74657374"

OK

18.3.15 Unsolicited FTP Codes (Summary of CME ERROR Codes)

Code of <err>	Description

201	Unknown error for FTP
202	FTP task is busy
203	Failed to resolve server address
204	FTP timeout
205	Failed to read file
206	Failed to write file
207	Not allowed in current state
208	Failed to login
209	Failed to logout
210	Failed to transfer data
211	FTP command rejected by server
212	Memory error
213	Invalid parameter
214	Network error

18.4 Hyper Text Transfer Protocol Service

18.4.1 AT+CHTTPACT   Launch a HTTP operation

NOTE: For HTTP/HTTPS operation, The "Secure Hyper Text Transfer Protocol Service" chapter AT set is recommended to be used. The AT+CHTTPACT is only used to support old HTTP application.

Description

This command is used to launch a HTTP operation like GET or POST. Each <Ctrl+Z> character presented in the data flow of serial port will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the HTTP request data or end of the HTTP responded data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

For this command there may be a lot of DATA which need to be transferred to DTE using serial port, it is recommended that the AT+CATR will be used.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTTPACT=?	+CHTTPACT: "ADDRESS", (1-65535) OK
Write Command	Responses

AT+CHTTPACT= "<address>",<port>	+CHTTPACT: REQUEST
	+CHTTPACT: DATA, <len>
	…
	+CHTTPACT: DATA, <len>
	…
	…
	+CHTTPACT: 0
	+CME ERROR
	+CHTTPACT: <err>
	ERROR
	+CHTTPACT: REQUEST
	+CHTTPACT: <err>
	ERROR
	+CHTTPACT: REQUEST
	+CHTTPACT: DATA, <len>
	…
	+CHTTPACT: DATA, <len>
	…
	…
	+CHTTPACT: <err>
	ERROR

Defined values

<address>
The HTTP server domain name or IP address.
<port>
The HTTP server port.
<len>
The length of HTTP data in the packet.
<err>
The error code of HTTP operation.

Examples

AT+CHTTPACT=”www.mywebsite.com”,80
+CHTTPACT: REQUEST
GET http://www.mywebsite.com/index.html HTTP/1.1
Host: www.mywebsite.com
User-Agent: MY WEB AGENT
Content-Length: 0
<Ctrl+Z>
OK

+CHTTPACT: DATA, 249

HTTP/1.1 200 OK

Content-Type: text/html

Content-Language: zh-CN

Content-Length: 57

Date: Tue, 31 Mar 2009 01:56:05 GMT

Connection: Close

Proxy-Connection: Close

<html>

<header>test</header>

<body>

Test body

</body>

+CHTTPACT: 0

AT+CHTTPACT=”www.mywebsite.com”,80

+CHTTPACT: REQUEST

POST http://www.mywebsite.com/mydir/test.jsp HTTP/1.1

Host: www.mywebsite.com

User-Agent: MY WEB AGENT

*Accept: */**

Content-Type: application/x-www-form-urlencoded

Cache-Control: no-cache

Accept-Charset: utf-8, us-ascii

Pragma: no-cache

Content-Length: 29

*myparam1=test1&myparam2=test2**Ctrl+Z***

OK

+CHTTPACT: DATA, 234

HTTP/1.1 200 OK

Content-Type: text/html

Content-Language: zh-CN

Content-Length: 54

Date: Tue, 31 Mar 2009 01:56:05 GMT

Connection: Close

Proxy-Connection: Close

<html>

<header>result</header>

<body>

Result is OK

</body>

+CHTTPACT: 0
AT+CHTTPACT=?
+CHTTPACT: "ADDRESS",(1-65535)
OK

18.4.2   Unsolicited HTTP codes (summary of CME ERROR codes)

Code of <err>	Description
220	Unknown error for HTTP
221	HTTP task is busy
222	Failed to resolve server address
223	HTTP timeout
224	Failed to transfer data
225	Memory error
226	Invalid parameter
227	Network error

18.5   Secure Hyper Text Transfer Protocol Service

18.5.1   AT+CHTTPSSTART   Acquire HTTPS protocol stack

Description

This command is used to acquire HTTPS protocol stack.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CHTTPSSTART	OK
	ERROR

Examples

AT+CHTTPSSTART
OK

18.5.2   AT+CHTTPSSTOP   Stop HTTPS protocol stack

Description

This command is used to stop HTTPS protocol stack.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CHTTPSSTOP	OK ERROR

Examples

AT+CHTTPSSTOP
OK

18.5.3   AT+CHTTPSOPSE   Open HTTPS session

Description

This command is used to open a new HTTPS session. Every time, AT+CHTTPSSTART command must be executed before executing AT+CHTTPSOPSE command.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTTPSOPSE=?	+CHTTPSOPSE: "ADDRESS",(1-65535)[,(1-2)] OK
Write Command	Responses
AT+CHTTPSOPSE="\<host\>",\<port\>[,\<server_type\>]	OK ERROR

Defined values

\<host\>
The host address
\<port\>
The host listening port for SSL
\<server_type\>
The type of server: 1   –   HTTP server.

2	–	HTTPS server with SSL3.0/TLS1.0 supported.

Examples

AT+CHTTPSOPSE="www.mywebsite.com",443
OK

18.5.4 AT+CHTTPSCLSE   Close HTTPS session

Description

This command is used to close the opened HTTPS session.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CHTTPSCLSE	OK ERROR

Examples

AT+CHTTPSCLSE
OK

18.5.5 AT+CHTTPSSEND   Send HTTPS request

Description

This command is used to send HTTPS request. The AT+CHTTPSSEND=<len> is used to download the data to be sent. The AT+CHTTPSSEND is used to wait the result of sending.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTTPSSEND=?	+CHTTPSSEND: (1-4096) OK
Read Command	Responses
AT+CHTTPSSEND?	+CHTTPSSEND: <unsent_len> OK

Write Command	Responses
AT+ CHTTPSSEND =<len>	> OK ERROR
Execute Command	Responses
AT+CHTTPSSEND	OK +CHTTPSSEND: <result> ERROR

Defined values

<unsent_len>
The length of the data in the sending buffer which is waiting to be sent.   <len>   The length of the data to send
<result>

The final result of the sending.
    0 –   ok
    1 –   unknown error
    2 –   busy
    3 –   server closed
    4 –   timeout
    5 –   transfer failed
    6 –   memory error
    7 –   invalid parameter
    8 –   network error

Examples

AT+CHTTPSSEND=88
>GET / HTTP/1.1   *Host: www.mywebsite.com*   *User-Agent: MY WEB AGENT*   *Content-Length: 0*   *OK*
AT+CHTTPSSEND
OK   *+CHTTPSSEND: 0*
AT+CHTTPSSEND?
+CHTTPSSEND: 88   *OK*

18.5.6   AT+CHTTPSRECV   Receive HTTPS response

Description

This command is used to receive HTTPS response after sending HTTPS request.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CHTTPSRECV=<max_recv_len>	OK +CHTTPSRECV: DATA,<len> … +CHTTPSRECV: DATA,<len> … +CHTTPSRECV:<result> +CHTTPSRECV:<result> ERROR ERROR

Defined values

<len>
The length of the data received.
<max_recv_len>
Maximum bytes of data to receive in the current AT+CHTTPSRECV calling. Minimum is 1.
<result>
The final result of the receiving.

   0 –   ok
   1 –   unknown error
   2 –   busy
   3 –   server closed
   4 –   timeout
   5 –   transfer failed
   6 –   memory error
   7 –   invalid parameter
   8 –   network error

Examples

AT+CHTTPSRECV=249
OK

```
+CHTTPSRECV: DATA,249
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 57
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>test</header>
<body>
Test body
</body>

+CHTTPSRECV: 0
```

18.5.7　Unsolicited HTTPS Codes

Code	Description
+CHTTPS: RECV EVENT	When the AT+CHTTPSRECV is not called, and there is data cached in the receiving buffer, this event will be reported.
+CHTTPSNOTIFY:　PEER CLOSED	The HTTPS session is closed by the server.

18.5.8　Unsolicited HTTPS command <err> Codes

0	Operation succeeded
1	Unknown error
2	Busy
3	Server closed
4	Operation timeout
5	Transfer failed
6	Memory error
7	Invalid parameter
8	Network error

18.6 Secure File Transfer Protocol Service

The FTPS related AT commands need the AT+CATR to be set to the used port. AT+CATR=0 may cause some problem.

18.6.1 AT+CFTPSSTART   Acquire FTPS protocol stack

Description

This command is used to acquire FTPS protocol stack.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CFTPSSTART	OK +CFTPSSTART: \<err> +CFTPSSTART: \<err> OK ERROR

Defined values

\<err>
The result code of the acquiring FTP/FTPS stack. 0 is success. Other values are failure.

Examples

AT+CFTPSSTART *OK* *+CFTPSSTART: 0*

18.6.2 AT+CFTPSSTOP   Stop FTPS protocol stack

Description

This command is used to stop FTPS protocol stack. Currently only explicit FTPS mode is supported.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CFTPSSTOP	OK +CFTPSSTOP: \<err> +CFTPSSTOP: \<err> OK ERROR

Defined values

\<err>
The result code of the stopping FTP/FTPS stack. 0 is success. Other values are failure.

Examples

AT+CFTPSSTOP
OK
+CFTPSSTOP: 0

18.6.3   AT+CFTPSLOGIN   Login the FTPS server

Description

This command is used to login the FTPS server. Each time, AT+CFTPSSTART command must be executed before executing AT+CFTPSLOGIN command.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSLOGIN=?	+CFTPSLOGIN:"ADDRESS",(1-65535),"USERNAME","PASSWORD"[,(0-3)] OK
Write Command	Responses
AT+CFTPSLOGIN="\<host>",\<port>,"\<username>", "\<password>"[\<server_type>]	OK +CFTPSLOGIN: \<err> +CFTPSLOGIN: \<err> OK ERROR

Defined values

<host>
The host address, maximum length is 256
<port>
The host listening port for SSL, the range is from 1 to 65535
<username>
The user name, maximum length is 256
<password>
The user password, maximum length is 256
<server_type>

The type of server:
     0 – FTP server.
     1 – Explicit FTPS server with AUTH SSL.
     2 – Explicit FTPS server with AUTH TLS.
     <u>3</u> – Implicit FTPS server.

<err>
The result code of the FTP/FTPS login. 0 is success. Other values are failure.

Examples

> *AT+CFTPSLOGIN="www.myftpsserver.com",990, "myname", "mypassword",3*
> *OK*
> *+CFTPSLOGIN: 0*

18.6.4 AT+CFTPSLOGOUT   Logout the FTPS server

Description

This command is used to logout the FTPS server.

Syntax

Execute Command	Responses
AT+CFTPSLOGOUT	OK +CFTPSLOGOUT: <err> +CFTPSLOGOUT: <err> OK ERROR

Defined values

<err>
The result code of FTP/FTPS logout. 0 is success. Other values are failure.

Examples

AT+CFTPSLOGOUT

OK

+CFTPSLOGOUT: 0

18.6.5   AT+CFTPSMKD   Create a new directory on FTPS server

Description

This command is used to create a new directory on the FTPS server. The maximum length of the full path name is 256.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSMKD=?	+CFTPSMKD: "DIR" OK
Write Command	Responses
AT+CFTPSMKD="<dir>"	OK +CFTPSMKD: <err> ERROR ERROR

Defined values

<dir>

The directory to be created

Examples

AT+CFTPSMKD="testdir"

OK

AT+CFTPSMKD={non-ascii}"74657374646972"

OK

18.6.6   AT+CFTPSRMD   Delete a directory on FTPS server

Description

This command is used to delete a directory on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSRMD=?	+CFTPSRMD: "DIR"
	OK
Write Command	Responses
AT+CFTPSRMD="<dir>"	OK
	+CFTPSRMD: <err>
	ERROR
	ERROR

Defined values

<dir>
The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

Examples

AT+CFTPSRMD="testdir"
OK
AT+CFTPSRMD={non-ascii}"74657374646972"
OK

18.6.7 AT+CFTPSDELE   Delete a file on FTPS server

Description

This command is used to delete a file on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSDELE=?	+CFTPSDELE: "FILENAME"
	OK
Write Command	Responses
AT+CFTPSDELE="<filename>"	OK
	+CFTPSDELE: <err>
	ERROR
	ERROR

Defined values

<filename>
The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.

Examples

AT+CFTPSDELE=”test”
OK
AT+CFTPDELE={non-ascii}”74657374”
OK

18.6.8 AT+CFTPSCWD   Change the current directory on FTPS server

Description

This command is used to change the current directory on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSCWD=?	+CFTPSCWD: ”DIR” OK
Write Command	Responses
AT+CFTPSCWD=”<dir>”	OK +CFTPSCWD: <err> ERROR ERROR

Defined values

<dir>
The directory to be changed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

Examples

AT+CFTPSCWD=”testdir”
OK
AT+CFTPSCWD={non-ascii}”74657374646972”
OK

18.6.9 AT+CFTPSPWD   Get the current directory on FTPS server

Description

This command is used to get the current directory on FTPS server.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CFTPSPWD	+CFTPSPWD: ”<dir>” OK +CFTPSPWD: <err> ERROR ERROR

Defined values

<dir>
The current directory on FTPS server.

Examples

AT+CFTPSPWD
+CFTPSPWD: "/testdir"
OK

18.6.10 AT+CFTPSTYPE   Set the transfer type on FTPS server

Description

This command is used to set the transfer type on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSTYPE=?	+CFTPSTYPE: (A,I) OK
Read Command	Responses
AT+CFTPSTYPE?	+CFTPSTYPE: <type>

	OK
Write Command	Responses
AT+CFTPSTYPE=<type>	OK
	+CFTPSTYPE: <err>
	ERROR
	ERROR

Defined values

<type>
The type of transferring:
A – ASCII.
I – Binary.

Examples

AT+CFTPSTYPE=A
OK

18.6.11 AT+CFTPSLIST   List the items in the directory on FTPS server

Description

This command is used to list the items in the specified directory on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CFTPSLIST="<dir>"	OK
	+CFTPSLIST: DATA,<len>
	…
	+CFTPSLIST:<err>
	ERROR
Execute Command	Responses
AT+CFTPSLIST	OK
	+CFTPSLIST: DATA,<len>
	…
	+CFTPSLIST:<err>
	OK
	+CFTPSLIST:<err>

	+CFTPSLIST:<err>
	ERROR
	ERROR

Defined values

<dir>
The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<len>
The length of data reported
<err>
The result code of the listing

Examples

AT+CFTPSLIST="/testd"
OK
+CFTPSLIST: DATA,193
drw-rw-rw-   1 user   group   0 Sep 1 18:01 .
drw-rw-rw-   1 user   group   0 Sep 1 18:01 ..
-rw-rw-rw-   1 user   group   2017 Sep 1 17:24 19800106_000128.jpg
+CFTPSLIST: 0
AT+CFTPSLIST
OK
+CFTPSLIST: DATA,193
drw-rw-rw-   1 user   group   0 Sep 1 18:01 .
drw-rw-rw-   1 user   group   0 Sep 1 18:01 ..
-rw-rw-rw-   1 user   group   2017 Sep 1 17:24 19800106_000128.jpg
+CFTPSLIST: 0

18.6.12 AT+CFTPSGETFILE   Get a file from FTPS server to EFS

Description

This command is used to download a file from FTPS server to module EFS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSGETFILE=?	+CFTPGETFILE: [{non-ascii}]"FILEPATH", (list of supported <dir>s) [, (list of supported <rest_size>s)] OK
Write Command	Responses
AT+CFTPGETFILE= "<filepath>",<dir>[,<rest_siz e>]	OK +CFTPSGETFILE: 0
	+CFTPSGETFILE: <err> ERROR
	ERROR
	OK +CFTPSGETFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>

The directory to save the downloaded file:
    0 – current directory [refer to AT+FSCD]
    1 – "*C:/Picture*" directory
    2 – "*C:/Video*" directory
    3 – "*C:/VideoCall*" directory
    4 – "*D:/Picture*" directory
    5 – "*D:/Video*" directory
    6 – "*D:/VideoCall*" directory
    7 – "C:/Audio" directory
    8 – "D:/Audio" directory

<rest_size>
The value for FTP "REST" command which is used for broken transfer when transferring failed last time.   It's range is 0 to 2147483647.
<err>
The error code of FTPS operation.

Examples

AT+CFTPSGETFILE="/pub/mydir/test1.txt",1

OK

...

+CFTPSGETFILE: 0

AT+CFTPSGETFILE=" test2.txt",2

OK

...

+CFTPSGETFILE: 0

AT+CFTPSGETFILE={non-ascii}" B2E2CAD42E747874",2

OK

...

+CFTPSGETFILE: 0

AT+CFTPSGETFILE=?

