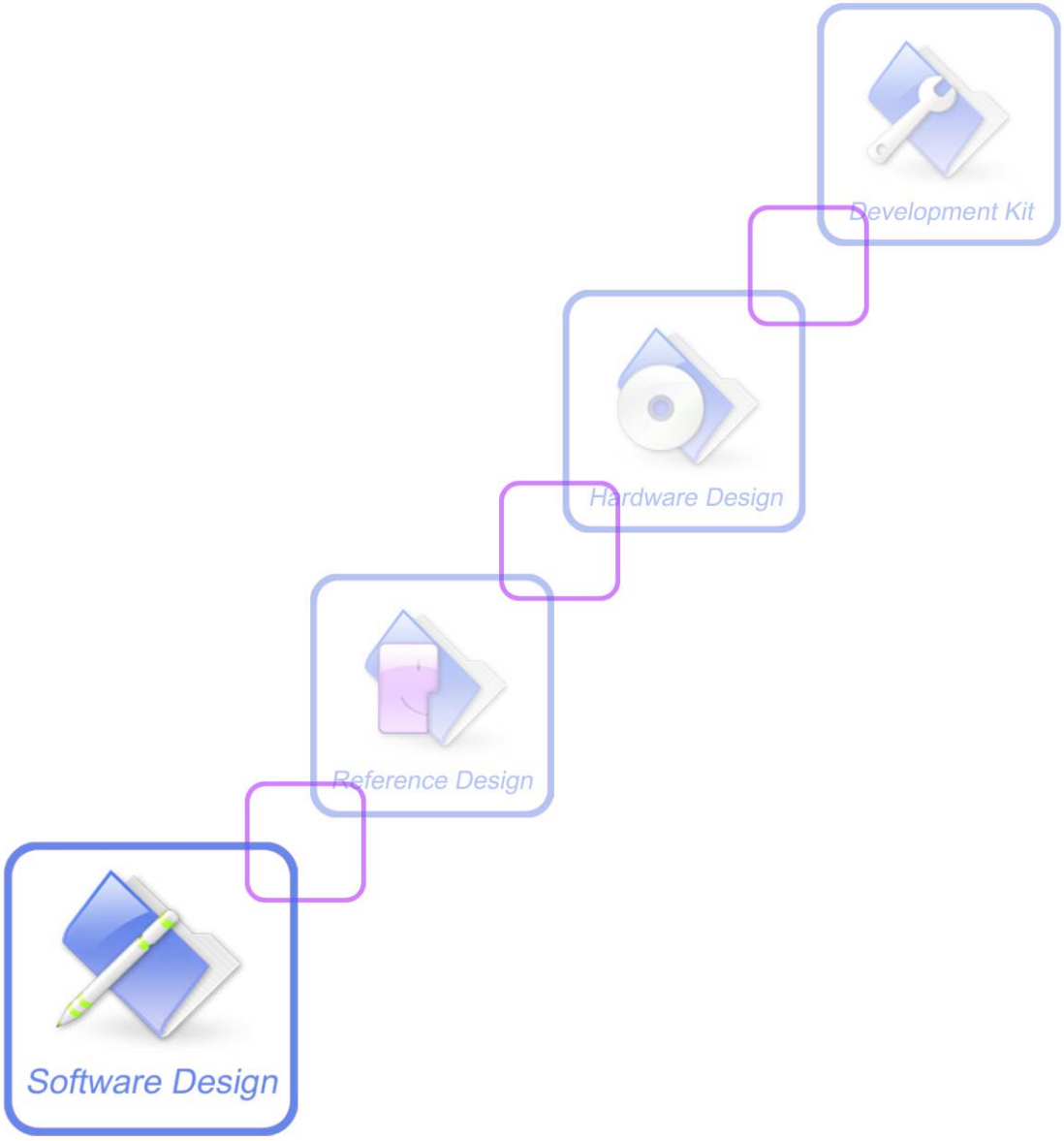
AT Command Set

SIM5320 _ATC_V1.23



Document Title:	SIM5320 AT Command Set
Version:	1.23
Date:	2012-05-14
Status:	Release
Document ID:	SIM5320_ATC_V1.23

General Notes

SIMCom offers this information as a service to its customers, to support application and engineering efforts that use the products designed by SIMCom. The information provided is based upon requirements specifically provided to SIMCom by the customers. SIMCom has not undertaken any independent search for additional relevant information, including any information that may be in the customer's possession. Furthermore, system validation of this product designed by SIMCom within a larger electronic system remains the responsibility of the customer or the customer's system integrator. All specifications supplied herein are subject to change.

Copyright

Version History

Version	Chapter	Comments
V1.00	New Version	
V1.01	5.23 AT+CMGSEX	Modify the description of this command
	6.30 AT+CPLMNWLIST	Modify the description of this command
	6.31 AT+CPASSMGR	Modify the description of this command
	7.20 AT+CDELTA	Modify the description of this command
	9.20 AT+CECM	Modify the description of this command
	9.21 AT+CNSM	Add this command
	9.22 AT+CECSET	Add this command
	9.37 AT+CADCI	Add this command
	9.38 AT+CUSBSPD	Add this command
	9.39 AT+CLEDITST	Add this command
	12.11 AT+FSCOPY	Add this command
	16.3 AT+CSOCKAUTH	Modify the description of this command
	16.19 AT+CIPCLOSE	Modify the description of this command
	18.7.1 AT+CHTPSERV	Add this command
	18.7.2 AT+CHTPUPDATE	Add this command
	19.14 AT+CMMSRECV	Modify the description of this command
	21.9 AT+CGPSNMEA	Add this command
V1.02	4.33 AT+CSSN	Remove this command
V1.03	9.36 AT+CADCI	Modify the description of value of this command
	15.3 AT+CGEQREQ	Modify the examples of this command
	19.14 AT+CMMSRECV	Modify the description of this command
V1.04	4.21 AT+CMIC	Remove this command
	6.4 AT+CPWD	Modify the value description of this command
	6.26 AT+CCINFO	Modify the value description of this command
	9.19 AT+SIDET	Modify the default value of this command
	9.20 AT+CECM	Modify the description of this command
	9.21 AT+CNSM	Modify the description of this command
	9.22 AT+CECSET	Modify the description of this command
	9.28 AT+CDTRISRMD	Modify the description of this command
	9.29 AT+CDTRISRS	Modify the description of this command
	9.30 AT+CGFUNC	Modify the description of this command
	9.32 AT+CGWISRMD	Modify the description of this command
	9.35 AT+CADCI	Modify the description of this command
	9.36 AT+CUSBSPD	Modify the description of this command
	9.37 AT+CLEDITST	Modify the description of this command
	12.2 AT+FSMKDIR	Modify the description of this command
	12.8 AT+FSMEM	Modify the description of this command

	12.9 AT+FSFMT	Remove this command
	16.5 AT+NETOPEN	Modify the description of this command
	19.7 AT+CMMSSEND	Modify the description of this command
	19.13 AT+CMMSDELBCC	Modify the description of this command
	21.1 AT+CGPS	Add read command of this command
	21.2 AT+CGPSINFO	Modify the description of this command
	21.5 AT+CGPSSWITCH	Modify default baud rate value
	21.7 AT+CGPSSSL	Modify the description of this command
	21.8 AT+CGPSAUTO	Modify the description of this command
	21.10 AT+CGPSMD	Add this command
	21.11 AT+CGPSFTM	Add this command
V1.05	4.26 AT+CSDVC	Modify the description of this command
	6.26 AT+CCINFO	Modify the description of this command
	7.21 AT+CDIPR	Add this command
	7.22 AT+CUDIAG	Add this command
	9.29 AT+CDTRISRS	Modify the description of this command
	12.1 AT+FSCD	Modify the examples of this command
	12.2 AT+FSMKDIR	Modify the examples of this command
	13.1 AT+CTXFILE	Modify the examples of this command
	13.2 AT+CRXFILE	Modify the description of this command
	15.2 AT+CGQREQ	Modify the examples of this command
	15.4 AT+CGQMIN	Modify the examples of this command
	15.5 AT+CGEQMIN	Modify the examples of this command
	16.1 AT+CGSOCKCONT	Modify the description of this command
	16.3 AT+CSOCKAUTH	Modify the test command of this command
	18.3.7 AT+CFTPGETFILE	Modify the description of this command
	18.3.8 AT+CFTPPUTFILE	Modify the description of this command
	18.5.5 AT+ CHTTPSSEND	Modify the write command of this command
	18.6.12 AT+CFTPSGETFILE	Modify the description of this command
	18.6.13 AT+CFTPSPUTFILE	Modify the description of this command
	19.2 AT+CMMSPROTO	Modify the description of this command
	19.5 AT+CMMSDOWN	Modify the description of this command
	19.7 AT+CMMSSEND	Modify the description of this command
	19.14 AT+CMMSRECV	Modify the description of this command
	21.2 AT+CGPSINFO	Add course information
V1.06	6.16 AT+CPOL	Modify the description of this command
	6.34 AT+CNSVN	Remove read command of this command
	12 FileSystem Related Commands	Modify the description of this section
	14.10 ATV	Add this command
	18.1.6 AT+SMTPBODY	Modify the description of this command
	18.5.6 AT+CHTTPSRECV	Modify the description of this command
	18.6.11 AT+CFTPSLIST	Modify the execute command of this command

	18.6.15 AT+CFTPSPUT	Modify the description of this command
	18.7.1 AT+CHTPSERV	Modify the description of this command
	19 MMS Commands	Add the description of this section
	19.5 AT+CMMSDOWN	Modify the description of this command
	21.1 AT+CGPS	Modify the description of this command
	22 Result codes	Add this section
	23.2.2 TCP client	Modify the description of this command
V1.07	5.1 CMS ERROR	Add two value of <err> of this command
	6.7 AT+COLP	Modify the description of this command
	6.10 AT+CCWA	Modify the description of this command
	6.15 AT+CLCC	Modify this command
	7.7 AT+AUTOCSQ	Modify this command
	12.3 AT+FSRMDIR	Modify the description of this command
	12.9 AT+FSLOCA	Modify the description of this command
	13.1 AT+CTXFILE	Add note for <filename> of this command
	16.3 AT+CSOCKAUTH	Modify the examples of this command
	18.2.10 AT+POP3READ	Modify <location> value range of this command
	18.5.5 AT+CHTTPSSEND	Add the <result> value description of this command
	18.5.6 AT+CHTTPSRECV	Add the <result> value description of this command
	21.6 AT+CGPSURL	Modify the description of this command
V1.08	9.29 AT+CDTRISRS	Modify this command
V1.09	3.1 ATI	Modify this command
	3.4 AT+CGMR	Modify examples of this command
	6.5 AT+CLIP	Modify this command
	6.16 AT+CPOL	Modify this command
	9.35 AT+CADCI	Remove this command
	9.37 AT+CADCA	Add this command
	16.9 AT+SERVERSTART	Modify this command
	16.17 AT+CIPOPEN	Modify this command
	16.18 AT+CIPSEND	Modify this command
	17.1 AT+STIN	Modify this command
	18.1.4 AT+SMTPRCPT	Modify read command response this command
	18.7.1 AT+CHTPSERV	Modify this command
	18.7.2 AT+CHTPUPDATE	Modify read command response this command
	20.6 AT+PRINTDIR	Add this command
	23.2.2 TCP client	Modify this section
V1.10	4.3 ATD	Add note for defined value <;> of this command
	5.16 AT+CSMP	Modify the write command of this command
	5.22 AT+CMGWO	Modify parameter <toda> range of this command
	6.22 AT+CPSI	Add value Offline for <Operation Mode> parameter
	13.2 AT+CMWAIT	Add this command
	16.3 AT+CSOCKAUTH	Modify this command

	16.7 AT+TCPWRITE	Modify this command
	16.8 AT+UDPSEND	Modify this command
	16.22 AT+CIPSTAT	Modify this command
	16.23 information about TCP	Modify the description
	18.1.3 AT+SMTPFROM	Modify this command
	18.1.7 AT+SMTPFILE	Modify the description of this command
	18.2.4 AT+POP3LIST	Modify this command
	18.2.6 AT+POP3GET	Modify the description of this command
	18.6.11 AT+CFTPSLIST	Modify the description of this command
	18.6.16 AT+CFTPSSINGLEIP	Modify the description of this command
	22.2Response string of AT+CEER	Add this section
V1.11	13.3 AT+CMWAIT	Add Execution Command of this command
V1.12	4.22 AT+AUTOANSWER	Modify this command
	4.24 AT+CPTONE	Modify this command
	5.8 AT+CNMA	Modify this command
	11.6 AT+CEMNLIST	Modify the description of this command
	12.5 AT+FSDEL	Modify this command
	13.1 AT+CTXFILE	Modify the description of this command
	15.3 AT+CGEQREQ	Modify this command
	15.5 AT+CGEQMIN	Modify this command
	18.6.3 AT+CFTPSLOGIN	Modify this command
	19.8 AT+CMMSRECP	Modify write Command of this command
	19.9 AT+CMMSCC	Modify write Command of this command
	19.10 AT+CMMSBCC	Modify write Command of this command
	19.12 AT+CMMSDELCC	Modify execute command of this command
	19.18 AT+CMMSSAVE	Modify write Command of this command
	9.8 AT+CRIIC	Modify this command
V1.13	9.38 AT+CAPWRON	Add this command
	9.39 AT+CAPWROFF	Add this command
	13.3 AT+CMWAIT	Modify this command
V1.14	4.3 ATD	Modify the description of this command
	4.22 AT+AUTOANSWER	Modify the description of this command
	4.26 AT+CSDVC	Modify this command
	5.15 AT+CMGD	Modify the description of this command
	9.25 AT+CMUX	Add this command
	9.26 AT+CMUXSRVPORT	Add this command
V1.15	4.3 ATD	Modify the description of this command
	4.32 AT+CODEC	Add this command
	6.37 AT+CCGMDF	Add this command
	6.38 AT+CPLMNPASS	Add this command
	21.2 AT+CGPSINFO	Modify this command
	21.12 AT+CGPS	Add this command

	22.1 AT+CSVM	Add this command
	22.2 Indication of Voice Mail	Add this command
	23.1 Indication of EONS	Add this command
	24.1 AT+COTADPHONENUMBER	Add this command
V1.16	9.26 AT+CMUXSRVPORT	Modify this command
	9.42 AT+CBVTBP	Add this command
V1.17	3.9 AT+CATR	Modify <port> value of this command
	4.32 AT+CODEC	Modify default value of this command
	5.10 AT+CMGL	Modify <toda> value of this command
	5.11 AT+CMGR	Modify <toda> value of this command
	5.13 AT+CMSS	Modify <toda> value of this command
	5.14 AT+CMGW	Modify <toda> value of this command
	5.21 AT+CMGSO	Modify <toda> value of this command
	5.23 AT+CMGSEX	Modify <toda> value of this command
	6.30 AT+CPLMNWLIST	Modify <plmnwlist> value of this command
	8.3 AT+CRSM	Modify this command
	16.17 AT+CIPOPEN	Modify this command
	16.18 AT+CIPSEND	Modify this command
	16.21 AT+CDNSGHNAME	Add this command
	21.2 AT+CGPSINFO	Modify this command
	21.13 AT+CGPSXE	Add this command
	21.14 AT+CGPSXD	Add this command
V1.18	4.19 AT+CLVL	Modify this command
	5.23 AT+CMGSEX	Modify this command
	6.10 AT+CCWA	Modify this command
	6.16 AT+CPOL	Modify this command
	6.22 AT+CPSI	Modify this command
	6.26 AT+CCINFO	Modify this command
	7.23 AT+CUDLOADS	Add this command
	9.16 AT+CGISR	Add this command
	9.18 AT+CVLVL	Modify this command
	9.22 AT+CECSET	Modify this command
	9.25 AT+CMUX	Modify this command
	15.2 AT+CGDSCONT	Add this command
	15.3 AT+CGTFT	Add this command
	16.4 AT+CGSOCKQREQ	Add this command
	16.5 AT+CGSOCKEQREQ	Add this command
	16.6 AT+CGSOCKQMIN	Add this command
	16.7 AT+CGSOCKEQMIN	Add this command
	16.16 AT+CIPCCFG	Modify this command
	16.17 AT+CIPOPEN	Modify this command
	16.18 AT+CIPSEND	Modify this command

	16.28 AT+CTCPFIN	Add this command
	16.29 AT+CENDUPPDP	Add this command
	16.30 AT+CTCPKA	Add this command
	16.31 AT+CPING	Add this command
	16.32 AT+CPINGSTOP	Add this command
	18.1.8 AT+SMTPSEND	Modify this command
	18.2.6 AT+POP3GET	Modify this command
	18.3.10 AT+CFTPPUT	Modify this command
	18.4.1 AT+CHTTPACT	Modify this command
	19.5 AT+CMMSDOWN	Modify this command
	19.7 AT+CMMSSEND	Modify this command
	19.16 AT+CMMSREAD	Modify this command
	21.1 AT+CGPS	Modify this command
	21.12 AT+CGPSDEL	Add this command
	21.13 AT+CGPSNOTIFY	Modify this command
	24.1 AT+COTADPHONENUMBER	Modify this command
V1.19	5.14 AT+CMGW	Bug10482:Under the PUD mode，there's an unwanted comma
	6.39 AT*CNTI	Add this command
	9.19 AT+CVLVL	Modify the note section
	9.44 AT+CRFOP	Add this command
	15.1 AT+CGDCONT	Modify the example section
	16.1 AT+CGSOCKCONT	Modify the example section
	16.20 AT+CIPCCFG	Modify write command section
	16.30 AT+CTCPKA	Add a parameter
	16.33 AT+CTEUTP	Add this command
	16.34 AT+CUPURE	Add this command
	16.35 AT+CINICMPALLOW	Add this command
	17.4 AT+STK	Add this command
	18.2.1 AT+POP3SRV	bug10752
	18.2.2 AT+POP3IN	Bug 10522
	18.2.6 AT+POP3GET	bug10759
	18.3.6 AT+CFTPPW	bug10872
	18.3.7 AT+CFTPGETFILE	Add field <rest_size>
	18.3.8 AT+CFTPPUTFILE	Add field <rest_size>
	18.3.9 AT+CFTPGET	Add field <rest_size>/ bug10871
	18.3.10 AT+CFTPPUT	Add field <rest_size>
	18.4.1 AT+CHTTPACT	MKBUG00000205
	21.2 AT+CGPSINFO	Bug10481:Add the explain section of read command
	21.14 AT+ CGPSXE	Modify this command
	21.15 AT+CGPSXD	Modify this command
	21.16 AT+CGPSXDAUTO	Add this command
	21.16.1 AT+CASSISTLOC	Add this command

	21.16.2 AT+ CASSISTLOCTRYTIMES	Add this command
	21.16.3 AT+ CASSISTLOCMODE	Add this command
V1.20	4.33 AT+CVOC	MKBUG00000214
	6.16 AT+CPOL	MKBUG00000110/MKBUG00000219
	6.22 AT+CPSI	MKBUG00000238
	7.11 AT+CPOF	bug10918
	7.23 AT+CUDLOADS	MKBUG00000242
	16.30 AT+CTCPKA	MKBUG00000221
	19.7 AT+CMMSSEND	MKBUG00000239
	21.17 AT+CGPSINFOCFG	Add this command
V1.21	11.4 AT+CPBF	MKBUG00000310
	16.9 AT+NETOPEN	MKBUG00000529
	16.13 AT+SERVERSTART	MKBUG00000529
	16.36 AT+TCPCLOSE	MKBUG00000529
	19.22 AT+CMMSUA	MKBUG00000564
	19.23 AT+CMMSPROFILE	MKBUG00000564
V1.22	6.1 AT+CREG	MKBUG00000317
	9.33 AT+CGFUNC	MKBUG00000302
	15.14 AT+CGREG	MKBUG00000317
	19.7 AT+CMMSSEND	MKBUG00000601
	19.8 AT+CMMSRECP	MKBUG00000601
	19.9 AT+CMMSCC	MKBUG00000601
	19.10 AT+CMMSBCC	MKBUG00000601
	19.11 AT+CMMSDELRECP	MKBUG00000601
	19.12 AT+CMMSDELCC	MKBUG00000601
	19.13 AT+CMMSDELBCC	MKBUG00000601
V1.23	9.13 AT+CGDRT	MKBUG00000715
	9.14 AT+CGSETV	MKBUG00000715
	16.11 AT+TCPWRITE	MKBUG00000312
	16.12 AT+UDPSEND	MKBUG00000312
	16.13 AT+SERVERSTART	MKBUG00000900
	16.27 AT+CIPSTAT	MKBUG00000358
	16.37 Information elements related to TCP/IP	Add +NETCLOSE: 1/ MKBUG00000900
	18.1.5 AT+SMTPSUB	MKBUG00000843
	18.1.7 AT+SMTPFILE	MKBUG00000843
	18.1.7 AT+SMTPBCH	Add this command
	18.2.2 AT+POP3IN	MKBUG00000416
	18.2.3 AT+POP3NUM	MKBUG00000419
	18.2.6 AT+POP3GET	MKBUG00000420
	18.2.8 AT+POP3OUT	MKBUG00000416
	18.3.4 AT+CFTPSERV	MKBUG00000434
	18.3.5 AT+CFTPUN	MKBUG00000312

	18.3.6 AT+CFTPPW	MKBUG00000436
	18.3.9 AT+CFTPGET	MKBUG00000438
	18.3.10 AT+CFTPPUT	MKBUG00000544/MKBUG00000448
	18.3.11 AT+CFTPLIST	MKBUG00000437
	19.4 AT+CMMSEDIT	MKBUG00000362/MKBUG00000363
	19.19 AT+CMMSDELETE	MKBUG00000396
	19.22 AT+CMMSUA	MKBUG00000813
	19.23 AT+CMMSPROFILE	MKBUG00000816
	22.1 AT+CSVM	MKBUG00000633

Contents

1 Introduction

1.1 Scope

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

SIM5320

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

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

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

1.2 References

The present document is based on the following standards:

[1] ETSI GSM 01.04: Abbreviations and acronyms.

