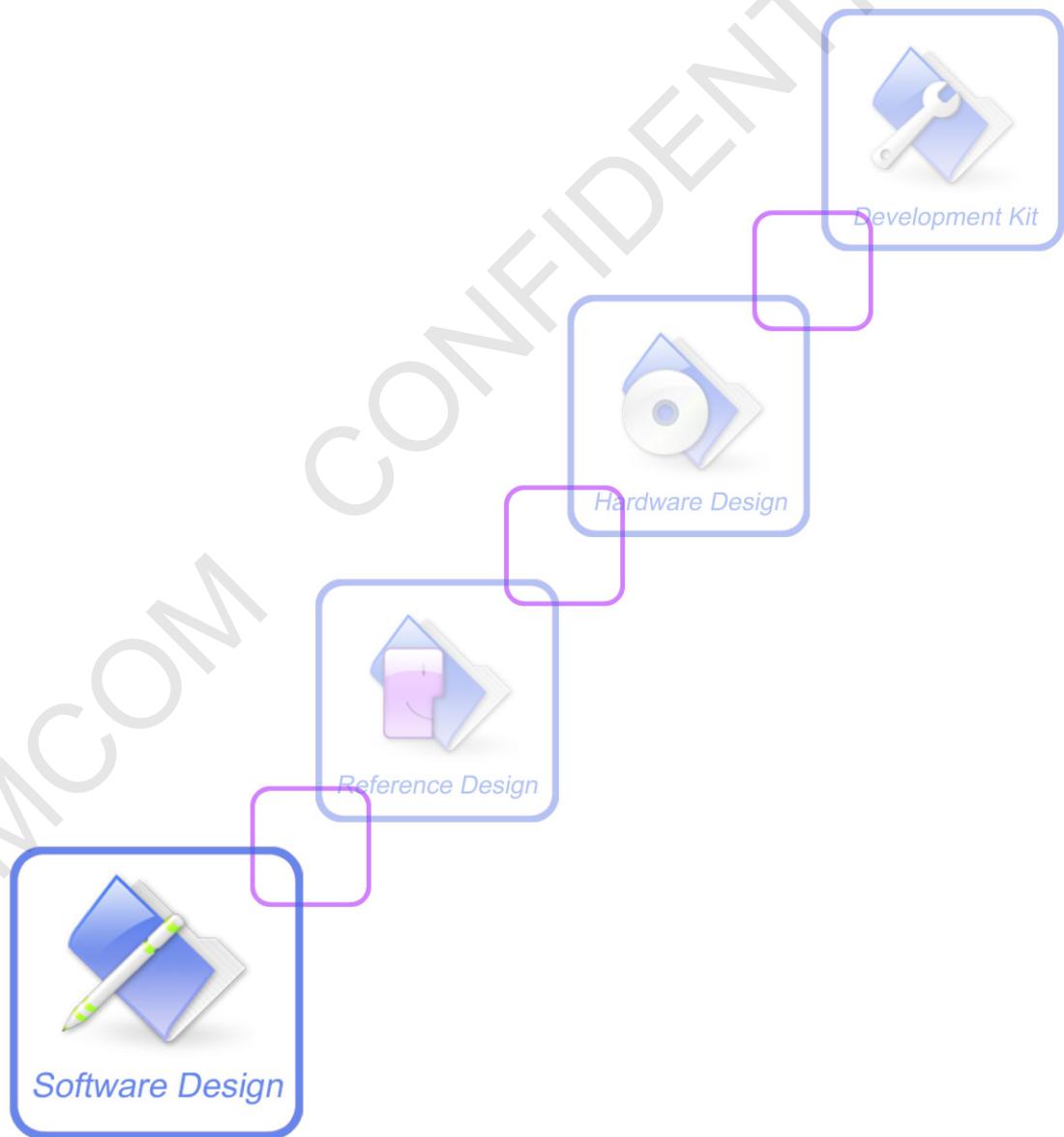




AT Command Set

SIM5360_ATC_V0.22



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Version History

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

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|-------|---|---------|--|
| V0.04 | 9.20 AT+SIDET attenuation of sidetone | Digital | Delete the at command |
| V0.05 | 16.12 AT+SERVERSTOP Stop TCP server | | Modify “AT+SERVERSTOP=?” example |
| V0.05 | 6.18 AT+CNMP Preferred mode selection | | Add the mode which value is “19 ” |
| V0.05 | 14.11 AT&F Set all current parameters to manufacturer defaults | | Modify AT+CNBP default value from 0x0002000000680380 to 0x0002000000E80380 Modify AT+CGSOCKCONT format of default value Delete the default value of command AT+CMICAMP1, AT+SIDET, AT+CTXGAIN, AT+CRXGAIN., AT+CEMNLIST AT+CMMSENDCFG, AT+CMMSCURL, AT+CMMSPROTO. |
| V0.05 | 6.30 AT+CPLMNWLST Manages PLMNs allowed by customer | | Add SIM PIN References |
| V0.05 | 6.32 AT+CNSVSQ Network band scan quickly | | Add Response type |
| V0.05 | 6.33 AT+CNSVS Network full band scan in string format | | Add Response type |
| V0.05 | 6.34 AT+CNSVN Network full band scan in numeric format | | Add Response type |
| V0.06 | 7.4 AT+CFUN Set phone functionality | | Add Note |
| V0.07 | 24.1 AT+CSCRIPTSTART 24.2 AT+CSCRIPTSTOP 24.3 AT+ CSCRIPTCL 24.4 AT+ CSCRIPTPASS 24.5 AT+ CSCRIPTCMD 24.6 AT+ PRINTDIR 24.7 AT+ CSCRIPTAUTO 24.8 Unsolicited CSCRIPT codes | | add |
| V0.07 | 4.1 AT+CSTA | | Add <type> parameter default value |
| V0.07 | 7.15 AT+CDELT A Write delta package to FOTA partition | | Add AT+CDELT A command |
| V0.07 | 26.1 AT+CEBDAT | | Add |

| | | |
|-------|---|---|
| | 26.2 AT+CEBATSTART 26.3 AT+ CEBDATPRINTDIR 26.4 AT+ CEBDATAUTORUN | |
| V0.08 | 25.1 AT+CTTS 25.2 AT+CTTSPARAM | Add |
| V0.09 | 24.1 AT+CSCRIPTSTART 24.6 AT+ PRINTDIR 24.7 AT+ CSCRIPTAUTO | Modify the description of the second parameter Modify default value Modify default value |
| V0.09 | 6.13 AT+CAOC 6.18 AT+CNMP 6.19 AT+CNBP 6.23 AT+CNSMOD 6.42 AT+MONI 6.43 AT+CNLSA | Modify write command results Modify the SIM PIN required. Modify the SIM PIN required. Modify the SIM PIN required Add command Add command |
| V0.09 | 16.3 AT+CSOCKAUTH Set type of authentication for PDP-IP connections of socket | Modify the parameter of test command |
| V0.09 | 16.11AT+SERVERSTART Startup TCP server | Added the range of parameter "<server_index>" |
| V0.09 | 20.21 AT+CPPS | Add |
| V0.10 | 16.15 AT+CIPCCFG | Modify this command |
| V0.11 | 25.1 AT+DTAM | Add command |
| V0.11 | AT+CGPSINFO | Modify sample date/time format |
| V0.12 | 26.1 AT+CEBDAT 26.2 AT+CEBATSTART 26.3 AT+ CEBDATPRINTDIR | Add test command |
| V0.13 | AT+CGPSMODE | Add this command |
| V0.13 | AT+CSWITCHMBIM | Add |
| V0.13 | AT+CGPSSWITCH | Modify the parameter |
| V0.13 | Audio Application Commands | Add AT commands |
| V0.13 | AT+CGPSSWITCH | Modify default parameter |
| V0.14 | AT+NETOPEN | Modify the legacy parameter |
| V0.14 | AT+CIPCCFG | Modify the legacy parameter |
| V0.15 | AT+CGPSSWITCH AT+IPR2 AT+IPR AT+IFC AT+IPREX AT+CUARTWD | Modify the legacy parameter Add command Modify the legacy parameter Modify the legacy parameter Modify the legacy parameter Modify command |
| V0.16 | 6.42 AT+MONI Show cell | Modify these command |

| | | |
|-------|--|-----------------------|
| | system information 6.32 AT+CNSVSQ Network band scan quickly 6.33 AT+CNSVS Network full band scan in string format 6.34 AT+CNSVN Network full band scan in numeric format 6.35 AT+CNSVUS Network band scan by channels in string 6.36 AT+CNSVUN Network band scan by channels in numeric | |
| V0.16 | AT+CGPSSWITCH | Modify the parameter |
| V0.16 | 17.1 AT+STIN SAT Indication 6.26 AT+CCINFO Show cell system information 6.27 AT+CSCHN Show cell channel information 6.28 AT+CSRPs Show serving cell radio parameter | Moify these commands. |
| V0.16 | 6.44 AT+CCLASS GRPS and EDGE class type 6.45 AT+CGSI GSM service cell information 6.46 AT+CWRRCR GRPS and EDGE class type 6.47 AT+CSGSNR Set SGSN version 6.48 AT+CMSCR Set MSC version 6.49 AT+CLDCH Lock UE at DCH state 6.50 AT+CFRAUR Force routing area update request 6.51 AT+CFLAUR Force location area update request 6.52 AT+REBOOT Reboot the system 6.53 AT+CMSSN Manual select specific network 6.54 AT#REBOOT Reboot the system 6.55 AT#MONI Show cell | Add these commands. |

| | | |
|-------|--|--|
| | system information 6.56 AT+CGSETI GSM neighbor cells information 6.57 AT+CUSI Check service cell information in UMTS 6.58 AT+ CUSETICell sets information in UMTS 6.59 AT+CRUPSI Request cell system information in UMTS 6.60 AT+CRUSET Inquiring system information 6.61 AT+CLARFCN Lock ARFCN for GSM 6.62 AT+CLGCELL Lock cell through AFRCN and BSIC in GSM 6.63 AT+CLUARFCN Lock DL frequency for UMTS 6.64 AT+CLUCELL Lock cell through frequency and PSC in UMTS 6.65 AT+CSURV Network full band scan in string format 6.66 AT+CSURCHQ Network band scan quickly 6.67 AT+CSURVC Network full band scan in numeric format 6.68 AT+CSURVU Network band scan by channels in string 6.69 AT+CSURVUC Network band scan by channels in numeric | |
| V0.16 | AT+CCMXSPEC | Add unknown file type |
| V0.16 | 6.70 AT+CSURCH Network full band scan in string format 6.71 AT+BND Set band preference 6.72 AT#BND Set band preference 6.7 AT+COLP Connected line identification presentation 6.5 AT+CLIP Calling line identification presentation 6.6 AT+CLIR Calling line | Add these commands Modify this command Modify the write command Modify this command |

| | | | |
|-------|--|--------|---|
| | identification restriction 6.23 AT+CNSMOD network system mode | Show | Add HSPA+ support |
| V0.16 | 16.33 AT+CIPDNSSET Set DNS query parameters | | Change “Maxmimum”to “Maximum” |
| V0.16 | 15.2 AT+CGDSCONT Define Secondary PDP Context | Define | Modify Read Command |
| V0.16 | 14.11 AT&F Set all current parameters to manufacturer defaults | | Modify default values |
| V0.16 | 9.42 AT+CPMVT Low and high voltage Power Off | | Add AT+CPMVT |
| V0.16 | 9.5 AT+CVALARM Low and high voltage Alarm | | Modify the parameter, add the high voltage threshold. |
| V0.16 | 9.18 AT+CECSET Set/Get the parameters of the EC | | Modify the mistake |
| V0.16 | 16.16 AT+CIPTIMEOUT Set TCP/IP timeout value | | Add this Command |
| V0.17 | 16.9 AT+CIPFILTERSET IP filter configuration | IP | Add this Command |
| V0.17 | 16.10 AT+CSETDNSSRV Set the DNS servers' IP address | | Add this Command |
| V0.17 | 25.2 AT+CTTS TTS operation | TTS | Modify this Command |
| V0.18 | 15.9 AT+CGACT PDP context activate or deactivate | PDP | Modify the description of read command |
| V0.19 | 16.37 AT+CDNSSRV Get dns server ip address | Get | Add this command |
| V0.20 | 20.25 AT+CLBS Base station location | Base | Add this command |
| V0.20 | 16.21 AT+CIPSEND Send data through TCP or UDP connection | | Modify this Command |
| V0.20 | 16.9 AT+CIPFILTERSET IP filter configuration | IP | Modify this Command |
| V0.20 | 4.34 AT+DSWITCH | | Add AT+DSWITCH |
| V0.21 | 9.8 AT+CSETFKIIC | | Add AT+CSETFKIIC |
| V0.21 | 4.25 AT+CSPATH | | Add AT+CSPATH |
| V0.21 | 14.3 AT+ICF | | Modify this Command |
| V0.21 | 18.4.2 AT+CHTTPSETSD | | Add AT+CHTTPSETSD |
| V0.22 | 4.36 AT+CODECSEL | | Add AT+ CODECSEL |

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| V0.22 | 18.5.5 AT+CHTTPSSEND | Modify this Command |
| V0.22 | 18.5.6 AT+CHTTPSSRCV | Modify this Command |

SIMCOM CONFIDENTIAL FILE

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1 Introduction

1.1 Scope

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

SIM5360

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

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

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

1.2 References

The present document is based on the following standards:

- [1] ETSI GSM 01.04: Abbreviations and acronyms.
- [2] 3GPP TS 27.005: Use of Data Terminal Equipment – Data Circuit terminating Equipment (DTE – DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS).
- [3] 3GPP TS 27.007: AT command set for User Equipment (UE).
- [4] WAP-224-WTP-20010710-a
- [5] WAP-230-WSP-20010705-a
- [6] WAP-209-MMSEncapsulation-20010601-a

1.3 Terms and abbreviations

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

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

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

1.4 Definitions and conventions

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

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

2. Document conventions:

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

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

3. Special marks for commands or parameters:

| | |
|----------------|---|
| SIM PIN | – Is the command PIN protected? |
| | YES – AT command can be used only when SIM PIN is READY. |
| | NO – AT command can be used when SIM card is absent or SIM PIN validation is pending. |
| References | – Where is the derivation of command? |
| 3GPP TS 27.007 | – 3GPP Technical Specification 127 007. |
| V.25ter | – ITU-T Recommendation V.25ter. |
| Vendor | – The command is supported by SIMCom. |

2 AT Interface Synopsis

2.1 Interface settings

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

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

2.2 AT command syntax

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

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

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

1. Basic Command

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

2. S Parameter Command

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

3. Extended Command

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

Table 2-1: Types of Extended Command

| Command Type | Syntax | Comments |
|--------------|--------|----------|
|--------------|--------|----------|

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

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

2.3 Information responses

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

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

3 General Commands

3.1 ATI Display product identification information

Description

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

| SIM PIN | References |
|---------|------------|
| NO | V.25ter |

Syntax

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

Defined values

<manufacturer>

The identification of manufacturer.

<model>

The identification of model.

<revision>

The revision identification of firmware.

<sn>

Serial number identification, which consists of a single line containing IMEI (International Mobile station Equipment Identity) number.

<name>

List of additional capabilities:

- | | |
|---------|-------------------------------------|
| +CGSM | GSM function is supported |
| +FCLASS | FAX function is supported |
| +DS | Data compression is supported |
| +ES | Synchronous data mode is supported. |

Examples

ATI

Manufacturer: SIMCOM INCORPORATED

Model: SIMCOM_SIM5360E

Revision: SIM5360_V3.5

IMEI: 351602000330570

+GCAP: +CGSM,+FCLASS,+DS

OK

3.2 AT+CGMI Request manufacturer identification

Description

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

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

Syntax

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

Defined values

<manufacturer>

The identification of manufacturer.

Examples

AT+CGMI

SIMCOM INCORPORATED

OK

3.3 AT+CGMM Request model identification

Description

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

the Module to identify the specific model.

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

Syntax

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

Defined values

| |
|------------------------------|
| <model> |
| The identification of model. |

Examples

| |
|----------------|
| AT+CGMM |
| SIMCOM_SIM5360 |
| OK |

3.4 AT+CGMR Request revision identification

Description

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

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

Syntax

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

Defined values

| |
|---------------------------------|
| <revision> |
| The identification of revision. |

The revision identification of firmware.

Examples

```
AT+CGMR
+CGMR: 3535B01SIM5360E
OK
```

3.5 AT+CGSN Request product serial number identification

Description

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

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

Syntax

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

Defined values

<sn>

Serial number identification, which consists of a single line containing the IMEI (International Mobile station Equipment Identity) number of the MT.

Examples

```
AT+CGSN
351602000330570
OK
```

3.6 AT+CSCS Select TE character set

Description

Write command informs TA which character set <chset> 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 | <i>Set subparameters as default value:</i> OK |

Defined values

<chset>

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+CSTR Configure URC destination interface

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<port>

- 0 – all ports
- 1 – use UART port to output URCs

- 2 – use MODEM port to output URCs
- 3 – use ATCOM port to output URCs
- 4-7 – mapping to 0-3, the port mapping relation can be set by user

<save>

- 0 – set temporarily
- 1 – set permanently

Examples

AT+CATR=1,0

OK

AT+CATR?

+CATR: 1

OK

3.10 A/ Repeat last command

Description

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

References

V.25ter

Syntax

| Execution Command | Responses |
|-------------------|--|
| A/ | <i>The response the last AT command return</i> |

Examples

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

3.11 AT+CFGRI Indicate RI when using URC

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

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

Examples

```

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

4 Call Control Commands and Methods

4.1 AT+CSTA Select type of address

Description

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

Read command returns the current type of number.

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CSTA=? | +CSTA:(list of supported <type>s) OK |
| Read Command | Responses |
| AT+CSTA? | +CSTA:<type> OK |
| Write Command | Responses |
| AT+CSTA=<type> | OK ERROR |
| Execution Command | Responses |
| AT+CSTA | <i>Set default value :</i> OK |

Defined values

<type>

Type of address octet in integer format:

- 145 – when dialling string includes international access code character “+”
- 161 – national number. The network support for this type is optional
- 177 – network specific number,ISDN format
- 129 – otherwise

NOTE: Because the type of address is automatically detected on the dial string of dialing command, command AT+CSTA has really no effect.

Examples

AT+CSTA?

+CSTA: 129

OK

AT+CSTA=145

OK

4.2 AT+CMOD Call mode

Description

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

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<mode>

0 – single mode(only supported)

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

Examples

AT+CMOD?

+CMOD: 0

OK

AT+CMOD=0

OK

4.3 ATD Dial command

Description

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

NOTE:

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | V25.ter |

Syntax

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

Defined values

<n>

String of dialing digits and optionally V.25ter modifiers dialing digits:

0 1 2 3 4 5 6 7 8 9 * # + A B C

Following V.25ter modifiers are ignored:

, T P ! W @

<mgsm>

String of GSM modifiers:

- I Activates CLIR (disables presentation of own phone number to called party)
- i Deactivates CLIR (enables presentation of own phone number to called party)
- G Activate Closed User Group explicit invocation for this call only
- g Deactivate Closed User Group explicit invocation for this call only

<;>

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

<text>

CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.

<err>

Service failure result code string; the string formats please refer +CME ERROR result code and AT+CME command.

Examples

ATD10086;

OK

VOICE CALL:BEGIN

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

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | V.25ter |

Syntax

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

Defined values

<mem>

Phonebook storage: (For detailed description of storages see [AT+CPBS](#))

| | |
|------|--|
| "DC" | ME dialed calls list |
| "MC" | ME missed (unanswered received) calls list |
| "RC" | ME received calls list |
| "SM" | SIM phonebook |
| "ME" | UE phonebook |
| "FD" | SIM fixed dialing phonebook |
| "ON" | MSISDN list |
| "LD" | Last number dialed phonebook |
| "EN" | Emergency numbers |

<n>

Integer type memory location in the range of locations available in the selected memory, i.e. the index returned by [AT+CPBR](#).

<;>

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

<text>

CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.

<err>

Service failure result code string; the string formats please refer +CME ERROR result code and AT+CMEE command.

Examples

ATD>SM3;

OK

VOICE CALL: BEGIN

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

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|---------|
| NO | V.25ter |
|----|---------|

Syntax

| | |
|--------------------|-----------|
| Execution Commands | Responses |
|--------------------|-----------|

| | |
|------------|---|
| ATD><n>[;] | <i>Originate a voice call successfully:</i> |
|------------|---|

| | |
|------------|---|
| ATD><n>[;] | <i>Originate a voice call successfully:</i> |
|------------|---|

| |
|--|
| OK |
| VOICE CALL: BEGIN |
| <i>Originate a data call successfully:</i> |
| CONNECT<text> |
| <i>Originate a call unsuccessfully during command execution:</i> |
| ERROR |
| <i>Originate a call unsuccessfully for failed connection recovery:</i> |
| NO CARRIER |
| <i>Originate a call unsuccessfully for error related to the MT:</i> |
| +CME ERROR: <err> |

Defined values

<n>

Integer type memory location in the range of locations available in the selected memory, i.e. the index number returned by [AT+CPBR](#).

<;>

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

<text>

CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.

<err>

Service failure result code string; the string formats please refer +CME ERROR result code and AT+CME command.

Examples

```
ATD>2;
OK
VOICE CALL: BEGIN
```

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

Description

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

| SIM PIN | References |
|---------|------------|
| NO | V.25ter |

Syntax

| | |
|--------------------|-----------|
| Execution Commands | Responses |
|--------------------|-----------|

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

Defined values

<str>

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

<;>

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

<text>

CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.

<err>

Service failure result code string; the string formats please refer +CME ERROR result code and AT+CME command.

Examples

ATD>"Kobe";

OK

VOICE CALL: BEGIN

4.7 ATA Call answer

Description

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

SIM PIN References

| | |
|-----|---------|
| YES | V.25ter |
|-----|---------|

Syntax

| Execution Commands | Responses |
|--------------------|---|
| ATA | <p><i>For voice call:</i></p> <p>VOICE CALL: BEGIN</p> <p>OK</p> |
| | <p><i>For data call, and TA switches to data mode:</i></p> <p>CONNECT</p> |
| | <p><i>No connection or no incoming call:</i></p> <p>NO CARRIER</p> |

Examples

```
ATA
VOICE CALL: BEGIN
OK
```

4.8 +++ Switch from data mode to command mode

Description

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

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

| SIM PIN | References |
|---------|------------|
| YES | V.25ter |

Syntax

| Execution Command | Responses |
|-------------------|-----------|
| +++ | OK |

Examples

```
+++
OK
```

4.9 ATO Switch from command mode to data mode

Description

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

| SIM PIN | References |
|---------|------------|
| YES | V.25ter |

Syntax

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

Examples

```
ATO
CONNECT 115200
```

4.10 AT+CVHU Voice hang up control

Description

Write command selects whether [ATH](#) or “drop DTR” shall cause a voice connection to be disconnected or not. By voice connection is also meant alternating mode calls that are currently in voice mode.

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

Syntax

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

| | |
|-------------------|---------------------------------|
| Write Command | Responses |
| AT+CVHU=<mode> | OK ERROR |
| Execution Command | Responses |
| AT+CVHU | <i>Set default value:</i> OK |

Defined values

<mode>

- 0 – “Drop DTR” ignored but OK response given. ATH disconnects.
- 1 – “Drop DTR” and ATH ignored but OK response given.

Examples

AT+CVHU=0

OK

AT+CVHU?

+CVHU: 0

OK

4.11 ATH Disconnect existing call

Description

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

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

SIM PIN References

NO V.25ter

Syntax

| | |
|-------------------|---|
| Execution Command | Responses |
| ATH | <i>If AT+CVHU=0:</i> VOICE CALL: END: <time> OK OK |

Defined values

<time>

Voice call connection time:

Format – HHMMSS (HH: hour, MM: minute, SS: second)

Examples

AT+CVHU=0

OK

ATH

VOICE CALL:END:000017

OK

4.12 AT+CHUP Hang up call

Description

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

SIM PIN References

| | |
|----|----------------|
| NO | 3GPP TS 27.007 |
|----|----------------|

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CHUP=? | OK |
| Execution Command | Responses |
| AT+CHUP | VOICE CALL: END: <time> [...] VOICE CALL: END: <time> OK |
| | <i>No call:</i> 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= | OK |
| <speed>[,<name>[,<ce>]] | ERROR |
| Execution Command | Responses |
| AT+CBST | <i>Set default value:</i> 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 | <i>Set default value:</i> 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 | <i>Set default value:</i> 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

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

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<dtmf>

A single ASCII character in the set 0-9, *, #, A, B, C, D.

<duration>

Tone duration in 1/10 seconds, from 0 to 255. This is interpreted as a DTMF tone of different duration from that mandated by the **AT+VTD** command, otherwise, the duration which be set the **AT+VTD** command will be used for the tone (<duration> is omitted).

<dtmf-string>

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

Examples

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

4.19 ATS0 Automatic answer

Description

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

| SIM PIN | References |
|---------|------------|
| YES | V.25ter |

Syntax

| | |
|---------------|-----------|
| Read Command | Responses |
| ATS0? | <n> OK |
| Write Command | Responses |
| ATS0=<n> | OK |

Defined values

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

automatically.

Examples

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

4.20 AT+VTD Tone duration

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<n>

Tone duration in integer format, from 0 to 255, and 0 is factory value.

0 Tone duration of every single tone is dependent on the network.

1...255 Tone duration of every single tone in 1/10 seconds.

Examples

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

AT+VTD?

+VTD: 0

OK

AT+VTD=5

OK

4.21 AT+CODEC Set audio codec mode

Description

The command is used to configure audio codec mode.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------------------|--|
| AT+CODEC=? | +CODEC: (list of supported <g_codec>s), (list of supported <w_codec>s) OK |
| Read Command | Responses |
| AT+CODEC? | +CODEC: <g_codec>, <w_codec> OK |
| Write Command | Responses |
| AT+CODEC=<g_codec>,<w_codec> | OK ERROR |
| Execution Command | Responses |
| AT+CODEC | <i>Set default value(31,7)</i> OK |

Defined values

<g_codec>

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

1 – GSM FR

2 – GSM HR

4 – GSM EFR

8 – GSM FR AMR

16 – GSM HR AMR

32 – GSM FR AMR-WB

<w_codec>

1~7 – Sum of integers each representing a specific codec mode., default value is 7.

- 1 – UMTS AMR
- 2 – UMTS AMR2
- 4 – UMTS AMR-WB

Examples

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

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

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CVOC=? | OK |
| Execution Command | Responses |
| AT+CVOC | +CVOC: <voc>,<amr_mode>,<DTX>,<SCR> OK |

Defined values

<voc>

- 0x100 – AMR codec
- 0x200 – GSM EFR codec
- 0x400 – GSM Full rate codec
- 0x800 – GSM Half rate codec
- 0x1000000 – AMR-WB vocoder
- Other values is reserved

<amr_mode>

- 0 – 4.75kbit/s AMR

```

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

<DTX>

```

0 - Disable encoder DTX mode
1 - Enable encoder DTX mode
  
```

<SCR>

```

0 - Disable encoder SCR mode
1 - Enable encoder SCR mode
  
```

Examples

AT+CVOC

+CVOC: 0x200,17,0,0

OK

AT+CVOC

+CVOC: 0x100,7,0,0

OK

4.23 AT+MORING Enable or disable report MO ring URC

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<mode>

Enable or disable report MO ring URC:

- 0 – disable
- 1 – enable.

Examples

AT+MORING=1

OK

AT+MORING?

+MORING:1

OK

AT+MORING=?

+MORING: (0-1)

OK

4.24 AT+CSDVC Switch voice channel device

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------|-----------|
|--------------|-----------|

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

Defined values

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

Examples

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

4.25 AT+CSPATH Switch right path on handset channel

Description

This command is used to switch right path on handset channel. After changing, the right path of handset channel will enable/disable. This value is not saved.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|-----------------------------|--|
| Test Command AT+CSPATH=? | Responses +CSPATH: (list of supported <on/off>) OK |
| Read Command AT+CSPATH? | Responses +CSPATH: <on/off> OK |

| Write Command | Responses |
|--------------------|-----------|
| AT+CSPATH=<on/off> | OK |

Defined values

| |
|-------------|
| <on/off> |
| 0 – disable |
| 1 – enable |

Examples

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

4.26 AT+CMUT Microphone mute control

Description

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

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

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

Syntax

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

Defined values

| |
|--------|
| <mode> |
|--------|

| | | |
|----------|---|----------|
| <u>0</u> | - | mute off |
| 1 | - | mute on |

Examples

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

4.27 AT+CLVL Loudspeaker volume level

Description

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

Test command returns supported values as compound value.

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

Syntax

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

Defined values

<level>

Integer type value which represents loudspeaker volume level. The range is from 0 to 7, and 0 represents the lowest loudspeaker volume level, 2 is default factory value.

NOTE: <level> is nonvolatile, and it is stored when restart.

Examples

```
AT+CLVL?
+CLVL:2
```

```

OK
AT+CLVL=3
OK
  
```

4.28 AT+VMUTE Speaker mute control

Description

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

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

| <mode> |
|--------------|
| 0 – mute off |
| 1 – mute on |

Examples

```

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

4.29 AT+CALM Alert sound mode

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

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

Examples

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

4.30 AT+CRSL Ringer sound level

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<level>

Integer type value which represents the incoming call ringer sound level. The range is from 0 to 8, and 0 represents the lowest level, 2 is default factory value.

NOTE: <level> is nonvolatile, and it is stored when restart.

Examples

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

4.31 AT+CPTONE Play tone

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

| | |
|-----------------------------------|---|
| | OK |
| Write Command AT+CPTONE=<tone> | Responses 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
  
```

4.32 AT+CPCM External PCM codec mode configuration

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

4.33 AT+CPCMFMFT Change the PCM format

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------------|--|
| AT+CPCMFMFT=? | +CPCMFMFT: (list of supported <format>s) OK |
| Read Command | Responses |
| AT+CPCMFMFT? | +CPCMFMFT: <format> OK |
| Write Command | Responses |
| AT+CPCMFMFT=<format> | OK ERROR |

Defined values

<format>

- 0 u-law
- 1 a-law
- 2 linear

Examples

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

4.34 AT+CPCMREG Control PCM data transfer by diagnostics port

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

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

Examples

```

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

4.35 AT+DSWITCH Change diagnostics port mode

Description

This command is used to change diagnostics port mode. The default mode of diagnostics port is debug mode. User can switch it from debug mode to data mode or from data mode to debug mode. Under 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

4.36 AT+CODECSEL Select the external codec

Description

This command is used to select the external codec chip. The default chip is wm8960. User can change it based on the hardware design.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------------|---|
| AT+CODECSEL=? | + CODECSEL: (list of supported <chip>s) OK |
| Read Command | Responses |
| AT+ CODECSEL? | + CODECSEL: <chip> OK |
| Write Command | Responses |
| AT+ CODECSEL =<chip> | OK ERROR |

Defined values

<chip>

Parameter shows the settings of codec chip

- 0 External codec is neither wm8960 nor nuvoton8810
- 1 External codec is wm8960 (default)
- 2 External codec is nuvoton8810

Examples

AT+CODECSEL=?

+ CODECSEL: (0-2)

OK

AT+ CODECSEL?

+ CODECSEL: 0

```
OK
AT+CODECSEL=2
OK
```

5 SMS Related Commands

5.1 +CMS ERROR Message service failure result code

Description

Final result code +CMS ERROR: <err> indicates an error related to mobile equipment or network. The operation is similar to ERROR result code. None of the following commands in the same command line is executed. Neither ERROR nor OK result code shall be returned. ERROR is returned normally when error is related to syntax or invalid parameters. The format of <err> can be either numeric or verbose. This is set with command [AT+CMEE](#).

SIM PIN References

--- 3GPP TS 27.005

Syntax

```
+CMS ERROR: <err>
```

Defined values

| <err> |
|---------------------------------|
| 300 ME failure |
| 301 SMS service of ME reserved |
| 302 Operation not allowed |
| 303 Operation not supported |
| 304 Invalid PDU mode parameter |
| 305 Invalid text mode parameter |
| 310 SIM not inserted |
| 311 SIM PIN required |
| 312 PH-SIM PIN required |
| 313 SIM failure |
| 314 SIM busy |
| 315 SIM wrong |
| 316 SIM PUK required |
| 317 SIM PIN2 required |
| 318 SIM PUK2 required |
| 320 Memory failure |

- 321 Invalid memory index
- 322 Memory full
- 330 SMSC address unknown
- 331 no network service
- 332 Network timeout
- 340 NO +CNMA ACK EXPECTED
- 341 Buffer overflow
- 342 SMS size more than expected
- 500 unknown error

Examples

```
AT+CMGS=02112345678
+CMS ERROR: 304
```

5.2 AT+CSMS Select message service

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

| <service> |
|---|
| <u>0</u> – SMS at command is compatible with GSM phase 2. |
| 1 – SMS at command is compatible with GSM phase 2+. |

<mt>
 Mobile terminated messages:
 0 – type not supported.
1 – type supported.

<mo>
 Mobile originated messages:
 0 – type not supported.
1 – type supported.

<bm>
 Broadcast type messages:
 0 – type not supported.
1 – type supported.

Examples

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

5.3 AT+CPMS Preferred message storage

Description

This command is used to select memory storages <mem1>, <mem2> and <mem3> to be used for reading, writing, etc. These values will be saved after the module restarts

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| Test Command | Responses |
|--------------|--|
| AT+CPMS=? | +CPMS: (list of supported <mem1>s), (list of supported <mem2>s), (list of supported <mem3>s) OK |
| Read Command | Responses |
| AT+CPMS? | +CPMS:<mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>, |

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

Defined values

<mem1>

String type, memory from which messages are read and deleted (commands List Messages

[AT+CMGL](#), Read Message [AT+CMGR](#) and Delete Message [AT+CMGD](#)).

- “ME” and “MT” FLASH message storage
- “SM” SIM message storage
- “SR” Status report storage

<mem2>

String type, memory to which writing and sending operations are made (commands Send Message from Storage [AT+CMSS](#) and Write Message to Memory [AT+CMGW](#)).

- “ME” and “MT” FLASH message storage
- “SM” SIM message storage
- “SR” Status report storage

<mem3>

String type, memory to which received SMS is preferred to be stored (unless forwarded directly to TE; refer command New Message Indications [AT+CNMI](#)).

- “ME” FLASH message storage
- “SM” SIM message storage

<usedX>

Integer type, number of messages currently in <memX>.

<totalX>

Integer type, total number of message locations in <memX>.

Examples

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

```
AT+CPMS="SM","SM","SM"
+CPMS:3,40,3,40,3,40
OK
```

5.4 AT+CMGF Select SMS message format

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

| <mode> |
|---------------|
| 0 – PDU mode |
| 1 – Text mode |

Examples

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

5.5 AT+CSCA SMS service centre address

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

<sca>

Service Center Address, value field in string format, BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set (refer to command [AT+CSCH](#)), type of address given by <tosca>.

<tosca>

SC address Type-of-Address octet in integer format, when first character of <sca> is + (IRA 43) default is 145, otherwise default is 129.

Examples

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

5.6 AT+CSCB Select cell broadcast message indication

Description

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

The read command displays the accepted message types.

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

<mode>

- 0 – message types specified in <mids> and <dcss> are accepted.
- 1 – message types specified in <mids> and <dcss> are not accepted.

<mides>

String type; all different possible combinations of CBM message identifiers.

<dcss>

String type; all different possible combinations of CBM data coding schemes(default is empty string)

Examples

| |
|-----------|
| AT+CSCB=? |
|-----------|

| +CSCB: (0-1) |
| OK |

```
AT+CSCB=0,"15-17,50,86",""  
OK
```

5.7 AT+CSDH Show text mode parameters

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

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

Examples

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

OK

5.8 AT+CNMA New message acknowledgement to ME/TA

Description

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

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

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

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

<+CDS> for <ds>=1.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

| |
|-----|
| <n> |
|-----|

Parameter required only for PDU mode.

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

mode.

Examples

```
AT+CNMI=1,2,0,0,0
OK
+CMT: "1380022xxxx", "02/04/03,11:06:38",129,7,0<CR><LF>
Testing
(receive new short message)
AT+CNMA(send ACK to the network)
OK
AT+CNMA
+CMS ERROR: 340
(the second time return error, it needs ACK only once)
```

5.9 AT+CNMI New message indications to TE

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.005 |

Syntax

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

OK

Defined values

<mode>

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

<mt>

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

- 0 – No SMS-DELIVER indications are routed to the TE.
- 1 – If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code: +CMTI: <mem3>,<index>.
- 2 – SMS-DELIVERS (except class 2 messages and messages in the message waiting indication group (store message)) are routed directly to the TE using unsolicited result code:
`+CMT:<alpha>,<length><CR><LF><pdu>` (PDU mode enabled); or
`+CMT:<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data>`
 (text mode enabled, about parameters in italics, refer command Show Text Mode Parameters [AT+CSDH](#)).
- 3 – Class 3 SMS-DELIVERS are routed directly to TE using unsolicited result codes defined in <mt>=2. Messages of other data coding schemes result in indication as defined in <mt>=1.

<bm>

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

- 0 – No CBM indications are routed to the TE.
- 2 – New CBMs are routed directly to the TE using unsolicited result code:
`+CBM:<length><CR><LF><pdu>` (PDU mode enabled); or
`+CBM:<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data>` (text mode enabled)

<ds>

- 0 – No SMS-STATUS-REPORTs are routed to the TE.
- 1 – SMS-STATUS-REPORTs are routed to the TE using unsolicited result code:
`+CDS:<length><CR><LF><pdu>` (PDU mode enabled); or
`+CDS:<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>` (text mode enabled)

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

<bfr>

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

Examples

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

5.10 AT+CMGL List SMS messages from preferred store

Description

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

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

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

Defined values

<stat>

1. Text Mode:

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

2. PDU Mode:

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

4 – all messages

<index>

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

<oa>

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

<da>

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

<alpha>

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

<scts>

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

<tooa>

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

<toda>

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

<length>

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

<data>

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

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

- b. If TE character set is "HEX": ME/TA converts each 7-bit character of the GSM 7 bit default alphabet into two IRA character long hexadecimal numbers.
- 4. If <dcs> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal numbers.

<fo>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<ra>

Recipient Address

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

<tora>

Type of Recipient Address

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

<dt>

Discharge Time

GSM 03.40 TP-Discharge-Time in time-string format:"yy/MM/dd,hh:mm:ss+zz",where characters indicate year (two last digits),month,day,hour,minutes,seconds and time zone.

<st>

Status

GSM 03.40 TP-Status in integer format

0...255

<ct>

Command Type

GSM 03.40 TP-Command-Type in integer format

0...255

<sn>

Serial Number

GSM 03.41 CBM Serial Number in integer format

<mid>

Message Identifier

GSM 03.41 CBM Message Identifier in integer format

<page>

Page Parameter

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

<pages>

Page Parameter

GSM 03.41 CBM Page Parameter bits 0-3 in integer format

<pdu>

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

Examples

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

5.11 AT+CMGR Read message

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

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

Defined values

<index>

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

<stat>

1. Text Mode:

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

2. PDU Mode:

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

<oa>

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

<alpha>

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

<scts>

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

<tooa>

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

<fo>

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

<pid>

Protocol Identifier

GSM 03.40 TP-Protocol-Identifier in integer format

0...255

<dcs>

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

<sca>

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

<tosca>

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

<length>

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

<data>

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

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

<da>

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

<toda>

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

<vp>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<ra>

Recipient Address

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

<tora>

Type of Recipient Address

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

<dt>

Discharge Time

GSM 03.40 TP-Discharge-Time in time-string format: "yy/MM/dd, hh:mm:ss+zz", where characters indicate year (two last digits), month, day, hour, minutes, seconds and time zone.

<st>

Status

GSM 03.40 TP-Status in integer format

0...255

<ct>

Command Type

GSM 03.40 TP-Command-Type in integer format

0...255

<mn>

Message Number

GSM 03.40 TP-Message-Number in integer format

<sn>

Serial Number

GSM 03.41 CBM Serial Number in integer format

<mid>

Message Identifier

GSM 03.41 CBM Message Identifier in integer format

<page>

Page Parameter

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

<pages>

Page parameter

GSM 03.41 CBM Page Parameter bits 0-3 in integer format

<pdu>

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

Examples

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

5.12 AT+CMGS Send message

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

<da>

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

<toda>

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

<length>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

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

Examples

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

5.13 AT+CMSS Send message from storage

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| Test Command | Responses |
|-----------------------------------|---|
| AT+CMSS=? | OK |
| Write Command | Responses |
| AT+CMSS= <index> [,<da>[,<toda>]] | +CMSS: <mr> OK ERROR <i>If sending fails:</i> |

+CMS ERROR: <err>

Defined values

<index>

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

<da>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<toda>

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

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

Examples

AT+CMSS=3

+CMSS: 0

OK

AT+CMSS=3,"13012345678"

+CMSS: 55

OK

5.14 AT+CMGW Write message to memory

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| Test Command | Responses |
|---------------|-----------|
| AT+CMGW=? | OK |
| Write Command | Responses |

| | |
|---|-----------------|
| <i>If text mode(</i> AT+CMGF=1 <i>):</i> AT+CMGW=<oa>/<da>[,<t> <oa>/<toda>[,<stat>]]<CR> <i>Text is entered.</i> <CTRL-Z/ESC> <i>If PDU mode(</i> AT+CMGF=0 <i>):</i> AT+CMGW=<length>[,<sta t>]<CR> <i>PDU is entered.</i> <CTRL-Z/ESC> | +CMGW: <index> |
| | OK ERROR |

| | |
|--------------------------------|-------------------|
| +CMS ERROR: <err> | +CMS ERROR: <err> |
| | |

Defined values

<index>

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

<oa>

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

<tooa>

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

<da>

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

<toda>

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

<length>

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

<stat>

1. Text Mode:

"STO UNSENT" stored unsent message

"STO SENT" stored sent message

2. PDU Mode:

2 – stored unsent message

3 – stored sent message

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

Examples

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

5.15 AT+CMGD Delete message

Description

This command is used to delete message from preferred message storage <mem1> location <index>. If <delflag> is present and not set to 0 then the ME shall ignore <index> and follow the rules for <delflag> shown below.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

<index>

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

<delflag>

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

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

Examples

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

5.16 AT+CSMP Set text mode parameters

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

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

Defined values

<fo>

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

<vp>

Depending on SMS-SUBMIT <fo> setting: GSM 03.40,TP-Validity-Period either in integer format (default 167), in time-string format, or if is supported, in enhanced format (hexadecimal coded string with quotes), (<vp> is in range 0... 255).

<pid>

GSM 03.40 TP-Protocol-Identifier in integer format (default 0).

<dcs>

GSM 03.38 SMS Data Coding Scheme (default 0), or Cell Broadcast Data Coding Scheme in integer format depending on the command or result code.

Examples

AT+CSMP=17,23,64,244

OK

5.17 AT+CMGRO Read message only

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

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

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,"+86138002105

00",145,4

abcd

OK

5.18 AT+CMGMT Change message status

Description

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

SIM PIN References

YES Vendor

Syntax

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

Defined values

<index>

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

Examples

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

5.19 AT+CMVP Set message valid period

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

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

Defined values

<vp>

Validity period value:

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

Examples

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

5.20 AT+CMGRD Read and delete message

Description

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

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------|---|
| AT+CMGRD=? | OK |
| Write Command | Responses |
| AT+CMGRD=<index> | <p><i>If text mode(AT+CMGF=1), command successful and SMS-DE-LIVER:</i></p> <p>+CMGRD:<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data></p> <p>OK</p> |
| | <p><i>If text mode(AT+CMGF=1), command successful and SMS-SUBMIT:</i></p> <p>+CMGRD:<stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>],<sca>,<tosca>,<length>]<CR><LF><data></p> <p>OK</p> |
| | <p><i>If text mode(AT+CMGF=1), command successful and SMS-STATUS- REPORT:</i></p> <p>+CMGRD:<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st></p> <p>OK</p> |
| | <p><i>If text mode(AT+CMGF=1), command successful and SMS-COMMAND:</i></p> <p>+CMGRD:<stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length>]<CR><LF><data>]</p> <p>OK</p> |
| | <p><i>If text mode(AT+CMGF=1), command successful and CBM storage:</i></p> <p>+CMGRD:<stat>,<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data></p> <p>OK</p> |
| | <p><i>If PDU mode(AT+CMGF=0) and command successful:</i></p> <p>+CMGRD:<stat>,[<alpha>],<length><CR><LF><pdu></p> <p>OK</p> |

| |
|-------------------|
| 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, "+86138002105
00",145,4
How do you do
OK
```

5.21 AT+CMGSO Send message quickly

Description

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

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|----------------------------|
| AT+CMGSO=? | OK |
| Write Command | Responses |
| <i>If text mode (AT+CMGF=1):</i> AT+CMGSO=<da>[,<toda> >,<text> | +CMGSO: <mr> OK |
| <i>If PDU mode (AT+CMGF =0):</i> AT+CMGSO=<length>,<pd ucontent> | ERROR +CMS ERROR: <err> |

Defined values

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

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

<length>

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

<toda>

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

<text>

Content of message.

<pducontent>

Content of message.

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

Examples

AT+CMGSO="10086","YECX"

+CMGSO: 128

OK

5.22 AT+CMGWO Write message to memory quickly

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|------------|----|
| AT+CMGWO=? | OK |
|------------|----|

| | |
|---------------|-----------|
| Write Command | Responses |
|---------------|-----------|

| | |
|----------------------------------|-----------------|
| <i>If text mode (AT+CMGF=1):</i> | +CMGWO: <index> |
|----------------------------------|-----------------|

| | |
|-------------------------------|----|
| AT+CMGWO=<da>[,<toda>,<text>] | OK |
|-------------------------------|----|

| | |
|-------------------------------|-------|
| AT+CMGWO=<da>[,<toda>,<text>] | ERROR |
|-------------------------------|-------|

If PDU mode (AT+CMGF =0):
 AT+CMGWO=<length>,<pducontent>

+CMS ERROR: <err>

Defined values

<index>

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

<da>

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

<toda>

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

<text>

Content of message.

<pducontent>

Content of message.

Examples

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

5.23 AT+CMGSEX Send message

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.005 |

Syntax

| | |
|---------------|-----------|
| Test Command | Responses |
| AT+CMGSEX=? | OK |
| Write Command | Responses |

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

Defined values

<da>

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

<toda>

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

<length>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<msg_seg>

The segment number for long sms

<msg_total>

The total number of the segments for long sms. Its range is from 2 to 255.

NOTE: In text mode, the maximum length of an SMS depends on the used coding scheme: For single SMS, it is 160 characters if the 7 bit GSM coding scheme is used; For multiple long sms, it is 153 characters if the 7 bit GSM coding scheme is used.

Examples

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

>ABCD<ctrl-Z/ESC>

+CMGSEX: 190

OK

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

```
> EFGH<ctrl-Z/ESC>
+CMGSEX: 190
OK
```

5.24 AT+CMGENREF Generate a new message reference

Description

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

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

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

Defined values

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

Examples

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

5.25 AT+CMSSEX Send multi messages from storage

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.005 |

Syntax

| Test Command | Responses |
|--|---|
| AT+CMSSEX=? | OK |
| Write Command | Responses |
| AT+CMSSEX= <index> [,<index>[,...]] | +CMSSEX: <mr>[,<mr>[,...]] OK ERROR |
| | <i>If sending fails:</i> [+CMSSEX: <mr>[,<mr>[,...]]] +CMS ERROR: <err> |

Defined values

<index>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

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

Examples

AT+CMSSEX=0,1
+CMSSEX: 239,240

OK

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

5.26 AT+CMSSEXm Send message from storage to multi DA

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|----------------|
| YES | 3GPP TS 27.005 |
|-----|----------------|

Syntax

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

Defined values

<index>

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

<storage>

Values reserved by the present document:

| | |
|------|---|
| "DC" | ME dialed calls list Capacity: max. 10 entries AT+CPBW command is not applicable to this storage. |
| "MC" | ME missed (unanswered received) calls list Capacity: max. 10 entries AT+CPBW command is not applicable to this storage. |
| "RC" | ME received calls list Capacity: max. 10 entries AT+CPBW command is not applicable to this storage. |
| "SM" | SIM phonebook Capacity: depending on SIM card |
| "ME" | Mobile Equipment phonebook Capacity: max. 100 entries |
| "FD" | SIM fixdialling-phonebook Capacity: depending on SIM card |
| "ON" | MSISDN list Capacity: depending on SIM card |
| "LD" | Last number dialed phonebook Capacity: depending on SIM card |

AT+CPBW command is not applicable to this storage.

"EN" Emergency numbers

Capacity: depending on SIM card

AT+CPBW command is not applicable to this storage.

"SN" Service Dialling Numbers

Capacity: depending on SIM card

AT+CPBW command is not applicable to this storage.

<pb_index>

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

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

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

Examples

AT+CMSSEX=0,"sm",1,3

+CMSSEX: 1,241

+CMSSEX: 3,242

OK

AT+CMSSEX=0,"sm",1,2

+CMSSEX: 1,invalid index

+CMSSEX: 2,243

OK

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

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

Test Command

Responses

AT+CSALPHA=?

+ CSALPHA: (list of supported <setting>s)

OK

Read Command

Responses

| | |
|------------------------|---|
| AT+ CSALPHA? | + CSALPHA: <setting> OK |
| Write Command | Responses |
| AT+ CSALPHA =<setting> | OK |
| Execution Command | Responses |
| AT+ CSALPHA | <i>Set default value (<setting>=1):</i> OK |

Defined values

| |
|-------------------------------------|
| <setting> |
| 0 – not to match alpha in PB |
| <u>1</u> – try to match alpha in PB |

Examples

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

6 Network Service Related Commands

6.1 AT+CREG Network registration

Description

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

Read command returns the status of result code presentation and an integer <stat> which shows whether the network has currently indicated the registration of the ME. Location information elements <lac> and <ci> are returned only when <n>=2 and ME is registered in the network.

SIM PIN References

NO 3GPP TS 27.007

Syntax

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

Defined values

<n>

- 0 – disable network registration unsolicited result code
- 1 – enable network registration unsolicited result code +CREG: <stat>

2 – enable network registration and location information unsolicited result code +CREG:
`<stat>[,<lac>,<ci>]`

`<stat>`

- 0 – not registered, ME is not currently searching a new operator to register to
- 1 – registered, home network
- 2 – not registered, but ME is currently searching a new operator to register to
- 3 – registration denied
- 4 – unknown
- 5 – registered, roaming

`<lac>`

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

`<ci>`

Cell ID in hexadecimal format.

GSM : Maximum is two byte

WCDMA : Maximum is four byte

Examples

`AT+CREG?`

`+CREG: 0,1`

`OK`

6.2 AT+COPS Operator selection

Description

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

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

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

It is recommended (although optional) that after the operator list TA returns lists of supported `<mode>`s and `<format>`s. These lists shall be delimited from the operator list by two commas. When executing `AT+COPS=?`, any input from serial port will stop this command.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--|--|
| AT+COPS=? | +COPS: [list of supported (<stat>,long alphanumeric <oper> ,short alphanumeric <oper>,numeric <oper>[,<AcT>])s] [,,(list of supported <mode>s),(list of supported <format>s)] OK |
| | ERROR |
| | +CME ERROR: <err> |
| Read Command | Responses |
| AT+COPS? | +COPS: <mode>[,<format>,<oper>[,<AcT>]] OK |
| | ERROR |
| | +CME ERROR: <err> |
| Write Command | Responses |
| AT+COPS=<mode>[,<form at>[,<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","DGTMPPT",
"46000",0),,(0,1,2,3,4,5),(0,1,2)

OK

6.3 AT+CLCK Facility lock

Description

This command is used to lock, unlock or interrogate a ME or a network facility **<fac>**. Password is normally needed to do such actions. When querying the status of a network service (**<mode>**=2) the response line for 'not active' case (**<status>**=0) should be returned only if service is not active for any **<class>**.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|----------------|
| YES | 3GPP TS 27.007 |
|-----|----------------|

Syntax

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

| | |
|-------------------|--------|
| | [...]] |
| | OK |
| +CME ERROR: <err> | |

Defined values

<fac>

- "PF" lock Phone to the very First inserted SIM card or USIM card
- "SC" lock SIM card or USIM card
- "AO" Barr All Outgoing Calls
- "OI" Barr Outgoing International Calls
- "OX" Barr Outgoing International Calls except to Home Country
- "AI" Barr All Incoming Calls
- "IR" Barr Incoming Calls when roaming outside the home country
- "AB" All Barring services (only for <mode>=0)
- "AG" All outGoing barring services (only for <mode>=0)
- "AC" All inComing barring services (only for <mode>=0)
- "FD" SIM fixed dialing memory feature
- "PN" Network Personalization
- "PU" network subset Personalization
- "PP" service Provider Personalization
- "PC" Corporate Personalization

<mode>

- 0 – unlock
- 1 – lock
- 2 – query status

<status>

- 0 – not active
- 1 – active

<passwd>

Password.

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

<classX>

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

- 1 – voice (telephony)
- 2 – data (refers to all bearer services)
- 4 – fax (facsimile services)
- 8 – short message service
- 16 – data circuit sync
- 32 – data circuit async

- 64 – dedicated packet access
- 128 – dedicated PAD access
- 255 – The value 255 covers all classes

Examples

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

6.4 AT+CPWD Change password

Description

Write command sets a new password for the facility lock function defined by command Facility Lock [AT+CLCK](#).

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|-------------------------|--|
| AT+CPWD=? | +CPWD: (list of supported (<fac>,<pwdlength>)s) OK +CME ERROR: <err> |
| Write Command | Responses |
| AT+CPWD= | OK |
| <fac>,<oldpwd>,<newpwd> | +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 [<pwlength>](#).

<pwlength>

Integer type, max length of password.

Examples

AT+CPWD=?

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

OK

6.5 AT+CLIP Calling line identification presentation

Description

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

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

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

SIM PIN References

YES 3GPP TS 27.007

Syntax

| Test Command | Responses |
|--------------|---------------------------------------|
| AT+CLIP=? | +CLIP: (list of supported <n>s) OK |
| Read Command | Responses |
| AT+CLIP? | +CLIP: <n>,<m> |

| | |
|-------------------|--|
| | OK |
| | ERROR |
| | +CME ERROR: <err> |
| Write Command | Responses |
| AT+CLIP=<n> | OK |
| | ERROR |
| | +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CLIP | <i>Set default value(<n>=0):</i> OK |

Defined values

<n>

Parameter sets/shows the result code presentation status in the TA:

- 0 – disable
- 1 – enable

<m>

- 0 – CLIP not provisioned
- 1 – CLIP provisioned
- 2 – unknown (e.g. no network, etc.)

<number>

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

<type>

Type of address octet in integer format;

- 128 – Restricted number type includes unknown type and format
- 145 – International number type
- 161 – national number. The network support for this type is optional
- 177 – network specific number,ISDN format
- 129 – Otherwise

<alpha>

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

<CLI validity>

- 0 – CLI valid
- 1 – CLI has been withheld by the originator
- 2 – CLI is not available due to interworking problems or limitations of originating network

Examples

AT+CLIP=1

OK

RING (with incoming call)

+CLIP: "02152063113",128,,,"gongsi",0

6.6 AT+CLIR Calling line identification restriction

Description

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

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

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

Test command returns values supported as a compound value.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<n>

- 0 – presentation indicator is used according to the subscription of the CLIR service
- 1 – CLIR invocation
- 2 – CLIR suppression

| <m> |
|---|
| 0 – CLIR not provisioned |
| 1 – CLIR provisioned in permanent mode |
| 2 – unknown (e.g. no network, etc.) |
| 3 – CLIR temporary mode presentation restricted |
| 4 – CLIR temporary mode presentation allowed |

Examples

AT+CLIR=?

+CLIR:(0-2)

OK

6.7 AT+COLP Connected line identification presentation

Description

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

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

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

SIM PIN References

| | |
|-----|----------------|
| YES | 3GPP TS 27.007 |
|-----|----------------|

Syntax

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

| | |
|-------------------|--|
| | ERROR |
| | +CME ERROR: <err> |
| Execution Command | Responses |
| AT+COLP | <p><i>Set default value(<n>=0, <m>=0):</i></p> <p>OK</p> |

Defined values

<n>

Parameter sets/shows the result code presentation status in the TA:

- 0 – disable
- 1 – enable

<m>

- 0 – COLP not provisioned
- 1 – COLP provisioned
- 2 – unknown (e.g. no network, etc.)

