



L206(C,D) AT DOCUMENT

GSM/GPRS Module Series

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2016-8-12	V1.05	Remove chapter "GATT Client AT Command" Added command "AT+IFC" Remove command "AT+DS" Add FTP /HTTP/AUDIO commands	
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Table of Contents

Notice	1
Revision History	2
Table of Contents	3
1 Introduction	11
1.1 Overview	11
1.2 References.....	11
2 V.25ter AT Commands	12
2.1 ATA.....	12
2.2 ATD	12
2.3 ATE.....	14
2.4 ATH	14
2.5 ATI.....	15
2.6 ATL	15
2.7 ATO	16
2.8 ATQ	16
2.9 ATS0.....	17
2.10 ATS3.....	18
2.11 ATS4.....	18
2.12 ATS5.....	19
2.13 ATS6.....	19
2.14 ATS7.....	19
2.15 ATS8.....	20
2.16 ATS10.....	20
2.17 ATT.....	21
2.18 ATV.....	21
2.19 ATX.....	21
2.20 ATZ.....	22
2.21 AT&F	23

2.22	AT+GMI	23
2.23	AT+GMM.....	23
2.24	AT+GMR.....	23
2.25	AT+IPR.....	23
2.26	AT+IFC Set TE-TA Local Data Flow Control.....	24
2.27	AT+GCAP.....	26
3	General commands	27
3.1	AT+CGMI Request manufacturer identification.....	27
3.2	AT+CGMM Request model identification.....	27
3.3	AT+CGMR Request revision identification	28
3.4	AT+CGSN Request product serial number identification.....	28
3.5	AT+CSCS Select TE character set.....	28
3.6	AT+CIMI Request international mobile subscriber identity.....	30
4	Call Control commands	31
4.1	AT+CSTA Select type of address.....	31
4.2	AT+CHUP Hang up call.....	32
4.3	AT+CR Service reporting control.....	32
4.4	AT+CEER Extended error report	33
4.5	AT+CRC Cellular result code.....	34
4.6	AT+CSNS Single Numbering Scheme.....	35
4.7	AT+CVHU Voice Hangup Control.....	36
5	Network Service related commands	38
5.1	AT+CNUM Subscriber Number.....	38
5.2	AT+CREG Network Registration.....	38
5.3	AT+COPS Operator Selection	40
5.4	AT+CLCK Facility Lock.....	42
5.5	AT+CPWD Change Password	44
5.6	AT+CLIP Calling line identification presentation	45
5.7	AT+CLIR Calling line identification restriction	46
5.8	AT+COLP Connected line identification presentation	47
5.9	AT+CCUG Closed user group	48

5.10	AT+CCFC	Call forwarding number and conditions	49
5.11	AT+CCWA	Call waiting	50
5.12	AT+CHLD	Call related supplementary services.....	52
5.13	AT+CTFR	Call deflection	53
5.14	AT+CUSD	Unstructured supplementary service data.....	53
5.15	AT+CSSN	Supplementary service notifications.....	54
5.16	AT+CLCC	List current calls	55
5.17	AT+CPOL	Preferred operator list.....	57
5.18	AT+CPLS	Selection of preferred PLMN list.....	58
5.19	AT+COPN	Read operator name.....	59
5.20	AT+CAEMLPP	eMLPP priority Registration and Interrogation	60
5.21	AT+WS46	Select wireless network	61
6	MT control and status command		63
6.1	AT+CPAS	Phone activity status	63
6.2	AT+CFUN	Set Phone Functionality	64
6.3	AT+CPIN	Enter PIN	65
6.4	AT+CBC	Battery Charge	66
6.5	AT+CSQ	Signal Quality	67
6.6	AT+CMEC	Mobile Termination control mode.....	68
6.7	AT+CIND	Indicator control	69
6.8	URC: +CIEV	NITZ indicator event.....	70
6.9	AT+CMER	Mobile Termination event reporting.....	71
6.10	AT+CPBS	Select Phonebook Memory Storage.....	73
6.11	AT+CPBR	Read phonebook entries.....	74
6.12	AT+CPBF	Find Phonebook entries	75
6.13	AT+CPBW	Write Phonebook entries	76
6.14	AT+CCLK	Clock.....	77
6.15	AT+CALA	Alarm.....	78
6.16	AT+CSIM	Generic SIM Access.....	79
6.17	AT+CRSM	Restricted SIM access	82
6.18	AT+CRSL	Ringer Sound Level.....	84
6.19	AT+CLVL	Loudspeaker volume level.....	85

6.20	AT+CMUT	Mute Control.....	86
7	GPRS commands(27.007)	.....	88
7.1	AT+CGDCONT	Define PDP Context.....	88
7.2	AT+CGDSCONT	Define Secondary PDP Context	89
7.3	AT+CGQREQ	Quality of Service Profile (Requested).....	91
7.4	AT+CGQMIN	Quality of Service Profile (Minimum acceptable)	92
7.5	AT+CGATT	PS attach or detach.....	93
7.6	AT+CGACT	PDP context activate or deactivate.....	94
7.7	AT+CGCMOD	PDP Context Modify.....	94
7.8	AT+CGDATA	Enter data state	95
7.9	AT+CGPADDR	Show PDP address	96
7.10	AT+CGAUTO	Automatic response to network request PDP context activation	97
7.11	AT+CGANS	Manual response to a network request for PDP context activation.....	98
7.12	AT+CGCLASS	GPRS mobile station class.....	99
7.13	AT+CGREG	GPRS network registration status.....	100
7.14	AT+CGSMS	Select service for MO SMS messages	101
7.15	AT+EGTP	GPRS Transfer Preference (Proprietary Command).....	102
7.16	AT+CGEQREQ	3G Quality of Service Profile (Minimum acceptable).....	103
8	Mobile Termination Errors	.....	108
8.1	AT+CMEE	.....	108
9	Annex C(27.007)	.....	111
9.1	AT+FCLASS	.....	111
9.2	AT+VTS	.....	112
10	SMS AT Commands(27.005)	.....	114
10.1	AT+CSMS	Select Message Service	114
10.2	AT+CPMS	Preferred Message Storage.....	115
10.3	AT+CMGF	Message Format	116
10.4	AT+CSCA	Service Center Address	117
10.5	AT+CSMP	Set Text Mode Parameters	117
10.6	AT+CSDH	Show Text Mode Parameters.....	118
10.7	AT+CSCB	Select Cell Broadcast Message Types	119

10.8	AT+CSAS	Save Settings.....	123
10.9	AT+CRES	Restore Settings.....	124
10.10	AT+CNMI	New Message Indications to TE.....	125
10.11	AT+CMGL(Text mode)	List Message.....	127
10.12	AT+CMGL(PDU mode)	List Message.....	128
10.13	AT+CMGR(Text mode)	Read Message.....	129
10.14	AT+CMGR(PDU mode)	Read Message.....	131
10.15	AT+CNMA(Text mode)	New Message Acknowledgement to ME/TA.....	131
10.16	AT+CNMA(PDU mode)	New Message Acknowledgement to ME/TA.....	132
10.17	AT+CMGS(Text mode)	Send Message.....	133
10.18	AT+CMGS(PDU mode)	Send Message.....	133
10.19	AT+CMSS(Text mode)	Send Message from Storage.....	134
10.20	AT+CMSS(PDU mode)	Send Message from Storage.....	135
10.21	AT+CMGW(Text mode)	Write Message to Memory.....	135
10.22	AT+CMGW(PDU mode)	Write Message to Memory.....	136
10.23	AT+CMGD	Delete Message.....	137
10.24	AT+CMGC(Text mode)	Send Command.....	138
10.25	AT+CMGC(PDU mode)	Send Command.....	139
10.26	AT+CMMS	More Message to Send.....	139
10.27	AT+EQSI	Query storage index.....	140
10.28	AT+EMGR(PDU mode)	Read Message (for phone suite).....	141
11	Hardware Testing AT Commands.....		143
11.1	AT+EALT	Audio Sound Playback.....	143
11.2	AT+ESAM	Set Audio Mode.....	143
11.3	AT+EGMR	Mobile Revision and IMEI.....	144
11.4	AT+ESLP	Sleep Mode.....	146
11.5	AT+CSCLK	Configure Slow Clock.....	147
12	STK AT Commands.....		149
13	Proprietary AT Commands For PS.....		150
13.1	AT+EPBSE	Band Selection.....	150
13.2	AT+EGPAU	PPP Authentication.....	151

13.3	AT+EPIN1	Enter PIN1	152
13.4	AT+EPIN2	Enter PIN2	153
13.5	AT+EPINC	PIN remaining attempt number	154
13.6	AT+ESMSS	SMS status change mode	155
13.7	AT+EOPN	Read Operator name	156
13.8	AT+EQUERY	General query command	157
13.9	AT+EIND	Indication Control Command	159
13.10	AT+ECSQ	Received signal level indication	160
13.11	AT+EINFO	URC Information Control Command	161
13.12	AT+EBOOT	Boot up mode	162
13.13	AT+ICCID	Read ICCID of SIM Card	162
14	Proprietary Unsolicited Result code		164
14.1	URC: +ECSQ	.....	164
14.2	URC: +ESMLA	.....	164
14.3	URC: +ECFU	.....	165
14.4	URC: +ESPEECH	.....	166
14.5	URC: +ESCRI	.....	167
14.6	URC: +ESIMS	.....	167
14.7	URC: +EUSIM	.....	168
14.8	URC: +ETESTSIM	.....	169
15	Compatible AT commands		169
15.1	AT+CIPMUX	Start Up Multiple IP Connection	170
15.2	AT+CIPMODE	Select TCPIP Application Mode	171
15.3	AT+CSTT	Start Task and Set APN, USER NAME, PASSWORD	171
15.4	AT+CIICR	Bring Up Wireless Connection with GPRS or CSD	173
15.5	AT+CIFSR	Get local IP address	173
15.6	AT+CIPSTART	Start TCP or UDP Connection	174
15.7	AT+CIPSEND	Send data through TCP or UDP connection	177
15.8	AT+CIPCLOSE	Close TCP or UDP connection	179
15.9	AT+CIPSHUT	Deactivate GPRS PDP Context	180
15.10	AT+CIPSTATUS	Query Current Connection Status	181
15.11	AT+CIPRXGET	Get Data from Network Manually	182

15.12	AT+CALM	Alert sound mode	185
15.13	AT+GSN	Request TA Serial Number Identification (IMEI)	186
15.14	AT+CIPHEAD	Add an IP Head at the Beginning of a Package Received.....	187
15.15	AT+CIPQSEND	Select Data Transmitting Mode	187
15.16	AT+SPEAKER	Speaker and MIC select.....	188
15.17	AT+SIDET	Change the side tone gain level.....	189
15.18	AT+CDNSGIP	Get IP address by Domain Name	191
15.19	AT+CIPTKA	Set TCP Keepalive Parameters	191
15.20	AT+CIPACK	TCP/IP Data flow calculation.....	193
16	HTTP AT Commands		194
16.1	AT+HTTTPARA	Set http parameter.....	194
16.2	AT+HTTTPSETUP	HTTP link establishment	195
16.3	AT+HTTTPACTION	Sending HTTP request.....	195
16.4	AT+HTTTPCLOSE	Close HTTP link.....	197
17	AUDIO AT Commands		198
17.1	AT+ZAUDREC	Audio function.....	198
17.2	AT+ZFILEREAD	Reading the recording file.....	199
18	FTP AT Commands		201
18.1	AT+FTPPORT	Set FTP Control Port.....	201
18.2	AT+FTPMODE	Set Active or Passive FTP Mode.....	202
18.3	AT+FTPTYPE	Set the Type of Data to Be Transferred.....	202
18.4	AT+FTPPUTOPT	Set FTP Put Type	203
18.5	AT+FTPREST	Set Resume Broken Download.....	204
18.6	AT+FTPSERV	Set FTP Server Address	205
18.7	AT+FTPPUN	set FTP User Name	206
18.8	AT+FTPPW	Set FTP Password.....	207
18.9	AT+FTPGETNAME	Set Download File Name.....	207
18.10	AT+FTPGETPATH	Set Download File Path.....	208
18.11	AT+FTPPUTNAME	Set Upload File Name	209
18.12	AT+FTPPUTPATH	Set Upload File Path	210
18.13	AT+FTPGET	Download File.....	211

18.14	<i>AT+FTPPUT</i>	<i>Set Upload File</i>	213
18.15	<i>AT+FTPSCONT</i>	<i>Save FTP Application Context</i>	214
18.16	<i>AT+FTPDELE</i>	<i>Delete Specified File in FTP Server</i>	216
18.17	<i>AT+FTPSIZE</i>	<i>Get the Size of Specified File in FTP Server</i>	217
18.18	<i>AT+FTPSTATE</i>	<i>Get the FTP State</i>	218
18.19	<i>AT+FTPMKD</i>	<i>Make Directory on the Remote Machine</i>	218
18.20	<i>AT+FTPMD</i>	<i>Remove Directory on the Remote Machine</i>	219
18.21	<i>AT+FTPLIST</i>	<i>List Contents of Directory on the Remote Machine</i>	220
18.22	<i>AT+FTPGETTOFS</i>	<i>Download File and Save in File System</i>	222
18.23	<i>AT+FTPPUTFRMFS</i>	<i>Upload File from File System.</i>	223
18.24	<i>AT+FTPEXTGET</i>	<i>Extend Download File</i>	225
18.25	<i>AT+FTPEXTPUT</i>	<i>Extend Upload File</i>	226
18.26	<i>AT+FTPFILEPUT</i>	<i>Load File in RAM from File System then Upolad with FTPPUT</i>	228
18.27	<i>AT+FTPQUIT</i>	<i>Quit Current FTP Session</i>	229
18.28	<i>AT+SAPBR</i>	<i>Set the info about ftp and active ftp pdp context</i>	229
19	TTS AT Command		232
19.1	<i>AT+CTTS</i>	<i>TTS Operation</i>	232
19.2	<i>AT+CTSPARAM</i>	<i>Set Parameters of the TTS Playing</i>	233
20	LBS AT Command		235
20.1	<i>AT+GTPOS</i>	<i>Get LBS</i>	235
20.2	<i>AT+ZIPIND</i>	<i>Set channel</i>	237

1 Introduction

1.1 Overview

This document introduces the supported AT command set of L206(C,D) project. The target MP branch is L206(C,D) related product and after.

We don't suggest using proprietary command in a multiple command. There might be abnormal situation occurs.

1.2 References

- [1] 3GPP TS 27.007 V3.13.0 (2003-03)
- [2] ETSI TS 27.005 V3.1.0 (2000-01)
- [3] ITU-T V.25 ter (07/1997)

2 V.25ter AT Commands

2.1 ATA

Answers and initiates a connection to an incoming call.

2.1.1 Format

Execution Command ATA	Response CONNECT CONNECT <text> NO CARRIER ERROR
Reference	Note In UCM project , ATA command will sent to MMI for SYNC

2.1.2 Field

Parameters are defined below:

Parameters	Description
<text>	28800 Connected with data bit rate of 28800 bits/s (HSCSD)
	19200 Connected with data bit rate of 19200 bits/s (HSCSD)
	14400 Connected with data bit rate of 14400 bits/s (HSCSD)
	9600 Connected with data bit rate of 9600 bits/s
	4800 Connected with data bit rate of 4800 bits/s
	2400 Connected with data bit rate of 2400 bits/s

2.2 ATD

Initiates a phone connection, which may be data, facsimile (+FCLASS> 0), or voice (phone number terminated by semicolon). The phone number used to establish the connection will consist of digits and modifiers, or a stored number specification. ATD memory dial can originate call to phone number in entry location <n> (the memory storage of +CPBS setting will be used.). ATDL is used to dial LDN(last dialed number) and it will always dial as voice call.

2.2.1 Format

Execution Command ATD<dial string> Memory dial command : ATD><n>	Response CONNECT CONNECT <text> NO CARRIER ERROR
Reference	Note The ATD abortability described in V.25 5.6.1 is implemented, except for the ATD memory dial. Aborting of the command is accomplished by the transmission from the DTE to the DCE of any character before the response. In UCM project , ATD command will sent to MMI for SYNC

2.2.2 Field

Parameters	Description
<dial string>	<p>.0 1 2 3 4 5 6 7 8 Valid characters for origination</p> <p>9 +.</p> <p>W The W modifier is ignored but is included for compatibility reasons only, The comma modifier is ignored but is included for compatibility reasons only; Informs the Infrared Modem that the number is a voice number rather than a fax or datanumber</p> <p>T The T modifier is ignored but is included only for compatibility purposes</p> <p>P The P modifier is handled (pulse DTMF dialing functionality)</p>
<text>	<p>28800 Connected with data bit rate of 28800 bits/s (HSCSD)</p> <p>19200 Connected with data bit rate of 19200 bits/s (HSCSD)</p> <p>14400 Connected with data bit rate of 14400 bits/s (HSCSD)</p> <p>9600 Connected with data bit rate of 9600 bits/s</p> <p>4800 Connected with data bit rate of 4800 bits/s</p> <p>2400 Connected with data bit rate of 2400 bits/s</p>

2.3 ATE

The setting of this parameter determines whether or not the DCE echoes characters received from the DTE during command state and online command state.

2.3.1 Format

Execution Command ATE [<value>]	Response OK
---	-----------------------

Execution command : ATE[<value>]

2.3.2 Field

Parameters	Description
< value >	<p>0 DCE does not echo characters during command state and online command state.</p> <p>1 DCE echoes characters during command state and online command state.</p>

2.4 ATH

Terminates a connection.

2.4.1 Format

Execution Command ATH	Response NO CARRIER OK
	Note In non-UCM projects (excluding Neptune Gemini with BT supported) projects, ATH can only hang up the call from the same source. In UCM project , ATH command will sent to MMI for SYNC

- | | |
|---|-----------------------|
| 1 | Low speaker volume |
| 2 | Medium speaker volume |
| 3 | High speaker volume |

2.7 ATO

Switch from on-line command mode to on-line data mode during an active call. Returns ERROR when not in on-line command mode.

2.7.1 Format

Execution Command	Response
ATO	CONNECT CONNECT <text> NO CARRIER ERROR

2.7.2 Field

Parameters are defined below:

Parameters	Description												
<text>	<table border="1"> <tr> <td>28800</td> <td>Connected with data bit rate of 28800 bits/s (HSCSD)</td> </tr> <tr> <td>19200</td> <td>Connected with data bit rate of 19200 bits/s (HSCSD)</td> </tr> <tr> <td>14400</td> <td>Connected with data bit rate of 14400 bits/s (HSCSD)</td> </tr> <tr> <td>9600</td> <td>Connected with data bit rate of 9600 bits/s</td> </tr> <tr> <td>4800</td> <td>Connected with data bit rate of 4800 bits/s</td> </tr> <tr> <td>2400</td> <td>Connected with data bit rate of 2400 bits/s</td> </tr> </table>	28800	Connected with data bit rate of 28800 bits/s (HSCSD)	19200	Connected with data bit rate of 19200 bits/s (HSCSD)	14400	Connected with data bit rate of 14400 bits/s (HSCSD)	9600	Connected with data bit rate of 9600 bits/s	4800	Connected with data bit rate of 4800 bits/s	2400	Connected with data bit rate of 2400 bits/s
28800	Connected with data bit rate of 28800 bits/s (HSCSD)												
19200	Connected with data bit rate of 19200 bits/s (HSCSD)												
14400	Connected with data bit rate of 14400 bits/s (HSCSD)												
9600	Connected with data bit rate of 9600 bits/s												
4800	Connected with data bit rate of 4800 bits/s												
2400	Connected with data bit rate of 2400 bits/s												

2.8 ATQ

Set result code suppression mode.

2.8.1 Format

Execution Command ATQ<value>	Response OK If value is 0 . (none) If value is 1 (because result codes are suppressed). ERROR For unsupported values (if previous value was Q0). (none) For unsupported values (if previous value was Q1).
	Note If use input ATQ, it is equal to ATQ1 by default

2.8.2 Field

Parameters	Description
<value>	0 DCE transmits result codes. 1 Result codes are suppressed and not transmitted.

2.9 ATSO

Automatic answer.

This S-parameter controls the automatic answering feature of the DCE. If set to 0, automatic answering is disabled. If set to a non-zero value, the DCE shall cause the DCE to answer when the incoming call indication (ring) has occurred the number of times indicated by the value.

2.9.1 Format

Execution Command ATSO=<value>	Response OK
	Note In GEMINI architecture, the setting of ATSO applies both on SIM1 and SIM2.

2.9.2 Field

Parameters	Description
<value>	0 Automatic answering is disabled..

2.10 ATS3

Command line termination character

This S-parameter represents the decimal IA5 value of the character recognized by the DCE from the DTE to terminate an incoming command line. It is also generated by the DCE as part of the header, trailer, and terminator for result codes and information text, along with the S4 parameter (see the description of the V parameter for usage).

2.10.1 Format

Execution Command	Response
ATS3=<value>	OK or ERROR

2.10.2 Field

Parameters	Description
<value>	13 Carriage return character (CR, IA5 0/13).
	0 - 127 Set command line termination character to this value.

2.11 ATS4

Response formatting character

This S-parameter represents the decimal IA5 value of the character generated by the DCE as part of the header, trailer, and terminator for result codes and information text, along with the S3 parameter (see the description of the V parameter for usage).

2.11.1 Format

Execution Command	Response
ATS4=<value>	OK or ERROR

2.11.2 Field

Parameters	Description
<value>	10 Line feed character (LF, IA5 0/10).
	0 - 127 Set response formatting character to this value.

2.12 AT5

Command line editing character.

This S-parameter represents the decimal IA5 value of the character recognized by the DCE as a request to delete from the command line the immediately preceding character.

2.12.1 Format

Execution Command	Response
ATS5=<value>	OK or ERROR

2.12.2 Field

Parameters	Description
<value>	8 Backspace character (BS, IA5 0/8).
	0 - 127 Set command line editing character to this value.

2.13 AT6

Pause before blind dialing.

The command is ignored.

2.14 AT7

Connection completion timeout.

This parameter specifies the amount of time, in seconds, that the DCE shall allow between either answering a call (automatically or by the A command) or completion of signaling of call addressing information to network (dialing), and establishment of a connection with the remote DCE. If no connection is established during this time, the DCE disconnects from the line and returns a result code indicating the cause of the disconnection.

2.14.1 Format

Execution Command	Response
ATS7=<value>	OK or ERROR

2.14.2 Field

Parameters	Description
<value>	1 - 255 Number of seconds in which connection must be established or call will be disconnected.

2.15 AT S8

Comma dial modifier time.

This parameter specifies the amount of time, in seconds, that the DCE shall pause, during signaling of call addressing information to the network (dialing), when a "," (comma) dial modifier is encountered in a dial string.

2.15.1 Format

Execution Command	Response
ATS8=<value>	OK or ERROR

2.15.2 Field

Parameters	Description
<value>	<p>0 DCE does not pause when "," encountered in dial string.</p> <p>1 to 255 Number of seconds to pause. Recommended default setting</p> <p>2 DCE pauses two seconds when "," is encountered.</p>

2.16 AT S10

Automatic disconnect delay.

This parameter specifies the amount of time, in tenths of a second, that the DCE will remain connected to the line (off-hook) after the DCE has indicated the absence of received line signal. If the received line signal is once again detected before the time specified in S10 expires, the DCE remains connected to the line and the call continues.

2.16.1 Format

Execution Command ATS10=<value>	Response OK or ERROR
---	--------------------------------

2.16.2 Field

Parameters	Description
<value>	1to254 1 to 254 Number of tenths of a second of delay.

2.17 ATT

We do not support.
This setting is ignored.

2.18 ATV

Set DCE response format.

2.18.1 Format

Execution Command ATV[<value>]	Response OK
--	-----------------------

2.18.2 Field

Parameters	Description
<value>	<p>0 DCE transmits limited headers and trailers and numeric text.</p> <p>1 DCE transmits full headers and trailers and verbose response text.</p>

2.19 ATX

The setting of this parameter determines whether or not the DCE transmits particular result codes to the DTE. It also controls whether or not the DCE verifies the presence of dial tone when it

first goes off-hook to begin dialing, and whether or not engaged tone (busy signal) detection is enabled.

