

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Olimex LTD](#)
[MOD-USB3G](#)

For any questions, you can email us directly:

sales@integrated-circuit.com



AT Command Set in Gobi™

Application Note

80-VG756-1 G

February 4, 2010

Submit technical questions at:
<https://support.cdmatech.com>

Qualcomm Confidential and Proprietary

Restricted Distribution. Not to be distributed to anyone who is not an employee of either Qualcomm or a subsidiary of Qualcomm without the express approval of Qualcomm's Configuration Management.

Not to be used, copied, reproduced in whole or in part, nor its contents revealed in any manner to others without the express written permission of Qualcomm.

Qualcomm reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed for any damages arising directly or indirectly by their use or application. The information provided in this document is provided on an "as is" basis.

This document contains Qualcomm confidential and proprietary information and must be shredded when discarded.

Qualcomm is a registered trademark of Qualcomm Incorporated in the United States and may be registered in other countries. Other product and brand names may be trademarks or registered trademarks of their respective owners. CDMA2000 is a registered certification mark of the Telecommunications Industry Association, used under license. ARM is a registered trademark of ARM Limited. QDSP is a registered trademark of Qualcomm Incorporated in the United States and other countries.

This technical data may be subject to U.S. and international export, re-export, or transfer ("export") laws. Diversion contrary to U.S. and international law is strictly prohibited.

Qualcomm Incorporated
5775 Morehouse Drive
San Diego, CA 92121-1714
U.S.A.

Copyright © 2007-2010 Qualcomm Incorporated.
All rights reserved.

Released - Internal Use Only

Released - Internal Use Only

Contents

1 Introduction.....	5
1.1 Purpose	5
1.2 Scope	5
1.3 Conventions.....	5
1.4 Revision history.....	6
1.5 References	6
1.6 Technical assistance	7
1.7 Acronyms	7
2 AT Command Support (WCDMA)	8
2.1 AT command set	8
2.2 DTE-TA/DCE interface commands	9
2.2.1 General commands	10
2.2.1.1 Basic commands	10
2.2.1.2 WCDMA general commands.....	11
2.2.1.3 ITU-T V.25ter generic DCE control commands.....	12
2.2.2 Call control commands.....	15
2.2.2.1 WCDMA call control commands	15
2.2.2.2 ITU-T V.25ter call control commands.....	19
2.2.2.3 ITU-T V.25ter data compression commands.....	20
2.2.3 Network service-related commands	20
2.2.4 Mobile equipment commands.....	23
2.2.5 WCDMA packet domain commands.....	25
2.2.5.1 WCDMA-specific packet domain commands	25
2.2.6 SMS commands.....	32
2.2.7 Proprietary AT commands.....	34
3 IS-707 AT Commands (CDMA).....	37
3.1 AT command set implementation for Gobi (CDMA)	37
3.2 Proprietary AT command set (CDMA)	51
3.3 In-band control AT command	57
3.4 Cellular identification AT command.....	57
3.5 Packet data AT commands (CDMA)	59
4 Carrier-Proprietary AT Commands	64
4.1 AT commands	64
4.1.1 AT&T	64
4.1.2 Vodafone	65

Contents

4.1.3 T-Mobile	65
4.1.4 Verizon Wireless	66
4.1.5 Sprint PCS	66
5 Gobi-Specific Manufacturing AT Command Set	75
5.1 AT commands	75

Released - Internal Use Only

Tables

Table 1-1	Revision history	6
Table 1-2	Reference documents and standards	6
Table 2-1	Column headings	8
Table 2-2	ITU-T V.25ter DTE-DCE interface command	9
Table 2-3	Basic commands	10
Table 2-4	WCDMA general commands	11
Table 2-5	ITU-T V.25ter generic DCE control commands	12
Table 2-6	WCDMA call control commands	15
Table 2-7	ITU-T V.25ter call control commands	19
Table 2-8	ITU-T V.25ter data compression commands	20
Table 2-9	Network service-related commands	20
Table 2-10	Mobile equipment commands	23
Table 2-11	WCDMA-specific packet domain commands	25
Table 2-12	SMS text and PDU mode commands	32
Table 2-13	Vendor-specific commands	34
Table 3-1	Column descriptions	37
Table 3-2	IS-707.3 Table 7.1.1-1. Basic AT Parameters	37
Table 3-3	IS-707.3 Table 7.1.2-1. Basic S-Registers	41
Table 3-4	IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 1 of 5)	42
Table 3-5	IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 2 of 5)	43
Table 3-6	IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 3 of 5)	44
Table 3-7	IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 4 of 5)	46
Table 3-8	IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 5 of 5)	47
Table 3-9	IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 1 of 4)	48
Table 3-10	IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 2 of 4)	49
Table 3-11	IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 3 of 4)	50
Table 3-12	IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 4 of 4)	50
Table 3-13	IS-707.3 Table 7.4.1-4. Cellular AT Commands for Packet Data Services	51
Table 3-14	Vendor-specific AT commands	51
Table 3-15	In-band control AT command	57
Table 3-16	Cellular identification AT command	57
Table 3-17	AT commands for packet data services	59
Table 4-1	AT&T AT commands	64
Table 4-2	T-Mobile AT commands	65
Table 4-3	Verizon Wireless AT commands	66
Table 4-4	Sprint PCS AT commands	66
Table 4-5	Sprint OMA-DM AT commands (Gobi2000 only)	74
Table 5-1	AT commands	75

1 Introduction

1.1 Purpose

This document specifies the AT command set for Gobi™. It groups AT commands into several categories. Each category identifies all AT commands applicable to that category, specifies supported targets, and describes the applicable mode.

NOTE Information in this document is subject to change and does not represent a commitment on the part of Qualcomm.

1.2 Scope

This document provides a description of the AT commands that will be supported in Gobi as required by different carriers. This document is intended for those who are interested in using the AT commands.

1.3 Conventions

Function declarations, function names, type declarations, and code samples appear in a different font, e.g., #include.