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

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

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

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

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

1.3 Terms and abbreviations

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

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

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

1.4 Definitions and conventions

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

<CR> Carriage return character.

<LF> Linefeed character.

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

2. Document conventions:

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

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

3. Special marks for commands or parameters:

SIM PIN – Is the command PIN protected?

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

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

References – Where is the derivation of command?

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

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

Vendor – The command is supported by SIMCom.

2 AT Interface Synopsis

2.1 Interface settings

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

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

2.2 AT command syntax

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

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

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

1. Basic Command

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

2. S Parameter Command

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

3. Extended Command

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

Table 2-1: Types of Extended Command

Command Type	Syntax	Comments

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

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

2.3 Information responses

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

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

3 General Commands

3.1 ATI Display product identification information

Description

The command requests 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_SIM5320* *Revision:* SIM5320_V1.5 *IMEI: 351602000330570* *+GCAP: +CGSM,+FCLASS,+DS* *OK*

3.2 AT+CGMI Request manufacturer identification

Description

The command requests 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

The command 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_SIM5320 *OK*

3.4 AT+CGMR Request revision identification

Description

The command requests product firmware revision identification text, which is intended to permit the user of the Module to identify the version, revision level, date, and other pertinent information.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGMR=?	OK
Execution Command	Responses
AT+CGMR	<revision> OK

Defined values

<revision>
The revision identification of firmware.

Examples

AT+CGMR
+CGMR: SIM5320_V1.5
OK

3.5 AT+CGSN Request product serial number identification

Description

The 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

The 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

The 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

The 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	OK

Defined values

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

Examples

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

4.2 AT+CMOD Call mode

Description

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

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

SIM PIN	References
NO	3GPP TS 27.007

Syntax

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

Defined values

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

Examples

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

4.3 ATD Dial command

Description

The dial command lists 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
YES	V25.ter

Syntax

Execution Commands	Responses
ATD<n>[<mgsm>][;]	OK VOICE CALL: BEGIN
	Originate a call unsuccessfully: NO CARRIER
	ERROR

Defined values

<n>
String of dialing digits and optionally V.25ter modifiers dialing digits: 0 1 2 3 4 5 6 7 8 9 * # + A B C Following V.25ter modifiers are ignored: , T P ! W @
<mgsm>
String of GSM modifiers: I Activates CLIR (disables presentation of own phone number to called party) i Deactivates CLIR (enables presentation of own phone number to called party) G Activate Closed User Group explicit invocation for this call only g Deactivate Closed User Group explicit invocation for this call only
<;>

The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax calls.

NOTE: If it is a data call, please refer to the result codes table for response at the end of this document.

Examples

ATD10086;

OK

VOICE CALL:BEGIN

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

Description

Originate a call using specified memory and index number.

SIM PIN	References
YES	V.25ter

Syntax

Execution Commands	Responses
ATD><mem><n>[;]	OK VOICE CALL: BEGIN
	Originate a call unsuccessfully: NO CARRIER

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.

Examples

ATD>SM3;
OK
VOICE CALL: BEGIN

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

Description

Originate a call to specified number.

SIM PIN	References
YES	V.25ter

Syntax

Execution Commands	Responses
ATD><n>[;]	OK VOICE CALL: BEGIN
	Originate a call unsuccessfully: NO CARRIER

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.

Examples

ATD>2;
OK
VOICE CALL: BEGIN

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

Description

Originate a call to specified number.

SIM PIN	References
YES	V.25ter

Syntax

Execution Commands	Responses
ATD><str>[;]	OK VOICE CALL: BEGIN
	Originate a call unsuccessfully: NO CARRIER

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.

Examples

ATD>"Kobe"; *OK* *VOICE CALL: BEGIN*

4.7 ATA Call answer

Description

The 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

The 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
	If connection is not successfully resumed or there is not a connected CSD call: NO CARRIER

Examples

```
ATO
CONNECT
```

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

The command is used to disconnect existing voice 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.

The 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

The 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>

0 – disables reporting

1 – enables reporting

<serv>

ASYNC	asynchronous transparent
SYNC	synchronous transparent
REL ASYNC	asynchronous non-transparent
REL sync	synchronous non-transparent
GPRS [<L2P>]	GPRS

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

Examples

AT+CR?

+CR:0
OK
AT+CR=1
OK

4.16 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>	
0 – disable extended format	
1 – enable extended format	
<type>	
ASYNC	asynchronous transparent
SYNC	synchronous transparent
REL ASYNC	asynchronous non-transparent
REL SYNC	synchronous non-transparent
FAX	facsimile
VOICE	normal voice
VOICE/*XXX*	voice followed by data(*XXX* is ASYNC, SYNC, REL ASYNC or REL SYNC)
ALT VOICE/*XXX*	alternating voice/data, voice first
ALT *XXX*/VOICE	alternating voice/data, data first
ALT FAX/VOICE	alternating voice/fax, fax first
GPRS	GPRS network request for PDP context activation

Examples

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

4.18 AT+VTS DTMF and tone generation

Description

The 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 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 8, 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

4.20 AT+VMUTE Speaker mute control

Description

The 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

4.21 AT+CMUT Microphone mute control

Description

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

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

SIM PIN	References
NO	3GPP TS 27.007

Syntax

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

Defined values

<mode>	
0	– mute off
1	– mute on

Examples

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

4.22 AT+AUTOANSWER Automatic answer quickly

Description

The command causes the Module to enable and disable automatic answer. If enabled, the Module will answer automatically after the Module receives a call from network and 3 seconds lapse.

NOTE 1 .The command is effective on csd call ,voice call and data call even if ATS0=0.

2 .The setting will be effective after restart.

3 .The <port> setting only takes effect on csd call video call.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+AUTOANSWER=?	+AUTOANSWER: (list of supported <arg>s), (list of supported <port>s) OK
Read Command	**Responses**
AT+AUTOANSWER?	+AUTOANSWER: <arg>,<port> OK
Write Command	**Responses**
AT+AUTOANSWER=<arg>[,<port>]	OK

Defined values

<arg>	
0	– disable auto answer
1	– enable auto answer
<port>	
0	– use current PORT(read for other value, refer to notes)
1	– use UART port to output URCs
2	– use MODEM port to output URCs
3	– use ATCOM port to output URCs

NOTE 1. If subparameter <port> is omitted, the current port will be used.

2. If subparameter <port> is zero, read for current port index, it's not zero.

3. If subparameter <port> is not zero and auto answer is eanbled, the corresponding port should be opened when data call incoming.

Examples

AT+AUTOANSWER=1,1

OK

AT+AUTOANSWER?

+AUTOANSWER: 1,1

OK

4.23 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.
3.For voice call and video call, AT+AUTOANSWER is prior to ATS0.

Examples

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

4.24 AT+CALM Alert sound mode

Description

The 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
NO	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
```

4.25 AT+CRSL Ringer sound level

Description

The 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
NO	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 4, 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*

4.26 AT+CSDVC Switch voice channel device

Description

The 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).

NOTE Use AT+CPCM command to enable PCM function and configure the mode that you want before setting AT+CSDVC=4.

SIM PIN	References
NO	Vendor

Syntax

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

AT+CSDVC?	+CSDVC: <dev> OK
Write Command	Responses
AT+CSDVC= <dev>[,<save>]	OK

Defined values

<dev>
1 – handset
3 – speaker phone
4 – PCM interface
<save>
0 – temporary voice device setting, after reboot it will be resumed.
1 – permanent voice device setting.
NOTE If subparameter <save> is omitted, voice device setting is temporary.

Examples

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

4.27 AT+CPTONE Play tone

Description

The 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
```

4.28 AT+CPCM External PCM codec mode configuration

Description

The command will 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
```

4.29 AT+CPCMFMT Change the PCM format

Description

The command allows 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

4.30 AT+CPCMREG Control PCM data transfer by diagnostics port

Description

The 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

4.31 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

4.32 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(63,7)* OK

Defined values

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

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

Description

The 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

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

The 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

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

Write Command	Responses
AT+CPMS=<mem1> [,<mem2>[,<mem3>]]	+CPMS: <used1>,<total1>,<used2>,<total2>,<used3>,<total3> OK
	ERROR
	+CMS ERROR: <err>

Defined values

<mem1>
String type, memory from which messages are read and deleted (commands List Messages AT+CMGL, Read Message AT+CMGR and Delete Message AT+CMGD). "ME" and "MT" FLASH message storage "SM" SIM message storage "SR" Status report storage
<mem2>
String type, memory to which writing and sending operations are made (commands Send Message from Storage AT+CMSS and Write Message to Memory AT+CMGW). "ME" and "MT" FLASH message storage "SM" SIM message storage "SR" Status report storage
<mem3>
String type, memory to which received SMS is preferred to be stored (unless forwarded directly to TE; refer command New Message Indications AT+CNMI). "ME" FLASH message storage "SM" SIM message storage
<usedX>
Integer type, number of messages currently in <memX>.
<totalX>
Integer type, total number of message locations in <memX>.

Examples

AT+CPMS=?
+CPMS: ("ME","MT","SM","SR"),("ME","MT","SM","SR"),("ME",,"SM")
OK
AT+CPMS?
+CPMS:"ME", 0, 23,"ME", 0, 23,"ME", 0, 23
OK
AT+CPMS="SM","SM","SM"
+CPMS:3,40,3,40,3,40
OK

5.4 AT+CMGF Select SMS message format

Description

The 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

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

Defined values

<sca>
Service Center Address, value field in string format, BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set (refer to command AT+CSCS), type of address given by <tosca>.
<tosca>
SC address Type-of-Address octet in integer format, when first character of <sca> is + (IRA 43) default is 145, otherwise default is 129.

Examples

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

5.6 AT+CSCB Select cell broadcast message indication

Description

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

The read command displays the accepted message types.

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

Defined values

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

Examples

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

5.7 AT+CSDH Show text mode parameters

Description

The 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

The command confirms 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

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

Defined values

<mode>

0 – Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications.

1 – Discard indication and reject new received message unsolicited result codes when TA-TE link is reserved (e.g. in on-line data mode). Otherwise forward them directly to the TE.

2 – Buffer unsolicited result codes in the TA when TA-TE link is reserved (e.g. in on-line data mode) and flush them to the TE after reservation. Otherwise forward them directly to the TE.

<mt>

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

0 – No SMS-DELIVER indications are routed to the TE.

1 – If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code: +CMTI: <mem3>,<index>.

2 – SMS-DELIVERs (except class 2 messages and messages in the message waiting indication group (store message)) are routed directly to the TE using unsolicited result code:
+CMT:[<alpha>],<length><CR><LF><pdu> (PDU mode enabled); or
+CMT:<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]
<CR> <LF><data>
(text mode enabled, about parameters in italics, refer command Show Text Mode Parameters AT+CSDH).

3 – Class 3 SMS-DELIVERs are routed directly to TE using unsolicited result codes defined in <mt>=2. Messages of other data coding schemes result in indication as defined in <mt>=1.

<bm>

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

0 – No CBM indications are routed to the TE.

2 – New CBMs are routed directly to the TE using unsolicited result code:
+CBM: <length><CR><LF><pdu> (PDU mode enabled); or
+CBM: <sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data> (text mode enabled)

<ds>

0 – No SMS-STATUS-REPORTs are routed to the TE.

1 – SMS-STATUS-REPORTs are routed to the TE using unsolicited result code:
+CDS: <length><CR><LF><pdu> (PDU mode enabled); or
+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (text mode enabled)

2 – If SMS-STATUS-REPORT is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code: +CDSI: <mem3>,<index>.

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

Examples

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

5.10 AT+CMGL List SMS messages from preferred store

Description

The command returns 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>,<length>] <CR><LF><data>[<CR><LF> +CMGL:<index>,<stat>,<da>/<oa>,[<alpha>],[<scts>][,<tooa>/<toda>,<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>,<s

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

Defined values

<stat>

1. Text Mode:
   - "REC UNREAD" received unread message (i.e. new message)
   - "REC READ" received read message
   - "STO UNSENT" stored unsent message
   - "STO SENT" stored sent message
   - "ALL" all messages
2. PDU Mode:
   - 0 – received unread message (i.e. new message)
   - 1 – received read message
   - 2 – stored unsent message
   - 3 – stored sent message
   - 4 – all messages

<index>

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

<oa>

Originating-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <tooa>.

<da>

Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.

<alpha>

String type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific; used character set should be the one selected with command Select TE Character Set AT+CSCS.

<scts>

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

<tooa>

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

<toda>

TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.

<length>

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

<data>

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

1. If <dcs> indicates that GSM 7 bit default alphabet is used and <fo> indicates that TP-User-Data-Header-Indication is not set:
   a. If TE character set other than "HEX": ME/TA converts GSM alphabet into current TE character set.
   b. If TE character set is "HEX": ME/TA converts each 7-bit character of GSM 7 bit default alphabet into two IRA character long hexadecimal number. (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 number. (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 number.
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 number.

<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 number. (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

The command returns 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 number. (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 number. (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 number. 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 number.
<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 number. (e.g. 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

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

Defined values

<da>
Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.
<toda>

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

Examples

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

5.13 AT+CMSS Send message from storage

Description

The 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

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

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

Defined values

<index>
Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<oa>
Originating-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <tooa>.
<tooa>
TP-Originating-Address, Type-of-Address octet in integer format. (default refer <toda>).
<da>
Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.
<toda>
TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.
<length>
Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+CMGF=0), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length).
<stat> 1. Text Mode: "STO UNSENT" stored unsent message "STO SENT" stored sent message 2. PDU Mode: 2 – stored unsent message 3 – stored sent message
NOTE In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

Examples

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

5.15 AT+CMGD Delete message

Description

The 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

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

SIM PIN	References
YES	3GPP TS 27.005

Syntax

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

Defined values

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

Examples

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

5.17 AT+CMGRO Read message only

Description

The command returns message with location value <index> from message storage <mem1> to the TE, but the message's status don't 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

The 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

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

The 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> *If PDU mode (AT+CMGF=0):* AT+CMGSO=<length>,<pducontent>	+CMGSO: <mr> OK
	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

The 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

The 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. It's 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

The 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

6 Network Service Related Commands

6.1 AT+CREG Network registration

Description

Write command controls the presentation of an unsolicited result code +CREG: <stat> when <n>=1 and there is a change in the ME network registration status.

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.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

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

Defined values

<n>		
0	–	disable network registration unsolicited result code
1	–	enable network registration unsolicited result code +CREG: <stat>
2	–	there is a change in the ME network registration status or a change of the network cell: +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>
Two byte cell ID in hexadecimal format.

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
NO	3GPP TS 27.007

Syntax

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

Defined values

<mode>
0 – automatic 1 – manual 2 – force deregister 3 – set only <format> 4 – manual/automatic 5 – manual,but do not modify the network selection mode(e.g GSM,WCDMA) after module resets.
<format>
0 – long format alphanumeric <oper> 1 – short format alphanumeric <oper> 2 – numeric <oper>
<oper>
string type, <format> indicates if the format is alphanumeric or numeric.
<stat>
0 – unknown 1 – available 2 – current 3 – forbidden
<AcT>

Access technology selected
0 – GSM
1 – GSM Compact
2 – UTRAN

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),(0,1,2)
OK
```

6.3 AT+CLCK Facility lock

Description

The 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.
<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

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

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

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

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

AT+CLIP	*Set default value(<n>=0,<m>=0):* OK

Defined values

<n>
Parameter sets/shows the result code presentation status in the TA: 0 – disable 1 – enable
<m>
0 – CLIP not provisioned 1 – CLIP provisioned 2 – unknown (e.g. no network, etc.)
<number>
String type phone number of calling address in format specified by <type>.
<type>
Type of address octet in integer format; 128 – Restricted number type includes unknown type and format 145 – International number type 161 – national number.The network support for this type is optional 177 – network specific number,ISDN format 129 – Otherwise
<alpha>
String type alphanumeric representation of <number> corresponding to the entry found in phone book.
<CLI validity>
0 – CLI valid 1 – CLI has been withheld by the originator 2 – CLI is not available due to interworking problems or limitations of originating network

Examples

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

6.6 AT+CLIR Calling line identification restriction

Description

The 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

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

When enabled (and called subscriber allows), +COLP:<number>, <type> [,<subaddr>, <satype> [,<alpha>]] intermediate result code is returned from TA to TE before any +CR responses. It is manufacturer specific if this response is used when normal voice call is established.

When the AT+COLP=1 is set, any data input immediately after the launching of “ATDXXX;” will stop the execution of the ATD command, which may cancel the establishing of the call.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

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

Examples

AT+COLP?
+COLP: 1,0 *OK*
ATD10086;
VOICE CALL: BEGIN *+COLP: "10086",129,,,* *OK*

6.8 AT+CCUG Closed user group

Description

The 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

The 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	*When <mode>=2 and command successful:*

>[,<number>[,<type>[,<class>[,<subaddr>[,<satype>[,<time>]]]]]]	+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

The command allows control of the Call Waiting supplementary service. Activation, deactivation and status query are supported. When querying the status of a network service (<mode>=2) the response line for 'not active' case (<status>=0) should be returned only if service is not active for any <class>. Parameter <n> is used to disable/enable the presentation of an unsolicited result code +CCWA: <number>,<type>,<class> to the TE when call waiting service is enabled. Command should be abortable when network is interrogated.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

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

Defined values

<n>
Sets/shows the result code presentation status in the TA 0 – disable 1 – enable
<mode>
When <mode> parameter is not given, network is not interrogated: 0 – disable 1 – enable 2 – query status
<class>
It is a sum of integers each representing a class of information (default 7) 1 – voice (telephony) 2 – data (refers to all bearer services) 4 – fax (facsimile services) 7 – voice,data and fax(1+2+4) 8 – short message service 16 – data circuit sync 32 – data circuit async 64 – dedicated packet access 128 – dedicated PAD access
<status>
0 – not active 1 – active
<number>
String type phone number of calling address in format specified by <type>.
<type>
Type of address octet in integer format; 128 – Restricted number type includes unknown type and format 145 – International number type 129 – Otherwise

Examples

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

6.11 AT+CHLD Call related supplementary services

Description

The command allows the control of 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.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

<n>		
0	–	Terminate all held calls; or set User Determined User Busy for a waiting call
1	–	Terminate all active calls and accept the other call (waiting call or held call)
1X	–	Terminate a specific call X
2	–	Place all active calls on hold and accept the other call (waiting call or held call) as

the active call
2X – Place all active calls except call X on hold
3 – Add the held call to the active calls
4 – Connect two calls and cut off the connection between users and them simultaneously

Examples

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

6.12 AT+CUSD Unstructured supplementary service data

Description

The command allows control of the Unstructured Supplementary Service Data (USSD). Both network and mobile initiated operations are supported. Parameter <n> is used to disable/enable the presentation of an unsolicited result code (USSD response from the network, or network initiated operation) +CUSD: <m>[,<str>,<dcs>] to the TE. In addition, value <n>=2 is used to cancel an ongoing USSD session.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

<n>

0 – disable the result code presentation in the TA 1 – enable the result code presentation in the TA 2 – cancel session (not applicable to read command response)
<str>
String type USSD-string.
<dcs>
Cell Broadcast Data Coding Scheme in integer format (default 0).
<m>
0 – no further user action required (network initiated USSD-Notify, or no further information needed after mobile initiated operation) 1 – further user action required (network initiated USSD-Request, or further information needed after mobile initiated operation) 2 – USSD terminated by network 4 – operation not supported 5 – network time out

Examples

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

6.13 AT+CAOC Advice of charge

Description

The 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.

The 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

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

When <n>=1 and a supplementary service notification is received after a mobile originated call setup, intermediate result code +CSSI: <code1>[,<index>] is sent to TE before any other MO call setup result codes presented in the present document. When several different <code1>s are received from the network, each of them shall have its own +CSSI result code.

When <m>=1 and a supplementary service notification is received during a mobile terminated call setup or during a call, or when a forward check supplementary service notification is received, unsolicited result code +CSSU: <code2>[,<index>[,<number>,<type>[,<subaddr>,<satype>]]] is sent to TE. In case of MT call setup, result code is sent after every +CLIP result code (refer command "Calling line identification presentation +CLIP") and when several different <code2>s are received from the network, each of them shall have its own +CSSU result code.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

<n>
Parameter sets/shows the +CSSI result code presentation status in the TA: 0 – disable 1 – enable
<m>
Parameter sets/shows the +CSSU result code presentation status in the TA: 0 – disable 1 – enable
<code1>
0 – unconditional call forwarding is active 1 – some of the conditional call forwarding are active 2 – call has been forwarded

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

Examples

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

6.15 AT+CLCC List current calls

Description

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

SIM PIN	References
NO	3GPP TS 27.007

Syntax

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

AT+CLCC?	+CLCC: <n> OK
Write Command	Responses
AT+CLCC=<n>	OK
Execution Command	Responses
AT+CLCC	+CLCC:<id1>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,<alpha>]][<CR><LF> +CLCC:<id2>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,<alpha>]] [...]] OK
	ERROR
	+CME ERROR: <err>

Defined values

<n>
0 – Don't report a list of current calls of ME automatically when the current call status changes.
1 – Report a list of current calls of ME automatically when the current call status changes.
<idX>
Integer type, call identification number, this number can be used in +CHLD command operations.
<dir>
0 – mobile originated (MO) call
1 – mobile terminated (MT) call
<stat>
State of the cal:
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

The 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

Execute command returns 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

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

SIM PIN	References
YES	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>		
2	–	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

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

SIM PIN	References

YES	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

Write command resets 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

Write command resets 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

The command returns 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

The command returns the current network system mode.

SIM PIN	References
YES	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)

Examples

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

6.24 AT+CTZU Automatic time and time zone update

Description

The 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 doesn'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

The 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 doesn'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

The 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> […] *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> […]

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,C 1:21,C2:21
+CCINFO:[NCell3],ARFCN:25,MCC:460,MNC:00,LAC:6360,ID:8498,BSIC:40,RXLev:-81dbm,C 1:21,C2:21
+CCINFO:[NCell4],ARFCN:2,MCC:460,MNC:00,LAC:6362,ID:24644,BSIC:48,RXLev:-87dbm,C 1:15,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

The 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

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

The 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

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,PWRC:1, DTX:0,RLT:32
OK

6.29 AT+CRUS Show cell set system information

Description

The execution command returns 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

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

Syntax

Read Command	Responses
AT+CPLMNWLIST?	+CPLMNWLIST: <plmnwlist>,<type> OK
Write Command	Responses
AT+CPLMNWLIST=<plmnwlist>[,<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

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

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
<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

The 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.