However, this setting has no effect on the operation of the W dial modifier, which always checks for dial tone regardless of this setting, nor on the busy signal detection capability of the W and @dial modifiers. See Table.

2.19.1 Format

Execution Command	Response
ATX[<value>]	OK or ERROR

2.19.2 Field

Parameters	Description
<value>	<p>0 CONNECT result code is given upon entering online data state. Dial tone and busy detection are disabled.</p> <p>1 CONNECT <text> result code is given upon entering online data state. Dial tone and busy detection are disabled.</p> <p>2 CONNECT <text> result code is given upon entering online data state. Dial tone detection is enabled, and busy detection is disabled.</p> <p>3 CONNECT <text> result code is given upon entering online data state. Dial tone detection is disabled, and busy detection is enabled.</p> <p>4 CONNECT <text> result code is given upon entering online data state. Dial tone and busy detection are both enabled.</p>

2.20 ATZ

Reset to default configuration

2.20.1 Format

Execution Command	Response
ATZ[<value>]	OK or ERROR

2.20.2 Field

Parameters	Description
<value>	0 Set parameters to factory defaults.

2.21 AT&F

Set to factory-defined configuration

2.21.1 Format

Execution Command	Response
AT&F[<value>]	OK | ERROR | +CME ERROR: <err>

2.22 AT+GMI

Same as AT+CGMI

2.23 AT+GMM

Same as AT+CGMM

2.24 AT+GMR

Same as AT+CGMR

2.25 AT+IPR

Specifies the data rate, in addition to 1200 bits/s or 9600 bits/s, at which the DCE will accept commands. May be used to select operation at rates at which the DCE is not capable of automatically detecting the data rate being used by the DTE.

2.25.1 Format

Execution Command AT+IPR=[<rate>]	Response OK
Test Command AT+IPR=?	Response +IPR: (list of supported <rate>s)
Read Command AT+IPR?	Response +IPR: <rate>

2.25.2 Field

Parameters	Description
<value>	rate The rate, in bits per second, at which the DTE-DCE interface should operate. Currently, the following rates are supported: 0, 300, 1200, 2400, 4800, 9600, 14400, 19200, 28800, 38400, 57600, and 115200. If unspecified, or set to zero, automatic detection is selected, and the character format is forced to auto-detect (AT+IPR=0)

2.26 AT+IFC Set TE-TA Local Data Flow Control

AT+IFC Set TE-TA Local Data Flow Control

2.26.1 Format

Test Command AT+IFC=?	Response +IFC: (0-2),(0-2) OK
Read Command AT+ IFC?	Response This parameter setting determines the data flow control on the serial interface for data mode. OK Or Error
Write Command AT+IFC=[<dce_by_dte>,<dte_by_dce>]	Response OK Or ERROR
Reference	Note

2.26.2 Field

Parameters	Description
<dce_by_dte>	Specifies the method will be used by TE at receive of data from TA <u>0</u> No flow control 1 Software flow control 2 Hardware flow control
<dte_by_dce>	Specifies the method will be used by TA at receive of data from TE <u>0</u> No flow control 1 Software flow control 2 Hardware flow control

Example:

Commands	Response
AT+IFC?	+IFC: 0, 0 OK

2.27 AT+GCAP

Request complete capabilities list.

2.27.1 Format

Execution Command AT+GCAP	Response +GCAP: +FCLASS, +CGSM OK
Test Command AT+GCAP=? Shows if the command is supported.	Response OK

3 General commands

3.1 AT+CGMI Request manufacturer identification

The command causes the phone to return one or more lines of information text <manufacturer> which is intended to permit the user of the ITAE/ETAE to identify the manufacturer of the phone to which it is connected to.

3.1.1 Format

Execution Command AT+CGMI	Response +CME ERROR: <err>
Test Command AT+CGMI=?	Response OK

3.2 AT+CGMM Request model identification

The command causes the phone to return one or more lines of information text <model> which is intended to permit the user of the ITAE/ETAE to identify the specific model of phone to which it is connected to.

3.2.1 Format

Execution Command AT+CGMM	Response <model> +CME ERROR: <err>
Test Command AT+CGMM=?	Response

3.3 AT+CGMR Request revision identification

The command causes the phone to return a string containing information regarding SW version.

3.3.1 Format

Execution Command AT+CGMR	Response <revision> +CME ERROR: <err>
Test Command AT+CGMR=?	Response

3.4 AT+CGSN Request product serial number identification

Returns the IMEI number of the phone.

3.4.1 Format

Execution Command AT+CGSN	Response <IMEI> +CME ERROR: <err>
Test Command AT+CGSN=?	Response

3.5 AT+CSCS Select TE character set

Set 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.

3.5.1 Format

Read Command AT+CSCS?	Response +CSCS: <chset>
Test Command AT+CSCS=?	Response +CSCS: (list of supported <chset>s)
Write Command AT+CSCS=[<chset>]	

3.5.2 Field

Parameters	Description
< chset >	<p>"GSM" GSM 7 bit default alphabet (3GPP TS 23.038); this setting causes easily software flow control (XON/XOFF) problems.</p> <p>"HEX" character strings consist only of hexadecimal numbers from 00 to FF; e.g. "032FE6" equals three 8-bit characters with decimal values 3, 47 and 230; no conversions to the original MT character set shall be done.</p> <p>"IRA" international reference alphabet (ITU-T T.50 [13])</p> <p>"PCCP437" PC character set Code Page 437</p> <p>"UCS2" 16-bit universal multiple-octet coded character set (ISO/IEC10646 [32]); UCS2 character strings are converted to hexadecimal numbers from 0000 to FFFF; e.g. "004100620063" equals three 16-bit characters with decimal values 65, 98 and 99</p> <p>"8859-1" ISO 8859 Latin character set</p> <p>"UCS2_08X1" The supported parameters are subject to change according to different compile directives (options).</p>

3.6 AT+CIMI Request international mobile subscriber identity

Execution command causes the TA to return <IMSI>, which is intended to permit the TE to identify the individual SIM which is attached to ME. Refer [1] 9.2 for possible <err> values.

3.6.1 Format

Execution Command AT+CIMI	Response <IMSI> +CME ERROR: <err>
Test Command AT+CIMI=?	Response OK

4 Call Control commands

4.1 AT+CSTA Select type of address

Selects the type of number for further dialing commands (D) according to GSM/UMTS specifications.

4.1.1 Format

Write Command AT+CSTA=[<type>]	Response <IMSI> +CME ERROR: <err>
Read Command AT+CSTA?	Response +CSTA: <type>
Test Command AT+CSTA=?	Response +CSTA: (list of supported <type>s)
Reference	Note If _+ appears at the beginning of <dial string> , the TON to network is set to 145, otherwise we use the setting of +CSTA .

4.1.2 Field

Parameters	Description
< type >	type of address octet in integer format (refer 3GPP TS 24.008 [8] subclause 10.5.4.7); default 145 when dialing string includes international access code character "+", otherwise 129.

4.2 AT+CHUP Hang up call

Request to hang up the current GSM call.

4.2.1 Format

Execution Command AT+CHUP	Response OK
Test Command AT+CHUP=?	Response OK
Reference	Note In non-UCM projects (excluding Neptune Gemini with BT supported) projects, AT+CHUP can only hang up the call from the same source. In UCM project , this command will sent to MMI for SYNC.

4.3 AT+CR Service reporting control

Service reporting control.

Set 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.

4.3.1 Format

Write Command AT+CR=[<mode>]	Response
Read Command AT+CR?	Response +CR: <mode>
Test Command AT+CR=?	Response +CR: (list of supported <mode>s)

4.3.2 Field

Parameters	Description
<mode>	0 disables reporting 1 enables reporting

4.4 AT+CEER Extended error report

Execution command causes the TA to return one or more lines of information text <report>, which offer the user of the TA an extended report of the reason for

- the failure in the last unsuccessful call setup (originating or answering) or in-call modification;
- the last call release;

4.4.1 Format

Execution Command AT+CEER	Response +CEER: <cause>, <report>
Test Command AT+CEER=?	Response
Reference	Note For error cause other than those listed in GSM 04.08 annex H. +CEER: 128 ,"ERROR_CAUSE_UNKNOWN" will be given. If there is no error happened , +CEER: 0 ,"NONE" will be given.

4.4.2 Field

Parameters	Description
<cause>	cause value listed in GSM 04.08 annex H.
<report>	string type describes cause value.

4.5 AT+CRG Cellular result code

Set 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.

4.5.1 Format

Write Command AT+CRC=[<mode>]	Response
Read Command AT+CRC?	Response +CRC: <mode>
Test Command AT+CRC=?	Response +CRC: (list of supported <mode>s)

4.5.2 Field

Parameters	Description
<mode>	0 disables extended format 1 enables extended format

4.6 AT+CSNS Single Numbering Scheme

Set command selects the bearer or teleservice to be used when mobile terminated single numbering scheme call is established. Parameter values set with +CBST command shall be used when <mode> equals to a data service.

4.6.1 Format

Write Command AT+CSNS=[<mode>]	Response
Read Command AT+CSNS?	Response +CSNS: <mode>
Test Command AT+CSNS=?	Response +CSNS: (list of supported <mode>s)

4.6.2 Field

Parameters	Description
<mode>	0 voice 1 alternating voice/fax, voice first (TS 61) 2 fax (TS 62) 3 alternating voice/data, voice first (BS 61) 4 data 5 alternating voice/fax, fax first (TS 61) 6 alternating voice/data, data first (BS 61) 7 voice followed by data (BS 81)

4.7 AT+CVHU Voice Hangup Control

Set 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.

4.7.1 Format

Write Command AT+CVHU=[<mode>]	Response
Read Command AT+CVHU?	Response +CVHU:<mode>
Test Command AT+CVHU=?	Response ERROR

4.7.2 Field

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

5 Network Service related commands

5.1 AT+CNUM Subscriber Number

returns the MSISDNs related to the subscriber (this information can be stored in the SIM/UICC or in the MT).

5.1.1 Format

Execution Command AT+CNUM	Response +CNUM: [<alpha1>,<number1>,<type1> [<CR><LF>+CNUM: [<alpha2>,<number2>,<type2> [...]] +CME ERROR: <err>
Test Command AT+CNUM=?	Response

5.2 AT+CREG Network Registration

Set command controls the presentation of an unsolicited result code +CREG: <stat> when <n>=1 and there is a change in the MT network registration status, or code +CREG: <stat>[,<lac>,<ci>[,<AcT>]] 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 MT. Location information elements <lac>,<ci> and <AcT> are returned only when <n>=2 and MT is registered in the network.

5.2.1 Format

Write Command AT+CREG=[<n>]	Response
--	-----------------

Read Command AT+CREG?	Response +CREG: <n>,<stat>[,<lac>,<ci>[,<Act>]] +CME ERROR: <err>
Test Command AT+CREG=?	Response +CREG: (list of supported <n>s)

5.2.2 Field

Parameters	Description
<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>[,<Act>]].
<stat>	0 not registered, MT is not currently searching a new operator to register to 1 registered, home network 2 not registered, but MT is currently searching a new operator to register to 3 registration denied 4 unknown 5 registered, roaming
<lac>	string type; two byte location area code in hexadecimal format (e.g. "00C3" equals 195 in decimal)
<ci>	string type; four byte cell ID in hexadecimal format
<Act>	0 GSM 2 UTRAN 3 GSM w/EGPRS 4 UTRAN w/HSDPA

- | | |
|---|-------------------------|
| 5 | UTRAN w/HSUPA |
| 6 | UTRAN w/HSDPA and HSUPA |

5.2.3 Note

5.2.3.1 Change History

<Act> is applied from 09A.0920MP

5.2.3.2 Usage Note

N/A

5.3 AT+COPS Operator Selection

Set command forces an attempt to select and register the GSM/UMTS network operator. If the selected operator is not available, ERROR is returned.

Read command returns the current mode, the currently selected operator.

Test command returns operator list present in the network.

5.3.1 Format

Write Command AT+COPS=<mode>[,<format>,<oper>[,<Act>]]	Response +CME ERROR: <err>
Read Command AT+COPS?	Response +COPS: <mode>[,<format>,<oper>] +CME ERROR: <err>

<p>Test Command AT+COPS=?</p>	<p>Response +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)] +CME ERROR: <err></p>
<p>Rederence</p>	<p>Note</p> <p>We DO NOT support full set of alphanumeric format of <oper>, since the code size will become very large. If the customer needs the alphanumeric format, the table can be customized in mcu\custom\common\customer_operator_names.c. +COPS? response is not alphanumeric format when setting with alphanumeric format example: +COPS: 0,0," KG Telecom Co." If you got +COPS: 0,0,"46688" This is possibly due to there is no alphanumeric format name mapping to the operator id</p> <p>-----</p> <p>You can define operator name table in the following file under custom folder. mcu\custom\common\customer_operator_name.c Please check if there is operator name mapping in the name table. If not , Please add your operator name and operator id There is comment information in the file to guide you . Please read the guide before modification. After modification .then 'remake custom' There are two places shall be modified 1. RMMI_PLMN_NAME_ENTRIES 2. rmmi_plmn_table <input type="checkbox"/> <mode>=2 supported in projects with __NW_DETACH_SUPPORT__ option. (available after W1012)</p>

5.3.2 Field

Parameters	Description
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<mode>	0 automatic (<oper> field is ignored)
	1 manual (<oper> field shall be present)
	2 deregister from network (disable form 05.48)
	3 set only <format> (for read command +COPS?), do not attempt registration/deregistration
<format>	0 long format alphanumeric <oper>
	1 short format alphanumeric <oper>
	2 numeric <oper>
<oper>	string type
<stat>	0 unknown
	1 available
	2 current
	3 forbidden
<Act>	0 GSM
	2 UTRAN

5.4 AT+CLCK Facility Lock

Execute command is used to lock, unlock or interrogate a ME or a network facility <fac>.

5.4.1 Format

Write Command AT+CLCK=<fac>,<mode>[,<p asswd>,<class>]]	Response +CME ERROR: <err> when <mode>=2 and command successful: +CLCK: <status>[,<class1> [<CR><LF>+CLCK: <status>,<class2> [...]]
---	--

Test Command AT+CLCK=?	Response +CLCK: (list of supported <fac>s) OK OR +CME ERROR: <err>
----------------------------------	--

5.4.2 Field

Parameters	Description
<fac>	"PF", "SC", "AO", "OI", "OX", "AI", "IR", "AB", "AG", "AC", "PN", "PU", "PP", "PC"
<mode>	0 unlock 1 lock 2 query status (only "SC", "AO", "OI", "OX", "AI", "IR" support query mode)
<status>	0 not active
<passwd>	1 active string type
<classx>	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

5.4.3 Note

5.4.3.1 Change History

N/A

5.4.3.2 Usage Note

The <fac> "AB", "AG" and "AC" are applicable only for <mode>=0

5.5 AT+CPWD Change Password

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

5.5.1 Format

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

5.5.2 Field

Parameters	Description
<fac>	"P2" SIM PIN2 refer Facility Lock +CLCK for other values
<oldpwd>	string type
<newpwd>	string type

<pwdlength>	integer type maximum length of the password for the facility
--------------------------	--

5.6 AT+CLIP Calling line identification presentation

Requests calling line identification. Determines if the +CLIP unsolicited result code is activated. When the presentation of the CLI at the TE is enabled (and calling subscriber allows), +CLIP: <number>,<type>[,<subaddr>,<satype>] response is returned after every RING.

5.6.1 Format

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

5.6.2 Field

Parameters	Description
<n>	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 format specified by <type>

<type>	type of address octet in integer format (refer TS 24.008 [8] subclause 10.5.4.7)
<subaddr>	string type subaddress of format specified by <satype>
<satype>	type of subaddress octet in integer format (refer TS 24.008 [8] subclause 10.5.4.8)

5.7 AT+CLIR Calling line identification restriction

Requests calling line identification restriction.

5.7.1 Format

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

5.7.2 Field

Parameters	Description
<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

5.8 AT+COLP Connected line identification presentation

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 or V.250 [14] responses.

5.8.1 Format

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

5.8.2 Field

Parameters	Description
------------	-------------

<n>	0 disable 1 enable
<m>	0 COLP not provisioned 1 COLP provisioned 2 unknown (e.g. no network, etc.)

5.9 AT+CCUG Closed user group

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.

5.9.1 Format

Write Command AT+CCUG=[<n>[,<index>[,<info>]]]	Response +CME ERROR: <err>
Read Command AT+CCUG?	Response +CCUG: <n>,<index>,<info>
Test Command AT+CCUG=?	Response OK

5.9.2 Field

Parameters	Description
<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
---------------------	--

5.10 AT+CCFC Call forwarding number and conditions

Sets the call forwarding number and conditions. Registration, erasure, activation, deactivation and status query operations are supported.

5.10.1 Format

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

5.10.2 Field

Parameters	Description
<reason>	0 unconditional 1 mobile busy 2 no reply 3 not reachable 4 all call forwarding (refer 3GPP TS 22.030 [19]) 5 all conditional call forwarding (refer 3GPP TS 22.030 [19])

<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
<subaddr>	string type subaddress of format specified by <satype>
<satype>	type of subaddress octet in integer format (refer TS 24.008 [8] subclause 10.5.4.8); default 128
<classx>	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
<time>	1...30 when "no reply" is enabled or queried, this gives the time in seconds to wait before call is forwarded
<status>	0 not active 1 active

5.11 AT+CCWA Call waiting

This command allows control of the Call Waiting supplementary service. Activation, deactivation and status query are supported. 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.

5.11.1 Format

Write Command AT+CCWA=[<n>[,<mode>[,<class>]]]	Response +CME ERROR: <err> when <mode>=2 and command successful +CCWA: <status>,<class1> [<CR><LF>+CCWA: <status>,<class2> [...]]
Read Command AT+CCWA?	Response +CCWA: <n>
Test Command AT+CCWA=?	Response ERROR

5.11.2 Field

Parameters	Description
<n>	0 disable 1 enable
<mode>	0 disable 1 enable 2 query status
<classx>	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
<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 (refer TS 24.008 [8] subclause 10.5.4.7)

5.12 AT+CHLD Call related supplementary services

Requests call-related supplementary services. Refers to a service that allows a call to be temporarily disconnected from the ME but the connection to be retained by the network, and to a service that allows multiparty conversation. Calls can be put on hold, recovered, released and added to a conversation.

5.12.1 Format

Write Command AT+CHLD=[<n>]	Response +CME ERROR: <err>
Test Command AT+CHLD=?	Response [+CHLD: (list of supported <n>s)]

5.12.2 Field

Parameters	Description
<n>	<ul style="list-style-type: none"> 0 Releases all held calls, or sets User-Determined User Busy for a waiting call 1 Releases all active calls and accepts the other (waiting or held) call 1x Releases the specific active call X 2 Places all active calls on hold and accepts the other (held or waiting) call 2x Places all active calls, except call X, on hold 3 Adds a held call to the conversation 4 Connects two calls and disconnects the subscriber from both calls 5 Activate the Completion of Calls to Busy Subscriber Request. (CCBS)

5.13 AT+CTFR Call deflection

This refers to a service that causes an incoming alerting call to be forwarded to a specified number.

5.13.1 Format

Write Command AT+CTFR=<number>[,<type>[,<subaddr>[,<satype>]]]	Response +CME ERROR: <err>
Test Command AT+CTFR=?	Response OK

5.13.2 Field

Parameters	Description
<number>	string type phone number of format specified by <type>
<type>	type of address
<subaddr>	string type subaddress of format specified by <satype>
<satype>	type of subaddress octet in integer format (refer TS 24.008 [8] subclause 10.5.4.8); default 128

5.14 AT+CUSD Unstructured supplementary service data

Allows control of the Unstructured Supplementary Service Data (USSD). Both network- and mobile-initiated operations are supported. This command is used to enable the unsolicited result code +CUSD.

5.14.1 Format

Write Command AT+CUSD=[<n>[,<str>[,<dcs>]]]	Response +CME ERROR: <err>
Read Command AT+CUSD?	Response +CUSD: <n>
Test Command AT+CUSD=?	Response +CUSD: (list of supported <n>s)

5.14.2 Field

Parameters	Description
<n>	0 disable the result code presentation to the TE 1 enable the result code presentation to the TE 2 cancel session (not applicable to read command response)
<str>	string type USSD string
<dcs>	3GPP TS 23.038 [25] Cell Broadcast Data Coding Scheme in integer format (default 15)

5.15 AT+CSSN Supplementary service notifications

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

When <n>=1 and a supplementary service notification is received after a mobile originated call setup, intermediate result code +CSSI: <code1>[,<index>] is sent to TE before any other MO call setup result codes presented in the present document or in V.250 [14]. When several different <code1>s are received from the network, each of them shall have its own +CSSI result code.

When $\langle m \rangle = 1$ and a supplementary service notification is received during a mobile terminated call setup or during a call, or when a forward check supplementary service notification is received, unsolicited result code +CSSU:

`<code2>[,<index>[,<number>,<type>[,<subaddr>,<satype>]]]` is sent to TE. In case of MT call setup, result code is sent after every +CLIP result code (refer command "Calling line identification presentation +CLIP") and when several different $\langle code2 \rangle$ s are received from the network, each of them shall have its own +CSSU result code.

5.15.1 Format

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

5.15.2 Field

Parameters	Description
$\langle n \rangle$	0 disable
	1 enable
$\langle m \rangle$	0 disable
	1 enable

5.16 AT+CLCC List current calls

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

5.16.1 Format

Execution Command AT+CLCC	Response [+CLCC: <idx>,<dir>,<stat>,<mode>,<empty>[, <number>,<type>] [<CR><LF>+CLCC: <id2>,<dir>,<stat>,<mode>,<empty>[, <number>,<type>] [...]]] +CME ERROR: <err>
Test Command AT+CLCC=?	Response OK

5.16.2 Field

Parameters	Description
<idx>	integer type; call identification number as described in 3GPP TS 22.030 [19] subclause 4.5.5.1; this number can be used in +CHLD command operations.
<dir>	0 mobile originated (MO) call 1 mobile terminated (MT) call
<stat>	0 active 1 held 2 dialing (MO call) 3 alerting (MO call) 4 incoming (MT call) 5 waiting (MT call)
<mode>	0 voice 1 data 2 fax 3 voice followed by data, voice mode 4 alternating voice/data, voice mode 5 alternating voice/fax, voice mode 6 voice followed by data, data mode 7 alternating voice/data, data mode 8 alternating voice/fax, fax mode 9 unknown

<empty>	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 (refer TS 24.008 [8] subclause 10.5.4.7)

5.17 AT+CPOL Preferred operator list

This command is used to edit the SIM preferred list of networks. Execute command writes an entry in the SIM list of preferred operators (EFPLMNsel). If <index> is given but <oper> is left out, entry is deleted. If <oper> is given but <index> is left out, <oper> is put in the next free location. If only <format> is given, the format of the <oper> in the read command is changed.

5.17.1 Format

Write Command AT+CPOL=[<index>],[<format>],<oper>[,<GSM_Act>,<GSM_Compact_Act>,<UTRAN_Act>]]]	Response +CME ERROR: <err>
Read Command AT+CPOL?	Response +CPOL: <index1>,<format>,<oper1>[,<GSM_Act1>,<GSM_Compact_Act1>,<UTRAN_Act1>] [<CR><LF>+CPOL: <index2>,<format>,<oper2>[,<GSM_Act2>,<GSM_Compact_Act2>,<UTRAN_Act2>] [...] +CME ERROR: <err>
Test Command AT+CPOL=?	Response +CPOL: (list of supported <index>s), (list of supported <format>s) OK OR +CME ERROR: <err>

5.17.2 Field

Parameters	Description
<indexn>	the order number of operator in the SIM/USIM preferred operator list
<format>	0 long format alphanumeric <oper> 1 short format alphanumeric <oper> 2 numeric <oper>
<opern>	string type; <format> indicates if the format is alphanumeric or numeric (see +COPS)
<GSM_AcTn>	0 access technology not selected 1 access technology selected
<GSM_Compact_AcTn>	0 access technology not selected 1 access technology selected
UTRAN_AcTn	0 access technology not selected 1 access technology selected

5.18 AT+CPLS Selection of preferred PLMN list

This command is used to select one PLMN selector with Access Technology list in the SIM card or active application in the UICC (GSM or USIM), that is used by +CPOL command. Execute command selects a list in the SIM/USIM. Read command returns the selected PLMN selector list from the SIM/USIM. Test command returns the whole index range supported lists by the SIM/USIM

5.18.1 Format

Write Command AT+CPLS=<list>	Response +CME ERROR: <err>
Read Command AT+CPLS?	Response +CPLS: <list>

Test Command AT+CPLS=?	Response +CPLS: <list of supported<lis>s> +CME ERROR: <err>
----------------------------------	---

5.18.2 Field

Parameters	Description
<list>	<p>0 User controlled PLMN selector with Access Technology EFPLMNwAcT, if not found in the SIM/UICC then PLMN preferred list EFPLMNsel (this file is only available in SIM card or GSM application selected in UICC)</p> <p>1 Operator controlled PLMN selector with Access Technology EFOPLMNwAcT</p> <p>2 HPLMN selector with Access Technology EFHPLMNwAcT</p>

5.19 AT+COPN Read operator name

Execute command returns the list of operator names from the MT. Each operator code <numeric> that has an alphanumeric equivalent <alphan> in the MT memory shall be returned.

