

CM 800A

AT command Interface Specification

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Contents

1. GENERAL COMMANDS.....	8
1.1. REQUEST REVISION IDENTIFICATION +CGMR.....	8
1.2. PRODUCT SERIAL NUMBER +CGSN	8
1.3. SELECT TE CHARACTER SET +CSCS : NOT SUPPORT	8
1.4. REQUEST IMSI +CIMI	8
1.5. CAPABILITIES LIST +GCAP	8
1.6. REPEAT LAST COMMAND A/	9
1.7. PHONE OFFLINE +CPOF.....	9
1.8. SET PHONE FUNCTIONALITY +CFUN.....	9
1.9. PHONE ACTIVITY STATUS +CPAS	9
1.10. REPORT MOBILE EQUIPMENT ERRORS +CMEE.....	10
1.11. KEYPAD CONTROL +CKPD.....	10
1.12. CLOCK MANAGEMENT +CCLK	10
1.13. RING MELODY PLAYBACK +CRMP	11
1.14. RINGER SOUND LEVEL +CRSL	12
1.15. SUBSCRIBER NUMBER +CNUM.....	12
1.16. SELECT TYPE OF ADDRESS +CSTA	12
1.17. VIEW MODULE TIMERS +WTMR	13
2. CALL CONTROL COMMANDS	13
2.1. DIAL COMMAND D	13
2.2. HANG-UP COMMAND H	15
2.3. ANSWER A CALL A	15
2.4. REMOTE DISCONNECTION.....	15
2.5. EXTENDED ERROR REPORT +CEER.....	16
2.6. DTMF SIGNALS +VTD, +VTS	16
2.7. DTMF START AND STOP CONTINUOUS +WSDT, +WSDS	17
2.8. REDIAL LAST TELEPHONE NUMBER ATDL	17
2.9. AUTOMATIC ANSWER ATSO	18
2.10. INCOMING CALL BEARER +CICB	18
2.11. SINGLE NUMBERING SCHEME +CSNS	18
2.12. MICROPHONE GAIN +VGT	19
2.13. VOLUME GAIN CONTROL +VGR	20
2.14. MICROPHONE MUTE CONTROL +CMUT	20
2.15. SPEAKER & MICROPHONE SELECTION +SPEAKER.....	21
2.16. ECHO CANCELLATION +ECHO.....	21
2.17. SIDE TONE MODIFICATION +SIDET.....	22
2.18. INITIALIZE VOICE PARAMETERS +VIP	22
2.19. CALL FORWARDING SERVICE CODE SET +CCFSC	22
2.20. CALL WAITING SERVICE CODE SET +CCWCS	23
2.21. CLI RESTRICTION CODE SET +CCLIRS.....	23
2.22. CALL FORWARDING MODE SET +CCFMS.....	24
2.23. CALL WAITING MODE SET +CCWS.....	24
3. NETWORK SERVICE COMMANDS	25
3.1. SIGNAL QUALITY +CSQ.....	25
3.2. MODE PREFERENCE +COPS	25

3.3.	ROAM PREFERENCE +WRMP	26
3.4.	NETWORK REGISTRATION & ROAMING +CREG	27
3.5.	CHANGE NAM SELECTION +WNAM	28
3.6.	READ CURRENT NAM +WCNM	28
4.	<u>SECURITY COMMANDS.....</u>	29
4.1.	ENTER PIN +CPIN	29
4.2.	ENTER PIN2 +CPIN2	29
4.3.	PIN REMAINING ATTEMPT NUMBER +CPINC	30
4.4.	FACILITY LOCK +CLCK	30
4.5.	CHANGE PASSWORD +CPWD	31
5.	<u>SHORT MESSAGES COMMANDS.....</u>	31
5.1.	PARAMETERS DEFINITION	31
5.2.	PREFERRED MESSAGE STORAGE +CPMS	32
5.3.	NEW MESSAGE INDICATION +CNMI	33
5.4.	READ MESSAGE +CMGR	34
5.5.	LIST MESSAGE +CMGL	35
5.6.	SEND MESSAGE +CMGS	36
5.7.	DELETE MESSAGE +CMGD	37
5.8.	SET SMS COMPOSE LANGUAGE AND ENCODING +WSCL	38
5.9.	WRITE MESSAGE TO MEMORY +CMGW	39
5.10.	SEND MESSAGE FROM STORAGE +CMSS	40
6.	<u>SUPPLEMENTARY SERVICES COMMANDS.....</u>	40
6.1.	CALL FORWARDING +CCFC	40
6.2.	(RESERVED).....	41
6.3.	CALLING LINE IDENTIFICATION RESTRICTION +CLIR.....	41
6.4.	CALLING LINE IDENTIFICATION PRESENTATION +CLIP	41
6.5.	SEND FLASH TO BASE STATION +WFSH.....	42
6.6.	LIST CURRENT CALL STATE +CLCC.....	43
7.	<u>DATA COMMANDS.....</u>	44
7.1.	SELECT MODE +FCLASS	44
7.2.	CELLULAR RESULT CODES +CRC	44
7.3.	V42 BIS DATA COMPRESSION +DS.....	45
7.4.	V42 BIS DATA COMPRESSION REPORT +DR.....	45
8.	<u>V24-V25 COMMANDS.....</u>	46
8.1.	FIXED DTE RATE +IPR	46
8.2.	DTE-DCE CHARACTER FRAMING +ICF	46
8.3.	DTE-DCE LOCAL FLOW CONTROL +IFC	47
8.4.	SET DCD SIGNAL &C	47
8.5.	SET DTR SIGNAL &D	47
8.6.	BACK TO ONLINE MODE O	48
8.7.	RESULT CODE SUPPRESSION Q.....	48

8.8.	DCE RESPONSE FORMAT V	48
8.9.	ECHO E.....	49
8.10.	DISPLAY CONFIGURATION &V	49
8.11.	RESTORE FACTORY SETTING &F	49
8.12.	SAVE CONFIGURATION &W	50
9.	<u>PHONE BOOK COMMANDS.....</u>	50
9.1.	SELECT PHONE BOOK MEMORY STORAGE +CPBS	50
9.2.	RETURN SELECTED PHONEBOOK LOCATIONS +CPBU	50
9.3.	FIND PHONEBOOK ENTRIES +CPBF	51
9.4.	WRITE PHONEBOOK ENTRY +CPBW	51
9.5.	PHONEBOOK READ +CPBR.....	52
9.6.	PHONEBOOK SEARCH +CPBP.....	52
9.7.	AVOID PHONEBOOK INIT +WAIP	53
9.8.	DELETE CALLS FROM PHONEBOOK +WDCP	53
10.	<u>POSITION DETERMINATION (GPS) AT COMMANDS.....</u>	53
10.1.	POSITION DETERMINATION SESSION TYPE +WPDST	54
10.2.	POSITION DETERMINATION OPERATING MODE +WPDOM.....	54
10.3.	POSITION DETERMINATION DATA DOWNLOAD +WPDDD	54
10.4.	POSITION DETERMINATION FIX RATE +WPDFR.....	55
10.5.	POSITION DETERMINATION PRIVACY LEVEL +WPDPL	55
10.6.	POSITION DETERMINATION START SESSION +WPDSS.....	55
10.7.	POSITION DETERMINATION END SESSION +WPDES	56
10.8.	POSITION DETERMINATION START SESSION RESULT +WPDSS.....	56
10.9.	PACKET DIAL STRING +GPDS	57
10.10.	PPP AUTHENTICATION PROTOCOL ID +GPAPID.....	58
10.11.	PPP AUTHENTICATION PROTOCOL PASSWORD +GPAPPWD.....	58
10.12.	MPC SERVER IP +GMPCIP	58
10.13.	MPC SERVER PORT +GMPCPORT	58
10.14.	OPEN NETWORK LIBRARY +GNETLIB.....	59
10.15.	MAKE PPP DATA CALL +GPPP	59
10.16.	CREATE TCP SOCKET FOR CONNECTION TO MPC +GSOCK	60
10.17.	CONNECTION TO MPC +GCONN	60
10.18.	PDE SERVER IP +GPDEIP	61
10.19.	PDE SERVER PORT +GPDEPORT.....	61
10.20.	NMEA-0183 MESSAGE SUPPORT +GNMEA0183.....	62
10.21.	EXAMPLE.....	62
11.	<u>SIMPLESOCKET INTERFACE AT COMMANDS</u>	63
11.1.	SIMPLESOCKET SERVER IP +GSIP	63
11.2.	SIMPLESOCKET SERVER PORT +GSPORT	63
11.3.	CREATE TCP SOCKET FOR CONNECTION TO SIMPLESOCKET SERVER +GSSOCK.....	63
11.4.	CONNECTION TO SIMPLESOCKET SERVER +GSCONN.....	64
11.5.	WRITE DATA TO SIMPLESOCKET +GSWRITE.....	64
11.6.	READ DATA FROM SIMPLESOCKET +GSREAD	65
11.7.	EXAMPLE.....	65
12.	<u>SPECIFIC AT COMMANDS</u>	66

12.1.	MANUFACTURER IDENTIFICATION +WGMI.....	66
12.2.	REQUEST MODEL IDENTIFICATION +WGMM	66
12.3.	CELL ENVIRONMENT DESCRIPTION +CCED	66
12.4.	AUTOMATIC RXLEV INDICATION +CCED	67
12.5.	GENERAL INDICATIONS +WIND.....	68
12.6.	ANALOG DIGITAL CONVERTERS MEASUREMENTS +ADC	69
12.7.	MOBILE EQUIPMENT EVENT REPORTING +CMER	69
12.8.	READ GPIO VALUE +WIOR	69
12.9.	WRITE GPIO VALUE +WLOW	70
12.10.	PLAY TONE +WTONE	70
12.11.	PLAY DTMF TONE +WDTMF	71
12.12.	HARDWARE VERSION +WHWV	71
12.13.	GIGA SELECT VOICE GAIN +WSVG.....	72
12.14.	GIGA STATUS REQUEST +WSTR.....	72
12.15.	GIGA RING INDICATOR MODE +WRIM	73
12.16.	GIGA 32KHz SLEEP MODE +W32K.....	73
12.17.	GIGA CHANGE DEFAULT MELODY +WCDM	74
12.18.	GIGA SOFTWARE VERSION +WSSW	74
12.19.	GIGA CUSTOM CHARACTER SET +WCCS : NOT SUPPORT	75
12.20.	GIGA CHANGE DEFAULT PLAYER +WCDP	75
12.21.	GIGA RESET +WRST	75
12.22.	SET STANDARD TONE +WSST	76
12.23.	SET VOICE PRIVACY LEVEL +WPRV	76
12.24.	SECURITY PIN +WPIN	77
12.25.	REQUEST PRL VERSION INFORMATION +WPRL.....	77
12.26.	VIBRATOR ON/OFF +VIBR	78
12.27.	SET ALERT TYPE +SALT.....	78
13.	<u>SIM TOOLKIT</u>	<u>79</u>
13.1.	OVERVIEW OF SIM APPLICATION TOOLKIT	79
13.2.	SIM TOOLKIT SET FACILITIES (+STSF)	80
13.3.	SIM TOOLKIT INDICATION (+STIN)	81
13.4.	SIM TOOLKIT GET INFORMATION (+STGI).....	82
13.5.	UNSOLICITED RESULT : SIM TOOLKIT CONTROL RESPONSE (+STCR)	86
13.6.	SIM TOOLKIT GIVE RESPONSE (+STGR).....	86
14.	<u>PROVISIONING AT COMMANDS</u>	<u>89</u>
14.1.	SERVICE PROGRAMMING CODE +WSPC.....	89
14.2.	MOBILE DIRECTORY NUMBER +WMDN	89
14.3.	SET IMSI_M +WIMI	90
14.4.	SID AND NID +WSID.....	90
14.5.	ACCESS OVERLOAD CLASS +WAOC	90
14.6.	SLOT CYCLE INDEX +WSCI	90
14.7.	PACKET DIAL STRING +WPDS	91
14.8.	PRIMARY CDMA CHANNELS +WPCC.....	91
14.9.	SECONDARY CDMA CHANNELS +WSCC.....	91
14.10.	SERVICE OPTION MANAGEMENT +WSOM	91
14.11.	COMMIT CHANGES +WCMT.....	92
14.12.	SERVICE PROGRAMMING EXAMPLE.....	92
15.	<u>EXTENDED AT COMMANDS IN IS707.3.....</u>	<u>93</u>

15.1.	REMOTE ASYNC/FAX COMMAND X	93
15.2.	RESET TO DEFAULT CONFIGURATION Z0	93
15.3.	SELECT TONE DIALING T	94
15.4.	SELECT PULSE DIALING P	94
15.5.	BASIC S-REGISTERS ATS<X>	94
15.6.	ERROR CONTROL OPERATION +EB	95
15.7.	NUMERIC PARAMETER CONTROL +EFCS	95
15.8.	ERROR CONTROL REPORT +ER	96
15.9.	ERROR CONTROL SELECTION +ES	96
15.10.	ERROR CONTROL SELECTION +ESR	97
15.11.	ERROR CONTROL SELECTION +ETBM	97
15.12.	REQUEST MANUFACTURE IDENTIFICATION +GMI	98
15.13.	REQUEST MANUFACTURE IDENTIFICATION +GMM	98
15.14.	REQUEST REVISION IDENTIFICATION +GMR	98
15.15.	REQUEST PRODUCT SERIAL NUMBER IDENTIFICATION +GSN	99
15.16.	REQUEST GLOBAL OBJECT IDENTIFICATION +GOI	99
15.17.	MODULATION SELECTION +MS	99
15.18.	MODULATION AUTOMODE CONTROL +MA	100
15.19.	MODULATION REPORTING CONTROL +MR	100
15.20.	V.18 REPORTING CONTROL +MV18R	100
15.21.	V.18 SELECTION +MV18S	101
15.22.	CELLULAR EXTENSION +CXT	101
15.23.	CONFIGURATION STRING +CFG	102
15.24.	QUERY SERVICE +CAD ?	102
15.25.	UM INTERFACE DATA COMPRESSION REPORTING +CDR	103
15.26.	UM INTERFACE DATA COMPRESSION +CDS	103
15.27.	SET RM INTERFACE PROTOCOL +CRM	103
15.28.	BATTERY CHARGE +CBC ?	104
15.29.	COMMAND STATE INACTIVITY TIMER +CQD	104
15.30.	MOBILE STATION IP ADDRESS +CMIP?	105
15.31.	BASE STATION IP ADDRESS +CBIP ?	105
15.32.	SERVING SYSTEM +CSS ?	105
15.33.	SELECT MULTIPLEX OPTION +CMUX	106
15.34.	UM INTERFACE FAX COMPRESSION +CFC	106
15.35.	HANG-UP VOICE +CHV	106
15.36.	DIAL COMMAND FOR VOICE CALLS +CDV	107
15.37.	UM PACKET DATA INACTIVITY TIMER +CTA	107
16.	<u>QUALCOMM DEFINED AT COMMANDS FOR CDMA OPERATION.....</u>	107
16.1.	TRANSITION TO DIAGNOSTICS MONITOR \$QCDMG	107
16.2.	QUICK NET CONNECT \$QCQNC.....	108
16.3.	PROTOCOL REVISION IN USE \$QCPREV	108
16.4.	DUMP RLP PROTOCOL STATISTICS \$QCRLPD	109
16.5.	RESET RLP PROTOCOL STATISTICS \$QCRLPR	109
16.6.	DUMP PPP PROTOCOL STATISTICS \$QCPPPD	109
16.7.	RESET PPP PROTOCOL STATISTICS \$QCPPPR	110
16.8.	DUMP IP PROTOCOL STATISTICS \$QCIPD	110
16.9.	RESET IP PROTOCOL STATISTICS \$QCIPR	110
16.10.	DUMP UDP PROTOCOL STATISTICS \$QCUDPD.....	110
16.11.	RESET UDP PROTOCOL STATISTICS \$QCUDPR.....	111
16.12.	DUMP TCP PROTOCOL STATISTICS \$QCTCPD	111
16.13.	RESET TCP PROTOCOL STATISTICS \$QCTCPR	111
16.14.	SET DATA SERVICE OPTION \$QCSO	112

16.15.	CLEAR MOBILE ERROR LOG \$QCCLR	112
16.16.	ANSWER INCOMING VOICE CALL \$QCCAV	112
16.17.	AUTOMATIC PACKET DETECTION \$QCPKND.....	113
16.18.	PREARRANGEMENT SETTING \$QCVAD	113
16.19.	SET DM BAUD RATE \$QCDMR	114
16.20.	SET MEDIUM DATA RATE \$QCMDR	114
16.21.	DUMP RLP 3 PROTOCOL STATISTICS \$QCRL3D.....	115
16.22.	RESET RLP 3 PROTOCOL STATISTICS \$QCRL3R	115
16.23.	SCRM'ING SELECTION \$QCSCRM.....	115
16.24.	R-SCH SELECTION \$QCTRTL	116
17.	<u>UNSOLICITED AT RESULT CODES</u>	<u>116</u>
17.1.	CELL ENVIRONMENT DESCRIPTION INDICATION +CCED	116
17.2.	CALL WAITING INDICATION +CCWA	116
17.3.	KEY PRESS OR RELEASE +CKEV.....	117
17.4.	CALLER ID PRESENTATION +CLIP.....	117
17.5.	INCOMING MESSAGE DIRECTLY DISPLAYED +CMT.....	117
17.6.	INCOMING MESSAGE STORED IN MEMORY +CMTI	117
17.7.	MODE PREFERENCE +COPS	118
17.8.	REGISTRATION & ROAMING +CREG	118
17.9.	INCOMING CALL +CRING.....	118
17.10.	AUTOMATIC RXLEV INDICATION +CSQ.....	119
17.11.	INCOMING CALL RING	119
17.12.	CALL ANSWERED +WANS	119
17.13.	CALL CONNECTED +WCNT	120
17.14.	CALL ENDED +WEND.....	120
17.15.	FEATURE NOTIFICATION MESSAGE +WFNM	121
17.16.	GIGA GENERAL INDICATOR +WIND	121
17.17.	CALL ORIGINATED +WORG	121
17.18.	CALL PRIVACY INDICATION +WPRV	121
17.19.	ROAMING INDICATION +WROM.....	122
17.20.	CURRENT NAM CHANGE +WNAM.....	122
17.21.	GIGA VOICE MAIL INDICATOR +WVMI.....	122
17.22.	SMS MESSAGE STORAGE FULL +WMGF	123
17.23.	SMS STATUS REPORT INDICATION DIRECT DISPLAYED +CDS.....	123
18.	<u>APPENDICES.....</u>	<u>123</u>
18.1.	MS ERROR RESULT CODE : +CME ERROR: <ERROR>.....	123
18.2.	MESSAGE SERVICE FAILURE RESULT CODE: +CMS ERROR : <ERROR>	124
18.3.	EXTENDED ERROR REPORT (+CEER) CALL PROCESSING CODES.....	124
18.4.	PARAMETERS STORAGE	125

1. GENERAL COMMANDS

1.1. Request revision identification +CGMR

1.1.1. Description:

This command is used to get the revised software version.

1.1.2. Syntax:

Command Syntax AT+CGMR

Command	Possible responses
AT+CGMR <i>Note: Get software version</i>	+CGMR: S/W VER: 58.00.00.03 Jun 30 2003 OK <i>Note: Software Version 58.00.00.03, generated on the June 30th, 2003</i>

1.2. Product Serial Number +CGSN

1.2.1. Description:

This command allows the user application to get the ESN of the product.

1.2.2. Syntax:

Command Syntax AT+CGSN

Command	Possible responses
AT+CGSN <i>Note: Get the ESN</i>	+CGSN: FE7A7704 OK <i>Note: ESN read from NV</i>

1.3. Select TE character set +CSCS : NOT SUPPORT

1.3.1. Description:

NOT SUPPORT

1.4. Request IMSI +CIMI

1.4.1. Description:

This command is used to read and identify the IMSI (International Mobile Subscriber Identity) of the SIM card. The PIN may need to be entered before reading the IMSI.

1.4.2. Syntax:

Command Syntax AT+CIMI

Command	Possible responses
AT+CIMI <i>Note: Read the IMSI</i>	+CIMI: 310008585551212 OK <i>Note: IMSI value (15 digits)</i>

1.5. Capabilities list +GCAP

1.5.1. Description:

This command gets the complete list of capabilities.

1.5.2. Syntax:

Command Syntax AT+GCAP

Command	Possible responses
AT+GCAP <i>Note: Get capabilities list</i>	+GCAP: +CIS707-A, +MS, +ES, +DS, +FCLASS OK

1.6. Repeat last command A/

1.6.1. Description

This command repeats the previous command. Only the A/ command itself cannot be repeated.

1.6.2. Syntax:

Command Syntax A/

Command	Possible responses
A/ <i>Note: Repeat last command</i>	

1.7. Phone Offline +CPOF

1.7.1. Description:

This specific command sends all CDMA software stack tasks offline. AT command can still be received, however, there is no RF functionality. The AT+CFUN=0 command is equivalent to +CPOF.

1.7.2. Syntax:

Command Syntax AT+CPOF

Command	Possible responses
AT+CPOF <i>Note: Stop CDMA stack</i>	+CPOF: OK <i>Note: Command valid</i>

1.8. Set phone functionality +CFUN

1.8.1. Description:

This command selects the mobile station's level of functionality. AT+CFUN=0 is equivalent to AT+CPOF

The AT+CFUN=1 (by default, AT+CFUN will act the same as AT+CFUN=1) command restarts the entire CDMA stack and CDMA functionality: a complete software reset is performed. In addition, the OK response will be sent at the last baud rate defined by the +IPR command.

1.8.2. Syntax:

Command Syntax AT+CFUN=<functionality level>

Command	Possible responses
AT+CFUN? <i>Note: Ask for current functionality level</i>	+CFUN: 1 OK <i>Note: Full functionality</i>
AT+CFUN=0 <i>Note: Set phone offline</i>	OK <i>Note: Command valid</i>
AT+CFUN=1 <i>Note: Perform software reset</i>	<i>Note: Command valid</i>

1.9. Phone activity status +CPAS

1.9.1. Description:

This command returns the activity status of the mobile equipment.

1.9.2. Syntax:

Command Syntax AT+CPAS

Command	Possible responses
AT+CPAS <i>Note: Current activity status</i>	+CPAS: <pas> OK

1.9.3. Defined values :

<pas>

- 0: ready (allow commands from TA/TE)
- 1: unavailable (does not allow commands)
- 2: unknown
- 3: ringing (ringer is active)
- 4: call in progress
- 5: asleep (low functionality)

1.10. Report Mobile Equipment errors +CMEE

1.10.1. Description:

This command disables or enables the use of the “+CME ERROR : <xxx>” or “+CMS ERROR :<xxx>” result code instead of simply “ERROR”. See section 17.1 for +CME ERROR result codes description and section 17.2 for +CMS ERROR result codes.

Command Syntax AT+CMEE=<error reporting flag>

Command	Possible responses
AT+CMEE=0 <i>Note: Disable MS error reports, use only « ERROR »</i>	OK
AT+CMEE=1 <i>Note: Enable « +CME ERROR: <xxx> » or « +CMS ERROR: <xxx> »</i>	OK

1.11. Keypad control +CKPD

1.11.1. Description:

This command emulates the MS keypad by sending each keystroke as a character in a <keys> string. If emulation fails, a +CME ERROR: <err> is returned.

If emulation succeeds, the result depends on the CDMA sequence activated:

<keys>: string of the following characters (0-9,*,#).

1.11.2. Syntax:

Command Syntax AT+CKPD=<keys>

Command	Possible responses
AT+CKPD="*#21#" <i>Note: Key sequence allowed</i>	OK
AT+CKPD=1234 <i>Note: Sequence not allowed</i>	+CME ERROR 3

1.12. Clock Management +CCLK

1.12.1. Description:

This command is used to set or get the current date and time of the MS real time clock.

String format for date/time is: “yy/MM/dd, hh:mm:ss”.

Valid years are 80 (for 1980) to 97 (for 2097). The seconds field is not mandatory.

Default date/time is “80/01/06,00:00:00” (January 6th, 1980 / midnight).

1.12.2. Syntax:

Command Syntax **AT+CCLK=<date and time string>**

Command	Possible responses
AT+CCLK="00/06/09,17:33:00" <i>Note: set date to June 9th, 2000, and time to 5:33pm</i>	OK or ERROR <i>Note: Date/Time stored – ERROR returned when RTC not enabled.</i>
AT+CCLK="00/13/13,12:00:00" <i>Note: Incorrect month entered</i>	+CME ERROR 3
AT+CCLK? <i>Note: Get current date and time</i>	+CCLK: "00/06/09,17:34:23" <i>Note: current date is June 9th, 2000 current time is 5:34:23 pm – network time if available, otherwise RTC time if enabled.</i>

1.13. Ring Melody Playback +CRMP

1.13.1. Description:

This command allows a melody to be played. All melodies are manufacturer defined. Ten manufacturer-defined melodies can be played back (in a loop).

Note:

Loop melodies must be stopped by a +CRMP command with the <index> field set to 0 (example: +CRMP=0,,0).

When the +CRMP command is performed, the <volume> parameter overwrites the <sound level> value of the +CRSL command.

1.13.2. Syntax:

Command Syntax **AT+CRMP=<call type>[,<volume>,<type>,<index>]**

Command	Possible responses
AT+CRMP=0,2,0,2 <i>Note: Play voice call melody index 2 with volume level 2.</i>	OK <i>Note: Melody Playback.</i>
AT+CRMP=0,,0 <i>Note: Stop the melody.</i>	OK <i>Note: The melody is stopped.</i>
AT+CRMP=? <i>Note: supported parameters</i>	+CRMP: (0-3),(0-4),(0-0),(0-10) OK

1.13.3. Defined values :

<call type>

- 0: Incoming voice call
- 1: Incoming data call
- 2: Incoming fax call
- 3: Incoming short message (SMS)

<volume>

- 0: Min volume (mute)
- ...
- 1: Default volume
- 4: Max volume

<type>

- 0: Manufacturer Defined (default)

<index>

- 0: Stop Melody Playback

1~10: Melody ID for voice/data/fax call type (default : 1)

1.14. Ringer Sound Level +CRSL

1.14.1. Description:

This command is used to set/get the sound level of the ringer on incoming calls.

1.14.2. Syntax:

Command Syntax AT+CRSL=<sound level>

Command	Possible responses
AT+CRSL=0 <i>Note: Set volume to Min (muted).</i>	OK <i>Note: Current ring playing is muted.</i>
AT+CRSL=4 <i>Note: Set volume to Max.</i>	OK <i>Note: Current ring playing with max. volume.</i>
AT+CRSL? <i>Note: get current ringer sound level</i>	+CRSL: 4 OK <i>Note: Current level is 4</i>
AT+CRSL=? <i>Note: supported parameters</i>	+CRSL: (0-4) OK

1.14.3. Defined values :

<sound level>

- 0: Min volume (muted)
- 1: Default volume (default)
- 4: Max volume

1.15. Subscriber Number +CNUM

1.15.1. Description:

This command is used to return the subscriber MSISDN. If the subscriber has different MSISDNs for different services, each MSISDN is returned in a separate line.

1.15.2. Syntax:

Command Syntax AT+CNUM

Response Syntax + CNUM: <alphax>,<numberx>, <typex>

Command	Possible responses
AT+CNUM <i>Note: Get MSISDN</i>	+CNUM :“Phone”,”8585551212”,129 <i>Note: MSISDNs</i>

1.15.3. Defined values :

- <alphax> optional alphanumeric string associated with <numberx>
- <numberx> string type phone number with format as specified by <typex>
- <typex> type of address byte in integer format – only supports 129

1.16. Select Type of Address +CSTA

1.16.1. Description:

This command is used to select the type of phone address to use.

1.16.2. Syntax:

Command Syntax AT+CSTA=<typex>

Command	Possible responses
AT+CSTA? <i>Note: Get type of address</i>	+CSTA: 129 <i>Note: Local Number format</i>
AT+CSTA=? <i>Note: Get supported address types</i>	+CSTA: (129-129) OK

1.16.3. Defined values :

<typex> type of address byte in integer format – only supports 129

1.17. View Module Timers +WTMR

1.17.1. Description:

This command is used to read the module’s accumulated internal timers. These timers include Uptime, Call Time, and Call Count. Uptime is the number of seconds the module has been running since boot-up. Call Time is the total number of seconds the module has been in a call since manufacture (Voice, Data, Fax, OTASP, and CDMA Test Calls; but SMS is not included). Call count is the total number of calls made since manufacture. The range of all the returned items is 0 to 4294967295 (136 years).

1.17.2. Syntax:

Command Syntax	AT+WTMR
Response Syntax	+WTMR: <Uptime>,<Call Time>,<Call Count>
Command	Possible responses
AT+WTMR <i>Note: See Module Timers</i>	+WTMR: 1029, 45670,289 OK <i>Note: Uptime = 1029 seconds Call Time = 45670 seconds Call Count = 289 calls</i>

2. CALL CONTROL COMMANDS

2.1. Dial command D

2.1.1. Description:

The ATD command is used to originate a voice, data or fax call. The dial command also controls supplementary services.

For a data or a fax call, the application sends the following ASCII string to the product:

ATD<nb> where <nb> is the destination phone number.

Note: ATD<nb> is followed by PPP negotiation.

For a voice call, the application sends the following ASCII string to the product:

ATD<nb>; where <nb> is the dialing string or destination phone number, followed a semicolon “;”. The dialing string may only contain characters “0-9”, “#”, “*” only. Note that some countries may have specific numbering rules for their CDMA handset numbering.