Shading indicates content that has been added or changed in this revision of the document.

1.4 Revision history

The revision history for this document is shown in Table 1-1.

Table 1-1 Revision history

Version	Date	Description
A	Sep 2007	Initial release
B	Jan 2008	<ul style="list-style-type: none"> Modified Chapters 1, 2, and 3 to add missing AT commands Added Chapter 4 – Carrier-proprietary AT commands Added Chapter 5 – Gobi-specific manufacturing AT commands set
C	Mar 2008	Modified Chapters 1, 3, and 4 to append Gobi-specific AT commands
D	Aug 2008	Modified Chapter 2.2.4 and 5 to append CDMA Sprint carrier commands
E	Feb 2009	AT commands added for Gobi1000™ and Gobi2000™. Throughout this document, UNDP has been changed to Gobi; UMTS has been changed to WCDMA.
F	Sep 2009	Added Sprint OMA-DM AT commands for Gobi2000; added one DOCOMO-specific AT command for Gobi2000; made minor description changes for AT\$QCBOTVER and AT\$QCALLUP
G	Feb 2010	Updated Table 2-13 and Table 5-1

1.5 References

Reference documents, which may include QUALCOMM®, standards, and resource documents, are listed in Table 1-2. Reference documents that are no longer applicable are deleted from this table; therefore, reference numbers may not be sequential.

Table 1-2 Reference documents and standards

Ref.	Document	
Qualcomm		
Q1	Application Note: Software Glossary for Customers	CL93-V3077-1
Standards		
S1	AT command set for 3GPP User Equipment (UE)	3GPP TS 27.007
S2	Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)	3GPP TS 27.005
S3	Serial Asynchronous Automatic Dialing and Control	ITU-T V.25ter
S4	Data Service Options for Spread Spectrum Systems	TIA/EIA/IS-707-A-2
S5	Data Transmission Systems and Equipment – Serial Asynchronous Automatic Dialing and Control – Extended Command Syntax	TIA/EIA-615

1.6 Technical assistance

For assistance or clarification on information in this guide, submit a case to Qualcomm CDMA Technologies at <https://support.cdmatech.com/>.

If you do not have access to the CDMA Tech Support Service website, register for access or send email to support.cdmatech@qualcomm.com.

1.7 Acronyms

For definitions of terms and abbreviations, refer to [Q1].

2 AT Command Support (WCDMA)

The following categories of AT commands shall be supported for Gobi:

- DTE-TA interface
- General
- Call control
- Network service-related
- Mobile equipment
- WCDMA packet domain
- SMS

2.1 AT command set

Specific AT commands for each category of supported commands are defined in the remaining sections of this chapter. Each section contains tables listing all AT commands applicable to that category of command. The tables contain several column headings defining the AT command. A description of these column headings is given in Table 2-1.

Table 2-1 Column headings

Heading	Description
Command	Defines the AT command name in its ASCII character string format
Description	Short explanation of the command and its values
3GPP TS 27.007 or 3G TS 27.005 or ITU-T T.31 requirement	ETSI requirement column specifies whether the AT command set specifications classify the command as: <ul style="list-style-type: none"> ■ Mandatory ■ Optional ■ Not applicable (N/A)
Explanation	Provides insight into the reasoning behind the implementation
Supported targets	Gobi1000 and Gobi2000
Applicable mode	Specifies the modes in which the AT command works: <ul style="list-style-type: none"> ■ WCDMA and GSM ■ GSM only ■ WCDMA only ■ Not applicable (N/A)

2.2 DTE-TA/DCE interface commands

For Gobi, support the DTE-TA/DCE interface commands as indicated in Table 2-2.

Table 2-2 ITU-T V.25ter DTE-DCE interface command

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
S3	Command line termination character; values per specifications	Mandatory		All	WCDMA and GSM
S4	Response formatting character; values per specifications	Mandatory		All	WCDMA and GSM
S5	Command line editing character; values per specifications	Mandatory		All	WCDMA and GSM
E<value>	Command echo; values per specifications	Mandatory		All	WCDMA and GSM
Q<value>	Result code suppression; values per specifications	Mandatory		All	WCDMA and GSM
V<value>	DCE response format; values per specifications	Mandatory		All	WCDMA and GSM
X<value>	Result code selection and call progress monitoring control; values per specifications	Mandatory	Currently, data rates display supported only for CS data	All	WCDMA and GSM
&C<value>	Circuit 109 DCE RLSD (DCD) behavior; values per specifications	Mandatory	&C2 is a Qualcomm implementation	All	WCDMA and GSM
&D<value>	Circuit 108 DTE DTR behavior; values per specifications	Mandatory		All	WCDMA and GSM
+IPR=<rate>	Fixed DTE rate; this numeric extended-format parameter specifies the data rate at which the DCE will accept commands; auto baud rate detection is not supported <rate> – 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400	Optional	Default DTE rate fixed at 115200 bps; default DTE rate can be changed by \$QCTER command	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+ICF= <format>, <parity>	DTE-DCE character framing; this extended-format compound parameter is used to determine the local serial port start-stop (asynchronous) character framing that the DCE shall use while accepting DTE commands and while transmitting information text and result codes to the DTE <ul style="list-style-type: none"> ■ <format> – 3 8 data 1 stop ■ <parity> – Values per specifications 	Optional	Qualcomm R _m interface fixed at 8 data bits, no parity, 1 stop bit; error returned for any other parameters	All	WCDMA and GSM
+IFC= <DCE by DTE>, <DTE by DCE>	DTE-DCE local flow control; this extended-format compound parameter is used to control the operation of local flow control between the DTE and DCE; values per specifications	Optional	Hardware and software flow control supported for asynchronous service	All	WCDMA and GSM

2.2.1 General commands

2.2.1.1 Basic commands

Basic commands are indicated in Table 2-3.