5.19.1 Format

Execution Command AT+COPN	Response +COPN: <numeric1>,<alpha1> [<CR><LF>+COPN: <numeric2>,<alpha2> [...]] +CME ERROR: <err>
Test Command AT+COPN=?	Response

5.19.2 Field

Parameters	Description
<numericn>	string type; operator in numeric format (see +COPS)
<alphan>	string type; operator in long alphanumeric format (see +COPS)

5.20 AT+CAEMLPP eMLPP priority Registration and Interrogation

The execute command is used to change the default priority level of the user in the network. The requested priority level is checked against the eMLPP subscription of the user stored on the SIM card or in the active application in the UICC (GSM or USIM) EF_{eMLPP}. If the user doesn't have subscription for the requested priority level an ERROR or +CMEE ERROR result code is returned.

The read command triggers an interrogation of the provision of the maximum priority level which the service subscriber is allowed to use and default priority level activated by the user. If the service is not provisioned, a result code including the SS-Status (?) parameter is returned.

5.20.1 Format

Write Command AT+CAEMLPP=<priority>	Response +CME ERROR: <err>
Read Command AT+CAEMLPP?	Response +CAEMLPP: <default_priority>,<max_priority> +CME ERROR: <err>
Test Command AT+CAEMLPP=?	Response OK

5.20.2 Field

Parameters	Description
<priority>	integer type parameter which identifies the default priority level to be activated in the network, values specified in 3GPP TS 22.067 [54]
efault_priority	integer type parameter which identifies the default priority level which is activated in the network, values specified in 3GPP TS 22.067 [54]
max_priority	integer type parameter which identifies the maximum priority level for which the service subscriber has a subscription in the network, values specified in 3GPP TS 22.067 [54].

5.21 AT+WS46 Select wireless network

Select the cellular network (Wireless Data Service; WDS) to operate with the TA. This command may be used when TA is asked to indicate the networks in which it can operate.

5.21.1 Format

Write Command AT+WS46=[<n>]	Response +CME ERROR: <err>
Read Command AT+WS46?	Response <n>
Test Command AT+WS46=?	Response (list of supported <n>s)

5.21.2 Field

Parameters	Description
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<n>

25 3GPP Systems (both GERAN and UTRAN)

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6 MT control and status command

6.1 AT+CPAS Phone activity status

Returns the activity status <pas> of the ME. It can be used to interrogate the ME before requesting action from the phone. If the command is executed without the <mode> parameter, only <pas> values from 0 to 128 are returned. If the <mode> parameter is included in the execution command, <pas> values from 129 to 255 may also be returned.

6.1.1 Format

Execution Command AT+CPAS	Response +CPAS: <pas> +CME ERROR: <err>
Test Command AT+CPAS=?	Response +CPAS: (list of supported <pas>s) +CME ERROR: <err>

6.1.2 Field

Parameters	Description
<pas>	<ul style="list-style-type: none"> 0 ready (MT allows commands from TA/TE) 1 unavailable (MT does not allow commands from TA/TE) 2 unknown (MT is not guaranteed to respond to instructions) 3 ringing (MT is ready for commands from TA/TE, but the ringer is active) 4 call in progress (MT is ready for commands from TA/TE, but a call is in progress) 5 asleep (MT is unable to process commands from TA/TE because it is in a low functionality state)

6.2 AT+CFUN Set Phone Functionality

AT+CFUN = 0 turn off radio and SIM power. (supported only for feature phone with feature option)

AT+CFUN = 1, 1 or AT+CFUN=4,1 can reset the target. (supported only for feature phone)

AT+CFUN = 1 can enter normal mode. (supported only for module solution)

AT+CFUN = 4 can enter flight mode. (supported only for module solution)

6.2.1 Format

Write Command AT+CFUN=[<fun>[,<rst>]]	Response +CME ERROR: <err>
Test Command AT+CFUN=?	Response +CFUN: (list of supported <fun>s), (list of supported <rst>s) +CME ERROR: <err>
Reference	Note The supported parameters are subject to change according to different compile directives (options). <input type="checkbox"/> <input type="checkbox"/> AT+CFUN=1,1 or AT+CFUN=4,1 can only reset the target, not fully compliant with 27.007 <input type="checkbox"/> <input type="checkbox"/> <fun> = 0,1,4 only supported in projects with <code>__ATCFUN_FLIGHTMODE_SUPPORT__</code> option.

6.2.2 Field

Parameters	Description
<fun>	1 full functionality 4 disable phone both transmit and receive RF circuits (supported only for module solution)
<rst>	0 do not reset the MT before setting it to <fun> power level 1 reset the MT before setting it to <fun> power level

6.3 AT+CPIN Enter PIN

Set command sends to the ME a password which is necessary before it can be operated (SIM PIN, SIM PUK, PH-SIM PIN, etc.). If the PIN is to be entered twice, the TA shall automatically repeat the PIN. If no PIN request is pending, no action is taken towards ME and an error message, +CME ERROR, is returned to TE. Refer [1] 9.2 for possible <err> values.

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.

6.3.1 Format

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

6.3.2 Field

Parameters	Description
<pin>	string type values
<newpin>	string type values

<code>	<p><code> values reserved by the present document:</p> <p>READY MT is not pending for any password</p> <p>SIM PIN MT is waiting SIM PIN to be given</p> <p>SIM PUK MT is waiting SIM PUK to be given</p> <p>PH-SIM PIN MT is waiting phone to SIM card password to be given</p> <p>PH-FSIM PIN MT is waiting phone-to-very first SIM card password to be given</p> <p>PH-FSIM PUK MT is waiting phone-to-very first SIM card unblocking password to be given</p> <p>SIM PIN2 MT is waiting SIM PIN2 to be given</p> <p>SIM PUK2 MT is waiting SIM PUK2 to be given</p> <p>PH-NET PIN MT is waiting network personalization password to be given</p> <p>PH-NET PUK MT is waiting network personalization unblocking password to be given</p> <p>PH-NETSUB PIN MT is waiting network subset personalization password to be given</p> <p>PH-NETSUB PUK MT is waiting network subset personalization unblocking password to be given</p> <p>PH-SP PIN MT is waiting service provider personalization password to be given</p> <p>PH-SP PUK MT is waiting service provider personalization unblocking password to be given</p> <p>PH-CORP PIN MT is waiting corporate personalization password to be given</p> <p>PH-CORP PUK MT is waiting corporate personalization unblocking password to be given</p>
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6.4 AT+CBC Battery Charge

Execution and read command returns battery connection status <bcs> and battery level <bcl> of the ME.

6.4.1 Format

Execution Command AT+CBC	Response +CBC: <bc>,<bcl> +CME ERROR: <err>
Test Command AT+CBC=?	Response +CBC: (list of supported <bc>s),(list of supported <bcl>s)

6.4.2 Field

Parameters	Description
<bc>	0 MT does not have a battery connected
<bcl>	1...100 vbat has 1 to 100 percent of capacity remaining

6.5 AT+CSQ Signal Quality

The command returns received signal strength indication <rsi> and channel bit error rate <ber> from the ME.

6.5.1 Format

Execution Command AT+CSQ	Response +CSQ: <rsi>,<ber> +CME ERROR: <err>
Test Command AT+CSQ=?	Response ERROR

6.5.2 Field

Parameters	Description
<rss>	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>	0...7 as RXQUAL values in the table in TS 45.008 [20] subclause 8.2.4 not known or not detectable

6.6 AT+CMEC Mobile Termination control mode

Set command selects the equipment, which operates MT keypad, writes to MT display and sets MT indicators. If operation mode is not allowed by the MT, +CME ERROR: <err> is returned.

Test command returns the modes supported as compound values.

6.6.1 Format

Write Command AT+CMEC=[<keyp>[,<disp>[,<ind>]]]	Response +CME ERROR: <err>
Read Command AT+CMEC?	Response +CMEC: <keyp>,<disp>,<ind>
Test Command AT+CMEC=?	Response +CMEC: (list of supported <keyp>s),(list of supported <disp>s),(list of supported <ind>s)

Reference	Note Change History: The command is available from 09B.1009MP
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6.6.2 Field

Parameters	Description
<keyp>	0 MT can be operated only through its keypad (execute command of +CKPD cannot be used) 1 MT can be operated only from TE (with command +CKPD) 2 MT can be operated from both MT keypad and TE
<disp>	0 only MT can write to its display (command +CDIS can only be used to read the display) 1 only TE can write to MT display (with command +CDIS) 2 MT display can be written by both MT and TE
<ind>	0 only MT can set the status of its indicators (command +CIND can only be used to read the indicators) 1 only TE can set the status of MT indicators (with command +CIND) 2 MT indicators can be set by both MT and TE

6.7 AT+CIND Indicator control

Displays the value of ME indicators.

6.7.1 Format

Write Command AT+CIND=[<ind>[,<ind>[,...]]]	Response +CME ERROR: <err>
---	--

Read Command AT+CIND?	Response +CIND: <ind>[,<ind>[,...]] +CME ERROR: <err>
Test Command AT+CIND=?	Response +CIND: (<descr>,(list of supported <ind>s)) [,(<descr>,(list of supported <ind>s))[,...]] +CME ERROR: <err>
Reference	Note "call setup" is proprietary defined in MTK solution and only used when BT supported.

6.7.2 Field

Parameters	Description
<ind>	integer type value, which shall be in range of corresponding <descr> <descr> values reserved by the present document and their <ind> ranges: "battchg" battery charge level (0 5) "signal" signal quality (0 5) "service" service availability (0 1) "message" message received (0 1) "call" call in progress (0 1) "roam" roaming indicator (0 1) "call setup" call setup indicator(0 3) "smsfull" a short message memory storage in the MT has become full(1) or memory locations are available (0)

6.8 URC: +CIEV NITZ indicator event

This URC is the result code of an NITZ indicator event.

6.8.1 Format

	Response Unsolicited result code +CIEV: <ind>,<value1>[,<value2>,...]
--	---

6.8.2 Field

Parameters	Description
<ind>	9: NITZ date/time/timezone information +CIEV: 9,<UT>,<TZ>[,<DST>] <UT> , Universal Time , String type "YY/MM/DD,HH:MM:SS" <TZ>: Local Time Zone, Integer type ex: +4 or -4 <DST>: Daylight Saving Time , Integer type 1: Summer time 0: Winter time ex: +CIEV: 9,"09/05/16,16:56:00",-28,1

6.9 AT+CMER Mobile Termination event reporting

Set command enables or disables sending of unsolicited result codes from TA to TE in the case of key pressings, display changes, and indicator state changes.

Test command returns the modes supported as compound values.

6.9.1 Format

Write Command AT+CMER=[<mode>[,<keyp>[,<disp>[,<ind>[,<bfr>]]]]]	Response OK Or ERROR
--	--

Read Command AT+CMER?	Response +CMER: <mode>,<key>,<disp>,<ind>,<bfr> OK
Test Command AT+CMER=?	Response +CMER: (list of supported <mode>s),(list of supported <key>s),(list of supported <disp>s), (list of supported <ind>s),(list of supported <bfr>s)
Reference	Note We don't support set command of +CIND to set the values of MT indicators. So behaviors of <ind> 1 and 2 are currently the same. The +CKEV URC which set by <key> parameter only reports when UART setting is SIM1. <tscrn> parameter take effect after W1021.

6.9.2 Field

Parameters	Description
<mode>	<p>0 buffer unsolicited result codes in the TA; if TA result code buffer is full, codes can be buffered in some other place or the oldest ones can be discarded</p> <p>1 discard unsolicited result codes when TA-TE link is reserved (e.g. in on-line data mode); otherwise forward them directly to the TE</p> <p>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</p> <p>3 forward unsolicited result codes directly to the TE; TA-TE link specific inband technique used to embed result codes and data when TA is in on-line data mode</p>

<keyp>	<p>0 no keypad event reporting</p> <p>1 keypad event reporting using result code +CKEV: <key>, <press>, <key> indicates the key (refer IRA values defined in table in subclause "Keypad control +CKPD") and <press> if the key is pressed or released (1 for pressing and 0 for releasing). Only those key pressing, which are not caused by +CKPD shall be indicated by the TA to the TE.</p> <p>NOTE 1: When this mode is enabled, corresponding result codes of all keys currently pressed should be flushed to the TA regardless of <bfr> setting.</p> <p>NOTE 2: When this mode is enabled, corresponding result codes of all keys currently pressed should be flushed to the TA regardless of <bfr> setting.</p>
<disp>	<p>0 no display event reporting</p>
<ind>	<p>0 no indicator event reporting</p> <p>1 indicator event reporting using result code +CIEV: <ind>,<value>. <ind> indicates the indicator order number (as specified for +CIND) and <value> is the new value of indicator. Only those indicator events, which are not caused by +CIND shall be indicated by the TA to TE</p> <p>2 indicator event reporting using result code +CIEV: <ind>,<value>. All indicator events shall be directed from TA to TE</p>
<bfr>	<p>0 TA buffer of unsolicited result codes defined within this command is cleared when</p> <p>1 TA buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1...3 is entered (OK response shall be given before flushing the codes)</p>

6.10 AT+CPBS Select Phonebook Memory Storage

Selects the phonebook memory storage <storage> that is used by other phonebook commands.

6.10.1 Format

Write Command	Response
AT+CPBS=<storage>	+CME ERROR: <err>

Read Command AT+CPBS?	Response +CPBS: <storage>[,<used>,<total>] +CME ERROR: <err>
Test Command AT+CPBS=?	Response +CPBS: (list of supported <storage>s)
Reference	Note 1. Before 10A, We don't support query <used> field for the storage "LD", "MC", "RC", "DC". It would be always 0. 2. After 10A(include 10A), We don't support query <used> field for the storage "LD", "MC", "RC", "DC" in the module(modem) project. It would be always 0.

6.10.2 Field

Parameters	Description
<storage>	"ME" MT phonebook "SM" SIM/UICC phonebook "LD" last-dialling phonebook "MC" MT missed calls list "RC" MT received calls list. "DC" MT dialled calls list "FD" SIM/USIM fixdialling-phonebook "ON" SIM own numbers (MSISDNs) list

6.11 AT+CPBR Read phonebook entries

Returns phone book entries in location number range <index1>...<index2> from the current phonebook memory storage selected by AT+CPBS. If <index2> is omitted, only location <index1> is returned. Entry fields returned are location number <indexn>, phone number <number> in <indexn>, and text <text> associated with the number.

6.11.1 Format

Write Command AT+CPBR=<index1>[,<index2>]	Response [+CPBR: <index1>,<number>,<type>,<text>[,<hidden>][[...]] <CR><LF>+CPBR: <index2>,<number>,<type>,<text>[,<hidden>]]] +CME ERROR: <err>
Test Command AT+CPBR=?	Response +CPBR: (list of supported <index>s),[<nlength>],[<tlength>] +CME ERROR: <err>

6.11.2 Field

Parameters	Description
<index>	integer type values in the range of location numbers of phonebook memory
<index1>	integer type values in the range of location numbers of phonebook memory
<index2>	integer type values in the range of location numbers of phonebook memory
<number>	string type phone number of format <type>
<type>	type of address octet in integer format (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 +CSCS
<nlength>	integer type value indicating the maximum length of field <number>
<tlength>	integer type value indicating the maximum length of field <text>
<hidden>	0: phonebook entry not hidden 1: phonebook entry hidden

6.12 AT+CPBF Find Phonebook entries

Execution command returns phonebook entries (from the current phonebook memory storage)

selected with +CPBS) which alphanumeric field start with string <findtext>(Prefix match).
Entry fields returned are location number <indexn>, phone number stored there <number> (of format <type>) and text <text> associated with the number.

6.12.1 Format

Write Command AT+CPBF=<findtext>	Response [+CPBF: <index1>,<number>,<type>,<text> [[...] <CR><LF>+CPBF: <index2>,<number>,<type>,<text>]] +CME ERROR: <err>
Test Command AT+CPBF=?	Response +CPBF: [<nlength>],[<tlength>] +CME ERROR: <err>

6.12.2 Field

Parameters	Description
<index1>, <index2>	integer type values in the range of location numbers of phonebook memory
<number>	string type phone number of format <type>
<type>	type of address octet in integer format (refer TS 24.008 [8] subclause 10.5.4.7)
<findtext>, <text>	string type field of maximum length <tlength>. Only support "IRA"
<nlength>	integer type value indicating the maximum length of field <number>
<tlength>	integer type value indicating the maximum length of field <text>

6.13 AT+CPBW Write Phonebook entries

Writes phonebook entry in location number <index> in the current phonebook memory storage area, selected with AT+CPBS. If the <number> and <text> parameters are omitted, the entry is deleted. If <index> is omitted but <number> is included, the entry is written to the first free location in the phonebook.

6.13.1 Format

Write Command AT+CPBW=[<index>][,<number>][,<type>][,<text>]]	Response +CME ERROR: <err>
Test Command AT+CPBW=?	Response +CPBW: (list of supported <index>s)[,<nlength>], (list of supported <type>s)[,<tlength>] +CME ERROR: <err>

6.13.2 Field

Parameters	Description
<index>	integer type values in the range of location numbers of phonebook memory
<number>	string type phone number of format <type>
<type>	type of address
<text>	string type field of maximum length <tlength>; character set as specified by command Select TE Character Set +CSCS. "UCS2", and "IRA" are supported.
<nlength>	integer type value indicating the maximum length of field <number>
<tlength>	integer type value indicating the maximum bytes of field <text> after encoding

6.14 AT+CCLK Clock

Set command sets the real-time clock of the MT.

Read command returns the current setting of the clock.

6.14.1 Format

Write Command AT+CCLK=<time>	Response +CME ERROR: <err>
Read Command AT+CCLK?	Response +CCLK: <time> +CME ERROR: <err>
Test Command AT+CCLK=?	Response OK

6.14.2 Field

Parameters	Description
<time>	string type value; format is "yy/MM/dd,hh:mm:ss", where characters indicate year (two last digits), month, day, hour, minutes, seconds.

6.15 AT+CALA Alarm

Sets an alarm time in the ME.

6.15.1 Format

Write Command AT+CALA=<time>[,<n>[,<type>[,<text>[,<recur>]]]]	Response +CME ERROR: <err>
--	--

Read Command AT+CALA?	Response [+CALA: <time>,<n1>,,,<recurr> [<CR><LF>+CALA: <time>,<n2>,,,<recurr> [...]]] +CME ERROR: <err>
Test Command AT+CALA=?	Response OK

6.15.2 Field

Parameters	Description
<time>	refer +CCLK
<n>	integer type value indicating the index of the alarm
<type>	integer type. But we don't care about type value.
<text>	string type. But we don't care about text content. MMI doesn't support.
<recurr>	string type value indicating day of weeks for the alarm in one of the following format: "<1..7>[,<1..7>[...]]" – Sets a recurrent alarm for one or more days in the week. The digits 1 to 7 corresponds to the days in the week, Monday (1), ..., Sunday (7). Example: The string "1,2,3,4,5" may be used to set an alarm for all weekdays. "0" – Sets a recurrent alarm for all days in the week.

6.16 AT+CSIM Generic SIM Access

Set command transmits to the MT the <command> it then shall send as it is to the SIM. In the same manner the SIM <response> shall be sent back by the MT to the TA as it is. Refer subclause 9.2 for <err> values.

This command allows a direct control of the SIM by an distant application on the TE. The TE shall then take care of processing SIM information within the frame specified by SM/UMTS.

6.16.1 Format

<p>Write Command</p> <p>AT+CSIM=<length>,<command></p>	<p>Response</p> <p>+CSIM: <length>,<response></p> <p>+CME ERROR: <err></p>
<p>Test Command</p> <p>AT+CSIM=?</p>	<p>Response</p>
<p>Reference</p>	<p>Note</p> <ol style="list-style-type: none"> 1. The command only support when __CSIM__ is defined 2. We support AT+CSIM with limitation: We only support SELECT, STATUS, READ BINARY, UPDATE BINARY, READ RECORD, UPDATE RECORD, GET RESPONSE commands. We don't allow the AT users to select another application, send termination indication or initialization indication. If the user send SELECT by AID, STATUS by initialization or termination, he will get ERROR in return. 3. We support AT+CSIM with GSM CLA, and UICC CLA, but we don't support logical channels other than the default channel.

Example

1. SELECT

(1) (P1 = SELECT MF by file id)

AT+CSIM=14,"00A4000C023F00"

+CSIM: 4, "9000"

OK

2. SELECT

(1) (P1 = SELECT by DF name)

AT+CSIM=42,"00A4040C10A0000000871002FF477001890

00001FF"

ERROR

3. READ BINARY

(1) (Pre-condition: SELECT EF_IMSI (P1 = SELECT by path from MF, P2 = return with FCP))

AT+CSIM=20,"00A40804047FFF6F0700"

+CSIM: 64,

"621C8202412183026F07A5038001718A01058B036F0605
800200098801389000"

OK

(2) READ BINARY

AT+CSIM=10,"00B0000009"

+CSIM: 22, "0849667914305241049000"

OK

4. UPDATE BINARY

(1) (Pre-condition: SELECT EF_PLMNwAcT(P1 = SELECT by path from MF, P2 = return with FCP))

AT+CSIM=20,"00A40804047FFF6F6000"

+CSIM: 64,

"621C8202412183026F60A5038001718A01058B036F0606
800200878801509000"

OK

(2) READ BINARY

AT+CSIM=10,"00B0000087"

+CSIM: 18,

"888888008854F400808025F510808005F221808015F0018
08005F520808015F52080

8004F401808004F454808004F429808004F430808004F49

4808004F404808054F050808025F0

1080

8054F5108080FFFFFFF0000FFFFFFF0000FFFFFFF0000FFFFF

FF0000FFFFFFF0000FFFFFFF0000F

FFFFFF00

00FFFFFFF0000FFFFFFF0000FFFFFFF0000FFFFFFF00009000

"

OK

(3) UPDATE BINARY

AT+CSIM=20,"00D600000521F3548080"

+CSIM: 4, "9000"

6.16.2 Field

Parameters	Description
<length>	integer type; length of the characters that are sent to TE in <command> or <response> (two times the actual length of the command or response)
<command>	command passed on by the MT to the SIM in the format as described in 3GPP TS 51.011 [28] (hexadecimal character format; refer +CSCS)
<response>	response to the command passed on by the SIM to the MT in the format as described in 3GPP TS 51.011 [28] (hexadecimal character format; refer +CSCS)

6.17 AT+CRSM Restricted SIM access

Set command transmits to the MT the SIM <command> and its required parameters.

6.17.1 Format

Write Command AT+CRSM=<command>[,<fileid>[,<P1>,<P2>,<P3>[,<data>[,<pathid>]]]]	Response +CRSM: <sw1>,<sw2>[,<response>] +CME ERROR: <err>
Test Command AT+CRSM=?	Response
Reference	Note <pathid> + <fileid> can be a unique identifier on the SIM/UICC. In USIM, the response of STATUS and GET RESPONSE is TLV format, and length is not fixed. So the P3 should be assigned as "00" as 256 bytes, which is the maximum value of response data.