The response to the ATD command is one of the following:

Verbose result code	Numeric code (with ATV0 set)	Description
OK	0	Command executed (voice)
CONNECT <speed>	10,11,12,13,14,15	if the call succeeds, for data calls only, <speed> takes the value negotiated by the product.
BUSY	7	If the called party is already in communication
NO ANSWER	8	If no hang up is detected after a fixed network time-out
NO CARRIER	3	Call setup failed or remote user release.

2.1.2. Syntax:

Command Syntax	ATD<nb>[;]
Command	Possible responses
ATD18005551212; <i>Note: Attempt a voice call.</i>	OK <i>Note: Command executed</i>

	<p>+WORG:18005551212 <i>Note: Voice call origination sent to Base Station with dial string "18005551212".</i> CDMA AT Commands Interface Specification</p> <p>+WCNT: 9 <i>Note: Call Connected, CDMA traffic channel established with service option9. You can now hear audio of the calling party's phone ringing. However, this event does not means the other calling party has answered. See section 14.7 Unsolicited commands.</i></p>
<p>ATD5551212; <i>Note: Example of a failed voice call attempt.</i></p>	<p>OK <i>Note: Command executed</i></p> <p>+WORG:5551212 <i>Note: Voice call origination sent to Base Station with dialing string "5551212".</i></p> <p>+WEND: 3 <i>Note: Call Attempt failed/ended. Reason 3, signal faded. See section 14.7 Unsolicited commands.</i></p>

Direct Dialing from a phonebook (stored in the RUIM card or NV) can be performed with the following command:

ATD<<index>; to call <index> from the selected phonebook (by the +CPBS command)
 ATD>"Bill"; to call "Bill" from the selected phonebook (by the +CPBS command)
 ATD>mem<index>; (mem is a phone book listed by the +CPBS=? Command) and <index> is a valid location from the phonebook

Note: A semicolon must be used at the end of the AT command to signal phonebook dialing. Otherwise, the command will result in error.

2.1.3. Syntax:

Command Syntax
 ATD><index>[;]
 ATD><name>[;]
 ATD>[<mem>]<index>[;]

Command	Possible responses
<p>AT+CPBS? <i>Note: Which phonebook is selected.</i></p>	<p>+CPBS: ME,11,100 OK <i>Note: Command executed</i></p>
<p>ATD>5; <i>Note: Dial location 5 from ME phonebook.</i></p>	<p>OK <i>Note: Command executed</i></p> <p>+WORG:5551212 <i>Note: Voice call origination sent to Base Station with dialing string "5551212".</i></p> <p>+WEND: 3 <i>Note: Call Attempt failed/ended. Reason 3, signal faded. See section 14.7 Unsolicited commands.</i></p>
<p>ATD>SM20; <i>Note: Dial location 20 from the SM(RUIM card) phonebook.</i></p>	<p>OK <i>Note: Command executed</i></p>

	+WORG:5551212 <i>Note: Voice call origination sent to Base Station with dialing string "5551212".</i> +WEND: 3 <i>Note: Call Attempt failed/ended. Reason 3, signal faded. See section 14.7 Unsolicited commands.</i>
ATD>"Bill"; <i>Note: This command is NOT valid for MC, RC, and LD phonebooks as they are supported in CDMA networks</i>	OK <i>Note: Command executed</i> +WORG:5551212

2.2. Hang-Up command H

2.2.1. Description:

The ATH (or ATH0) command is used by the application to disconnect the remote user. In the case of multiple calls, all calls are released (active, on-hold and waiting calls).

The specific GIGA ATH1 command has been appended to disconnect the current outgoing call, only in dialing or alerting state (i.e. ATH1 can be used only after the ATD command, and before its terminal response (OK, NO CARRIER, ...)). It can be useful in the case of multiple calls.

2.2.2. Syntax:

Command Syntax ATH

Command	Possible responses
ATH <i>Note: Ask for disconnection</i>	OK +WEND: 10 <i>Note: Every call, if any, is released</i>
ATH1 <i>Note: Ask for outgoing call disconnection</i>	OK +WEND: 10 <i>Note: Outgoing call, if any, is released</i>

2.3. Answer a call A

2.3.1. Description:

When the product receives a call, it sets the Ringing signal and sends the ASCII "RING" or "+CRING: <type>" string to the application (+CRING if the cellular result code +CRC is enabled). Then it waits for the application to accept the call with the ATA command.

2.3.2. Syntax:

Command Syntax ATA

Command	Possible responses
	RING <i>Note: Incoming call</i>
ATA <i>Note: Answer to this incoming call</i>	+WANS:0 +WCNT: 10 <i>Note: Call accepted</i>
ATH <i>Note: Disconnect call</i>	OK +WEND: 10 <i>Note: Call disconnected</i>

2.4. Remote disconnection

This message is used by the product to inform the application that the remote user has released an active call.

The product sends +WEND:<result code> to the application. The DCD signal may be set based upon the AT&C2 setting for packet calls.

2.5. Extended error report +CEER

2.5.1. Description:

This command gives the cause of any general call processing error or malfunction. See section 17.3.

2.5.2. Syntax:

Command Syntax	AT+CEER
Response Syntax	+CEER: Error <Cause Value>
Command	Possible responses
ATD18005551212;	OK +WORG:18005551212 +WCNT:3
ATD1234567; <i>Note: Outgoing voice call while already in a call</i>	ERROR <i>Note: Call setup failure</i>
AT+CEER	+CEER: Error 2 OK <i>Note: Operation not allowed when call in progress</i>
AT+CEER <i>Note: Ask for reason of release</i>	+CEER : Error <x> OK <i>Note: <x>is the cause information element values</i>

2.6. DTMF signals +VTD, +VTS

2.6.1. +VTD Description:

The product enables the user application to send DTMF tones over the CDMA network. This command is used to define tone duration (the default value is 1,1).

To define this duration, the application uses:

AT+VTD=<on>,<off>

2.6.2. +VTD Syntax:

Command Syntax	AT+VTD=<on>,<off>
Command	Possible responses
AT+VTD=4,3 <i>Note: To define 300 ms on tone duration and 200 ms off tone duration.</i>	OK <i>Note: Command valid</i>
AT+VTD=?	+VTD: (0-5), (0-3) OK

2.6.3. +VTD Defined values :

<on> on tone duration

- 0: 95 milliseconds
- 1: 150 milliseconds
- 2: 200 milliseconds
- 3: 250 milliseconds
- 4: 300 milliseconds
- 5: 350 milliseconds

<off> off tone duration

- 0: 60 milliseconds
- 1: 100 milliseconds
- 2: 150 milliseconds
- 3: 200 milliseconds

2.6.4. +VTS Description:

The product enables the user application to send DTMF tones over the CDMA network. This command enables tone to be transmitted. To transmit DTMF tones(only when there is an active call), the application uses:

AT+VTS=<Tone> where <Tone> is in {0-9,*,#}

2.6.5. +VTS Syntax:

Command Syntax AT+VTS=<Tone>

Command	Possible responses
AT+VTS=#	OK <i>Note: Command valid</i>
AT+VTS=11	OK
AT+VTS=4	OK

2.6.6. Informative example :

To send tone sequence 13#, the application sends:

AT+VTS=13#

2.7. DTMF START and STOP Continuous +WSDT, +WSDS

2.7.1. Description:

Starts and stops a DTMF tone while in a call state (conversation).

2.7.2. Syntax:

Command Syntax AT+WSDT=<x>
AT+WSDS

Command	Possible responses
AT+WSDT=2	OK <i>Note: Starts DTMF tone</i>
AT+WSDS	OK <i>Note: Stops</i>

2.7.3. Defined values :

<X>: (0-9, #,*)

2.8. Redial last telephone number ATDL

2.8.1. Description:

This command is used by the application to redial the last number used in the ATD command. The last number dialed is displayed. This does not use the phonebook to redial this number.

2.8.2. Syntax:

Command Syntax ATDL

Command	Possible responses
ATDL <i>Note: Redial last number</i>	OK +WORG: 8585551212 <i>Note: Last call was a voice call. Command valid</i>

2.9. Automatic answer ATSO

2.9.1. Description:

This S0(zero) parameter determines and controls the product automatic answering mode.

2.9.2. Syntax:

Command Syntax ATSO=<value>

Command	Possible responses
ATSO=2 <i>Note: Automatic answer after 2 rings (2*6 secs)</i>	OK
ATSO? <i>Note: Current value</i>	002 OK <i>Note: always 3 characters padded with zeros</i>
ATSO=0 <i>Note: No automatic answer</i>	OK <i>Note: Command valid</i>

All others S-parameters (S6,S7,S8 ...) are not implemented.

2.10. Incoming Call Bearer +CICB

2.10.1. Description:

This specific command is used to set the type of incoming calls when no incoming bearer is given (see +CSNS).

Note: setting the +CICB command affects the current value of +CSNS.

2.10.2. Syntax:

Command Syntax AT+CICB=<mode>

Command	Possible responses
AT+CICB=1 <i>Note: If no incoming bearer, force a fax call</i>	OK <i>Note: Command accepted</i>
AT+CICB=2 <i>Note: If no incoming bearer, force a voice call</i>	OK <i>Note: Command accepted</i>
AT+CICB? <i>Note: Interrogate value</i>	+CICB: 2 OK <i>Note: Default incoming bearer: voice call</i>
AT+CICB=? <i>Note: Test command</i>	+CICB: (0-4) OK <i>Note: Speech, data or fax default incoming bearer</i>

2.10.3. Defined values :

<mode>

- 0: Data
- 1: Fax
- 2: Speech
- 3: Data once (10 minute timeout)
- 4: Fax once (10 minute timeout)

2.11. Single Numbering Scheme +CSNS

2.11.1. Description:

This command selects the bearer to be used when an MT single numbering scheme call is set up (see +CICB, these commands are the same).

Note: setting the +CSNS command affects the current value of +CICB.

2.11.2. Syntax:

Command Syntax AT+CSNS

Command	Possible responses
---------	--------------------

AT+CSNS=1 <i>Note: force a fax call</i>	OK Note: Command accepted
AT+CSNS=2 <i>Note: force a voice call</i>	OK Note: Command accepted
AT+CSNS? <i>Note: Interrogate value</i>	+CSNS: 2 OK Note: Default incoming bearer: voice call
AT+CSNS=? <i>Note: Test command</i>	+CSNS: (0-4) OK Note: Voice, data or fax default incoming bearer

2.11.3. Defined values :

<mode>

- 0: Data
- 1: Fax
- 2: Speech
- 3: Data once (10 minute timeout)
- 4: Fax once (10 minute timeout)

2.12. Microphone Gain +VGT

2.12.1. Description:

This command set the microphone gain of the current audio path.

2.12.2. Syntax:

Command Syntax **AT+VGT=<MicGain>**

Command	Possible responses
AT+VGT=2	OK Note: Command valid
AT+VGT? <i>Note: Interrogate value</i>	+VGT: 2 OK Note: Current value Handset default:7 Headset default:9
AT+VGT=? <i>Note: Test command</i>	+VGT: (0-10) OK Note: Possible values

2.12.3. Defined values:

<MicGain> value to Microphone relative gain:

AT+VGT value	Microphone relative gain step (dB)
0	Mute
1	-10
2	-8
3	-6
4	-4
5	-2
6	0
7	+2
8	+4
9	+6
10	+8

2.13. Volume Gain control +VGR

2.13.1. Description:

This command is used by the application to tune the receive gain of the speaker.

2.13.2. Syntax:

Command Syntax AT+VGR=<Rgain>

Command	Possible responses
AT+VGR=2	OK <i>Note: Command valid</i>
AT+VGR? <i>Note: Interrogate value</i>	+VGR: 2 OK <i>Note: Current value</i>
AT+VGR=? <i>Note: Test command</i>	+VGR : (0-10) OK <i>Note: Possible values; default: 6</i>

2.13.3. Defined values:

<Rgain> value to Speaker relative gain:

AT+VGR value	Speaker relative gain step (dB)
0	Mute
1	-26
2	-22
3	-18
4	-14
5	-10
6	-6
7	-2
8	+2
9	+6
10	+10

2.14. Microphone Mute Control +CMUT

2.14.1. Description:

This command is used to mute the microphone input on the product (for the active microphone set with the +SPEAKER command). This command is only allowed during a call.

2.14.2. Syntax:

Command Syntax AT+CMUT=<mode>

Command	Possible responses
AT+CMUT=? <i>Note: Test command</i>	+CMUT: (0-1) OK <i>Note: Enable / disable mute</i>
AT+CMUT? <i>Note: Ask for current value</i>	+CMUT: 0 OK <i>Note: Current value is OFF</i>
AT+CMUT=1 <i>Note: Mute ON (call active)</i>	OK <i>Note: Command valid</i>
AT+CMUT? <i>Note: Ask for current value</i>	+CMUT: 1 OK <i>Note: Mute is active (call active)</i>
AT+CMUT=0 <i>Note: Mute OFF (call not active)</i>	+CME ERROR: 3 <i>Note: Command not valid</i>

2.14.3. Defined values:

<mode>

- 0: microphone mute off (default value).
- 1: microphone mute on.

2.15. Speaker & Microphone selection +SPEAKER

2.15.1. Description:

This command is used to select the speaker and the microphone set.

2.15.2. Syntax:

Command Syntax **AT+SPEAKER=<ActiveSpkMic>**

Command	Possible responses
AT+SPEAKER=0 <i>Note: Set headset mode</i>	OK <i>Note: Command valid</i>
AT+SPEAKER?	+SPEAKER: 0 OK <i>Note: Current mode is headset mode.</i>

2.15.3. Defined values:

<mode>

- 0: HEADSET
- 1: HANDSET

2.16. Echo Cancellation +ECHO

2.16.1. Description:

This command is used to enable, disable or configure the Echo Cancellation functions for voice calls (in rooms, in cars, etc.). The +SPEAKER function automatically sets echo cancellation based upon handset or headset choice and this command allows non-standard operation.

2.16.2. Syntax:

Command Syntax **AT+ECHO= <mode>**

Command	Possible responses
AT+ECHO? <i>Note: Read current settings</i>	OK
AT+ECHO=0 <i>Note: Set Echo Cancellation Off</i>	OK
AT+ECHO=1 <i>Note: Set Echo Cancellation to Handset</i>	OK
AT+ECHO=2 <i>Note: Set Echo Cancellation to Headset</i>	OK
AT+ECHO=3 <i>Note: Set Default Echo Cancellation for current path settings</i>	OK

2.16.3. Defined values:

<mode>

- 0: Vocoder Echo Cancellation Off
- 1: Ear Seal Echo Cancellation (for Handset)
- 2: Head Set Echo Cancellation (for Headset)
- 3: Default Echo Cancellation for current path settings

2.17. Side Tone modification +SIDET

2.17.1. Description:

This specific command is used to set the level of audio feedback in the speaker (microphone feedback in the speaker).

2.17.2. Syntax:

Command Syntax AT+SIDET=<val1>,<val2>

Command	Possible responses
AT+SIDET=1,0	OK <i>Note: Command valid</i>
AT+SIDET? <i>Note: Current value</i>	+SIDET: 1,0 OK <i>Note: Command valid</i>
AT+SIDET=?	+SIDET: (0-1),(0-3)

2.17.3. Defined values :

<val1>

- 0: Side tone is disabled
- 1: Side tone is enabled

<val2> (default value 0 will be used if this parameter is not given)

- 0: -10 dB
- 1: -15 dB
- 2: -20 dB
- 3: -25 dB

2.18. Initialize Voice Parameters +VIP

2.18.1. Description:

This command allows voice parameters to be restored from NV memory.

2.18.2. Syntax:

Command Syntax AT+VIP

Command	Possible responses
AT+VIP	OK <i>Note: Command valid</i>

2.18.3. Defined Values:

- Gain controls are restored (+VGT and +VGR)
- Voice path selection is restored (+SPEAKER)
- Echo cancellation is restored (+ECHO)
- And side tone values are restored (+SIDET)

2.19. Call Forwarding Service Code Set +CCFSC

2.19.1. Description:

This command sets call forwarding service code.

2.19.2. Syntax:

Command Syntax AT+CCFSC= <reason>,<mode>,<service code>
+CCFSC: <reason>,<on service code>,<off service code>

Command	Possible responses
AT+CCFSC=0,1,*94 <i>Note: Set enable service code for call forwarding on busy</i>	OK <i>Note: Command valid</i>

AT+CCFSC=0,2 <i>Note: Query service code for call forwarding on busy</i>	+CCFSC: 0, *90, *900 OK
---	----------------------------

2.19.3. Defined Values:

<reason>

- 0: Busy
- 1: No Answer
- 2: Always
- 3: Default

<mode>

- 0: Off
- 1: On
- 2: Query status

<service code> : The call forwarding service code

2.19.4. Default Values:

Condition	On service code	Off service code
Busy	*90	*900
No Answer	*92	*920
Always	*72	*720
Default	*68	*680

2.20. Call Waiting Service Code Set +CCWCS

2.20.1. Description:

This command sets call waiting service code.

2.20.2. Syntax:

Command Syntax AT+CCWCS= <mode>,<service code>
+CCWCS: <on service code>,<off service code>

Command	Possible responses
AT+CCWCS=0,*740 <i>Note: Set disable service code for call waiting.</i>	OK <i>Note: Command valid</i>
AT+CCWCS=2 <i>Note: Query service code for call waiting.</i>	+CCWCS: *74, *740 OK

2.20.3. Defined Values:

<mode>

- 0: Off
- 1: On
- 2: Query status

<service code> : The call waiting service code

2.20.4. Default Values:

On service code	Off service code
*74	*740

2.21. CLI Restriction Code Set +CCLIRS

2.21.1. Description:

This command sets CLI restriction code.

2.21.2. Syntax:

Command Syntax AT+CCLIRS= <service code>

Command	Possible responses
---------	--------------------

AT+CCLIRS=*23# <i>Note: Set service code to CLI restriction.</i>	OK <i>Note: Command valid</i>
AT+CCLIRS? <i>Note : Current value</i>	+CCLIRS: *23#

2.21.3. Defined Values:

<service code> : The service code to CLI restriction all outgoing calls to.
The default value is “*67”

2.22. Call Forwarding Mode Set +CCFMS

2.22.1. Description:

This commands allows control of the call forwarding supplementary service,

2.22.2. Syntax:

Command Syntax AT+CCFMS= <reason>,<mode>,<number>

Command	Possible responses
AT+CCFMS=0,1,858551212 <i>Note: Register to a call forwarding when ME is busy.</i>	OK <i>Note: Command executed</i> +WORG:*90858551212 <i>Note: Voice call origination sent to Base Station with dialing string “*90858551212”.</i> +WEND: 10
AT+CCFMS=2,0 <i>Note: Erase unconditional call forwarding.</i>	OK <i>Note: Command executed</i> +WORG:*720 <i>Note: Voice call origination sent to Base Station with dialing string “*720”.</i> +WEND: 10

2.22.3. Defined Values:

<reason>

- 0: Busy
- 1: No Answer
- 2: Always
- 3: Default

<mode>

- 0: Off
- 1: On

<number> : The phone number to forward.

2.23. Call Waiting Mode Set +CCWS

2.23.1. Description:

This commands allows control of the call waiting supplementary service,

2.23.2. Syntax:

Command Syntax AT+CCWS= <mode>

Command	Possible responses
AT+CCWS=1 <i>Note: Enable call waiting</i>	OK <i>Note: Command executed</i>

	+WORG:*74 <i>Note: Voice call origination sent to Base Station with dialing string “*74”.</i> +WEND: 10
--	---

2.23.3. Defined Values:

- <mode>
 0: Off
 1: On

3. NETWORK SERVICE COMMANDS

3.1. Signal Quality +CSQ

3.1.1. Description:

This command is used to ascertain the received signal strength indication(<rssi>) and the channel frame error rate (<fer>).

3.1.2. Syntax:

Command Syntax AT+CSQ

Command	Possible responses
AT+CSQ	+CSQ: <rssi>,<fer> OK <i>Note: <rssi> and <ber> as defined below</i>

3.1.3. Defined values :

<rssi> : 0-31 valid value ranges. Exact meaning of the SQM(RSSI) shall be manufacturer defined. The lowest defined value is 0 and the highest is 31.

<fer> :

99: not known or not detectable Currently always returns 99.

3.2. Mode Preference +COPS

3.2.1. Description:

The Mode Preference of a CDMA module governs the basic system acquisition behavior of the MS in conjunction with the PRL (Preferring Roaming List). It's important to note that the PRL takes precedence over mode preference when guiding the phone to a band or system. The PRL must allow a particular band first, before the mode preference can take effect. In other words, a mode preference change is simply a request; the PRL decides whether or not to allow it. After execution of the +COPS command, an unsolicited +COPS: <mode> will follow soon to confirm the new mode selection, but not in all cases. See section 17.11 unsolicited result codes. All changes to +COPS are automatically saved in NV RAM.

Note1: **Now, mode 0(Automatic mode) and term 0(Permanent) case is only available.**

Note2: AMPS selection is only available for modules which support AMPS mode.

Note3: please refer to Appendices 20.10 for AT commands that applicable to the AMPS operation.

3.2.2. Syntax:

The application must send the following command:

Command Syntax AT+COPS=<mode>,<term>

Command	Possible responses
AT+COPS?	+COPS: 0,0

<i>Note: Ask for current Mode Preference</i>	OK <i>Note: Automatic mode, use PRL order, Permanent</i>
AT+COPS=?	+COPS: (0),(0) OK <i>Note: Modes: Automatic, Term: Permanent.</i>
AT+COPS=0,0 <i>Note: Ask for Automatic mode</i>	OK +COPS:0,0 <i>Note: Unsolicited +COPS result confirms Automatic mode, Permanent term is requested</i>
AT+COPS=1,1 <i>Note: Ask for PCS mode</i>	ERROR <i>Note: Mode: Automatic, Term: Permanent is only available.</i>
AT+COPS=2,2 <i>Note: Ask for Cellular mode</i>	ERROR <i>Note: Mode: Automatic, Term: Permanent is only available.</i>

3.2.3. Defined values :

The parameters values are the following ones:

<mode>

- 0: Automatic, follow PRL (default value)
- 1: Automatic in PCS frequencies (1900Mhz only)
- 2: Automatic in Cellular frequencies (800Mhz only)
- 3: AMPS only – only allowed for modules which support AMPS

<term>

- 0: Permanent – this mode persists until another +COPS command is issued
- 1: Power cycle – this mode persists until power cycle is performed
- 2: 1 call – this mode persist for one call only

Note:

- 1: Now, mode 0(Automatic mode) and term 0(Permanent) case is only available.
- 2: AT+COPS by itself is a short-hand equivalent to AT+COPS=0,0.
- 3: When make one call only on a certain mode, after the call, the module will go back to the previous permanent mode.

e.g.

```
AT+COPS=3,0 # set to permanent AMPS mode
AT+COPS=3,1 # set to AMPS mode until reboot
AT+COPS=3,2 # set to make one call only on APMS Make a call
AT+COPS? # query current mode
+COPS: 3,0 # shows it on permanent AMPS mode, not 3,1
```

3.3. Roam Preference +WRMP

3.3.1. Description:

The Roam Preference of a CDMA module informs the MS whether it is allowed to roam on foreign CDMA networks or only allow operation on home networks.

The determination of what is a foreign or home network is programmed into the PRL (Preferring Roaming List). This command simply enables or disables the capability of the MS to roam, based on the PRL configuration.

After execution of the +WRMP command, the MS may change roaming states.

The unsolicited result +WROM:<mode> will indicate the new state. See section 18.6 Unsolicited result codes.

3.3.2. Syntax:

The application must send the following command:

Command Syntax **AT+WRMP=<mode>**

Command	Possible responses
AT+WRMP? <i>Note: Ask for current Mode Preference</i>	+WRMP: 0 OK <i>Note: Home only</i>
AT+WRMP=?	+WRMP: (0-2) OK <i>Note: Home, Affiliated, Any</i>
AT+WRMP=0 <i>Note: Allow Home only networks</i>	OK . . . +WROM:0 <i>Note: Unsolicited +WROM may or may not appear based on current circumstances</i>
AT+WRMP=1 <i>Note: Allow Roaming Affiliated Networks</i>	OK . . . +WROM:1 <i>Note: Unsolicited +WROM may or may not appear based on current circumstances</i>
AT+WRMP=2 <i>Note: Allow Roaming on Any Network</i>	. . . +WRMP:2 <i>Note: Unsolicited +WROM may or may not appear based on current circumstances</i>

3.3.3. Defined values :

The parameters values are the following ones:

<mode>

- 0: Home Networks only, as defined in the PRL (default value)
- 1: Roaming on Affiliated networks, as defined in the PRL
- 2: Roaming on Any Network, as defined in the PRL.

3.4. Network registration & roaming +CREG

3.4.1. Description:

This command is used by the application to ascertain the registration and roaming status of the product. Note: Also see +WROM unsolicited command for CDMA roaming status.

3.4.2. Syntax:

Command Syntax AT+CREG= <mode>

Response Syntax +CREG : <mode>, <stat>

Command	Possible responses
AT+CREG=0 <i>Note: Disable network registration unsolicited result code</i>	+CREG: 0,1 OK <i>Note: Command valid</i>
AT+CREG=1 <i>Note: Enable network registration unsolicited result code</i>	+CREG:1,1 OK <i>Note: Command valid</i>
AT+CREG?	+CREG: 1,5 OK <i>Note: Unsolicited enabled, MS currently roaming.</i>

AT+CREG=?	+CREG: (0-1) OK <i>Note: 0,1 <mode> values are supported</i>
Example of the unsolicited result code. MS is searching for a base station	+CREG:2

3.4.3. Defined values :

<mode>

- 0: Disable network registration unsolicited result code (default)
- 1: Enable network registration unsolicited code result code +CREG : <stat>

<stat>

- 0: not registered, MS is not currently searching for a new operator.
- 1: registered, home network.
- 2: not registered, MS currently searching for a base station.
- 4: unknown.
- 5: registered, roaming

3.5. Change NAM Selection +WNAME

3.5.1. Description:

This command is used to request a change in the NAM (Number Assignment Module) selection. The module supports up to 4 NAMs. However, if a NAM is not full programmed, the module will not switch to the requested NAM. The default NAM for the module is 1. The response to this command is only OK, and this is no guarantee that the NAM will change. If the NAM selection request is accepted, the unsolicited command +WNAME: <nam> will be returned. If or when the actual NAM changes, the unsolicited command +WCNM: <nam> will be returned. See section 19, unsolicited result codes.

3.5.2. Syntax:

Command Syntax	AT+WNAME=<nam>	Possible responses
AT+WNAME=2 <i>Note: Use NAM 2, if programmed</i>		OK +WNAME: 2 +WCNM: 2
AT+WNAME=3		OK <i>Note: No unsolicited response indicates that NAM 3 is not valid, thus no change in NAM.</i>

3.5.3. Defined values :

<nam>

- 1: NAM 1
- 2: NAM 2
- 3: NAM 3
- 4: NAM 4

Note1: Now, Only NAM1 is available.

3.6. Read Current NAM +WCNM

3.6.1. Description:

This command is used to read the current NAM (Number Assignment Module). The module supports up to 4 NAMs. Also, note that there exist an unsolicited command +WCNM: <nam> that is returned any time the NAM changes. See section 19, unsolicited result codes.

Note1: Now, Only NAM1 is available.

3.6.2. Syntax:

Command Syntax	AT+WCNM	Possible responses
	Command	Possible responses

AT+WCCNM <i>Note: Ask for the current NAM</i>	+WCCNM: 1 OK <i>Note: NAM 1 in use</i>
--	--

4. SECURITY COMMANDS

4.1. Enter PIN +CPIN

4.1.1. Description:

This command is used to enter the ME passwords (CHV1 / CHV2 / PUK1 / PUK2, etc.), that are required before any ME functionality can be used. CHV1/CHV2 is between 4 and 8 digits long, PUK1/PUK2 is only 8 digits long. The application is responsible for checking the PIN after each reset or power on – if the PIN was enabled.

4.1.2. Syntax:

Command Syntax AT+CPIN=<pin>

Command	Possible responses
AT+CPIN=1234	OK <i>Note: PIN code is correct</i>

After 3 unsuccessful attempts to enter the PIN (Personal Identification Number), the PUK (Personal Unblocking Key) will be required. PUK validation forces the user to enter a new PIN code as a second parameter and this will be the new PIN code if PUK validation succeeds. CHV1 is then enabled if PUK1 is correct. The application therefore uses this command:

AT+CPIN=<Puk>,<NewPin>

Command	Possible responses
AT+CPIN=00000000,1234 <i>Note: Enter PUK and new PIN</i>	+CME ERROR: 16 <i>Note: Incorrect PUK</i>
AT+CPIN=12345678,1234 <i>Note: Enter PUK and new PIN, 2nd attempt</i>	OK <i>Note: PUK correct, new PIN stored</i>

To ascertain which code must be entered (or not), the following query command can be used:

AT+CPIN?

The possible responses are :

+CPIN: READY ME is not pending for any password
 +CPIN: UIM PIN CHV1 is required
 +CPIN: UIM PUK PUK1 is required
 +CPIN: UIM PIN2 CHV2 is required
 +CPIN: UIM PUK2 PUK2 is required
 +CPIN: PH-UIM PIN UIM lock (phone-to-UIM) is required
 +CPIN: PH-NET PIN Network personalization is required
 +CME ERROR: <err> SIM failure (13) absent (10) etc.