Table 2-3 Basic commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
AT	Command line prefix	N/A		All	N/A
at	Command line prefix	N/A		All	N/A
A/	Reexecution of previously executed AT command	N/A		All	N/A
a/	Reexecution of previously executed AT command	N/A		All	N/A

2.2.1.2 WCDMA general commands

For Gobi, support the generic WCDMA commands as indicated in Table 2-4.

Table 2-4 WCDMA general commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGMI	Requests manufacturer identification; command processed regardless of SIM state	Optional	Gobi1000: Returns Qualcomm Incorporated Gobi2000: Default returns Qualcomm Incorporated The return value is customizable and varies with the NV#0x5078 setting inside the module.	All	WCDMA and GSM
+CGMM	Requests model identification; command processed regardless of SIM state	Optional	Gobi1000: Returns 88 (model ID) Gobi2000: Default returns Qualcomm HS-USB The return value is customizable and varies with the NV#0x5079 setting inside the module.	All	WCDMA and GSM
+CGMR	Requests firmware revision identification; command processed regardless of SIM state	Optional		All	WCDMA and GSM
+CGSN	Request product serial number identification; command processed regardless of SIM state	Optional	Returns IMEI	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CSCS=<chset>	Selects TE character set; values per specifications <chset> – IRA, GSM, UCS2	Mandatory when other commands using this setting are implemented	UCS2 – 0x0000 to 0x00FF supported	All	WCDMA and GSM
+CIMI	Requests international mobile subscriber identity	Optional		All	WCDMA and GSM

2.2.1.3 ITU-T V.25ter generic DCE control commands

For Gobi, support the generic DCE/TA control commands as indicated in Table 2-5.

Table 2-5 ITU-T V.25ter generic DCE control commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
Z<value>	Resets to default configuration; values per specifications	Mandatory	Resets configuration; does not change DCE baud rate or PDP context profiles	All	WCDMA and GSM
&F<value>	Sets to factory-defined configuration (effect is implementation-dependent); values per specifications	Mandatory	Same behavior as Z, except it changes baud rate to default value	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
I	Requests identification information; no value accepted	Optional	<p>Gobi1000: Returns manufacturer, model number, software revision, IMEI and +GCAP: +CGSM,+DS commands</p> <p>The output would be similar to:</p> <ul style="list-style-type: none"> ■ ATI ■ Manufacturer: Qualcomm Incorporated ■ Model: 88 ■ Revision: D1020-xxxxx 1 [Apr 14 2008 18:00:00] ■ IMEI: 355890020000829 ■ +GCAP: +CGSM,+DS <p>For Gobi2000: Returns manufacturer, model number, firmware version number, Software Version Number (SVN), IMEI and +GCAP: +CGSM, +DS</p> <p>The output would be similar to:</p> <ul style="list-style-type: none"> ■ ATI ■ Manufacturer: Qualcomm HS-USB ■ Model: 12 ■ Revision: D1025-xxxxxxx 1 [Dec 1 2008 09:18:40] ■ SVN: 01 ■ IMEI: 351602000598605 ■ +GCAP: +CGSM, +DS 	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+GMI	Requests manufacturer identification	Mandatory	Gobi1000: ■ Returns Qualcomm Incorporated Gobi2000: ■ Default returns Qualcomm Incorporated The return value is customizable and varies with the NV#0x5078 setting inside the module.	All	WCDMA and GSM
+GMM	Requests model identification	Mandatory	Gobi1000: ■ Returns 88 (model ID) Gobi2000: ■ Default returns Qualcomm HS-USB The return value is customizable and varies with the NV#0x5079 setting inside the module.	All	WCDMA and GSM
+GMR	Requests firmware revision identification	Mandatory	Returns firmware revision and timestamp, e.g., D1020-xxxxxx 1 [Apr 14 2008 18:00:00]	All	WCDMA and GSM
+GSN	Request product serial number identification	Optional	Returns IMEI	All	WCDMA and GSM
+GCAP	Requests complete capabilities list	Mandatory	In GSM mode, unit outputs: ■ +GCAP ■ +CGSM ■ +FCLASS ■ +DS In WCDMA mode, unit outputs: ■ +GCAP ■ +CGSM ■ +ES	All	WCDMA and GSM
+WS46=[<n>]	Select wireless network <n> – 12 (3GPP systems)	Optional		All	WCDMA and GSM

2.2.2 Call control commands

2.2.2.1 WCDMA call control commands

Support the call control commands as indicated in Table 2-6.