Example

```

1. Read EFSST (file_idx= 0x6F38 , structure: transparent)
(1) Get RESPONSE first , 3~4 byte is the file size
information.(e.g. 000A=10 )
at+crsm=192,28472
+CRSM: 144, 0, "0000000A6F38040015005501010000"
OK
at+crsm=176,28472,0,0,10
+CRSM: 144, 0, "FF3FFFFFF00003C03000C"
OK
2. Read a EFADN (file_idx= 0x6F3A , structure: Linear fixed)
(1)GET RESPONSE first , No.15 byte represents the record
length (e.g 1E =30)
at+crsm=192,28474
+CRSM: 144, 0, "00001D4C6F3A04001100220502011E"
OK
(2) READ RECORD
at+crsm=178,28474,1,4,30
+CRSM: 144, 0,
"6F776E6572FFFFFFFFFFFFFFFFFFFFFFFF0681907830332
6FFFFFFFFFFFFFFFFF"
OK
3. READ EFImageInstanceDataFiles (with <pathid>) (file_idx =
0x4F20(File id would be different if you
use other SIM cards), structure: Transparent)
(1) GET RESPONSE first (without AT command example)
(2) READ BINARY
AT+CRSM=176,20256,0,0,1,,"7F105F50"
+CRSM: 144, 0, "00"
OK

```

6.17.2 Field

Parameters	Description
<command>	176 READ BINARY 178 READ RECORD 192 GET RESPONSE 214 UPDATE BINARY 220 UPDATE RECORD 242 STATUS

<fileid>	integer type; this is the identifier of a elementary data file on SIM. <P1>, <P2>, <P3>: integer type; parameters passed on by the MT to the SIM.(For detailed information , please refer 3GPP TS11.11 Section 9.2)
<data>	information which shall be written to the SIM (hexadecimal character format; refer+CSCS)
<pathid>	string type; contains the path of an elementary file on the SIM/UICC in hexadecimal format as defined in ETSI TS 102 221 [60] (e.g. "7F205F70" in SIM and UICC case). The <pathid> shall only be used in the mode "select by path from MF" as defined in ETSI TS 102 221 [60]. NOTE: Since valid elementary file identifiers may not be unique over all valid dedicated file identifiers the <pathid> indicates the targeted UICC/SIM directory path in case of ambiguous file identifiers. For earlier versions of this specification or if <pathid> is omitted, it could be implementation specific which one will be selected. <sw1>, <sw2>: integer type; information from the SIM about the execution of the actual command.
<response>	response of a successful completion of the command previously issued (hexadecimal character format) [Note1]: READ BINARY command is used for transparent EF. READ RECORD is used for linear fixed or cyclic EF [Note2]:Before using READ BINARY, READ RECORD, UPDATE BINARY, UPDATE RECORD, please use command GET RESPONSE to get the exact length information first.

6.18 AT+CRSL Ringer Sound Level

Set the incoming call ringer sound level.

6.18.1 Format

Write Command AT+CRSL=<level>	Response +CME ERROR: <err>
Read Command AT+CRSL?	Response +CRSL: <level> +CME ERROR: <err>

Test Command AT+CRSL=?	Response +CRSL: (list of supported <level>s) +CME ERROR: <err>
Reference	Note This command can't be used when UART setting is SIM2

6.18.2 Field

Parameters	Description
<level>	integer type value with manufacturer specific range

6.19 AT+CLVL Loudspeaker volume level

Sets the volume of the internal speaker in the ME

6.19.1 Format

Write Command AT+CLVL=<level>	Response +CME ERROR: <err>
Read Command AT+CLVL?	Response +CLVL: <level> +CME ERROR: <err>
Test Command AT+CLVL=?	Response +CLVL: (list of supported <level>s) +CME ERROR: <err>

Reference	Note This command can't be used when UART setting is SIM2
-----------	--

6.19.2 Field

Parameters	Description
<level>	integer type value with manufacturer specific range.

6.20 AT+CMUT Mute Control

Enable/Disable the uplink voice muting during a voice call.

6.20.1 Format

Write Command AT+CMUT=<n>	Response +CME ERROR: <err>
Read Command AT+CMUT?	Response +CMUT: <n> +CME ERROR: <err>
Test Command AT+CMUT=?	Response +CMUT: (list of supported <n>s)
Reference	Note This command can't be used when UART setting is SIM2

6.20.2 Field

Parameters	Description
<n>	0 mute off 1 mute on

□□

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7 GPRS commands(27.007)

7.1 AT+CGDCONT Define PDP Context

Specifies PDP context parameter values for a PDP context identified by the (local) context identification parameter, <cid>.

7.1.1 Format

Write Command AT+CGDCONT=[<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>[,<pd1>[,...[,pdN]]]]]]]]]]]	Response OK or ERROR
Read Command AT+CGDCONT?	Response +CGDCONT: <cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[,<pd1>[,...[,pdN]]] [<CR><LF>+CGDCONT: <cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp>[,<pd1>[,...[,pdN]]] [...]]
Test Command AT+CGDCONT=?	Response +CGDCONT: (range of supported <cid>s), <PDP_type>,,,(list of supported <d_comp>s), (list of supported <h_comp>s)[,(list of supported <pd1>s)[,...[, (list of supported <pdN>s)]]] [<CR><LF>+CGDCONT: (range of supported <cid>s), <PDP_type>,,,(list of supported <d_comp>s), (list of supported <h_comp>s)[,(list of supported <pd1>s)[,...[, (list of supported <pdN>s)]]] [...]]

7.1.2 Field

Parameters	Description
<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.
<PDP_type>	(Packet Data Protocol type) a string parameter. IP Internet Protocol (IETF STD 5)
<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. If the value is null or omitted, then the subscription value will be requested.
<PDP_address >	a string parameter that identifies the MT in the address space applicable to the PDP. If the value is null or omitted, then a value may be provided by the TE during the PDP startup procedure or, failing that, a dynamic address will be requested. The read form of the 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 the +CGPADDR command.
<d_comp>	a numeric parameter that controls PDP data compression (applicable for SNDCP only) 0 - off (default if value is omitted)
<h_comp>	a numeric parameter that controls PDP header compression 0 - off (default if value is omitted)
<pd1>,... <pdN>	zero to N string parameters whose meanings are specific to the <PDP_type>

7.2 AT+CGDSCONT Define Secondary PDP Context

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.

7.2.1 Format

Write Command AT+CGDSCONT=[<cid> ,<p_cid>,<d_comp>,<h_comp>]]	Response OK or ERROR
Read Command AT+CGDSCONT?	Response +CGDSCONT: <cid>, <p_cid>, <d_comp>, <h_comp>[-<CR><LF>+CGDSCONT: <cid>, <p_cid>, <d_comp>, <h_comp>[...]]
Test Command AT+CGDSCONT=?	Response +CGDSCONT: (range of supported <cid>s), (list of <cid>s for active primary contexts),(list of supported <d_comp>s), (list of supported <h_comp>s)

7.2.2 Field

Parameters	Description
<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 contextrelated commands. The range of permitted values (minimum value = 1) is returned by the test form of the command
<p_cid>	a numeric parameter which specifies a particular PDP context definition which has been specified by use of the +CGDCONT command. The parameter is local to the TE-MT interface. The list of permitted values is returned by the test form of the command.
<PDP_type>	a string parameter which specifies the type of packet data protocol IP Internet Protocol (IETF STD 5)
<d_comp>	a numeric parameter that controls PDP data compression 0 - off (default if value is omitted)
<h_comp>	a numeric parameter that controls PDP header compression 0 - off (default if value is omitted)

7.3 AT+CGQREQ Quality of Service Profile (Requested)

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.

7.3.1 Format

Write Command AT+CGQREQ=[<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]]]]	Response OK or ERROR
Read Command AT+CGQREQ?	Response +CGQREQ: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>[<CR><LF>+CGQREQ: <cid>, <precedence>, <delay>, <reliability>., <peak>, <mean>[...]]
Test Command AT+CGQREQ=?	Response +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)[...]]

7.3.2 Field

Parameters	Description
<cid>	a numeric parameter which specifies a particular PDP context definition
<precedence>	a numeric parameter which specifies the precedence class
<delay>	a numeric parameter which specifies the delay class
<reliability>	a numeric parameter which specifies the reliability class
<peak>	a numeric parameter which specifies the peak throughput class
<mean>	a numeric parameter which specifies the mean throughput class

7.4 AT+CGQMIN Quality of Service Profile (Minimum acceptable)

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.

7.4.1 Format

Write Command AT+CGQMIN=[<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]]]]	Response OK or ERROR
Read Command AT+CGQMIN?	Response +CGQMIN: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean> [<CR><LF> +CGQMIN: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean> [...]]
Test Command AT+CGQMIN=?	Response +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) [...]]

7.4.2 Field

Parameters	Description
<cid>	a numeric parameter which specifies a particular PDP context definition
<precedence>	a numeric parameter which specifies the precedence class
<delay>	a numeric parameter which specifies the delay class

<reliability>	a numeric parameter which specifies the reliability class
<peak>	a numeric parameter which specifies the peak throughput class
<mean>	a numeric parameter which specifies the mean throughput class

7.5 AT+CGATT PS attach or detach

The execution command is used to attach the MT to, or detach the MT from, the Packet Domain service. After the command has completed, the MT remains in V.250 command state.

7.5.1 Format

Write Command AT+CGATT= [<state>]	Response OK or ERROR
Read Command AT+CGATT?	Response +CGATT: <state>
Test Command AT+CGATT=?	Response +CGATT: (list of supported <state>s)

7.5.2 Field

Parameters	Description
<state>	indicates the state of PS attachment 0 detached 1 attached

7.6 AT +CGACT PDP context activate or deactivate

To activate or deactivate the specified PDP context (s).

7.6.1 Format

Write Command AT+CGACT=[<state> ,<cid>]]	Response OK or ERROR
Read Command AT+CGACT?	Response +CGACT: <cid>, <state>[<CR><LF>+CGACT: <cid>, <state>[...]]
Test Command AT+CGACT=?	Response +CGACT: (list of supported <state>s)

7.6.2 Field

Parameters	Description
<state>	indicates the state of PDP context activation 0 deactivated 1 activated Other values are reserved and will result in an ERROR response to the execution command.
<cid>	a numeric parameter which specifies a particular PDP context definition. If no <cid> is specified, then UE assumes it as 1. The usage of omitted <cid> to activate/deactivate all is not supported.

7.7 AT +CGCMOD PDP Context Modify

The execution command is used to modify the specified PDP context (s) with respect to QoS profiles and TFTs.

7.7.1 Format

Write Command AT+CGCMOD=<cid>	Response OK or ERROR
Test Command AT+CGCMOD=?	Response +CGCMOD: (list of <cid>s associated with active contexts)

7.7.2 Field

Parameters	Description
<cid>	a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

7.8 AT+CGDATA Enter data state

The execution 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.

7.8.1 Format

Write Command AT+CGDATA=[<L2P> , [<cid>]]	Response CONNECT ERROR
Test Command AT+CGDATA=?	Response +CGDATA: (list of supported <L2P>s)

7.8.2 Field

Parameters	Description
<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 Other values will result in an ERROR response.
<cid>	a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).

7.9 AT+CGPADDR Show PDP address

The execution command returns a list of PDP addresses for the specified context identifiers. The test command returns a list of defined <cid>s.

7.9.1 Format

Write Command AT+CGPADDR=<cid>	Response +CGPADDR: <cid>,<PDP_addr>
Test Command AT+CGPADDR=?	Response +CGPADDR: (list of defined <cid>s)

7.9.2 Field

Parameters	Description
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<cid>	a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands). If no <cid> is specified, an ERROR result code will be returned. Multiple <cid> field is not supported. +CGDSCONT commands when the context was defined. For a dynamic address it will be the one
<PDP_address >	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 +CGDCONT and assigned during the last PDP context activation that used the context definition referred to by <cid>. <PDP_address> is omitted if none is available.

7.10 AT+CGAUTO Automatic response to network request PDP context activation

The set command disables or enables an automatic positive response (auto-answer) to the receipt of a Request PDP Context Activation message from the network.

When the +CGAUTO=0 command is received, the MT shall not perform a PS detach if it is attached. Subsequently, when the MT announces a network request for PDP context activation by issuing the unsolicited result code RING or +CRING, the TE may manually accept or reject the request by issuing the +CGANS command or may simply ignore the network request.

When the +CGAUTO=1 command is received, the MT shall attempt to perform a PS attach if it is not already attached. Failure will result in ERROR or, if enabled, +CME ERROR being returned to the TE. Subsequently, when the MT announces a network request for PDP context activation by issuing the unsolicited result code RING or +CRING to the TE, this is followed by the intermediate result code CONNECT. The MT then enters V.250 online data state and follows the same procedure as it would after having received a +CGANS=1 with no <L2P> or <cid> values specified.

7.10.1 Format

Write Command AT+CGAUTO=<n>	Response OK or ERROR
---	---

Read Command AT+CGAUTO?	Response +CGAUTO: <n>
-----------------------------------	---------------------------------------

7.10.2 Field

Parameters	Description
<n>	0 turn off automatic response for Packet Domain only 1 turn on automatic response for Packet Domain only For <n> = 0 Packet Domain network requests are manually accepted or rejected by the +CGANS command. For <n> = 1 Packet Domain network requests are automatically accepted according to the description above.

7.11 AT+CGANS Manual response to a network request for PDP context activation

The execution command requests the MT to respond to a network request for Packet Domain PDP context activation which has been signaled to the TE by the RING or +CRING: unsolicited result code. The <response> parameter allows the TE to accept or reject the request.

7.11.1 Format

Write Command AT+CGANS=[<response>],[<L2P>],[<cid>]]]	Response OK or ERROR
Test Command AT+CGANS=?	Response +CGANS: (list of supported<response>s), (list of supported <L2P>s)

7.11.2 Field

Parameters	Description
<response>	0 reject the request 1 accept and request that the PDP context be activated
<L2P>	a string parameter which indicates the layer 2 protocol to be used (see +CGDATA command).
<cid>	a numeric parameter which specifies a particular PDP context definition

7.12 AT+CGCLASS GPRS mobile station class

The set command is used to set the MT to operate according to the specified GPRS mobile class. If the requested class is not supported, an ERROR or +CME ERROR response is returned. Extended error responses are enabled by the +CMEE command.

The read command returns the current GPRS mobile class.

The test command is used for requesting information on the supported GPRS mobile classes.

7.12.1 Format

Write Command AT+CGCLASS=[<class>]	Response OK or ERROR
Read Command AT+CGCLASS?	Response +CGCLASS:<class>
Test Command AT+CGCLASS=?	Response +CGCLASS: (list of supported <class>s)

Reference	<p>Note</p> <p>On MAUI and 09A branches, after W0918, the test command and the query command can be used while a normal SIM card is inserted. Before this, the +CGCLASS command can be only used while a test SIM is inserted.</p>
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7.12.2 Field

Parameters	Description
<class>	<p>a string parameter which indicates the GPRS mobile class (in descending order of functionality)</p> <p>A class A (highest)</p> <p>B classB</p> <p>CG class C in GPRS only mode</p> <p>CC class C in circuit switched only mode (lowest)</p> <p>Other values are reserved and will result in an ERROR response to the set command.</p> <p>If the MT is GPRS attached when the set command is issued with a <class> = CC specified,a detach request shall be sent to the network.</p>

7.13 AT+CGREG GPRS network registration status

The set 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, or code +CGREG: <stat>[,<lac>,<ci>[,<Act>]] when <n>=2 and there is a change of the network cell.

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

7.13.1 Format

<p>Write Command</p> <p>AT+CGREG=[<n>]</p>	<p>Response</p> <p>OK</p>
---	---------------------------

Read Command AT+CGREG?	Response +CGREG:<n>,<stat>[,<lac>,<ci>[,<Act>]]+CME ERROR: <err>
----------------------------------	--

7.13.2 Field

Parameters	Description
<n>	0 disable network registration unsolicited result code 1 enable network registration unsolicited result code +CGREG: <stat> 2 enable network registration and location information unsolicited result code +CGREG:
<stat>	0 not registered, MT is not currently searching an operator to register to 1 registered, home network 2 not registered, but MT is currently trying to attach or searching an operator to register to 3 registration denied 4 unknown 5 registered, roaming
<lac>	string type; two byte location area code in hexadecimal format (e.g. "00C3" equals 195 in decimal)
<ci>	string type; four byte cell ID in hexadecimal format
<Act>	0 GSM 2 UTRAN 3 GSM w/EGPRS 4 UTRAN w/HSDPA 5 UTRAN w/HSUPA 6 UTRAN w/HSDPA and HSUPA

7.14 AT+CGSMS Select service for MO SMS messages

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

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

The test command is used for requesting information on the currently available services and service preferences.

7.14.1 Format

Write Command AT+CGSMS= <service>	Response OK or ERROR
Read Command AT+CGSMS?	Response +CGSMS: <service>

7.14.2 Field

Parameters	Description
<service>	0 Packet Domain 1 circuit switched 2 Packet Domain preferred (use circuit switched if GPRS not available) 3 circuit switched preferred (use Packet Domain if circuit switched not available)

7.15 AT+EGTP GPRS Transfer Preference (Proprietary Command)

This command is to set or to get GPRS transfer preference. It is only available when `__MONITOR_PAGE_DURING_TRASFER__` is defined

7.15.1 Format

Write Command AT+EGTP=<state>	Response OK or ERROR
---	---

Read Command AT+EGTP?	Response +EGTP: <state><CR><LF>OK
Test Command AT+EGTP=?	Response +EGTP: (list of supported <state>s)
Reference	Note This command goes along with the feature option: MONITOR_PAGE_DURING_TRANSFER. For feature phone projects, this command is only used for test purposes. The synchronization and simultaneous access from AT and MMI interfaces are not supported. It is only supported in full AT command set

7.15.2 Field

Parameters	Description
<state>	0 – DATA PREFER 1 – CALL PREFER Other values are reserved and will result in an ERROR response to the execution command

7.16 AT+CGEQREQ 3G Quality of Service Profile (Minimum acceptable)

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/Modify PDP Context Accept message.

<p>Test Command</p> <p>AT+CGEQMIN=?</p>	<p>Response</p> <p>+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)</p> <p>[<CR><LF>+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)</p> <p>[...]</p>
<p>Reference</p>	<p>Note</p> <ol style="list-style-type: none"> 1. It is only supported in R99 or later projects. 2. For the set/execute mode, all parameters must be entered. Part of parameters omitted will be treated as an undefined operation.

7.16.2 Field

Parameters	Description
<cid>	A special form of the set command, +CGEQMIN= <cid> causes the requested profile for context number <cid> to become undefined.
<Traffic class>	<p>0 - conversational</p> <p>1 - streaming</p> <p>2 - interactive</p> <p>3 - background</p> <p>Other values are reserved</p>
<Maximum bitrate UL>	a numeric parameter that indicates the maximum number of kbits/s delivered to UMTS (up-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as '32' (e.g.AT+CGEQMIN=...,32, ...)
<Maximum bitrate DL>	a numeric parameter that indicates the maximum number of kbits/s delivered by 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, ...).
<Guaranteed bitrate UL>	a numeric parameter that indicates the guaranteed number of kbits/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, ...)
<Guaranteed bitrate DL>	a numeric parameter that indicates the guaranteed number of kbits/s delivered by 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, ...)
<Delivery order>	<p>0 - no</p> <p>1 - yes</p> <p>2 - no detect</p> <p>Other values are reserved</p>
<Maximum SDU size>	a numeric parameter (1,2,3,...) that indicates the maximum allowed SDU size in octets.
<SDU error ratio>	a string parameter that indicates the target value for the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic. The value is specified as 'mEe'. As an example a target SDU error ratio of $5 \cdot 10^{-3}$ would be specified as '5E3' (e.g.AT+CGEQMIN=..., '5E3',...)

<Residual bit error ratio>	a string parameter that 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. The value is specified as 'mEe'. As an example a target residual bit error ratio of $5 \cdot 10^{-3}$ would be specified as '5E3' (e.g. AT+CGEQMIN=..., '5E3', ...)
<Delivery of erroneous SDUs>	0 - no 1 - yes 2 - no detect Other values are reserved
<Transfer delay>	a numeric parameter (0,1,2,...) that indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds. <Traffic handling priority> : a numeric parameter (1,2,3,...) that specifies the relative importance for handling of all SDUs belonging to the UMTS bearer compared to the SDUs of other bearers
<PDP_type>	(see +CGDCONT and +CGDSCONT commands)

8 Mobile Termination Errors

8.1 AT+CMEE

Set command disables or enables the use of result code +CME ERROR: <err> as an indication of an error relating to the functionality of the MT. When enabled, MT related errors cause +CME ERROR: <err> final result code instead of the regular ERROR final result code. ERROR is returned normally when error is related to syntax, invalid parameters, or TA functionality.

Test command returns values supported as a compound value.

8.1.1 Format

Write Command AT+CMEE=[<n>]	Response
Read Command AT+CMEE?	Response +CMEE: <n>
Test Command AT+CMEE=?	Response +CMEE: (list of supported <n>s)

8.1.2 Field

Parameters	Description
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<n>	0 disable +CME ERROR: <err> result code and use ERROR instead
	1 enable +CME ERROR: <err> result code and use numeric <err> values (refer next subclause)
	2 enable +CME ERROR: <err> result code and use verbose <err> values (refer next subclause)
	<err> values (numeric format followed by verbose format):
	9.2.1 General errors
	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
48 hidden key required (NOTE: This key is required when accessing hidden phonebook entries.)
100 unknown
9.2.2 GPRS-related errors
9.2.2.1 Errors related to a failure to perform an Attach
103 Illegal MS (#3)
106 Illegal ME (#6)
107 GPRS service not allowed (#7)
111 PLMN not allowed (#11)
112 Location area not allowed (#12)
113 Roaming not allowed in this location area (#13)
(Values in parentheses are TS 24.008 cause codes.)
9.2.2.2 Errors related to a failure to Activate a Context
132 service option not supported (#32)
133 requested service option not subscribed (#33)
134 service option temporarily out of order (#34)
149 PDP authentication failure
(Values in parentheses are TS 24.008 cause codes.)
9.2.2.3 Other GPRS errors
150 invalid mobile class
148 unspecified GPRS error
Other values in the range 101-150 are reserved for use by GPRS

9 Annex C(27.007)

9.1 AT+FCLASS

Puts the TA in a specific mode of operation. This causes the TA to process information in a manner suitable for that type of information.

9.1.1 Format

Write Command AT+FCLASS=<n>	Response
Read Command AT+FCLASS?	Response <n>
Test Command AT+FCLASS=?	Response (list of supported <n>s)

9.1.2 Field

Parameters	Description
<n>	0 data 1 fax class 1 (TIA-578-A) 2 fax (manufacturer specific) 2.0 fax class 2 (ITU T T.32 [12] and TIA 592)

9.2 AT+VTS

Allows the transmission of DTMF tones. The command is write-only.

Note: The command is used only during voice calls.

9.2.1 Format

Write Command AT+VTS=<dtmf>	Response
Test Command AT+VTS=?	Response (list of supported <tone1>s),(list of supported <tone2>s) ,(list of supported <duration>s)
Reference	Note <p>When modem work with application (ex: WM smart phone RIL or ECMT tool) , the application expect the result of AT+VTS is returned immediately . Since user might press keypad to send DTMF very fast, so application would like to send DTMF before the previous DTMF is actually processed in NW (modem shall help to queue the DTMF request if previous is not finished yet). So we will response the result code immediately to prevent blocking the application's DTMF keypad handling.</p> <p>Currently, we only check if the digit is valid and if there is any call ongoing(ex: dialing , active exist). If yes, then we will return "OK". But please notice the "OK" doesn't imply that the DTMF is really processed successfully in NW. ex: it might fail due to MS doesn't have user connection yet. Or it might be fail due to there is no response from NW. Or it might be fail due to there is no speech channel (ex: data call) If <code>__VTS_LATE_RESPONSE__</code> is turned on, "OK" is printed when SEND DTMF is acknowledged by network</p>

9.2.2 Field

Parameters	Description
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<DTMF>

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

For example: AT+VTS = 9 or AT+VTS = A

You can use multiple command to achieve continuous DTMF tones.