Please note that in this case the mobile equipment does not end its response with the OK string. The response +CME ERROR : 13 (SIM failure) is returned after 10 unsuccessful PUK attempts. The SIM card is then out of order and must be replaced by a new one.

4.2. Enter PIN2 +CPIN2

4.2.1. Description:

This specific command is used to validate the PIN2 code (CHV2), or to validate the PUK2 code (UNBLOCK CHV2) and to define a new PIN2 code. Of course, the +CPIN command allows PIN2 or PUK2 codes to be validated, but only when the last command executed resulted in PIN2 authentication failure. PIN2 length is between 4 and 8 digits, PUK2 length is 8 digits only.

4.2.2. Syntax:

Command Syntax AT+CPIN2=<pin2>

Command	Possible responses
AT+CPIN2=1234	OK <i>Note: PIN2 code is correct</i>

After 3 unsuccessful attempts, PUK2 will then be required. PUK2 validation forces the user to enter a new PIN2 code as a second parameter and this will be the new PIN2 code if PUK1 validation succeeds. The application therefore uses this command:

AT+CPIN2=<puk2>,<NewPin2>

Command	Possible responses
AT+CPIN2=00000000,1234 <i>Note: Enter PUK2 and new PIN2</i>	+CME ERROR: 16 <i>Note: Incorrect PUK2</i>
AT+CPIN2=12345678,1234 <i>Note: Enter PUK2 and new PIN2, 2nd attempt</i>	OK <i>Note: PUK2 correct, new PIN2 stored</i>

To ascertain which code must be entered (or not), the following query command can be used:

AT+CPIN?

The possible responses are :

- +CPIN: READY ME is not pending for any password
- +CPIN: UIM PIN2 CHV2 is required
- +CPIN: UIM PUK2 PUK2 is required
- +CME ERROR: <err> SIM failure (13) absent (10) etc.

4.3. PIN Remaining Attempt Number +CPINC

4.3.1. Description:

This specific command is used to get the number of valid attempts for PIN1 (CHV1), PIN2 (CHV2), PUK1 (UNBLOCK CHV1) and PUK2 (UNBLOCK CHV2) identifiers.

4.3.2. Syntax:

Command Syntax AT+CPINC

Response Syntax +CPINC : <n1>,<n2>,<k1>,<k2>

Command	Possible responses
AT+CPINC <i>Note: Get the number of attempts left</i>	+CPINC : 2,3,10,10 OK <i>Note: First CHV1 attempt was a failure</i>
AT+CPINC? <i>Note: Get the number of attempts left</i>	+CPINC : 2,3,10,10 OK <i>Note: First CHV1 attempt was a failure</i>

4.3.3. Defined values :

<n1>, <n2> are the attempts left for PIN1, PIN2 (0 = blocked, 3 max)

<k1>, <k2> are the attempts left for PUK1, PUK2 (0 = blocked, 10 max) For this to work, the card should be present at the time of initialization, otherwise an error will be sent (+CME ERROR : 10).

4.4. Facility Lock +CLCK

4.4.1. Description:

This command is used by the application to lock, unlock or interrogate an ME or network facility <fac>. Note that the call barring facilities require a password to be properly performed, however, these passwords are not enforced (any 4 digit sequence can be entered). Builds without UIM support will not feature “SC” and “P2” facilities.

4.4.2. Syntax:

Command Syntax AT+CLCK= <fac>,<mode>[,<passwd>]
Response Syntax +CLCK: <status>

Command	Possible responses
AT+CLCK="SC",1,1234 <i>Note: Enable PIN</i>	OK <i>Note: PIN correct</i>
AT+CLCK? <i>Note: Get status</i>	+CLCK("SC",0) OK <i>Note: PIN1 is disabled</i>
AT+CLCK="SC",0,555555 <i>Note: Disable PIN</i>	+CME ERROR: 16 <i>Note: PIN incorrect</i>

4.4.3. Defined values :

The following <fac> values are supported:

"SC" : PIN1 enabled (<mode> = 1) / disabled (<mode> = 0)

<mode>

- 0: unlock the facility
- 1: lock the facility
- 2: query status

4.5. Change Password +CPWD

4.5.1. Description:

This command is used by the application to change a password. (PIN1). "SC" facilities are only supported for builds, which include UIM.

4.5.2. Syntax:

Command Syntax AT+CPWD= <fac>, <oldpwd>, <newpwd>

Command	Possible responses
AT+CPWD="SC",1234,5555 <i>Note: Change UIM PIN1</i>	OK <i>Note: PIN correct</i>
AT+CPWD="SC",1234,5555 <i>Note: Change UIM PIN1</i>	+CME ERROR: 16 <i>Note: PIN incorrect</i>
AT+CPWD? <i>Note: Get status</i>	+CPWD: ("SC",8) OK <i>Note: PIN1 passwords are supported with 8 digit maximum</i>

4.5.3. Defined values :

The following <fac> values are supported:

"SC" : PIN1

5. SHORT MESSAGES COMMANDS

For SMS messages, in the CDMA system, the PDU mode will not be supported, instead, the Unicode format message is supported. The Unicode header code will start at 0x80 and above.

5.1. Parameters definition

- <cbn> Call Back Number
- <CR> Carriage Return (hex code 0x0D)
- <da> Destination Address
- <dcs> Data Coding Scheme, coded like in document [5].
- <dt> Discharge Time in string format :
"yy/MM/dd, hh :mm :ss" (Year/Month/Day,Hour:Min:Seconds)
- <encod> Encoding

- <fo> First Octet, coded like SMS-SUBMIT first octet in document [4], default value is 17 for SMS-SUBMIT
- <index> Place of storage in memory.
- <lang> Language
- <LF> Line Feed (hex code 0x0A)
- <mem1> Memory used to list, read and delete messages (+CMGL, +CMGR and +CMGD).
- <mem2> Memory used to write and send messages (+CMGW, +CMSS).
- <mid> CBM Message Identifier.
- <mr> Message Reference.
- <oa> Originator Address.
- <pid> Protocol Identifier.
- <priority> Message Priority
- <ra> Recipient Address.
- <sca> Service Center Address
- <scts> Service Center Time Stamp in string format :
"yy/MM/dd, hh :mm :ss" (Year/Month/Day, Hour:Min:Seconds)
- <sn> CBM Serial Number
- <st> Status of a SMS-STATUS-REPORT (see section 17.7 for possible values)
- <stat> Status of message in memory.
- <tooa> Type-of-Address of <oa>.
- <tora> Type-of-Address of <ra>.
- <tosca> Type-of-Address of <sca>.
- <total1> Number of message locations in <mem1>.
- <total2> Number of messages locations in <mem2>.
- <ts> Timestamp for MT SMS.
- <used1> Total number of messages locations in <mem1>.
- <used2> Total number of messages locations in <mem2>.
- <vp> Validity Period of the short message, default value is 167

5.2. Preferred Message Storage +CPMS

5.2.1. Description:

This command allows the message storage area to be selected (for reading, writing, etc).

5.2.2. Syntax:

Command Syntax **AT+CPMS=<mem1>,<mem2>**

Command	Possible responses
AT+CPMS=? <i>Note: Possible message storages</i>	+CPMS: ("MT"),("MO") OK <i>Note: Read, list, delete: SMS</i> <i>Write, send: SMS</i>
AT+CPMS? <i>Note: Read</i>	+CPMS: "MT",3,45,"MO",0,30 OK
AT+CPMS="AM" <i>Note: Select false message storage</i>	+CMS ERROR: 302 OK
AT+CPMS="MT" <i>Note: Select MT message storage</i>	+CPMS:3,45,0,30 OK <i>Note: Read, list, delete MT from NV and UIM</i>

5.2.3. Defined values:

<mem1>: Memory used to list, read and delete messages. It can be:

- "MT": SMS Mobile Terminated message storage in NV and UIM

**Giga module support to save 30 SMS message for MT and 30 SMS message for MO (sent and saved message) in NV. And Only MT messages are saved in UIM.*

For examples, if UIM card supports 15 SMS to save , Total Capacity is 45 SMS for MT and 30 SMS for MO..

<mem2>: Memory used to write and send messages(Not Supported)
 “MO” : Mobile Originated SMS message storage.

5.3. New message indication +CNMI

5.3.1. Description:

This command selects the procedure for message reception from the network.

5.3.2. Syntax:

Command Syntax	AT+CNMI=<mode>,<mt>,<bm>,<ds>,<bfr>
Command	Possible responses
AT+CNMI=2,1,0,0,0 Note: <mt>=1	OK
	AT+CMTI: “MT”,1 OK Note: message received
AT+CNMI=2,2,0,0,0 Note: <mt>=2	OK
	+CMT: “01199104208”,”03/07/24,12:30:00”,129,1,2,1, ”01199323390”<CR><LF> Hello Note: message received
AT+CNMI=2,0,0,1,0 Note: <ds>=1	OK
AT+CMGS=”01199323390”,0,2,”01199104208”<CR> Hello<ctrl-z> OK	+CMGS: 7 OK Note: Successful transmission
	+CDS: 2,7,”01199104208”,129,“03/07/24,12:30:59”, “03/07/24,12:31:04”, 32768 OK Note: message was correctly delivered

5.3.3. Defined values

<mode> : controls the processing of unsolicited result codes
 Only <mode>=2 is supported.
 Any other value for <mode> (0,1 or 3) is reserved for future.

<mode>

- 0: reserved for future.
- 1: reserved for future.
- 2: Buffer unsolicited result codes in the TA when TA-TE link is reserved and flush them to the TE after reservation. Otherwise forward them directly to the TE
- 3: reserved for future.

<mt> : sets the result code indication routing for SMS-DELIVERs. Default is 1.

<mt>

- 0: No SMS-DELIVER indications are routed.
- 1: SMS-DELIVERs are routed using unsolicited code :
+CMTI: “MT”,<index>
- 2: SMS-DELIVERs (except class 2 messages) are routed using unsolicited code :
+CMT : <oa>,<scts>,<tooa>,<lang>,<encod>,<priority>,<cbn>,<length>,<data>

<bm> : sets the result code indication routing for received CBMs (Cell Broadcast Message)
***CURRENTLY CBMs NOT SUPPORT. Default is 0.**

<ds> for SMS-STATUS-REPORTs. Default is 1.

<ds>

0: No SMS-STATUS-REPORTs are routed.

1: SMS-STATUS-REPORTs are routed using unsolicited code : +CDS :

<mr>, <ra>, <tora>, <scts>, <dt>, <st>

<bfr> Default is 0.

<bfr>

0: 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)

1: reserved for future.

5.4. Read message +CMGR

5.4.1. Description:

This command allows the application to read stored messages. The messages are read from the memory selected by +CPMS command.

5.4.2. Syntax:

Command Syntax	AT+CMGR=<index>
Response Syntax	-. For SMS-DELIVER(MT) +CMGR:<stat>,<oa>,<scts>,<lang>,<encod>,<priority>,<cbn>,<length><CR><LF> <user data> OK <i>Note 1 : A message read with status "REC UNREAD" will be updated in memory with the status "REC READ".</i> -. For SMS-SUBMIT(MO) +CMGR: <stat>,<da>,<dt>,<lang>,<encod><priority>,<cbn>,<length><CR><LF> <user data> OK
Command	Possible responses
	+CMTI: "MT",1 <i>Note: New message received</i>
AT+CMGR=1 <i>Note: Read the message</i>	+CMGR: "REC UNREAD","01199323390", "03/07/24,12:30:59",1,2,0,"01199482012,8,<CR><LF> HI there OK
AT+CMGR=1 <i>Note: Read the message again</i>	+CMGR: "REC READ","01199323390", "03/07/24,12:30:59",1,2,0,"01199482012",8 <CR><LF> HI there OK <i>Note: Message is read now</i>
+WVMI:"VOICE",18,3 <i>Note: voice message is received.</i>	+CMGR:"VOICE","8585551212","03/11/06,18:04:29",0,0,0,"2580", 31<CR><LF>
AT+CMGR=18 <i>Note: Read voice messages</i>	03 voice messages are received. OK
AT+CMGR=2 <i>Note: Read at a wrong index</i>	+CMS ERROR: 321 <i>Note: Error : invalid index</i>

Note:

*When Listing or Reading Voice message, originally there are no user data in voice message.

But, when CMGR command, giga module displays user data for distinguish number of waiting voice message in Message Center.

5.4.3. Defined values

Parameter Definition :

- <stat> Status of message in memory.
- <oa> : Origination Address Value in string format.
- <da> : Destination Address Value in string format.
- <dt> : Discharge Time in String format
- <scts>: Service Center Time Stamp in string format
- <lang>: Language.
- <encod>: Encoding
- <priority>: Message priority:
 - 0: NORMAL
 - 1: INTERACTIVE
 - 2: URGENT
 - 3: EMERGENCY
- <cbn>: Call Back Number
- <length>:

<user data> : Composed SMS message by User.

5.5. List message +CMGL

5.5.1. Description:

This command allows the application to read stored messages, by indicating the type of the message to read. The messages are read from the memory selected by the +CPMS command.

5.5.2. Syntax:

Command Syntax	Command syntax : AT+CMGL=<stat>
Response Syntax	-. For SMS-DELIVER(MT) +CMGL:<index>,<status>, <oa>,<lang>,<encod>,<length><CR><LF> <user data> OK
	-. For SMS-SUBMIT(MO) +CMGL:<index>,<status>, <da>,<lang>,<encod>,<length><CR><LF> <user data> OK

Command	Possible responses
AT+CMGL="UREAD" Note: List unread messages	+CMGL:1, "REC UNREAD", "01199323390", 1, 2, 8 <CR> <LF> HI there OK +CMGL: 2, "REC UNREAD", "01199323390", 1, 2, 10 <CR> <LF> Call me!! OK <i>Note: If doing this command again, Same Result is shown.</i>
AT+CMGL="READ" Note: List read messages	+CMGL: 3, "REC READ", "8585551212", 1, 2, 9 <CR> <LF> Keep cool OK
+WVMI:VOICE",18,3	+CMGL:18,"VOICE", "8585551212", 0, 0, 31 <CR> <LF>

<i>Note: voice message is received.</i> AT+CMGL="VOICE" <i>Note: List voice messages</i>	03 voice messages are received. OK
AT+CMGL=SENT" <i>Note: List stored and sent messages in text mode</i>	OK <i>Note: No message found</i>

5.5.3. Defined values :

<stat> possible values (status of messages in memory) :

Text mode possible values	Status of messages in memory
"UREAD"	received unread messages
"READ"	received read messages
"USENT"	stored unsent messages
"SENT"	stored sent messages
"VOICE"	stored voice messages
"ALL"	all messages

Note:

Refer to +CMGR parameters

**When Listing or Reading Voice message, originally there are no user data voice message. But giga module input user data for distinguish number of waiting voice message in Message Center.*

5.6. Send message +CMGS

5.6.1. Description:

The <address> field is the address of the terminal to which the message is sent. To send the message, simply type, <ctrl-Z> character (ASCII 26).

The <reserved> parameter is optional and reserved for future use. Currently, The value of this parameter is not used in module.

The <priority> and <cbn> parameters are optional, and are used to set message priority and call back number. Default message priority is NORMAL, and call back number is not included in the message unless it is specified using this optional field.

5.6.2. Syntax:

Command Syntax AT+CMGS= <da>[,<length>][,<priority>[,<cbn>]]<CR>text<ctrl-Z>

Response Syntax +CMGS:<mr>

Command	Possible responses
AT+CMGS="01199104208",,2,"01199323390" <CR> Please call me soon, Fred. <ctrl-Z> <i>Note: Send a message</i>	+CMGS:<mr> OK

5.6.3. Defines values.

<da>

Destination Address Value in string format.

<length>

0 or None : Contents are finished with <ctrl-z>
n (max is 140 byte) : Contents are finished with (n+1)th byte.

<priority>

Message priority:
0 – NORMAL
1 – INTERACTIVE
2 – URGENT
3 – EMERGENCY

<cbn>

Call Back Number

5.7. Delete message +CMGD

5.7.1. Description:

This command is used to delete one or several messages from preferred message storage.

5.7.2. Syntax:

Command Syntax	AT+CMGS = <index>, <Del Flag>	Possible responses
		+CMTI:"MT",3 <i>Note: New message received</i>
AT+CMGR=3 <i>Note: Read it</i>		+CMGR: "REC UNREAD", "01199323390" "03/07/24,14:30:59",1,2,"8282"<CR><LF> Test Message! OK
AT+CMGD=3 <i>Note: Delete it</i>		OK <i>Note: Message deleted</i>
AT+CMGD=1,0		OK <i>Note: The message from the preferred message storage at the location 1 is deleted</i>
AT+CMGD=1,1		OK <i>Note: All READ messages from the preferred message storage are deleted</i>
AT+CMGD=1,2		+CMS ERROR:341 <i>Note: NV Error deleting READ messages and SENT</i>
AT+CMGD=1,3		OK <i>Note: All READ, SENT and UNSENT messages are deleted</i>
AT+CMGD=1,4		OK <i>Note: All messages are deleted</i>

5.7.3. Defines values.

<index>

Integer type values in the range of location numbers of Message memory. The range depends on UIM capacity. (Basically, This Module support 30 MT and 30 MO SMS SMS message in NV. For Example, if UIM support 15 SMS message, total SMS capacity is 45 MT and 30 MO.)

<DelFlag>

- 0: Delete message at location <index>
- 1: Delete All READ messages
- 2: Delete All READ and SENT messages
- 3: Delete All READ, SENT and UNSENT messages
- 4: Delete All messages.

5.8. Set SMS compose language and encoding +WSCL

5.8.1. Description :

The +WSCL command sets the SMS composition language and encoding types. When composing a message (+CMGS, +CMGW), the SMS language and encoding fields will be set using the current +WSCL value.

5.8.2. Syntax :

Command Syntax **AT+WSCL = <lang>, <encod>**

Command	Possible responses
AT+WSCL=1,2	OK <i>Note: Set language to English, encoding to ASCII</i>
AT+CMGS="01199104208",1,2,"01199323390"<CR> test message<ctrl-Z> OK	+CMGS: <mr> OK
AT+WSCL=6,4 Note: Delete it	OK <i>Note: Set language to Chinese, encoding to UNICODE</i>
AT+CMGS="01199104208",1,2,"01199323390"<CR> Ãû>Ö<ctrl-Z> OK <i>Note1 : Send a message in Chinese</i> <i>Note2: The SMS will be sent when passer see <CR></i> <i>(0x001A)</i>	+CMGS: <mr> OK <i>Note : Message sent</i>

5.8.3. Defines values.

<lang> :

0: Unspecified

1: English

2: French

3: Spanish

4: Japanese

5: Korean

6: Chinese

7: Hebrew

*Giga Module Do not Care this value. (Actually, this values are not set in SMS language indicator.)

<enc> :

0: Octet (or Unspecified)

1: IS91EP

2: ASCII

3: IA5

4: UNICODE

2- - **CURRENTLY SUPPORT Combinations : (lang,enc) = (0,0) (1,2) AND (6,4), others are reserved for feature use.**

5.9. Write Message to Memory +CMGW

5.9.1. Description :

This command stores a message in memory. The memory location <index> is returned (no choice possible as with phonebooks +CPBW). Text or Unicode message is entered as described for the Send Message +CMGS command. The <length> parameter is optional, it is used to set the length of the text string. The command will only process the number of bytes as specified by <length> regardless of whether it contains <ctrl-Z>, <backspace> characters. The <priority> and <cbm> parameters are optional, and are used to set message priority and call back number. Default message priority is NORMAL, and call back number is not included in the message unless it is specified using this optional field.

**A stored message by CMGW command is saved in NV ONLY – it dose not be save in UIM.*

***Giga module support to save 30 SMS message for MT and 30 SMS message for MO (sent and saved message) in NV. And Only MT messages are saved in UIM.*

For examples, if UIM card supports 15 SMS to save , Total Capacity is 45 SMS for MT and 30 SMS for MO..

5.9.2. Syntax :

Command Syntax	AT+CMGW= <da>[,<length>][,<priority>[,<cbn>]]<CR> text <ctrl-z >	
Response Syntax	+CMGW: <index> or +CMS ERROR: <err> if writing	
Command	Possible responses	
AT+CMGW="01199323390"<CR> Hello how are you ?<ctrl-Z> OK <i>Note : Write a message</i>	+CMGW: 4 OK <i>Note : Message stored in index 4</i>	
AT+CMGW="01199323390",6<CR> Aİİİİİ?<ctrl-Z> <i>Note : Write a message with specified length of 6 bytes</i>	+CMGW: <index> OK <i>Note : Message stored in <index></i>	

5.9.3. Defined values :

Parameter Definition :

<da> : Destination Address Value in string format.

<length> : Length of the text message (in bytes).

<priority>: Message priority:

0 – NORMAL

1 – INTERACTIVE

2 – URGENT

3 – EMERGENCY

<cbn>: Call Back Number

5.10. Send Message From Storage +CMSS

5.10.1. Description :

This command sends a message stored at location value <index>.

5.10.2. Syntax :

Command Syntax	AT+CMSS=<index>[,<da>]
Response Syntax	+CMSS : <mr> or +CMS ERROR: <err> if sending fails If a new recipient address <da> is given, it will be used instead of the one stored with the message and replace it.
Command	Possible responses
AT+CMGW="01199323390"<CR> Today is my birthday <CTRL-Z> OK	+CMGW: 5 OK <i>Note : Message stored in index 5</i>
AT+CMSS=5 OK <i>Note : Send the message 5 to a stored number</i>	+CMSS :<mr> OK <i>Note : Successful transmission</i>
AT+CMSS=5,"01199104208" <i>Note : Send the message 5 to a different destination number.</i>	+CMSS :<mr> OK <i>Note : Successful transmission</i>

5.10.3. Defined values :

Parameter Definition :

<da> : Destination Address Value in string format.

<index> : : location value of a stored message.

6. SUPPLEMENTARY SERVICES COMMANDS

6.1. Call forwarding +CCFC

6.1.1. Description:

This commands allows control of the call forwarding supplementary service, if supported by the carrier. All calls will be forwarded unconditionally to the phone number specified. The module will actually make a brief call to the CDMA network to set up the call forwarding or cancel it. An audio tone will be produced in the audio path to confirm the change of call forwarding. Please note that that canceling call forward on some CDMA networks has failed during field testing.

6.1.2. Syntax:

Command Syntax	AT+CCFC= <number>
Command	Possible responses
AT+CCFC=8585551212 <i>Note: Register to an unconditional call forwarding</i>	OK <i>Note: Command executed</i> +WORG:*728585551212 <i>Note: Voice call origination sent to Base Station with dialing string "*728585551212".</i> +WEND: 10

AT+CCFC=0 <i>Note: Cancel unconditional call forwarding</i>	OK <i>Note: Command executed</i> +WORG:*720 <i>Note: Voice call origination sent to Base Station with dialing string “*720”.</i> +WEND: 10
---	---

6.1.3. Defined values

<number>

The phone number to forward all calls to.

6.2. (Reserved)

6.3. Calling line identification restriction +CLIR

6.3.1. Description:

This command allows control of the outgoing caller ID restriction supplementary service.

6.3.2. Syntax:

Command Syntax **AT+CLIR=<mode>**
Response Syntax **+CLIR :<mode> (for AT+CLIR ?)**

Command	Possible responses
AT+CLIR=1	OK <i>Note: Command valid</i>
AT+CLIR ? <i>Note: Ask for current functionality</i>	+CLIR :<mode> OK <i>Note: <mode> as defined below</i>

6.3.3. Defined values :

<mode>: sets the caller ID restriction for outgoing calls

<mode>

0: Outgoing Caller ID works normally, according to the subscription of the Caller ID service.

1: Outgoing Caller ID is restricted. The called party will see ‘Restricted’ on their Caller ID display.

Please note that this command works by automatically pre-pending a *67 to the outgoing dialing string. Thus, this command will only work on CDMA networks that recognizes a *67 to suppress outgoing caller ID. Also, the original dialing string cannot be longer than 29 characters in length.

6.4. Calling line identification presentation +CLIP

6.4.1. Description:

This command allows control of the incoming caller ID presentation supplementary service. When presentation of the CLI (Calling Line Identification) is enabled (and the carrier allows), +CLIP response is returned after the RING unsolicited result code. By default, +CLIP is enabled.

6.4.2. Syntax:

Command Syntax **AT+CLIP=<mode>**
Response Syntax **+CLIP: <mode> for AT+CLIP?**
+CLIP: <number>, <type> for an incoming call, after a RING indication

Command	Possible responses
AT+CLIP=1 <i>Note: Enable CLIP</i>	OK <i>Note: CLIP is enabled</i>

AT+CLIP? <i>Note: Ask for current functionality</i>	+CLIP:<mode> OK <i>Note: <mode> defined as below</i>
	RING <i>Note: Incoming call</i> +CLIP: "8585551212",129 <i>Note: Incoming call with number presentation</i>
AT+CLIP=0 <i>Note: Disable CLIP presentation</i>	OK <i>Note: Command valid</i>

6.4.3. Defined values :

<mode>: parameter enable or disables the caller ID unsolicited command

<mode>

0: Disable

1: Enable

6.5. Send Flash to Base Station +WFSH

6.5.1. Description:

This command sends a flash or flash with information to the base station. The flash command is used to manage call waiting and 3-way calls. For call waiting situations when the 3rd party call is received, send a flash (AT+WFSH) to toggle between the two different call parties. The +WFSH unsolicited AT command will return if a flash was sent to the base station over the air. Please note that on CDMA networks, this does not guarantee that an actual switch between calls took place, because there is no acknowledgement to the module.

For 3-way calls, initiate the first call to party # 1 (see ATD). Then send a flash with information (AT+WFSH=18005551212) to initiate a call to party # 2, party # 1 will automatically be placed on hold. The "information" is the phone number of party # 2. Once a conversation with party # 2 is established, send a regular flash (AT+WFSH) to connect all 3 parties. Send another flash (AT+WFSH) to disconnect party # 2, or End call (see ATH) to end the call with all parties.

6.5.2. Syntax:

Command Syntax	AT+WFSH
	AT+WFSH= <phone number> (for a flash with information)
Unsolicited result syntax	+WFSH (confirms a flash was sent to the base station)

Command	Possible responses
ATD8585551212; <i>Note: Make a voice call</i>	OK +WORG:8585551212 +WCNT:3 <i>Note: Conversation...</i> +CCWA:"8582701234",129 <i>Note: Indication of another incoming call</i>
AT+WFSH <i>Note: Send a flash to the Base Station (toggle to the second call).</i> <i>Note: Conversation with second call.</i>	OK +WFSH <i>Note: Flash sent to the Base Station. Call switches to the second call. However, this is not 100% guaranteed because the there is not confirmation from the Base Station.</i>
AT+WFSH <i>Note: Send a flash to the Base</i> <i>Note: Send a flash to the Base Station (toggle to the first call).</i>	OK +WFSH <i>Note: Flash sent to the Base Station. Call switches to the first call. However, this is not 100% guaranteed because the there is not confirmation from the Base Station.</i>

ATH <i>Note: Release the all calls.</i>	OK +WEND:10 <i>Note: All Calls End</i>
ATD8585551212; <i>Note: Make a voice call</i>	OK +WORG:8585551212 +WCNT:3 <i>Note: Conversation...</i>
AT+WFSH=6195552121 <i>Note: Place first call on hold, connect to second party.</i>	OK +WFSH <i>Note: Module now places first call on hold, and attempts connection to second call.</i>
AT+WFSH <i>Note: Connect all 3 parties.</i>	OK +WFSH <i>Note: All 3 parties now connected.</i>
AT+WFSH	OK +WFSH <i>Note: Disconnect second party, connected to first party only.</i>
ATH	OK +WEND:10

6.6. List current call state +CLCC

6.6.1. Description:

This command is used to return the current call state of the module.

6.6.2. Syntax:

Command Syntax

AT+CLCC

Response Syntax

+CLCC: <state>, <mode>, <termination>

Command	Possible responses
AT+CLCC <i>Note: Seek current phone state</i>	+CLCC: 0,9,0 OK <i>Note: Command valid</i>

6.6.3. Defined values :

<state> (state of the call):

- 0: no call
- 1: traffic
- 2: dialing (MO call)
- 3: incoming (MT call)

<mode> (teleservice) :

- 0: voice
- 1: data
- 2: fax
- 3: sms
- 4: otasp
- 5: markov or loopback
- 9: unknown or not applicable

<termination>

- 0: unknown or not applicable

- 1: mobile terminated (MT) call
- 2: mobile originated (MO) call

7. DATA COMMANDS

7.1. Select mode +FCLASS

7.1.1. Description:

This command puts the product into a particular operating mode for fax.

7.1.2. Syntax:

Command Syntax AT+FCLASS= <n>

Command	Possible responses
AT+FCLASS=? <i>Note: Test command</i>	+FCLASS: 0, 2.0 OK <i>Note: If fax class 1 not supported</i>
AT+FCLASS=0 <i>Note: Data mode requested</i>	OK <i>Note: Command valid</i>
AT+FCLASS=2.0 <i>Note: Fax class 2 mode requested</i>	OK <i>Note: Command valid</i>
AT+FCLASS? <i>Note: Current value</i>	+FCLASS: 2.0 OK <i>Note: Command valid</i>

7.1.3. Defined values :

<n>

0: Data

2.0: Fax class 2.0

7.2. Cellular result codes +CRC

7.2.1. Description:

This command gives more detailed ring information for an incoming call.

Instead of the string "RING", an extended string is used to indicate which type of call is ringing (e.g. +CRING:VOICE).