Table 2-6 WCDMA call control commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CSTA= <type>	Selects type of address; values per specifications <type> ■ 129 ■ 145	Mandatory when other than default value allowed		All	WCDMA and GSM
+CMOD	Call mode <mode> – 0	Mandatory when alternating mode calls supported		All	WCDMA and GSM
+CHUP	Hang-up voice call	Mandatory		All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CBST= <speed>, <name>, <ce>	<p>Selects the circuit-switched bearer service <name> with data rate <speed> and connection element <ce> when data calls are originated; parameter values supported are:</p> <ul style="list-style-type: none"> ■ <speed> (in bps) <ul style="list-style-type: none"> □ 0 – Autobaud □ 7 – 9600 (V.32) □ 12 – 9600 (V.34) □ 14 – 14400 (V.34) □ 16 – 28800 (V.34) □ 17 – 33600 (V.34) □ 39 – 9600 (V.120) □ 43 – 14400 (V.120) □ 48 – 28800 (V.120) □ 51 – 48000 (V.120) □ 71 – 9600 (V.110) □ 75 – 14400 (V.110) □ 80 – 28800 (V.110) □ 81 – 38400 (V.110) □ 83 – 56000 (X.31 flag stuffing, UDI/RDI) 84 – 64000 bps (X.31 flag stuffing, UDI) □ 116 – 64000 bps □ 134 – 64000 bps (multimedia) ■ <name> <ul style="list-style-type: none"> □ 0 – Data circuit asynchronous (UDI or 3.1 kHz modem) □ 1 – Data circuit synchronous (UDI or 3.1 kHz modem) □ 4 – Data circuit asynchronous (RDI) ■ <ce> <ul style="list-style-type: none"> □ 0 – Data transparent □ 1 – Data nontransparent 	Mandatory		All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CRLP= <iws>, <mws>, <T1>, <N2>	<p>Alters the RLP parameters used when nontransparent circuit-switched data calls are originated</p> <p>For Version 0 and 1, parameter values supported are:</p> <ul style="list-style-type: none"> ■ <iws> – 0 to 61 frames ■ <mws> – 0 to 61 frames ■ <T1> – 38 to 255 x 10 ms ■ <N2> – 1 to 255 retransmits <p>For Version 2, parameter values supported are:</p> <ul style="list-style-type: none"> ■ <iws> – 0 to 488 frames ■ <mws> – 0 to 488 frames ■ <T1> – 42 to 255 x 10 ms ■ <N2> – 1 to 255 retransmits 	Mandatory	RLP Versions 0, 1, and 2 are supported	All	WCDMA and GSM
+CR= <mode>	Service reporting control; values per specifications	Mandatory		All	WCDMA and GSM
+CEER	Extended error report	Optional	Report the reason for the last call failure to setup or release; both CS and PS domain call types are reported	All	
+CRC= <mode>	Cellular result codes; values per specifications	Mandatory		All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CHSN	<p>HSCSD nontransparent call configuration; parameter values supported are:</p> <ul style="list-style-type: none"> ■ <wAiur> (in bps) <ul style="list-style-type: none"> □ 0 – TA shall calculate a proper value from currently selected fixed network user rate (<speed> subparameter from +CBST command) □ 2 – 14400 □ 4 – 28800 □ 7 – 57600 ■ <wRx> <ul style="list-style-type: none"> □ 0 – TA shall calculate a proper value from currently selected <wAiur> and <codings> ■ <topRx> <ul style="list-style-type: none"> □ 0 – TA shall calculate a proper value from currently selected <wAiur> and <codings> ■ <codings> <ul style="list-style-type: none"> □ 0 – All supported codings are accepted 	Mandatory		All	WCDMA and GSM
+CV120	V.120 rate adaptation protocol	Mandatory when V.120 interworking supported by ME		All	

2.2.2.2 ITU-T V.25ter call control commands

For Gobi, support the ITU-T V.25ter call control commands as indicated in Table 2-7.

Table 2-7 ITU-T V.25ter call control commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
D <dial string>	Dial circuit- switched data call; supported dial modifiers are: <ul style="list-style-type: none"> ■ > – Direct dial from phonebook ■ I/I – Calling line identification restriction ■ G/g – Closed user group Values per specifications; command is abortable	Mandatory		All	WCDMA and GSM
T	Selects tone dialing	Mandatory (ignored in GSM/WCDMA)		All	WCDMA and GSM
P	Selects pulse dialing	Mandatory (ignored in GSM/WCDMA)		All	WCDMA and GSM
H<value>	Hook control command to terminate call in progress; does not terminate voice calls; values per specifications	Mandatory		All	WCDMA and GSM
O<value>	Returns to Online Data state from Online Command state; values per specifications	Mandatory		All	WCDMA and GSM
S6=<value>	Pauses before blind dialing; values per specifications	Mandatory (ignored in GSM/WCDMA)		All	WCDMA and GSM
S7=<value>	Number of seconds to establish end-to- end data connection; values per specifications	Mandatory	Asynchronous data command; command accepted; no action taken	All	WCDMA and GSM
S8=<value>	Number of seconds to pause when “,” is encountered in dial string; values per specifications	Mandatory	Asynchronous data command; command accepted; no action taken	All	WCDMA and GSM

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
S10= <value>	Number of tenths of a second from carrier loss to disconnect; values per specifications	Mandatory	Asynchronous data command; command accepted; no action taken	All	WCDMA and GSM

2.2.2.3 ITU-T V.25ter data compression commands

For Gobi, support the data compression commands as indicated in Table 2-8.

Table 2-8 ITU-T V.25ter data compression commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+DR= <value>	Reports use of V.42bis using intermediate result code before going to Online Data state after call answer or origination; values per specifications	Mandatory		All	WCDMA and GSM
+DS= <dir>, <neg>, <P1>, <P2>	Controls V.42bis data compression; values per specifications; parameter values supported are: ■ <dir> – 0 to 3 ■ <neg> – 0 ■ <P1> – 512 to 2048 ■ <P2> – 6	Mandatory		All	WCDMA and GSM

2.2.3 Network service-related commands

Support the network service-related commands as indicated in Table 2-9. These commands were not included in the call control section of this document. Command support shall be as specified in [S1].

Table 2-9 Network service-related commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CNUM	Subscriber number	Optional		All	WCDMA and GSM
+CREG=[<n>]	Network registration; parameter values supported are: ■ <n> – 0, 1, 2	Optional		All	

