CDMA AT Commands Interface Specification

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Reference :

Document Change History

Version	Date	History of the evolution	Writer
Rev 1.31	09/23/02	Merge QC's mobile IP proprietary AT commands	A. Zhuang
Rev 1.22	08/26/02	General AT command error correction in the document	A. Zhuang
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Rev 1.18	08/08/02	Add chapter 15 of QC's proprietary AT commands and other modifications	A. Zhaung
Rev 1.17	08/07/02	Add chapter 6 security section and update +CLCK command	Steve Shen
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CDMA AT Commands Interface Specification

Contents

1 Introduction

As a wireless module, the AT command set is one of the main interfaces for the module to interact with an external application layer. CDMA AT commands are defined in TIA/EIA/IS707.3. However, as the wireless applications increases, TIA/EIA/IS707.3 is not sufficient. In addition, a lot of GSM applications already exist and GSM customers would like to maintain the same interface in order to make no or minimum changes to the applications to be used with CDMA module. To meet the all these needs, Wavecom WISMOQ CDMA AT command set is designed to cover: 1) IS707.3 AT commands; 2) GSM 07.07 when applicable; 3) GSM 07.05 when applicable, 4) ITU-T v25 when applicable; 5) Wavecome proprietary AT set; 6) Customer specific AT commands; 7) Qualcomm defined AT commands. Please note that is several instances, the GSM 7.07 and 7.05 specifications could not be followed because of fundamental differences between CDMA and GSM call processing behaviors. In these cases, minimal changes were made to the GSM related commands.

1.1 Scope of this document

This document describes the WISMOQ CDMA AT command, its syntax, its response, and result codes. It serves as the reference for wireless application development based on WISMOQ CDMA module, and for the integrtiona and testing.

This document is also intended to be used for North American market, SIM/R-UIM and its related AT commands are not documented here.

1.2 Related references

This interface specification is based on the following recommendations or standards:

[1] ETSI GSM 07.05: Digital cellular telecommunications system (Phase 2);
Use of DTE-DCE interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)

[2] ETSI GSM 07.07: Digital cellular telecommunications system (Phase 2);
AT command set for GSM Mobile Equipment (ME)

[3] ITU-T Recommendation V.25 ter: Serial asynchronous automatic dialling and control

[4] ETSI GSM 03.40: Digital cellular telecommunications system (Phase 2);
Technical implementation of the Short Message Service (SMS) Point-to-Point (PP)

[5] ETSI GSM 03.38: Digital cellular telecommunications system (Phase 2);
Alphabets and language-specific information

[6] ETSI GSM 04.80: Digital cellular telecommunications system (Phase 2):
Mobile radio interface layer 3, Supplementary service specification, Formats and coding

[7] WAVECOM AT Commands Interface Guide version 001/9.1

[8] TIA/EIA/IS-707.3: Data Service Options for Wideband Spread Spectrum Systems: AT Command Processing and the Rm Interface

[9] Qualcomm Application Note (CL93-V0327-1 X10): AT COMMANDS FOR DMSS

1.3 Definitions

This is an alphabetical list of terms and acronyms used throughout this document and the CDMA cellular industry:

2G: Second Generation. All digital cellular systems developed to replace the first analog cellular systems (GSM and CDMA).

3G: Third Generation. Next generation digital cellular systems designed to have high speed data access and higher voice capacity (WCDMA & CDMA2000).

CBM: Cell Broadcast Message. An SMS meesage that is broadcast to all mobiles on the network.

CDMA : Code Division Multiple Access. CDMA is a spread spectrum, digital wireless modulation scheme for cellular communication systems. It has approximately 3 times the voice capacity of GSM networks. See IS-95, IS-95A, IS-95B, IS-2000.

CDMA2000: See IS-2000.

DCE: Data Communications Equipment. This is the modem in the traditional serial commnunication paradigm of a computer connected via two modems to another computer.

DTE: Data Terminal Equipment. This is the computer in the traditional serial commnunication paradigm of a computer connected via two modems to another computer.

DTMF: Dual Tone Multi-Frequency: A pre-defined set of tones sents over the air when keys are pressed on the keypad.

Handset (Path): The audio path (microphone & speaker) that connects to a traditional hand held telephone receiver, usually dual balanced electrical lines.

Headset (Path): The audio path (microphone & speaker) that connects to a earpiece with a microphone, usually single electrical lines.

IMSI: International Mobile Station ID. This a international 15 digital phone number that uniquely identifies a mobile. IMSI = MCC + MNC + MIN.

IS-95: The first CDMA standard published by Qualcomm in 1993.

IS-95A: A CDMA standard with improved voice quality. This standard is widely used throughout the world.

IS-95B: This CDMA standard contains Medium Data Rate capabilities and bug fixes for system access failures. It is considered a 2.5G system. This standard is mostly deployed in Korea.

IS-2000: The first 3G CDMA standard based on IS-95B. It contains a significant increase in voice capacity and high speed data rates. It is backward compatable with IS-95B and IS-95A. The CDMA WISMOQ is IS-2000 compatable.

MCC: Mobile Contry Code. A pre-defined 3-digital number that represents a country in the IMSI.

MIN: Mobile ID Number: The traditional 10 digit phone number of the mobile.

MNC: Mobile Network Code. A pre-defined 2-digital number that represents a sub-network in the IMSI (usually set to “00”).

MO: Mobile Originated. An action (usually a call) that is first started from the phone. An outgoing call or SMS.

MS: Mobile Station. The term MS is commonly used to represent the phone or mobile.

MT: Mobile Terminated: An action (usually a call) that is first started from a land based network. An incoming call or SMS.

MSM: Mobile Station Modem. This is the main processing ASIC for a CDMA phone.

NAM: Number Assignment Module. The NAM is collection of internal parameters that define a working phone for a given network (phone number, access parameters, etc.). The WISMOQ supports up to four NAMs.

NID: Network ID. The NID is an identification number that represents geographic location of a common coverage area; but is a subset of the SID, usually a neighborhood in a large city. NID is usually not used and is set to zero. Also see SID.

NV-RAM: Non-Volitile Random Access Memeory. NV-RAM is a data storage device that does not lose it’s data when power is turn off.

OTAPA: Over The Air Parameter Administration. An automatic update in internal software parameters (PRL for example) by means of a specially defined CDMA data call that is mobile terminated (MT).

OTASP: Over The Air Service Programming. An automatic update in internal software parameters (PRL for example) by means of a specially defined CDMA data call that is mobile originated (MO).

PDU: A GSM SMS standard where any type of binary data can be transported via an SMS message.

PN Offset: Psuedorandom Noise Offset: In a CDMA network, the PN offset is a variable time delay offset of a repeating random noise generator that is used to distinguish individual sectors of a base station.

P-REV: The CDMA revision of the mobile or base station.

PRL: Preferred Roaming List. The PRL is a collection of Frequencys, SIDs, and NIDs that the call processing software uses to search for approved and unapproved CDMA networks. The PRL is loaded into the phone and is save in NV-RAM.

PSTN: Public Switching Telephone Network. The traditional telephone network.

RF: Radio Frequency.

RSSI: Receive Signal Strength Indicator: This parameter represents the total RF received signal power from the base station(s) the mobile sees.

SID: System ID. The SID is an identification number that represents geographic location of a common coverage area, usually a large city. Also see NID.

SMS: Short Messaging Service: A suppliment service that is capable to sended and receiving short length text messages to/from the mobile.

TA/TE: Terminal Application/Terminal Equipment. This is the end “device” (combination of hardware and software) that communicates with a modem via a serial link. In this context, it is the device (PDA/Computer) connected to the WISMOQ. Also see DTE.

V24-V25: A data compression algorithm.

V42: A data compression algorithm.

2 AT commands features

2.1 Wavecom line settings

A serial link handler is set with the following default values (factory settings):
autobaud, 8 bits data, 1 stop bit, no parity, RTS/CTS flow control.
Please use the +IPR, +IFC and +ICF commands to change these settings.

2.2 Command line

Commands always start with AT (which means ATtention) and finish with a <CR> character.

2.3 Information responses and result codes

Responses start and end with <CR><LF>, except for the ATV0 DCE response format) and the ATQ1 (result code suppression) commands.

- If command syntax is incorrect, an **ERROR** string is returned.
- If extended error reports are enabled (+CMEE), the **+CME ERROR:** <Err> or **+CMS ERROR:** <SmsErr> strings are returned with different error codes.
- If the command line has been performed successfully, an **OK** string is returned.

In the following examples <CR> and <CR><LF> are intentionally omitted.

3 General commands

3.1 Request revision identification +CGMR

3.1.1 Description :

This command is used to get the revised software version.

3.1.2 Syntax :

Command syntax : AT+CGMR

Command	Possible responses
AT+CGMR *Note : Get software version*	+CGMR: S/W VER: WISMOQ WQ1.1 Mar 20 2002 17:30:00 OK *Note : Software Version WISMOQ, revision WQ1.1 generated on the March 20th, 2002 at 17:30:00*

3.2 Product Serial Number +CGSN

3.2.1 Description :

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

3.2.2 Syntax :

Command syntax : AT+CGSN

Command	Possible responses
AT+CGSN *Note : Get the ESN*	+CGSN: FE7A7704 OK *Note : ESN read from NV*

3.3 Select TE character set +CSCS

3.3.1 Description :

This command informs the MS which character set is used by the TE. The MS can convert each character of entered or displayed strings. This is used to send, read or write short messages.

3.3.2 Syntax :

Command syntax : AT+CSCS=<Character Set>

Command	Possible responses
AT+CSCS="CDMA"	OK

Note : CDMA default alphabet	*Note : Command valid*
AT+CSCS=”PC437” *Note : PC character set code page 437*	OK *Note : Command valid*
AT+CSCS=? *Note : Get possible values*	+CSCS: ("PC437", "CDMA", "CUST") OK *Note : Possible values*

3.3.3 Defined values :

<Character Set>
“CDMA” CDMA default alphabet.
“PC437” PC character set code page 437.
“CUST” Custom Character set.

3.4 Request IMSI +CIMI

3.4.1 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.

3.4.2 Syntax :

Command syntax : AT+CIMI

Command	**Possible responses**
AT+CIMI *Note : Read the IMSI*	+CIMI: 310008585551212 OK *Note : IMSI value (15 digits)*

3.5 Capabilities list +GCAP

3.5.1 Description :

This command gets the complete list of capabilities.

3.5.2 Syntax :

Command syntax : AT+GCAP

Command	**Possible responses**
AT+GCAP *Note : Get capabilities list*	+GCAP: +CGSM, +CIS707-A, +MS, +ES, +DS, +FCLASS OK

3.6 Repeat last command A/

3.6.1 Description :

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

3.6.2 Syntax :

Command syntax : A/

Command	Possible responses
A/ *Note : Repeat last command*	

3.7 Power off +CPOF

3.7.1 Description :

This **specific** command stops the CDMA software stack as well as the hardware layer. The AT+CFUN=0 command is equivalent to +CPOF.

3.7.2 Syntax :

Command syntax : AT+CPOF

Command	Possible responses
AT+CPOF *Note : Stop CDMA stack*	+CPOF: OK *Note : Command valid*

3.8 Set phone functionality +CFUN

3.8.1 Description :

This command selects the mobile station's level of functionality.
When the application wants to stop the product with a power off, then it must send:
AT+CFUN=0 (equivalent to AT+CPOF)

The 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.

3.8.2 Syntax :

Command syntax : AT+CFUN=<functionality level>

Command	Possible responses
AT+CFUN? *Note : Ask for current functionality level*	+CFUN: 1 OK *Note : Full functionality*
AT+CFUN=0 *Note : Perform power off*	OK *Note : Command valid*
AT+CFUN=1 *Note : Perform software reset*	 *Note : Command valid*

3.9 Phone activity status +CPAS

3.9.1 Description :

This command returns the activity status of the mobile equipment.

3.9.2 Syntax :

Command syntax : AT+CPAS

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

3.9.3 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)

3.10 Report Mobile Equipment errors +CMEE

3.10.1 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.

3.10.2 Syntax :

Command syntax : AT+CMEE=<error reporting flag>

Command	Possible responses
AT+CMEE=0 *Note : Disable MS error reports, use only « ERROR »*	OK
AT+CMEE=1	OK

Note : Enable «+CME ERROR: <xxx>» or «+CMS ERROR: <xxx>»	

3.11 Keypad control +CKPD

3.11.1 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,*,#).

3.11.2 Syntax :

Command syntax : AT+CKPD=<keys>

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

3.12 Clock Management +CCLK

3.12.1 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 98 (for 1998) to 97 (for 2097). The seconds field is not mandatory.
Default date/time is "98/01/01,00:00:00" (January 1st, 1998 / midnight).

3.12.2 Syntax :

Command syntax : AT+CCLK=<date and time string>

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

3.13 Ring Melody Playback +CRMP

3.13.1 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 (for voice/data/fax call) must be stopped by a +CRMP command with the <index> field set to 0 (example: +CRMP=0,,,0).
When the <volume> parameter is given, this overwrites the <sound level> value of the +CRSL command. If the <volume> parameter is not given, the <sound level> value of +CRSL is used as default value.

3.13.2 Syntax :

Command syntax : AT+CRMP=<call type>[,<volume>,<type>,<index>]

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

3.13.3 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
…
1 Default volume
3 Max volume
<type>
0 Manufacturer Defined (default)
<index>
0 Stop Melody Playback
1-10 Melody ID for voice/data/fax call type (default : 1)
1-2 Melody ID for short message (default : 1)

3.14 Ringer Sound Level +CRSL

3.14.1 Description :

This command is used to set/get the sound level of the ringer on incoming calls. The set command changes the default <volume> value of the +CRMP command.

3.14.2 Syntax :

Command syntax : AT+CRSL=<sound level>

Command	Possible responses
AT+CRSL=0 *Note : Set volume to Min.*	OK *Note : Current ring playing with Min. volume.*
AT+CRSL=3 *Note : Set volume to Max.*	OK *Note : Current ring playing with Max. volume.*
AT+CRSL? *Note : get current ringer sound level*	+CRSL: 3 OK *Note : Current level is 3 (max.)*
AT+CRSL=? *Note : supported parameters*	+CRSL: (0-3) OK

3.14.3 Defined values :

<sound level>
0 Min volume
1 Default volume (default)
3 Max volume

3.15 Subscriber Number +CNUM

3.15.1 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.

3.15.2 Syntax :

Command syntax : AT+CNUM

Command	Possible responses
AT+CNUM *Note : Get MSISDN*	+CNUM :“Phone”,”8585551212”,129 *Note : MSISDNs*
AT+CNUM=?	+CNUM: OK

3.15.3 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

3.16 Select Type of Address +CSTA

3.16.1 Description :

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

3.16.2 Syntax :

Command syntax : AT+CSTA=<typex>

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

3.16.3 Defined values :

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

3.17 View Module Timers +WTMR

3.17.1 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).

3.17.2 Syntax :

Command syntax: AT+WTMR
Response syntax:
+WTMR: <Uptime>,<Call Time>, <Call Count>

Command	Possible responses
AT+WTMR *Note : See Module Timers*	+WTMR: 1029, 45670,289 OK *Note: Uptime = 1029 seconds* *Call Time = 45670 seconds* *Call Count = 289 calls*

4 Call Control commands

4.1 Dial command D

4.1.1 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 (the bearer must be previously selected with the +CBST command):
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.

4.1.2 Syntax :

Command syntax : ATD<nb>[;]

Command	Possible responses
ATD18005551212; *Note: Attempt a voice call.*	OK *Note: Command executed* +WORG:18005551212 *Note: Voice call origination sent to Base Station with dial string "18005551212".* *+WCNT: 9* *Note: Call Connected, CDMA traffic channel established with service option 9. 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.
ATD5551212; *Note : Example of a failed voice call attempt.*	OK *Note: Command executed* +WORG:5551212 *Note: Voice call origination sent to Base Station with dialing string "5551212".* +WEND: 3 *Note: Call Attempt failed/ended. Reason 3, signal faded. See section 14.7 Unsolicited commands.*

4.2 Hang-Up command H

4.2.1 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 Wavecom ATH1 command has been appended to disconnect the current outgoing call, only in dialing or alerting state (ie. 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.

4.2.2 Syntax :

Command syntax : ATH

Command	Possible responses
ATH *Note : Ask for disconnection*	OK +WEND: 10 *Note : Every call, if any, is released*
ATH1 *Note : Ask for outgoing call disconnection*	ERROR +WEND: 10 *Note : Outgoing call, if any, is released*

4.3 Answer a call A

4.3.1 Description :

When the product receives a call, it sets the **RingInd** 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.

4.3.2 Syntax :

Command syntax : ATA

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

4.4 Remote disconnection

This message is used by the product to inform the application that an active call has been released by the remote user.
The product sends +WEND:<result code> to the application. The DCD signal may be set based upon the AT&C2 setting for packet calls.

4.5 Extended error report +CEER

4.5.1 Description :

This command gives the cause of any general call processing error or misfunction. See section 17.4.

Syntax :
Command syntax : AT+CEER

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

4.6 DTMF signals +VTD, +VTS

4.6.1 +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 150,255ms).
To define this duration, the application uses:
AT+VTD=<n1>,<n2> where <n1>gives the on duration in ms and <n2>gives the off duration.

4.6.2 +VTD Syntax :

Command syntax : AT+VTD=<n>,<n>

Command	Possible responses
AT+VTD=150,255 *Note : To define 150 ms off tone duration and 255 ms on tone duration.*	OK *Note : Command valid*
AT+VTD=?	+VTD: (60-200), (95-350) OK

4.6.3 +VTS Description :

The product enables the user application to send DTMF tones over the CDMA network. This command enables tones 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,*,#,A,B,C,D}

4.6.4 +VTS Syntax :

Command syntax : AT+VTS=<Tone>

Command	Possible responses
AT+VTS=A	OK *Note : Command valid*
AT+VTS=11	OK
AT+VTS=4	OK

4.6.5 Informative example :

To send tone sequence 13#, the application sends :
AT+VTS=13#

4.7 DTMF START and STOP Continuous +WSDT, +WSDS

4.7.1 Description:

Starts and stops a DTMF tone while in a call state.

4.7.2 Syntax:

Command syntax: AT+WSDT

Command	Possible responses
AT+WSDT	OK *Starts DTMF tone*
AT+WSDS	OK *Stops DTM tone*

4.8 Redial last telephone number ATDL

4.8.1 Description :

This command is used by the application to redial the last number used in the ATD command. The last number dialed is displayed.

4.8.2 Syntax :

Command syntax : ATDL

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

4.9 Automatic dialing with DTR AT%Dn

4.9.1 Description :

This command enables and disables:

- automatic sending of the short message (SMS) stored in the first location.

The number is dialed and then short message is sent when DTR OFF switches ON.