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
	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

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

The 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.

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
AT+CNSVS=<arfcn_index>	*If 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 *If non BCCH-Carrier:* arfch: <arfcn_value>,dBm: <dBm_value> OK
	+CNSVS: NOT IN GSM OK
	+CNSVS: arfcn index invalid 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

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 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+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

The 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.

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
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
	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

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 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

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

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
	+CNSVN: NOT IN GSM 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

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

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
	+CNSVN: NOT IN GSM 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: - 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+CNSVUN=16,20,86,96,109 *Network survey started...* *For BCCH-Carrier:* *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* *For non BCCH-Carrier:* *86, -97* *Network survey end* *OK*

6.37 AT+CCGMDF Enable single mode in RAT balancing mode

Description

The command is used to enable or disable single mode in RAT balancing mode. This command is used for test purpose 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

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

Syntax

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

Defined values

<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+CPLMNPASS= “”, “12345678”
OK
AT+CPLMNPASS= “12345678”, “111111”
OK
AT+CPLMNPASS=”111111”
OK
AT+CPLMNPASS=”111111”,””
OK
```

6.39 AT*CNTI Query Network Mode

Description

The 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

Examples

*AT*CNTI =1*

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

7 Mobile Equipment Control and Status Commands

7.1 +CME ERROR Mobile Equipment error result code

Description

The operation of +CME ERROR:<err> result code is similar to the regular ERROR result code: if +CME ERROR: <err> is the result code for any of the commands in a command line, none of the following commands in the same command line is executed (neither ERROR nor OK result code shall be returned as a result of a completed command line execution). The format of <err> can be either numeric or verbose. This is set with command AT+CMEE.

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

The command controls the format of the error result codes that indicates errors related to Sim5320 Functionality.Format can be selected between plain “ERROR” output,error numbers or verbose “+CME ERROR: <err>” and “+CMS ERROR: <err>” messages.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

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

Defined values

<n>		
	0	– Disable result code,i.e. only “ERROR” will be displayed.
	1	– Enable error result code with numeric values.
	2	– Enable error result code with string values.

Examples

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

7.3 AT+CPAS Phone activity status

Description

Execution command returns 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

The command selects 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.

SIM PIN	References
NO	3GPP TS 27.007

Syntax

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

	+CME ERROR: <err>

Defined values

<fun>
0 – minimum functionality
1 – full functionality, online mode
4 – disable phone both transmit and receive RF circuits
5 – Factory Test Mode
6 – Reset
7 – Offline Mode
<rst>
0 – do not reset the ME before setting it to <fun> power level
1 – reset the ME before setting it to <fun> power level. This value only takes effect when <fun> equals 1.

Examples

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

7.5 AT+CPIN Enter PIN

Description

The command sends to 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 b is returned to TE.

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

SIM PIN	References
NO	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CPIN=?	OK
Read Command	Responses
AT+CPIN?	+CPIN: <code>

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

Defined values

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

Examples

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

7.6 AT+CSQ Signal quality

Description

Execution command returns 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
YES	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

The command causes the module to disable and enable auto report CSQ information, if we enable auto report, the module reports CSQ information every five seconds or only after <rssi> or <ber> changing, the format of report is "+CSQ: <rssi>,<ber>".

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<aoto>

0 – disable auto report

1 – enable auto report

<mode>

0 – CSQ auto report every five seconds

1 – CSQ auto report only after <rssi> or <ber> changing

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

The command resets the Advice of Charge related accumulated call meter value in SIM file EFACM.

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

The command sets the Advice of Charge related accumulated call meter maximum value in SIM file EFACMmax.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

Defined values

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

Examples

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

7.10 AT+CPUC Price per unit and currency table

Description

The command sets the parameters of Advice of Charge related price per unit and currency table in SIM file EFPUCT.

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

The command controls the phone to power off.

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

The 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 -47…+48). E.g. 6th of May 2008, 14:28:10 GMT+8 equals to “08/05/06,14:28:10+32”.

NOTE 1. Time zone is nonvolatile, and the factory value is invalid time zone.

2. Command +CCLK? will return time zone when time zone is valid, and if time zone is 00, command +CCLK? will return “+00”, but not “-00”.

Examples

```
AT+CCLK=”08/11/28, 12:30:33+32”
OK
AT+CCLK?
+CCLK: "08/11/28,12:30:35+32"
```

OK
AT+CCLK=”08/11/26,10:15:00”
OK
AT+CCLK?
+CCLK: “08/11/26,10:15:02+32”
OK

7.13 AT+CRFEN RF check at initialization

Description

The command will enable or disable RF check at the initialization, you can disable the RF control status check at the initialization if do not want to check the RF pin status. This status will be saved the check function on reboot.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<value>
0 – disable RF check at initialization
1 – enable RF check at initialization

Examples

AT+CRFEN=1
OK
AT+CRFEN?
+CRFEN: 1
OK

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

7.14 AT+CRESET Reset ME

Description

The 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

7.15 AT+SIMEI Set module IMEI

Description

The 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

7.16 AT+CSIMLOCK Request and change password

Description

The command allows to request a password and define a new password for a password protected <facility> lock function.Each password is a string of digits, the length is 8.The read command returns status of <facility> lock.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSIMLOCK=?	+CSIMLOCK: (list of supported <facility>s) OK
Read Command	Responses
AT+CSIMLOCK?	+CSIMLOCK: <PN_status>,<PU_status>,<PP_status>,<PC_status>,<PF_status> OK
Write Command	Responses
AT+CSIMLOCK= <facility>	+CSIMLOCK: <old password>

[,<old password>,<new password>]	OK
	+CME ERROR: <err>

Defined values

<facility>	
“PN”	Network Personalisation
“PU”	Network subset Personalisation
“PP”	Service Provider Personalisation
“PC”	Corporate Personalisation
“PF”	Lock Phone to the very First SIM card
<old password>	
Password specified for the facility. The length of password is 8.	
<new password>	
New password for the facility.The length of password is 8.	
<PN_status>	
Status of “PN” lock	
0	inactive
1	autolock
2	active
5	disable
<PU_status>	
Status of “PU” lock	
0	inactive
1	autolock
2	active
5	disable
<PP_status>	
State of “PP” lock	
0	inactive
1	autolock
2	active
5	disable
<PC_status>	
State of “PC” lock	
0	inactive
1	autolock
2	active
5	disable
<PF_status>	
State of “PF” lock	
0	inactive

1	autolock
2	active
5	disable

Examples

```
AT+CSIMLOCK=?
+CSIMLOCK: ("PN","PU","PP","PC","PF")
OK
AT+CSIMLOCK?
+CSIMLOCK: 0,0,0,0,0
OK
AT+CSIMLOCK=”PN”
+CSIMLOCK: 87654321
OK
AT+CSIMLOCK=”PN”,”87654321”,”12345678”
OK
```

7.17 AT+DSWITCH Change diagnostics port mode

Description

The command is used to change diagnostics port mode.The default mode of diagnostics port is debug mode. You can switch it from debug mode to data mode or from data mode to debug mode.In data mode, you can send and receive PCM data.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<mode>

Pamameter shows the settings of diagnostics port	
0	Switch from data mode to debug mode
1	Switch from debug mode to data mode

Examples

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

7.18 AT+CNVW Write NV item

Description

The AT+CNVW write command can be used to write <item> to NV(nonvolatile memory).If <item> is given as the only parameter,the write command may get <item> information.

The test command returns the range of <item> and the maximum length of the <item_data> field.

NOTE Before writing <item> to NV,you should get <item> information by AT+CNVW=<item> and confirm these parameters.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNVW=?	+CNVW: (0-<max_item>),<max_data_len> OK
Write Command	**Responses**
AT+CNVW=<item>[,<index>,<item_data>]	*If <item> is given as the only parameter:* +CNVW: <item>,<presence>,<array_size>,<item_size> OK
	If successful,return: +CNVW: 1 OK
	If fail,return: +CNVW: 0,<err_code> OK

Defined values

<max_item>
Maximum number of item supported by module.

<max_data_len>
Maximum length of <item_data>.

<item>
Item number in NV(nonvolatile memory).These items store some configuration of RF,Audio,etc.

<index>
Index of array.Some items is stored by array.When operating these items,you must specify the index.To other items(not stored by array),the index is 0.

<item_data>
Data(string type) that written to <item>.<item_data> is in hexadecimal format.The length of <item_data> is not more than <item_size>*2.

<presence>
Presence of item.

0	not present
1	present

<array_size>
Size of array.If <item> is stored by array,the value of <index> must be less than <array_size>.

<item_size>
Size of item.The value is given in octets.Because the format of <item_data> is hexadecimal,the length of <item_data> should be equal to <item_size>*2.

<err_code>
The error codes.These error codes are followed:

-1	Error parameters
0	Not present
1	Busy(Request is queued)
2	Bad(unrecognizable) command
3	The NVM is full
4	Command failed,reason other than NVM was full
5	Not active
6	Bad parameter in command block
7	Parameter is write-protected and thus read only.
8	Item not valid for target
9	Free memory exhausted
10	Address is not a valid allocation.

Examples

```
AT+CNVW=?
+CNVW: (0-7157),256
OK
AT+CNVW=110
```

+CNVW: 110,1,0,1
OK
AT+CNVW=110,0,"00"
+CNVW: 1
OK

7.19 AT+CNVR Read NV item

Description

The AT+CNVR write command can be used to get <item> data from NV(nonvolatile memory).If <item> is given as the only parameter,the write command may get <item> information.

The test command returns the range of <item> and the maximum length of the <item_data> field.

NOTE Before reading <item> from NV,you should get <item> information by AT+CNVR=<item> and confirm these parameters.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CNVR=?	+CNVR: (0-<max_item>),<max_data_len> OK
Write Command	**Responses**
AT+CNVR=<item>[,<index>]	*If <item> is given as the only parameter:* +CNVR: <item>,<presence>,<array_size>,<item_size> OK
	If successful,return: +CNVR: 1,<item_data> OK
	If fail,return: +CNVR: 0,<err_code> OK

Defined values

<max_item>
Maximum number of item supported by module.
<max_data_len>
Maximum length of <item_data>.
<item>

Item number in NV(nonvolatile memory).These items store some configuration of RF,Audio,etc.

<index>

Index of array.Some items is stored by array.When operating these items,you must specify the index.To other items(not stored by array),the index is 0.

<item_data>

Data(string type) that written to <item>.<item_data> is in hexadecimal format.The length of <item_data> is not more than <item_size>*2.

<presence>

Presence of item.

0 not present

1 present

<array_size>

Size of array.If <item> is stored by array,the value of <index> must be less than <array_size>.

<item_size>

Size of item.The value is given in octets.Because the format of <item_data> is hexadecimal,the length of <item_data> should be equal to <item_size>*2.

<err_code>

The error codes.These error codes are followed:

-1	Error parameters
0	Not present
1	Busy(Request is queued)
2	Bad(unrecognizable) command
3	The NVM is full
4	Command failed,reason other than NVM was full
5	Not active
6	Bad parameter in command block
7	Parameter is write-protected and thus read only.
8	Item not valid for target
9	Free memory exhausted
10	Address is not a valid allocation.

Examples

```
AT+CNVR=?
+CNVR: (0-7157),256
OK
AT+CNVR=110
+CNVR: 110,1,0,1
OK
AT+CNVR=110,0
+CNVR: 1,"00"
OK
```

7.20 AT+CDELTA Write delta package to FOTA partition

Description

The AT+CDELTA command can be used to write delta package to FOTA partition. After writing successfully, it will set the flag for updating. When module resets and checks the flag, then 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 resided in the module or T Flash card, 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 "SIM52xx_Delta_Package_Update_Application_note_V0.01.doc" for more detail.

7.21 AT+CDIPR Set UART baud rate

Description

The command sets UART baud rate when upgrade firmware through UART.

NOTE:

1. This command depends on which baud rate is set by AT+IPR and download tool.
2. Before using download tool to upgrade firmware through UART, one must use AT+CUDIAG to change UART service for download.
3. The baud rate will be saved as long as this command is executed.
4. Please refer to the document about download firmware through UART, in order to get more usage of this command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CDIPR=?	+CDIPR:(0-3) OK
Read Command	Responses
AT+CDIPR?	+CDIPR: <value> OK
Write Command	Responses
AT+CDIPR=<value>	OK
	ERROR
Execution Command	Responses
AT+CDIPR	*Set default value:* OK

Defined values

<value>
The baud rate which will be set. 0 – 38400 1 – 57600 2 – 115200(default)

3 – 230400

Examples

```
AT+CDIPR?
+CDIPR: 2
OK
AT+CDIPR=?
+CDIPR: (0-3)
OK
AT+CDIPR=2
OK
```

7.22 AT+CUDIAG Switch UART from AT service to DIAG service

Description

The command switches UART from AT service to DIAG service. After executing this command, UART comport can't be used to send AT command, and just used to transmit and receive data.

NOTE: This command must be used by the UART comport which is current used port.

SIM PIN	References
NO	Vendor

Syntax

Execution Command	Responses
AT+CUDIAG	OK

Examples

```
AT+CUDIAG
OK
```

7.23 AT+CUDLOADS Switch to UART download mode

Description

The command switch upgrade mode from USB download mode to UART download mode.

Notice:

1. The default download mode is through USB, this command is used when one wants to use UART to upgrade firmware.
2. When use AT+CUDLOADS=1, USB can never be used to upgrade firmware.
3. When one set this command "1", after UART download finished, this command will be "0", and next download mode will be USB download mode.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CUDLOADS=?	+CUDLOADS: (0-1) OK
Read Command	Responses
AT+CUDLOADS?	+CUDLOADS: <value> OK
Write Command	Responses
AT+CUDLOADS=<value>	OK
	ERROR
Execution Command	Responses
AT+CUDLOADS	*Set default value:* OK

Defined values

<value>
The download mode which will be set. 0 – USB download mode. 1 – UART download mode.

Examples

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

NOTE: Please refer to the application note "SIM52xx_UART_Dload_Application_note_V0.02.doc", in order to get more usage of this command.

8 SIMCard Related Commands

8.1 AT+CICCID Read ICCID in SIM card

Description

The command is used to Read the ICCID in SIM card

SIM PIN	References
YES	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

The 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 follow list the fileID hex value, the user need to convet them to decimal. EFs under MF 0x2FE2 ICCID 0x2F05 Extended Language Preferences 0x2F00 EF DIR 0x2F06 Access Rule Reference EFs under USIM ADF 0x6F05 Language Indication

0x6F07	IMSI
0x6F08	Ciphering and Integrity keys
0x6F09	C and I keys for pkt switched domain
0x6F60	User controlled PLMN selector w/Acc Tech
0x6F30	User controlled PLMN selector
0x6F31	HPLMN search period
0x6F37	ACM maximum value
0x6F38	USIM Service table
0x6F39	Accumulated Call meter
0x6F3E	Group Identifier Level
0x6F3F	Group Identifier Level 2
0x6F46	Service Provider Name
0x6F41	Price Per Unit and Currency table
0x6F45	Cell Bcast Msg identifier selection
0x6F78	Access control class
0x6F7B	Forbidden PLMNs
0x6F7E	Location information
0x6FAD	Administrative data
0x6F48	Cell Bcast msg id for data download
0x6FB7	Emergency call codes
0x6F50	Cell bcast msg id range selection
0x6F73	Packet switched location information
0x6F3B	Fixed dialling numbers
0x6F3C	Short messages
0x6F40	MSISDN
0x6F42	SMS parameters
0x6F43	SMS Status
0x6F49	Service dialling numbers
0x6F4B	Extension 2
0x6F4C	Extension 3
0x6F47	SMS reports
0x6F80	Incoming call information
0x6F81	Outgoing call information
0x6F82	Incoming call timer
0x6F83	Outgoing call timer
0x6F4E	Extension 5
0x6F4F	Capability Config Parameters 2
0x6FB5	Enh Multi Level Precedence and Pri
0x6FB6	Automatic answer for eMLPP service
0x6FC2	Group identity
0x6FC3	Key for hidden phonebook entries
0x6F4D	Barred dialling numbers
0x6F55	Extension 4

0x6F58	Comparison Method information
0x6F56	Enabled services table
0x6F57	Access Point Name Control List
0x6F2C	De-personalization Control Keys
0x6F32	Co-operative network list
0x6F5B	Hyperframe number
0x6F5C	Maximum value of Hyperframe number
0x6F61	OPLMN selector with access tech
0x6F5D	OPLMN selector
0x6F62	HPLMN selector with access technology
0x6F06	Access Rule reference
0x6F65	RPLMN last used access tech
0x6FC4	Network Parameters
0x6F11	CPHS: Voice Mail Waiting Indicator
0x6F12,	CPHS: Service String Table
0x6F13	CPHS: Call Forwarding Flag
0x6F14	CPHS: Operator Name String
0x6F15	CPHS: Customer Service Profile
0x6F16	CPHS: CPHS Information
0x6F17	CPHS: Mailbox Number
0x6FC5	PLMN Network Name
0x6FC6	Operator PLMN List
0x6F9F	Dynamic Flags Status
0x6F92	Dynamic2 Flag Setting
0x6F98	Customer Service Profile Line2
0x6F9B	EF PARAMS - Welcome Message
0x4F30	Phone book reference file
0x4F22	Phone book synchronization center
0x4F23	Change counter
0x4F24	Previous Unique Identifier
0x4F20	GSM ciphering key Kc
0x4F52	GPRS ciphering key
0x4F63	CPBCCH information
0x4F64	Investigation scan
0x4F40	MExE Service table
0x4F41	Operator Root Public Key
0x4F42	Administrator Root Public Key
0x4F43	Third party Root public key
0x6FC7	Mail Box Dialing Number
0x6FC8	Extension 6
0x6FC9	Mailbox Identifier
0x6FCA	Message Waiting Indication Status
0x6FCD	Service Provider Display Information

0x6FD2	UIM_USIM_SPT_TABLE
0x6FD9	Equivalent HPLMN
0x6FCB	Call Forwarding Indicator Status
0x6FD6	GBA Bootstrapping parameters
0x6FDA	GBA NAF List
0x6FD7	MBMS Service Key
0x6FD8	MBMS User Key
0x6FCE	MMS Notification
0x6FD0	MMS Issuer connectivity parameters
0x6FD1	MMS User Preferences
0x6FD2	MMS User connectivity parameters
0x6FCF	Extension 8
0x5031	Object Directory File
0x5032	Token Information File
0x5033	Unused space Information File

EFs under Telecom DF

0x6F3A	Abbreviated Dialing Numbers
0x6F3B	Fixed dialling numbers
0x6F3C	Short messages
0x6F3D	Capability Configuration Parameters
0x6F4F	Extended CCP
0x6F40	MSISDN
0x6F42	SMS parameters
0x6F43	SMS Status
0x6F44	Last number dialled
0x6F49	Service Dialling numbers
0x6F4A	Extension 1
0x6F4B	Extension 2
0x6F4C	Extension 3
0x6F4D	Barred Dialing Numbers
0x6F4E	Extension 4
0x6F47	SMS reports
0x6F58	Comparison Method Information
0x6F54	Setup Menu elements
0x6F06	Access Rule reference
0x4F20	Image
0x4F30	Phone book reference file
0x4F22	Phone book synchronization center
0x4F23	Change counter
0x4F24	Previous Unique Identifier

<p1> <p2> <p3>

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

<data>

Information which shall be written to the SIM(hexadecimal character format, refer AT+CSCS).
<sw1> <sw2>
Status information from the SIM about the execution of the actual command. It is returned in both cases, on successful or failed execution of the command.
<response>
Response data in case of a successful completion of the previously issued command. "STATUS" and "GET RESPONSE" commands return data, which gives information about the currently selected elementary data field. This information includes the type of file and its size. After "READ BINARY" or "READ RECORD" commands the requested data will be returned. <response> is empty after "UPDATE BINARY" or "UPDATE RECORD" commands.

Examples

AT+CRSM=?
OK

8.4 AT+CSIMSEL Switch between two SIM card

Description

The command is used to select external or embedded SIM card.

NOTE 1. Embedded SIM card supported by customization. Customer should provide information written into USIM chipset.

2. The command is disabled if the embedded SIM card isn't exist, i.e. standard hardware version.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CSIMSEL=?	OK
Read Command	**Responses**
AT+CSIMSEL?	+CSIMSEL: <simcard> OK
Write Command	**Responses**
AT+CSIMSEL=<simcard>	OK

Defined values

<simcard>
1 – external SIM card

2 – embedded SIM card

Examples

```
AT+CSIMSEL=1
OK
```

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

Description

The 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
```

8.6 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 – don't display PLMN.Already registered on PLMN.
1 – display PLMN

Examples

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

9 Hardware Related Commands

9.1 AT+CTXGAIN Set TX gain

Description

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

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<tx_gain>
TX gain level which is from 0 to 65535.

Examples

AT+CTXGAIN=1234
OK

9.2 AT+CRXGAIN Set RX gain

Description

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

SIM PIN	References
NO	Vendor

Syntax

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

	OK
Write Command	Responses
AT+CRXGAIN=<rx_gain>	OK

Defined values

<rx_gain>
RX gain level which is from 0 to 65535.