Examples

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

+COLP: "10086",129,,

OK
```

6.8 AT+CCUG Closed user group

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

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

Defined values

<n>

- 0 – disable CUG temporary mode
- 1 – enable CUG temporary mode

<index>

- 0...9 – CUG index
- 10 – no index (preferred CUG taken from subscriber data)

<info>

- 0 – no information
- 1 – suppress OA
- 2 – suppress preferential CUG
- 3 – suppress OA and preferential CUG

Examples

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

6.9 AT+CCFC Call forwarding number and conditions

Description

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

SIM PIN References

YES

3GPP TS 27.007

Syntax

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

Defined values

- <reason>
 - 0 – unconditional
 - 1 – mobile busy
 - 2 – no reply
 - 3 – not reachable
 - 4 – all call forwarding
 - 5 – all conditional call forwarding
- <mode>
 - 0 – disable
 - 1 – enable
 - 2 – query status
 - 3 – registration
 - 4 – erasure
- <number>

String type phone number of forwarding address in format specified by <[type](#)>.
- <type>

Type of address octet in integer format:

 - 145 – dialing string <number> includes international access code character ‘+’
 - 129 – otherwise
- <subaddr>

String type sub address of format specified by <[satype](#)>.
- <satype>

Type of sub address octet in integer format default 128

<classX>

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

- 1 – voice (telephony)
- 2 – data (refers to all bearer services)
- 4 – fax (facsimile services)
- 16 – data circuit sync
- 32 – data circuit async
- 64 – dedicated packet access
- 128 – dedicated PAD access
- 255 – The value 255 covers all classes

<time>

1...30 – when "no reply" is enabled or queried, this gives the time in seconds to wait before call is forwarded, default value 20.

<status>

- 0 – not active
- 1 – active

Examples

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

6.10 AT+CCWA Call waiting

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--------------|---|
| AT+CCWA=? | +CCWA: (list of supported <n> s) |

| | |
|--|--|
| | OK |
| Read Command AT+CCWA? | Responses +CCWA: <n> OK |
| Write Command AT+CCWA= <n>[,<mode>[,<class>]] | Responses <i>When <mode>=2 and command successful:</i> +CCWA:<status>,<class>[<CR><LF> +CCWA: <status>, <class>[...]] OK |
| | ERROR |
| | +CME ERROR: <err> |
| Execution Command AT+CCWA | Responses <i>Set default value (<n>=0):</i> OK |

Defined values

<n>

Sets/shows the result code presentation status in the TA

- 0 – disable
- 1 – enable

<mode>

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

- 0 – disable
- 1 – enable
- 2 – query status

<class>

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

- 1 – voice (telephony)
- 2 – data (refers to all bearer services)
- 4 – fax (facsimile services)
- 7 – voice,data and fax(1+2+4)
- 8 – short message service
- 16 – data circuit sync
- 32 – data circuit async
- 64 – dedicated packet access
- 128 – dedicated PAD access
- 255 – The value 255 covers all classes

<status>

- 0 – not active
- 1 – active

<number>

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

<type>

Type of address octet in integer format;

- 128 – Restricted number type includes unknown type and format
- 145 – International number type
- 129 – Otherwise
- 161 – national number. The network support for this type is optional

Examples

AT+CCWA=?

+CCWA:(0-1)

OK

AT+CCWA?

+CCWA: 0

OK

6.11 AT+CHLD Call related supplementary services

Description

This command allows the control the following call related services:

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

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

SIM PIN References

YES 3GPP TS 27.007

Syntax

| Test Command | Responses |
|-------------------|---------------------------------------|
| AT+CHLD=? | +CHLD: (list of supported <n>s) OK |
| Write Command | Responses |
| AT+CHLD=<n> | OK ERROR +CME ERROR: <err> |
| Execution Command | Responses |

| | |
|--------------------------------|-------------------|
| AT+CHLD | OK |
| <i>Default to <n>=2.</i> | ERROR |
| | +CME ERROR: <err> |

Defined values

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

Examples

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

6.12 AT+CUSD Unstructured supplementary service data

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

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

| | |
|--|---|
| Write Command | Responses |
| AT+CUSD= | OK |
| <code><n>[,<str>[,<dcs>]]</code> | ERROR |
| | +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CUSD | <i>Set default value (<n>=0):</i> OK |

Defined values

`<n>`

- 0 – disable the result code presentation in the TA
- 1 – enable the result code presentation in the TA
- 2 – cancel session (not applicable to read command response)

`<str>`

String type USSD-string.

`<dcs>`

Cell Broadcast Data Coding Scheme in integer format (default 0).

`<m>`

- 0 – no further user action required (network initiated USSD-Notify, or no further information needed after mobile initiated operation)
- 1 – further user action required (network initiated USSD-Request, or further information needed after mobile initiated operation)
- 2 – USSD terminated by network
- 4 – operation not supported
- 5 – network time out

Examples

AT+CUSD?

+CUSD: 1

OK

AT+CUSD=0

OK

6.13 AT+CAOC Advice of charge

Description

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

This command also includes the possibility to enable an unsolicited event reporting of the CCM information. The unsolicited result code +CCCM: `<ccm>` is sent when the CCM value changes, but not more than 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 <code><mode></code> s) OK |
| Read Command | Responses |
| AT+CAOC? | +CAOC: <code><mode></code> OK ERROR +CME ERROR: <code><err></code> |
| Write Command | Responses |
| AT+CAOC=<mode> | [+CAOC: <code><ccm></code>] OK ERROR +CME ERROR: <code><err></code> |
| Execution Command | Responses |
| AT+ CAOC | <i>Set default value (<code><mode>=1</code>):</i> OK |

Defined values

`<mode>`

- 0 – query CCM value
- 1 – deactivate the unsolicited reporting of CCM value
- 2 – activate the unsolicited reporting of CCM value

`<ccm>`

String type, three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30), value is in home units and bytes are similarly coded as ACMmax value in the SIM.

Examples

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

6.14 AT+CSSN Supplementary service notifications

Description

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

When $<n>=1$ and a supplementary service notification is received after a mobile originated call setup, intermediate result code +CSSI: $<\text{code1}>[,<\text{index}>]$ is sent to TE before any other MO call setup result codes presented in the present document. When several different $<\text{code1}>$ 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: $<\text{code2}>[,<\text{index}>[,<\text{number}>,<\text{type}>[,<\text{subaddr}>,<\text{satype}>]]]$ 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 $<\text{code2}>$ 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 $<\text{n}>$ s),(list of supported $<\text{m}>$ s) OK |
| Read Command | Responses |
| AT+CSSN? | +CSSN: $<\text{n}>,<\text{m}>$ OK |
| Write Command | Responses |
| AT+CSSN=< n >[,< m >] | OK ERROR +CME ERROR: $<\text{err}>$ |

Defined values

$<\text{n}>$

Parameter sets/shows the +CSSI result code presentation status in the TA:

- $\underline{0}$ – disable
- 1 – enable

<m>

Parameter sets/shows the +CSSU result code presentation status in the TA:

- 0 – disable
- 1 – enable

<code1>

- 0 – unconditional call forwarding is active
- 1 – some of the conditional call forwarding are active
- 2 – call has been forwarded
- 3 – call is waiting
- 5 – outgoing calls are barred

<index>

Refer "Closed user group +CCUG".

<code2>

- 0 – this is a forwarded call (MT call setup)
- 2 – call has been put on hold (during a voice call)
- 3 – call has been retrieved (during a voice call)
- 5 – call on hold has been released (this is not a SS notification) (during a voice call)

<number>

String type phone number of format specified by <type>.

<type>

Type of address octet in integer format; default 145 when dialing string includes international access code character "+", otherwise 129.

<subaddr>

String type sub address of format specified by <satype>.

<satype>

Type of sub address octet in integer format, default 128.

Examples

AT+CSSN=1,1

OK

AT+CSSN?

+CSSN: 1,1

OK

6.15 AT+CLCC List current calls

Description

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

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

Syntax

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

Defined values

<n>

0 – Don't report a list of current calls of ME automatically when the current call status changes.

1 – Report a list of current calls of ME automatically when the current call status changes.

<idX>

Integer type, call identification number, this number can be used in +CHLD command operations.

<dir>

0 – mobile originated (MO) call
1 – mobile terminated (MT) call

<stat>

State of the call:

0 – active
1 – held
2 – dialing (MO call)
3 – alerting (MO call)
4 – incoming (MT call)
5 – waiting (MT call)
6 – disconnect

<mode>

bearer/teleservice:

0 – voice

1 – data

2 – fax

9 – unknown

<mpty>

0 – call is not one of multiparty (conference) call parties

1 – call is one of multiparty (conference) call parties

<number>

String type phone number in format specified by <type>.

<type>

Type of address octet in integer format;

128 – Restricted number type includes unknown type and format

145 – International number type

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

177 – network specific number,ISDN format

129 – Otherwise

<alpha>

String type alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with command Select TE Character Set **AT+CSGS**.

Examples

ATD10011;

OK

AT+CLCC

+CLCC: 1,0,0,0,0,"10011",129,"sm"

OK

RING (with incoming call)

AT+CLCC

+CLCC: 1,1,4,0,0,"02152063113",128,"gongsi"

OK

6.16 AT+CPOL Preferred operator list

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| | |
|--|--|
| Test Command | Responses |
| AT+CPOL=? | +CPOL: (list of supported <index>s), (list of supported <format>s) OK |
| Read Command | Responses |
| AT+CPOL? | [+CPOL:<index1>,<format>,<oper1>[<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>][<CR><LF> +CPOL: <index2>,<format>,<oper2>[,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>] [...]]] OK |
| Write Command | Responses |
| AT+CPOL=<index> [,<format>[,<oper>][,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1>]] NOTE: If using USIM card, the last three parameters must set. | OK ERROR +CME ERROR: <err> |

Defined values

<index>

Integer type, the order number of operator in the SIM preferred operator list.

If only input <index>, command will delete the value indicate by <index>.

<format>

- 0 – long format alphanumeric <oper>
- 1 – short format alphanumeric <oper>
- 2 – numeric <oper>

<operX>

String type.

<GSM_AcTn>

- GSM access technology:
- 0 – access technology not selected
 - 1 – access technology selected

<GSM_Compact_AcTn>

- GSM compact access technology:
- 0 – access technology not selected
 - 1 – access technology selected

<UTRA_AcTn>

- UTRA access technology:
- 0 – access technology not selected

1 – access technology selected

Examples

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

6.17 AT+COPN Read operator names

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

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

<alphaX>
String type, operator in long alphanumeric format (see [AT+COPS](#)).

Examples

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

+COPN: "46001","China Unicom"

.....

OK

6.18 AT+CNMP Preferred mode selection

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

| <mode> |
|-----------------|
| 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

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------|---------------------|
| AT+CNBP? | +CNBP: <mode> OK |
| Write Command | Responses |
| AT+CNBP=<mode> | OK ERROR |

Defined values

<mode>

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

<pos>

Value:

| | |
|--------------------|-----------------|
| 0xFFFFFFFF7FFFFFFF | Any (any value) |
| 7 | GSM_DCS_1800 |
| 8 | GSM_EGSM_900 |
| 9 | GSM_PGSMS_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?
+CNPB: 0xFFFFFFFF3FFFFFFF
OK
```

6.20 AT+CNAOP Acquisitions order preference

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

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

Defined values

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

Examples

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

6.21 AT+CNSDP Preferred service domain selection

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

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

Defined values

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

Examples

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

6.22 AT+CPSI Inquiring UE system information

Description

This command is used to return the UE system information.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Defined values

<time>

The range is 0-255, unit is second, after set <time> will report the system information every the seconds.

<System Mode>

System mode, values: “NO SERVICE”, “GSM” or “WCDMA”.

<Operation Mode>

UE operation mode, values: “Online”, “Offline”, “Factory Test Mode”, “Reset”, “Low Power Mode”.

<MCC>

Mobile Country Code (first part of the PLMN code)

<MNC>

Mobile Network Code (second part of the PLMN code)

<LAC>

Location Area Code (hexadecimal digits)

<Cell ID>

Service-cell ID.

<Absolute RF Ch Num>

AFRCN for service-cell.

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

Examples

```
AT+CPSI?  

+CPSI: GSM,Online,460-00 0x182d,12401,27 EGSM 900,-64,2110,42-42  

OK  

AT+CPSI=?  

+CPSI: WCDMA,Online,001-01,0xED2E ,WCDMA IMT 2000,0,9,10688,0,6,62,43,45,500  

OK  

AT+CPSI=?  

+CPSI: (0-255)  

OK
```

6.23 AT+CNSMOD Show network system mode

Description

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

[SIM PIN](#) [References](#)

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Defined values

<n>

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

<state>

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

Examples

```
AT+CNSMOD?
```

```
+CNSMOD: 0,2
```

```
OK
```

6.24 AT+CTZU Automatic time and time zone update

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<onoff>

Integer type value indicating:

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

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

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

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

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

Examples

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

OK

6.25 AT+CTZR Time and time zone reporting

Description

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

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

SIM PIN References

YES 3GPP TS 27.007

Syntax

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

Defined values

<onoff>

Integer type value indicating:

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

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

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

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

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

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

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

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

- <tz> Local time zone received from network.
- <time> Universal time received from network, and the format is “yy/MM/dd, hh:mm:ss”, where characters indicate year (two last digits), month, day, hour, minutes and seconds.
- <dst> Network daylight saving time, and if it is received from network, it indicates the value that has been used to adjust the local time zone. The values as following:
 - 0 – No adjustment for Daylight Saving Time.
 - 1 – +1 hour adjustment for Daylight Saving Time.
 - 2 – +2 hours adjustment for Daylight Saving Time.

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

Examples

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

6.26 AT+CCINFO Show cell system information

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

| | |
|--|---|
| | OK |
| | <i>When ME in dedicated mode:</i> |
| | +CCINFO: [<SCELL>],ARFCN: <arfcn>,MCC: <mcc>,MNC: <mnc>,LAC: <lac>,ID: <id>,BSIC: <bsic>,RXLev: <rxlev>,C1: <c1>,C2: <c2>,TA: <TA>,TXPWR: <TXPWR> |
| | +CCINFO: [<NCELLn>],ARFCN: <arfcn>,BSIC: <bsic>,RXLev: <rxlev> |
| | [...] |
| | OK |
| | <i>When not in GSM:</i> |
| | +CCINFO: NOT IN GSM |
| | OK |
| | ERROR |

Defined values

<SCELL>

indicate serving cell

<NCELLn>

available neighbour cell index

<arfcn>

assigned radio channel

<mcc>

mobile country code

<mnc>

mobile network code

<lac>

localization area code

<id>

cell identifier

<bsic>

base station identification code

<rxlev>

received signal strength in dBm

<TA>

timing advance

<c1>

Coefficient for base station selection

<c2>

Coefficient for Cell re-selection

<TXPWR>

UE TX power in dBm. If no TX, the value is 0.

Examples

```

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

AT+CCINFO (dedicated mode)
+CCINFO: [SCELL],ARFCN: 11,MCC: 460,MNC: 00,LAC: 6360, ID: 12402,BSIC: 52,RXLev:
-61dbm,C1: 42,C2: 42,TXPWR: 29
+CCINFO: [NCell1],ARFCN: 25,BSIC: 40,RXLev: -81dbm
+CCINFO: [NCell2],ARFCN: 28,BSIC: 49,RXLev: -82dbm
+CCINFO: [NCell3],ARFCN: 29,BSIC: 55,RXLev: -82dbm
+CCINFO: [NCell4],ARFCN: 14,BSIC: 54,RXLev: -87dbm
+CCINFO: [NCell5],ARFCN: 2,BSIC: 48,RXLev: -89dbm
+CCINFO: [NCell6],ARFCN: 13,BSIC: 51,RXLev: -89dbm
OK
  
```

6.27 AT+CSCHN Show cell channel information

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

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

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+CSRП Show serving cell radio parameter

Description

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

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CSR?P=? | OK |
| Execution Command | Responses |
| AT+CSR?P | <p><i>When during a call:</i></p> <p>+CSR?P: ARFCN: <arfcn>,RXLevFull: <rxlevfull>,RXLevSub: <rxlevsub>,RXQualFull: <rxqualfull>,RXQualSub: <rxqualsub>,PWRC: <pwrc>,DTX: <dtx>,RLT: <rlt></p> <p>OK</p> <p><i>When not in call:</i></p> <p>OK</p> <p><i>When not in GSM:</i></p> <p>+CSR?P: NOT IN GSM</p> <p>OK</p> |
| | ERROR |

Defined values

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

Examples

| |
|--|
| <i>AT+CSR?P</i> |
| +CSR?P: 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

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<UTMS_SETS Cells Num>

cells number

<UTMS_SETS Cell 1-n PSC>

primary synchronization code of the cell

<UTMS_SETS Cell 1-n Freq>

downlink frequency of the cell

<UTMS_SETS Cell 1-n SSC>

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

Examples

```

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

6.30 AT+CPLMNWLIST Manages PLMNs allowed by customer

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

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

Defined values

<plmnwlist>

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

<type>

The type of PLMN filter:

- 1 – filter by HPLMN.
- 2 – filter by PLMN of the wireless network.
- 3 – filter by both HPLMN and PLMN of the wireless network.

Examples

AT+CPLMNWLST= “46000;46001”

OK

AT+CPLMNWLST=””

OK

AT+CPLMNWLST?

+CPLMNWLST: “46000;46001”, I

OK

6.31 AT+CPASSMGR Manage password

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<module>

The module for the password operation:

- "cplmnwlist" – AT+CPLMNWLST command
- "portmode" – Used for locking DIAG port. No AT command affected.
- "imei" – AT+SIMEI command

<password>

The password for the module. The maximum length is 8.

<new_password>

The new password for the module. The maximum length is 8.

Examples

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

6.32 AT+CNSVSQ Network band scan quickly

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

Write Command

AT+CNSVSQ=<s>,<e>

Responses

Network survey started...

For BCCH-Carrier:

[arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>]

[...]

For non BCCH-Carrier:

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

Defined values

<s>

starting channel.

<e>

ending channel.

<arfcn_value>

carrier assigned radio channel (BCCH – Broadcast Control Channel).

<bsic_value>

base station identification code.

<dBm_value>

the value of dBm.

Examples

AT+CNSVSQ

Network survey started...

For BCCH-Carrier:

arfcn: 16,bsic: 45,dBm: -75

.....

For non BCCH-Carrier:

arfcn: 89,dBm: -82

arfcn: 1011,dBm: -86

.....

Network survey end

OK

6.33 AT+CNSVS Network full band scan in string format

Description

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

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|--------------|-----------|
| Read Command | Responses |
|--------------|-----------|

AT+CNSVS?

+CNSVS: <count>

OK

| | |
|---------------|-----------|
| Write Command | Responses |
|---------------|-----------|

AT+CNSVS=<s>,<e>

Network survey started...

For BCCH-Carrier:

[arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>,<[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStasus>] or [SIB3 not available]>,<[numArfcn: <num_arfcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>]

[...]

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

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

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. exclusion timer running, no BCCH available etc.

```

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

```

Examples

```

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

```

6.34 AT+CNSVN Network full band scan in numeric format

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

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

Defined values

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

localization area code.

<cellId>

cell identifier.

<cellStatus>

cell status, this parameter indicates the following statuses:

- 0 – Indicates the C0 is a suitable cell.
- 1 – Indicates the cell is low priority based on the system information received.
- 2 – Indicates the cell is forbidden.
- 3 – Indicates the cell is barred based on the system information received.
- 4 – Indicates the cell RXLEV is low.
- 5 – Indicates none of the above, e.g. exclusion timer running, no BCCH available etc

<num_arfcn>

number of valid channels.

<list of arfcns>

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

<num_channel>

number of valid channels.

<list of channels>

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

<arfcn_index>

the index of arfcn, and the minimum value is zero.

Examples

AT+CNSVN

Network survey started...

16,45,-82,460,0,6180,42545,0,5, 16 45 49 71 81,11, 11 12 14 16 19 20 21 22 24 26 27

.....

694, -94

.....

Network survey end

OK

6.35 AT+CNSVUS Network band scan by channels in string

Description

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

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

SIM PIN References

NO Vendor

Syntax

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

Defined values

<chN>

channel number(arfcn). It *must be in an increasing order, and the range of “N” is from 1 to 10.*

<arfch_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. exclusion timer running, no BCCH available etc.

<num_arfcn>

number of valid channels.

<list of arfcns>

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

<num_channel>

number of valid channels.

<list of channels>

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

Examples

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

Network survey started...

For BCCH-Carrier:

*arfcn: 16,bsic: 45,dBm: -80,mcc: 460,mnc: 0,lac: 6180,cellId: 42545,cellStatus:CELL_SUITABLE,
numArfcn: 5,arfcn: 16 45 49 71 81,numChannels: 11,array: 11 12 14 16 19 20 21 22 24 26 27*

For non BCCH-Carrier:

arfcn: 86,dBm: -97

Network survey end

OK

6.36 AT+CNSVUN Network band scan by channels in numeric

Description

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

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

[SIM PIN](#) [References](#)
[NO](#) [Vendor](#)

Syntax

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

Defined values

<chN>

channel number(arfcn). It *must be in a increasing order, and the range of "N" is from 1 to 10.*

<arfcn_value>

carrier assigned radio channel (BCCH – Broadcast Control Channel).

<bsic_value>

base station identification code.

<dBm_value>

the value of dBm.

<mcc_value>

mobile country code.

<mnc_value>

mobile network code.

<lac_value>

localization area code.

<cellId>

cell identifier.

<cellStatus>

cell status, this parameter indicates the following statuses:

- 0 – Indicates the C0 is a suitable cell.
- 1 – Indicates the cell is low priority based on the system information received.
- 2 – Indicates the cell is forbidden.
- 3 – Indicates the cell is barred based on the system information received.
- 4 – Indicates the cell RXLEV is low.
- 5 – Indicates none of the above, e.g. exclusion timer running, no BCCH available etc

<num_arfcn>

number of valid channels.

<list of arfcns>

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

<num_channel>

number of valid channels.

<list of channels>

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

Examples

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

Network survey started...

*14,51, -89, 460, 0, 6180, 41074, 0, 8, 5 7 14 51 61 65 74 88, 24, 2 3 9 11 12 15 16 17 19 20 22 24 25
26 27 28 36 81 516 520 525 532 556 600*

86, -97

Network survey end

OK

6.37 AT+CCGMDF Enable single mode in RAT balancing mode

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

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

Defined values

<mode>

Whether to enable or disable single mode in RAT balancing condition (mode depends on AT+CNMP):

- 0 – Disable.
- 1 – Enable.

Examples

AT+CCGMDF=1

OK

AT+CCGMDF?

+CCGMDF: 0

OK

AT+CCGMDF=?

+CCGMDF: (0-1)

OK

6.38 AT+CPLMNPASS Manage PLMN filter password

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Write Command | Responses |
|-----------------------|-----------|
| AT+CPLMNPASS=<passwo | OK |
| rd>[, <new_password>] | ERROR |

Defined values

<password>

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

<new_password>

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

Examples

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

6.39 AT*CNTI Query Network Mode

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

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

Defined values

<CNTI_option>

Network query option.

Value:

- | | |
|---|---|
| 0 | Query the current network mode |
| 1 | Query the network mode available for the module now |
| 2 | Query the network mode supported by the module |

<network_mode>

The wireless access technologies separated by ‘,’. For some products, the HSDPA or HSUPA is not supported.

Value:

- NONE
- GSM
- GPRS
- EDGE
- UMTS
- HSDPA
- HSUPA
- HSPA
- HSPA+

Examples

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

6.40 AT+CELLLOCK Lock on specified 2G cell

Description

This command is used to lock on specified 2G cell

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

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

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

Defined values

<arfcn>

The arfcn of the cell. User can use AT+CCINFO to get it.

<state>

The state of the locking action

IDLE – no locking

LOCKING – trying to lock on the target cell.

LOCKED – already locked on the target cell.

Examples

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

6.41 AT+CRPAAO Set Network Searching Preference on Power up

Description

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

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

SIM PIN References

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

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

Defined values

<state>

The State of the setting:

- 0 – Disable.
- 1 – Enable.

Examples

```
AT+CRPAAO=1
```

```
OK
```

```
AT+CRPAAO?
```

```
+CRPAAO:1
```

```
OK
```

```
AT+CRPAAO=?
```

```
+CRPAAO: (0,1)
```

```
OK
```

6.42 AT+MONI Show cell system information

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

| |
|--|
| <code><dBm>dBm, C1:<C1>-C2:<C2></code> <code>[...]</code> <code>OK</code> <code><i>When the network name is unknown:</i></code> <code>+MONI:Cc:<cc>,Nc<nc>,BSIC:<bsic>,RxQual:<qual>,LAC:<lac></code> <code>,Id:<id>, ARFCN:<arfcn>,PWR:<dBm>dBm,C1:<C1>-C2:<C2></code> <code><i>When extracting data for an adjacent cell:</i></code> <code>+MONI:Adj Cell<n>,[LAC:<lac>,Id:<id>],ARFCN:<arfcn>,PWR:</code> <code><dBm>dBm, C1:<C1>-C2:<C2></code> <code>[...]</code> <code>OK</code> |
|--|

Defined values

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

Examples

| |
|---|
| <code>AT+MONI?</code> <code>+MONI: China Mobile,BSIC: 45,RXQual: 255,LAC: 6180,Id: 42545,ARFCN: 16,PWR: -74d</code> <code>bm,C1:30-C2:30</code> |
|---|

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

6.43 AT+CNLSA Network limited service allowed

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

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

Examples

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

6.44 AT+CCLASS GPRS and EDGE class type

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Read Command | Responses |
|--------------------------|-------------------------------|
| AT+CCLASS? | +CCLASS: <gclass>,<ecl> OK |
| Write Command | Responses |
| AT+CCLASS=<gclass>,<ecl> | +CCLASS: SUCCESS OK |
| | +CCLASS: FAIL OK |

Defined values

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

Examples

```
AT+CCLASS?
+CCLASS:10,10
OK
```

6.45 AT+CGSI GSM service cell information

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

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

Examples

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

6.46 AT+CWRRCR Set WCDMA RRC version

Description

This command is used to set the WCDMA RRC version.

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

SIM PIN References

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|-----------------|------------------------|
| Read Command | Responses |
| AT+CWRRCR? | +CWRRCR: <rel> OK |
| Write Command | Responses |
| AT+CWRRCR=<rel> | +CWRRCR: SUCCESS OK |
| | +CWRRCR: FAIL OK |

Defined values

| | |
|-------|--------------------|
| <rel> | |
| 0 | R99 |
| 1 | R5 (default value) |

Examples

```
AT+CWRRCR?  
+CWRRCR: 1  
OK
```

6.47 AT+CSGSNR Set SGSN version

Description

This command is used to set the SGSN version.

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

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

Defined values

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

Examples

```
AT+CSGSNR?  
+CSGSNR: 2  
OK
```

6.48 AT+CMSCR Set MSC version

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

| <rel> | |
|-------|--|
| 0 | Forces the UE to always behave as a R97/R98 mobile, irrespective of the network's MSCR (MSC revision number) |
| 1 | Forces the UE to always behave as a R99 mobile, irrespective of the network's MSCR (MSC revision number), default value |
| 2 | Causes the UE's behavior to be dynamic, in accordance with the MSCR bit. MSCR = 0 – MSC is Release 98 or older MSCR = 1 – MSC is Release 99 or later |

Examples

```
AT+CSGSNR?  
+CSGSNR: 2  
OK
```

6.49 AT+CLDCH Lock UE at DCH state

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

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

Defined values

| <mode> |
|------------|
| 0 – unlock |
| 1 – lock |

Examples

```
AT+CLDCH?  
+CLDCH: 0  
OK
```

6.50 AT+CFRAUR Force routing area update request

Description

Execute this command to send routing area update request.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|-----------|
| AT+CFRAUR | OK |

Defined values

Examples

```
AT+CFRAUR  
OK
```

6.51 AT+CFLAUR Force location area update request

Description

Execute this command to send location area update request.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|-----------|
| AT+CFLAUR | OK |

Defined values

Examples

AT+CFLAUR

OK

6.52 AT+REBOOT Reboot the system

Description

The command is used to reboot the system immediately.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|-----------|
| AT+REBOOT | OK |

Defined values

Examples

AT+REBOOT

OK

6.53 AT+CMSSN Manual select specific network

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<plmn>

Appointed PLMN

Examples

| |
|-----------------------------|
| <code>AT+CMSSN=46001</code> |
| <code>OK</code> |

6.54 AT#REBOOT Reboot the system

Description

The command is used to reboot the system immediately.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Execution Command | Responses |
|------------------------|-----------------|
| <code>AT#REBOOT</code> | <code>OK</code> |

Defined values

Examples

| |
|------------------------|
| <code>AT#REBOOT</code> |
| <code>OK</code> |

6.55 AT#MONI Show cell system information

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

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

When extracting data for an adjacent cell:

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

Defined values

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

Examples

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

6.56 AT+CGSETI GSM neighbor cells information

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

| |
|----------------|
| < Cell ID > |
| Cell ID |
| < Cell ARFCN > |
| Cell ARFCN |
| < Cell BSIC > |
| Cell BSIC |

Examples

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

6.57 AT+CUSI Check service cell information in UMTS

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Read Command | Responses |
|--------------|-----------|
|--------------|-----------|

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

Defined values

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

Examples

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

6.58 AT+ CUSETI Cell sets information in UMTS

Description

The command is used to extract setting information in the UMTS

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

```

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

```

Defined values

<ActiveSET Cells Num>

active set cells number, and if it is NULL, <ActiveSET Cell 1-n PSC> and <ActiveSET Cell 1-n PSC> will be ignored

<PSC>

primary scramble code of the cell[1-n] of active set

<Freq>

downlink frequency of the cell[1-n]of active set

<ecio>

ec/io

<RSCP>

Received Signal Code Power

<SyncSET Cells Num>

sync neighbor set cells number, and if it is NULL, <SyncSET Cell 1-n PSC> and <SyncSET Cell 1-n Freq> will be ignored

<UnlistSET Cell Num>

unlist set cells number, and if it is NULL, <UnlistSET Cell 1-n PSC> and <UnlistSET Cell 1-n Freq> will be ignored

<Add-Candidate Cells Num>

add candidate set cells number, and if it is NULL, <Add-Candidate Cell 1-n PSC> and <Add-Candidate Cell 1-n Freq> will be ignored

Notes: Cell belongs to Add-Candidate Set -- a SET containing cells that are originally from Sync SET or UnlistSET and whose energy is strong enough ,based on network-specified event criteria (1A, 1C, 1D & 1E),to be handoff candidates.

<Drop-Candidate Cells Num>

drop candidate set cells number, and if it is NULL, <Drop-Candidate Cell 1-n PSC> and <Drop-Candidate Cell 1-n Freq> will be ignored

<HHOActiveSET Cells Num>

hard handover active set cells number, and if it is NULL, <HHOActiveSET Cell 1-n PSC> and <HHOActiveSET Cell 1-n Freq> will be ignored.

Examples

AT+CUSETI?

+CUSETI: ActiveSET: 1,2 10663 33 109,SyncSET: 2,35 10663 26 106,11 10663 49 121,UnlistSET: NULL,Add-CandidateSET: NULL,Drop-CandidateSET: NULL,HHOActiveSET: NULL
OK

6.59 AT+CRUPSI Request cell system information in UMTS

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------|---|
| AT+CRUPSI=? | +CRUPSI: (list of supported <time>s) OK |
| Read Command | Responses |
| AT+CRUPSI? | <i>When in UMTS:</i> +CRUPSI: <Cells num>[,<Cell ID>,<PSC>,<Freq>,<Rscp> [...]] OK <i>When not in UMTS:</i> +CRUPSI: NOT IN WCDMA OK ERROR |
| Write Command | Responses |
| AT+CRUPSI=<time> | OK ERROR |

Defined values

<time>

the range is 0-255, unit is second, after set <time> will report the system information every the seconds

<Cells num>

total number of stored cells

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

Examples

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

6.60 AT+CRUSET Inquiring system information

Description

This command is used to Inquiring system information for UMTS.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------------------|---|
| AT+CRUSET=? | +CRUSET: scope of <time> OK |
| Read Command AT+CRUSET? | Responses <i>When in UMTS:</i> +CRUSET: Active SET,<ActiveSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]] +CRUSET: Sync Neighbor SET,<SyncSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]] +CRUSET: Async Neighbor SET,<AsyncSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]] +CRUSET: UnlistSET,<UnlistSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize> [...]] +CRUSET: Add-Candidate SET,<Add-Candidate Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize> [...]] |

e>[...]]
+CRUSET: Drop-Candidate SET,<Drop-Candidate Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]]
+CRUSET: After failed W2G SET,<ResumeSET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]]
+CRUSET: DCH Only SET,<DCHOnlySET Cells Num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]]
+CRUSET: HHO Active SET,<HHOActiveSET Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]]
+CRUSET: HHO Active NO PN SET,<HHOActiveNoPNSet Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]]
+CRUSET: Candidate to Unlisted SET,<CandidateToUnlistSet Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]]
+CRUSET: Saved SET,<SavedSET Cells num>[,<PSC>,<Freq>,<SSC>,<Sttd>,<TotEcio>,<Ecio>,<Rscp>,<WinSize>[...]]
OK

When not in UMTS:

+CRUSET: NOT IN WCDMA

OK

ERROR

| Write Command | Responses |
|------------------|-----------|
| AT+CRUSET=<time> | OK |
| | ERROR |

Defined values

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

secondary synchronization code

<Sttd>

if the CPICH of this cell uses STTD

< TotEcio >

the total Ec/Io in the best paths found in a sweep

< Ecio >

Ec/Io

<Rscp>

CPICH RSCP

< WinSize >

search window size for this cell

<ActiveSET Cells Num>

active set cells number

< SyncSET Cells Num>

neighbor (monitored) set for neighbors whose timing is known cells number

< AsyncSET Cells Num>

neighbor (monitored) set for neighbors whose timing is unknown cells number

< UnlistSET Cells Num>

unlist set cells number

< Add-Candidate Cells Num>

add-candidate set cells number

< Drop-Candidate Cells Num>

drop-candidate set cells number

< ResumeSET Cells Num>

after failed W2G set or resume set cells number

< DCHOnlySET Cells Num>

DCH only set cells number

< HHOActiveSET Cells Num>

hard handover active set cells number

< HHOActiveNoPNSET Cells Num>

hard handover active no PN set cells number

< CandUSET Cells Num>

candidate to unlist set cells number

< SavedSET Cells Num>

saved set cells number

Examples

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

```

10663,
0,0,0,49,121,0,258,10663,0,0,0,49,121,0,109,10663,0,0,0,49,121,0,226,10663,0,0,38,49,121,1536
+CRUSET: Unlist SET,NULL
+CRUSET: Add-Candidate SET,NULL
+CRUSET: Drop-Candidate SET,NULL
+CRUSET: After failed W2G SET,NULL
+CRUSET: DCH Only SET,NULL
+CRUSET: HHO Active SET,NULL
+CRUSET: HHO Active No PN SET,NULL
+CRUSET: Candidate to Unlisted SET,NULL
+CRUSET: Saved SET,NULL
OK
  
```

6.61 AT+CLARFCN Lock ARFCN for GSM

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

| |
|---|
| <arfcn> |
| appointed AFRCN of service-cell that will be locked |

Examples

`AT+CLARFCN=110`

`OK`

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

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Write Command | Responses |
|---|---|
| <code>AT+CLGCELL=<arfcn>,<b sic></code> | <code>OK</code> <code>+CLGCELL: NOT IN GSM</code> <code>OK</code> <code>+CLGCELL: NETWORK BUSY</code> <code>OK</code> <code>ERROR</code> |
| Execution Command | Responses |
| <code>AT+CLGCELL</code> | <i>Set automatic mode</i> <code>OK</code> <code>+CLGCELL: NETWORK BUSY</code> <code>OK</code> <code>ERROR</code> |

Defined values

`<arfcn>`

appointed AFRCN of service-cell that will be locked

`<bsic>`

base station identification code. BSIC=NCC(Network Colour Code)+BCC(Base Station Colour Code)

Examples

`AT+CLGCELL=46,51`

OK

6.63 AT+CLUARFCN Lock DL frequency for UMTS

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<freq>

appointed DL frequency(UTRA absolute radio frequency channel number)

Examples

AT+CLUARFCN=10688

OK

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

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Write Command | Responses |
|-----------------------------|---|
| AT+CLUCELL=<freq>,<ps c> | OK +CLUCELL: NETWORK BUSY OK ERROR |
| Execution Command | Responses |
| AT+CLUCELL | <i>Set automatic mode</i> OK ERROR |

Defined values

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

Examples

| |
|---------------------|
| AT+CLUCELL=10688, 9 |
| OK |

6.65 AT+CSURV Network full band scan in string format

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|------------------------|---|
| Read Command | Responses |
| AT+CSURV? | +CSURV: <count> OK |
| Write Command | Responses |
| AT+CSURV=<s><e> | <p>Network survey started...</p> <p>For BCCH-Carrier:</p> <p>[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]>]</p> <p>[...]</p> <p>For non BCCH-Carrier:</p> <p>[arfch: <arfcn_value>,dBm: <dBm_value>]</p> <p>[...]</p> <p>Network survey end</p> <p>OK</p> |
| | +CSURV: NOT IN GSM |
| | OK |
| | +CSURV: NETWORK BUSY |
| | OK |
| | +CSURV: NOT ALLOW IN CALL |
| | OK |
| | ERROR |
| AT+CSURV=<arfcn_index> | <p>For BCCH-Carrier:</p> <p>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_afren>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]></p> <p>OK</p> <p>For non BCCH-Carrier:</p> <p>arfch: <arfcn_value>,dBm: <dBm_value></p> <p>OK</p> |
| | +CSURV: NOT IN GSM |
| | OK |
| | +CSURV: arfcn index invalid |
| | OK |
| | +CSURV: NETWORK BUSY |

| | |
|-------------------|---|
| | OK |
| | +CSURV: NOT ALLOW IN CALL |
| | OK |
| | ERROR |
| Execution Command | Responses |
| AT+CSURV | <p>Network survey started...</p> <p>For BCCH-Carrier:</p> <p>[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_arfcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>]</p> <p>[...]</p> <p>For non BCCH-Carrier:</p> <p>[arfch: <arfch_value>,dBm: <dBm_value>]</p> <p>[...]</p> <p>Network survey end</p> <p>OK</p> <p>+CSURV: NOT IN GSM</p> <p>OK</p> <p>+CSURV: NETWORK BUSY</p> <p>OK</p> <p>+CSURV: NOT ALLOW IN CALL</p> <p>OK</p> <p>ERROR</p> |

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. exclusion timer running, no BCCH available etc.

<num_arfcn>

number of valid channels

<list of arfcns>

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

<num_channel>

number of valid channels

<list of channels>

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

<arfcn_index>

the index of arfcn, and the minimum value is zero

Examples

AT+CSURV

Network survey started...

For BCCH-Carrier:

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

For non BCCH-Carrier:

arfcn: 694,dBm: -94
.....

Network survey end

OK

6.66 AT+CSURCHQ Network band scan quickly

Description

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

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

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

Defined values

<s>

starting channel.

<e>

ending channel.

<arfcn_value>

carrier assigned radio channel (BCCH – Broadcast Control Channel).

<bsic_value>

base station identification code.

<dBm_value>

the value of dBm.

Examples

AT+CSURCHQ

Network survey started...

For BCCH-Carrier:

arfcn: 16,bsic: 45,dBm: -75

.....

For non BCCH-Carrier:

arfcn: 89,dBm: -82

arfcn: 1011,dBm: -86

.....

Network survey end

OK

6.67 AT+CSURVC Network full band scan in numeric format

Description

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

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

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

Defined values

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

`<dBm_value>`

the value of dBm.

`<mcc_value>`

mobile country code.

`<mnc_value>`

mobile network code.

`<lac_value>`

localization area code.

`<cellId>`

cell identifier.

`<cellStatus>`

cell status, this parameter indicates the following statuses:

0 – Indicates the C0 is a suitable cell.

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

2 – Indicates the cell is forbidden.

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

4 – Indicates the cell RXLEV is low.

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

`<num_arfcn>`

number of valid channels.

`<list of arfcns>`

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

`<num_channel>`

number of valid channels.

`<list of channels>`

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

`<arfcn_index>`

the index of arfcn, and the minimum value is zero.

Examples

`AT+CSURVC`

Network survey started...

`16,45,-82,460,0,6180,42545,0,5, 16 45 49 71 81,11, 11 12 14 16 19 20 21 22 24 26 27`

.....

`694, -94`

.....

Network survey end

`OK`

6.68 AT+CSURVU Network band scan by channels in string

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

Write Command

AT+CSURVU=<ch1>,[<ch2>,...[<ch10>]]

Responses

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_arfcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>]

[...]

For non BCCH-Carrier:

[arfch: <arfch_value>,dBm: <dBm_value>]

[...]

Network survey end

OK

+CSURVU: NOT IN GSM

OK

+CSURVU: NETWORK BUSY

OK

+CSURVU: NOT ALLOW IN CALL

OK

ERROR

Defined values

<chN>

channel number(arfcn). It *must be in an increasing order, and the range of “N” is from 1 to 10.*

<arfcn_value>

carrier assigned radio channel (BCCH – Broadcast Control Channel).

<bsic_value>

base station identification code.

<dBm_value>

the value of dBm.

`<mcc_value>`

mobile country code.

`<mnc_value>`

mobile network code.

`<lac_value>`

localization area code.

`<cellId>`

cell identifier.

`<cellStatus>`

cell status, this parameter indicates the following statuses:

- CELL_SUITABLE indicates the C0 is a suitable cell.

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

- CELL_FORBIDDEN indicates the cell is forbidden.

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

- CELL_LOW_LEVEL indicates the cell RXLEV is low.

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

`<num_arfcn>`

number of valid channels.

`<list of arfcns>`

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

`<num_channel>`

number of valid channels.

`<list of channels>`

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

Examples

```
AT+CSURVU=16,20,86,96,109
```

Network survey started...

For BCCH-Carrier:

*arfcn: 16,bsic: 45,dBm: -80,mcc: 460,mnc: 0,lac: 6180,cellId: 42545,cellStatus:CELL_SUITABLE,
numArfcn: 5,arfcn: 16 45 49 71 81,numChannels: 11,array: 11 12 14 16 19 20 21 22 24 26 27*

For non BCCH-Carrier:

arfcn: 86,dBm: -97

Network survey end

OK

6.69 AT+CSURVUC Network band scan by channels in numeric

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

Write Command

```
AT+CSURVUC=<ch1>,[<c
h2>,...[<ch10>]]]
```

Responses

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_afren>,<list of arfcns>] or [cell allocation
empty]>,<[<num_channel>,<list of channels>] or [SIB2 not
available]>]

[...]

For non BCCH-Carrier:

[<arfcn_value>,<dBm_value>]

[...]

Network survey end

OK

+CSURVUC: NOT IN GSM

OK

+CSURVUC: NETWORK BUSY

OK

+CSURVUC: NOT ALLOW IN CALL

OK

ERROR

Defined values

<chN>

channel number(arfcn). It *must be in a increasing order, and the range of “N” is from 1 to 10.*

<arfcn_value>

carrier assigned radio channel (BCCH – Broadcast Control Channel).

<bsic_value>

base station identification code.

<dBm_value>

the value of dBm.

<mcc_value>
 mobile country code.
 <mnc_value>
 mobile network code.
 <lac_value>
 localization area code.
 <cellId>
 cell identifier.
 <cellStatus>
 cell status, this parameter indicates the following statuses:
 0 – Indicates the C0 is a suitable cell.
 1 – Indicates the cell is low priority based on the system information received.
 2 – Indicates the cell is forbidden.
 3 – Indicates the cell is barred based on the system information received.
 4 – Indicates the cell RXLEV is low.
 5 – Indicates none of the above, e.g. exclusion 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+CSURVUC=16,20,86,96,109
Network survey started...
14,51, -89, 460, 0, 6180, 41074, 0, 8, 5 7 14 51 61 65 74 88, 24, 2 3 9 11 12 15 16 17 19 20 22 24 25
26 27 28 36 81 516 520 525 532 556 600
86, -97
Network survey end
OK
  
```

6.70 AT+CSURCH Network full band scan in string format

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

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

Examples

| |
|-----------|
| AT+CSURCH |
|-----------|

```

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

6.71 AT+BND Set band preference

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|-------------------|---|
| Test Command | Responses |
| AT+BND=? | +BND: (list of supported <band>s) OK |
| Read Command | Responses |
| AT+BND? | +BND: <band> OK |
| Write Command | Responses |
| AT+BND=<band> | <i>The <band> range is limited as 1-10</i> OK ERROR |
| Execution Command | Responses |
| AT+BND | <i>Set all band for module</i> OK |

Defined values

| <band> |
|--|
| 0 – GSM 900MHz + DCS 1800MHz |
| 1 – GSM 900MHz + PCS 1900MHz |
| 2 – GSM 850MHz + DCS 1800MHz (available only on quadri-band modules) |
| 3 – GSM 850MHz + PCS 1900MHz (available only on quadri-band modules) |

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

Examples

```
AT+BND=0,11
```

```
OK
```

```
AT+BND?
```

```
+BND: 0,11
```

```
OK
```

6.72 AT#BND Set band preference

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

AT#BND

Set all band for module

OK

Defined values

<band>

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

Examples

AT+BND=0,11

OK

AT+BND?

+BND: 0,11

OK

7 Mobile Equipment Control and Status Commands

7.1 +CME ERROR Mobile Equipment error result code

Description

This result code is similar to the regular ERROR result code. The format of <err> can be either numeric or verbose string, by setting [AT+CMEE](#) command.

SIM PIN References

NO | 3GPP TS 27.007

Syntax

```
+CME ERROR: <err>
```

Defined values

<err>

Values (numeric format followed by verbose format):

- 0 phone failure
- 1 no connection to phone
- 2 phone adaptor link reserved
- 3 operation not allowed
- 4 operation not supported
- 5 PH-SIM PIN required
- 6 PH-FSIM PIN required
- 7 PH-FSIM PUK required
- 10 SIM not inserted
- 11 SIM PIN required
- 12 SIM PUK required
- 13 SIM failure
- 14 SIM busy
- 15 SIM wrong
- 16 incorrect password
- 17 SIM PIN2 required
- 18 SIM PUK2 required
- 20 memory full
- 21 invalid index
- 22 not found
- 23 memory failure
- 24 text string too long
- 25 invalid characters in text string
- 26 dial string too long
- 27 invalid characters in dial string
- 30 no network service
- 31 network timeout
- 32 network not allowed - emergency calls only
- 40 network personalization PIN required
- 41 network personalization PUK required
- 42 network subset personalization PIN required
- 43 network subset personalization PUK required
- 44 service provider personalization PIN required

45 service provider personalization PUK required
46 corporate personalization PIN required
47 corporate personalization PUK required
100 Unknown
103 Illegal MESSAGE
106 Illegal ME
107 GPRS services not allowed
111 PLMN not allowed
112 Location area not allowed
113 Roaming not allowed in this location area
132 service option not supported
133 requested service option not subscribed
134 service option temporarily out of order
148 unspecified GPRS error
149 PDP authentication failure
150 invalid mobile class
257 network rejected request
258 retry operation
259 invalid deflected to number
260 deflected to own number
261 unknown subscriber
262 service not available
263 unknown class specified
264 unknown network message
273 minimum TFTS per PDP address violated
274 TFT precedence index not unique
275 invalid parameter combination

“CME ERROR” codes of MMS:

170 Unknown error for mms
171 MMS task is busy now
172 The mms data is over size
173 The operation is overtime
174 There is no mms receiver
175 The storage for address is full
176 Not find the address
177 Invalid parameter
178 Failed to read mss
179 There is not a mms push message
180 Memory error
181 Invalid file format
182 The mms storage is full
183 The box is empty
184 Failed to save mms

- 185 It's busy editing mms now
- 186 It's not allowed to edit now
- 187 No content in the buffer
- 188 Failed to receive mms
- 189 Invalid mms pdu
- 190 Network error
- 191 Failed to read file
- 192 None

“CME ERROR” codes of FTP:

- 201 Unknown error for FTP
- 202 FTP task is busy
- 203 Failed to resolve server address
- 204 FTP timeout
- 205 Failed to read file
- 206 Failed to write file
- 207 It's not allowed in current state
- 208 Failed to login
- 209 Failed to logout
- 210 Failed to transfer data
- 211 FTP command rejected by server
- 212 Memory error
- 213 Invalid parameter
- 214 Network error

“CME ERROR” codes of HTTP:

- 220 Unknown error 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

Examples

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

7.2 AT+CMEE Report mobile equipment error

Description

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

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

Syntax

| Test Command | Responses |
|-------------------|--------------------------------------|
| AT+CME=? | +CME: (list of supported <n>s) OK |
| Read Command | Responses |
| AT+CME? | +CME: <n> OK |
| Write Command | Responses |
| AT+CME=<n> | OK ERROR |
| Execution Command | Responses |
| AT+CME | <i>Set default value:</i> 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+CME?
+CME: 2
OK
AT+CPIN="1234","1234"
+CME ERROR: incorrect password
AT+CME=0
OK
AT+CPIN="1234","1234"
ERROR
AT+CME=1
OK
AT+CPIN="1234","1234"

```

+CME ERROR: 16

7.3 AT+CPAS Phone activity status

Description

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

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

Syntax

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

Defined values

<pas>

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

Examples

RING (with incoming call)

AT+CPAS

+CPAS: 3

OK

AT+CPAS=?

+CPAS: (0,3,4)

OK

7.4 AT+CFUN Set phone functionality

Description

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

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

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

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

Syntax

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

Defined values

<fun>

- 0 – minimum functionality
- 1 – full functionality, online mode
- 4 – disable phone both transmit and receive RF circuits
- 5 – Factory Test Mode
- 6 – Reset
- 7 – Offline Mode

<rst>

- 0 – do not reset the ME after setting it to <fun> power level

1 – reset the ME after setting it to <fun> power level. This value only takes effect when <fun> equals 1.

Examples

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

7.5 AT+CPIN Enter PIN

Description

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

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

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

Syntax

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

Defined values

<pin>
String type values.

<newpin>

String type values.

<code>

Values reserved by the present document:

| | |
|------------|--|
| READY | – ME is not pending for any password |
| SIM PIN | – ME is waiting SIM PIN to be given |
| SIM PUK | – ME is waiting SIM PUK to be given |
| PH-SIM PIN | – ME is waiting phone-to-SIM card password to be given |
| SIM PIN2 | – ME is waiting SIM PIN2 to be given |
| SIM PUK2 | – ME is waiting SIM PUK2 to be given |
| PH-NET PIN | – ME is waiting network personalization password to be given |

Examples

AT+CPIN?

+CPIN: SIM PUK2

OK

7.6 AT+CSQ Signal quality

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|----------------|
| NO | 3GPP TS 27.007 |
|----|----------------|

Syntax

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

Defined values

<rssi>

| | | |
|--------|---|------------------|
| 0 | – | -113 dBm or less |
| 1 | – | -111 dBm |
| 2...30 | – | -109... -53 dBm |

| | | |
|----|---|-----------------------------|
| 31 | - | -51 dBm or greater |
| 99 | - | not known or not detectable |

<ber>

(in percent)

| | | |
|----|---|-----------------------------|
| 0 | - | <0.01% |
| 1 | - | 0.01% --- 0.1% |
| 2 | - | 0.1% --- 0.5% |
| 3 | - | 0.5% --- 1.0% |
| 4 | - | 1.0% --- 2.0% |
| 5 | - | 2.0% --- 4.0% |
| 6 | - | 4.0% --- 8.0% |
| 7 | - | >=8.0% |
| 99 | - | not known or not detectable |

Examples

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

7.7 AT+AUTOCSQ Set CSQ report

Description

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

| SIM PIN | References |
|---------|------------|
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Defined values

<aoto>

- 0 – disable automatic report
- 1 – enable automatic report

<mode>

- 0 – CSQ automatic report every five seconds
- 1 – CSQ automatic report only after <rssi> or <ber> is changed

NOTE: If the parameter of <mode> is omitted when executing write command, <mode> will be set to default value.

Examples

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

7.8 AT+CACM Accumulated call meter

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|------------------|--|
| AT+CACM=? | OK |
| Read Command | Responses |
| AT+CACM? | +CACM: <acm> OK ERROR +CME ERROR: <err> |
| Write Command | Responses |
| AT+CACM=<passwd> | OK |

| | |
|-------------------|-------------------|
| | ERROR |
| | +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CACM | OK |
| | +CME ERROR: <err> |

Defined values

<passwd>

String type, SIM PIN2.

<acm>

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

Examples

AT+CACM?

+CACM: "000000"

OK

7.9 AT+CAMM Accumulated call meter maximum

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.007 |

Syntax

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

| Execution Command | Responses |
|-------------------|-------------------|
| AT+CAMM | OK |
| | +CME ERROR: <err> |

Defined values

<acmmmax>

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

<passwd>

String type, SIM PIN2.

Examples

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

7.10 AT+CPUC Price per unit and currency table

Description

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<currency>

String type, three-character currency code (e.g. "GBP", "DEM"), character set as specified by command Select TE Character Set [AT+CSCS](#).

<ppu>

String type, price per unit, dot is used as a decimal separator. (e.g. "2.66").

<passwd>

String type, SIM PIN2.

Examples

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

7.11 AT+CPOF Control phone to power down

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Examples

```
AT+CPOF  
OK
```

7.12 AT+CCLK Real time clock

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|----------------|
| NO | 3GPP TS 27.007 |
|----|----------------|

Syntax

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

Defined values

<time>

String type value; format is “yy/MM/dd,hh:mm:ss±zz”, where characters indicate year (two last digits), month, day, hour, minutes, seconds and time zone (indicates the difference, expressed in quarters of an hour, between the local time and GMT; three last digits are mandatory, range -96...+96). E.g. 6th of May 2008, 14:28:10 GMT+8 equals to “08/05/06,14:28:10+32”.

- NOTE:**
1. Time zone is nonvolatile, and the factory value is invalid time zone.
 2. Command +CCLK? will return time zone when time zone is valid, and if time zone is 00, command +CCLK? will return “+00”, but not “-00”.

Examples

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

7.13 AT+CRESET Reset ME

Description

This command is used to reset ME.

[SIM PIN](#) [References](#)

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Examples

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

7.14 AT+SIMEI Set module IMEI

Description

This command is used to set module IMEI value.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

| |
|--------------------------|
| <imei> |
| The 15-digit IMEI value. |

Examples

```
AT+SIMEI=357396012183170
```

OK

```
AT+SIMEI?
```

+SIMEI: 357396012183170

OK

```
AT+SIMEI=?
```

OK

7.15 AT+CDELTA Write delta package to FOTA partition

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|---------------------------|--|
| AT+CDELTA=? | OK |
| Write Command | Responses |
| AT+CDELTA=<delta_package> | <p><i>If successful, return:</i></p> <p>+CDELTA: 1</p> <p>OK</p> <p><i>If fail, return:</i></p> <p>+CDELTA: 0,<err_code></p> <p>OK</p> |

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+CDELT A=?
OK
AT+CDELT A="delta_1_2.mld"
+CDELT A: 1
OK
  
```

NOTE:

1. Delta package can be saved in the module EFS, this command will lookup the package under current directory. BTW you can use +FSCD to change current directory.
2. After the command finished one need to reset the module to start the updating process, during the process the status led will blink for attention. Please refer to "SIM5360_Delta_Package_Update_Application_note_V0.01.doc" for more detail.

7.16 AT+CSQDELT A Set RSSI delta change threshold

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------------|--|
| AT+CSQDELT A=? | +CSQDELT A: (list of supported <delta>s) OK |
| Read Command | Responses |
| AT+CSQDELT A? | +CSQDELT A: <delta> OK ERROR |
| Write Command | Responses |
| AT+CSQDELT A=<delta> | OK ERROR |
| Execution Command | Responses |
| AT+CSQDELT A | <i>Set default value (<delta>=5) :</i> OK |

Defined values

<delta>

Range: from 0 to 5.

Examples

```
AT+CSQDELT A?  
+CSQDELT A: 5  
OK
```

SIMCOM CONFIDENTIAL FILE

8 SIMCard Related Commands

8.1 AT+CICCID Read ICCID in SIM card

Description

This command is used to Read the ICCID in SIM card

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<ICCID>

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

Examples

```
AT+CICCID
+ICCID: 898600700907A6019125
OK
```

8.2 AT+CSIM Generic SIM access

Description

This command allows to control the SIM card directly.

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

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

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

| SIM PIN | References |
|---------|----------------|
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<length>

Interger type; length of the characters that are sent to TE in <command> or <response>

<command>

Command passed on by the MT to the SIM.

<response>

Response to the command passed on by the SIM to the MT.

Examples

AT+CSIM=?

OK

8.3 AT+CRSM Restricted SIM access

Description

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

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

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

Defined values

<command>

Command passed on by the MT to the SIM:

- 176 – READ BINARY
- 178 – READ RECORD
- 192 – GET RESPONSE
- 214 – UPDATE BINARY
- 220 – UPDATE RECORD
- 242 – STATUS
- 203 – RETRIEVE DATA
- 219 – SET DATA

<fileID>

Identifier for an elementary data file on SIM, if used by <command>.

The following list the fileID hex value, user needs to convert 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+SPIC Times remain to input SIM PIN/PUK

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------------|--|
| <code>AT+SPIC=?</code> | <code>OK</code> |
| Execution Command | Responses |
| <code>AT+SPIC</code> | <code>+SPIC: <pin1>,<puk1>,<pin2>,<puk2></code> <code>OK</code> |

Defined values

`<pin1>`

Times remain to input PIN1 code.

`<puk1>`

Times remain to input PUK1 code.

`<pin2>`

Times remain to input PIN2 code.

`<puk2>`

Times remain to input PUK2 code.

Examples

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

8.5 AT+CSPN Get service provider name from SIM

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

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

Defined values

<spn>

String type; service provider name on SIM

<display mode>

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

1 – display PLMN

Examples

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

8.6 AT+CRFSIM Reinitialize the SIM card

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-----------------|-------------|
| AT+CRFSIM=? | OK |
| Execute Command | Responses |
| AT+CRFSIM | OK ERROR |

Examples

| |
|-------------|
| AT+CRFSIM=? |
| OK |
| AT+CRFSIM |
| OK |

9 Hardware Related Commands

9.1 AT+CTXVOL Set TX volume

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<tx_vol>

TX volume level which is from 0 to 65535.

Examples

```
AT+CTXVOL=1234
OK
```

9.2 AT+CRXVOL Set RX volume

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<rx_vol>

RX volume level which is from -100 to 100.

Examples

| |
|--------------|
| AT+CRXVOL=12 |
| OK |

9.3 AT+CTXFTR Set TX filter

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---------------|--|
| AT+CTXFTR=? | +CTXFTR: (list of supported <tx_ftr_N>s) OK |
| Read Command | Responses |
| AT+CTXFTR? | +CTXFTR: <tx_ftr_1>,<...>,<tx_ftr_7> OK |
| Write Command | Responses |

| | |
|-----------------------------|----|
| AT+CTXFTR= | OK |
| <tx_ftr_I>,<...>,<tx_ftr_7> | |

Defined values

| | |
|------------|--|
| <tx_ftr_N> | TX filter level which is from 0 to 65535. (N is from 1 to 7) |
|------------|--|

Examples

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

9.4 AT+CRXFTR Set RX filter

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-----------------------------|--|
| AT+CRXFTR=? | +CRXFTR: (list of supported <rx_ftr_N>s) OK |
| Read Command | Responses |
| AT+CRXFTR? | +CRXFTR: <rx_ftr_I>,<...>,<rx_ftr_7> OK |
| Write Command | Responses |
| AT+CRXFTR= | |
| <rx_ftr_I>,<...>,<rx_ftr_7> | OK |

Defined values

| | |
|------------|--|
| <rx_ftr_N> | RX filter level which is from 0 to 65535. (N is from 1 to 7) |
|------------|--|

Examples

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

9.5 AT+CVALARM Low and high voltage Alarm

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CVALARM=? | +CVALARM: (list of supported <enable>s), (list of supported low <voltage>s), (list of supported high <voltage>s) OK |
| Read Command | Responses |
| AT+CVALARM? | +CVALARM: <enable>,<low voltage>,<high voltage> OK |
| Write Command | Responses |
| AT+CVALARM=<enable>[,<low voltage>],[<high voltage>] | OK ERROR |

Defined values

<enable>

0 – Close
 1 – Open. If voltage < < low voltage >, it will report “UNDER-VOLTAGE WARNING” every 20s. If voltage > <high voltage>, it will report “OVER-VOLTAGE WARNING” every 20s.

<low voltage>

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

<high voltage>

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

NOTE: The three parameters will be saved automatically.

Examples

```

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

```

9.6 AT+CRIIC Read values from register of IIC device

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

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

Examples

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

9.7 AT+CWIIC Write values to register of IIC device

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

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

Examples

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

9.8 AT+CSETFKIIC Set the clk of IIC bus

Description

This command is used to set the clk of IIC bus

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------|--|
| AT+CSETFKIIC=? | + CSETFKIIC: (list of supported <clk>) OK |
| Read Command | Responses |
| AT+ CSETFKIIC? | + CSETFKIIC: <clk> OK |
| Write Command | Responses |
| AT+CSETFKIIC=? | OK |

ERROR

Defined values

<clk>

The value of the iic clk, the value is 100 or 400;

Examples

AT+CSETFKIIC=400

OK

9.9 AT+CVAUXS Set state of the pin named VREG_AUX1

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<state>

0 – the pin is closed.

1 – the pin is open (namely, open the pin)

Examples

AT+CVAUXS=1

```

OK
AT+CVAUXS?
+CVAUXS: 1
OK
  
```

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

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<voltage>

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

Examples

```

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

9.11 AT+CGPIO Set GPIO0 interrupt trigger mode

Description

This command is used to set GPIO0 interrupt trigger mode.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

| |
|-----------------------------|
| <detect> |
| 0 – LEVEL trigger mode |
| 1 – EDGE trigger mode |
| <polarity> |
| 0 – trigger when low level |
| 1 – trigger when high level |
| <save> |
| 0 – not save the setting |
| 1 – save the setting |

NOTE: If the parameter of <save> is omitted, it will save the setting.