These extended indications are:

+CRING:VOICE	for normal voice calls
+CRING:DATA	for all types of data calls
+CRING:FAX	for all types of fax calls
+CRING:OTAPA	for OTAPA calls
+CRING:TEST	for markov, loopback, and test calls
+CRING:UNKNOWN	for unknown/undefined calls types

7.2.2. Syntax:

Command Syntax AT+CRC

Command	Possible responses
AT+CRC=0 <i>Note: Extended reports disabled</i>	OK <i>Note: Command valid</i>
AT+CRC=1 <i>Note: Extended reports enabled</i>	OK <i>Note: Command valid</i>

7.3. V42 bis data compression +DS

7.3.1. Description:

This command enables or disables V.42bis data compression if this feature is provided on the PSTN in the IWF.

7.3.2. Syntax:

Command Syntax AT+DS=<dir>,<neg>,<P1>,<P2>

Command	Possible responses
AT+DS=3,0,4096,250 <i>Note: Set new parameters</i>	OK <i>Note: Command valid</i>
AT+DS? <i>Note: Current values</i>	+DS: 3,0,4096,250 OK <i>Note: Command valid</i>

7.3.3. Defined values :

Four numeric sub-parameters are accepted:

< dir >: specifies the desired direction(s) of operation of the data compression function; from the DTE point of view, **(default is 3)**,

<dir>

0: Negotiated ... no compression

1: Transmit only

2: Receive only

3: Both directions, accept any direction

< neg >: specifies whether or not the DCE should continue to operate if the desired result is not obtained, **(default is 0)**,

< neg >

0: Do not disconnect if V.42 bis is not negotiated by the remote DCE as specified in <dir>

1: Disconnect if V.42 bis is not negotiated by the remote DCE as specified in <dir>

< P1 >

512-65535: specifies the maximum number of dictionary entries that should be negotiated, **(default is 2048)**,

< P2 >

6-250: specifies the maximum string length to be negotiated, **(default is 6)**.

7.4. V42 bis data compression report +DR

7.4.1. Description:

If this feature is provided by the product this command determines whether or not the use of V42bis is given in an incoming or outgoing data call.

The intermediate result code represents current DCE-DCE data compression type. The format of this result code is as follows:

+DR: NONE	Data compression is not in use
+DR: V42B	Rec. V.42 bis is in use in both directions
+DR: V42B RD	Rec. V.42 bis is in use in receive direction only
+DR: V42B TD	Rec. V.42 bis is in use in transmit direction only

7.4.2. Syntax:

Command Syntax AT+DR

Command	Possible responses
AT+DR=1 <i>Note: Reporting enabled</i>	OK <i>Note: Command valid</i>
AT+DR?	+DR: 1

<i>Note: Current value</i>	OK <i>Note: Command valid</i>
----------------------------	----------------------------------

8. V24-V25 COMMANDS

8.1. Fixed DTE rate +IPR

8.1.1. Description:

This commands specifies the data rate at which the DCE will accept commands.

8.1.2. Syntax:

Command Syntax AT+IPR	
Command	Possible responses
AT+IPR? <i>Note: Current value</i>	+IPR: 115200 OK <i>Note: Current rate is 115200 bps</i>
AT+IPR=? <i>Note: Possible value</i>	+IPR: (0,1200,2400,4800,9600,19200), (45,50,75,110,150,300,600,38400,57600,115200,230400) OK
AT+IPR=38400 <i>Note: set rate</i>	OK <i>Note: set rate to 38400 bps</i>
AT+IPR=0	OK Note : Enable autobaud

Note:

When in the autobaud mode, the supported auto baud rate is up to 19200.

8.2. DTE-DCE character framing +ICF

8.2.1. Description:

This command is used to determine the local serial port start-stop(asynchronous) character framing that the DCE uses.

8.2.2. Syntax:

Command Syntax AT+ICF= <format>, <parity>	
Command	Possible responses
AT+ICF=3,3 <i>Note: Set New values</i>	OK
AT+ICF? <i>Note: Current values</i>	+ICF: 3,3 OK
AT+ICF=? <i>Note: Possible values</i>	+ICF: (3-3),(0-3) OK

8.2.3. Defined values :

<format>

- 0: Autodetect
- 1: 8 Data 2 Stop
- 2: 8 Data 1 Parity 1 Stop
- 3: 8 Data 1 Stop**
- 4: 7 Data 2 Stop
- 5: 7 Data 1 Parity 1 Stop
- 6: 7 Data 1 Stop

<parity>

- 0: Odd

- 1: Even
- 2: Mark
- 3: None

Note: Rm interface is supported at 8 data bits, No Parity, 1 stop bit. ERROR returned for other formats.

8.3. DTE-DCE local flow control +IFC

8.3.1. Description:

This command is used to control the operation of local flow control between the TE2 and the MT2.

8.3.2. Syntax:

Command Syntax AT+IFC=<n1>,<n2>

Command	Possible responses
AT+IFC?	+IFC: 2,2 OK <i>Note: Current values</i>
AT+IFC=?	+IFC: (0-3),(0-2) OK <i>Note: Possible values</i>
AT+IFC=0,0	OK <i>Note: New values</i>

8.3.3. Defined values :

< n1 >

- 0: none (supported)
- 1: Xon/Xoff local circuit 103 (not supported)
- 2: RTS (supported)
- 3: Xon/Xoff global on circuit 103 (not supported)

< n2 >

- 0: none
- 1: DC1/DC3 on circuit 104
- 2: Circuit 106

8.4. Set DCD signal &C

8.4.1. Description:

This commands controls the Data Carrier Detect (DCD) signal.

8.4.2. Syntax:

Command Syntax AT&C

Command	Possible responses
AT&C0 <i>Note: DCD always on</i>	OK <i>Note: Command valid</i>
AT&C1 <i>Note: DCD matches state in accordance with the specified service</i>	OK <i>Note: Command valid</i>

8.5. Set DTR signal &D

8.5.1. Description:

This commands controls the Data Terminal Ready (DTR) signal.

8.5.2. Syntax:

Command Syntax **AT&D**

Command	Possible responses
AT&D0 <i>Note: The DTR signal is ignored</i>	OK <i>Note: Command valid</i>
AT&D1 <i>Note: Enter online command state following ON-to-OFF transition of circuit 108/2</i>	OK <i>Note: Command valid</i>
AT&D2 <i>Note: Enter command state following Onto-OFF transition of circuit 108/2.</i>	OK <i>Note: Command valid</i>

8.6. Back to online mode O

8.6.1. Description:

If a connection has been established and the MS is in command mode, this command allows you to return to online data mode.

8.6.2. Syntax:

Command Syntax **ATO**

Command	Possible responses
ATO Return from online mode to offline mode	

8.7. Result code suppression Q

8.7.1. Description:

This command determines whether the mobile equipment sends result codes or not

8.7.2. Syntax:

Command Syntax

Command	Possible responses
ATQ0 <i>Note: Return result codes</i>	OK
ATQ1 <i>Note: Result codes are suppressed and not transmitted</i>	(none) <i>Note: No response</i>

8.8. DCE response format V

8.8.1. Description:

This command determines the DCE response format, with or without header characters <CR><LF>, and with the use of numeric result codes.

8.8.2. Syntax:

Command Syntax **ATV**

Command	Possible responses
ATV0 <i>Note: Display result codes as numbers</i>	0 <i>Note: Command is valid (0 means OK)</i>
ATV1 <i>Note: Display result codes as words</i>	OK <i>Note: Command valid</i>

8.9. Echo E

8.9.1. Description:

This command is used to determine whether or not the modem echoes characters received by an external application (DTE).

8.9.2. Syntax:

Command Syntax	ATE
Command	Possible responses
ATE0 <i>Note: Characters are not echoed</i>	OK <i>Note: Done</i>
ATE1 <i>Note: Characters are echoed</i>	OK <i>Note: Done</i>

8.10. Display configuration &V

8.10.1. Description:

This command is used to display the modem configuration.

The parameters displayed are the following :

&C: 1; &D: 2; &F: 0; E: 1; L: 0; M: 0; Q: 0; V: 1; X: 4; Z: 0; %D: 0; S0: 0; S10: 14; S11: 95; S3: 13; S4: 10; S5: 8; S6: 2; S7: 50 S8: 2; S9: 6; +FCLASS: 0; +CFG: ""; +FCC: 0,1,0,0,0,0,0,0 +FIS: 0,1,0,0,0,0,0,0; +CDR: 0; +CDS: 0,1,2048,6; +CFC: 0; +CQD: 10 +CRC: 0; +CRM: 1; +CTA: 0; +CXT: 0; +DR: 0

8.10.2. Syntax:

Command Syntax	AT&V
Command	Possible responses
AT&V	See above OK <i>Note: Done</i>

8.11. Restore Factory Setting &F

8.11.1. Description:

This command is used to restore the factory setting from NV memory. The settings that are restored are displayed in table 17.4.

[note] Command – ‘&F’ and ‘&Fn’ is entirely different.

8.11.2. Syntax:

Command Syntax	AT&F or AT&Fn
Command	Possible responses
AT&F	OK <i>Note: Command valid</i> <i>: Restor the Factory Setting from NV memory.</i>
AT&Fn	OK <i>Note: Command valid</i> <i>: According to Following defined values,</i> <i>Various Data Call Type is decided.</i>

8.11.3. Defined values

n

- 0 : Async/Fax mode
- 1 : Packet mode
- 2 : QNC mode

8.12. Save Configuration &W

8.12.1. Description:

This command writes the current configuration to NV. See table 17.4 for a list of items.

8.12.2. Syntax:

Command Syntax	AT&W
Command	Possible responses
AT&W	OK <i>Note : Command valid</i>

9. PHONE BOOK COMMANDS

9.1. Select phone book memory storage +CPBS

9.1.1. Description:

This command selects the type of memory where the phone book will be stored. Possible phone books are as list of <bk>.

9.1.2. Syntax:

Command Syntax	AT+CPBS="<bk>"
Command	Possible responses
AT+CPBS="SM" <i>Note: Select the RUIM phonebook</i>	OK <i>Note: RUIM phonebook selected</i>
AT+CPBS=? <i>Note: Possible values, not all may be supported</i>	+CPBS: ("ME","MC","LD","RC","EN") <i>Note: Not all may be supported</i>
AT+CPBS? <i>Note: Return the currently selected phonebook</i>	+CPBS: EN,0,10 OK <i>Note: EN phonebook selected, 0 locations used, 10 available</i>

9.1.3. Defined values

<bk>:

- "SM": I (RUIM phonebook)
- "LD": LND (combined RUIM and ME last dialed phonebook)
- "EN": EN (ME NV emergency numbers)
- "MC": MSD (ME missed calls list)
- "ME": ME (ME NV phonebook)
- "MT": MT (combined ME and RUIM phonebook)
- "RC": LIC (ME received calls list)

9.2. Return selected phonebook locations +CPBU

9.2.1. Description:

This returns the currently selected phonebook locations, maximum length for the phone number, and the maximum characters for the text portion.

9.2.2. Syntax:

Command Syntax AT+CPBU?

Command	Possible responses
AT+CPBU?	+CPBU: (1-80),20,12 OK <i>Note: ME phone book previously selected, 80-location starting at 1, and 20 digits maximum, and 12 characters for the text.</i>

9.3. Find phonebook entries +CPBF

9.3.1. Description:

This command returns the first 10 phonebook entries with alphanumeric fields starting with a given string. The user can use a string that is more exact to ensure that the entry they are looking for is found. It is possible to use this command with UCS2 strings. If a wrong UCS2 format is entered, the string is considered as an ASCII string.

9.3.2. Syntax:

Command Syntax AT+CPBF="string"

Command	Possible responses
AT+CPBF="TES"	+CPBF: 1,"6195551212",129,"test1" OK <i>Note: Displays location starting with "TES"</i>
AT+CPBF="NEXT" <i>Note: Find entries that start with "NEXT"</i>	+CME ERROR: 22 <i>Note: Entry not found</i>
AT+CPBF="8000410043FFFF" (or AT+CPBF="8000410043") <i>Note: Read entries starting with 00410043 UCS2 character. UCS : String with 1 (should 80)+4n characters</i>	+CPBF: 11,"34662352",129,"80004100430042FFFF" +CPBF: 12,"1332131232",129,"ACD" OK <i>Note: Display locations with text field starting with 00410043 (and 0x41 0x43 ="AC") character</i>
AT+CPBF="8045C" <i>Note: Read entries with "8045C"(ASCII format).</i>	+CME ERROR: 22 <i>Note: Entry not found. The string has a wrong UCS2 format, it is therefore considered as an ASCII string.</i>

9.4. Write phonebook entry +CPBW

9.4.1. Description:

This command writes a phone book to location < index> in the current phonebook selected with +CPBS.

9.4.2. Syntax:

Command Syntax AT+CPBW=<index>,"<phonenumber>",<TON/NPI number>,"<text string>"

Command	Possible responses
AT+CPBW=1,"6195551212",129,"test1"	OK <i>Note: Location 1 written to</i>
AT+CPBW=2 <i>Note: Erase location 2</i>	OK
AT+CPBW=1,"8585551212",129,"test1" <i>Note: Location 1 overwritten</i>	OK
AT+CPBW=80,"8585551212",129,"test80" <i>Note: Error left off trailing quotes</i>	ERROR
AT+CPBW=2,"8585551212",129,"test" <i>Note: Location 2 overwritten</i>	OK
AT+CPBW=4,"8585551212",129,"FullBook" <i>Note: Phone book is full</i>	+CME ERROR: 20 <i>Note: Phonebook full</i>

AT+CPBW=5,"8585551212",129,"Text is too long for this " <i>Note: Location 5 overwritten</i>	+CME ERROR: 24 <i>Note: Text string exceed maximum character length</i>
AT+CPBW=6,"012345",129,"8000410042" <i>Note: Write location 6(UCS2 format for the <text> field)</i>	OK <i>Note: Location 6 written. If all values are from 0x0000 to 0x007f, it is saved as an ASCII string. ("8000410042" -> "AB" or 0x41 0x42)</i>
AT+CPBW=7,"944595",129,"804E00963FFFFFF" <i>Note: Write location 7(UCS2 format for the <text> field)</i>	OK
AT+CPBW=8,"0127453",129,"80Xyz" <i>Note: Write location. The string has a wrong USC2 format, it is therefore considered as an ASCII string.</i>	OK

9.4.3. Defined values:

- <index> Integer value for currently selected phonebook.
- <phone number> Phone number is in ASCII format. Valid characters are 0-9 and *, #, -.
- <TON/NPI> Type of address in integer form. The MSB of this will always be set high.
- <text string> Any text string.

9.5. Phonebook read +CPBR

9.5.1. Description

This commands returns phonebook entries from a range of locations from the currently selected phonebook.

Note: There are only 5 entries total in the Emergency Numbers phonebook

9.5.2. Syntax:

Command Syntax AT+CPBR=<first>[,<last>]

Command	Possible responses
AT+CPBR=1	+CPBR:1,"6185551212",129,"test"
AT+CPBR=1,3 <i>Note: Read location 1 to 3 and return and data they may contain. Only 10 entries starting at the first entry are displayed. User can enter command multiple times with different indices.</i>	+CPBR:1,"6185551212",129,"test1" +CPBR:2,"61852",129," 804E00963FFFFFF" +CPBR:3,"6185551212",129,"test3" <i>Note: The MSB of the TON/NPI is ALWAYS set high</i>
AT+CPBR=12,1 <i>Note: <x,y> where x<y</i>	ERROR <i>Note: Invalid range x>y</i>
AT+CPBR=300	+CMEE:21 <i>Note: Invalid index</i>

Note:

When the range is more than 10, only the first 10 hit entries will be displayed.

e.g.

AT+CPBR=1,100

9.6. Phonebook search +CPBP

9.6.1. Description:

This searches the currently selected phonebook for a phone number match and returns it if found.

9.6.2. Syntax:

Command Syntax AT+CPBP= "<phone number>"

Command	Possible responses
AT+CPBP= "8585551212"	+CPBP=1,"8585551212",129,"FullBook"

<i>Note: Find "8585551212" in current phonebook if it exists.</i>	OK <i>Note: ME phone book previously selected. Display the entry that matches.</i>
AT+CPBP="123"	+CME ERROR: 22 <i>Note: Entry not found</i>

Note:

The phone number to search should be match that stored in phone book.
Partial number searching will return an error.

9.7. Avoid phonebook init +WAIP

9.7.1. Description:

This command allows the initialization off all available phonebooks.

9.7.2. Syntax:

Command Syntax AT+WAIP= <mode>

Command	Possible responses
AT+WAIP?	+WAIP: 1 <i>Note: No Phonebook commands are allowed. If a command is entered, it returns "+CME ERROR: 3".</i>
AT+WAIP=?	+WAIP: (0-1) OK
AT+WAIP=1	OK

9.7.3. Defined values:

<Mode>:

0 : Normal Operation mode. Enable.

1 : No Phonebook initialization. Disable

9.8. Delete calls from phonebook +WDCP

9.8.1. Description:

This command will delete call history from a selected phonebook if it supports this feature.

9.8.2. Syntax:

Command Syntax AT+WDCP="<call phonebook>"

Command	Possible responses
AT+WDCP?	+WDCP: "LD" <i>Note: Returns phonebook(s) that support deleting calls.</i>
AT+WDCP=?	+WDCP: ("LD","MC","RC") <i>Note: Possible supported phonebooks</i>
AT+WDCP="LD"	OK <i>Note: Erase call history for last dialed phone book</i>

9.8.3. Defined values:

<call phonebook>:

LD

MC

RC

10.POSITION DETERMINATION (GPS) AT COMMANDS

10.1. Position Determination Session Type +WPDST

10.1.1. Description:

This command sets and returns the PD session type.

10.1.2. Syntax:

Command Syntax AT+ WPDST =<type>

Command	Possible responses
AT+ WPDST? <i>Note: Request current setting mode</i>	+ WPDST: 2 OK
AT+ WPDST =3	ERROR (PD parameter not supported)

10.1.3. Defined values :

<Mode>

- 0: Session to provide single-shot fix
- 1: Session to provide the last position info available
- 2: Tracking mode independent fixes – session to provide continuous independent position fixes

Note: CM800A Currently do not support Tracking mode, it will be supported on MSM6xxxx based module.

10.2. Position Determination Operating Mode +WPDOM

10.2.1. Description:

This command sets and returns the PD session operating mode.

10.2.2. Syntax:

Command Syntax AT+WPDOM=<mode>

Command	Possible responses
AT+WPDOM? <i>Note: Request current setting mode</i>	+WPDOM: 5 OK
AT+WPDOM=1	OK
AT+WPDOM=0	+CME ERROR: tbd (PD parameter not supported)

10.2.3. Defined values :

<Mode>

- 0: Standalone only (currently not available on Q24)
- 1: Network only
- 2: Speed optimal (minimize time-to-fix, MS-based first, PDE-based later if failed)
- 3: Accuracy optimal (PDE preferred, MS in case of failure)
- 4: Data optimal– minimize data exchanged
- 5: MS-based only

Note: CM800A Currently do not support.

10.3. Position Determination Data Download +WPDDD

10.3.1. Description:

This command specifies and returns the PD data download setting.

10.3.2. Syntax:

Command Syntax AT+WPDDD=<type>,<duration>

Command	Possible responses
AT+WPDDD? <i>Note: Request current setting type</i>	+WPDDD: 0,10 OK +CME ERROR: tbd (not set yet)
AT+WPDDD=0,10 <i>Note: single-shot data valid for 10 minutes</i>	OK

10.3.3. Defined values :

<type>

- 0: single-shot download of data valid for the specified duration
- 1: periodically download data for the specified duration

<duration>

minutes

Note: CM800A Currently do not support.

10.4. Position Determination Fix Rate +WPDFR

10.4.1. Description:

This command specifies and returns the PD fix rate setting. This is used in Tracking sessions only.

10.4.2. Syntax:

Command Syntax AT+WPDFR=<num>,<time>

Command	Possible responses
AT+WPDFR? <i>Note: Request current setting type</i>	+WPDFR: 10,100 OK +CME ERROR: tbd (not set yet)
AT+WPDFR=10,100 <i>Note: maximum 10 fixes with 100 seconds in between fixes</i>	OK

10.4.3. Defined values :

<num>

maximum number of fixes

<time>

maximum time between fixes in seconds, limited to 1800 seconds.

Note: CM800A Currently do not support.

10.5. Position Determination Privacy Level +WPDPL

10.5.1. Description:

This command specifies and returns gpsOne lock for PD sessions setting.

10.5.2. Syntax:

Command Syntax AT+WPDPL=<level>

Command	Possible responses
AT+WPDPL? <i>Note: Request current setting type</i>	+WPDPL: 0 OK
AT+WPDPL=2 <i>Note: Select highest level of security</i>	OK

10.5.3. Defined values :

<level>

- 0: Off-allows both mobile-initiated and PDE-initiated(no restriction)
- 1: Mobile-disallows mobile-initiated PD session only
- 2: Network-nonemergency PDE-initiated PD sessions only
- 3: Both-disallows both mobile-initiated and nonemergency PDE-initiated PD sessions

10.6. Position Determination Start Session +WPDSS

10.6.1. Description

This command starts the PD session to get position. Resulting data will come in as unsolicited responses.

10.6.2. Syntax:

Command Syntax AT+WPDSS=<service>,<performance>,<accuracy>

Command	Possible responses
AT+WPDSS="PH" <i>Note: Start session for position and height with no limit on GSP search time</i>	OK +CME: ERROR: tbd (PD session already active) +CME: ERROR: tbd (module offline)
AT+WPDSS="PVH",20,50 <i>Note: Start session for position, velocity, and height – requiring GSP search time limited within 20 seconds, and aim for accuracy within 50 meters</i>	OK +CMD: ERROR: tbd (tracking mode only) +CMD: ERROR: tbd (tracking mode requires +WPDFR setup) +CME: ERROR: tbd (MS-based session only)
AT+WPDSS? +WPDSS="PV" ("PV" session in progress)	OK +WPDSS="PH",20,50 (said session in progress) OK OK (no active PD session)

10.6.3. Defined values :

<service>

- "P" Position only
- "PV" Position and Velocity
- "PH" Position and Height
- "PVH" Position, Velocity, and Height

<performance>

- 1: no time allowed for GPS search, use AFLT only.
2. 255: upper bound of GPS search time in seconds, with 255 seconds the maximum

<accuracy>

Accuracy threshold in meters, used by MS-based only. If position uncertainty higher than the threshold, PDE-calculated fixes will be try. The input can be between 1 to 255. But, the reasonable range may be much smaller.

10.7. Position Determination End Session +WPDES

10.7.1. Description:

This command ends the PD session to get position.

10.7.2. Syntax:

Command Syntax AT+WPDES

Command	Possible responses
AT+WPDES <i>Note: End session</i>	OK +CME: ERROR: tbd (no active session)

10.8. Position Determination Start Session Result +WPDSS

10.8.1. Description:

This unsolicited command returns the PD data.

10.8.2. Syntax:

Command Syntax +WPDSS:
<lat>,<lon>,<time>,<uncertainty>,<fix>,<mask>,<alt>,<alt_u>,<heading>,<ang_u>,<vh>,<vv>,<v_u>

Command	Possible responses
AT+WDSS="P" <i>Note: Ask for position only</i>	OK +WDSS:###,###,2 <i>Note: Unsolicited result with position only</i>
AT+WDSS="PV" <i>Note: Ask for position and velocity</i>	OK +WDSS:###,###,2,6,###,###, <i>Note: Unsolicited result with heading and velocity too</i>
AT+WDSS="PH" <i>Note: Ask for position and height</i>	OK +WDSS:###,###,3,3,###,###, <i>Note: Unsolicited result with altitude and heading too</i>

10.8.3. Defined values :

<lat> & <lon>

32-bit integer

<time>

64-bit integer

<fix>

2: 2D fix
3: 3D fix

<mask>

bit 0: altitude valid
bit 1: heading valid
bit 2: velocity valid (e.g. 6 means heading and velocity valid)

<altitude>

16 bit integer

<altitude uncertainty>

byte

<heading>

16 bit unsigned integer

<heading uncertainty>

byte

<velocity horizontal>

16 bit unsigned integer

<velocity vertical>

8 bit signed integer

<velocity uncertainty>

byte

10.9. Packet Dial String +GPDS

10.9.1. Description:

This command is used to set the packet dial string.

10.9.2. Syntax:

Command Syntax AT+GPDS=<number>

Command	Possible responses
---------	--------------------

AT+GPDS? <i>Note: Get current Packet Dial String</i>	+GPDS: #777 OK <i>Note: Current Packet Dial String is #777</i>
AT+GPDS=#999 <i>Note: Set the Packet Dial String to #999</i>	OK

10.10. PPP Authentication Protocol ID +GPAPID

10.10.1. Description:

This command sets and returns the PAP ID.

10.10.2. Syntax:

Command Syntax AT+ GPAPID =<id>

Command	Possible responses
AT+ GPAPID? <i>Note: Request current PAP ID</i>	+ GPAPID: speed011 OK
AT+ GPAPID =speed011	OK

10.11. PPP Authentication Protocol Password +GPAPPWD

10.11.1. Description:

This command sets and returns the PAP password.

10.11.2. Syntax:

Command Syntax AT+ GPAPPWD =<password>

Command	Possible responses
AT+ GPAPPWD? <i>Note: Request current PAP password</i>	+ GPAPPWD: speed011 OK
AT+ GPAPPWD =speed011	OK

10.12. MPC Server IP +GMPCIP

10.12.1. Description:

This command sets and returns the MPC server IP address.

10.12.2. Syntax:

Command Syntax AT+ GMPCIP =<IP address>

Command	Possible responses
AT+ GMPCIP? <i>Note: Request current setting mode</i>	+ GMPCIP: 10.1.0.40 OK
AT+ GMPCIP =10.1.0.38	OK

10.13. MPC Server Port +GMPCPORT

10.13.1. Description:

This command sets and returns the MPC server port.

10.13.2. Syntax:

Command Syntax AT+ GMPCPORT =<Port Number>

Command	Possible responses
AT+ GMPCPORT? <i>Note: Request current setting mode</i>	+ GMPCPORT: 6066 OK
AT+ GMPCPORT =7777	OK

10.13.3. Defined values :

< Port Number >

: 0-65535.

Note: CM800A currently fixed 6066 by China-Unicom requirements.

10.14. Open Network Library +GNETLIB

10.14.1. Description:

This command open and close MS's network library for connection to PDSN.

10.14.2. Syntax:

Command Syntax	AT+ GNETLIB =<Mode>
Response Syntax	+ GNETLIB: <Mode>,<Status>[,<ErrorNum>]
Command	Possible responses
AT+ GNETLIB? <i>Note: Request current mode</i>	+ GNETLIB: 0 OK
AT+ GNETLIB =1	OK

10.14.3. Defined values :

<Mode>

- 0: Close PPP.
- 1: Open PPP.

<Status>

- 0: Error
- 1: Success

<OpenErrorNum>

- 0: Could not open network library
- 1: Error maximum applications

<CloseErrorNum>

- 0: Invalid application ID
- 1: Existing,allocated sockets
- 2: Network still established
- 3: Could not close network library

10.15. Make PPP data call +GPPP

10.15.1. Description:

This command open and close PPP.

10.15.2. Syntax:

Command Syntax	AT+ GPPP =<Mode>
Response Syntax	+GPPP: <Mode>,<Status>[,<ErrorNum>]
Command	Possible responses
AT+ GPPP? <i>Note: Request current mode</i>	+ GPPP: 0 OK
AT+ GPPP =1	OK

10.15.3. Defined values :

<Mode>

- 0: Close PPP.
- 1: Open PPP.

<Status>

- 0: Error
- 1: Success

<OpenErrorNum>

- 0: PPP open in progress
- 1: Invalid application ID
- 2: subsystem establishment in progress

- 3: Could not open ppp
- 4: Bad application ID
- 5: network unavailable
- 6: network establishment inprogress
- 7: network close in progress

<CloseErrorNum>

- 0: PPP close in progress
- 1: Invalid application ID
- 2: subsystem close in progress
- 3: Could not close ppp
- 4: network is still connected and available
- 5: Bad application ID
- 6: network establishment inprogress
- 7: network close in progress

10.16. Create TCP Socket for connection to MPC +GSOCK

10.16.1. Description:

This command create a socket.

10.16.2. Syntax:

<i>Command Syntax</i>	AT+ GSOCK =<Mode>
<i>Response Syntax</i>	+GSOCK: <Mode>,<Status>[,<ErrorNum>] +GSOCK: <Mode>,<Status>[,<ErrorNum>]
Command	Possible responses
AT+ GSOCK? <i>Note: Request current mode</i>	+ GSOCK: 0 OK
AT+ GSOCK =1	OK

10.16.3. Defined values :

<Mode>

- 0: Close socket.
- 1: Create socket.

<Status>

- 0: Error
- 1: Success

<CreateErrorNum>

- 0: Address family not supported
- 1: Invalid application ID
- 2: Wrong protocol for socket type
- 3: Socket parameter not supported
- 4: No more sockets available for opening
- 5: Could not open TCP socket

<CloseErrorNum>

- 0: Could not close socket
- 1: TCP close in progress

10.17. Connection to MPC +GCONN

10.17.1. Description:

This command connect to MPC server and request PDE I.

10.17.2. Syntax:

<i>Command Syntax</i>	AT+ GCONN =<Mode>
<i>Response Syntax</i>	+GCONN: <Status>[,<ErrorNum>]
Command	Possible responses
AT+ GCONN?	+ GCONN: 0

<i>Note: Request current mode</i>	OK
AT+ GCONN =1	OK

10.17.3. Defined values :

<Mode>

- 0: Do nothing,no meanings.
- 1: Connect to MPC server.