Examples

AT+CRXGAIN=1234
OK

9.3 AT+CTXVOL Set TX volume

Description

The 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

9.4 AT+CRXVOL Set RX volume

Description

The 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

9.5 AT+CTXFTR Set TX filter

Description

The 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= <tx_ftr_*1*>,<…>,<tx_ftr_*7*>	OK

Defined values

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

Examples

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

9.6 AT+CRXFTR Set RX filter

Description

The 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= <rx_ftr_*1*>,<…>,<rx_ftr_*7*>	OK

Defined values

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

Examples

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

9.7 AT+CVALARM Low voltage Alarm

Description

The 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 <voltage>s) OK
Read Command	Responses
AT+CVALARM?	+CVALARM: <enable>,<voltage> OK
Write Command	Responses
AT+CVALARM=<enable>[,<voltage>]	OK
	ERROR

Defined values

<enable>
0 – Close 1 – Open. If voltage < <voltage>, every 20 seconds will report a string: “warning! Voltage is low:<voltage value>”.
<voltage>
Between 2800mV and 4300mV. Default value is 3450.

NOTE the two parameters will be saved automatically.

Examples

AT+CVALARM=1,3400
OK

AT+CVALARM?
+CVALARM: 1,3400
OK
AT+CVALARM=?
+CVALARM: (0-1),(2800-4300)
OK

9.8 AT+CRIIC Read values from register of IIC device

Description

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

9.9 AT+CWIIC Write values to register of IIC device

Description

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
+CWIIC: 0x1234 *OK*

9.10 AT+CVAUXS Set state of the pin named VREG_AUX1

Description

The 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*

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

Description

The 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

9.12 AT+CGPIO Set Trigger mode of interrupt GPIO

Description

Set GPIO interrupt trigger mode (GPIO0 is used for interrupt).

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
```

9.13 AT+CGDRT Set the direction of specified GPIO

Description

The command is used to set the specified GPIO to in or out state. If setting the specified GPIO to in state, then it can not set the value of the GPIO to high or low.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<gpio_num>

0 – GPIO0
2 – GPIO2
3 – GPIO3
5 – GPIO5

<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.

Examples

```
AT+CGDRT=3,0,0
OK
```

9.14 AT+CGSETV Set the value of specified GPIO

Description

The 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	– GPIO0
2	– GPIO2
3	– GPIO3
5	– GPIO5
<gpio_hl>	
0	– low
1	– high
<save>	
0	– not save the setting
1	– save the setting
NOTE	If the parameter of <save> is omitted, it will save the value of specified GPIO.

Examples

```
AT+CGSETV=3,0,0
OK
```

9.15 AT+CGGETV Get the value of specified GPIO

Description

The 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 – GPIO0
1 – GPIO1
2 – GPIO2
3 – GPIO3
4 – GPIO4
5 – GPIO5
<gpio_hl>
0 – low
1 – high

Examples

```
AT+CGGETV=3
+CGGETV: 0
OK
```

9.16 AT+CGISR set interrupt trigger condition and start such interruption.

Description

SIM52XX 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. It sets the detect type and polarity type for such interruption and then enables the interruption. Please consult the document “SIM52xx_GPIO_Application_note” for more details.

SIM PIN	References
No	

Syntax

Read Command	Responses

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

Defined values

< GPIO >
GPIO number.
< switch >
0 : interrupt is disabled.
1 : interrupt is enabled
< detect >
0 : level detection.
1 : edge detection
< polarity >
0 : low level/edge detection
1 : high level/edge detection

Examples

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

NOTE:

1. *if the interruption is triggered SIM52XX will send the following URC to host.*

```
GPIO[0] Interrupt Alarm!value:0
```

2. *for read command if < switch > is 0 then <detect>, <polarity> have no meaning.*

9.17 AT+CADC Read ADC value

Description

Read the ADC value from modem. We support 3 type of ADC, 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*

9.18 AT+CMICAMP1 Set value of micamp1

Description

The command is used to set audio path parameter – micamp1; With this command you can change the first stage of MIC amplify value based on your design separately and refer to related hardware design document to get more information

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CMICAMP1=?	+CMICAMP1: (list of supported <amp_val>s) OK
Read Command	Responses
AT+ CMICAMP1?	+CMICAMP1:<amp_val> OK
Write Command	Responses
AT+CMICAMP1= <amp_val>	OK
	ERROR

Defined values

<amp_val>
Amplify value number which is from 0 to 1. 0 is 0DB and 1 is 24DB.

Examples

AT+CMICAMP1=0
+CMICAMP1: 0
OK
AT+CMICAMP1?
+CMICAMP1: 0
OK
AT+ CMICAMP1=?
+CMICAMP1: (0-1)
OK

9.19 AT+CVLVL Set value of sound level

Description

The 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. With this command you can change the value of each sound level based on your design separately and refer to related hardware design document to get 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>	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: -2000,-200,500,1000
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).

9.20 AT+SIDET Digital attenuation of sidetone

Description

The command is used to set digital attenuation of sidetone. For more detailed information, please refer to relevant HD document.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<st>
Digital attenuation of sidetone, integer type in decimal format and nonvolatile. Range: from 0 to 65535. Factory value: HANDSET:4000, HEADSET:9472, SPEAKER PHONE:16384.

Examples

AT+CSDVC=1
OK
AT+SIDET?
+SIDET: 4000
OK

9.21 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)

PCM: at+cecm=5(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

6 : EC mode recommended for aggressive SPEAKER

7 : EC mode recommended for medium SPEAKER

8 : EC mode recommended for least aggressive SPEAKER

Note:

1. EC mode of 6, 7, 8 can be adjusted by +CECSET command

2. 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

9.22 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

9.23 AT+CECSET Adjust the effect for the given echo cancellation mode

Description

This command is used to adjust the parameters of the selected EC mode for the given device. It can be used together with +ECM command.

This is a savable command.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CECSET=?	+CECSET: (list of supported <index>s), (list of supported <value>s) OK
Read Command	**Responses**
AT+CECSET?	+CECSET: current echo cancellation mode is : <ec_md> <index> -> <value> […] OK
Write Command	**Responses**
AT+CECSET =<index>,<value>	OK
	ERROR

Defined values

<ec_md>:
Current echo cancellation mode, please refer +CECM for more details
<index>:
0 – 37, EC has 38 parameters; this is the index of the selected parameter.
<value>:
0 – 65535, EC parameter value.

NOTE:

1. Currently only three EC mode's parameters can be adjusted, they are 6, 7 and 8 you can use +ECM to select one of these modes.

2. You have to use +ECM to select the right EC mode first in order to change the parameters.

Examples

AT+CSDVC=1
OK
AT+CECM =6
OK
AT+CECSET=0,65530
OK
AT+CECSET=1,1000
OK

9.24 AT+CRIRS Reset RI pin of serial port

Description

The command is used to reset RI pin of serial port (UART device).After the command executed. When a voice (csd, video) call or a SMS is coming or URC is reported, RI pin is asserted.it can wake up host.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CRIRS=?	OK
Write Command	Responses
AT+CRIRS	OK
	ERROR

Defined values

None

Examples

AT+CRIRS
OK

9.25 AT+CSUART Switch UART line mode

Description

The command is used to switch UART line mode between three and seven lines mode.

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
```

9.26 AT+CMUX Enable the multiplexer over the UART

Description

This command is used to enable the multiplexer over the UART, after enabled four virtual com 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 com ports are used as AT command port.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CMUX=?	+CMUX: (0) OK
Write Command	**Responses**
AT+CMUX=<value>[,<subset>[,<port_speed>[,<N1>[,<T1>[,<N2>[,<T2>[,<T3>[,<k>]]]]]]]	OK ERROR

Defined values

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

9.27 AT+CMUXSRVPORT Configure the specific virtual com 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.

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

9.28 AT+CDCDMD Set DCD pin mode

Description

The command is used to set DCD pin to DCD mode or GPIO mode.

NOTE DCD mode is invalid currently.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<mode>		
0	–	DCD mode
1	–	GPIO mode

Examples

```
AT+CDCDMD=0
OK
```

9.29 AT+CDCDVL Set DCD pin high-low in GPIO mode

Description

The command is used to set DCD pin high-low in GPIO mode.

NOTE The command will disable when DCD pin is DCD mode.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<value>		
0	–	set DCD pin low in GPIO mode
1	–	set DCD pin high in GPIO mode

Examples

```
AT+CDCDVL=0
OK
```

9.30 AT+CBC Battery charge

Description

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

NOTE The SIM5320 do not allow the detection of battery use,so <bcs> and <bcl> may be ignored.They are only compatible with other products like SIM5320,etc.The user can get the 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

9.31 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 while the UART is under NULL modem mode.

The interrupt is low level triggered by default.

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
```

9.32 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 will only take effect while the UART is working under NULL modem mode.

The function is disabled by default.

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

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

Description

SIM5320 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 “SIM5320_GPIO_Application_note” for more details.

This command is savable.

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

Defined values

<function>
1 : function status led.
2 : function wakeup me

3 : function wakeup host
4 : function pcm
7 : function keypad
9 : function rf switch
10 : function uart1 dcd
11 : function uart1 flow control
12: function wake up SIM5320 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
<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 SIM52XX 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).*

9.34 AT+CGWHOST Reset GPIO 41 to high level

Description

The 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

9.35 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, please use "AT+CGFUNC=12,1" to enable the 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 =<detect>,<polarity>	OK 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

9.36 AT+CKGSWT Switch pins' function

Description

This command is used to switch pins' function between keypad interface and general GPIO. If no keypad subsystem, the total 10 pins can be used as general GPIO after switching mode successfully.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<mode>

Integer type and nonvolatile value.

0 – General GPIO mode.

1 – Keypad interface mode (factory value).

NOTE In general GPIO mode, GPIO AT command can be used to config the GPIOs' direction and value (Refer to related HD document for more information).

KEYPAD INTERFACE	<---------->	GENERAL GPIO NUMBER
KEYPAD_4		GPIO6
KEYPAD_3		GPIO7
KEYPAD_2		GPIO8
KEYPAD_1		GPIO9
KEYPAD_0		GPIO10
KEYSENSE4		GPIO11
KEYSENSE3		GPIO12
KEYSENSE2		GPIO13
KEYSENSE1		GPIO14
KEYSENSE0		GPIO15

Examples

```
AT+CKGSWT=0
OK
AT+CKGSWT=1
OK
```

9.37 +KEY Keypad result code

Description

URCs (Unsolicited Result Code) for keypad when keypad interface mode is active (refer to +CKGSWT). 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"

9.38 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. If you just want to use full speed to simplify the circuit then you can use this command to switch the USB speed. This command will save your configuration so if you don't change the speed the module will use the latest configuration forever.

This command will only takes effect on the next start-up.

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 1 – Full speed (default value)

Examples

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

9.39 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.

This is a savable command 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>	OK

,<val>	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

9.40 AT+CADCA Read the value from the second ADC

Description

The modem 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*

9.41 AT+CAPWRON auto power on setting

Description

You can use this command to let the module to be powered up automaticly 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 up
<minute>
0 – 59 : the minute to power up
<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:

You can use the command AT+CAPWRON=255,255,255 to cancel such function.

9.42 AT+CAPWROFF auto power off setting

Description

You can use this command to let the module to be powered down 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 down
<minute>
0 – 59 : the minute to power down
<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:

You can use the command AT+CAPWROFF=255,255,255 to cancel such function

9.43 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.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CBVTBP=?	+CBVTBP: (0,1) OK
Read Command	**Responses**
AT+CBVTBP?	+CSVM: <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

9.44 AT+CRFOP Set the value of RF output power

Description

This command is used to set the value of RF output power for different bands supported by the module.

SIM PIN	References
NO	Vendor

Syntax

Write Command	Responses
AT+CRFOP=<band> [,<enable>] [,<value>]	[+CRFOP: <band>,<value>] OK
	ERROR

Defined values

<band>
0 – GSM 850
1 – GSM 900
2 – DCS 1800
3 – PCS 1900
4 – WCDMA 850
5 – WCDMA 900
6 – WCDMA 1900
7 – WCDMA 2100
<enable>
0 – write the third parameter <value> to the module
1 – write the default value to the module (the third parameter is not needed)

<value>
(0–3400) – the range for <band> 0-<band> 3 , it means 0 dbm to 34 dbm
(0–200) – the range for <band> 4-<band> 7 , it means 8 dbm to 28 dbm

Examples

AT+ CRFOP =1
+CRFOP:1,3250
OK
AT+ CRFOP =1,1
OK
AT+ CRFOP =1,0,3100
OK

10 SPI Related Commands

10.1 AT+CSPISETCLK SPI clock rate setting

Description

The 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

The 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

The 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

The 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

The 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

The 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

The 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. 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: max. 50 entries
	AT+CPBW command is not applicable to this storage.
<used>	
Integer type value indicating the number of used locations in selected memory.	
<total>	
Integer type value indicating the total number of locations in selected memory.	

Examples

```
AT+CPBS=?
+CPBS: ("SM","DC","FD","LD","MC","ME","RC","EN","ON")
OK
AT+CPBS=”SM”
OK
AT+CPBS?
+CPBS: "SM",1,200
OK
```

11.3 AT+CPBR Read phonebook entries

Description

The 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

The 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

The 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, 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
<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

The command allows to define emergency numbers list according to customers' requirement .Note that only no sim card is inserted or sim card is locked, these emergency numbers take effect.

When it is set enable and in the above situation, the customer defined emergency numbers in <emergency numbers> take effect, but the emergency numbers in the "EN" phonebook storage do not take effect.

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>[,	OK

<emergency numbers>]	

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:*”.

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

1 The length of actual fully qualified names of directories and files can not exceed 254.

2 Directory and file names can not include the following characters:

\ : * ? “ < > | , ;

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

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

12.1 AT+FSCD Select directory as current directory

Description

The 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.
<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

The 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 is not already existing 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

The 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, directory name which is relative and already existing.

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

The 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

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

Examples

AT+FSLS?

```
+FSLS: SUBDIRECTORIES: 2, FILES: 2
OK
AT+FSLS
+FSLS: SUBDIRECTORIES:
FirstDir
SecondDir

+FSLS: FILES:
image_0.jpg
image_1.jpg

OK
AT+FSLS=2
+FSLS: FILES:
image_0.jpg
image_1.jpg

OK
```

12.5 AT+FSDEL Delete file in current directory

Description

The 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 without double quotes, file name which is relative and already existing. If <filename> is *.*, it means delete all files in current directory.

Examples

AT+FSDEL=image_0.jpg
OK

12.6 AT+FSRENAME Rename file in current directory

Description

The 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 without double quotes, file name which is existed in current directory.
<new_name>
New name of specified file, string without double quotes.

Examples

AT+FSRENAME=image_0.jpg, image_1.jpg
OK

12.7 AT+FSATTRI Request file attributes

Description

The command is used to request the attributes of file which is existing 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 without double quotes, file name which is in current directory.
<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*

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 if present and mounted.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+FSMEM=?	OK
Execution Command	Responses
AT+FSMEM	+FSMEM: C:(<total>, <used>) OK

Defined values

<total>

The total size of local storage space.
<used>
The used size of local storage space.
NOTE 1.The unit of storage space size is in Byte.

Examples

AT+FSMEM
+FSMEM: C:(11348480, 2201600)
OK

12.9 AT+FSLOCA Select storage place

Description

The command is used to set the storage place for media files.

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:/”)

Examples

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

OK

12.10 AT+FSCOPY Copy an appointed file

Description

The 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>	+FSCOPY: <percent> [+FSCOPY: <percent>] OK
	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.
<file2>
The destination file name or the whole path name with destination file name.
<percent>

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

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.

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
```

13 File Transmission Related Commands

The module supports file transmission between the Module and PC host over Xmodem protocol, and the transmission is bidirectional.

13.1 AT+CTXFILE Select file transmitted to PC host

Description

The command is used to select a file which is transmitted from the module to PC host. After selecting the file successfully, use HyperTerminal to get the file over Xmodem protocol [refer AT Commands Samples: File transmission to PC host]. If available memory is not enough, file transmission will fail.

Note: If available memory is not enough, file transmission will fail. If you use HyperTerminal Applet (MS), please to make sure the storage path to PC host can not include Chinese character, but file name can include Chinese 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. **NOTE** The path to where you want to save the file by using HyperTerminal, must not contain any Chinese 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
video_0.mp4        video_1.mp4
OK
AT+CTXFILE=”video_2.mp4”
OK
….
```

13.2 AT+CRXFILE Set name of file received from PC host

Description

The command is used to set file name which is received from PC 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 PC 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 PC host.
<dir_type>
Specify storage location of file which is received from PC host. If this parameter is omitted, it will save the file to current directory [refer AT+FSCD] 0 – save file received from PC 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

+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.

14 V24-V25 Commands

14.1 AT+IPR Set local baud rate temporarily

Description

The command sets the baud rate of module's serial interface temporarily, after reboot the baud rate is set to default value.The default value is 115200.

SIM PIN	References
NO	V.25ter

Syntax

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

Defined values

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

Examples

```
AT+IPR?
+IPR: 115200
OK
AT+IPR=?
```

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

14.2 AT+IPREX Set local baud rate permanently

Description

The command sets the baud rate of module's serial interface permanently, after reboot the baud rate is also valid.

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

Examples

AT+IPREX?
+IPREX: 115200
OK

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

14.3 AT+ICF Set control character framing

Description

The command sets character framing which contain data bit, stop bit and parity bit.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

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

Examples

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

14.4 AT+IFC Set local data flow control

Description

The command sets the flow control of the module.

SIM PIN	References
NO	V.25ter

Syntax

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

Defined values

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

Examples

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

14.5 AT&C Set DCD function mode

Description

The command determines how the state of circuit 109 (**DCD**) relates to the detection of received line signal from the distant end.

NOTE After executing AT+CSUART=1 and AT+CDCDMD=0,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

The 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

The 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

The command determines how the **TA** responds when circuit 108/2 (**DTR**) 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
NO	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 the 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

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
<APN>
(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.
<PDP_addr>
A string parameter that identifies the MT in the address space applicable to the PDP. Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using command AT+CGPADDR.
<d_comp>
A numeric parameter that controls PDP data compression, this value may depend on platform: 0 – off (default if value is omitted) 1 – on 2 – V.42bis
<h_comp>
A numeric parameter that controls PDP header compression, this value may depend on platform: 0 – off (default if value is omitted) 1 – on 2 – RFC1144 3 – RFC2507 4 – RFC3095

Examples

AT+CGDCONT?
+CGDCONT: 1,"IP","","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)
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)

OK
```

15.3 AT+CGTFT Define Secondary PDP Context

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 +CGDCONT and +CGDSCONT commands).
<packet filter identifier>
a numeric parameter, value range from 1 to 16.
<evaluation precedence index>
a numeric parameter. The value range is from 0 to 255.
<source address and subnet mask>
string type. The string is given as dot-separated numeric (0-255) parameters on the form: "a1.a2.a3.a4.m1.m2.m3.m4" for IPv4 or "a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16.m1.m2.m3.m4.m5.m6.m7.m8.m9.m10.m11.m12.m13.m14.m15.m16", for IPv6.
<protocol number (ipv4) / next header (ipv6)>
a numeric parameter, value range from 0 to 255.
<destination port range>
string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t".
<source port range>
string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t".
<ipsec security parameter index (spi)>
numeric value in hexadecimal format. The value range is from 00000000 to FFFFFFFF.

<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>
string type. The string is given as dot-separated numeric (0-255) parameters on the form "t.m".
<flow label (ipv6)>
numeric value in hexadecimal format. The value range is from 00000 to FFFFF. Valid for IPv6 only.
<direction>
a numeric parameter which specifies the transmission direction in which the packet filter shall be applied. 0 Pre-Release 7 TFT filter (see 3GPP TS 24.008 [8], table 10.5.162) 1 Uplink 2 Downlink 3 Birectional (Up & Downlink)

Examples

AT+CGTFT?
+CGTFT: 2,1,0,"74.125.71.99.255.255.255.255",0,0.0,0.0,0,0.0,0
OK
AT+CGTFT=2,1,0,"74.125.71.99.255.255.255.255"
OK
AT+CGTFT=?
+CGTFT: "IP",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF) *+CGTFT: "PPP",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)* *+CGTFT: "IPV6",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFF),(0-255.0-255),(0-FFFFF)*
OK

15.4 AT+CGQREQ Quality of service profile (requested)

Description

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

Defined values

<cid>
Parameter specifies a particular PDP context definition.The parameter is also used in other PDP

context-related commands.

1…16

<Traffic class>

0 – conversational

1 – streaming

2 – interactive

3 – background

4 – subscribed value

<Maximum bitrate UL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(up-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGEQREQ=…,32,…).

0 subscribed value

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

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

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

<Maximum bitrate DL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGEQREQ=…,32,…).

0 subscribed value

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

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

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

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGEQREQ=…,32,…).

0 subscribed value

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

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

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

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGEQREQ=…,32,…).

0 subscribed value

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

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

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

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

0 – subscribed value

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

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g.AT+CGEQREQ=..,”5E3”,…).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g. AT+CGEQREQ=…,”5E3”,..).

“0E0” – subscribed value

“5E2”

“1E2”

“5E3”

“4E3”

“1E3”

“1E4”

“1E5”

“1E6”

“6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no

1 – yes

2 – no detect

3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds.

0 – subscribed value

10…150 – value needs to be divisible by 10 without remainder

200…950 – value needs to be divisible by 50 without remainder

1000…4000 – value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

0 – subscribed value

1 –

2 –

3 –

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

Examples

```
AT+CGEQREQ?
+CGEQREQ:
OK
AT+CGEQREQ=?
+CGEQREQ: "IP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGEQREQ: "PPP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1
E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1
E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGEQREQ: "IPV6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","
1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","
1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
OK
```

15.6 AT+CGQMIN Quality of service profile (minimum acceptable)

Description

The 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
<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)
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 bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrate UL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGEQMIN	OK

Defined values

<cid>
Parameter specifies a particular PDP context definition.The parameter is also used in other PDP

context-related commands.

1…16

<Traffic class>

0 – conversational

1 – streaming

2 – interactive

3 – background

4 – subscribed value

<Maximum bitrate UL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(up-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGEQMIN=…,32,…).

0 subscribed value

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

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

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

<Maximum bitrate DL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGEQMIN=…,32,…).

0 subscribed value

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

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

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

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGEQMIN=…,32,…).

0 subscribed value

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

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

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

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGEQMIN=…,32,…).

0 subscribed value

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

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

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

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size inoctets.