Examples

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

9.12 AT+CGDRT Set the direction of specified GPIO

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

| |
|-------------------------------|
| <gpio_num> |
| 0-15, 33-37,40-44,50-51,60-63 |
| <gpio_io> |
| 0 – in |
| 1 – out |
| <save> |
| 0 – not save the setting |
| 1 – save the setting |

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

Examples

| |
|----------------|
| AT+CGDRT=3,0,0 |
| OK |

9.13 AT+CGSETV Set the value of specified GPIO

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

| |
|-------------------------------|
| <gpio_num> |
| 0-15, 33-37,40-44,50-51,60-63 |
| <gpio_hl> |
| 0 – low |
| 1 – high |

<save>

0 – not save the setting

1 – save the setting

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

Examples

AT+CGSETV=3,0,0

OK

9.14 AT+CGGETV Get the value of specified GPIO

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

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

<gpio_hl>
0 – low
1 – high

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

Examples

AT+CGGETV=3

+CGGETV: 0

OK

9.15 AT+CGISR Set GPIO interrupt trigger condition

Description

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

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

| SIM PIN | References |
|---------|------------|
| No | |

Syntax

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

Defined values

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

Examples

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

NOTE:

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

| |
|---------------------------------|
| GPIO[0] Interrupt Alarm!value:0 |
|---------------------------------|

2. Default <detect> is 0 and default <polarity> is 1.
3. After setting one GPIO pin as an interrupt source successfully, the setting will be saved.

9.16 AT+CADC Read ADC value

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|-------------------|---|
| Test Command | Responses |
| AT+CADC=? | +CADC: (range of supported <adc>s) OK |
| Write Command | Responses |
| AT+CADC=<adc> | +CADC: <value> OK ERROR |
| Execution Command | Responses |
| AT+CADC | Same as AT+CADC= 0: +CADC: <value> OK |

Defined values

<adc>
 ADC type:
 0 – raw type.
 1 – temperature type.
 2 – voltage type(mv)

<value>
 Integer type value of the ADC.

Examples

```
AT+CADC=?  

+CADC:(0-2)  

OK  

AT+CADC=0
```

+CADC: 187

OK

9.17 AT+CVLVL Set value of sound level

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<lvl>

Sound level number which is from 1 to 8.

<lvl_value>

Sound level value which is from -5000 to 5000.

<lvl_value1>

Sound level value that sound level number equals 1.

<lvl_value2>

Sound level value that sound level number equals 2.

<lvl_value3>

Sound level value that sound level number equals 3.

<lvl_value4>

Sound level value that sound level number equals 4.

<lvl_value5>

Sound level value that sound level number equals 5.

<lvl_value6>

Sound level value that sound level number equals 6.

<lvl_value7>

Sound level value that sound level number equals 7.

<lvl_value8>

Sound level value that sound level number equals 8.

Examples

AT+CVLVL=1,-2000

+CVLVL: -2000

OK

AT+CVLVL?

+CVLVL: -1500,-1200,-900,-600,-300,0,300,600

OK

AT+ CVLVL=?

+CVLVL: (1-8),(-5000-5000)

OK

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

9.18 AT+CECM Enable/Disable Echo Canceller

Description

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

Handset: at+cecm=1(default open)

Headset: at+cecm=2(default open)

Speaker: at+cecm=4(default open)

SIM PIN References

NO Vendor

Syntax

Test Command

AT+CECM=?

Responses

+CECM: (list of supported <enable>s)

OK

| | |
|------------------|-----------------------|
| Read Command | Responses |
| AT+CECM? | +CECM: <enable> OK |
| Write Command | Responses |
| AT+CECM=<enable> | OK ERROR |

Defined values

<enable>:

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

NOTE:

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

Examples

AT+CECM=0

OK

AT+CECM=1

OK

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

Description

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

SIM PIN References

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|--------------|---|
| Test Command | Responses |
| AT+CECSET=? | +CECSET: (list of supported <index>s), (list of supported <index_value>s) |

| | |
|---|--|
| | OK |
| Read Command AT+CECSET? | Responses +CECSET: Echo cancellation mode is :<ec_mode> <index0> -> <index0_value> <index1> -> <index1_value> <index2> -> <index2_value> <index47> -> <index1_value> <index48> -> <index2_value> |
| | OK |
| Write Command AT+CECSET=<index>, <index_value> | Responses OK ERROR |

Defined values

<index>

The index number of the parameters of the nextgen EC.

<index_value>

The value corresponding to the index of the parameters of the nextgen EC.

<ec_mode>

The current EC mode. Which is set by AT+CECM.

Examples

AT+CECSET=0, 32767

OK

AT+CECSET?

+CECSET:

echo cancellation mode is :1

0 -> 32767

1 -> 2048

2 -> 32767

3 -> 4255

4 -> 0

5 -> 20

6 -> 2048

7 -> 8192

8 -> 8192

9 -> 250

10 -> 70

```
11 -> 1
12 -> 767
13 -> 64
14 -> 32
15 -> 18000
16 -> 64
17 -> 16800
18 -> 2048
19 -> 99
20 -> 20000
21 -> 20000
22 -> 1
23 -> 19000
24 -> 6000
25 -> 0
26 -> 256
27 -> 256
28 -> 1024
29 -> 512
30 -> 1024
31 -> 768
32 -> 486
33 -> 400
34 -> 10361
35 -> 450
36 -> 12000
37 -> 4000
38 -> 20
39 -> 8192
40 -> 250
41 -> 70
42 -> 1
43 -> 767
44 -> 32767
45 -> 32767
46 -> 4096
47 -> 8
48 -> 1
```

OK

AT+CECSET=?

+CECSET: (0-49), (0-65535)

OK

9.20 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 |

9.21 AT+CRIRS Reset RI pin of serial port

Description

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

Second serial port is not support this command.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Defined values

| |
|------|
| None |
|------|

Examples

| |
|----------|
| AT+CRIRS |
|----------|

| |
|----|
| OK |
|----|

9.22 AT+IPR2 Set UART2 baud rate temporarily

Description

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|---------|
| NO | V.25ter |
|----|---------|

Syntax

| Test Command | Responses |
|--------------|------------------------------------|
| AT+IPR2=? | +IPR2: (list of supported<speed>s) |
| | OK |

| | |
|-------------------|--|
| Read Command | Responses |
| AT+IPR2? | +IPR2: <speed> OK |
| Write Command | Responses |
| AT+IPR2=<speed> | OK ERROR |
| Execution Command | Responses |
| AT+IPR2 | <i>Set default value 115200:</i> OK |

Defined values

<speed>

Baud rate per second:

4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800

Examples

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

9.23 AT+CSUART Switch UART line mode

Description

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

Second serial port is not support this command.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|--------------|--|
| Test Command | Responses |
| AT+CSUART=? | +CSUART: (list of supported <mode>s), (list of supported |

| | |
|--|------------------------------------|
| | <save>s) |
| | OK |
| Read Command AT+CSUART? | Responses +CSUART: <mode> OK |
| Write Command AT+CSUART=<mode>[,<sa ve>] | Responses 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 |

9.24 AT+CSCLK UART sleep mode

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

| | |
|-----------------|-----------|
| | ERROR |
| Write Command | Responses |
| AT+CSCLK=<mode> | OK |
| | ERROR |

Defined values

< mode >:

- 0 : disable UART DTR pin sleep mode
- 1 : enable UART DTR pin sleep mode

Examples

AT+CSCLK=0

OK

AT+CSCLK=1

OK

9.25 AT+CMUX Enable the multiplexer over the UART

Description

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

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

Second serial port is not support this command.

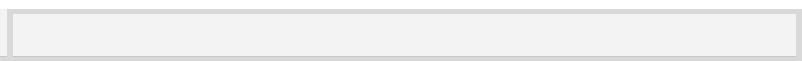
| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|--|------------------|
| Test Command | Responses |
| AT+CMUX=? | +CMUX: (0) OK |
| Write Command | Responses |
| AT+CMUX= | OK |
| <value> [, <subset> [, <port _speed> [, <N1> [, <T1> [, <N2> [, <T2> [, <T3> [, <k | 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 is supported.

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

Description

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

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

Second serial port is not support this command.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<port>: virtual com port

0 – 3 currently support 4 virtual com ports index from 0 to 3. [port] is the format of responses.

<service>: valid service

0 – DIAG Service

1 – DATA(MODEM) Service

5 – NMEA Service

Examples

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

NOTE:

1. NMEA service only supported on SIM5360.
2. DIAG and NMEA service are exclusively, so it is forbidden to configure the DIAG or NMEA service to more than one virtual com port.

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

Description

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

The default value is 0.

Note:

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

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------------|----------------------------|
| AT+CUARTWD=? | +CUARTWD: (0-10000) OK |
| Read Command | Responses |
| AT+CUARTWD? | +CUARTWD: <interval> OK |
| Write Command | Responses |
| AT+ CUARTWD =<interval> | OK ERROR |

Defined values

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

Examples

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

9.28 AT+CBC Battery charge

Description

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

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

| SIM PIN | References |
|---------|---------------|
| NO | 3GPP TS 07.07 |

Syntax

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

Defined values

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

Examples

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

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

Description

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

This command is only valid for NULL modem.

The interrupt is low level triggered by default.

Second serial port is not support this command.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Defined values

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

Examples

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

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

Description

This command is used to enable or disable the function of waking up the module by means of UART's DTR pin which to trigger an interrupt

This command is only valid for NULL modem.

The function is disabled by default.

Second serial port is not support this command.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

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

Defined values

| <switch> |
|-------------------------|
| 0 disable such function |
| 1 enable such function |

Examples

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

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

Description

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

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

The configuration will be saved automatically.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

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

Defined values

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

Examples

```

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

NOTE:

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

9.32 AT+CGWHOST Reset GPIO 41 to high level

Description

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

GPIO41 status:

Low level: Wake up the HOST.

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------|-----------|
| AT+CGWHOST | OK |

Examples

```
AT+CGWHOST
OK
```

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

Description

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

The interrupt is low level triggered by default.

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

| Read Command | Responses |
|--------------|-----------|
| | |

| | |
|-------------------------------------|--------------------------------------|
| AT+CGWISRMD? | +CGWISRMD: <detect>,<polarity> OK |
| Write Command | Responses |
| AT+CGWISRMD =<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
```

9.34 +KEY Keypad result code

Description

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

Refer to related HD document for more information about keypad.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

| |
|---|
| <key> |
| Key code in hexadecimal format (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"

9.35 AT+CUSBSPD Switch USB high or full speed

Description

This command is used to switch the speed of USB between high speed and full speed.
 This configuration will take effect after reboot.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------------|--|
| AT+CUSBSPD=? | +CUSBSPD: (list of supported <speed>s) OK |
| Read Command | Responses |
| AT+CUSBSPD? | +CUSBSPD: <speed> OK |
| Write Command | Responses |
| AT+CUSBSPD=<speed> | OK ERROR |

Defined values

| |
|---------|
| <speed> |
|---------|

Integer type and nonvolatile value.

- 0 – High speed (default value)
- 1 – Full speed

Examples

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

9.36 AT+CREDITST Adjust the LED's intensity

Description

This command is used to adjust the intensity of the LED. It also can be used to disable the driver.
 The configuration will be save automatically and the default value is 10 (100mA).

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

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

Examples

```
AT+CREDITST=0,0
OK
AT+ CREDITST =0,10
OK
```

9.37 AT+CADCA Read the value from the second ADC

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

| |
|------------------------------------|
| <value> |
| Integer type value of the voltage. |

Examples

```
AT+CADCA
+CADCA: 1100
OK
```

9.38 AT+CAPWRON Auto power on setting

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------|--------------------------------------|
| AT+CAPWRON=? | +CAPWRON: (0-23), (0-59),(0-1) OK |
| Read Command | Responses |
| AT+CAPWRON? | +CAPWRON: <hour>,<minute>,<repeated> |

| | |
|---------------------------------------|-----------|
| | OK |
| Write Command | Responses |
| AT+CAPWRON=<hour>,<minute>,<repeated> | OK |
| | ERROR |

Defined values

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

Examples

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

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

9.39 AT+CAPWROFF Auto power off setting

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|---------------|---------------------------------------|
| Test Command | Responses |
| AT+CAPWROFF=? | +CAPWROFF: (0-23), (0-59),(0-1) OK |
| Read Command | Responses |
| AT+CAPWROFF? | +CAPWROFF: <hour>,<minute>,<repeated> |

| | |
|--|-----------|
| | OK |
| Write Command | Responses |
| AT+CAPWROFF=<hour>,<minute>,<repeated> | OK |
| | ERROR |

Defined values

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

Examples

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

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

9.40 AT+CBVTBP Set 800-850 band indicator

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|--------------|----------------------|
| Test Command | Responses |
| AT+CBVTBP=? | +CBVTBP: (0,1) OK |
| Read Command | Responses |

| | |
|-----------------|----------------|
| AT+CBVTBP? | +CBVTBP: <ind> |
| | OK |
| | ERROR |
| Write Command | Responses |
| AT+CBVTBP=<ind> | OK |
| | ERROR |

Defined values

<ind>

- 0 – The common RF channels of 800/850 is regarded as 850
- 1 – The common RF channels of 800/850 is regarded as 800

Examples

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

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

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|---------------|-----------------------------|
| Read Command | Responses |
| AT+CMTE? | +CMTE: <mode> <temperature> |
| | OK |
| | ERROR |
| Write Command | Responses |

AT+CMTE=<mode>

OK

ERROR

Defined values

<mode>

- 0 – Disable temperature detection
- 1 – Enable temperature detection

<temperature>

Range of -40 to 85

Examples

AT+CMTE?

+CMTE: 0,29

OK

AT+CMTE=1

OK

NOTE:

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

9.42 AT+CSWITCHMBIM Switch MBIM mode

Description

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

SIM PIN References

NO Vendor

Syntax

Test Command

Responses

AT+CSWITCHMBIM =?

OK

Read Command

Responses

| | |
|--|--------------------------------------|
| AT+CSWITCHMBIM? | + CSWITCHMBIM: <mode> OK ERROR |
| Write Command AT+CSWITCHMBIM =<mode> | Responses OK ERROR |

Defined values

| |
|------------------|
| <mode> |
| 0 – Disable mbim |
| 1 – Enable mbim |

Examples

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

9.43 AT+CPMVT Low and high voltage Power Off

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

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

Defined values

<enable>

- 0 – Close
- 1 – Open. If voltage < < low voltage >, it will report “UNDER-VOLTAGE WARNING POWER DOWN” and power off the module. If voltage > <high voltage>, it will report “OVER-VOLTAGE WARNING POWER DOWN” and power off the module

<low voltage>

Between 2800mV and 4300mV. Default value is 3200.

<high voltage>

Between 4000mV and 4800mV. Default value is 4800.

NOTE: The three parameters will be saved automatically.

Examples

AT+CPMVT=1,3400,4500

OK

AT+CPMVT?

+CPMVT: 1,3400,4500

OK

AT+CPMVT=?

+CPMVT: (0-1),(2800-4300),(4000-4800)

OK

10 SPI Related Commands

10.1 AT+CSPISETCLK SPI clock rate setting

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CSPISETCLK=? | +CSPISETCLK: (range of supported <polarity>s), (range of supported <mode>s),(range of supported <trigger mode>s) OK |
| Read Command | Responses |
| AT+CSPISETCLK? | +CSPISETCLK: <polarity>,<mode>,<trigger mode> OK |
| Write Command | Responses |
| AT+CSPISETCLK=<polarit y>,<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+CSPINETCLK?
+CSPINETCLK: 1,0,1
OK
AT+CSPINETCLK=?
+CSPINETCLK: (0-1),(0-1),(0-1)
OK
  
```

10.2 AT+CSPINETCS SPI chip select setting

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------------------------|--|
| AT+CSPINETCS=? | +CSPINETCS: (range of supported <mode>s), (range of supported <polarity>s) OK |
| Read Command | Responses |
| AT+CSPINETCS? | +CSPINETCS: <mode>,<polarity> OK |
| Write Command | Responses |
| AT+CSPINETCS=<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+CSPINETCS=1,0
OK
AT+CSPINETCS?
+CSPINETCS: 1,0
  
```

```

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

10.3 AT+CSPISETF SPI clock frequency setting

Description

This command is used to set SPI clock frequency

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<min>

In master mode, set the minimum SPI clock frequency by the slave device

0...26000000

<max>

In master mode, set the maximum SPI clock frequency by the slave device

0...26000000

<de-assertion time>

In master mode, set the minimum time to wait between transfer units in nanoseconds

0...64

Examples

```

AT+CSPISETF =960000,10000000,0
OK
AT+CSPISETF?
  
```

```
+CSPISETF: 960000,10000000,0
OK
AT+CSPISETF=?
+CSPISETF: (0-26000000), (0-26000000),(0-64)
OK
```

10.4 AT+CSPISETPARA SPI transfer parameters setting

Description

This command is used to set SPI transfer parameters

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<bit>

set the number of bits to use per transfer unit, only support 8,16,32 bits

0...32

<input packed>

- 0 data should be not packed into the user input buffer
- 1 data should be packed into the user input buffer

<output unpacked>

- 0 data should be not packed from the user output buffer
- 1 data should be packed from the user output buffer

Examples

```
AT+CSPISETPARA =16,0,1
```

```

OK
AT+CSPISETPARA?
+CSPISETPARA:16,0,1
OK
AT CSPISETPARA=?
+CSPISETPARA : (0-32), (0-1),(0-1)
OK
  
```

10.5 AT+CSPIW Write data to SPI

Description

This command is used to write data to SPI.

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-----------------------------|-------------|
| AT+CSPIW=? | OK |
| Write Command | Responses |
| AT+CSPIW=<reg>,<data>,<len> | OK ERROR |

Defined values

<reg>

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

<data>

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

<len>

Read length.The unit is byte

1...4

Examples

```

AT+CSPIW=0x0F, 0x1234, 2
OK
  
```

10.6 AT+CSPIR Read data from SPI

Description

This command is used to read data from SPI.

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

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

Defined values

<reg>

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

<data>

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

<len>

Read length. The unit is byte.

1...4

Examples

AT+CSPIR =0x0F, 2

+CSPIR : 0x1234

OK

11 Phonebook Related Commands

11.1 AT+CNUM Subscriber number

Description

Execution command returns the MSISDNs related to the subscriber (this information can be stored in the SIM or in the ME). If subscriber has different MSISDN for different services, each MSISDN is returned in a separate line.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CNUM=? | OK |
| Execution Command | Responses |
| AT+CNUM | <p>[+CNUM: <alpha>,<number>,<type>[<CR><LF></p> <p>+CNUM: <alpha>,<number>,<type> [...]]]</p> <p>OK</p> |
| | +CME ERROR: <err> |

Defined values

<alpha>

Optional alphanumeric string associated with <number>, used character set should be the one selected with command Select TE Character Set [AT+CSCS](#).

<number>

String type phone number of format specified by <type>.

<type>

Type of address octet in integer format.see also [AT+CPBR <type>](#)

Examples

```
AT+CNUM
+CNUM:,"13697252277",129
OK
```

11.2 AT+CPBS Select phonebook memory storage

Description

This command selects the active phonebook storage, i.e. the phonebook storage that all subsequent phonebook commands will be operating on.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|-------------------|--|
| AT+CPBS=? | +CPBS: (list of supported <storage>s) OK |
| Read Command | Responses |
| AT+CPBS? | +CPBS: <storage>[,<used>,<total>] OK +CME ERROR: <err> |
| Write Command | Responses |
| AT+CPBS=<storage> | OK ERROR +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CPBS | <i>Set default value "SM":</i> OK |

Defined values

<storage>

Values reserved by the present document:

| | |
|------|--|
| "DC" | ME dialed calls list Capacity: max. 20 entries <i>AT+CPBW</i> command is not applicable to this storage. |
| "MC" | ME missed (unanswered received) calls list Capacity: max. 20 entries <i>AT+CPBW</i> command is not applicable to this storage. |
| "RC" | ME received calls list Capacity: max. 20 entries <i>AT+CPBW</i> command is not applicable to this storage. |
| "SM" | SIM phonebook |

| | |
|------|--|
| | Capacity: depending on SIM card |
| "ME" | Mobile Equipment phonebook |
| | Capacity: max. 100 entries |
| "FD" | SIM fixdialling-phonebook |
| | Capacity: depending on SIM card |
| "ON" | MSISDN list |
| | Capacity: depending on SIM card |
| "LD" | Last number dialed phonebook |
| | Capacity: depending on SIM card |
| | AT+CPBW command is not applicable to this storage. |
| "EN" | Emergency numbers |
| | Capacity: depending on SIM card |
| | AT+CPBW command is not applicable to this storage. |
| "SN" | Service Dialling Numbers |
| | Capacity: depending on SIM card |
| | AT+CPBW command is not applicable to this storage. |

<used>

Integer type value indicating the number of used locations in selected memory.

<total>

Integer type value indicating the total number of locations in selected memory.

Examples

```
AT+CPBS=?  

+CPBS: ("SM", "DC", "FD", "LD", "MC", "ME", "RC", "EN", "ON", "SN")  

OK  

AT+CPBS="SM"  

OK  

AT+CPBS?  

+CPBS: "SM",1,200  

OK
```

11.3 AT+CPBR Read phonebook entries

Description

This command gets the record information from the selected memory storage in phonebook. If the storage is selected as "["SM"](#)" then the command will return the record in SIM phonebook, the same to others.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|-----------------------------|---|
| AT+CPBR=? | +CPBR: (<minIndex>-<maxIndex>), [<nlength>], [<tlength> OK +CME ERROR: <err>] |
| Write Command | Responses |
| AT+CPBR=<index1>[,<index2>] | [+CPBR: <index1>,<number>,<type>,<text>[<CR><LF> +CPBR: <index2>,<number>,<type>,<text>[...]] OK ERROR +CME ERROR: <err>] |

Defined values

<index1>

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

<index2>

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

<index>

Integer type.the current position number of the Phonebook index.

<minIndex>

Integer type the minimum <index> number.

<maxIndex>

Integer type the maximum <index> number

<number>

String type, phone number of format <type>, the maximum length is <nlength>.

<type>

Type of phone number octet in integer format, default 145 when dialing string includes international access code character "+", otherwise 129.

<text>

String type field of maximum length <tlength>; often this value is set as name.

<nlength>

Integer type value indicating the maximum length of field <number>.

<tlength>

Integer type value indicating the maximum length of field <text>.

Examples

AT+CPBS?

+CPBS: "SM",2,200

OK

AT+CPBR=1,10

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

11.4 AT+CPBF Find phonebook entries

Description

This command finds the record in phonebook (from the current phonebook memory storage selected with [AT+CPBS](#)) which alphanumeric field has substring <findtext>. If <findtext> is null, it will lists all the entries.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|----------------|
| YES | 3GPP TS 27.007 |
|-----|----------------|

Syntax

| Test Command | Responses |
|----------------------|---|
| AT+CPBF=? | +CPBF: [<nlength>],[<tlength>] OK +CME ERROR: <err> |
| Write Command | Responses |
| AT+CPBF=[<findtext>] | [+CPBF: <index1>,<number>,<type>,<text>[<CR><LF> +CBPF: <indexN>,<number>,<type>,<text>[...]]] OK ERROR +CME ERROR: <err> |

Defined values

<findtext>

String type, this value is used to find the record. Character set should be the one selected with command [AT+CSRS](#).

<index>

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

<number>

String type, phone number of format <type>, the maximum length is <nlength>.

<type>

Type of phone number octet in integer format, default 145 when dialing string includes international access code character "+", otherwise 129.

<text>

String type field of maximum length <tlength>; Often this value is set as name.

<nlength>

Integer type value indicating the maximum length of field <number>.

<tlength>

Integer type value indicating the maximum length of field <text>.

Examples

```
AT+CPBF="James "
+CPBF: 1,"1234567890",129,"James "
OK
```

11.5 AT+CPBW Write phonebook entry

Description

This command writes phonebook entry in location number <index> in the current phonebook memory storage selected with [AT+CPBS](#).

SIM PIN References

YES 3GPP TS 27.007

Syntax

| Test Command | Responses |
|--|--|
| AT+CPBW=? | +CPBW:(list of supported <index>s),[<nlength>], (list of supported <type>s),[<tlength>] OK +CME ERROR:<err> |
| Write Command | Responses |
| AT+CPBW=[<index>][,<nu mber>[,<type>[,<text>]]] | OK ERROR +CME ERROR:<err> |

Defined values

<index>

Integer type values in the range of location numbers of phonebook memory. If <index> is not given, the first free entry will be used. If <index> is given as the only parameter, the phonebook entry specified by <index> is deleted. If record number <index> already exists, it will be overwritten.

<number>

String type, phone number of format <type>, the maximum length is <nlength>. It must be an non-empty string.

<type>

Type of address octet in integer format, The range of value is from 128 to 255. If <number> contains a leading “+” <type> = 145 (international) is used. Supported value are:

- 145 – when dialling string includes international access code character “+”
- 161 – national number. The network support for this type is optional
- 177 – network specific number, ISDN format
- 129 – otherwise

NOTE: Other value refer TS 24.008 [8] subclause 10.5.4.7.

<text>

String type field of maximum length <tlength>; character set as specified by command Select TE Character Set [AT+CSCS](#).

<nlength>

Integer type value indicating the maximum length of field <number>.

<tlength>

Integer type value indicating the maximum length of field <text>.

NOTE: If the parameters of <type> and <text> are omitted and the first character of <number> is ‘+’, it will specify <type> as 145(129 if the first character isn’t ‘+’) and <text> as NULL.

Examples

```
AT+CPBW=3,"88888888",129,"John"
```

```
OK
```

```
AT+CPBW=,"6666666",129,"mary"
```

```
OK
```

```
AT+CPBW=1
```

```
OK
```

11.6 AT+CEMNLIST Set the list of emergency number

Description

This command allows user to define emergency number list which stored in ME.

NOTE: These emergency numbers in this list only be available without SIMCard or with PIN 1 oocked. Once SIM card is here without pin locked, this list will not be accessible, but customer could access another emergency number list from phone book on “EN” entry, please refer to co mmand AT+CPBS. This “EN” list is usually released by SIM card provider.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|---------------|--|
| AT+CEMNLIST=? | +CEMNLIST: (list of supported <mode>s), <nlength>, <total> |
|---------------|--|

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

Defined values

<mode>

- 0 disable
- 1 enable
- 2 edit emergency numbers

<nlength>

Integer type value indicating the maximum length of single emergency number.

<total>

Integer type value indicating the total number of emergency numbers.

<emergency numbers>

Emergency numbers list, string type.

<emergency number> includes all of emergency numbers,every emergency number is seperated by comma,for example “911,112”.

Examples

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

12 File System Related Commands

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

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

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

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

- 1 The length of actual fully qualified names of directories and files can not exceed 254. For example: the length of “C:/Picture/first_image.jpg (“C:/” should be replaced by “/MultiMedia/”, and “D:/” should be replaced by “/mmc1/”)” don’t exceed 254.
- 2 Directory and file names can not include the following characters:
` \ : * ? “ < > | , ;
- 3 Between directory name and file/directory name, use character “/” as list separator, so it can not appear in directory name or file name.
- 4 The first character of names must be a letter or a numeral or underline, and the last character can not be period “.” and oblique “”.
- 5 Case sensitive in “**C:**”, but not case sensitive in “**D:**” if storage card is present.

12.1 AT+FSCD Select directory as current directory

Description

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

Read Command will return current directory without double quotation marks.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------|-----------------------------------|
| AT+FSCD=? | OK |
| Read Command | Responses |
| AT+FSCD? | +FSCD: <curr_path> OK |
| Write Command | Responses |
| AT+FSCD=<path> | +FSCD: <curr_path> OK ERROR |

Defined values

<path>

String without double quotes, directory for selection.

NOTE If <path> is “..”, it will go back to previous level of directory. If current directory is **D:/** or

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

<curr_path>

String without double quotes, current directory.

Examples

AT+FSCD=C:

+FSCD: C:/

OK

AT+FSCD=C:/

+FSCD: C:/

OK

AT+FSCD?

+FSCD: C:/

OK

AT+FSCD=..

+FSCD: C:/

OK

12.2 AT+FSMKDIR Make new directory in current directory

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------|-----------|
| AT+FSMKDIR=? | OK |
| Write Command | Responses |
| AT+FSMKDIR=<dir> | OK |
| | ERROR |

Defined values

<dir>

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

Examples

```

AT+FSMKDIR= SIMTech
OK
AT+FSCD?
+FSCD: C:/ 
OK
AT+FSLS
+FSLS: SUBDIRECTORIES:
SIMTech
OK
  
```

12.3 AT+FSRMDIR Delete directory in current directory

Description

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------|-----------|
| AT+FSRMDIR=? | OK |
| Write Command | Responses |
| AT+FSRMDIR=<dir> | OK |
| | ERROR |

Defined values

<dir>
 String without double quotes.

Examples

```

AT+FSRMDIR=SIMTech
OK
AT+FSCD?
+FSCD: C:/ 
OK
AT+FSLS
+FSLS: SUBDIRECTORIES:
  
```

Audio
Picture
Video
VideoCall
OK

12.4 AT+FSLS List directories/files in current directory

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|--|
| AT+FSLS=? | +FSLS: (list of supported <type>s) OK |
| Read Command | Responses |
| AT+FSLS? | +FSLS: SUBDIRECTORIES:<dir_num>,FILES:<file_num> OK |
| Write Command | Responses |
| AT+FSLS=<type> | [+FSLS: SUBDIRECTORIES: <list of subdirectories> <CR><LF>] [+FSLS: FILES: <list of files> <CR><LF>] OK |
| Execution Command | Responses |
| AT+FSLS | [+FSLS: SUBDIRECTORIES: <list of subdirectories> <CR><LF>] [+FSLS: FILES: <list of files> <CR><LF>] OK |

Defined values

<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

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

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|------------|----|
| AT+FSDEL=? | OK |
|------------|----|

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

Defined values

<filename>

String with or without double quotes, file name which is relative and already existing.

If <filename> is *.* , it means delete all files in current directory.

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

Examples

AT+FSDEL=image_0.jpg

OK

12.6 AT+FSRENAME Rename file in current directory

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|-----------------------|-----------|
| Test Command | Responses |
| AT+FSRENAME=? | OK |
| Write Command | Responses |
| AT+FSRENAME= | OK |
| <old_name>,<new_name> | ERROR |

Defined values

<old_name>

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

<new_name>

New name of specified file, string with or without double quotes. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the

quotation mark.

Examples

```
AT+FSRENAME=image_0.jpg, image_1.jpg
OK
AT+FSRENAME= "my test.jpg", {non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
OK
```

12.7 AT+FSATTRI Request file attributes

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<filename>

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

<file_size>

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

<create_date>

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

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

Examples

```
AT+FSATTRI=image_0.jpg
+FSATTRI: 8604, 2008/04/28 10:24:46 Tue
OK
AT+FSATTRI={non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
```

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

12.8 AT+FSMEM Check the size of available memory

Description

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

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

| | |
|--|---|
| | +FSMEM: C:(<total>, <used>), D:(<total>, <used>) OK |
| | <i>If SD card doesn't exist:</i> +FSMEM: C:(<total>, <used>) OK |

Defined values

<total>

The total size of local storage space or SD card.

<used>

The used size of local storage space or SD card.

<limit>

0 – Close memory check

<max> – The limit space of SD card. The max value refers to the SD card size
(It's only available when SD card exist!)

<timer>

The range is 0-255, unit is second, after set <time> will report the URC when SD card's available space less than <limit> every the seconds. (It's only available when SD card exist!)

NOTE 1.The unit of storage space size is in Byte.

2. The unit of <limit> space of SD card is in MB.

Examples

AT+FSMEM

+FSMEM: C:(11348480, 2201600), D:(255533056, 42754048)

OK

AT+FSMEM=?

+FSMEM: (0-243),(0-255)

OK

AT+FSMEM=10,5

OK

+FSMEM: C:(11348480, 2201600), D:(255533056, 245535421)

12.9 AT+FSLOCA Select storage place

Description

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

NOTE

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

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------|--|
| AT+FSLOCA=? | +FSLOCA: (list of supported <loca>s) OK |
| Read Command | Responses |
| AT+FSLOCA? | +FSLOCA: <loca> OK |
| Write Command | Responses |
| AT+FSLOCA=<loca> | OK ERROR |

Defined values

<loca>

- 0 – store media files to local storage space (namely “C:/”)
- 1 – store media files to storage card (namely “D:/”)

NOTE If <loca>=1 and SD card is removed and unmounted, it will set <loca>=0 automatically after a moment.

Examples

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

12.10 AT+FSCOPY Copy an appointed file

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

<file1>

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

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

<file2>

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

<percent>

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

<sync_mode>

The execution mode of the command:

0 – synchronous mode

1 – asynchronous mode

NOTE:

1. The <file1> and <file2> should give the whole path and name, if only given file name, it will refer to current path (AT+FSCD) and check the file's validity.
2. If <file2> is a whole path and name, make sure the directory exists, make sure that the file name does not exist or the file name is not the same name as the sub folder name, otherwise return error.
3. <percent> report refer to the copy file size. The big file maybe report many times, and little file report less.
4. If <sync_mode> is 1, the command will return OK immediately, and report final result with +FSCOPY: END.

Examples

AT+FSCD?

+FSCD: C:/

OK

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

+FSCOPY: 1.0

+FSCOPY: 9.7

+FSCOPY: 19.4

...

+FSCOPY: 100.0

OK

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

+FSCOPY:1.0

+FSCOPY:100.0

OK

12.11 AT+FSFMT Format the storage card

Description

The command is used to format storage card which is plugged in. After formatting and remounting, it will create four directories of “Picture”, “Video”, “VideoCall” and “Audio” automatically. If current directory is in D:/ but not one of D:/Picture, D:/Video, D:/Audio and D:/VideoCall, it will set current directory D:/ after formatting.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|-----------|
| AT+FSFMT=? | OK |
| Execution Command | Responses |
| AT+FSFMT | OK |

Examples

| |
|----------|
| AT+FSFMT |
| OK |

13 File Transmission Related Commands

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

13.1 AT+CTXFILE Select file transmitted to host

Description

This command is used to select a file which will be transmitted from the module to host. After selecting the file successfully, use HyperTerminal to get the file over Xmodem protocol [refer AT Commands Samples: [File transmission to host](#)].

NOTE: If available memory is not enough, file transmission will fail. If user uses HyperTerminal Applet (MS), please make sure the storage path to host can not include Non-ASCII character, but file name can include Non-ASCII character.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|--|--|
| AT+CTXFILE=? | +CTXFILE: (list of supported <dir_type>s), (list of supported <protocol>s) OK |
| Write Command | Responses |
| AT+CTXFILE=<file_name> [,<dir_type>[,<protocol>]] | OK FILE NOT EXISTING ERROR |

Defined values

<filename>

String with double quotes, file name to be transmitted to PC host which already exists. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

NOTE: The path name only supports ASCII character.

<dir_type>

0 – file to be transmitted is in current directory; before **AT+CTXFILE** execution, it needs to set current directory [refer **AT+FSCD**]

NOTE: If <dir_type> is omitted, it will select a file to be transmitted which is in current directory. **AT+FSCD** and **AT+FSLS** being used in combination can help user to check the file selected whether existing or not.

<protocol>

- 0 – Xmodem
- 1 – 1K Xmodem

Examples

```
AT+CTXFILE="image_0.jpg", 0,1
```

```
OK
```

```
.....
```

```
AT+FSCD=C:/
```

```
+FSCD: C:/
```

```
OK
```

```
AT+FSLS=2
```

```
+FSLS: FILES:
```

```
video_2.mp4
```

```
image_1.jpg
```

```
OK
```

```
AT+CTXFILE="video_2.mp4"
```

OK

....

13.2 AT+CRXFILE Set name of file received from host

Description

This command is used to set file name which is received from host to file system of module. After setting successfully, use HyperTerminal to send the file over Xmodem protocol [refer AT Commands Samples: [File received from host](#)].

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CRXFILE=? | +CRXFILE: (list of supported <dir_type>s) OK |
| Write Command | Responses |
| AT+CRXFILE=<file_name> [,<dir_type>] | OK FILE IS EXISTING ERROR |

Defined values

<file_name>

String with double quotes, file name which is received from host. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir_type>

Specify storage location of file which is received from host. If this parameter is omitted, it will save the file to current directory [refer [AT+FSCD](#)]

- 0 – save file received from host to current directory; before [AT+CTXFILE](#) execution, it needs to set current directory [refer [AT+FSCD](#)]

Examples

```
AT+CRXFILE="image_8.jpg",0
```

OK

.....

```
AT+FSCD=C:/
```

+FSCD: C:/

OK

```
AT+CRXFILE="video.mp4"
OK
....
```

13.3 AT+CMWAIT config the waiting seconds before xmodem start receiving

Description

This command is used to config the waiting seconds when setup a xmodem receiving task. Set to zero means no wait and start receive process. Ought to be used together with +CRXFILE command.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---------------------------------|
| AT+CMWAIT=? | +CMWAIT: (0-60) OK |
| Read Command | Responses |
| AT+CMWAIT? | +CMWAIT: <value> OK ERROR |
| Write Command | Responses |
| AT+CMWAIT=<value> | OK ERROR |
| Execution Command | Responses |
| AT+CMWAIT | +CMWAIT: 10 OK |

Defined values

< value >:
0 – 60 second

Examples

```
AT+FSCD=C:/Video
+FSCD: C:/Video/
OK
AT+CMWAIT=5
OK
```

```
AT+CRXFILE="1.txt"
```

OK

...

NOTE:

1. The default < value > is 10 second, it can be set to any positive integer value, 0~60 is permitted..
2. The < value > cann't be saved, will be set to default value when the device restart later.

13.4 AT+CFTRANRX Transfer a file to EFS

Description

This command is used to transfer a file to EFS.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CFTRANRX=? | +CFTRANRX: [{non-ascii}]"FILEPATH" OK |
| Write Command | Responses |
| AT+CFTRANRX=<filepath>,<len>,<fileappend> | > OK > ERROR ERROR |

Defined values

<filepath>

The path of the file on EFS.

<len>

The length of the file data to send.

<fileappend>

1: enable the append function

0: disable the append function

NOTE

The <filepath> must be a full path with the directory path.

If the <fileappend> is missed the append function will be disable.

Examples

```
AT+CFTRANRX="c:/MyDir/t1.txt",10,I
>testcontent
OK
```

13.5 AT+CFTRANX Transfer a file from EFS to host

Description

This command is used to transfer a file from EFS to host. Before using this command, the [AT+CATR](#) must be used to set the correct port used.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------|---|
| AT+CFTRANX=? | +CFTRANX: [{non-ascii}]"FILEPATH" OK |

| Write Command | Responses |
|-----------------------|-----------|
| AT+CFTRANX=<filepath> | [|

| |
|----------------------|
| +CFTRANX: DATA,<len> |
| ... |
| +CFTRANX: DATA,<len> |
| ... |
|] |
| +CFTRANX: 0 |
| OK |
| ERROR |

Defined values

| |
|------------|
| <filepath> |
|------------|

The path of the file on EFS.

| |
|-------|
| <len> |
|-------|

The length of the following file data to output.

| |
|------|
| NOTE |
|------|

The <filepath> must be a full path with the directory path.

Examples

```
AT+CFTRANX="c:/MyDir/t1.txt"
+CFTRANX: DATA, 10
```

Testcontent
+CFTRANTX: 0
OK

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14 V24-V25 Commands

14.1 AT+IPR Set local baud rate temporarily

Description

This command sets the baud rate of module's serial interface temporarily, after reboot the baud rate is set to default value. The default value is 115200, if set to 0, then support autobaud at now.
 If host run this command on second serial port, it will be only change local baudrate.

| SIM PIN | References |
|---------|------------|
| NO | V.25ter |

Syntax

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

Defined values

<speed>

Baud rate per second:

0,300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600,
3200000, 3686400, 4000000

Second serial port Baud rate per second:

4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800

Examples

```

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

14.2 AT+IPREX Set local baud rate permanently

Description

This command sets the baud rate of module's serial interface permanently, after reboot the baud rate is also valid, if set to 0, then support autobaud.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+IPREX=? | +IPREX: (list of supported<speed>s) OK |
| Read Command | Responses |
| AT+IPREX? | +IPREX: <speed> OK |
| Write Command | Responses |
| AT+IPREX=<speed> | OK ERROR |
| Execution Command | Responses |
| AT+IPREX | <i>Set default value 115200:</i> OK |

Defined values

<speed>

Baud rate per second:

0,300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600,
3200000, 3686400, 4000000

Examples

```

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

14.3 AT+ICF Set control character framing

Description

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

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

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

Defined values

| |
|----------|
| <format> |
|----------|

- 1 – data bit 8, stop bit 2
- 2 – data bit 8, parity bit 1,stop bit 1
- 3 – data bit 8, stop bit 1

| | | |
|---|---|-------------------------------------|
| 4 | - | data bit 7, stop bit 2 |
| 5 | - | data bit 7, parity bit 1,stop bit 1 |
| 6 | - | data bit 7, stop bit 1 |

<parity>

| | | |
|----------|---|-------|
| 0 | - | Odd |
| 1 | - | Even |
| 2 | - | space |
| <u>3</u> | - | none |

Examples

```
AT+ICF?  
+ICF: 3,3  
OK  
AT+ICF=?  
+ICF: (1-6),(0-3)  
OK  
AT+ICF=3,3  
OK
```

14.4 AT+IFC Set local data flow control

Description

The command sets the flow control of the module.

NOTE

Second serial port is not support flow control.

| SIM PIN | References |
|---------|------------|
| NO | V.25ter |

Syntax

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

| | |
|--------|-----------------------------|
| AT+IFC | Set default value:0,0 OK |
|--------|-----------------------------|

Defined values

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

Examples

```

AT+IFC?
+IFC: 0,0
OK
AT+IFC=?
+IFC: (0,2),(0,2)
OK
AT+IFC=2,2
OK
If this command running on second serial port,it will be have
AT+IFC=?
+IFC: (0),(0)
OK
  
```

14.5 AT&C Set DCD function mode

Description

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

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

| SIM PIN | References |
|---------|------------|
| NO | V.25ter |

Syntax

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

Defined values

<value>

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

Examples

AT&C1

OK

14.6 ATE Enable command echo

Description

This command sets whether or not the TA echoes characters.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|---------|
| NO | V.25ter |
|----|---------|

Syntax

| Execution Command | Responses |
|-------------------|-----------|
| ATE[<value>] | OK |
| | ERROR |

Defined values

<value>

- 0 – Echo mode off
- 1 – Echo mode on

Examples

ATE1

OK

14.7 AT&V Display current configuration

Description

This command returns some of the base configuration parameters settings.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|---------|
| YES | V.25ter |
|-----|---------|

Syntax

| Execution Command | Responses |
|-------------------|--------------|
| AT&V | <TEXT> OK |

Defined values

| |
|---|
| <TEXT> |
| All relative configuration information. |

Examples

```
AT&V
&C: 0; &D: 2; &F: 0; E: 1; L: 0; M: 0; Q: 0; V: 1; X: 0; Z: 0; S0: 0;
S3: 13; S4: 10; S5: 8; S6: 2; S7: 50; S8: 2; S9: 6; S10: 14; S11: 95;
+FCLASS: 0; +ICF: 3,3; +IFC: 2,2; +IPR: 115200; +DR: 0; +DS: 0,0,2048,6;
+WS46: 12; +CBST: 0,0,1;
.....
OK
```

14.8 AT&D Set DTR function mode

Description

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

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

| SIM PIN | References |
|---------|------------|
| NO | V.25ter |

Syntax

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

Defined values

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

Examples

```
AT&DI
OK
```

14.9 AT&S Set DSR function mode

Description

The command determines how the state of DSR pin works.

| SIM PIN | References |
|---------|------------|
| YES | V.25ter |

Syntax

| Execution Command | Responses |
|-------------------|-----------|
| AT&S<value> | OK |
| | ERROR |

Defined values

<value>

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

Examples

```
AT&S0
OK
```

14.10 ATV Set result code format mode

Description

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

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

| SIM PIN | References |
|---------|------------|
| NO | V.25ter |

Syntax

| Write Command | Responses |
|---------------|-----------|
| | |

| | |
|--------------|----------------------------|
| ATV[<value>] | <i>If <value> =0</i> |
| | 0 |
| | <i>If <value> =1</i> |
| | OK |

Defined values

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

Examples

ATV1

OK

14.11 AT&F Set all current parameters to manufacturer defaults

Description

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

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

Every ongoing or incoming call will be terminated.

SIM PIN References

| | |
|----|-------|
| NO | V.250 |
|----|-------|

Syntax

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

Defined values

<value>

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

default values

| | |
|---------------|-------|
| TA parameters | VALUE |
|---------------|-------|

| | |
|---------------|---|
| AT+AUTOANSWER | 0,0 |
| AT+CATR | 0 |
| AT+CSUART | 0 |
| AT+CPCM | 1,1 |
| AT+CPCMFORMAT | 2 |
| AT+CNBP ① | 0x0002000000E80380 |
| AT+CNMP | 2 |
| AT+CNAOP | 2 |
| AT+CNSDP | 2 |
| AT+CTZU | 0 |
| AT+CRSL | 2 |
| AT+CALM | 0 |
| AT+CVALARMS | 0,3400 |
| AT+CSDVC | 1 |
| AT+CLVL ② | 2 |
| AT+CVLVL ② | -200,1000,3000,5000,3000,4000,5000,5000 |
| AT+CTXVOL ② | 10000 |
| AT+CRXVOL ② | 0 |
| AT+CTXFTR ② | 0, 0, 0, 0, 0, 0, 0 |
| AT+CRXFTR ② | 0, 0, 0, 0, 0, 0, 0 |
| AT+CVAUXS | 1 |
| AT+CVAUXV | 57 |
| AT+CDTRISRS | 0 |
| AT+CDTRISRMD | 0,0 |
| AT+CGDCONT | 1,"IP","", "0.0.0.0",0,0 |
| AT+CGSOCKCONT | +CGSOCKCONT: 1,"IP","", "0.0.0.0",0,0 |
| AT+CPLMNWLST | "", 1 |
| AT+CGPSSL | 0 |
| AT+CGPSURL | "" |
| AT+CGPSAUTO | 0 |
| AT+CGPSSWITCH | 1,115200 |

① SIM5360E default value is 0x0002000000680380. SIM5360A default value is 0x0000000000CA80380. SIM5360J default value is 0x0000000000CE80380.

② These audio parameters are different in different Qualcomm platform versions.

Examples

| |
|------|
| AT&F |
| OK |

14.12 ATQ Set Result Code Presentation Mode

Description

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

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| Write Command | Responses |
|-------------------|----------------------------------|
| ATQ<n> | If <n>=0: OK If <n>=1: |
| Execution Command | Responses |
| ATQ | <i>Set default value:0</i> OK |

Defined values

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

Examples

| |
|------|
| ATQ0 |
| OK |

14.13 ATX Set CONNECT Result Code Format

Description

This parameter setting determines whether the TA transmits unsolicited result codes or not. The unsolicited result codes are

<CONNECT><SPEED><COMMUNICATION PROTOCOL>[<TEXT>]

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| | |
|-------------------|-----------------------------------|
| Write Command | Responses |
| ATX<VALUE> | OK ERROR |
| Execution Command | Responses |
| ATX | <i>Set default value: 1</i> OK |

Defined values

<value>

0 – CONNECT result code returned

1,2,3,4 – May be transmits extern result codes according to AT&E and AT\V settings. Refer to AT&E.

Examples

ATXI

OK

14.14 AT\V Set CONNECT Result Code Format About Protocol

Description

This parameter setting determines whether report the communication protocol. If PS call, it also determines whether report APN, uplink rate, downlink rate.

SIM PIN References

YES 3GPP TS 27.005

Syntax

| | |
|-------------------|-----------------------------------|
| Write Command | Responses |
| AT\V<value> | OK ERROR |
| Execution Command | Responses |
| AT\V | <i>Set default value: 0</i> OK |

Defined values

<value>

0 – Don't report

1 – Report communication protocol. And report APN, uplink rate, downlink rate if PS call. Refer to AT&E. The maybe communication protocol report include “NONE”, “PPPOverUD”, “AV32K”, “AV64K”, “PACKET”. And APN in string format while uplink rate and downlink rate in integer format with kb unit.

Examples

```
AT\VV0
OK
```

14.15 AT&E Set CONNECT Result Code Format About Speed

Description

This parameter setting determines to report Serial connection rate or Wireless connection speed. It is valid only ATX above 0.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| Write Command | Responses |
|-------------------|-----------------------------------|
| AT&E<value> | OK ERROR |
| Execution Command | Responses |
| AT&E | <i>Set default value: 1</i> OK |

Defined values

| |
|---|
| <value> |
| 0 – Wireless connection speed in integer format. |
| 1 – Serial connection rate in integer format. Such as: “115200” |

Examples

```
AT&E0
OK
```

14.16 AT&W Save the user setting to ME

Description

This command will save the user settings to ME which set by ATE, ATQ, ATV, ATX, AT&C AT&D,

AT&S, AT\V, AT+IFC and ATS0.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| Write Command | Responses |
|-------------------|-----------------------------------|
| AT&W<value> | OK ERROR |
| Execution Command | Responses |
| AT&W | <i>Set default value: 0</i> OK |

Defined values

| |
|----------|
| <value> |
| 0 – Save |

Examples

| |
|-------|
| AT&W0 |
| OK |

14.17 ATZ Restore the user setting from ME

Description

This command will restore the user setting from ME which set by ATE, ATQ, ATV, ATX, AT&C AT&D, AT&S, AT\Q, AT\V, and ATS0.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.005 |

Syntax

| Write Command | Responses |
|-------------------|-----------------------------------|
| ATZ<value> | OK ERROR |
| Execution Command | Responses |
| ATZ | <i>Set default value: 0</i> OK |

Defined values

<value>

0 – Restore

Examples

ATZ0

OK

15 Commands for Packet Domain

15.1 AT+CGDCONT Define PDP context

Description

The set command specifies PDP context parameter values for a PDP context identified by the (local) context identification parameter <cid>. The number of PDP contexts that may be in a defined state at the same time is given by the range returned by the test command. A special form of the write command (AT+CGDCONT=<cid>) causes the values for context <cid> to become undefined.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| | |
|--|---|
| Test Command | Responses |
| AT+CGDCONT=? | +CGDCONT: (range of supported<cid>s),<PDP_type>,,(list of supported <d_comp>s),(list of supported <h_comp>s) OK ERROR |
| Read Command | Responses |
| AT+CGDCONT? | +CGDCONT: [<cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp>[<CR><LF> +CGDCONT: <cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[...]]] OK ERROR |
| Write Command | Responses |
| AT+CGDCONT=<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>]]]]] | OK ERROR |
| Execution Command | Responses |
| AT+CGDCONT | OK ERROR |

Defined values

<cid>

(PDP Context Identifier) a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.

1...16

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

IPV4V6 Dual PDN Stack

<APN>

(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.

<PDP_addr>

A string parameter that identifies the MT in the address space applicable to the PDP.

Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using command [AT+CGPADDR](#).

<d_comp>

A numeric parameter that controls PDP data compression, this value may depend on platform:

0 – off (default if value is omitted)

1 – on

2 – V.42bis

<h_comp>

A numeric parameter that controls PDP header compression, this value may depend on platform:

0 – off (default if value is omitted)

1 – on

2 – RFC1144

3 – RFC2507

4 – RFC3095

Examples

AT+CGDCONT?

+CGDCONT: 1,"IP","CMNET","0.0.0.0",0,0

OK

AT+CGDCONT=?

+CGDCONT: (1-16),"IP",,(0-2),(0-4)

+CGDCONT: (1-16),"PPP",,(0-2),(0-4)

+CGDCONT: (1-16),"IPV6",,(0-2),(0-4)

+CGDCONT: (1-16),"IPV4V6",,(0-2),(0-4)

OK

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_ci d>[,<d_comp>[,<h_comp>]]] | OK ERROR |

Defined values

<cid>

a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.

NOTE: The <cid>s for network-initiated PDP contexts will have values outside the ranges

indicated for the <cid> in the test form of the commands +CGDCONT and +CGDSCONT.

<p_cid>

a numeric parameter which specifies a particular PDP context definition which has been specified by use of the +CGDCONT command. The parameter is local to the TE-MT interface. The list of permitted values is returned by the test form of the command.

<d_comp>

a numeric parameter that controls PDP data compression (applicable for SNDCPonly) (refer 3GPP TS 44.065 [61])

- 0 off
- 1 on (manufacturer preferred compression)
- 2 V.42bis
- 3 V.44

Other values are reserved.

<h_comp>

a numeric parameter that controls PDP header compression (refer 3GPP TS 44.065 [61] and 3GPP TS 25.323 [62])

- 0 off
- 1 on (manufacturer preferred compression)
- 2 RFC1144 (applicable for SNDCP only)
- 3 RFC2507
- 4 RFC3095 (applicable for PDCP only)

Other values are reserved.

Examples

AT+CGDSCONT?

+CGDSCONT: 2,1,0,0

OK

AT+CGDSCONT=2,1

OK

AT+CGDSCONT=?

+CGDSCONT: (1-16),(1),"IP",,(0-2),(0-4)

+CGDSCONT: (1-16),(1),"PPP",,(0-2),(0-4)

+CGDSCONT: (1-16),(1),"IPV6",,(0-2),(0-4)

+CGDSCONT: (1-16),(1),"IPV4V6",,(0-2),(0-4)

OK

15.3 AT+CGTFT Traffic Flow Template

Description

This command allows the TE to specify a Packet Filter - PF for a Traffic Flow Template - TFT that is used in the GGSN in UMTS/GPRS and Packet GW in EPS for routing of packets onto different QoS flows towards the TE. The concept is further described in the 3GPP TS 23.060 [47]. A TFT consists of from one and up to 16 Packet Filters, each identified by a unique <packet filter identifier>. A Packet Filter also has an <evaluation precedence index> that is unique within all TFTs associated with all PDP contexts that are associated with the same PDP address.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--------------|--|
| AT+CGTFT=? | +CGTFT: <PDP_type>,(list of supported <packet filter identifier>s),(list of supported <evaluation precedence index>s),(list of supported <source address and subnet mask>s),(list of supported <protocol number (ipv4) / next header (ipv6)>s),(list of supported <destination port range>s),(list of supported <source port range>s),(list of supported <ipsec security parameter index (spi)>s),(list of supported <type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>s),(list of supported <flow label (ipv6)>s),(list of supported <direction>s) [<CR><LF>]+CGTFT: <PDP_type>,(list of supported <packet filter identifier>s),(list of supported <evaluation precedence index>s),(list of supported <source address and subnet mask>s),(list of supported <protocol number (ipv4) / next header (ipv6)>s),(list of supported <destination port range>s),(list of supported <source port range>s),(list of supported <ipsec security parameter index (spi)>s),(list of supported <type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>s),(list of supported <flow label (ipv6)>s),(list of supported <direction>s) [...]] |
| | OK |
| Read Command | Responses |
| AT+CGTFT? | +CGTFT: <cid>,<packet filter identifier>,<evaluation precedence index>,<source address and subnet mask>,<protocol number (ipv4) / next header (ipv6)>,<destination port range>,<source port range>,<ipsec security parameter index (spi)>,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>,<flow label (ipv6)>,<direction> [<CR><LF>]+CGTFT: <cid>,<packet filter identifier>,<evaluation precedence index>,<source address and subnet mask>,<protocol |

| | |
|--|---|
| | <p>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></p> <p>[...]]</p> |
| | 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>]]]]]]]]] | <p>OK</p> <p>ERROR</p> |

Defined values

| | |
|---|---|
| <cid> | a numeric parameter which specifies a particular PDP context definition (see the AT+CGDCONT and AT+CGDSCONT commands). |
| <packet filter identifier> | a numeric parameter, value range from 1 to 16. |
| <evaluation precedence index> | a numeric parameter. The value range is from 0 to 255. |
| <source address and subnet mask> | string type The string is given as dot-separated numeric (0-255) parameters on the form: "a1.a2.a3.a4.m1.m2.m3.m4" for IPv4 or "a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16.m1.m2.m3.m4.m5.m6.m7.m8.m9.m10.m11.m12.m13.m14.m15.m16", for IPv6. |
| <protocol number (ipv4) / next header (ipv6)> | a numeric parameter, value range from 0 to 255. |
| <destination port range> | string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t". |
| <source port range> | |

string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t".

<ipsec security parameter index (spi)>

numeric value in hexadecimal format. The value range is from 00000000 to FFFFFFFF.

<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>

string type. The string is given as dot-separated numeric (0-255) parameters on the form "t.m".

<flow label (ipv6)>

numeric value in hexadecimal format. The value range is from 00000 to FFFF. 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 Bi-directional (Up & Downlink)

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6
- IPV4V6 Dual PDN Stack

Examples

```
AT+CGTFT?
```

```
+CGTFT: 2,1,0,"74.125.71.99.255.255.255.255",0,0.0,0.0,0,0.0,0
```

OK

```
AT+CGTFT=2,1,0,"74.125.71.99.255.255.255.255"
```

OK

```
AT+CGTFT=?
```

```
+CGTFT:"IP",,(1-16),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFFFF),(0-255.0-255),(0-FFFF)
```

```
+CGTFT:"PPP",,(1-16),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFFFF),(0-255.0-255),(0-FFFF)
```

```
+CGTFT:"IPV6",,(1-16),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFFFF),(0-255.0-255),(0-FFFF)
```

```
+CGTFT:"IPV4V6",,(1-16),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFFFFFF),(0-255.0-255),(0-FFFF)
```

OK

15.4 AT+CGQREQ Quality of service profile (requested)

Description

This command allows the TE to specify a Quality of Service Profile that is used when the MT sends an Activate PDP Context Request message to the network.. A special form of the set command (**AT+CGQREQ=<cid>**) causes the requested profile for context number **<cid>** to become undefined.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|---|---|
| AT+CGQREQ=? | +CGQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [...]] OK ERROR |
| Read Command | Responses |
| AT+CGQREQ? | +CGQREQ: [<cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>][<CR><LF> +CGQREQ: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>[...]] OK ERROR |
| Write Command | Responses |
| AT+CGQREQ=<cid> [,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]] | OK ERROR |
| Execution Command | Responses |
| AT+CGQREQ | OK ERROR |

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

IPV4V6 Dual PDN Stack

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value

1 – high priority

2 – normal priority

3 – low priority

<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value

1 – delay class 1

2 – delay class 2

3 – delay class 3

4 – delay class 4

<reliability>

A numeric parameter which specifies the reliability class:

0 – network subscribed value

1 – Non real-time traffic,error-sensitive application that cannot cope with data loss

2 – Non real-time traffic,error-sensitive application that can cope with infrequent data loss

3 – Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-
SM, and SMS

4 – Real-time traffic,error-sensitive application that can cope with data loss

5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value

1 – Up to 1000 (8 kbit/s)

2 – Up to 2000 (16 kbit/s)

3 – Up to 4000 (32 kbit/s)

4 – Up to 8000 (64 kbit/s)

5 – Up to 16000 (128 kbit/s)

6 – Up to 32000 (256 kbit/s)

7 – Up to 64000 (512 kbit/s)

8 – Up to 128000 (1024 kbit/s)

9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

- 0 – network subscribed value
- 1 – 100 (~0.22 bit/s)
- 2 – 200 (~0.44 bit/s)
- 3 – 500 (~1.11 bit/s)
- 4 – 1000 (~2.2 bit/s)
- 5 – 2000 (~4.4 bit/s)
- 6 – 5000 (~11.1 bit/s)
- 7 – 10000 (~22 bit/s)
- 8 – 20000 (~44 bit/s)
- 9 – 50000 (~111 bit/s)
- 10 – 100000 (~0.22 kbit/s)
- 11 – 200000 (~0.44 kbit/s)
- 12 – 500000 (~1.11 kbit/s)
- 13 – 1000000 (~2.2 kbit/s)
- 14 – 2000000 (~4.4 kbit/s)
- 15 – 5000000 (~11.1 kbit/s)
- 16 – 10000000 (~22 kbit/s)
- 17 – 20000000 (~44 kbit/s)
- 18 – 50000000 (~111 kbit/s)
- 31 – optimization

Examples

```
AT+CGQREQ?  