+CFTPSGETFILE: [{non-ascii}]"FILEPATH",(0-8)[,(0-2147483647)]

OK

18.6.13 AT+CFTPSPUTFILE   Upload a file in module EFS to FTPS server

Description

This command is used to upload a file in the module EFS to FTPS server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSPUTFILE=?	+CFTPPUTFILE: [{non-ascii}] "FILEPATH", (list of supported <dir>s)[, (list of supported <rest_size>s)] OK
Write Command	Responses
AT+CFTPSPUTFILE= "<filepath>",<dir>[,<rest_size>]	OK +CFTPSPUTFILE: 0
	+CFTPSPUTFILE: <err> ERROR
	ERROR
	OK +CFTPSPUTFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>
The directory that contains the file to be uploaded: 0   –   current directory [refer to AT+FSCD]

1	–	"*C:/Picture*" directory
2	–	"*C:/Video*" directory
3	–	"*C:/VideoCall*" directory
4	–	"*D:/Picture*" directory
5	–	"*D:/Video*" directory
6	–	"*D:/VideoCall*" directory
7	–	"C:/Audio" directory
8	–	"D:/Audio" directory

<rest_size>

The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<err>

The error code of FTPS operation.

Examples

AT+CFTPSPUTFILE="/pub/mydir/test1.txt",1
OK
AT+CFTPSPUTFILE=" test2.txt",1
OK
...
+CFTPSPUTFILE: 0
AT+CFTPSPUTFILE={non-ascii}" B2E2CAD42E747874",1
OK
...
+CFTPSPUTFILE: 0
AT+CFTPSPUTFILE=?
+CFTPSPUTFILE: [{non-ascii}]"FILEPATH",(0-8)[,(0-2147483647)]
OK

18.6.14 AT+CFTPSGET   Get a file from FTPS server to serial port

Description

This command is used to get a file from FTPS server and output it to serial port.   This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses

AT+CFTPSGET=?	OK
Write Command	Responses
AT+CFTPSGET= "<filepath>" [,<rest_size>]	OK +CFTPSGET: DATA,<len> … +CFTPSGET: DATA, <len> … … +CFTPSGET: 0
	+CFTPSGET: <err> ERROR
	ERROR
	+CFTPSGET: DATA, <len> … +CFTPSGET: DATA, <len> … … +CFTPSGET: <err>

Defined values

<filepath>
The remote file path. When the file path doesn't contain "/", this command transfer file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<rest_size>
The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.
<len>
The length of FTPS data contained in this packet.
<err>
The error code of FTPS operation.

Examples

AT+CFTPSGET="/pub/mydir/test1.txt"
OK
+CFTPSGET: DATA, 1020,
…
+CFTPSGET: DATA, 1058,
…
…
+CFTPSGET: 0

AT+CFTPSGET={non-ascii}”/2F74657374646972/B2E2CAD42E747874”

OK

+CFTPSGET: DATA, 1020,

…

+CFTPSGET: 0

AT+CFTPSGET=?

OK

18.6.15 AT+CFTPSPUT   Put a file to FTPS server

Description

This command is used to put a file to FTPS server through serial port. The AT+CFTPSPUT= [“<filepath>”,]<len> is used to download the data to be sent. The AT+CFTPSPUT is used to wait the result of sending.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSPUT=?	OK
Read Command	Responses
AT+CFTPSPUT?	+CFTPSPUT: <unsent_len> OK
Write Command	Responses
AT+CFTPSPUT=[“<filepath >”,]<len>[,<rest_size>]	> OK +CFTPSPUT: <result> ERROR ERROR
Execute Command	Responses
AT+CFTPSPUT	OK +CFTPSPUT: <result> ERROR

Defined values

<filepath>
The path of the file on FTPS server.
<unsent_len>
The length of the data in the sending buffer which is waiting to be sent.
<len>

The length of the data to send, the maximum length is 1024.

<rest_size>

The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<result>

The final result of the sending.

Examples

AT+CFTPSPUT="t1.txt",10
>testcontent
OK
AT+CFTPSPUT
OK
+CFTPSSPUT: 0
AT+CFTPSPUT?
+CFTPSPUT: 88
OK

18.6.16 AT+CFTPSSIZE   Get the size of a file on FTPS server

Description

This command is used to get the size of file on FTPS server

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSSIZE=?	OK
Write Command	Responses
AT+CFTPSSIZE="<filename>"	OK
	+CFTPSSIZE: <err>[,<fsize>]
	ERROR

Defined values

<filename>

The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.

<err>

The result of get file size. O is successful. Only when successful, the second parameter of URC

+CFTPSSIZE is provided. When failure, Only +CFTPSSIZE: <err> is reported.

<fsize>

The size of the file in byte.

Examples

AT+CFTPSSIZE=”test.txt”
+CFTPSSIZE: 0, 1024
OK
AT+CFTPSSIZE={non-ascii}”74657374”
+CFTPSSIZE: 0, 1024
OK

18.6.17 AT+CFTPSCACHERD   Output cached data to MCU

Description

This command is used to output cached data(generated by AT+CFTPSGET/AT+CFTPSLIST) to MCU.

SIM PIN	References
YES	Vendor

Syntax

Read Command	Responses
AT+CFTPSCACHERD?	+CFTPSCACHERD: <len> OK
Execute Command	Responses
AT+CFTPSCACHERD	**If cache data is AT+CFTPSGET:** +CFTPSGET: DATA,<out_len><CR><LF> … OK **If the cache data is AT+CFTPSLIST:** +CFTPSLIST: DATA,<out_len><CR><LF> … OK
	ERROR

Defined values

<len>
The bytes of data cached in FTPS module.
<out_len>
The bytes of data to output. The maximum value is 1024 for each AT+CFTPSCACHERD calling.

Examples

AT+CFTPSCACHERD?
+CFTPSCACHERD: 102400
OK
AT+CFTPSCACHERD
+CFTPSGET: DATA, 1024
…
OK

18.6.18 AT+CFTPSSTATE   Get the state of FTPS stack

Description

This command is used to get the state of FTPS stack.

SIM PIN	References
NO	Vendor

Syntax

Execute Command	Responses
AT+CFTPSSTATE	+CFTPSTATE: <state>,<operation>
	OK
	ERROR

Defined values

<state>
0 – None
1 – Accquired FTPS stack
2 – Opening network
3 – Closing network
4 – Opened network
5 – Logging in
6 – Login
7 – Operating
8 – Logging out

<operation>
0 – None
1 – Login
2 – Logout
3 – List
4 – Cwd
5 – Pwd
6 – Mkd
7 – Rmd
8 – Dele
9 – Type
10 – Get
11 – Put
12 – Size

Examples

AT+CFTPSSTATE
+CFTPSSTATE: 0,0
OK

18.6.19 AT+CFTPSTO   Set FTPS receive timeout value

Description

This command is used to set timeout value for FTPS receive timeout parameter.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CFTPSTO=?	+CFTPSTO: (10-120)
	OK

Read Command	Responses
AT+CFTPSTO?	+CFTPSTO: <recv_timeout>
	OK

Write Command	Responses
AT+CFTPSTO=<recv_timeout>	OK
	ERROR

Defined values

<recv_timeout>
Timeout value for FTPS receiving operation, default value is 120 seconds. The range is from 10 seconds to 120 seconds.

Examples

AT+CFTPSTO?
+CFTPSTO: 120
OK
AT+CFTPSTO=10
OK

18.6.20 AT+CFTPSABORT   Abort and Stop FTPS protocol stack

Description

This command is used to abort and stop FTPS protocol stack. This command can only be used in FTPS logged-in state.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CFTPSABORT	OK +CFTPSABORT: <err> +CFTPSABORT: <err> OK ERROR

Defined values

<err>
The result code of the aborting FTP/FTPS stack. 0 is success. Other values are failure.

Examples

AT+CFTPSABORT
OK
+CFTPSABORT: 0

18.6.21 AT+CFTPSSINGLEIP   Set FTPS data socket address type

Description

This command is used to set FTPS server data socket IP address type

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSSINGLEIP=?	+CFTPSSINGLEIP: (0,1) OK
Read Command	Responses
AT+CFTPSSINGLEIP?	+ CFTPSSINGLEIP: \<singleip> OK
Write Command	Responses
AT+CFTPSSINGLEIP=\<singleip>	OK
	ERROR

Defined values

\<singleip>
The FTPS data socket IP address type: 0 – decided by PORT response from FTPS server   1 – the same as the control socket.

Examples

AT+CFTPSSINGLEIP=1
OK
AT+CFTPSSINGLEIP?
+CFTPSSINGLEIP:1
OK
AT+CFTPSSINGLEIP=?
+CFTPSSINGLEIP: (0,1)
OK

18.6.22 Unsolicited FTPS Codes

Code	Description
+CFTPSNOTIFY: PEER CLOSED	The FTPS session is closed by the server.

18.6.23 Unsolicited FTPS command <err> Codes

0	FTPS operation succeeded
1	SSL verify alert
2	Unknown FTPS error
3	FTPS busy
4	FTPS server closed connection
5	Timeout
6	FTPS transfer failed
7	FTPS memory error
8	Invalid parameter
9	Operation rejected by FTPS server
10	Network error

18.7　HTTP Time Synchronization Service

The HTP related AT commands are used to synchronize system time with HTTP server.

18.7.1　AT+CHTPSERV　Set HTP server info

Description

This command is used to add or delete HTP server information. There are maximum 16 HTP servers.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTPSERV=?	+CHTPSERV:"ADD","HOST",(1-65535), (0-1)[,"PROXY",(1-65535)] +CHTPSERV: "DEL",(0-15) OK
Read Command	Responses
AT+CHTPSERV?	+CHTPSERV:<index>"<host>",<port>,<http_version> [,"<proxy>",<proxy_port>] … +CHTPSERV:<index>"<host>",<port>[,"<proxy>",< proxy_port>]

	OK
	OK *(if HTP server not setted)*
Write Command	Responses
AT+CHTPSERV= "<cmd>","<host_or_idx>"[,< port>,<http_version> [,"<proxy>",<proxy_port>]]	OK
	ERROR

Defined values

<cmd>

This command to operate the HTP server list.
  "ADD": add a HTP server item to the list
  "DEL": delete a HTP server item from the list

<host_or_idx>
If the <cmd> is "ADD", this field is the same as <host>, needs quotation marks; If the <cmd> is "DEL", this field is the index of the HTP server item to be deleted from the list, does not need quotation marks.
<host>
The HTP server address.
<port>
The HTP server port.
<http_version>

The HTTP version of the HTP server:
  0- HTTP 1.0
  1- HTTP 1.1

<proxy>
The proxy address
<proxy_port>
The port of the proxy
<index>
The HTP server index.

Examples

AT+CHTPSERV="ADD","www.google.com",80,1 *OK*

18.7.2 AT+CHTPUPDATE   Updating date time using HTP protocol

Description

This command is used to updating date time using HTP protocol.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CHTPUPDATE=?	OK
Read Command	**Response**
AT+CHTPUPDATE?	+CHTPUPDATE:<status>
	OK
Execute Command	**Responses**
AT+CHTPUPDATE	OK
	+CHTPUPDATE: <err>
	ERROR

Defined values

<status>
The status of HTP module:
Updating: HTP module is synchronizing date time
NULL: HTP module is idle now
<err>
The result of the HTP updating

Examples

AT+CHTPUPDATE
OK
+CHTPUPDATE: 0

18.7.3 Unsolicited HTP Codes

Code of <err>	Description
0	Operation succeeded
1	Unknown error
2	Wrong parameter

3	Wrong date and time calculated
4	Network error

18.8   Common Channel Service

The common channel related AT commands needs the AT+CATR to be set to the used port. AT+CATR=0 may cause some problem.

18.8.1   AT+CCHSTART   Acquire common channel service

Description

This command is used to acquire common channel service.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+CCHSTART	OK +CCHSTART: <err> +CCHSTART: <err> OK ERROR

Defined values

<err>
The result code of the acquiring common channel service. 0 is success. Other values are failure.

Examples

AT+CCHSTART *OK* *+CCHSTART: 0*

18.8.2   AT+CCHSTOP   Stop common channel service

Description

This command is used to stop common channel service.

SIM PIN	References

YES	Vendor

Syntax

Execute Command	Responses
AT+CCHSTOP	OK +CCHSTOP: <err> +CCHSTOP: <err> OK ERROR

Defined values

<err>
The result code of the stoping common channel service. 0 is success. Other values are failure.

Examples

AT+CCHSTOP *OK* *+CCHSTOP: 0*

18.8.3   AT+CCHOPEN   Open a channel

Description

This command is used to connect peer using common channel service.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCHOPEN=?	+CCHOPEN: (0,1), " ADDRESS", list of <port>s [,list of <channel_type>s [,list of <bind_port>s]] OK
Write Command	Responses
AT+CCHOPEN=<session_id>, "<host>",<port>[<channel_type>,[<bind_port>]]	OK +CCHOPEN: <session_id>,<err> +CCHOPEN: <session_id>,<err> OK *Open channel successfully in transparent mode:*

	CONNECT<text>
	Open channel failed in transparent mode:
	CONNECT FAIL
	ERROR

Defined values

<session_id>
The session index to operate. It's from 0 to 1. In transparent mode, only 0 is valid.
<host>
The host address, maximum length is 256
<port>
The peer port for channel, the range is from 1 to 65535
<channel_type>
The type of channel:

> 0   –   UDP.
> 1   –   TCP client.
> 2   –   SSLv3.0/TLSv1.0 client.

<bind_port>
The local port for channel, the range is from 1 to 65535
<text>
CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.
<err>
The result code of the opening common channel. 0 is success. Other values are failure.

Examples

AT+CCHOPEN=0, "www.myserver.com",443,2
OK
+CCHOPEN: 0 0
AT+CCHOPEN=0, "www.myserver.com",443,1
OK
+CCHOPEN: 0,0

18.8.4   AT+CCHCLOSE   Close a channel

Description

This command is used to disconnect from peer.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CCHCLOSE=<session_id>	OK CLOSED +CCHCLOSE: <session_id>,<err> +CCHCLOSE: <session_id>,<err> OK ERROR

Defined values

<session_id>
The session index to operate. It's from 0 to 1.
<err>
The result code of the closing common channel. 0 is success. Other values are failure.

Examples

AT+CCHCLOSE=0
OK
+CCHCLOSE: 0,0

18.8.5 AT+CCHSEND   Send data to peer

Description

This command is used to send data to peer. If the first parameter of AT+CCHSET is set to 1, the +CCHSEND: <session_id>, <err> will be reported after AT+CCHSEND is finished.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCHSEND=?	+CCHSEND: (0,1),(1-2048) OK
Read Command	**Responses**
AT+CCHSEND?	+CCHSEND: 0,<unsent_len_0>,1,<unsent_len_1> OK
Write Command	**Responses**
AT+ CCHSEND =<session_id>,<len>	> OK ERROR

Defined values

<session_id>
The session index to operate. It's from 0 to 1.
<len>
The length of data to send. Its range is from 1 to 2048.
<unsent_len_0>
The data of channel session 0 cached in DS layer which is waiting to be sent.
<unsent_len_1>
The data of channel session 1 cached in DS layer which is waiting to be sent.

Examples

AT+CCHSEND=0, 125
>GET / HTTP/1.1
Host: www.google.com.hk
User-Agent: MAUI htp User Agent
Proxy-Connection: keep-alive
Content-Length: 0
OK

18.8.6 AT+CCHRECV   Receive data from the channel

Description

This command is used to receive data from the channel.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CCHRECV=<session_id>[,<max_recv_len>]	OK [+CCHRECV: DATA, <session_id>,<len> … +CCHRECV: DATA, <session_id>,<len> …] +CCHRECV: <session_id>, <result> ERROR

Defined values

<session_id>

The session index to operate. It's from 0 to 1.

<max_recv_len>

Maximum bytes of data to receive in the current AT+CCHRECV calling. 0 means unlimited.

<result>

The final result of the receiving.

   0 –   ok
   1 –   unknown error
   2 –   busy
   3 –   server closed
   4 –   timeout
   5 –   transfer failed
   6 –   memory error
   7 –   invalid parameter
   8 –   network error

<len>

The length of data followed.

Examples

AT+CCHRECV=1

OK
+CCHRECV: DATA,1,249
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 57
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>test</header>
<body>
Test body
</body>

+CCHRECV:1, 0

18.8.7 AT+CCHSET Set the parameter of common channel service

Description

This command is set the parameter of common channel service. It must be called before AT+CCHSTART.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CCHSET=?	+CCHSET: (0,1),(0,1) OK
Read Command	Responses
AT+CCHSET?	+CCHSET: <report_send_result>,<recv_mode> OK
Write Command	Responses
AT+ CCHSET =<report_send_result>[,<recv_mode>]	OK ERROR

Defined values

<report_send_result>

Whether to report result of CCHSEND:
    0 – No.
    1 – Yes.

<recv_mode>

The receiving mode:
    0 – Output the data to MCU whenever received data.
    1 – Module caches the received data and notify MCU with +CCHEVENT: <session_id>, RECV EVENT. MCU can use AT+CCHRECV to receive the cached data(manual receiving mode).

Examples

AT+CCHSET=1,1
OK

18.8.8　AT+CCHADDR　　Get the IPv4 address for common channel service

Description

This command is used to get the IPv4 address after calling AT+CCHSTART.

SIM PIN	References
YES	Vendor

Syntax

Execute Command	Responses
AT+ CCHADDR	+CCHADDR: < ip_address> OK ERROR

Defined values

<ip_address>

A string parameter that identifies the IPv4 address of the common channel service when connecting to Packet network.