0 – subscribed value

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

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g.AT+CGEQMIN=..,”5E3”,…).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g. AT+CGEQMIN=…,”5E3”,..).

“0E0” – subscribed value

“5E2”

“1E2”

“5E3”

“4E3”

“1E3”

“1E4”

“1E5”

“1E6”

“6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no

1 – yes

2 – no detect

3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds.

0 – subscribed value

10…150 – value needs to be divisible by 10 without remainder

200…950 – value needs to be divisible by 50 without remainder

1000…4000 – value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

0 – subscribed value

1 –

2 –

3 –

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

Examples

```
AT+CGEQMIN?
+CGEQMIN:
OK
AT+CGEQMIN=?
+CGEQMIN: "IP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGEQMIN: "PPP",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","1
E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1
E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGEQMIN: "IPV6",(0-4),(0-384),(0-7168),(0-384),(0-7168),(0-2),(0-1520),("0E0","
1E1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","
1E4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
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 1 – 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: 1,0
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
	NO CARRIER
	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

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

The command is used to set the MT to operate according to the specified GPRS mobile class.

SIM PIN	References
YES	3GPP TS 27.007

Syntax

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

	OK
	ERROR
Read Command	Responses
AT+CGCLASS?	+CGCLASS: <class> OK
	ERROR
Write Command	Responses
AT+CGCLASS=<class>	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGCLASS	*Set default value:* OK
	ERROR

Defined values

<class>
A string parameter which indicates the GPRS mobile class (in descending order of functionality) A – class A (highest)

Examples

AT+CGCLASS=?
+CGCLASS: ("A") *OK*
AT+CGCLASS?
+CGCLASS: "A" *OK*

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

The 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 byte location area code in hexadecimal format(e.g.”00C3” equals 193 in decimal).		
<ci>		
Two byte cell ID in hexadecimal format.		

Examples

AT+CGREG=?
+CGREG: (0-1)
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

The 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>
Indicates the types 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
<passwd>
Parameter specifies the password used for authentication. It is required for the authentication types PAP and CHAP.
<user>
Parameter specifies the user name used for authentication. It is required for the authentication type PAP.

Examples

AT+CGAUTH=?
+CGAUTH: (1-16),(0-2), *OK*
AT+CGAUTH=1,1,"SIMCOM","123"
OK

16 TCP/IP Related Commands

16.1 AT+CGSOCKCONT Define socket PDP context

Description

The 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
<APN>
(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.
<PDP_addr>
A string parameter that identifies the MT in the address space applicable to the PDP. Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure.
<d_comp>
A numeric parameter that controls PDP data compression: 0 – off (default if value is omitted) 1 – on
<h_comp>
A numeric parameter that controls PDP header compression: 0 – off (default if value is omitted) 1 – on

Examples

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

16.2 AT+CSOCKSETPN Set active PDP context's profile number

Description

The 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 conne-ctions of socket

Description

The command is used to set type of authentication for PDP-IP connections of socket.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CSOCKAUTH=?	+CSOCKAUTH:(range of supported <cid>s),(list of supported <auth _type> s), <passwd_len>,<user_len> OK
	ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+CSOCKAUTH?	+CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> … OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CSOCKAUTH=<cid>[,<auth_type>[,<passwd>[,<user>]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	**Responses**
AT+CSOCKAUTH	OK
	ERROR
	+CME ERROR: <err>

Defined values

<cid>
Parameter specifies a particular PDP context definition. This is also used in other PDP context-related commands. 1…16
<auth_type>
Indicates the types 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
<passwd>

Parameter specifies the password used for authentication. It is required for the authentication types PAP and CHAP.
<user>
Parameter specifies the user name used for authentication. It is required for the authentication type PAP.
<passwd_len>
The maximum length of the password.
<user_len>
The maximum length of the user name.

Examples

AT+CSOCKAUTH=?
+CSOCKAUTH: (1-16),(0-2),132,132
OK
AT+CSOCKAUTH=1,1,"SIMCOM","123"
OK

16.4 AT+CGSOCKQREQ Quality of service profile (requested)

Description

The 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	3GPP TS 27.007

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
<precedence>
A numeric parameter which specifies the precedence class: 0 – network subscribed value 1 – high priority 2 – normal priority 3 – low priority
<delay>
A numeric parameter which specifies the delay class: 0 – network subscribed value 1 – delay class 1 2 – delay class 2 3 – delay class 3 4 – delay class 4
<reliability>
A numeric parameter which specifies the reliability class:

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

<peak>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value
1 – Up to 1000 (8 kbit/s)
2 – Up to 2000 (16 kbit/s)
3 – Up to 4000 (32 kbit/s)
4 – Up to 8000 (64 kbit/s)
5 – Up to 16000 (128 kbit/s)
6 – Up to 32000 (256 kbit/s)
7 – Up to 64000 (512 kbit/s)
8 – Up to 128000 (1024 kbit/s)
9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

0 – network subscribed value
1 – 100 (~0.22 bit/s)
2 – 200 (~0.44 bit/s)
3 – 500 (~1.11 bit/s)
4 – 1000 (~2.2 bit/s)
5 – 2000 (~4.4 bit/s)
6 – 5000 (~11.1 bit/s)
7 – 10000 (~22 bit/s)
8 – 20000 (~44 bit/s)
9 – 50000 (~111 bit/s)
10 – 100000 (~0.22 kbit/s)
11 – 200000 (~0.44 kbit/s)
12 – 500000 (~1.11 kbit/s)
13 – 1000000 (~2.2 kbit/s)
14 – 2000000 (~4.4 kbit/s)
15 – 5000000 (~11.1 kbit/s)
16 – 10000000 (~22 kbit/s)
17 – 20000000 (~44 kbit/s)
18 – 50000000 (~111 kbit/s)
31 – optimization

Examples

```
AT+CGSOCKQREQ?
+CGSOCKQREQ:
OK
AT+CGSOCKQREQ=?
+CGSOCKQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQREQ: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQREQ: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
OK
```

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	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGSOCKEQREQ=?	+CGSOCKEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Deliv ery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) [<CR><LF> +CGSOCKEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate

	DL>s),(list of supported <Deliv ery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) […]] OK
Read Command	Responses
AT+CGSOCKEQREQ?	+CGSOCKEQREQ: [<cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>, <Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>][<CR><LF> +CGSOCKEQREQ: <cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>, <Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>[…]] OK
Write Command	Responses
AT+CGSOCKEQREQ=<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CGSOCKEQREQ	OK

Defined values

<cid>

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

1…16

<Traffic class>

0 – conversational

1 – streaming

2 – interactive

3 – background

4 – subscribed value

<Maximum bitrate UL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(up-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQREQ=…,32,…).

0 subscribed value

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

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

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

<Maximum bitrate DL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQREQ=…,32,…).

0 subscribed value

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

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

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

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGSOCKEQREQ=…,32,…).

0 subscribed value

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

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

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

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGSOCKEQREQ=…,32,…).

0 subscribed value

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

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

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

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

0 – subscribed value

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

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g.AT+CGSOCKEQREQ=..,”5E3”,…).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g. AT+CGSOCKEQREQ=…,”5E3”,..).

“0E0” – subscribed value

“5E2”

“1E2”

“5E3”

“4E3”

“1E3”

“1E4”

“1E5”

“1E6”

“6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no

1 – yes

2 – no detect

3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its

delivery at the other SAP,in milliseconds.

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

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

0	–	subscribed value
1	–	
2	–	
3	–	

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP	Internet Protocol
PPP	Point to Point Protocol
IPV6	Internet Protocol Version 6

Examples

```
AT+CGSOCKEQREQ?
+CGSOCKEQREQ:
OK
AT+CGSOCKEQREQ =?
+CGSOCKEQREQ: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4"
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQREQ: "PPP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1
","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4
","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQREQ: "IPV6",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
OK
```

16.6 AT+CGSOCKQMIN Quality of service profile (minimum acceptable)

Description

The 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	3GPP TS 27.007

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

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value
1 – high priority
2 – normal priority
3 – low priority

<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value
1 – delay class 1
2 – delay class 2
3 – delay class 3
4 – delay class 4

<reliability>

A numeric parameter which specifies the reliability class:

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

<peak>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value
1 – Up to 1000 (8 kbit/s)
2 – Up to 2000 (16 kbit/s)
3 – Up to 4000 (32 kbit/s)
4 – Up to 8000 (64 kbit/s)
5 – Up to 16000 (128 kbit/s)
6 – Up to 32000 (256 kbit/s)
7 – Up to 64000 (512 kbit/s)
8 – Up to 128000 (1024 kbit/s)
9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

0 – network subscribed value
1 – 100 (~0.22 bit/s)
2 – 200 (~0.44 bit/s)
3 – 500 (~1.11 bit/s)
4 – 1000 (~2.2 bit/s)

5 – 2000 (~4.4 bit/s)
6 – 5000 (~11.1 bit/s)
7 – 10000 (~22 bit/s)
8 – 20000 (~44 bit/s)
9 – 50000 (~111 bit/s)
10 – 100000 (~0.22 kbit/s)
11 – 200000 (~0.44 kbit/s)
12 – 500000 (~1.11 kbit/s)
13 – 1000000 (~2.2 kbit/s)
14 – 2000000 (~4.4 kbit/s)
15 – 5000000 (~11.1 kbit/s)
16 – 10000000 (~22 kbit/s)
17 – 20000000 (~44 kbit/s)
18 – 50000000 (~111 kbit/s)
31 – optimization

Examples

```
AT+CGSOCKQMIN?
+CGSOCKQMIN:
OK
AT+CGSOCKQMIN=?
+CGSOCKQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
OK
```

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	3GPP TS 27.007

Syntax

Test Command	Responses
AT+CGSOCKEQMIN=?	+CGSOCKEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Deliv ery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) [<CR><LF> +CGSOCKEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maxim um bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Deliv ery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) […]] OK
Read Command	Responses
AT+CGSOCKEQMIN?	+CGSOCKEQMIN: [<cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>, <Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>][<CR><LF> +CGSOCKEQMIN: <cid>,<Traffic class>,<Maximum bitrate UL>,<Ma ximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>, <Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>[…]] OK
Write Command	Responses

AT+CGSOCKEQMIN=<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]]	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CGSOCKEQMIN	OK

Defined values

<cid>
Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands. 1…16
<Traffic class>
0 – conversational 1 – streaming 2 – interactive 3 – background 4 – subscribed value
<Maximum bitrate UL>
This parameter indicates the maximum number of kbits/s delivered to UMTS(up-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQMIN=…,32,…). (refer TS 24.008 [8] subclause 10.5.6.5). 0 subscribed value 1kbps…63kbps – value needs to be divisible by 1 without remainder 64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps 576 kbps …8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps
<Maximum bitrate DL>
This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQMIN=…,32,…). (refer TS 24.008 [8] subclause 10.5.6.5). 0 subscribed value 1kbps…63kbps – value needs to be divisible by 1 without remainder 64 kbps …568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

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

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGSOCKEQMIN=…,32,…). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

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

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

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

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGSOCKEQMIN=…,32,…). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

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

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

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

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size inoctets. (refer TS 24.008 [8] subclause 10.5.6.5).

0 – subscribed value

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

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g.AT+CGSOCKEQMIN=..,”5E3”,…).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of $5*10^{-3}$ would be specified as “5E3”(e.g.

AT+ CGSOCKEQMIN =…,”5E3”,..).

“0E0” – subscribed value
“5E2”
“1E2”
“5E3”
“4E3”
“1E3”
“1E4”
“1E5”
“1E6”
“6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no
1 – yes
2 – no detect
3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds. (refer TS 24.008 [8] subclause 10.5.6.5).

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

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

0 – subscribed value
1 –
2 –
3 –

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol
PPP Point to Point Protocol
IPV6 Internet Protocol Version 6

Examples

AT+CGSOCKEQMIN?
+ CGSOCKEQMIN:
OK
AT+CGSOCKEQMIN =?

+CGSOCKEQMIN: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4"
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQMIN: "PPP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1
","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4
","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQMIN: "IPV6",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E
1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E
4","1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
OK

16.8 AT+IPADDR Inquire socket PDP address

Description

The 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+NETOPEN Open socket

Description

The command opens socket, and it can also activate the socket PDP context at the same time. For the write command, if the first and second parameters are empty, the third parameter must exist; If the third parameter is empty, the first and second parameters must exist.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+NETOPEN=?	+NETOPEN: (list of supported <sock_type>s), (range of supported <port>s), (list of supported <mode>s) OK
	ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+NETOPEN?	+NETOPEN:<net_state>, <mode> OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+NETOPEN=[<sock_type>][,[<port>] [,<mode>]]	Network opened OK
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>

Defined values

<sock_type>
a string parameter that identifies the type of transmission protocol. TCP – Transfer Control Protocol UDP – User Datagram Protocol When it is “TCP” and only one parameter exists, the AT+TCPCLOSE command can be used to close the socket created.
<port>
A numeric parameter that identifies the port of socket, the range of permitted values is 0 to 65535.
<net_state>

a numeric parameter that indicates the state of PDP context activation:

0 network close (deactivated)

1 network open(activated)

<mode>

a numeric parameter that module is used which mode.At present, it supports three mode,such as single-client, tcp-server and multi-client.if <mode> is 1,then <sock_type> and <port> are ignored.

0 single-client or tcp-server

1 multi-client

<err_info>

A string parameter that displays the cause of occurring error.

Examples

```
AT+NETOPEN=”TCP”,80
Network opened
OK
AT+NETOPEN=?
+NETOPEN: ("TCP", "UDP"), (0-65535), (0-1)
OK
AT+NETOPEN?
+NETOPEN: 1, 1
OK
```

16.10 AT+TCPCONNECT Establish TCP connection

Description

The command establishes TCP connection with TCP server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+TCPCONNECT =?	OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+TCPCONNECT= <server_IP>, <port>	Connect ok OK
	+IP ERROR: <err_info> ERROR

	Connect fail ERROR
	ERROR

Defined values

<server_IP>
A string parameter that identifies the IP address of TCP 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.cn.".
<port>
A numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+TCPCONNECT="192.168.0.1",80
OK
AT+TCPCONNECT="192.168.0.1",80
Connect fail *ERROR*
AT+TCPCONNECT="www.google.cn",80
OK

16.11 AT+TCPWRITE Send TCP data

Description

The command sends TCP data when the TCP connection is established.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+TCPWRITE=?	OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses

AT+TCPWRITE=<length> <CR>*data for send*	OK +TCPWRITE: <reqSendLength>, <cnfSendLength> *If sending successfully:* Send ok
	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<length>
a numeric parameter which indicates the length of sending data, it must be between1 and 1024.
<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.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

```
AT+TCPWRITE=12
>ABCDEFGHIJKL
OK

+TCPWRITE：12, 12

Send ok
```

16.12 AT+UDPSEND Send UDP data

Description

The command sends UDP data.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+UDPSEND =?	OK
	ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+UDPSEND=<length>,<IP_address>,<port><CR> *data for send*	OK +UDPSEND: <reqSendLength>, <cnfSendLength>
	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<length>
a numeric parameter which indicates the length of sending data, it must be between1 and 1024.
<IP_address>
A string parameter that identifies the IP address of receiver.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.cn.".
<port>
A numeric parameter that identifies the port of receiver, the range of permitted values is 0 to 65535.
<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.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+UDPSEND=12,"192.168.0.1",80
>ABCDEFGHIJKL
OK
+UDPSEND: 12, 12

16.13 AT+SERVERSTART Startup TCP server

Description

The 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: <client_IP>:<port>.

NOTE: If the module is as a server, this need the Operators to support.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+SERVERSTART=?	OK
	ERROR
Read Command	**Responses**
AT+SERVERSTART?	+SERVERSTART: <state> OK
	+IP ERROR: <err_info> ERROR
Write Command	**Responses**
AT+SERVERSTART=<port>	OK
	+IP ERROR: <err_info> ERROR
Execution Command	**Responses**
AT+SERVERSTART	+IP ERROR: <err_info> ERROR
	OK

Defined values

<client_IP>
A string parameter that identifies the IP address of client.
<port>
The port to listen on. This parameter can only be used when AT+NETOPEN=”TCP” is launched.
<state>
The state of the server socket: - LISTENING - NOT LISTENING
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+SERVERSTART
OK
At+SERVERSTART?
+SERVERSTART: LISTENING *OK*

16.14 AT+LISTCLIENT List all of clients' information

Description

The command lists all of clients' information, and these clients have already been connected with TCP server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+LISTCLIENT=?	OK
Write Command	**Responses**
AT+LISTCLIENT	[+LISTCLIENT: <index1>, <IP_address>, <port>] … [+LISTCLIENT: <indexN>, <IP_address>, <port>] OK
	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<indexX>
A numeric parameter that identifies the index of client, the max number of client is ten, and the range of permitted values is 0 to 9.
<IP_address>
A string parameter that identifies the IP address of client.
<port>
A numeric parameter that identifies the port of client, the range of permitted values is 0 to 65535.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+LISTCLIENT

```
+LISTCLIENT: 0, 10.71.34.32 , 80
+LISTCLIENT: 1, 10.71.78.89, 1020
OK
```

16.15 AT+CLOSECLIENT Disconnect specified client

Description

The command disconnects the specified client.if the client disconnects connection, an unsolicited result code is returned.The unsolicited result code is +IPCLOSE: <client_index>, <close_reason>,<remote_IP>,<port>.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CLOSECLIENT=?	OK
Write Command	**Responses**
AT+CLOSECLIENT=<client_index>	OK
	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<client_index>
A numeric parameter that identifies the client index which will be closed, The allocated index may be read using command AT+LISTCLIENT.
<close_reason>
a numeric parameter that identifies reason that the connection closed. 1 remote side sends a request of closing first. 2 reset the connection because of timeout of sending data,or other reasons.
<remote_IP>
A string parameter that identifies the IP address of client.
<port>
A numeric parameter that identifies the port of client.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+CLOSECLIENT=0
OK

16.16 AT+ACTCLIENT Activate specified client

Description

The command activates the specified client, when the client is activated, the client is able to receive data from TCP server or send data to the TCP server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+ACTCLIENT=?	OK
Write Command	**Responses**
AT+ACTCLIENT= <client_index>	OK
	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<client_index>
A numeric parameter that identifies the client index which will be closed. The allocated index may be read using command AT+LISTCLIENT.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+ ACTCLIENT=0
OK

16.17 AT+NETCLOSE Close socket

Description

The command closes socket, if the socket is opened for a server, then it will disconnect all of clients' connection that is connected with the server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+NETCLOSE =?	OK
Execution Command	Responses
AT+NETCLOSE	OK
	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+NETCLOSE
Network closed *OK*

16.18 AT+CIPHEAD Add an IP head when receiving data

Description

The command is used to add an IP head when receiving data.

SIM PIN	References
NO	Vendor

Syntax

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

	ERROR
Execution Command	Responses
AT+CIPHEAD	*Set default value:* OK

Defined values

<mode>
a numeric parameter which indicates whether adding an IP header to received data or not 0 – not add IP header 1 – add IP header, the format is "+IPD(data length)"

Examples

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

16.19 AT+CIPSRIP Set whether display IP address and port of sender when receiving data

Description

The command is used to set whether display IP address and port of sender when receiving data.

SIM PIN	References
NO	Vendor

Syntax

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

AT+CIPSRIP	*Set default value:* OK

Defined values

<mode>
a numeric parameter which indicates whether show the prompt of where the data received or not before received data. 0 – do not show the prompt 1 – show the prompt,the format is as follows: "RECV FROM:<IP ADDRESS>:<PORT>"

Examples

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

16.20 AT+CIPCCFG Configure parameters of socket

Description

The command is used to configure parameters of socket. For the write command, the parameter part cannot be empty.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CIPCCFG=?	+CIPCCFG: (list of supported <NmRetry>s),(list of supported <DelayTm>s),(list of supported <Ack>s), (list of supported <errMode>s),(list of supported <HeaderType>s) OK
Read Command	Responses
AT+CIPCCFG?	+CIPCCFG:<NmRetry>,<DelayTm>,<Ack>,<errMode>,<Header-Type> OK
Write Command	Responses
AT+CIPCCFG=	OK

[<NmRetry>][,[<DelayTm>][,[<Ack>][,[<errMode>][,]<HeaderType>]]]]	ERROR
Execution Command	Responses
AT+CIPCCFG	*Set default value:* OK

Defined values

<NmRetry>
a numeric parameter which is number of retransmission to be made for an IP packet.The default value is 10.
<DelayTm>
a numeric parameter which is number of milliseconds to delay to output data of Receiving.The default value is 0.
<Ack>
a numeric parameter which sets whether reporting a string “Send ok” when sending some data as a tcp connection. 0 not reporting 1 reporting
<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>”

Examples

AT+CIPCCFG=?
+CIPCCFG: (3-10),(0-1000),(0-1),(0-1),(0-1)
OK
AT+CIPCCFG=3,500,1,1,1
OK

16.21 AT+CIPOPEN Establish connection in multi-client mode

Description

The 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
	+CME ERROR: <err>
Read Command	**Responses**
AT+CIPOPEN?	+CIPOPEN: <link_num> [,<type>,<serverIP>,<serverPort>] +CIPOPEN: <link_num> [,<type>,<serverIP>,<serverPort>] […] OK
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CIPOPEN=<link_num>,"TCP",<serverIP>,<serverPort>[,<localPort>]	Connect ok(*if tcp connect*) OK
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>
AT+CIPOPEN=<link_num>,"UDP",,,<localPort>	OK(*if udp open*)
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>

Defined values

<link_num>
a numeric parameter that identifies a connection. the range of permitted values is 0 to 9.
<type>
a string parameter that identifies the type of transmission protocol. TCP Transfer Control Protocol UDP User Datagram Protocol
<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.cn.”.
<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.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+CIPOPEN=0,"TCP","116.228.221.51",100
Connect ok *OK*
AT+CIPOPEN=1,"UDP",,,8080
OK
AT+CIPOPEN=?
+CIPOPEN: (0-9), ("TCP", "UDP") *OK*
AT+CIPOPEN?
+CIPOPEN: 0, "TCP", "116.228.221.51", 100 *+CIPOPEN: 1* *+CIPOPEN: 2* *+CIPOPEN: 3* *+CIPOPEN: 4* *+CIPOPEN: 5* *+CIPOPEN: 6* *+CIPOPEN: 7* *+CIPOPEN: 8* *+CIPOPEN: 9* *OK*
AT+CIPOPEN=0,"TCP","www.google.cn",80
Connect ok *OK*

16.22 AT+CIPSEND Send data in multi-client mode

Description

The command sends some data to remote host in mult-client mode.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPSEND =?	+CIPSEND: (list of supported <link_num>s), (list of supported <length >s) OK
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>
Read Command	**Responses**
AT+CIPSEND?	OK
	+CME ERROR: <err>
Write Command	**Responses**
AT+CIPSEND=<link_num>,<length><CR>*data for send* (This format is for TCP connect)	OK +CIPSEND: <reqSendLength>, <cnfSendLength> *If sending successfully(tcp connect):* Send ok
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>
AT+CIPSEND=<link_num>,<length>,<serverIP>,<serverPort><CR>*data for send* (This format is for UDP connect)	*If sending successfully(udp sending):* OK +CIPSEND: <reqSendLength>, <cnfSendLength>
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>

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 1024.
<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.cn.".

<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.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+CIPSEND=0,1
> S *OK* *+CIPSEND: 1, 1* *Send ok*
AT+CIPSEND=1,1,"116.236.221.75",6775
> S *OK* *+CIPSEND: 1, 1* *Send ok*
AT+CIPSEND=?
+CIPSEND: (0-9), (1-1024) *OK*

16.23 AT+CIPCLOSE Close connection in Multi-client mode

Description

The command closes a specified connection in multi-client mode.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CIPCLOSE =?	+CIPCLOSE: (list of supported <link_num>s) OK
	+CME ERROR: <err>
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
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>
Write Command	**Responses**
AT+CIPCLOSE= <link_num>	OK
	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>

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

16.24 AT+CDNSGIP Query the IP address of given domain name

Description

The 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*

16.25 AT+CDNSGHNAME Query the domain name of given IP address

Description

The 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
```

16.26 AT+CIPMODE Select TCPIP application mode

Description

The command is used to select **TCPIP** application modes that includes two modes(normal mode and transparent mode).The default mode is normal 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	– Normal mode
1	– Transparent mode

Examples

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

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

16.27 AT+CIPSTAT Statistic the total size of data sent or received

Description

The command is used to statistics the total size of data sent or received for a socket in multiple socket mode(Only valid for client mode).