For example : AT+VTS=6;+VTS=2;+VTS=8;+VTS=2

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10 SMS AT Commands(27.005)

Please refer to 27.005 Sec 3.1 Parameter Definition to see more details of the parameter fields in each command.

10.1 AT+CSMS Select Message Service

Selects the message service and returns the type of messages supported by the ME. If chosen service is not supported by the ME (but supported by the TA), +CME ERROR is returned.

10.1.1 Format

Write Command AT+CSMS=<service>	Response +CSMS: <mt>,<mo>,<bm> +CMS ERROR: <err>
Read Command AT+CSMS?	Response +CSMS: <service>,<mt>,<mo>,<bm>
Test Command AT+CSMS=?	Response +CSMS: (list of supported <service>s)
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.1.2 Field

Parameters	Description
<service>	0 3GPP TS 23.040 [3] and 3GPP TS 23.041 [4] 1 3GPP TS 23.040 [3] and 3GPP TS 23.041 [4] the requirement of <service> setting 1 is mentioned under corresponding command descriptions)
<mt>	0 type not supported 1 type supported
<mo>	0 type not supported 1 type supported
<bm>	0 type not supported 1 type supported

10.2 AT+CPMS Preferred Message Storage

Selects memory storage spaces to be used for reading, writing, etc. If chosen storage is not appropriate for the ME (but is supported by the TA), +CME ERROR is returned.

10.2.1 Format

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

Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT
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10.3 AT+CMGF Message Format

Sets the input and output format to be used by the TA.

10.3.1 Format

Write Command AT+CMGF=[<mode>]	Response
Read Command AT+CMGF?	Response +CMGF: <mode>
Test Command AT+CMGF=?	Response +CMGF: (list of supported <mode>s)
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.3.2 Field

Parameters	Description
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<mode>	0 PDU mode (default when implemented)
	1 text mode

10.4 AT+CSCA Service Center Address

Updates the SMCS address, through which mobile-originated SMSs are transmitted. In text mode, the setting is used by send (AT+CMGS) and write (AT+CMGW) commands. In PDU mode, the setting is used by the same commands, but only when the length of the SMCS address (coded into <pdu> parameter) equals zero.

10.4.1 Format

Write Command AT+CSCA=<sca>[,<tosca>]	Response
Read Command AT+CSCA?	Response +CSCA: <sca>,<tosca>
Test Command AT+CSCA=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.5 AT+CSMP Set Text Mode Parameters

10.5.1 Description

Setting Text Mode Parameters. Set command is used to select values for additional

parameters needed when SM is sent to the network or placed in a storage when text format message mode is selected. It is possible to set the validity period starting from when the SM is received by the SMSC (<vp> is in range 0... 255) or define the absolute time of the validity period termination (<vp> is a string). The format of <vp> is given by <fo>.

10.5.2 Format

Write Command AT+CSMP=[<fo>[,<vp>[,<pid>[,<dc>]]]]	Response
Read Command AT+CSMP?	Response +CSMP: <fo>,<vp>,<pid>,<dc>
Test Command AT+CSMP=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.6 AT+CSDH Show Text Mode Parameters

Set command controls whether detailed header information is shown in text mode result codes.

Test command returns supported values as a compound value.

10.6.1 Format

Write Command AT+CSDH=[<show>]	Response
Read Command AT+CSDH?	Response +CSDH: <show>
Test Command AT+CSDH=?	Response +CSDH: (list of supported <show>s)
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.7 AT+CSCB Select Cell Broadcast Message Types

Selects which types of CBMs are to be received by the ME.

10.7.1 Format

Write Command AT+CSCB=[<mode>[,<mids>]]	Response
Read Command AT+CSCB?	Response +CSCB: <mode>,<mids>

Test Command	Response
AT+CSCB=?	+CSCB: (list of supported <mode>s)

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Reference

Note1

For <mids> of <mode>=0, our design is to open the <mids> from user input and close other <mids>.

In the following case, user input <mode>=0 and <mids>=2.

So open channel 2 and close other channel (channel 1).

AT+CSCB?

+CSCB: 0,"1","1"

OK

AT+CSCB=0,"2","2"

OK

AT+CSCB?

+CSCB: 0,"2","1,2"

OK

In the following case, user input <mode>=0 without <mids>.

So don't open any channel and close other channel (channel 1).

AT+CSCB?

+CSCB: 0,"1","1"

OK

AT+CSCB=0

OK

AT+CSCB?

+CSCB: 0,"","1"

OK

For <dcss> of <mode>=0, our design is to **increase** the <dcss> from user input.

In the following case, user input <mode>=0 and <dcss>=2.

So **increase** language 2.

AT+CSCB?

+CSCB: 0,"1","1"

OK

AT+CSCB=0,"2","2"

OK

AT+CSCB?

+CSCB: 0,"2","1,2"

OK

In the following case, user input <mode>=0 without <dcss>.

So don't **increase** any language.

AT+CSCB?

+CSCB: 0,"1","1"

OK

AT+CSCB=0

OK

AT+CSCB?

+CSCB: 0,"","1"

OK

Reference	Note2
	<p>For <mids> of <mode>=1, our design is to close all <mids> no matter with <mids> or not.</p> <p>In the following case, user input <mode>=1. So close all channel.</p> <p>AT+CSCB? +CSCB: 0,"2","1,2" OK AT+CSCB=1,"2","2" OK AT+CSCB? +CSCB: 1,"","1" OK</p> <p>In the following case, user input <mode>=1 without <mids>. Also close all channel.</p> <p>AT+CSCB? +CSCB: 0,"1","1" OK AT+CSCB=1 OK AT+CSCB? +CSCB: 1,"","1" OK</p> <p>For <dcss> of <mode>=1, our design is to decrease the <dcss> from user input.</p> <p>In the following case, user input <mode>=1 and <dcss>=2. So decrease language 2.</p> <p>AT+CSCB? +CSCB: 0,"2","1,2" OK AT+CSCB=1,"2","2" OK AT+CSCB? +CSCB: 1,"","1" OK</p> <p>In the following case, user input <mode>=1 without <dcss>. So don't decrease any language.</p> <p>AT+CSCB? +CSCB: 0,"1","1" OK AT+CSCB=1 OK AT+CSCB? +CSCB: 1,"","1" OK</p>

Reference	Usage Note
	<p><mid> 3GPP TS 23.041 CBM Message Identifier in integer format</p> <p><input type="checkbox"/> <input type="checkbox"/> <dc> depending on the command or result code: 3GPP TS 23.038 SM Data Coding Scheme (default 0), or Cell Broadcast Data Coding Scheme in integer format</p> <p><input type="checkbox"/> <input type="checkbox"/> We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT</p>

10.7.2 Field

Parameters	Description
<mode>	<p>0 message types specified in <mids> and <dcss> are accepted</p> <p>1 message types specified in <mids> and <dcss> are not accepted</p>
<mids>	We support 10 message identifiers at most.
string type	all different possible combinations of CBM message identifiers (refer <mid>) (default is empty string);
<dcss>	string type; all different possible combinations of CBM data coding schemes (refer <dc>) (default is empty string); e.g. "0-3,5"

10.8 AT+CSAS Save Settings

Execution command saves active message service settings to a non-volatile memory.

Settings specified in commands Service Centre Address +CSCA, Set Message Parameters +CSMP and Select Cell Broadcast Message Types +CSCB (if implemented) are saved. Certain settings may not be supported by the storage (e.g. (U)SIM SMS parameters) and therefore can not be saved.

10.8.1 Format

Write Command	Response
AT+CSAS[=<profile>]	+CMS ERROR: <err>

Test Command AT+CSAS=?	Response +CSAS: (list of supported <profile>s)
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.8.2 Field

Parameters	Description
<profile>	0-3 manufacturer specific profile number where settings are to be stored

10.9 AT+CREG Restore Settings

Execution command restores message service settings from non-volatile memory to active memory. A TA can contain several profiles of settings. Settings specified in commands Service Centre Address +CSCA, Set Message Parameters +CSMP and Select Cell Broadcast Message Types +CSCB (if implemented) are restored. Certain settings may not be supported by the storage (e.g. (U)SIM SMS parameters) and therefore can not be restored.

10.9.1 Format

Write Command AT+CREG[=<profile>]	Response +CMS ERROR: <err>
Test Command AT+CREG=?	Response +CREG: (list of supported <profile>s)

Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT
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10.9.2 Field

Parameters	Description
<profile>	0...3 manufacturer specific profile number where settings are to be stored

10.10 AT+CNMI New Message Indications to TE

Selects the procedure how the reception of new messages from the network is indicated to the TE when TE is active (DTR signal is ON). IF TE is inactive (DTR signal OFF), message reception is carried out as specified in GSM 03.38. This command enables the unsolicited result codes +CMT, +CMTI, +CBM, and +CDS. (Please refer to 07.07 for more detail)

If received new SMS, Ring pin will change status as below table.

Module status	Ring pin status
Standby	HIGH
Received SMS	When receiving SMS the RI will be changed to LOW and hold at low level for about 120 ms then it is changed to HIGH' meanwhile the module Will report following URCs: +CMTI. +CMT: +CDS:
TCPIP events	When execute following TCPIP AT command, the RI will be changed to LOW and hold at low level for about 120 ms, then it is changed to HIGH. (1) TCP create the connect by AT+CIPSTART command (2) TCP close the connect by AT+CIPCLOSE command

Note:

For L206(D), Ring pin is named as RING1 .

10.10.1 Format

Write Command AT+CNMI=[<mode>[,<mt>[,<bm>[,<ds> [,<bfr>]]]]]	Response +CMS ERROR: <err>
Read Command AT+CNMI?	Response +CNMI: <mode>,<mt>,<bm>,<ds>,<bfr>
Test Command AT+CNMI=?	Response +CNMI: (list of supported <mode>s),(list of supported <mt>s),(list of supported <bm>s),(list of supported <ds>s),(list of supported <bfr>s)
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.10.2 Field

Parameters	Description
<mode>	<p>0 disable unsolicited result code</p> <p>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.</p> <p>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.</p> <p>3 Forward unsolicited result codes directly to the TE. TA-TE link specific inband technique used to embed result codes and data when TA is in on-line data mode</p>

<mt>	<p>0 No SMS-DELIVER indications are routed to the TE.</p> <p>1 If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code: +CMTI: <mem>,<index></p> <p>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 +CSDH)</p> <p>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</p>
<bm>	<p>0 No CBM indications are routed to the TE.</p> <p>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) If ME supports data coding groups which define special routing also for messages other than class 3 (e.g. (U)SIM specific messages), ME may choose not to route messages of such data coding schemes into TE (indication of a stored CBM may be given as defined in <bm>=1).</p> <p>3 Class 3 CBMs are routed directly to TE using unsolicited result codes defined in <bm>=2. If CBM storage is supported, messages of other classes result in indication as defined in <bm>=1</p>
<ds>	<p>0 No SMS-STATUS-REPORTs are routed to the TE.</p> <p>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)</p>
<bfr>	<p>0 TA buffer of unsolicited result codes defined within this command is flushed to the TE when <mode>1 is entered (OK response shall be given before flushing the codes).</p> <p>1 TA buffer of unsolicited result codes defined within this command is cleared when <mode> 1...3 is entered.</p>

10.11 AT+CMGL(Text mode) List Message

Returns messages with status value <stat> from returned message in preferred storage to the

TE.

10.11.1 Format

<p>Write Command AT+CMGL[=<stat>]</p>	<p>Response</p> <p>if text mode (+CMGF=1), command successful and SMS-SUBMITs and/or SMS-DELIVERs:</p> <p>+CMGL: <index>,<stat>,<oa/da>,[<alpha>],[<scts>][,<tooa/toda>,<length>]<CR><LF><data>[<CR><LF></p> <p>+CMGL: <index>,<stat>,<da/oa>,[<alpha>],[<scts>][,<tooa/toda>,<length>]<CR><LF><data>[...]</p> <p>if text mode (+CMGF=1), command successful and SMS-STATUS-REPORTs:</p> <p>+CMGL: <index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>[<CR><LF></p> <p>+CMGL: <index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>[...]</p> <p>if text mode (+CMGF=1), command successful and SMS-COMMANDs:</p> <p>+CMGL: <index>,<stat>,<fo>,<ct>[<CR><LF></p>
<p>Test Command AT+CMGL=?</p>	<p>Response</p> <p>+CMGL: (list of supported <stat>s)</p>
<p>Reference</p>	<p>Note</p> <p>We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT</p>

10.12 AT+CMGL(PDU mode) List Message

Returns messages with status value <stat> from returned message in preferred storage to the TE.

10.12.1 Format

<p>Write Command AT+CMGL[=<stat>]</p>	<p>Response if PDU mode (+CMGF=0) and command successful: +CMGL: <index>,<stat>,[<alpha>],<length><CR><LF><pdu> [<CR><LF>+CMGL:<index>,<stat>,[<alpha>],<length><CR> <LF><pdu> [...]] otherwise: +CMS ERROR: <err></p>
<p>Test Command AT+CMGL=?</p>	<p>Response +CMGL: (list of supported <stat>s)</p>
<p>Reference</p>	<p>Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT</p>

10.13 AT+CMGR(Text mode) Read Message

Returns messages with location value <index> from preferred message storage <mem1> to the TE. If the status of the message is .received unread., the status in the storage changes to .received read.. If reading fails, +CMS ERROR is returned.

10.13.1 Format

<p>Write Command AT+CMGR=<index></p>	<p>Response</p> <p>if text mode (+CMGF=1), command successful and SMS-DELIVER: +CMGR: <stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data></p> <p>if text mode (+CMGF=1), command successful and SMS-SUBMIT: +CMGR: <stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,<vp>],<sca>,<tosca>,<length>]<CR><LF><data></p> <p>if text mode (+CMGF=1), command successful and SMS-STATUSREPORT: +CMGR: <stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st></p> <p>if text mode (+CMGF=1), command successful and SMS-COMMAND: +CMGR: <stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length>]<CR><LF><cdata>]</p> <p>if text mode (+CMGF=1), command successful and CBM storage: +CMGR: <stat>,<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data> ></p> <p>otherwise: +CMS ERROR: <err></p>
<p>Test Command AT+CMGR=?</p>	<p>Response</p>
<p>Reference</p>	<p>Note</p> <p>We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT</p>

10.14 AT+CMGR(PDU mode) Read Message

Returns messages with location value <index> from preferred message storage <mem1> to the TE. If the status of the message is .received unread., the status in the storage changes to .received read.. If reading fails, +CMS ERROR is returned.

10.14.1 Format

Write Command AT+CMGR=<index>	Response if PDU mode (+CMGF=0) and command successful: +CMGR: <stat>,[<alpha>],<length><CR><LF><pdu> otherwise: +CMS ERROR: <err>
Test Command AT+CMGR=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.15 AT+CNMA(Text mode) New Message Acknowledgement to ME/TA

Execution command confirms correct reception of a new message (SMS-DELIVER or SMSSTATUS-REPORT) which is routed directly to the TE. This acknowledgement command (causing ME to send RP-ACK to the network) shall be used when +CSMS parameter <service> equals 1.

10.15.1 Format

Execution Command if text mode (+CMGF=1): AT+CNMA	Response +CMS ERROR: <err>
Test Command AT+CNMA=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.16 AT+CNMA(PDU mode) New Message Acknowledgement to ME/TA

Execution command confirms correct reception of a new message (SMS-DELIVER or SMSSTATUS-REPORT) which is routed directly to the TE This acknowledgement command (causing ME to send RP-ACK to the network) shall be used when +CSMS parameter <service> equals 1.

10.16.1 Format

Write Command if PDU mode (+CMGF=0): AT+CNMA[=<n>[,<length>[<CR> PDU is given<ctrl-Z/ESC>]]]	Response +CMS ERROR: <err>
Test Command AT+CNMA=?	Response if PDU mode (+CMGF=0): +CNMA: (list of supported<n>s)

Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT
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10.17 AT+CMGS(Text mode) Send Message

Execution command sends message from a TE to the network (SMS-SUBMIT). Message reference value <mr> is returned to the TE on successful message delivery.

10.17.1 Format

Write Command if text mode (+CMGF=1): AT+CMGS=<da>[,<today>]<CR> > text is entered <ctrl-Z/ESC>	Response if text mode (+CMGF=1) and sending successful: +CMGS: <mr>[,<scts>] if sending fails: +CMS ERROR: <err>
Test Command AT+CMGS=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.18 AT+CMGS(PDU mode) Send Message

Execution command sends message from a TE to the network (SMS-SUBMIT). Message reference value <mr> is returned to the TE on successful message delivery.

10.18.1 Format

Write Command if PDU mode (+CMGF=0): AT+CMGS=<length><CR> PDU is given <ctrl-Z/ESC>	Response if PDU mode (+CMGF=0) and sending successful: +CMGS: <mr>[,<ackpdu>] if sending fails: +CMS ERROR: <err>
Test Command AT+CMGS=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.19 AT+CMSS(Text mode) Send Message from Storage

Execution command sends message with location value <index> from preferred message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND). If new recipient address <da> is given for SMS-SUBMIT, it shall be used instead of the one stored with the message. Reference value <mr> is returned to the TE on successful message delivery.

10.19.1 Format

Write Command AT+CMSS=<index>[,<da>[,<to da>]]	Response if text mode (+CMGF=1) and sending successful: +CMSS: <mr>[,<scts>] if sending fails: +CMS ERROR: <err>
Test Command AT+CMSS=?	Response

Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT
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10.20 AT+CMSS(PDU mode) Send Message from Storage

Execution command sends message with location value <index> from message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND). If new recipient address <da> is given for SMS-SUBMIT, it shall be used instead of the one stored with the message. Reference value <mr> is returned to the TE on successful message delivery.

10.20.1 Format

Write Command AT+CMSS=<index>[,<da>[,<toda>]]	Response if PDU mode (+CMGF=0) and sending successful: +CMSS: <mr>[,<ackpdu>] if sending fails: +CMS ERROR: <err>
Test Command AT+CMSS=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.21 AT+CMGW(Text mode) Write Message to Memory

Execution command stores a message to memory storage <mem2>. Memory location <index> of the stored message is returned. By default message status will be set to 'stored unsent', but parameter <stat> allows also other status values to be given, support "stored unsent" and "stored sent"

10.21.1 Format

Write Command if text mode (+CMGF=1): AT+CMGW[=<oa/da>[,<toa/toda>[,<stat>]]]<CR> <i>text is entered</i> <ctrl-Z/ESC>	Response +CMGW: <index> +CMS ERROR: <err>
Test Command AT+CMGW=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.22 AT+CMGW(PDU mode) Write Message to Memory

Execution command stores a message to memory storage <mem2>. Memory location <index> of the stored message is returned. By default message status will be set to 'stored unsent', but parameter <stat> allows also other status values to be given, support 'stored unsent' and "stored sent"

10.22.1 Format

Write Command if PDU mode (+CMGF=0): +CMGW=<length>[,<stat>]<CR> <i>PDU is given</i> <ctrl-Z/ESC>	Response +CMGW: <index> +CMS ERROR: <err>
Test Command AT+CMGW=?	Response

Reference	Note is only supported for phone suite. Others can't use this command to do test. <input type="checkbox"/> We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT Change History: 7 "DRAFT" of <stat> is available from 09B.1017MP
-----------	--

10.22.2 Field

Parameters	Description
<stat>	the status of message in memory; defined values: 0 "REC UNREAD" received unread message (i.e. new message) 1 "REC READ" received read message 2 "STO UNSENT" stored unsent message (only applicable to SMS) 3 "STO SENT" stored sent message (only applicable to SMS) 4 "ALL" all messages (only applicable to +CMGL command) 7 "DRAFT"

10.23 AT+CMGD Delete Message

Deletes message from preferred message <mem1> (see AT+CPMS) storage location <index>. If deletion fails, +CMS ERROR is returned.

10.23.1 Format

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

Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT
-----------	--

10.23.2 Field

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

10.24 AT+CMGC(Text mode) Send Command

Execution command sends a command message from a TE to the network (SMSCOMMAND).

10.24.1 Format

Write Command if text mode (+CMGF=1): +CMGC=<fo>,<ct>[,<pid>[,<mn>[,<da>[,<toda>]]]]<CR> <i>text is entered</i> <ctrl-Z/ESC>	Response if text mode (+CMGF=1) and sending successful: +CMGC: <mr>[,<scts>] if sending fails: +CMS ERROR: <err>
Test Command AT+CMGC=?	Response

Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT
-----------	--

10.25 AT+CMGC(PDU mode) Send Command

Execution command sends a command message from a TE to the network (SMSCOMMAND).

10.25.1 Format

Write Command if PDU mode (+CMGF=0): +CMGC=<length><CR> PDU is given <ctrl-Z/ESC>	Response if PDU mode (+CMGF=0) and sending successful: +CMGC: <mr>[,<ackpdu>] if sending fails: +CMS ERROR: <err>
Test Command AT+CMGC=?	Response
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.26 AT+CMMS More Message to Send

Set command controls the continuity of SMS relay protocol link. When feature is enabled (and supported by network) multiple messages can be sent much faster as link is kept open.

Test command returns supported values as a compound value.

10.26.1 Format

Write Command AT+CMMS=[<n>]	Response if PDU mode (+CMGF=0) and sending successful: +CMGC: <mr>[,<ackpdu>] if sending fails: +CMS ERROR: <err>
Read Command AT+CMMS?	Response +CMMS: <n>
Test Command AT+CMMS=?	Response +CMMS: (list of supported <n>s)
Reference	Note We don't support "+CMS ERROR" when AT command set is SLIM_AT or ULC_AT

10.26.2 Field

Parameters	Description
<n>	0 disable 2 enable (if the time between the response of the latest message send command and the next send command exceeds 1-5 seconds (the exact value is up to ME implementation), ME shall close the link but TA shall not switch automatically back to <n>=0)

10.27 AT+EQSI Query storage index

To query storage index.

10.27.1 Format

Write Command AT+EQSI=<storage>	Response +EQSI: <storage>, <begin>, <end>, <used> OK/ERROR
Test Command AT+EQSI=?	Response +ESUO: (list of supported<storage>s)
Reference	Note This command is only supported for phone suite. Others can't use this command to do test

10.27.2 Field

Parameters	Description
<storage>	string type; SM or ME
<begin>	beginning of index
<end>	ending of index
<used>	number of messages in <storage>

10.28 AT+EMGR(PDU mode) Read Message (for phone suite)

Returns messages with location value <index> from preferred message storage <mem1> to the TE. If the status of the message is .received unread., the status in the storage changes to .received read.. If reading fails, +CMS ERROR is returned. It is similar with AT+CMGR (PDU mode). <stat> is different.

10.28.1 Format

Write Command AT+EMGR=<index>	Response if PDU mode (+CMGF=0) and command successful: +EMGR: <stat>,[<alpha>],<length><CR><LF><pdu> otherwise: +CMS ERROR: <err>
Test Command AT+EMGR=?	Response
Reference	Note The command is available from 09B.1017MP This command is only supported for phone suite. Others can't use this command to do test.

10.28.2 Field

Parameters	Description
<stat>	the status of message in memory; defined values: 0 "REC UNREAD" received unread message (i.e. new message) 1 "REC READ" received read message 2 "STO UNSENT" stored unsend message (only applicable to SMS) 3 "STO SENT" stored send message (only applicable to SMS) 4 "ALL" all messages (only applicable to +CMGL command) 7 "DRAFT"

11 Hardware Testing AT Commands

These AT commands are designed for tools to do factory hardware testing and should be tested **exclusively**. Test only one command/item at the same time.

11.1 AT+EALT Audio Sound Playback

This Command is used to turn on/off the loop back test.

11.1.1 Format

Write Command AT+EALT = <op>	Response OK | ERROR | +CME ERROR: <err>
Test Command AT+EALT =?	Response +EALT: (list of supported <op>s)

11.1.2 Field

Parameters	Description
op	0 turn off the loop back test. 1 turn on the loop back test.

11.2 AT+ESAM Set Audio Mode

This Command is used to set audio mode. We have three audio mode , normal, loud speaker and handset.

11.2.1 Format

Write Command AT+ ESAM = <mode>	Response OK
Test Command AT+ ESAM =?	Response + ESAM: (0-2)
Reference	Note For L206(D) module, only mode 2 will take effect

11.2.2 Field

Parameters	Description
mode	0 normal 1 handset 2 loudspeaker

11.3 AT+EGMR Mobile Revision and IMEI

This command is used to get mobile revision and IMEI for Engineer mode and factory test using.