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CLCK= <fac>, <mode>, <passwd>, <class>	Locks, unlocks, or interrogates an ME or a network facility; values per specifications; command is abortable; parameter values supported are: ■ <fac> □ AB □ AC □ AG □ AI □ AO □ IR □ OI □ OX □ SC □ FD □ PN □ PU □ PP □ PC □ PF ■ <mode> – 0 to 2 ■ <class> – 1 to 255	Mandatory		All	WCDMA and GSM
+CPWD= <fac>, <oldpwd>, <newpwd>	Sets new password for a facility lock function; values per specifications; parameter values supported are: ■ <fac> □ AB □ AC □ AG □ AI □ AO □ IR □ OI □ OX □ P2 □ SC	Optional		All	WCDMA and GSM
+COLP=[<n>]	Connected line identification presentation; values per specifications <n> – 0, 1	Optional		All	WCDMA and GSM
+CDIP=[<n>]	Called line identification presentation; values per specifications <n> – 0, 1	Optional		All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CCUG= <n>, <index>, <info>	Controls closed user group supplementary service; values per specifications	Optional		All	WCDMA and GSM
+CUSD= <n>, <str>, <dcs>	Controls unstructured supplementary service data; values per specifications	Optional		All	WCDMA and GSM
+CSSN= [<n>[,<m>]]	Supplementary service notifications; values per specifications	Optional		All	WCDMA and GSM
+CPOL= [<index> [, <format> [, <oper> [, <GSM_AcT>, <GSM_Compact_ AcT>, <UTRAN_AcT>]]]	Preferred operator list; parameter values supported are: ■ <index> – 1 to 85 ■ <format> – 0, 1, 2 ■ <GSM_AcT> – 0/1 ■ <GSM_ Compact_AcT> – 0/1 ■ <UTRAN_AcT> – 0/1	Optional		All	WCDMA and GSM
+CHLD=[<n>]	Call-related supplementary services <n> – 0, 1, 1x, 2, 2x, 3, 4	Optional		All	WCDMA and GSM
+COPS= [<mode> [, <format> [, <oper>]]]	Operator selection; parameter values supported are: ■ <mode> – 0, 1, 3, 4 ■ <format> – 2	Optional		All	WCDMA and GSM
+CAOC= [<mode>]	Advice of charge; values per specifications	Optional		All	WCDMA and GSM
+CLIP=[<n>]	Calling line identification presentation <n> – 0, 1	Optional		All	WCDMA and GSM
+CLCC	List current calls	Optional		All	WCDMA and GSM
+CPLS= <list>	Selection of preferred PLMN list <list> – 0, 1, 2	Optional		All	WCDMA and GSM

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CTFR =<number> [,<type> [,<subaddr> [,<satype>]]]	Call deflection supplementary service; values per specifications	Optional		All	WCDMA and GSM
+COPN	Reads operator names	Optional			WCDMA and GSM

2.2.4 Mobile equipment commands

Support the mobile equipment control and status commands as indicated in Table 2-10.

Table 2-10 Mobile equipment commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CPAS	Reports phone activity status; values per specifications; only states ready, ringing, and call in progress are reported; command processed when ME in Limited Service state	Mandatory		All	WCDMA and GSM
+CFUN=[<fun> [,<rst>]]	Sets phone functionality; values per specifications; parameter values supported are: ■ <fun> – 0, 1, 4 (per specification) □ 5 (factory test mode) □ 6 (reset) □ 7 (offline) ■ <rst> – 0,1 Limited support in CDMA; can only be used to set modes	Optional		All	Gobi1000: ■ CDMA (Sprint carrier only) and WCDMA (no GSM) Gobi2000: ■ CDMA and WCDMA
+CPIN=<pin>, <newpin>	Enters PIN; values per specifications; only SIM PIN/PUK and PIN2/PUK2 supported; command processed when ME in Limited Service state	Mandatory		All	WCDMA and GSM
+CSQ	Reports signal quality; values per specifications	Optional	Bit error rate reporting not supported	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CPBS= <storage>, <password>	Select phonebook memory storage; values per specifications: ■ <storage> □ SM □ LD □ DC □ FD □ MC □ ME □ RC □ EN □ ON	Optional		All	WCDMA and GSM
+CPBR= <index1>, <index2>	Reads phonebook entries; values per specifications	Optional		All	WCDMA and GSM
+CPBF= <find text>	Finds phonebook entries; values per specifications	Optional		All	WCDMA and GSM
+CPBW= <index>, <number>, <type>,<text>	Writes phonebook entry; values per specifications	Optional		All	WCDMA and GSM
+CTZR= <onoff>	Time zone reporting <onoff> – 0, 1	Optional		All	WCDMA and GSM
+CSIM= <length>, <command>	Generic SIM access <length> – 10 to 520	Optional		All	WCDMA and GSM
+CRSM= <command> [,<fileid> [,<P1>,<P2>, <P3>[,<data>]]]	Restricted SIM access; values per specifications	Optional		All	WCDMA and GSM
+CACM= [,<passwd>]	Accumulated call meter; values per specifications	Optional		All	WCDMA and GSM
+CMM= [,<acmmx> [,<passwd>]]	Accumulated call meter maximum; values per specifications	Optional		All	WCDMA and GSM
+CPUC= <currency>, <ppu> [,<passwd>]	Price per unit and currency table; values per specifications	Optional		All	WCDMA and GSM
+CLAC	Lists all available AT commands	Optional		All	WCDMA and GSM
+CTZU=<onoff>	Automatic time zone update <onoff> – 0, 1	Optional		All	WCDMA and GSM

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CTZR=<onoff>	Time zone reporting <onoff> – 0, 1	Optional		All	WCDMA and GSM
+CMEE= <n>	Reports mobile equipment error; values per specifications	Mandatory		All	WCDMA and GSM

2.2.5 WCDMA packet domain commands

2.2.5.1 WCDMA-specific packet domain commands

For Gobi, support the packet domain commands specific to WCDMA as indicated in Table 2-11.

Table 2-11 WCDMA-specific packet domain commands

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGDCONT= <cid>, <PDP_Type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>	Sets PDP context parameter values for a PDP context identified by connection identifier; values per specifications; parameter values supported are: ■ <cid> – 1 to 16 ■ <PDP_type> □ IP □ PDP-IP □ PPP □ PDP-PPP ■ <d_comp> – 0, 2 ■ <h_comp> – 0, 4	Mandatory	See \$QCPDPP command for connection authentication parameters	All	WCDMA and GSM
+CGDSCONT= [<cid> ,<p_cid> [,<d_comp> [,<h_comp>]]]	Defines secondary PDP context; values per specifications; parameter values supported are: ■ <cid> – 1 to 16 ■ <p_cid> – 1 to 16 ■ <d_comp> – 0, 2 ■ <h_comp> – 0, 4	Optional		All	WCDMA and GSM