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CIPSTAT=?	+CIPSTAT: (list of supported <link_num>s) OK
Write Command	**Responses**
AT+CIPSTAT=<link_num>	+CIPSTAT: <sent_size>, <recv_size> OK
	+IP ERROR: <err_info> ERROR

Defined values

< link_num>
a numeric parameter that identifies a connection. the range of permitted values is 0 to 9.
<sent_size>
Total size of sent data.
<recv_size>
Total size of received data.
<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+CIPSTAT=0
+CIPSTAT: 10, 20
OK
AT+CIPSTAT=?

+CIPSTAT: (0-9)
OK

16.28 AT+CTCPFIN Wait for TCP_FIN in TCP_FINWAIT2 state

Description

The command is used to configure whether the module should wait for TCP_FIN in TCP_FINWAIT2 state.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CTCPFIN=?	+CTCPFIN: (list of supported <TCP_FIN_Enable>s),(list of supported <DelayTm>s) OK
Read Command	Responses
AT+CTCPFIN?	+CTCPFIN:<TCP_FIN_Enable>,<DelayTm> OK
Write Command	Responses
AT+CTCPFIN= <TCP_FIN_Enable>, <DelayTm>	OK ERROR

Defined values

< TCP_FIN_Enable >
a numeric parameter which sets whether waiting for TCP_FIN inTCP_FINWAIT2 state. 0 not waiting 1 waiting
<DelayTm>
a numeric parameter which is number of seconds to delay before closing the PS network. This parameter only affects the AT+NETCLOSE command when using single TCP/UDP mode.

Examples

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

AT+CTCPFIN=1,2
OK

16.29 AT+CENDUPPDP Enable duplicate PDP activation

Description

The 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

16.30 AT+CTCPKA Set TCP_KEEP_ALIVE parameters

Description

The command is used to set TCP_KEEP_ALIVE parameters for TCP related AT commands.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CTCPKA=?	+CTCPKA: (list of supported <TCP_KA_Enable>s),(list of supported <KeepIdleTm>s) ,(list of supported <KeepAliveMaxTry>s) OK
Read Command	Responses
AT+CTCPKA?	+CTCPKA:<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry> OK
Write Command	Responses
AT+CTCPKA=<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry>	OK ERROR

Defined values

< TCP_KA_Enable >
a numeric parameter which sets whether enable TCP_KEEP_ALIVE option. 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

16.31 AT+CPING Ping some destination address

Description

The command is used to ping some 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) OK
Write Command	**Responses**
AT+CPING=<dest_addr>,<dest_addr_type>[,<num_pings>]	OK ERROR

Defined values

<dest_addr>
The destination is to be pinged; it can be an IP address (IPv4 or IPv6) or a domain name.
<dest_addr_type>
Integer type. Address family type (IPv4 or IPv6) of the destination address 1 – IPv4. 2 – IPv6.
<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.

Examples

AT+CPING=?
+CPING:10086;10010
OK
AT+CPING=”www.baidu.com”,1,4
+CPING: Pinging www.baidu.com with 64 bytes of data:
OK
+CPING: Reply from 119.75.218.45: bytes=64 time=626ms TTL=255
+CPING: Reply from 119.75.218.45: bytes=64 time=2069ms TTL=255

```
+CPING: Reply from 119.75.218.45: bytes=64 time=2001ms TTL=255
+PING: Request timed out.
+CPING: Ping statistics: Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds: Minimum = 626ms, Maximum = 2069ms, Average = 1565ms
```

16.32 AT+CPINGSTOP Stop an ongoing ping session

Description

The command is used to stop an ongoing ping session.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CPINGSTOP	OK ERROR

Examples

```
AT+CPINGSTOP
OK
```

16.33 AT+CTEUTP Set unknown incoming TCP packet echo

Description

The command is used to enable or disable unknown incoming TCP packet echo.

SIM PIN	References
NO	Vendor

Syntax

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

Write Command	Responses
AT+CTEUTP = <Echo_Unknown_TCP_Enable>	OK ERROR

Defined values

<Echo_Unknown_TCP_Enable>
a numeric parameter which sets whether enable or disable unknown incoming TCP packet echo option. 0 disable 1 enable

Examples

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

16.34 AT+CUPURE Set UDP port unreachable ICMP echo

Description

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

SIM PIN	References
NO	Vendor

Syntax

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

<UDP_PORT_UNREACHABLE_Enable>	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

16.35 AT+CINICMPALLOW Preferred ICMP filter

Description

The 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
```

16.36 AT+TCPCLOSE Close the TCP connection

Description

The command closes TCP connection. This command can only be used when AT+NETOPEN=”TCP” is launched.

SIM PIN	References
YES	Vendor

Syntax

Execution Command	Responses
AT+TCPCLOSE	OK

	+IP ERROR: <err_info> ERROR
	ERROR

Defined values

<err_info>
A string parameter that displays the cause of occurring error.

Examples

AT+TCPCLOSE
OK

16.37 Information elements related to TCP/IP

The following table lists information elements which may be returned.It should be noted that TCP/IP socket problems may occur or result may be executed.

Information	Description
Network opened	Indicate that the write command of AT+NETOPEN has excuted successfully.
Network not opened	Indicate that you should execute AT+NETOPEN first.
Network is already opened	Indicate that the write command of AT+NETOPEN has already executed successfully.
Port overflow	Indicate that input port is out of range.
Create socket failed	Indicate that socket has not been created successfully.
Bind port failed	Indicate that input port is already in use.
Connect ok	Indicate that establishing a connection successfully.
Connection is already created	Indicate that a connection has been already established.
Connect fail	Indicate that establishing a connection unsuccessfully
No clients connected	Indicate that module as TCP server has no any connection.
No active client	Indicate that you should execute AT+ACTCLIENT first and select a connection.
Client index overflow	Indicate that input client's index is out of range.

Connection disconnected	Indicate that the remote end has closed the connection.
Socket closed	Indicate that socket is closed.
Network closed	Indicate that the write command of AT+NETCLOSE has excuted successfully.
Network is already closed	Indicate that network has been closed now.
Sending time out	Failed to send TCP or UDP data for timer expire.
Sending failure for network error	Failed to send data for network error
Open failure for network error	Failed to open network for network error.
Server is already listening	Server is already listening
+NETCLOSE: 1	Network is closed for network 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.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+STIN=?	OK
Read Command	**Responses**
AT+STIN?	+STIN: <cmd_id> OK

Unsolicited Result Codes

+STIN: <cmd_id>
Proactive Command notification 21 – display text 22 – get inkey 23 – get input 24 – select item
+STIN: 25
Notification that SIM Application has returned to main menu. If user does any action in 2 minutes, application will return to main menu automatically.
VOICE CALL: BEGIN
Notification that SIM Application has originated a voice call.

Defined values

<cmd_id>
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
NO	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
NO	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 SMTP server address and port number

Description

The 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

The 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: 0, "username", "password"
OK
AT+SMTPAUTH
OK
AT+SMTPAUTH?
+SMTPAUTH: 0, "", ""
OK

18.1.3 AT+SMTPFROM Sender address and name

Description

The 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=<saddr>[, <sname>]	OK
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

The 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

The 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

The 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

The 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=?	+SMTPSUB: ”CHARSET” OK
Read Command	Responses
AT+SMTPBCH?	+SMTPSUB: <charset> OK
Write Command	Responses
AT+SMTPBCH=<charset>	OK

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=?
+SMTPSUB: “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

The 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 an 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

The 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

The 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

The 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

The 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
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

The asynchronous command is used to retrieve e-mail's sender address, date and sender address, that 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>	From: [<from>] Date: [<date>] Subject: [<sub>] OK
	+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>	
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

From: sendername<senderaddress@server.com>

Date: Mon, 17 Aug 2009 14:09:27 +0800

Subject: THIS IS A TEST MAIL

OK

18.2.6 AT+POP3GET Get an e-mail from POP3 server

Description

The 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

<msg_id>
The e-mail's ID.
<mail_dir>
The directory for e-mail and attachment, string type without double quotes and the format is "YYMMDDHHMMSS" which is generated according to module's RTC. According to the setting of command +FSLOCA (refer to file system commands), TE can select the location (local file system or storage card) in which POP3 client saves e-mail file and attachment.
<mail_file>
If the <get_type> is 1 or 3, it is the file to save e-mail's header and body, string type without double quotes. Usually, this file name is "EMAIL110511102353000.TXT", and if e-mail includes an attachment whose name is the same as the e-mail file, the first twelve digits of the number in the e-mail is generated according to the module's RTC with format "YYMMDDHHMMSS" and the

last three digits of the number in the e-mail file name will be increase by 1, usually it is “000” for 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

The 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

The command will 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
	+POP3: <code> ERROR
	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

The 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

The 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 Syntax

Test Command	Responses
AT+POP3READ=?	OK
Write Command	Responses
AT+POP3READ= <location>, <mail_file>	<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.
<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".
<e-mail>
The content of e-mail, including e-mail header and body.

18.3 File Transfer Protocol Service

18.3.1 AT+CFTPPORT Set FTP server port

Description

The 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

The command is used to set FTP passive/proactive mode. Default is proactive 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

The 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: I – 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

The 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= ”<address>”	OK +CME ERROR

Defined values

<address>
The FTP server domain name or IP address. The maximum length is 100 bytes.

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

The 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 bytes.

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

The 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 bytes.

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

The command is used to download a file from FTP server to module EFS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPGETFILE=?	+CFTPGETFILE: [{non-ascii}]“FILEPATH”, (list of supported <dir>s) [, (list of supported <rest_size>s)] OK
Write Command	**Responses**
AT+CFTPGETFILE= “<filepath>”,<dir>[,<rest_size>]	OK +CFTPGETFILE: 0
	+CME ERROR
	OK +CFTPGETFILE: <err>

Defined values

<filepath>
The remote file path. When the file path doesn’t contain ”/”, this command transfers file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.
<dir>
The directory to save the downloaded file (For SIM5320, Only 0 is valid): 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 Put a file in module EFS to FTP server

Description

The command is used to upload a file in the module EFS to FTP server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPUTFILE=?	+CFTPPPUTFILE: [{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 (For SIM5320, Only 0 is valid): 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
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 from SIO

Description

The 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
	+CME ERROR
	[+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+CFTPGETT=?
+CFTPGET: [{non-ascii}]“FILEPATH” [,(0-2147483647)] *OK*

18.3.10 AT+CFTPPUT Put a file to FTP server

Description

The command is used to put a file to FTP server using the data got from serial port. Each <Ctrl+Z> character present in the data flow of serial port when downloading FTP data will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the FTP data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPPUT=?	+CFTPPUT: [{non-ascii}] “FILEPATH” [, (list of supported <rest_size>s)] OK
Execution Command	**Responses**
AT+CFTPPUT=“<filepath>” [,<rest_size>]	+CFTPPUT: BEGIN OK

	+CME ERROR
	[+CFTPPUPT: 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}.
<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" [,(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 Sep 1 18:01 .

drw-rw-rw- 1 user group 0 Sep 1 18:01 ..

-rw-rw-rw- 1 user group 2017 Sep 1 17:24 19800106_000128.jpg

+CFTPLIST: 0

18.3.12 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

Description

The 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 Release HTTPS protocol stack

Description

This command is used to release 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, the module must call AT+CHTTPSSTART before calling AT+CHTTPSOPSE.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CHTTPSOPSE=”<host>”,<port>	OK ERROR

Defined values

<host>
The host address
<port>
The host listening port for SSL

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=<recv_len>	OK +CHTTPSRECV: DATA,<len> … +CHTTPSRECV: DATA,<len> … +CHTTPSRECV:<result> +CHTTPSRECV:<result> ERROR ERROR

Defined values

<recv_len>
The minimum length of the data to be received. The final length of the received data may be larger than the requested length.The maximum length is 4096.
<len>
The length of the data received.
<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=1
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 of <err>	Description

+CHTTPS: RECV EVENT	When the AT+CHTTPSRECV is not being called, and there is data cached in the receiving buffer, this event will be reported.

18.6 Secure File Transfer Protocol Service

The FTPS related AT commands needs 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 ERROR

Examples

```
AT+CFTPSSTART
OK
```

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 ERROR

Examples

AT+CFTPSSTOP
OK

18.6.3 AT+CFTPSLOGIN Login the FTPS server

Description

This command is used to login the FTPS server. Each time, the module must call AT+CFTPSSTART before calling AT+CFTPSLOGIN.

SIM PIN	References
YES	Vendor

Syntax

Write Command	Responses
AT+CFTPSLOGIN=”<host>”,<port>,”<username>”, ”<password>”	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 password, maximum length is 256

Examples

AT+CFTPSLOGIN=”www.myftpsserver.com”,990, ”myname”, ”mypassword”
OK

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 ERROR

Examples

AT+CFTPSLOGOUT
OK

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 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 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 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 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 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 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

The command is used to download a file from FTPS server to module EFS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSGETFILE=?	+CFTPSGETFILE: [{non-ascii}]“FILEPATH”, (list of supported <filepath>s) OK
Write Command	Responses

AT+CFTPGETFILE= “<filepath>”,<dir>	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]
<err>
The error code of FTPS operation.

Examples

AT+CFTPSGETFILE=”/pub/mydir/test1.txt”,1
OK
…
+CFTPSGETFILE: 0
AT+CFTPSGETFILE=” test2.txt”,2
OK
…
+CFTPSGETFILE: 0
AT+CFTPSGETFILE={non-ascii}” B2E2CAD42E747874”,2
OK
…
+CFTPSGETFILE: 0
AT+CFTSPGETFILE=?
+CFTPSGETFILE: [{non-ascii}]“FILEPATH”,(0)
OK

18.6.13 AT+CFTPSPUTFILE Put a file in module EFS to FTPS server

Description

The command is used to upload a file in the module EFS to FTPS server.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CFTPSPUTFILE=?	+CFTPSPUTFILE: [{non-ascii}] “FILEPATH”, (list of supported <filepath>s) OK
Write Command	**Responses**
AT+CFTPSPUTFILE= “<filepath>”,<dir>	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]
<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)
OK

18.6.14 AT+CFTPSGET Get a file from FTPS server to serial port

Description

The 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=?	+CFTPSGET: [{non-ascii}] “FILEPATH” OK
Write Command	**Responses**
AT+CFTPSGET= “<filepath>”	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}.
<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=?
+CFTPSGET:[{non-ascii}] “FILEPATH”
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=?	+CFTPSPUT: [{non-ascii}]"FILEPATH" OK
Read Command	Responses
AT+CFTPSPUT?	+CFTPSPUT: <unsent_len> OK
Write Command	Responses
AT+CFTPSPUT=[“<filepath	>

>”,]<len>	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 512.
<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+CFTPSSINGLEIP Set FTPS data socket address type

Description

The 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*

18.6.17 Unsolicited FTPS Codes

Code of <err>	Description
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 HTP server.

18.7.1 AT+CHTPSERV Set HTP server info

Description

The 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>
The 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

The 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

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

The 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://"

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

The command is used to set the protocol parameters and MMS proxy address.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSPROTO=?	+CMMSPROTO: (0,1),"(0-255).(0-255).(0-255).(0-255)",(0-65535) OK
Read Command	**Responses**
AT+CMMSPROTO?	+CMMSPROTO: <type>,<gateway>,<port> OK
Write Command	**Responses**
AT+CMMSPROTO=<type>[,<gateway>,<port>]	OK ERROR +CME ERROR: <err>

Defined values

<type>
The application protocol for MMS: 0 – WAP 1 – HTTP
<gateway>
IP address of MMS proxy
<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

The command is used to set the parameters for sending MMS.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSENDCFG=?	+CMMSSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4) OK
Read Command	Responses
AT+CMMSSENDCFG?	+CMMSSENDCFG: <valid>,<pri>,<sendrep>,<readrep>,<visible>,<class> OK
Write Command	Responses
AT+CMMSSENDCFG=<valid>,<pri>,<sendrep>,<readrep>,<visible>,<class>	OK ERROR +CME ERROR: <err>

Defined values

<valid>
The valid time of the sent MMS: 0 – 1 hour. 1 – 12 hours. 2 – 24 hour. 3 – 2 days. 4 – 1 week. 5 – maximum. 6 – Not set (default).
<pri>
Priority: 0 – lowest. 1 – normal. 2 – highest. 3 – Not set (default)
<sendrep>

Whether need delivery report: 0 – No (default). 1 – Yes.
<readrep>
Whether need read report: 0 – No (default). 1 – Yes.
<visible>
Whether to show the address of the sender: 0 – hide the address of the sender. 1 – Show the address of the sender even if it is a secret address. 2 – Not set (default).
<class>
The class of MMS: 0 – personal. 1 – advertisement. 2 – informational. 3 – auto. 4 – Not set (default).

Examples

AT+CMMSSENDCFG=6,3,1,1,2,4
OK
AT+CMMSSENDCFG?
+CMMSSENDCFG:6,3,1,1,2,4
OK
AT+CMMSSENDCFG=?
+CMMSSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4)
OK

19.4 AT+CMMSEDIT Enter or exit edit mode

Description

The 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 need 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),”FILEPATH”
+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 Start MMS sending

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 recipients

Description

This command is used to add 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 copy-to recipients

Description

This command is used to add copy-to 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 secret recipients

Description

This command is used to add 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 recipients

Description

This command is used to delete recipients. The execute command is used to delete all 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 copy-to recipients

Description

This command is used to delete copy-to recipients. The execution command is used to delete all copy 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 secret recipients

Description

This command is used to delete secret recipients. The execution command is used to delete all 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 can only 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> Or 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 information of MMS in box or memory

Description

This command is used to view information of MMS in box or 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 MMS mail box index
<mmstype>
The state of MMS: 0 – Received MMS. 1 – Sent MMS. 2 – Unsent MMS.
<sender>
The address of sender
<receipts>
The list of receipts separated by “;”
<ccs>
The list of copy receipts separated by “;”
<bccs>
The list of secret receipts separated by “;”
<time>
For received MMS, it is the time to receive the MMS. For other MMS, it is the time to create the MMS.
<subject>
MMS title
<size>
MMS data size
<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 in MMS currently in memory

Description

This command is used to read a given file in MMS currently in 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 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 in MMS currently in memory, and save it to UE file system. If the file of input name already exists in the selected directory, it will fail.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSSNATCH=?	OK
Write Command	**Responses**
AT+CMMSSNATCH=<index>,<dir>,"<filename>"	OK ERROR +CME ERROR: <err>

Defined values

<index>
The index of the given file contained in the MMS body
<dir>
The directory of the selected file: 0 – current directory[[refer to AT+FSCD]
<filename>
The name of the given file contained in the MMS body

Examples

AT+CMMSSNATCH=?
OK
AT+CMMSSNATCH=3,2,"mylocalfile.jpg"
OK

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 selected to save the MMS
<mmstype>
The status of MMS: 0 – Received MMS. 1 – Sent MMS. 2 – Unsent MMS.

Examples

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

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 mail box 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	OK ERROR

>[,<wap_send_buf_size>[,<wap_recv_buf_size>[,<wap_send_buf_count>]]]	+CME ERROR: <err>

Defined values

< max_pdu_size >
The maximum MMS pdu size allowed by operator.
<wap_send_buf_size>
The length of WTP PDU for sending
<wap_recv_buf_size>
The length of WTP PDU for receiving
<wap_send_buf_count>
The count of buffers for WTP sending in group

Examples

AT+CMMSSYSSET=?
+CMMSSYSSET: (10240-102400),(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

The 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

The 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

The command is used to set the User-Agent profile of MMS packet.

SIM PIN	References
YES	Vendor

Syntax

Test Command	Responses
AT+CMMSPROFILE=?	+CMMSPROFILE:”UserAgentProfile” OK
Read Command	Responses
AT+CMMSPROFILE?	+CMMSPROFILE: “<profile>” OK
Write Command	Responses
AT+CMMSPROFILE=”<profile>”	OK ERROR

	+CME ERROR: <err>

Defined values

<profile>
The User-Agent profile of MMS packet. The maximum length is 511 bytes.

Examples

AT+CMMSPROFILE=" Test my UserAgent profile"
OK
AT+CMMSPROFILE?
+CMMSUA:" Test my UserAgent profile" *OK*
AT+CMMSPROFILE=?
+CMMSPROFILE:"UserAgent profile" *OK*

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 report +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 CSCRIPT Commands

20.1 AT+CSCRIPTSTART Start running a LUA script file.

Description

The 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”
	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. 1 – Report.
<err>
The error code of running script.

Examples

AT+CSCRIPTSTART=”mytest.lua”
OK *+CSCRIPT: 0*
AT+CSCRIPTSTART=?
OK

20.2 AT+CSCRIPTSTOP Stop the current running LUA script.

Description

The 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?	+CSCRIPTSTOP: " <filename>" 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

20.3 AT+CSCRIPTCL Compile a LUA script file.

Description

The 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	**Responses**
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
```