The set operation only apply for IMEI, Serial Number and SV.

Setting new IMEI needs to reboot the target, then IMEI can take effect.

11.3.1 Format

<p>Write Command</p> <p>AT+ EGMR = <op>,<type>[,<str>]</p>	<p>Response</p> <p>When type = (1-7, 9): [+EGMR: "str"] OK</p> <p>When type = 8 (+EGMR=0,8 to get MMI resource): +AUDIO: "ver" +IMAGE: "ver" +FONT: "ver" +STR: "ver" OK</p>
<p>Test Command</p> <p>AT+ EGMR =?</p>	<p>Response</p> <p>+ EGMR: (0,1),(0-9)</p>
<p>Reference</p>	<p>Example</p> <p>3. read IMEI: AT+EMGR=0,7 +EGMR: "135790246811220" OK</p> <p>4. Write IMEI: AT+EGMR=1,7,"123451234512345" OK AT+EGMR=0,7 +EGMR: "123451234512345" OK</p> <p>5. read SV of IMEISV AT+EGMR=0,9 +EGMR: "78" OK</p> <p>6. Write SV AT+EGMR=1,9,"01" OK AT+EGMR=0,9 +EGMR: "01" OK</p>

Reference	Note <type> = 10, 11, and 12 are only turned on when GEMINI, GEMINI+ with 3 or more SIM, and GEMINI+ with 4 SIM respectively.
-----------	--

11.3.2 Field

Parameters	Description
<op>	0 get 1 Set
<type>	0 Baseband chipset (only for op= 0) 1 DSP code (only for op= 0) 2 DSP patch (only for op= 0) 3 MCU software (only for op= 0) 4 MS board(hardware) (only for op= 0) 5 Serial Number 6 Melody revision (only for op=0) 7 SIM1 IMEI 8 MMI resource ver. (only for op=0) 9 SV (Software Version in IMEISV: 2 digit) 10 SIM2 IMEI 11 SIM3 IMEI 12 SIM4 IMEI
<str>	Input/output string

11.4 AT+ESLP Sleep Mode

This Command is used to enable and disable sleep mode in the mobile.

11.4.1 Format

Write Command AT+ESLP = <op>	Response OK
--	----------------

Test Command AT+ESLP=?	Response +ESLP: (0, 1)
----------------------------------	----------------------------------

11.4.2 Field

Parameters	Description
op	0 disable 1 enable

11.5 AT+CSCLK Configure Slow Clock

This Command is used to Configure Slow Clock.

11.5.1 Format

Test Command AT+CSCLK=?	Response +CSCLK: (list of supported <n>s) OK
Read Command AT+CSCLK?	Response +CSCLK: <n> OK
Write Command AT+CSCLK=<n>	Response OK Or ERROR

Reference	Note
	<p>There are two caveats when you want to quit sleep mode in mode 2:</p> <ol style="list-style-type: none"> 1, You should input some characters (at least one) to awake module 2, An interval time of 100ms more is necessary between waking characters and following AT commands, otherwise the waking characters will not be discarded completely, and messy codes will be produced which may lead to UART baudrate re-adaptation. <p>The +CSCLK value can not be reset by AT&F or ATZ command.</p>

11.5.2 Field

Parameters	Description
< n >	<p>0 Disable slow clock, module will not enter sleep mode.</p> <p>1 Enable slow clock, it is controlled by DTR. When DTR is high, module can enter sleep mode. When DTR changes to low level, module can quit sleep mode.</p> <p>2 Enable slow clock automatically. When there is no interrupt (on air and hardware such as GPIO interrupt or data in serial port), module can enter sleep mode. Otherwise, it will quit sleep mode.</p>

12 STK AT Commands

Please refer to another document Remote_SAT (RSAT). We introduce the STK AT command in detail in that document.

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13 Proprietary AT Commands For PS

13.1 AT+EPBSE Band Selection

To set MS preferred band.

13.1.1 Format

Write Command AT+EPBSE=<gsm_band>,<umts_band>	Response OK
Read Command AT+EPBSE?	Response +EPBSE: <gsm_band>, <umts_band>
Test Command AT+EPBSE=?	Response List of supported bit masks of each band mode +EPBSE: <gsm_band>, <umts_band>
Reference	Example Set Auto band (select all supported bands) AT+EPBSE=255, 65535 OK Set "EURO band" (GSM-900 / DCS-1800 / WCDMA-IMT-2000) AT+EPBSE=10, 1 OK

Reference	Note
	<ol style="list-style-type: none"> 1. This command is not allowed to set each band mode, GSM or UMTS, as 0, said AT+EPBSE=<gsm_band>,0 or AT+EPBSE=0, <umts_band>. 2. If the band mode is not supported, this command will just ignore the setting 3. After using this command, user should reboot the handset to let the setting become effective if the compile option <code>__DYNAMIC_BAND_SEL__</code> is not opened 4. If we get 0 in the certain field using AT+EPBSE=? , it means that the field is not supported.

13.1.2 Field

Parameters	Description
<GSM_band>	bit 1 EGSM900 bit 3 DCS1800 bit 4 PCS1900 bit 7 GSM850 0xff Auto selection
<UMTS_band>	bit 0 UMTS BAND I : WCDMA-IMT-2000 bit 1 UMTS BAND II : WCDMA-PCS-1900 bit 2 UMTS BAND III : WCDMA-DCS-1800 bit 3 UMTS BAND IV : WCDMA-AWS-1700 bit 4 UMTS BAND V : WCDMA-CLR-850 bit 5 UMTS BAND VI : WCDMA-800 bit 6 UMTS BAND VII : WCDMA-IMT-E-2600 bit 7 UMTS BAND VIII : WCDMA-GSM-900 bit 8 UMTS BAND IX : WCDMA-1800 bit 9 UMTS BAND X : WCDMA-1700 0xffff Auto selection

13.2 AT+EGPAU PPP Authentication

This command is used to set GPRS PPP negotiated authentication protocol.

13.2.1 Format

Write Command AT+ EGPAU = <op>,<cid> [,<is_chap>]	Response OK
Test Command AT+ EGPAU =?	Response + EGPAU: (0,1), (<cid range>), (0-1)

13.2.2 Field

Parameters	Description
op	0 Read 1 Write
cid	Please refer to the value in test command response.
is_chap	0 PAP 1 CHAP

13.3 AT+EPIN1 Enter PIN1

This command is used to validate PUK and to define a new PIN code.

13.3.1.1 Format

Write Command AT+EPIN1= <puk>,<new_pin>	Response +CME ERROR: <err>
---	--

Read Command AT+EPIN1?	Response +EPIN1: <code> +CME ERROR: <err>
Test Command AT+EPIN1=?	Response
Reference	Note Do not use this command during power on process. During power on process, use AT+CPIN to validate PUK. <input type="checkbox"/> <input type="checkbox"/> Since this proprietary command is intended for modem project or dual-SIM/mode project . We won't handle such MMI synchronization problem or perform extra error handling <input type="checkbox"/> <input type="checkbox"/> Only used AT+EPIN1 when SIM card inserted

13.3.1.2 Field

Parameters	Description
<puk>, <new_pin>	string type values <code> values reserved by the present document: READY MT is not pending for any password SIM PIN MT is waiting SIM PIN to be given SIM PUK MT is waiting SIM PUK to be given SIM BLOCKED PIN and PUK are blocked

13.4 AT+EPIN2 Enter PIN2

This command is used to validate the PIN2 , or to validate PUK2 and to define a new PIN2 code.

13.4.1 Format

Write Command AT+EPIN2=<pin2> or +EPIN2= <puk2>,<newpin2>	Response +CME ERROR: <err>
Read Command AT+EPIN2 ?	Response +EPIN2: <code> +CME ERROR: <err>
Test Command AT+EPIN2=?	Response
Reference	Note To verify PIN2 , suggest to use AT+CPWD="P2","PIN2","PIN2" . To unblock PIN2, use AT+EPIN2="PUK2","new_PIN2" □□ Only used AT+EPIN2 when SIM card inserted and MT has completely boot up.

13.4.2 Field

Parameters	Description
<pin2> , <newpin2> , <puk2>	string type values <code> values reserved by the present document: READY PIN2 is allowed to verified SIM PUK2 PIN2 is blocked SIM BLOCKED PIN2 and PUK2 are blocked

13.5 AT+EPINC PIN remaining attempt number

This command queries the number of remaining valid tries for PIN1, PIN2, PUK1, and PUK2

13.5.1 Format

Execution Command AT+EPINC	Response +EPINC: <pin1>,<pin2>,<puk1>,<puk2> +CME ERROR: <err>
Read Command AT+EPINC ?	Response +EPINC: <pin1>,<pin2>,<puk1>,<puk2> +CME ERROR: <err>
Test Command AT+EPINC=?	Response

13.5.2 Field

Parameters	Description
<pin1>,<pin2>,<puk1>,<puk2>	the remaining tries of each type

13.6 AT+ESMSS SMS status change mode

SMS status change mode after +CMGR and +CMGL

13.6.1 Format

Write Command AT+ESMSS= <mode>	Response +CME ERROR: <err>
--	--

Read Command AT+ESMSS ?	Response +ESMSS : <mode>
Test Command AT+ESMSS=?	Response +ESMSS : (0-1)

13.6.2 Field

Parameters	Description
<mode>	0 Unchange – SMS status remains as "REC UNREAD" after +CMGR or +CMGL 1 Change – SMS status changes from "REC UNREAD" to "REC READ" after +CMGR or +CMGL.

13.7 AT+EOPN Read Operator name

This command returns the operator name in alphanumeric format when given the numeric format.

13.7.1 Format

Write Command AT+EOPN=<format>,<oper_n um>	Response +EOPN: <format>, <oper_alpha> +CME ERROR: <err>
Test Command AT+EOPN=?	Response

Reference	Note We DO NOT support full set of alphanumeric format of <oper>, since the code size will become very large. If the customer needs the alphanumeric format, the table can be customized in mcu\custom\ps\xxx_bb\customer_operator_names.c.
-----------	---

13.7.2 Field

Parameters	Description
<format>	0 long alphanumeric format 19 short alphanumeric format
<oper_num>	the operator in numeric format
<oper_alpha>	the operator in alphanumeric format

13.8 AT +EQUERY General query command

To query hardware or MS status.

13.8.1 Format

Write Command AT+EQUERY=<op>	Response OK or ERROR
Test Command AT+EQUERY=?	Response ERROR
Reference	Note We DO NOT 5,6,7 for M2M

Reference	Example
	<pre> AT+EQUERY=0 +CMGW: (0-3) // SMS support writing SMS to inbox OK AT+EQUERY=1 +CHAR: 1 // charger is plug-in OK AT+EQUERY=2 +CLAM: 0 // clam is closed OK AT+EQUERY=5 +EQMO: 1 // #if defined(__SMS_STORAGE_BY_MMI__) && defined(__GEMINI__) OK AT+EQUERY=6 +EPBV: 2 // #if defined(__PHB_STORAGE_BY_MMI__) OK AT+EQUERY=7 +ESMSV: 2 // #if defined(__SMS_STORAGE_BY_MMI__) OK </pre>

13.8.2 Field

Parameters	Description
op	<ul style="list-style-type: none"> 0 Query SMS stats to write SMS to inbox 1 Query charger status 2 Query clam status 3 Query if sms ready 4 Query if phb ready 5 Query if open compile option <code>__SMS_STORAGE_BY_MMI__</code> and <code>__GEMINI__</code> (for phone suite). 6 Query the PHB System module version. When defined <code>__PHB_STORAGE_BY_MMI__</code>, the version is 2. Else, the version is 1 7 Query the SMS System module version. When defined <code>__SMS_STORAGE_BY_MMI__</code>, the version is 2. Else, the version is 1.

13.9 AT +EIND Indication Control Command

Set command to enable +EIND unsolicited result code . to indicate the readiness of SMS or PHB or AT

13.9.1 Format

Write Command AT+EIND= <flag>	Response OK or ERROR
Read Command AT+EIND?	Response +EIND: <ind>
Test Command AT+EIND=?	Response +EIND: (0-4294967295)

13.9.2 Field

Parameters	Description
flag	Bit 0 Any value(0~4294967295) that bit 0 is 1 e.g. 1,3,5.. Bit 1 Any value(0~4294967295) that bit 1 is 1 e.g. 2,3,6.. Bit 2 Any value(0~4294967295) that bit 2 is 1 e.g. 4,5,.. Bit 3 Any value(0~4294967295) that bit 3 is 1 e.g. 8,9.. Bit 7 Any value(0~4294967295) that bit 7 is 1 e.g. 128,129,130..
ind	1 SMS_READY 2 PHB_READY 4 file change for PLMN files 8 file change for EONS files 16 Invalid SIM 128 AT_READY

13.10 AT +ECSQ Received signal level indication

Set command to enable +ECSQ unsolicited result code . to indicate the received signal level.

13.10.1 Format

Write Command AT+ECSQ= <flag>	Response OK or ERROR
Read Command AT+ECSQ?	Response +ECSQ: <flag>
Test Command AT+ECSQ=?	Response +ECSQ: (0,1)
Reference	Note Unsolicited result code format: +ECSQ: <rssi>, <ber>, <rssi_in_qdbm>[, <RSCP_in_qdbm>, <EcN0_in_qdbn]

13.10.2 Field

Parameters	Description
flag	0 Received signal level indication disable 1 Received signal level indication enable
rssi	0-255 Received signal strength indication
ber	0-255 Bit error rate
RSCP	RSCP In qdbm

EcN0	EcN0 In qdbm
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13.11 AT +EINFO URC Information Control Command

Set command to enable some proprietary unsolicited result code(URC) information report.

13.11.1 Format

Write Command AT+EINFO= <flag>	Response OK or ERROR
Read Command AT+EINFO?	Response +EINFO: <flag>
Test Command AT+EINFO=?	Response +EINFO: (0-4294967295)

13.11.2 Field

Parameters	Description
flag	Bit 0 Any value(0~4294967295) that bit 0 is 1 e.g. 1,3,5.. Bit 1 Any value(0~4294967295) that bit 1 is 1 e.g. 2,3,6.. Bit 2 Any value(0~4294967295) that bit 2 is 1 e.g. 4,5,.. Bit 3 Any value(0~4294967295) that bit 3 is 1 e.g. 8,9.. Bit 7 Any value(0~4294967295) that bit 7 is 1 e.g. 128,129,130..

Currently , bit 0 is for +ESMLA (see 15.14 for detail) , bit 1 is for +ECFU (see 15.15 for detail) , bit 4 is for +ESPEECH (see 15.16 for detail)

13.12 AT+EBOOT Boot up mode

This command is used to set the boot up mode for modem. If boot up in exception mode, modem will perform silent boot up, such as bypass PIN check when it has been verified before.

13.12.1.1 Format

Write Command AT+EBOOT=<mode>	Response OK or ERROR
---	---

13.12.1.2 Field

Parameters	Description
<mode>	0 Normal boot up 1 Exceptoon boot up

13.13 AT+ICCID Read ICCID of SIM Card

This command is used to read SIM card ICCID if SIM inserted. If SIM not inserted, return +CME ERROR: 10

13.13.1.1 Format

Execution Command AT+ICCID	Response <iccid> OK ERROR / +CME ERROR: 10
--------------------------------------	--

13.13.1.2 Field

Parameters	Description
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14 Proprietary Unsolicited Result code

14.1 URC: +ECSQ

This URC is to report signal strength

14.1.1 Format

Execution Command	Response Unsolicited result code +ECSQ: <rsssi>,<ber>,<rsssi_in_qdbm>[,<RSCP_in_qdbm>,<EcN0_in_qdbm>]
-------------------	--

14.1.2 Field

Parameters	Description
rsssi	0-255 Received signal strength indication level
ber	0-255 Bit error rate
rsssi_in_qdbm	Received signal strength in quarter dbm
RSCP_in_qdbm	RSCP in quarter dbm. Only available when camp on UMTS network
EcN0_in_qdbm	EcN0 in quarter dbm. Only available when camp on UMTS network

14.2 URC: +ESMLA

This URC is to report if Auto personalization(defined in 3GPP TS 22.022) is enabled.

14.2.1 Format

Execution Command	Response Unsolicited result code +ESMLA: <is_autolock_enabled>, <autolock_result>
-------------------	---

14.2.2 Field

Parameters	Description
is_autolock_enabled	0 autolock is disabled
	1 autolock is enabled
autolock_result	0 autolock is failed
	1 autolock is successful

14.3 URC: +ECFU

This URC is intended to notify application to show CFU(Call Forwarding Unconditional) icon.

14.3.1 Format

Execution Command	Response Unsolicited result code +ECFU: <status>,<line>
Reference	Note Available after W09.04 . And it's only supported in modem load .

14.3.2 Field

Parameters	Description
status	0 hide CFU icon
	1 show CFU icon
line	1 Line1
	2 Line2

14.4 URC: +ESPEECH

This URC is to notify application to attach the speech for voice call (user connection). It's defined in spec 24.008 section5 call control .

14.4.1 Format

Execution Command	Response Unsolicited result code +ESPEECH: <on_off>,<rat>,<irho_speech_on_off>
Reference	Note Available after W09.12 . And it's only supported in modem load .

14.4.2 Field

Parameters	Description
on_off	0 Detach speech
	1 Attach speech
Rat	1 GSM
	2 UMTS
	3 GSM
irho_speech_on_off	0 Not inter-rat handover
	1 Is inter-rat handover

14.5 URC: +ESCRI

This URC is to notify application the result of AT+ESCRI

14.5.1 Format

Execution Command	Response Unsolicited result code +ESCRI: <report_value>
-------------------	---

14.5.2 Field

Parameters	Description
<report_value>	SCRI_REQ_SENT = 0, SCRI_CS_SESSION_ONGOING = 1, SCRI_PS_SIGNALLING_ONGOING = 2, SCRI_NO_PS_DATA_SESSION = 3, SCRI_REQ_NOT_SENT = 4, SCRI_NOT_ALLOWED = 5

14.6 URC: +ESIMS

Indicate the SIM is inserted or not and related cause

14.6.1 Format

Execution Command	Response +ESIMS: <sim_inserted_status>,<cause >
-------------------	---

14.6.2 Field

Parameters	Description
<sim_inserted_status>	0 SIM not presented 1 SIM presented
<cause>	0 SIM_CARD_REMOVED, 1 SIM_ACCESS_ERROR, 2 // Reserved for other use 3 // Reserved for other use 4 // Reserved for other use 5 SIM_ACCESS_PROFILE_ON 6 SIM_ACCESS_PROFILE_OFF 7 DUALSIM_DISCONNECTED 8 DUALSIM_CONNECTED 9 SIM_VSIM_ON 10 SIM_VSIM_OFF 11 SIM_PLUG_OUT 12 SIM_PLUG_IN 13 SIM_RECOVERY_START 14 SIM_RECOVERY_END

14.7 URC: +EUSIM

Indicate the inserted SIM card is SIM or USIM.

The URC is control by AT+EIND command(The 6th bit).

14.7.1 Format

Execution Command	Response
	+EUSIM: <type>

14.7.2 Field

Parameters	Description
type	0 SIM 1 USIM

14.8 URC: +EESTSIM

This URC reports whether current inserted SIM is test SIM during power-on procedure.

There is no query mode for this command.

This URC is supported from W12.23.

14.8.1 Format

Execution Command	Response Unsolicited result code +EESTSIM: <is_test_sim>
-------------------	--

14.8.2 Field

Parameters	Description
is_test_sim	0 normal sim 1 test sim

15 Compatible AT commands

Overview of Compatible AT Commands:

AT Command	Description
AT+CIPMUX	Start up multi-IP connection
AT+CSTT	Start task and set APN, user name, password
AT+CIICR	Bring up wireless connection with GPRS or CSD
AT+CIFSR	Get local IP address
AT+CIPSTART	Start up TCP or UDP connection
AT+CIPSEND	Send data through TCP or UDP connection
AT+CIPCLOSE	Close TCP or UDP connection
AT+CIPSHUT	Deactivate GPRS PDP context
AT+CIPSTATUS	Query current connection status
AT+CIPRXGET	Get data from network manually
AT+CALM	Alert sound mode
AT+GSN	Request TA Serial Number Identification (IMEI)
AT+CIPHEAD	Add an IP Head at the Beginning of a Package Received

AT+CIPQSEND	Select Data Transmitting Mode(no action)
AT+SPEAKER	Speaker and MIC select
AT+SIDET	Change the side tone gain level
AT+CDNSGIP	Get IP address by Domain Name

15.1 AT+CIPMUX Start Up Multiple IP Connection

This command is used to start Up Multiple IP Connection or single IP Connection.

Test Command AT+CIPMUX=?	Response +CIPMUX: (0,1) OK
Read Command AT+ CIPMUX?	Response + CIPMUX: <multiple> OK Or Error
Write Command AT+CIPMUX=<multiple>	Response OK Or ERROR
Reference	Note Only in IP initial state, AT+CIPMUX=1 is effective; Only when multi IP connection and GPRS application are both shut down, AT+CIPMUX=0 is effective.

Parameters are defined below:

Parameters	Description
<multiple>	<u>0</u> Single IP connection 1 Multiple IP connection

15.2 AT+CIPMODE Select TCPIP Application Mode

This command is used to Select TCPIP Application Mode

Test Command AT+CIPMODE=?	Response +CIPMODE: (0-NORMAL MODE,1-TRANSPARENT MODE) OK
Read Command AT+ CIPMODE?	Response + CIPMODE: <mode> OK
Write Command AT+CIPMODE=<mode>	Response OK Or ERROR
Reference	Note

Parameters are defined below:

Parameters	Description
<mode>	<u>0</u> Normal Mode 1 Transparent Mode

15.3 AT+CSTT Start Task and Set APN, USER NAME, PASSWORD

This command is used to Start Task and Set APN, USER NAME, PASSWORD.

Test Command AT+CSTT=?	Response +CSTT:"APN","USER","PWD" OK
Read Command AT+CSTT?	Response +CSTT: <APN>,<user name>,<password> OK
Write Command AT+CSTT=<APN>,<user name>,<password>	Response OK Or ERROR
Execution Command AT+CSTT	Response OK Or ERROR
Reference	Note The write command and execution command of this command is valid only at the state of IP INITIAL. After this command is executed, the state will be changed to IP START.

Parameters are defined below:

Parameters	Description
<APN>	A string parameter which indicates the GPRS access point name
<user name>	A string parameter which indicates the GPRS user name
<password>	A string parameter which indicates the GPRS password

15.4 AT+CIICR Bring Up Wireless Connection with GPRS or CSD

This command is used to Bring Up Wireless Connection with GPRS or CSD..

Test Command AT+CIICR=?	Response OK
Execution Command AT+CIICR	Response OK Or ERROR
Reference	Note 1. Max Response Time 85 seconds 2. AT+CIICR only activates moving scene at the status of IP START, after operating this Command is executed, the state will be changed to IP CONFIG. 3. After module accepts the activated operation, if it is activated successfully, module state will be changed to IP GPRSACT, and it responds OK, otherwise it will respond ERROR.

15.5 AT+CIFSR Get local IP address

This command is used to get local IP address..

Test Command AT+CIFSR=?	Response OK
Execution Command AT+CIFSR	Response <IP address> OK Or ERROR
Reference	Note local IP Address can be obtained by AT+CIFSR, if module hasn't valid IP, it will respond ERROR.

Parameters are defined below:

Parameters	Description
<IP address>	A string parameter which indicates the IP address assigned, for example: 10.112.208.9

15.6 AT+CIPSTART Start TCP or UDP Connection

This command is used to start TCP or UDP Connection.