<Status>

- 0: Connect Error
- 1: Connect Success
- 2: sending MPC Request
- 3: MPC Read success

<ErrorNum>

- 0: EwouldBlock on connect
- 1: Invalid socket descriptor
- 2: Connection attempt refused
- 3: Connection attempt timed out
- 4: Invalid buffer or argument
- 5: IP address changed,causing TCP reset
- 6: Connection establishment in progress
- 7: Network subsystem unavailable
- 8: Operation not supported
- 9: Address already in use
- 10: Destination address required
- 11: Could not connect to server

10.18. PDE Server IP +GPDEIP

10.18.1. Description:

This command sets and returns the PDE IP.

10.18.2. Syntax:

Command Syntax AT+ GPDEIP =<IP address>

Command	Possible responses
AT+ GPDEIP?	+ GPDEIP: 10.1.0.59
<i>Note: Request current setting mode</i>	OK
AT+ GPDEIP =10.1.0.58	OK

Note: PDE IP is received via MPC server in China-market.

10.19. PDE Server Port +GPDEPORT

10.19.1. Description:

This command sets and returns the PDE port.

10.19.2. Syntax:

Command Syntax AT+ GPDEPORT =<password>

Command	Possible responses
AT+ GPDEPORT?	+ GPDEPORT: 7777
<i>Note: Request current setting mode</i>	OK
AT+ GPDEPORT =7778	OK

Note: PDE IP is received via MPC server in China-market.

10.20. NMEA-0183 Message Support +GNMEA0183

10.20.1. Description:

This command sets the NMEA-0183 type PD info.

10.20.2. Syntax:

Command Syntax	AT+ GNMEA0183 =<Mode>
Response Syntax	\$GPGGA,073301.7,3658D424821,N,12200D002139,W,1,05,1D0,15D0,M,,,*25
Command	Possible responses
AT+ GNMEA0183?	+ GNMEA0183: 0
<i>Note: Request current setting mode</i>	OK
AT+ GNMEA0183 =1	OK

10.20.3. Defined values :

<Mode>

0: "+WPDSS:" Type PD info.

1: NMEA-0183 Type PD info.

Note: CM800A Currently do support Only GGA message.

10.21. Example

```

AT+CRM=1
OK
AT+GPDS=1501
OK
AT+GPDS?
+GPDS: 1501
OK
AT+GPAPID=speed011?
OK
AT+GPAPPWD=speed011?
OK
AT+GMPCIP=10.1.0.40
OK
AT+GMPCPORT=6066
OK
AT+GNETLIB=1
OK
AT+GPPP=1
OK
AT+GSOCK=1
OK
AT+GCONN=1
OK
AT+GSOCK=0
OK
AT+WPDST=0
OK
AT+WPDSS="PVH",16,200
OK
+WPDSS: 692B76,FEA4FA49,2CDB7302,D,0,1,203,B,0,9,0,0,D
AT+GPPP=0
OK
AT+GNETLIB=0
    
```

OK

11. SimpleSocket Interface AT COMMANDS

11.1. SimpleSocket Server IP +GSIP

11.1.1. Description:

This command sets and returns the SimpleSocket Server IP Address.

11.1.2. Syntax:

Command Syntax AT+ GSIP =<IP Address>

Command	Possible responses
AT+ GSIP?	+ GSIP: 10.1.0.64
<i>Note: Request current setting mode</i>	OK
AT+ GSIP =10.1.0.62	OK

Note: SimpleSocket Server is the server you want to connect and communicate.

11.2. SimpleSocket Server Port +GSPORT

11.2.1. Description:

This command sets and returns the SimpleSocket Server Port Number.

11.2.2. Syntax:

Command Syntax AT+ GSPORT =<Port number>

Command	Possible responses
AT+ GSPORT?	+ GSPORT: 7676
<i>Note: Request current setting mode</i>	OK
AT+ GSPORT =7545	OK

Note: SimpleSocket Server is the server you want to connect and communicate.

11.3. Create TCP Socket for connection to SimpleSocket Server +GSSOCK

11.3.1. Description:

This command create a socket.

11.3.2. Syntax:

Command Syntax AT+ GSSOCK =<Mode>

Response Syntax + GSSOCK: <Mode>,<Status>[,<ErrorNum>]

+ GSSOCK: <Mode>,<Status>[,<ErrorNum>]

Command	Possible responses
AT+ GSSOCK?	+ GSSOCK: 0
<i>Note: Request current mode</i>	OK
AT+ GSSOCK =1	OK

11.3.3. Defined values :

<Mode>

- 0: Close socket.
- 1: Create socket.

<Status>

- 0: Error
- 1: Success

<CreateErrorNum>

- 0: Address family not supported
- 1: Invalid application ID
- 2: Wrong protocol for socket type

- 3: Socket parameter not supported
- 4: No more sockets available for opening
- 5: Could not open TCP socket

<CloseErrorNum>

- 0: Could not close socket
- 1: TCP close in progress

11.4. Connection to SimpleSocket Server +GSCONN

11.4.1. Description:

This command connect to SimpleSocket Server.

11.4.2. Syntax:

Command Syntax	AT+ GSCONN =<Mode>
Response Syntax	+ GSCONN: <Status>[,<ErrorNum>]

Command	Possible responses
AT+ GSCONN?	+ GSCONN: 0
<i>Note: Request current mode</i>	OK
AT+ GSCONN =1	OK

11.4.3. Defined values :

<Mode>

- 0: Do nothing,no meanings.
- 1: Connect to SimpleSocket server.

<Status>

- 0: Connect Error
- 1: Connect Success

<ErrorNum>

- 0: EwouldBlock on connect
- 1: Invalid socket descriptor
- 2: Connection attempt refused
- 3: Connection attempt timed out
- 4: Invalid buffer or argument
- 5: IP address changed,causing TCP reset
- 6: Connection establishment in progress
- 7: Network subsystem unavailable
- 8: Operation not supported
- 9: Address already in use
- 10: Destination address required
- 11: Could not connect to server

11.5. Write data to SimpleSocket +GSWRITE

11.5.1. Description:

This command write data to SimpleSocket.

11.5.2. Syntax:

Command Syntax	AT+ GSWRITE =<Mode>,<Data>
Response Syntax	+GSWRITE: <Status>

Command	Possible responses
AT+ GSWRITE?	+ GSWRITE: 0
<i>Note: Request current mode</i>	OK
AT+ GSWRITE =1,"This is Test"	OK

11.5.3. Defined values :

<Mode>

- 0: Do nothing,no meanings.
- 1: Write indicates.

<Data>

Ascii strings

<Status>

- 0: Write retry
- 1: Write success

11.6. Read data from SimpleSocket +GSREAD

11.6.1. Description:

This command read data from SimpleSocket.

11.6.2. Syntax:

Command Syntax	AT+ GSREAD =<Mode>
Response Syntax	+GSREAD: <Data>
Command	Possible responses
AT+ GSREAD?	+ GSREAD: 0
<i>Note: Request current mode</i>	OK
AT+ GSREAD=1	+GSREAD: "Hello!"

11.6.3. Defined values :

<Mode>

- 0: Do nothing,no meanings.
- 1: Wait read data.

<Data>

Ascii strings

11.7. Example

```

AT+CRM=1
OK
AT+GPDS=1501
OK
AT+GPDS?
+GPDS: 1501
OK
AT+GPAPID=speed011?
OK
AT+GPAPPWD=speed011?
OK
AT+GSIP=10.1.0.40
OK
AT+GSPORT=5555
OK
AT+GNETLIB=1
OK
AT+GPPP=1
OK
AT+GSSOCK=1
OK
AT+GSCONN=1
OK
AT+GSWRITE=1,"This is Socket write Test"
OK
    
```

```
AT+GSREAD=1
OK
+GSREAD: "Hello, who are you?"
AT+GSOCK=0
OK
AT+GPPP=0
OK
AT+GNETLIB=0
OK
```

12.SPECIFIC AT COMMANDS

12.1. Manufacturer identification +WGMI

12.1.1. Description:

This command gives the manufacturer identification.

12.1.2. Syntax:

Command Syntax **AT+WGMI**

Command	Possible responses
AT+WGMI <i>Note: Get manufacturer identification</i>	+WGMI: GIGA telecom, Incorporated OK <i>Note: Command valid, GIGA modem</i>

12.2. Request model identification +WGMM

12.2.1. Description:

This command is used to get the supported frequency bands. With multi-band products the response may be a combination of different bands.

12.2.2. Syntax:

Command Syntax **AT+WGMM**

Command	Possible responses
AT+WGMM <i>Note: Get supported bands</i>	+WGMM: 800 1900 OK <i>Note: CDMA 800 MHz band and 1900(PCS)</i>

12.3. Cell environment description +CCED

12.3.1. Description:

This command can be used by the application to retrieve the parameters of the main cell and up to six neighboring cells.

There are two possible methods for the external application to ascertain these cell parameters: on request by the application or automatically by the product every 5 seconds.

Automatic mode is not supported during communication or registration.

12.3.2. Syntax:

Command Syntax **AT+CCED=<mode>[, <requested dump>]**

12.3.3. Defined values :

<mode>

- 0: One shot requested
- 1: Automatic shots requested
- 2: Stop automatic shots

Automatic shots will not return a terminating "OK".

<requested dump>

- 1: Main Cell : band class, Channel #, SID, NID, Base Station P Rev, Pilot PN offset, Base Station ID, Slot cycle index, Raw Ec/Io, Rx power, Tx power, Tx Adj
- 2: Neighbor1 to Neighbor20 (max) : First parameter is the number of neighbors. Following parameters: Neighbor1 band class, Neighbor1 Pilot PN, Neighbor1 frequency assignment, Neighbor2 Pilot PN, Neighbor2 band class, Neighbor2 frequency assignment, ...
- 4: Timing Advance: Always zero for CDMA

Combination (addition of the values) of the requested dump is supported.

Where <value> is the ASCII string of the values (in decimal form except the LAC and CI values which are in hexadecimal form) of the parameters. If a field cannot be measured – or has no sense – the parameter is not filled in (two consecutive commas are then found).

If the <requested dump> parameter is absent, that of the last +CCED command (or 15 by default) will be used.

12.4. Automatic RxLev indication +CCED

12.4.1. Description:

The CCED command has been extended to indicate the received signal strength indication (rssi) of the main cell. The command principle has not changed.

12.4.2. Syntax:

Command Syntax AT+CCED=<mode>[, <requested dump>]

12.4.3. Defined values :

<mode>

- 0: One shot requested
- 1: Automatic shots requested
- 2: Stop automatic shots

<requested dump>

- 8: Main cell RSSI indications (RxLev) from 0 to 31

The response will be a +CSQ response and not a +CCED response. The 07.07 format for +CSQ is respected. The <ber> is not evaluated by this command, so the <ber> value will always be 99.

+CSQ :<rssi>, 99
OK

This +CSQ response, when automatic shots are selected, is sent every time the<rssi> measured by the product changes. Automatic shots are supported in idle mode and during communication.

Combination (addition of the values) of the requested dump (1,2,4,8) is supported but the activation or deactivation of this flow (8) does not affect the other flows. Both +CCED and +CSQ responses may then be generated.

If the <requested dump> parameter is absent, the last +CCED command parameter (or 15 by default) will be used.

Command	Possible responses
AT+CCED=0,15 <i>Note: one shot, dump all</i>	+CSQ:29, 99 +CCED:0,2,0,300,384,0,160,384,0,384,4,8, 6,296, 6033,1,16,-69,-67,-63 OK <i>Note: +CCED has the format: +CCED: <timing advance>,<neighbor parameters>,<main cell parameters>.</i>

12.5. General Indications +WIND

12.5.1. Description:

GIGA has introduced a general mechanism to send unsolicited non-standardized indications to the application. The identified unsolicited non-standardized indications are:

1. indication during mobile originated call setup that the calling party is ringing.
- Indication of the availability of the product to receive AT commands after boot.

For each of these indications, a “bit flow” has to be indicated.

12.5.2. Syntax:

Command Syntax **AT+WIND= <IndLevel >**

12.5.3. Defined values :

<IndLevel>

- 1 (bit-0): R-UIM Presence
- 2 (bit-1): Reserved
- 4 (bit-2): Reserved
- 8 (bit-3): Indication that the product is ready to process all AT commands
- 16 (bit-4): Reserved
- 32 (bit-5): Reserved
- 64 (bit-6): Network service available indication
- 128 (bit-7): Network lost indication
- 256 (bit-8): Reserved
- 512 (bit-9): Reserved

Note: If <IndLevel> is equal to 0, no unsolicited “+WIND: <IndNb>” will occur.

Combination (addition of the values) is used to allow more than one indication flow.

0 ≥ IndLevel ≤ 1023

The response is OK if the values are in the previous range.

The unsolicited response will then be:

+WIND : <event> [,<idx>]
<idx>: Call identifier, defined in +CLCC command.

The supported events are:

<event>

- 0: R-UIM not present
- 1: R-UIM present
- 2: Reserved
- 4: Reserved
- 8: Product is ready to process all AT commands
- 16: Reserved
- 32: Reserved
- 64: The network service is available for an emergency call.
- 128: The network is lost.
- 256: Reserved
- 512: Reserved

The AT+WIND=? Command is supported and indicates the <allowed bit flows>.

Default value is 8: AT command processing ready indication.

AT+WIND=? Gives the possible value range (0-1023)

Command	Possible responses
AT+WIND=128 <i>Note: Turn on Network lost indication only</i>	OK

12.6. Analog digital converters measurements +ADC

12.6.1. Description:

This command gets the raw value of the ADC conversion. Six ADC read values are specified: VBATT, THERM, HDET_HIGH, HDET_LOW, ADC_0, RESERVED.

12.6.2. Syntax:

Command Syntax	AT+ADC=<item>	Possible responses
	AT+ADC=0	+ADC: 185 OK
	<i>Note: Select VBATT</i>	<i>Note: raw value for VBATT</i>
	AT+ADC=1	+ADC: 238 OK
	<i>Note: Select THERM</i>	
	AT+ADC=?	+ADC: (0-5)
	<i>Note: Ask for the list of possible values</i>	<i>Note: possible values 0 –5</i>
	AT+ADC?	+ADC: 1 OK
	<i>Note: Ask for the current item selected</i>	<i>Note: THERM selected</i>

12.6.3. Defined values :

The supported items are:

<item>

- 0: VBATT
- 1: THERM
- 2: HDET_HIGH
- 3: HDET_LOW
- 4: ADC_0
- 5: RESERVED

12.7. Mobile Equipment event reporting +CMER

12.7.1. Description:

This command enables or disables sending of unsolicited result codes in the case of a key press.

12.7.2. Syntax:

Command Syntax AT+CMER=<keyp>

12.7.3. Defined values :

<keyp> (keypad) :

- 0: No keypad event reporting.
- 1: Keypad event reporting are routed using unsolicited code :
+CKEV : <key>, <press>

12.8. Read GPIO value +WIOR

12.8.1. Description

Set the I/O port as an input and read the I/O pin value.

12.8.2. Syntax

Command Syntax	AT+WIOR=<index>	Possible responses
	AT+WIOR=32	+WIOR: 0
	Read GPIO 32 value	OK

	GPIO 32 value is 0
--	--------------------

12.8.3. Defined values

<index>

The GPIO to read. (0-47)

<value>

Value of the GPIO pin.

12.9. Write GPIO value +WIOW

12.9.1. Description

Set the I/O port as an output and set the requested I/O pin value.

Note: Because the GPIO that user can handle is not exist, this command is not supported now.

12.9.2. Syntax

Command Syntax AT+WIOW=<index>,<value>

Command	Possible responses
AT+WIOW=47,1 <i>Note: Set GPIO 47 to 1</i>	OK <i>Note: GPIO value is written</i>

12.9.3. Defined values

<index>

The GPIO to write.

<value>

0: I/O bit is set to 0.

1: I/O bit is set to 1.

12.10. Play tone +WTONE

12.10.1. Description:

This specific command allows a tone to be played on the current speaker or on the buzzer. Frequency, volume and duration can be set.

12.10.2. Syntax:

Command Syntax AT+WTONE=<mode>[,<dest>,<freq>,<volume>,<duration>]

Response Syntax OK or ERROR

Command	Possible responses
AT+WTONE=1,1,300,2,50 <i>Note: Play a tone</i>	OK <i>Note: Done</i>
AT+WTONE? <i>Note: Current value</i>	+WTONE: 1,1,300,2,50 OK
AT+WTONE=0 <i>Note: Stop playing</i>	OK <i>Note: Done</i>
AT+WTONE=? <i>Note: Test command</i>	+WTONE: (0-1),(1-2),(1-4000),(0-3),(0-50) OK <i>Note: Done</i>

12.10.3. Defined values :

<mode>

0: Stop playing.

1: Play a tone

<dest>: This parameter sets the destination (mandatory if <mode>=1)

1: Speaker

2: Buzzer

<freq>

This parameter sets tone frequency (in Hz) (mandatory if <mode>=1). The range is between 1 and 4000Hz. However, for handset and a person to hear, the effective range may be 150-4000Hz.

<volume>

(0-3): This parameter sets the tone volume. The default value is 1. Values are the same as +CRSL.

<duration>

(0-50): This parameter sets tone duration (unit of 100 ms). When this parameter is equal to 0 (default value), the duration is infinite, and the tone can be stopped by AT+WDTONE=0.

12.11. Play DTMF tone +WDTMF

12.11.1. Description:

This specific command allows a DTMF tone to be played on the current speaker. DTMF, volume and duration can be set.

This command is only used to play a DTMF tone. To send a DTMF over the CDMA network, use the +VTS command.

12.11.2. Syntax:

Command Syntax	AT+WDTMF=<mode>[,<dtmf>,<volume>,<duration>]
Response Syntax	OK or ERROR
Command	Possible responses
AT+WDTMF=1,"*"2,10 <i>Note: Play a DTMF tone</i>	OK <i>Note: Done</i>
AT+WDTMF? <i>Note: Current value</i>	+WDTMF: 1,"*"2,10
AT+WDTMF=0 <i>Note: Stop playing</i>	OK <i>Note: Done</i>
AT+WDTMF=? <i>Note: Test command</i>	ERROR <i>Note: Done</i>

12.11.3. Defined values :

<mode>

- 0: Stop playing.
- 1: Play a DTMF tone

<dtmf>

This parameter sets the DTMF to play in {0-9,*,#,A,B,C,D} (mandatory if <mode>=1)

<volume>

(0-3): This parameter sets tone gain. The values are identical to those of the +WDTONE (speaker) command (mandatory if <mode>=1).

<duration>

(0-50): This parameter sets the tone duration (unit of 100 ms). When this parameter is 0 (default value), the duration is infinite, and the DTMF tone can be stopped by AT+WDTMF=0.

12.12. Hardware Version +WHWV

12.12.1. Description:

This specific command gets the hardware version.

12.12.2. Syntax:

Command Syntax **AT+WHWV**

Command	Possible responses
AT+WHWV <i>Note: Request Hardware Version</i>	Hardware Version 4.14 OK <i>Note: Hardware version is 4.14</i>
AT+WHWV <i>Note: Request Hardware Version</i>	Hardware Version -.— OK <i>Note: No hardware version available</i>

12.13. GIGA Select Voice Gain +WSVG

12.13.1. Description:

The product has 2 voice gain paths, this specific command allows the path to be selected.

12.13.2. Syntax:

Command Syntax **AT+WSVG = <n>**

Command	Possible responses
AT+WSVG=<n>	
AT+WSVG=0 <i>Note: Select Path 1 (Default)</i>	OK <i>Note: Path 1 selected</i>
AT+WSVG=1 <i>Note: Select Path 2</i>	OK <i>Note: Path 2 selected</i>
AT+WSVG=? <i>Note: Get the list of possible values</i>	+WSVG: (0-1) <i>Note: possible values 0 or 1</i>
AT+WSVG? <i>Note: Get the current value</i>	+WSVG: 1 <i>Note: Path 1 is selected</i>

12.13.3. Defined values

<n> Path

- 0: HANDSET (Default)
- 1: HEADSET

12.14. GIGA Status Request +WSTR

12.14.1. Description:

This specific command returns some operation status. It can be used for ex. To check the state of the initialization sequence; the different values returned are Not started, Ongoing, Finished.

12.14.2. Syntax:

Command Syntax **AT+WSTR=<status>**

Response Syntax **Response syntax: +WSTR: <status>,<value>**

Command	Possible responses
AT+WSTR=<status>	+WSTR :<status>,<value>
AT+WSTR=1 <i>Note: Select the status 1 (INIT SEQUENCE)</i>	+WSTR: 1,2 OK <i>Note: Init finished</i>
AT+WSTR=2 <i>Note: Select the status 2 (NETWORK STATUS)</i>	+WSTR: 2,1 OK <i>Note: The network is available</i>
AT+WSTR=? <i>Note: Ask the list of possible values</i>	+WSTR: (1-2) <i>Note: possible values : 1, 2</i>

12.14.3. Defined values

<status> 1 Initialization sequence

<value>

- 0: Not started
- 1: On going
- 2: Finished

<status> 2 Network status

<value>

- 0: No network
- 1: Network available

12.15. GIGA Ring Indicator Mode +WRIM

12.15.1. Description:

This specific command sets or returns the state of the Ring Indicator Mode.

In pulse RI mode, an electrical pulse lasting approximately 10s is sent on the Ring Indicator signal just before sending any unsolicited AT response in order not to lose AT responses when client tasks are in sleep state. Still in RI mode, when receiving incoming calls, electrical pulses are sent on the RI signal.

In up-down RI mode, no pulses are sent before unsolicited AT response, and up-down signals are sent when receiving an incoming call.

12.15.2. Syntax:

Command Syntax AT+WRIM=<n>

Command	Possible responses
AT+WRIM=<n>	
AT+WRIM=0 <i>Note: Select up-down RI mode</i>	OK <i>Note: up-down RI mode selected</i>
AT+WRIM=1 <i>Note: Select pulse RI mode</i>	OK <i>Note: pulse RI mode selected</i>
AT+WRIM=? <i>Note: Ask the list of possible values</i>	+WRIM: (0-1) OK <i>Note: possible values 0 or 1</i>
AT+WRIM? <i>Note: Ask the current value</i>	+WRIM: 1 OK <i>Note: current RI mode is pulse RI.</i>

12.15.3. Defined values

<n>

- 0: up-down RI mode
- 1: pulse RI mode

12.16. GIGA 32kHz Sleep Mode +W32K

Description: This specific command allows the 32kHz sleep mode to be enabled or disabled.

When sleep mode is entered, the product uses a 32kHz internal clock during inactivity stages.

When enabled, sleep mode is active after 1 to 15 minutes.

12.16.1. Syntax:

Command Syntax AT+W32K=<mode>

Command	Possible responses
AT+W32K=1 <i>Note: Enable 32kHz sleep mode</i>	OK <i>Note: 32kHz sleep mode is enabled</i>
AT+W32K=0	OK

<i>Note: Disable 32kHz sleep mode</i>	<i>Note: 32kHz sleep mode is disabled</i>
---------------------------------------	---

12.16.2. Defined values

<mode>

- 0: Disable 32kHz powerdown mode
- 1: Enable 32kHz powerdown mode

12.17. GIGA Change Default Melody +WCDM

12.17.1. Description:

This specific command allows a manufacturer specific melody to be selected.

This default melody will be played for any new incoming voice call, either on the buzzer or on the speaker. If melody 0 is selected, no melody will be played.

Note: Selection of the player will have effect on the setting of the WCDP command.

12.17.2. Syntax:

Command Syntax	
Command	Possible responses
AT+WCDM=0 <i>Note : Select no melody</i>	OK
AT+WCDM=5 <i>Note : Select melody n°5</i>	OK
AT+WCDM? <i>Note : Indicate the current melody</i>	+WCDM: 5,0 OK <i>Note : Melody n°5 is currently selected, and the buzzer is selected to play it.</i>
	RING <i>Note : An incoming call occurs, and the melody n°5 is played on the buzzer.</i>
AT+WCDM=,1 <i>Note: Select the speaker to play the melody on.</i>	OK
AT+WCDM?	+WCDM: 5,1 OK <i>Note : Now the speaker is selected to play the melody if an incoming call occurs.</i>

12.17.3. Defined values

<melody>

- 0: No melody (default)
- 1~10: Melody 1 to 10

<player>

- 0: Melody <melody> will be played on the buzzer for any new incoming voice call. (default)
- 1: Melody <melody> will be played on the speaker for any new incoming voice call.

12.18. GIGA Software version +WSSW

12.18.1. Description:

This specific command displays some internal software reference.

12.18.2. Syntax:

Command Syntax	
Command	Possible responses
AT+WSSW	+WSSW: WQ1.6 OK
<i>Note: Get Software version</i>	<i>Note: internal software information</i>

12.19. GIGA Custom Character Set +WCCS : NOT SUPPORT

NOT SUPPORT

12.20. GIGA Change Default Player +WCDP

12.20.1. Description

This specific command allows the default melody player to be selected.

Note:

Selection of the player will have effect on the setting of the WCDM command.

12.20.2. Syntax

Command Syntax	AT+WCDP = <player>
Command	Possible responses
AT+WCDP=?	+WCDP : (0-1) OK
AT+WCDP=0 <i>Note: Select the speaker.</i>	OK
AT+WCDP?	+WCDP: 0 OK

12.20.3. Defined values :

<player>

- 0: Speaker
- 1: Buzzer

12.21. GIGA Reset +WRST

12.21.1. Description

This specific command allows to reset the module after the time specified by the second parameter.

12.21.2. Syntax

Command Syntax	AT+WRST =<Mode>,<Delay>
Response Syntax	+WRST: <Mode>,<Delay>,<RemainTime>
Command	Possible responses
AT+WRST=?	ERROR
AT+WRST=0 <i>Note: Disable timer</i>	OK
AT+WRST=1,"001:03" <i>Note: Enable timer and put delay at 1 hour 3 minutes</i>	OK
AT+WRST?	+WRST: 1,"001:03","001:01" OK <i>Note: Timer activated to reset after 1 hour and 3 minutes. Actually 1 hour and 1 minute remaining before next reset.</i>

12.21.3. Defined values :

<val1>

- 0: timer reset is disabled
- 1: timer reset is enabled

<Delay> specify the time for reset

"000:00"- "199:59"

<RemainTime> time before next reset

“ 000:00”- “199:59”

12.22. Set Standard Tone +WSST

12.22.1. Description:

This command allows to set/get the sound level of the Standard Tones.

12.22.2. Syntax:

Command Syntax AT+WSST=<sound level>	
Command	Possible responses
AT+WSST=4 <i>Note: Set volume to Max.</i>	OK
AT+WSST=0 <i>Note: Set the volume to Min (muted)</i>	OK <i>Note: Standard Tones are muted</i>
AT+WSST? <i>Note: get current standard tones sound level</i>	+WSST: 4 OK <i>Note: Current level is 4</i>
AT+WSST=?	+WSST: (0-4)

12.22.3. Defined values :

<sound level>

- 0: Min volume (muted)
- 1: Default volume (default)
- 4: Max volume

12.23. Set voice privacy level +WPRV

12.23.1. Description:

This command requests the CDMA voice privacy level. CDMA voice privacy is an optional feature of CDMA networks. Therefore, voice privacy will only become enabled during a voice call if the base station supports voice privacy; otherwise this feature is unavailable on your CDMA carrier. Thus, this command enables a request from the module to the base station for voice privacy. If voice privacy is activated by the base station, the unsolicited command +WPRV:1 will appear indicating the long code PN mask for the traffic channel has been scrambled by the base station.

This command may be called before or during a voice call.

12.23.2. Syntax:

Command Syntax AT+WPRV=<voice privacy level>	
Command	Possible responses
AT+WPRV=0 <i>Note: Set to normal voice call</i>	OK
AT+WPRV=1 <i>Note: Request a secure voice call</i>	OK
ATD18005551212;	OK +WORG:18005551212 +WCNT:3 +WPRV:1 <i>Note: Voice Privacy is now ON</i>

12.23.3. Description:

<voice privacy level>

- 0: Normal (default)
- 1: Private

12.24. Security PIN +WPIN

12.24.1. Description:

This command sets, enables, or disables the security PIN. When this PIN is enabled, only ATD (emergency numbers only), ATH, and +WPIN commands will be accepted.

12.24.2. Syntax:

Command Syntax AT+WPIN=<mode>,<current val>,<new val>

Command	Possible responses
AT+WPIN=0,1111 <i>Note: Disable the security PIN</i>	OK
AT+WPIN? <i>Note: Query the current state</i>	+WPIN: 0 OK <i>Note: PIN disabled</i>
AT+WPIN=1,2222 <i>Note: Enable the security PIN</i>	+CME ERROR: 44 <i>Note: Invalid PIN</i>
AT+WPIN=1,1111 <i>Note: Enable the security PIN</i>	OK
AT+WPIN? <i>Note: Query the current state</i>	+WPIN: 1 OK <i>Note: PIN enabled</i>
AT+WPIN=2,1111,5555 <i>Note: Change the security PIN code from 1111 to 5555</i>	OK
AT+CSQ?	+CME ERROR: 44 <i>Note: Module is locked, only ATD & +WPIN commands will be accepted</i>
ATD8585551212;	+CME ERROR: 44 <i>Note: Module is locked, only emergency numbers accepted using ATD.</i>
AT+WPIN=0,5555 <i>Note: Disable the security PIN</i>	OK

12.24.3. Defined values :

<mode>

- 0: Disable PIN
- 1: Enable PIN
- 2: Change PIN

<current val> & <new val>

0000 – 9999

12.25. Request PRL Version information +WPRL

12.25.1. Description:

This command requests PRL Version information for the currently selected NAM. Note that this command only works for software which includes PRL information in NV. For other builds, this command will return +CME ERROR:4

12.25.2. Syntax:

Command Syntax AT+WPRL?