Examples

AT+CCHADDR
+CCHADDR: 10.71.155.118
OK

18.8.9 AT+CCHMODE Set the mode of common channel service

Description

This command is set the mode of common channel service. This AT command must be called before calling AT+CCHSTART.

SIM PIN	References
YES	Vendor

Syntax

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

Defined values

<mode>

The mode of common channel service:
    0 – Normal.

> 1 – Transparent mode.

Examples

> *AT+CCHMODE=1*
> *OK*

18.8.10 Unsolicited common channel Codes

Code	Description
+CCHEVENT: <session_id>, RECV EVENT	In manual receiving mode, when new data of a channel arriving to the module, this unsolicited result code will be reported to MCU.
+CCH_PEER_CLOSED: <session_id>	The channel is closed by the peer.

18.8.11 Unsolicited common channel command <err> Codes

0	Operation succeeded
1	Alerting state(reserved)
2	Unknown error
3	Busy
4	Peer closed
5	Operation timeout
6	Transfer failed
7	Memory error
8	Invalid parameter
9	Network error

18.9 Secure Simple Mail Transfer Protocol Service

This chapter supports SMTP / SMTPS two kinds server. The old SMTP only supports SMTP server, and the old SMTP AT commands are for compatibility with previous customers. New customers are recommended to use the commands in this chapter.

18.9.1 AT+CSMTPSSRV　　Set SMTP server address and port number

Description

This command is used to set SMTP server address and server's port number. SMTP client will initiate TCP session with the specified server to send an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server address and port number.

Execution command will clear SMTP server address and set the port number as default value.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSRV=?	OK
Read Command	**Responses**
AT+CSMTPSSRV?	+CSMTPSSRV: \<server\>,\<port\>,\<server_type\>
	OK
Write Command	**Responses**
AT+CSMTPSSRV=\<server\>, \<port\>[, \<server_type\>]	OK
	ERROR
Execution Command	**Responses**
AT+CSMTPSSRV	OK
	ERROR

Defined values

\<server\>
SMTP server address, non empty string with double quotes, mandatory and ASCII text string up to 127 characters.
\<port\>
Port number of SMTP server in decimal format, from 1 to 65535, and default port is 465 for SMTP.
\<server_type\>
The type of server:
1 – SMTP server.
2 – SMTPS server with SSL3.0/TLS1.0 supported

Examples

AT+CSMTPSSRV="smtp.server.com",425

OK

AT+CSMTPSSRV?

+CSMTPSSRV: "smtp.server.com",425,2

OK

AT+SMTPSRV

OK

AT+SMTPSRV?

+SMTPSRV: "",465,2

OK

18.9.2   AT+CSMTPSAUTH   SMTP server authentication

Description

This synchronous command is used to control SMTP authentication during connection with SMTP server. If SMTP server requires authentication while logging in the server, TE must set the authentication control flag and provide user name and password correctly before sending an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server authentication control flag, if the flag is 0, both <user> and <pwd> are empty strings.

Execution Command clears user name and password.

SIM PIN	References
YES	Vendor

Syntax

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

Read Command	Responses
AT+CSMTPSAUTH?	+CSMTPSAUTH: <flag>, <user>, <pwd> OK

Write Command	Responses
AT+CSMTPSAUTH= <flag>[, <user>, <pwd>]	OK ERROR

Execution Command	Responses
AT+CSMTPSAUTH	OK ERROR

Defined values

<flag>

SMTP server authentication control flag, integer type.

    0 – SMTP server doesn't require authentication, factory value.

    1 – SMTP server requires authentication.

|
| --- |
| User name to be used for SMTP authentication, non empty string with double quotes and up to 127 characters. |
| <pwd> |
| Password to be used for SMTP authentication, string with double quotes and up to 127 characters. |
| **NOTE:** If <flag> is 0, <user> and <pwd> must be omitted (i.e. only <flag> is present). |

Examples

AT+CSMTPSAUTH?
+CSMTPSAUTH: 0, "", ""*
OK
AT+CSMTPSAUTH=1,"username","password"
OK
AT+CSMTPSAUTH?
+CSMTPSAUTH: 1, "username", "password"
OK
AT+CSMTPSAUTH
OK
AT+CSMTPSAUTH?
+CSMTPSAUTH: 0, "", ""*
OK

18.9.3 AT+CSMTPSFROM   Sender address and name

Description

This synchronous command is used to set sender's address and name, which are used to construct e-mail header. The sender's address must be correct if the SMTP server requries, and if the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current sender's address and name.

Execution command will clear sender's address and name.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSFROM=?	OK
Read Command	Responses
AT+CSMTPSFROM?	+CSMTPSFROM: <saddr>, <sname>
	OK
Write Command	Responses

AT+CSMTPSFROM= <saddr>[, <sname>]	OK ERROR
Execution Command	Responses
AT+CSMTPSFROM	OK ERROR

Defined values

<saddr>
E-mail sender address (MAIL FROM), non empty string with double quotes, mandatory and ASCII text up to 127 characters. <saddr> will be present in the header of the e-mail sent by SMTP client in the field: "*From: *".
<sname>
E-mail sender name, string with double quotes, and alphanumeric ASCII text up to 63 characters. <sname> will be present in the header of the e-mail sent by SMTP client in the field: "*From: *".

Examples

AT+CSMTPSFROM="senderaddress@server.com","sendername"
OK
AT+CSMTPSFROM?
+CSMTPSFROM: "senderaddress@server.com", "sendername"
OK
AT+CSMTPSFROM
OK
AT+CSMTPSFROM?
+CSMTPSFROM: "", ""
OK

18.9.4 AT+CSMTPSRCPT   Recipient address and name (TO/CC/BCC)

Description

This synchronous command is used to set recipient address/name and kind (TO/CC/BCC). If only the parameter of "kind" is present, the command will clear all recipients of this kind, and if only parameters of "kind" and "index" are present, the command will clear the specified recipient. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current recipient address/name and kind list.

Execution command will clear all recipient information.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSRCPT=?	+CSMTPSRCPT: (list of supported <kind>s), (list of supported <index>s) OK
Read Command	Responses
AT+CSMTPSRCPT?	[+CSMTPSRCPT: <kind>, <index>, <raddr>, <rname> [<CR><LF>…]] OK
	OK
	ERROR
Write Command	Responses
AT+CSMTPSRCPT= <kind>[, <index> [,<raddr>[,<rname>]]]	OK ERROR
Execution Command	Responses
AT+CSMTPSRCPT	OK ERROR

Defined values

<kind>
Recipient kind, the kinds of TO and CC are used to construct e-mail header in the field: "*To: *" or "*Cc: *".

    0 – TO, normal recipient.
    1 – CC, Carbon Copy recipient.
    2 – BCC, Blind Carbon Copy recipient.

<index>
Index of the kind of recipient, decimal format, and from 0 to 4.

<raddr>
Recipient address, non empty string with double quotes, and up to 127 characters.

<rname>
Recipient name, string type with double quotes, and up to 63 characters.

Examples

AT+CSMTPSRCPT=0, 0, "rcptaddress_to@server.com", "rcptname_to"
OK
AT+CSMTPSRCPT?
+CSMTPSRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"
OK
AT+CSMTPSRCPT=1, 0, "rcptaddress_cc@server.com", "rcptname_cc"
OK

AT+CSMTSPRCPT?
+CSMTPSRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"
+CSMTPSRCPT: 1, 0, "rcptaddress_cc@server.com", "rcptname_cc"
OK

18.9.5 AT+CSMTPSSUB   E-mail subject

Description

This synchronous command is used to set the subject of e-mail, which is used to construct e-mail header. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current e-mail subject.

Execution command will clear the subject.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSUB=?	OK

Read Command	Responses
AT+CSMTPSSUB?	+SMTPSUB: <subject_len>,<subject_character><CR><LF> [<subject>] OK

Write Command	Responses
AT+CSMTPSSUB=<subject _len>[,<subject_character>]	> OK ERROR

Execution Command	Responses
AT+CSMTPSSUB	OK ERROR

Defined values

<subject>
E-mail subject, string with double quotes, and ASCII text up to 511 characters. <subject> will be present in the header of the e-mail sent by SMTPS client in the field: "*Subject:* ". For write command, it can input any binary data.
<subject_len>
The length of subject content
<subject_character>
The character set of subject. Default is utf-8.

Examples

AT+CSMTPSSUB?
+CSMTPSSUB: 0,"utf-8"   *OK*
AT+CSMTPSSUB=19, "utf-8"
> THIS IS A TEST MAIL   *OK*
AT+SMTPSSUB?
+SMTPSSUB: 19, "utf-8"   *THIS IS A TEST MAIL*   *OK*

18.9.6   AT+CSMTPSBODY   E-mail body

Description

This command is used to set e-mail body, which will be sent to SMTP server with text format.

Read command returns current e-mail body. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly. Execution command clears email body.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSBODY=?	OK

Read Command	Responses
AT+CSMTPSBODY?	+CSMTPSBODY: <body_len><CR><LF> [<body>] OK

Write Command	Responses
AT+CSMTPSBODY=<body _len>	> OK

Execution Command	Responses
AT+CSMTPSBODY	OK

Defined values

<body>
E-mail body, up to 5120 characters.
<body_len>

The length of email body.

Examples

> AT+CSMTPSBODY=38
> > THIS IS A TEST MAIL FROM SIMCOM MODULE
> OK
> AT+CSMTPSBODY?
> +CSMTPSBODY: 38
> THIS IS A TEST MAIL FROM SIMCOM MODULE
> OK

18.9.7   AT+CSMTPSBCH   E-mail body character set

Description

This synchronous command is used to set the body character set of e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.
Read command returns current e-mail body character set.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSBCH=?	OK

Read Command	Responses
AT+CSMTPSBCH?	+CSMTPSBCH: <charset>
	OK

Write Command	Responses
AT+CSMTPSBCH=<charset >	OK
	ERROR

Execution Command	Responses
AT+CSMTPSBCH	OK
	ERROR

Defined values

<charset>
E-mail body character, string with double quotes. By default, it is "utf-8". The maximum length is 19 bytes.

Examples

AT+CSMTPSBCH=?	
OK	
AT+CSMTPSBCH="gb2312"	
OK	
AT+CSMTPSBCH?	
+CSMTPSBCH: "gb2312"	
OK	

18.9.8 AT+CSMTPSFILE   Select attachment

Description

The synchronous command is used to select file as e-mail attachment. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current all selected attachments with full path.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSFILE=?	+CSMTPSFILE: (list of supported <index>s) OK
Read Command	**Responses**
AT+CSMTPSFILE?	[+CSMTPSFILE: <index>, <filename>, <filesize> [<CR><LF>…]] OK
Write Command	**Responses**
AT+CSMTPSFILE= <index>[, <filename>]	OK
	[+CSMTPS: <err>] ERROR
Execution Command	**Responses**
AT+CSMTPSFILE	OK

Defined values

<index>
Index for attachments, from 1 to 10. According to the sequence of <index>, SMTP client will encode and send all attachments.
<filename>
String type with double quotes, the name of a file which is under current directory (refer to file

system commands). SMTP client doesn't allow two attachments with the same file name. For write command, if the file name contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

<filesize>

File size in decimal format. The total size of all attachments can't exceed 10MB.

<err>

The error information.

Examples

AT+CSMTPSFILE=1,"file1.txt"
OK
AT+CSMTPSFILE=1,{non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
OK
AT+CSMTPSFILE?
+CSMTPSFILE: 1, "C:/file1.txt"
OK
AT+CSMTPSFILE=2,"file2.txt"
OK
AT+CSMTPSFILE?
+CSMTPSFILE: 1, "C:/file1.txt"
+CSMTPSFILE: 2, "C:/file2.txt"
OK

18.9.9   AT+CSMTPSSEND   Initiate session and send e-mail

Description

This asynchronous command is used to initiate TCP/SSL session with SMTP server and send an e-mail after all mandatory parameters have been set correctly.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSEND=?	OK

Execution Command	Responses
AT+CSMTPSSEND	OK +CSMTPSSEND: <err>
	ERROR
	+CSMTPSSEND: <err> ERROR

Defined values

<err>
The error information. 0 indicates success. Other values indicate failure.

Examples

AT+CSMTPSSEND
OK
+CSMTPSSEND: 0

18.9.10　AT+CSMTPSSTOP　　Force to stop sending e-mail

Description

The synchronous command is used to force to stop sending e-mail and close the TCP/SSL session while sending an e-mail is ongoing. Otherwise, the command will return "ERROR" directly.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSMTPSSTOP=?	OK
Execution Command	Responses
AT+CSMTPSSTOP	OK
	ERROR

Examples

AT+CSMTPSSTOP
OK

18.9.11　AT+CSMTPSCLEAN　　Clean mail content and setting

Description

The synchronous command is used to clean mail content and setting.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses	
AT+CSMTPSCLEAN=?	OK	
Execution Command	Responses	
AT+CSMTPSCLEAN	OK	
	ERROR	

Examples

AT+CSMTPSCLEAN
OK

18.9.12 Unsolicited SMTPS command <err> Codes

0	SMTPS operation succeeded
1	Busy
2	Over size
3	Duplicate file
4	Time out
5	Transfer failed
6	Memory error
7	Invalid parameter
8	Network error
9	EFS operation error
10	SMTP server error
11	Authentication failure
12	User cancel
255	Unknown error

18.10   SSL Certificate & Key Management

18.10.1 AT+CCERTDOWN   Transfer a certificate file to Module

Description

This command is used to transfer a certificate or key file to the module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCERTDOWN=?	OK
Write Command	**Responses**
AT+CCERTDOWN="<filename>",<len>	> OK > ERROR ERROR

Defined values

<filename>
The name of the certificate/key file. The file name must have type like ".der" or ".pem", and the .pem file cannot be protected using password.
<len>
The length of the file data to send.

Examples

AT+CCERTDOWN="client_key.der",611 *>file content...* *OK*

18.10.2 AT+CCERTLIST   List certificate/key in module

Description

This command is used to list certificate/key files which has already been downloaded to the module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses

AT+CCERTLIST=?	OK
Execution Command	Responses
AT+CCERTLIST	[<list of files> with "+CCERTLIST:" header <CR><LF>] OK

Defined values

<list of files>
The certificate/key files which has been downloaded to the module.

Examples

AT+CCERTLIST=?
OK
AT+CCERTLIST
+CCERTLIST: "ca_cert.der"
+CCERTLIST: "client_cert.der"
+CCERTLIST: "client_key.der"
+CCERTLIST: "server_cert.pem"
+CCERTLIST: "server_key.pem"
OK

18.10.3 AT+CCERTDELE   Delete certificate/key in the module

Description

This command is used to delete a certificate/key file in the module.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCERTDELE=?	OK
Write Command	Responses

| AT+CCERTDELE=<filename> | OK |
| | ERROR |

Defined values

| <filename> |
| String with or with double quotes, file name which is relative and already existing. |

Examples

| *AT+CCERTDELE="server_key.pem"* |
| *OK* |

18.10.4 AT+CSSLCA   Set the CA used in the module

Description

This command is used to set the CA used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

| SIM PIN | References |
| YES | Vendor |

Syntax

Test Command	Responses
AT+CSSLCA=?	OK
Read Command	Response
AT+CSSLCA?	(list of +SSLCA: <chain_index>,<filename>s)
	OK
	ERROR
Write Command	Responses
AT+CSSLCA=<chain_index>,<filename>	OK
	ERROR

Defined values

| <chain_index> |
| The index of CA in the chain. It's range is from 0 to 3. |
| <filename> |
| The name of the CA file. |

Examples

AT+CSSLCA=0, "rootca.der"

OK

AT+CSSLCA=1,"intermediate.der"

OK

18.10.5 AT+CSSLCERT   Set the certificate file used in the module

Description

This command is used to set the certificate file used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSSLCERT=?	OK
Read Command	**Response**
AT+CSSLCERT?	+CSSLCERT: \<filename\>,\<ca_chain_index\>
	OK
	ERROR
Write Command	**Responses**
AT+CSSLCERT=\<filename\>,\<ca_chain_index\>	OK
	ERROR

Defined values

\<ca_chain_index\>

The index of CA file in the chain. It's range is from 0 to 3. The \<filename\> certificate file has been signed using this CA file.

\<filename\>

The name of the certificate file.

Examples

AT+CSSLCERT="mycert.der",0

OK

18.10.6 AT+CSSLKEY   Set the key file used in the module

Description

This command is used to set the key file used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSSLKEY=?	OK
Read Command	**Response**
AT+CSSLKEY?	+CSSLKEY: \<filename\>,\< sll_key_type \> OK
	ERROR
Write Command	**Responses**
AT+CSSLKEY=\<filename\>, \<sll_key_type\>	OK
	ERROR

Defined values

\<filename\>
The name of the key file.
\<sll_key_type\>
0 - SSL_KEY_TYPE_RSA
1 - SSL_KEY_TYPE_DSA

Examples

AT+CSSLKEY="myKEY.der",1
OK

18.10.7 AT+CSSLLOADCK   Load certificate/key

Description

This command is used to load the certificate/key files which has been set using AT+CSSLCA/AT+CSSLCERT/AT+CSSLKEY. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSSLLOADCK=?	OK

Execution Command	Responses
AT+CSSLLOADCK	OK
	ERROR

Examples

AT+CSSLLOADCK=?
OK
AT+CSSLLOADCK
OK

19 MMS Commands

The maximum of recipients, copy-to recipients, and secret recipients are respective 20. The maximum length of recipients' number is 60.