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGTFT=[<cid>, [<packet filter identifier>, <evaluation precedence index> [<source address and subnet mask> [<protocol number (ipv4) / next header (ipv6)> [<destination port range> [<source port range> [<ipsec security parameter index (spi)> [<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask> [<flow label (ipv6)>]]]]]]]]]]	Traffic flow template; values per specifications; parameter values supported are: <ul style="list-style-type: none"> ■ <cid> – 1 to 16 ■ <packet filter identifier> – 1, 2 ■ <evaluation precedence index> – 0 to 255 ■ <source address and subnet mask> – 0.0.0.0.0.0.0 to 255.255.255.255.255.255.255 ■ <protocol number (ipv4)/next header (ipv6)> – 0 to 255 ■ <destination port range> – 0.0 to 65535.65535 ■ <source port range> – 0.0 to 65535.65535 ■ <ipsec security parameter index (spi)> – 0 to FFFFFFFF ■ <type of service (tos) (ipv4) and mask/traffic class (ipv6) and mask> – 0.0 to 255.255 ■ <flow label (ipv6)> – 0 to FFFFFF 	Optional		All	WCDMA and GSM
+CGQREQ=<cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>	Sets the QoS profile that is used in Activate PDP Context Request message; values per specifications; parameter values supported are: <ul style="list-style-type: none"> ■ <cid> – 1 to 16 ■ <precedence> – 1 to 3 ■ <delay> – 1 to 4 ■ <reliability> – 1 to 5 ■ <peak> – 1 to 4 ■ <mean> – 1 to 18, 31 Set values are saved across power cycles	Optional	Setting these parameters will reset +CGEQREQ and +CGEQMIN to defaults	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGQMIN= <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>	Sets minimum acceptable profile against the negotiated profile in Activate PDP Context Accept message; values per specifications; parameter values supported are: <ul style="list-style-type: none"> ■ <cid> – 1 to 16 ■ <precedence> – 1 to 3 ■ <delay> – 1 to 4 ■ <reliability> – 1 to 5 ■ <peak> – 1 to 4 ■ <mean> – 1 to 18, 31 Set values are saved across power cycles	Optional	Command accepted, no action taken; setting these parameters will reset +CGEQREQ and +CGEQMIN to defaults	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGEQREQ= <cid>, <Traffic_class>, <maximum_ bitrate_UL>, <maximum_ bitrate_DL>, <Guaranteed_ bitrate_UL>, <Guaranteed_ bitrate_DL>, <Delivery_ order>, <Maximum_ SDU_size>, <SDU_error_ ratio>, <Residual_bit_ error_ratio>, <Delivery_of_ erroneous_ SDUs>, <Transfer_ delay>, <Traffic_ handling_ priority>	<p>Sets the WCDMA QoS profile that is used in the Activate PDP Context Request message; values per specifications; parameter values supported are:</p> <ul style="list-style-type: none"> ■ <cid> – 1 to 16 ■ <Traffic_class> – 0 to 4 ■ <maximum_bitrate_UL> – 0 to 384 ■ <maximum_bitrate_DL> – 0 to 384 ■ <Guaranteed_bitrate_UL> – 0 to 384 ■ <Guaranteed_bitrate_DL> – 0 to 384 ■ <Delivery_order> – 0 to 2 ■ <Maximum_SDU_size> – 0 to 1520 ■ <SDU_error_ratio> <ul style="list-style-type: none"> □ 0E0 □ 1E1 □ 1E2 □ 7E3 □ 1E3 □ 1E4 □ 1E5 □ 1E6 ■ <Residual_bit_error_ratio> <ul style="list-style-type: none"> □ 0E0 □ 5E2 □ 1E2 □ 5E3 □ 4E3 □ 1E3 □ 1E4 □ 1E5 □ 1E6 □ 6E8 ■ <Delivery_of_erroneous_SDU> – 0 to 3 ■ <Transfer_delay> – 0, 100 to 4000 ■ <Traffic_handling_priority> – 0 to 3 <p>Set values are saved across power cycles</p>	Optional	Setting these parameters will reset +CGQMIN and +CGQREQ to defaults	All	WCDMA and GSM