Syntax :
Command syntax : AT%D<n>

Command	Possible responses
AT%D2 *Note : Activates DTR short message sending*	OK *Note : Command has been executed*

4.9.2 Defined values :

<n> (0-2)
to enable or disable automatic message transmission or number dialling.
Informs the product that the number is a voice rather than a fax or data number.
AT%D0
Disables automatic DTR number dialling / message transmission.
AT%D1

Currently not implemented.
AT%D2
Activates automatic DTR message transmission if DTR switches from OFF to ON.

4.10 Automatic answer ATS0

4.10.1 Description :

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

4.10.2 Syntax :

Command syntax : ATS0=<value>

Command	Possible responses
ATS0=2 *Note : Automatic answer after 2 rings*	OK
ATS0? *Note : Current value*	002 OK *Note : always 3 characters padded with zeros*
ATS0=0 *Note : No automatic answer*	OK *Note : Command valid*

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

4.11 Incoming Call Bearer +CICB

4.11.1 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.

4.11.2 Syntax :

Command syntax : AT+CICB=<mode>

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

4.11.3 Defined values :

<mode>
0 : Data
1 : Fax
2 : Speech
3: Data once (10 minute timeout)
4: Fax once (10 minute timeout)

4.12 Single Numbering Scheme +CSNS

4.12.1 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.

4.12.2 Syntax :

Command syntax : AT+CSNS

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

4.12.3 Defined values :

<mode>
0 : Voice
2 : Fax
4 : Data

4.13 Microphone Gain +VGT

4.13.1 Description:

This command set the microphone gain of the current audio path. This command can be set when the phone is in idle mode (not in a call).

4.13.2 Syntax:

Command syntax : AT+VGT=<MicGain>

Command	Possible responses
AT+VGT=2	OK *Note : Command valid*
AT+VGT? *Note : Interrogate value*	+VGR: 2 OK *Note : Current value*
AT+VGT=?	+VGR : (0-3)

Note : Test command	OK *Note : Possible values*

4.14 Volume Gain control +VGR

4.14.1 Description :

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

4.14.2 Syntax :

Command syntax : AT+VGR=<Rgain>

Command	Possible responses
AT+VGR=2	OK *Note : Command valid*
AT+VGR? *Note : Interrogate value*	+VGR: 2 OK *Note : Current value*
AT+VGR=? *Note : Test command*	+VGR : (0-10) OK *Note : Possible values*

4.15 Microphone Mute Control +CMUT

4.15.1 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.

4.15.2 Syntax :

Command syntax : AT+CMUT=<mode>

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

4.15.3 Defined values :

<mode>
0 : microphone mute off (default value).
1 : microphone mute on.

4.16 Speaker & Microphone selection +SPEAKER

4.16.1 Description

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

4.16.2 Syntax :

Command syntax : AT+SPEAKER=<ActiveSpkMic>

Command	Possible responses
AT+SPEAKER=0 *Note : Speaker ONE and Micro ONE*	OK *Note : Command valid*
AT+SPEAKER?	+SPEAKER: 0 OK *Note : Speaker ONE and Micro ONE are active*

4.16.3 Defined values :

<mode>
0 : HEADSET
1 : HANDSET

4.17 Echo Cancellation +ECHO

4.17.1 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 automaticly sets echo cancellation based upon handset or headset choice and this command allows non-standard operation.

4.17.2 Syntax :

Command syntax :
AT+ECHO= <mode>

Command	Possible responses
AT+ECHO? *Note : Read current settings*	+ECHO: 0 OK
AT+ECHO=0 *Note : Set Echo Cancellation Off*	OK
AT+ECHO=1 *Note : Set Echo Cancellation to Ear Seal*	OK
AT+ECHO=2 *Note : Set Echo Cancellation to Headset*	OK

AT+ECHO=4 *Note : Set Echo Cancellation to Handset*	OK

4.17.3 Defined values:

<mode>
0 :Vocoder Echo Cancellation Off
1 : Ear Seal Echo Cancellation
2 : Head Set Echo Cancellation
3 : AEC
4 : Speaker Echo Cancellation for car kit operation
5 : Default Echo Cancellation for current path settings

4.18 SideTone modification +SIDET

4.18.1 Description :

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

4.18.2 Syntax :

Command syntax : AT+SIDET=<val1>,<val2>

Command	Possible responses
AT+SIDET=1,0	OK *Note : Command valid*
AT+SIDET? *Note : Current value*	+SIDET: 1,0 OK *Note : Command valid*

4.18.3 Defined values :

<val1>
0: SideTone is disabled
1: SideTone is enabled

<val2>
0: No side tone
1: Handset Sidetone levels
2: Headset Sidetone levels
3: Max Sidetone level

4.19 Intialize Voice Paramters +VIP

4.19.1 Description:

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

4.19.2 Syntax:

Command syntax : AT+VIP

Command	Possible responses
AT+VIP	OK *Note : Command valid*

4.19.3 Defined Values:

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

4.20 TTY Mode +WTTY

4.20.1 Description:

This command enables TTY mode on the headset audio path. The module must be in a call to set this command and when the call ends it goes back to standard audio mode.

4.20.2 Syntax :

Command syntax : AT+WTTY

Command	Possible responses
AT+WTTY	OK *Note : Command valid*

5 Network service commands

5.1 Signal Quality +CSQ

5.1.1 Description :

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

5.1.2 Syntax :

Command syntax : AT+CSQ

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

5.1.3 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.

5.2 Mode Perference +COPS

5.2.1 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. See section 15.6 unsolicited result codes.

5.2.2 Syntax :

The application must send the following command:
Command syntax: AT+COPS=<mode>

Command	Possible responses
AT+COPS? *Note : Ask for current Mode Preference*	+COPS: 0 OK

	Note : Automatic mode, use PRL order
AT+COPS=?	+COPS: (0-2) OK *Note: Automatic, PCS, Cellular*
AT+COPS=0 *Note : Ask for Automatic mode*	OK +COPS:0 *Note: Unsolicited +COPS result confirms Automatic mode is requested*
AT+COPS=1 *Note : Ask for PCS mode*	OK +COPS:1 *Note: Unsolicited +COPS result confirms PCS mode is requested*
AT+COPS=2 *Note : Ask for Cellular mode*	OK +COPS:2 *Note : Unsolicited +COPS result confirms Cellular mode is requested*

5.2.3 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)

5.3 Roam Perference +WRMP

5.3.1 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 15.6 Unsolicited result codes.

5.3.2 Syntax :

The application must send the following command:
Command syntax: AT+WRMP=<mode>

Command	Possible responses
AT+WRMP? *Note : Ask for current Mode Preference*	+WRMP: 0 OK *Note : Home only*
AT+WRMP=?	+WRMP: (0-2) OK *Note: Home, Affiliated, Any*
AT+WRMP=0 *Note : Allow Home only networks*	OK . .

	. +WROM:0 *Note: Unsolicited +WROM may or may not appear based on current circumstances*
AT+WRMP=1 *Note : Allow Roaming Affiliated Networks*	OK . . . +WROM:1 *Note: Unsolicited +WROM may or may not appear based on current circumstances*
AT+WRMP=2 *Note : Allow Roaming on Any Network*	OK . . . +WRMP:2 *Note: Unsolicited +WROM may or may not appear based on current circumstances*

5.3.3 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.

5.4 MOB_TERM Adjustment +WRID

5.4.1

This command set the three CDMA MOB_TERM boolean flags for the module for the current NAM. Use of this command can cause unintended side effects for registration and mobile terminated calls. This command automatically resets the module, except reading the current state. Do not use this command unless you fully understand how to adjust these parameters.

5.4.2 Syntax

Command Syntax: AT+WRID= <Home SID>,<Foreign SID>, <Foreign NID>

Command	Possible responses
AT+WRID=1,1,1	(module resets) *Note : Command valid*
AT+WRID=1,0,0	(module resets) *Note : Command valid*
AT+WRID?	+WRID: 1,1,0 OK

5.5 Network registration & roaming +CREG

5.5.1 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.

5.5.2 Syntax :

Command syntax : AT+CREG= <mode>
Response syntax : +CREG : <mode>, <stat>

Command	Possible responses
AT+CREG=0 *Note : Disable network registration unsolicited result code*	+CREG: 0,1 OK *Note : Command valid*
AT+CREG=1 *Note : Enable network registration unsolicited result code*	+CREG:1,1 OK *Note : Command valid*
AT+CREG?	+CREG: 1,5 OK *Note : Unsolicited enabled, MS currently roaming.*
AT+CREG=?	+CREG: (0-1) OK *Note : 0,1 <mode> values are supported*
Example of the unsolicited result code. MS is searching for a base station	+CREG:2

5.5.3 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

5.6 Change NAM Selection +WNAM

5.6.1 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 +WNAM: <nam> will be returned. If or when the actual NAM changes, the unsolicited command +WCNM: <nam> will be returned. See section 16, unsolicited result codes.

5.6.2 Syntax :

Command syntax: AT+WNAM=<nam>

Command	Possible responses
AT+WNAM=2 *Note : Use NAM 2, if programmed*	OK +WNAM: 2 +WCNM: 2
AT+WNAM=3 *Note :*	OK *Note : No unsolicited response indicates that NAM 3 is not valid, thus no change in NAM.*
AT+WNAM=5 *Note : Try Auto NAM*	OK +WNAM: 5 +WCNM: 1 *Note : Auto NAM is selected, NAM 1 choosen.*

5.6.3 Defined values :

<nam>
1: NAM 1
2: NAM 2
3: NAM 3
4: NAM 4
5: Auto NAM

5.7 Read Current NAM +WCNM

5.7.1 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 16, unsolicited result codes.

5.7.2 Syntax :

Command syntax : AT+WCNM

Command	Possible responses
AT+WCNM *Note : Ask for the current NAM*	+WCNM: 1 OK *Note : NAM 1 in use*

6 Security commands

6.1 Enter PIN +CPIN

6.1.1 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.

6.1.2 Syntax :

Command syntax : AT+CPIN=<pin>

Command	Possible responses
AT+CPIN=1234	OK *Note : PIN code is correct*

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 *Note : Enter PUK and new PIN*	+CME ERROR: 16 *Note : Incorrect PUK*
AT+CPIN=12345678,1234 *Note : Enter PUK and new PIN, 2ne attempt*	OK *Note : PUK correct, new PIN stored*

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 personnalisation 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.

6.2 Enter PIN2 +CPIN2

6.2.1 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.

6.2.2 Syntax :

Command syntax : AT+CPIN2=<pin2>

Command	Possible responses
AT+CPIN2=1234	OK *Note : PIN2 code is correct*

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 *Note : Enter PUK2 and new PIN2*	+CME ERROR: 16 *Note : Incorrect PUK2*
AT+CPIN2=12345678,1234 *Note : Enter PUK2 and new PIN2, 2ne attempt*	OK *Note : PUK2 correct, new PIN2 stored*

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.

6.3 PIN Remaining Attempt Number +CPINC

6.3.1 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.

6.3.2 Syntax :

Command syntax : AT+CPINC
Response syntax : +CPINC : <n1>,<n2>,<k1>,<k2>

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

6.3.3 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).

6.4 Facility Lock +CLCK

6.4.1 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 perfomed, however, these passwords are not enforced (any 4 digit sequence can be entered). Builds without UIM support will not feature “SC” and “P2” facilities.

6.4.2 Syntax :

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

Command	Possible responses
AT+CLCK=”SC”,1,1234 *Note : Enable PIN*	OK *Note : PIN correct*
AT+CLCK? *Note : Get status*	+CLCK:(“SC”,0),(“P2”,0),(“AO”,1),(“AI”,1) OK Note : PIN1 is disabled, PIN2 is disabled, Outgoing call barring is enabled, Incoming call barring is enabled
AT+CLCK=”SC”,0,555555 *Note : Disable PIN*	+CME ERROR: 16 *Note : PIN incorrect*

6.4.3 Defined values :

The following <fac> values are supported:
“SC” : PIN1 enabled (<mode> = 1) / disabled (<mode> = 0)
“P2” : PIN2 enabled (<mode> = 1) / disabled (<mode> = 0)
“AO” : BAOC (Barr All Outgoing Calls)
“AI” : BAIC (Barr All Incoming Calls)

<mode>
0 : unlock the facility
1 : lock the facility
2 : query status

6.5 Change Password +CPWD

6.5.1 Description :

This command is used by the application to change a password. (PIN1, PIN2). “SC” and “P2” facilities are only supported for builds which include UIM.

6.5.2 Syntax :

Command syntax : AT+CPWD= <fac>, <oldpwd>, <newpwd>

Command	Possible responses
AT+CPWD=”SC”,1234,5555 *Note : Change UIM PIN1*	OK *Note : PIN correct*
AT+CPWD=”SC”,1234,5555 *Note : Change UIM PIN1*	+CME ERROR: 16 *Note : PIN incorrect*
AT+CPWD? *Note : Get status*	+CPWD:(“SC”,8),(“P2”,8) OK Note : PIN1 & PIN2 passwords are supported with 8 digit maximum

6.5.3 Defined values :

The following <fac> values are supported:
“SC” : PIN1
“P2” : PIN2

7 Short Messages commands

7.1 Parameters definition

<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 [00-99], Month [01-12],
Day [01-31], Hour, Minute, Second
<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.
<length> Text mode (+CMGF=1): number of characters PDU mode (+CMGF=0): length of the TP data unit in octets
<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.
<pdu> For **SMS** : address followed by TPDU in hexadecimal format, coded as specified in doc [4] For **CBS** : GSM 03.41 TPDU in hexadecimal format
<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.
<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

7.2 Select message service +CSMS

7.2.1 Description :

The supported services are originated (SMS-MO) and terminated short message (SMS-MT) + Cell Broadcast Message (SMS-CB) services.

7.2.2 Syntax :

Command syntax : AT+CSMS?

Command	Possible responses
AT+CSMS? *Note : Current values ?*	+CSMS: <MO>,<MT>,<CB> OK *Note : SMS-MO, SMS-MT and SMS-CB support*

7.2.3 Defined values :

<MO>
0: Mobile Originated SMS not supported.
1: Mobile Originated SMS supported.
<MT>
0: Mobile Terminated SMS not supported.
1: Mobile Terminated SMS supported.
<CB>
0: Broadcast SMS not supported.
1: Broadcast SMS supported.

7.3 New Message Acknowledgement +CNMA

7.3.1 Description :

This command allows reception of a new message routed directly to the TE to be acknowledged.
In TEXT mode, only positive acknowledgement to the network (RP-ACK) is possible.
In PDU mode, either positive (RP-ACK) or negative (RP-ERROR) acknowledgement to the network is possible.
Acknowledge with +CNMA is possible only when a +CMT or +CDS indication is shown (see +CNMI command).

7.3.2 Syntax :

Command syntax in text mode *:*
AT+CNMA
Command syntax in PDU mode *:*
AT+CNMA [= <n> [, <length> [<CR>
PDU is entered <ctrl-Z / ESC>]]]

Note:
PDU is entered using <ackpdu> format instead of <pdu> format (e.g.. SMSC address field is not present).

Example of acknowledgement of a new message in TEXT mode

Command	Possible responses
AT+CMGF=1 *Note : Set TEXT mode*	OK *Note : TEXT mode valid*
AT+CNMI=2,2,0,0,0 *Note : <mt>=2*	OK
	+CMT:"8587351530","02/04/03,11 :06 :38",129,7<CR><LF> Testing *Note : message received*
AT+CNMA *Note : acknowledge the message received*	OK *Note : send positive acknowledgement to the network*

AT+CNMA *Note : try to acknowledge again*	+CMS ERROR : 340 *Note : no +CNMA acknowledgment expected*

Example of acknowledgement of a new message in PDU mode:

Command	Possible responses
AT+CMGF=0 *Note : Set PDU mode*	OK *Note : PDU mode valid*
	+CMT: ,29 07913366003000F1240B913366920547F300000030 03419404800B506215D42ECFE7E17319 *Note : message received*
AT+CNMA=2,<length> <CR> *… Pdu message …* <Ctrl-Z/ESC> *Note : negative acknowledgement for the message.*	OK *Note : send a negative acknowledgement to the network (RP-ERROR) with PDU message (<ackpdu> format).*

7.3.3 Defined values :

<n> : Type of acknowledgement in PDU mode
0: send RP-ACK without PDU (same as TEXT mode)
1: send RP-ACK with optional PDU message
2: send RP-ERROR with optional PDU message
<length>: Length of the PDU message

7.4 Preferred Message Storage +CPMS

7.4.1 Description :

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

7.4.2 Syntax :

Command syntax : AT+CPMS=<mem1>,[<mem2>]

Command	Possible responses
AT+CPMS=? *Note : Possible message storages*	+CPMS: (“MT”,”BC”,”SR”),(“MO”) OK *Note :* *Read, list, delete: SMS, CBM or SMS Status Report* *Write, send: SMS*
AT+CPMS? *Note : Read*	+CPMS: “MT”,3, 10,”MO”,3,10 OK
AT+CPMS=”AM” *Note : Select false message storage*	+CMS ERROR: 302
AT+CPMS=”BC” *Note : Select CBM message storage*	+CPMS:2,10,3,10 OK *Note : Read, list, delete CBM from NV RAM*

7.4.3 Defined values :

<mem1>: Memory used to list, read and delete messages. It can be:
-**"MT"**: SMS Moble Terminated message storage in NV (default)
-**"BC"**: CBM message storage in NV.
-**"SR"** : Status Report message storage in NV.

<mem2>: Memory used to write and send messages
- **"MO"** : Mobile Originated SMS message storage.
If the command is correct, the following message indication is sent:
+CPMS: <used1>,<total1>,<used2>,<total2>
When <mem1> is selected, all following +CMGL, +CMGR and +CMGD commands are related to the type of SMS stored in this memory.

7.5 Preferred Message Format +CMGF

7.5.1 Description :

The message formats supported are *text mode* and *PDU mode*.
In PDU mode, a complete SMS Message including all header information is given as a binary string (in hexadecimal format). Therefore, only the following set of characters is allowed: {'0','1','2','3','4','5','6','7','8','9', 'A', 'B','C','D','E','F'}. Each pair or characters is converted to a byte (e.g.: '41' is converted to the ASCII character 'A', whose ASCII code is 0x41 or 65).
In Text mode, all commands and responses are in ASCII characters.

7.5.2 Syntax :

Command syntax : AT+CMGF

Command	Possible responses
AT+CMGF ? *Note : Current message format*	+CMGF: 1 OK *Note : Text mode*
AT+CMGF=? *Note : Possible message format*	+CMGF: (0-1) OK *Note : Text or PDU modes are available*

Example, sending an SMS Message in PDU mode

Command	Possible responses
AT+CMGF=0 *Note : Set PDU mode*	OK *Note : PDU mode valid*
AT+CMGS=14<CR> 0001030691214365000004C9E9340B *Note : Send complete MSG in PDU mode, no SC address*	+CMGS: 4 OK *Note : MSG correctly sent, <mr> is returned*

7.5.3 Defined values :

The <pdu> message is composed of the SC address (« 00 means no SC address given) and the TPDU message.