+CGQREQ:  

OK  

AT+CGQREQ=?  

+CGQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)  

+CGQREQ: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)  

+CGQREQ: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)  

+CGQREQ: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)  

OK
```

15.5 AT+CGEQREQ 3G quality of service profile (requested)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allows the TE to specify a Quality of Service Profile for the context identified by the context identification parameter <cid> which is used when the MT sends an Activate PDP Context Request message to the network.

A special form of the write command, **AT+CGEQREQ=<cid>** causes the requested profile for context number <cid> to become undefined.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|---|---|
| AT+CGEQREQ=? | +CGEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s,(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) OK |
| Read Command | Responses |
| AT+CGEQREQ? | +CGEQREQ: [<cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>][<CR><LF> +CGEQREQ: <cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>[...]] OK |
| Write Command | Responses |
| AT+CGEQREQ=<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrate UL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit | OK ERROR |

| | |
|--|-------------------|
| <pre>error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]</pre> | +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 kbit/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 kbit/s delivered to UMTS(down-link traffic)at a SAP. As an example a bitrate of 32kbit/s would be specified as 32(e.g. [AT+CGEQREQ=...,32,...](#)).

0 – subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver). As an example a bitrate of 32kbit/s would be specified as 32(e.g. [AT+CGEQREQ=...,32,...](#)).

0 – subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a

SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.[AT+CGEQREQ=...,32,...](#)).

0 – subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

0 – subscribed value

10...1520 (value needs to be divisible by 10 without remainder)

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of 5×10^{-3} would be specified as “5E3”(e.g.[AT+CGEQREQ=..,”5E3”,...](#)).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of 5×10^{-3} would be specified as “5E3”(e.g.[AT+CGEQREQ=..,”5E3”,..](#)).

“0E0” – subscribed value

“5E2”

“1E2”

“5E3”

“4E3”

“1E3”

“1E4”

“1E5”

“1E6”

“6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

- 0 – no
- 1 – yes
- 2 – no detect
- 3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds.

- 0 – subscribed value
- 10...150 – value needs to be divisible by 10 without remainder
- 200...950 – value needs to be divisible by 50 without remainder
- 1000...4000 – value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

- 0 – subscribed value
- 1 –
- 2 –
- 3 –

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6
- IPV4V6 Dual PDN Stack

Examples

```

AT+CGEQREQ?
+CGEQREQ:
OK
AT+CGEQREQ=?
+CGEQREQ:"IP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1E2
", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6", "6
E8"), (0-3), (0, 100-4000), (0-3), (0, 1), (0, 1)
+CGEQREQ:"PPP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1E
2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6",
"6E8"), (0-3), (0, 100-4000), (0-3), (0, 1), (0, 1)
+CGEQREQ:"IPV6", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1
E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6"
, "6E8"), (0-3), (0, 100-4000), (0-3), (0, 1), (0, 1)
+CGEQREQ:"IPV4V6", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1",
"1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E
")

```

6","6E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1)

OK

15.6 AT+CGQMIN Quality of service profile (minimum acceptable)

Description

This command allows the TE to specify a minimum acceptable profile which is checked by the MT against the negotiated profile returned in the Activate PDP Context Accept message. A special form of the set command, **AT+CGQMIN=<cid>** causes the minimum acceptable profile for context number **<cid>** to become undefined.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--|---|
| AT+CGQMIN=? | +CGQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s)[...]] OK ERROR |
| Read Command | Responses |
| AT+CGQMIN? | +CGQMIN: [<cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>][<CR><LF> +CGQMIN: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean> [...]] OK ERROR |
| Write Command | Responses |
| AT+CGQMIN= <cid>[,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]] | OK ERROR |
| Execution Command | Responses |

AT+CGQMIN OK

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

IPV4V6 Dual PDN Stack

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value

1 – high priority

2 – normal priority

3 – low priority

<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value

1 – delay class 1

2 – delay class 2

3 – delay class 3

4 – delay class 4

<reliability>

A numeric parameter which specifies the reliability class:

0 – network subscribed value

1 – Non real-time traffic,error-sensitive application that cannot cope with data loss

2 – Non real-time traffic,error-sensitive application that can cope with infrequent data loss

3 – Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-
SM, and SMS

4 – Real-time traffic,error-sensitive application that can cope with data loss

5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

0 – network subscribed value

1 – Up to 1000 (8 kbit/s)

2 – Up to 2000 (16 kbit/s)

3 – Up to 4000 (32 kbit/s)

4 – Up to 8000 (64 kbit/s)

- 5 – Up to 16000 (128 kbit/s)
- 6 – Up to 32000 (256 kbit/s)
- 7 – Up to 64000 (512 kbit/s)
- 8 – Up to 128000 (1024 kbit/s)
- 9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

- 0 – network subscribed value
- 1 – 100 (~0.22 bit/s)
- 2 – 200 (~0.44 bit/s)
- 3 – 500 (~1.11 bit/s)
- 4 – 1000 (~2.2 bit/s)
- 5 – 2000 (~4.4 bit/s)
- 6 – 5000 (~11.1 bit/s)
- 7 – 10000 (~22 bit/s)
- 8 – 20000 (~44 bit/s)
- 9 – 50000 (~111 bit/s)
- 10 – 100000 (~0.22 kbit/s)
- 11 – 200000 (~0.44 kbit/s)
- 12 – 500000 (~1.11 kbit/s)
- 13 – 1000000 (~2.2 kbit/s)
- 14 – 2000000 (~4.4 kbit/s)
- 15 – 5000000 (~11.1 kbit/s)
- 16 – 10000000 (~22 kbit/s)
- 17 – 20000000 (~44 kbit/s)
- 18 – 50000000 (~111 kbit/s)
- 31 – optimization

Examples

```
AT+CGQMIN?  
+CGQMIN:  
OK  
AT+CGQMIN=?  
+CGQMIN: "IP", (0-3), (0-4), (0-5), (0-9), (0-18, 31)  
+CGQMIN: "PPP", (0-3), (0-4), (0-5), (0-9), (0-18, 31)  
+CGQMIN: "IPV6", (0-3), (0-4), (0-5), (0-9), (0-18, 31)  
+CGQMIN: "IPV4V6", (0-3), (0-4), (0-5), (0-9), (0-18, 31)  
OK
```

15.7 AT+CGEQMIN 3G quality of service profile (minimum acceptable)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allow the TE to specify a Quality 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>[,<Tr affic class>[,<Maximum bit rate UL>[,<Maximum bitrat e DL>[,<Guaranteed bitrate UL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<M aximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of e rroneous SDUs>[,<Transfer delay>[,<Traffic handling p riority>]]]]]]]]]]] | 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 kbit/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 kbit/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 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+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.

- | | | |
|-------------|---|--|
| <u>0</u> | – | subscribed value |
| 10...150 | – | value needs to be divisible by 10 without remainder |
| 200...950 | – | value needs to be divisible by 50 without remainder |
| 1000...4000 | – | value needs to be divisible by 100 without remainder |

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

- 0 – subscribed value
- 1 –
- 2 –
- 3 –

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6
- IPV4V6 Dual PDN Stack

Examples

```
AT+CGEQMIN?
+CGEQMIN:
OK
AT+CGEQMIN=?
+CGEQMIN:"IP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1E2")
```

```

,"7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5","1E6","6
E8"),(0-3),(0,100-4000),(0-3),(0,1),(0,1)
+CGEQMIN:"PPP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1E
2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6",
"6E8"), (0-3), (0,100-4000), (0-3), (0,1), (0,1)
+CGEQMIN:"IPV6", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1
E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6",
"6E8"), (0-3), (0,100-4000), (0-3), (0,1), (0,1)
+CGEQMIN:"IPV4V6", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1",
"1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6",
"6E8"), (0-3), (0,100-4000), (0-3), (0,1), (0,1)

```

OK

15.8 AT+CGATT Packet domain attach or detach

Description

The write command is used to attach the MT to, or detach the MT from, the Packet Domain service. The read command returns the current Packet Domain service state.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--------------|--|
| AT+CGATT=? | +CGATT: (list of supported <state>s) OK |
| Read Command | Responses |
| AT+CGATT? | +CGATT: <state> OK |

| Write Command | Responses |
|------------------|-------------------|
| AT+CGATT=<state> | OK |
| | ERROR |
| | +CME ERROR: <err> |

Defined values

<state>

Indicates the state of Packet Domain attachment:

0 – detached

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: 1,1  

OK  

AT+CGACT=?  

+CGACT: (0,1)  

OK  

AT+CGACT=0,1  

OK
```

15.10 AT+CGDATA Enter data state

Description

The command causes the MT to perform whatever actions are necessary to establish communication between the TE and the network using one or more Packet Domain PDP types. This may include performing a PS attach and one or more PDP context activations.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|----------------------------|---|
| AT+CGDATA=? | +CGDATA: (list of supported <L2P>s) OK |
| Write Command | Responses |
| AT+CGDATA=[<L2P>,[<ci d>]] | CONNECT [<baud rate>] NO CARRIER OK ERROR +CME ERROR: <err> |

Defined values

| | |
|-------|--|
| <L2P> | A string parameter that indicates the layer 2 protocol to be used between the TE and MT. PPP Point-to-point protocol for a PDP such as IP |
| <cid> | A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command). 1...16 |

Examples

```
AT+CGDATA=?  

+CGDATA: ("PPP")  

OK  

AT+CGDATA="PPP",1  

CONNECT 115200
```

15.11 AT+CGPADDR Show PDP address

Description

The write command returns a list of PDP addresses for the specified context identifiers.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--------------------------------|---|
| AT+CGPADDR=? | +CGPADDR: (list of defined <cid>s) OK |
| Write Command | Responses |
| AT+CGPADDR=<cid>[,<cid>[,...]] | [+CGPADDR:<cid>,<PDP_addr>[<CR><LF> +CGPADDR:<cid>,<PDP_addr>[...]]] OK |
| | ERROR |
| | +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CGPADDR | [+CGPADDR:<cid>,<PDP_addr>] +CGPADDR:<cid>,<PDP_addr>[...]] OK |
| | ERROR |
| | +CME ERROR: <err> |

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command). If no <cid> is specified, the addresses for all defined contexts are returned.

1...16

<PDP_addr>

A string that identifies the MT in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the [AT+CGDCONT](#) command when the

context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>. <PDP_addr> is omitted if none is available.

Examples

```
AT+CGPADDR =?
+CGPADDR: (1)
OK
AT+CGPADDR=1
+CGPADDR: 1,"0.0.0.0"
OK
```

15.12 AT+CGCLASS GPRS mobile station class

Description

This command is used to set the MT to operate according to the specified GPRS mobile class.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--------------------|---|
| AT+CGCLASS=? | +CGCLASS: (list of supported <class>s) OK ERROR |
| Read Command | Responses |
| AT+CGCLASS? | +CGCLASS: <class> OK ERROR |
| Write Command | Responses |
| AT+CGCLASS=<class> | OK ERROR +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CGCLASS | <i>Set default value:</i> 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 |
| <i>AT+CGEREP=?</i> | +CGEREP: (list of supported <mode> s),(list of supported <bfr> s) OK |
| Read Command | Responses |
| <i>AT+CGEREP?</i> | +CGEREP: <mode> , <bfr> OK |
| Write Command | Responses |
| <i>AT+CGEREP=</i> <mode> [, <bfr>] | OK ERROR +CME ERROR: <err> |
| Execution Command | Responses |
| <i>AT+CGEREP</i> | OK |

Defined values

<mode>

- 0 – buffer unsolicited result codes in the MT; if MT result code buffer is full, the oldest ones can be discarded. No codes are forwarded to the TE.
- 1 – discard unsolicited result codes when MT-TE link is reserved (e.g. in on-line data mode); otherwise forward them directly to the TE.
- 2 – buffer unsolicited result codes in the MT when MT-TE link is reserved (e.g. in on-line data mode) and flush them to the TE when MT-TE link becomes available; otherwise forward them directly to the TE.

<bfr>

- 0 – MT buffer of unsolicited result codes defined within this command is cleared when <mode> 1 or 2 is entered.
- 1 – MT buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1 or 2 is entered (OK response shall be given before flushing the codes).

The following unsolicited result codes and the corresponding events are defined:

+CGEV: REJECT <PDP_type>, <PDP_addr>

A network request for PDP context activation occurred when the MT was unable to report it to the TE with a +CRING unsolicited result code and was automatically rejected.

+CGEV: NW REACT <PDP_type>, <PDP_addr>, [<cid>]

The network has requested a context reactivation. The <cid> that was used to reactivate the context is provided if known to the MT.

+CGEV: NW DEACT <PDP_type>, <PDP_addr>, [<cid>]

The network has forced a context deactivation. The <cid> that was used to activate the context is provided if known to the MT.

+CGEV: ME DEACT <PDP_type>, <PDP_addr>, [<cid>]

The mobile equipment has forced a context deactivation. The <cid> that was used to activate the context is provided if known to the MT.

+CGEV: NW DETACH

The network has forced a Packet Domain detach. This implies that all active contexts have been deactivated. These are not reported separately.

+CGEV: ME DETACH

The mobile equipment has forced a Packet Domain detach. This implies that all active contexts have been deactivated. These are not reported separately.

+CGEV: NW CLASS <class>

The network has forced a change of MS class. The highest available class is reported (see [AT+CGCLASS](#)).

+CGEV: ME CLASS <class>

The mobile equipment has forced a change of MS class. The highest available class is reported (see [AT+CGCLASS](#)).

Examples

```

AT+CGEREP=?
+CGEREP: (0-2),(0-1)
OK
AT+CGEREP?
+CGEREP: 0,0
OK
  
```

15.14 AT+CGREG GPRS network registration status

Description

This command controls the presentation of an unsolicited result code “+CGREG: <stat>” when <n>=1 and there is a change in the MT's GPRS network registration status.

The read command returns the status of result code presentation and an integer <stat> which shows Whether the network has currently indicated the registration of the MT.

| SIM PIN | References |
|---------|----------------|
| NO | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|-------------------|--|
| AT+CGREG=? | +CGREG: (list of supported <n>s) OK |
| Read Command | Responses |
| AT+CGREG? | +CGREG: <n>,<stat>[,<lac>,<ci>] OK |
| Write Command | Responses |
| AT+CGREG=<n> | OK |
| Execution Command | Responses |
| AT+CGREG | <i>Set default value:</i> OK |

Defined values

<n>

- 0 – disable network registration unsolicited result code
- 1 – enable network registration unsolicited result code +CGREG: <stat>
- 2 – there is a change in the ME network registration status or a change of the network cell:
+CGREG: <stat>[,<lac>,<ci>]

<stat>

- 0 – not registered, ME is not currently searching an operator to register to
- 1 – registered, home network

- 2 – not registered, but ME is currently trying to attach or searching an operator to register to
- 3 – registration denied
- 4 – unknown
- 5 – registered, roaming

<lac>

Two bytes location area code in hexadecimal format (e.g."00C3" equals 193 in decimal).

<ci>

Cell ID in hexadecimal format.

GSM : Maximum is two byte

WCDMA : Maximum is four byte

Examples

AT+CGREG=?

+CGREG: (0-2)

OK

AT+CGREG?

+CGREG: 0,0

OK

15.15 AT+CGSMS Select service for MO SMS messages

Description

The write command is used to specify the service or service preference that the MT will use to send MO SMS messages.

The test command is used for requesting information on which services and service preferences can be set by using the **AT+CGSMS** write command

The read command returns the currently selected service or service preference.

SIM PIN References

YES 3GPP TS 27.007

Syntax

| Test Command | Responses |
|--------------------|--|
| AT+CGSMS=? | +CGSMS: (list of supported <service>s) OK |
| Read Command | Responses |
| AT+CGSMS? | +CGSMS: <service> OK |
| Write Command | Responses |
| AT+CGSMS=<service> | OK |

| |
|-------------------|
| ERROR |
| +CME ERROR: <err> |

Defined values

<service>

A numeric parameter which indicates the service or service preference to be used

- 0 – GPRS(value is not really supported and is internally mapped to 2)
- 1 – circuit switched(value is not really supported and is internally mapped to 3)
- 2 – GPRS preferred (use circuit switched if GPRS not available)
- 3 – circuit switched preferred (use GPRS if circuit switched not available)

Examples

AT+CGSMS?

+CGSMS: 3

OK

AT+CGSMS=?

+CGSMS: (0-3)

OK

15.16 AT+CGAUTH Set type of authentication for PDP-IP connections of GPRS

Description

This command is used to set type of authentication for PDP-IP connections of GPRS.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------|--|
| AT+CGAUTH=? | +CGAUTH:(range of supported <cid>s),(list of supported <auth_type> s),, OK |
| | ERROR |
| | +CME ERROR: <err> |
| Read Command | Responses |
| AT+CGAUTH? | +CGAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CGAUTH: <cid>,<auth_type>[,<user>]<CR><LF> |

| | |
|---|----------------------------------|
| | ... |
| | OK |
| | ERROR |
| | +CME ERROR: <err> |
| Write Command | Responses |
| AT+CGAUTH=<cid>[,<aut h_type>[,<passwd>[,<user>]]] | OK ERROR +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CGAUTH | OK ERROR +CME ERROR: <err> |

Defined values

<cid>

Parameter specifies a particular PDP context definition. This is also used in other PDP context-related commands.

1...16

<auth_type>

Indicate the type of authentication to be used for the specified context. If CHAP is selected another parameter <passwd> needs to be specified. If PAP is selected two additional parameters <passwd> and <user> need to be specified.

- 0 – none
- 1 – PAP
- 2 – CHAP
- 3 – PAP or CHAP

<passwd>

Parameter specifies the password used for authentication.

<user>

Parameter specifies the user name used for authentication.

Examples

```
AT+CGAUTH=?
```

```
+CGAUTH: (1-16),(0-3) ,,
```

```
OK
```

```
AT+CGAUTH=1,1,"SIMCOM","123"
```

```
OK
```

16 TCP/IP Related Commands

16.1 AT+CGSOCKCONT Define socket PDP context

Description

This command specifies socket PDP context parameter values for a PDP context identified by the (local) context identification parameter <cid>. The number of PDP contexts that may be in a defined state at the same time is given by the range returned by the test command. **A special form of the write command (AT+CGSOCKCONT=<cid>) causes the values for context <cid> to become undefined.**

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CGSOCKCONT=? | +CGSOCKCONT: (range of supported<cid>s),<PDP_type>,,(list of supported <d_comp>s),(list of supported <h_comp>s) OK ERROR |
| Read Command | Responses |
| AT+CGSOCKCONT? | +CGSOCKCONT: [<cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[<CR><LF> +CGSOCKCONT: <cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[...]]] OK ERROR |
| Write Command | Responses |
| AT+CGSOCKCONT=<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>]]]]] | OK ERROR |
| Execution Command | Responses |
| AT+CGSOCKCONT | OK ERROR |

Defined values

<cid>

(PDP Context Identifier) a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.

1...16

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6(reserved)

IPV4V6 Dual PDN Stack

<APN>

(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.

<PDP_addr>

A string parameter that identifies the MT in the address space applicable to the PDP.

Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure.

<d_comp>

A numeric parameter that controls PDP data compression, this value may depend on platform:

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+CGSOCKCONT?

+CGSOCKDCONT: 1,"IP","","0.0.0.0",0,0

OK

AT+CGSOCKCONT=?

+CGSOCKCONT: (1-16),"IP",,(0,1),(0,1)

+CGSOCKCONT: (1-16),"PPP",,(0,1),(0,1)

+CGSOCKCONT: (1-16),"IPV6",,(0,1),(0,1)

+CGSOCKCONT: (1-16),"IPV4V6",,(0-2),(0-4)

OK

16.2 AT+CSOCKSETPN Set active PDP context's profile number

Description

This command sets default active PDP context's profile number. When we activate PDP by using [AT+NETOPEN](#) command, we need use the default profile number, and the context of this profile is set by [AT+CGSOCKCONT](#) command.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------------------|---|
| AT+CSOCKSETPN=? | +CSOCKSETPN: (list of supported <profile_number>s) OK ERROR |
| Read Command | Responses |
| AT+CSOCKSETPN? | +CSOCKSETPN: <profile_number> OK ERROR |
| Write Command | Responses |
| AT+CSOCKSETPN= <profile_number> | OK ERROR |
| Execution Command | Responses |
| AT+CSOCKSETPN | OK ERROR |

Defined values

<profile_number>

A numeric parameter that identifies default profile number, the range of permitted values is one to sixteen.

1...16

Examples

AT+CSOCKSETPN=1

OK

16.3 AT+CSOCKAUTH Set type of authentication for PDP-IP connections of socket

Description

This command is used to set type of authentication for PDP-IP connections of socket.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CSOCKAUTH=? | +CSOCKAUTH:(range of supported <cid>s),(list of supported <auth_type>s),, OK |
| | ERROR |
| | +CME ERROR: <err> |
| Read Command | Responses |
| AT+CSOCKAUTH? | +CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> ... OK |
| | ERROR |
| | +CME ERROR: <err> |
| Write Command | Responses |
| AT+CSOCKAUTH=<cid>[,<auth_type>[,<passwd>[,<user>]]] | OK ERROR +CME ERROR: <err> |
| Execution Command | Responses |
| AT+CSOCKAUTH | OK ERROR +CME ERROR: <err> |

Defined values

<cid>

Parameter specifies a particular PDP context definition. This is also used in other PDP context-related commands.

1...16

<auth_type>

Indicate the type of authentication to be used for the specified context. If CHAP is selected another parameter <passwd> needs to be specified. If PAP option is selected, two additional parameters, <passwd> and <user>, need to be specified.

- 0 – none
- 1 – PAP
- 2 – CHAP
- 3 – PAP or CHAP

<passwd>

Parameter specifies the password used for authentication.

<user>

Parameter specifies the user name used for authentication.

<passwd_len>

The maximum length of the password.

<user_len>

The maximum length of the user name.

Examples

```
AT+CSOCKAUTH=?
+CSOCKAUTH: (1-16),(0-3), ,
OK
AT+CSOCKAUTH=1,2, "123", "SIMCOM"
OK
```

16.4 AT+CGSOCKQREQ Quality of service profile (requested)

Description

This command allows the TE to specify a Quality of Service Profile that is used when the MT sends an Activate PDP Context Request message to the network. A special form of the set command (AT+CGSOCKQREQ=<cid>) causes the requested profile for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to AT+CGSOCKCONT).

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

Test Command

Responses

| | | |
|---|---|--|
| | AT+CGSOCKQREQ=? | +CGSOCKQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGSOCKQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [...]] OK |
| | | ERROR |
| Read Command | Responses | |
| AT+CGSOCKQREQ? | +CGSOCKQREQ: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>[<CR><LF> +CGSOCKQREQ: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>[...]] OK | |
| | ERROR | |
| Write Command | Responses | |
| AT+CGSOCKQREQ=<cid> [,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]] | OK ERROR | |
| Execution Command | Responses | |
| AT+CGSOCKQREQ | OK ERROR | |

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT command](#)).
1...16

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6(reserved)

IPV4V6 Dual PDN Stack (reserved)

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value

1 – high priority

2 – normal priority

3 – low priority

<delay>

A numeric parameter which specifies the delay class:

- 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)
+CGSOCKQREQ: "IPV4V6",(0-3),(0-4),(0-5),(0-9),(0-18,31)

OK
  
```

16.5 AT+CGSOCKEQREQ 3G quality of service profile (requested)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allows the TE to specify a Quality of Service Profile for the context identified by the context identification parameter <cid> which is used when the MT sends an Activate PDP Context Request message to the network.

A special form of the write command, **AT+CGSOCKEQREQ=<cid>** causes the requested profile for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to [AT+CGSOCKCONT](#)).

SIM PIN References

YES Vendor

Syntax

Test Command

Responses

| | |
|---|---|
| AT+CGSOCKEQREQ=? | <p>+CGSOCKEQREQ: <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) [<CR><LF>]</p> <p>+CGSOCKEQREQ: <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) [...]]</p> <p>OK</p> |
| Read Command | Responses |
| AT+CGSOCKEQREQ? | <p>+CGSOCKEQREQ: [<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>]</p> <p>+CGSOCKEQREQ: <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>[...]]</p> <p>OK</p> |
| Write Command | Responses |
| AT+CGSOCKEQREQ=<cid>,[<Traffic class>],[<Maximum bitrate UL>],[<Maximum bitrate DL>][<Guarantee | OK |

| | |
|--|---|
| <code>d bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery ord er>[,<Maximum SDU size> [,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of e rroneous SDUs>[,<Transfer delay>[,<Traffic handling p riority>]]]]]]]]]]]]]</code> | ERROR <code>+CME ERROR: <err></code> |
| Execution Command <code>AT+CGSOCKEQREQ</code> | Responses <code>OK</code> |

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.

- | | | |
|-------------|---|--|
| <u>0</u> | – | subscribed value |
| 10...150 | – | value needs to be divisible by 10 without remainder |
| 200...950 | – | value needs to be divisible by 50 without remainder |
| 1000...4000 | – | value needs to be divisible by 100 without remainder |

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

- 0 – subscribed value
- 1 –
- 2 –
- 3 –

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6(reserved)
- IPV4V6 Dual PDN Stack (reserved)

Examples

```
AT+CGSOCKEQREQ?  

+CGSOCKEQREQ:  

OK  

AT+CGSOCKEQREQ =?  

+CGSOCKEQREQ:"IP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1"  

, "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1  

E6", "6E8"), (0-3), (0,100-4000), (0-3)  

+CGSOCKEQREQ:"PPP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E
```

```

1","1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4","1E5",
1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQREQ:"IPV6", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1
E1", "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5"
, "1E6", "6E8"), (0-3), (0,100-4000), (0-3)
+CGSOCKEQREQ:"IPV4V6", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0",
"1E1", "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E
5", "1E6", "6E8"), (0-3), (0,100-4000), (0-3)

```

OK

16.6 AT+CGSOCKQMIN Quality of service profile (minimum acceptable)

Description

This command allows the TE to specify a minimum acceptable profile which is checked by the MT against the negotiated profile returned in the Activate PDP Context Accept message. A special form of the set command, **AT+CGSOCKQMIN=<cid>** causes the minimum acceptable profile for context number **<cid>** to become undefined.

This command only affects the embedded socket related PDP context definition (refer to **AT+CGSOCKCONT**).

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-----------------|---|
| AT+CGSOCKQMIN=? | +CGSOCKQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGSOCKQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s)[...]] OK |
| | ERROR |
| Read Command | Responses |
| AT+CGSOCKQMIN? | +CGSOCKQMIN: [<cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>][<CR><LF> +CGSOCKQMIN: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean> |

| | |
|--|---------------|
| | [...]]] OK |
| | ERROR |
| Write Command | Responses |
| AT+CGSOCKQMIN= <cid>[,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]] | OK ERROR |
| Execution Command | Responses |
| AT+CGSOCKQMIN | OK |

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6(reserved)

IPV4V6 Dual PDN Stack(reserved)

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value

1 – high priority

2 – normal priority

3 – low priority

<delay>

A numeric parameter which specifies the delay class:

0 – network subscribed value

1 – delay class 1

2 – delay class 2

3 – delay class 3

4 – delay class 4

<reliability>

A numeric parameter which specifies the reliability class:

0 – network subscribed value

1 – Non real-time traffic,error-sensitive application that cannot cope with data loss

2 – Non real-time traffic,error-sensitive application that can cope with infrequent data loss

3 – Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-

SM, and SMS

- 4 – Real-time traffic, error-sensitive application that can cope with data loss
- 5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

- 0 – network subscribed value
- 1 – Up to 1000 (8 kbit/s)
- 2 – Up to 2000 (16 kbit/s)
- 3 – Up to 4000 (32 kbit/s)
- 4 – Up to 8000 (64 kbit/s)
- 5 – Up to 16000 (128 kbit/s)
- 6 – Up to 32000 (256 kbit/s)
- 7 – Up to 64000 (512 kbit/s)
- 8 – Up to 128000 (1024 kbit/s)
- 9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

- 0 – network subscribed value
- 1 – 100 (~0.22 bit/s)
- 2 – 200 (~0.44 bit/s)
- 3 – 500 (~1.11 bit/s)
- 4 – 1000 (~2.2 bit/s)
- 5 – 2000 (~4.4 bit/s)
- 6 – 5000 (~11.1 bit/s)
- 7 – 10000 (~22 bit/s)
- 8 – 20000 (~44 bit/s)
- 9 – 50000 (~111 bit/s)
- 10 – 100000 (~0.22 kbit/s)
- 11 – 200000 (~0.44 kbit/s)
- 12 – 500000 (~1.11 kbit/s)
- 13 – 1000000 (~2.2 kbit/s)
- 14 – 2000000 (~4.4 kbit/s)
- 15 – 5000000 (~11.1 kbit/s)
- 16 – 10000000 (~22 kbit/s)
- 17 – 20000000 (~44 kbit/s)
- 18 – 50000000 (~111 kbit/s)
- 31 – optimization

Examples

AT+CGSOCKQMIN?

+CGSOCKQMIN:

OK

AT+CGSOCKQMIN=?
+CGSOCKQMIN: "IP", (0-3), (0-4), (0-5), (0-9), (0-18, 31)
+CGSOCKQMIN: "PPP", (0-3), (0-4), (0-5), (0-9), (0-18, 31)
+CGSOCKQMIN: "IPV6", (0-3), (0-4), (0-5), (0-9), (0-18, 31)
+CGSOCKQMIN: "IPV4V6", (0-3), (0-4), (0-5), (0-9), (0-18, 31)

OK

16.7 AT+CGSOCKEQMIN 3G quality of service profile (minimum acceptable)

Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allow the TE to specify a Quality of Service Profile for the context identified by the context identification parameter <cid> which is checked by the MT against the negotiated profile returned in the Activate/Modify PDP Context Accept message.

A special form of the write command, `AT+CGSOCKEQMIN=<cid>` causes the requested for context number `<cid>` to become undefined.

This command only affects the embedded socket related PDP context definition (refer to [AT+CGSOCKCONT](#)).

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------|---|
| AT+CGSOCKEQMIN=? | +CGSOCKEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <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) [<CR><LF> |
| | +CGSOCKEQMIN: <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 |

| | |
|--|---|
| | <p><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) [...]]</p> <p>OK</p> |
| Read Command | Responses |
| AT+CGSOCKEQMIN? | <p>+CGSOCKEQMIN: [<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></p> <p>+CGSOCKEQMIN: [<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>[...]]</p> <p>OK</p> |
| Write Command | Responses |
| AT+CGSOCKEQMIN=<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>]]]]]]]]]]]]] | <p>OK</p> <p>ERROR</p> <p>+CME ERROR: <err></p> |
| 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 kbit/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 kbit/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 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+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 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+CGSOCKEQMIN=...,32,...**). (refer to TS 24.008 [8] subclause 10.5.6.5).

0 – subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 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. (refer to TS 24.008 [8] subclause 10.5.6.5).

- 0 – subscribed value
- 10...1520 (value needs to be divisible by 10 without remainder)

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic. As an example a target SDU error ratio of 5×10^{-3} would be specified as "5E3"(e.g.[AT+CGSOCKEQMIN=..,"5E3",..\).](#)

- "0E0" – subscribed value
- "1E2"
- "7E3"
- "1E3"
- "1E4"
- "1E5"
- "1E6"
- "1E1"

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested, Residual bit error ratio indicates the bit error ratio in the delivered SDUs. As an example a target residual bit error ratio of 5×10^{-3} would be specified as "5E3"(e.g. [AT+CGSOCKEQMIN =...,,"5E3",..\).](#)

- "0E0" – subscribed value
- "5E2"
- "1E2"
- "5E3"
- "4E3"
- "1E3"
- "1E4"
- "1E5"
- "1E6"
- "6E8"

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

- 0 – no
- 1 – yes
- 2 – no detect
- 3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP,in milliseconds. (refer TS 24.008 [8] subclause 10.5.6.5).

- 0 – subscribed value
- 10...150 – value needs to be divisible by 10 without remainder
- 200...950 – value needs to be divisible by 50 without remainder
- 1000...4000 – value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

- 0 – subscribed value
- 1 –
- 2 –
- 3 –

<PDP_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6(reserved)
- IPV4V6 Dual PDN Stack(reserved)

Examples

```
AT+CGSOCKEQMIN?
```

```
+CGSOCKEQMIN:
```

```
OK
```

```
AT+CGSOCKEQMIN=?
```

```
+CGSOCKEQMIN:"IP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6", "6E8"), (0-3), (0,100-4000), (0-3)
```

```
+CGSOCKEQMIN:"PPP", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "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), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6", "6E8"), (0-3), (0,100-4000), (0-3)
```

```
+CGSOCKEQMIN:"IPV4V6", (0-4), (0-5760), (0-14000), (0-5760), (0-14000), (0-2), (0-1520), ("0E0", "1E1", "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4", "1E5", "1E6", "6E8"), (0-3), (0,100-4000), (0-3)
```

```
OK
```

16.8 AT+IPADDR Inquire socket PDP address

Description

This command inquires the IP address of current active socket PDP.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------|-------------------------------|
| AT+IPADDR=? | OK |
| Execution Command | Responses |
| AT+IPADDR | +IPADDR:<ip_address> OK |
| | +IP ERROR:<err_info> ERROR |
| | ERROR |

Defined values

<ip_address>

A string parameter that identifies the IP address of current active socket PDP.

<err_info>

A string parameter that displays the cause of occurring error.

Examples

```
AT+IPADDR
+IPADDR: 10.71.155.118
OK
```

16.9 AT+CIPFILTERSET IP filter configuration

Description

This command is used to enable the IP filter feature in the multi-PDP mode. The IP filter is a feature which to support embedded TCP/IP protocol applications while the mobile device is in a PPP call.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CIPFILTERSET=? | +CIPFILTERSET: (0-9),(0,1) OK ERROR |
| Read Command | Responses |
| AT+CIPFILTERSET? | +CIPFILTERSET: <enabled_flag> +CIPFILTERSET: 0,<enabled_flag> +CIPFILTERSET: 1,<enabled_flag> ... OK |
| Write Command | Responses |
| AT+CIPFILTERSET=<link_num>,<enabled_flag> Or AT+CIPFILTERSET=<enabled_flag> | OK If ERROR occurred +IP ERROR: <error message> ERROR |

Defined values

<link_num>

A numeric parameter that identifies a connection. The range of permitted values is 0 to 9. This parameter is used for multi clients.

<enabled_flag>

A numeric flag parameter that show the <link_num> connection whether or not to use the IP filter feature. The default value is 0.

0: disable the IP filter feature.

1: enable the IP filter feature.

NOTE:

1. The execution command must be executed before opening network.
2. If you want to use the PPP dial and socket data at the same time, set the IP filter flag enabled. In this usage, the PPP dial operation must be executed before the socket command.

Examples

```
AT+CIPFILTERSET=?
+CIPFILTERSET: (0-9),(0,1)
```

OK

```
AT+CIPFILTERSET=0,1
```

OK

AT+CIPFILTERSET =1

OK

AT+CIPFILTERSET?

+CIPFILTERSET: 1
+CIPFILTERSET: 0,1
+CIPFILTERSET: 1,0
+CIPFILTERSET: 2,0
+CIPFILTERSET: 3,0
+CIPFILTERSET: 4,0
+CIPFILTERSET: 5,0
+CIPFILTERSET: 6,0
+CIPFILTERSET: 7,0
+CIPFILTERSET: 8,0
+CIPFILTERSET: 9,0

OK

16.10 AT+CSETDNSSRV Set the DNS servers' IP address

Description

This command is used to set the DNS servers' IP address.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CSETDNSSRV=? | +CSETDNSSRV: "a.b.c.d", "a.b.c.d" OK ERROR |
| Read Command | Responses |
| AT+CSETDNSSRV? | +CSETDNSSRV: "a.b.c.d", "a.b.c.d" OK |
| Execution Command | Responses |
| AT+CSETDNSSRV =<prim_addr>[,<sec_addr>] | OK If ERROR occurred +IP ERROR: <error message> ERROR |

Defined values

| | |
|---------------|---|
| < prim_addr > | A string parameter that identifies the primary DNS server IP address. |
| < sec_addr > | A string parameter that identifies the second DNS server IP address. |

Examples

```
AT+CSETDNSSRV=?
+CSETDNSSRV: "a.b.c.d","a.b.c.d"

OK
AT+ CSETDNSSRV="210.22.70.3","211.95.1.97"
OK
AT+ CSETDNSSRV?
+ CSETDNSSRV: "210.22.70.3","211.95.1.97"

OK
```

16.11 AT+NETOPEN Open socket

Description

This command opens packet network,

NOTE: The test command of AT+NETOPEN is reserved for being compatible with old TCP/IP command set, and the old TCP/IP command set is not recommended to be used any longer.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Read Command | Responses |
|-------------------|---|
| AT+NETOPEN? | +NETOPEN:<net_state>, <mode> OK ERROR +CME ERROR: <err> |
| Execution Command | Responses |
| AT+NETOPEN | OK +NETOPEN: <err> +NETOPEN: <err> OK +NETOPEN: <err> |

| | |
|--|-------|
| | ERROR |
| | ERROR |

Defined values

<net_state>

a numeric parameter that indicates the state of PDP context activation:

- 0 network close (deactivated)
- 1 network open(activated)

<err >

The result of operation, 0 is success, other value is failure.

<mode >

This value is legacy.

Examples

AT+NETOPEN

OK

+NETOPEN: 0

AT+NETOPEN?

+NETOPEN: 1

OK

16.12 AT+NETCLOSE Close socket

Description

This command closes network. Before calling this command, all opened sockets must be closed first.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|-------------------|--|
| AT+NETCLOSE=? | OK |
| Execution Command | Responses |
| AT+NETCLOSE | OK <i>+NETCLOSE: <err></i> <i>+NETCLOSE: <err></i> OK <i>+NETCLOSE: <err></i> ERROR |

ERROR

Defined values

<err>

The result of operation, 0 is success, other value is failure.

Examples

AT+NETCLOSE

OK

+NETCLOSE: 0

16.13 AT+SERVERSTART Startup TCP server

Description

This command starts up TCP server, and the server can receive the request of TCP client. After the command executes successfully, an unsolicited result code is returned when a client tries to connect with module and module accepts request. The unsolicited result code is +CLIENT: <link_num>,<server_index>,<client_IP>:<port>.

SIM PIN References

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|------------------|---|
| AT+SERVERSTART=? | OK +SERVERSTART: (list of supported <port>), (list of supported <server_index>) OK ERROR |
| Read Command | Responses |
| AT+SERVERSTART? | [+SERVERSTART: <server_index>,<port> ...] OK +CIPERROR: <err> ERROR |

| Write Command | Responses |
|-----------------------|------------------|
| AT+SERVERSTART=<port> | OK |
| >,<server_index> | +CIPERROR: <err> |
| | ERROR |
| | ERROR |

Defined values

<server_index>

The TCP server index (The range of permitted values is 0 to 3).

<err>

The result of operation, 0 is success, other value is failure.

Examples

```
AT+SERVERSTART
OK
AT+SERVERSTART?
+SERVERSTART: 0, 1000
+SERVERSTART: 2, 2000

OK
```

16.14 AT+SERVERSTOP Stop TCP server

Description

This command stops TCP server. Before stopping a TCP server, all sockets with <server_index> equals to the closing TCP server index must be closed first.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------------------|-----------------------------------|
| AT+SERVERSTOP =? | OK |
| | ERROR |
| Execution Command | Responses |
| AT+SERVERSTOP=<server_index> | +SERVERSTOP: <server_index>,<err> |
| | OK |
| | OK |

| | |
|--|-----------------------------------|
| | +SERVERSTOP: <server_index>,<err> |
| | +SERVERSTOP: <server_index>,<err> |
| | ERROR |
| | ERROR |

Defined values

<server_index>

The TCP server index.

<err>

The result of operation, 0 is success, other value is failure.

Examples

```
AT+SERVERSTOP=?
OK
AT+SERVERSTOP=0
+SERVERSTOP: 0, 0
OK
AT+SERVERSTART?
+SERVERSTART: 0, LISTENING
+SERVERSTART: 1, NOT LISTENING
OK
AT+SERVERSTART
OK
```

16.15 AT+CIPHEAD Add an IP head when receiving data

Description

This command is used to add an IP head when receiving data.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|--------------|--|
| AT+CIPHEAD=? | +CIPHEAD: (list of supported<mode>s) OK |
| Read Command | Responses |
| AT+CIPHEAD? | +CIPHEAD: <mode> OK |

| | |
|-------------------|---------------------------------|
| AT+CIPHEAD=<mode> | OK |
| | ERROR |
| Execution Command | Responses |
| AT+CIPHEAD | <i>Set default value:</i> 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

16.16 AT+CIPSRIP Show Remote IP address and Port

Description

This command is used to set whether display IP address and port of sender when receiving data.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CIPSRIP=? | +CIPSRIP: (list of supported <mode>s) OK |
| Read Command | Responses |
| AT+CIPSRIP? | +CIPSRIP: <mode> OK |
| Write Command | Responses |
| AT+CIPSRIP=<mode> | OK ERROR |
| Execution Command | Responses |
| AT+CIPSRIP | <i>Set default value:</i> |

OK

Defined values

<mode>

a numeric parameter which indicates whether show the prompt or where the data received or not before received data.

0 – do not show the prompt

1 – show the prompt, the format is as follows:

“RECV FROM:<IP ADDRESS>:<PORT>”

Examples

`AT+CIPSRIP=?`

`+CIPSRIP: (0-1)`

`OK`

`AT+CIPSRIP=1`

`OK`

16.17 AT+CIPCCFG Configure parameters of socket

Description

This command is used to configure parameters of socket. For the write command, the parameter part cannot be empty.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| <code>AT+CIPCCFG=?</code> | <code>+CIPCCFG: (list of supported <NmRetry>s),(list of supported <DelayTm>s), (list of supported <Ack>s), (list of supported <errMode>s),(list of supported <HeaderType>s), (list of supported < AsyncMode >s), (list of supported <TimeoutVal>s)</code> <code>OK</code> |
| Read Command | Responses |
| <code>AT+CIPCCFG?</code> | <code>+CIPCCFG:<NmRetry>,<DelayTm>,<Ack>,<errMode>,<HeaderType>,< AsyncMode >,<TimeoutVal></code> <code>OK</code> |
| Write Command | Responses |
| <code>AT+CIPCCFG=</code> [<NmRetry>],[<DelayTm>] | <code>OK</code> <code>ERROR</code> |

| | |
|--|---------------------------------|
| [,[<Ack>][,[<errMode>][,]<HeaderType>][,[[<AsyncMode>][,[<TimeoutVal>]]]]]]] | |
| Execution Command | Responses |
| AT+CIPCCFG | <i>Set default value:</i> OK |

Defined values

<NmRetry>

a numeric parameter which is number of retransmission to be made for an IP packet. The default value is 10.

<DelayTm>

a numeric parameter which is number of milliseconds to delay to output data of Receiving. The default value is 0.

<Ack>

NOTE: This parameter is legacy and only used to be compatible with old TCP/IP command set.

<errMode>

a numeric parameter which sets mode of reporting error result code.

0 error result code with numeric values

1 error result code with string values

<HeaderType>

a numeric parameter that select which data header of receiving data, it only takes effect in multi-client mode.

0 add data header, the format is “+IPD<data length>”

1 add data header, the format is “+RECEIVE,<link num>,<data length>”

< AsyncMode >

NOTE: This parameter is legacy and only used to be compatible with old TCP/IP command set.

< TimeoutVal >

a numeric parameter that set the minimum retransmission timeout value for TCP connection. The unit is millisecond. The range is 500-120000.

Examples

AT+CIPCCFG=?

+CIPCCFG: (0-10),(0-1000),(0),(0-1),(0-1),(0),(500-120000)

OK

AT+CIPCCFG=3,500,0,1,1,0,500

OK

16.18 AT+CIPTIMEOUT Set TCP/IP timeout value

Description

This command is used to set timeout value for AT+NETOPEN/AT+CIPOEN/AT+CIPSEND.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CIPTIMEOUT=? | OK |
| Read Command | Responses |
| AT+CIPTIMEOUT? | +CIPTIMEOUT: <netopen_timeout>, <cipopen_timeout>, <cipsend_timeout> |
| | OK |
| Write Command | Responses |
| AT+CIPTIMEOUT=[<n etopen_timeout>][, <cipopen_timeout>][, <cipsend_timeout>]]] | OK ERROR |

Defined values

<netopen_timeout>

Timeout value for AT+NETOPEN, default value is 120000 milliseconds. The range of this value is from 3000ms to 120000ms.

<cipopen_timeout>

Timeout value for AT+CIPOEN, default value is 120000 milliseconds. The range of this value is from 3000ms to 120000ms.

<cipsend_timeout>

Timeout value for AT+CIPSEND, default value is 120000 milliseconds. The range of this value is from 3000ms to 120000ms.

Examples

```
AT+CIPTIMEOUT?  
+CIPTIMEOUT: 30000,20000,40000
```

OK

```
AT+CIPTIMEOUT=30000,20000,40000
```

OK

16.19 AT+CIPSENDMODE Select sending mode

Description

This command is used to sending wait peer TCP ACK mode or sending without waiting peer TCP ACK mode. The default mode is sending without waiting peer TCP ACK mode.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-----------------------|---|
| AT+CIPSENDMODE=? | +CIPSENDMODE: (list of supported <mode>s) OK |
| Read Command | Responses |
| AT+CIPSENDMODE? | +CIPSENDMODE: <mode> OK |
| Write Command | Responses |
| AT+CIPSENDMODE=<mode> | OK ERROR |

Defined values

| <mode> |
|---|
| 0 – sending without waiting peer TCP ACK mode |
| 1 – sending wait peer TCP ACK mode |

Examples

| |
|---------------------|
| AT+CIPSENDMODE? |
| +CIPSENDMODE: 1 |
| OK |
| AT+CIPSENDMODE=1 |
| OK |
| AT+CIPSENDMODE=? |
| +CIPSENDMODE: (0,1) |
| OK |

16.20 AT+CIOPEN Establish connection in multi-socket mode

Description

This command is used to establish a connection with TCP server and UDP server, The sum of

all of connections are 10.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CIPOEN=? | +CIPOEN: (list of supported <link_num>s), (list of supported <type>s) OK ERROR |
| Read Command | Responses |
| AT+CIPOEN? | +CIPOEN: <link_num> [<type>,<serverIP>,<serverPort>,<index>] +CIPOEN: <link_num> [<type>,<serverIP>,<serverPort>,<index>] [...] OK <i>IF connection not opened in single-client mode</i> +IP ERROR: <err_info> ERROR ERROR |
| Write Command | Responses |
| AT+CIPOEN=<link_num>,"TCP",<serverIP>,<serverPort>[,<localPort>] | OK +CIPOEN: <link_num>,<err> <i>Open connection successfully in transparent mode:</i> CONNECT<text> <i>Open connection failed in transparent mode:</i> CONNECT FAIL +CIPOEN: <link_num>,<err> ERROR ERROR |
| AT+CIPOEN=<link_num>,"UDP",,<localPort> | +CIPOEN: <link_num>,<err> OK(<i>if udp open</i>) +CIPOEN: <link_num>,<err> ERROR ERROR |

Defined values

<link_num>

a numeric parameter that identifies a connection. The range of permitted values is 0 to 9. If AT+CIPMODE=1 is set, the <link_num> is restricted to be only 0.

<type>

a string parameter that identifies the type of transmission protocol.

TCP Transfer Control Protocol

UDP User Datagram Protocol

If AT+CIPMODE=1 is set, the <type> is restricted to be only “TCP”.

<serverIP>

A string parameter that identifies the IP address of server. The IP address format consists of 4 octets, separated by decimal point: "AAA.BBB.CCC.DDD". In the latest software version, it already supports DNS query, so it may be a string like "www.google.com".

<serverPort>

a numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535.

NOTE: When open port as TCP, the port must be the opened TCP port;

When open port as UDP, the port may be any port.

But, for Qualcomm, connecting the port 0 is as an invalid operation.

<localPort>

a numeric parameter that identifies the port of local socket, the range of permitted values is 0 to 65535.

<index>

a numeric parameter that identifies the server index that the client linked when as a TCP server.

-1 Not as a TCP server

0-3 TCP server index

<text>

CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.

<err>

The result of operation, 0 is success, other value is failure.

<err_info>

A string parameter that displays the cause of occurring error.

Examples

```
AT+CIPOEN=0, "TCP", "116.228.221.51", 100
```

OK

```
+CIPOEN: 0,0
```

```
AT+CIPOEN=1, "UDP",,,8080
```

```
+CIPOEN: 0,0
```

OK

```
AT+CIPOEN=?
```

```
+CIPOEN: (0-9), ("TCP", "UDP")
```

OK

```

AT+CIPOEN?
+CIPOEN: 0, "TCP", "116.228.221.51", 100, -1
+CIPOEN: 1
+CIPOEN: 2
+CIPOEN: 3
+CIPOEN: 4
+CIPOEN: 5
+CIPOEN: 6
+CIPOEN: 7
+CIPOEN: 8
+CIPOEN: 9
OK
  
```

16.21 AT+CIPSEND Send data through TCP or UDP connection

Description

This command is used to send data to remote side. The <length> field can be empty, when it is empty, Each <Ctrl+Z> character present in the data should be coded as <ETX><Ctrl+Z>. Each <ESC> character present in the data should be coded as <ETX><ESC>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the input data. Single <ESC> is used to cancel the sending.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A, <ESC> is 0x1B.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CIPSEND=? | +CIPSEND: (list of supported <link_num>s), (list of supported <length>s) OK |
| | +CIPERROR: <err> ERROR |
| | ERROR |
| Read Command | Responses |
| AT+CIPSEND? | OK |
| | ERROR |
| Write Command | Responses |
| AT+CIPSEND=<link_num>, <length><CR> <i>data for send</i> | OK +CIPSEND: <link_num>, <reqSendLength>, <cnfSendLength> |

| | |
|---|--|
| (This format is for TCP connect) | +CIPERROR: <err> ERROR ERROR |
| AT+CIPSEND=<link_num>, <length>,<serverIP>,<server Port><CR> <i>data for send</i> | <i>If sending successfully(udp sending):</i> OK +CIPSEND: <link_num>,<reqSendLength>,<cnfSendLength> +CIPERROR: <err> ERROR ERROR |
| (This format is for UDP connect) | |

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 between 1 and 1500.

<serverIP>

A string parameter that identifies the IP address of server. The IP address format consists of 4 octets, separated by decimal point: "AAA.BBB.CCC.DDD".

<serverPort>

a numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535.

NOTE: When open port as TCP, the port must be the opened TCP port;

When open port as UDP, the port may be any port.

But, for Qualcomm, connecting the port 0 is as an invalid operation.

<reqSendLength>

a numeric parameter that requested number of data bytes to be transmitted.

<cnfSendLength>

a numeric parameter that confirmed number of data bytes to be transmitted.

-1 the connection is disconnected.

0 own send buffer or other side's congestion window are full.

Note: If the <cnfSendLength> is not equal to the <reqSendLength>, the socket then cannot be used, and should be closed.

<err_info>

A string parameter that displays the cause of occurring error.

Examples

AT+CIPSEND=0,1

> S

OK

```
+CIPSEND: 0, 1, I
AT+CIPSEND=1,1,"116.236.221.75",6775
> S
OK

+CIPSEND: 1, 1, I
AT+CIPSEND=?
+CIPSEND: (0-9), (1-1500)
OK
```

16.22 AT+CIPCLOSE Close TCP or UDP socket

Description

This command is used to close TCP or UDP socket.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------------|---|
| AT+CIPCLOSE=? | +CIPCLOSE: (list of supported <link_num>s) OK |
| Read Command | Responses |
| AT+CIPCLOSE? | +CIPCLOSE:<link0_state>,<link1_state>,<link2_state>, <link3_state>,<link4_state>,<link5_state>,<link6_state>, <link7_state>,<link8_state>,<link9_state> OK +CIPCLOSE: <link_num>,<err> ERROR <i>If not multi client:</i> +IP ERROR: <err_info> ERROR ERROR |
| Write Command | Responses |
| AT+CIPCLOSE= <link_num> | OK +CIPCLOSE: <link_num>,<err> +CIPCLOSE: <link_num>,<err> OK +CIPCLOSE: <link_num>,<err> |

ERROR

ERROR

Defined values

`<link_num>`

a numeric parameter that identifies a connection. The range of permitted values is 0 to 9.

`<linkx_state>`

a numeric parameter that identifies state of `<link_num>`. the range of permitted values is 0 to 1.

0 disconnected

1 connected

`<err_info>`

A string parameter that displays the cause of occurring error.

Examples

`AT+CIPCLOSE?`

`+CIPCLOSE: 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0`

`OK`

`AT+CIPCLOSE=?`

`+CIPCLOSE: (0-9)`

`OK`

`AT+CIPCLOSE=0`

`OK`

`+CIPCLOSE: 0,0`

16.23 AT+CDNSGIP Query the IP address of given domain

name

Description

This command is used to query the IP address of given domain name.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|--------------|-----------|
|--------------|-----------|

`AT+CDNSGIP=?` OK

| Write Command | Responses |
|---------------|-----------|
|---------------|-----------|

`AT+CDNSGIP=<domain>` *If successful, return:*

| | |
|---------------------------|--|
| <code><name></code> | +CDNSGIP: 1,<domain name>,<IP address> OK |
| | <i>If fail, return:</i> |
| | +CDNSGIP: 0,<dns error code> ERROR |
| | ERROR |

Defined values

`<domain name>`

A string parameter (string should be included in quotation marks) which indicates the domain name.

`<IP address>`

A string parameter (string should be included in quotation marks) which indicates the IP address corresponding to the domain name.

`<dns error code>`

A numeric parameter which indicates the error code.

10 DNS GENERAL ERROR

Examples