Test Command	Response
AT+CIPSTART=?	<p>1) If AT+CIPMUX=0</p> <p>+CIPSTART:("TCP","UDP"),(0,255).(0,255).(0,255).(0,255),"(1-65535)"</p> <p>+CIPSTART:("TCP","UDP"),"DOMAIN NAME","(1-65535)"</p> <p>OK</p> <p>2) If AT+CIPMUX=1</p> <p>+CIPSTART:(0-5),("TCP","UDP"),(0,255).(0,255).(0,255).(0,255),"(1-65535)"</p> <p>+CIPSTART: (0-5),("TCP","UDP"),"DOMAIN NAME","(1-65535)"</p> <p>OK</p>

<p>Write Command</p> <p>1)If single IP connection (AT+CIPMUX=0) AT+CIPSTART=<mode>,<IP address or domain name>,<port></p> <p>2)If multi-IP connection (AT+CIPMUX=1) AT+CIPSTART=<id>,<mode>,< IP address or domain name >,<port></p>	<p>Response</p> <p>OK</p> <p>Or</p> <p>ERROR If already connected, will return:</p> <p>OK [<n>],ALREADY CONNECT</p>
<p>Reference</p>	<p>Note</p> <p>This command allows establishment of a TCP/UDP connection only when the state is IP INITIAL or IP STATUS when it is in single state.</p> <p>In multi-IP state, the state is in IP STATUS only. So it is necessary to process "AT+CIPSHUT" before user establishes a TCP/UDP connection with this command when the state is not IP INITIAL or IP STATUS.</p> <p>When module is in multi-IP state, before this command is executed, it is necessary to process "AT+CSTT, AT+CIICR, AT+CIFSR".</p>

Parameters are defined below:

Parameters	Description
<id>	0..5 A numeric parameter which indicates the connection number
<mode>	A string parameter which indicates the connection type "TCP" Establish a TCP connection "UDP" Establish a UDP connection
<IP address or domain name >	A string parameter which indicates remote server IP address, or domain name.
<port>	Remote server port

<state>	A string parameter which indicates the progress of connecting IP INITIAL CONNECT OK In Multi-IP state: IP INITIAL CONNECT OK
----------------------	---

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15.7 AT+CIPSEND Send data through TCP or UDP connection

This command is used to send data through TCP or UDP connection.

Test Command AT+CIPSEND=?	Response 1) For single IP connection (+CIPMUX=0) +CIPSEND: (1-1460) OK 2) For multi IP connection (+CIPMUX=1) +CIPSEND: (0-5),(1-1460) OK
Read Command AT+CIPSEND?	Response 1) For single IP connection (+CIPMUX=0) +CIPSEND: <size> OK 2) For multi IP connection (+CIPMUX=1) +CIPSEND: <n>,<size> OK

Write Command	Response
<p>1) If single IP connection (AT+CIPMUX=0) AT+CIPSEND=<length></p> <p>2) If multi IP connection (AT+CIPMUX=1) AT+CIPSEND=<id>[,<length>]</p>	<p>If single IP is connected (+CIPMUX=0) If connection is not established or module is disconnected:</p> <p>If error is related to ME functionality: +CME ERROR <err></p> <p>If sending is successful: When +CIPQSEND=0 SEND OK</p> <p>When +CIPQSEND=1 DATA ACCEPT:<length></p> <p>If sending fails: SEND FAIL</p> <p>If multi IP connection is established (+CIPMUX=1) If connection is not established or module is disconnected: If error is related to ME functionality: +CME ERROR <err></p> <p>If sending is successful: <n>,SEND OK</p> <p>If sending fails: <id>,SEND FAIL</p>

<p>Execution Command</p> <p>AT+CIPSEND response">", then type data for send, tap CTRL+Z to send</p>	<p>Response</p> <p>This Command is used to send changeable length data.</p> <p>If single IP connection is established (+CIPMUX=0)</p> <p>If connection is not established or module is disconnected:</p> <p>If error is related to ME functionality: +CME ERROR <err></p> <p>If sending is successful: SEND OK</p> <p>If sending fails: SEND FAIL</p>
<p>Reference</p>	<p>Note</p> <p>This Command can only be used in single IP connection mode (+CIPMUX=0) and to send data on the TCP or UDP connection that has been established already. Ctrl-Z is used as a termination symbol. ESC is used to cancel sending data. There are at most <size> bytes which can be sent at a time.</p>

Parameters are defined below:

Parameters	Description
<id>	0-5 A numeric parameter which indicates the connection number
<size>	1-1460 A numeric parameter which indicates the data length sent one time

15.8 AT+CIPCLOSE Close TCP or UDP connection

This command is used to Close TCP or UDP Connection.

Test Command AT+CIPCLOSE=?	Response 1) For single IP connection (+CIPMUX=0) OK 2) For multi IP connection (+CIPMUX=1) +CIPCLOSE: (0-5) OK
Write Command If multi-IP connection (AT +CIPMUX=1) AT+CIPCLOSE=<id>	Response For multi IP connection (+CIPMUX=1) <id>, CLOSE OK
Execution Command AT+CIPCLOSE	Response For single IP connection only (+CIPMUX=0): If close is successfully: CLOSE OK If close fails: ERROR
Reference	Note This command only closes connection at the status of TCP/UDP which returns CONNECTING or CONNECT OK , otherwise it will return ERROR , after the connection is closed, the status is IP CLOSE in single IP mode.

Parameters are defined below:

Parameters	Description
<id>	0-5 A numeric parameter which indicates the connection number

15.9 AT+CIPSHUT Deactivate GPRS PDP Context

This command is used to deactivate GPRS PDP Context

Test Command AT+CIPSHUT=?	Response OK
Execution Command AT+CIPSHUT	Response If close is successful: SHUT OK If close fails: ERROR Or
Reference	Note If this command is executed in multi-connection mode, all of the IP connection will be shut. User can close GPRS PDP context by AT+CIPSHUT . After it is closed, the status is IP INITIAL . If " +PDP: DEACT " URC is reported which means the GPRS is released by the network, then user still needs to execute " AT+CIPSHUT " command to make PDP context come back to original state.

15.10 AT+CIPSTATUS Query Current Connection Status

This command is used to Query Current Connection Status.

Test Command AT+CIPSTATUS=?	Response OK Or +CIPSTATUS:(0-5) OK
Write Command If multi IP connection mode (AT+CIPMUX=1) AT+CIPSTATUS=<id>	Response +CIPSTATUS: <id>,<bearer>, <TCP/UDP>, <IP address>, <port>,<client state> OK

Execution Command	Response
AT+CIPSTATUS	1) If in single-IP mode (AT+CIPMUX=0) +CIPSTATUS: <client state> OK
	2) If in multi-IP mode (AT+CIPMUX=1) +CIPSTATUS: 0,<bearer>, <TCP/UDP>, <IP address>, <port>, <client state> ... +CIPSTATUS: 5,<bearer>, <TCP/UDP>, <IP address>, <port>, <client state> OK
Reference	Note

Parameters are defined below:

Parameters	Description
<id>	0-5 A numeric parameter which indicates the connection number
<bearer>	0-1 GPRS bearer, default is 0
<client state>	INITIAL CONNECTED CLOSED

15.11 AT+CIPRXGET Get Data from Network Manually

This command is used to Get Data from Network Manually.

<p>Test Command</p> <p>AT+CIPRXGET=?</p>	<p>Response</p> <p>If single IP connection (+CIPMUX=0) +CIPRXGET: (list of supported <mode>s), (list of supported <REQ length>) OK</p> <p>If multi IP connection (+CIPMUX=1) +CIPRXGET: (list of supported <mode>s), (list of supported <id>s), (list of supported <REQ length>) OK</p>
<p>Read Command</p> <p>AT+CIPRXGET?</p>	<p>Response</p> <p>+CIPRXGET: <mode> OK</p>

Write Command	Response
<p>1) If single IP connection (+CIPMUX=0) AT+CIPRXGET=<mode>[,<REQ length >]</p> <p>2) If multi IP connection (+CIPMUX=1) AT+CIPRXGET=<mode>[,<id>,<REQ length >]</p>	<p>OK</p> <p>Or</p> <p>ERROR</p> <p>1)For single IP connection If “AT+CIPSRIP=1” is set, IP address and port are contained. if <mode>=1 +CIPRXGET: 1[,<IP ADDRESS>:<PORT>] if <mode>=2 +CIPRXGET: 2,<REQ length>,<CNF length>[,<IP ADDRESS>:<PORT>] 1234567890... OK if <mode>=3 +CIPRXGET: 3,<REQ length>,<CNF length>[,<IP ADDRESS>:<PORT>] 5151... OK</p> <p>2)For multi IP connection if <mode>=1 +CIPRXGET: 1[,<id>,<IP ADDRESS>:<PORT>] if <mode>=2 +CIPRXGET: 2,<id>,<REQ length>,<CNF length>[,<IP ADDRESS>:<PORT>] 1234567890... OK if <mode>=3 +CIPRXGET: 3,<id>,<REQ length>,<CNF length>[,<IP ADDRESS>:<PORT>] 5151... OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p>
Reference	<p>Note</p> <p>To enable this function, parameter <mode> must be set to 1 before connection.</p>

Parameters are defined below:

Parameters	Description
<mode>	<u>0</u> Disable getting data from network manually, the module is set to normal mode, data will be pushed to TE directly. 1 Enable getting data from network manually. 2 The module can get data, but the length of output data can't exceed 1460 bytes at a time. 3 Similar to mode 2, but in HEX mode, which means the module can get 730 bytes maximum at a time. 4 Reserved 5 Reserved
<id>	A numeric parameter which indicates the connection number
<REQ length>	Requested number of data bytes (1-1460 bytes) to be read
<CNF length>	Confirmed number of data bytes to be read, which may be less than <length>. 0 indicates that no data can be read.

15.12 AT+CALM **Alert sound mode**

This command is used to set alert sound mode.

Test Command	Response
AT+CALM=?	+CALM: (0-1) OK
Read Command	Response
AT+CALM?	+ CALM: <mode> OK Or Error
Write Command	Response
AT+CALM=<mode>	OK Or ERROR
Reference	Note

Parameters are defined below:

Parameters	Description
<mode>	<u>0</u> Normal mode 1 Silent mode (all sounds from ME are prevented)

Example:

Commands	Response
AT+CALM=?	+CALM: (0-1) OK
AT+CALM?	+CALM: 1 OK

15.13 AT+GSN Request TA Serial Number Identification (IMEI)

This command is used to request TA Serial Number Identification (IMEI).

Test Command AT+GSN=?	Response OK
Execution Command AT+GSN	Response <IMEI> OK Or Error
Reference	Note

15.14 AT+CIPHEAD Add an IP Head at the Beginning of a Package Received

This command is used to add an IP Head at the Beginning of a Package Received.

Test Command	Response
AT+CIPHEAD=?	+CIPHEAD: (0-1) OK
Read Command	Response
AT+CIPHEAD?	+ CIPHEAD: <mode> OK Or Error
Write Command	Response
AT+CIPHEAD=<mode>	OK Or ERROR
Reference	Note

Parameters are defined below:

Parameters	Description
<mode>	<u>0</u> Normal mode, Not add IP header 1 No effect also

15.15 AT+CIPQSEND Select Data Transmitting Mode

This command is used to select Data Transmitting Mode.

Test Command	Response
AT+CIPQSEND=?	+CIPQSEND: (0-1) OK
Read Command	Response
AT+CIPQSEND?	+ CIPQSEND: <n> OK Or Error
Write Command	Response
AT+CIPQSEND=<n>	OK Or ERROR
Reference	Note

Parameters are defined below:

Parameters	Description
<n>	<u>0</u> Normal mode, 1 No effect also.

15.16 AT+SPEAKER Speaker and MIC select

This command is used to select speaker and MIC.

<p>This command is used to select speaker and MIC. Test Command</p> <p>AT+SPEAKER=?</p>	<p>Response</p> <p>+SPEAKER: (0-1), (0-1)</p> <p>OK</p>
<p>Read Command</p> <p>AT+SPEAKER?</p>	<p>Response</p> <p>+ SPEAKER: <speaker channel>,<MIC channel></p> <p>OK</p> <p>Or</p> <p>Error</p>
<p>Write Command</p> <p>AT+SPEAKER=<speaker channel>,<MIC channel></p>	<p>Response</p> <p>OK</p> <p>Or</p> <p>ERROR</p>
<p>Reference</p>	<p>Note</p>

Parameters are defined below:

Parameters	Description
<speaker channel>	<u>0</u> speaker channel 0 1 speaker channel 1
<MIC channel>	<u>0</u> MIC channel 0 1 MIC channel 1

15.17 AT+SIDET Change the side tone gain level

This command is used to change the side tone gain level.

Test Command	Response
AT+SIDET=?	+SIDET: (0-1), (0-16) OK
Read Command	Response
AT+SIDET?	+ SIDET: <channel 0 level>,<channel 1 level> OK Or Error
Write Command	Response
AT+SIDET=<channel number>,<channel n level>	OK Or ERROR
Reference	Note

Parameters are defined below:

Parameters	Description
<channel number>	<u>0</u> channel number 0 1 channel number 1
<channel n level>	<u>0</u> -16 channel level (n refer to <channel number>)

Example:

Commands	Response
AT+SIDET=?	+SIDET: (0-1),(0-16) OK
AT+SIDET=1,11	OK

15.18 AT+CDNSGIP Get IP address by Domain Name

This command is used to get IP address by Domain Name.

Test Command	Response
AT+CDNSGIP=?	OK
Write Command	Response
AT+CDNSGIP=<domain name>	OK
	+CDNSGIP: <result>,<domain name>,<IP addr>
	Or
	ERROR
Reference	Note

Parameters are defined below:

Parameters	Description
result	0 get ip address failure 1 get ip address successful
domain name	Domain name string, need use "" double quotes
IPaddr	IP address string, need use "" double quotes

Example:

Commands	Response
AT+CDNSGIP="baidu.com"	OK
	+CDNSGIP: 1,"baidu.com", "111.13.100.91"

15.19 AT+CIPTKA Set TCP Keepalive Parameters

This command is used to set TCP network heartbeat packet function

Read Command AT+CIPTKA?	Response +CIPTKA: <mode>, <keepIdle>, <keepInterval>, <keepCount> OK
Execution Command AT+CIPTKA=<mode>[,<keepIdle>[,<keepInterval>[,<keepCount >]]]	Response OK or ERROR
Reference	Note This command must be used before AT+CIPSTART, otherwise invalid

Parameters are defined below:

Parameters	Description
<mode>	Set TCP keepalive option. 0 Disable TCP keep alive mechanism 1 Eable TCP keep alive mechanism
<keepIdle>	Interval type; Idle (in second) before TCP send the initial keepalive peobe 30-7200 Default 180
<keepInterval>	Interval type; (in second) between keepalive probes retransmission 30-600 Default 75
<keepCount>	Interval type;Invalid value. 1-9 Default 9

Example:

Commands	Response
AT+CIPTKA=1,180,75,9	OK

15.20 AT+CIPACK TCP/IP Data flow calculation

This command is used to calculate TCP/IP data flow status.

Test Command AT+CIPACK=?	Response OK
Write Command (+CIPMUX=1) AT+CIPACK=<id>	Response OK +CIPACK: <txlen>,<acklen>,<nacklen> Or ERROR
Active Command (+CIPMUX=0) AT+CIPACK	Response OK +CIPACK: <txlen>,<acklen>,<nacklen> Or ERROR
Reference	Note

Parameters are defined below:

Parameters	Description
id	0..5 A numeric parameter which indicates the connection number
txlen	The data amount which has been sent(MAX: $2^{32}-1$)
acklen	The data amount confirmed successfully by the server(MAX: $2^{32}-1$)
nacklen	The data amount without confirmation by the server(MAX: $2^{32}-1$)

16 HTTP AT Commands

16.1 AT+HTTTPARA Set http parameter

The command is used to set http parameter.

Format

Write Command	Response
AT+HTTTPARA=<para>,<value>	OK/ERROR

Field

Parameters	Description
<para>	String url, target path port, target port
<value>	Corresponding to the value of url, the <para> parameter is the maximum of 128 bytes, url supports domain name resolution, the default value of port is 80

Example:

Commands	Response
AT+HTTTPARA= url,www.baidu.com //set http url parameter	OK
AT+HTTTPARA=port,80 //set port //can ignore	OK

16.2 AT+HTTPSETUP HTTP link establishment

The command is used to create HTTP link.

Format

Execution Command	Response
AT+HTTPSETUP	OK/ERROR
	The correct destination address and port can be established successfully.

Example:

Commands	Response
AT+HTTPSETUP //creating HTTP link	OK

16.3 AT+HTTPACTION Sending HTTP request

The command is used to send HTTP request.

Format

Write Command	Response
AT+HTTPACTION=<mode>,[<length>],[<string>]	OK/ERROR

Field

Parameters	Description
<mode>	0 HTTP GET request 1 HTTP HEAD request 2 HTTP POST request 99 OTHER request
<length>	Maxium 2048,length of HTTP POST request body.

<string>	Value of HTTP POST request body OR other request content
-----------------------	--

Example:

Commands	Response
AT+HTTPACTION=0 //send HTTP GET request	OK +HTTPRECV: HTTP/1.1 200 OK Date: Fri, 11 Sep 2015 05:21:54 GMT Content-Type: image/jpeg Content-Length: 6 Connection: close ETag: "2815057560" Last-Modified: Wed, 09 Sep 2015 01:33:59 GMT Expires: Fri, 11 Sep 2015 05:22:54 GMT Cache-Control: max-age=60 Lfy: st01.i6 Accept-Ranges: bytes ☐ 123456
AT+HTTPACTION=1 //send HTTP HEAD request	OK +HTTPRECV: HTTP/1.1 200 OK Date: Fri, 11 Sep 2015 05:25:57 GMT Content-Type: image/jpeg Content-Length: 24794 Connection: close ETag: "2815057560" Last-Modified: Wed, 09 Sep 2015 01:33:59 GMT Expires: Fri, 11 Sep 2015 05:26:57 GMT Cache-Control: max-age=60 Lfy: cq02.i4 Accept-Ranges: bytes
AT+HTTPACTION= 2,6,123456 //send HTTP POST request	OK +HTTPRECV: HTTP/1.1 200 OK Date: Fri, 11 Sep 2015 05:25:57 GMT ...

AT+HTTPACTION= 99, GET http://www.baidu.com HTTP/1.1\r\nHOST: www.baidu.com\r\n\r\n	OK
--	-----------

16.4 AT+HTTPCLOSE Close HTTP link

The command is used to close HTTP link

Format

Execution Command	Response
AT+HTTPCLOSE	OK/ERROR

Example:

Commands	Response
AT+HTTPCLOSE //close HTTP link	OK

17 AUDIO AT Commands

17.1 AT+ZAUDREC Audio function

The command is used to audio function.

Format

Write Command AT+ZAUDREC=<Mode>[,<Filename>]	Response OK/ERROR
Read Command AT+ZAUDREC?	Response +ZAUDREC:<Files_number>,<File_name1>,<len1> ,<File_name2>,<len2> OK
Test Command AT+ZAUDREC=?	Response +ZAUDREC: (0-6) OK

Field

Parameters	Description
mode	0 Start record 1 stop record 2 Play record 3 Stop play record 4 Delete record 5 Start play record in call 6 Stop record in call
filename	Record file name, do not need suffix, suffix is wav, if mode is 0、2、4、5 时, this field is valid, if 0、2、5 do not have this field, default name is rec
File_num	File number
len	File size

Example:

Commands	Response
AT+zaudrec = 0 [, "rec"]	OK
AT+zaudrec = 1	OK
AT+zaudrec = 2 [, "rec"]	OK
AT+zaudrec = 3	OK
AT+zaudrec = 4 , "rec"	OK
AT+zaudrec = 5 , "rec"	OK
AT+zaudrec = 6	OK
AT+zaudrec?	+zaudrec: 1, rec.wav, 66332

17.2 AT+ZFILEREAD Reading the recording file.

The command is used for reading the recording file.

Format

Write Command	Response
AT+ZFILEREAD =<file_name>[,<offset>,<len>]	<cr><lf>+ZFILEREAD:<act_len><cr><lf> <data_content> <cr><lf>OK<cr><lf> OR <CR><LF>ERROR<CR><LF>

Field

Parameters	Description
Filename	Record file name
offset	File offset
len	Read file length

Example:

Commands	Response
----------	----------

AT+ZFILEREAD= "REC",0,1500	+ZFILEREAD:1500 RIFF4WAVEfmt @- ? ----- ?fact ----- ?data??w??畧€K*???紉?惊 D?跐?胖 1 菌#穿貉线?一悼 从忒97 孽贖!??格?G 埼??猜?林暗厠?捞...
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18 FTP AT Commands

18.1 AT+FTPPORT Set FTP Control Port

The command is used to set ftp control port.

Format

Write Command AT+FTPPORT=<value>	Response OK
Read Command AT+FTPPORT?	Response +FTPPORT: <value> OK
Test Command AT+FTPPORT=?	Response OK

Field

Parameters	Description
<value>	The value of FTP Control port, from 1 to 65535. Default value is 21

Example:

Commands AT+FTPPORT=21	Response OK
----------------------------------	-----------------------

18.2 AT+FTPMODE Set Active or Passive FTP Mode

The command is used to set ftp mode active or passive.