NOTE: CDMA does not support changing of the Service Center Address. Only 0x00 is allowed for the SC byte. CDMA status reports do not generate a message field. So, <length> of status reports will always be zero and <pdu> will be empty.

In this example, the length of **octets** of the TPDU buffer is 14.
In this case the TPDU is : 0x01 0x03 0x06 0x91 0x21 0x43 0x65 0x00 0x00 0x04 0xC9 0xE9 0x34 0x0B:

<fo> 0x01 (SMS-SUBMIT, no validity period)
<mr> (TP-MR) 0x03 (Message Reference)
<da> (TP-DA) 0x06 0x91 0x21 0x43 0x65 (destination address +123456)
<pid> (TP-PID) 0x00 (Protocol Identifier)
<dcs> (TP-DCS) 0x00 (Data Coding Scheme : 7 bits alphabet)
<length> (TP-UDL) 0x04 (User Data Length, 4 characters of text)
TP-UD 0xC9 0xE9 0x34 0x0B (User Data : ISSY)

TPDU in hexadecimal format must be converted into two ASCII characters, e.g. octet with hexadecimal value 0x2A is presented to the MS as two characters '2' (ASCII 50) and 'A' (ASCII 65).

7.6 Show text mode parameters +CSDH

7.6.1 Description :

This command gives additional information on text mode result codes. This information is given in brackets in the +CMTI, +CMT, +CDS, +CMGR, +CMGL commands.

7.6.2 Syntax :

Command syntax : AT+CSDH

Command	Possible responses
AT+CSDH? *Note : Current value*	+CSDH: 0 OK *Note : Do not show header values*

7.7 New message indication +CNMI

7.7.1 Description :

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

7.7.2 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 *Note : message received*
AT+CNMI=2,2,0,0,0 *Note : <mt>=2*	OK
	+CMT : “8585551212”,”98/10/01,12 :30 00”,129,5<CR><LF> Hello *Note : message received*
AT+CNMI=2,0,0,1,0 *Note : <ds>=1*	OK
AT+CMGS=”8585551212”<CR> Message to send <ctrl-Z> *Note : Send a message in text mode*	+CMGS : 7 OK *Note : Successful transmission*
	+CDS : 2, 116, ”8585551212”, 129, “98/10/01,12 :30 :07”, “98/10/01 12 :30 :08”, 0 *Note : message was correctly delivered*

7.7.3 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 accepted (return code will be *OK*), but the processing of unsolicited result codes will be the same as with<mode>=2.
<mode>
0: Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications
1: Discard indication and reject new received message unsolicited result codes when TA-TE link is reserved. Otherwise forward them directly to the TE
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: Forward unsolicited result codes directly to the TE. TA-TE link specific inband used to embed result codes and data when TA is in on-line data mode

<mt> : sets the result code indication routing for SMS-DELIVERs. Default is 2.
<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 : [<alpha>,] <length> <CR> <LF> <pdu> (PDU mode) or +CMT : <oa>,[<alpha>,] <scts> [,<tooa>, <length>] <CR><LF><data> (text mode)

<bm> : sets the the result code indication routing for received CBMs (Cell Broadcast Message) Default is 2.
<bm>
0: No CBM indications are routed to the TE. The CBMs are stored.
1: The CBM is stored and an indication of the memory location is routed to the customer application using unsolicited result code: +CBMI: “BC”, <index>
2: New CBMs are routed directly to the TE using unsolicited result code (format matches that of +CMT since CDMA treats them very much the same way). +CBM : [<alpha>,] <length> <CR> <LF> <pdu> (PDU mode) or +CBM : <oa>,[<alpha>,] <scts> [,<tooa>, <length>] <CR><LF><data> (text mode)

<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 : <length> <CR> <LF> <pdu> (PDU mode) or +CDS : <fo>,<mr>, [<ra>] , [<tora>], <scts>,<dt>,<st> (Text mode)
2: SMS-STATUS-REPORTs are stored and routed using the unsolicited result code : +CDSI: “SR”,<index>

<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: TA buffer of unsolicited result codes defined within this command is cleared when <mode> 1…3 is entered.

7.8 Read message +CMGR

7.8.1 Description :

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

7.8.2 Syntax :

Command syntax : AT+CMGR=<index>
Response syntax for text mode:
+CMGR :<stat>,<oa>,[<alpha>,] <scts> [,<tooa>,<fo>,
<pid>,<dcs>,<sca>,<tosca>,<length>] <CR><LF> <data> (for **SMS-DELIVER** only)
+CMGR : <stat>,<da>,[<alpha>,]<dt>[,<toda>,<fo>,<pid>,<dcs>, [<vp>], <sca>,
<tosca>,<length>]<CR><LF> <data> (for **SMS-SUBMIT** only)
+CMGR : <stat>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (for **SMS-STATUS-REPORT** only)
Response syntax for PDU mode :
+CMGR: <stat>, [<alpha>] ,<length> <CR><LF> <pdu>

A message read with status “REC UNREAD” will be updated in memory with the status “REC READ”.
Note :
the <stat> parameter for SMS Status Reports is always “READ”.

Example :

Command	**Possible responses**
	+CMTI: “MT”,1 *Note : New message received*
AT+CMGR=1 *Note : Read the message*	+CMGR: “REC UNREAD”,”8585551212”, ”98/10/01,18 :22 :11+00”,<CR><LF> ABCdefGHI OK
AT+CMGR=1 *Note : Read the message again*	+CMGR: “REC READ”,”8585551212”, ”98/10/01,18 :22 :11”,<CR><LF> ABCdefGHI OK *Note : Message is read now*
AT+CMGR=2 *Note : Read at a wrong index*	+CMS ERROR: 321 *Note : Error : invalid index*
AT+CMGF=0 ;+CMGR=1 *Note : In PDU mode*	+CMGR: 2,,<length> <CR><LF><pdu> OK *Note : Message is stored but unsent, no <alpha>field*
AT+CMGF=1;+CPMS=”SR”;+CNMI=,,,2 *Reset to text mode, set read memory to “SR”, and allow storage of further SMS Status Report into “SR” memory*	+CPMS:0,10,0,10 OK
AT+CMSS=3 *Send an SMS previously stored*	+CMSS: 160 OK
	+CDSI: “SR”,1 *New SMS Status Report stored in “SR” memory at index 1*
AT+CMGR=1 *Read the SMS Status Report*	+CMGR: “READ”,160, “8585551212”,129,”01/05/31,15:15:09”, “01/05/31,15:15:09”,0 OK

7.9 List message +CMGL

7.9.1 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.

7.9.2 Syntax :

Command syntax *:* AT+CMGL=<stat>
Response syntax for text mode:
+CMGL : <index>,<stat>,<da/oa>[,<alpha>], [<scts>, <tooa/toda>, <length>] <CR><LF><data> (for **SMS-DELIVER and SMS-SUBMIT**, may be followed by other <CR><LF>+CMGL:<index>…)
+CMGL : <index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (for **SMS-STATUS-REPORT** only, may be followed by other <CR><LF>+CMGL:<index>…)

Response syntax for PDU mode :
+CMGL : <index>,<stat>, [<alpha>], <length> <CR><LF> <pdu> (for **SMS-DELIVER**, **SMS-SUBMIT** and **SMS-STATUS-REPORT**, may be followed by other <CR><LF>+CMGL:<index>…)

Command	**Possible responses**
AT+CMGL="UREAD" *Note : List unread messages in text mode*	+CMGL: 1,"REC UNREAD","8585551212", <CR><LF> Unread message ! +CMGL: 3,"REC UNREAD", "8585551212", <CR><LF> OK *Another message unread!* *Note : 2 messages are unread, these messages will then have their status changed to "REC READ" (+CSDH:0)*
AT+CMGL="READ" *Note : List read messages in text mode*	+CMGL: 2,"REC READ","8585551212", <CR><LF> Keep cool OK
AT+CMGL="SENT" *Note : List stored and sent messages in text mode*	OK *Note : No message found*
AT+CMGL=1 *Note : List read messages in PDU mode*	+CMGL: 1,1,,26<CR><LF> 07913366003000F3040B913366920547F400130011 90412530400741AA8E5A9C5201 OK

7.9.3 Defined values

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

Text mode possible values	PDU mode possible values	Status of messages in memory
"UREAD"	0	received unread messages
"READ"	1	received read messages
"USENT"	2	stored unsent messages
"SENT"	3	stored sent messages
"ALL"	4	all messages

Note :
For SMS Status Reports, only "ALL" / 4 and "READ" / 1 values of the <stat> parameter will list messages ; other values will only return OK.

7.10 Send message +CMGS

7.10.1 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 text can contain all existing characters except <ctrl-Z> and <ESC> (ASCII 27).
This command can be aborted using the <ESC> character when entering text.
In PDU mode, only hexadecimal characters are used ('0'…'9','A'…'F').

7.10.2 Syntax :

Command syntax in text mode *:*
AT+CMGS= <da> [,<toda>] <CR>
text is entered <ctrl-Z / ESC >
Command syntax in PDU mode *:*
AT+CMGS= <length> <CR>
PDU is entered <ctrl-Z / ESC >

Command	Possible responses
AT+CMGS="8585551212"<CR> Please call me soon, Fred. <ctrl-Z> *Note : Send a message in text mode*	+CMGS:<mr> OK
AT+CMGS=<length><CR><pdu><ctrl-Z> *Note : Send a message in PDU mode*	+CMGS:<mr> OK

7.11 Write Message to Memory +CMGW

7.11.1 Description :

This command stores a message in memory (either SMS-SUBMIT or SMS-DELIVERS). The memory location <index> is returned (no choice possible as with phonebooks +CPBW).
Text or PDU is entered as described for the Send Message +CMGS command.

7.11.2 Syntax :

Command syntax in text mode *:*(<index> is returned in both cases)
AT+CMGW= <oa/da> [,<tooa/toda>] <CR>
enter text <ctrl-Z / ESC>
Command syntax in PDU mode *:*
AT+CMGW= <length> <CR>
give PDU <ctrl-Z / ESC>

Response syntax:
+CMGW: <index> or +CMS ERROR: <err> if writing fails

Command	Possible responses
AT+CMGW="8585551212"<CR> Hello how are you ?<ctrl-Z> *Note : Write a message in text mode*	+CMGW: 4 OK *Note : Message stored in index 4*
AT+CMGW=<length><CR><pdu><ctrl-Z> *Note : Write a message in PDU mode*	+CMGW: <index> OK *Note : Message stored in <index>*

7.11.3 Defined values :

Parameter Definition :
<oa/da> : Originating or Destination Address Value in string format.
<tooa/toda> : Type of Originating / Destination Address.
<length> : Length of the actual data unit in octets

7.12 Send Message From Storage +CMSS

7.12.1 Description :

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

7.12.2 Syntax :

Command syntax: AT+CMSS=<index>[,<da> [,<toda>]]
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

Command	Possible responses
AT+CMGW="8585551212"<CR> Today is my birthday <CTRL-Z>	+CMGW : 5 OK

Note :	*Note :Message stored with index 5*
AT+CMSS=5,8582221212 *Note : Send the message 5 to a different destination number*	+CMSS :<mr> OK *Note : Successful transmission*
AT+CMSS=5,8583331212 *Note : Send the message 5 to a different destination number*	+CMSS :<mr> OK *Note : Successful transmission*

7.13 Delete message +CMGD

7.13.1 Description :

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

7.13.2 Syntax :

Command syntax : AT+CMGD=<Index> [,<DelFalg>]

Command	Possible responses
	+CMTI:"MT",3 Note : New message received
AT+CMGR=3 Note : Read it	+CMGR: "REC UNREAD","8585551212", "98/10/01,18 :19 :20" <CR><LF> Message received! OK *Note : Unread message received from 8585551212 on the 01/10/1998 at 18H19m 20s*
AT+CMGD=3 *Note : Delete it*	OK *Note : Message deleted*
AT+CMGD=1,0	OK *Note : The message from the preferred message storage at the location 1 is deleted*
AT+CMGD=1,1	OK *Note : All READ messages from the preferred message storage are deleted*
AT+CMGD=1,2	+CMS ERROR:341 *Note : NV Error deleting READ messages and SENT*
AT+CMGD=1,3	OK *Note : All READ, SENT and UNSENT messages are deleted*
AT+CMGD=1,4	OK *Note : All messages are deleted*

7.13.3 Defines values

<index>
0-9
When the preferred message storage is "BC". Integer type values in the range of location numbers of Message memory when the preferred message storage is "MT" or "SR".

<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.

Note :
when the preferred message storage is "SR", as SMS status reports are assumed to have a "READ" status, if <DelFlag> is greater than 0, all SMS status reports will be deleted.

7.14 Message status modification +WMSC

7.14.1 Description :

This command is used to change the status of one message from preferred message storage.

7.14.2 Syntax :

Command syntax : AT+WMSC= <loc>, <status>
<loc> location number of the stored message (integer)
<status> new status to be stored, as for +CMGL command :

PDU Mode	Text Mode
0	"UREAD"
1	"READ"
2	"USENT"
3	"SENT"

Possible responses:

OK	location is valid and has been changed
+CMS ERROR: 341	Non-volatile memory error
+CMS ERROR: 321	Invalid index (out of range or no SMS stored)
+CMS ERROR: 302	if attempting to change Status Report SMS or if syntax is incorrect

Note:
Status of SENT or USENT indicate changing MO memory SMS. Status of READ or UREAD imply using preferred memory. Changes are not accepted when preferred memory is set to Status Report (all status reports are always assumed to be READ and cannot be changed).

Command	Possible responses
AT+WMSC=4,"UREAD"	OK *Note : Message stored in preferred memory index 4 status changed to NOT READ*
AT+WMSC=8,"USENT"	+CMS ERROR: 321 *Note : Invalid index, no message at location 8 of MO memory*
AT+CPMS="SR" *Note: Change preferred memory to Status Report*	+CPMS:1,10,4,10 OK
AT+WMSC=0,"UREAD"	+CMS ERROR: 302 *Note : Cannot change Status Report messages*

7.15 Message overwriting +WMGO

7.15.1 Description :

The +CMGW command writes an SMS to the first location available. To write an SMS to a specified location, the +WMGO **specific** command forces the product to write an SMS (with the +CMGW command) to the location specified with +WMGO, but for just one +CMGW command.

7.15.2 Syntax :

Command syntax : AT+WMGO= <loc>
<loc> location number of the record to write or overwrite

Command	Possible responses
AT+WMGO=0	OK *Note : Next MSG write will be to index 0*
AT+WMGO=15	+CMS ERROR: 302 *Note : Invalid index (out of range)*

On the next AT+CMGW command, the record number used will be the one specified by the AT+WMGO command. The location is forgotten and, in order to perform a second overwrite, +WMGO has to be used again.
If the external application specifies a free location, and if an incoming message is received before the AT+CMGW command, the product may store the incoming message at a location available. This could be the one specified by +WMGO (the product does not prevent from this). If the user then issues an AT+CMGW command without changing the AT+WMGO location, the new message will be overwritten!
Note that this location number is not kept over a software reset.

7.16 Unchange SMS Status +WUSS

7.16.1 Description :

The +WUSS command allows to keep the SMS Status to UNREAD after +CMGR or +CMGL.

7.16.2 Syntax :

Command syntax : AT+WUSS = <mode>
<mode> : 1 The SMS Status will not change.
<mode> : 0 The SMS Status will change.

Command	Possible responses
AT+WUSS=1	OK
AT+WUSS=0	OK *Note : If lower layer failure,* +CMS ERROR: 513

8 Supplementary Services commands

Supplementary Service commands are specialized call processing commands used to control carrier features on the module such as caller ID, call forwarding, call waiting, 3-way calls, and specialized CDMA test calls.

8.1 Call forwarding +CCFC

8.1.1 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 cancelling call forward on some CDMA networks has failed during field testing.

8.1.2 Syntax :

Command syntax :
AT+CCFC= <number>

Response syntax:
OK

Command	Possible responses
AT+CCFC=8585551212 *Note : Register to an unconditional call forwarding*	OK *Note : Command valid* *Note : Call forwarding active for all incoming calls to phone number 858-555-1212*
AT+CCFC=0 *Note : Cancel unconditional call forwarding*	OK *Note : Call forwarding cancelled.*

8.1.3 Defined values

<number>
<number> The phone number to forward all calls to.

8.2 Call barring +CLCK

8.2.1 Description :

This command allows control of the call barring supplementary service. Barring Calls or querying the status of call barring is possible for Data and Voice Calls, except Emergency Voice Calls.

8.2.2 Syntax :

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

Command	Possible responses
AT+CLCK="AO",1,1234 *Note : Bar Outgoing Calls only*	OK *Note : Command valid*
AT+CLCK="AI",1,1234 *Note : Bar Incoming Calls Only*	OK *Note : Incoming Calls are Barred*
AT+CLCK="AO",2 *Note : Query outgoing call barring status*	+CLCK: 1 OK *Note : Outgoing call barring is active*

Note: see security section for more information on +CLCK command.

8.3 Calling line identification restriction +CLIR

8.3.1 Description :

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

8.3.2 Syntax :

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

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

8.3.3 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 prepending 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.

8.4 Calling line identification presentation +CLIP

8.4.1 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.

8.4.2 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 *Note : Enable CLIP*	OK *Note : CLIP is enabled*
AT+CLIP? *Note : Ask for current functionality*	+CLIP:<mode> OK *Note : <mode> defined as below*
	RING *Note : Incoming call* +CLIP: “8585551212”,129 *Note : Incoming call with number presentation*
AT+CLIP=0 *Note : Disable CLIP presentation*	OK *Note : Command valid*

8.4.3 Defined values :

<mode>: parameter enable or disables the caller ID unsolicited command
<mode>
0: Disable
1: Enable

8.5 Send Flash to Base Station +WFSH

8.5.1 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.

8.5.2 Syntax :

Command syntax: AT+WFSH
OK
Command syntax: AT+WFSH= < phone_number > (for a flash with information)
OK

Unsolicited result syntax: +WFSH (confirms a flash was sent to the base station) See section 16.