```
AT+CDNSGIP=?  
OK  
AT+CDNSGIP="www.google.com"  
+CDNSGIP: 1,"www.google.com","203.208.39.99"  
OK
```

16.24 AT+CDNSGHNAME Query the domain name of given IP

address

Description

This command is used to query the domain name of given IP address.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-----------------|-----------|
| AT+CDNSGHNAME=? | OK |
| Write Command | Responses |

| | |
|----------------------------|--|
| AT+CDNSGHNAME=<IP address> | <i>If successful, return:</i> +CDNSGHNAME: <index>,<domain name>,<IP address> OK |
| | <i>If fail, return:</i> +CDNSGHNAME: 0,<dns error code> ERROR ERROR |

Defined values

<domain name>

A string parameter (string should be included in quotation marks) which indicates the domain name.

<IP address>

A string parameter (string should be included in quotation marks) which indicates the IP address corresponding to the domain name.

<dns error code>

A numeric parameter which indicates the error code.

10 DNS GENERAL ERROR

<index>

A numeric parameter which indicates DNS result index. This value is always 1 if performing successfully. Currently only the first record returned from the DNS server will be reported.

Examples

```
AT+CDNSGHNAME=?  
OK  
AT+CDNSGHNAME="58.32.231.148"  
+CDNSGHNAME: 1,"mail.sim.com","58.32.231.148"  
OK
```

16.25 AT+CIPMODE Select TCPIP application mode

Description

This command is used to select transparent mode (data mode) or non-transparent mode (command mode). The default mode is non-transparent mode.

SIM PIN References

NO Vendor

Syntax

| | |
|-------------------|---|
| Test Command | Responses |
| AT+CIPMODE=? | +CIPMODE: (list of supported <mode>s) OK |
| Read Command | Responses |
| AT+CIPMODE? | +CIPMODE: <mode> OK |
| Write Command | Responses |
| AT+CIPMODE=<mode> | OK ERROR |
| Execution Command | Responses |
| AT+CIPMODE | <i>Set default value (<mode>=0) :</i> OK |

Defined values

| |
|--------------------------|
| <mode> |
| 0 – Non transparent mode |
| 1 – Transparent mode |

Examples

AT+CIPMODE?

+CIPMODE: 1

OK

AT+CIPMODE=1

OK

AT+CIPMODE=?

+CIPMODE: (0-1)

OK

AT+CIPMODE

OK

16.26 AT+CIPSTAT Inquire the total size of data sent or received

Description

This command is used to inquire the total size of data sent or received for a socket in multiple socket modes (Only valid for client TCP socket mode).

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|-----------------------|---|
| AT+CIPSTAT=? | +CIPSTAT: (list of supported <link_num>s) OK |
| Write Command | Responses |
| AT+CIPSTAT=<link_num> | +CIPSTAT: <sent_size>, <recv_size> OK |
| | +IP ERROR: <err_info> ERROR |

Defined values

< link_num >

a numeric parameter that identifies a connection. The range of permitted values is 0 to 9.

<sent_size >

Total size of sent data.

<recv_size >

Total size of received data.

<err_info >

A string parameter that displays the cause of occurring error.

Examples

AT+CIPSTAT=0

+CIPSTAT: 10, 20

OK

AT+CIPSTAT=?

+CIPSTAT: (0-9)

OK

16.27 AT+CTCPFIN Configure TCP FIN

Description

This command is used to configure whether the module should wait for TCP_FIN in TCP_WAIT2 state.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|--|--|
| AT+CTCPFIN=? | +CTCPFIN: (list of supported <TCP_FIN_Enable>s),(list of supported <DelayTm>s) |
| | OK |
| Read Command | Responses |
| AT+CTCPFIN? | +CTCPFIN:<TCP_FIN_Enable>,<DelayTm> OK |
| Write Command | Responses |
| AT+CTCPFIN= <TCP_FIN_Enable>,<DelayTm> | OK ERROR |

Defined values

< TCP_FIN_Enable >

a numeric parameter which sets whether waiting for TCP_FIN in TCP_WAIT2 state.

0 not waiting

1 waiting

<DelayTm>

a numeric parameter which is number of seconds to delay before closing the PS network. This parameter only affects the AT+NETCLOSE command when using single TCP/UDP mode. The range is 0 to 10.

Examples

```
AT+CTCPFIN=?  
+CTCPFIN: (0,1),(0-10)  
OK  
AT+CTCPFIN=1,2  
OK
```

16.28 AT+CENDUPPDP Duplicate PDP activation

Description

This command is used to enable or disable duplicate PDPs activation with the same APN.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|-------------------------------|---|
| AT+CENDUPPDP=? | +CENDUPPDP: (list of supported <DUP_PDP_Enable>s) |
| | OK |
| Read Command | Responses |
| AT+CENDUPPDP? | +CENDUPPDP:<DUP_PDP_Enable> |
| | OK |
| Write Command | Responses |
| AT+CENDUPPDP=<DUP_PDP_Enable> | OK |
| | ERROR |

Defined values

<DUP_PDP_Enable>

a numeric parameter which sets whether enable duplicate PDPs activation with the same APN.

- 0 disable
- 1 enable

Examples

```
AT+CENDUPPDP=?
+CENDUPPDP: (0,1)
OK
AT+CENDUPPDP=1
OK
```

16.29 AT+CTCPKA Configure TCP heartbeat

Description

This command is used to set TCP heartbeat parameters..

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------|---|
| AT+CTCPKA=? | +CTCPKA: (list of supported <TCP_KA_Enable>s),(list of supported <KeepIdleTm>s) ,(list of supported <KeepAliveMaxTry>s) |

| | |
|--|--|
| Read Command | Responses |
| AT+CTCPKA? | +CTCPKA:<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry> OK |
| Write Command | Responses |
| AT+CTCPKA=<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry> | OK ERROR |

Defined values

< TCP_KA_Enable >

a numeric parameter which sets whether enable TCP heartbeat function or not.

- 0 disable
- 1 enable

<KeepIdleTm>

a numeric parameter which is number of minutes to delay after last time of sending TCP data. The range is 1 to 120.

<KeepAliveMaxTry>

Maximum times for sending Keep-Alive checking. The range is 1 to 10.

Examples

```
AT+CTCPKA=?  
+CTCPKA: (0,1),(1-120),(1-10)  
OK  
AT+CTCPKA=1,3,3  
OK
```

16.30 AT+CPING Ping destination address

Description

This command is used to ping destination address.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|--------------|---|
| Test Command | Responses |
| AT+CPING=? | +CPING:IP address, (list of supported <dest_addr_type>s), (1-100), (4-188), |

| | |
|---|--|
| | (1000-10000),(10000-100000), (16-255) |
| | OK |
| Write Command | Responses |
| AT+CPING=<dest_addr>,<dest_ad dr_type> | OK |
| [,<num_pings>[,<data_packet_size>[,<interval_time>[,<wait_time>[,<TTL>]]]]] | <p><i>If ping's result_type = 1</i></p> <p>+CPING: <result_type>,<resolved_ip_addr>,<data_packet_size>,<rtt>,<TTL></p> <p><i>If ping's result_type = 2</i></p> <p>+CPING:<result_type></p> <p><i>If ping's result_type = 3</i></p> <p>+CPING: <result_type>,<num_pkts_sent>,<num_pkts_recv>,<num_pkts_lost>,<min_rtt>,<max_rtt>,<avg_rtt></p> <p>ERROR</p> |

Defined values

<dest_addr>

The destination is to be pinged; it can be an IP address or a domain name.

<dest_addr_type>

Integer type. Address family type of the destination address

1 – IPv4.

2 – IPv6(reserved)

<num_pings>

Integer type. The num_pings specifies the number of times the ping request (1-100) is to be sent. The default value is 4.

<data_packet_size>

Integer type. Data byte size of the ping packet (4-188). The default value is 64 bytes.

<interval_time>

Integer type. Interval between each ping. Value is specified in milliseconds (1000ms-10000ms). The default value is 2000ms.

<wait_time>

Integer type. Wait time for ping response. An ping response received after the timeout shall not be processed. Value specified in milliseconds (10000ms-100000ms). The default value is 10000ms.

<TTL>

Integer type. TTL(Time-To-Live) value for the IP packet over which the ping(ICMP ECHO Request message) is sent (16-255), the default value is 255.

<result_type>

1 – Ping success

| |
|---|
| 2 – Ping time out |
| 3 – Ping result |
| <code><num_pkts_sent></code> |
| Indicates the number of ping requests that were sent out. |
| <code><num_pkts_recv></code> |
| Indicates the number of ping responses that were received. |
| <code><num_pkts_lost></code> |
| Indicates the number of ping requests for which no response was received. |
| <code><min_rtt></code> |
| Indicates the minimum Round Trip Time(RTT). |
| <code><max_rtt></code> |
| Indicates the maximum RTT. |
| <code><avg_rtt></code> |
| Indicates the average RTT. |
| <code><resolved_ip_addr></code> |
| Indicates the resolved ip address. |
| <code><rtt></code> |
| Round Trip Time. |

Examples

```

AT+CPING=?
+CPING:IP address,(1,2), (1-100), (4-188),(1000-10000),(10000-100000), (16-255)
OK
AT+CPING="www.baidu.com",1,4,64,1000,10000,255
OK

+CPING: 1,119.75.217.56,64,410,255

+CPING: 1,119.75.217.56,64,347,255

+CPING: 1,119.75.217.56,64,346,255

+CPING: 1,119.75.217.56,64,444,255

+CPING: 3,4,4,0,346,444,386
  
```

16.31 AT+CPINGSTOP Stop an ongoing ping session

Description

This command is used to stop an ongoing ping session.

SIM PIN References

YES Vendor

Syntax

| | |
|----------------|--|
| Write Command | Responses |
| AT+CPINGSTOP | +CPING: <result_type>,<num_pkts_sent>,<num_pkts_recv>,<num_pkts_lost>,<min_rtt>,<max_rtt>,<avg_rtt> |
| | OK |
| | OK |
| | ERROR |
| Test Command | Responses |
| AT+CPINGSTOP=? | OK |

Defined values

<result_type>

- 1 – Ping success
- 2 – Ping time out
- 3 – Ping result

<num_pkts_sent>

Indicates the number of ping requests that were sent out.

<num_pkts_recv>

Indicates the number of ping responses that were received.

<num_pkts_lost>

Indicates the number of ping requests for which no response was received.

<resolved_ip_addr>

Indicates the resolved ip address.

<min_rtt>

Indicates the minimum Round Trip Time (RTT).

<max_rtt>

Indicates the maximum RTT.

<avg_rtt>

Indicates the average RTT.

Examples

```
AT+CPINGSTOP
OK
```

16.32 AT+CTEUTP Set unknown incoming TCP packet echo

Description

This command is used to enable or disable unknown incoming TCP packet echo.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|--|---|
| AT+CTEUTP=? | +CTEUTP: (list of supported <Echo_Unknown_TCP_Enable>s) OK |
| Read Command | Responses |
| AT+CTEUTP? | +CTEUTP:<Echo_Unknown_TCP_Enable> OK |
| Write Command | Responses |
| AT+CTEUTP = <Echo_Unknown_TCP_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 |
|----|

16.33 AT+CUPURE Set UDP port unreachable ICMP echo

Description

This command is used to enable or disable UDP port unreachable echo.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|--|---|
| AT+CUPURE=? | +CUPURE: (list of supported <UDP_PORT_UNREACHABLE_Enable>s) OK |
| Read Command | Responses |
| AT+CUPURE? | +CUPURE:<UDP_PORT_UNREACHABLE_Enable> OK |
| Write Command | Responses |
| AT+CUPURE= <UDP_PORT_UNREACHABLE_Enable> | OK ERROR |

Defined values

<UDP_PORT_UNREACHABLE_Enable>

a numeric parameter which sets whether enable or disable UDP port unreachable ICMP echo option.

- 0 disable
- 1 enable

Examples

AT+CUPURE=?

+CUPURE: (0,1)

OK

AT+CUPURE=1

OK

16.34 AT+CINICMPALLOW Preferred ICMP filter

Description

This command is used to filter the incoming ICMP packets that are not allowed.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|--------------|-----------|
| 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=0xFFFFFFFFFFFFFFFEFF

OK

AT+CINICMPALLOW?

+CINICMPALLOW: 0xFFFFFFFFFFFFFFFEFF

OK

16.35 AT+CIPRXGET Get the network data manually

Description

This command is used to get the network data manually.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CIPRXGET=? | <p><i>1. If single-client:</i> +CIPRXGET: (0-4), (1-1500) OK</p> <p><i>2. If multi-client:</i> +CIPRXGET: (0-4),(0-9),(1-1500) OK</p> |
| | ERROR |
| Read Command | Responses |
| AT+CIPRXGET? | <mode> OK |
| Execution Command | Responses |
| <i>1. If single-client</i> <i>(AT+CIPRXGET=0):</i> AT+CIPRXGET=<mode>[,<len>] | <p><i>1. If <mode> = 0 or 1:</i> OK</p> <p><i>2. If <mode> = 2 or 3:</i></p> <p><i>a. If single-client:</i> +CIPRXGET: <mode>,<read_len>,<rest_len> <data></p> |
| <i>2. If multi-client</i> <i>(AT+CIPRXGET=1):</i> AT+CIPRXGET=<mode>,<cid>[,<len>] | <p><i>2. If <mode> = 2 or 3:</i></p> <p><i>a. If multi-client:</i> +CIPRXGET: <mode>,<cid>,<read_len>,<rest_len> <data></p> |
| | OK |
| | <p><i>3. If <mode> = 4:</i></p> <p><i>a. If single-client:</i> +CIPRXGET: 4,<rest_len></p> |
| | OK |
| | <p><i>b. If multi-client:</i></p> |

| | |
|--|-------------------------------|
| | +CIPRXGET: 4,<cid>,<rest_len> |
| | OK |
| | If ERROR occurred |
| | +IP ERROR: <error message> |
| | ERROR |

Defined values

<mode>

- 0 – set the way to get the network data automatically
- 1 – set the way to get the network data manually
- 2 – read data, the max read length is 1500
- 3 – read data in HEX form, the max read length is 750
- 4 – get the rest data length

<cid>

A numeric parameter that identifies a connection. The range of permitted values is 0 to 9.

<len>

The data length to be read.

Not required, the default value is 1500 when <mode>=2, and 750 when <mode>=3.

<read_len>

The length of the data that have read.

<rest_len>

The data length which not read in the buffer.

< data >

The read data.

<error message>

The list of all error message:

Invalid parameter

Operation not supported

No data

NOTE:

1. When <mode> is set to 1 and the 2-4 mode will take effect.
2. If AT+CIPRXGET=1, it will report +CIPRXGET: 1(single client) or +CIPRXGET: 1,<cid>(multi client) when received data and the buffer is empty.

Examples

```
AT+CIPRXGET=?
+CIPRXGET: (0-4),(1-1500)
```

OK

AT+CIPRXGET?

+CIPRXGET: 1

OK

AT+CIPRXGET=1

OK

AT+CIPRXGET=2,100

+CIPRXGET: 2,100,1300

0123456789012345678901234567890123456789012345678901234567890123456789

01234567890123456789

OK

AT+CIPRXGET=3,100

+CIPRXGET: 3,100,1200

30313233343536373839303132333435363738393031323334353637383930313233343536373839

30313233343536373839303132333435363738393031323334353637383930313233343536373839

3031323334353637383930313233343536373839

OK

AT+CIPRXGET=4

+CIPRXGET: 4,1200

OK

AT+CIPRXGET=2,0,100

+CIPRXGET: 2,0,100,1300

0123456789012345678901234567890123456789012345678901234567890123456789

01234567890123456789

OK

AT+CIPRXGET=3,0,100

+CIPRXGET: 3,0,100,1200

30313233343536373839303132333435363738393031323334353637383930313233343536373839

30313233343536373839303132333435363738393031323334353637383930313233343536373839

3031323334353637383930313233343536373839

OK

AT+CIPRXGET=4,0

+CIPRXGET: 4,0,1200

OK

16.36 AT+CIPDNSSET Set DNS query parameters

Description

This command is used to set DNS query parameters. The timeout value for performing DNS query is $<\text{net_open_time}> + 3000\text{ms} + 1000\text{ms} * <\text{dns_query_retry_counter}>$. Here $<\text{net_open_time}>$ is the time for opening PS network. $<\text{dns_query_retry_counter}>$ is the retry counter for sending DNS query using UDP packet.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|--|---|
| AT+CIPDNSSET=? | OK |
| Read Command | Responses |
| AT+CIPDNSSET? | +CIPDNSSET: <max_net_retries>, <net_timeout>, <max_query_retries> OK |
| Write Command | Responses |
| AT+CIPDNSSET=[<max_net_retries>][,<net_timeout>][,<max_query_retries>]]] | OK ERROR |

Defined values

<max_net_retries>

Maximum retry times for opening PS network to perform DNS query. It's range is 0 to 3. Default value is 3.

<net_timeout>

Timeout value for each opening PS network operation when performing DNS query. It's range is from 3000ms to 120000ms. Default value is 30000ms.

<max_query_retries>

Maximum retry times for performing DNS query using UDP packet. It's range is from 0 to 7. Default value is 7.

Examples

```
AT+CIPDNSSET?  
+CIPDNSSET: 1,30000,3
```

```
OK
```

AT+CIPDNSSET=1,30000,I

OK

16.37 AT+CDNSSRV Get dns server ip address

Description

The write command is used to query the dns server ip address of the specified PDP context (s).

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

Read Command

AT+CDNSSRV?

Responses

[+CDNSSRV: <cid>, <ip_addr>, <prm_dns>, <sec_dns>
 [<CR><LF>
 + CDNSSRV: <cid>, <ip_addr>, <prm_dns>, <sec_dns>
 [...]]]
 OK

Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

<ip_addr>

A string that identifies the IP address when the PDP context is activated.

<pri_dns>

A string that identifies the primary DNS server address when the PDP context is activated.

<sec_dns>

A string that identifies the secondary DNS server address when the PDP context is activated.

Examples

AT+CDNSSRV?

+CDNSSRV: 1, "10.85.202.25", "210.22.70.3", "211.95.1.97"

OK

16.38 Information elements related to TCP/IP

The following table lists information elements which may be reported.

| Information | Description |
|---|--|
| +CIPEVENT: NETWORK CLOSED UNEXPECTEDLY | Network is closed for network error(Out of service, etc). When this event happens, user application needs to check and close all opened sockets, and then use AT+NETCLOSE to release the network library if AT+NETOPEN? shows the network library is still opened. |
| +IPCLOSE: <client_index>, <close_reason> | Socket is closed passively. <client_index>: a numeric parameter that identifies a connection. The range of permitted values is 0 to 9. <close_reason>: a numeric parameter that identifies the reason to close a client 0– close connection forwardly 1– closed connection passively 2– reset connection because of timeout of sending data |
| +CLIENT: <link_num>,<server_index>,<client_IP>:<port> | TCP server accepted a new socket client, the index is <link_num>, the TCP server index is <server_index>. The peer IP address is <client_IP>, the peer port is <port>. |

16.38.1 Unsolicited TCP/IP command <err> Codes

| | |
|-----|---------------------------------|
| 0 | operation succeeded |
| 1 | Network failure |
| 2 | Network not opened |
| 3 | Wrong parameter |
| 4 | Operation not supported |
| 5 | Failed to create socket |
| 6 | Failed to bind socket |
| 7 | TCP server is already listening |
| 8 | Busy |
| 9 | Sockets opened |
| 10 | Timeout |
| 11 | DNS parse failed |
| 255 | Unknown error |

SIMCOM CONFIDENTIAL FILE

17 SIM Application Toolkit (SAT) Commands

17.1 AT+STIN SAT Indication

Description

Every time the SIM Application issues a Proactive Command, via the ME, the TA will receive an indication. This indicates the type of Proactive Command issued.

AT+STGI must then be used by the TA to request the parameters of the Proactive Command from the ME. Upon receiving the **+STGI** response from the ME, the TA must send **AT+STGR** to confirm the execution of the Proactive Command and provide any required user response, e.g. a selected menu item.

Note: if SAT not available in the SIM card, the <cmd_id> value 0 will be returned.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------|-----------------------|
| AT+STIN=? | OK |
| Read Command | Responses |
| AT+STIN? | +STIN: <cmd_id> OK |

Unsolicited Result Codes

+STIN: <cmd_id>

Proactive Command notification

- 0 – none command
- 21 – display text
- 22 – get inkey
- 23 – get input
- 24 – select item

+STIN: 25

Notification that SIM Application has returned to main menu. If user doesn't do any action in 2 minutes, application will return to main menu automatically.

Defined values

| <cmd_id> |
|-------------------|
| 0 – none command |
| 21 – display text |
| 22 – get inkey |
| 23 – get input |
| 24 – select item |
| 25 – set up menu |

Examples

```
AT+STIN?  
+STIN: 24  
OK
```

17.2 AT+STGI Get SAT information

Description

Regularly this command is used upon receipt of an URC "+STIN" to request the parameters of the Proactive Command. Then the TA is expected to acknowledge the [AT+STGI](#) response with [AT+STGR](#) to confirm that the Proactive Command has been executed. [AT+STGR](#) will also provide any user information, e.g. a selected menu item. The Proactive Command type value specifies to which "+STIN" the command is related.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------|--|
| AT+STGI=? | OK |
| Write Command | Responses |
| AT+STGI=<cmd_id> | <p>If <cmd_id>=10:</p> <p>OK</p> |
| | <p>If <cmd_id>=21:</p> <p>+STGI:21,<prio>,<clear_mode>,<text_len>,<text></p> <p>OK</p> |
| | <p>If <cmd_id>=22:</p> <p>+STGI: 22,<rsp_format>,<help>,<text_len>,<text></p> <p>OK</p> |
| | <p>If <cmd_id>=23:</p> <p>+STGI:23,<rsp_format>,<max_len>,<min_len>,<help>,<show>,<ext_len>,<text></p> |

| | |
|--|--|
| | OK |
| | <i>If <cmd_id>=24:</i> |
| | +STGI:24,<help>,<softkey>,<present>,<title_len>,<title>,<item_n um> |
| | +STGI:24,<item_id>,<item_len>,<item_data> |
| | [...] |
| | OK |
| | <i>If <cmd_id>=25:</i> |
| | +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,"4EA52A17CBE9009"
+STGI:25,5,8,"8D448D3963A88350"
+STGI:25,6,8,"81EA52A9670D52A1"
+STGI:25,7,8,"8F7B677E5F6994C3"
+STGI:25,8,8,"8BED97F367425FD7"
+STGI:25,9,10,"97F34E506392884C699C"
+STGI:25,10,8,"65B095FB59296C14"
+STGI:25,11,8,"94C358F056FE7247"
+STGI:25,12,8,"804A59294EA453CB"
+STGI:25,13,8,"5F005FC34F1195F2"
```

```
+STGI:25,14,8,"751F6D3B5E388BC6"
+STGI:25,21,12,"00530049004D53614FE1606F"
OK
```

17.3 AT+STGR SAT respond

Description

The **TA** is expected to acknowledge the **AT+STGI** response with **AT+STGR** to confirm that the Proactive Command has been executed. **AT+STGR** will also provide any user information, e.g. a selected menu item.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------------|-----------|
| AT+STGR=? | OK |
| Write Command | Responses |
| AT+STGR=<cmd_id>[,<data>] | OK |

Defined values

| | |
|---|-----------------------|
| <cmd_id> | |
| 22 | – get inkey |
| 23 | – get input |
| 24 | – select item |
| 25 | – set up menu |
| 83 | – session end by user |
| 84 | – go backward |
| <data> | |
| If <cmd_id>=22: | |
| Input a character | |
| If <cmd_id>=23: | |
| Input a string. | |
| If <rsp_format> is YES or NO, input of a character in case of ANSI character set requests one byte, e.g. “Y”. | |
| If <rsp_format> is numerical only, input the characters in decimal number, e.g. “123” | |
| If <rsp_faomat> is UCS2, requests a 4 byte string, e.g. “0031” | |
| <rsp_faomat> refer to the response by AT+STGI =23 | |
| If <cmd_id>=24: | |
| Input the identifier of the item selected by user | |

If <cmd_id>=25:

 Input the identifier of the item selected by user

If <cmd_id>=83:

 <data> ignore

Note: It could return main menu during Proactive Command id is not 22 or 23

If <cmd_id>= 84:

 <data> ignore

Examples

AT+STGR=25,I

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 | <i>Set default value (<value>=1):</i> OK |

Defined values

| |
|---------|
| <value> |
|---------|

| |
|-----------------|
| 0 – Disable STK |
|-----------------|

1 – Enable STK

Examples

```
AT+STK=1
OK
```

18 Internet Service Command

18.1 Simple mail transfer protocol service

18.1.1 AT+SMTPSRV Set SMTP server address and port number

Description

This synchronous command is used to set SMTP server address and server's port number. SMTP client will initiate TCP session with the specified server to send an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server address and port number.

Execution command will clear SMTP server address and set the port number as default value.

NOTE: After an e-mail is sent successfully or unsuccessfully, SMTP server address and port number won't be cleared.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-----------------------------------|---|
| AT+SMTPSRV=? | +SMTPSRV: (list of supported <port>s) OK |
| Read Command | Responses |
| AT+SMTPSRV? | +SMTPSRV: <server>, <port> OK |
| Write Command | Responses |
| AT+SMTPSRV=<server> [, <port>] | OK |
| Execution Command | Responses |
| AT+SMTPSRV | OK |

Defined values

<server>

SMTP server address, non empty string with double quotes, mandatory and ASCII text string up to 128 characters.

<port>

Port number of SMTP server in decimal format, from 1 to 65535, and default port is 25 for SMTP.

Examples

```
AT+SMTPSRV="smtp.server.com",25
```

OK

```
AT+SMTPSRV?
```

```
+SMTPSRV: "smtp.server.com", 25
```

OK

```
AT+SMTPSRV
```

OK

```
AT+SMTPSRV?
```

```
+SMTPSRV: "", 25
```

OK

18.1.2 AT+SMTPAUTH SMTP server authentication

Description

This synchronous command is used to control SMTP authentication during connection with SMTP server. If SMTP server requires authentication while logging in the server, TE must set the authentication control flag and provide user name and password correctly before sending an e-mail. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current SMTP server authentication control flag, if the flag is 0, both <user> and <pwd> are empty strings.

Execution Command cancels SMTP server authentication and clear user name and password.

NOTE: After an e-mail is sent successfully or unsuccessfully, server authentication won’t be cleared.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|---------------|--|
| AT+SMTPAUTH=? | +SMTPAUTH: (list of supported <flag>s) OK |
| Read Command | Responses |
| AT+SMTPAUTH? | +SMTPAUTH: <flag>, <user>, <pwd> OK |

| | |
|-------------------------|-----------|
| Write Command | Responses |
| AT+SMTPAUTH= | OK |
| <flag>[, <user>, <pwd>] | |
| Execution Command | Responses |
| AT+SMTPAUTH | OK |

Defined values

<flag>

SMTP server authentication control flag, integer type.

- 0 – SMTP server doesn't require authentication, factory value.
- 1 – SMTP server requires authentication.

<user>

User name to be used for SMTP authentication, non empty string with double quotes and up to 128 characters.

<pwd>

Password to be used for SMTP authentication, string with double quotes and up to 128 characters.

NOTE: If <flag> is 0, <user> and <pwd> must be omitted (i.e. only <flag> is present).

Examples

```
AT+SMTPAUTH?
+SMTPAUTH: 0, "", ""
OK
AT+SMTPAUTH=1,"username","password"
OK
AT+SMTPAUTH?
+SMTPAUTH: 1, "username", "password"
OK
AT+SMTPAUTH
OK
AT+SMTPAUTH?
+SMTPAUTH: 0, "", ""
OK
```

18.1.3 AT+SMTPFROM Sender address and name

Description

This synchronous command is used to set sender's address and name, which are used to construct e-mail header. The sender's address must be correct if the SMTP server requires, 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", "sendernname"
```

```
OK
```

```
AT+SMTPFROM?
```

```
+SMTPFROM: "senderaddress@server.com", "sendernname"
```

```
OK
```

```
AT+SMTPFROM
```

```
OK
```

```
AT+SMTPFROM?
```

```
+SMTPFROM: "", ""
```

```
OK
```

18.1.4 AT+SMTPRCPT Recipient address and name (TO/CC/BCC)

Description

This synchronous command is used to set recipient address/name and kind (TO/CC/BCC). If only the parameter of “kind” is present, the command will clear all recipients of this kind, and if only parameters of “kind” and “index” are present, the command will clear the specified recipient. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current recipient address/name and kind list.

Execution command will clear all recipient information.

NOTE: After an e-mail is sent successfully, all recipients will be cleared, if unsuccessfully, they won’t be cleared.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+SMTPRCPT=? | +SMTPRCPT: (list of supported <kind>s), (list of supported <index>s) OK |
| Read Command | Responses |
| AT+SMTPRCPT? | [+SMTPRCPT: <kind>, <index>, <raddr>, <rname> [<CR><LF>...]] OK OK |
| Write Command | Responses |
| AT+SMTPRCPT= <kind>[, <index> [, <raddr>[, <rname>]]] | OK |
| Execution Command | Responses |
| AT+SMTPRCPT | OK |

Defined values

<kind>

Recipient kind, the kinds of TO and CC are used to construct e-mail header in the field: “To: ” or “Cc: ”.

- 0 – TO, normal recipient.
- 1 – CC, Carbon Copy recipient.
- 2 – BCC, Blind Carbon Copy recipient.

<index>

Index of the kind of recipient, decimal format, and from 0 to 4.

<raddr>

Recipient address, non empty string with double quotes, and up to 128 characters.

<rname>

Recipient name, string type with double quotes, and up to 64 characters.

Examples

```
AT+SMTPRCPT=0, 0, "rcptaddress_to@server.com", "rcptname_to"
```

OK

```
AT+SMTPRCPT?
```

```
+SMTPRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"
```

OK

```
AT+SMTPRCPT=1, 0, "rcptaddress_cc@server.com", "rcptname_cc"
```

OK

```
AT+SMTPRCPT?
```

```
+SMTPRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"
```

```
+SMTPRCPT: 1, 0, "rcptaddress_cc@server.com", "rcptname_cc"
```

OK

18.1.5 AT+SMTPSUB E-mail subject

Description

This synchronous command is used to set the subject of e-mail, which is used to construct e-mail header. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current e-mail subject.

Execution command will clear the subject.

NOTE: After an e-mail is sent successfully, the subject will be cleared, if unsuccessfully, it won’t be cleared.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|--------------|----|
| AT+SMTPSUB=? | OK |
|--------------|----|

| | |
|--------------|-----------|
| Read Command | Responses |
|--------------|-----------|

| | |
|-------------|---------------------------|
| AT+SMTPSUB? | +SMTPSUB: <subject> OK |
|-------------|---------------------------|

| | |
|---------------|-----------|
| Write Command | Responses |
|---------------|-----------|

| | |
|----------------------|----|
| AT+SMTPSUB=<subject> | OK |
|----------------------|----|

| | |
|-------------------|-----------|
| Execution Command | Responses |
|-------------------|-----------|

| | |
|------------|----|
| AT+SMTPSUB | OK |
|------------|----|

Defined values

<subject>

E-mail subject, string with double quotes, and ASCII text up to 512 characters. <subject> will be present in the header of the e-mail sent by SMTP client in the field: "Subject: ". For write command, if the subject contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

Examples

```
AT+SMTPSUB?  
+SMTPSUB: ""  
OK  
AT+SMTPSUB="THIS IS A TEST MAIL"  
OK  
AT+SMTPSUB={non-ascii}"E6B58BE8AF95E982AEE4BBB6"  
OK  
AT+SMTPSUB?  
+SMTPSUB: "THIS IS A TEST MAIL"  
OK
```

18.1.6 AT+SMTPBODY E-mail body

Description

This command is used to set e-mail body, which will be sent to SMTP server with text format. Read command returns current e-mail body. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly. Execute command will switch the serial port from command mode to data mode, so TE can enter more ASCII text as e-mail body (up to 5120), and CTRL-Z (ESC) is used to finish (cancel) the input operation and switch the serial port back to command mode. **NOTE:** After an e-mail is sent successfully, the body will be cleared, if unsuccessfully, it won't be cleared. When execute command AT+SMTPBODY, and display ">>", the prevent body will be cleared.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------|-----------|
| AT+SMTPBODY=? | OK |

| | |
|--------------------|-------------------------|
| Read Command | Responses |
| AT+SMTPBODY? | +SMTPBODY: <body> OK |
| Write Command | Responses |
| AT+SMTPBODY=<body> | OK |
| Execution Command | Responses |
| AT+SMTPBODY | >> |

Defined values

<body>

E-mail body, string with double quotes, and printable ASCII text up to 512 or 5120 characters.

NOTE: In data mode, “BACKSPACE” can be used to cancel an ASCII character.

Examples

AT+SMTPBODY= "THIS IS A TEST MAIL FROM SIMCOM MODULE"

OK

AT+SMTPBODY?

+SMTPBODY: "THIS IS A TEST MAIL FROM SIMCOM MODULE"

OK

AT+SMTPBODY

>> This is a test mail.<CTRL-Z>

OK

AT+SMTPBODY?

+SMTPBODY: "This is a test mail."

OK

AT+SMTPBODY

>> This is a test mail.<ESC>

OK

AT+SMTPBODY?

+SMTPBODY: ""

OK

18.1.7 AT+SMTPBCH E-mail body character set

Description

This synchronous command is used to set the body character set of e-mail. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current e-mail body character set.

YES Vendor

Syntax

| Test Command | Responses |
|------------------------|-----------------------------|
| AT+SMTPBCH=? | +SMTPBCH: "CHARSET" OK |
| Read Command | Responses |
| AT+SMTPBCH? | +SMTPBCH: < charset > OK |
| Write Command | Responses |
| AT+SMTPBCH=< charset > | OK ERROR |
| Execution Command | Responses |
| AT+SMTPBCH | OK ERROR |

Defined values

< charset >

E-mail body character, string with double quotes. By default, it is “utf-8”. The maximum length is 30 bytes.

Examples

```
AT+SMTPBCH=?
+SMTPBCH: "CHARSET"
OK
AT+SMTPBCH="gb2312"
OK
AT+SMTPBCH?
+SMTPBCH: "gb2312"
OK
```

18.1.8 AT+SMTPFILE Select attachment

Description

The synchronous command is used to select file as e-mail attachment. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current all selected attachments with full path.

Execute command will clear all attachments.

NOTE: After an e-mail is sent successfully, attachment will be cleared, if unsuccessfully, it won't

be cleared. The same file can't be selected twice.

AT+SMTPFILE=<index> is used to delete the relevant attachments.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-----------------------------------|---|
| AT+SMTPFILE=? | +SMTPFILE: (list of supported <index>s) OK |
| Read Command | Responses |
| AT+SMTPFILE? | [+SMTPFILE: <index>, <filename>, <filesize> [<CR><LF>...]] OK |
| Write Command | Responses |
| AT+SMTPFILE=<index>[, <filename>] | OK [+SMTP: OVERSIZE] ERROR |
| Execution Command | Responses |
| AT+SMTPFILE | OK |

Defined values

<index>

Index for attachments, from 1 to 10. According to the sequence of <index>, SMTP client will encode and send all attachments.

<filename>

String type with double quotes, the name of a file which is under current directory (refer to file system commands). SMTP client doesn't allow two attachments with the same file name. For write command, if the file name contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

<filesize>

File size in decimal format. The total size of all attachments can't exceed 10MB.

Examples

```
AT+SMTPFILE=1, "file1.txt"
OK
AT+SMTPFILE=1,{non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
OK
AT+SMTPFILE?
+SMTPFILE: 1, "C:/file1.txt"
```

```

OK
AT+SMTPFILE=2,"file2.txt"
OK
AT+SMTPFILE?
+SMTPFILE: 1, "C:/file1.txt"
+SMTPFILE: 2, "C:/file2.txt"
OK
  
```

18.1.9 AT+SMTPSEND Initiate session and send e-mail

Description

This asynchronous command is used to initiate TCP session with SMTP server and send an e-mail after all mandatory parameters have been set correctly. After SMTP client has connected with specified SMTP server and SMTP client receives an indication that indicates SMTP server is working well, the command will return “+SMTP: OK”, but it doesn’t indicate that the e-mail is already sent successfully.

After the e-mail is sent and the session is closed, an Unsolicited Result Code (URC) will be returned to TE, “+SMTP: SUCCESS” indicates the e-mail is sent successfully, and other URCs indicate a failed result and the session is closed.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------|--|
| AT+SMTPSEND=? | OK |
| Read Command | Responses |
| AT+SMTPSEND? | +SMTPSEND: <ongoing> OK |
| Execution Command | Responses |
| AT+SMTPSEND | OK +SMTP: OK +SMTP: <code> +SMTP: OK +SMTP: <code> OK +SMTP: <code> ERROR |

Defined values

<ongoing>

Whether or not an e-mail is sent in process. If the process of sending an e-mail is ongoing, SMTP client can't send the e-mail again.

0 – Not ongoing.

1 – Ongoing.

<code>

| | |
|---------------|--|
| SUCCESS | SMTP client has sent the e-mail successfully. |
| ONGOING | The process of sending an e-mail is ongoing. |
| PARAM ERROR | Mandatory parameter isn't set (SMTP server, or sender/recipient address) |
| NETWORK ERROR | Invalid SMTP server. |
| | Network is bad for establishing session or sending data to SMTP server. |
| SERVER ERROR | SMTP server released the session. |
| | SMTP server rejects the operation with wrong response. |
| | SMTP server doesn't give SMTP client a response in time. |
| AUTH REQUIRED | Authentication is required by SMTP server. |
| AUTH ERROR | SMTP server rejects the session because of bad user name and password combination. |

Examples

```
AT+SMTPSEND?
+SMTPSEND: 0
OK
AT+SMTPSEND
+SMTP: OK
OK

+SMTP: SUCCESS
```

18.1.10 AT+SMTPSTOP Force to stop sending e-mail

Description

The synchronous command is used to force to stop sending e-mail and close the TCP session while sending an e-mail is ongoing. Otherwise, the command will return “ERROR” directly.

SIM PIN References

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|---------------|-----------|
| AT+SMTPSTOP=? | OK |

| Execution Command | Responses |
|-------------------|-----------|
| AT+SMTPSTOP | OK |
| | ERROR |

Examples

```
AT+SMTPSEND?  
+SMTPSEND: I  
OK  
AT+SMTPSTOP  
OK
```

18.2 Post Office Protocol 3 Service

18.2.1 AT+POP3SRV POP3 server and account

Description

This synchronous command is used to set all parameters to get and e-mail from POP3 server, including server address, port number, user name and password. If POP3 client isn't free, the command will return "ERROR" directly.

Read command returns current all information about POP3 server and account.

Execution command will clear POP3 server address, user name and password, and set server's port number as default value.

NOTE: After an e-mail is sent successfully or unsuccessfully, POP3 server and account information won't be cleared.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+POP3SRV=? | +POP3SRV: (list of supported <port>s) OK |
| Read Command | Responses |
| AT+POP3SRV? | +POP3SRV: <server>, <user>, <pwd>, <port> OK |
| Write Command | Responses |
| AT+POP3SRV=<server>, <user>, <pwd>[,<port>] | OK |
| Execution Command | Responses |
| AT+POP3SRV | OK |

Defined values

| | |
|----------|---|
| <server> | POP3 server address, non empty string with double quotes, mandatory and ASCII text string up to 128 characters. |
| <user> | User name to log in POP3 server, non empty string with double quotes, and up to 128 characters. |
| <pwd> | Password to log in POP3 server, string with double quotes, and up to 128 characters. |
| <port> | Port number of POP3 server in decimal format, from 1 to 65535, and default port is 110 for POP3. |

Examples

```

AT+POP3SRV=?
+POP3SRV: (1-65535)
OK
AT+POP3SRV?
+POP3SRV: "", "", "", 110
OK
AT+POP3SRV="pop3.server.com", "user_name", "password", 110
OK
AT+POP3SRV?
+POP3SRV: "pop3.server.com", "user_name", "password", 110
OK
AT+POP3SRV
OK
AT+POP3SRV?
+POP3SRV: "", "", "", 110
OK
  
```

18.2.2 AT+POP3IN Log in POP3 server

Description

This asynchronous command is used to log in POP3 server and establish a session after POP3 server and account information are set rightly. If the POP3 client logs in POP3 server successfully, the response “+POP3: SUCCESS” will be returned to TE; if no POP3 operation for a long time after the session is ready, POP3 server may release the session.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|-----------------|---|
| Test Command | Responses |
| AT+POP3IN=? | OK |
| Read Command | Responses |
| AT+POP3IN? | +POP3IN: "<server>" OK |
| | +POP3IN: NULL OK |
| Execute Command | |
| AT+POP3IN | +POP3: SUCCESS OK OK +POP3: SUCCESS +POP3: <code> ERROR ERROR |

Defined values

| | |
|----------------|---|
| <code> | |
| NETWORK ERROR | Invalid POP3 server or network is bad for establishing session or sending data to POP3 server. |
| SERVER ERROR | POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. |
| INVALID UN | Invalid user name to log in POP3 server. |
| INVALID UN/PWD | Invalid user name and password combination to log in POP3 server. |
| <server> | The address of the POP3 server currently logged in. |

Examples

```
AT+POP3IN=?
OK
AT+POP3IN
+POP3: SUCCESS
OK
```

18.2.3 AT+POP3NUM Get e-mail number and total size

Description

This asynchronous command is used to get e-mail number and total size on the specified POP3 server after the POP3 client logs in POP3 server successfully and no other POP3 operation is

ongoing.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------|-----------------------------|
| AT+POP3NUM=? | OK |
| Execution Command | Responses |
| AT+POP3NUM | +POP3: <num>, <tsize> OK |
| | +POP3: <code> ERROR |

Defined values

| | |
|---|--|
| <num> | |
| The e-mail number on the POP3 server, decimal format. | |
| <tsize> | |
| The total size of all e-mail and the unit is in Byte. | |
| <code> | |
| NETWORK ERROR | Network is bad for sending data to POP3 server. |
| SERVER ERROR | POP3 server released the session. |
| | POP3 server rejects the operation with wrong response. |
| | POP3 server doesn't give POP3 client a response in time. |

Examples

| |
|----------------|
| AT+POP3NUM=? |
| OK |
| AT+POP3NUM |
| +POP3: 1, 3057 |
| OK |

18.2.4 AT+POP3LIST List e-mail ID and size

Description

This asynchronous command is used to list e-mail number and total size, e-mail ID and each e-mail's size after the POP3 client logs in POP3 server successfully and no other POP3 operation is ongoing. The e-mail ID may be used to do those operations: get e-mail header, get the whole e-mail, and mark an e-mail to delete from POP3 server.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|----------------------|--|
| AT+POP3LIST=? | OK |
| Write Command | Responses |
| AT+POP3LIST=<msg_id> | +POP3: <msg_id>, <size> OK ERROR +POP3: <code> ERROR |
| Execution Command | Responses |
| AT+POP3LIST | +POP3: [<msg_id> <size> [<CR><LF>...]] OK +POP3: EMPTY OK +POP3: <code> ERROR |

Defined values

<msg_id>

The e-mail's ID.

<size>

The size of e-mail <msg_id>, and the unit is in Byte.

<code>

NETWORK ERROR Network is bad for sending data to POP3 server.

SERVER ERROR POP3 server released the session.

POP3 server rejects the operation with wrong response.

POP3 server doesn't give POP3 client a response in time.

POP3 client gives wrong e-mail's ID.

Examples

AT+POP3LIST=?

OK

AT+POP3LIST

+POP3:

```
I 3056
OK
AT+POP3LIST=1
+POP3: 1, 3056
OK
```

18.2.5 AT+POP3HDR Get e-mail header

Description

This asynchronous command is used to retrieve e-mail's sender address, date and sender address, which are present in the mail's header.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------|---|
| AT+POP3HDR=? | OK |
| Write Command | Responses |
| AT+POP3HDR=<msg_id> | Ok +POP3: <code> From: [<from>] Date: [<date>] Subject: [<sub>] |
| | OK |
| | +POP3: <code> |
| | +POP3: <code> |
| | ERROR |

Defined values

<msg_id>

The e-mail's ID.

<from>

E-mail's sender name and sender address from mail

<date>

E-mail's date from mail header.

<sub>

E-mail's subject from mail header.

<code>

SUCCESS POP3 client gets an e-mail header from POP3 server successfully.

NETWORK ERROR Network is bad for sending data to POP3 server.

| | |
|--------------|---|
| SERVER ERROR | POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. POP3 client gives wrong e-mail's ID. |
|--------------|---|

Examples

AT+POP3HDR=1

OK

+POP3: SUCCESS

From: lin <mail_simcom@126.com>
Date: Mon, 4 Mar 2013 17:26:55 +0800 (CST)
Subject: test

18.2.6 AT+POP3GET Get an e-mail from POP3 server

Description

This command is used to retrieve specified e-mail from the POP3 server. After retrieving an e-mail successfully, POP3 client will create a directory and save the e-mail's header and body into file system as file "EmailYYMMDDHHMMSSXYZ.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 <i>+POP3: <code></i> <i><mail_dir>, <mail_file></i> |
| | <i>+POP3: <code></i> ERROR |
| | OK <i>+POP3: <code></i> |

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

This asynchronous command is used to mark an e-mail to delete from POP3 server. The operation only marks an e-mail on the server to delete it, and after POP3 client logs out POP3 server and closes the session normally, the marked e-mail is deleted on the server. Otherwise, the e-mail isn't deleted.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|---------------------|--|
| AT+POP3DEL=? | OK |
| Write Command | Responses |
| AT+POP3DEL=<msg_id> | +POP3: SUCCESS OK +POP3: <code> ERROR |

Defined values

<msg_id>

E-mail's ID for mark to delete it on POP3 server.

<code>

NETWORK ERROR Network is bad for sending data to POP3 server.

SERVER ERROR POP3 server released the session.

POP3 server rejects the operation with wrong response.

POP3 server doesn't give POP3 client a response in time.

POP3 client gives wrong e-mail's ID.

Examples

AT+POP3DEL=1

+POP3: SUCCESS

OK

18.2.8 AT+POP3OUT Log out POP3 server

Description

This command is used to log out the POP3 server and close the session, and if there are some e-mails which are marked to delete, it also informs POP3 server to delete the marked e-mails.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+POP3OUT=? | OK |
| Execution Command | Responses |
| AT+POP3OUT | +POP3: SUCCESS OK ERROR +POP3: <code> ERROR |

Defined values

| <code> | |
|---------------|---|
| NETWORK ERROR | Network is bad for sending data to POP3 server. |
| SERVER ERROR | POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. POP3 client gives wrong e-mail's ID. |

Examples

```
AT+POP3OUT
+POP3: SUCCESS
OK
```

18.2.9 AT+POP3STOP Force to stop receiving e-mail/close the session

Description

This synchronous command is used to force to close the session, and if the process of receiving e-mail is ongoing, the command also stops the operation. Otherwise, the command will return “ERROR” directly. If an e-mail has been marked to delete, POP3 server won’t delete the e-mail after the session is closed.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|-------------------|-----------|
| AT+POP3STOP=? | OK |
| Execution Command | Responses |
| AT+POP3STOP | OK |
| | ERROR |

Examples

| |
|-------------|
| AT+POP3STOP |
|-------------|

| |
|----|
| OK |
|----|

18.2.10 AT+POP3READ Read an e-mail from file system

Description

This command is used to read an e-mail from file system. If the process of receiving e-mail is ongoing, the command can't read an e-mail.

Execution command is used to read the e-mail which is received just now.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|----------------------------------|-----------|
| AT+POP3READ=? | OK |
| Write Command | Responses |
| AT+POP3READ= | <e-mail> |
| <location>, | OK |
| <mail_file>[,<start_pos>,<size>] | ERROR |
| Execution Command | Responses |
| AT+POP3READ | <e-mail> |
| | OK |
| | ERROR |

Defined values

<location>

The location from which TE reads an e-mail.

0 – Local file system.

1 – SD CARD.

<mail_file>

The e-mail's file name, string type with double quotes and including a directory name and a text file name separated by the list separator “/”, e.g. “090901103000/EMAIL000.TXT”.

<start_pos>

The start position of the file to read.

<size>

The num of bytes to read from file.

<e-mail>

The content of e-mail, including e-mail header and body.

Examples

```
AT+POP3READ=0,"800106072758/EMAIL800106072758000.TXT"
```

```
Subject:=?utf-8?B?TWFpbCBUZXN0?=
```

```
Date: Mon, 02 Jul 2012 16:01:11 +0800
```

```
From: SIMCom-3G <hello@163.com>
```

```
To: 3G-SIMCom <hello@163.com>
```

```
VGhpcyBpcyBhIHRlc3QgbWFpbCBmcm9tIExVQSB0ZXN0IHNjcmldC4=
```

```
OK
```

```
AT+POP3READ=0,"1.txt",0,100
```

```
at+pop3read=0,"1.txt",0,100
```

```
From:=?gb2312?B?v+zHrg==?= <service@account.99bill.com>
```

```
Date: Sun, 6 Jan 2013 14:54:02 +0800 (CST)
```

```
OK
```

18.3 File Transfer Protocol Service

18.3.1 AT+CFTPPORT Set FTP server port

Description

This command is used to set FTP server port.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|--------------------|--|
| AT+CFTPPORT=? | +CFTPPORT: (list of supported <port>s) OK |
| Read Command | Responses |
| AT+CFTPPORT? | +CFTPPORT: <port> OK |
| Write Command | Responses |
| AT+CFTPPORT=<port> | OK +CME ERROR |

Defined values

<port>

The FTP server port, from 1 to 65535, and default value is 21.

Examples

```
AT+CFTPPORT=21
OK
AT+CFTPPORT?
+CFTPPORT:21
OK
AT+CFTPPORT=?
+CFTPPORT: (1-65535)
OK
```

18.3.2 AT+CFTPMODE Set FTP mode

Description

This command is used to set FTP passive/proactive mode. Default is passive mode.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------|--|
| AT+CFTPMODE=? | +CFTPMODE: (list of supported <mode>s) OK |
| Read Command | Responses |
| AT+CFTPMODE? | +CFTPMODE: <mode> |

| | |
|--------------------|------------|
| | OK |
| Write Command | Responses |
| AT+CFTPMODE=<mode> | OK |
| | +CME ERROR |

Defined values

<mode>

The FTP access mode:

- 0 – proactive mode.
- 1 – passive mode.

Examples

AT+CFTPMODE=1

OK

AT+CFTPMODE?

+CFTPMODE: 1

OK

AT+CFTPMODE=?

+CFTPMODE: (0,1)

OK

18.3.3 AT+CFTPTYPE Set FTP type

Description

This command is used to set FTP type. Default is binary type.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|--------------------|--|
| Test Command | Responses |
| AT+CFTPTYPE=? | +CFTPTYPE: (list of supported <type>s) OK |
| Read Command | Responses |
| AT+CFTPTYPE? | +CFTPTYPE: <type> OK |
| Write Command | Responses |
| AT+CFTPTYPE=<type> | OK +CME ERROR |

Defined values

<type>

The FTP type:

- 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

This command is used to set FTP server domain name or IP address.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-----------------------------|------------------------------|
| AT+CFTPSERV=? | +CFTPSERV: "ADDRESS" OK |
| Read Command | Responses |
| AT+CFTPSERV? | +CFTPSERV: "<address>" OK |
| Write Command | Responses |
| AT+CFTPSERV= "<address>" | OK +CME ERROR |

Defined values

<address>

The FTP server domain name or IP address. The maximum length is 100.

Examples

```

AT+CFTPSERV="www.mydomain.com"
OK
AT+CFTPSERV?
+CFTPSERV: "www.mydomain.com"
OK
AT+CFTPSERV=?
+CFTPSERV: "ADDRESS"
OK
AT+CFTPSERV="10.0.0.127"
OK
  
```

18.3.5 AT+CFTPUN Set user name for FTP access

Description

This command is used to set user name for FTP server access.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------------|-------------------------|
| AT+CFTPUN=? | +CFTPUN: "NAME" OK |
| Read Command | Responses |
| AT+CFTPUN? | +CFTPUN: "<name>" OK |
| Write Command | Responses |
| AT+CFTPUN="<name>" | OK +CME ERROR |

Defined values

<name>

The user name for FTP server access. The maximum length is 30.

Examples

```

AT+CFTPUN="myname"
OK
AT+CFTPUN="anonymous"
OK
AT+CFTPUN?
+CFTPUN: "myname"
  
```

```

OK
AT+CFTPUN=?
+CFTPUN: "NAME"
OK
  
```

18.3.6 AT+CFTPPW Set user password for FTP access

Description

This command is used to set user password for FTP server access.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|----------------------|-----------------------------|
| AT+CFTPPW=? | +CFTPPW: "PASSWORD" OK |
| Read Command | Responses |
| AT+CFTPPW? | +CFTPPW: "<password>" OK |
| Write Command | Responses |
| AT+CFTPPW=<password> | OK |
| " | +CME ERROR |

Defined values

<password>

The user password for FTP server access. The maximum length is 40.

Examples

```

AT+CFTPPW="mypass"
OK
AT+CFTPPW?
+CFTPPW: "mypass"
OK
AT+CFTPPW=?
+CFTPPW: "mypass"
OK
  
```

18.3.7 AT+CFTPGFILE Get a file from FTP server to EFS

Description

This command is used to download a file from FTP server to module EFS.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CFTPGFILE=? | +CFTPGFILE: [{non-ascii}]“FILEPATH”, (list of supported <dir>s) [, (list of supported <rest_size>s)] OK |
| Write Command | Responses |
| AT+CFTPGFILE=“<filepath>”,<dir>[,<rest_size>] | OK +CFTPGFILE: 0 +CME ERROR OK +CFTPGFILE: <err> |

Defined values

<filepath>

The remote file path. When the file path doesn't contain “/”, this command transfers file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir>

The directory to save the downloaded file:

- 0 – current directory [refer to [AT+FSCD](#)]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

<rest_size>

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<err>

The error code of FTP operation.

Examples

```

AT+CFTPGETFILE="/pub/mydir/test1.txt",0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE=" test2.txt",0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE={non-ascii}" B2E2CAD42E747874",0
OK
...
+CFTPGETFILE: 0
  
```

18.3.8 AT+CFTPPUTFILE Upload a file from module EFS to FTP server

Description

This command is used to upload a file from the module EFS to FTP server.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CFTPPUTFILE=? | +CFTPPUTFILE: [{non-ascii}] "FILEPATH", (list of supported <dir>s), (list of supported <rest_size>s) OK |
| Write Command | Responses |
| AT+CFTPPUTFILE= "<filepath>,<dir>[,<rest_size>] | OK +CFTPPUTFILE: 0 +CME ERROR |
| | OK +CFTPPUTFILE: <err> |

Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir>

The directory that contains the file to be uploaded:

- 0 – current directory [refer to [AT+FSCD](#)]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

`<rest_size>`

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It’s range is 0 to 2147483647.

`<err>`

The error code of FTP operation.

Examples

```
AT+CFTPPUTFILE="/pub/mydir/test1.txt",0,10
OK
+CFTPPUTFILE: 0
AT+CFTPPUTFILE="test2.txt",0
OK
...
+CFTPPUTFILE: 0
AT+CFTPPUTFILE={non-ascii}"B2E2CAD42E747874",0
OK
...
+CFTPPUTFILE: 0
```

18.3.9 AT+CFTPGET Get a file from FTP server and output it to SIO

Description

This command is used to get a file from FTP server and output it to serial port. This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

Test Command

Responses

| | |
|---|--|
| AT+CFTPGET=? | +CFTPGET: [{non-ascii}] “FILEPATH” [, (list of supported <rest_size>s)] OK |
| Write Command | Responses |
| AT+CFTPGET= “<filepath>”,<rest_size> | OK +CFTPGET: DATA,<len> ... +CFTPGET: DATA,<len> ... +CFTPGET: DATA,<len> ... +CFTPGET: 0 |
| | <i>If the file size is 0:</i> OK |
| | +CFTPGET: 0 |
| | OK [+CFTPGET: DATA,<len> ... +CFTPGET: DATA,<len>] +CFTPGET:<err> |

Defined values

<filepath>

The remote file path. When the file path doesn't contain “/”, this command transfer file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<rest_size>

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<len>

The length of FTP data contained in this packet.

<err>

The error code of FTP operation.

Examples

```
AT+CFTPGET="/pub/mydir/test1.txt", 10
```

OK

+CFTPGET: DATA, 1020,

...