20.4 AT+CSCRIPTPASS Set the password for +CSCRIPTCL.

Description

The 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+CSCRIPTCL=” <old_password>” , ” <new_password> ”	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
```

20.5 AT+CSCRIPTCMD Send data to the running LUA script.

Description

The 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

20.6 AT+PRINTDIR Set the value of LUA printdir function.

Description

The 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

20.7 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

21 GPS Related Commands

21.1 AT+CGPS Start/stop GPS session

Description

The 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 only support standalone mode. If executing AT+CGPS=1, the GPS session will choose cold or hot start automatically.

2. UE-based and UE-assisted mode depends on URL (AT+CGPSURL) and certificate (AT+CGPSSSL). When UE-based mode failing, it will switch standalone mode.

3. UE-assisted mode is single fix. Standalone and UE-based mode is consecutive fix.

4. After close GPS, need to wait about 2s~30s for next start. 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

21.2 AT+CGPSINFO Get GPS fixed position information

Description

The 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>] AmpI/AmpQ: <AmpI>/<AmpQ> ……
	OK *(if <time>=0)*
Execution Command	**Responses**
AT+CGPSINFO	+CGPSINFO: [<lat>],[<N/S>],[<log>],[<E/W>],[<date>],[<UTC time>],[<alt>],[<speed>],[<course>] AmpI/AmpQ: <AmpI>/<AmpQ> OK

Defined values

<lat>
Latitude of current position. Output format is ddmm.mmmm
<N/S>
N/S Indicator, N=north or S=south
<log>
Longitude of current position. Output format is dddmm.mmmm
<E/W>

E/W Indicator, E=east or W=west
<date>
Date. Output format is ddmmyy
<UTC time>
UTC Time. Output format is hhmmss.s
<alt>
MSL Altitude. Unit is meters.
<speed>
Speed Over Ground. Unit is knots.
<AmpI>
The value of AmpI.
<AmpQ>
The value of AmpQ.
<course>
Course. Degrees.
<time>
The range is 0-255, unit is second, after set <time> will report the GPS information every the seconds.

Examples

AT+CGPSINFO=?
+CGPSINFO: (0-255)
OK
AT+CGPSINFO?
+CGPSINFO: 0
OK
AT+CGPSINFO
+CGPSINFO:3113.343286,N,12121.234064,E,250311,072809.3,44.1,0.0,0
AmpI/AmpQ: 420/421
OK

21.3 AT+CGPSCOLD Cold start GPS

Description

The 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

21.4 AT+CGPSHOT Hot start GPS

Description

The command is used to hot start GPS session

NOTE Before using this command, must use AT+CGPS=0 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

21.5 AT+CGPSSWITCH Configure output port for NMEA sentence

Description

The command is used to choose the output port for NMEA sentence.

NOTE Support NMEA output over the UART or NMEA port. You can choose only one port for the NMEA sentence. If choosing UART port, Baud rate of host must be set 115200 bit/s, and can't input AT commands through UART port, and the NMEA port is disabled absolutely. If choosing NMEA port for NMEA sentence, the UART port function is

integrated.It takes effect after rebooting.

SIM PIN	References
NO	Vendor

Syntax

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

Defined values

<port>	
1	– NMEA ports
2	– UART port

Examples

```
AT+CGPSSWITCH=?
+CGPSSWITCH:(1,2)
OK
AT+CGPSSWITCH=1
OK
```

21.6 AT+CGPSURL Set AGPS default server URL

Description

The 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

21.7 AT+CGPSSSL Set AGPS transport security

Description

The 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

21.8 AT+CGPSAUTO Start GPS automatic

Description

The command is used to start GPS automatic when module power on, default GPS is closed.

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

21.9 AT+CGPSNMEA Configure NMEA sentence type

Description

The 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 didn't configure, GPGSV sentence also didn'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 31 Each bit enables an NMEA sentence output as follows: Bit 0 – GPGGA (global positioning system fix data) Bit 1 – GPRMC (recommended minimum specific GPS/TRANSIT data) Bit 2 – GPGSV (GPS satellites in view) Bit 3 – GPGSA (GPS DOP and active satellites) Bit 4 – GPVTG (track made good and ground speed) Set the desired NMEA sentence bit(s). If multiple NMEA sentence formats are desired, "OR" the desired bits together.

Examples

AT+CGPSNMEA =31
OK

21.10 AT+CGPSMD Configure AGPS MO method

Description

The 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

21.11 AT+CGPSFTM Start GPS test mode

Description

The command is used to start GPS test mode.

NOTE

1. If test mode started, the URC will report on AT port, Modem port and UART port.
2. If testing on actual signal, <SV> should ignore, and must start GPS by AT+CGPS, AT+CGPSCOLD or AT+CGPSHOT.
3. If testing on GPS signal simulate equipment, must choice <SV>, 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
```

21.12 AT+CGPSDEL Delete the GPS information

Description

The command is used to delete the GPS information. After executing the command, GPS start is cold start.

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
```

21.13 AT+CGPSNOTIFY LCS respond positioning request

Description

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

NOTE This command only for A version.

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
```

21.14 AT+ CGPSXE Enable/disable GPS XTRA function

Description

The 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 form network by HTTP, so must set the APN 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=?
+CGPSNOTIFY: (0,1)
OK
AT+CGPSXE=0
OK
```

21.15 AT+CGPSXD Download XTRA assistant file

Description

The command is used to download the GPS XTRA assistant file form 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>
	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

21.16 AT+CGPSXDAUTO Download XTRA assistant file automatically

Description

The 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 download, it's same as AT+CGPSXD command.

Examples

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

21.17 AT+CGPSINFOCFG Report GPS NMEA-0183 sentence

Description

The command is used to report NMEA-0183 sentence.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CGPSINFOCFG=?	+CCGPSINFOCFG: (scope of <time>),(scope of <config>) OK
Read Command	**Responses**
AT+CGPSINFOCFG?	+CCGPSINFOCFG: <time>, <config> OK
Write Command	**Responses**
AT+CGPSINFOCFG=<time>,<config>	OK (NMEA-0183 Sentence) ……
	OK *(if <time>=0)*

Defined values

<time>
The range is 0-255, unit is second, after set <time> will report the GPS NMEA sentence every the seconds. If <time>=0, module stop reporting the NMEA sentence.
<config>
Range – 0 to 31. Default value is 0. Each bit enables an NMEA sentence output as follows: Bit 0 – GPGGA (global positioning system fix data) Bit 1 – GPRMC (recommended minimum specific GPS/TRANSIT data) Bit 2 – GPGSV (GPS satellites in view) Bit 3 – GPGSA (GPS DOP and active satellites) Bit 4 – GPVTG (track made good and ground speed) Set the desired NMEA sentence bit(s). If multiple NMEA sentence formats are desired, “OR” the desired bits together. For example: If want to report GPRMC sentence by 10 seconds, should execute AT+CGPSINFOCFG=10,2

Examples

AT+CGPSINFOCFG=?
+CGPSINFO: (0-255),(0-31) *OK*
AT+CGPSINFOCFG=10,31

```
OK
$GPGSV,4,1,16,04,53,057,44,02,55,334,44,10,61,023,44,05,45,253,43*7D
$GPGSV,4,2,16,25,10,300,40,17,25,147,40,12,22,271,38,13,28,053,38*77
$GPGSV,4,3,16,26,09,187,35,23,06,036,34,24,,,,27,,,*7A
$GPGSV,4,4,16,09,,,,31,,,,30,,,,29,,,*7D
$GPGGA,051147.0,3113.320991,N,12121.248076,E,1,10,0.8,47.5,M,0,M,,*45
$GPVTG,NaN,T,,M,0.0,N,0.0,K,A*42
$GPRMC,051147.0,A,3113.320991,N,12121.248076,E,0.0,0.0,211211,,,A*66
$GPGSA,A,3,02,04,05,10,12,13,17,23,25,26,,,1.4,0.8,1.2*3B
```

21.18 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**	

21.19 Cell Location

21.19.1 AT+CASSISTLOC Start/Stop assist location

Description

The 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>]]	*If autorun = 0:* OK +CASSISTLOC: <return code> *If autorun = 1:* OK +CASSISTLOC:<charset>,<latitude>,<longitude>,<altitude>,<accuracy>,<altitude_accuracy>,<street_num>,<street>,<premises>,<city>,<county>,<region>,<country>,<country_code>,<postal_code> +CASSISTLOC: <return code> *If autorun = 2:* 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> ……
	ERROR
	+CME ERROR: <error message>

Defined values

< autorun >
0 – stop location 1 – start location, only once（Must set the cid） 2 – start cycle location （Must set the cid）
< cid >
network parameters, refer to AT+CGSOCKCONT.
< 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. 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-geocode 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).
< return code >
The result code of the location. 0 – OK 1 – Unknow error 2 – Invalid param error 3 – Bad got error 4 – network 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.

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,,,E58D
8FE5928CE8B7AF,,E4B88AE6B5B7E5B882,,E4B88AE6B5B7E5B882,E4B8ADE59BBD,434E,
+CASSISTLOC: 0
AT+CASSISTLOC=2,1,"en_GB",2
OK
+CASSISTLOC:,,,,,,,,,,,,

+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,58696
56865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E,

+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,58696
56865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E,
AT+CASSISTLOC=0
OK

+CASSISTLOC: 0
```

21.19.2 AT+ CASSISTLOCTRYTIMES Set retry times

Description

The command is used to set the max number to try connection when the http connects if failed.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CASSISTLOCTRYTIMES=?	+CASSISTLOCTRYTIMES: (2-10),(5-60*60) OK
Read Command	**Responses**
AT+CASSISTLOCTRYTIMES?	+CASSISTLOCTRYTIMES: <num>,<time> OK

Execution Command	Responses
AT+CASSISTLOCTRYTIMES=<num>[, <time>]	OK ERROR

Defined values

< num >
the number to retry when error occurred
< time >
the time between try. The unit is second, range is 5 - 60*60.

Examples

AT+CASSISTLOCTRYTIMES=?
*+CASSISTLOCTRYTIMES: (2-10),(5-60*60)* *OK*
AT+CASSISTILOCTRYTIMES?
+CASSISILOCTRYTIMES: 3,5 *OK*
AT+CASSISTLOCTRYTIMES=3,10
OK

21.19.3 AT+ CASSISTLOCMODE Set assist location mode

Description

The command is used to set the mode of location: 0 – using single cell; 1 – using more cell.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+CASSISTLOCMODE=?	+CASSISILOCMODE: (0, 1) OK
Read Command	Responses
AT+CASSISTLOCMODE?	+CASSISTLOCMODE: <mode> OK
Write Command	Responses
AT+CASSISTLOCMODE=<mode>	OK ERROR

Defined values

<mode>
the location mode: 0 – using single cell; 1 – using more cell

Examples

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

22 Voice Mail Related Commands

The module supports voice mail AT commands.

22.1 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. 1 – Voice mail number is valid.
<number>
String type phone number of format specified by <type>.
<type>
Type of address octet in integer format. see also AT+CPBR <type>

Examples

AT+CSVM?
+CSVM: 1 ,"13697252277",129 *OK*

22.2 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

23 EONS Related AT commands

The module supports EONS function.

23.1 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.
PNN UPDATING	This indication means the EF-PNN is updating using OTA message. After updating, the “PNN DONE” should report.

24 OTAD Commands

24.1 AT+COTADPHONENUMBER modify OTAD phone number

Description

The command is used to get, add and delete the OTAD phone numbers.

SIM PIN	References
NO	Vendor

Syntax

Test Command	Responses
AT+COTADPHONENUMBER=?	+COTADPHONENUMBER: (list of supported <flag>s),PHONE NUM OK
Read Command	Responses
AT+COTADPHONENUMBER?	+COTADPHONENUMBER:<phone num> OK
Write Command	Responses
AT+COTADPHONENUMBER=<flag>,<phone num>	OK ERROR +OTAD ERROR:<err>

Defined values

<flag>
OTAD phone numbers add or delete control flag, integer type 1 – add the OTAD phone number to list. 2 – delete the OTAD phone number from list..
< phone num >
OTAD phone numbers to be used for OTAD, non empty string without double quotes and smaller than 48 characters.
<err>
1. The phone number exist or the list is full 2. The phone number does not exist or the list is empty 3. The phone number is too long or empty 4. The phone number contains illegal character

Examples

AT+COTADPHONENUMBER?
+COTADPHONENUMBER:10086;10010 OK
AT+COTADPHONENUMBER=1,10086
OK
AT+COTADPHONENUMBER=2,10086
OK

25 Result codes

25.1 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

25.2 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

26 AT Commands Samples

26.1 SMS commands

Commands and Responses	Comments
AT+CMGF=1 OK	Set SMS system into text mode, as opposed to PDU mode.

AT+CPMS="SM","SM","SM" +CPMS: 0,40,0,40,0,40 OK	Select memory storages.
AT+CNMI=2,1 OK	Set new message indications to TE.
AT+CMGS="+861358888xxxx" >This is a test <*Ctrl+Z*> +CMGS:34 OK	Set new message indications to TE.
+CMTI:"SM",1	Unsolicited notification of the SMS arriving.
AT+CMGR=1 +CMGR: "REC UNREAD", "+86135888xxxx", ,"08/01/30, 20:40:31+00" This is a test OK	Read SMS message that has just arrived. **NOTE** The number should be the same as that given in the +CMTI notification.
AT+CMGR=1 +CMGR: "REC READ", "+861358888xxxx",,"08/01/30 , 20:40:31+00" This is a test OK	Reading the message again changes the status to "READ" from "UNREAD".
AT+CMGS="+861358888xxxx" >Test again<*Ctrl+Z*> +CMGS:35 OK	Send another SMS to myself.
+CMTI:"SM",2	Unsolicited notification of the SMS arriving.
AT+CMGL="ALL" +CMGL: 1, "REC READ", "+861358888xxxx", , "08/01/30,20:40:31+00" This is a test +CMGL: 2, "REC UNREAD","", "+861358888xxxx", , "08/01/30,20:45:12+00" Test again OK	Listing all SMS messages.
AT+CMGD=1 OK	Delete an SMS message.
AT+CMGL="ALL" +CMGL: 2,"REC READ","+861358888xxxx", "08/01/30,20:45:12+00" Test again	List all SMS messages to show message has been deleted.

OK	

26.2 TCP/IP commands

26.2.1 TCP server

Commands and Responses	Comments
AT+NETOPEN=”TCP”,80 Network opened OK	Activate the specified socket’s PDP context and Create a socket.
AT+SERVERSTART OK	For Tcp Server,it starts a Passive open for connections.
AT+LISTCLIENT NO.0 client : 10.71.34.32 80 NO.1 client : 10.71.78.89 1020 OK	List all of clients’ information.
AT+ACTCLIENT = 0 OK	Activate the specified client.
AT+TCPWRITE=8 >ABCDEFGH +TCPWRITE: 8, 8 OK Send ok	Send data to an active client.
AT+CLOSECLIENT=0 OK	Close the specified client.
AT+NETCLOSE Network closed OK	Close all of clients and Deactivate the specified socket’s PDP context.

26.2.2 TCP client

Commands and Responses	Comments
AT+NETOPEN=”TCP”,80 Network opened OK	Activate the specified socket’s PDP context and Create a socket.
AT+TCPCONNECT=”192.168.0.1”,80	Attempt to establish the TCP connection

OK	with the specified Tcp server.
AT+TCPWRITE=8 >ABCDEFGH +TCPWRITE: 8, 8 OK Send ok	Send data to server.
AT+NETCLOSE Network closed OK	Disconnect the connection with server and Deactivate the specified socket's PDP context.
+IPCLOSE: <client_index>, <close_reason>, <remote_IP>, <port>. +NETCLOSE: 1	Disconnected by the server **NOTE:** Client_index: This value identifies the client index; When the mode is single-client, this value is 255. Close_reason: This value is the reason for close. Remote_IP: This value identifies the IP address of sever. Port: This value identifies the port of sever, the range of permitted values is 0 to 65535

26.2.3 UDP

Commands and Responses	Comments
AT+NETOPEN="UDP",80 Network opened OK	Activate the specified socket's PDP context and Create a socket.
AT+UDPSEND=8,"192.168.0.1",80 >ABCDEFGH +UDPSEND: 8, 8 OK	Send data.
AT+NETCLOSE Network closed OK	Close the socket and Deactivate the specified socket's PDP context.

26.2.4 Multi client

Commands and Responses	Comments
AT+NETOPEN=,,1 Network opened OK	Activate the specified socket's PDP context and Select in multi-client mode
AT+CIPOPEN=0,"TCP","116.228.221.51",100 Connect ok OK	Establish a connection with TCP Server
AT+CIPOPEN=1,"UDP","116.228.221.51",120 OK	Establish a connection with UDP Server
AT+CIPSEND=0,7 >SimTech +CIPSEND: 7, 7 OK Send ok	Send data in the connection of number 0
AT+CIPSEND=1,7 >SimTech +CIPSEND: 7, 7 OK	Send data in the connection of number 1
AT+CIPCLOSE=0 OK	Close the connection of number 0
AT+NETCLOSE OK	Close all of connections and Deactivate the specified socket's PDP context.

26.3 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.

26.3.1 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]

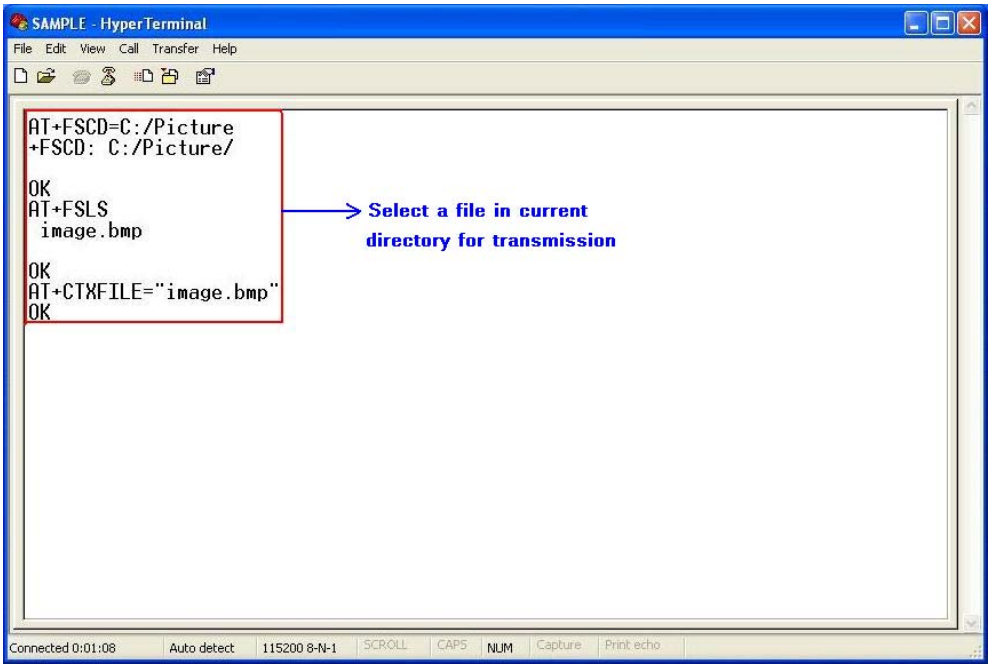


Figure 17-1 Select file for transmission

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]

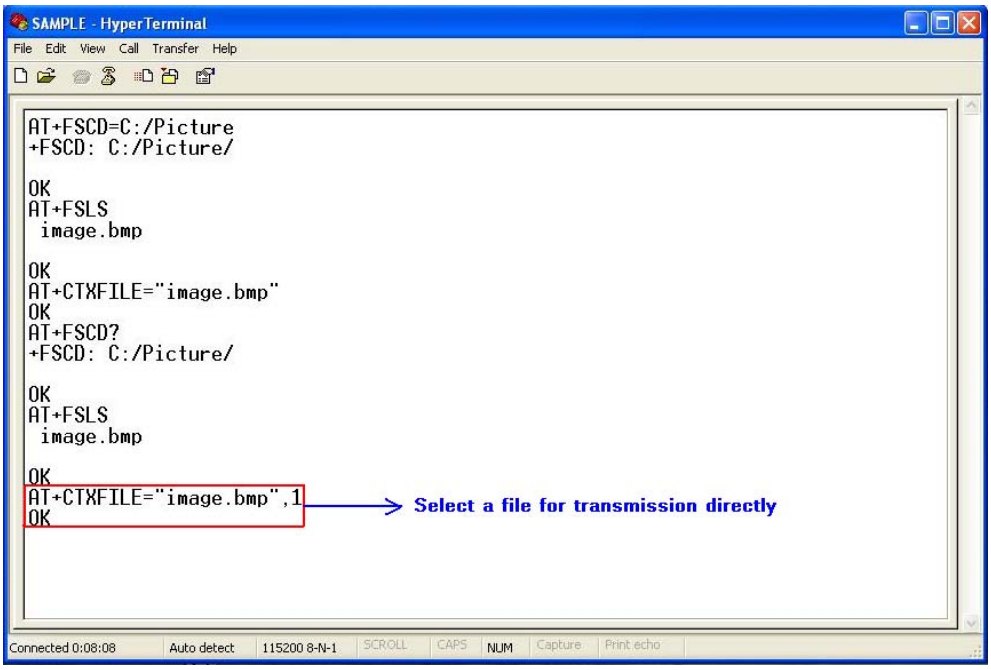


Figure 17-2 Select file directly for transmission

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]

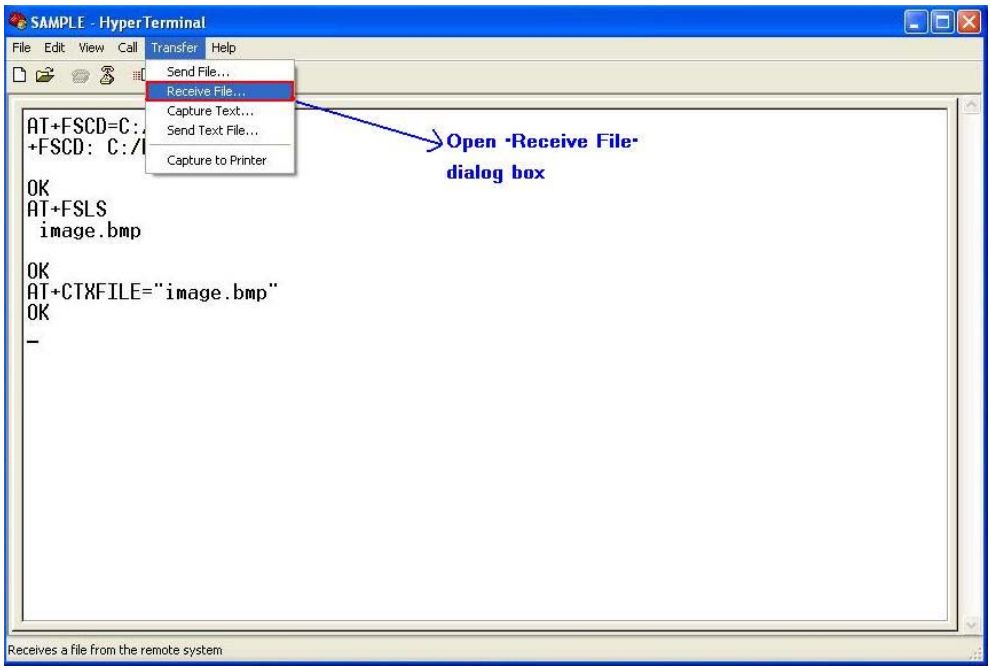


Figure 17-3 Open “Receive File” dialog box

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.