Command	Possible responses
ATD8585551212; *Note: Make a voice call*	OK +WORG:8585551212 +WCNT:3 *Note: Conversation…* +CCWA:"8582701234",129 *Note: Indication of another incoming call*
AT+WFSH *Note: Send a flash to the Base Station (toggle to the second call).* *Note: Conversation with second call.*	OK +WFSH *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.*
AT+WFSH Send a flash to the Base *Note: Send a flash to the Base Station (toggle to the first call).*	OK +WFSH *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.*
ATH *Note: Release the all calls.*	OK +WEND:10 *Note: All Calls End*
ATD8585551212; *Note: Make a voice call*	OK +WORG:8585551212 +WCNT:3 *Note: Conversation…*
AT+WFSH=6195552121 *Note: Place first call on hold, connect to second party.*	*OK* *+WFSH* *Note: Module now places first call on hold, and attempts connection to second call.*
AT+WFSH *Note:Connect all 3 parties.*	OK +WFSH *Note: All 3 parties now connected.*
AT+WFSH	OK +WFSH *Note: Disconnect second party, connected to first party only.*
ATH	OK +WEND:10

8.6 List current call state +CLCC

8.6.1 Description :

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

8.6.2 Syntax :

Command syntax : AT+CLCC
+CLCC : <state>, <mode>, <termination>
OK

Command	Possible responses
AT+CLCC *Note: Seek current phone state*	+CLCC: 0,9,0 OK *Note : Command valid*

8.6.3 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

9 Data commands

9.1 Using AT Commands during a data connection

To use AT Commands during a data connection (e.g. while the product is in online mode), it is necessary either to switch to offline mode, or to use the **specific +WMUX** command to enable Commands / Data multiplexing.

9.1.1 Switch from online to offline mode

To switch from online mode to offline mode, the "+++" sequence must be sent. Following this, the product gets back to offline mode with an "OK" response, and an AT command can be sent.
Note :
the "+++" sequence only works with the **+ICF** command using the following settings:

- 8 data bits, with no parity
- 7 data bits, with even parity

9.1.2 Switch from offline to online mode

See the **ATO** command description.

9.2 Select mode +FCLASS

9.2.1 Description

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

9.2.2 Syntax :

Command syntax: AT+FCLASS= <n>

Command	Possible responses
AT+FCLASS=? *Note : Test command*	+FCLASS: (0,2) OK *Note : If fax class 1 not supported*
AT+FCLASS=? *Note : Test command*	+FCLASS: (0,1,2) OK *Note : Fax class 2 supported*
AT+FCLASS=0 *Note : Data mode requested*	OK *Note : Command valid*
AT+FCLASS=2 *Note : Fax class 2 mode requested*	OK *Note : Command valid*
AT+FCLASS? *Note : Current value*	+FCLASS: 2 OK *Note : Command valid*

9.2.3 Defined values :

<n>
0: Data
1: Fax class 1
2: Fax class 2

9.3 Cellular result codes +CRC

9.3.1 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

9.3.2 Syntax :

Command syntax : AT+CRC

Command	Possible responses
AT+CRC=0 *Note : Extended reports disabled*	OK *Note : Command valid*
AT+CRC=1 *Note : Extended reports enabled*	OK *Note : Command valid*

9.4 DTE-DCE local rate reporting +ILRR

9.4.1 Description :

This parameter controls whether or not the extended-format "+ILRR:<rate>" information text is transmitted from the DCE to the DTE. Currently the product only supports 0 = OFF.

9.4.2 Syntax :

Command syntax : AT+ILRR

Command	Possible responses
AT+ILRR=0 *Note : Local port rate report disabled*	OK *Note : Command valid*

9.5 V42 bis data compression +DS

9.5.1 Description :

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

9.5.2 Syntax :

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

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

9.5.3 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 >
512-4096: specifies the maximum number of dictionary entries that should be negotiated, **(default is 4096)**,
< P2 >
6-250: specifies the maximum string length to be negotiated, **(default is 250)**.

9.6 V42 bis data compression report +DR

9.6.1 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

The +DR intermediate result code, if enabled, is issued before the final result code, before the +ILRR intermediate report and after the service report control +CR.

9.6.2 Syntax :

Command syntax : AT+DR

Command	Possible responses
AT+DR=1 *Note : Reporting enabled*	OK *Note : Command valid*
AT+DR? *Note : Current value*	+DR: 1 OK *Note : Command valid*

10 V24-V25 commands

10.1 Fixed DTE rate +IPR

10.1.1 Description :

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

10.1.2 Syntax :

Command syntax : AT+IPR

Command	Possible responses
AT+IPR? *Note :*	+IPR: 9600 OK *Note : Current rate is 9600 bps*
AT+IPR=? *Note :*	+IPR: (0,1200,2400,4800,9600,19200), (45,50,75,110,150,300,600,38400,57600,115200,230400) OK *Note : Possible value (*)*
AT+IPR=38400 *Note :*	OK *Note : Disable autobauding and set rate to 38400 bps*
AT+IPR=0 *Note :*	OK *Note : Enable autobauding*

10.2 DTE-DCE character framing +ICF

10.2.1 Description :

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

10.2.2 Syntax :

Command syntax: AT+ICF= <format>, <parity>

Command	Possible responses
AT+ICF=3,3 *Note :*	OK *Note : New values*
AT+ICF? *Note :*	+ICF: 3,3 OK *Note : Current values*
AT+ICF=? *Note :*	+ICF: (3-3),(0-3) OK *Note : Possible values*

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

10.3 DTE-DCE local flow control +IFC

10.3.1 Description :

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

10.3.2 Syntax :

Command syntax : AT+IFC=<n1>,<n2>

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

10.3.3 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

10.4 Set DCD signal &C

10.4.1 Description :

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

10.4.2 Syntax :

Command syntax : AT&C

Command	Possible responses
AT&C0 *Note : DCD always on*	OK *Note : Command valid*
AT&C1 *Note : DCD matches state in accordance with the specified service*	OK *Note : Command valid*
AT&C2 *Note : Always on wink on channel disconnect*	OK *Note : Command valid*

10.5 Set DTR signal &D

10.5.1 Description :

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

10.5.2 Syntax :

Command syntax : AT&D

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

10.6 Back to online mode O

10.6.1 Description

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

10.6.2 Syntax

Command syntax : ATO

Command	Possible responses
ATO Return from online mode to offline mode	OK

10.7 Result code suppression Q

10.7.1 Description :

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

10.7.2 Syntax :

Command syntax : ATQ

Command	Possible responses
ATQ0 *Note : Return result codes*	OK *Note : Command valid*
ATQ1 *Note : Result codes are suppressed and not transmitted*	(none) *Note : No response*

10.8 DCE response format V

10.8.1 Description :

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

10.8.2 Syntax :

Command syntax : ATV

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

10.9 Auto-tests &T

10.9.1 Description:

AT&T1 is used to perform audio loop back in the current audio path. This command can be used to validat the audio loop.
Command syntax : AT&T<num>

Command	Possible responses
AT&T1	OK *Note : Audio loopback is on.*
AT&T2	OK *Note : Aduio loopback is off.*

10.9.2 Defined Values:

<num>
0 – not defined returns OK
1 – Audio loopback on for current path
2 – Audio loopback is off.

10.10 Echo E

10.10.1 Description :

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

10.10.2 Syntax :

Command syntax : ATE

Command	Possible responses
ATE0 *Note : Characters are not echoed*	OK *Note : Done*
ATE1 *Note : Characters are echoed*	OK *Note : Done*

10.11 Display configuration &V

10.11.1 Description

This command is used to display the modem configuration.
&V
&V0 : Display the modem configuration in RAM.
&V1 : Display the modem configuration in NV-RAM.
&V2 : Display the modem factory configuration.

The parameters displayed are the following :
&C: 2; &D: 2; &F: 0; E: 1; L: 0; M: 0; Q: 0; V: 1; X: 4; Z: 0; %D: 0 %C: 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: 0; +CTA: 0; +CXT: 0; +DR: 0; +DS: 3,0,2048,6; +EB: 1,0,30 +EFCS: 1; +ER: 0; +ES: 3,0,2; +ESR: 1; +ETBM: 1,1,20; +FAA: 0 +FAP: 0,0,0; +FBO: 0; +FBU: 0; +FCQ: 1,0; +FCR: 0; +FCT: 1E; +FEA: 0 +FFC: 0,0,0,0; +FHS: 0; +FIE: 0; +FIP: 0; +FLI: ""; +FLO: 1; +FLP: 0 +FMS: 0; +FNR: 0,0,0,0; +FNS: ""; +FPA: ""; +FPI: ""; +FPP: 0; +FPR: 8 +FPS: 1; +FPW: ""; +FRQ: 0,0; +FRY: 0; +FSA: ""; +FSP: 0; +ICF: 3,3 +IFC: 2,2; +ILRR: 0; +IPR: 115200; +MA: ; +MR: 0; +MS: ; +MV18R: 0 +MV18S: 0,0,0;

+CMUX: C,2; +ADC: 0; +CALA: ""; +CBST: 75,3; +CCED: 0,15 +CCFC: ; +CCLK: ""; +CFUN: 1;
+CICB: 2; +CKPD: ""; +CLCK: 0; +CLIP: 1 +CLIR: 0; +CMEE: 0; +CMER: 0; +CMGD: 0,0; +CMGF:
1; +CMGL: "UREAD" +CMGR: 0; +CMGS: ""; +CMGW: ""; +CMSS: ; +CMUT: 0; +CNMA: 0,0
+CNMI: 2,0,0,0,0; +COPS: 0; +CPHS: 1,1; +CPMS: "MT","MO"; +CR: 0 +CREG: 0; +CRMP: 0,1,0,1;
+CRSL: 1; +CSCS: "PC437"; +CSNS: 2; +CSTA: 129 +ECHO: 5; +SPEAKER: 0; +SIDET: 0,3;
+VGR: 8; +VTD: 150,255; +VTS: +W32K: 0; +WCCS: 0,0,0,0; +WCDM: 0,0; +WDTMF: ; +WFSH: ;
+WIND: 8 +WIOR: 0; +WIOW: 0,0; +WMGO: 0; +WMSC: ; +WNAM: 1; +WOSO: 2; +WPRV: 0
+WRIM: 0; +WRMP: 0; +WRST: ; +WSDT: ; +WSST: 0; +WSTR: 1; +WSVG: 0
+WTONE: 0,1,1,1,0; +WUSS: 0

10.11.2 Syntax :

Command syntax : AT&V

Command	Possible responses
AT&V *Note : Display active parameters in RAM*	See above OK *Note : Done*

10.12 Request Indentification Information I

10.12.1 Description :

This command causes the product to tranmit one or more lines of information test from the MT2.

Command syntax : ATI<num>

Command	Possible responses
ATI0	WAVECOM MODEM 800 1900 OK *Note : Done*
ATI3	S/W VER: WISMOQ WQ1.6A May 17 2002 17:30:00 OK
ATI6	+CGSM, +CIS707, +MS, +ES, +DS, +FCLASS OK

10.12.2 Defined values

Valid range <num> is 0 – 7
For ATI6 the IS-707 command, +GCAP, is more applicable for the MT2.

10.13 Restore Factory Setting &F

10.13.1 Description:

This command is used to restore the factory setting from NV memory. The settings that are restored are displayed in table ???. This command reset the module as the very last part of its operation.

10.13.2 Syntax:

Command syntax : AT&F

Command	Possible responses
AT&F	OK *Note : Command valid, module resets*

10.14 Save Configuration &W

10.14.1 Description:

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

10.14.2 Syntax:

Command syntax : AT&W

Command	Possible responses
AT&W	OK *Note : Command valid*

11 Specific AT commands

11.1 Manufacturer identification +WGMI

11.1.1 Description :

This command gives the manufacturer identification.

11.1.2 Syntax :

Command syntax : AT+WGMI

Command	Possible responses
AT+WGMI *Note : Get manufacturer identification*	+WGMI: WAVECOM MODEM OK *Note : Command valid, Wavecom modem*

11.2 Request model identification +WGMM

11.2.1 Description :

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

11.2.2 Syntax :

Command syntax : AT+WGMM

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

11.3 Cell environment description +CCED

11.3.1 Description :

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

11.3.2 Syntax :

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

11.3.3 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.

11.4 Automatic RxLev indication +CCED

11.4.1 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.

11.4.2 Syntax :

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

11.4.3 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) are 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 *Note: one shot, dump all*	+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 *Note: +CCED has the format: +CCED: <timing advance>,<neighbor parameters>,<main cell parameters>.*

11.5 General Indications +WIND

11.5.1 Description :

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

- 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.

11.5.2 Syntax :

Command syntax: AT+WIND= <IndLevel >

11.5.3 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

If <IndLevel> is equal to 0 (default value), 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 *Note: Turn on Network lost indication only*	OK

11.6 Analog digital converters measurements +ADC

11.6.1 Description :

This command gets the raw value of the ADC conversion. Six ADC read values are specified: VBATT, THERM, HDET, ADC_0, ADC_1, ADC_CHG_MON.

11.6.2 Syntax :

Command syntax: AT+ADC=<item>

Command	Possible responses
AT+ADC=0 *Note : Select VBATT*	+ADC: 185 OK *Note : raw value for VBATT*
AT+ADC=1 *Note : Select THERM*	+ADC: 238 OK

AT+ADC=? *Note : Ask for the list of possible values*	+ADC: (0-5) *Note : possible values 0 –5*
AT+ADC? *Note : Ask for the current item selected*	+ADC: 1 OK *Note : THERM selected*

11.6.3 Defined values :

The supported items are:
<item>
0: VBATT
1: THERM
2: HDET
3: ADC_0
4: ADC_1
5: ADC_CHG_MON

11.7 Mobile Equipment event reporting +CMER

11.7.1 Description :

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

11.7.2 Syntax :

Command Syntax: AT+CMER=<keyp>

11.7.3 Defined values :

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

<press>
1: key press
0: key release

<key> : Keyboard map according to Qualcomm HS definitions

11.8 Read GPIO value +WIOR

11.8.1 Description

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

11.8.2 Syntax

Command syntax: AT+WIOR=<index>
Response syntax: +WIOR: <value>

Command	Possible responses
AT+WIOR=32 *Read GPIO 32 value*	+WIOR: 0 OK *GPIO 32 value is 0*

11.8.3 Defined values

<index>
The GPIO to read. (0-47)
<value>
Value of the GPIO pin.

11.9 Write GPIO value +WIOW

11.9.1 Description

Set the I/O port as an output and set the requested I/O pin value. Valid writable GPIOs are: 2, 3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 16, 20, 21, 22, 23, 30, 36, 40, 42, 43, 44, 45, 46, 47.

11.9.2 Syntax

Command syntax: AT+WIOW=<index>,<value>

Command	Possible responses
AT+WIOW=47,1 *Set GPIO 47 to 1*	OK *GPIO value is written*

11.9.3 Defined values

<index>
The GPIO to write.
<value>
0: I/O bit is set to 0.
1: I/O bit is set to 1.

11.10 Play tone +WTONE

11.10.1 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.

11.10.2 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 *Note : Play a tone*	OK *Note : Done*
AT+WTONE? *Note : Current value*	+WTONE: 1,1,300,2,50 OK
AT+WTONE=0 *Note : Stop playing*	OK *Note : Done*
AT+WTONE=? *Note : Test command*	+WTONE: (0-1),(1-2),(1-4000),(0-3),(0-50) OK *Note : Done*

11.10.3 Defined values :

<mode>
0: Stop playing.
1: Play a tone
<dest>: This parameter sets the destination (mandatory if <mode>=1)
<dest>
1: Speaker
2: Buzzer
<freq>: This parameter sets tone frequency (in Hz) (mandatory if <mode>=1). The range is between 1 and 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+WTONE=0.

11.11 Play DTMF tone +WDTMF

11.11.1 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.

11.11.2 Syntax :

Command syntax : AT+WDTMF=<mode>[,<dtmf>,<volume>,<duration>]
Response syntax: OK or ERROR

Command	Possible responses

AT+WDTMF=1,"*",2,10 *Note : Play a DTMF tone*	OK *Note : Done*
AT+WDTMF? *Note : Current value*	+WDTMF: 1,"*",2,10 *Note :*
AT+WDTMF=0 *Note : Stop playing*	OK *Note : Done*
AT+WDTMF=? *Note : Test command*	ERROR *Note : Done*

11.11.3 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 +WTONE (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.

11.12 Hardware Version +WHWV

11.12.1 Description :

This **specific** command gets the hardware version.

11.12.2 Syntax :

Command syntax : AT+WHWV

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

11.13 Wavecom Select Voice Gain +WSVG

11.13.1 Description :

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

11.13.2 Syntax :

Command syntax : AT+WSVG = <n>

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

11.13.3 Defined values

<n> Path
0: HANDSET (Default)
1: HEADSET

11.14 Wavecom Status Request +WSTR

11.14.1 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.

11.14.2 Syntax :

Command syntax: AT+WSTR=<status>
Response syntax: +WSTR: <status>,<value>

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

11.14.3 Defined values

<**status**> **1** Initialisation sequence
<**value**>
0: Not started
1: On going
2: Finished

<**status**> **2** Network status
<**value**>
0: No network
1: Network available

11.15 Wavecom Ring Indicator Mode +WRIM

11.15.1 Description :

This **specific** command sets or returns the state of the Ring Indicator Mode.
In pulse RI mode, an electrical pulse lasting approximately 10µs 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.

11.15.2 Syntax :

Command syntax: AT+WRIM=<n>

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

11.15.3 Defined values

<n>
0: up-down RI mode
1: pulse RI mode

11.16 Wavecom 32kHz Sleep Mode +W32K

11.16.1 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.

11.16.2 Syntax :

Command syntax : AT+W32K=<mode>

Command	Possible responses
AT+W32K=1 *Note : Enable 32kHz* sleep *mode*	OK *Note : 32kHz* sleep *mode is enabled*
AT+W32K=0 *Note : Disable 32kHz* sleep *mode*	OK *Note : 32kHz* sleep *mode is disabled*

11.16.3 Defined values

<mode>
0: Disable 32kHz powerdown mode
1: Enable 32kHz powerdown mode

11.17 Wavecom Change Default Melody +WCDM

11.17.1 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.

11.17.2 Syntax :

Command syntax : AT+WCDM=<melody>,<player>

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

11.17.3 Defined values

<melody>
0: No melody (**default**)
1…10: Melody 1 to 10

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

11.18 Wavecom Software version +WSSW

11.18.1 Description :

This **specific** command displays some internal software reference.

11.18.2 Syntax :

Command syntax : AT+WSSW

Command	Possible responses
AT+WSSW *Note : Get Software version*	+WSSW: WQ1.6 OK *Note : internal software information*

11.19 Wavecom Custom Character Set +WCCS

11.19.1 Description :

This **specific** command allows to edit and display the custom character set tables. The "CUSTOM" mode of +CSCS command use this character set. In this mode, when the user enters a string, this string is converted into CDMA alphabet using the Custom To CDMA table. In a similar way, when the user requests a string display, the string is converted from CDMA alphabet using the CDMA To Custom table.

In edition mode, the edition session is terminated by <ctrl-Z>, or aborted by <ESC>. Only hexadecimal characters ('0'…'9', 'A'…'F') can be used. The number of characters entered must equal the edition range requested, otherwise the command will terminate with a "+CME ERROR: 3" result.