```
+CFTPGET: DATA, 1058,
...
...
+CFTPGET: 0
AT+CFTPGET={non-ascii} "/2F74657374646972/B2E2CAD42E747874"
OK
+CFTPGET: DATA, 1020,
...
+CFTPGET: 0
AT+CFTPGET=?
+CFTPGET: [{non-ascii}] "FILEPATH" [,,(0-2147483647)]
OK
```

18.3.10 AT+CFTPPUT Upload the DATA from SIO to FTP server

Description

This command is used to upload the DATA from serial port to FTP server as a file . Each <Ctrl+Z> character present in the data flow of serial port when **downloading** FTP data will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the FTP data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CFTPPUT=? | +CFTPPUT: [{non-ascii}] "FILEPATH" ,<len> [,,(list of supported <rest_size>s)] OK |
| Execution Command | Responses |
| AT+CFTPPUT="<filepath>" ,<len> [,<rest_size>] | +CFTPPUT: BEGIN OK +CME ERROR [+CFTPPUT: BEGIN] +CFTPPUT: <err_code> ERROR |

Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfers file to the

current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<len>

The length of the data to send

<rest_size>

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It’s range is 0 to 2147483647.

<err_code>

Refer to “Unsolicited FTP Codes”.

Examples

```
AT+CFTPPUT="/pub/mydir/test1.txt", 20
+CFTPPUT: BEGIN
.....<Ctrl+Z>
OK
AT+CFTPPUT={non-ascii}"/2F74657374646972/B2E2CAD42E747874"
+CFTPPUT: BEGIN
.....<Ctrl+Z>
OK
AT+CFTPPUT=?
+CFTPPUT: [{non-ascii}] "FILEPATH", <len> [,,(0-2147483647)]
OK
```

18.3.11 AT+CFTPLIST List the items in the directory on FTP server

Description

This command is used to list the items in the specified directory on FTP server

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| | |
|---------------------|---|
| Test Command | Responses |
| AT+CFTPLIST=? | +CFTPLIST: [{non-ascii}] "FILEPATH" OK |
| Write Command | Responses |
| AT+CFTPLIST="<dir>" | OK [+CFTPLIST: DATA,<len> ...] +CFTPLIST:<err> |

+CME ERROR

Defined values

<dir>

The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

<len>

The length of data reported

<err>

The result code of the listing

Examples

AT+CFTPLIST="/testd"

OK

+CFTPLIST: DATA,193

| | | | |
|-------------------|---------------|--------------|---|
| <i>drw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>0 Sep 1 18:01 .</i> |
| <i>drw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>0 Sep 1 18:01 ..</i> |
| <i>-rw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>2017 Sep 1 17:24 19800106_000128.jpg</i> |

+CFTPLIST: 0

18.3.12 AT+CFTPMKD Create a new directory on FTP server

Description

This command is used to create a new directory on the FTP server. The maximum length of the full path name is 256.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|---|--|
| <i>AT+CFTPMKD=?</i> | <i>+CFTPMKD: [{non-ascii}]DIR"</i> <i>OK</i> |
| Write Command | Responses |
| <i>AT+CFTPMKD="<dir>"</i> | <i>OK</i> <i>+CFTPMKD:<err></i> <i>ERROR</i> |

Defined values

<dir>

The directory to be created. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

<err>

The result code of the command

Examples

`AT+CFTPMKD="/testdir"`

`OK`

`AT+CFTPMKD={non-ascii}"74657374646972"`

`OK`

18.3.13 AT+CFTPRMD Delete a directory on FTP server

Description

This command is used to delete a directory on FTP server

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------------------------|-----------------------------------|
| <code>AT+CFTPRMD=?</code> | +CFTPRMD: [{non-ascii}]DIR" OK |
| Write Command | Responses |
| <code>AT+CFTPRMD="<dir>"</code> | OK +CFTPRMD:<err> ERROR |

Defined values

<dir>

The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

<err>

The result code of the command

Examples

```
AT+CFTPMD="/testdir"
OK
AT+CFTPMD={non-ascii}"74657374646972"
OK
```

18.3.14 AT+CFTPDELE Delete a file on FTP server

Description

This command is used to delete a file on FTP server

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------------|--|
| AT+CFTPDELE=? | +CFTPDELE: [{non-ascii}]"FILENAME" OK |
| Write Command | Responses |
| AT+CFTPDELE=<filename> | OK +CFTPDELE:<err> |
| e>" | ERROR |

Defined values

<filename>

The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.

<err>

The result code of the command

Examples

```
AT+CFTPDELE="test"
OK
AT+CFTPDELE={non-ascii}"74657374"
OK
```

18.3.15 Unsolicited FTP Codes (Summary of CME ERROR Codes)

| Code of <err> | Description |
|---------------|-------------|
|---------------|-------------|

| | |
|-----|----------------------------------|
| 201 | Unknown error for FTP |
| 202 | FTP task is busy |
| 203 | Failed to resolve server address |
| 204 | FTP timeout |
| 205 | Failed to read file |
| 206 | Failed to write file |
| 207 | Not allowed in current state |
| 208 | Failed to login |
| 209 | Failed to logout |
| 210 | Failed to transfer data |
| 211 | FTP command rejected by server |
| 212 | Memory error |
| 213 | Invalid parameter |
| 214 | Network error |

18.4 Hyper Text Transfer Protocol Service

18.4.1 AT+CHTTPPACT Launch a HTTP operation

NOTE: For HTTP/HTTPS operation, The “Secure Hyper Text Transfer Protocol Service” chapter AT set is recommended to be used. The AT+CHTTPPACT is only used to support old HTTP application.

Description

This command is used to launch a HTTP operation like GET or POST. Each <Ctrl+Z> character presented in the data flow of serial port will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the HTTP request data or end of the HTTP responded data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

For this command there may be a lot of DATA which need to be transferred to DTE using serial port, it is recommended that the AT+CATR will be used.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|----------------|--|
| AT+CHTTPPACT=? | +CHTTPPACT: “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="www.baidu.com", 80
OK
+CHTTPACT: DATA,280
http/1.1 302 found
date: fri, 19 feb 2016 05:51:05 gmt
server: apache
location: http://www.baidu.com/search/error.html
cache-control: max-age=86400
expires: sat, 20 feb 2016 05:51:05 gmt
content-length: 222
connection: close
content-type: text/html; charset=iso-8859-1

+CHTTPACT: DATA,222
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>302 Found</title>
</head><body>
<h1>Found</h1>
<p>The document has moved <a href="http://www.baidu.com/search/error.html">here</a>. </p>
</body></html>

+CHTTPACT: 0
AT+CHTTPACT=?
+CHTTPACT: "ADDRESS",(1-65535)
OK
```

18.4.2 AT+CHTTPSETSD Set The Way How To Send Data by AT+CHTTACT

Description

This command is used to choose the way how to send HTTP request data and set the filename of the data which will be sent by AT+CHTTPACT.

Execution command will clear the switch and reset the data file name to the default value.

Write command will set the way how to send HTTP request data and set the filename of the data which will be sent.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|-----------------|-----------|
| Execute Command | Responses |
|-----------------|-----------|

| | |
|-------------------------------------|-----------|
| AT+CHTTPSETSD | OK |
| Write Command | Responses |
| AT+CHTTPSETSD = <flag>,"<filename>" | Ok |
| | ERROR |

Defined values

<flag>

control flag how to send the data by AT+CHTTPACT, integer type

0 – The data which need to be transferred to DTE using serial port

1 – The file data which need to be put to module EFS or SD

< filename >

String type with double quotes, the name of a file.

Examples

AT+CHTTPSETSD

OK

AT+CHTTPSETSD=1,"htt-.txt"

OK

18.4.3 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

| |
|-----------------------|
| <i>AT+CHTTPSSTART</i> |
| <i>OK</i> |

18.5.2 AT+CHTTPSSTOP Stop HTTPS protocol stack

Description

This command is used to stop HTTPS protocol stack.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Execute Command | Responses |
|-----------------|-----------|
| AT+CHTTPSSTOP | OK |
| | ERROR |

Examples

| |
|----------------------|
| <i>AT+CHTTPSSTOP</i> |
| <i>OK</i> |

18.5.3 AT+CHTTPSOPSE Open HTTPS session

Description

This command is used to open a new HTTPS session. Every time, AT+CHTTPSSTART command must be executed before executing AT+CHTTPSOPSE command.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|--|---|
| AT+CHTTPSOPSE=? | +CHTTPSOPSE: "ADDRESS",,(1-65535)[,(1-2)] OK |
| Write Command | Responses |
| AT+CHTTPSOPSE="<host>,<port>[,<server_type>] | OK ERROR |

Defined values

<host>

The host address

<port>

The host listening port for SSL

<server_type>

The type of server:

1 – HTTP server.

2 – HTTPS server with SSL3.0/TLS1.0 supported.

Examples

AT+CHTTPSOPSE="www.mywebsite.com",443

OK

18.5.4 AT+CHTTPSCLSE Close HTTPS session

Description

This command is used to close the opened HTTPS session.

SIM PIN References

YES Vendor

Syntax

| Execute Command | Responses |
|-----------------|-------------|
| AT+CHTTPSCLSE | OK ERROR |

Examples

AT+CHTTPSCLSE

OK

18.5.5 AT+CHTTPSEND Send HTTPS request

Description

This command is used to send HTTPS request. The AT+CHTTPSEND=<len> is used to download the data to be sent. **The AT+CHTTPSEND is used to wait the result of sending.**

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------------------------|-------------------------------------|
| AT+CHTTPSEND=? | +CHTTPSEND: (1-4096) OK |
| Read Command | Responses |
| AT+CHTTPSEND? | +CHTTPSEND: <unsent_len> OK |
| Write Command | Responses |
| AT+CHTTPSEND=<len>[, <filename>] | > OK ERROR |
| Execute Command | Responses |
| AT+CHTTPSEND | OK +CHTTPSEND: <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

<filename>

String type with double quotes, the name of a file, the name of a file which is under current directory(when you use this command to send a file to HTTPS server ,you need use the command AT+FSCD switch to the directory where the file is)

<result>

The final result of the sending.

0 – ok

1 – unknown error

2 – busy

3 – server closed

4 – timeout

- 5 – transfer failed
- 6 – memory error
- 7 – invalid parameter
- 8 – network error

Examples

```

AT+CHTTPSEND=88
>GET /HTTP/1.1
Host: www.mywebsite.com
User-Agent: MY WEB AGENT
Content-Length: 0

OK
AT+CHTTPSEND
OK
+CHTTPSEND: 0
AT+CHTTPSEND?
+CHTTPSEND: 88
OK
AT+CHTTPSEND=88,"htt-.txt"
OK
+CHTTPSEND: 0
  
```

18.5.6 AT+CHTTPSRECV Receive HTTPS response

Description

This command is used to receive HTTPS response after sending HTTPS request.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Write Command | Responses |
|---|---|
| AT+CHTTPSRECV=<max_recv_len>[,<filename>] | OK +CHTTPSRECV: DATA,<len> ... +CHTTPSRECV: DATA,<len> ... +CHTTPSRECV:<result> +CHTTPSRECV:<result> ERROR |

ERROR

Defined values

<len>

The length of the data received.

<max_recv_len>

Maximum bytes of data to receive in the current AT+CHTTPSRECV calling. Minimum is 1.

<filename>

String type with double quotes, the name of the file which will be received to the current directory (when you use this command to receive a file, you need use the command AT+FSCD to switch to the directory where you want the file will be written to)

<result>

The final result of the receiving.

- 0 – ok
- 1 – unknown error
- 2 – busy
- 3 – server closed
- 4 – timeout
- 5 – transfer failed
- 6 – memory error
- 7 – invalid parameter
- 8 – network error

Examples

AT+CHTTPSRECV=249

OK

+CHTTPSRECV: DATA,249

HTTP/1.1 200 OK

Content-Type: text/html

Content-Language: zh-CN

Content-Length: 57

Date: Tue, 31 Mar 2009 01:56:05 GMT

Connection: Close

Proxy-Connection: Close

<html>

<header>test</header>

<body>

Test body

</body>

+CHTTPSRECV: 0

AT+CHTTPSRECV?

+CHTTPSRECV: LEN,10059

OK

AT+CHTTPSRECV=10059,"recv"□

OK

+CHTTPSRECV: 0

18.5.7 Unsolicited HTTPS Codes

| Code | Description |
|----------------------------|--|
| +CHTTPS: RECV EVENT | When the AT+CHTTPSRECV is not called, and there is data cached in the receiving buffer, this event will be reported. |
| +CHTTPSNOTIFY: PEER CLOSED | The HTTPS session is closed by the server. |

18.5.8 Unsolicited HTTPS command <err> Codes

| | |
|---|---------------------|
| 0 | Operation succeeded |
| 1 | Unknown error |
| 2 | Busy |
| 3 | Server closed |
| 4 | Operation timeout |
| 5 | Transfer failed |
| 6 | Memory error |
| 7 | Invalid parameter |
| 8 | Network error |

18.6 Secure File Transfer Protocol Service

The FTPS related AT commands need the AT+CATR to be set to the used port. AT+CATR=0 may cause some problem.

18.6.1 AT+CFTPSSTART Acquire FTPS protocol stack

Description

This command is used to acquire FTPS protocol stack.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Execute Command | Responses |
|-----------------|---|
| AT+CFTPSSTART | OK +CFTPSSTART: <err> +CFTPSSTART: <err> OK ERROR |

Defined values

<err>

The result code of the acquiring FTP/FTPS stack. 0 is success. Other values are failure.

Examples

```
AT+CFTPSSTART
OK
+CFTPSSTART: 0
```

18.6.2 AT+CFTPSSTOP Stop FTPS protocol stack

Description

This command is used to stop FTPS protocol stack. Currently only explicit FTPS mode is supported.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Execute Command | Responses |
|-----------------|--|
| AT+CFTPSSTOP | OK +CFTPSSTOP: <err> +CFTPSSTOP: <err> |

| | |
|--|-------|
| | OK |
| | ERROR |

Defined values

<err>

The result code of the stopping FTP/FTPS stack. 0 is success. Other values are failure.

Examples

```
AT+CFTPSSTOP
OK
+CFTPSSTOP: 0
```

18.6.3 AT+CFTPSLOGIN Login the FTPS server

Description

This command is used to login the FTPS server. Each time, AT+CFTPSSTART command must be executed before executing AT+CFTPSLOGIN command.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|---|---|
| AT+CFTPSLOGIN=? | +CFTPSLOGIN:"ADDRESS",,(1-65535),"USERNAME","PASSW ORD",[,(0-3)] OK |
| Write Command | Responses |
| AT+CFTPSLOGIN=" <host> ", <port> , <username> ", " <p assword> "[<server_type>] | OK +CFTPSLOGIN: <err> +CFTPSLOGIN: <err> OK ERROR |

Defined values

<host>

The host address, maximum length is 256

<port>

The host listening port for SSL, the range is from 1 to 65535

<username>

The user name, maximum length is 256

<password>

The user password, maximum length is 256

<server_type>

The type of server:

- 0 – FTP server.
- 1 – Explicit FTPS server with AUTH SSL.
- 2 – Explicit FTPS server with AUTH TLS.
- 3 – Implicit FTPS server.

<err>

The result code of the FTP/FTPS login. 0 is success. Other values are failure.

Examples

```
AT+CFTPSLOGIN="www.myftpsserver.com",990, "myname", "mypassword",3
```

OK

+CFTPSLOGIN: 0

18.6.4 AT+CFTPSLOGOUT Logout the FTPS server

Description

This command is used to logout the FTPS server.

Syntax

| Execute Command | Responses |
|-----------------|---|
| AT+CFTPSLOGOUT | OK +CFTPSLOGOUT: <err> +CFTPSLOGOUT: <err> OK ERROR |

Defined values

<err>

The result code of FTP/FTPS logout. 0 is success. Other values are failure.

Examples

```
AT+CFTPSLOGOUT
```

OK

+CFTPSLOGOUT: 0

18.6.5 AT+CFTPSMKD Create a new directory on FTPS server

Description

This command is used to create a new directory on the FTPS server. The maximum length of the full path name is 256.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------------------------|--|
| AT+CFTPSMKD=? | +CFTPSMKD: "DIR" OK |
| Write Command | Responses |
| AT+CFTPSMKD=" <i><dir></i> " | OK +CFTPSMKD: <err> ERROR ERROR |

Defined values

<dir>

The directory to be created

Examples

```
AT+CFTPSMKD="testdir"
OK
AT+CFTPSMKD={non-ascii}"74657374646972"
OK
```

18.6.6 AT+CFTPSRMD Delete a directory on FTPS server

Description

This command is used to delete a directory on FTPS server

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------|-----------|
|--------------|-----------|

| | |
|------------------------------------|------------------------|
| AT+CFTPSRMD=? | +CFTPSRMD: "DIR" OK |
| Write Command | Responses |
| AT+CFTPSRMD=" <i><dir></i> " | OK |
| | +CFTPSRMD: <err> |
| | ERROR |
| | ERROR |

Defined values

<dir>

The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

Examples

```
AT+CFTPSRMD="testdir"
OK
AT+CFTPSRMD={non-ascii}"74657374646972"
OK
```

18.6.7 AT+CFTPSDELE Delete a file on FTPS server

Description

This command is used to delete a file on FTPS server

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|------------------------------|
| AT+CFTPSDELE=? | +CFTPSDELE: "FILENAME" OK |
| Write Command | Responses |
| AT+CFTPSDELE=" <i><filename></i> " | OK |
| | +CFTPSDELE: <err> |
| | ERROR |
| | ERROR |

Defined values

<filename>

The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.

Examples

```
AT+CFTPSDELE="test"
OK
AT+CFTPDELE={non-ascii}"74657374"
OK
```

18.6.8 AT+CFTPSCWD Change the current directory on FTPS server

Description

This command is used to change the current directory on FTPS server

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------|--|
| AT+CFTPSCWD=? | +CFTPSCWD: "DIR" OK |
| Write Command | Responses |
| AT+CFTPSCWD=<dir> | OK +CFTPSCWD: <err> ERROR ERROR |

Defined values

<dir>

The directory to be changed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

Examples

```
AT+CFTPSCWD="testdir"
OK
AT+CFTPSCWD={non-ascii}"74657374646972"
OK
```

18.6.9 AT+CFTPSPWD Get the current directory on FTPS server

Description

This command is used to get the current directory on FTPS server.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Execute Command | Responses |
|-----------------|--------------------|
| AT+CFTPSPWD | +CFTPSPWD: "<dir>" |
| | OK |
| | +CFTPSPWD: <err> |
| | ERROR |
| | ERROR |

Defined values

<dir>

The current directory on FTPS server.

Examples

```
AT+CFTPSPWD
+CFTPSPWD: "/testdir"
OK
```

18.6.10 AT+CFTPSTYPE Set the transfer type on FTPS server

Description

This command is used to set the transfer type on FTPS server

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|----------------|--------------------|
| AT+CFTPSTYPE=? | +CFTPSTYPE: (A,I) |
| | OK |
| Read Command | Responses |
| AT+CFTPSTYPE? | +CFTPSTYPE: <type> |

| | |
|---------------------|-------------------|
| | OK |
| Write Command | Responses |
| AT+CFTPSTYPE=<type> | OK |
| | +CFTPSTYPE: <err> |
| | ERROR |
| | ERROR |

Defined values

<type>

The type of transferring:

- A – ASCII.
- I – Binary.

Examples

AT+CFTPSTYPE=A

OK

18.6.11 AT+CFTPSLIST List the items in the directory on FTPS server

Description

This command is used to list the items in the specified directory on FTPS server

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|----------------------|---|
| Write Command | Responses |
| AT+CFTPSLIST="<dir>" | OK +CFTPSLIST: DATA,<len> ... +CFTPSLIST:<err> ERROR |
| Execute Command | Responses |
| AT+CFTPSLIST | OK +CFTPSLIST: DATA,<len> ... +CFTPSLIST:<err> OK +CFTPSLIST:<err> |

| | |
|--|------------------|
| | +CFTPSLIST:<err> |
| | ERROR |
| | ERROR |

Defined values

<dir>

The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

<len>

The length of data reported

<err>

The result code of the listing

Examples

AT+CFTPSLIST="/testd"

OK

+CFTPSLIST: DATA,193

| | | | | |
|-------------------|---------------|--------------|-----------------|------------------------------------|
| <i>drw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>0 Sep</i> | <i>1 18:01 .</i> |
| <i>drw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>0 Sep</i> | <i>1 18:01 ..</i> |
| <i>-rw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>2017 Sep</i> | <i>1 17:24 19800106_000128.jpg</i> |

+CFTPSLIST: 0

AT+CFTPSLIST

OK

+CFTPSLIST: DATA,193

| | | | | |
|-------------------|---------------|--------------|-----------------|------------------------------------|
| <i>drw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>0 Sep</i> | <i>1 18:01 .</i> |
| <i>drw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>0 Sep</i> | <i>1 18:01 ..</i> |
| <i>-rw-rw-rw-</i> | <i>1 user</i> | <i>group</i> | <i>2017 Sep</i> | <i>1 17:24 19800106_000128.jpg</i> |

+CFTPSLIST: 0

18.6.12 AT+CFTPSGETFILE Get a file from FTPS server to EFS

Description

This command is used to download a file from FTPS server to module EFS.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CFTPSGETFILE=? | +CFTPSGETFILE: [{non-ascii}]“FILEPATH”, (list of supported <dir>s) [, (list of supported <rest_size>s)] OK |
| Write Command | Responses |
| AT+CFTPSGETFILE=“<filepath>,<dir>[,<rest_size>] | OK +CFTPSGETFILE: 0 +CFTPSGETFILE: <err> ERROR ERROR OK +CFTPSGETFILE: <err> |

Defined values

<filepath>

The remote file path. When the file path doesn't contain “/”, this command transfers file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir>

The directory to save the downloaded file:

- 0 – current directory [refer to [AT+FSCD](#)]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

<rest_size>

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<err>

The error code of FTPS operation.

Examples

```
AT+CFTPSGETFILE="/pub/mydir/test1.txt",1
```

OK

...

```
+CFTPSGETFILE: 0
```

```
AT+CFTPSGETFILE=" test2.txt",2
```

```

OK
...
+CFTPSGETFILE: 0
AT+CFTPSGETFILE={non-ascii} "B2E2CAD42E747874",2
OK
...
+CFTPSGETFILE: 0
AT+CFTPSGETFILE=?
+CFTPSGETFILE: [{non-ascii}]"FILEPATH",(0-8)[,(0-2147483647)]
OK
  
```

18.6.13 AT+CFTPPUTFILE Upload a file in module EFS to FTPS server

Description

This command is used to upload a file in the module EFS to FTPS server.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CFTPPUTFILE=? | +CFTPPUTFILE: [{non-ascii}] "FILEPATH", (list of supported <dir>s)[, (list of supported <rest_size>s)] OK |
| Write Command | Responses |
| AT+CFTPPUTFILE=“<filepath>”,<dir>[,<rest_size>] | OK +CFTPPUTFILE: 0 +CFTPPUTFILE: <err> ERROR 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 FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir>

The directory that contains the file to be uploaded:

0 – current directory [refer to [AT+FSCD](#)]

```

1   - "C:/Picture" directory
2   - "C:/Video" directory
3   - "C:/VideoCall" directory
4   - "D:/Picture" directory
5   - "D:/Video" directory
6   - "D:/VideoCall" directory
7   - "C:/Audio" directory
8   - "D:/Audio" directory
<rest_size>

```

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It’s range is 0 to 2147483647.

<err>

The error code of FTPS operation.

Examples

```

AT+CFTPSPUTFILE="/pub/mydir/test1.txt",1
OK
AT+CFTPSPUTFILE=" test2.txt",1
OK
...
+CFTPSPUTFILE: 0
AT+CFTPSPUTFILE={non-ascii} "B2E2CAD42E747874",1
OK
...
+CFTPSPUTFILE: 0
AT+CFTPSPUTFILE=?
+CFTPSPUTFILE: [{non-ascii}]"FILEPATH", (0-8)[,(0-2147483647)]
OK

```

18.6.14 AT+CFTPSGET Get a file from FTPS server to serial port

Description

This command is used to get a file from FTPS server and output it to serial port. This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|----------------------------|---|
| AT+CFTPSGET=? | OK |
| Write Command | Responses |
| AT+CFTPSGET=? | OK |
| “<filepath>” [<rest_size>] | +CFTPSGET: DATA, <len> ... +CFTPSGET: DATA, <len> +CFTPSGET: 0 |
| | +CFTPSGET: <err> |
| | ERROR |
| | ERROR |
| | +CFTPSGET: DATA, <len> ... +CFTPSGET: DATA, <len> +CFTPSGET: <err> |

Defined values

<filepath>

The remote file path. When the file path doesn't contain “/”, this command transfer file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<rest_size>

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<len>

The length of FTPS data contained in this packet.

<err>

The error code of FTPS operation.

Examples

```
AT+CFTPSGET="/pub/mydir/test1.txt"
```

OK

+CFTPSGET: DATA, 1020,

...

+CFTPSGET: DATA, 1058,

...

...

+CFTPSGET: 0

```
AT+CFTPSGET={non-ascii}"/2F74657374646972/B2E2CAD42E747874"
```

OK

+CFTPSGET: DATA, 1020,

...

+CFTPSGET: 0

```
AT+CFTPSGET=?
```

OK

18.6.15 AT+CFTPSPUT Put a file to FTPS server

Description

This command is used to put a file to FTPS server through serial port. The AT+CFTPSPUT= [“<filepath>”,]<len> is used to download the data to be sent. The AT+CFTPSPUT is used to wait the result of sending.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CFTPSPUT=? | OK |
| Read Command | Responses |
| AT+CFTPSPUT? | +CFTPSPUT: <unsent_len> OK |
| Write Command | Responses |
| AT+CFTPSPUT=[“<filepath>”,]<len>[,<rest_size>] | > OK +CFTPSPUT: <result> ERROR ERROR |
| Execute Command | Responses |
| AT+CFTPSPUT | OK +CFTPSPUT: <result> ERROR |

Defined values

<filepath>

The path of the file on FTPS server.

<unsent_len>

The length of the data in the sending buffer which is waiting to be sent.

<len>

The length of the data to send, the maximum length is 1024.

`<rest_size>`

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. Its range is 0 to 2147483647.

`<result>`

The final result of the sending.

Examples

```
AT+CFTPSPUT="t1.txt",10
>testcontent
OK
AT+CFTPSPUT
OK
+CFTPSSPUT: 0
AT+CFTPSPUT?
+CFTPSPUT: 88
OK
```

18.6.16 AT+CFTPSSIZE Get the size of a file on FTPS server

Description

This command is used to get the size of file on FTPS server

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| AT+CFTPSSIZE=? | OK |
| Write Command | Responses |
| AT+CFTPSSIZE=" filename " e>" | OK +CFTPSSIZE: <err>[,<fsize>] ERROR |

Defined values

`<filename>`

The name of the file to be deleted. If the file name contains non-ASCII characters, the `<filename>` parameter should contain a prefix of {non-ascii}.

`<err>`

The result of get file size. 0 is successful. Only when successful, the second parameter of URC

+CFTPSSIZE is provided. When failure, Only +CFTPSSIZE: <err> is reported.

<fsize>

The size of the file in byte.

Examples

```
AT+CFTPSSIZE="test.txt"
+CFTPSSIZE: 0, 1024
OK
AT+CFTPSSIZE={non-ascii},"74657374"
+CFTPSSIZE: 0, 1024
OK
```

18.6.17 AT+CFTPSCACHERD Output cached data to MCU

Description

This command is used to output cached data(generated by AT+CFTPSGET/AT+CFTPSLIST) to MCU.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Read Command | Responses |
|------------------|--|
| AT+CFTPSCACHERD? | +CFTPSCACHERD: <len> OK |
| Execute Command | Responses |
| AT+CFTPSCACHERD | <p><i>If cache data is AT+CFTPSGET:</i></p> <p>+CFTPSGET: DATA,<out_len><CR><LF> ... OK</p> <p><i>If the cache data is AT+CFTPSLIST:</i></p> <p>+CFTPSLIST: DATA,<out_len><CR><LF> ... OK</p> <p>ERROR</p> |

Defined values

<len>

The bytes of data cached in FTPS module.

<out_len>

The bytes of data to output. The maximum value is 1024 for each AT+CFTPSCACHERD calling.

Examples

```
AT+CFTPSCACHERD?
+CFTPSCACHERD: 102400
OK
AT+CFTPSCACHERD
+CFTPSGET: DATA, 1024
...
OK
```

18.6.18 AT+CFTPSSTATE Get the state of FTPS stack

Description

This command is used to get the state of FTPS stack.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Execute Command | Responses |
|-----------------|---------------------------------|
| AT+CFTPSSTATE | +CFTPSTATE: <state>,<operation> |
| | OK |
| | ERROR |

Defined values

<state>

- 0 – None
- 1 – Accquired FTPS stack
- 2 – Opening network
- 3 – Closing network
- 4 – Opened network
- 5 – Logging in
- 6 – Login
- 7 – Operating
- 8 – Logging out

<operation>

- | | | |
|----|---|--------|
| 0 | - | None |
| 1 | - | Login |
| 2 | - | Logout |
| 3 | - | List |
| 4 | - | Cwd |
| 5 | - | Pwd |
| 6 | - | Mkd |
| 7 | - | Rmd |
| 8 | - | Dele |
| 9 | - | Type |
| 10 | - | Get |
| 11 | - | Put |
| 12 | - | Size |

Examples

```
AT+CFTPSSTATE
+CFTPSSTATE: 0,0
OK
```

18.6.19 AT+CFTPSTO Set FTPS receive timeout value

Description

This command is used to set timeout value for FTPS receive timeout parameter.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|-------------------------------|--------------------------------|
| AT+CFTPSTO=? | +CFTPSTO: (10-120) OK |
| Read Command | Responses |
| AT+CFTPSTO? | +CFTPSTO: <recv_timeout> OK |
| Write Command | Responses |
| AT+CFTPSTO=<recv_time out> | OK ERROR |

Defined values

<recv_timeout>

Timeout value for FTPS receiving operation, default value is 120 seconds. The range is from 10 seconds to 120 seconds.

Examples

AT+CFTPSTO?

+CFTPSTO: 120

OK

AT+CFTPSTO=10

OK

18.6.20 AT+CFTPSABORT Abort and Stop FTPS protocol stack

Description

This command is used to abort and stop FTPS protocol stack. This command can only be used in FTPS logged-in state.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Execute Command | Responses |
|----------------------|---|
| <i>AT+CFTPSABORT</i> | OK <i>+CFTPSABORT: <err></i> <i>+CFTPSABORT: <err></i> OK ERROR |

Defined values

<err>

The result code of the aborting FTP/FTPS stack. 0 is success. Other values are failure.

Examples

AT+CFTPSABORT

OK

+CFTPSABORT: 0

18.6.21 AT+CFTPSSINGLEIP Set FTPS data socket address type

Description

This command is used to set FTPS server data socket IP address type

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------------------|-----------------------------------|
| AT+CFTPSSINGLEIP=? | +CFTPSSINGLEIP: (0,1) OK |
| Read Command | Responses |
| AT+CFTPSSINGLEIP? | + CFTPSSINGLEIP: <singleip> OK |
| Write Command | Responses |
| AT+CFTPSSINGLEIP=<sin gleip> | OK ERROR |

Defined values

<singleip>

The FTPS data socket IP address type:

- 0 – decided by PORT response from FTPS server
- 1 – the same as the control socket.

Examples

```
AT+CFTPSSINGLEIP=1
```

```
OK
```

```
AT+CFTPSSINGLEIP?
```

```
+CFTPSSINGLEIP:1
```

```
OK
```

```
AT+CFTPSSINGLEIP=?
```

```
+CFTPSSINGLEIP: (0,1)
```

```
OK
```

18.6.22 Unsolicited FTPS Codes

| Code | Description |
|---------------------------|---|
| +CFTPSNOTIFY: PEER CLOSED | The FTPS session is closed by the server. |

18.6.23 Unsolicited FTPS command <err> Codes

| | |
|----|-----------------------------------|
| 0 | FTPS operation succeeded |
| 1 | SSL verify alert |
| 2 | Unknown FTPS error |
| 3 | FTPS busy |
| 4 | FTPS server closed connection |
| 5 | Timeout |
| 6 | FTPS transfer failed |
| 7 | FTPS memory error |
| 8 | Invalid parameter |
| 9 | Operation rejected by FTPS server |
| 10 | Network error |

18.7 HTTP Time Synchronization Service

The HTP related AT commands are used to synchronize system time with HTTP server.

18.7.1 AT+CHTPSERV Set HTTP server info

Description

This command is used to add or delete HTP server information. There are maximum 16 HTP servers.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------|--|
| AT+CHTPSERV=? | +CHTPSERV:"ADD","HOST",,(1-65535), (0-1)[,"PROXY",,(1-65535)] +CHTPSERV: "DEL",,(0-15) OK |
| Read Command | Responses |
| AT+CHTPSERV? | +CHTPSERV:<index>"<host>,<port>,<http_version> [,"<proxy>,<proxy_port>] ... +CHTPSERV:<index>"<host>,<port>[,"<proxy>,<proxy_port>] |

| | |
|---|--------------------------------------|
| | OK |
| | OK <i>(if HTP server not setted)</i> |
| Write Command AT+CHTPSERV= "⟨cmd⟩","⟨host_or_idx⟩"[,⟨port⟩,<http_version> [,⟨proxy⟩,⟨proxy_port⟩]] | Responses OK ERROR |

Defined values

⟨cmd⟩

This command to operate the HTP server list.

“ADD”: add a HTP server item to the list

“DEL”: delete a HTP server item from the list

⟨host_or_idx⟩

If the ⟨cmd⟩ is “ADD”, this field is the same as ⟨host⟩, needs quotation marks; If the ⟨cmd⟩ is “DEL”, this field is the index of the HTP server item to be deleted from the list, does not need quotation marks.

⟨host⟩

The HTP server address.

⟨port⟩

The HTP server port.

⟨http_version⟩

The HTTP version of the HTP server:

0- HTTP 1.0

1- HTTP 1.1

⟨proxy⟩

The proxy address

⟨proxy_port⟩

The port of the proxy

⟨index⟩

The HTP server index.

Examples

```
AT+CHTPSERV="ADD","www.google.com",80,I
```

```
OK
```

18.7.2 AT+CHTPUPDATE Updating date time using HTP protocol

Description

This command is used to updating date time using HTP protocol.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-----------------|-----------------------------------|
| AT+CHTPUPDATE=? | OK |
| Read Command | Response |
| AT+CHTPUPDATE? | +CHTPUPDATE:<status> OK |
| Execute Command | Responses |
| AT+CHTPUPDATE | OK +CHTPUPDATE: <err> ERROR |

Defined values

<status>

The status of HTP module:

Updating: HTP module is synchronizing date time

NULL: HTP module is idle now

<err>

The result of the HTP updating

Examples

AT+CHTPUPDATE

OK

+CHTPUPDATE: 0

18.7.3 Unsolicited HTP Codes

| Code of <err> | Description |
|---------------|---------------------|
| 0 | Operation succeeded |
| 1 | Unknown error |
| 2 | Wrong parameter |

| | |
|---|--------------------------------|
| 3 | Wrong date and time calculated |
| 4 | Network error |

18.8 Common Channel Service

The common channel related AT commands needs the AT+CATR to be set to the used port. AT+CATR=0 may cause some problem.

18.8.1 AT+CCHSTART Acquire common channel service

Description

This command is used to acquire common channel service.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Execute Command | Responses |
|-----------------|---|
| AT+CCHSTART | OK +CCHSTART: <err> +CCHSTART: <err> OK ERROR |

Defined values

<err>

The result code of the acquiring common channel service. 0 is success. Other values are failure.

Examples

```
AT+CCHSTART
OK
+CCHSTART: 0
```

18.8.2 AT+CCHSTOP Stop common channel service

Description

This command is used to stop common channel service.

| SIM PIN | References |
|---------|------------|
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Execute Command | Responses |
|-----------------|---|
| AT+CCHSTOP | OK +CCHSTOP: <err> +CCHSTOP: <err> OK ERROR |

Defined values

| |
|-------|
| <err> |
|-------|

The result code of the stopping common channel service. 0 is success. Other values are failure.

Examples

| |
|-------------|
| AT+CCHSTOP |
| OK |
| +CCHSTOP: 0 |

18.8.3 AT+CCHOPEN Open a channel

Description

This command is used to connect peer using common channel service.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CCHOPEN=? | +CCHOPEN: (0,1), " ADDRESS", list of <port>s [,list of <channel_type>s [,list of <bind_port>s]] OK |
| Write Command | Responses |
| AT+CCHOPEN=<session_id>, "<host>",<port>[<channel_type>,<bind_port>] | OK +CCHOPEN: <session_id>,<err> +CCHOPEN: <session_id>,<err> OK <i>Open channel successfully in transparent mode:</i> |

| | |
|--|--|
| | CONNECT< text > <i>Open channel failed in transparent mode:</i> CONNECT FAIL ERROR |
|--|--|

Defined values

<session_id>

The session index to operate. It's from 0 to 1. In transparent mode, only 0 is valid.

<host>

The host address, maximum length is 256

<port>

The peer port for channel, the range is from 1 to 65535

<channel_type>

The type of channel:

0 – UDP.

1 – TCP client.

2 – SSLv3.0/TLSv1.0 client.

<bind_port>

The local port for channel, the range is from 1 to 65535

<text>

CONNECT result code string; the string formats please refer ATX/AT\V/AT&E command.

<err>

The result code of the opening common channel. 0 is success. Other values are failure.

Examples

```
AT+CCHOPEN=0, "www.myserver.com",443,2
```

OK

+CCHOPEN: 0 0

```
AT+CCHOPEN=0, "www.myserver.com",443,1
```

OK

+CCHOPEN: 0,0

18.8.4 AT+CCHCLOSE Close a channel

Description

This command is used to disconnect from peer.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Write Command | Responses |
|--------------------------|--|
| AT+CCHCLOSE=<session_id> | OK CLOSED +CCHCLOSE: <session_id>,<err> +CCHCLOSE: <session_id>,<err> |
| | OK |
| | ERROR |

Defined values

<session_id>

The session index to operate. It's from 0 to 1.

<err>

The result code of the closing common channel. 0 is success. Other values are failure.

Examples

AT+CCHCLOSE=0

OK

+CCHCLOSE: 0,0

18.8.5 AT+CCHSEND Send data to peer

Description

This command is used to send data to peer. If the first parameter of AT+CCHSET is set to 1, the +CCHSEND: <session_id>, <err> will be reported after AT+CCHSEND is finished.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|------------------------------------|---|
| AT+CCHSEND=? | +CCHSEND: (0,1),(1-2048) OK |
| Read Command | Responses |
| AT+CCHSEND? | +CCHSEND: 0,<unsent_len_0>,1,<unsent_len_1> OK |
| Write Command | Responses |
| AT+ CCHSEND =<session_id>,<len> | > OK ERROR |

Defined values

`<session_id>`

The session index to operate. It's from 0 to 1.

`<len>`

The length of data to send. Its range is from 1 to 2048.

`<unsent_len_0>`

The data of channel session 0 cached in DS layer which is waiting to be sent.

`<unsent_len_1>`

The data of channel session 1 cached in DS layer which is waiting to be sent.

Examples

`AT+CCHSEND=0, 125`

`>GET / HTTP/1.1`

`Host: www.google.com.hk`

`User-Agent: MAUI htp User Agent`

`Proxy-Connection: keep-alive`

`Content-Length: 0`

`OK`

18.8.6 AT+CCHRECV Receive data from the channel

Description

This command is used to receive data from the channel.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| | |
|---------------|-----------|
| Write Command | Responses |
|---------------|-----------|

`AT+CCHRECV=<session_i_d>[,<max_recv_len>]`

| | |
|---------------|-----------|
| Write Command | Responses |
|---------------|-----------|

`OK`
`[+CCHRECV: DATA, <session_id>,<len>`
`...`
`+CCHRECV: DATA, <session_id>,<len>`
`...]`
`+CCHRECV: <session_id>, <result>`
`ERROR`

Defined values

`<session_id>`

The session index to operate. It's from 0 to 1.

<max_recv_len>

Maximum bytes of data to receive in the current AT+CCHRECV calling. 0 means unlimited.

<result>

The final result of the receiving.

- 0 – ok
- 1 – unknown error
- 2 – busy
- 3 – server closed
- 4 – timeout
- 5 – transfer failed
- 6 – memory error
- 7 – invalid parameter
- 8 – network error

<len>

The length of data followed.

Examples

AT+CCHRECV=1

OK

+CCHRECV: DATA,1,249

HTTP/1.1 200 OK

Content-Type: text/html

Content-Language: zh-CN

Content-Length: 57

Date: Tue, 31 Mar 2009 01:56:05 GMT

Connection: Close

Proxy-Connection: Close

<html>

<header>test</header>

<body>

Test body

</body>

+CCHRECV:1, 0

18.8.7 AT+CCHSET Set the parameter of common channel service

Description

This command is set the parameter of common channel service. It must be called before AT+CCHSTART.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|---|---|
| AT+CCHSET=? | +CCHSET: (0,1),(0,1) OK |
| Read Command | Responses |
| AT+CCHSET? | +CCHSET: <report_send_result>,<recv_mode> OK |
| Write Command | Responses |
| AT+ CCHSET =<report_send_result>[,<recv_mode>] | OK ERROR |

Defined values

<report_send_result>

Whether to report result of CCHSEND:

0 – No.

1 – Yes.

<recv_mode>

The receiving mode:

0 – Output the data to MCU whenever received data.

1 – Module caches the received data and notify MCU with +CCHEVENT: <session_id>, RECV EVENT. MCU can use AT+CCHRECV to receive the cached data(manual receiving mode).

Examples

| |
|---------------|
| AT+CCHSET=1,1 |
|---------------|

| |
|----|
| OK |
|----|

18.8.8 AT+CCHADDR Get the IPv4 address for common channel service

Description

This command is used to get the IPv4 address after calling AT+CCHSTART.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Execute Command | Responses |
|-----------------|------------------------|
| AT+ CCHADDR | +CCHADDR: <ip_address> |
| | OK |
| | ERROR |

Defined values

<ip_address>

A string parameter that identifies the IPv4 address of the common channel service when connecting to Packet network.

Examples

```
AT+CCHADDR
+CCHADDR: 10.71.155.118
OK
```

18.8.9 AT+CCHMODE Set the mode of common channel service

Description

This command is set the mode of common channel service. This AT command must be called before calling AT+CCHSTART.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------|------------------------|
| AT+CCHMODE=? | +CCHMODE: (0,1) OK |
| Read Command | Responses |
| AT+CCHMODE? | +CCHMODE: <mode> OK |
| Write Command | Responses |
| AT+ CCHMODE =<mode> | OK ERROR |

Defined values

<mode>

The mode of common channel service:

0 – Normal.

1 – Transparent mode.

Examples

```
AT+CCHMODE=1
```

```
OK
```

18.8.10 Unsolicited common channel Codes

| Code | Description |
|--------------------------------------|--|
| +CCHEVENT: <session_id>, EVENT | RECV In manual receiving mode, when new data of a channel arriving to the module, this unsolicited result code will be reported to MCU. |
| +CCH_PEER_CLOSED: <session_id> | The channel is closed by the peer. |

18.8.11 Unsolicited common channel command <err> Codes

| | |
|---|--------------------------|
| 0 | Operation succeeded |
| 1 | Alerting state(reserved) |
| 2 | Unknown error |
| 3 | Busy |
| 4 | Peer closed |
| 5 | Operation timeout |
| 6 | Transfer failed |
| 7 | Memory error |
| 8 | Invalid parameter |
| 9 | Network error |

18.9 Secure Simple Mail Transfer Protocol Service

This chapter supports SMTP / SMTPS two kinds server. The old SMTP only supports SMTP server, and the old SMTP AT commands are for compatibility with previous customers. New customers are recommended to use the commands in this chapter.

18.9.1 AT+CSMTPSSRV Set SMTP server address and port number

Description

This command is used to set SMTP server address and server's port number. SMTP client will initiate TCP session with the specified server to send an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server address and port number.

Execution command will clear SMTP server address and set the port number as default value.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CSMTPSSRV=? | OK |
| Read Command | Responses |
| AT+CSMTPSSRV? | +CSMTPSSRV: <server>,<port>,<server_type> OK |
| Write Command | Responses |
| AT+CSMTPSSRV=<server>, <port>[,<server_type>] | OK ERROR |
| Execution Command | Responses |
| AT+CSMTPSSRV | OK ERROR |

Defined values

<server>

SMTP server address, non empty string with double quotes, mandatory and ASCII text string up to 127 characters.

<port>

Port number of SMTP server in decimal format, from 1 to 65535, and default port is 465 for SMTP.

<server_type>

The type of server:

1 – SMTP server.

2 – SMTPS server with SSL3.0/TLS1.0 supported

Examples

```
AT+CSMTPSSRV="smtp.server.com",425
```

```
OK
```

```
AT+CSMTPSSRV?
```

```
+CSMTPSSRV: "smtp.server.com",425,2
```

```

OK
AT+SMTPSRV
OK
AT+SMTPSRV?
+SMTPSRV: "",465,2
OK
  
```

18.9.2 AT+CSMTPSAUTH SMTP server authentication

Description

This synchronous command is used to control SMTP authentication during connection with SMTP server. If SMTP server requires authentication while logging in the server, TE must set the authentication control flag and provide user name and password correctly before sending an e-mail. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly. Read command returns current SMTP server authentication control flag, if the flag is 0, both <user> and <pwd> are empty strings. Execution Command clears user name and password.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CSMTPSAUTH=? | +CSMTPSAUTH: (list of supported <flag>s) OK |
| Read Command | Responses |
| AT+CSMTPSAUTH? | +CSMTPSAUTH: <flag>, <user>, <pwd> OK |
| Write Command | Responses |
| AT+CSMTPSAUTH= <flag>[, <user>, <pwd>] | OK ERROR |
| Execution Command | Responses |
| AT+CSMTPSAUTH | OK ERROR |

Defined values

<flag>
SMTP server authentication control flag, integer type.

- 0 – SMTP server doesn't require authentication, factory value.
- 1 – SMTP server requires authentication.

<user>

User name to be used for SMTP authentication, non empty string with double quotes and up to 127 characters.

<pwd>

Password to be used for SMTP authentication, string with double quotes and up to 127 characters.

NOTE: If <flag> is 0, <user> and <pwd> must be omitted (i.e. only <flag> is present).

Examples

AT+CSMTPSAUTH?

+CSMTPSAUTH: 0, "", ""

OK

AT+CSMTPSAUTH=1, "username", "password"

OK

AT+CSMTPSAUTH?

+CSMTPSAUTH: 1, "username", "password"

OK

AT+CSMTPSAUTH

OK

AT+CSMTPSAUTH?

+CSMTPSAUTH: 0, "", ""

OK

18.9.3 AT+CSMTPSFROM Sender address and name

Description

This synchronous command is used to set sender's address and name, which are used to construct e-mail header. The sender's address must be correct if the SMTP server requires, and if the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current sender's address and name.

Execution command will clear sender's address and name.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|-----------------|-------------------------------------|
| AT+CSMTPSFROM=? | OK |
| Read Command | Responses |
| AT+CSMTPSFROM? | +CSMTPSFROM: <saddr>, <sname> OK |
| Write Command | Responses |

| | |
|--------------------|-----------|
| AT+CSMTPSFROM= | OK |
| <saddr>[, <sname>] | ERROR |
| Execution Command | Responses |
| AT+CSMTPSFROM | OK |
| | ERROR |

Defined values

<saddr>

E-mail sender address (MAIL FROM), non empty string with double quotes, mandatory and ASCII text up to 127 characters. <saddr> will be present in the header of the e-mail sent by SMTP client in the field: “From:”.

<sname>

E-mail sender name, string with double quotes, and alphanumeric ASCII text up to 63 characters. <sname> will be present in the header of the e-mail sent by SMTP client in the field: “From:”.

Examples

```
AT+CSMTPSFROM="senderaddress@server.com", "sendernname"
OK
AT+CSMTPSFROM?
+CSMTPSFROM: "senderaddress@server.com", "sendernname"
OK
AT+CSMTPSFROM
OK
AT+CSMTPSFROM?
+CSMTPSFROM: "", ""
OK
```

18.9.4 AT+CSMTPSRCPT Recipient address and name (TO/CC/BCC)

Description

This synchronous command is used to set recipient address/name and kind (TO/CC/BCC). If only the parameter of “kind” is present, the command will clear all recipients of this kind, and if only parameters of “kind” and “index” are present, the command will clear the specified recipient. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current recipient address/name and kind list.

Execution command will clear all recipient information.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|---|--|
| Test Command | Responses |
| AT+CSMTPSRCPT=? | +CSMTPSRCPT: (list of supported <kind>s), (list of supported <index>s) OK |
| Read Command | Responses |
| AT+CSMTPSRCPT? | [+CSMTPSRCPT: <kind>, <index>, <raddr>, <rname> [<CR><LF>...]] OK OK ERROR |
| Write Command | Responses |
| AT+CSMTPSRCPT= <kind>[, <index> [, <raddr>[, <rname>]]] | OK ERROR |
| Execution Command | Responses |
| AT+CSMTPSRCPT | OK ERROR |

Defined values

<kind>

Recipient kind, the kinds of TO and CC are used to construct e-mail header in the field: “To: ” or “Cc: ”.

- 0 – TO, normal recipient.
- 1 – CC, Carbon Copy recipient.
- 2 – BCC, Blind Carbon Copy recipient.

<index>

Index of the kind of recipient, decimal format, and from 0 to 4.

<raddr>

Recipient address, non empty string with double quotes, and up to 127 characters.

<rname>

Recipient name, string type with double quotes, and up to 63 characters.

Examples

```
AT+CSMTPSRCPT=0, 0, "rcptaddress_to@server.com", "rcptname_to"
```

OK

```
AT+CSMTPSRCPT?
```

```
+CSMTPSRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"
```

OK

```
AT+CSMTPSRCPT=1, 0, "rcptaddress_cc@server.com", "rcptname_cc"
```

OK

```

AT+CSMTSPRCPT?
+CSMTSPRCPT: 0, 0, "rcptaddress_to@server.com", "rcptname_to"
+CSMTSPRCPT: 1, 0, "rcptaddress_cc@server.com", "rcptname_cc"
OK
  
```

18.9.5 AT+CSMTPSSUB E-mail subject

Description

This synchronous command is used to set the subject of e-mail, which is used to construct e-mail header. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly. Read command returns current e-mail subject. Execution command will clear the subject.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CSMTPSSUB=? | OK |
| Read Command | Responses |
| AT+CSMTPSSUB? | +SMTSPSUB: <subject_len>,<subject_character><CR><LF> [<subject>] OK |
| Write Command | Responses |
| AT+CSMTPSSUB=<subject _len>[,<subject_character>] | > OK ERROR |
| Execution Command | Responses |
| AT+CSMTPSSUB | OK ERROR |

Defined values

<subject>

E-mail subject, string with double quotes, and ASCII text up to 511 characters. **<subject>** will be present in the header of the e-mail sent by SMTPS client in the field: “Subject: ”. For write command, it can input any binary data.

<subject_len>

The length of subject content

<subject_character>

The character set of subject. Default is utf-8.

Examples

```

AT+CSMTPSSUB?
+CSMTPSSUB: 0, "utf-8"
OK
AT+CSMTPSSUB=19, "utf-8"
> THIS IS A TEST MAIL
OK
AT+SMTPSSUB?
+SMTPSSUB: 19, "utf-8"
THIS IS A TEST MAIL
OK
  
```

18.9.6 AT+CSMTSPSBODY E-mail body

Description

This command is used to set e-mail body, which will be sent to SMTP server with text format. Read command returns current e-mail body. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly. Execution command clears email body.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------------------|--|
| AT+CSMTSPSBODY=? | OK |
| Read Command | Responses |
| AT+CSMTSPSBODY? | +CSMTSPSBODY: <body_len><CR><LF> [<body>] OK |
| Write Command | Responses |
| AT+CSMTSPSBODY=<body _len> | > OK |
| Execution Command | Responses |
| AT+CSMTSPSBODY | OK |

Defined values

| |
|-------------------------------------|
| <body> |
| E-mail body, up to 5120 characters. |
| <body_len> |

The length of email body.

Examples

```
AT+CSMTPSBODY=38
> THIS IS A TEST MAIL FROM SIMCOM MODULE
OK
AT+CSMTPSBODY?
+CSMTPSBODY: 38
THIS IS A TEST MAIL FROM SIMCOM MODULE
OK
```

18.9.7 AT+CSMTPSBCH E-mail body character set

Description

This synchronous command is used to set the body character set of e-mail. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current e-mail body character set.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------------|-----------------------------|
| AT+CSMTPSBCH=? | OK |
| Read Command | Responses |
| AT+CSMTPSBCH? | +CSMTPSBCH: <charset> OK |
| Write Command | Responses |
| AT+CSMTPSBCH=<charset> | OK |
| > | ERROR |
| Execution Command | Responses |
| AT+CSMTPSBCH | OK ERROR |

Defined values

<charset>

E-mail body character, string with double quotes. By default, it is “utf-8”. The maximum length is 19 bytes.

Examples

```
AT+CSMTPSBCH=?  

OK  

AT+CSMTPSBCH="gb2312"  

OK  

AT+CSMTPSBCH?  

+CSMTPSBCH: "gb2312"  

OK
```

18.9.8 AT+CSMTPSFILE Select attachment

Description

The synchronous command is used to select file as e-mail attachment. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current all selected attachments with full path.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CSMTPSFILE=? | +CSMTPSFILE: (list of supported <index>s) OK |
| Read Command | Responses |
| AT+CSMTPSFILE? | [+CSMTPSFILE: <index>, <filename>, <filesize> [<CR><LF>...]] OK |
| Write Command | Responses |
| AT+CSMTPSFILE= <index>[, <filename>] | OK [+CSMTPS: <err>] ERROR |
| Execution Command | Responses |
| AT+CSMTPSFILE | OK |

Defined values

<index>

Index for attachments, from 1 to 10. According to the sequence of <index>, SMTP client will encode and send all attachments.

<filename>

String type with double quotes, the name of a file which is under current directory (refer to file

system commands). SMTP client doesn't allow two attachments with the same file name. For write command, if the file name contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

<filesize>

File size in decimal format. The total size of all attachments can't exceed 10MB.

<err>

The error information.

Examples

```
AT+CSMTPSFILE=1, "file1.txt"
OK
AT+CSMTPSFILE=1,{non-ascii} "E6B58BE8AF95E99984E4BBB62E6A7067"
OK
AT+CSMTPSFILE?
+CSMTPSFILE: 1, "C:/file1.txt"
OK
AT+CSMTPSFILE=2, "file2.txt"
OK
AT+CSMTPSFILE?
+CSMTPSFILE: 1, "C:/file1.txt"
+CSMTPSFILE: 2, "C:/file2.txt"
OK
```

18.9.9 AT+CSMTPSEND Initiate session and send e-mail

Description

This asynchronous command is used to initiate TCP/SSL session with SMTP server and send an e-mail after all mandatory parameters have been set correctly.

SIM PIN References

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|-------------------|--|
| AT+CSMTPSEND=? | OK |
| Execution Command | Responses |
| AT+CSMTPSEND | OK +CSMTPSEND: <err> ERROR +CSMTPSEND: <err> ERROR |

Defined values

<err>

The error information. 0 indicates success. Other values indicate failure.

Examples

`AT+CSMTPSEND`

`OK`

`+CSMTPSEND: 0`

18.9.10 AT+CSMTPSSTOP Force to stop sending e-mail

Description

The synchronous command is used to force to stop sending e-mail and close the TCP/SSL session while sending an e-mail is ongoing. Otherwise, the command will return “ERROR” directly.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|------------------------------|---------------------------------------|
| <code>AT+CSMTPSSTOP=?</code> | <code>OK</code> |
| Execution Command | Responses |
| <code>AT+CSMTPSSTOP</code> | <code>OK</code> <code>ERROR</code> |

Examples

`AT+CSMTPSSTOP`

`OK`

18.9.11 AT+CSMTPSCLEAN Clean mail content and setting

Description

The synchronous command is used to clean mail content and setting.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|-------------------|-----------|
| AT+CSMTPSCLEAN=? | OK |
| Execution Command | Responses |
| AT+CSMTPSCLEAN | OK |
| | ERROR |

Examples

```
AT+CSMTPSCLEAN
```

```
OK
```

18.9.12 Unsolicited SMTPS command <err> Codes

| | |
|-----|---------------------------|
| 0 | SMTPS operation succeeded |
| 1 | Busy |
| 2 | Over size |
| 3 | Duplicate file |
| 4 | Time out |
| 5 | Transfer failed |
| 6 | Memory error |
| 7 | Invalid parameter |
| 8 | Network error |
| 9 | EFS operation error |
| 10 | SMTP server error |
| 11 | Authentication failure |
| 12 | User cancel |
| 255 | Unknown error |

18.10 SSL Certificate & Key Management

18.10.1 AT+CCERTDOWN Transfer a certificate file to Module

Description

This command is used to transfer a certificate or key file to the module.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---|--------------------------------|
| AT+CCERTDOWN=? | OK |
| Write Command | Responses |
| AT+CCERTDOWN=" <filename> , <len> " | > OK > ERROR ERROR |

Defined values

<filename>

The name of the certificate/key file. The file name must have type like “.der” or “.pem”, and the .pem file cannot be protected using password.

<len>

The length of the file data to send.

Examples

```
AT+CCERTDOWN="client_key.der",611
>file content...
OK
```

18.10.2 AT+CCERTLIST List certificate/key in module

Description

This command is used to list certificate/key files which has already been downloaded to the module.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|--------------|-----------|
| Test Command | Responses |
|--------------|-----------|

| | |
|-----------------------------------|--|
| AT+CCERTLIST=? | OK |
| Execution Command AT+CCERTLIST | Responses [<list of files> with “+CCERTLIST:” header <CR><LF>] OK |

Defined values

[<list of files>](#)

The certificate/key files which has been downloaded to the module.

Examples

```
AT+CCERTLIST=?
OK
AT+CCERTLIST
+CCERTLIST: "ca_cert.der"
+CCERTLIST: "client_cert.der"
+CCERTLIST: "client_key.der"
+CCERTLIST: "server_cert.pem"
+CCERTLIST: "server_key.pem"

OK
```

18.10.3 AT+CCERTDELETE Delete certificate/key in the module

Description

This command is used to delete a certificate/key file in the module.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|------------------|-----------|
| Test Command | Responses |
| AT+CCERTDELETE=? | OK |
| Write Command | Responses |

| | |
|-------------------------------|-------|
| AT+CCERTDELE=<filename me> | OK |
| | ERROR |

Defined values

<filename>

String with or with double quotes, file name which is relative and already existing.