Command	Possible responses
AT+WPRL? <i>Note: Request current NAM's PRL version</i>	+WPRL: 1024 OK
AT+WPRL?	+CME ERROR: 41

Note: Request current NAM's PRL version	Note: PRL request invalid
---	---------------------------

12.26. Vibrator On/Off +VIBR

12.26.1. Description:

This specific command turns the vibrator on or off.

12.26.2. Syntax:

Command Syntax AT+VIBR=<mode>

Command	Possible responses
AT+VIBR=1 <i>Note: Turn the vibrator on</i>	OK <i>Note: Done</i>
AT+VIBR=0 <i>Note: Turn the vibrator off</i>	OK <i>Note: Done</i>

12.26.3. Defined values :

<mode>

- 0: On
- 1: Off

12.27. Set Alert Type +SALT

12.27.1. Description:

This specific command allows a specific alert type to be selected for any new incoming voice call and SMS.

12.27.2. Syntax:

Command Syntax AT+ SALT=<call type>,<alert type>

Command	Possible responses
AT+SALT=0,0 <i>Note: Select a bell type for any new incoming voice call.</i>	OK <i>Note: An incoming voice call occurs, and ringing the bell.</i>
AT+SALT=1,1 <i>Note: Select a vibrator type for any new incoming SMS.</i>	OK <i>Note: An incoming SMS occurs, and start vibration.</i>
AT+SALT=1,2 <i>Note: Select a vibrator/bell type for any new incoming SMS.</i>	ERROR or +CME ERROR: 3 <i>Note: Not allowed.</i>

12.27.3. Defined values :

<call type>

- 0: Incoming voice call
- 1: Incoming short message (SMS)

< alert type >

- 0: Bell (Voice and SMS – default value)
- 1: Vibrator
- 2: Vibrator/Bell (Not allow if SMS call)
- 3: Lamp Only

13.SIM TOOLKIT

13.1. Overview of SIM Application ToolKit

13.1.1. Summary

SIM ToolKit, also known as .SIM Application ToolKit. Introduces new functionalities, which open the way to a broad range of value added services.

The principle is to allow service providers to develop new applications (e.g.. for banking, travel, ticket booking, etc.) for subscribers and to download them into This solution allows new services to be accessible to the user by adding new SIM-based applications without modifying the handset.

13.1.2. Functionality

SIM Toolkit refers to the functionalities described in the GSM Technical specification 11.14.

It introduces about twenty-five new commands for the SIM. Three classes of ToolKit functionalities have been defined, with class 1 offering a subset of commands and class 3 offering the full range of commands (See table 1 in APPENDIX B).

The SIM Application Toolkit supports:

- profile download,
- proactive SIM,
- data download into SIM.
- menu selection,
- call control by SIM.

13.1.3. Profile download

The Profile Download instruction is sent by the customer application to the SIM as part of the initialization. It is used to indicate which SIM Application Toolkit features the customer application supports.

The AT command used for this operation is +STSF (SIM ToolKit Set Facilities).

13.1.4. Proactive SIM

A proactive SIM provides a mechanism whereby the SIM can ask the customer application to perform certain actions.

These actions include:

- display menu,
- display given text,
- get user input,
- send a short message,
- play the requested tone,
- set up a call,
- provide location information.

This mechanism allows SIM applications to generate powerful menu-driven sequences on the customer application and to use services available in the network.

The commands used for this operation are:

- +STIN (SIM Toolkit Indication),
- +STGI (SIM Toolkit Get Information),
- +STGR (SIM Toolkit Give Response).

13.1.5. Data Download to SIM

Data downloading to the SIM allows (SMS, phonebook.) data or programs (Java applets) received by SMS or by Cell Broadcast to be transferred directly to the SIM Application.

This feature does not need any AT command. It is transparent to the customer application.

13.1.6. Menu Selection

A set of menu items is supplied by the SIM Application ToolKit. The menu selection command can then be used to inform the SIM Application which menu item is selected.

The commands used for this operation are +STIN, +STGI and +STGR .

13.1.7. Call control by SIM

The call control mechanism allows the SIM to check all dialed numbers, supplementary service control strings and USSD strings before connecting to the network. This gives the SIM the ability to allow, bar or modify the string before the operation starts.

The commands used for this operation are :

- +STCR (SIM Toolkit Control Response),
- +STGR (SIM Toolkit Give Response).

13.2. SIM ToolKit Set Facilities (+STSF)

13.2.1. Description

This command allows SIM ToolKit facilities to be activated, deactivated or configured.

13.2.2. Syntax

Command Syntax +STSF=<mode>[,<config>][,<Timeout>][,<AutoResponse>]

Command	Possible responses
+STSF=<Mode>[,<Config>][,<Timeout>][,<AutoResponse>]	OK +CME ERROR: <err>
+STSF? +STSF:	<Mode>,<Config>,<Timeout>,<Autoresponse>

13.2.3. Defined values

<mode>

- 0: Deactivates the SIM Toolkit functionalities.
- 1: Activates the SIM Toolkit functionalities.
- 2: Configures the SIM Toolkit functionalities.

<Config>

(160060C01F . 5FFFFFFF7F) (hex format)

<Timeout>

1~255: Timeout for user responses (multiple of 10 seconds).

<Autoresponse>

- 0: Automatic response is not activated
- 1: Automatic response is activated

The activation or deactivation of the SIM Toolkit functionalities requires the use of the +CFUN (Set phone functionality) command to reset the product (this operation is not necessary if PIN is not entered yet).

The <Config> parameter gives the coding of the TERMINAL PROFILE, precisely the list of SIM Application Toolkit facilities that are supported by the customer application.

The <Timeout> parameter (multiple of 10 seconds) sets the maximum time the user has for reacting (to select an item, to input a text, etc).

When the <Autoresponse> is activated, the +STIN indication for Play Tone (5), Refresh (7), Send SS (8), Send SMS (9) or Send USSD (10) is automatically followed by the corresponding +STGI response.

Note:

Some bits are related to the product only and not to the customer application.

The product automatically sets these bits to either 0 or 1 whatever the user enters with the +STSF command. Those values are given in Appendix C.

Each facility is coded on 1 bit:

- bit = 1: facility is supported by the customer application.
- bit = 0: facility is not supported by the customer application.

Only the first five bytes of the TERMINAL PROFILE (Class 2) can be configured, the other are set to 0. (See structure of TERMINAL PROFILE in APPENDIX C)

13.2.4. Error codes

+CME ERROR: 3 Operation not allowed . This error is returned when a wrong parameter is entered.

13.2.5. Example

AT+CMEE=1	Enable the reporting of mobile equipment errors
OK	
AT+WIND=15	Set GIGA indications
OK	
AT+CPAS	Query ME Status
+CPAS: 0	ME is ready.
OK	
AT+STSF=?	Test command SIM ToolKit Set Facilities
+STSF: (0-2), (160060C01F . 5FFFFFFF7F),(1-255)	
OK	
AT+STSF?	
+STSF: 0,"160060C000",3	No activation of SIM ToolKit functionality
OK	
AT+STSF=2,"5FFFFFFF7F"	Set all SIM ToolKit facilities (class 3).
OK	
AT+STSF=3	Syntax Error
+CME ERROR: 3	
AT+STSF=1	Activation of SIM ToolKit functionality
OK	
AT+CFUN=1	Reboot Software.
OK	
AT+CPIN?	Is the ME requiring a password?
+CPIN: SIM PIN	Yes, SIM PIN required
AT+CPIN=0000	
OK PIN Ok	
+WIND: 4	Init phase is complete
AT+STSF?	
+STSF: 1,"5FFFFFFF7F",3	SIM ToolKit functionality activated with all facilities
OK	

13.3. SIM ToolKit Indication (+STIN)

13.3.1. Unsolicited result

In order to allow the customer application to identify the pro-active command sent via SIM ToolKit, a mechanism of unsolicited SIM ToolKit indications(+STIN) is implemented.

Syntax

+STIN: <CmdType>

<CmdType>

- 0: Indicates that a .Setup Menu. Pro-active command has been sent from the SIM.
- 1: Indicates that a .Display Text. Pro-active command has been sent from the SIM.
- 2: Indicates that a .Get Inkey. Pro-active command has been sent from the SIM.
- 3: Indicates that a .Get Input. Pro-active command has been sent from the SIM.
- 4: Indicates that a .Setup Call. Pro-active command has been sent from the SIM.

- 5: Indicates that a .Play Tone. Pro-active command has been sent from the SIM. (*)
- 6: Indicates that a .Sel Item. Pro-active command has been sent from the SIM.
- 7: Indicates that a .Refresh. pro-active command has been sent from the SIM. (*)
- 9: Indicates that a .Send SMS. Pro-active command has been sent from the SIM. (*)
- 11 : Indicates that a SETUP EVENT LIST. Pro-active command has been sent from the SIM.
- 98 : Indicates the timeout when no response from user.
- 99: Indicates that a .End Session. Has been sent from the SIM.

(*) if the automatic response parameter is activated, this indication is followed by the corresponding +STGI response.

13.3.2. Last SIM toolkit indication

The last SIM toolkit indication sent by the SIM can be requested by the AT+STIN? Command. This command is only usable between the sending of the STIN indication by the SIM (step 2 : see section 16.2) and the response of the user with the +STGI command (step 3).

Command Syntax +STIN?	
Command	Possible responses
+STIN? <i>Note: Ask for the last SIM toolkit indication sent by the SIM</i>	+STIN: 0 OK <i>Note: the last SIM toolkit indication was a Setup Menu</i>
+STGI=0	<i>Note: Display the SIM toolkit application menu</i>
+STIN? <i>Note: Ask for the last SIM toolkit indication sent by the SIM</i>	+CME ERROR: 4 <i>Note: operation not supported, the +STGI command has been already used</i>

13.4. SIM ToolKit Get Information (+STGI)

13.4.1. Description

This command allows to get the information (text to display, Menu information, priorities.) of a pro-active command sent from the SIM.

The information is returned only after receiving a SIM Toolkit indication (+STIN) .

13.4.2. Syntax

Command Syntax +STGI=<CmdType>	
Command	Possible responses
+STGI=<CmdType>	+CME ERROR: <err>
+STGI=?	+STGI: (0-11) OK

Cmd type	Description	Possible responses
1	Get information about 'Setup Menu' pro-active command.	+STGI: <Alpha Identifier menu> +STGI: <Id1>,<NbItems>,<Alpha Id1 Label>,<Help Info>[,<NextActionId>]-<CR><LF> +STGI: <Id2>,<NbItems>,<Alpha Id2 Label>,<Help Info>[,<NextActionId>]-<CR><LF>[.] No action expected from SIM.
2	Get information about 'Display text' pro-active command.	+STGI: <Prior>,<Text>,<ClearMode> No action expected from SIM.
3	Get information about 'Get Inkey' pro-active command.	+STGI: <Format>,<HelpInfo>[,<TextInfo>] SIM expects key pressed (+STGR).
4	Get information about 'Get Input' pro-active command.	+STGI: <Format>,<EchoMode>,<SizeMin>,<SizeMax> <HelpInfo>[,<TextInfo>]

		SIM expects key input (+STGR).
5	Get information about 'Setup call' pro-active command.	+STGI: <Type>,<CalledNb>,<SubAddress>,<Class> SIM expects user authorization (+STGR).
6	Get information about 'Play Tone' pro-active command.	+STGI: <ToneType>[,<TimeUnit>,<TimeInterval>,<TextInfo>] No action.
7	Get information about 'Sel Item' pro-active command	+STGI: <DefaultItem>, <Alpha Identifier menu><CR><LF> +STGI: <Id1>,<NbItems>,<Alpha Id1 Label>,<Help Info>[,<NextActionId>]<CR><LF> +STGI: <Id2>,<NbItems>,<Alpha Id2 Label>,<Help Info>[,<NextActionId>]<CR><LF> [.] SIM expects an item choice (+STGR).
8	Get information about 'Refresh' pro-active command.	+STGI: <RefreshType> No action (Refresh done automatically by product).
9	Get information about 'Send SS' pro-active command.	Currently not supported
10	Get information about 'Send SMS' pro-active command.	+STGI: <TextInfo> No action (Send SMS done automatically by product).
11	Get information about 'Send USSD' pro-active command.	Currently not supported
12	Get information about 'SETUP EVENT LIST' pro-active command.	+STGI: <Evt>

13.4.3. Defined values

Values when CmdType=0 (Setup menu)

- <Alpha Identifier menu> Alpha identifier of the main menu.
- <Idx> (1 –255) Menu item Identifier.
- <NbItems> (1 –255) Number of items in the main menu.
- <Alpha Idx Label> Alpha identifier label of items in ASCII format.
- <HelpInfo>
 - 0: No help information available.
 - 1: Help information available.
- <NextActionId> Contains a pro-active command identifier. (see the table in APPENDIX D)

Compared to other commands the customer application can always get information about setup menu after having received the +STIN:0 indication.

Values when CmdType=1 (Display text)

- <Prior>
 - 0: Normal priority of display.
 - 1: High priority of display.
- <Text> Text to display in ASCII format.
- <ClearMode>
 - 0: Clear message after a delay (3 seconds)
 - 1: Wait for user to clear message.

Values when CmdType=2 (Get Inkey)

- <Format>
 - 0: Digit (0-9, *, #, and +)
 - 1: SMS alphabet defaults.
 - 2: UCS2
 - 3: Yes/No
- <HelpInfo>

- 0: No help information available.
- 1: Help information available.
- <TextInfo> Text information in ASCII format.

Values when CmdType=3 (Get Input)

- <Format>
 - 0: Digit (0-9, *, #, and +)
 - 1: SMS alphabet defaults.
 - 2: UCS2
 - 3: Unpacked format.
 - 4: Packed format.
- <EchoMode>
 - 0: Echo off.
 - 1: Echo on.
- <SizeMin> (1 –255) Minimum length of input.
- <SizeMax> (1 –255) Maximum length of input.
- <HelpInfo>
 - 0: No help information available.
 - 1: Help information available.
- <TextInfo> Text information in ASCII format

Values when CmdType=4 (Setup Call)

- <Type>
 - 0: Set up call but only if not currently busy on another call.
 - 1: Set up call, putting all other calls (if any) on hold.
 - 2: Set up call, disconnecting all other calls (if any).
- <CalledNb> Called party number in ASCII format.
- <SubAdress> Called party sub-address in ASCII format.
- <Class>
 - 0: Voice call.
 - 1: Data call.
 - 2: Fax call

Values when CmdType=5 (Play tone)

- <ToneType>
 - 0: Tone Dial.
 - 1: Tone Busy.
 - 2: Tone Congestion.
 - 3: Tone Radio ack
 - 4: Tone Dropped.
 - 5: Tone Error.
 - 6: Tone Call waiting.
 - 7: Tone Ringing.
 - 8: Tone General beep.
 - 9: Tone Positive beep.
 - 10: Tone Negative beep.
- <TimeUnit>
 - 0: Time unit used is minutes.
 - 1: Time unit used is seconds.
 - 2: Time unit used is tenths of seconds.
- <TimeInterval> (1 –255) Time required expressed in units.
- <TextInfo> Text information in ASCII format.

Values when CmdType=6 (Sel Item)

- <DefaultItem> (1 –255) Default Item Identifier.

<Alpha Identifier menu>	Alpha identifier of the main menu.
<Idx>	(1 –255) Identifier items.
<NbItems>	(1 –255) Number of items in the menu.
<Alpha Idx Label>	Alpha identifier label of items in ASCII format.
<HelpInfo>	0: No help information available. 1: Help information available.
<NextActionId>	Contains a pro-active command identifier. (see the table in APPENDIX D)

Values when CmdType=7 (Refresh)

<RefreshType>	
0:	SIM initialization and full file change notification.
1:	File change notification.
2:	SIM initialization and file change notification.
3:	SIM initialization.
4:	SIM reset.

Values when CmdType=8 (Send SS)

<TextInfo>	Text information in ASCII format.
------------	-----------------------------------

Values when CmdType=9 (Send SMS)

<TextInfo>	Text information in ASCII format.
------------	-----------------------------------

Values when CmdType=10 (Send USSD)

<TextInfo>	Text information in ASCII format.
------------	-----------------------------------

Values when CmdType=11 (Setup Event List)

<Evt>	
1:	Reporting asked for an .Idle Screen. Event.
2:	Reporting asked for an .User Activity. Event.
3:	Reporting asked for .Idle Screen. And .User Activity. Events.
4:	Cancellation of reporting event.

Rem : For the UCS2 format texts are displayed in Hexa Ascii format. Example :
When the SIM sends a Text String containing 0x00 0x41 the text displayed is .0041..

13.4.4. Error codes

- + CME ERROR: 3 Operation not allowed . This error is returned when a wrong parameter is detected.
- +CME ERROR: 4 Operation not supported . This error is returned when the user wants to get information about a SIM ToolKit pro-active command (with SIM ToolKit functionality not activated.)
- +CME ERROR: 518 SIM ToolKit indication not received . This error is returned when the SIM Toolkit indication (+STIN) has not been received.

13.4.5. Example

Initially, all facilities are activated, the PIN is not required and SIM toolkit functionality is activated.

```
AT+CMEE=1                            Enable the reporting of mobile equipment errors
OK
AT+WIND=15                            Set GIGA indications
OK
AT+STSF?
+STSF: 1,"5FFFFFFF7F",3              SIM ToolKit functionality activated with all facilities.
OK
```

```
+STIN: 0           The main menu has been sent from the SIM.
AT+STIN?
+STIN: 0
OK
AT+STGI=0         Get information about the main menu
+STGI: "SIM TOOLKIT MAIN MENU"  Main menu contains 3 items.
+STGI: 1,3,"BANK",0
+STGI: 2,3,"QUIZ",0
+STGI: 3,3,"WEATHER",0
OK
AT+STIN?
+CME ERROR: 4
```

13.5. Unsolicited Result : SIM ToolKit Control Response (+STCR)

When the customer application makes an outgoing call or an outgoing SMS and if the call control facility is activated, CALL CONTROL and SMS CONTROL responses can be identified. This is also applicable to SS calls.

<i>Syntax</i>	+STCR: <Result>[,<Number>,<MODestAddr>,<TextInfo>]
<i>Option</i>	<Result> 0: Control response not allowed. 1: Control response with modification. <Number> Called number, Service Center Address or SS String in ASCII format. <MODestAddr> MO destination address in ASCII format. <TextInfo> Text information in ASCII format.

13.6. SIM ToolKit Give Response (+STGR)

13.6.1. Description

This command allows the application/user to select an item in the main menu, or to answer the following proactive commands :

- GET INKEY Key pressed by the user.
- GET INPUT Message entered by the user.
- SELECT ITEM Selected item.
- SETUP CALL User confirmation.
- DISPLAY TEXT User confirmation to clear the message.

It is also possible to terminate the current proactive command session by sending a Terminal Response to the SIM, with the following parameters :

- BACKWARD MOVE Process a backward move
- BEYOND CAPABILITIES Command beyond ME capabilities
- UNABLE TO PROCESS ME is currently unable to process command
- NO RESPONSE No response from the user
- END SESSION User abort.

13.6.2. Syntax

Command Syntax **+STGR=<CmdType>[,<Result>,<Data>]**

Command	Possible responses
+STGR=<CmdType>[,<Result>,<Data>]	OK +CME ERROR: <err>
For Get Input with <Result>=1: +STGR=3,1<CR> <Data><Ctrl Z>	OK +CME ERROR: <err>

For GetInkey with <Result>=1 +STGR=2,1<CR> <Data><Ctrl Z>	OK +CME ERROR: <err>
+STGR=?	OK

13.6.3. Defined values

<CmdType>

- 0: Item selection in the main menu.
- 1: User confirmation to clear a .Disp Text. .
- 2: Response for a 'Get Inkey' .
- 3: Response for a 'Get Input' .
- 4: Response for a 'Setup call' .
- 6: Response for a 'Sel Item' .
- 95: Backward move
- 96: Command beyond ME capabilities
- 97: ME currently unable to process command
- 98: No response from the user.
- 99: User abort.

Values when CmdType=0 (Select an item from the main menu)

<Result>

- 1: Item selected by the user.
- 2: Help information required by user.

<Data> Contains the item identifier of the item selected by the user.

Values when CmdType=1 (Confirm the display text clearing)

No values.

Values when CmdType=2 (Get Inkey)

<Result>

- 0: Session ended by user.
- 1: Response given by the user.
- 2: Help information required by user.

<Data> Contains the key pressed by the user.

<CmdType>

- 0: Item selection in the main menu.
- 1: User confirmation to clear a .Disp Text. .
- 2: Response for a 'Get Inkey' .
- 3: Response for a 'Get Input' .
- 4: Response for a 'Setup call' .
- 6: Response for a 'Sel Item' .
- 95: Backward move
- 96: Command beyond ME capabilities
- 97: ME currently unable to process command
- 98: No response from the user.
- 99: User abort.

Values when CmdType=0 (Select an item from the main menu)

<Result>

- 1: Item selected by the user.
- 2: Help information required by user.

<Data> Contains the item identifier of the item selected by the user.

Values when CmdType=1 (Confirm the display text clearing)

No values.

Values when CmdType=2 (Get Inkey)

<Result>

- 0: Session ended by user.
- 1: Response given by the user.
- 2: Help information required by user.

<Data> Contains the key pressed by the user.

Note:

For the SETUP MENU Proactive Command, it is only possible to send a Terminal Response after the +STIN: 0 indication, not after a +STGI=0 request.

All of the Terminal Responses are not possible with all of the Proactive Commands. Compatibility between available Terminal Responses and Proactive Commands is given in Appendix B, Table 2.

If a Terminal Response is attempted during a incompatible Proactive Command session, a +CME ERROR: 3 will be returned.

13.6.4. Possible error codes

+ CME ERROR: 3 Operation not allowed . This error is returned when a wrong parameter is detected.

+CME ERROR: 4 Operation not supported . This error is returned when the user gives a response with SIM ToolKit functionality not activated. Or if the SIM Toolkit indication (+STIN) has not been received.

13.6.5. Example

Initially, all facilities are activated, the PIN is not required and the SIM toolkit functionality is activated.

```
+STIN: 0                            The main menu has been sent from the SIM.
AT+STGI=0                          Get information about the main menu
+STGI: 1,3,"BANK",0                The main menu contains 3 items.
+STGI: 2,3,"QUIZ",0
+STGI: 3,3,"WEATHER",0
OK
AT+STGR=0,1,1                      The item 2 of the main menu has been selected.
OK
+STIN: 6                            The Sel item menu has been sent from the SIM.
AT+STGI=6                          Get information about the BANK menu
+STGI: 1,"BANK".                    The BANK menu contains two items.
+STGI: 1,2,"PERSONAL ACCOUNT ENQUIRY",1
+STGI: 2,2,"NEWS",0
OK
AT+STGR=6,1,1                      Select Item 1.
OK
+STIN: 3                            User request to enter Password sent.
AT+STGI=3                          Get information about this request.
+STGI: 0,0,4,4,0,"Enter Account Password:"
OK
AT+STGR=3,1<CR>                    The user enters the Password.
>0000<Ctrl Z>
OK
+STIN:1 A text info has been sent from the SIM.
AT+STGI=1 Get information about this text.
+STGI: 0,"Password correct, please wait for response",0
OK
```



```
+STIN: 9           SIM requests a bank account update from bank server via the network (SEND SMS)
AT+STGI=9         Get all information about the SEND SMS
+STGI: "Send account balance of user, authorization ok"
OK
***** After a short period of time. *****
+STIN: 5           Transaction is complete: BEEP
+STGI=5           Get information about the Tone
+STGI: 9,1,1
+STIN: 1           Display text indication
AT+STGI=1
+STGI: 0,"Your account balance is 1000 $",0
OK
```

14. PROVISIONING AT COMMANDS

14.1. Service Programming Code +WSPC

14.1.1. Description:

This command allows for entry of the service programming code (either MSL or OTKSL). Upon successful entry of this code, all other service provisioning AT commands may be used. If this code is not properly entered prior to attempting other provisioning AT commands, all provisioning commands will return ERROR. If the OTKSL is used to enter provisioning mode, only +WIMI, +WSID, +WAOC, and +WCMT commands will be allowed; other commands will return ERROR.

14.1.2. Syntax:

Command Syntax **AT+WSPC=<code>**

Command	Possible responses
AT+WSPC? <i>Note: Service programming code request</i>	ERROR <i>Note: Invalid request</i>
AT+WSPC=?	ERROR <i>Note: Invalid request</i>
AT+WSPC=111111 <i>Note: Enter service programming code 111111</i>	ERROR <i>Note: Code invalid</i>
AT+WSPC=000000 <i>Note: Enter service programming code 000000</i>	OK <i>Note: Code valid</i>

14.2. Mobile Directory Number +WMDN

14.2.1. Description:

This command is used to enter a new mobile directory number. Valid numbers are between 10 and 15 digits in length.

14.2.2. Syntax:

Command Syntax **AT+WMDN=<number>**

Command	Possible responses
AT+WMDN? <i>Note: Get current mobile directory number</i>	+WMDN: 8581111111 OK
AT+WMDN=8585551212 <i>Note: Set mobile directory number to 8585551212</i>	OK

14.3. Set IMSI_M +WIMI

14.3.1. Description:

This command is used to set the IMSI_M. Valid IMSI_M is 15 digits in length.

For support of Wireless Number Portability, changes to the IMSI_M will NOT update the MDN. Changes to the IMSI_M will automatically update the Access Overload Class values unless specifically modified using +WAOC command.

14.3.2. Syntax:

Command Syntax AT+WIMI=<number>

Command	Possible responses
AT+WIMI? <i>Note: Get current IMSI</i>	+WIMI: 310008581111111 OK
AT+WIMI=310008585551212 <i>Note: Set IMSI_M to 310008585551212</i>	OK

Note: IMSI is written RUIM issuing time. User has no need to write it.

14.4. SID and NID +WSID

14.4.1. Description:

This command is used to set the home SID and NID for 800Mhz CDMA operation only.

14.4.2. Syntax:

Command Syntax AT+WSID=<SID number>,<NID number>

Command	Possible responses
AT+WSID? <i>Note: Get current SID and NID</i>	+WSID: 45, 84 OK <i>Note: Current Home SID is 45 and NID is 84</i>
AT+WSID=4145, 2102 <i>Note: Set SID to 4145 and NID to 2102</i>	OK

Note: IMSI is written RUIM issuing time. User has no need to write it.

14.5. Access Overload Class +WAOC

14.5.1. Description:

This command is used to set the Access Overload Class.

14.5.2. Syntax:

Command Syntax AT+WAOC=<number>

Command	Possible responses
AT+WAOC? <i>Note: Get current Access Overload Class</i>	+WAOC: 5 OK
AT+WAOC=7 <i>Note: Set Access Overload Class to 7</i>	OK

Note: IMSI is written RUIM issuing time. User has no need to write it.

14.6. Slot Cycle Index +WSCI

14.6.1. Description:

This command is used to set the slot cycle index.

14.6.2. Syntax:

Command Syntax AT+WSCI=<number>

Command	Possible responses
AT+WSCI? <i>Note: Read the current slot cycle index</i>	+WSCI: 2 OK
AT+WSCI=1 <i>Note: Set the slot cycle index</i>	OK

14.7. Packet Dial String +WPDS

14.7.1. Description:

This command is used to set the packet dial string.

14.7.2. Syntax:

Command Syntax AT+WPDS=<number>

Command	Possible responses
AT+WPDS? <i>Note: Get current Packet Dial String</i>	+WPDS: #777 OK <i>Note: Current Packet Dial String is #777</i>
AT+WPDS=#999 <i>Note: Set the Packet Dial String to #999</i>	OK

14.8. Primary CDMA Channels +WPCC

14.8.1. Description:

This command is used to set the primary CDMA channels for 800Mhz CDMA operation only. Values entered must be valid CDMA 800Mhz Channel numbers.

14.8.2. Syntax:

Command Syntax AT+WPCC=<channel a number>,<channel b number>

Command	Possible responses
AT+WPCC? <i>Note: Get current primary CDMA channels</i>	+WPCC: 283,384 OK
AT+WPCC=211,432 <i>Note: Set the primary CDMA channels</i>	OK

14.9. Secondary CDMA Channels +WSCC

14.9.1. Description:

This command is used to set the secondary CDMA channels for 800Mhz CDMA operation only. Values entered must be valid CDMA 800Mhz Channel numbers.

14.9.2. Syntax:

Command Syntax AT+WSCC=<channel a number>,<channel b number>

Command	Possible responses
AT+WSCC? <i>Note: Get current secondary CDMA channels</i>	+WPCC: 691,777 OK
AT+WSCC=511,632 <i>Note: Set the secondary CDMA channels</i>	OK

14.10. Service Option Management +WSOM

14.10.1. Description:

This command is used to manage Service Options for EVRC. It will allow the user to enable EVRC, set home page, home origination, and roam origination voice service options for the current NAM. It is only available for software builds, which include EVRC Service Option Management feature.