11.19.2 Syntax :

Command syntax : AT+WCCS=<mode>,<table>,<char 1>[,<char 2>]

Command	Possible responses
AT+WCCS=0,0,20,30 *Note : Display from character 120 to character 130 of the Custom To CDMA conversion table*	+WCCS: 11, 78797A2020202020097E05 OK *Note : 11 characters displayed*
AT+WCCS=1,0,115<CR> 20<ctrl-Z> *Note : Edit character 115 of the Custom To CDMA conversion table*	OK *Note : Edition successful*
AT+WCCS=1,1,0,4<CR> 40A324A5E8<ctrl-Z> *Note : Edit the 5 first characters of the CDMA To Custom conversion table*	OK *Note : Edition successful*
AT+WCCS=1,1,200 *Note : Edit character 200 of CDMA To Custom*	+CME ERROR: 3 *Note : Index out of range*

conversion table	

11.19.3 Defined values

<mode>
0: Display the table
1: Edit the table

<table>
0: Custom To CDMA conversion table
1: CDMA To Custom conversion table

<char 1>, <char 2> Character range to display/edit. If only <char 1> is present, only this char is displayed/edited.
0…127: for CDMA To Custom conversion table
0…255: for Custom To CDMA conversion table

11.20 CPHS command +CPHS

11.20.1 Description :

This **specific** command is used to activate, deactivate or interrogate a CPHS feature (e.g. Voice Mail Indicator). Upon performing interrogation (mode = 2), the selected FctId CPHS feature is automatically enabled (status = 1).
Note :
This command may answer +CME ERROR: 3 if the CPHS feature is disabled.

11.20.2 Syntax

Command syntax : AT+CPHS=<Mode>,<FctId>

Command	Possible responses
AT+CPHS=<Mode>,<FctId>	OK
AT+CPHS?	+CPHS: <Status>,<FctId1><CR<LF> OK
AT+CPHS=? *Note: display the range of values*	+CPHS: (0-2),(1-1) OK

11.20.3 Defined values:

<Mode>
0: Deactivate a CPHS feature
1: Activate a CPHS feature
2: Interrogate a CPHS status

<FctId>
1: Voice Mail Indicator

<Status>
0: CPHS feature disabled
1: CPHS feature enabled

11.21 Unsolicited result : Wavecom Voice Mail Indicator +WVMI

11.21.1 Description :

This unsolicited indication gives the status of the Voicemail Inbox.

Syntax : +WVMI: <LineId>,<Num>
Option :
<LineId>
1: Line 1

<Num>
The number of messages waiting in the inbox.
0: No message waiting.
1: One message is waiting
3: Three messages are waiting

Command	Possible responses
	+WVMI: 1,2 OK Note: 2 messages are in your voicemail box.

11.21.2 Example

AT+CPHS? *Interrogate the status of CPHS functionality*
+CPHS: 1,0 *The voice mail indicator functionality is deactivated*
OK

AT+CPHS=3,1 *Syntax error*
+CME ERROR: 3

AT+CPHS=1,1 *Activate the voice mail indicator functionality*
OK

AT+CPHS? *Interrogate the status of CPHS functionality*
+CPHS: 1,1 *The voice mail indicator functionality is activated*
OK

**** the message box contains 1 message *****
+WVMI: 1,1 *A message is waiting on Line 1*

AT+CPHS=2,1 *Interrogate the status of voice mail indicator functionality*
OK

+WVMI: 1,1 *a message is waiting on LINE 1*

AT+CPHS? *Interrogate the status of CPHS functionality*
+CPHS: 1,1 *The voice mail indicator functionality is activated*
OK

11.22 Wavecom Change Default Player +WCDP

11.22.1 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.

11.22.2 Syntax

Command syntax AT+WCDP = <player>

Command	Possible responses
AT+WCDP=?	+WCDP : (0-1) OK
AT+WCDP=0 *Select the speaker.*	OK
AT+WCDP?	+WCDP: 0 OK

11.22.3 Defined values :

<player>
0: Speaker
1: Buzzer

11.23 Wavecom Reset +WRST

11.23.1 Description

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

11.23.2 Syntax

Command syntax : AT+WRST =<Mode>,<Delay>

Response syntax : +WRST: <Mode>,<Delay>,<RemainTime>

Command	Possible responses
AT+WRST=?	ERROR
AT+WRST=0 *Disable timer*	OK
AT+WRST=1,"001:03"	OK

Enable timer and put delay at 1 hour 3 minutes	
AT+WRST?	+WRST: 1,"001:03","001:01" OK *Note: Timer activated to reset after 1 hour and 3 minutes. Actually 1 hour and 1 minute remaining before next reset.*

11.23.3 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"

11.24 Set Standard Tone +WSST

11.24.1 Description :

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

11.24.2 Syntax :

Command syntax : AT+WSST=<sound level>

Command	Possible responses
AT+WSST=0 *Note : Set volume to Max.*	OK
AT+WSST=3 *Note : Set volume to Min.*	OK
AT+WSST? *Note : get current standard tones sound level*	+WSST: 3 OK *Note : Current level is 3 (min.)*
AT+WSST=?	+WSST: (0-3)

11.24.3 Defined values :

<sound level>

0 Max volume (default)
3 Min volume

11.25 Set voice privacy level +WPRV

11.25.1 Description :

This command sets the CDMA voice privacy level. This command can only be called during a voice call. X = 0 is normal; x = 1 is secure. Example: AT+WPRV=1 for a secure voice call.

11.25.2 Syntax :

Command syntax : AT+WPRV=<x>

Command	Possible responses
AT+WPRV=0 *Note : Set to normal voice call*	OK
AT+WPRV=1 *Note : Set to secure voice call*	OK

11.26 Security PIN +WPIN

11.26.1 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.

11.26.2 Syntax :

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

Command	Possible responses
AT+WPIN=0,1111 *Note : Disable the security PIN* AT+WPIN? *Note : Query the current state* AT+WPIN=1,2222 *Note : Enable the security PIN*	OK +WPIN: 0 OK *Note: PIN disabled* +CME ERROR: 44 *Note: Invalid PIN*
AT+WPIN=1,1111 *Note : Enable the security PIN*	OK
AT+WPIN? *Note : Query the current state*	+WPIN: 1 OK *Note: PIN enabled*
AT+WPIN=2,1111,5555 *Note : Change the security PIN code from 1111 to 5555*	OK

AT+CSQ?	+CME ERROR: 44 *Note: Module is locked, only ATD & +WPIN commands will be accepted*
ATD8585551212;	+CME ERROR: 44 *Note: Module is locked, only emergency numbers accepted using ATD.*
AT+WPIN=0,5555 *Note : Disable the security PIN*	OK

11.26.3 Defined values :

<mode>

0 Disable PIN
1 Enable PIN
2 Change PIN

<current val> & <new val>

0000 - 9999

12 Provisioning AT commands

12.1 Service Programming Code +WSPC

12.1.1 Description :

This command allows for entry of the service programming code. 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, those commands will return **ERROR**.

12.1.2 Syntax :

Command syntax : AT+WSPC=<code>

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

12.2 Mobile Directory Number +WMDN

12.2.1 Description :

This command is used to enter a new mobile directory number. Valid numbers are between 10 and 15 digits in length. For support of Wireless Number Portability, changes to the MDN will **ALWAYS** update the IMSI_M. Changes to the MDN will automatically update the Access Overload Class values unless specifically modified using +WAOC command.

12.2.2 Syntax :

Command syntax : AT+WMDN=<number>

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

12.3 Set IMSI_M +WIMI

12.3.1 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.

12.3.2 Syntax :

Command syntax : AT+WIMI=<number>

Command	Possible responses
AT+WIMI? *Note : Get current IMSI*	+WIMI: 310008581111111 OK
AT+WIMI=310008585551212 *Note : Set IMSI_M to 310008585551212*	OK

12.4 SID and NID +WSID

12.4.1 Description :

This command is used to set the home SID and NID.

12.4.2 Syntax :

Command syntax : AT+ WSID=<SID number>,<NID number>

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

12.5 Access Overload Class +WAOC

12.5.1 Description :

This command is used to set the Access Overload Class.

12.5.2 Syntax :

Command syntax : AT+WAOC=<number>

Command	Possible responses

AT+WAOC? *Note: Get current Access Overload Class*	+WAOC: 5 OK
AT+WAOC=7 *Note: Set Access Overload Class to 7*	OK

12.6 Slot Cycle Index +WSCI

12.6.1 Description :

This command is used to set the slot cycle index.

12.6.2 Syntax :

Command syntax : AT+WSCI=<number>

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

12.7 Primary Browser Gateway +WBGP

12.7.1 Description :

This command is used to set the primary browser gateway IP address (IPv4). If a browser is not natively supported by the module, this command will return ERROR.

12.7.2 Syntax :

Command syntax : AT+WBGP=<num>,<num>,<num>,<num>

Command	Possible responses
AT+WBGP? *Note : Get current gateway*	+WBGP: 127,0,0,1 OK
AT+WBGP=255,255,255,0 *Note : Set primary gateway to 255.255.255.0*	OK

12.7.3 Defined values :

<num>
0-255

12.8 Secondary Browser Gateway +WBGS

12.8.1 Description :

This command is used to set the secondary browser gateway IP address (IPv4). If a browser is not natively supported by the module, this command will return ERROR.

12.8.2 Syntax :

Command syntax : AT+WBGS=< num >,< num >,< num >,< num >

Command	Possible responses
AT+WBGS? *Note : Get current primary gateway*	+WBGS: 127,0,0,1 OK
AT+WBGS=255,21,255,0 *Note : Set secondary gateway to 255.21.255.0*	OK

12.8.3 Defined values :

<num>
0-255

12.9 Packet Dial String +WPDS

12.9.1 Description :

This command is used to set the packet dial string.

12.9.2 Syntax :

Command syntax : AT+WPDS=<number>

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

12.10 Station Class Mark +WSCM

12.10.1 Description :

This command is used to set Class-of-station information or Station Class Mark.

12.10.2 Syntax :

Command syntax : AT+WSCM=<number>

Command	Possible responses
AT+WSCM? *Note : Get current station class mark*	+WSCM: 45 OK
AT+WSCM=42 *Note : Set the station class mark*	OK

12.11 Primary CDMA Channels +WPCC

12.11.1 Description :

This command is used to set the primary CDMA channels.

12.11.2 Syntax :

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

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

12.12 Secondary CDMA Channels +WSCC

12.12.1 Description :

This command is used to set the secondary CDMA channels.

12.12.2 Syntax :

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

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

12.13 Commit Changes +WCMT

12.13.1 Description :

This command is used to commit or to undo/revert any changes done during the service programming session. Changes performed during this session will not take place until a commit command has been sent (AT+WCMT=1). Commission of these changes will force a software reset of the module. Sending this command indicates this service provisioning session is complete. In order to perform any subsequent provisioning, the service programming code must be entered using the +WSPC command.

12.13.2 Syntax :

Command syntax : AT+WCMT=<val>

Command	Possible responses
AT+WCMT=0 *Note : Undo any changes performed during this provisioning AT session*	OK
AT+WCMT=1 *Note : Commit all changes performed during this provisioning AT session to non-volatile memory.*	OK *Note: software reset is performed*

12.13.3 Defined values :

<val>
0: undo changes
1: commit changes

12.14 Service Programming example

Command	Response
AT+WBGP=255,255,255,255 *Note : Attempt to set the primary browser gateway*	ERROR *Note: Service Programming code not yet entered*
AT+WPDS? *Note : Get current Packet Dial String*	ERROR *Note: Service Programming code not yet entered*
AT+WSPC=000000 *Note : Enter service programming code*	OK *Note: Service Programming code entered properly*
AT+WPDS? *Note : Get current Packet Dial String*	+WPDS: ”#777” OK *Note: Current Packet Dial String is #777*
AT+WPDS=”#999” *Note : Set the Packet Dial String to #999*	OK
AT+WCMT=1	OK

Note : Commit all changes performed during this provisioning AT session to non-volatile memory.	*Note: software reset is performed*
AT+WSPC=000111 *Note : Enter service programming code*	ERROR *Note: Service Programming code incorrect*
AT+WSPC=000000 *Note : Enter service programming code*	OK *Note: Service Programming code entered properly*
AT+WPDS? *Note : Get current Packet Dial String*	+WPDS: ”#999” OK *Note: Current Packet Dial String is #999*
AT+WPDS=”#555” *Note : Set the Packet Dial String to #555*	OK
AT+WSCI? *Note : Read the current slot cycle index*	+WSCI: 2 OK
AT+WSCI=1 *Note : Set the slot cycle index*	OK
AT+WCMT=0 *Note : Undo any changes performed during this provisioning AT session.*	OK *Note: No software reset since this is an undo command.*
AT+WSPC=000000 *Note : Enter service programming code*	OK *Note: Service Programming code entered properly*
AT+WPDS? *Note : Get current Packet Dial String*	+WPDS=”#999” OK *Note: Current Packet Dial String is #999 (changes not committed from last write)*
AT+WSCI? *Note : Read the current slot cycle index*	+WSCI: 2 OK *Note: Slot cycle index is 2 (changes not committed from last write)*
AT+WMDN=8585551212 *Note : Set mobile directory number to 8585551212*	OK
AT+WCMT=1 *Note : Commit all changes performed during this provisioning AT session to non-volatile memory.*	OK *Note: software reset is performed*

13 Extended AT commands in IS707.3

WISMOQ 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.

13.1 Remote Async/Fax command X

13.1.1 Description :

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

13.1.2 Syntax :

Command syntax : ATX<n>

Command	Possible responses
ATX0 *Note : Ignores dial tone and busy signal.*	OK *Note : Command is valid*
ATX1 *Note : disable dial tone and busy detection.*	OK *Note : Command is valid*
ATX2 *Note : disable busy detection & enable dial tone detection.*	OK *Note : Command is valid*
ATX3 *Note : Enable busy detection & disable dial tone detection.*	OK *Note : Command is valid*
ATX4 *Note : Enable busy and dial tone detection.*	OK *Note : Command is valid*

13.2 Reset to default configuration Z0

13.2.1 Description :

This command is to reset to default configuration.

13.2.2 Syntax :

Command syntax : ATZ0

Command	Possible responses
ATZ0	OK

Note : reset to default configuration.	*Note : Command is valid*

13.3 Select tone dialing T

13.3.1 Description :

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

13.3.2 Syntax :

Command syntax : ATT

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

13.4 Select pulse dialing P

13.4.1 Description :

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

13.4.2 Syntax :

Command syntax : ATP

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

13.5 Basic S-Registers ATS<X>

13.5.1 Description :

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

13.5.2 Syntax :

Command syntax : ATS<X>=<value>

Command	Possible responses

ATS<X>=<value> *Note : set S-registers value*	OK
ATS0? *Note : disable or enable antomatic answering (value: 0-255)* *0: disable;* *1-255: enable after [(value-1)x6 sec.]*	002 OK *Note : always 3 characters padded with zeros*
ATS3? *Note : Carrige 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 pualse when "," is encountered in dial string (value: 0-255)*	002 OK
ATS9? *Note : Carrier detect threshold in increaments 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

13.6 Error control operation +EB

13.6.1 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 lind (if present in IWF). The command is not relevant for packet service.

13.6.2 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	OK

Note : *set value to 2.*	*Note : Command is valid*

13.6.3 Defined values :

<Break_selection**>**
0: Ignore break (do not signal to remote DCE)
1: Non-expedited, non-destructive
2: Expdited, 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
other :Higher values may be supported

13.7 Numeric parameter control +EFCS

13.7.1 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.

13.7.2 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.*	OK *Note : Command is valid*

13.7.3 Defined values:

<Val>
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

13.8 Errer control report +ER

13.8.1 Description :

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

13.8.2 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.*	OK *Note : Command is valid*

13.8.3 Defined values :

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

13.9 Error control selection +ES

13.9.1 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.

13.9.2 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*

13.9.3 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 optiona; If error control not established maintain DTE-DCE data rate
1: Error control optiona; 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 optiona; 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

13.10 Error control selection +ESR

13.10.1 Description :

The extended-format numetic 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.

13.10.2 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*

13.10.3 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

13.11 Error control selection +ETBM

13.11.1 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.

13.11.2 Syntax :

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

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

13.11.3 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: Attampt until all data is delivered (ignore timer)
2: Attempt until all data is delivered; If timer expires, discard remainder

<timer>
0-30: Deliver timer value in seconds
other: Higher values may be supported at manufacture's option

13.12 Request manufacture identification +GMI

13.12.1 Description :

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

13.12.2 Syntax :

Command syntax : AT+GMI

Command	Possible responses
AT+GMI? *Note : display the current setting.*	ERROR *Note : Command is not valid*
AT+GMI *Note :* display the manufacturer	+GMI: WAVECOM MODEM OK *Note : Command is valid*

13.13 Request manufacture identification +GMM

13.13.1 Description :

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

13.13.2 Syntax :

Command syntax : AT+GMM

Command	Possible responses
AT+GMM? *Note : display the current setting.*	ERROR *Note : Command is not valid*
AT+GMM *Note :* display the model	+GMM: Model 72 OK *Note : Command is valid*

13.14 Request revision identification +GMR

13.14.1 Description :

The command is used to cause the DCE to reansmit one or more lines of imformation 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.

13.14.2 Syntax :

Command syntax : AT+GMR

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

13.15 Request product serial number identification +GSN

13.15.1 Description :

The command is used to cause the DCE to reansmit one or more lines of imformation text, determined by the manufacturer, which is intended to permit the user of the DCE to identify the individual alpha-numeric string.

13.15.2 Syntax :

Command syntax : AT+GSN

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

13.16 Request global object identification +GOI

13.16.1 Description :

The command is used to cause the DCE to reansmit one or more lines of imformation 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.

13.16.2 Syntax :

Command syntax : AT+GOI

Command	Possible responses
AT+GOI? *Note : display the current setting.*	ERROR *Note : Command is not valid*

AT+GOI *Note* : display the responses to the command	+GOI: OK *Note : Command is valid*

Note:
Currently, no information text is provided.

13.17 Modulation selection +MS

13.17.1 Description :

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

13.17.2 Syntax :

CommandSyntax :
AT+MS=[<carrier>[,<automode>[,<min_rate>[,<max_rate>[,<min_rx_rate>[,<max_rx_rate>]]]]]]

Command	Possible responses
AT+MS? *Note* : *display the parameter information.*	+MS: V32B,1,1200,14400 *Note : Command is valid*
AT+MS=? *Note* : display the range of marameters	+MS: (V21,V22),(0,1,),(0,300-14400),(0,300-14400) *Note : Command is valid*

13.17.3 Defined values :

<carrier>
manufacturer specific

<automode>
0: Disabled
1: enabled with V.8 or V.32bis Annex where applicable

<min_rate> and <min_rx_rate>
set to 0 if unspecified

<max_rate> and <max_rx_rate>
set to 0 if unspecified

13.18 Modulation automode control +MA

13.18.1 Description :

The extended-format compound parameter is a list of modulations that the DCE may use to connect with the remote DCE in automode operation, for answering or originating data calls.