Examples

AT+CCERTDELE="server_key.pem"
OK

18.10.4 AT+CSSLCA Set the CA used in the module

Description

This command is used to set the CA used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

| SIM PIN | References |
|---------|------------|
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CSSLCA=? | OK |
| Read Command | Response |
| AT+CSSLCA? | (list of +SSLCA: <chain_index>,<filename>s) OK |
| | ERROR |
| Write Command | Responses |
| AT+CSSLCA=<chain_ind ex>,<filename> | OK ERROR |

Defined values

<chain_index>

The index of CA in the chain. It's range is from 0 to 3.

<filename>

The name of the CA file.

Examples

```
AT+CSSLCA=0, "rootca.der"
OK
AT+CSSLCA=1, "intermediate.der"
OK
```

18.10.5 AT+CSSLCERT Set the certificate file used in the module

Description

This command is used to set the certificate file used in following SSL operation. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CSSLCERT=? | OK |
| Read Command | Response |
| AT+CSSLCERT? | +CSSLCERT: <filename>,<ca_chain_index> OK ERROR |
| Write Command | Responses |
| AT+CSSLCERT=<filename>,<ca_chain_index> | OK ERROR |

Defined values

<ca_chain_index>

The index of CA file in the chain. It's range is from 0 to 3. The <filename> certificate file has been signed using this CA file.

<filename>

The name of the certificate file.

Examples

```
AT+CSSLCERT="mycert.der",0
OK
```

18.10.6 AT+CSSLKEY Set the key file used in the module

Description

This command is used to set the key file used in following SSL operation. The command only can be used after AT+CHTTPSSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------------------------------|--|
| AT+CSSLKEY=? | OK |
| Read Command | Response |
| AT+CSSLKEY? | +CSSLKEY: <filename>,< sll_key_type > OK ERROR |
| Write Command | Responses |
| AT+CSSLKEY=<filename>,<sll_key_type> | OK ERROR |

Defined values

<filename>

The name of the key file.

<sll_key_type>

0 - SSL_KEY_TYPE_RSA

1 - SSL_KEY_TYPE_DSA

Examples

```
AT+CSSLKEY="myKEY.der",1
```

```
OK
```

18.10.7 AT+CSSLLOADCK Load certificate/key

Description

This command is used to load the certificate/key files which has been set using AT+CSSLCA/AT+CSSLCERT/AT+CSSLKEY. The command only can be used after AT+CHTTPSSTART/AT+CCHSTART/AT+CFTPSSTART, and before any SSL open operation.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| Test Command | Responses |
|-------------------|-----------|
| AT+CSSLLOADCK=? | OK |
| Execution Command | Responses |
| AT+CSSLLOADCK | OK |
| | ERROR |

Examples

| |
|-----------------|
| AT+CSSLLOADCK=? |
|-----------------|

| |
|----|
| OK |
|----|

| |
|---------------|
| AT+CSSLLOADCK |
|---------------|

| |
|----|
| OK |
|----|

19 MMS Commands

The maximum of recipients, copy-to recipients, and secret recipients are respective 20. The maximum length of recipients' number is 60.

19.1 AT+CMMSCURL Set the URL of MMS center

Description

This command is used to set the URL of MMS center.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-----------------------------|----------------------------------|
| AT+CMMSCURL=? | +CMMSCURL:"URL" OK |
| Read Command | Responses |
| AT+CMMSCURL? | +CMMSCURL: "<mmscurl>" OK |
| Write Command | Responses |
| AT+CMMSCURL="<mmsc url>" | OK ERROR +CME ERROR: <err> |

Defined values

<mmscurl>

The URI of MMS center, not including <http://>. The max length of <mmscurl> is 40 byes.

Examples

```
AT+CMMSCURL="mmsc.monternet.com"
OK
AT+CMMSCURL?
+CMMSCURL:"mmsc.monternet.com"
OK
AT+CMMSCURL=?
+CMMSCURL:"URL"
```

OK

19.2 AT+CMMSPROTO Set the protocol parameters and MMS proxy

Description

This command is used to set the protocol parameters and MMS proxy address.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CMMSPROTO=? | +CMMSPROTO: (0,1),(0-255).(0-255).(0-255).(0-255),(0-65535) OK |
| Read Command | Responses |
| AT+CMMSPROTO? | +CMMSPROTO: <type>,<gateway>,<port> OK |
| Write Command | Responses |
| AT+CMMSPROTO=<type> [,<gateway>,<port>] | OK ERROR +CME ERROR: <err> |

Defined values

<type>

The application protocol for MMS:

- 0 – WAP
- 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+CMMSENDCFG Set the parameters for sending MMS

Description

This command is used to set the parameters for sending MMS.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CMMSENDCFG=? | +CMMSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4) OK |
| Read Command | Responses |
| AT+CMMSENDCFG? | +CMMSENDCFG: <valid>,<pri>,<sendrep>,<readrep>,<visible>,<class> OK |
| Write Command | Responses |
| AT+CMMSENDCFG=<val> <id>,<pri>,<sendrep>,<readrep> <p>,<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+CMMSENDCFG=6,3,1,1,2,4
```

OK

```
AT+CMMSENDCFG?
```

```
+CMMSENDCFG:6,3,1,1,2,4
```

OK

```
AT+CMMSENDCFG=?
```

```
+CMMSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4)
```

OK

19.4 AT+CMMSEDIT Enter or exit edit mode

Description

This command is used to enter or exit edit mode of mms.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|-----|--------|
| YES | Vendor |
|-----|--------|

Syntax

| | |
|--------------------|----------------------------------|
| Test Command | Responses |
| AT+CMMSEDIT=? | +CMMSEDIT: (0,1) OK |
| Read Command | Responses |
| AT+CMMSEDIT? | +CMMSEDIT: <mode> OK |
| Write Command | Responses |
| AT+CMMSEDIT=<mode> | OK ERROR +CME ERROR: <err> |

Defined values

<mode>

Whether to allow edit MMS:

- 0 – No.
- 1 – Yes.

Examples

AT+CMMSEDIT=0

OK

AT+CMMSEDIT?

+CMMSEDIT:0

OK

AT+CMMSEDIT=?

+CMMSEDIT:(0-1)

OK

19.5 AT+CMMSDOWN Download the file data or title from

UART

Description

This command is used to download file data to MMS body. When downloading a text file or title from UART, the text file or title must start with \xFF\xFE , \xFE\xFF or \xEF\xBB\xBF to indicate whether it is UCS2 little endian, UCS2 big endian or UTF-8 format. Without these OCTETS, the text file or title will be regarded as UTF-8 format.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|---|---|
| AT+CMMSDOWN=? | +CMMSDOWN: "PIC",(1-<max_pdu_size>),"NAME" +CMMSDOWN: "TEXT",(1-<max_pdu_size>),"NAME" +CMMSDOWN: "AUDIO",(1-<max_pdu_size>),"NAME" +CMMSDOWN: "VIDEO",(1-<max_pdu_size>),"NAME" +CMMSDOWN: "SDP", (1-<max_pdu_size>) +CMMSDOWN: "FILE", (0-8), "FILENAME" +CMMSDOWN: "TITLE", (1-40) OK |
| Write Command | Responses |
| AT+CMMSDOWN=<type>, <size>[,<name>] Or AT+CMMSDOWN=<type>, <dir>,<filename> | OK ERROR +CME ERROR: <err> |

Defined values

<type>

The type of file to download:

- “PIC” – JPG/GIF/PNG/TIFF file.
- “TEXT” – plain text file.
- “AUDIO” – MIDI/WAV/AMR/MPEG file.
- “VIDEO” – 3GPP/MP4 file.
- “SDP” – application/sdp type
- “FILE” – file in the UE.
- “TITLE” – subject of the MMS.

<size>

The size of file data needs to download through AT interface.

<name>

The name of the file to download.

<dir>

The directory of the selected file:

- 0 – current directory [refer to AT+FSCD]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory

8 – “D:/Audio” directory

<filename>

The name of the file existing in the UE to download.

<max_pdu_size>

The maximum size of MMS PDU permitted.

Examples

```
AT+CMMSDOWN=?  

+CMMSDOWN: "PIC", (1-102400), "NAME"  

+CMMSDOWN: "TEXT", (1-102400), "NAME"  

+CMMSDOWN: "AUDIO", (1-102400), "NAME"  

+CMMSDOWN: "VIDEO", (1-102400), "NAME"  

+CMMSDOWN: "SDP", (1-102400)  

+CMMSDOWN: "FILE", (0-8), "FILENAME"  

+CMMSDOWN: "TITLE", (1-40)  

OK  

AT+CMMSDOWN="PIC", 20112, "test1.jpg" <CR><LF>  

>....(20112 bytes of data transferred in AT interface)  

OK  

AT+CMMSDOWN="FILE", 2, " test2.wav"  

OK
```

19.6 AT+CMMSDELFILE Delete a file within the editing MMS body

Description

This command is used to delete a file within the editing MMS body.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|------------------------|----------------------------------|
| AT+CMMSDELFILE=? | OK |
| Write Command | Responses |
| AT+CMMSDELFILE=<index> | OK ERROR +CME ERROR: <err> |

Defined values

<index>

The index of the file to delete contains in the MMS body.

Examples

AT+CMMSDELFILE=2

OK

AT+CMMSDELFILE=?

OK

19.7 AT+CMMSEN Send MMS

Description

This command is used to send MMS. It can only be performed in edit mode of MMS.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------------------------------|--|
| <i>AT+CMMSEN=?</i> | +CMMSEN: "ADDRESS" OK |
| Write Command | Responses |
| <i>AT+CMMSEN=<address>></i> | OK +CMMSEN: 0 ERROR +CME ERROR: <err> Or OK +CMMSEN :<err> |
| Execute Command | Responses |
| <i>AT+CMMSEN</i> | OK +CMMSEN:0 ERROR +CME ERROR: <err> or |

| | |
|--|------------------------|
| | OK +CMMSSEND :<err> |
|--|------------------------|

Defined values

<address>

Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

```
AT+CMMSSEND="13613623116"
OK
+CMMSSEND:0
AT+CMMSSEND
OK
+CMMSSEND:0
AT+CMMSSEND=" 13613623116"
OK
+CME ERROR: 190
AT+CMMSSEND=2,"13613623116"
+CME ERROR: 177
```

19.8 AT+CMMSRECP Add the recipients

Description

This command is used to add the recipients.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------|--|
| AT+CMMSRECP=? | +CMMSRECP: "ADDRESS " OK |
| Read Command | Responses |
| AT+CMMSRECP? | +CMMSRECP: (list of <addr>s) OK ERROR +CME ERROR: <err> |
| Write Command | Responses |

| | |
|--------------------|----------------------------------|
| AT+CMMSRECP=<addr> | OK ERROR +CME ERROR: <err> |
|--------------------|----------------------------------|

Defined values

| |
|---|
| <addr> |
| Mobile phone number or email address. |
| As mobile phone number, the max length is 40; |
| As email address, the max length is 60; |

Examples

```
AT+CMMSRECP=?
+CMMSRECP: "ADDRESS"
OK
AT+CMMSRECP?
+CMMSRECP:"t1@test.com";"15813862534"
OK
AT+CMMSRECP="13818362596"
OK
```

19.9 AT+CMMSCC Add the cc recipients

Description

This command is used to add the cc recipients.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------|--|
| AT+CMMSCC=? | +CMMSCC: "ADDRESS " OK |
| Read Command | Responses |
| AT+CMMSCC? | +CMMSCC: (list of <addr>s) OK ERROR +CME ERROR: <err> |
| Write Command | Responses |
| AT+CMMSCC=<addr> | OK ERROR |

+CME ERROR: <err>

Defined values

<addr>

Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

```
AT+CMMSCC=?  
+CMMSCC: "ADDRESS"  
OK  
AT+CMMSCC?  
+CMMSCC:"t1@test.com";"15813862534"  
OK  
AT+CMMSCC="13818362596"  
OK
```

19.10 AT+CMMSBCC Add the secret recipients

Description

This command is used to add the secret recipients.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CMMSBCC=? | +CMMSBCC: "ADDRESS " OK |
| Read Command | Responses |
| AT+CMMSBCC? | +CMMSBCC: (list of <addr>s) OK ERROR +CME ERROR: <err> |
| Write Command | Responses |
| AT+CMMSBCC=<addr> | OK ERROR +CME ERROR: <err> |

Defined values

<addr>

Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

Examples

```
AT+CMMSBCC=?
+CMMSBCC: "ADDRESS"
OK
AT+CMMSBCC?
+CMMSBCC:"t1@test.com";"15813862534"
OK
AT+CMMSBCC="13818362596"
OK
```

19.11 AT+CMMSDELRECP Delete the recipients

Description

This command is used to delete the recipients. The execute command is used to delete all the recipients

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------------|----------------------------------|
| AT+CMMSDELRECP=? | +CMMSDELRECP: "ADDRESS " OK |
| Write Command | Responses |
| AT+CMMSDELRECP=<add r> | OK ERROR +CME ERROR: <err> |
| Execute Command | Responses |
| AT+CMMSDELRECP | OK ERROR +CME ERROR: <err> |

Defined values

<addr>

Mobile phone number or email address.
 As mobile phone number, the max length is 40;
 As email address, the max length is 60;

Examples

```
AT+CMMSDELRECP=?  

+CMMSDELRECP: "ADDRESS"  

OK  

AT+CMMSDELRECP  

OK  

AT+CMMSDELRECP="13818362596"  

OK
```

19.12 AT+CMMSDELCC Delete the cc recipients

Description

This command is used to delete the cc recipients. The execution command is used to delete all the cc recipients

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------|----------------------------------|
| AT+CMMSDELCC=? | +CMMSDELCC: "ADDRESS " OK |
| Write Command | Responses |
| AT+CMMSDELCC=<addr> | OK ERROR +CME ERROR: <err> |
| Execute Command | Responses |
| AT+CMMSDELCC | OK ERROR +CME ERROR: <err> |

Defined values

<addr>
 Mobile phone number or email address.
 As mobile phone number, the max length is 40;
 As email address, the max length is 60;

Examples

```
AT+CMMSDELCC=?  

+CMMSDELCC: "ADDRESS"  

OK  

AT+CMMSDELCC  

OK  

AT+CMMSDELCC="13818362596"  

OK
```

19.13 AT+CMMSDELBCC Delete the secret recipients

Description

This command is used to delete the secret recipients. The execution command is used to delete all the secret recipients

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------------|----------------------------------|
| AT+CMMSDELBCC=? | +CMMSDELBCC: "ADDRESS " OK |
| Write Command | Responses |
| AT+CMMSDELBCC=<addr> > | OK ERROR +CME ERROR: <err> |
| Execute Command | Responses |
| AT+CMMSDELBCC | OK ERROR +CME ERROR: <err> |

Defined values

<addr>
 Mobile phone number or email address.
 As mobile phone number, the max length is 40;
 As email address, the max length is 60;

Examples

```
AT+CMMSDELBCC=?
```

```
+CMMSDELRECP: "ADDRESS"
OK
AT+CMMSDELBCC
OK
AT+CMMSDELBCC="13818362596"
OK
```

19.14 AT+CMMSRECV Receive MMS

Description

This command is used to receive MMS. It only can be perform in non-edit mode of MMS

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|------------------------|---|
| AT+CMMSRECV=? | +CMMSRECV: "LOCATION" OK |
| Write Command | Responses |
| AT+CMMSRECV=<location> | OK +CMMSRECV: 0 ERROR +CME ERROR: <err> OK +CME ERROR :<err> |

Defined values

| |
|-----------------------------------|
| <location> |
| Reported by +WAP_PUSH_MMS message |

Examples

```
AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"
OK
+CMMSRECV: 0
AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"
OK
+CME ERROR: 190
AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"
+CME ERROR: 177
```

19.15 AT+CMMSVIEW View the information of MMS from the inbox or the memory

Description

This command is used to view the information of MMS from the inbox or the memory. The title part of the MMS is formatted with UCS2 little endian character set.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------|---|
| AT+CMMSVIEW=? | +CMMSVIEW: (0,1) OK |
| Write Command | Responses |
| AT+CMMSVIEW=<index> | +CMMSVIEW:<mmstype>,<sender>,<receipts>,<ccs>,<bcs>,<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>,<bcs>,<datetime>,<subject>,<size><CR><LF>list of [<fileIndex>,<name>,<type>,<fileSize>]<CR><LF> OK ERROR +CME ERROR: <err> |

Defined values

<index>

The index of MMS.

<mmstype>

The state of MMS:

- 0 – Received MMS.
- 1 – Sent MMS.
- 2 – Unsent MMS.

<sender>

The address of the sender

<receipts>

The list of the **recipients** separated by “;”

<ccs>

The list of cc **recipients** separated by “;”

<bccs>

The list of secret **recipients** separated by “;”

<datetime>

For received MMS, it is the time indication when you received the MMS. For other MMS, it is the time indication when you create the MMS.

<subject>

The title of MMS.

<size>

The data size of MMS.

<fileIndex>

The index of each file contained in the MMS body

<name>

The name of each file contained in the MMS body

<type>

The type of each file contained in the MMS body:

- 1 – unknown type.
- 2 – text.
- 3 – text/html.
- 4 – text/plain.
- 5 – image.
- 6 – image/gif.
- 7 – image/jpg.
- 8 – image/tif.
- 9 – image/png.
- 10 – audio/midi.
- 11 – audio/x-wav.
- 12 – audio /amr.
- 13 – audio /mpeg.
- 14 – video /mp4.
- 15 – video /3gpp.
- 29 – application/sdp.
- 30 – application/smil.

<fileSize>

The size of each file contained in the MMS body

Examples

AT+CMMSVIEW=?

+CMMSVIEW: (0,1)

```

OK
AT+CMMSVIEW
+CMMSVIEW:2,"",,"0000-00-00 00:00:00","dsidfsids",83867
0,"1.txt",4,10
1,"80.jpg",7,83794
OK
AT+CMMSVIEW=1
+CMMSVIEW:0,"",,"2009-03-10 10:06:12","my title",83867
0,"1.txt",4,10
1,"80.jpg",7,83794
OK
  
```

19.16 AT+CMMSREAD Read the given file of MMS in the memory

Description

This command is used to read the **given file of MMS in the memory**. When reading a text file, it will be converted to UCS2 little endian before final UART output.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------|---|
| AT+CMMSREAD=? | OK |
| Write Command | Responses |
| AT+CMMSREAD=<index> | +CMMSREAD:<name>,<datSize> <FileContent> |
| | OK ERROR +CME ERROR: <err> |

Defined values

| |
|---|
| <index> |
| The index of the given file contained in the MMS body |
| <name> |
| The name of the given file contained in the MMS body |
| <datSize> |

The size of the given file contained in the MMS body

<FileContent>

The content of the file to be read

Examples

```
AT+CMMSREAD=?  
OK  
AT+CMMSREAD=3  
+CMMSREAD:"1.jpg",83794  
...(File Content)  
  
OK
```

19.17 AT+CMMSSNATCH Snatch the given file in MMS

Description

This command is used to snatch the given file of MMS in memory, and save it to UE file system.
If the **input file name already exists** in the selected directory, it will fail.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|----------------------------------|
| AT+CMMSSNATCH=? | OK |
| Write Command | Responses |
| AT+CMMSSNATCH=<index>,<dir>,<filename> | OK ERROR +CME ERROR: <err> |

Defined values

<index>

The index of the given file contained in the MMS body

<dir>

The directory of the selected file:

- 0 – current directory[refer to **AT+FSCD**]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory

- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

<filename>

The name of the given file contained in the MMS body

Examples

```
AT+CMMSSNATCH=?
OK
AT+CMMSSNATCH=3,2,"mylocalfile.jpg"
OK
```

19.18 AT+CMMSSAVE Save the MMS to a mail box

Description

This command is used to save the selected MMS into a mailbox.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|-------------------------------------|--|
| AT+CMMSSAVE=? | +CMMSSAVE: (0-1),(0-2) OK |
| Write Command | Responses |
| AT+CMMSSAVE=<index>[, <mmstype>] | +CMMSSAVE: <index> OK ERROR +CME ERROR: <err> |
| Execute Command | Responses |
| AT+CMMSSAVE | +CMMSSAVE: <index> OK ERROR +CME ERROR: <err> |

Defined values

<index>

The index of mail box is selected to save the MMS

<mstype>

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=<inde x> | OK ERROR +CME ERROR: <err> |
| Execute Command | Responses |
| AT+CMMSDELETE | OK ERROR +CME ERROR: <err> |

Defined values

| |
|---|
| <index> |
| The index of the mail box, where is selected to save the MMS. |
| <mmsNum> |
| The number of MMS saved in the mail box |

Examples

| |
|-------------------------|
| <i>AT+CMMSSDELETE=?</i> |
| +CMMSSDELETE: (0-1) |
| <i>OK</i> |
| <i>AT+CMMSSDELETE</i> |
| <i>OK</i> |
| <i>AT+CMMSSDELETE=1</i> |
| <i>OK</i> |

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 AT+CMMSSYSSET=? | Responses +CMMSSYSSET: (10240-<max_pdu_size>),(512-4096),(512-4096),(1-<wap_send_buf_count>) OK |
| Write Command AT+CMMSSYSSET? | Responses +CMMSSYSSET: <max_pdu_size>,<wap_send_buf_size>,<wap_recv_buf_size>,<wap_send_buf_count> OK |
| Write Command AT+CMMSSYSSET=<max_pdu_size>[,<wap_send_buf_size>[,<wap_recv_buf_size>] | Responses OK ERROR +CME ERROR: <err> |

[,<wap_send_buf_count>]]

Defined values

<max_pdu_size>

The maximum MMS pdu size allowed by operator.

<wap_send_buf_size>

The length of WTP PDU for sending

<wap_recv_buf_size>

The length of WTP PDU for receiving

<wap_send_buf_count>

The count of buffers for WTP sending in group

Examples

AT+CMMSSYSSET=?

+CMMSSYSSET: (10240-307712),(512-4096),(512-4096),(1-8)

OK

AT+CMMSSYSSET?

+CMMSSYSSET:102400,1460,1500,6

OK

AT+CMMSSYSSET=102400,1430,1500,8

OK

AT+CMMSSYSSET=102400

OK

19.21 AT+CMMSINCLEN Increase the length of audio/video attachment header

Description

This command is used to increase the length of video/audio attachment header length in the length indicator field. This command is used to be compatible with some operators. This command must be set before calling [AT+CMMSEdit=1](#).

SIM PIN References

YES Vendor

Syntax

Test Command

Responses

AT+CMMSINCLEN=?

+CMMSINCLEN: (0,1)

OK

Read Command

Responses

| | |
|--------------------------|----------------------------------|
| AT+CMMSINCLEN? | +CMMSINCLEN: <mode> OK |
| Write Command | Responses |
| AT+CMMSINCLEN=<mod e> | OK ERROR +CME ERROR: <err> |
| | |

Defined values

<mode>

Whether to increase the length:

- 0 – No.
- 1 – Yes.

Examples

```
AT+CMMSINCLEN=0
OK
AT+CMMSINCLEN?
+CMMSINCLEN:0
OK
AT+CMMSINCLEN=?
+CMMSINCLEN:(0-1)
OK
```

19.22 AT+CMMSUA Set the User-Agent of MMS packet

Description

This command is used to set the User-Agent of MMS packet.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|----------------------|------------------------------|
| Test Command | Responses |
| AT+CMMSUA=? | +CMMSUA: "UserAgent" OK |
| Read Command | Responses |
| AT+CMMSUA? | +CMMSUA: "<useragent>" OK |
| Write Command | Responses |
| AT+CMMSUA=<useragent | OK |

| | |
|----|----------------------------|
| >" | ERROR +CME ERROR: <err> |
|----|----------------------------|

Defined values

<useragent>

The User-Agent of MMS packet. The maximum length is 511 bytes.

Examples

```
AT+CMMSUA=" Test my UserAgent"
OK
AT+CMMSUA?
+CMMSSUA: " Test my UserAgent"
OK
AT+CMMSUA=?
+CMMSSUA: " UserAgent"
OK
```

19.23 AT+CMMSPROFILE Set the User-Agent profile of MMS packet

Description

This command is used to set the User-Agent profile of MMS packet.

SIM PIN References

YES Vendor

Syntax

| Test Command | Responses |
|----------------------------|---------------------------------------|
| AT+CMMSPROFILE=? | +CMMSPROFILE:"UserAgentProfile" OK |
| Read Command | Responses |
| AT+CMMSPROFILE? | +CMMSPROFILE: "<profile>" OK |
| Write Command | Responses |
| AT+CMMSPROFILE="<profile>" | OK ERROR +CME ERROR: <err> |

Defined values

<profile>

The User-Agent profile of MMS packet. The maximum length is 511 bytes.

Examples

```
AT+CMMSPROFILE="Test my UserAgent profile"
OK
AT+CMMSPROFILE?
+CMMSSUA:"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 |
|---|---|
| +CMMSENDA:<err> | This indication means the result of sending MMS. If successful, it reports +CMMSENDA:0, or else, it reports +CMMSENDA:<err> |
| MMS Notification | Description |
| +WAP_PUSH_MMS:<sender>,<transaction_id>,<location>,<timestamp>,<class>,<size> | This indication means there is a new MMS received in the MMS center. |
| MMS Receiving | Description |
| +CMMSRECV:<err> | This indication means the result of receiving MMS. If successful, it reports +CMMSRECV:0, or else, it reports +CMMSRECV:<err> |

Defined values

< sender >

The sender address of the received MMS

<transaction_id>

The X-Mms-Transaction-ID of the received MMS

<location>

The X-Mms-Content-Location of the received MMS

<timestamp>

The timestamp of the WAP push message

<class>

The X-Mms-Class of the received MMS

- 0 – Expired
- 1 – Retrieved
- 2 – Rejected
- 3 – Deferred
- 4 – Unrecognized

<size>

The size of the received MMS

Examples

```
+WAP_PUSH_MMS
+WAP_PUSH_MMS: "15001844675","RROpJGJVjeA","http://211.136.112.84/RROpJGJVjeA"
,"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 |

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Failed to read file in UE

20 GPS Related Commands

20.1 AT+CGPS Start/stop GPS session

Description

This command is used to start or stop GPS session.

NOTE:

1. Output of NMEA sentences is automatic; no control via AT commands is provided. You can configure NMEA or UART port for output by using [AT+CGPSSWITCH](#). At present the module only supports standalone mode. If executing [AT+CGPS=1](#), the GPS session will choose cold or hot start automatically.
2. UE-based and UE-assisted mode depend on URL ([AT+CGPSURL](#)) and certificate ([AT+CGPSSL](#)). When UE-based mode fails, it will switch standalone mode.
3. UE-assisted mode is singly fixed. Standalone and UE-based mode is consecutively fixed.
4. After the GPS closed, it should to wait about 2s~30s for start again. Reason: If the signal conditions are right (strong enough signals to allow ephemeris demodulation) or ephemeris demodulation is on going, sometimes MGP will stay on longer in order to demodulate more ephemeris. This will help the engine provide faster TTFF and possibly better yield later (up to 2 hours), because it has the benefit of more ephemeris available.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------------------|--|
| AT+CGPS=? | +CGPS: (list of supported <on/off>s),(list of supported <mode>s) OK |
| Read Command | Responses |
| AT+CGPS? | +CGPS: <on/off>,<mode> OK |
| Write Command | Responses |
| AT+CGPS=<on/off> [,<mode>] | OK <i>If UE-assisted mode, when fixed will report indication:</i> +CAGPSINFO:<lat>,<lon>,<alt>,<date>,<time> |

ERROR

Defined values

<on/off>

- 0 – stop GPS session
- 1 – start GPS session

<mode>

- Ignore - standalone mode
- 1 – standalone mode
- 2 – UE-based mode
- 3 – UE-assisted mode

<lat>

Latitude of current position. Unit is in 10^8 degree

<log>

Longitude of current position. Unit is in 10^8 degree

<alt>

MSL Altitude. Unit is meters.

<date>

UTC Date. Output format is ddmmyyyy

<time>

UTC Time. Output format is hhmmss.s

Examples

AT+CGPS?

OK

AT+CGPS=1,1

OK

20.2 AT+CGPSINFO Get GPS fixed position information

Description

This command is used to get current position information.

SIM PIN References

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

Test Command

AT+CGPSINFO=?

Responses

+CCGPSINFO: (scope of <time>)

OK

| | |
|--------------------|---|
| Read Command | Responses |
| AT+CGPSINFO? | +CGPSINFO: <time> OK |
| Write Command | Responses |
| AT+CGPSINFO=<time> | OK +CGPSINFO: [<lat>],[<N/S>],[<log>],[<E/W>],[<date>],[<UTC time>],[<alt>],[<speed>],[<course>] OK (<i>if <time>=0</i>) |
| Execution Command | Responses |
| AT+CGPSINFO | +CGPSINFO: [<lat>],[<N/S>],[<log>],[<E/W>],[<date>],[<UTC time>],[<alt>],[<speed>],[<course>] OK |

Defined values

| | |
|------------|---|
| <lat> | |
| | Latitude of current position. Output format is ddmm.mmmmmm |
| <N/S> | |
| | N/S Indicator, N=north or S=south |
| <log> | |
| | Longitude of current position. Output format is dddmm.mmmmmmm |
| <E/W> | |
| | E/W Indicator, E=east or W=west |
| <date> | |
| | Date. Output format is ddmmyy |
| <UTC time> | |
| | UTC Time. Output format is hhmmss.0 |
| <alt> | |
| | MSL Altitude. Unit is meters. |
| <speed> | |
| | Speed Over Ground. Unit is knots. |
| <course> | |
| | Course. Degrees. |
| <time> | |
| | The range is 0-255, unit is second, after set <time> will report the GPS information every the seconds. |

Examples

```
AT+CGPSINFO=?  
+CGPSINFO: (0-255)
```

```

OK
AT+CGPSINFO?
+CGPSINFO: 0
OK
AT+CGPSINFO
+CGPSINFO:3113.343286,N,12121.234064,E,250311,072809.0,44.1,0.0,0
OK
  
```

20.3 AT+CGPSCOLD Cold start GPS

Description

This command is used to cold start GPS session.

NOTE: Before using this command, it must use [AT+CGPS=0](#) to stop GPS session.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|-------------------|-----------|
| AT+CGPSCOLD=? | OK |
| Execution Command | Responses |
| AT+CGPSCOLD | OK |

Examples

```

AT+CGPSCOLD=?
OK
AT+CGPSCOLD
OK
  
```

20.4 AT+CGPSHOT Hot start GPS

Description

This command is used to hot start GPS session

NOTE: Before using this command, [AT+CGPS=0](#) must be used to stop GPS session.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|--------------|-----------|
| AT+CGPSHOT=? | OK |

| | |
|-------------------|-----------|
| Execution Command | Responses |
| AT+CGPSSHOT | OK |

Examples

```
AT+CGPSSHOT=?  
OK  
AT+CGPSSHOT  
OK
```

20.5 AT+CGPSSWITCH Configure output port for NMEA sentence

Description

This command is used to choose the output port and baudrate for NMEA sentence.

NOTE: Support NMEA output over the UART, UART2 or NMEA port. You can choose only one port for the NMEA sentence. It takes effect after restarting.

If host want print GPS info to UART or UART2, then must be pull down DTR.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|---------------------------------------|---|
| Test Command | Responses |
| AT+CGPSSWITCH=? | +CGPSSWITCH: (list of supported <port>s), (list of supported <baudrate>s) OK |
| Read Command | Responses |
| AT+CGPSSWITCH? | +CGPSSWITCH: <port>, <baudrate> OK |
| Write Command | Responses |
| AT+CGPSSWITCH=<port> [,<baudrate>] | OK ERROR |
| Execution Command | Responses |
| AT+CGPSSWITCH | OK |

Defined values

<port>
1 – NMEA ports

| |
|---|
| 2 – UART ports |
| 3 – UART2 ports |
| <baudrate> |
| 4800,9600,19200,38400,57600, <u>115200</u> ,230400,460800 |

Examples

```

AT+CGPSSWITCH=?
+CGPSSWITCH:(1,2,3), (4800,9600,19200,38400,57600,115200,230400,460800)
OK
AT+CGPSSWITCH=1
OK
Note: baudrate will be use last setting value.
AT+CGPSSWITCH=1,115200
OK
AT+CGPSSWITCH?
+CGPSSWITCH:1, 115200
OK
  
```

20.6 AT+CGPSURL Set AGPS default server URL

Description

This command is used to set AGPS default server URL. It will take effect only after restarting.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|------------------|----------------------|
| AT+CGPSURL=? | OK |
| Read Command | Responses |
| AT+CGPSURL? | +CGPSURL:<URL> OK |
| Write Command | Responses |
| AT+CGPSURL=<URL> | OK ERROR |

Defined values

| |
|---|
| <URL> |
| AGPS default server URL. It needs double quotation marks. |

Examples

```
AT+CGPSURL="123.123.123.123:8888"
OK
AT+CGPSURL?
+CGPSURL:" 123.123.123.123:8888"
OK
```

20.7 AT+CGPSSL Set AGPS transport security

Description

This command is used to select transport security, used certificate or not. The certificate gets from local carrier. If the AGPS server doesn't need certificate, execute [AT+CGPSSL=0](#).

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-----------------|---|
| AT+CGPSSL=? | +CGPSSL: (list of supported <SSL>s) OK |
| Read Command | Responses |
| AT+CGPSSL? | +CGPSSL=<SSL> OK |
| Write Command | Responses |
| AT+CGPSSL=<SSL> | OK ERROR |

Defined values

| | |
|-------|-------------------------|
| <SSL> | |
| 0 | – don't use certificate |
| 1 | – use certificate |

Examples

```
AT+CGPSSL=0
OK
```

20.8 AT+CGPSAUTO Start GPS automatic

Description

This command is used to start GPS automatically when module powers on, GPS is closed defaultly.

NOTE: If GPS start automatically, its operation mode is standalone mode.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------------|---|
| AT+CGPSAUTO=? | +CGPSAUTO: (list of supported <auto>s) OK |
| Read Command | Responses |
| AT+CGPSAUTO? | +CGPSAUTO:<auto> OK |
| Write Command | Responses |
| AT+CGPSAUTO=<auto> | OK ERROR |

Defined values

| |
|-------------------|
| <auto> |
| 0 – Non-automatic |
| 1 – automatic |

Examples

```
AT+CGPSAUTO=1
OK
```

20.9 AT+CGPSNMEA Configure NMEA sentence type

Description

This command is used to configure NMEA output sentences which are generated by the gpsOne engine when position data is available.

NOTE: If bit 2 GPGSV doesn't configure, GPGSV sentence also doesn't output on AT/modem port even set AT+CGPSFTM=1.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---------------|------------------------------|
| AT+CGPSNMEA=? | +CGPSNMEA: (scope of <nmea>) |

| | |
|-------------------------------------|--|
| | OK |
| Read Command AT+CGPSNMEA? | Responses +CGPSNMEA: <nmea> OK |
| Write Command AT+CGPSNMEA=<nmea> | Responses OK <i>If GPS engine is running:</i> ERROR |

Defined values

<nmea>

Range – 0 to 511

Each bit enables an NMEA sentence output as follows:

Bit 0 – GPGGA (global positioning system fix data)

Bit 1 – GPRMC (recommended minimum specific GPS/TRANSIT data)

Bit 2 – GPGSV (GPS satellites in view)

Bit 3 – GPGSA (GPS DOP and active satellites)

Bit 4 – GPVTG (track made good and ground speed)

Bit 5 – PSTIS (proprietary string at the beginning of each GNSS session)

Bit 6 – GNGNS (fix data for GNSS receivers; output for GPS-only, GLONASS-only, *hybrid* GLONASS+GPS fixes, or even AFLT fixes)

Bit 7 – GNGSA (DOP and GLONASS satellites; GPS+GLONASS or GLONASS-only fixes. Contains DOP information for all active satellites, but other information is GLONASS-only)

Bit 8 – GLGSV (GLONASS satellites in view GLONASS fixes only)

Set the desired NMEA sentence bit(s). If multiple NMEA sentence formats are desired, “OR” the desired bits together.

Examples

AT+CGPSNMEA =511

OK

20.10 AT+CGPSMD Configure AGPS MO method

Description

This command specifies if the Mobile-Originated (MO) GPS session should use the control plane session or user plane session.

SIM PIN References

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|--------------------|---|
| AT+CGPSMD=? | +CGPSMD: (scope of <method>) OK |
| Read Command | Responses |
| AT+CGPSMD? | +CGPSMD: <method> OK |
| Write Command | Responses |
| AT+CGPSMD=<method> | OK <i>If GPS engine is running:</i> ERROR |

Defined values

| <method> |
|-------------------|
| 0 – Control plane |
| 1 – User plane |

Examples

```
AT+CGPSMD=1
OK
```

20.11 AT+CGPSFTM Start GPS test mode

Description

This command is used to start GPS test mode.

NOTE:

1. If test mode starts, the URC will report on AT port, Modem port and UART port.
2. If testing on actual signal, <SV> should be ignored, and GPS must be started by AT+CGPS, AT+CGPSCOLD or AT+CGPSHOT.
3. If testing on GPS signal simulate equipment, <SV> must be choiced, and GPS will start automatically.
4. URC sentence will report every 1 second.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------|-----------|
| AT+CGPSFTM=? | OK |

| | |
|---------------------|--------------------------|
| Read Command | Responses |
| AT+CGPSFTM? | +CGPSFTM: <on/off> OK |
| Write Command | Responses |
| AT+CGPSFTM=<on/off> | OK ERROR |

Defined values

<on/off>
 0 – Close test mode
 1 – Start test mode

<CNo>
 Satellite CNo value. Floating value.
 URC format
 \$GPGSV[,<SV>,<CNo>][...]

Examples

```
AT+CGPSFTM=1
OK
$GPGSV,3,44.5,13,45.6,32,35.3,19,39.1,23,42.5,21,38.8
$GPGSV,3,44.9,13,45.5,32,35.5,19,39.8,23,42.9,21,38.7
```

20.12 AT+CGPSDEL Delete the GPS information

Description

This command is used to delete the GPS information. After executing the command, GPS start is cold start.

NOTE: This command must be executed after GPS stopped.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|-------------------|-------------|
| Test Command | Responses |
| AT+CGPSDEL=? | OK |
| Execution Command | Responses |
| AT+CGPSDEL | OK ERROR |

Examples

`AT+CGPSDEL=?`

`OK`

`AT+CGPSDEL`

`OK`

20.13 AT+CGPSNOTIFY LCS respond positioning request

Description

This command is used to respond to the incoming request for positioning request message.

NOTE: This command is only for SIM5360A.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---|--|
| <code>AT+CGPSNOTIFY=?</code> | +CGPSNOTIFY: (list of supported <resp>s) OK |
| Write Command | Responses |
| <code>AT+CGPSNOTIFY=<resp></code> | OK ERROR |

Defined values

| <resp> |
|-----------------------------------|
| 0 – LCS notify verify accept |
| 1 – LCS notify verify deny |
| 2 – LCS notify verify no response |

Examples

`AT+CGPSNOTIFY=?`

+CGPSNOTIFY: (0-2)

`OK`

`AT+CGPSNOTIFY=0`

`OK`

20.14 AT+ CGPSXE Enable/disable GPS XTRA function

Description

This command is used to enable/disable the GPS XTRA function.

NOTE: The function will take effect after restarting the module. XTRA function must download the assistant file from network by HTTP, so the APN must be set by [AT+CGSOCKCONT](#) command.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------------|--|
| AT+CGPSXE=? | +CGPSXE: (list of supported <on/off>s) OK |
| Read Command | Responses |
| AT+CGPSXE? | +CGPSXE: <on/off> OK |
| Write Command | Responses |
| AT+CGPSXE=<on/off> | OK ERROR |

Defined values

| |
|----------------------|
| <on/off> |
| 0 – Disable GPS XTRA |
| 1 – Enable GPS XTRA |

Examples

```
AT+CGPSXE=?
+CGPSXE: (0,1)
OK
AT+CGPSXE=0
OK
```

20.15 AT+CGPSXD Download XTRA assistant file

Description

This command is used to download the GPS XTRA assistant file from network through http protocol. Module will download the latest assistant file from server and write the file into module.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------------|---|
| AT+CGPSXD=? | +CGPSXD: (list of supported <server>s) OK |
| Read Command | Responses |
| AT+CGPSXD? | +CGPSXD: <server> OK |
| Write Command | Responses |
| AT+CGPSXD=<server> | OK +CGPSXD: <resp> +CGPSXD: <resp> ERROR |

Defined values

<server>

- 0 – XTRA primary server (precedence)
- 1 – XTRA secondary server
- 2 – XTRA tertiary server

<resp>

refer to Unsolicited XTRA download Codes

Examples

AT+CGPSXD=?

+CGPSXD: (0-2)

OK

AT+CGPSXD=0

OK

+CGPSXD: 0

20.16 AT+CGPSXDAUTO Download XTRA assistant file automatically

Description

This command is used to control download assistant file automatically or not when GPS start. XTRA function must enable for using this command. If assistant file doesn't exist or check error, the module will download and inject the assistant file automatically.

SIM PIN References

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|----------------------------|--|
| AT+CGPSXDAUTO=? | +CGPSXDAUTO: (list of supported <on/off>s) OK |
| Read Command | Responses |
| AT+CGPSXDAUTO? | +CGPSXDAUTO: <on/off> OK |
| Write Command | Responses |
| AT+CGPSXDAUTO=<on/o ff> | OK ERROR |

Defined values

| <on/off> |
|------------------------------------|
| 0 – disable download automatically |
| 1 – enable download automatically |

NOTE: Some URCs will report when downloading, it's same as [AT+CGPSXD](#) command.

Examples

```
AT+CGPSXDAUTO=?
+CGPSXDAUTO: (0,1)
OK
AT+CGPSXDAUTO=0
OK
```

20.17 AT+CGPSINFOCFG Report GPS NMEA-0183 sentence

Description

This command is used to report NMEA-0183 sentence.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------|---|
| AT+CGPSINFOCFG=? | +CGPSINFOCFG: (scope of <time>),(scope of <config>) OK |
| Read Command | Responses |

| | |
|---|---|
| AT+CGPSINFOCFG? | +CGPSINFOCFG: <time>, <config> OK |
| Write Command AT+CGPSINFOCFG=<time> >[<config>] | Responses OK (NMEA-0183 Sentence) OK (<i>if <time>=0</i>) |

Defined values

<time>

The range is 0-255, unit is second, after set <time> will report the GPS NMEA sentence every the seconds.

If <time>=0, module stop reporting the NMEA sentence.

<config>

Range – 0 to511. Default value is 0.

Each bit enables an NMEA sentence output as follows:

Bit 0 – GPGGA (global positioning system fix data)

Bit 1 – GPRMC (recommended minimum specific GPS/TRANST data)

Bit 2 – GPGSV (GPS satellites in view)

Bit 3 – GPGSA (GPS DOP and active satellites)

Bit 4 – GPVTG (track made good and ground speed)

Bit 5 – PSTIS (proprietary string at the beginning of each GNSS session)

Bit 6 – GNGNS (fix data for GNSS receivers; output for GPS-only, GLONASS-only, *hybrid* GLONASS+GPS fixes, or even AFLT fixes)

Bit 7 – GNGSA (DOP and GLONASS satellites; GPS+GLONASS or GLONASS-only fixes. Contains DOP information for all active satellites, but other information is GLONASS-only)

Bit 8 – GLGSV (GLONASS satellites in view GLONASS fixes only)

Set the desired NMEA sentence bit(s). If multiple NMEA sentence formats are desired, “OR” the desired bits together.

For example:

If want to report GPRMC sentence by 10 seconds, should execute AT+CGPSINFOCFG=10,2

Examples

```
AT+CGPSINFOCFG=?  
+CGPSINFOCFG: (0-255),(0-511)  
OK  
AT+CGPSINFOCFG=10,31  
OK  
$GPGSV,4,1,16,04,53,057,44,02,55,334,44,10,61,023,44,05,45,253,43*7D  
$GPGSV,4,2,16,25,10,300,40,17,25,147,40,12,22,271,38,13,28,053,38*77
```

```

$GPGSV,4,3,16,26,09,187,35,23,06,036,34,24,,,27,,,*7A
$GPGSV,4,4,16,09,,,31,,,30,,,29,,,*7D
$GPGGA,051147.0,3113.320991,N,12121.248076,E,1,10,0.8,47.5,M,0,M,,*45
$GPVTG,NaN,T,,M,0.0,N,0.0,K,A*42
$GPRMC,051147.0,A,3113.320991,N,12121.248076,E,0.0,0.0,211211,,A*66
$GPGSA,A,3,02,04,05,10,12,13,17,23,25,26,,,1.4,0.8,1.2*3B

```

20.18 AT+CGPSPMD Configure positioning mode

Description

This command is used to configure the positioning modes support.

NOTE: Need to restart the module after setting the mode.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|-----------------------------------|
| AT+CGPSPMD=? | +CGPSPMD: (scope of <mode>) OK |
| Read Command | Responses |
| AT+CGPSPMD? | +CGPSPMD: <mode> OK |
| Write Command | Responses |
| AT+CGPSPMD=<mode> | OK ERROR |

Defined values

<mode>

Range – 1 to 127, default is 127

Each bit enables a supported positioning mode as follows:

- Bit 0 – Standalone
- Bit 1 – UP MS-based
- Bit 2 – UP MS-assisted
- Bit 3 – CP MS-based (2G)
- Bit 4 – CP MS-assisted (2G)
- Bit 5 – CP UE-based (3G)
- Bit 6 – CP UE-assisted (3G)

Set the desired mode sentence bit(s). If multiple modes are desired, “OR” the desired bits together.

Example, support standalone, UP MS-based and UP MS-assisted, set Binary value 0000 0111, is 7.

Examples

```
AT+CGPSPMD=127
OK
```

20.19 AT+CGPSMSB Configure based mode switch to standalone

Description

This command is used to configure AGPS based mode switching to standalone mode automatically or not.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|-----------------------------------|
| AT+CGPSMSB=? | +CGPSMSB: (scope of <mode>) OK |
| Read Command | Responses |
| AT+CGPSMSB? | +CGPSMSB: <mode> OK |
| Write Command | Responses |
| AT+CGPSMSB=<mode> | OK ERROR |

Defined values

| <mode> |
|---|
| 0 – Don't switch to standalone mode automatically |
| 1 – Switch to standalone mode automatically |

Examples

```
AT+CGPSMSB=0
OK
```

20.20 AT+CGPSHOR Configure positioning desired accuracy

Description

This command is used to configure the positioning desired accuracy threshold in meters.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------|----------------------------------|
| AT+CGPSHOR=? | +CGPSHOR: (scope of <acc>) OK |
| Read Command | Responses |
| AT+CGPSHOR? | +CGPSHOR: <acc> OK |
| Write Command | Responses |
| AT+CGPSHOR=<acc> | OK ERROR |

Defined values

| |
|----------------------|
| <acc> |
| Range – 0 to 1800000 |
| Default value is 50 |

Examples

| |
|---------------|
| AT+CGPSHOR=50 |
| OK |

20.21 AT+CPPS Configure pulse per second

Description

This command is used to configure the pulse per second. One(now is GPIO44 ONLY) pin pulsing every second for time synchronization while using GNSS feature, and it must fix the position. It meanders with 200ms peak length every second.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|--------------|-------------------------------|
| AT+CPPS=? | +CPPS: (scope of <on/off>),44 |
| | OK |

| | |
|---------------------|--------------------------|
| Read Command | Responses |
| AT+CPPS? | +CPPS: <on/off>,44 OK |
| Write Command | Responses |
| AT+CPPS=<on/off>,44 | OK ERROR |

Defined values

<on/off>
 0 – disable PPS
 1 – enable PPS
 Default value is 0
 44 – ONLY GPIO44 is available now

Examples

```
AT+CPPS=1,44
OK
```

20.22 AT+CGPSMODE Configure GPS and GLONASS mode

Description

This command is used to configure GPS and GLONASS start mode, so if you configured by this command, you should reboot the device.

| SIM PIN | References |
|---------|------------|
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|--------------------|------------------------------------|
| Test Command | Responses |
| AT+CGPSMODE=? | +CGPSMODE: (scope of <mode>) OK |
| Read Command | Responses |
| AT+CGPSMODE? | +CGPSMODE: <mode> OK |
| Write Command | Responses |
| AT+CGPSMODE=<mode> | OK ERROR |

Defined values

<mode>

0 – GPS and GLONASS hybrid, DPO is enabled, when position fixed, GLONASS will be closed

1 – GPS only

2 – GPS and GLONASS hybrid,DPO is disabled

Default value is 0

Examples

AT+CGPSMODE=0

OK

20.23 Unsolicited XTRA download Codes

| Code of <err> | Description |
|---------------|--|
| 0 | Assistant file download successfully |
| 1 | Assistant file doesn't exist |
| 2 | Assistant file check error |
| 220 | Unknown error for HTTP |
| 221 | HTTP task is busy |
| 222 | Failed to resolve server address |
| 223 | HTTP timeout |
| 224 | Failed to transfer data |
| 225 | Memory error |
| 226 | Invalid parameter |
| 227 | Network error |
| 220~227 | codes are same as Unsolicited HTTP codes |

20.24 Cell Assistant Location

20.24.1 AT+CASSISTLOC Start/Stop assist location

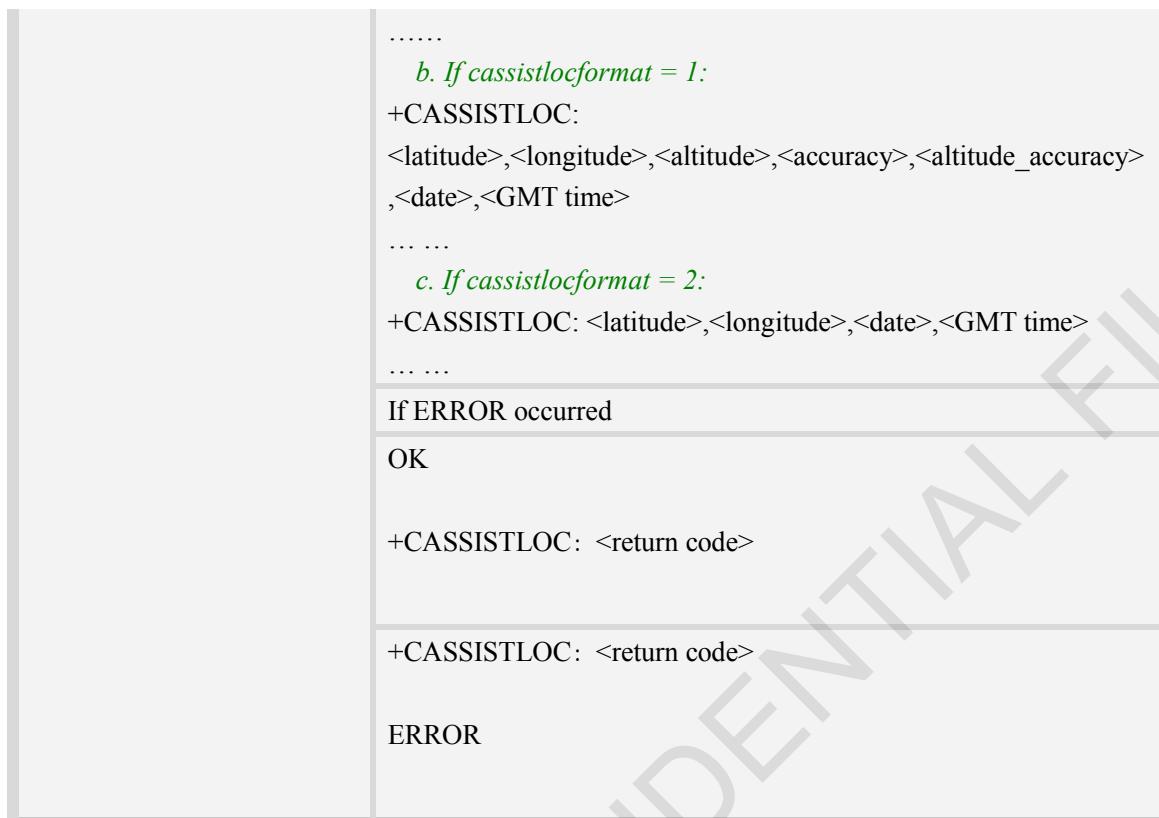
Description

This command is used to start or stop the assist location. When start, it will connect Google server and post request, then receive response. When stop, it will stop the location and release the resource.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CASSISTLOC=? | +CASSISTLOC: (0-2),(1-16),(language),(1-24*60*60) OK ERROR |
| Execution Command | Responses |
| AT+CASSISTLOC=<autorun n>[,<cid>[,<language>[,< time_between_fix>]]] | <p><i>1. If autorun = 0:</i></p> <p>OK</p> <p>+CASSISTLOC: <return code></p> <p><i>2. If autorun = 1:</i></p> <p><i>a. If cassistlocformat = 0 or cassistlocformat = 1 and the <charset> not supported:</i></p> <p>OK</p> <p>+CASSISTLOC:<charset>,<latitude>,<longitude>,<altitude>,<accuracy>,<altitude_accuracy>,<street_num>,<street>,<premises>,<city>,<county>,<region>,<country>,<country_code>,<postal_code>,<date>,<GMT time></p> <p>+CASSISTLOC: <return code></p> <p><i>b. If cassistlocformat = 1:</i></p> <p>OK</p> <p>+CASSISTLOC: <latitude>,<longitude>,<altitude>,<accuracy>,<altitude_accuracy>,<date>,<GMT time></p> <p>+CASSISTLOC: <return code></p> <p><i>c. If cassistlocformat = 2:</i></p> <p>+CASSISTLOC: <latitude>,<longitude>,<date>,<GMT time></p> <p>+CASSISTLOC: <return code></p> <p><i>3. If autorun = 2:</i></p> <p><i>a. If cassistlocformat = 0 or cassistlocformat = 1 and the <charset> not supported:</i></p> <p>OK</p> <p>+CASSISTLOC:<charset>,<latitude>,<longitude>,<altitude>,<accuracy>,<altitude_accuracy>,<street_num>,<street>,<premises>,<city>,<county>,<region>,<country>,<country_code>,<postal_code></p> <p>+CASSISTLOC:<charset>,<latitude>,<longitude>,<altitude>,<accuracy>,<altitude_accuracy>,<street_num>,<street>,<premises>,<city>,<county>,<region>,<country>,<country_code>,<postal_code>,<date>,<GMT time></p> |



Defined values

<autorun>

- 0 – stop location
- 1 – start location, only once
- 2 – start cycle location

<cid>

network parameters, refer to AT+CGSOCKCONT.

Not required, the default value is 1.

<language>

accept language. Refer to Google standard: en_GB, zh_CN and so on.

Not required, the default value is en_GB

<time_between_fix>

Time interval of fix(second), range: 1 second – 24 hours.

Not required, the default value is 1 second.

<charset>

charset for URC(not include the Date and Time). ASCII, UTF-8 and so on.

<latitude>

Latitude of current position in degrees.

<longitude>

Longitude of current position in degrees.

<altitude>

Altitude of the fix. Unit is meters (not required).

< accuracy >

The horizontal accuracy of the fix, in meters at a 95% confidence level. This is required unless the request specified a valid location object, i.e. a request for a reverse-genocide of a known position(not required)

< altitude_accuracy >

The accuracy of the altitude, in meters(not required)

< street_num >

The building's street number(not required)

< street >

Street name(not required)

< premises >

Premises, e.g. building name(not required)

< city >

City name(not required)

< county >

County name (not required).

< region >

Region, e.g. a state in the US(not required)

< country >

Country(not required)

< country_code >

Country code(not required)

< postal_code >

Postal code. This is the zip code in the US and postcode in the UK(not required).

< date >

Date when get the address information. Output format is ddmmyy.

< GMT time >

GMT Time when get the address information. Output format is hhmmss.

< return code >

The result code of the location.

0 – OK

1 – Unknow error

2 – Invalid parma error

3 – Bad got error

4 – network error

5 – busy error

6 – not run error

NOTE:

1. When <autorun> is set to 0 and the others parameters not be given (AT+CASSISTLOC=0), the command is to stop the location.
2. When <autorun> is set to 1 or 2, <cid> is required, but <language>, < time_between_fix> is not required.
3. When <autorun> is set to 2 and there is an error occurred, there is not an error report, the location

is continuing.

4. The < charset > is only applicable to the address information, not include the <date> and <GMT time>.
5. The coding format of <date> and <GMT time> is ASCII.
6. When AT+CASSISTLOCFORMAT=0 or 1, it will access <http://www.google.com/loc/json> to request the location information; But when AT+ CASSISTLOCFORMAT=2, it will access <http://www.google.com/glm/mmap> to request the location information.
7. In the cell location process, it will query the DNS. The timeout value of querying DNS is 70s, customer can call AT+CIPDNSSET to the timeout value for performing DNS query. The best timeout value for performing DNS query less than 70s. The AT+CIPDNSSET instruction for use can refer the “Set DNS maximum timeout value” in “TCPIP Application Note for WCDMA Solution”.

Examples

```

AT+CASSISTLOC=?
+ CASSISTLOC: (0-2) , (1-16),(language),(1-24*60*60)
OK
AT+CASSISTLOC=1,2,"zh_CN"
OK
+CASSISTLOC:UTF-8,33312E32323137363537,3132312E33353532343739,,3734322E30,,E58D
8FE5928CE8B7AF,E4B88AE6B5B7E5B882,E4B88AE6B5B7E5B882,E4B8ADE59BBD,434E, ,15
0612,093747
+CASSISTLOC: 0
AT+CASSISTLOC=2,1,"en_GB",2
OK
+CASSISTLOC:,,,,,,,
+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,58696
56865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,150612,093747