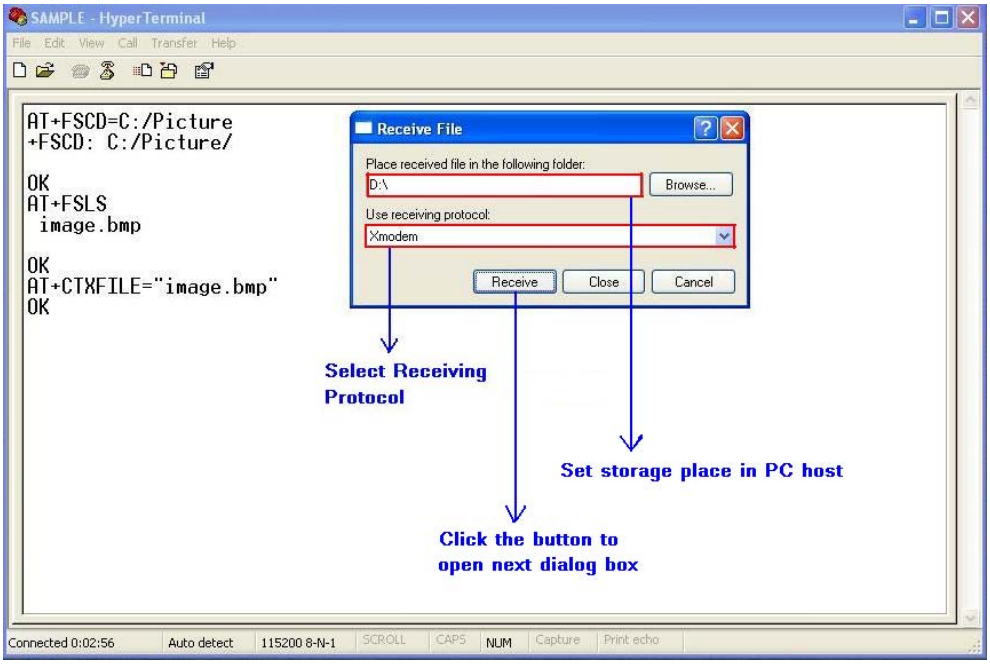


Figure 17-4 Storage place and receiving potocol

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]

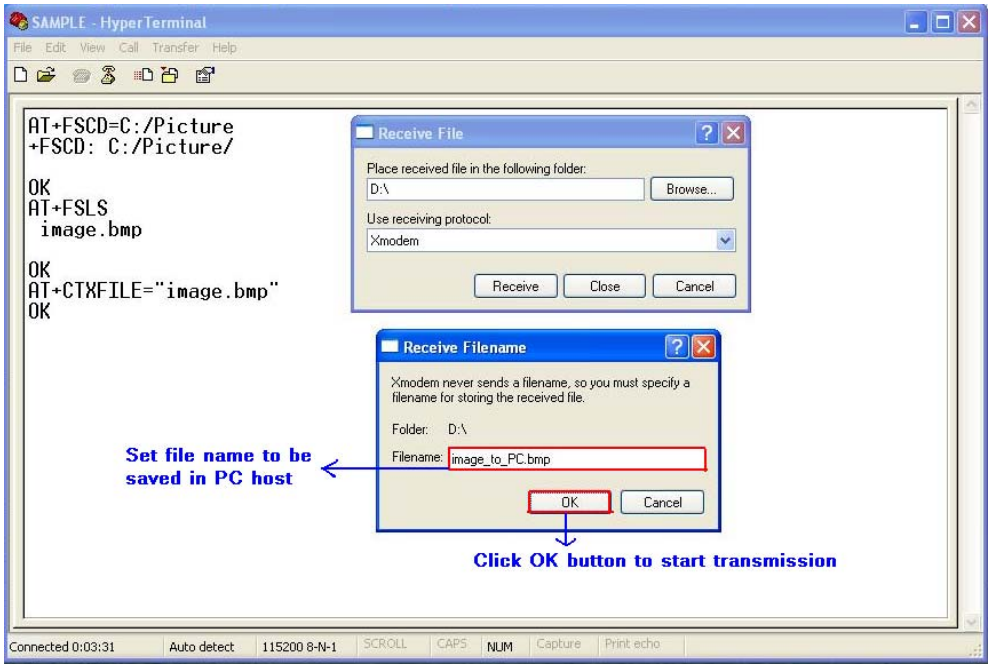


Figure 17-5 Set file name

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]

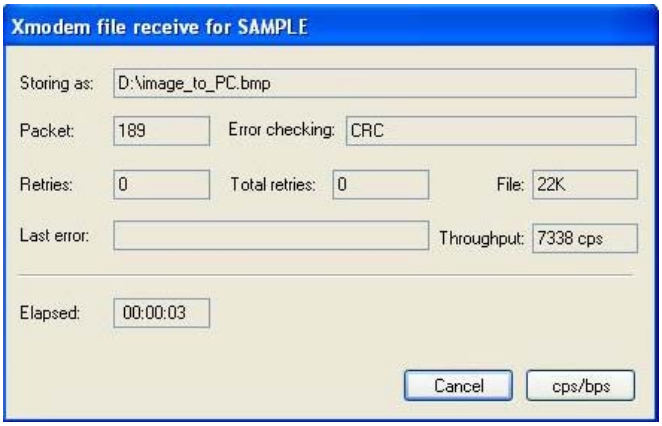


Figure 17-6 Xmodem file receive

If cannel the transmission, 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]

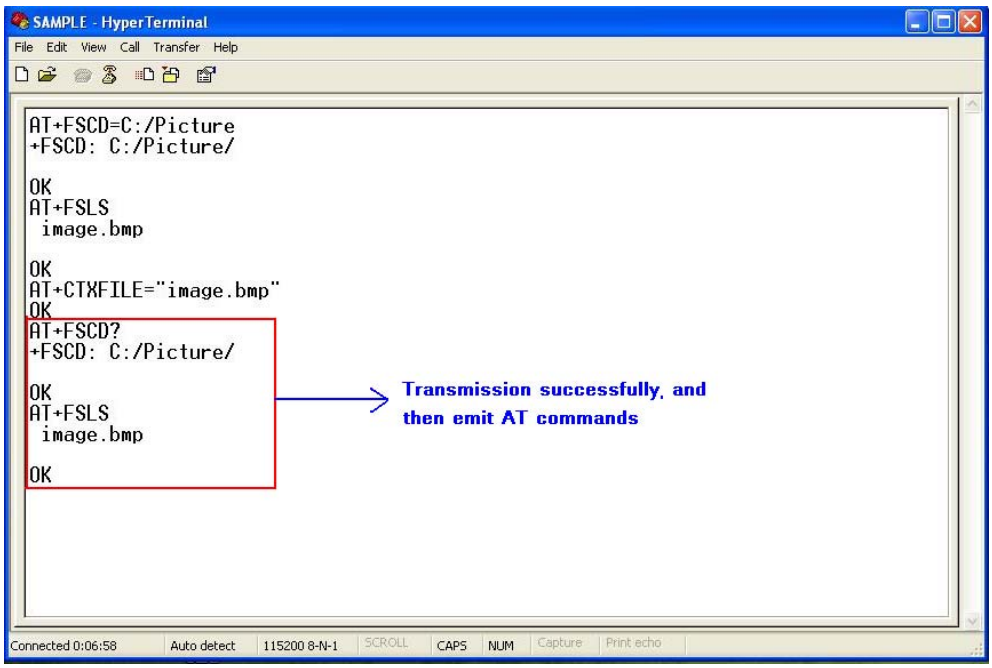


Figure 17-8 Transmission successfully

26.3.2 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]

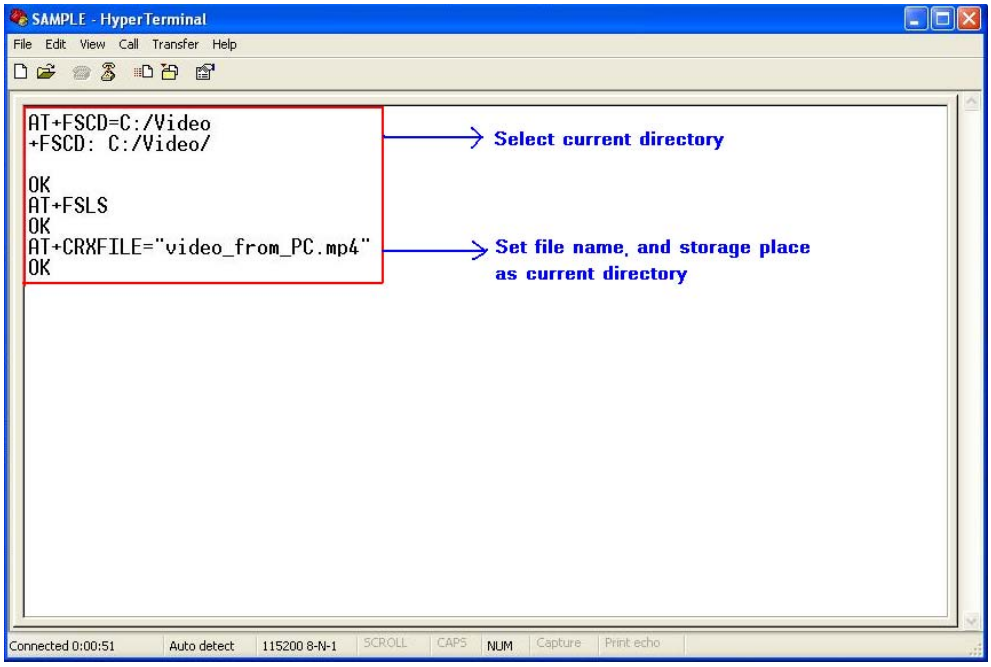


Figure 17-9 Set file name and storage place

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]

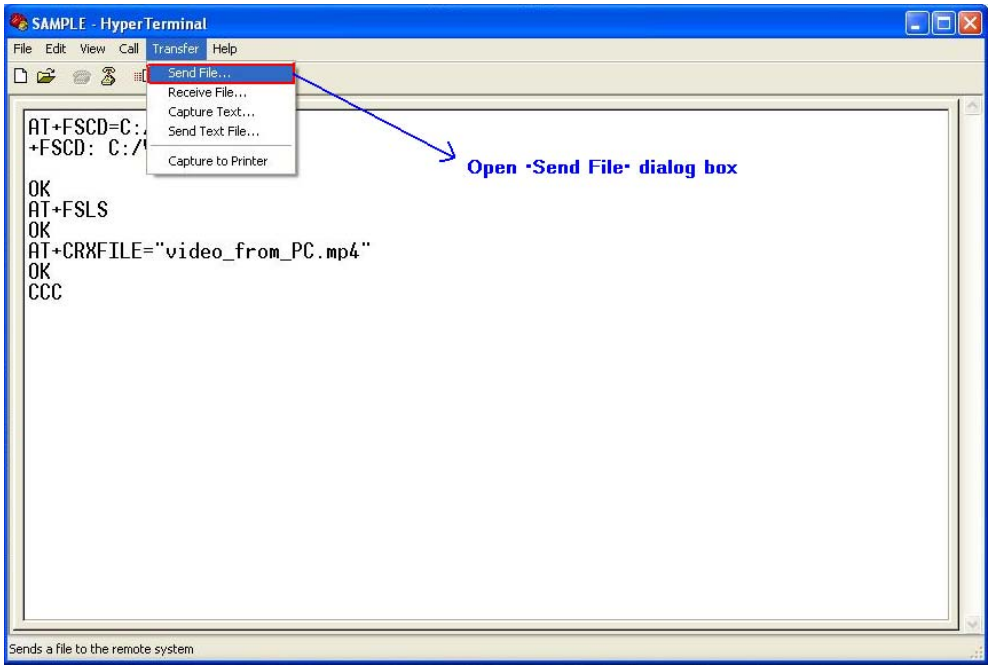


Figure 17-10 Open "Send File" dialog box

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.

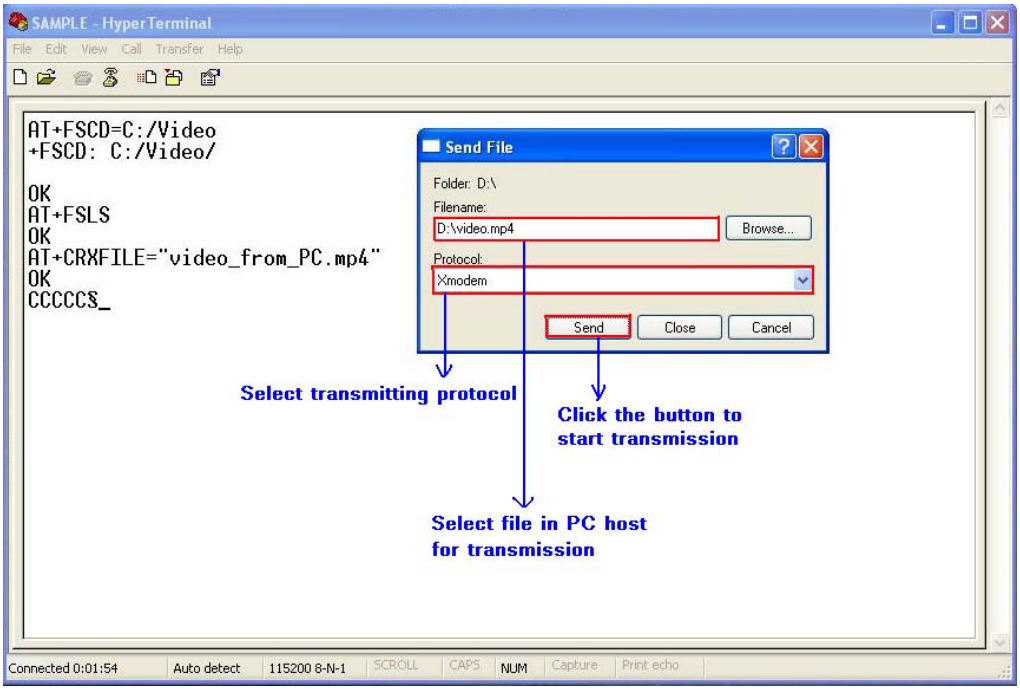


Figure 17-11 Select file and protocol

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]

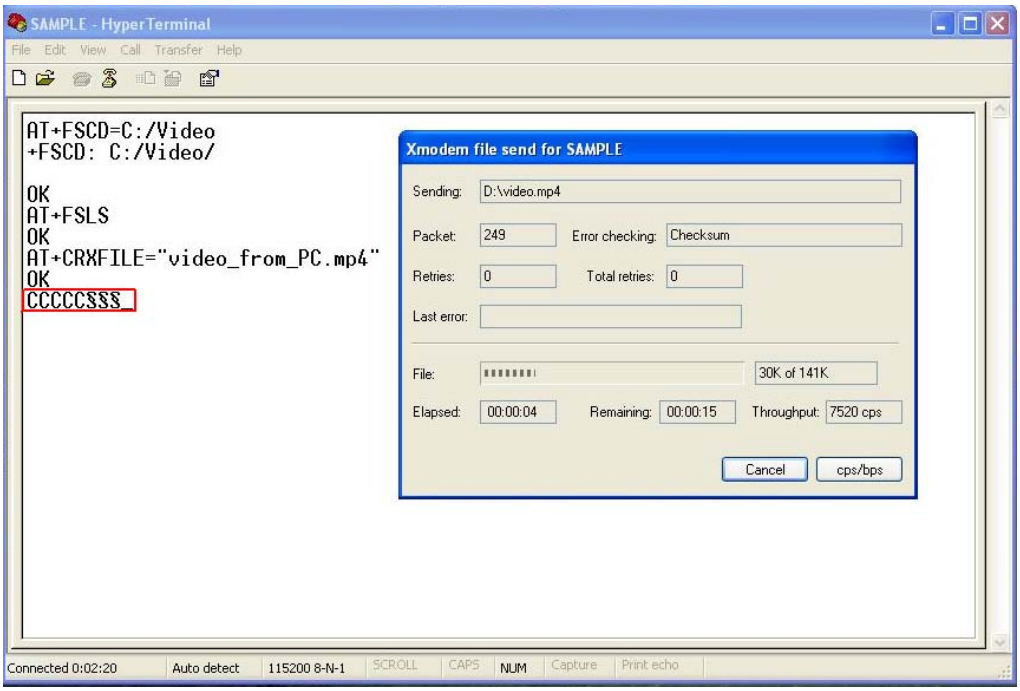


Figure 17-12 The process of file transmission

If cannel the transmission, HyperTerminal will prompt "Transfer cancelled by user".

NOTE There may be some characters reported which denote interactions between module and PC host.

26.4 MMS commands

Set the parameters	Comments
AT+CMMSCURL="mmsc.monternet.com" OK	Set the MMS center URL without "http://"
AT+CMMSPROTO=1,"10.0.0.172",80 OK	Use http protocol to send MMS and set the IP address and port of MMS proxy to "10.0.0.172" and 80
AT+CMMSSENDCFG=6,3,0,0,2,4 OK	Set the parameter of MMS to send. This is unnecessary to set.
Send MMS	Comments
AT+CGSOCKCONT=1,"IP","cmwap" OK AT+CMMSEDIT=1	Set the PDP context profile. Set the edit mode to 1.

OK	
AT+CMMSDOWN=”TITLE”,10 >Test title OK	Set the title of MMS to “Test title”.
AT+CMMSDOWN=”FILE”,3,” 1.jpg” OK	Add the “1.jpg” in UE to the MMS body.
AT+CMMSDOWN=”TEXT”,120,”t1.txt” >My test content….(file content, 120 bytes) OK	Add a text file named “t1.txt” with length of 120 bytes.
AT+CMMSRECP=”13918181818” OK	Add a recipient of “13918181818”
AT+CMMSRECP=”T1@TEST.COM” OK	Add a recipient of T1@TEST.COM
AT+CMMSCC=”15013231222” OK	Add a copy recipient of ”15013231222”
AT+CMMSSAVE=1 +CMMSSAVE: 1 OK	Save the MMS to mail box of index 1.
AT+CMMSSEND=”13318882322” OK +CMMSSEND:0	Send the MMS including new recipient ”13318882322” After MMS is sent successfully, This command indicates success of sending. If failed, +CME ERROR:<err> will be reported.
Receive MMS	Description
+WAP_PUSH_MMS: "15001844675","RROpJGJVyjeA","http://211.136.112.84/RROpJGJVyjeA" ,"09/03/17,17:14:41+32",0,13338	Receiving a new MMS notification.
AT+CGSOCKCONT=1,”IP”,”cmwap” OK	Set the PDP context profile.
AT+CMMSEDIT=0 OK	Set the mms edit mode to 0.

AT+CMMSRECV="http://211.136.112.84/RROpJGJVyjeA" OK	Receive MMS using the location contained in +WAP_PUSH_MMS indication.
+CMMSRECV:0	After MMS is received successfully, this command indicates success of receiving. If failed, +CME ERROR:<err> will be reported.
AT+CMMSSAVE=0 +CMMSSAVE: 0 OK	If receiving successfully, save it to mail box.

Contact us

Shanghai SIMCom Wireless Solutions Ltd.

Add: Building A, SIM Technology Building, No.633, Jinzhong Road, Changning District 200335

Tel: +86 21 3252 3300

Fax: +86 21 3252 3301

URL: http:/www.sim.com/wm/