13.18.2 Syntax :

Command syntax : AT+MA=[<carrier>[,<carrier>[,<carrier>[,…]]]]

Command	Possible responses
AT+MA? *Note* : *display the parameter information.*	+MA: V32, V32B *Note : Command is valid*
AT+MA=? *Note* : display the range of marameters	+MA: (V32B,V32,V26B,V22B,V22,V21) *Note : Command is valid*
AT+MA=V32 *Note* : set to V32	OK *Note : Command is valid*

13.19 Modulation reporting control +MR

13.19.1 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.

13.19.2 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*

13.19.3 Defined values :

<Val>
0: Disables reporting of modulation connection
1: Enables reporting of modulation connection (+MCR and +MRR are transmitted)

13.20 V.18 reporting control +MV18R

13.20.1 Description :

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

13.20.2 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*

13.20.3 Defined values :

<Val>
0: Disables reporting of V.18 connection
1: Enables reporting of V.18 connection

13.21 V.18 selection +MV18S

13.21.1 Description :

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

13.21.2 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*

13.21.3 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

13.22 Cellular extention +CXT

13.22.1 Description :

The numeric parameter is used for cellular extension.

13.22.2 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*

13.22.3 Defined values :

<Val>
0: Do not pass unrecongnized commands to the IWF
1: When detecting an unrecongnized AT command, open transport layer connection and pass unrecongnized command to the IWF.

13.23 Configration string +CFG

13.23.1 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.

13.23.2 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*

13.24 Query service +CAD ?

13.24.1 Description :

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

13.24.2 Syntax :

Command syntax : AT+CAD ?

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

13.24.3 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)

13.25 Um interface data compression reporting +CDR

13.25.1 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.

13.25.2 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*

13.26 Um interface data compression +CDS

13.26.1 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.

13.26.2 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.

13.27 Set Rm interface protocol +CRM

13.27.1 Description :

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

13.27.2 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 *Note : Command is valid*

Note: This default value for the +CRM parameter shall be 0 if this value is supported by the MT2.

13.27.3 Defined values :

<Val>
0: Asynchronous Data or Fax
1: Packet data service, Relay Layer R_m interface
2: Packet data service, Network Layer R_m interface, PPP

Note: The values 3 and 4 are not supported currently.
3: Packet data service, Network Layer R_m interface, SLIP
4: STU-III Service

13.28 Battery Charge +CBC ?

13.28.1 Description :

The numeric parameter is used to query the battery charge.

13.28.2 Syntax :

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

Command	Possible responses
AT+CBC? *Note* : *display the current status*	+CBC: 1, 77 OK *Note : Command is valid*
AT+CBC	ERROR *Note : Command is not valid*

13.28.3 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%.

13.29 Command State Inactivity Timer +CQD

13.29.1 Description :

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

13.29.2 Syntax :

Command syntax : AT+CQD=<Val>

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

13.29.3 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.

13.30 Mobile Station IP Address +CMIP?

13.30.1 Description :

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

13.30.2 Syntax :

Command syntax : AT+CMIP?

Command	Possible responses
AT+CMIP? *Note* : *display the current setting*	OK *Note : Command is valid*
AT+CMIP	ERROR

	Note : Command is not valid

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

13.31 Base Station IP Address +CBIP ?

13.31.1 Description :

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

13.31.2 Syntax :

Command syntax : AT+CBIP?

Command	Possible responses
AT+CBIP? *Note : display the current setting*	OK *Note : Command is valid*
AT+CBIP	ERROR *Note : Command is not valid*

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

13.32 Serving System +CSS ?

13.32.1 Description :

The numeric parameter is used to query the serving system .

13.32.2 Syntax :

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

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

13.32.3 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.

13.33 Select Multiplex Option +CMUX

13.33.1 Description :

The numeric parameter is used to select multiplex option.

13.33.2 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: (1-9,A-F), (1,2) OK *Note : Command is valid*
AT+CMUX=1 *Note :* Set the value to 0	OK *Note : Command is valid*

13.33.3 Defined values :

<n>

1: Multiplex Option 1

2: Multiplex Option 2

13.34 U_m Interface Fax Compression +CFC

13.34.1 Description :

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

13.34.2 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*

13.34.3 Defined values :

<Val>

0: No compression

1: V.42*bis* compression with parameters as set by the +CDS command

2: Modified Read compression

13.35 Hangup Voice +CHV

13.35.1 Description :

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

13.35.2 Syntax :

Command syntax : AT+CHV<n>

Command	Possible responses
AT+CHV *Note : display the current setting*	OK *Note : Command is valid*
AT+CHV0 *Note :* hang up the call	OK *Note : Command is valid*

13.35.3 Defined values :

<n>
0: Hangup voice call
1-255: Reserved.

13.36 Dial command for voice calls +CDV

13.36.1 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.

13.36.2 Syntax :

Command syntax : AT+CDV=<dial_string>

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

13.37 IWF content list +CGCAP

13.37.1 Description :

This extended-format command causes the IWF to transmit one or more lines of information text in a specific format. The content is a list of additional capabilities command +<name>s, which is intended to permit the user of the IWF to identify the minimum capabilities of the IWF.

13.37.2 Syntax :

Command syntax : AT+CGCAP

Command	Possible responses
AT+ CGCAP *Note : display the current setting*	+CGCAP: OK *Note : Command is valid*
AT+ CGCAP=0 *Note :* Set the value to 0	ERROR *Note : Command is not valid*

Note:
IWFs conforming to this standard shall include the following items, as a minimum, in the result code for the +CGCAP command:
+CIS707, +MS, +ES, +DS, +FCLASS

13.38 IWF device idendification +CGOI

13.38.1 Description :

This command causes the IWF to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the IWF to identify the device, based on the ISO system for registering unique object identifiers. Typically, the text will consist of a single line containing numeric strings delimited by period characters.

13.38.2 Syntax :

Command syntax : AT+CGOI

Command	Possible responses
AT+ CGOI *Note* : *display the current setting*	OK *Note : Command is valid*
AT+ CGOI=0 *Note* : Set the value to 0	ERROR *Note : Command is not valid*

13.39 U_m packet data inactivity timer +CTA

13.39.1 Description :

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

13.39.2 Syntax :

Command syntax : AT+CTA=<Val>

Command	Possible responses
AT+CTA ? *Note* : *display the current setting*	+CTA: 0 OK *Note : Command is valid*
AT+CTA=? *Note* : display the range of values	+CTA: (0-255) OK *Note : Command is valid*
AT+CTA=1 *Note* : Set the value to 1	OK *Note : Command is valid*

13.39.3 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 U_m interface.

14 Fax parameters

This chapter list the tables of the IS-707.3 fax parameters for users' reference.

IS-707.3 Table 7.3.1-1. Fax Parameters (Part 1 of 2)

Parameter	Value (per)	Description	Type
+FAA	EIA/TIA-592	Adaptive-answer parameter (see +FCLASS)	Remote
+FAP	TIA/EIA/IS-134	Addressing and polling capabilities parameter	Remote
+FBO	EIA/TIA-592	Phase-C data-bit-order parameter	Remote
+FBS	EIA/TIA-592	Buffer size parameter (read-only)	Local
+FBU	EIA/TIA-592	HDLC-frame-reporting parameter	Remote
+FCC		DCE-capabilities parameters	Remote
VR	EIA/TIA-592	Vertical-resolution subparameter	
[BR]		Bit-rate subparameter	
	0 1 2 3[1]	• 2400 bits/s • 4800 bits/s • 7200 bits/s • 9600 bits/s	
WD	EIA/TIA-592	Page-width subparameter	
[LN]	EIA/TIA-592[2]	Page-length subparameter	
[DF]	EIA/TIA-592[2]	Data-compression-format subparameter	
[EC]	EIA/TIA-592[2]	Error-correction subparameter	
BF	EIA/TIA-592	Binary-file-transfer subparameter	
ST	EIA/TIA-592	Scan-time-per-line subparameter	
[+FCLASS]		Service-class selection parameter	Remote
	0 1 2.0[3]	• Class-0 • [Class-1 support unavailable] • Class-2.0 fax service (EIA/TIA-592)	
+FCQ	EIA/TIA-592	Copy-quality-checking parameter	Remote
[+FCR]	EIA/TIA-592[2]	Capability-to-receive parameter	Remote
+FCS	EIA/TIA-592	Current-session results parameters	Remote
+FCT	EIA/TIA-592	DTE Phase-C timeout parameter	Remote
+FEA	EIA/TIA-592	Phase-C received EOL-alignment parameter	Remote

IS-707.3 Table 7.3.1-1. Fax Parameters (Part 2 of 2)

Parameter	Value (per)	Description	Type
+FFC	EIA/TIA-592	Format-conversion parameter	Remote
+FHS	EIA/TIA-592	Call-termination-status parameter	Remote
+FIE	EIA/TIA-592	Procedure-interrupt-enable parameter	Remote
+FIS	EIA/TIA-592	Current-session negotiation parameters	Remote
[+FLI]	EIA/TIA-592[2]	Local-ID-string parameter (TSI or CSI)	Remote
+FLO	EIA/TIA-592[2]	Flow-control-select parameter	Local
+FLP	EIA/TIA-592	Indicate-document-to-poll parameter	Remote
+FMI	EIA/TIA-592	Request DCE manufacturer identification	See 4.3.1.2.5
+FMM	EIA/TIA-592	Request DCE model	See 4.3.1.2.5
+FMR	EIA/TIA-592	Request DCE revision	See 4.3.1.2.5
[+FMS]	EIA/TIA-592[2]	Minimum-Phase-C-speed parameter	Remote
+FNR	EIA/TIA-592	Negotiation-message-reporting control parameters	Remote
+FNS	EIA/TIA-592	Nonstandard-frame FIF parameter	Remote
+FPA	TIA/EIA/IS-134	Selective Polling Address Parameter	Remote
[+FPI]	EIA/TIA-592[2]	Local-polling-ID-string parameter	Remote
[+FPP]	EIA/TIA-592[4]	Packet-protocol-control parameter	Local
+FPR	EIA/TIA-592	Serial-port-rate-control parameter	Local
[+FPS]	EIA/TIA-592[5]	Page-status parameter	Remote
+FPW	TIA/EIA/IS-134	Password parameter (Sending or Polling)	Remote
[+FRQ]	EIA/TIA-592[2]	Receive-quality-threshold parameters	Remote
+FRY	EIA/TIA-592	ECM-retry-value parameter	Remote
+FSA	TIA/EIA/IS-134	Subaddress Parameter	Remote
[+FSP]	EIA/TIA-592[2]	Request-to-poll parameter	Remote

Notes

1. Use of option 3 may cause degradations in the quality of certain faxes.
2. Some values for this parameter are optional in EIA/TIA-592. In this standard, all parameters of this command shall be supported.
3. Class 2.0 represents EIA/TIA-592.
4. Support of packet protocol is optional.
5. Values 4 and 5 of this parameter are optional.

IS-707.3 Table 7.3.2-1. Fax Action Commands

Command	Description	Type
+FDR	Receive Phase-C data.	Remote
+FDT	Transmit Phase-C data.	Remote
+FIP	Initialize facsimile parameters.	Remote
+FKS	Terminate session.	Remote

15 Qualcomm Defined AT commands for CDMA operation

15.1 Transition to Diagnostics Monitor $QCDMG

15.1.1 Description :

This command is used to returns “OK” and then transition the phone serial port to DM mode. DM mode runs at 38.4 Kbps and uses a proprietary half-duplex protocol.

15.1.2 Syntax :

Command syntax : AT$QCDMG

Command	Possible responses
AT$QCDMG *Note : transition to DM port*	*OK* *Note : Command is valid*

15.2 Quick Net Connect $QCQNC

15.2.1 Description :

This command is used to enable or disable the Quick Net Connect (QNC).

15.2.2 Syntax :

Command syntax : AT$QCQNC =<Val>

Command	Possible responses
AT$QCQNC? *Note : display the current setting*	$QCQNC: 0 OK *Note : Command is valid*
AT$QCQNC =? *Note :* display the range of values	$QCQNC: (0-1) OK *Note : Command is valid*
AT$QCQNC=1 *Note :* Set the value to 1	OK *Note : Command is valid*

15.2.3 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..

15.3 Protocol revision in use $QCPREV

15.3.1 Description :

This command is used to query the protocol revision in use.

15.3.2 Syntax :

Command syntax : AT$QCPREV

Command	Possible responses
AT$QCPREV? *Note : display the current setting*	ERROR *Note : Command is not valid*
AT$QCPREV *Note :* display the of value	$QCPREV: 6 OK *Note : Command is valid*

15.3.3 Defined values :

The command should return one of the following codes:
1: JST008
3: IS-95A
4: IS-95B
6: IS-2000

15.4 Originate M-to-M Packet Data call $QCMTOM

15.4.1 Description :

This command is used to originate Mobile-to-Mobile Packet Data call using QUALCOMM proprietary Service Option number.

15.4.2 Syntax :

Command syntax : AT$QCMTOM = ‘’<number>’’

Command	Possible responses

AT$QCMTOM? *Note* : *display the current setting*	$QCMTOM: "" OK *Note : Command is valid*
AT$QCMTOM =? *Note* : display the range of values	$QCMTOM: (20,21,23-7E) OK *Note : Command is valid*
AT$QCMTOM =”#777” *Note* : packet data call to the number	OK *Note : Command is valid*

15.4.3 Defined values :

<number>
where <number> is the phone number to dial. This command will originate a Mobile-to-Mobile Packet data call using the QUALCOMM-proprietary Service Option number 0x8003. This is a Rate Set 1 call.

15.5 Dump RLP protocol statistics $QCRLPD

15.5.1 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).

15.5.2 Syntax :

Command syntax : AT$QCRLPD

Command	Possible responses
AT$QCRLPD? *Note* : *display the current setting*	*ERROR* *Note : Command is not valid*
AT$QCRLPD *Note* : Dump RLP statistics data	$QCRLPD: Rx Data Cnt :0000 Tx Data Cnt :0000 …. OK *Note : Command is valid*

15.6 Reset RLP protocol statistics $QCRLPR

15.6.1 Description :

This command is used to zero all the RLP statistics counters. This does not apply to RLP 3 statistics (see $QCRL3R).

15.6.2 Syntax :

Command syntax : AT$QCRLPR

Command	Possible responses
AT$QCRLPR? *Note : display the current setting*	ERROR *Note : Command is not valid*
AT$QCRLPR *Note :* Rest RLP statistics counter	$QCRLPR: OK *Note : Command is valid*

15.7 Dump PPP protocol statistics $QCPPPD

15.7.1 Description :

This command is used to dump the PPP statistics in ASCII format to the TE2.

15.7.2 Syntax :

Command syntax : AT$QCPPPD

Command	Possible responses
AT$QCPPPD? *Note : display the current setting*	ERROR *Note : Command is not valid*
AT$QCPPPD *Note :* Dump PPP statistics information	$QCPPPD: In LCP :0000 Out LCP :0000 …. OK *Note : Command is valid*

15.8 Reset PPP protocol statistics $QCPPPR

15.8.1 Description :

This command is used to zero all of the PPP statistics counters.

15.8.2 Syntax :

Command syntax : AT$QCPPPR

Command	Possible responses
AT$QCPPPR? *Note : display the current setting*	ERROR *Note : Command is not valid*

AT$QCPPPR *Note* : Rest PPP statistics counter	$QCPPPR: OK *Note : Command is valid*

15.9 Dump IP protocol statistics $QCIPD

15.9.1 Description :

This command is used to dump the IP statistics in ASCII format to the TE2.

15.9.2 Syntax :

Command syntax : AT$QCIPD

Command	Possible responses
AT$QCIPD? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCIPD *Note* : Dump IP statistics information	$QCIPD: IP: InReceives :0000 InHdrErrors :0000 …. OK *Note : Command is valid*

15.10 Reset IP protocol statistics $QCIPR

15.10.1 Description :

This command is used to zero all of the IP statistics counters.

15.10.2 Syntax :

Command syntax : AT$QCIPR

Command	Possible responses
AT$QCIPR? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCIPR *Note* : Rest IP statistics counter	$QCIPR: OK *Note : Command is valid*

15.11 Dump UDP protocol statistics $QCUDPD

15.11.1 Description :

This command is used to dump the UDP statistics in ASCII format to the TE2.

15.11.2 Syntax :

Command syntax : AT$QCUDPD

Command	Possible responses
AT$QCUDPD? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCUDPD *Note* : Dump UDP statistics information	$QCUDPD: InDatagrams :0000 OutDatagrams :0000 …. OK *Note : Command is valid*

15.12 Reset UDP protocol statistics $QCUDPR

15.12.1 Description :

This command is used to zero all of the UDP statistics counters.

15.12.2 Syntax :

Command syntax : AT$QCUDPR

Command	Possible responses
AT$QCUDPR? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCUDPR *Note* : Rest UDP statistics counter	$QCUDPR: OK *Note : Command is valid*

15.13 Dump TCP protocol statistics $QCTCPD

15.13.1 Description :

This command is used to dump the TCP statistics in ASCII format to the TE2.

15.13.2 Syntax :

Command syntax : AT$QCTCPD

Command	Possible responses
AT$QCTCPD? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCTCPD *Note* : Dump TCP statistics information	$QCTCPD: ActiveOpens :0000 PassiveOpens :0000 …. OK *Note : Command is valid*

15.14 Reset TCP protocol statistics $QCTCPR

15.14.1 Description :

This command is used to zero all of the TCP statistics counters.

15.14.2 Syntax :

Command syntax : AT$QCTCPR

Command	Possible responses
AT$QCTCPR? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCTCPR *Note* : Rest TCP statistics counter	$QCTCPR: OK *Note : Command is valid*

15.15 Set data service option $QCSO

15.15.1 Description :

This command is used to Set Data Service Option number set; saves to non-volatile memory.

15.15.2 Syntax :

Command syntax : AT$QCSO = <Val>

Command	Possible responses
AT$QCSO? *Note* : *display the current setting*	$QCSO: 2 OK *Note : Command is valid*
AT$QCSO =? *Note* : display the range of values	$QCSO: (0-2) OK *Note : Command is valid*
AT$QCSO =1 *Note* : set value to 1	OK *Note : Command is valid*

15.15.3 Defined values :

<Val>

0 : pre-707 SO numbers (RS 1: Async 4, G3 Fax 5, packet 7; RS 2: Async 12, G3 Fax 13, 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)

15.16 Clear mobile error log $QCCLR

15.16.1 Description :

This command is used to clear the mobile error log.