19.1 AT+CMMSCURL   Set the URL of MMS center

Description

This command is used to set the URL of MMS center.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSCURL=?	+CMMSCURL:"URL" OK

Read Command	Responses
AT+CMMSCURL?	+CMMSCURL: "<mmscurl>" OK

Write Command	Responses
AT+CMMSCURL="<mmscurl>"	OK ERROR +CME ERROR: <err>

Defined values

<mmscurl>
The URI of MMS center, not including http://.The max length of <mmscurl> is 40 byes.

Examples

AT+CMMSCURL=" mmsc.monternet.com"
OK
AT+CMMSCURL?
+CMMSCURL:" mmsc.monternet.com"
OK
AT+CMMSCURL=?
+CMMSCURL:"URL"

OK

19.2 AT+CMMSPROTO   Set the protocol parameters and MMS proxy

Description

This command is used to set the protocol parameters and MMS proxy address.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSPROTO=?	+CMMSPROTO: (0,1),"(0-255).(0-255).(0-255).(0-255)",(0-65535) OK
Read Command	**Responses**
AT+CMMSPROTO?	+CMMSPROTO: <type>,<gateway>,<port> OK
Write Command	**Responses**
AT+CMMSPROTO=<type> [,<gateway>,<port>]	OK ERROR +CME ERROR: <err>

Defined values

<type>
The application protocol for MMS:
0 – WAP
<u>1</u> – HTTP
<gateway>
IP address of MMS proxy
<port>
Port of MMS proxy

Examples

AT+CMMSPROTO=0,"10.0.0.172",9201

OK

AT+CCMMSPROTO?

+CMMSPROTO: 0,"10.0.0.172",9201

OK
AT+CMMSPROTO=?
+CMMSPROTO: (0,1),"(0-255).(0-255).(0-255).(0-255)",(0-65535)
OK

19.3 AT+CMMSSENDCFG   Set the parameters for sending MMS

Description

This command is used to set the parameters for sending MMS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSENDCFG=?	+CMMSSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4) OK

Read Command	Responses
AT+CMMSSENDCFG?	+CMMSSENDCFG: <valid>,<pri>,<sendrep>,<readrep>,<visible>,<class> OK

Write Command	Responses
AT+CMMSSENDCFG=<valid>,<pri>,<sendrep>,<readrep>,<visible>,<class>	OK ERROR +CME ERROR: <err>

Defined values

<valid>
The valid time of the sent MMS:

  0 – 1 hour.
  1 – 12 hours.
  2 – 24 hour.
  3 – 2 days.
  4 – 1 week.
  5 – maximum.
  <u>6</u> – Not set (default).

<pri>
Priority:

  0 – lowest.
  1 – normal.
  2 – highest.

<u>3</u>	–	Not set (default)

<sendrep>

Whether need delivery report:

<u>0</u>	–	No (default).
1	–	Yes.

<readrep>

Whether need read report:

<u>0</u>	–	No (default).
1	–	Yes.

<visible>

Whether to show the address of the sender:

0	–	hide the address of the sender.
1	–	Show the address of the sender even if it is a secret address.
<u>2</u>	–	Not set (default).

<class>

The class of MMS:

0	–	personal.
1	–	advertisement.
2	–	informational.
3	–	auto.
<u>4</u>	–	Not set (default).

Examples

AT+CMMSSENDCFG=6,3,1,1,2,4
OK

AT+CMMSSENDCFG?
+CMMSSENDCFG:6,3,1,1,2,4
OK

AT+CMMSSENDCFG=?
+CMMSSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4)
OK

19.4 AT+CMMSEDIT   Enter or exit edit mode

Description

This command is used to enter or exit edit mode of mms.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSEDIT=?	+CMMSEDIT: (0,1) OK

Read Command	Responses
AT+CMMSEDIT?	+CMMSEDIT: \<mode> OK

Write Command	Responses
AT+CMMSEDIT=\<mode>	OK ERROR +CME ERROR: \<err>

Defined values

\<mode>

Whether to allow edit MMS:
    0 – No.
    1 – Yes.

Examples

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

19.5 AT+CMMSDOWN   Download the file data or title from UART

Description

This command is used to download file data to MMS body. When downloading a text file or title from UART, the text file or title must start with \xFF\xFE , \xFE\xFF or \xEF\xBB\xBF to indicate whether it is UCS2 little endian, UCS2 big endian or UTF-8 format.   Without these OCTETS, the text file or title will be regarded as UTF-8 format.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDOWN=?	+CMMSDOWN: "PIC",(1-<max_pdu_size>),"NAME"
	+CMMSDOWN: "TEXT",(1-<max_pdu_size>),"NAME"
	+CMMSDOWN: "AUDIO",(1-<max_pdu_size>),"NAME"
	+CMMSDOWN: "VIDEO",(1-<max_pdu_size>),"NAME"
	+CMMSDOWN: "SDP",(1-<max_pdu_size>)
	+CMMSDOWN: "FILE",(0-8),"FILENAME"
	+CMMSDOWN: "TITLE",(1-40)
	OK
Write Command	**Responses**
AT+CMMSDOWN=<type>, <size>[,<name>] Or AT+CMMSDOWN=<type>, <dir>,<filename>	OK ERROR +CME ERROR: <err>

Defined values

<type>
The type of file to download:

     "PIC"   –   JPG/GIF/PNG/TIFF file.
     "TEXT"   –   plain text file.
     "AUDIO"   –   MIDI/WAV/AMR/MPEG file.
     "VIDEO"   –   3GPP/MP4 file.
     "SDP"   –   application/sdp type
     "FILE"   –   file in the UE.
     "TITLE"   –   subject of the MMS.

<size>
The size of file data needs to download through AT interface.

<name>
The name of the file to download.

<dir>
The directory of the selected file:

     0   –   current directory [refer to AT+FSCD]
     1   –   "*C:/Picture*" directory
     2   –   "*C:/Video*" directory
     3   –   "*C:/VideoCall*" directory
     4   –   "*D:/Picture*" directory
     5   –   "*D:/Video*" directory
     6   –   "*D:/VideoCall*" directory
     7   –   "C:/Audio" directory

	8	–	"D:/Audio" directory

<filename>
The name of the file existing in the UE to download.
<max_pdu_size>
The maximum size of MMS PDU permitted.

Examples

AT+CMMSDOWN=?
+CMMSDOWN: "PIC",(1-102400),"NAME"
+CMMSDOWN: "TEXT",(1-102400),"NAME"
+CMMSDOWN: "AUDIO",(1-102400),"NAME"
+CMMSDOWN: "VIDEO",(1-102400),"NAME"
+CMMSDOWN:"SDP",(1-102400)
+CMMSDOWN: "FILE",(0-8)," FILENAME"
+CMMSDOWN: "TITLE",(1-40)
OK
AT+CMMSDOWN="PIC",20112,"test1.jpg" <CR><LF>
>….(20112 bytes of data transferred in AT interface)
OK
AT+CMMSDOWN="FILE",2," test2.wav"
OK

19.6 AT+CMMSDELFILE   Delete a file within the editing MMS body

Description

This command is used to delete a file within the editing MMS body.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELFILE=?	OK
Write Command	Responses
AT+CMMSDELFILE=<index>	OK
	ERROR
	+CME ERROR: <err>

Defined values

<index>
The index of the file to delete contains in the MMS body.

Examples

AT+CMMSDELFILE=2
OK
AT+CMMSDELFILE=?
OK

19.7 AT+CMMSSEND   Send MMS

Description

This command is used to send MMS. It can only be performed in edit mode of MMS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSEND=?	+CMMSSEND: "ADDRESS" OK
Write Command	Responses
AT+CMMSSEND=<address>	OK +CMMSSEND: 0 ERROR +CME ERROR: <err> Or OK +CMMSSEND :<err>
Execute Command	Responses
AT+CMMSSEND	OK +CMMSSEND:0 ERROR +CME ERROR: <err> or

	OK
	+CMMSSEND :<err>

Defined values

<address>
Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

AT+CMMSSEND="13613623116"
OK
+CMMSSEND:0
AT+CMMSSEND
OK
+CMMSSEND:0
AT+CMMSSEND=" 13613623116"
OK
+CME ERROR: 190
AT+CMMSSEND=2,"13613623116"
+CME ERROR: 177

19.8 AT+CMMSRECP   Add the recipients

Description

This command is used to add the recipients.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSRECP=?	+CMMSRECP: "ADDRESS " OK
Read Command	Responses
AT+CMMSRECP?	+CMMSRECP: (list of <addr>s) OK ERROR +CME ERROR: <err>
Write Command	Responses

AT+CMMSRECP=<addr>	OK
	ERROR
	+CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

AT+CMMSRECP=?
+CMMSRECP: "ADDRESS"
OK
AT+CMMSRECP?
+CMMSRECP:"t1@test.com";"15813862534"
OK
AT+CMMSRECP="13818362596"
OK

19.9 AT+CMMSCC   Add the cc recipients

Description

This command is used to add the cc recipients.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSCC=?	+CMMSCC: "ADDRESS "
	OK
Read Command	**Responses**
AT+CMMSCC?	+CMMSCC: (list of <addr>s)
	OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CMMSCC=<addr>	OK
	ERROR

	+CME ERROR: \<err>

Defined values

\<addr>
Mobile phone number or email address。
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

AT+CMMSCC=?
+CMMSCC: "ADDRESS"
OK
AT+CMMSCC?
+CMMSCC:"t1@test.com";"15813862534"
OK
AT+CMMSCC="13818362596"
OK

19.10   AT+CMMSBCC   Add the secret recipients

Description

This command is used to add the secret recipients.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSBCC=?	+CMMSBCC: "ADDRESS " OK
Read Command	Responses
AT+CMMSBCC?	+CMMSBCC: (list of \<addr>s) OK ERROR +CME ERROR: \<err>
Write Command	Responses
AT+CMMSBCC=\<addr>	OK ERROR +CME ERROR: \<err>

Defined values

<addr>
Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

AT+CMMSBCC=?
+CMMSBCC: "ADDRESS"
OK
AT+CMMSBCC?
+CMMSBCC:"t1@test.com";"15813862534"
OK
AT+CMMSBCC="13818362596"
OK

19.11   AT+CMMSDELRECP   Delete the recipients

Description

This command is used to delete the recipients. The execute command is used to delete all the recipients

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELRECP=?	+CMMSDELRECP: "ADDRESS " OK
Write Command	Responses
AT+CMMSDELRECP=<addr>	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELRECP	OK ERROR +CME ERROR: <err>

Defined values

<addr>

Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

AT+CMMSDELRECP=?
+CMMSDELRECP: "ADDRESS"
OK
AT+CMMSDELRECP
OK
AT+CMMSDELRECP="13818362596"
OK

19.12   AT+CMMSDELCC   Delete the cc recipients

Description

This command is used to delete the cc recipients. The execution command is used to delete all the cc recipients

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELCC=?	+CMMSDELCC: "ADDRESS " OK
Write Command	Responses
AT+CMMSDELCC=<addr>	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELCC	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

AT+CMMSDELCC=?
+CMMSDELCC: "ADDRESS"
OK
AT+CMMSDELCC
OK
AT+CMMSDELCC="13818362596"
OK

19.13   AT+CMMSDELBCC   Delete the secret recipients

Description

This command is used to delete the secret recipients. The execution command is used to delete all the secret recipients

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELBCC=?	+CMMSDELBCC: "ADDRESS " OK
Write Command	Responses
AT+CMMSDELBCC=<addr>	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELBCC	OK ERROR +CME ERROR: <err>

Defined values

<addr>
Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

AT+CMMSDELBCC=?

+CMMSDELRECP: "ADDRESS"

OK

AT+CMMSDELBCC

OK

AT+CMMSDELBCC="13818362596"

OK

19.14   AT+CMMSRECV   Receive MMS

Description

This command is used to receive MMS. It only can be perform in non-edit mode of MMS

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSRECV=?	+CMMSRECV: "LOCATION" OK
Write Command	Responses
AT+CMMSRECV=<location>	OK +CMMSRECV: 0 ERROR +CME ERROR: <err> OK +CME ERROR :<err>

Defined values

<location>
Reported by +WAP_PUSH_MMS message

Examples

AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"

OK

+CMMSRECV: 0

AT+CMMSRECV= http://211.136.112.84/MI76xou_anB"

OK

+CME ERROR: 190

AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"

+CME ERROR: 177

19.15 AT+CMMSVIEW View the information of MMS from the inbox or the memory

Description

This command is used to view the information of MMS from the inbox or the memory. The title part of the MMS is formatted with UCS2 little endian character set.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSVIEW=?	+CMMSVIEW: (0,1) OK

Write Command	Responses
AT+CMMSVIEW=\<index\>	+CMMSVIEW:\<mmstype\>,"\<sender\>","\<receipts\>","\<ccs\>","\<bccs\>","\<datetime\>","\<subject\>",\<size\>\<CR\>\<LF\>list of [\<fileIndex\>, \<name\>, \<type\>, \<filesize\>]\<CR\>\<LF\> OK ERROR +CME ERROR: \<err\>

Execute Command	Responses
AT+CMMSVIEW	+CMMSVIEW:\<mmstype\>,"\<sender\>","\<receipts\>","\<ccs\>","\<bccs\>","\<datetime\>","\<subject\>",\<size\>\<CR\>\<LF\>list of [\<fileIndex\>, \<name\>, \<type\>,\<fileSize\>]\<CR\>\<LF\> OK ERROR +CME ERROR: \<err\>

Defined values

\<index\>
The index of MMS.
\<mmstype\>

The state of MMS:
  0 – Received MMS.
  1 – Sent MMS.
  2 – Unsent MMS.

\<sender\>
The address of the sender

<receipts>
The list of the recipients separated by ";"
<ccs>
The list of cc recipients separated by ";"
<bccs>
The list of secret recipients separated by ";"
<datetime>
For received MMS, it is the time indication when you received the MMS. For other MMS, it is the time indication when you create the MMS.
<subject>
The title of MMS.
<size>
The data size of MMS.
<fileIndex>
The index of each file contained in the MMS body
<name>
The name of each file contained in the MMS body
<type>

The type of each file contained in the MMS body:
    1 – unknown type.
    2 – text.
    3 – text/html.
    4 – text/plain.
    5 – image.
    6 – image/gif.
    7 – image/jpg.
    8 – image/tif.
    9 – image/png.
    10 – audio/midi.
    11 – audio/x-wav.
    12 – audio /amr.
    13 – audio /mpeg.
    14 – video /mp4.
    15 – video /3gpp.
    29 – application/sdp.
    30 – application/smil.

<fileSize>
The size of each file contained in the MMS body

Examples

AT+CMMSVIEW=?

+CMMSVIEW: (0,1)

OK
AT+CMMSVIEW
+CMMSVIEW:2,"",,,,"0000-00-00 00:00:00","dsidfisids",83867

0,"1.txt",4,10

1,"80.jpg",7,83794

OK
AT+CMMSVIEW=1
+CMMSVIEW:0,"",,,,"2009-03-10 10:06:12","my title",83867

0,"1.txt",4,10

1,"80.jpg",7,83794

OK

19.16   AT+CMMSREAD   Read the given file of MMS in the

memory

Description

This command is used to read the given file of MMS in the memory. When reading a text file, it will be converted to UCS2 little endian before final UART output.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSREAD=?	OK

Write Command	Responses
AT+CMMSREAD=<index>	+CMMSREAD:<name>,<datSize>
	<FileContent>
	OK
	ERROR
	+CME ERROR: <err>

Defined values

<index>
The index of the given file contained in the MMS body
<name>
The name of the given file contained in the MMS body
<datSize>

The size of the given file contained in the MMS body

<FileContent>

The content of the file to be read

Examples

AT+CMMSREAD=?

OK

AT+CMMSREAD=3

+CMMSREAD:"1.jpg",83794

…(File Content)

OK

19.17   AT+CMMSSNATCH   Snatch the given file in MMS

Description

This command is used to snatch the given file of MMS in memory, and save it to UE file system. If the input file name already exists in the selected directory, it will fail.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSNATCH=?	OK

Write Command	Responses
AT+CMMSSNATCH=<index>,<dir>,"<filename>"	OK ERROR +CME ERROR: <err>

Defined values

<index>

The index of the given file contained in the MMS body

<dir>

The directory of the selected file:

    0 – current directory[refer to AT+FSCD]

    1 – "*C:/Picture*" directory

    2 – "*C:/Video*" directory

    3 – "*C:/VideoCall*" directory

4 – "*D:/Picture*" directory

5 – "*D:/Video*" directory

6 – "*D:/VideoCall*" directory

7 – "C:/Audio" directory

8 – "D:/Audio" directory

<filename>

The name of the given file contained in the MMS body

Examples

AT+CMMSSNATCH=?
OK
AT+CMMSSNATCH=3,2,"mylocalfile.jpg"
OK

19.18   AT+CMMSSAVE   Save the MMS to a mail box

Description

This command is used to save the selected MMS into a mailbox.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSAVE=?	+CMMSSAVE: (0-1),(0-2) OK
Write Command	Responses
AT+CMMSSAVE=<index>[,<mmstype>]	+CMMSSAVE: <index> OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSSAVE	+CMMSSAVE: <index> OK ERROR +CME ERROR: <err>

Defined values

<index>

The index of mail box is selected to save the MMS

<mmstype>
The status of MMS:
0 – Received MMS.
1 – Sent MMS.
<u>2</u> – Unsent MMS.