+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,58696
56865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,150612,093747
AT+CASSISTLOC=0
OK
+CASSISTLOC: 0
AT+CASSISTLOC=0
+CASSISTLOC: 6
ERROR

```

20.24.2 AT+CASSISTLOCFORMAT Set assist location report information's format

Description

This command is used to set the format of the report information.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--------------------|---------------------------|
| AT+CASSISTLOCFORMA | +CASSISTLOCFORMAT: (0-2) |
| T=? | OK |
| Read Command | Responses |
| AT+CASSISTLOCFORMA | +CASSISTLOCFORMAT: <mode> |
| T? | OK |
| Write Command | Responses |
| AT+CASSISTLOCFORMA | OK |
| T=<mode> | ERROR |

Defined values

| |
|--|
| <mode> |
| 0 – report detail address |
| 1 – not report detail address |
| 2 – only report latitude, longitude, data and time |

Examples

| |
|---|
| AT+CASSISTLOCFORMAT=? |
| +CASSISTLOCFORMAT: (0-2) |
| OK |
| AT+CASSISTLOCFORMAT? |
| + CASSISTLOCFORMAT: 0 |
| OK |
| AT+ CASSISTLOCFORMAT=I |
| OK |
| NOTE: |
| 1. When AT+CASSISTLOCFORMAT=0, the report location information is as follow: |
| +CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,58696 |
| 56865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,150612,093747 |

2. When AT+CASSISTLOCFORMAT=1, the report location information is as follow:

+CASSISTLOC:31.2224168,121.353584,,1029.0.,050912,064437

3. When AT+CASSISTLOCFORMAT=1, and if the charset returned by the server is not supported, the report location information is the same as AT+CASSISTLOCFORMAT=0.

4. When AT+CASSISTLOCFORMAT =2, the report location information is as follow:

+CASSISTLOC: 31.222163,121.353461,291112,060037

5. When AT+CASSISTLOCFORMAT=0 or 1, it will access <http://www.google.com/loc/json> to request the location information; But when AT+ CASSISTLOCFORMAT=2, it will access <http://www.google.com/glm/mmap> to request the location information.

6. When AT+CASSISTLOCFORMAT =2, the <language> parameter of AT+CASSISTLOC command is ignored and can be not set.

20.24.3 AT+CASSISTLOCTRYTIMES Set retry times

Description

This command is used to set the max number to try connection when the http connects if failed.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|---------------------|---------------------------------------|
| AT+CASSISTLOCTRYTIM | +CASSISTLOCTRYTIMES: (2-10),(5-60*60) |
| ES=? | OK |
| Read Command | Responses |
| AT+CASSISTLOCTRYTIM | +CASSISTLOCTRYTIMES: <num>,<time> |
| ES? | OK |
| Execution Command | Responses |
| AT+CASSISTLOCTRYTIM | OK |
| ES=<num>[, <time>] | ERROR |

Defined values

< num >

the number to retry when error occurred

< time >

The time between tries. The unit is second, range is 5 - 60*60.

Examples

```

AT+CASSISTLOCTRYTIMES=?
+CASSISTLOCTRYTIMES: (2-10),(5-60*60)
OK
AT+CASSISTLOCTRYTIMES?
+CASSISTLOCTRYTIMES: 3,5
OK
AT+CASSISTLOCTRYTIMES=3,10
OK
  
```

20.24.4 AT+CASSISTLOCMODE Set assist location mode

Description

This command is used to set the mode of location.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| | |
|--------------------------|-------------------------------|
| Test Command | Responses |
| AT+CASSISTLOCMODE=? | +CASSISTLOCMODE: (0, 1) OK |
| Read Command | Responses |
| AT+CASSISTLOCMODE? | +CASSISTLOCMODE: <mode> OK |
| Write Command | Responses |
| AT+CASSISTLOCMODE=<mode> | OK ERROR |

Defined values

<mode>
 0 – using single cell
 1 – using more cell

NOTE:

When AT+CASSISTLOCFORMAT=2, the AT+CASSISTLOCMODE only support <mode>=0.

Examples

```
AT+CASSISTLOCMODE=?
```

+CASSISTLOCMODE: (0,1)

OK

AT+CASSISTLOCMODE?

+CASSISTLOCMODE: 1

OK

AT+CASSISTLOCMODE=1

OK

20.25 AT+CLBS Base station location

Description

The write command is used to base station location.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|--|--|
| AT+CLBS=? | +CLBS: (1,3,4,9),(1-3),(-180.000000-180.000000),(-90.000000-90.000000), (0,1) OK |
| Write Command | Responses |
| AT+CLBS=<type>,<cid>,[[<longitude>,<latitude>],[<lon_type>]] | OK 1)type = 1,get longitude and latitude +CLBS: <ret_code>[,<longitude>,<latitude>,<acc>] 2)type = 3,get access times +CLBS: <ret_code>[,<times>] 3)type = 4,get longitude latitude and date time +CLBS: <ret_code>[,<longitude>,<latitude>,<acc>,<date>,<time>] 4)type = 9, report positioning error +CLBS: <ret_code> |

Defined values

<type>

A numeric parameter which specifies the location type.

- 1 use 3 cell's information
- 3 get access times
- 4 get longitude latitude and date time
- 9 report positioning error

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

<longitude>

Current longitude in degrees.

<latitude>

Current latitude in degrees.

<acc>

Positioning accuracy.

<lon_type>

The type of longitude and latitude

- 0 WGS84, the default type
- 1 GCJ02.

<times>

access service times.

<data>

service date.

<time>

service time.

<ret_code>

The result code.

- 0 Success
- 1 Parameter error returned by server.
- 2 Service out of time returned by server.
- 3 Location failed returned by server.
- 4 Query timeout returned by server.
- 5 Certification failed returned by server.
- 6 Server LBS error success.
- 7 Server LBS error failed.
- 80 Report LBS to server success
- 81 Report LBS to server parameter error
- 82 Report LBS to server failed
- 110 Other Error

- 8 LBS is busy.
- 9 Open network error.
- 10 Close network error.
- 11 Operation timeout.
- 12 DNS error.
- 13 Create socket error.
- 14 Connect socket error.
- 15 Close socket error.
- 16 Send data error.
- 17 Receive data error.
- 18 NONET error.

Examples

```
AT+CDNSSRV=?  
+CLBS: (1,3,4,9),(1-16),(-180.000000-180.000000),(-90.000000-90.000000),(0,1)
```

OK

```
AT+CLBS=1
```

OK

```
+CLBS: 0,31.228525,121.380295,500
```

```
AT+CLBS=3
```

OK

```
+CLBS: 0,22
```

```
AT+CLBS=4
```

OK

```
+CLBS: 0,31.228525,121.380295,500,2025/06/07,10:49:08
```

```
AT+CLBS=9
```

OK

```
+CLBS: 80
```

21 Voice Mail Related Commands

The module supports voice mail AT commands.

21.1 AT+CSVM Subscriber number

Description

Execution command returns the voice mail number related to the subscriber.

| | |
|---------|----------------|
| SIM PIN | References |
| YES | 3GPP TS 27.007 |

Syntax

| Test Command | Responses |
|-----------------------------------|--|
| AT+CSVM=? | +CSVM: (0-1), “(0-9,+”, (128-255) OK |
| Read Command | Responses |
| AT+CSVM? | +CSVM: <valid>, “<number>”,<type> OK ERROR |
| Write Command | Responses |
| AT+CSVM=<valid>,“<number>”,<type> | OK ERROR |

Defined values

<valid>

Whether voice mail number is valid:

- 0 – Voice mail number is invalid.
- 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

21.2 Indication of Voice Mail

| | |
|---------------------------------|--|
| Box Empty | Description |
| +VOICEMAIL: EMPTY | This indication means the voice mail box is empty |
| New Message | Description |
| +VOICEMAIL: NEW MSG | This indication means there is a new voice mail message notification received. This is for CPHS. |
| Voice Mail Status Updated | Description |
| +VOICEMAIL: WAITING, <count> | This indication means that there are <count> number of voice mail messages that needs to be got. |

Defined values

< count >

Count of voice mail message that waits to be got.

Examples

+VOICEMAIL: WAITING, <count>

+VOICEMAIL: WAITING, 5

22 EONS Related AT commands

The module supports EONS function.

22.1 Indication of EONS

| | |
|--------------|--|
| OPL INIT | Description |
| OPL DONE | This indication means EF-OPL has been read successfully. Only after this URC is reported, the AT+COPS? can query the network name that supports EONS function. |
| PNN INIT | Description |
| PNN DONE | This indication means EF-PNN has been read successfully |
| OPL UPDATING | Description |
| OPL UPDATING | This indication means the EF-OPL is updating using OTA message. After updating, the “OPL DONE” should report. |
| PNN UPDATING | Description |
| PNN UPDATING | This indication means the EF-PNN is updating using OTA message. After updating, the “PNN DONE” should report. |

23 Audio Application Commands

23.1 AT+CQCPREC Start recording sound clips

Description

The command is used to start recording sound clip. The name of audio file will be generated automatically based on system time [refer [AT+CCLK](#)], and the storage location of audio file refers to [AT+FSLOCA](#).

NOTE: If recording during a call, the <type> will set automatically refer to the call vocoder.

SIM PIN References

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| Test Command | Responses |
|--------------|---|
| AT+CQCPREC=? | +CQCPREC: (list of supported <source>s), (list of supported |

| | |
|--|--|
| | <format>s), (list of supported <type>s) OK |
| Write Command AT+CQCPREC=<source>,<format>,[<type>] | Responses <path_name> +AUDIOSTATE: audio record OK ERROR |

Defined values

<source>

- 0 – local path
- 1 – remote path

<format>

Format of the audio file:

- amr – AMR format
- qcp – QCP format
- wav – WAV format

<type>

Audio file format type:

- 10 – 4.75kbit/s AMR type QCP format
- 11 – 5.15kbit/s AMR type QCP format
- 12 – 5.9kbit/s AMR type QCP format
- 13 – 6.7kbit/s AMR type QCP format
- 14 – 7.4kbit/s AMR type QCP format
- 15 – 7.95kbit/s AMR type QCP format
- 16 – 10.2kbit/s AMR type QCP format
- 17 – 12.2kbit/s AMR type QCP format
- 18 – 4.75kbit/s AMR type with DTX enabled QCP format
- 19 – 5.15kbit/s AMR type with DTX enabled QCP format
- 20 – 5.9kbit/s AMR type with DTX enabled QCP format
- 21 – 6.7kbit/s AMR type with DTX enabled QCP format
- 22 – 7.4kbit/s AMR type with DTX enabled QCP format
- 23 – 7.95kbit/s AMR type with DTX enabled QCP format
- 24 – 10.2kbit/s AMR type with DTX enabled QCP format
- 25 – 12.2kbit/s AMR type with DTX enabled QCP format
- 26 – 4.75kbit/s AMR type AMR format
- 27 – 5.15kbit/s AMR type AMR format
- 28 – 5.9kbit/s AMR type AMR format
- 29 – 6.7kbit/s AMR type AMR format
- 30 – 7.4kbit/s AMR type AMR format
- 31 – 7.95kbit/s AMR type AMR format

- 32 – 10.2kbit/s AMR type AMR format
- 33 – 12.2kbit/s AMR type AMR format
- 34 – 4.75kbit/s AMR type with DTX enabled AMR format
- 35 – 5.15kbit/s AMR type with DTX enabled AMR format
- 36 – 5.9kbit/s AMR type with DTX enabled AMR format
- 37 – 6.7kbit/s AMR type with DTX enabled AMR format
- 38 – 7.4kbit/s AMR type with DTX enabled AMR format
- 39 – 7.95kbit/s AMR type with DTX enabled AMR format
- 40 – 10.2kbit/s AMR type with DTX enabled AMR format
- 41 – 12.2kbit/s AMR type with DTX enabled AMR format
- 42 – EFR QCP format
- 43 – FR QCP format
- 44 – HR QCP format

<path_name>

If saved in ME:

“C:/Audio/YYYYMMDD_HHMMSS.amr”

If saved in SD card:

“D:/Audio/YYYYMMDD_HHMMSS.amr”.

Examples

```
AT+CQCPREC=0,amr
C:/Audio/20080520_120303.amr
OK
```

23.2 AT+CQCPPAUSE Pause sound record

Description

The execution command pause record sound.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|---------------------------------------|
| AT+CQCPPAUSE | +AUDIOSTATE: audio record pause OK |

Examples

```
AT+CQCPPAUSE
+AUDIOSTATE: audio record pause
```

OK

23.3 AT+CQCPRESUME Resume sound record

Description

The command is used to resume sound record.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|---------------------------|
| AT+CQCPRESUME | +AUDIOSTATE: audio record |
| | OK |

Examples

```
AT+CQCPRESUME
+AUDIOSTATE: audio record
OK
```

23.4 AT+CQCPSTOP Stop sound record

Description

The command is used to stop sound record. Execute the command during recording sound.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|--------------------------------|
| AT+CQCPSTOP | +AUDIOSTATE: audio record stop |
| | OK |

Examples

```
AT+CQCPSTOP
+AUDIOSTATE: audio record stop
OK
```

23.5 AT+CCMXPLAY Play audio file

Description

The command is used to play an audio file.

NOTE Make sure the file path is “C:/Audio/” or “D:/Audio/” when playing sound by command [AT+FSCD](#).

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CCMXPLAY=? | +CCMXPLAY: (list of supported <play_path>s),(list of supported <repeat>s) OK |
| Write Command | Responses |
| AT+CCMXPLAY=<file_name>[,<play_path>[,<repeat>]] | +AUDIOSTATE: audio play OK ERROR |

Defined values

<file_name>

The name of audio file. Support audio file format midi, mp3, aac, amr, qcp, wav.

<play_path>

- 0 – local path (If <play_path> is omitted, default value is used.)
- 1 – local path during call
- 2 – remote path during call
- 3 – both path during call

<repeat>

- 0 – don't play repeat. Play only once.
- 1...255 – play repeat times. E.g. <repeat>=1, audio will play twice.

NOTE <play_path>=1, 2 or 3 must be used during call. During call, play file in remote path and both path which audio file format must be same as the voice call codec. The codec refer to [AT+CVOC](#).

Examples

```
AT+FSCD=Audio
```

```
+FSCD: C:/Audio/
```

```

OK
AT+FSCD?
+FSCD: C:/Audio/
OK
AT+CCMXPLAY="20080520_120303.amr",0,0
+AUDIOSTATE: audio play
OK
  
```

23.6 AT+CCMXPAUSE Pause playing audio file

Description

The command is used to pause playing audio file.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|-------------------------------|
| AT+CCMXPAUSE | +AUDIOSTATE: audio play pause |
| | OK |

Examples

```

AT+CCMXPAUSE
+AUDIOSTATE: audio play pause
OK
  
```

23.7 AT+CCMXRESUME Resume playing audio file

Description

The command is used to resume playing audio file.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|-------------------------|
| AT+CCMXRESUME | +AUDIOSTATE: audio play |
| | OK |

Examples

```
AT+CCMXRESUME
+AUDIOSTATE: audio play
OK
```

23.8 AT+CCMXSTOP Stop playing audio file

Description

The command is used to stop playing audio file. Execute this command during audio playing.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Execution Command | Responses |
|-------------------|------------------------------|
| AT+CCMXSTOP | +AUDIOSTATE: audio play stop |
| | OK |

Examples

```
AT+CCMXSTOP
+AUDIOSTATE: audio play stop
OK
```

23.9 AT+CCMXSPEC Get the audio file specification

Description

The command is used to get the audio file specification. The storage location of audio file refers to [AT+FSLOCA](#).

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-----------------------------|--------------------------|
| AT+CCMXSPEC=? | OK |
| Write Command | Responses |
| AT+CCMXSPEC=<file_na me> | +CCMXSPEC : <spec> OK |

ERROR

Defined values

<file_name>

The name of audio file.

<spec>

- 0 – MIDI file
 - 5 – MP3 file
 - 6 – AAC file
 - 14 – AMR QCP file
 - 15 – EFR QCP file
 - 16 – FR QCP file
 - 17 – HR QCP file
 - 18 – WAVE file
 - 19 – AMR file
 - 20 – AMR-WB file
 - 24 – Unknown file
- Other values is reserved

Examples

```
AT+CCMXSPEC="efr:qcp"
+CCMXSPEC: 15
OK
```

23.10 AT+CCMXPLAYRING Play a user-defined ring

Description

The command is used to play a user-defined ring file.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---|
| AT+CCMXPLAYRING=? | +CCMXPLAYRING: (list of supported <on/off>s),(list of supported <pause>s) OK |
| Read Command | Responses |
| AT+CCMXPLAYRING? | +CCMXPLAYRING: <on/off>,"<file>",<pause> OK |

| Write Command | Responses |
|-----------------------------|-----------|
| AT+CCMXPLAYRING= | OK |
| <on/off>[,”<file>”,<pause>] | ERROR |

Defined values

<on/off>

- 0 – disable play user defined ring
- 1 – enable play user defined ring

NOTE If setting with one parameter, must make user the <file> is existent.

<file>

User-defined ring file whole path. like "C:/Audio/ring1.mp3".

<pause>

0..60 seconds

Time (in second) of silence between repeating of file. (0 for no repeating)

Examples

```
AT+CCMXPLAYRING=?  
CCMXPLAYRING: (0,1),(0-60)  
OK  
AT+CCMXPLAYRING=1,"C:/Audio/ring1.mp3",2  
OK  
AT+CCMXPLAYRING?  
CCMXPLAYRING: 1,"C:/Audio/ring1.mp3",2  
OK
```

23.11 AT+CCMXPLAYWAV Play wav audio file

Description

This command is used to play a wav audio file. It can play wav file during a call or not.

NOTE Wav file format require mono channel, 8kHz sampling frequency, 16bit sampling size, 128kbps.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|------------------|--|
| AT+CCMXPLAYWAV=? | +CCMXPLAYWAV: (list of supported <play_path>s),(list of supported <repeat>s) |

| | |
|--|--|
| | OK |
| Write Command AT+CCMXPLAYWAV= <file_name>,<play_path>[,< repeat>] | Responses +WAVSTATE: wav play OK <i>Report URC automatically after playing end</i> +WAVSTATE: wav play stop ERROR |
| | |
| | |

Defined values

<file_name>

The name of wav audio file.

<play_path>

1 – remote path

2 – local path

<repeat>

This parameter is reserved.

Examples

AT+CCMXPLAYWAV="test.wav",2

+WAVSTATE: wav play

OK

23.12 AT+CCMXSTOPWAV Stop playing wav audio file

Description

This command is used to stop playing wav audio file. Execute this command during wav audio playing.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|-------------------------------------|---|
| Test Command AT+CCMXSTOPWAV=? | Responses OK |
| Execution Command AT+CCMXSTOPWAV | Responses [+WAVSTATE: wav play stop] OK |

Examples

```
AT+CCMXSTOPWAV
+WAVSTATE: wav play stop
OK
```

23.13 AT+CCMXWAVSTATE Get wav file play state

Description

This command is used to get wav play state.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|---------------------------------------|
| AT+CCMXWAVSTATE=? | OK |
| Read Command | Responses |
| AT+CCMXWAVSTATE? | +CCMXWAVSTATE: <state> OK ERROR |

Defined values

| |
|---------------------|
| <state> |
| 0 – wav play stoped |
| 1 – wav playing |

Examples

```
AT+CCMXWAVSTATE?
+CCMXWAVSTATE: 0
OK
```

24 CSCRIPT Commands

24.1 AT+CSCRIPTSTART Start running a LUA script file.

Description

This command is used to start running a LUA script file. The script file must exist in c:\ in the module EFS. This command shouldn't be used by sio LIB in LUA script files.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|---|---|
| AT+CSCRIPTSTART=? | +CSCRIPTSTART: "FILENAME"[,(list of supported <reportluaerror>s)] OK |
| Write Command AT+CSCRIPTSTART="<filename>[,<reportluaerror>"] | Responses 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=?
+CSCRIPTSTART: "FILENAME"[,(0-1)]
OK
```

24.2 AT+CSCRIPTSTOP Stop the current running LUA script.

Description

This command is used to stop the current running LUA script. This command shouldn't be used by sio LIB in LUA script files.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|------------------|---|
| Test Command | Responses |
| AT+CSCRIPTSTOP=? | OK |
| Read Command | Responses |
| AT+CSCRIPTSTOP? | <i>If LUA script is running</i> +CSCRIPTSTOP: "<filename>" OK <i>If there is no LUA script running</i> OK |
| Execute Command | Responses |
| AT+CSCRIPTSTOP | OK ERROR |

Defined values

<filename>

The script file name.

Examples

```

AT+CSCRIPTSTOP?
+CSCRIPTSTOP: "mytest.lua"
OK
AT+CSCRIPTSTOP=?
OK
AT+CSCRIPTSTOP
OK
  
```

24.3 AT+CSCRIPTCL Compile a LUA script file.

Description

This command is used to compile a LUA script file. The script file must exist in c:\ in the module EFS. This command shouldn't be used by sio LIB in LUA script files. If the AT+CSCRIPTPASS is set, the compiled file will be encrypted.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|--|---|
| Test Command | Responses |
| AT+CSCRIPTCL=? | +CSCRIPTCL: <filename>,<out_filename> OK |
| Write Command | 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
```

24.4 AT+CSCRIPTPASS Set the password for +CSCRIPTCL.

Description

This command is used to set the password which will be used for AT+CSCRIPTCL encryption.

| | |
|---------|------------|
| SIM PIN | References |
|---------|------------|

| | |
|----|--------|
| NO | Vendor |
|----|--------|

Syntax

| | |
|--|-----------|
| Write Command | Responses |
| AT+CSCRIPTPASS=" <old_password> "," <new_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
```

24.5 AT+CSCRIPTCMD Send data to the running LUA script.

Description

This command is used to send data to the running LUA script

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| | |
|---|---------------------------------|
| Test Command | Responses |
| AT+CSCRIPTCMD=? | +CSCRIPTCMD: <i>CMD1[,CMD2]</i> |
| | OK |
| Execute Command | Responses |
| AT+CSCRIPTCMD=<cmd1> >[<cmd2>] | OK |
| | ERROR |

Defined values

<cmd1>

An integer value to be sent as the second parameter of EVENT 31 to running LUA script.

<cmd2>

An integer value to be sent as the third parameter of EVENT 31 to running LUA script.

Examples

```

AT+CSCRIPTCMD=?
+CSCRIPTCMD: CMD1[,CMD2]
OK
AT+CSCRIPTCMD=23,98
OK
  
```

24.6 AT+PRINDIR Set the value of LUA printdir function.

Description

This command is used to set the value of LUA printdir function

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|-------------------|------------------------|
| AT+PRINDIR=? | +PRINDIR: (0,1) OK |
| Read Command | Responses |
| AT+PRINDIR? | +PRINDIR: <mode> OK |
| Write Command | Responses |
| AT+PRINDIR=<mode> | OK ERROR |

Defined values

<mode>

The value of printdir:

- 0 – print function is disabled.
- 1 – print function is enabled.

Examples

```

AT+PRINDIR=0
OK
AT+PRINDIR?
+PRINDIR:0
OK
AT+PRINDIR=?
+PRINDIR:(0-1)
OK
  
```

24.7 AT+CSCRIPTAUTO Enable/Disable LUA run automatically

Description

This command is used to enable or disable LUA scripts run automatically.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|--|
| AT+CSCRIPTAUTO=? | OK |
| Read Command | Responses |
| AT+CSCRIPTAUTO? | +CSCRIPTAUTO: <state>,<left_times> OK |
| Write Command | Responses |
| AT+CSCRIPTAUTO=<state> >,[<max_left_times>] | OK ERROR |

Defined values

<state>

Enable or disable LUA scripts run automatically:

- 0 – disable LUA scripts run automatically.
- 1 – enable LUA scripts run automatically.

<max_left_times>

Maximum times that LUA scripts can run automatically when powering up. If it is 0, it means unlimited times. Default value is 0.

<left_times>

Left times that LUA scripts can run automatically when powering up. If you set max_left_times to 0, this parameter will be displayed as *UNLIMITED*

Examples

```
AT+CSCRIPTAUTO=1
OK
AT+CSCRIPTAUTO?
+CSCRIPTAUTO: 1,UNLIMITED
OK
AT+CSCRIPTAUTO=?
OK
```

24.8 Unsolicited CSCRIPT codes

Summary of +CSCRIPT Codes

| Code of <err> | Description |
|---------------|-----------------------------------|
| 0 | Success |
| 1 | No resource |
| 2 | Failed to open the script file |
| 3 | Failed to run the script file |
| 4 | Failed to compile the script file |
| 5 | Virtual machine is busy |

25 TTS Related AT commands

25.1 AT+DTAM Set Local or Remote Audio Play.

Description

This command is used to set local or remote audio play.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------|--|
| AT+DTAM=? | +DTAM: (0-1) OK |
| Read Command | Responses |
| AT+DTAM? | +DTAM: <mode> OK |
| Write Command | Responses |
| AT+DTAM=<mode> | OK If error is related to MS functionality,response: +CME ERROR: <err> |

Defined values

<mode>

- 0 – Play audio locally.
- 1 – Play audio remotely.

<err>

The error code of running script.

Examples

AT+DTAM=1

OK

AT+DTAM?

+DTAM: 1

OK

25.2 AT+CTTS TTS operation.

Description

This command is used to transform text to audio data and output the voice by multimedia device.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| | |
|-------------------------|---|
| Test Command | Responses |
| AT+CTTS=? | OK |
| Read Command | Responses |
| AT+CTTS? | +CTTS: <status> OK |
| Write Command | Responses |
| AT+CTTS=<mode>[,<text>] | If <mode> is 0, <text> is null , return: OK If <mode> is 1 ,2 or 3<text> is't null, return: OK +CTTS: 0 //speech synch and play end |

If error is related to MS functionality,response:
 +CME ERROR:<err>

Defined values

```

<status>
  0  -  Idle mode.
  1  -  Play mode.

<mode>
  0  -  Stop the speech synch and play.
  1  -  Start synthetic and play ,<text> is in UCS2 coding format.
  2  -  Start synthetic and play , <text> is in ASCII coding format.Chinese text is in GBK
        coding format.
  3  -  Start synthetic and play Italian , <text> is in ASCII coding format.

<text>
  The text which is synthesized to speech to be played,maximum data length is 250 bytes. When
  The mode is 0,<text> is null.

<err>
  The error code of running script.
  
```

Examples

```

AT+CTTS=1,"6B228FCE4F7F75288BED97F3540862107CFB7EDF"
OK
+CTTS: 0
//注释: 欢迎使用语音合成系统
AT+CTTS=2, "欢迎使用语音合成系统"
OK
+CTTS: 0
AT+CTTS=3," Lasiai pensare Ma questo per lui e per i colleghi"
OK
+CTTS: 0
AT+CTTS=0
OK
  
```

25.3 AT+CTTSPARAM Set TTS Parameter.

Description

This command is used to TTS parameter.

SIM PIN References

NO Vendor

Syntax

| | |
|---|--|
| Test Command | Responses |
| AT+CTTSPARAM=? | +CTTSPARAM: (0-2),(0-3),(0-3),(0-2),(0-2) OK |
| Read Command | Responses |
| AT+CTTSPARAM? | +CTTSPARAM: <volume>,<sysvolume>,<digitmode>,<pitch>,<speed> OK |
| Write Command | Responses |
| AT+CTTSPARAM=<volume>[,<sysvolume>[,<digitmode>[,<pitch>[,<speed>]]]] | OK If error is related to MS functionality,response: +CME ERROR: <err> |

Defined values

<volume>

TTS speech volume

- 0 – The mix volume.
- 1 – The normal volume.
- 2 – The max volume.

<sysvolume>

The system volume

- 0 – The mix volume.
- 1 – The small volume.
- 2 – The normal volume.
- 3 – The max volume.

<digitmode>

The digit read mode

- 0 – Auto read digit, and read digit based on number rule first.
- 1 – Auto read digit, and read digit based on telegram rule first.
- 2 – Read digit based on telegram rule.
- 3 – Read digit based on number rule.

<pitch>

The voice tone.

- 0 – The mix voice tone.
- 1 – The normal voice tone.
- 2 – The max voice tone.

<speed>

The voice speed.

- 0 – The mix voice speed.
- 1 – The normal voice speed.
- 2 – The max voice speed.

<err>

The error code of running script.

Examples

AT+CTTSPARAM=2,2,1,1,1

OK

26 EAT Commands

26.1 AT+CEBDAT bring the customer application into effect.

Description

This command is used to bring the customer application into effect. The script file must exist in c:\ in the module EFS.

| SIM PIN | References |
|---------|------------|
| NO | Vendor |

Syntax

| Test Command | Responses |
|--|----------------------------|
| AT+CEBDAT=? | OK |
| Write Command | Responses |
| AT+CEBDAT=" filename " | +CEBDAT: OK OK ERROR |

Defined values

<filename>

The script file name.

<err>

The error code .

Examples

```
AT+CEBDAT= "ebdat_cust_entry.elf"
+CEBDAT: OK
OK
```

26.2 AT+CEBDATSTART start customer's application.

Description

This command is used to start customer's application.

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------------------|---------------------------|
| AT+CEBDATSTART=? | OK |
| Read Command | Responses |
| AT+CEBDATSTART? | + CEBDATSTART: <state> |
| | OK |
| Write Command | |
| AT+CEBDATSTART=<par am> | OK ERROR |
| AT+CEBDATSTART | OK ERROR |

Defined values

| |
|--------------------------------------|
| < param > |
| Parameter to customer's application. |
| < state > |
| RUNNING / NOT RUNNING |

Examples

```
AT+CEBDATSTART=1
begin ebdat_customer_entry with func_pointer supported
end of ebdat_customer_entry
OK
```

26.3 AT+CEBDATPRINTDIR Set the value of EAT printdir function.

Description

This command is used to set the value of EAT printdir function

| | |
|---------|------------|
| SIM PIN | References |
| NO | Vendor |

Syntax

| Test Command | Responses |
|----------------------------------|--------------------------------|
| AT+CEBDATPRINTDIR =? | OK |
| Read Command | Responses |
| AT+CEBDATPRINTDIR? | + CEBDATPRINTDIR: <mode> OK |
| Write Command | |
| AT+ CEBDATPRINTDIR=<mod e> | OK ERROR |

Defined values

<mode>

The value of printdir:

- 0 – print function is disabled.
- 1 – print function is enabled.

Examples

```
AT+CEBDATPRINTDIR=0
OK
AT+CEBDATPRINTDIR?
+CEBDATPRINTDIR:0
```

OK

26.4 AT+CEBDAUTORUN Enable/Disable EAT run

automatically

Description

This command is used to enable or disable EAT run automatically.

| | |
|---------|------------|
| SIM PIN | References |
| YES | Vendor |

Syntax

| Test Command | Responses |
|--|---|
| AT+CEBDAUTORUN=? | OK |
| Read Command | Responses |
| AT+ CEBDAUTORUN? | + CEBDAUTORUN: <state>,<left_times> OK |
| Write Command | Responses |
| AT+ | OK |
| CEBDAUTORUN =<state>,[<max_left_times>] | ERROR |

Defined values

<state>

Enable or disable EAT scripts run automatically:

0 – disable EAT scripts run automatically.

1 – enable EAT scripts run automatically.

<max_left_times>

Maximum times that EAT scripts can run automatically when powering up. If it is 0, it means unlimited times. Default value is 0.

<left_times>

Left times that EAT scripts can run automatically when powering up.

Examples

```
AT+CEBDAUTORUN=1
```

```
OK
```

```
AT+ CEBDAUTORUN?
```

```
+ CEBDAUTORUN: 1,0
```

```
OK
```

AT+CEBDAUTORUN =?

OK

27 Result codes

27.1 Verbose code and numeric code

| Verbose result code | Numeric (V0 set) | Description |
|---------------------|------------------|--|
| OK | 0 | Command executed, no errors, Wake up after reset |
| CONNECT | 1 | Link established |
| RING | 2 | Ring detected |
| NO CARRIER | 3 | Link not established or disconnected |
| ERROR | 4 | Invalid command or command line too long |
| NO DIALTONE | 6 | No dial tone, dialing impossible, wrong mode |
| BUSY | 7 | Remote station busy |
| NO ANSWER | 8 | Connection completion timeout |

27.2 Response string of AT+CEER

| Number | Response string |
|--------------------------|---|
| <i>CS internal cause</i> | |
| 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 order |
| 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 Authentication failed |
| 30 | Activation rejected by GGSN |
| 31 | Activation rejected, unspecified |
| 32 | Service option not supported |
| 33 | Requested service option not subscribed |
| 34 | Service option temporarily out of order |
| 35 | NSAPI already used (not sent) |
| 36 | Regular deactivation |
| 37 | QoS not accepted |
| 38 | Network failure |
| 39 | Reactivation required |
| 40 | Feature not supported |
| 41 | Semantic error in the TFT operation |
| 42 | Syntactical error in the TFT operation |
| 43 | Unknown PDP context |
| 44 | PDP context without TFT already activated |
| 45 | Semantic errors in packet filter |
| 46 | Syntactical errors in packet filter |
| 81 | Invalid transaction identifier |
| 95 | Semantically incorrect message |
| 96 | Invalid mandatory information |
| 97 | Message non-existent/not implemented |
| 98 | Message type not compatible with state |
| 99 | IE non-existent/not implemented |
| 100 | Conditional IE error |
| 101 | Message not compatible with state |
| 111 | Protocol error, unspecified |

28 AT Commands Samples

28.1 File transmission flow

The Module supports to transmit files from the Module to PC host and from PC host to the Module over Xmodem protocol. During the process of transmission, it can not emit any AT commands to do other things.

28.1.1 File transmission to PC host

Step1. Select file for transmission to PC host

After HyperTerminal is OK for emitting AT commands, it must select a file by one of following methods:

- ①. Select directory as current directory by **AT+FSCD**, and then select file with parameter <dir_type> of **AT+CTXFILE** is 0 or omitted. [Figure 17-1]

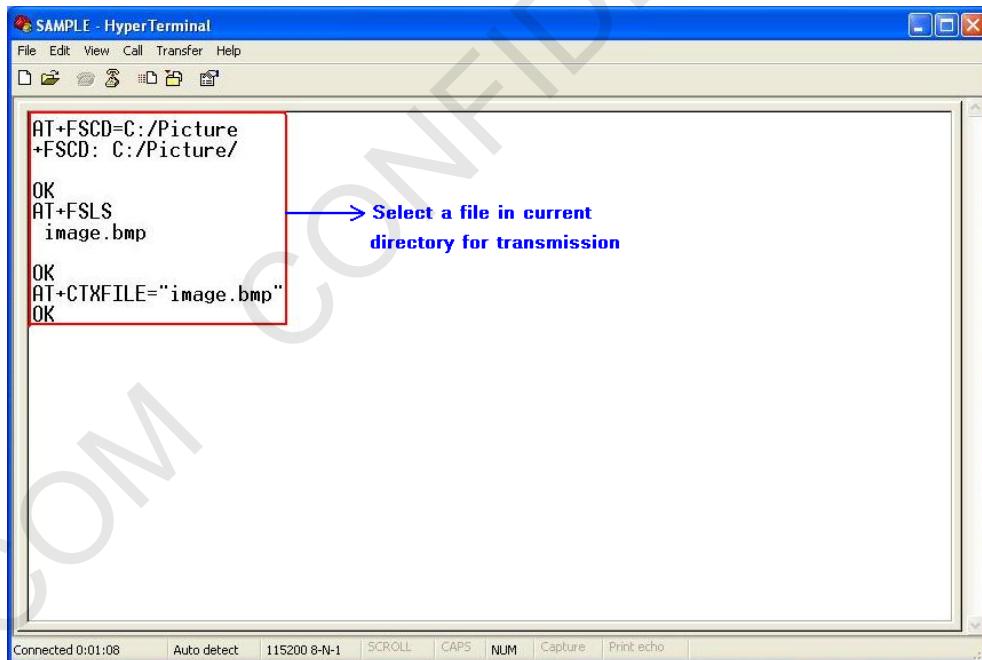


Figure 17-1 Select file for transmission

- ②. Select the file directly with subparameter <dir_type> of **AT+CTXFILE** is not 0 and not omitted; this method is a shortcut method for limited directories. [Figure 17-2]

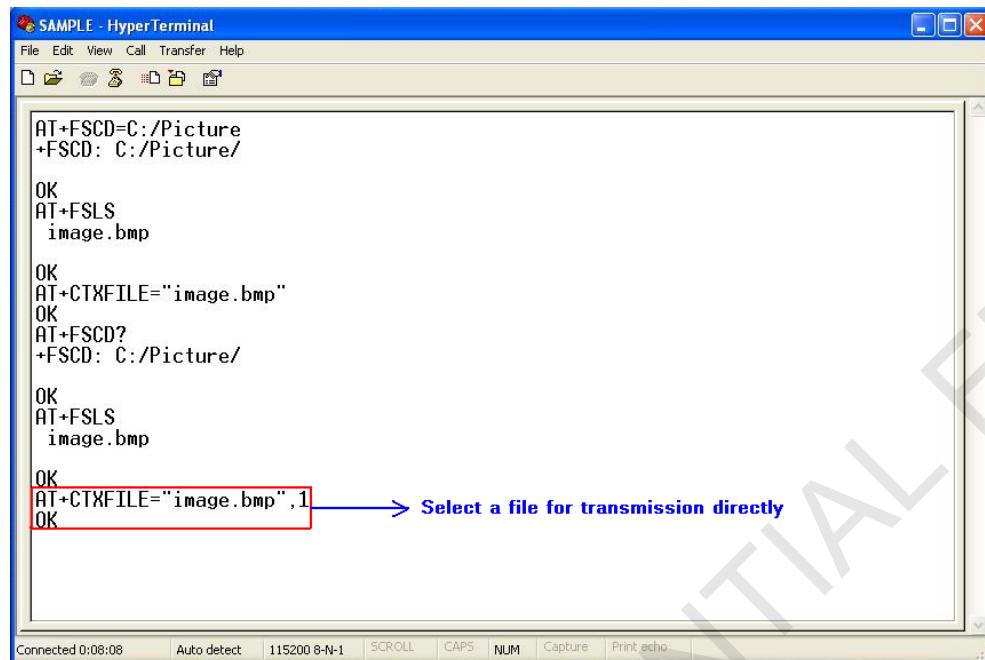


Figure 17-2 Select file directly for transmission

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]

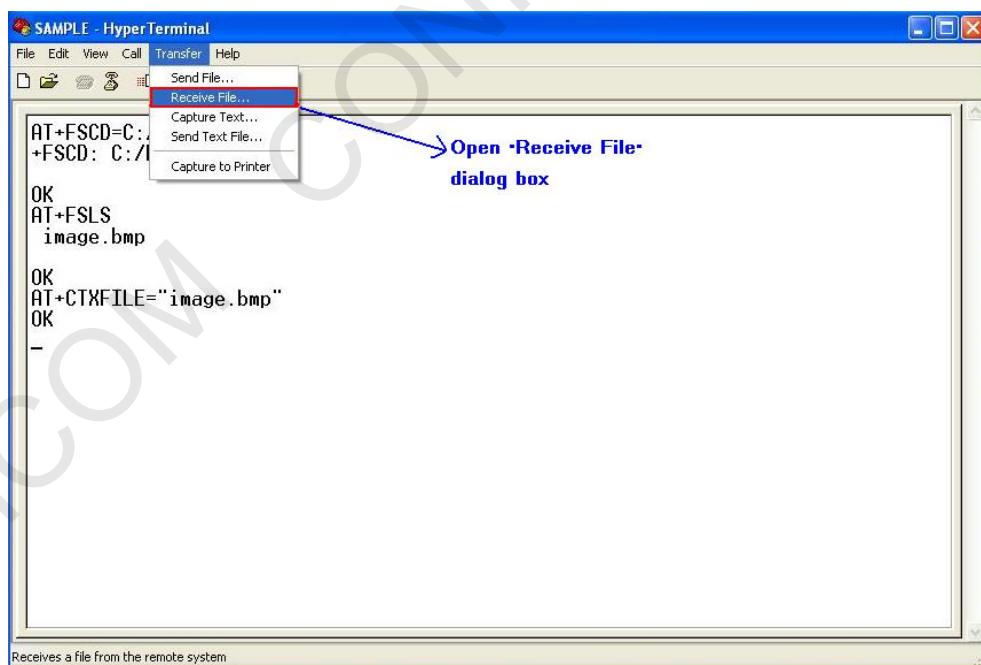


Figure 17-3 Open “Receive File” dialog box

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.

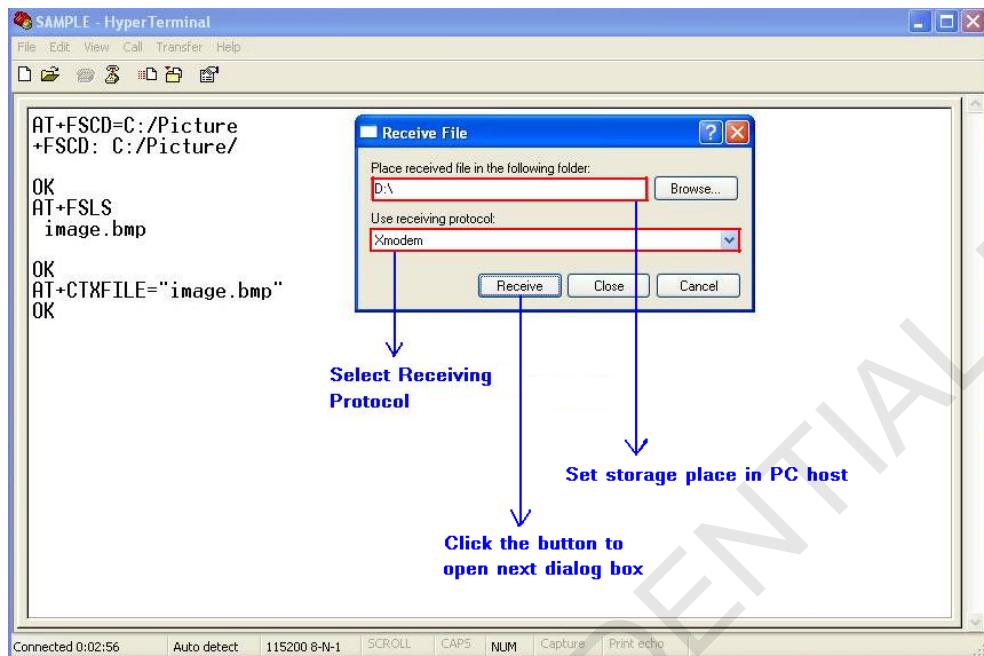


Figure 17-4 Storage place and receiving protocol

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]

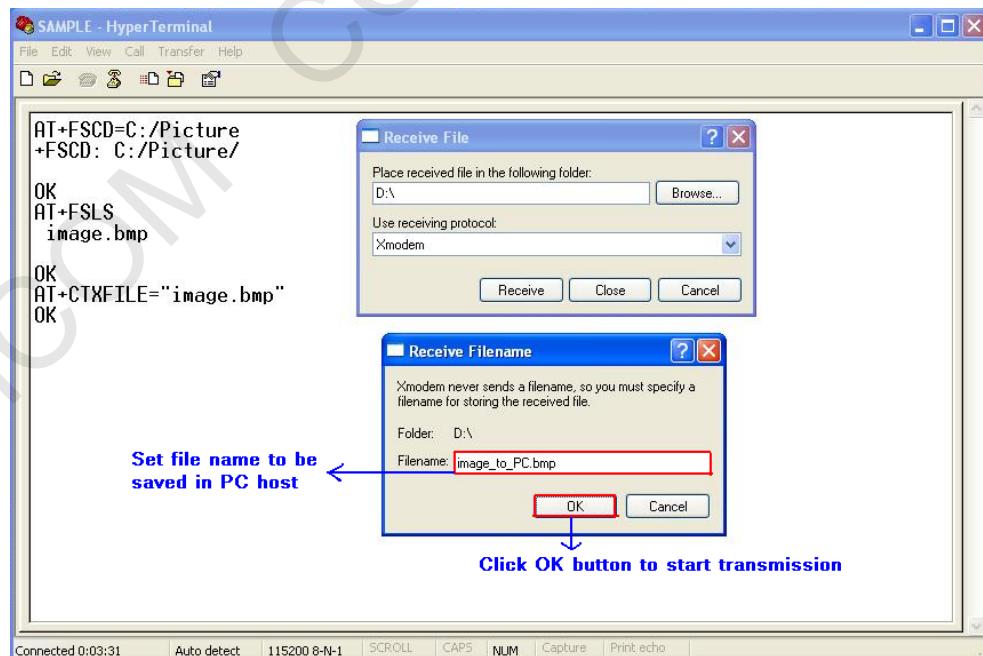


Figure 17-5 Set file name

Step5. Transmit the file

After start file transmission, it can't emit any AT commands until transmission stops. In “Xmodem file receive” dialog box, it will display the process of transmission. [Figure 17-6]

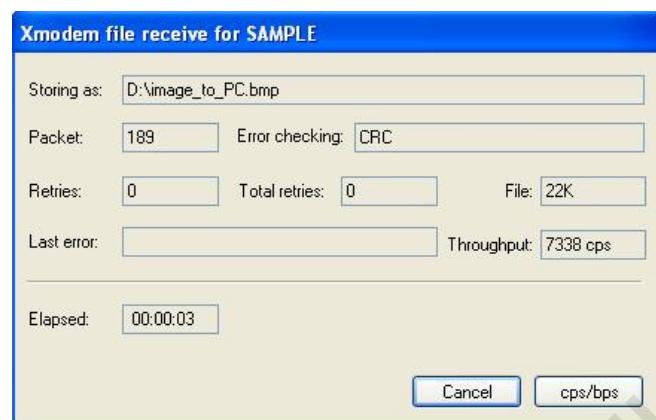


Figure 17-6 Xmodem file receive

If the transmission cancelled, HyperTerminal will prompt “Transfer cancelled by user”. [Figure 17-7]



Figure 17-7 Cancel transmission

After transmission successfully, the receiving dialog box is closed and it can emit AT commands in HyperTerminal. [Figure 17-8]

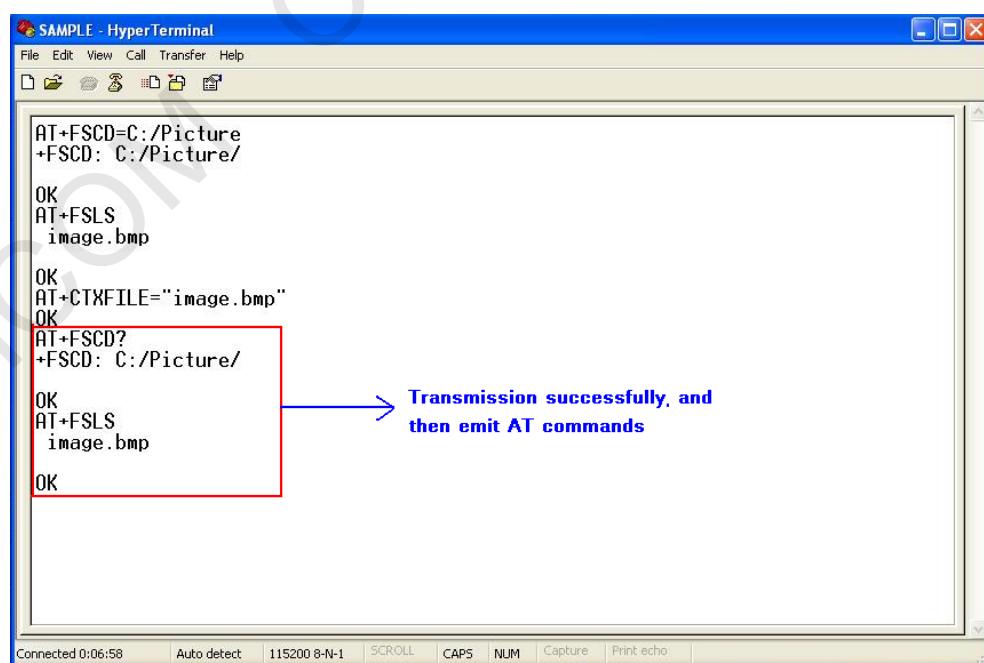


Figure 17-8 Transmission successfully

28.1.2 File received from PC host

Step1. Set file name and storage place

Firstly, it must set file name and storage place in file system of module by one of following methods:

- ①. Select directory as current directory by **AT+FSCD**, and then set file name and storage place as current directory with parameter <dir_type> of **AT+CRXFILE** is 0 or omitted. [Figure 17-9]

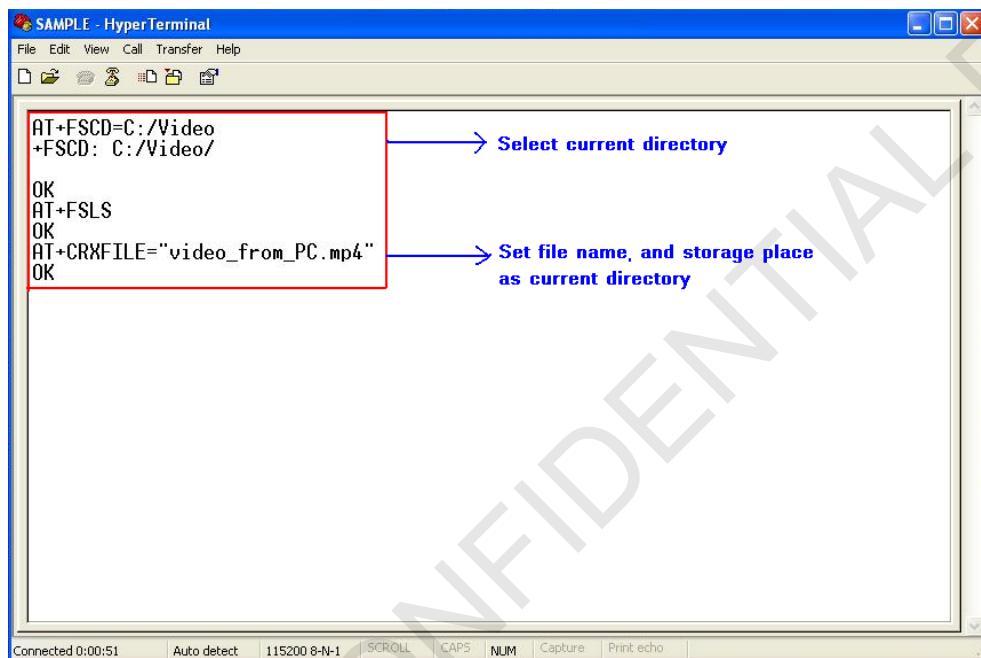


Figure 17-9 Set file name and storage place

- ②. Set storage place directly with parameter <dir_type> of **AT+CTXFILE** is not 0 and not omitted; this method is a shortcut method for limited directories.

Step2. Open “Send File” dialog box

After set file name and storage place successfully, use “Transfer>Send File...” menu to open “Send File” dialog box in HyperTerminal. [Figure 17-10]

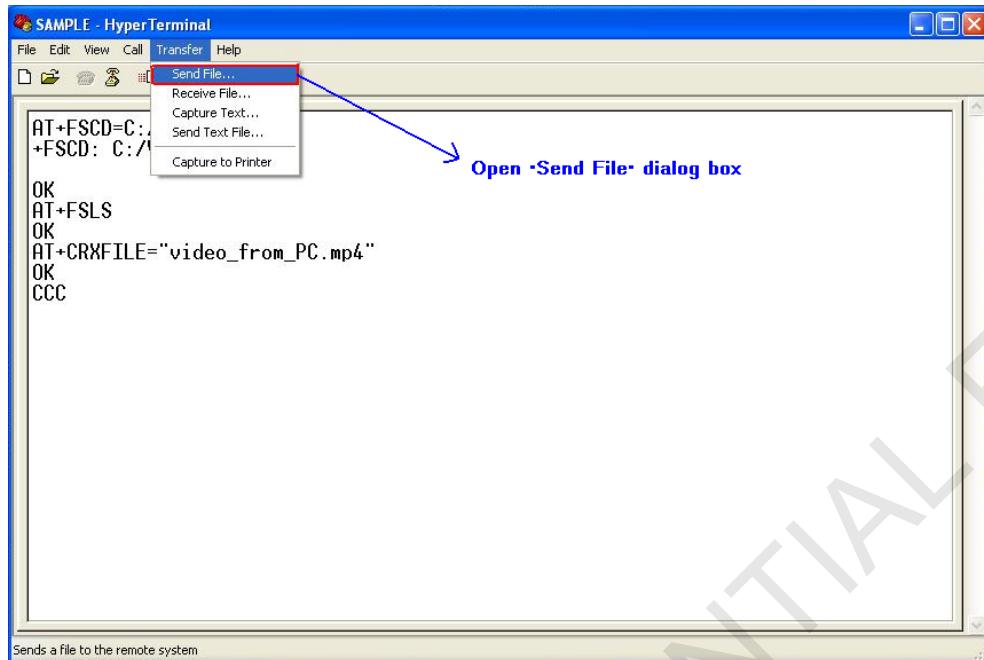


Figure 17-10 Open “Send File” dialog box

Step3. Select file and transmitting protocol

In “Send File” dialog box, select the file to be transmitted in text box, and select the transmitting protocol in combo box. Then click “Send” button to start transmission. [Figure 17-11]

NOTE: The transmitting protocol must be “Xmodem” protocol.

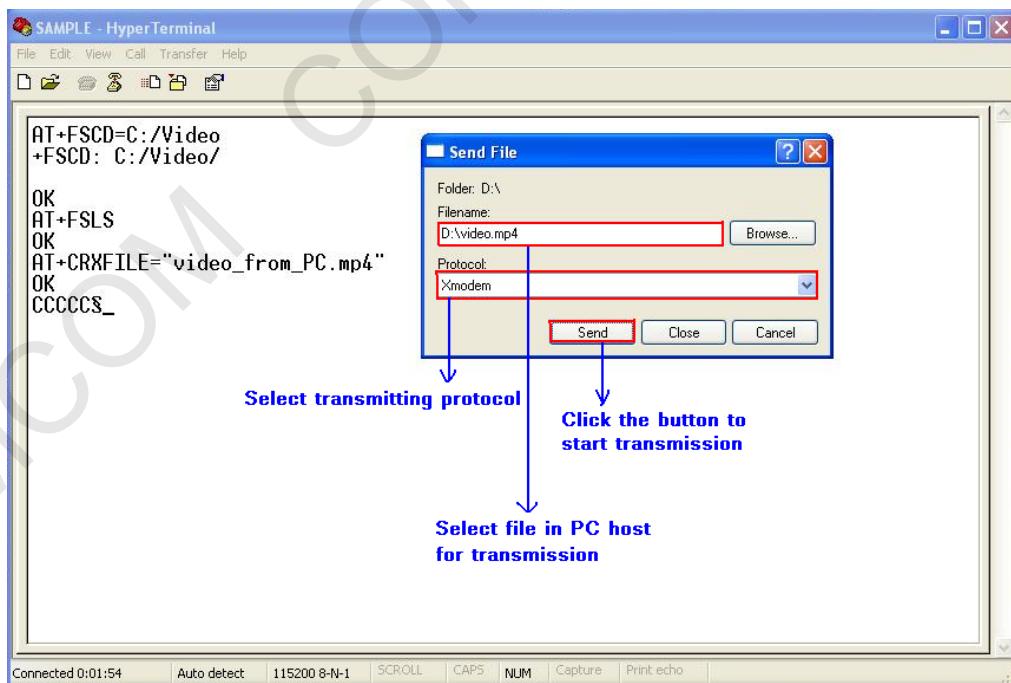


Figure 17-11 Select file and protocol

Step4. File transmission

After start file transmission, it can't emit any AT commands until transmission stops. In “Xmodem file send” dialog box, it will display the process of transmission. [Figure 17-12]

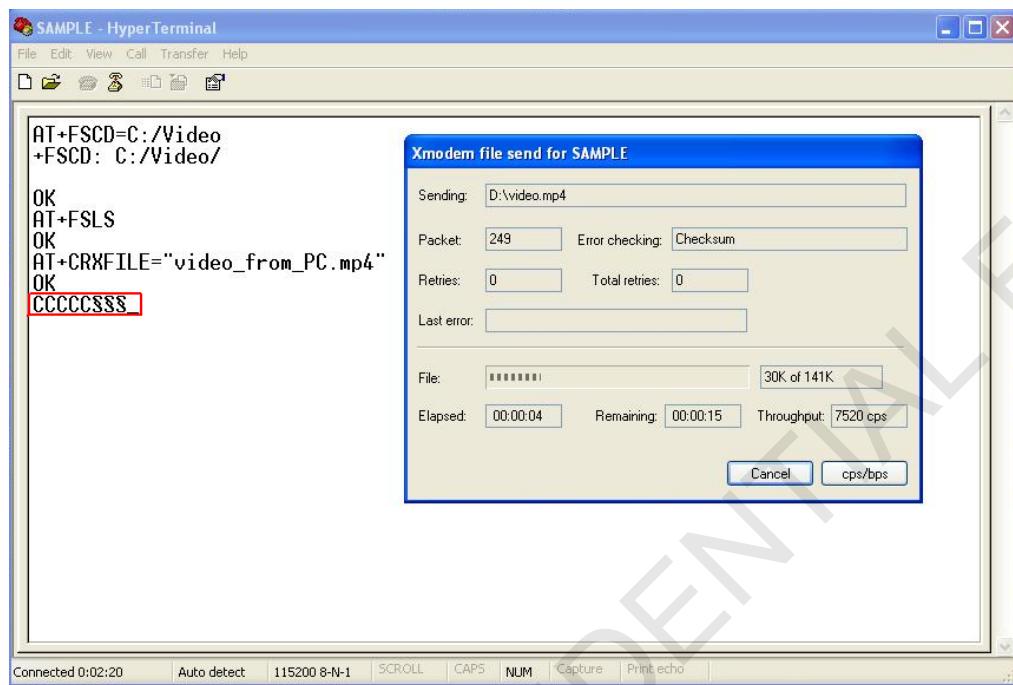


Figure 17-12 The process of file transmission

If the transmission canceled , HyperTerminal will prompt “Transfer cancelled by user”.

NOTE: There may be some characters reported which denote interactions between module and PC host.

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