15.16.2 Syntax :

Command syntax : AT$QCCLR

Command	Possible responses
AT$QCCLR? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCCLR *Note* : clear the mobile error log	$QCCLR: OK *Note : Command is valid*

15.17 Answer incoming voice call $QCCAV

15.17.1 Description :

This command is used to provide a means to answer an incoming voice call via an AT command.

15.17.2 Syntax :

Command syntax : AT$QCCAV

Command	Possible responses
AT$QCCAV? *Note* : *display the current setting*	OK *Note : Command is valid*
AT$QCCAV *Note* : Answer incoming voice call	OK +WCNT: 3 *Note : Command is valid*

15.18 Automatic packet detection $QCPKND

15.18.1 Description :

This command is used to enable or disable Automatic Packet Detection after a dial command.

15.18.2 Syntax :

Command syntax : AT$QCPKND = <Val>

Command	Possible responses
AT$QCPKND? *Note* : *display the current setting*	$QCPKND: 0 OK *Note : Command is valid*
AT$QCPKND=? *Note* : display the range of values	$QCPKND: (0-1) OK *Note : Command is valid*
AT$QCPKND=1 *Note* : set value to 1	OK *Note : Command is valid*

15.18.3 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.

15.19 Prearrangement setting $QCVAD

15.19.1 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.

15.19.2 Syntax :

Command syntax : AT$QCVAD= <Val>

Command	Possible responses
AT$QCVAD? *Note* : *display the current setting*	$QCVAD: 0 OK *Note : Command is valid*
AT$QCVAD=? *Note* : display the range of values	$QCVAD: (0-4) OK *Note : Command is valid*
AT$QCVAD=1 *Note* : set value to 1	OK *Note : Command is valid*

15.19.3 Defined values :

<Val>
0 : Off
1 : Fax for next call
2 : Fax for all calls
3: Async for next call
4: Async for all calls

15.20 Set DM baud rate $QCDMR

15.20.1 Description :

This command is used to set the DM baud rate.

15.20.2 Syntax :

Command syntax : AT$QCDMR= <Val>

Command	Possible responses
AT$QCDMR? *Note* : *display the current setting*	$QCDMR: 19200 OK *Note : Command is valid*
AT$QCDMR=? *Note* : display the range of values	$QCDMR: (19200, 38400, 57600, 115200, 230400, 460800) OK

	Note : Command is valid
AT$QCDMR=115200 *Note* : set value to 1	OK *Note : Command is valid*

15.20.3 Defined values :

<Val>
value should be on of the following:
19200, 38400, 57600, 115200

15.21 Set medium data rate $QCMDR

15.21.1 Description :

This command is used to Set Medium Data Rate (MDR) (also known as HSPD) setting.

15.21.2 Syntax :

Command syntax : AT$QCMDR= <Val>

Command	Possible responses
AT$QCMDR? *Note* : *display the current setting*	$QCMDR: 3 OK *Note : Command is valid*
AT$QCMDR=? *Note* : display the range of values	$QCMDR: (0-3) OK *Note : Command is valid*
AT$QCMDR=1 *Note* : set value to 1	OK *Note : Command is valid*

15.21.3 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.

15.22 Dump RLP 3 protocol statistics $QCRL3D

15.22.1 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).

15.22.2 Syntax :

Command syntax : AT$QCRL3D

Command	Possible responses
AT$QCRL3D? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCRL3D *Note* : Dump RLP 3 statistics information	$QCRL3D: Rx Data Cnt :00000000 Tx Data Cnt :00000000 …. OK *Note : Command is valid*

15.23 Reset RLP 3 protocol statistics $QCRL3R

15.23.1 Description :

This command is used to reset the RLP 3 protocol statistics.

15.23.2 Syntax :

Command syntax : AT$QCRL3R

Command	Possible responses
AT$QCRL3R? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCRL3R *Note* : Rest TCP statistics counter	$QCRL3R: OK *Note : Command is valid*

15.24 SCRM'ing selection $QCSCRM

15.24.1 Description :

This command is used to enable or disable mobile from SCRM'ing.

15.24.2 Syntax :

Command syntax : AT$QCSCRM= <Val>

Command	Possible responses
AT$QCSCRM? *Note* : *display the current setting*	$QCSCRM: 1 OK *Note : Command is valid*
AT$QCSCRM =? *Note* : display the range of values	$QCSCRM: (0-1) OK *Note : Command is valid*
AT$QCSCRM =0 *Note* : set value to 0	OK *Note : Command is valid*

15.24.3 Defined values :

<Val>
0 : Mobile never SCRMs.
1 : Mobile can SCRM as needed.
Note:
Command only applies to SO 33 calls. This value is stored in NV. The default is 1.

15.25 R-SCH selection $QCTRTL

15.25.1 Description :

This command is used to enable or disable mobile R-SCH throttling.

15.25.2 Syntax :

Command syntax : AT$QCTRTL = <Val>

Command	Possible responses
AT$QCTRTL? *Note* : *display the current setting*	$QCTRTL: 1 OK *Note : Command is valid*
AT$QCTRTL =? *Note* : display the range of values	$QCTRTL: (0-1) OK *Note : Command is valid*
AT$QCTRTL =0 *Note* : set value to 0	OK *Note : Command is valid*

15.25.3 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. This value is stored in NV. The default is 1.
For MSM500, MSM5105, and MSM5100 ASICs only.

15.26 R-SCH selection $QCMIP

15.26.1 Description :

This command is used to enable or disable mobile IP.

15.26.2 Syntax :

Command syntax : AT$QCMIP=<Val>

Command	Possible responses
AT$QCMIP? *Note* : *display the current setting*	$QCMIP: 1 OK *Note : Command is valid*
AT$QCMIP=? *Note* : display the range of values	$QCMIP: (0-1) OK *Note : Command is valid*
AT$QCMIP=0 *Note* : set value to 0	OK *Note : Command is valid*

15.26.3 Defined values :

<Val>

0 : Mobile IP disabled, Simple IP only.

1 : Mobile IP preferred. In the initial MIP registration, if the network does not support Mobile IP, then the mobile automatically reverts to Simple IP (force a PPP renegotiation by sending a LCP C-Req). However, if a Mobile IP session is registered, and then the mobile enters a network that does not support Mobile IP, the mobile will drop the session and inform the upper layers of the failure (for example, by dropping DCD to a laptop).

2 : Mobile IP only. The mobile will make data calls only when Mobile IP is supported in the network. During a MIP session, if the mobile hands off to a network that does not support MIP, then the mobile will drop the session and inform the upper layers of the failure (for example, by dropping DCD to a laptop). This value is stored in NV. The default value is 0.

Note1: When the AT$QCMIP value is changed to 1 or 2, this modifies the value of AT+CRM to 2. AT+CRM with a value of 2 enables network model operation. Changing the value to 0 will reset the AT+CRM to its original value.

Note2: This change is *not* supported by DMSS 5105 Release 1.0 Commercial.

Note3: When the AT$QCMIP value is changed to 1 or 2, this modifies the value of AT$QCMDR to 3. AT$QCMDR=3 means that the mobile tries Service Option 33 when it is in a cdma2000 network that advertises P_REV 6 or higher. When AT$QCMIP >0 and an attempt is made to set AT$QCMDR to less than 3, the mobile will return ERROR.

Note4: When the AT$QCMIP value is set to 1 or 2, this changes the value of AT$QCPKND to 0. This means that the mobile must see a dial string (such as ATDT#777) on the serial interface before it will originate packet data calls. When AT$QCMIP >0 and an attempt is made to set AT$QCPKND to 1, the mobile returns ERROR.

Note5: This AT command is for test purposes only and should not be changed by the mobile phone user.

15.27 MIP selection $QCMIPP

15.27.1 Description :

This command is used to select the MIP user profile to be active.

15.27.2 Syntax :

Command syntax : AT$QCMIPP

Command	Possible responses
AT$QCMIPP? *Note : display the current setting*	ERROR *Note : Command is not valid*
AT$QCMIPP *Note :* Rest TCP statistics counter	$QCMIPP: OK *Note : Command is valid*

Note:
Takes a profile number between 0 and 5. This value is stored in NV. This AT command is expected to be used by users to configure Dial-Up Networking

15.28 RFC2002bis selection $QCMIPT

15.28.1 Description :

This command is used to enable or disable the use of rfc2002bis authentication.

15.28.2 Syntax :

Command syntax : AT$QCMIPT=<Val>

Command	Possible responses
AT$QCMIPT? *Note : display the current setting*	$QCMIPT: 1 OK *Note : Command is valid*
AT$QCMIPT =?	$QCMIPT: (0-1)

Note : display the range of values	OK *Note : Command is valid*
AT$QCMIPT =0 *Note* : set value to 0	OK *Note : Command is valid*

15.28.3 Defined values :

<Val>
0: Use of rfc2002bis authentication is disabled. Rfc2002 style authentication is used instead.
1: Use of rfc2002bis authentication is enabled.

Note: This AT command is for test purposes only and should not be changed by the mobile phone user.

15.29 Current active profile $QCMIPEP

15.29.1 Description :

This command is used to enable or disable the currently active profile.

15.29.2 Syntax :

Command syntax : AT$QCMIPEP=<Val>

Command	Possible responses
AT$QCMIPEP? *Note* : *display the current setting*	$QCMIPEP: 1 OK *Note : Command is valid*
AT$QCMIPEP=? *Note* : display the range of values	$QCMIPEP: (0-1) OK *Note : Command is valid*
AT$QCMIPEP=0 *Note* : set value to 0	OK *Note : Command is valid*

15.29.3 Defined values :

<Val>
0: Disable the currently active profile (profile is unavailable until it is re-enabled.
1: Enable the currently active profile.

15.30 Return profile Information $QCMIPGETP

15.30.1 Description :

This command is used to return all information corresponding to the specified profile number.

15.30.2 Syntax :

Command syntax : AT$QCMIPGETP=<Val>

Command	Possible responses
AT$QCMIPGETP? *Note* : *display the current setting*	ERROR *Note : Command is not valid*
AT$QCMIPGETP=? *Note* : display the range of values	$QCMIPGETP: (0-5) OK *Note : Command is valid*
AT$ CMIPGETP=0 *Note* : set value to 0	Profile:0 Enabled ….. OK *Note : Command is valid*

15.30.3 Defined values :

<Val>

(0-5): Profile #

Note: If no profile number is entered, all information corresponding to the currently active profile is returned. If there is no profile associated with the specified number, an error is returned.

15.31 Set NAI for active profile $QCMIPNAI

15.31.1 Description :

This command is used to set the NAI for the currently active profile. There are two arguments : string corresponding to NAI to be stored and one of the 0 or 1.

15.31.2 Syntax :

Command syntax : AT$QCMIPNAI=<string>,<Val>

Command	Possible responses
AT$QCMIPNAI? *Note* : *display the current setting*	wavecommfcatest11@sprintpcs.com,1 OK *Note : Command is valid*
AT$QCMIPNAI=? *Note* : display the range of values	$QCMIPNAI: (20,21,23-7E),(0-1) OK *Note : Command is valid*
AT$QCMIPNAI=20,0 *Note* : set value to 20, 0	OK *Note : Command is valid*

15.31.3 Defined values :

<Val>

0: Do not commit to NV

✍+ Commit to NV

Note: Double quotes are only required if the string contains a comma.

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

15.32 Set reverse tunneling $QCMIPRT

15.32.1 Description :

This command is used to set the reverse tunneling currently active profile.

15.32.2 Syntax :

Command syntax : AT$QCMIPRT=<Val1>, <Val2>

Command	Possible responses
AT$QCMIPRT? *Note : display the current setting*	$QCMIPRT: 1,1 OK *Note : Command is valid*
AT$QCMIPRT=? *Note :* display the range of values	$QCMIPRT: (0-1), (0-1) OK *Note : Command is valid*
AT$QCMIPRT=1,1 *Note :* set value to 1 and commit	OK *Note : Command is valid*

15.32.3 Defined values :

<Val1>
0: Do not request reverse tunneling
1: Request reverse tunneling

<Val2>
0: Do not commit to NV
1: Commit to NV

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

15.33 Set MN-AAA shared secrets $QCMIPMASS

15.33.1 Description :

This command is used to set MN-AAA shared secrets for the currently active profile. Two arguments – string corresponding to the shared secret to be stored and one of the values: 0 and 1.

15.33.2 Syntax :

Command syntax : AT$QCMIPMASS =<string>,<Val>

Command	Possible responses
AT$QCMIPMASS? *Note* : *display the current setting*	$QCMIPMASS: Set OK *Note : Command is valid*
AT$QCMIPMASS=? *Note* : display the range of values	$QCMIPMASS: (20,21,23-7E),(0-1) OK *Note : Command is valid*
AT$QCMIPMASS=20,0 *Note* : set value to 20, 0	OK *Note : Command is valid*

15.33.3 Defined values :

<Val>
0: Do not commit to NV
✍✚ Commit to NV

Note: Double quotes are only required if the string contains a comma.

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

15.34 Set MN-HA shared secrets $QCMIPMHSS

15.34.1 Description :

This command is used to set MN-HA shared secrets for the currently active profile. Two arguments – string corresponding to the shared secret to be stored and one of the values: 0 and 1.

15.34.2 Syntax :

Command syntax : AT$QCMIPMHSS =<string>,<Val>

Command	Possible responses
AT$QCMIPMHSS? *Note* : *display the current setting*	$QCMIPMHSS: Set OK *Note : Command is valid*
AT$QCMIPMHSS=? *Note* : display the range of values	$QCMIPMHSS: (20,21,23-7E),(0-1) OK *Note : Command is valid*
AT$QCMIPMHSS=20,0 *Note* : set value to 20, 0	OK *Note : Command is valid*

15.34.3 Defined values :

<Val>
0: Do not commit to NV
✍✚ Commit to NV

Note: Double quotes are only required if the string contains a comma.

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

15.35 Set MN-AAA shared secrets $QCMIPMASSX

15.35.1 Description :

This command is used to set MN-AAA shared secret for the currently active profile in HEX. Two arguments – hexidecimal number and one of the values: 0 and 1.

15.35.2 Syntax :

Command syntax : AT$QCMIPMASSX =<HEX>,<Val>

Command	Possible responses
AT$QCMIPMASSX? *Note : display the current setting*	$QCMIPMASSX: Set OK *Note : Command is valid*
AT$QCMIPMASSX=? *Note :* display the range of values	$QCMIPMASSX: (0-FFFFFFFF),(0-1) OK *Note : Command is valid*
AT$QCMIPMASSX=FF,0 *Note :* set value to 0xFF, but not commit	OK *Note : Command is valid*

15.35.3 Defined values :

<HEX>

Hex value from 0 to FFFFFFFF

<Val>

0: Do not commit to NV

1 Commit to NV

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

15.36 Set MN-HA shared secrets $QCMIPMHSSX

15.36.1 Description :

This command is used to set MN-HA shared secret for the currently active profile in HEX. Two arguments – hexidecimal number and one of the values: 0 and 1.

15.36.2 Syntax :

Command syntax : AT$QCMIPMHSSX =<HEX>,<Val>

Command	Possible responses
AT$QCMIPMHSSX? *Note* : *display the current setting*	$QCMIPMHSSX: Set OK *Note : Command is valid*
AT$QCMIPMHSSX=? *Note* : display the range of values	$QCMIPMHSSX: (0-FFFFFFFF),(0-1) OK *Note : Command is valid*
AT$QCMIPMHSSX=FF,0 *Note* : set value to 0xFF, but not commit	OK *Note : Command is valid*

15.36.3 Defined values :

<HEX>

Hex value from 0 to FFFFFFFF

<Val>

0: Do not commit to NV

✚ Commit to NV

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

15.37 Set MN-AAA shared secrets $QCMIPMASPI

15.37.1 Description :

This command is used to set MN-AAA SPIs for the currently active profile. Two arguments – SPI value and one of the values: 0 and 1.

15.37.2 Syntax :

Command syntax : AT$QCMIPMASPI =<SPI>,<Val>

Command	Possible responses
AT$QCMIPMASPI? *Note* : *display the current setting*	$QCMIPMASPI: 1234,1 OK *Note : Command is valid*
AT$QCMIPMASPI=? *Note* : display the range of values	$QCMIPMASPI: (0-4294967295),(0-1) OK *Note : Command is valid*
AT$QCMIPMASPI=2300,0 *Note* : set value to 2300, but not commit	OK *Note : Command is valid*

15.37.3 Defined values :

<SPI>

SPI value from 0 to 4294967295

<Val>

0: Do not commit to NV

✚ Commit to NV

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

15.38 Set MN-HA shared secrets $QCMIPMHSPI

15.38.1 Description :

This command is used to set MN-HA SPIs for the currently active profile. Two arguments – SPI value and one of the values: 0 and 1.

15.38.2 Syntax :

Command syntax : AT$QCMIPMHSPI =<SPI>,<Val>

Command	Possible responses
AT$QCMIPMHSPI? *Note* : *display the current setting*	$QCMIPMHSPI: 1234,1 OK *Note : Command is valid*
AT$QCMIPMHSPI=? *Note* : display the range of values	$QCMIPMHSPI: (0-4294967295),(0-1) OK *Note : Command is valid*
AT$QCMIPMHSPI=5500,0 *Note* : set value to 5500, but not commit	OK *Note : Command is valid*

15.38.3 Defined values :

<SPI>

SPI value from 0 to 4294967295

<Val>

0: Do not commit to NV

✎+ Commit to NV

Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if $QCMIPP is called.

16 Unsolicited AT Result Codes

16.1 Cell Broadcast Message Directly Displayed +CBM

16.1.1 Description :

This command indicates a Cell Broadcast message has been received and, according to message storage preferences (+CNMI), is to be directly displayed.

16.1.2 Syntax :

Response syntax : +CBM: [<alpha>,] <length> <CR> <LF> <pdu> (PDU mode)
+CBM: <oa>,[<alpha>,] <scts> [,<tooa>, <length>] <CR><LF><data> (text mode)

Example Result
+CBM: “123456”,”98/10/01,12 :3000+00”,129,5<CR><LF> Hello *Note : Cell broadcast message received*

16.2 Cell Broadcast Message Stored in Memory +CBMI

16.2.1 Description :

This command indicates a Cell Broadcast message has been received and, according to message storage preferences (+CNMI), is to be stored in memory.

16.2.2 Syntax :

Response syntax : +CBMI: “BC”,<index>

Example Result
+CBMI: “BC”,5 *Note : Cell broadcast message received and stored in “BC” memory at index 5*

16.3 Cell Environment Description Indication +CCED

16.3.1 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.

16.3.2 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 *Note : Cell environment description indication in response to AT+CCED=1,7*

16.4 Call Waiting Indication +CCWA

16.4.1 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.