Examples

AT+CMMSSAVE=?
+CMMSSAVE: (0-1),(0-2)
OK
AT+CMMSSAVE=1
+CMMSSAVE: 1
OK

19.19   AT+CMMSDELETE   Delete MMS in the mail box

Description

This command is used to delete MMS in the mailbox. The execute command is used to delete all MMS in the mailbox.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSDELETE=?	+CMMSDELETE: (0-1) OK

Write Command	Responses
AT+CMMSDELETE?	+CMMSDELETE: <mmsNum> OK ERROR +CME ERROR: <err>

Write Command	Responses
AT+CMMSDELETE=<index>	OK ERROR +CME ERROR: <err>

Execute Command	Responses
AT+CMMSDELETE	OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of the mail box, where is selected to save the MMS.
<mmsNum>
The number of MMS saved in the mail box

Examples

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

19.20   AT+CMMSSYSSET   Configure   MMS   transferring

parameters

Description

This command is used to configure MMS transferring setting.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSYSSET=?	+CMMSSYSSET: (10240-<max_pdu_size>),(512-4096),(512-4096),(1-<wap_send_buf_count>) OK
Write Command	Responses
AT+CMMSSYSSET?	+CMMSSYSSET: <max_pdu_size>,<wap_send_buf_size>,<wap_recv_buf_size>,<wap_send_buf_count> OK
Write Command	Responses
AT+CMMSSYSSET=<max_pdu_size>[,<wap_send_buf_size>[,<wap_recv_buf_size>	OK ERROR +CME ERROR: <err>

[,<wap_send_buf_count>]]]

Defined values

< max_pdu_size >
The maximum MMS pdu size allowed by operator.
<wap_send_buf_size>
The length of WTP PDU for sending
<wap_recv_buf_size>
The length of WTP PDU for receiving
<wap_send_buf_count>
The count of buffers for WTP sending in group

Examples

AT+CMMSSYSSET=?
+CMMSSYSSET: (10240-307712),(512-4096),(512-4096),(1-8)
OK
AT+CMMSSYSSET?
+CMMSSYSSET:102400,1460,1500,6
OK
AT+CMMSSYSSET=102400,1430,1500,8
OK
AT+CMMSSYSSET=102400
OK

19.21   AT+CMMSINCLEN   Increase the length of audio/video attachment header

Description

This command is used to increase the length of video/audio attachment header length in the length indicator field. This command is used to be compatible with some operators. This command must be set before calling AT+CMMSEDIT=1.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSINCLEN=?	+CMMSINCLEN: (0,1) OK
Read Command	Responses

AT+CMMSINCLEN?	+CMMSINCLEN: <mode>
	OK
Write Command	Responses
AT+CMMSINCLEN=<mode>	OK
	ERROR
	+CME ERROR: <err>

Defined values

<mode>
Whether to increase the length:
0 – No.
1 – Yes.

Examples

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

19.22   AT+CMMSUA   Set the User-Agent of MMS packet

Description

This command is used to set the User-Agent of MMS packet.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSUA=?	+CMMSUA: "UserAgent"
	OK
Read Command	Responses
AT+CMMSUA?	+CMMSUA: "<useragent>"
	OK
Write Command	Responses
AT+CMMSUA="<useragent	OK

| >" | ERROR |
| | +CME ERROR: <err> |

Defined values

| <useragent> |
| The User-Agent of MMS packet. The maximum length is 511 bytes. |

Examples

| *AT+CMMSUA=" Test my UserAgent"* |
| *OK* |
| *AT+CMMSUA?* |
| *+CMMSUA: " Test my UserAgent"* |
| *OK* |
| *AT+CMMSUA=?* |
| *+CMMSUA: " UserAgent"* |
| *OK* |

19.23   AT+CMMSPROFILE   Set the User-Agent profile of MMS

packet

Description

This command is used to set the User-Agent profile of MMS packet.

| SIM PIN | References |
| YES | Vendor |

Syntax

Test Command	Responses
AT+CMMSPROFILE=?	+CMMSPROFILE:"UserAgentProfile"
	OK
Read Command	Responses
AT+CMMSPROFILE?	+CMMSPROFILE: "<profile>"
	OK
Write Command	Responses
AT+CMMSPROFILE="<profile>"	OK
	ERROR
	+CME ERROR: <err>

Defined values

The User-Agent profile of MMS packet. The maximum length is 511 bytes.

Examples

AT+CMMSPROFILE=" Test my UserAgent profile"

OK

AT+CMMSPROFILE?

+CMMSUA:" Test my UserAgent profile"

OK

AT+CMMSPROFILE=?

+CMMSPROFILE:"UserAgent profile"

OK

19.24   Supported Unsolicited Result Codes in MMS

Description

This section lists all the unsolicited result code in MMS module.

19.24.1 Indication of Sending/Receiving MMS

MMS Sending	Description
+CMMSSEND:<err>	This indication means the result of sending MMS. If successful, it reports +CMMSSEND:0, or else, it report +CMMSSEND:<err>
MMS Notification	**Description**
+WAP_PUSH_MMS:<sender>,<transaction_id>,<location>,<timestamp>,<class>,<size>	This indication means there is a new MMS received in the MMS center.
MMS Receiving	**Description**
+CMMSRECV:<err>	This indication means the result of receiving MMS. If successful, it reports +CMMSRECV:0, or else, it reports +CMMSRECV:<err>

Defined values

< sender>
The sender address of the received MMS
<transaction_id>
The X-Mms-Transaction-ID of the received MMS
<location>
The X-Mms-Content-Location of the received MMS

<timestamp>
The timestamp of the WAP push message
<class>
The X-Mms-Class of the received MMS
0 – Expired
1 – Retrieved
2 – Rejected
3 – Deferred
4 – Unrecognized
<size>
The size of the received MMS

Examples

+WAP_PUSH_MMS
+WAP_PUSH_MMS: "15001844675","RROpJGJVyjeA","http://211.136.112.84/RROpJGJVyjeA"
,"09/03/17,17:14:41+32",0,13338

19.24.2 Summary of CME ERROR Codes for MMS

Code of <err>	Description
201	Unknown error for mms
171	MMS task is busy now
172	The mms data is over size
173	The operation is over time
174	There is no mms receiver
175	The storage for address is full
176	Not find the address
177	Invalid parameter
178	Failed to read mms
179	There is not a mms push message (reserved)
180	Memory error
181	Invalid file format
182	The mms storage is full
183	The box is empty
184	Failed to save mms
185	Busy editing mms now
186	Not allowed to edit now
187	No content in the buffer
188	Failed to receive mms
189	Invalid mms pdu
190	Network error

191	Failed to read file in UE

20 GPS Related Commands

20.1 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. You can configure NMEA or UART port for output by using AT+CGPSSWITCH. 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

20.2 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.0
<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,250311,072809.0,44.1,0.0,0

OK

20.3 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

20.4 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

20.5 AT+CGPSSWITCH   Configure output port for NMEA sentence

Description

This command is used to choose the output port and baudrate for NMEA sentence.

NOTE: Support NMEA output over the UART, UART2 or NMEA port. You can choose only one port for the NMEA sentence. It takes effect after restarting.

If host want print GPS info to UART or UART2, then must be pull down DTR.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSSWITCH=?	+CGPSSWITCH: (list of supported <port>s), (list of supported <baudrate>s) OK
Read Command	Responses
AT+CGPSSWITCH?	+CGPSSWITCH: <port>, <baudrate> OK
Write Command	Responses
AT+CGPSSWITCH=<port> [,<baudrate>]	OK
	ERROR
Execution Command	Responses
AT+CGPSSWITCH	OK

Defined values

<port>
1   –   NMEA ports

| | 2 | – | UART ports |
| | 3 | – | UART2 ports |

<baudrate>

4800,9600,19200,38400,57600,<u>115200</u>,230400,460800

Examples

AT+CGPSSWITCH=?
+CGPSSWITCH:(1,2,3), (4800,9600,19200,38400,57600,115200,230400,460800)
OK
AT+CGPSSWITCH=1
OK
  Note: baudrate will be use last setting value.
AT+CGPSSWITCH=1,115200
OK
AT+CGPSSWITCH?
+CGPSSWITCH:1, 115200
OK

20.6 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

20.7 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

20.8 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

20.9 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

20.10　　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

20.11   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

20.12   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

20.13　　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

20.14　　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

20.15   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*

20.16   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

20.17   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 to511. 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)
     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.
 For example:
 If want to report GPRMC sentence by 10 seconds, should execute AT+CGPSINFOCFG=10,2

Examples

AT+CGPSINFOCFG=?
+CGPSINFOCFG: (0-255),(0-511)
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*

20.18   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

20.19 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

20.20 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

20.21   AT+CPPS   Configure pulse per second

Description

This command is used to configure the pulse per second. One(now is GPIO44 ONLY) pin pulsing every second for time synchronization while using GNSS feature, and it must fix the position. It meanders with 200ms peak length every second.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CPPS=?	+CPPS: (scope of <on/off>),44 OK

Read Command	Responses
AT+CPPS?	+CPPS: <on/off>,44
	OK
Write Command	Responses
AT+CPPS=<on/off>,44	OK
	ERROR

Defined values

<on/off>
0 – disable PPS
1 – enable PPS
Default value is 0
44 – ONLY GPIO44 is available now

Examples

AT+CPPS=1,44
OK

20.22   AT+CGPSMODE   Configure GPS and GLONASS mode

Description

This command is used to configure GPS and GLONASS start mode, so if you configured by this command, you should reboot the device.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSMODE=?	+CGPSMODE: (scope of <mode>)
	OK
Read Command	Responses
AT+CGPSMODE?	+CGPSMODE: <mode>
	OK
Write Command	Responses
AT+CGPSMODE=<mode>	OK
	ERROR

Defined values

<mode>
0 – GPS and GLONASS hybrid, DPO is enabled, when position fixed, GLONASS will be closed
1 – GPS only
2 – GPS and GLONASS hybrid,DPO is disabled
Default value is 0

Examples

AT+CGPSMODE=0
OK

20.23   Unsolicited XTRA download Codes

Code of <err>	Description
0	Assistant file download successfully
1	Assistant file doesn't exist
2	Assistant file check error
220	Unknown error for HTTP
221	HTTP task is busy
222	Failed to resolve server address
223	HTTP timeout
224	Failed to transfer data
225	Memory error
226	Invalid parameter
227	Network error
220~227 codes are same as Unsolicited HTTP codes	

20.24   Cell Assistant Location

20.24.1 AT+CASSISTLOC   Start/Stop assist location

Description

This command is used to start or stop the assist location. When start, it will connect Google server and post request, then receive response. When stop, it will stop the location and release the resource.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CASSISTLOC=?	+CASSISTLOC: (0-2),(1-16),(language),(1-24*60*60) OK
	ERROR
Execution Command	Responses
AT+CASSISTLOC=\<autorun\>[,\<cid\>[,\<language\>[,\<time_between_fix\>]]]	*1. If autorun = 0:* OK +CASSISTLOC: \<return code\> *2. If autorun = 1:* *a. If cassistlocformat = 0 or cassistlocformat = 1 and the \<charset\> not supported:* OK +CASSISTLOC:\<charset\>,\<latitude\>,\<longitude\>,\<altitude\>,\<accuracy\>,\<altitude_accuracy\>,\<street_num\>,\<street\>,\<premises\>,\<city\>,\<county\>,\<region\>,\<country\>,\<country_code\>,\<postal_code\>,\<date\>,\<GMT time\> +CASSISTLOC: \<return code\> *b. If cassistlocformat = 1:* OK +CASSISTLOC: \<latitude\>,\<longitude\>,\<altitude\>,\<accuracy\>,\<altitude_accuracy\>,\<date\>,\<GMT time\> +CASSISTLOC: \<return code\> *c. If cassistlocformat = 2:* +CASSISTLOC: \<latitude\>,\<longitude\>,\<date\>,\<GMT time\> +CASSISTLOC: \<return code\> *3. If autorun = 2:* *a. If cassistlocformat = 0 or cassistlocformat = 1 and the \<charset\> not supported:* OK +CASSISTLOC:\<charset\>,\<latitude\>,\<longitude\>,\<altitude\>,\<accuracy\>,\<altitude_accuracy\>,\<street_num\>,\<street\>,\<premises\>,\<city\>,\<county\>,\<region\>,\<country\>,\<country_code\>,\<postal_code\> +CASSISTLOC:\<charset\>,\<latitude\>,\<longitude\>,\<altitude\>,\<accuracy\>,\<altitude_accuracy\>,\<street_num\>,\<street\>,\<premises\>,\<city\>,\<county\>,\<region\>,\<country\>,\<country_code\>,\<postal_code\>,\<date\>,\<GMT time\>

	…… 　　*b. If cassistlocformat = 1:* +CASSISTLOC: \<latitude\>,\<longitude\>,\<altitude\>,\<accuracy\>,\<altitude_accuracy\> ,\<date\>,\<GMT time\> … … 　　*c. If cassistlocformat = 2:* +CASSISTLOC: \<latitude\>,\<longitude\>,\<date\>,\<GMT time\> … …
	If ERROR occurred
	OK +CASSISTLOC：\<return code\>
	+CASSISTLOC：\<return code\> ERROR

Defined values

< autorun >
0　–　stop location 　　1　–　start location, only once 　　2　–　start cycle location
< cid >
network parameters, refer to AT+CGSOCKCONT. Not required, the default value is 1.
< language >
accept language. Refer to Google standard: en_GB, zh_CN and so on. Not required, the default value is en_GB
< time_between_fix >
Time interval of fix(second)，range: 1 second – 24 hours. Not required, the default value is 1 second.
< charset >
charset for URC(not include the Date and Time). ASCII, UTF-8 and so on.
< latitude >
Latitude of current position in degrees.
< longitude >
Longitude of current position in degrees.
< altitude >
Altitude of the fix. Unit is meters (not required).

< accuracy >
The horizontal accuracy of the fix, in meters at a 95% confidence level. This is required unless the request specified a valid location object, i.e. a request for a reverse-genocide of a known position(not required)
< altitude_accuracy >
The accuracy of the altitude, in meters(not required)
< street_num >
The building's street number(not required)
< street >
Street name(not required)
< premises >
Premises, e.g. building name(not required)
< city >
City name(not required)
< county >
County name (not required).
< region >
Region, e.g. a state in the US(not required)
< country >
Country(not required)
< country_code >
Country code(not required)
< postal_code >
Postal code. This is the zip code in the US and postcode in the UK(not required).
< date >
Date when get the address information. Output format is ddmmyy.
< GMT time >
GMT Time when get the address information. Output format is hhmmss.
< return code >
The result code of the location.
0 – OK
1 – Unknow error
2 – Invalid parma error
3 – Bad got error
4 – network error
5 – busy error
6 – not run error
NOTE:
1. When <autorun> is set to 0 and the others parameters not be given (AT+CASSISTLOC=0), the command is to stop the location.
2. When <autorun> is set to 1 or 2, <cid> is required, but <language>, < time_between_fix> is not required.
3. When <autorun> is set to 2 and there is an error occurred, there is not an error report, the location

is continuing.

4. The < charset > is only applicable to the address information, not include the <date> and <GMT time>.

5. The coding format of <date> and <GMT time> is ASCII.

6. When AT+CASSISTLOCFORMAT=0 or 1, it will access http://www.google.com/loc/json to request the location information; But when AT+ CASSISTLOCFORMAT=2, it will access http://www.google.com/glm/mmap to request the location information.

7. In the cell location process, it will query the DNS. The timeout value of querying DNS is 70s, customer can call AT+CIPDNSSET to the timeout value for performing DNS query. The best timeout value for performing DNS query less than 70s. The AT+CIPDNSSET instruction for use can refer the "Set DNS maximum timeout value" in "TCPIP Application Note for WCDMA Solution".

Examples

AT+CASSISTLOC=?