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGEQMIN = <cid>, <Traffic_class>, <maximum_ bitrate_UL>, <maximum_ bitrate_DL>, <Guaranteed_ bitrate_UL>, <Guaranteed_ bitrate_DL>, <Delivery_ order>, <Maximum_ SDU_size>, <SDU_error_ ratio>, <Residual_bit_ error_ratio>, <Delivery_of_ erroneous_ SDUs>, <Transfer_ delay>, <Traffic_ handling_ priority>	<p>Sets the WCDMA QoS profile that is used in the Activate PDP Context Request message; values per specifications; parameter values supported are:</p> <ul style="list-style-type: none"> ■ <cid> – 1 to 16 ■ <Traffic_class> – 0 to 4 ■ <maximum_bitrate_UL> – 0 to 384 ■ <maximum_bitrate_DL> – 0 to 384 ■ <Guaranteed_bitrate_UL> – 0 to 384 ■ <Guaranteed_bitrate_DL> – 0 to 384 ■ <Delivery_order> – 0 to 2 ■ <Maximum_SDU_size> – 0 to 1520 ■ <SDU_error_ratio> <ul style="list-style-type: none"> □ 0E0 □ 1E1 □ 1E2 □ 7E3 □ 1E3 □ 1E4 □ 1E5 □ 1E6 ■ <Residual_bit_error_ratio> <ul style="list-style-type: none"> □ 0E0 □ 5E2 □ 1E2 □ 5E3 □ 4E3 □ 1E3 □ 1E4 □ 1E5 □ 1E6 □ 6E8 ■ <Delivery_of_erroneous_SDUs> – 0 to 3 ■ <Transfer_delay> – 0, 100 to 4000 ■ <Traffic_handling_priority> – 0 to 3 <p>Set values are saved across power cycles</p>	Optional	Setting these parameters will reset +CGQMIN and +CGQREQ to defaults	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGATT=[<state>]	Attaches or detaches from the packet domain service; values per specifications: ■ <state> □ 0 – Detached □ 1 – Attached	Optional		All	WCDMA and GSM
+CGACT=[<state> [,<cid> [,<cid>[,...]]]]	Activates or deactivates the specified PDP context(s); values per specifications; parameter values supported are: ■ <state> □ 0 – Deactivated □ 1 – Activated ■ <cid> – 1 to 16	Optional		All	WCDMA and GSM
+CGCMOD=[<cid> [,<cid> [,...]]]	PDP context modify; values per specifications; parameter values supported are: ■ <cid> – 1 to 16	Optional		All	WCDMA and GSM
+CGDATA=[<L2P> [,<cid> [,<cid> [,...]]]]	Enters Data state	Optional if dial command can be used to specify packet domain operation		All	WCDMA and GSM
+CGPADDR=[<cid> [,<cid> [,...]]]	Shows PDP address; values per specifications; parameter values supported are: ■ <cid> – 1 to 16	Optional		All	WCDMA and GSM
+CGCLASS=[<class>]	Sets the GPRS mobile class; values per specifications; parameter values supported are: ■ A – Class-A mode of operation	Optional	Supports only Class A	All	WCDMA and GSM
+CGEREP=[<mode>[,<bfr>]]	Controls sending of unsolicited result codes; values per specifications; parameter values supported are: ■ <mode> – 0 to 2 ■ <bfr> – 0 to 1	Optional		All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	3GPP TS 27.007 requirement	Explanation	Supported targets	Applicable mode
+CGREG=[<n>]	Controls the presentation of unsolicited GPRS network registration status; values per specifications; parameter values supported are: ■ <n> – 0, 1	Optional		All	WCDMA and GSM
AT+CGDATA=[<L2P> , [<cid> [, <cid> [...]	Enters Data state	Optional if the D (dial) command can be used to specify Packet Domain operation		All	WCDMA and GSM
D	Dial (request Packet Domain Service or Packet Domain IP Service); values per specifications; support *98# and *99#; optional connection parameter validated against defined PDP contexts (see +CGDCONT command)	Optional if +CGDATA command supported		All	WCDMA and GSM
+CGSMS=[<service>]	Service preference that will be used to send mobile-originated SMS messages; parameter values supported are: ■ <service> □ 0 – Packet domain □ 1 – Circuit-switched □ 2 – Packet domain preferred □ 3 – Circuit-switched preferred	Optional		All	WCDMA and GSM

2.2.6 SMS commands

For Gobi, support the Short Message Service (SMS) text and PDU mode AT commands as indicated in Table 2-12.

Table 2-12 SMS text and PDU mode commands

Command	Description	3GPP TS 27.005 requirement	Explanation	Supported targets	Applicable mode
+CSMS= <service>	Selects message service; values per specifications	Mandatory		All	WCDMA and GSM
+CPMS= <mem1>, <mem2>, <mem3>	Preferred message storage; values per specifications <ul style="list-style-type: none"> ■ <mem1> <ul style="list-style-type: none"> □ SM □ ME □ MT □ SR ■ <mem2> <ul style="list-style-type: none"> □ ME □ MT □ SM □ SR ■ <mem3> <ul style="list-style-type: none"> □ ME □ MT □ SM □ SR 	Mandatory		All	WCDMA and GSM
+CMGF= <mode>	Message format; values per specifications	Mandatory		All	WCDMA and GSM
+CSCA= <sca>, <tosca>	Service center address; values per specifications	Mandatory		All	WCDMA and GSM
+CSMP= <fo>, <vp>, <pid>, <dc>	Sets Text mode parameters; values per specification; GSM 7-bit, 8-bit and UCS2 data coding schemes supported	Mandatory		All	WCDMA and GSM
+CSDH= <show>	Shows Text mode parameters; values per specifications	Mandatory		All	WCDMA and GSM

Command	Description	3GPP TS 27.005 requirement	Explanation	Supported targets	Applicable mode
+CSCB=[<mode> [,<mids> [,<dcss>]]]	Selects cell broadcast message types; values per specifications	Optional	Applies only in GSM mode; however, being a parameter command, it will be visible in WCDMA	All	GSM
+CNMI= <mode>, <mt>, <bm>, <ds>, <bfr>	New message indications to TE; values per specifications: ■ <mode> – 0 to 2 ■ <mt> – 0 to 3 ■ <bm> – 0, 2 ■ <ds> – 0, 2 ■ <bfr> – 0, 1	Mandatory when any new message indications implemented	<bm> value of 2 applies only in GSM mode	All	WCDMA and GSM
+CMGL= <stat>	Lists message; values per specifications	Optional		All	WCDMA and GSM
+CMGR= <index>	Reads message; values per specifications	Optional		All	WCDMA and GSM
+CNMA	Acknowledges new message; values per specifications	Mandatory		All	WCDMA and GSM
+CMGS= <da>, <toda>	Sends message; values per specifications	Optional		All	WCDMA and GSM
+CMGW= <oa/da>, <tooa/toda>, <stat>	Writes message to memory; values per specifications	Optional		All	WCDMA and GSM
+CMGD= <index>, <deflag>	Deletes message; values per specifications	Optional		All	WCDMA and GSM
+CMSS= <index>, <da>, <toda>	Sends message from storage; values per specification	Optional		All	WCDMA and GSM
+CMGC	Sends command; values per specifications	Optional		All	WCDMA and GSM
+CMMS= [<n>]	More messages to send	Optional		All	WCDMA and GSM

2.2.7 Proprietary AT commands

For Gobi, support the vendor-specific AT commands as indicated in Table 2-13.