16.4.2 Syntax :

Response syntax : +CCWA: <caller_id>, <type>

Example Result
+CCWA: 18005551212,129 *Note : Incoming call from 1-800-555-1212, type always equals 129.*

16.5 SMS Status Report Indication Directly Displayed +CDS

16.5.1 Description :

This command indicates an SMS status report has been received and, according to message storage preferences (+CNMI), is to be directly displayed.

16.5.2 Syntax :

Response syntax : +CDS : <length> <CR> <LF> <pdu> (PDU mode)
+CDS : <fo>,<mr>, [<ra>] , [<tora>], <scts>,<dt>,<st> (Text mode)

Example Result
+CDS : 2, 116, ”3146290800”, 129, “98/10/01,12 :30 :07+04”, “98/10/01 12 :30 :08+04”, 0

Note : SMS status report received

16.6 SMS Status Report Indication Stored in Memory +CDSI

16.6.1 Description :

This command indicates an SMS status report has been received and, according to message storage preferences (+CNMI), is to be stored in memory.

16.6.2 Syntax :

Response syntax : +CDSI: “SR”,<index>

Example Result
+CDSI: “SR”,5 *Note : SMS status report received and stored in “SR” memory at index 5*

16.7 Key Press or Release +CKEV

16.7.1 Description :

This command a key has been pressed or released.

16.7.2 Syntax :

Response syntax : +CKEV: <key>,<press>

Example Result
+CKEV: 9,0 *Note : Indicates key 9 has been released*

16.7.3 Defined values :

<key> Keyboard map according to Qualcomm HS definitions
<press>
1: key press
0: key release

16.8 Caller ID Presentation +CLIP

16.8.1 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.

Syntax :
Response syntax : +CLIP: <caller_id>, <type>

Example Result
+CLIP: 18005551212,129 *Note : Incoming call from 1-800-555-1212, type always equals 129.*

16.9 Incoming Message Directly Displayed +CMT

16.9.1 Description :

This command indicates an incoming message has been received and, according to message storage preferences (+CNMI), is to be directly displayed.

16.9.2 Syntax :

Response syntax : +CMT: [<alpha>,] <length> <CR> <LF> <pdu> (PDU mode)
+CMT: <oa>,[<alpha>,] <scts> [,<tooa>, <length>] <CR><LF><data> (text mode)

Example Result
+CMT: “123456”,”98/10/01,12 :3000+00”,129,5<CR><LF> Hello *Note : Incoming message received*

16.10 Incoming Message Stored in Memory +CMTI

16.10.1 Description :

This command indicates an incoming message has been received and, according to message storage preferences (+CNMI), is to be stored in memory.

16.10.2 Syntax :

Response syntax : +CMTI: “MT”,<index>

Example Result
+CMTI: “MT”,5 *Note : Incoming message received and stored in “MT” memory at index 5*

16.11 Mode Preference +COPS

16.11.1 Description :

This unsolicited command indicates a change in mode preference has taken place. See +COPS, section 5.2 for information about Changing Mode Preference.

16.11.2 Syntax :

Response syntax : +COPS: <mode>

AT+COPS=0 *Note : Ask for Automatic mode*	OK +COPS:0 *Note: Unsolicited +COPS result confirms Automatic mode is requested*
AT+COPS=1 *Note : Ask for PCS mode*	OK +COPS:1 *Note: Unsolicited +COPS result confirms PCS mode is requested*
AT+COPS=2 *Note : Ask for Cellular mode*	OK +COPS:2 *Note : Unsolicited +COPS result confirms Cellular mode is requested*

16.12 Registration & Roaming +CREG

16.12.1 Description :

This unsolicited command indicates the current state of roaming . See +COPS, section 5.2 for information about Changing Mode Preference.

16.12.2 Syntax :

Response syntax : +CREG: <stat>

Example Result
+CREG: 1 *Note : Module has found the home network and is registered.*

<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

16.13 Incoming Call +CRING

16.13.1 Description :

This unsolicited command indicates an incoming call. See +CRC, section 9.3 for information about enabling this result.

16.13.2 Syntax :

Response syntax : +CRING: <Type>

+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

16.14 Automatic RxLev Indication +CSQ

16.14.1 Description :

This command indicates RSSI automatic shots when AT+CCED=1,8 is processed.

16.14.2 Syntax :

Response syntax : +CSQ: <rssi>,99

Example Result
+CSQ:29, 99 *Note : RSSI notification*

16.15 Incoming Call +RING

16.15.1 Description :

This unsolicited command indicates an incoming call.

16.15.2 Syntax :

Response syntax : +RING

Example Result
+RING +RING *Note : Incoming Call*

16.16 Call Answered +WANS

16.16.1 Description :

This unsolicited command indicates that an incoming voice call has been answered.

16.16.2 Syntax :

Response syntax : +WANS

Command	Possible responses
ATA	+RING OK +WANS *Note: Call answered* +WCNT:3

16.17 Call Connected +WCNT

16.17.1 Description :

This unsolicited command indicates that an incoming or outgoing voice call has been connected into a traffic channel state.

16.17.2 Syntax :

Response syntax : +WCNT: <so>

Command	Possible responses
ATD18005551212;	OK +WORG:18005551212 +WCNT:3 *Note: Call Connected with service option 3*

16.18 Call Ended +WEND

16.18.1 Description :

This unsolicited command indicates that a voice call or attempt to establish a voice call has ended.

16.18.2 Syntax :

Response syntax : +WEND: <reason>

Command	Possible responses
ATD18005551212; ATH	OK +WORG:18005551212 +WCNT:3 OK +WEND:10 *Note: Call Ended with a normal release*
ATD18005551212;	OK +WORG:18005551212 +WEND:3 Note: Call failed because the signal faded.

<**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 Acces probes exhausted (The module failed to contact the Base Station)
16: RUIM not present
17: Origination already in progress
18: General Access Failure
19: Received retry order (IS-2000 only).

16.19 Feature Notification Message +WFNM

16.19.1 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.

16.19.2 Syntax :

Response syntax : +WFNM="<message>"

Command	Possible responses
	+WFNM="Help, I have falling and I can't get up!"

16.20 Flash indication +WFSH

16.20.1 Description :

This unsolicited command confirms that a flash has been sent to the base station. See +WFSH command, section 8.5, for more information on using flash commands.

16.20.2 Syntax :

Response syntax : +WFSH

Command	Possible responses
AT+WFSH	OK +WFSH

16.21 Wavecom General Indicator +WIND

16.21.1 Description :

This unsolicited result gives general status indications.

16.21.2 Syntax :

Response syntax : +WIND: <event>

Example Result
+WIND:8 *Note : General indication that AT commands are ready to be accepted*

16.21.3 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

16.22 Call Originated +WORG

16.22.1 Description :

This unsolicited command indicates that an attempt to establish a voice call has occurred.

16.22.2 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 prepended numbers or other call options such as +CLIR.

16.23 Call Privacy indication +WPRV

16.23.1 Description :

This unsolicited command confirms that the call privacy level has changed during a call.

Syntax :
Response syntax : +WPRV: <prv>

Command	Possible responses
AT+WPRV=1	OK +WPRV: 1

<prv>
0: Indicates normal privacy
1: Indicates enhanced privacy

16.24 Roaming indication +WROM

16.24.1 Description :

This unsolicited command indicated roaming status has changed.

Syntax :
Response syntax : +WROM: <roam>

Command	Possible responses
	+WROM:1

<roam>
0: Home.
1: Roam Icon ON (affiliated network)
2: Roam Icon Blink (foreign network)

16.25 Current NAM Change +WNAM

16.25.1 Description :

This unsolicited command indicated the current NAM has changed.

Syntax :
Response syntax : +WNAM: <nam>

Command	Possible responses
	+WNAM:2

<nam>
1: NAM 1
2: NAM 2
3: NAM 3
4: NAM 4

16.26 Wavecom Voice Mail Indicator +WVMI

16.26.1 Description :

This unsolicited indication gives the status of the Voicemail Inbox.

16.26.2 Syntax :

Response syntax : +WVMI: <LineId>,<Num>

Example Result
+WVMI:1,1 *Note : 1 Message waiting on Line 1*

16.26.3 Defined values :

<LineId>
1: Line 1
<Num>
The number of messages waiting in the inbox.
0: No message waiting.
1: One message is waiting
3: Three messages are waiting

17 Appendices

17.1 MS error result code : +CME ERROR: <error>

<error>	Meaning	Resulting from the following commands
3	Operation not allowed	All GSM 07.07 commands (+CME ERROR: 3)
4	Operation not supported	All GSM 07.07 commands (+CME ERROR: 4)
5	PH-SIM PIN required (SIM lock)	All GSM 07.07 commands (+CME ERROR: 5)
10-23	Reserved	
24	Text string too long	+CPBW, +CPIN, +CPIN2, +CLCK, +CPWD
26	Dial string too long	+CPBW, ATD, +CCFC
30	No network service	+VTS, +COPS=?, +CLCK, +CCFC, +CCWA, +CUSD
32	Reserved	
40	Network personalization PIN required (Network lock)	All GSM 07.07 commands (+CME ERROR: 40)
41	Software resource not available	+WPRV, +CICB, +WFSH, +CCFC, +WNAM, +COPS, +WRMP
42	Invalid parameter	All commands
43	Non-Volatile Memory failure	All commands
44	Invalid WPIN code or WPIN required	All commands except ATD
45	Invalid WSPC provisioning code	+WSPC, +WMDN, +WIMI, +WSID, +WAOC, +WSCI, +WBGP, +WBGS, +WPDS, +WCMT

17.2 Message service failure result code: +CMS ERROR : <er>

<er> is defined as below :

<er>	Meaning	Resulting from the following commands
1 to 127	Reserved	
301	Reserved	
302	Operation not allowed	All SMS commands (+CMSS, +CMGL, +CPMS…
303	Reserved	
304	Invalid PDU mode parameter	+CMGS, +CMGW
305	Invalid text mode parameter	+CMGS, +CMGW, +CMSS
310-318	Reserved	
321	Invalid memory index	+CMGR, +CMSS, +CMGD
322	Reserved	
330	Reserved	
340	No +CNMA acknowledgement expected	+CNMA
341	Non Volatile Memory failure	All SMS commands

17.3 Specific error result codes

<error>	Meaning	Resulting from the following commands
500	unknown error.	All commands
512	Reserved	
513	Lower layer failure (for SMS)	+CMGS, +CMSS (+CMS ERROR: 513)
514-518	Reserved	
519	Reset the product to activate or change a new echo cancellation algo.	+ECHO, +VIP

17.4 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

17.5 Final result codes

Verbose result code	Numeric (V0 set)	Description
+CME ERROR: <err>	As verbose	Error from GSM 07.05 commands
+CMS ERROR: <err>	As verbose	Error from SMS commands (07.07)
BUSY	7	Busy signal detected
ERROR	4	Command not accepted
NO ANSWER	8	Connection completion timeout
NO CARRIER	3	Connection terminated
OK	0	Acknowledges correct execution of a command line
RING	2	Incoming call signal from network

17.6 Intermediate result codes

Verbose result code	Numeric (V0 set)	Description
+COLP :<number>,<type>	as verbose	Outgoing Call Presentation
+CR : <type>	as verbose	Outgoing Call report control
+ILRR: <rate>	as verbose	Local TA-TE data rate
CONNECT 300	10	Data connection at 300 bauds
CONNECT 1200	11	Data connection at 1200 bauds
CONNECT 1200/75	12	Data connection at 1200/75 bauds
CONNECT 2400	13	Data connection at 2400 bauds
CONNECT 4800	14	Data connection at 4800 bauds
CONNECT 9600	15	Data connection at 9600 bauds
CONNECT 14400	16	Data connection at 14400 bauds
+CSSI: <code1>[,<index>]	As verbose	Supplementary service notification during a call setup

17.7 Parameters Storage

Command	AT&W	AT&F	Default Values
+CSCS	x	X	
+CMEE	X	X	
+CRSL		X	1
%D		X	0
ATS0	X	X	0 no auto answer
+CICB	X	X	
+CSNS	X	X	
+VGR	X	X	
+VGT	X	X	
+SPEAKER	X	X	
+ECHO		X	
+SIDET	X	X	
+COPS	X	X	
+CREG	X	X	
+CMGF	X	X	
+CSDH			
+WUSS			
+CLIP	X	X	
+CBST	X	X	
+CRC	X	X	
%C	X	X	
+DS	X	X	
+DR	X	X	
+FCQ	X	X	
+FCR	X	X	

+IPR	X		
+ICF	X		
+IFC	X		
E	X		
&C	X		
&D	X		

17.8 Possible codes for SMS-STATUS-REPORT as reported by +CDS and +CMGR

<st> is defined as below :

<st>	Meaning
Network Problems (IS-41D)	
0	Address vacant
1	Address translation failure
2	Netowrk resource shortage
3	Network failure
4	Invalid Teleservice id
5	Other Network Problem
Terminal Problems (IS-41D)	
32	No page response
33	Destination busy
34	No acknowledgment
35	Destination resource shortage
36	SMS delivery postponed
37	Destination out of resources
38	Destination no longer at this address
39	Other terminal problem
Radio Interface Problems (IS-41D)	
64	Radio IF resource shortage
65	Radio IF incompatible
66	Other Radio IF problem
General problems (IS-41D)	
96	Unexpected parameter size
97	SMS Origination denied
98	SMS Termination denied
99	Supplementary service not supported
100	SMS not supported
101	Reserved
102	Missing expected parameters
103	Missing mandatory parameters
104	Unrecognized parameter value
105	Unexpected parameter value
106	User data size error
107	Other General problems
General codes (Not defined in IS-41D)	
32768	SMS OK. Message successfully delivered to base station
32769	Waiting for transport layer acknowledgment
32770	Out of resources (e.g. out of memory buffer)
32771	Message to large to be sent over access chanel
32772	Message to large to be sent over data traffic chanel
32773	Network not ready
32774	Phone not ready
32775	Cannot send message in analog mode
32776	Cannot send broadcast message
32777	Invalid transaction id

18 APPENDIX A (informative)

This chapter gives illustrative examples of the general AT commands used for a communication.

18.1 Example 1: When the MS has already been powered on.

AT+CMEE=1 Enable the report mobile equipment errors
OK
AT+CPAS Get the MS Status
+CPAS: 0 MS is ready to receive commands
OK

18.1.1 Examples where a voice call is originated.

Example 3 : When the MS is powered on.
AT+CMEE=1 Enable the reporting of mobile equipment errors
OK
ATD18001234567; Make a voice call
OK ATD Command is being processed
+WORG:18001234567 Indication of call origination sent to the Base Station with dialing string 18001234567
+WCNT:3 Call Connected with CDMA Service Option 3, Traffic channel established.

Conversation…
ATH Release the call
OK ATH command is being processed
+WEND:10 Call Ended, end reason 10 (Normal Release).

18.1.2 Example with incoming calls

When the MS is powered on.
AT+CMEE=1 Enable the report mobile equipment errors
OK
AT+WIND=63 Ask to display the general indications.
OK
AT+CLIP=1 Enable the calling line identification presentation.
OK
AT+CNUM Query own number.
+CNUM: “Phone”,”8585551212”,129
OK

Call the number from another MS.
+RING Incoming Call.
+CLIP: "8585551212",129 Identification of the remote party.
ATA Answer the call.
OK ATA command is being processed.
+WANS Call has been answered.
+WCNT:3 Call Connected with CDMA Service Option 3, Traffic channel established.
…Conversation…
+WEND:6 Call Ended, end reason 6 (Normal Release), the call has been released by the remote party.

18.1.3 Example of a call waiting situation

When the MS is powered on.

AT+CMEE=1	Enable the report mobile equipment errors
OK	
ATD8585551212;	Make a voice call
OK	ATD Command is being processed
+WORG:8585551212	Indication of call origination sent to the Base Station with dialing string 18001234567
+WCNT:3	Call Connected with CDMA Service Option 3, Traffic channel established.
Conversation…	Conversation with first call.
+CCWA:"8582701234",129	Indication of another incoming call. You will also hear a beep sound in the ear piece.
AT+WFSH	Send a flash to the Base Station (toggle to the second call).
OK	AT command is being executed.
+WFSH	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.
Conversation…	Conversation with second call.
AT+WFSH	Send a flash to the Base Station (toggle to the second call).
OK	AT command is being executed.
+WFSH	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.
Conversation…	Conversation with first call.
.	
.	
repeat as necessary	
.	
.	
ATH	Release the all calls.
OK	ATH command is being executed.
+WEND:10	Calls End

18.2 Examples about short messages

18.2.1 Example 1: Receive a short message

AT+CNMI=2,1,1,1,0	SMS-DELIVERs are stored in NV, SMS-STATUS-REPORTs are routed to TE
OK	
AT+CMGF=1	Set text mode to send a Short Message
OK	
+CMTI:"MT",0	New message received. Message store in "MT" memory at index 0.
AT+CNMI=2,2,1,1,0	SMS-DELIVERs are routed to TE
+CMT:"8585551212","02/05/17,10 :43 :07",129,17	
Test SMS Message	Received message.
AT+CNMA	Acknowledge the received message to the network.
OK	

18.2.2 Example 2: Send a short message

AT+CNMI=2,1,1,1,0	SMS-DELIVERs are stored in NV, SMS-STATUS-REPORTs are routed to TE
OK	
AT+CMGF=1	Set text mode to send a Short Message

OK

AT+CMGS=”8585551212”	Send a SMS-SUBMIT to mobile phone Product sends a 4 characters sequence: 0x0D 0x0A 0x3E 0x20
This is the first text line	Edit first line and press carriage return (<CR>, 0x0D)
This is the last text line	Edit last line and send message by pressing <ctrl-Z> (0x1A)
+CMGS: 1	Success: message reference 1 is returned from the SMS Service Center
+CDS:2,1,"8582431439",129,"02/05/17,10 :14 :17","02/05/17,10 :14 :27",32768	Success: report of successful message delivery received. Time of sending of the message and receiving of the acknowledgment from the SMS Service Center is reported, along with the status code.

18.2.3 Example 3: Read short messages

AT+CMGF=1	Set text mode to read Short Messages
OK	
AT+CPMS=”MT”	Set Mobile Terminated as preferred memory storage
OK	
+CPMS:2,10,1,10	Currently there are 2 MT messages and 1 MO messages stored.
AT+CMGL=”ALL”	List all stored messages
OK	
+CMGL:0,"REC READ","8585551111", Test message #1	
+CMGL:1,"REC UNREAD","8585552222", Test message #2	
+CMGL:0,"STO UNSENT","8585551212", Test message to be sent.	
AT+CMGR=1	Read the first message in currently selected memory
OK	storage (previously set by AT+CPMS).
+CMGR:"REC UNREAD","8585552222","02/05/15,15 :54 :04", Test message #2	

19 APPENDIX (standard): TIA/EIA/IS-707.3

This appendix describes the AT commands specified in the TIA/EIA/IS-707.3 and implemented in WISMOQ CDMA module. Please refer to the attached document for the detail.