+ CASSISTLOC: (0-2) , (1-16),(language),(1-24*60*60)

OK

AT+CASSISTLOC=1,2,"zh_CN"

OK

+CASSISTLOC:UTF-8,33312E32323137363537,3132312E33353532343739,,3734322E30,,,E58D8FE5928CE8B7AF,,E4B88AE6B5B7E5B882,,E4B88AE6B5B7E5B882,E4B8ADE59BBD,434E, ,150612,093747

+CASSISTLOC: 0

AT+CASSISTLOC=2,1,"en_GB",2

OK

+CASSISTLOC:,,,,,,,,,,,,,,

+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,5869656865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,150612,093747

+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,5869656865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,150612,093747

AT+CASSISTLOC=0

OK

+CASSISTLOC: 0

AT+CASSISTLOC=0

+CASSISTLOC: 6

ERROR

20.24.2 AT+CASSISTLOCFORMAT Set assist location report information's format

Description

This command is used to set the format of the report information.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CASSISTLOCFORMAT=?	+CASSISTLOCFORMAT: (0-2) OK

Read Command	Responses
AT+CASSISTLOCFORMAT?	+CASSISTLOCFORMAT: <mode> OK

Write Command	Responses
AT+CASSISTLOCFORMAT=<mode>	OK
	ERROR

Defined values

<mode>
0 – report detail address
1 – not report detail address
2 – only report latitude, longitude, data and time

Examples

AT+CASSISTLOCFORMAT=?
+CASSISTLOCFORMAT: (0-2)
OK
AT+CASSISTLOCFORMAT?
+ CASSISTLOCFORMAT: 0
OK
AT+ CASSISTLOCFORMAT=1
OK
NOTE:
1. When AT+CASSISTLOCFORMAT=0, the report location information is as follow:
+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,5869656865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,150612,093747

2.When AT+CASSISTLOCFORMAT=*1, the report location information is as follow:*
+CASSISTLOC:31.2224168,121.353584,,1029.0,,050912,064437

3. When AT+CASSISTLOCFORMAT=1, and if the charset returned by the server is not
supported, the report location information is the same as AT+CASSISTLOCFORMAT=0.

4. When AT+CASSISTLOCFORMAT =2, the report location information is as follow:
+CASSISTLOC: 31.222163,121.353461,291112,060037

5. When AT+CASSISTLOCFORMAT=0 or 1, it will access http://www.google.com/loc/json to request the location information; But when AT+ CASSISTLOCFORMAT=2, it will access http://www.google.com/glm/mmap to request the location information.

6. When AT+CASSISTLOCFORMAT =2, the <language> parameter of AT+CASSISTLOC command is ignored and can be not set.

20.24.3 AT+CASSISTLOCTRYTIMES   Set retry times

Description

This command is used to set the max number to try connection when the http connects if failed.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CASSISTLOCTRYTIM ES=?	+CASSISTLOCTRYTIMES: (2-10),(5-60*60) OK
Read Command	Responses
AT+CASSISTLOCTRYTIM ES?	+CASSISTLOCTRYTIMES: <num>,<time> OK
Execution Command	Responses
AT+CASSISTLOCTRYTIM ES=<num>[, <time>]	OK
	ERROR

Defined values

< num >
the number to retry when error occurred
< time >
The time between tries. The unit is second, range is 5 - 60*60.

Examples

AT+CASSISTLOCTRYTIMES=?	
*+CASSISTLOCTRYTIMES: (2-10),(5-60*60)*	
OK	
AT+CASSISTLOCTRYTIMES?	
+CASSISTLOCTRYTIMES: 3,5	
OK	
AT+CASSISTLOCTRYTIMES=3,10	
OK	

20.24.4 AT+CASSISTLOCMODE   Set assist location mode

Description

This command is used to set the mode of location.

SIM PIN	References
YES	Vendor

Syntax

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

Defined values

<mode>
0 – using single cell
1 – using more cell
NOTE:
When AT+CASSISTLOCFORMAT=2, the AT+CASSISTLOCMODE only support <mode>=0.

Examples

AT+CASSISTLOCMODE=?

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

21 Voice Mail Related Commands

The module supports voice mail AT commands.

21.1 AT+CSVM   Subscriber number

Description

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

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CSVM=?	+CSVM: (0-1), "(0-9,+)", (128-255) OK

Read Command	Responses
AT+CSVM?	+CSVM: <valid>, "<number>",<type> OK
	ERROR

Write Command	Responses
AT+CSVM=<valid>, "<number>",<type>	OK
	ERROR

Defined values

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

Examples

AT+CSVM?
+CSVM: 1 ,"13697252277",129
OK

21.2 Indication of Voice Mail

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

Defined values

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

Examples

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

22　EONS Related AT commands

The module supports EONS function.

22.1　Indication of EONS

OPL INIT	Description
OPL DONE	This indication means EF-OPL has been read successfully. Only after this URC is reported, the AT+COPS? can query the network name that supports EONS function.

PNN INIT	Description
PNN DONE	This indication means EF-PNN has been read successfully

OPL UPDATING	Description
OPL UPDATING	This indication means the EF-OPL is updating using OTA message. After updating, the "OPL DONE" should report.

PNN UPDATING	Description
PNN UPDATING	This indication means the EF-PNN is updating using OTA message. After updating, the "PNN DONE" should report.

23　Audio Application Commands

23.1　AT+CQCPREC　Start recording sound clips

Description

The command is used to start recording sound clip. The name of audio file will be generated automatically based on system time [refer AT+CCLK], and the storage location of audio file refers to AT+FSLOCA.

NOTE: If recording during a call, the <type> will set automatically refer to the call vocoder.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CQCPREC=?	+CQCPREC: (list of supported <source>s), (list of supported

	\<format>s), (list of supported \<type>s)
	OK
Write Command	Responses
AT+CQCPREC=\<source>,\<format>,[\<type>]	\<path_name>
	+AUDIOSTATE: audio record
	OK
	ERROR

Defined values

\<source>
0 – local path
1 – remote path
\<format>
Format of the audio file:
amr – AMR format
qcp – QCP format
wav – WAV format
\<type>
Audio file format type:
10 – 4.75kbit/s AMR type QCP format
11 – 5.15kbit/s AMR type QCP format
12 – 5.9kbit/s AMR type QCP format
13 – 6.7kbit/s AMR type QCP format
14 – 7.4kbit/s AMR type QCP format
15 – 7.95kbit/s AMR type QCP format
16 – 10.2kbit/s AMR type QCP format
17 – 12.2kbit/s AMR type QCP format
18 – 4.75kbit/s AMR type with DTX enabled QCP format
19 – 5.15kbit/s AMR type with DTX enabled QCP format
20 – 5.9kbit/s AMR type with DTX enabled QCP format
21 – 6.7kbit/s AMR type with DTX enabled QCP format
22 – 7.4kbit/s AMR type with DTX enabled QCP format
23 – 7.95kbit/s AMR type with DTX enabled QCP format
24 – 10.2kbit/s AMR type with DTX enabled QCP format
25 – 12.2kbit/s AMR type with DTX enabled QCP format
26 – 4.75kbit/s AMR type AMR format
27 – 5.15kbit/s AMR type AMR format
28 – 5.9kbit/s AMR type AMR format
29 – 6.7kbit/s AMR type AMR format
30 – 7.4kbit/s AMR type AMR format
31 – 7.95kbit/s AMR type AMR format

32 – 10.2kbit/s AMR type AMR format

<u>33</u> – 12.2kbit/s AMR type AMR format

34 – 4.75kbit/s AMR type with DTX enabled AMR format

35 – 5.15kbit/s AMR type with DTX enabled AMR format

36 – 5.9kbit/s AMR type with DTX enabled AMR format

37 – 6.7kbit/s AMR type with DTX enabled AMR format

38 – 7.4kbit/s AMR type with DTX enabled AMR format

39 – 7.95kbit/s AMR type with DTX enabled AMR format

40 – 10.2kbit/s AMR type with DTX enabled AMR format

41 – 12.2kbit/s AMR type with DTX enabled AMR format

<u>42</u> – EFR QCP format

43 – FR QCP format

44 – HR QCP format

<path_name>
If saved in ME:
"C:/Audio/YYYYMMDD_HHMMSS.amr"
If saved in SD card:
"D:/Audio/YYYYMMDD_HHMMSS.amr".

Examples

AT+CQCPREC= 0,amr
C:/Audio/20080520_120303.amr
OK

23.2 AT+CQCPPAUSE Pause sound record

Description

The execution command pause record sound.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CQCPPAUSE	+AUDIOSTATE: audio record pause
	OK

Examples

AT+CQCPPAUSE
+AUDIOSTATE: audio record pause

OK

23.3   AT+CQCPRESUME   Resume sound record

Description

The command is used to resume sound record.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CQCPRESUME	+AUDIOSTATE: audio record
	OK

Examples

AT+CQCPRESUME

+AUDIOSTATE: audio record

OK

23.4   AT+CQCPSTOP   Stop sound record

Description

The command is used to stop sound record. Execute the command during recording sound.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CQCPSTOP	+AUDIOSTATE: audio record stop
	OK

Examples

AT+CQCPSTOP

+AUDIOSTATE: audio record stop

OK

23.5 AT+CCMXPLAY Play audio file

Description

The command is used to play an audio file.

NOTE Make sure the file path is "C:/Audio/" or "D:/Audio/" when playing sound by command AT+FSCD.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXPLAY=?	+CCMXPLAY: (list of supported \<play_path\>s),(list of supported \<repeat\>s) OK
Write Command	Responses
AT+CCMXPLAY= \<file_name\>[,\<play_path\>[, \<repeat\>]]	+AUDIOSTATE: audio play OK ERROR

Defined values

\<file_name\>
The name of audio file. Support audio file format midi, mp3, aac, amr, qcp, wav.

\<play_path\>
0 – local path (If \<play_path\> is omitted, default value is used.)
1 – local path during call
2 – remote path during call
3 – both path during call

\<repeat\>
0 – don't play repeat. Play only once.
1…255 – play repeat times. E.g. \<repeat\>=1, audio will play twice.

NOTE \<play_path\>=1, 2 or 3 must be used during call. During call, play file in remote path and both path which audio file format must be same as the voice call codec. The codec refer to AT+CVOC.

Examples

AT+FSCD=Audio
+FSCD: C:/Audio/

OK

AT+FSCD?

+FSCD: C:/Audio/

OK

AT+CCMXPLAY="20080520_120303.amr",0,0

+AUDIOSTATE: audio play

OK

23.6 AT+CCMXPAUSE Pause playing audio file

Description

The command is used to pause playing audio file.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CCMXPAUSE	+AUDIOSTATE: audio play pause
	OK

Examples

AT+CCMXPAUSE

+AUDIOSTATE: audio play pause

OK

23.7 AT+CCMXRESUME Resume playing audio file

Description

The command is used to resume playing audio file.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CCMXRESUME	+AUDIOSTATE: audio play
	OK

Examples

AT+CCMXRESUME
+AUDIOSTATE: audio play
OK

23.8   AT+CCMXSTOP   Stop playing audio file

Description

The command is used to stop playing audio file. Execute this command during audio playing.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CCMXSTOP	+AUDIOSTATE: audio play stop
	OK

Examples

AT+CCMXSTOP
+AUDIOSTATE: audio play stop
OK

23.9   AT+CCMXSPEC   Get the audio file specification

Description

The command is used to get the audio file specification. The storage location of audio file refers to AT+FSLOCA.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXSPEC=?	OK
Write Command	Responses
AT+CCMXSPEC=<file_name>	+CCMXSPEC : <spec>
	OK

	ERROR

Defined values

<file_name>
The name of audio file.

<spec>
0   –   MIDI file
5   –   MP3 file
6   –   AAC file
14   –   AMR QCP file
15   –   EFR QCP file
16   –   FR QCP file
17   –   HR QCP file
18   –   WAVE file
19   –   AMR file
20   –   AMR-WB file
24   –   Unknown file
Other values is reserved

Examples

AT+CCMXSPEC="efr.qcp"
+CCMXSPEC: 15
OK

23.10   AT+CCMXPLAYRING   Play a user-defined ring

Description

The command is used to play a user-defined ring file.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXPLAYRING=?	+CCMXPLAYRING: (list of supported <on/off>s),(list of supported <pause>s) OK

Read Command	Responses
AT+CCMXPLAYRING?	+CCMXPLAYRING: <on/off>,"<file>",<pause> OK

Write Command	Responses
AT+CCMXPLAYRING= <on/off>[,”<file>”,<pause>]	OK
	ERROR

Defined values

<on/off>
0 – disable play user defined ring   1 – enable play user defined ring   **NOTE**   If setting with one parameter, must make user the <file> is existent.
<file>
User-defined ring file whole path. like "C:/Audio/ring1.mp3".
<pause>
0...60 seconds   Time (in second) of silence between repeating of file. (0 for no repeating)

Examples

AT+CCMXPLAYRING=?   *CCMXPLAYRING: (0,1),(0-60)*   *OK*   *AT+CCMXPLAYRING=1,"C:/Audio/ring1.mp3",2*   *OK*   *AT+CCMXPLAYRING?*   *CCMXPLAYRING: 1,"C:/Audio/ring1.mp3",2*   *OK*

23.11   AT+CCMXPLAYWAV   Play wav audio file

Description

This command is used to play a wav audio file. It can play wav file during a call or not.

NOTE   Wav file format require mono channel, 8kHz sampling frequency, 16bit sampling size, 128kbps.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXPLAYWAV=?	+CCMXPLAYWAV: (list of supported <play_path>s),(list of supported <repeat>s)

	OK
Write Command	**Responses**
AT+CCMXPLAYWAV= <file_name>,<play_path>[,< repeat>]	+WAVSTATE: wav play OK *Report URC automatically after playing end* +WAVSTATE: wav play stop ERROR

Defined values

<file_name>
The name of wav audio file.
<play_path>
1 –   remote path   2 –   local path
<repeat>
This parameter is reserved.

Examples

AT+CCMXPLAYWAV="test.wav",2
+WAVSTATE: wav play
OK

23.12 AT+CCMXSTOPWAV Stop playing wav audio file

Description

This command is used to stop playing wav audio file. Execute this command during wav audio playing.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXSTOPWAV=?	OK
Execution Command	**Responses**
AT+CCMXSTOPWAV	[+WAVSTATE: wav play stop] OK

Examples

AT+CCMXSTOPWAV
+WAVSTATE: wav play stop
OK

23.13   AT+CCMXWAVSTATE   Get wav file play state

Description

This command is used to get wav play state.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CCMXWAVSTATE=?	OK

Read Command	Responses
AT+CCMXWAVSTATE?	+CCMXWAVSTATE: <state>
	OK
	ERROR

Defined values

<state>
0   –   wav play stoped
1   –   wav playing

Examples

AT+CCMXWAVSTATE?
+CCMXWAVSTATE: 0
OK

24 CSCRIPT Commands

24.1   AT+CSCRIPTSTART   Start running a LUA script file.

Description

This command is used to start running a LUA script file. The script file must exist in c:\ in the module EFS. This command shouldn't be used by sio LIB in LUA script files.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSCRIPTSTART=?	+CSCRIPTSTART: "FILENAME"[, (list of supported <reportluaerror>s)] OK

Write Command	Responses
AT+CSCRIPTSTART="<filename>"[,"<reportluaerror>"]	OK +CSCRIPT: 0 ERROR OK +CSCRIPT: <err>

Defined values

<filename>
The script file name.

<reportluaerror>
Whether report the LUA compiling error or running error to TE.

    0　–　Not report.

    <u>1</u>　–　Report.

<err>
The error code of running script.

Examples

AT+CSCRIPTSTART="mytest.lua"
OK
+CSCRIPT: 0
AT+CSCRIPTSTART=?
+CSCRIPTSTART: "FILENAME"[,(0-1)]
OK

24.2　　AT+CSCRIPTSTOP　Stop the current running LUA script.

Description

This command is used to stop the current running LUA script. This command shouldn't be used by sio LIB in LUA script files.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSCRIPTSTOP=?	OK

Read Command	Responses
AT+CSCRIPTSTOP?	*If LUA script is running* +CSCRIPTSTOP: "\<filename\>" OK *If there is no LUA script running* OK

Execute Command	Responses
AT+CSCRIPTSTOP	OK ERROR

Defined values

<filename>
The script file name.

Examples

AT+CSCRIPTSTOP?
+CSCRIPTSTOP: "mytest.lua"
OK
AT+CSCRIPTSTOP=?
OK
AT+CSCRIPTSTOP
OK

24.3   AT+CSCRIPTCL   Compile a LUA script file.

Description

This command is used to compile a LUA script file. The script file must exist in c:\ in the module EFS. This command shouldn't be used by sio LIB in LUA script files. If the AT+CSCRIPTPASS is set, the compiled file will be encrypted.

SIM PIN	References

NO	Vendor

Syntax

Test Command	Responses
AT+CSCRIPTCL=?	+CSCRIPTCL: <filename>,<out_filename> OK
Write Command AT+CSCRIPTCL="<filename>"[,"<out_filename>"]	OK +CSCRIPT: 0 ERROR OK +CSCRIPT: <err>

Defined values

<filename>
The script file name.
<out_filename>
The output script file name. If this parameter is empty, the default <out_filename> will be the file name of <filename> with the file extension changed to ".out".
<err>
The error code of running script.

Examples

AT+CSCRIPTCL="mytest.lua"
OK
+CSCRIPT: 0
AT+CSCRIPTCL=?
+CSCRIPTCL: "FILENAME","OUT_FILENAME"
OK

24.4   AT+CSCRIPTPASS   Set the password for +CSCRIPTCL.

Description

This command is used to set the password which will be used for AT+CSCRIPTCL encryption.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CSCRIPTPASS="<old_ password>","<new_passwor d>"	OK ERROR

Defined values

<old_password>
The old password. *The original password for AT+CSCRIPTCL is empty.*
<new_password>
The new password.