14.10.2. Syntax:

Command Syntax AT+WSOM=<enable>,<home page SO>,<home orig SO>,<roam orig SO>

Command	Possible responses
AT+WSOM? <i>Note: Get the Service Options of the current</i>	+WSOM: 0, 1, 2, 0 OK <i>Note: EVRC disabled, home page is set to EVRC, home orig</i>

<i>NAM</i>	<i>is set to 13k, roam orig is set to IS96A</i>
AT+WSOM=1,4,2,2 <i>Note: Set current NAM Service Options</i>	OK <i>Note: EVRC enabled, set home page to WILDCARD, set home orig to 13k, set roam orig to 13k</i>

14.10.3. Defined values :

<enable>

- 0: disable EVRC
- 1: enable EVRC

<home page SO>

- 0: IS96A
- 1: EVRC
- 2: 13k
- 3: IS96
- 4: WILDCARD

<home orig SO> & <roam orig SO>

- 0: IS96A
- 1: EVRC
- 2: 13k
- 3: IS96

14.11. Commit Changes +WCMT

14.11.1. Description:

This command is used to commit by reset(AT+WCMT=1). Changes performed during this session will take place when a command has been performed.

14.11.2. Syntax:

Command Syntax AT+WCMT=<val>

	Possible responses
AT+WCMT=0	OK
AT+WCMT=1 <i>Note: Commit all changes performed during this provisioning AT session to nonvolatile memory.</i>	OK <i>Note: software reset is performed</i>

14.11.3. Defined values :

<val>

- 0: none operation.
- 1: commit changes

Note: Do not Undo operation.

14.12. Service Programming example

Command	Responses
AT+WSPC=000000 <i>Note: Enter service programming code</i>	OK Note: Service Programming code entered properly
AT+WPDS? <i>Note: Get current Packet Dial String</i>	+WPDS: #777 OK Note: Current Packet Dial String is #777
AT+WPDS=#999 <i>Note: Set the Packet Dial String to #999</i>	OK
AT+WPDS? <i>Note: Get current Packet Dial String</i>	+WPDS: #999 OK

	<i>Note: Current Packet Dial String is #999</i>
AT+WPDS=#555 <i>Note: Set the Packet Dial String to #555</i>	OK
AT+WSCI? <i>Note: Read the current slot cycle index</i>	+WSCI: 2 OK
AT+WSCI=1 <i>Note: Set the slot cycle index</i>	OK
AT+WMDN=8585551212 <i>Note: Set mobile directory number to 8585551212</i>	OK
AT+WCMT=1 <i>Note: Commit all changes performed during this provisioning AT session to nonvolatile memory.</i>	OK <i>Note: software reset is performed</i>

15. EXTENDED AT COMMANDS IN IS707.3

GIGA CDMA module also implements the CDMA AT commands as specified in the TIA/EIA/IS-707.3.

Note:

Some of the AT commands in this section may not be fully implemented.

15.1. Remote Async/Fax command X

15.1.1. Description:

This command sends a CONNECT message when a connection is established by blind dialing and enable additional result codes.

15.1.2. Syntax:

Command Syntax **ATX<n>**

Command	Possible responses
ATX1 <i>Note: disable dial tone and busy detection.</i>	OK <i>Note: Command is valid</i>
ATX2 <i>Note: disable busy detection & enable dial tone detection.</i>	OK <i>Note: Command is valid</i>
ATX3 <i>Note: Enable busy detection & disable dial tone detection.</i>	OK <i>Note: Command is valid</i>
ATX4 <i>Note: Enable busy and dial tone detection.</i>	OK <i>Note: Command is valid</i>

Note: For async data or fax settings, the dial tone detection settings do not apply.

15.2. Reset to default configuration Z0

15.2.1. Description:

This command is to reset to default configuration.

15.2.2. Syntax:

Command Syntax **ATZ0**

Command	Possible responses
ATZ0 <i>Note: reset to default configuration.</i>	OK <i>Note: Command is valid</i>

15.3. Select tone dialing T

15.3.1. Description:

This command is to select tone dialing. Not relevant to CDMA data services; “T” is not sent in dial string.

15.3.2. Syntax:

Command Syntax **ATT**

Command	Possible responses
ATT Note: select tone dialing.	OK Note: Command is valid

15.4. Select pulse dialing P

15.4.1. Description:

This command is to select pulse dialing. Not relevant to CDMA data services; “P” is not sent in dial string.

15.4.2. Syntax:

Command Syntax **ATP**

Command	Possible responses
ATP Note: select pulse dialing.	OK Note: Command is valid

15.5. Basic S-Registers ATS<X>

15.5.1. Description:

This S parameters determine the behaviors in the dialing and responses to the establish of a call.

15.5.2. Syntax:

Command Syntax **ATS<X>=<value>**

Command	Possible responses
ATS<X>=<value> Note: set S-registers value	OK
ATS0? Note: disable or enable automatic answering (value: 0-255) 0: disable; 1-255: enable after [(value-1)x6 sec.]	000 OK <i>Note: always 3 characters padded with zeros</i>
ATS3? Note: Carriage return character	013 OK
ATS4? Note: Line fees character	010 OK
ATS5? Note: Backspace character	008 OK
ATS6? Note: Pause before blind dialing (value: 2-10)	002 OK
ATS7? Note: Number of seconds to establish end to-end data connection (value: 1-255)	050 OK
ATS8? Note: Number of seconds to pulse when “,” is encountered in dial string (value: 0-255)	002 OK

ATS9? Note: Carrier detect threshold in increments of 0.1 seconds (value: 0-255)	006 OK
ATS10? Note: Number of tenths of a second from carrier loss to disconnect (value: 1-254) Value 255: disable carrier detect	014 OK
ATS11? Note: DTMF tone duration and spacing in milliseconds (value: 50-255)	095 OK

15.6. Error control operation +EB

15.6.1. Description:

This command is for break handling in error control operation. The extended format compound parameter is used to control the manner of V.42 operation on the PSTN line (if present in IWF). The command is not relevant for packet service.

15.6.2. Syntax:

Command Syntax AT+EB=[<Break_selection>[,<timed>[,<default_length>]]]

Command	Possible responses
AT+EB? Note: display the current setting.	+EB: 1,0,30 OK Note: This is the default setting
AT+EB=2 Note: set value to 2.	OK Note: Command is valid

15.6.3. Defined values :

<Break_selection>

- 0: Ignore break (do not signal to remote DCE)
- 1: Non-expedited, non-destructive
- 2: Expedited, non-destructive
- 3: Expedited and destructive

<timed>

- 0: Any transmitted V.42 L-SIGNAL shall not indicate break signal length
- 1: Any transmitted V.42 L-SIGNAL shall indicate break signal length

<default_length>

- 0 : Do not deliver break to DTE
 - 1. 254:Default break length of .01 to 2.54 seconds

15.7. Numeric parameter control +EFCS

15.7.1. Description:

The extended-format numeric parameter is used to control the use of 32-bit frame check sequence option in V.42 on the PSTN link (if present in IWF). The command is not relevant for packet service.

15.7.2. Syntax:

Command Syntax AT+EFCS=[<Val>]

Command	Possible responses
AT+EFCS? Note: display the current setting.	+EFCS: 0 OK Note: Command is valid

AT+EFCS=2 Note: set value to 2.	<i>OK</i> <i>Note: Command is valid</i>
------------------------------------	--

15.7.3. Defined values:

- 0: Use 16-bit FCS
- 1: Use 32-bit FCS if available in remote DCE; otherwise use 16-bit FCS
- 2: Use 32-bit FCS if available in remote DCE; otherwise disconnect

15.8. Error control report +ER

15.8.1. Description:

The extended-format numeric parameter is used to control whether the extended-format +ER intermediate result code is transmitted from the IWF over the Um interface.

15.8.2. Syntax:

Command Syntax AT+ER=[<Val>]

Command	Possible responses
AT+ER? Note: display the current setting.	+ER: 0 OK Note: Command is valid
AT+ER=1 Note: set value to 1.	<i>OK</i> <i>Note: Command is valid</i>

15.8.3. Defined values :

- <Val>
- 0: Error control reporting disabled
- 1: Error control reporting enabled

15.9. Error control selection +ES

15.9.1. Description:

The extended-format compound parameter is used to control the manner of operation of the V.42 protocol on the PSTN link (if present in IWF). The command is not relevant for packet service.

15.9.2. Syntax:

Command Syntax AT+ES=[<orig_rqst>[,<orig_fbk>[,<ans_fbk>]]]

Command	Possible responses
AT+ES? Note: display the current setting.	+ES: 3, 0, 2 OK Note: Command is valid
AT+ES=1 Note: set value to 1.	OK Note: Command is valid
AT+ES? Note: display the setting after change.	+ES: 1, 0, 2 OK Note: Command is valid

15.9.3. Defined values :

- <orig_rqst>
- 0: Direct mode
- 1: Initiate call with Buffered mode only
- 2: Initiate V.42 Detection Phase
- 3: Initiate Alternative Protocol

<orig_fbk>

- 0: Error control optional; If error control not established maintain DTE-DCE data rate
- 1: Error control optional; If error control not established change DTE-DCE data rate to match line rate
- 2: Error control required; If error control not established, disconnect
- 3: Error control required (only LAPM acceptable); If error control not established, disconnect
- 4: Error control required (only alternative protocol acceptable); If error control not established, disconnect

<ans_fbk>

- 0: Direct mode
- 1: Error control disabled, use Buffered mode
- 2: Error control optional; If error control not established maintain DTE-DCE data rate
- 3: Error control optional; If error control not established change DTE-DCE data rate to match line rate
- 4: Error control required; If error control not established, disconnect
- 5: Error control required (only LAPM acceptable); If error control not established, disconnect
- 6: Error control required (only alternative protocol acceptable); If error control not established, disconnect

15.10. Error control selection +ESR

15.10.1. Description:

The extended-format numeric parameter is used to control the use of selective repeat (SREJ) option in V.42 on the PSTN link (if present in IWF). The command is not relevant for packet service.

15.10.2. Syntax:

Command Syntax AT+ESR=[<Val>]

Command	Possible responses
AT+ESR? Note: display the current setting.	+ESR: 0 OK Note: Command is valid
AT+ESR=1 Note: set value to 1.	OK Note: Command is valid

15.10.3. Defined values :

<Val>

- 0: Do not use SREJ
- 1: Use SREJ if available in remote DCE; continue without it if not
- 2: Use SREJ if available in remote DCE; disconnect if SREJ is not available

15.11. Error control selection +ETBM

15.11.1. Description:

The extended-format compound parameter is used to control the handling of data remaining in IWF buffers upon service termination. The command is not relevant for packet service.

15.11.2. Syntax:

Command Syntax AT+ETBM=[<pending_TD>[,<pending_RD>[,<timer>]]]

Command	Possible responses
AT+ETBM? Note: display the current setting.	+ETBM: 1, 1, 20 OK Note: Command is valid
AT+ETBM=0 Note: set value to 0.	OK Note: Command is valid
AT+ETBM?	+ETBM: 0, 1, 20

Note: display the current setting.	OK Note: Command is valid
------------------------------------	------------------------------

15.11.3. Defined values :

<pending_TD>

- 0: Discard all buffered data immediately and disconnect
- 1: Attempt until all data is delivered and acknowledged (ignore timer)
- 2: Attempt until all data is delivered and acknowledged; If timer expires, discard remainder

<pending_RD>

- 0: Discard all buffered data immediately and disconnect
- 1: Attempt until all data is delivered (ignore timer)
- 2: Attempt until all data is delivered; If timer expires, discard remainder

<timer>

1~30: Deliver timer value in seconds

15.12. Request manufacture identification +GMI

15.12.1. Description:

The command is used to cause the DCE to retransmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the DCE to identify the manufacturer.

15.12.2. Syntax:

Command Syntax	AT+GMI
Command	Possible responses
AT+GMI? <i>Note: display the current setting.</i>	ERROR <i>Note: Command is not valid</i>
AT+GMI <i>Note: display the manufacturer</i>	+GMI: GIGA MODEM OK <i>Note: Command is valid</i>

15.13. Request manufacture identification +GMM

15.13.1. Description:

The command is used to cause the DCE to retransmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the DCE to identify the specific model of device.

15.13.2. Syntax:

Command Syntax	AT+GMM
Command	Possible responses
AT+GMM? <i>Note: display the current setting.</i>	ERROR <i>Note: Command is not valid</i>
AT+GMM <i>Note: display the model</i>	+GMM: Model 72 OK <i>Note: Command is valid</i>

15.14. Request revision identification +GMR

15.14.1. Description:

The command is used to cause the DCE to retransmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the DCE to identify the version, revision level or date, or other pertinent information of the device.

15.14.2. Syntax:

Command Syntax AT+GMR

Command	Possible responses
AT+GMR? <i>Note: display the current setting.</i>	ERROR <i>Note: Command is not valid</i>
AT+GMR <i>Note: display the revision</i>	+GMR: S/W VER: WISMOQ WQ1.8, 10015 OK <i>Note: Command is valid</i>

15.15. Request product serial number identification +GSN

15.15.1. Description:

The command is used to cause the DCE to retransmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the DCE to identify the individual alphanumeric string.

15.15.2. Syntax:

Command Syntax AT+GSN

Command	Possible responses
AT+GSN? <i>Note: display the current setting.</i>	ERROR <i>Note: Command is not valid</i>
AT+GSN <i>Note: display the serial number</i>	+GSN: F607A117 OK <i>Note: Command is valid</i>

15.16. Request global object identification +GOI

15.16.1. Description:

The command is used to cause the DCE to retransmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the DCE to identify the device, based on the ISO system for registering unique object identifiers.

15.16.2. Syntax:

Command Syntax AT+GOI

Command	Possible responses
AT+GOI? <i>Note: display the current setting.</i>	ERROR <i>Note: Command is not valid</i>
AT+GOI <i>Note: display the responses to the command</i>	+GOI: OK <i>Note: Command is valid</i>

Note: Currently, no information text is provided.

15.17. Modulation selection +MS

15.17.1. Description:

The extended-format compound parameter is used to control the manner of operation of the modulation capabilities in the DCE.

15.17.2. Syntax:

Command Syntax AT+MS

Command	Possible responses
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AT+MS? Note: display the parameter information.	+MS: Note: Command is valid
--	--------------------------------

15.18. Modulation automode control +MA

15.18.1. Description:

DCE may use to connect with the remote DCE in automode operation, for answering or originating data calls.

15.18.2. Syntax:

Command Syntax AT+MA

Command	Possible responses
AT+MA? Note: display the parameter information.	+MA: Note: Command is valid

15.19. Modulation reporting control +MR

15.19.1. Description:

The extended-format numeric parameter controls whether the extended-format +MCR:<carrier> and +MRR:<rate> intermediate result codes are transmitted from the IWF to the mobile station.

15.19.2. Syntax:

Command Syntax AT+MR=[<Val>]

Command	Possible responses
AT+MR? Note: display the current setting	+MR: 0 Note: Command is valid
AT+MR=? Note: display the range of setting	+MR: (0,1) Note: Command is valid
AT+MR=1 Note: display the range of setting	OK Note: Command is valid

15.19.3. Defined values :

<Val>

0: Disables reporting of modulation connection

1: Enables reporting of modulation connection (+MCR and +MRR are transmitted)

15.20. V.18 reporting control +MV18R

15.20.1. Description:

The extended-format numeric parameter controls whether the extended-format +MV18R: result code is transmitted from the IWF to the mobile station.

15.20.2. Syntax:

Command Syntax AT+MV18R=[<Val>]

Command	Possible responses
AT+MV18R? Note: display the current setting.	+MV18R: 0 OK Note: Command is valid
AT+MV18R=1 Note: set value to 1.	OK Note: Command is valid

15.20.3. Defined values :

<Val>

- 0: Disables reporting of V.18 connection
- 1: Enables reporting of V.18 connection

15.21. V.18 selection +MV18S

15.21.1. Description:

The extended-format numeric parameter is used to control the manner of operation of the V.18 capabilities (if present) in the DCE.

15.21.2. Syntax:

Command Syntax AT+MV18S=[<mode>[,<dflt_ans>[,<fbk_time_enable>]]]

Command	Possible responses
AT+MV18S? Note: display the current setting.	+MV18S: 0, 0, 0 OK Note: Command is valid
AT+MV18S=1,1,1 Note: set mode value to 1.	OK Note: Command is valid
AT+MV18S? Note: display the current setting.	+MV18S: 1, 1, 1 OK Note: Command is valid

15.21.3. Defined values :

<mode>

0: Disables V.18 connection

- 1: V.18 operation, auto detect mode
- 2: V.18 operation, connection in 5-bit mode
- 3: V.18 operation, connect in DTMF mode
- 4: V.18 operation, connect in EDT mode
- 5: V.18 operation, connect in V.21 mode
- 6: V.18 operation, connect in V.23 mode
- 7: V.18 operation, connect in Bell 103-type mode

<dflt_ans_mode>

0: disables V.18 answer operation

- 1: no default specified (auto detect)
- 2: V.18 operation, connect in 5-bit mode
- 3: V.18 operation, connect in DTMF mode
- 4: V.18 operation, connect in EDT mode

<fbk_time_enable>

0: disable

- 1: enable

15.22. Cellular extension +CXT

15.22.1. Description:

The numeric parameter is used for cellular extension.

15.22.2. Syntax:

Command Syntax AT+CXT=<Val>

Command	Possible responses
AT+CXT? Note: display the current setting	+CXT: 0 OK

	Note: Command is valid
AT+CXT=? Note: display the range of setting	+CXT: (0-1) OK Note: Command is valid
AT+CXT=1 Note: display the range of setting	OK Note: Command is valid

15.22.3. Defined values :

<Val>

0: Do not pass unrecognized commands to the IWF

1: When detecting an unrecognized AT command, open transport layer connection and pass unrecognized command to the IWF.

15.23. Configuration string +CFG

15.23.1. Description:

The string command is used to set configuration string. The string will be stored by the MT2 and sent to the base station prior to dialing. Each transmission of an AT+CFG command from TE2 replaces the contents of the previous string. The string may be up to 248 characters.

15.23.2. Syntax:

Command Syntax AT+CFG= <string>

Command	Possible responses
AT+CFG? Note: display the current setting	+CFG: "" OK
AT+CFG="" Note: set a configuration string	OK Note: Command is valid
AT+CFG="data" Note: set a configuration string	OK Note: Command is valid

15.24. Query service +CAD ?

15.24.1. Description:

The numeric parameter is used to query analog or digital service.

15.24.2. Syntax:

Command Syntax AT+CAD?

Command	Possible responses
AT+CAD? Note: display the current service	+CAD: 1 OK Note: Command is valid

15.24.3. Defined values :

The command should return one of the following codes:

0: If no service is available

1: If CDMA digital service is available

2: If TDMA digital service is available

3: If analog service is available (values 4 to 255 reserved)

15.25. Um interface data compression reporting +CDR

15.25.1. Description:

The extended-format numeric parameter is used to control whether the extended-format +CDR: intermediate result code is transmitted by the MT2. The result code is the same as +DR.

15.25.2. Syntax:

Command Syntax AT+CDR

Command	Possible responses
AT+CDR? Note: display the current code	+CDR: 0 OK Note: Command is valid
AT+CDR=1 Note: Reporting enabled	OK Note: Command valid
AT+CDR=? Note: display the range of code	+CDR: (0-1) OK Note: Command is valid

15.26. Um interface data compression +CDS

15.26.1. Description:

The extended-format numeric parameter is used to control the V.42bis data compression function on the Um interface. The command format is the same as for the +DS command.

15.26.2. Syntax:

Command Syntax AT+CDS=<Val>

Command	Possible responses
AT+CDS? Note: display the current setting	+CDS: 0, 1, 2048, 6 OK Note: Command is valid
AT+CDS=? Note: display the range of setting	+CDS: (0-0),(1-1),(512-65535),(6-250) OK Note: Command is valid

Note: Currently, mobile only accept 0 as a valid setting.

15.27. Set Rm interface protocol +CRM

15.27.1. Description:

The numeric parameter is used for set the Rm interface protocol.

15.27.2. Syntax:

Command Syntax AT+CRM=<Val>

Command	Possible responses
AT+CRM? Note: display the current setting	+CRM: 0 OK Note: Command is valid
AT+CRM=? Note: display the range of setting	+CRM: (0-2) OK Note: Command is valid
AT+CRM=1 Note: set to 1	OK

15.27.3. Defined values :

<Val>

- 0: Asynchronous Data or Fax
- 1: Packet data service, Relay Layer Rm interface (**default**)
- 2: Packet data service, Network Layer Rm interface, PPP

15.28. Battery Charge +CBC ?

15.28.1. Description:

The numeric parameter is used to query the battery charge.

15.28.2. Syntax:

Command Syntax AT+CBC ? Read-only. Returns <BCS>,<BCL>

Command	Possible responses
AT+CBC?	+CBC: 1, 77 OK <i>Note: Command is valid</i>
AT+CBC	ERROR <i>Note: Command is not valid</i>

15.28.3. Defined values :

<BCS>:

- 0: MT2 powered by battery, BCL = status
- 1: MT2 connected to external power
- 2: Battery status not available
- 3: Recognized power fault. Calls inhibited.

<BCL>:

0-100 Remaining battery capacity is 0-100%.

15.29. Command State Inactivity Timer +CQD

15.29.1. Description:

The numeric parameter is used to query and set the Command State Inactivity Timer.

15.29.2. Syntax:

Command Syntax AT+CQD=<Val>

Command	Possible responses
AT+CQD? <i>Note: display the current setting</i>	+CQD: 10 OK <i>Note: Command is valid</i>
AT+CQD=0 <i>Note: Set the value to 0</i>	OK <i>Note: Command is valid</i>

15.29.3. Defined values :

<Val>

- 0: Ignored
- 1~255:Release call after 5x<value> seconds have elapsed without activity.

Note:

The default <value> shall be 10, corresponding to 50 seconds.

15.30. Mobile Station IP Address +CMIP?

15.30.1. Description:

The numeric parameter is used to query mobile station IP address.

15.30.2. Syntax:

Command Syntax AT+CMIP?

Command	Possible responses
AT+CMIP? <i>Note: display the current setting</i>	OK <i>Note: Command is valid</i>
AT+CMIP	ERROR <i>Note: Command is not valid</i>

Note: Command is read-only. Returns the mobile station's temporary IP address.

15.31. Base Station IP Address +CBIP ?

15.31.1. Description:

The numeric parameter is used to query base station IP address.

15.31.2. Syntax:

Command Syntax AT+CBIP?

Command	Possible responses
AT+CBIP? <i>Note: display the current setting</i>	OK <i>Note: Command is valid</i>
AT+CBIP	ERROR <i>Note: Command is not valid</i>

Note: Command is read-only. Returns the base station's IP address.

15.32. Serving System +CSS ?

15.32.1. Description:

The numeric parameter is used to query the serving system .

15.32.2. Syntax:

Command Syntax AT+CSS ? Read-only. Returns <AB>,<SID>

Command	Possible responses
AT+CSS? <i>Note: display the current setting</i>	+CSS: 2, A, 4145 OK <i>Note: Command is valid</i>
AT+CSS=? <i>Note: display the range of setting</i>	+CSS: OK <i>Note: Command is valid</i>

15.32.3. Defined values :

<AB>

- A The mobile station is registered with an A-band system.
- B The mobile station is registered with a B-band system.
- Z The mobile station is not registered.

<SID>:

- 0-16383 The mobile station is registered with the system indicated.
- 99999 The mobile station is not registered.

15.33. Select Multiplex Option +CMUX

15.33.1. Description:

The numeric parameter is used to select multiplex option.

15.33.2. Syntax:

Command Syntax AT+CMUX=<n>

Command	Possible responses
AT+CMUX? Note: display the current setting	+CMUX: C, 2 OK Note: Command is valid
AT+CMUX=? Note: display the range of setting	+CMUX: : (1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, F),(1, 2) OK Note: Command is valid
AT+CMUX=1 Note: Set the value to 0	OK Note: Command is valid

15.33.3. Defined values : .

<n>

- 1: Multiplex Option 1
- 2: Multiplex Option 2

15.34. Um Interface Fax Compression +CFC

15.34.1. Description:

The numeric parameter is used to set the Um Interface Fax Compression.

15.34.2. Syntax:

Command Syntax AT+CFC=<Val>

Command	Possible responses
AT+CFC? Note: display the current setting	+CFC: 0 OK Note: Command is valid
AT+CFC=? Note: display the range of the setting	+CFC: (0-2) OK Note: Command is valid
AT+CFC=1 Note: Set the value to 1	OK Note: Command is valid

15.34.3. Defined values :

<Val>

- 0: No compression
- 1: V.42bis compression with parameters as set by the +CDS command
- 2: Modified Read compression

Note: currently, the value 1 and 2 are not supported.

15.35. Hang-up Voice +CHV

15.35.1. Description:

The numeric parameter is used to Hang-up Voice call. The command can be used after the call is set up by +CDV.

15.35.2. Syntax:

Command Syntax AT+CHV<n>

Command	Possible responses
AT+CHV0 <i>Note: hang up the call</i>	OK <i>Note: Command is valid</i>

15.35.3. Defined values :

<n>

0: Hang-up voice call

1~255: Reserved.

15.36. Dial command for voice calls +CDV

15.36.1. Description:

The numeric parameter is used to dial command for voice calls.. The format of <dial_string> is identical to that for the ATD command. This command does not cause the MT2 to change to the online state.

15.36.2. Syntax:

Command Syntax

Command	Possible responses
AT+CDV? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT+CDV=8583693450 <i>Note: dial for voice call</i>	OK +WORG: 8583693450 OK +WCNT: 3 OK <i>Note: Command is valid</i>

15.37. Um packet data inactivity timer +CTA

15.37.1. Description:

This command is used to Set, Read and Test Um packet data inactivity timer.

15.37.2. Syntax:

Command Syntax AT+CDV=<dial_string>

Command	Possible responses
AT+CTA ? <i>Note: display the current setting</i>	+CTA: 0 OK

15.37.3. Defined values :

<Val>

0: Traffic Channel not released during inactivity periods.

20-255: Release the Traffic Channel after <value> 1-second intervals have elapsed since last sending or receiving RLP data frames on the Um interface.

16. QUALCOMM DEFINED AT COMMANDS FOR CDMA OPERATION

16.1. Transition to Diagnostics Monitor \$QCDMG

16.1.1. Description:

This command is used to returns “OK” and then transition the phone serial port to DM mode.

16.1.2. Syntax:

Command Syntax **AT\$QCDMG**

Command	Possible responses
AT\$QCDMG <i>Note: transition to DM port</i>	OK <i>Note: Command is valid</i>

16.2. Quick Net Connect \$QCQNC

16.2.1. Description:

This command is used to enable or disable the Quick Net Connect (QNC).

16.2.2. Syntax:

Command Syntax **AT\$QCQNC =<Val>**

Command	Possible responses
AT\$QCQNC? <i>Note: display the current setting</i>	\$QCQNC: 0 OK <i>Note: Command is valid</i>
AT\$QCQNC=? <i>Note: display the range of values OK</i>	\$QCQNC: (0-1) <i>Note: Command is valid</i>
AT\$QCQNC=1 <i>Note: Set the value to 1</i>	OK <i>Note: Command is valid</i>

16.2.3. Defined values :

<Val>

0: Disable QNC capability. This means that packet Originations will use the Packet Data Service Option number.

1: Enable QNC capability. This means that Packet Originations will use the Async Data Service Option number..

16.3. Protocol revision in use \$QCPREV

16.3.1. Description:

This command is used to query the protocol revision in use.

16.3.2. Syntax:

Command Syntax **AT\$QCPREV**

Command	Possible responses
AT\$QCPREV? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCPREV <i>Note: display the of value</i>	\$QCPREV: 6 OK <i>Note: Command is valid</i>

16.3.3. Defined values :

The command should return one of the following codes:

- 1: JST008
- 3: IS-95A
- 4: IS-95B
- 6:IS-2000

16.4. Dump RLP protocol statistics \$QCRLPD

16.4.1. Description:

This command is used to dump the RLP statistics in ASCII format to the TE2. This does not apply to RLP 3 statistics (see \$QCRL3D).

16.4.2. Syntax:

Command Syntax **AT\$QCRLPD**

Command	Possible responses
AT\$QCRLPD? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCRLPD <i>Note: Dump RLP statistics data</i>	\$QCRLPD: Rx Data Cnt :0000 Tx Data Cnt :0000 OK <i>Note: Command is valid</i>

16.5. Reset RLP protocol statistics \$QCRLPR

16.5.1. Description:

This command is used to zero all the RLP statistics counters. This does not apply to RLP 3 statistics (see \$QCRL3R).

16.5.2. Syntax:

Command Syntax **AT\$QCRLPR**

Command	Possible responses
AT\$QCRLPR? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCRLPR <i>Note: Rest RLP statistics counter</i>	\$QCRLPR: OK <i>Note: Command is valid</i>

16.6. Dump PPP protocol statistics \$QCPPPD

16.6.1. Description:

This command is used to dump the PPP statistics in ASCII format to the TE2.

16.6.2. Syntax:

Command Syntax **AT\$QCPPPD**

Command	Possible responses
AT\$QCPPPD? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCPPPD <i>Note: Dump PPP statistics information</i>	\$QCPPPD: In LCP :0000 Out LCP :0000 OK <i>Note: Command is valid</i>

16.7. Reset PPP protocol statistics \$QCPPPR

16.7.1. Description:

This command is used to zero all of the PPP statistics counters.

16.7.2. Syntax:

Command Syntax AT\$QCPPPR	
Command	Possible responses
AT\$QCPPPR? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCPPPR <i>Note: Rest PPP statistics counter</i>	\$QCPPPR: OK <i>Note: Command is valid</i>

16.8. Dump IP protocol statistics \$QCIPD

16.8.1. Description:

This command is used to dump the IP statistics in ASCII format to the TE2.