Format

Write Command	Response
AT+FTPMODE =<value>	OK
Read Command	Response
AT+ FTPMODE?	+ FTPMODE: <value> OK
Test Command	Response
AT+FTPMODE=?	OK

Field

Parameters	Description
<value>	0 Active FTP mode 1 Passive FTP mode

Example:

Commands	Response
AT+FTPMODE=1	OK

18.3 AT+FTPTYPE Set the Type of Data to Be Transferred

The command is used to set the Type of Data to Be Transferred

Format

Write Command AT+ FTPTYPE=<value>	Response OK
Read Command AT+ FTPTYPE?	Response + FTPTYPE: <value> OK
Test Command AT+ FTPTYPE=?	Response OK

Field

Parameters	Description
<value>	"A" For FTP ASCII sessions "I" For FTP Binary sessions

Example:

Commands AT+FTPTYPE ="A"	Response OK
------------------------------------	-----------------------

18.4 AT+FTPPUTOPT Set FTP Put Type

The command is used to set FTP Put Type

Format

Write Command AT+FTPPUTOPT =<value>	Response OK
---	-----------------------

Read Command	Response
AT+ FTPPUTOPT?	+FTPPUTOPT: <value> OK
Test Command	Response
AT+ FTPPUTOPT=?	OK

Field

Parameters	Description
<value>	"APPE" For appending file "STOU" For storing unique file "STOR" For storing file Default is "STOR"

Example:

Commands	Response
AT+ FTPPUTOPT ="STOU"	OK

18.5 AT+FTPREST Set Resume Broken Download

The command is used to set Resume Broken Download

Format

Write Command	Response
AT+ FTPREST =<value>	OK
Read Command	Response
AT+ FTPREST?	+ FTPREST: <value> OK

Test Command	Response
AT+ FTPREST=?	OK

Field

Parameters	Description
<value>	Broken point to be resumed from 1 to 4294967295. (byte)

Example:

Commands	Response
AT+ FTPREST =100	OK

18.6 AT+FTPSERV Set FTP Server Address

The command is used to set FTP Server Address

Format

Write Command	Response
AT+FTPSERV =<value>	OK
Read Command	Response
AT+ FTPSERV?	+ FTPSERV: <value> OK
Test Command	Response
AT+ FTPSERV =?	OK

Field

Parameters	Description
<value>	32-bit number in dotted-decimal notation (i.e.xxx.xxx.xxx.xxx) or alphanumeric ASCII text string up to 49 characters if DNS is available

Example:

Commands	Response
AT+FTPSERV= "182.150.28.206"	OK

18.7 AT+FTPUN set FTP User Name

The command is used to set FTP User Name

Format

Write Command	Response
AT+ FTPUN =<value>	OK
Read Command	Response
AT+ FTPUN?	+ FTPUN: <value> OK
Test Command	Response
AT+ FTPUN=?	OK

Field

Parameters	Description
<value>	Alphanumeric ASCII text string up to 49 characters

Example:

Commands	Response
AT+ FTPUN ="cd_ftp"	OK

18.8 AT+FTPPW Set FTP Password

The command is used to Set FTP Password

Format

Write Command	Response
AT+ FTTPW =<value>	OK
Read Command	Response
AT+ FTTPW?	+ FTTPW: <value> OK
Test Command	Response
AT+ FTTPW =?	OK

Field

Parameters	Description
<value>	Alphanumeric ASCII text string up to 49 characters

Example:

Commands	Response
AT+ FTTPW ="cd_ftp"	OK

18.9 AT+FTPGETNAME Set Download File Name

The command is used to set the Type of Data to Be Transferred

Format

Write Command	Response
AT+FTPGETNAME=<value>	OK
Read Command	Response
AT+ FTPGETNAME?	+ FTPGETNAME: <value> OK
Test Command	Response
AT+ FTPGETNAME =?	OK

Field

Parameters	Description
<value>	Alphanumeric ASCII text string up to 99 characters

Example:

Commands	Response
AT+FTPGETNAME="test.txt" "	OK

18.10 AT+FTPGETPATH Set Download File Path

The command is used to Set Download File Path

Format

Write Command	Response
AT+FTPGETPATH=<value>	OK
Read Command	Response
AT+ FTPGETPATH?	+ FTPGETPATH: <value> OK
Test Command	Response
AT+ FTPGETPATH =?	OK

Field

Parameters	Description
<value>	Alphanumeric ASCII text string up to 99 characters

Example:

Commands	Response
AT+ FTPGETPATH ="/"	OK

18.11 AT+ FTTPUTNAME Set Upload File Name

The command is used to set Upload File Name

Format

Write Command	Response
AT+FTTPUTNAME=<value>	OK

Read Command	Response
AT+ FTTPUTNAME?	+ FTTPUTNAME: <value> OK
Test Command	Response
AT+ FTTPUTNAME=?	OK

Field

Parameters	Description
<value>	Alphanumeric ASCII text string up to 99 characters

Example:

Commands	Response
AT+FTTPUTNAME="deng.txt"	OK

18.12 AT+FTTPUTPATH Set Upload File Path

The command is used to set Upload File Path

Format

Write Command	Response
AT+FTTPUTPATH=<value>	OK
Read Command	Response
AT+ FTTPUTPATH?	+ FTTPUTPATH: <value> OK

Test Command	Response
AT+ FTPPUTPATH =?	OK

Field

Parameters	Description
<value>	Alphanumeric ASCII text string up to 99 characters

Example:

Commands	Response
AT+ FTPPUTPATH ="/"	OK

18.13 AT+FTPGET Download File

The command is used to download File

Format

Write Command	Response
AT+FTPGET=<mode>[,<reqlengt h>]	<p>If mode is 1 and it is a successful FTP get session: OK +FTPGET:1,1</p> <p>If data transfer finished: +FTPGET:1,0</p> <p>If mode is 1 and it is a failed FTP get session: OK +FTPGET:1,<error></p> <p>If mode is 2: +FTPGET:2,<cnflength> 012345678... OK</p>

Test Command	Response
AT+ FTPGET =?	OK

Field

Parameters	Description
<mode>	1 For opening FTP get session 2 For reading FTP download data.
<reqlength>	Requested number of data bytes (1-1460)to be read
<cnflength>	Confirmed number of data bytes to be read, which may be less than <length>. 0 indicates that no data can be read
<error>	61 Net error 62 DNS error 63 Connect error 64 Timeout 65 Server error 66 Operation not allow 70 Replay error 71 User error 72 Password error 73 Type error 74 Rest error 75 Passive error 76 Active error 77 Operate error 78 Upload error 79 Download error 80 File error 86 Manual quit
Timeout	75 seconds
Notify	When "+FTPGET:1,1" is shown, then use AT+FTPGET=2,<reqlength> to read data. If the module still has unread data, "+FTPGET:1,1" will be shown again in a certain time.(5 seconds)

Example:

Commands	Response
----------	----------

AT+ FTPGET =1	OK +FTPGET:1,1
AT+FTPGET=2,1024	+FTPGET: 2,50 01234567890123456789012345678901234567890123456789012345 6789 OK +FTPGET:1,0

18.14 AT+FTPPUT Set Upload File

The command is used to set Upload File

Format

Write Command	Response
AT+FTPPUT=<mode>[,<reqlengt h>]	<p>If mode is 1 and it is a successful FTP get session: OK +FTPPUT:1,1,<maxlength></p> <p>If mode is 1 and it is a failed FTP get session: OK +FTPPUT:1,<error></p> <p>If mode is 2 and <reqlength> is not 0 +FTPPUT:2,<cnflength> //Input data OK</p> <p>If mode is 2 and <reqlength> is 0, it will respond OK, and FTP session will be closed OK</p> <p>If data transfer finished. +FTPPUT:1,0</p>
Test Command	Response
AT+ FTTPUT =?	OK

Field

Parameters	Description
<mode>	1 For opening FTP put session 2 For writing FTP upload data.
<reqlength>	Requested number of data bytes(0-<maxlength>) to be transmitted
<cnflength>	Confirmed number of data bytes to be transmitted
<maxlength>	The max. length of data can be sent at a time. It depends on the network status
<error>	See "AT+FTPGET"
Timeout	75 seconds
Notify	When "+FTPPUT:1,1,<maxlength>" is shown, then use "AT+FTPPUT=2,<reqlength>" to write data. If you want finish input, should end with AT+FTPPUT=2,0

Example:

Commands	Response
AT+ FTTPUT =1	OK + FTTPUT:1,1,1360
AT+ FTTPUT=2,1024 01234567890123456789012 345678901234 567890123456 789..... (must up to 1024) OK	OK

18.15 AT+FTPSCONT Save FTP Application Context

The command is used to **save FTP Application Context**

Format

Write Command	Response
AT+ FTPSCONT	OK

Read Command	Response
AT+ FTPSCONT?	+FTPSCONT:<mode> +FTPSERV: <value> +FTPPORT: <value> +FTPUN: <value> +FTPPW: <value> +FTPCID: <value> +FTPMODE: <value> +FTPTYPE: <value> +FTPPUTOPT: <value> +FTPREST: <value> +FTPGETNAME: <value> +FTPGETPATH: <value> +FTPPUTNAME: <value> +FTPPUTPATH: <value> +FTPTIMEOUT: <value> OK
Test Command	Response
AT+ FTPSCONT=?	OK

Field

Parameters	Description
<mode>	0 Saved, the value from NVRAM 1 Unsaved, the value from RAM

Notify	UE saves FTP Application Context which consist of following AT Command parameters, and when system is rebooted, the parameters will be loaded automatically.
---------------	--

Example:

Commands	Response
----------	----------

AT+ FTPSCONT?	+FTPSCONT:<0> +FTPSERV: <182.150.28.206> +FTPPORT:<2100> +FTPUN: <cd_ftp> +FTPPW:<cd_ftp> +FTPCID: <1> +FTPMODE:<1> +FTPTYPE:<l> +FTPPUTOPT:<STOU> +FTPREST:<0> +FTPGETNAME:<deng1.txt> +FTPGETPATH:</> +FTPPUTNAME:<deng1.txt> +FTPPUTPATH:</> +FTPTIMEOUT: <75> OK
AT+ FTPSCONT	OK

18.16 AT+FTPDELE Delete Specified File in FTP Server

The command is used to delete Specified File in FTP Server

Format

Execution Command	Response
AT+ FTPDELE	Response If succeeded: OK +FTPDELE:1,0 If failed: OK +FTPDELE:1,<error>
Test Command	Response
AT+ FTPDELE=?	OK

Field

Notify	The file to be deleted is specified by the "AT+FTPGETNAME" and "AT+FTPGETPATH" commands.
---------------	--

timeout	75 seconds
----------------	------------

Example:

Commands	Response
AT+ FTPDELE	OK

18.17 AT+FTPSIZE Get the Size of Specified File in FTP Server

The command is used to **get the Size of Specified File in FTP Server**

Format

Execution Command	Response
AT+ FTPSIZE	If succeeded: OK +FTPSIZE:1,0,<size> If failed: OK +FTPSIZE:1,<error>,<0>
Test Command	Response
AT+ FTPSIZE =?	OK

Field

Parameters	Description
<error>	See "AT+FTPGET"
<size>	The file size. Unit: byte The file is specified by the "AT+FTPGETNAME" and "AT+FTPGETPATH" commands.

Example:

Commands	Response
----------	----------

AT+ FTPSIZE	OK +FTPSIZE: 1,0,300
--------------------	-------------------------

18.18 AT+FTPSTATE Get the FTP State

The command is used to get the FTP State

Format

Execution Command	Response
AT+ FTPSTATE	+FTPSTATE: <state> OK
Test Command	Response
AT+ FTPSTATE =?	OK

Field

Parameters	Description
<state>	0 idle 1 in the FTP session, including FTPGET, FTPPUT, FTPDELE and FTPSIZE operation.

Example:

Commands	Response
AT+ FTPSTATE	+FTPSTATE: 0 OK

18.19 AT+FTPMKD Make Directory on the Remote Machine

The command is used to make Directory on the Remote Machine

Format

Execution Command	Response
AT+ FTPMKD	OK If success: OK +FTPMKD: 1,0 If failed: OK +FTPMKD: 1,<error>
Test Command	Response
AT+ FTPMKD=?	OK

Field

Parameters	Description
<error>	See “AT+FTPGET” The created folder is specified by the “AT+FTPGETPATH” command.
Timeout	75 seconds

Example:

Commands	Response
AT+ FTPMKD	OK +FTPMKD: 1,0

18.20 AT+FTPRMD Remove Directory on the Remote Machine

The command is used to remove Directory on the Remote Machine

Format

Execution Command	Response
AT+ FTPRMD	If success: OK +FTPRMD: 1,0 If failed: OK +FTPRMD: 1,<error>
Test Command	Response
AT+ FTPRMD=?	OK

Field

Parameters	Description
<error>	See “AT+FTPGET” The removed folder is specified by the “AT+FTPGETPATH” command.
Timeout	75 seconds

Example:

Commands	Response
AT+ FTPRMD	OK +FTPRMD: 1,0

18.21 AT+FTPLIST List Contents of Directory on the Remote Machine

The command is used to list contents of directory on the remote machine

Format

Write Command AT+FTPLIST=<mode>[,<reqlengt h>]	Response If mode is 1 and it is a successful FTP get session: OK +FTPLIST: 1,1 If data transfer is finished: +FTPLIST: 1,0 If mode is 1 and it is a failed FTP get session: OK +FTPLIST: 1,<error> If mode is 2: +FTPLIST: 2,<cnflength> 012345678... OK
Read Command AT+ FTPLIST?	Response + FTPLIST: <value> OK
Test Command AT+ FTPLIST=?	Response OK

Field

Parameters	Description
<mode>	1 For opening FTP get file list session 2 For reading FTP file list
<reqlength>	Requested number of data bytes (1-1460) to be read
<cnflength>	Confirmed number of data bytes to be read, which may be less than <reqlength>. 0 indicates that no data can be read.
<error>	See "AT+FTPGET"

Example:

Commands	Response
----------	----------

AT+ FTPLIST =1	OK + FTPLIST:1,1
AT+ FTPLIST=2,1024	+FTPLIST: 2,50 2016/08/25 19:20 <DIR> . 2016/08/25 19:20 <DIR> .. 2015/11/04 16:39 <DIR> .android 2016/09/06 18:37 1,164 .bash_history 2015/10/28 15:39 <DIR> .config 2016/01/12 18:06 360 .gitconfig 2016/07/25 17:11 <DIR> .oracle_jre_usage 2016/07/27 17:23 <DIR> .ssh 2016/07/07 13:32 <DIR> .VirtualBox 2015/12/16 16:16 4,425 aaa 2016/03/10 15:36 16,740 aaa.txt 2016/03/16 16:21 10,425 aaaaaffdf.txt 2016/04/26 19:07 <DIR> AppData 2016/03/18 10:21 12,065 bing.txt OK +FTPLIST:1,0

18.22 AT+FTPGETTOFS Download File and Save in File System

The command is used to download File and Save in File System

Format

Write Command AT+FTPGETTOFS=<loc>,<filename>[,<num>,<time>]	Response If it is a successful FTP get session: OK If data transfer finished. +FTPGETTOFS: 0,<totalLength> If it is a failed FTP get session: OK +FTPGETTOFS: <error>
Read Command AT+ FTPGETTOFS?	Response +FTPGETTOFS: <status>[,<receivedLength>,<writeLength>]

Test Command	Response
AT+ FTPGETTOFS=?	OK

Field

Parameters	Description
<status>	0 not in the process 1 during the process
<loc>	0 saved in ROM 1 saved in SD card
<filename>	Alphanumeric ASCII text string up to 64 characters
<num>	Number of automatic reconnect times, from 0 to 255. Default value is 3.
<time>	wait time before module start automatic reconnect, from 0 to 60 seconds. Default value is 5 seconds. (when waiting reconnect, will not allow to other upload or download at commands)
<totalLength>	The total length of data bytes have been saved
Notify	File will be overwritten if you start this function twice with a same file name. All local file will save in path Z:\FTP_DOWNLOAD

Example:

Commands	Response
at+ftpgettofs=0, "aa.txt"	OK +FTPGETTOFS: 0,174125

18.23 AT+FTPPUTFRMFS Upload File from File System.

The command is used to upload File from File System.

Format

Write Command	Response
AT+FTPPUTFR MFS=<filename>[,<num>,<time>]	If it is a successful FTP put session: OK If data transfer finished. +FTPPUTFRMFS: 0,<totalLength> If it is a failed FTP put session: OK +FTPPUTFRMFS: <error>
Read Command AT+ FTTPUTFRMFS?	Response +FTPPUTFRMFS: <status>[,<putLength>] OK
Test Command AT+ FTTPUTFRMFS =?	Response OK

Field

Parameters	Description
<filename>	Alphanumeric ASCII text string up to 64 characters
<putLength>	the data length uploaded from File System
<num>	Number of automatic reconnect times, from 0 to 255. Default value is 3.
<time>	wait time before module start automatic reconnect, from 0 to 60seconds. Default value is 5 seconds. (when waiting reconnect, will not allow to other upload or download at commands)
<totalLength>	the data length uploaded from File System

Example:

Commands	Response
----------	----------

AT+FTPPUTFRMFS= "deng1.txt"	OK +FTPPUTFRMFS: 0,552
--	---------------------------

18.24 AT+FTPEXTGET Extend Download File.

The command is used to extend Download File.

Format

Write Command	Response
1)if mode is 0 or 1 AT+FTPEXTGET=<mode>	If mode is 0 OK If it is a successful FTP get session in mode 1: OK
2)if mode is 2 AT+FTPEXTGET=<mode>,<filename>	If data transfer finished in mode 1 +FTPEXTGET: 1,0 If it is a failed FTP get session in mode 1: OK
3)if mode is 3 AT+FTPEXTGET=<mode>,<readPosition>,<readLength >	+FTPEXTGET: 1,<error> If mode is 2: +FTPEXTGET: 2,<totalLength> OK If mode is 3: +FTPEXTGET: 3,<outputLength>
Read Command AT+ FTTPUTFRMFS?	Response +FTPPUTFRMFS: <status>[,<putLength>] OK
Test Command AT+ FTTPUTFRMFS =?	Response OK

Field

Parameters	Description
<mode>	0 use default FTPGET method 1 start extend FTPGET method 2 save download data to filesystem 3 output download data

<filename>	file name to write data in mode 2. Alphanumeric ASCII text string up to 64 characters.
<readPosition>	position start read data in mode 3.
<readLength>	read length in mode 3
<totalLength>	The total length of data bytes have been download
<outputLength>	total length will be output from serial port
timeout	75 seconds
Notify	Can not use this function when set FTPEXTPUT mode 1

Example:

Commands	Response
AT+FTPEXTGET=1	OK
AT+FTPEXTGET?	+FTPEXTGET: 1,1123 OK
	+FTPEXTGET: 1,0
AT+FTPEXTGET=2,"addf.txt"	+FTPEXTGET: 2,3222
AT+FTPEXTGET=3,0,3222	..... (output data) OK
AT+FTPEXTGET=0	OK

18.25 AT+FTPEXTPUT Extend Upload File.

The command is used to Extend Upload File.

Format

Write Command	Response
AT+FTPEXTPUT=<mode>[,<pos>,<len>,<timeout>]	If mode is 0 or 1 OK If mode is 2 +FTPEXTPUT: <pos>,<len>

Read Command AT+ FTTPUTFRMFS?	Response +FTTPUTFRMFS: <status>[,<putLength>] OK
Test Command AT+ FTTPUTFRMFS =?	Response OK

Field

Parameters	Description
<mode>	0 use default FTTPUT method 1 use extend FTTPUT method 2 download data which need to PUT to RAM
<pos>	data offset address 0-100k
<len>	data length 0-100k
<timeout>	timeout value of serial port 1000ms-1000000ms
Notify	When extend FTTPUT mode is activated, input data then execute “AT+FTTPUT=1” to transmit, after session is complete, if successful, it returns “+FTTPUT: 1,0”, otherwise it returns “+FTTPUT: 1,<error>”,<error> see “AT+FTPGET”. Can not use this function when set FTPFILEPUT and FTPEXTGET mode 1

Example:

Commands	Response
AT+FTPEXTPUT=1	OK
AT+FTPEXTPUT=2,0,10024,10 0000	2,0,1024,10000
.....(input data must up to 10024)	OK

AT+FTPPUT=1	OK +FTPPUT: 1,0
AT+FTPEXTPUT=0	OK

18.26 AT+FTPFILEPUT Load File in RAM from File System then Upload with FTPPUT.

The command is used to Load File in RAM from File System then Upload with FTPPUT.

Format

Write Command AT+FTPFILEPUT=<mode>[,filename]	Response OK
Read Command AT+ FTPPUTFRMFS?	Response +FTPPUTFRMFS: <status>[,<putLength>] OK
Test Command AT+ FTPPUTFRMFS =?	Response OK

Field

Parameters	Description
<mode>	0 not use FTPFILEPUT method 1 use FTPFILEPUT method
<filename>	file name to write data in mode 1. Alphanumeric ASCII text string up to 64 characters.
Notify	Can not use this function when set FTPEXTPUT and FTPEXTGET mode 1

Example:

Commands	Response
AT+FTPFILEPUT=1,"ni.txt"	OK
AT+FTPPUT=1	OK
	+FTPPUT: 1,0
AT+FTPFILEPUT=0	OK

18.27 AT+FTPQUIT Quit Current FTP Session

The command is used to quit Current FTP Session

Format

Execution Command	Response
AT+ FTPQUIT	OK +FTPGET: 1,86
Test Command	Response
AT+ FTPQUIT=?	OK

Example:

Commands	Response
AT+ FTPQUIT	OK +FTPGET: 1,86

18.28 AT+SAPBR Set the info about ftp and active ftp pdp

context

The command is used to set the info about ftp and active ftp pdp context

Format

Write Command	Response
AT+SAPBR=<cmd_type>,<cid>[,<ConParamTag>,<ConParamValue>]	OK If <cmd_type> = 2 +SAPBR: <cid>,<Status>,<IP_Addr> OK If <cmd_type>=4 +SAPBR: <ConParamTag>,<ConParamValue> OK
Read Command	Response
AT+ SAPBR?	+ SAPBR: <value> OK
Test Command	Response
AT+ SAPBR =?	OK

Field

Parameters	Description
<cmd_type>	0 Close bearer 1 Open bearer 2 Query bearer 3 Set bearer parameters 4 Get bearer parameters
<cid>	Bearer profile identifier
<Status>	0 Bearer is connecting 1 Bearer is connected 2 Bearer is closing 3 Bearer is closed
<ConParamTag>	"CONTYPE" Type of Internet connection. Value refer to

<ConParamValue_ConType> >	"APN" Access point name string: maximum 64 characters "USER" User name string: maximum 32 characters "PWD" Password string: maximum 32 characters "PHONENUM" Phone number for CSD call "RATE" CSD connection rate. For value refer to <ConParamValue_Rate>
<ConParamValue_Rate>	0 2400 1 4800 2 9600 3 14400
<IP_Addr>	The IP address of bearer

Example:

Commands	Response
at+sapbr=3,1,"apn","cmnet" "	OK
at+sapbr=1,1	OK

19 TTS AT Command

These commands are supported only on L206D project.

19.1 AT+CTTS - TTS Operation

19.1.1 Description

The command is used to broadcast text .

19.1.2 Format

Write Command	Response
AT+CTTS=<mode>[,<test>]	If<mode>=0, response OK If<mode>=1 or 2, response: OK +CTTS:0 //speech player over If error is related to MS functionality, response: +CME ERROR:<err>
Reference	Note Call setup will stop the current tts play TTS can play in call, but call release will stop the tts play TTS play is not allowed when alert or ring The feature is supported by L206D only.

19.1.3 Field

Parameters	Description
------------	-------------

<mode>	0 stop broadcast speech 1 Start to play synthetic speech, <text> is in UCS2 coding forma 2 Start to play synthetic speech, <text> is in ASCII coding format Chinese text is in GBK coding format
<text>	The text which is synthetized to speech to be played, maximum data length is 956 Bytes

19.2 AT+CTTSPARAM – Set Parameters of the TTS Playing

19.2.1 Description

Set Parameters of the TTS Playing.

19.2.2 Format

Write Command AT+CTTSPARAM=<volume>,<mode>,<pitch>,<speed>[,<channel>]	Response OK If error is related to MS functionality, response: +CME ERROR: <err>
Read Command AT+CTTSPARAM?	Response +CTTSPARAM: <volume>,<mode>,<pitch>,<speed>,<channel> OK
Test Command AT+CTTSPARAM=?	Response +CTTSPARAM: (0-100),(0-3),(1-100),(1-100),(0,1) OK
Reference	Note TTS play channel setting take no effect in call. TTS play channel depend on CHFA when in call. The default value of parameter <channel> is different among SIM800 series projects, please refer to chapter 21 for details. The feature is supported by L206D only

19.2.3 Field

Parameters	Description
<volume>	TTS playing volume, the range is 0-100,the default is 50
<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>	TTS playing pitch, the range is 1-100,the default is <u>50</u> .
<speed>	TTS playing speed, the range is 1-100,the default is <u>50</u>
<channel>	<u>0</u> main channel 1 aux channel Parameter Saving

20 LBS AT Command

20.1 AT+GTPOS Get LBS

Get the base station location information

20.1.1 Format

Execution Command AT+GTPOS	Response +GTPOS: Longitude, Latitude,value\$ OK OR +GTPOS: <status>
Write Command AT+GTPOS=<mode>	Response mode=0 OK/ERROR mode=1 OK CONNECT OK or ERROR mode=2 +GTPOS: Longitude, Latitude,value\$ OK or ERROR mode =3 +GTPOS: Longitude, Latitude,value\$ OK or ERROR
Reference	Note Note: using LBS will take up a network channel, if you use the TCPIP protocol, please pay attention do not use the same channel; default LBS use channel 4.

20.1.2 Field

Parameters	Description
< Longitude >	string type Longitude

< Latitude >	string type Latitude
< value\$>	Parity bit; odd parity check, the current number of odd numbers is even return 0, odd number is 1
< mode>	0: closed LBS funtion 1: open LBS function 2: get LBS information 3: access to WIFI base station location information
< status>	-1 : Network busy -2: LBS not ready -3:Network error -4: Network timeout -5:Network unack -6: Network EXISTS

Example 1

Command	Result
AT+CGREG?	+CGREG: 0,1 OK
AT+CSSTT="CMNET"	OK
AT+CIICR	10.85.182.45 OK
AT+ZIPIND=4	OK
AT+GTPOS	+GTPOS: 121.3955545,31.1560099,0\$ OK
AT+CIPSHUT	OK

Example 2

Command	Result
AT+CGREG?	+CGREG: 0,1 OK
AT+CSSTT="CMNET"	OK
AT+CIICR	10.85.182.45 OK
AT+ZIPIND=4	OK
AT+GTPOS=1	OK CONNECT OK

AT+GTPOS=2	+GTPOS: 121.396055,31.162621,0\$ OK
AT+CIPSHUT	OK

20.2 AT+ZIPIND Set channel

Set LBS channel,default 4.

20.2.1 Format

Read Command	Response
AT+ZIPIND?	+ZIPIND:channel,id OK
Write Command	Response
AT+ZIPIND=<channel>	OK /ERROR

20.2.2 Field

Parameters	Description
< channel >	Network channel (0-5),default 4
< id >	Network ID

Example 1

Command	Result
AT+ZIPIND?	+ZIPIND: 4,-1 OK
AT+ZIPIND=4	OK