Examples

AT+CSCRIPTPASS="","12345678"
OK
AT+CSCRIPTPASS="12345678","123456"
OK

24.5   AT+CSCRIPTCMD   Send data to the running LUA script.

Description

This command is used to send data to the running LUA script

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSCRIPTCMD=?	+CSCRIPTCMD: *CMD1[,CMD2]* OK
Execute Command	Responses
AT+CSCRIPTCMD=<cmd1 >[,<cmd2>]	OK ERROR

Defined values

<cmd1>
An integer value to be sent as the second parameter of EVENT 31 to running LUA script.
<cmd2>
An integer value to be sent as the third parameter of EVENT 31 to running LUA script.

Examples

AT+CSCRIPTCMD=?
+CSCRIPTCMD: CMD1[,CMD2]
OK
AT+CSCRIPTCMD=23,98
OK

24.6 AT+PRINTDIR Set the value of LUA printdir function.

Description

This command is used to set the value of LUA printdir function

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+PRINTDIR=?	+PRINTDIR: (0,1) OK

Read Command	Responses
AT+PRINTDIR?	+PRINTDIR: <mode> OK

Write Command	Responses
AT+PRINTDIR=<mode>	OK ERROR

Defined values

<mode>

The value of printdir:

    0 – print function is disabled.

    1 – print function is enabled.

Examples

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

24.7   AT+CSCRIPTAUTO   Enable/Disable LUA run automatically

Description

This command is used to enable or disable LUA scripts run automatically.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSCRIPTAUTO=?	OK
Read Command	**Responses**
AT+CSCRIPTAUTO?	+CSCRIPTAUTO: \<state\>,\<left_times\> OK
Write Command	**Responses**
AT+CSCRIPTAUTO=\<state\>,[\<max_left_times\>]	OK
	ERROR

Defined values

\<state\>
Enable or disable LUA scripts run automatically: 0 – disalbe LUA scripts run automatically.   1 – enable LUA scripts run automatically.
\<max_left_times\>
Maximum times that LUA scripts can run automatically when powering up. If it is 0, it means unlimited times. Default value is 0.
\<left_times\>
Left times that LUA scripts can run automatically when powering up. If you set max_left_times to 0, this parameter will be displayed as *UNLIMITED*

Examples

AT+CSCRIPTAUTO=1
OK
AT+CSCRIPTAUTO?
+CSCRIPTAUTO: 1,UNLIMITED
OK
AT+CSCRIPTAUTO=?
OK

24.8   Unsolicited CSCRIPT codes

Summary of +CSCRIPT Codes

Code of <err>	Description
0	Success
1	No resource
2	Failed to open the script file
3	Failed to run the script file
4	Failed to compile the script file
5	Virtual machine is busy

25 TTS Related AT commands

25.1   AT+DTAM   Set Local or Remote Audio Play.

Description

This command is used to set local or remote audio play.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+DTAM=?	+DTAM: (0-1) OK
Read Command	Responses
AT+DTAM?	+DTAM: <mode> OK
Write Command	Responses
AT+DTAM=<mode>	OK If error is related to MS functionality,response： +CME ERROR: <err>

Defined values

<mode>		
<u>0</u>	–	Play audio locally.
1	–	Play audo remotely.

<err>
The error code of running script.

Examples

AT+DTAM=1
OK

AT+DTAM?
+DTAM: 1
OK

25.2   AT+CTTS   TTS operation.

Description

This command is used to transform text to audio data and output the voice by multimedia device.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CTTS=?	OK

Read Command	Responses
AT+CTTS?	+CTTS: <status>
	OK

Write Command	Responses
AT+CTTS=<mode>[,<text>]	If <mode> is 0，<text> is null , return：
	OK
	If <mode> is 1 ,2 or 3<text> is't null, return：
	OK
	+CTTS: 0 *//speech synch and play end*

	If error is related to MS functionality,response： +CME ERROR: <err>

Defined values

<status>
0 – Idle mode.
1 – Play mode.
<mode>
<u>0</u> – Stop the speech synch and play.
1 – Start synthetic and play ,<text> is in UCS2 coding format.
2 – Start synthetic and play , <text> is in ASCII coding format.Chinese text is in GBK coding format.
3 – Start synthetic and play Italian , <text> is in ASCII coding format.
<text>
The text which is synthetized to speech to be played,maximum data length is 250 bytes. When The mode is 0, <text> is null.
<err>
The error code of running script.

Examples

AT+CTTS=1,"6B228FCE4F7F75288BED97F3540862107CFB7EDF"
OK
+CTTS: 0
//注释： 欢迎使用语音合成系统
AT+CTTS=2, "欢迎使用语音合成系统"
OK
+CTTS: 0
AT+CTTS=3," Lasiai pensare Ma questo per lui e per i colleghi"
OK
+CTTS: 0
AT+CTTS=0
OK

25.3 AT+CTTSPARAM Set TTS Parameter.

Description

This command is used to TTS parameter.

SIM PIN	References

NO	Vendor

Syntax

Test Command	Responses
AT+CTTSPARAM=?	+CTTSPARAM: (0-2),(0-3),(0-3),(0-2),(0-2) OK

Read Command	Responses
AT+CTTSPARAM?	+CTTSPARAM: \<volume>,\<sysvolume>,\<digitmode>,\<pitch>,\<speed> OK

Write Command	Responses
AT+CTTSPARAM=\<volume>[,\<sysvolume>[,\<digitmode>[,\<pitch>[,\<speed>]]]]	OK If error is related to MS functionality,response: +CME ERROR: \<err>

Defined values

\<volume>
TTS speech volume

    0 – The mix volume.
    <u>1</u> – The normal volume.
    2 – The max volume.

\<sysvolume>
The system volume

    0 – The mix volume.
    1 – The small volume.
    <u>2</u> – The normal volume.
    3 – The max volume.

\<digitmode>
The digit read mode

    <u>0</u> – Auto read digit, and read digit based on number rule first.
    1 – Auto read digit, and read digit based on telegram rule first.
    2 – Read digit based on telegram rule.
    3 – Read digit based on number rule.

\<pitch>
The voice tone.

    0 – The mix voice tone.
    <u>1</u> – The normal voice tone.
    2 – The max voice tone.

\<speed>

The voice speed.

    0   –   The mix voice speed.

    1   –   The normal voice speed.

    2   –   The max voice speed.

<err>

The error code of running script.

Examples

AT+CTTSPARAM=2,2,1,1,1

OK

26 EAT Commands

26.1   AT+CEBDAT   bring the customer application into effect.

Description

This command is used to bring the customer application into effect. The script file must exist in c:\ in the module EFS.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CEBDAT=?	OK

Write Command	Responses
AT+CEBDAT="<filename>"	+CEBDAT: OK OK ERROR

Defined values

<filename>

The script file name.

The error code .

Examples

AT+CEBDAT=" ebdat_cust_entry.elf"
+CEBDAT: OK
OK

26.2   AT+CEBDATSTART   start customer's application.

Description

This command is used to start customer's application.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CEBDATSTART=?	OK

Read Command	Responses
AT+CEBDATSTART?	+ CEBDATSTART: <state> OK

Write Command	
AT+CEBDATSTART=<param>	OK ERROR
AT+CEBDATSTART	OK ERROR

Defined values

< param >
Parameter to customer's application.
< state >
RUNNING   /   NOT RUNNING

Examples

AT+CEBDATSTART=1
begin ebdat_customer_entry with func_pointer supported
end of ebdat_customer_entry
OK

26.3 AT+CEBDATPRINTDIR   Set the value of EAT printdir function.

Description

This command is used to set the value of EAT printdir function

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CEBDATPRINTDIR =?	OK

Read Command	Responses
AT+CEBDATPRINTDIR?	+ CEBDATPRINTDIR: <mode> OK

Write Command	
AT+CEBDATPRINTDIR=<mode>	OK ERROR

Defined values

<mode>
The value of printdir: 0 –   print function is disabled.   1 –   print function is enabled.

Examples

AT+CEBDATPRINTDIR=0
OK
AT+CEBDATPRINTDIR?
+CEBDATPRINTDIR:0

OK

26.4 AT+CEBDATAUTORUN Enable/Disable EAT run automatically

Description

This command is used to enable or disable EAT run automatically.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CEBDATAUTORUN=?	OK
Read Command	**Responses**
AT+ CEBDATAUTORUN?	+ CEBDATAUTORUN: <state>,<left_times> OK
Write Command	**Responses**
AT+ CEBDATAUTORUN =<state>,[<max_left_times>]	OK ERROR

Defined values

<state>
Enable or disable EAT scripts run automatically: <u>0</u> – disalbe EAT scripts run automatically.   1 – enable EAT scripts run automatically.
<max_left_times>
Maximum times that EAT scripts can run automatically when powering up. If it is 0, it means unlimited times. Default value is 0.
<left_times>
Left times that EAT scripts can run automatically when powering up.

Examples

AT+CEBDATAUTORUN=1
OK
AT+ CEBDATAUTORUN?
+ CEBDATAUTORUN: 1,0
OK

```
AT+ CEBDATAUTORUN =?
OK
```

27 Result codes

27.1 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

27.2 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

28　AT Commands Samples

28.1　File transmission flow
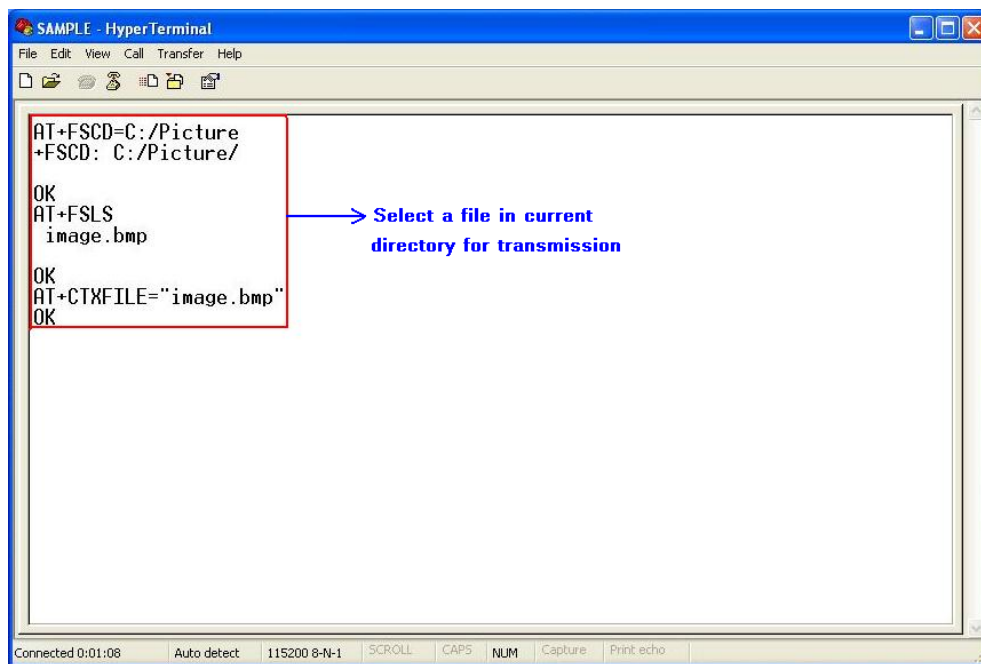
The Module supports to transmit files from the Module to PC host and from PC host to the Module over Xmodem protocol. During the process of transmission, it can not emit any AT commands to do other things.

28.1.1　File transmission to PC host

Step1. Select file for transmission to PC host

After HyperTerminal is OK for emitting AT commands, it must select a file by one of following methods:

①. Select directory as current directory by AT+FSCD, and then select file with parameter <dir_type> of AT+CTXFILE is 0 or omitted. [Figure 17-1]

Figure 17-1　Select file for transmission

②. Select the file directly with subparameter <dir_type> of AT+CTXFILE is not 0 and not omitted; this method is a shortcut method for limited directories. [Figure 17-2]
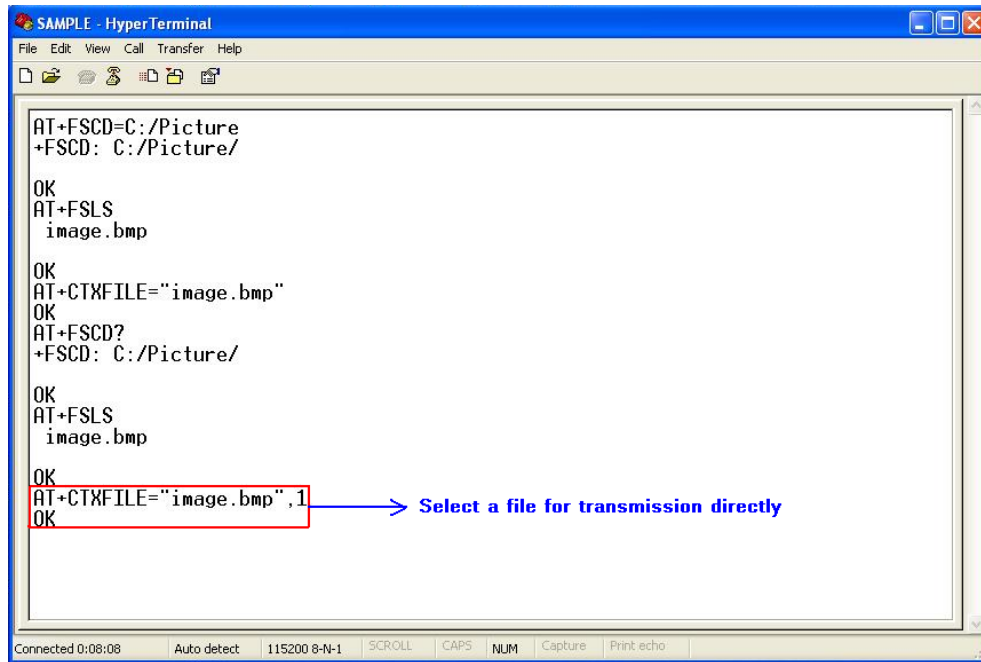
Figure 17-2   Select file drectly for transmission

Step2. Open "Receive File" dialog box

After select transmitted file successfully, use "Transfer>Receive File…" menu to open "Receive File" dialog box in HyperTerminal. [Figure 17-3]
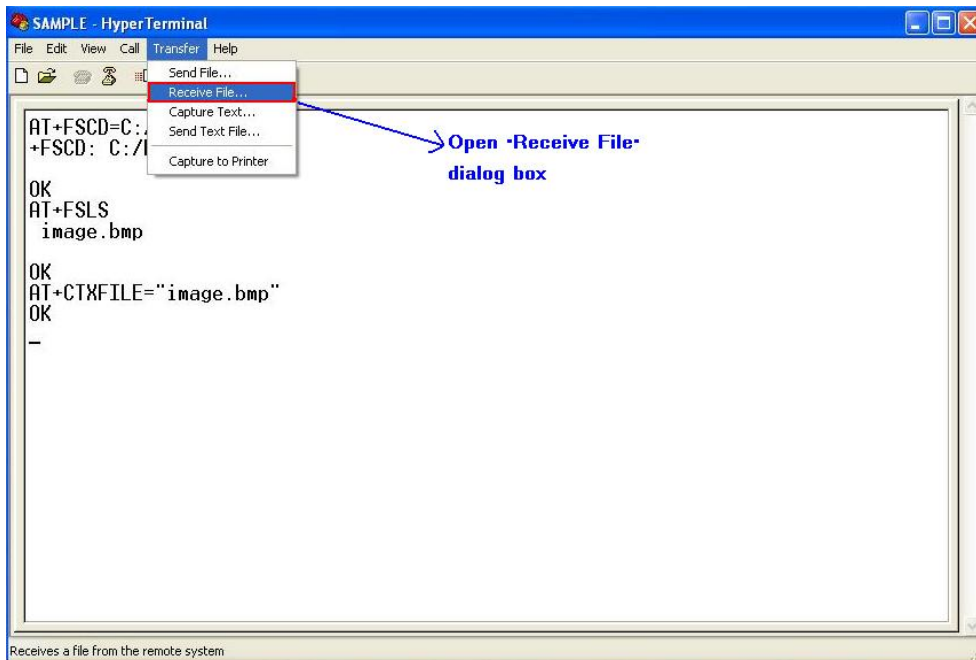
Figure 17-3   Open "Receive File" dialog box

Step3. Set storage place and receiving protocol

In "Receive File" dialog box, set the storage place in PC host where file transmitted is saved in text box, and select receiving protocol in combo box.