16.8.2. Syntax:

Command Syntax AT\$QCIPD	
Command	Possible responses
AT\$QCIPD? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCIPD <i>Note: Dump IP statistics information</i>	\$QCIPD: IP: InReceives :0000 InHdrErrors :0000 OK <i>Note: Command is valid</i>

16.9. Reset IP protocol statistics \$QCIPR

16.9.1. Description:

This command is used to zero all of the IP statistics counters.

16.9.2. Syntax:

Command Syntax AT\$QCIPR	
Command	Possible responses
AT\$QCIPR? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCIPR <i>Note: Rest IP statistics counter</i>	\$QCIPR: OK <i>Note: Command is valid</i>

16.10. Dump UDP protocol statistics \$QCUDPD

16.10.1. Description:

This command is used to dump the UDP statistics in ASCII format to the TE2.

16.10.2. Syntax:

Command Syntax AT\$QCUDPD	
Command	Possible responses

AT\$QCUDPD? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCUDPD <i>Note: Dump UDP statistics information</i>	\$QCUDPD: InDatagrams :0000 OutDatagrams :0000 OK <i>Note: Command is valid</i>

16.11. Reset UDP protocol statistics \$QCUDPR

16.11.1. Description:

This command is used to zero all of the UDP statistics counters.

16.11.2. Syntax:

Command Syntax AT\$QCUDPR

Command	Possible responses
AT\$QCUDPR? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCUDPR <i>Note: Rest UDP statistics counter</i>	\$QCUDPR: OK <i>Note: Command is valid</i>

16.12. Dump TCP protocol statistics \$QCTCPD

16.12.1. Description:

This command is used to dump the TCP statistics in ASCII format to the TE2.

16.12.2. Syntax:

Command Syntax AT\$QCTCPD

Command	Possible responses
AT\$QCTCPD? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCTCPD <i>Note: Dump TCP statistics information</i>	\$QCTCPD: ActiveOpens :0000 PassiveOpens :0000 OK <i>Note: Command is valid</i>

16.13. Reset TCP protocol statistics \$QCTCPR

16.13.1. Description:

This command is used to zero all of the TCP statistics counters.

16.13.2. Syntax:

Command Syntax AT\$QCTCPR

Command	Possible responses
AT\$QCTCPR? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCTCPR <i>Note: Rest TCP statistics counter</i>	\$QCTCPR: OK <i>Note: Command is valid</i>

16.14. Set data service option \$QCSO

16.14.1. Description:

This command is used to Set Data Service Option number set; saves to non-volatile memory.

16.14.2. Syntax:

Command Syntax AT\$QCSO = <Val>

Command	Possible responses
AT\$QCSO? <i>Note: display the current setting</i>	\$QCSO: 2 OK <i>Note: Command is valid</i>
AT\$QCSO =? <i>Note: display the range of values</i>	\$QCSO: (0-2) OK <i>Note: Command is valid</i>
AT\$QCSO =1 <i>Note: set value to 1</i>	OK <i>Note: Command is valid</i>

16.14.3. Defined values :

<Val>

- 0 : pre-707 SO numbers
(RS 1: Async 4, G3 Fax 5, packet 7; RS 2: Async 12, G3 Fax13, packet 15)
- 1 : proprietary SO numbers
(RS 1: Async 4, G3 Fax 5, packet 7; RS 2: Async 0x8021,G3 Fax 0x8022, packet 0x8020)
- 2 : IS-707 SO numbers
(RS 1: Async 0x1004, G3 Fax 0x1005, packet 0x1007; RS 2:Async 12, G3 Fax 13, packet 15)

16.15. Clear mobile error log \$QCCLR

16.15.1. Description:

This command is used to clear the mobile error log.

16.15.2. Syntax:

Command Syntax AT\$QCCLR

Command	Possible responses
AT\$QCCLR? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCCLR <i>Note: clear the mobile error log</i>	\$QCCLR: OK <i>Note: Command is valid</i>

16.16. Answer incoming voice call \$QCCAV

16.16.1. Description:

This command is used to provide a means to answer an incoming voice call via an AT command.

16.16.2. Syntax:

Command Syntax AT\$QCCAV

Command	Possible responses
AT\$QCCAV? <i>Note: display the current setting</i>	OK <i>Note: Command is valid</i>
AT\$QCCAV <i>Note: Answer incoming voice call</i>	OK +WCNT: 3

	<i>Note: Command is valid</i>
--	-------------------------------

16.17. Automatic packet detection \$QCPKND

16.17.1. Description:

This command is used to enable or disable Automatic Packet Detection after a dial command.

16.17.2. Syntax:

Command Syntax AT\$QCPKND = <Val>

Command	Possible responses
AT\$QCPKND? <i>Note: display the current setting</i>	\$QCPKND: 1 OK <i>Note: Command is valid</i>
AT\$QCPKND=? <i>Note: display the range of values</i>	\$QCPKND: (0-1) OK <i>Note: Command is valid</i>
AT\$QCPKND=0 <i>Note: set value to 0</i>	OK <i>Note: Command is valid</i>

16.17.3. Defined values :

<Val>

- 0 : Disable Packet No Dial. If a PPP packet is received by the mobile without a just prior dial command (that is, AtdX #), then the mobile will originate a Packet (or QNC) data call.
- 1 : Enable Packet No Dial. Reception of a PPP packet without a just prior dial command will NOT Originate a PPP packet (or QNC) call.

16.18. Prearrangement setting \$QCVAD

16.18.1. Description:

This command is used to respond to page message that has a voice service option with a page response that has a data service option.

16.18.2. Syntax:

Command Syntax AT\$QCVAD= <Val>

Command	Possible responses
AT\$QCVAD? <i>Note: display the current setting</i>	\$QCVAD: 0 OK <i>Note: Command is valid</i>
AT\$QCVAD=? <i>Note: display the range of values</i>	\$QCVAD: (0-4) OK <i>Note: Command is valid</i>
AT\$QCVAD=1 <i>Note: set value to 1</i>	OK <i>Note: Command is valid</i>

16.18.3. Defined values :

<Val>

0 : Off (Voice call)

- 1: Fax call once
- 2: Fax call always
- 3: Async call once
- 4: Async call always

16.19. Set DM baud rate \$QCDMR

16.19.1. Description:

This command is used to set the DM baud rate.

16.19.2. Syntax:

Command Syntax **AT\$QCDMR= <Val>**

Command	Possible responses
AT\$QCDMR? <i>Note: display the current setting</i>	\$QCDMR: 19200 OK <i>Note: Command is valid</i>
AT\$QCDMR=? <i>Note: display the range of values</i>	\$QCDMR: (19200, 38400, 57600,115200) OK <i>Note: Command is valid</i>
AT\$QCDMR=115200 <i>Note: set value to 1</i>	OK <i>Note: Command is valid</i>

16.19.3. Defined values :

<Val>

value should be on of the following:
19200, 38400, 57600, 115200

16.20. Set medium data rate \$QCMDR

16.20.1. Description:

This command is used to Set Medium Data Rate (MDR) (also known as HSPD) setting.

16.20.2. Syntax:

Command Syntax **AT\$QCMDR= <Val>**

Command	Possible responses
AT\$QCMDR? <i>Note: display the current setting</i>	\$QCMDR: 3 OK <i>Note: Command is valid</i>
AT\$QCMDR=? <i>Note: display the range of values</i>	\$QCMDR: (0-3) OK <i>Note: Command is valid</i>
AT\$QCMDR=1 <i>Note: set value to 1</i>	OK <i>Note: Command is valid</i>

16.20.3. Defined values :

<Val>

0: MDR Service Only. The mobile will originate with SOS 22 or SO 25. The mobile will not negotiate to any other service option if SO 22 and SO 25 are unavailable.

1: MDR Service, if available. The mobile will originate with SO 22 or SO 25, but will negotiate to a Low-Speed Packet service option if MDR is not available. The mobile will not negotiate to SO 33.

2: LSPD only. The mobile will originate a Low-Speed Packet call only. The mobile will not negotiate to SO 22, SO 25, or SO 33.

3: SO 33, if available. The mobile will negotiate to MDR or Low-Speed Packet service options if SO 33 is not available.

16.21. Dump RLP 3 protocol statistics \$QCRL3D

16.21.1. Description:

This command is used to dump the RLP 3 statistics in ASCII format to the TE2. This does not apply to other versions of RLP (see \$QCRLPD).

16.21.2. Syntax:

Command Syntax AT\$QCRL3D	
Command	Possible responses
AT\$QCRL3D? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCRL3D <i>Note: Dump RLP 3 statistics information</i>	\$QCRL3D: Rx Data Cnt :00000000 Tx Data Cnt :00000000 OK <i>Note: Command is valid</i>

16.22. Reset RLP 3 protocol statistics \$QCRL3R

16.22.1. Description:

This command is used to reset the RLP 3 protocol statistics.

16.22.2. Syntax:

Command Syntax AT\$QCRL3R	
Command	Possible responses
AT\$QCRL3R? <i>Note: display the current setting</i>	ERROR <i>Note: Command is not valid</i>
AT\$QCRL3R <i>Note: Rest TCP statistics counter</i>	\$QCRL3R: OK <i>Note: Command is valid</i>

16.23. SCRM'ing selection \$QCSCRM

16.23.1. Description:

This command is used to enable or disable mobile from SCRM'ing.

16.23.2. Syntax:

Command Syntax AT\$QCSCRM= <Val>	
Command	Possible responses
AT\$QCSCRM? <i>Note: display the current setting</i>	\$QCSCRM: 1 OK <i>Note: Command is valid</i>
AT\$QCSCRM=? <i>Note: display the range of values</i>	\$QCSCRM: (0-1) OK <i>Note: Command is valid</i>
AT\$QCSCRM=0 <i>Note: set value to 0</i>	OK <i>Note: Command is valid</i>

16.23.3. Defined values :

<Val>

- 0: Mobile never SCRM.
- 1: Mobile can SCRM as needed.

Note:

Command only applies to SO 33 calls. This value is stored in NV. The default is 1.

16.24. R-SCH selection \$QCTRL

16.24.1. Description:

This command is used to enable or disable mobile R-SCH throttling.

16.24.2. Syntax:

Command Syntax	AT\$QCTRL = <Val>	Possible responses
AT\$QCTRL?	<i>Note: display the current setting</i>	\$QCTRL: 1 OK <i>Note: Command is valid</i>
AT\$QCTRL=?	<i>Note: display the range of values</i>	\$QCTRL: (0-1) OK <i>Note: Command is valid</i>
AT\$QCTRL=0	<i>Note: set value to 0</i>	OK <i>Note: Command is valid</i>

16.24.3. Defined values :

<Val>

- 0: Mobile never throttles R-SCH
- 1: Mobile can throttle R-SCH as needed.

Note:

Command only applies to SO 33 calls. The default is 1.

For MSM500, MSM5105, and MSM5100 ASICs only.

17. UNSOLICITED AT RESULT CODES

17.1. Cell Environment Description Indication +CCED

17.1.1. Description:

This command indicates cell environment description. It is returned when the +CCED AT command is set to return automatic shots of the cell environment. For more information, see the +CCED AT command.

17.1.2. Syntax:

Response Syntax	+CCED: <dump>	Example Result
		+CCED:0,2,0,300,384,0,160,384,0,384,4,8, 6,296, 6033,1,16,-69,-67,-63 <i>Note: Cell environment description indication in response to AT+CCED=1,7</i>

17.2. Call Waiting Indication +CCWA

17.2.1. Description:

This unsolicited command indicates another incoming call is occurring during an existing call. See +WFSH, section 8.5 for information about handling call-waiting situations.

17.2.2. Syntax:

Response Syntax	+CCWA: "<caller_id>", <type>	Example Result

+CCWA: "18005551212",129
Note: Incoming call from 1-800-555-1212, type always equals 129.

17.3. Key Press or Release +CKEV

17.3.1. Description:

This command a key has been pressed or released.

17.3.2. Syntax:

Response Syntax +CKEV: <key>,<press>

Example Result

+CKEV: 9,0

Note: Indicates key 9 has been released

17.3.3. Defined values :

<key> Keyboard map according to Qualcomm HS definitions
 <press> 1: key press
 0: key release

17.4. Caller ID Presentation +CLIP

17.4.1. Description:

This unsolicited command indicates caller ID information is available for the current incoming call. See +CLIP, section 8.4, for enable and disabling this result.

17.4.2. Syntax:

Response Syntax +CLIP: "<caller_id>", <type>

Example Result

+CLIP: "18005551212",129

Note: Incoming call from 1-800-555-1212, type always equals 129.

+CLIP: "RESTRICTED",129

Note: Incoming call from restricted number.

+CLIP: "NOT AVAILABLE",129

Note: Incoming call from unavailable number

17.5. Incoming Message Directly Displayed +CMT

17.5.1. Description:

This command indicates an incoming message has been received and, according to message storage preferences (+CNMI), is to be directly displayed.

17.5.2. Syntax:

Response Syntax +CMT:
 <oa>,<scts>,<tooa>,<lang>,<encod>,<priority>,<cbn>,<length>,<data>

Example Result

+CMT:"123456","98/10/01,12 :30:59",129,1,2,2,"5550000",5, Hello

Note: Incoming message received

17.6. Incoming Message Stored in Memory +CMTI

17.6.1. Description:

This command indicates an incoming message has been received and, according to message storage preferences (+CNMI), is to be stored in memory.

17.6.2. Syntax:

Response Syntax +CMTI: "MT",<index>

Example Result
+CMTI: "MT",5 <i>Note: Incoming message received and stored in "MT" memory at index 5</i>

17.7. Mode Preference +COPS

17.7.1. Description:

This unsolicited command indicates a change in mode preference has taken place. See +COPS, section 5.2 for information about Changing Mode Preference.

17.7.2. Syntax:

Response Syntax +COPS: <mode>

Command	Possible responses
AT+COPS=0 <i>Note: Ask for Automatic mode</i>	OK +COPS:0 <i>Note: Unsolicited +COPS result confirms</i>
Automatic mode is requested AT+COPS=1 <i>Note: Ask for PCS mode</i>	OK +COPS:1 <i>Note: Unsolicited +COPS result confirms</i>
PCS mode is requested AT+COPS=2 <i>Note: Ask for Cellular mode</i>	OK +COPS:2 <i>Note: Unsolicited +COPS result confirms</i>
	Cellular mode is requested +COPS:5 <i>Note: Unsolicited +COPS:5 indicates the module is now in E911 emergency mode (seeking service anywhere it can)</i>

17.8. Registration & Roaming +CREG

17.8.1. Description:

This unsolicited command indicates the current state of roaming . See +COPS, section 5.2 for information about Changing Mode Preference

17.8.2. Syntax:

Response Syntax +CREG: <stat>

Example Result
+CREG: 1 <i>Note: Module has found the home network and is registered.</i>

17.8.3. Defined values :

<stat>

- 0: not registered, MS is not currently searching for a new operator.
- 1: registered, home network.
- 2: not registered, MS currently searching for a base station.
- 4: unknown.
- 5: registered, roaming

17.9. Incoming Call +CRING

17.9.1. Description:

This unsolicited command indicates an incoming call. See +CRC, section 9.3 for information about enabling this result.

17.9.2. Syntax:

Response Syntax +COPS: <mode>

Command	Discription
+CRING:VOICE	for normal voice calls
+CRING:DATA	for all types of data calls
+CRING:FAX	for all types of fax calls
+CRING:OTAPA	for OTAPA calls
+CRING:TEST	for markov, loopback, and test calls
+CRING:UNKNOWN	for unknown/undefined calls types

17.10. Automatic RxLev Indication +CSQ

17.10.1. Description:

This command indicates RSSI automatic shots when AT+CCED=1,8 is processed.

17.10.2. Syntax:

Response Syntax +CSQ: <rss>,99

Example Result
+CSQ:29, 99 <i>Note: RSSI notification</i>

17.11. Incoming Call RING

17.11.1. Description:

This unsolicited command indicates an incoming call.

17.11.2. Syntax:

Response Syntax RING

Example Result
RING RING <i>Note: Incoming Call</i>

17.12. Call Answered +WANS

17.12.1. Description:

This unsolicited command indicates that a voice call has been answered.

17.12.2. Syntax:

Response Syntax +WANS:<call type>

Command	Possible responses
ATA	+RING OK +WANS:0 <i>Note: Incoming call answered</i> +WCNT:3

17.12.3. Defined values :

<call type>

- 0: incoming call
- 1: outgoing call answered by other party (only available on networks supporting answering supervision for payphone applications)

17.13. Call Connected +WCNT

17.13.1. Description:

This unsolicited command indicates that an incoming or outgoing voice call has been connected into a traffic channel state.

17.13.2. Syntax:

Response Syntax +WCNT: <so>

Command	Possible responses
ATD18005551212;	OK +WORG:18005551212 +WCNT:3 <i>Note: Call Connected with service option 3</i>

17.14. Call Ended +WEND

17.14.1. Description:

This unsolicited command indicates that a voice call or attempt to establish a voice call has ended.

17.14.2. Syntax:

Response Syntax +WEND: <reason>

Command	Possible responses
ATD18005551212;	OK +WORG:18005551212 +WCNT:3
ATH	OK +WEND:10 <i>Note: Call Ended with a normal release</i>
ATD18005551212;	OK +WORG:18005551212 +WEND:3 <i>Note: Call failed because the signal faded.</i>

17.14.3. Defined values :

<reason>

- 0: Phone is offline
- 1: Phone is CDMA locked
- 2: Phone has no service
- 3: Call Faded/Dropped
- 4: Received Intercept from Base Station
- 5: Received Reorder from Base Station
- 6: Received a Release from Base Station (This is a normal call termination).
- 7: Service Option rejected by Base Station
- 8: Received Incoming Call
- 9: Received an alert stop from Base Station
- 10: Software ended the call (Normal release).
- 11: Received End Activation – OTASP calls only.
- 12: Internal Software aborted the origination/call.
- 13: NDSS failure (Network Directed System Selection, this is an IS-95B service)
- 14: Maximum Access probes exhausted (The module failed to contact the Base Station)
- 16: RUIIM not present
- 17: Origination already in progress
- 18: General Access Failure
- 19: Received retry order (IS-2000 only).

17.15. Feature Notification Message +WFNM

17.15.1. Description:

This unsolicited command displays a broadcast message that the carrier may send to all mobiles in an emergency. This event is required for CDMA specifications.

17.15.2. Syntax:

Response Syntax +WFNM="<message>"

Command	Possible responses
	+WFNM="Help, I have falling and I can't get up!"

17.16. GIGA General Indicator +WIND

17.16.1. Description:

This unsolicited result gives general status indications.

17.16.2. Syntax:

Response Syntax +WIND: <event>

Example Result
+WIND:8 <i>Note: General indication that AT commands are ready to be accepted</i>

17.16.3. Defined values :

<event>

- 0: R-UIM not present
- 1: R-UIM present
- 2: Reserved
- 4: Reserved
- 8: Product is ready to process all AT commands
- 16: Reserved
- 32: Reserved
- 64 : The network service is available for an emergency call.
- 128: The network is lost.
- 256: Reserved
- 512: Reserved

17.17. Call Originated +WORG

17.17.1. Description:

This unsolicited command indicates that an attempt to establish a voice call has occurred.

17.17.2. Syntax:

Response Syntax +WORG:<number>

Command	Possible responses
ATD18005551212;	OK +WORG:18005551212 +WCNT:3 OK

Note: <number> is the dialing string sent to the base station. You may see extra numbers before the intended dialing string, this is a result of pre-pended numbers or other call options such as +CLIR.

17.18. Call Privacy indication +WPRV

17.18.1. Description:

This unsolicited command confirms that the call privacy level has changed during a call.

17.18.2. Syntax:

Response Syntax +WPRV: <prv>

Command	Possible responses
AT+WPRV=1	OK +WPRV: 1

17.19. Roaming indication +WROM

17.19.1. Description:

This unsolicited command indicated roaming status has changed.

17.19.2. Syntax:

Response Syntax +WROM: <roam>

Command	Possible responses
	+WROM:1

17.19.3. Defined values :

<roam>

- 0: Home.
- 1: Roam Icon ON (affiliated network)
- 2: Roam Icon Blink (foreign network)

17.20. Current NAM Change +WNAM

17.20.1. Description:

This unsolicited command indicated the current NAM has changed.

17.20.2. Syntax:

Response Syntax +WNAM: <nam>

Command	Possible responses
	+WNAM:2

17.20.3. Defined values :

<nam>

- 1: NAM 1
- 2: NAM 2
- 3: NAM 3
- 4: NAM 4

17.21. GIGA Voice Mail Indicator +WVMI

17.21.1. Description:

This unsolicited indication gives the status of the Voicemail Inbox.

17.21.2. Syntax:

Response Syntax +WVMI: "VOICE",<index>,<Num>

Example Result
+WVMI:1,1 <i>Note: 1 Message waiting on Line 1</i>

17.21.3. Defined values :

<index>

Place of storage in memory.

<Num>

The number of messages waiting in the inbox.
 0: No message waiting.
 1: One message is waiting
 3: Three messages are waiting

17.22. SMS Message Storage Full +WMGF

17.22.1. Description:

This command indicates that the SMS Service Center has attempted to send an SMS message but it was rejected because SMS Message Storage is Full. No new SMS will be received until some room is created by deleting old.

17.22.2. Syntax:

Response Syntax +WMGF

Example Result
+WMGF <i>Note: Incoming message rejected. Message center notified with “out of resources” message. Message center will attempt to resend the message at a later time.</i>

17.23. SMS Status Report Indication Direct Displayed +CDS

17.23.1. Description:

This command indicates an SMS status report has been received and, according to message storage preferences (+CNMI), is to be directly displayed.

17.23.2. Syntax:

Response Syntax +CDS: <fo>, <mr>, <ra>, <tora>, <scts>, <dt>, <st>

Example Result
+CDS: 2,"01199323390",129,"03/07/12,19:12:44","03/07/12,19:12:49",32768 <i>Note: Status report received</i>

18. APPENDICES

18.1. MS error result code : +CME ERROR: <error>

Error	Meaning
3	Operation not allowed
4	Operation not supported
5	PH-SIM PIN required (SIM lock)
10	UIM NOT INSERTED
11	UIM PIN1 required
12	UIM PUK1 required
13	UIM failure
14-15	Reserved
16	UIM wrong password
17	UIM PIN2 required

18	UIM PUK2 required
20	Phone Book full
21	Invalid Index for Phone Book
22	Phone Book entry not found
23,25	Reserved
24	Text string too long
26	Dial string too long
30	No network service
31-39	Reserved
40	Network personalization PIN required (Network lock)
41	Software resource not available
42	Invalid parameter
43	Non-Volatile Memory failure
44	Invalid WPIN code or WPIN required
45	Invalid WSPC provisioning code
46	OTKSL provisioning code access restricted

18.2. Message service failure result code: +CMS ERROR : <error>

Error	Meaning
301	Reserved
302	Operation not allowed
303	Reserved
304	Invalid mode parameter
305	Invalid text mode parameter
310-318	Reserved
321	Invalid memory index
322	RESERVED
330	Reserved
340	No +CNMA acknowledgement expected
341	Non Volatile Memory failure

18.3. Extended Error Report (+CEER) Call Processing codes

Cause value	Diagnostic
0	No error detected in call processing
1	No CDMA service detected
2	Module is in a call, operation not allowed
3	Module is not in a call, operation not allowed

4	Module is in an unknown call state
5	Call Barring is ON
6	Invalid or Not allowed CDMA Service Option
7	Invalid Parameter
8	Operation only allowed during an incoming call
9	Invalid Mode Selection
10	Invalid Roam Selection
11	Invalid Band Selection

18.4. Parameters Storage

Command	Save NV with &W	Immediate save to NV	Get from NV with &F	Default values
General commands				
+CMEE	O		O	0
+CRSL		O	O	3
+WIND		O	O	RUIM:9, TE:8
Call control commands				
ATS0	O		O	0(No auto-answer)
+CICB			O	2
+CSNS			O	2
+VGR		O	O	6
+VGT		O	O	7
+SPEAKER		O	O	1
+ECHO		O	O	5
+SIDET		O	O	1,1
Network commands				
+COPS			O	0,0
+CREG	O		O	0
SMS commands				
+CSDH	O		O	0
+WUSS			O	0
+WSCL		O	O	RUIM: 6,4
Supplementary service commands				
+CLIP		O	O	1
Data commands				
+CRC	O		O	0
+DS			O	
+DR			O	0
Fax class 2 commands				
+FCQ			O	
+FCR			O	
+IPR		O		115200
+ICF				3,3
+IFC				2,2
V24-V25 commands				
E				1
&C				1

&D				2
Phonebook commands				
+WAIP		0	0	0

Document History

Version	Date	Name	Description
0.5	2003-07-07	Kim Misung	Initial version
0.6	2003-07-08	Kim Julee	1.17 – 2.23, 6.1 – 6.6, 9.1 – 9.7, 11.7, 11.10 – 11.11, 11.13, 11.17 – 11.18, 11.20, 11.22 – 11.23, 16.2 – 16.4, 16.9, 16.11 – 15, 16.17 – 16.19 : confirm 2.19 – 2.23 : Edit
0.7	2003-07-09	Shin man-sun	1.17 2.,1.4.,1.7.,1.8.,3.1.,3.2.,3.3.,3.4.,3.5.,3.6.,11.1.,11.2., 11.12.,11.21.,11.25.,13.1.,13.2.,13.3.,13.4.,13.5.,13.6.,13.7.,13.8.,13.9.,13.10.,13.11.,14.12.,14.13.,14.14.,14.15.,14.28., 14.32.:confirm 4.1.,4.2.,4.3.,4.4.,4.5.,11.3.,11.4.,11.5. 11.6.,11.8.,11.9.,11.14.,11.15.,11.16.,11.24.:confirm
0.8	2003-07-14	Lim kwan-woong	5.2 ~ 5.7, 16.5, 16.6, 16.21 ~16.23 : confirm 1.3, 11.19 : not support
0.9	2003-07-23	Kim Julee	2.16-17 : Not support 2.12-13 : Edit
1.0	2003-07-28	kim Julee	1.12 : Support 1.12 : Support & Edit 2.12-13 : Edit
1.1	2003-07-29	Lim kwan-woong	5.8 +WSCL 가
1.2	2003-07-30	Kim Julee	2.12-13 : Edit 2.17 : Edit
1.3	2003-07-30	Kim Julee	2.10, 9.2, 9.3, 9.5, 9.6 : Edit
1.4	2003-07-31	Kim Julee	2.19 – 2.21 : Edit
1.5	2003-08-04	Kim Julee	11.26, 11.27 : Add
1.6	2003-08-07	Kim, JoonSeok	8.1 : Edit 8.12 : Add
1.7	2003-08-13	Kim, JoonSeok	8.11.3 : Edit
1.8	2003-08-13	Kim Julee	2.6, 9.4 : Edit
1.9	2003-08-17	Lim	5.4 ~ 5.6 : modify for unicode
2.0	2003-08-21	Lee No kyoung	2.16:Edit
2.1	2003-08-24	Lim	CMGS, CMGL, CMGR Edit
2.2	2003-08-25	kim Julee	16.2, 16.4. 16.11 : Edit
2.3	2003-09-02	Kim Julee	2.11, 9.3-9.4, 11.22 : Edit
2.4	2003-09-05	Kim Julee	11.28 – 11.29 : Add
2.5	2003-09-08	Kim Julee	11.29 : Edit
2.5	2003-09-08	Kim, Young-hoon	3.2 : Edit, 3.5 : Edit
2.6	2003-09-09	Kim Julee	11.28 – 11.29 : Delete
2.7	2003-09-15	Kim, Young-hoon	3.2 : Edit
2.8	2003-09-17	Kim Julee	1.13 :Edit 2.6.4 – 2.6.6 :Add
2.9	2003-09-23	Kim Julee	2.1, 2.2, 2.5, 2.7, 2.15, 2.21, 2.22 : Edit 6.1, 6.5, 6.6 : Edit

			9.2 : Edit 11.7 :Edit
2.10	2003-09-24	Kim Julee	1.10 : Edit
2.11	2003-09-25	Kim Julee	17.1 – 17.4 :Add
2.12	2003-09-26	Kim Julee	17.4 : Edit
2.13	2003-09-26	Jun, Young-sam	8.11 : Edit 8.12 : Edit
2.13	2003-09-29	Kim Julee	17.4 : Edit
2.14	2003-10-13	Kim Julee	1.12 : Edit
2.15	2003-10-13	Jun, Young-sam	7.1.3 : Edit 8.1.2 : Edit 8.10.1, 17.4 : Edit
2.16	2003-10-13	Lim Kwan- woong	- . Modify examples of CMGS - . Modify 5.8 about WSCL - . Modify CSDS examples and 16.2 about <fo>
2.17	2003-10-21	Jun, Young-sam	8.10.1, 14.27.3 : Edit
2.18	2003-10-27	Kim Julee	9.7 : Add (+WAIP) 17.4 : Edit
2.19	2003-10-30	BAHK Won- Yong	Add SMS Length : CMGS, +CMGR, +CMGL
2.20	2003-11-06	Lim Kwan- woong	Modify CMGL, CMGS for WMVI and examples for length
2.21	2003-11-20	Lim Kwan- woong	Add CMGW, CMSS Command.
2.22	2003-12-16	Kim Julee	9.7 : Edit
2.23	2003-12-17	Lim Kwan- woong	17.23: CSDS -> CDS