Then click "Receive" button to open "Receive Filename" dialog box. [Figure 17-4]

NOTE: The receiving protocol must be "Xmodem" protocol.
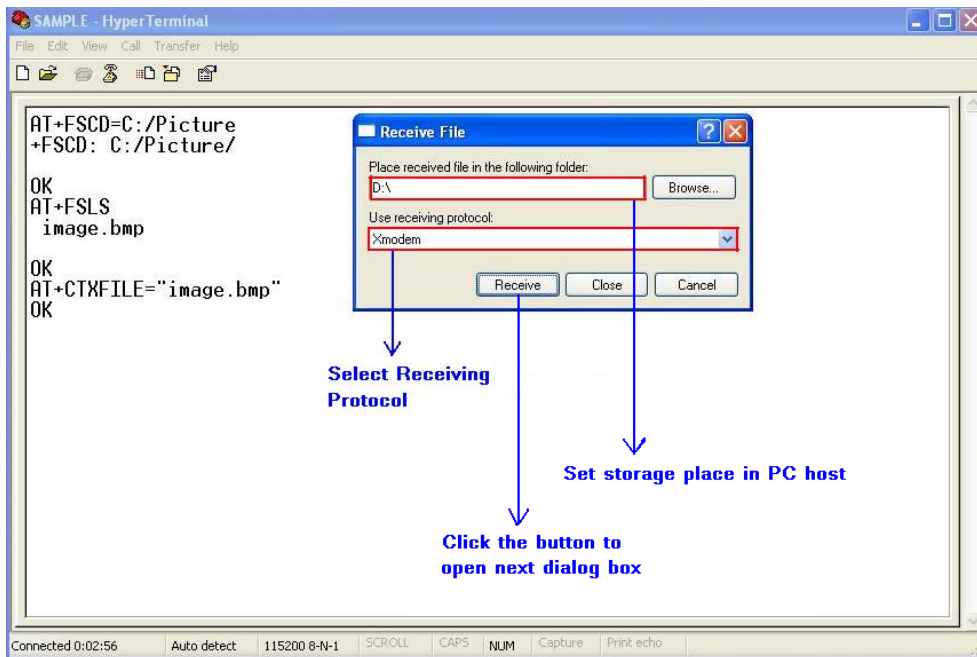
Figure 17-4   Storage place and receiving potocol

Step4. Set file name

In "Receive Filename" dialog box, input file name in "Filename" text box. And then click "OK" button to start transmitting file. [Figure 17-5]
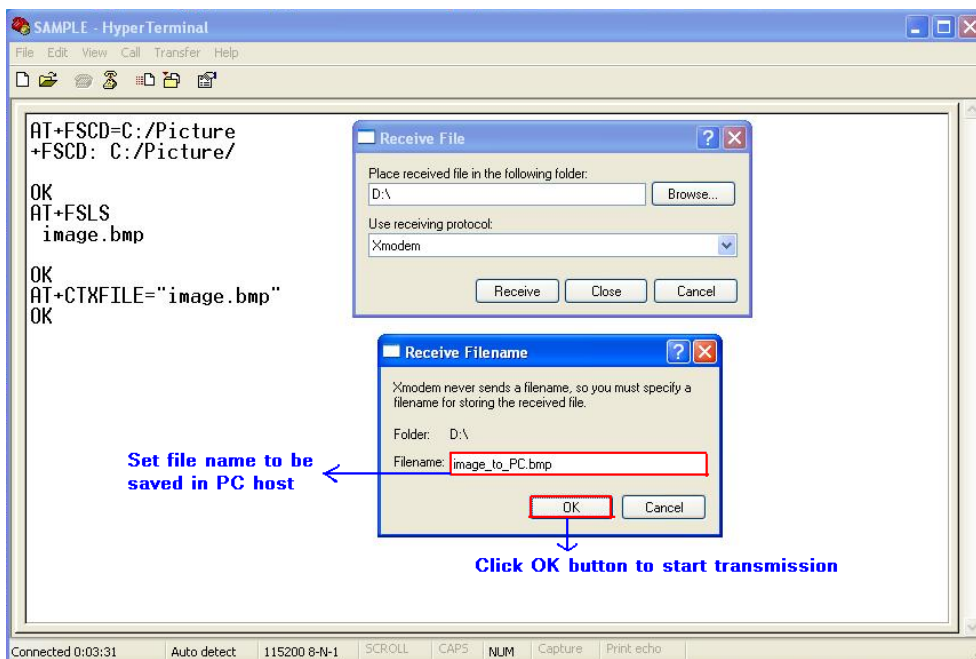
Figure 17-5   Set file name

Step5. Transmit the file

After start file transmission, it can't emit any AT commands untill transmission stops. In "Xmodem file receive" dialog box, it will display the process of transmission. [Figure 17-6]
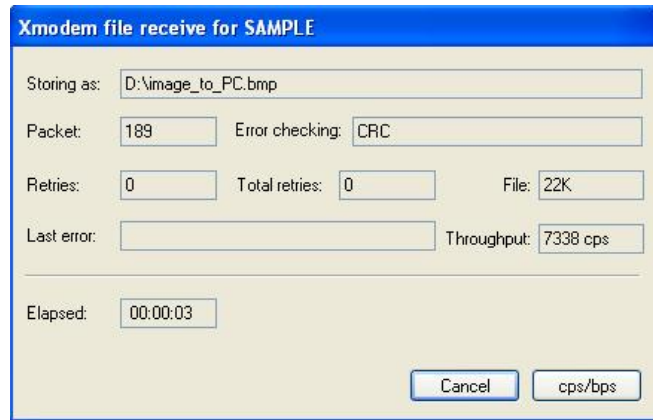
Figure 17-6   Xmodem file receive

If the transmission cancelled, HyperTerminal will prompt "Transfer cancelled by user". [Figure 17-7]
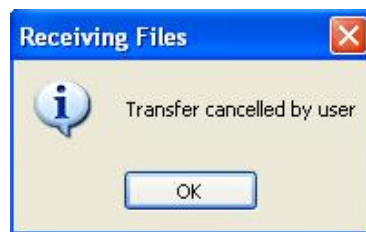
Figure 17-7   Cancel transmission

After transmission successfully, the receiving dialog box is closed and it can emit AT commands in HyperTerminal. [Figure 17-8]
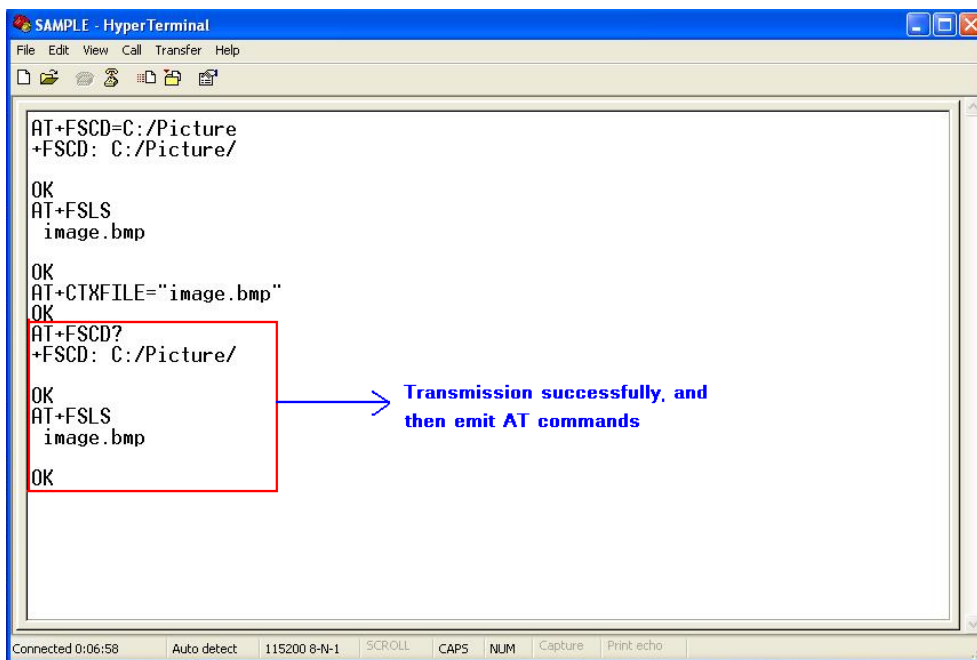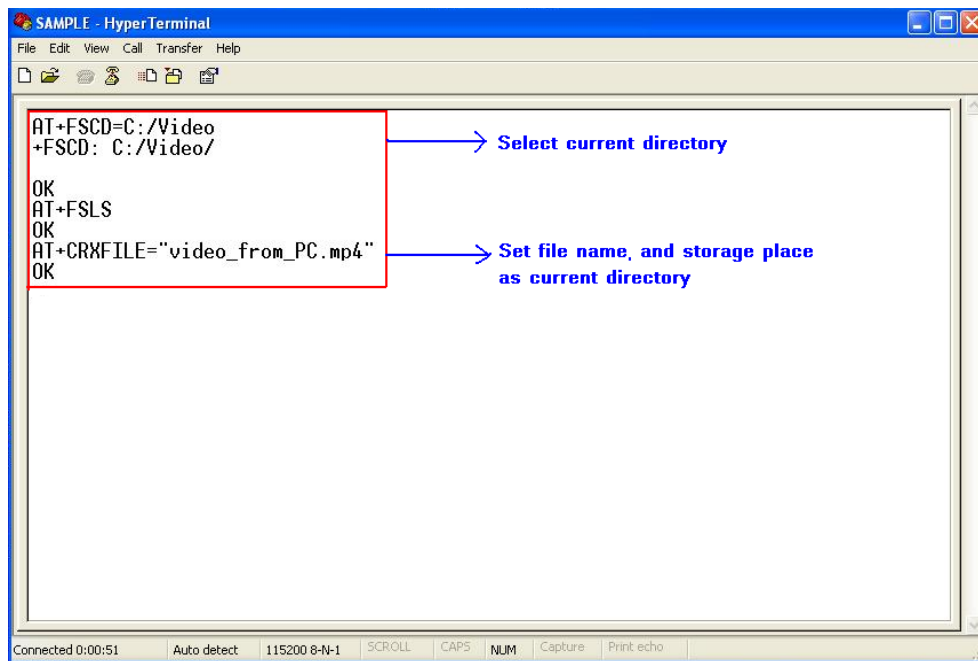
Figure 17-8   Transmission successfully

28.1.2   File received from PC host

Step1. Set file name and storage place

Firstly, it must set file name and storage place in file system of module by one of following methods:

①. Select directory as current directory by AT+FSCD, and then set file name and storage place as current directory with parameter <dir_type> of AT+CRXFILE is 0 or omitted. [Figure 17-9]

Figure 17-9   Set file name and storage place

②. Set storage place directly with parameter <dir_type> of AT+CTXFILE is not 0 and not omitted; this method is a shortcut method for limited directories.

Step2. Open "Send File" dialog box

After set file name and storage place successfully, use "Transfer>Send File…" menu to open "Send File" dialog box in HyperTerminal. [Figure 17-10]
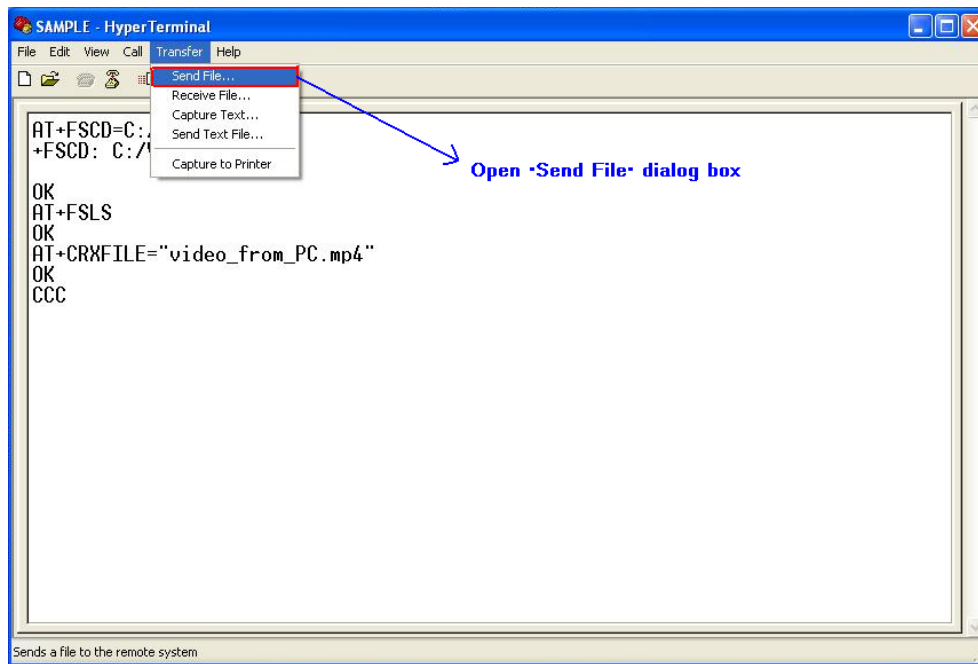
Figure 17-10   Open "Send File" dialog box

Step3. Select file and transmitting protocol

In "Send File" dialog box, select the file to be transmitted in text box, and select the transmitting protocol in combo box. Then click "Send" button to start transmission. [Figure 17-11]

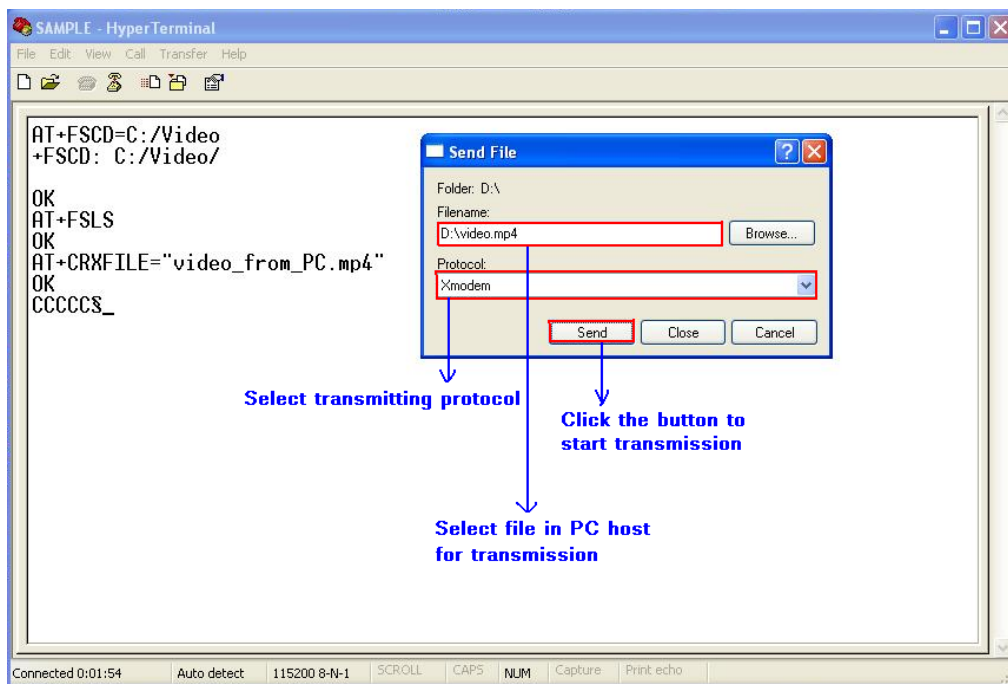**NOTE:** The transmitting protocol must be "Xmodem" protocol.

Figure 17-11   Select file and protocol

Step4. File transmission

After start file transmission, it can't emit any AT commands utill transmission stops. In "Xmodem file send" dialog box, it will display the process of transmission. [Figure 17-12]
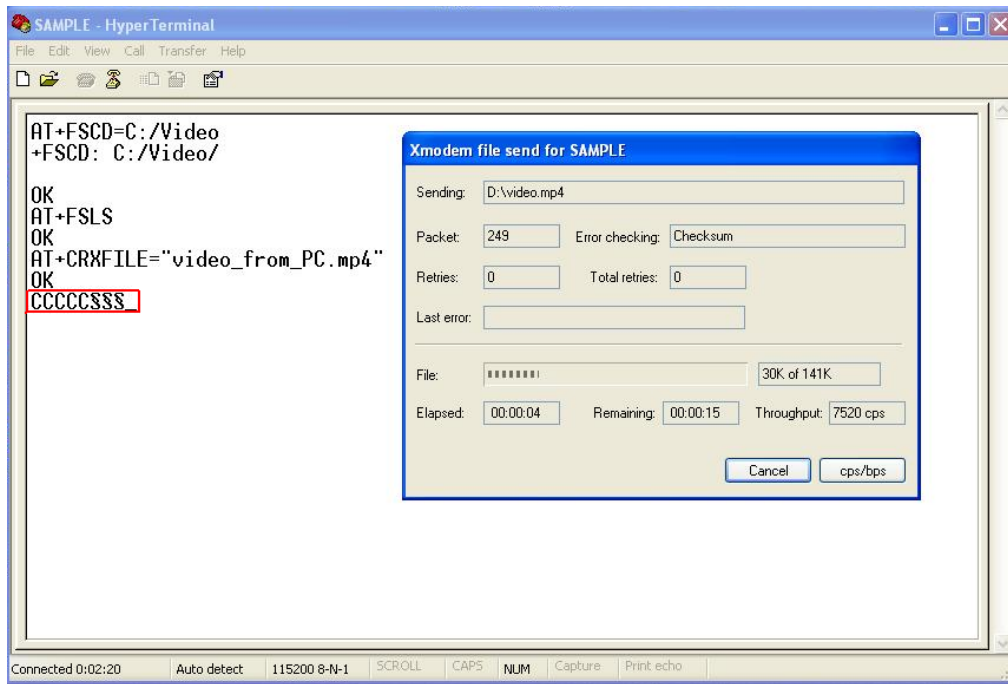

Figure 17-12   The process of file transmission

If the transmission canceled , HyperTerminal will prompt "Transfer cancelled by user".

NOTE: There may be some characters reported which denote interactions between module and PC host.

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