Table 2-13 Vendor-specific commands

Command	Description	Operation	Supported targets	Applicable mode
\$QCCLR	Clears mobile error log	Clears the mobile error log	All	WCDMA and GSM
\$QCDMG	Transitions to Diagnostics Monitor (DM) operation	Returns OK and then transitions the mobile's serial port to DM mode; DM mode runs at the rate set by \$QCDMR command and uses a proprietary half-duplex protocol. The default DM rate is fixed at 115200 bps.	All	WCDMA and GSM
\$QCDMR=<rate>	Sets DM baud rate	Changes the DM rate that will be used on the mobile's serial port when the mobile's serial port transitions to DM mode; DM mode is entered after \$QCDMG command is issued. The default DM rate is fixed at 115200 bps. Test command, i.e., \$QCDMR=?, returns rates supported, and the query command, i.e., \$QCDMR?, returns the current rate.	All	WCDMA and GSM
&V	Dumps configuration parameters	Dumps the status of all AT parameters applicable to the current operating mode, including the single-letter parameters not otherwise readable	All	WCDMA and GSM
&C2	Circuit 109 (carrier detect pin) behavior – Wink	Setting winks (briefly transitions off, then back on) the R _m port carrier detect pin when data calls end	All	WCDMA and GSM
\$QCTER=<rate>	Sets TE-DCE baud rate; baud rates supported are identical to +IPR command	Sets the TE-DCE rate at which DCE will accept commands; this data rate also becomes the default and is stored in NV RAM, changing the +IPR command default rate. Test command, i.e., \$QCTER=?, returns the rates supported and query command, i.e., \$QCTER?, returns the rate last issued by the \$QCTER command or the default rate.	All	WCDMA and GSM

Command	Description	Operation	Supported targets	Applicable mode
\$QCDNSP=<address>	Sets primary DNS IP address	Sets the default primary IP address used for Domain Name Services (DNS); used only if no DNS server address is received over-the-air during PDP context activation. The value is stored in NVRAM.	All	WCDMA and GSM
\$QCDNSS=<address>	Sets secondary DNS IP address	Sets the default secondary IP address used for DNS; used only if no DNS server address is received over-the-air during PDP context activation. The value is stored in NVRAM.	All	WCDMA and GSM
\$QCPDPP=<cid>, <auth_type>, <password>, <username>	Sets authentication for PDP-IP packet data calls; values are: ■ <cid> – 1 to 16 ■ <auth_type> □ 0 – None □ 1 – PAP □ 2 – CHAP	Defines authentication parameters on a per connection basis; the value of <auth_type> determines what additional parameters are required, as follows: ■ 0 – Neither username nor password accepted ■ 1 – Username and password accepted ■ 2 – Only password (secret) accepted Query command, i.e., \$QCPDPP?, does not display password values and only displays username for PAP authentication	All	WCDMA and GSM
\$QCPWRDN	Used to power down the UE	Returns OK and powers down the UE	All	WCDMA and GSM
\$QCDGEN=<cid>, <data length>	Generates data over +CGACT activated PDP context; values are: ■ <cid> – 1 to 16 ■ <data length> – 21 to 5000	Supported only during PDP context activation by +CGACT in GPRS mode	All	WCDMA and GSM
\$QCSLOT=<slot>	Sets SIM card on which slot commands will operate	Slot other than 1 only available	All	WCDMA and GSM
\$QCPDPLT=<enable>	Enables/disables tolerance to long delays in PDP call setup		All	WCDMA and GSM
\$QCPINSTAT?	Sends to the ME the status of all PINs for all cards	Statuses listed in order: SIM PIN, PH FSIM PIN, NET PIN, NETSUB PIN, SP PIN, CORP PIN, SIM PIN2	All	WCDMA and GSM

AT Command Support (WCDMA)

Command	Description	Operation	Supported targets	Applicable mode
\$QCCNMI	Similar to 27.005 +CNMI except for the behavior with \$QCCNMI=1,2	<mt> value 2 in +CNMI actually changes the route configuration and QCCNMI does not	Gobi2000 and later	WCDMA and GSM
\$CNTI*	Displays the access technology; refer to GSM 07.07 subclause 9.2 for err value	Proprietary AT commands, AT&T Connection Manager	Gobi2000 and later	WCDMA and GSM
AT\$QCBANDPREF=<persistence>,<band_indices>	Sets the band preferences of the device	Result: Band preferences set and also saved in NV memory, based on persistence parameter Note: For usage information, enter AT\$QCBANDPREF=? Persistence=1 indicates that the band setting will be saved across power cycles. Cmd will return OK as long as there is at least one supported band in the list of bands. For example, \$QCBANDPREF = 1, "27,28" will set the band preferences to WCDMA 2100 and WCDMA 1900 only.	Gobi2000 D1025*3587 and later	WCDMA only

1

3 IS-707 AT Commands (CDMA)

This chapter provides details of the IS-707 AT command set implementation for Gobi. The tables in this chapter are from IS-707.3 (AT Cmd Processing and the R_m Interface). Certain columns appear throughout the tables in this document. Their descriptions are provided in Table 3-1.

Table 3-1 Column descriptions

Heading	Description
Command	Defines the AT command name in its ASCII character string format
Description	Short explanation of the command and its values
IS-707 requirement	The IS-707 requirement column in each table specifies the IS-707 requirement for both the Async/G3 Fax service and the Packet service. One of the following is applicable to each service IS-707: <ul style="list-style-type: none"> ■ Requires (req) ■ Makes optional (opt) ■ Not applicable (N/A)
Supported targets	All
Explanation	The Explanation column provides insight into the reasoning behind the implementation. Many of the commands are remote commands that are passed to the IWF for processing. There are several AT commands that Qualcomm has chosen not to implement because of perceived limited utility to the CDMA data user.

3.1 AT command set implementation for Gobi (CDMA)

Table 3-2 IS-707.3 Table 7.1.1-1. Basic AT Parameters

Parameter	Description	IS-707 requirement	Supported targets	Explanation
E0	Do not echo commands in command state or online command state	Async: req Pkt: opt	All	
E1	Echo commands in command state or online command state	Async: req Pkt: opt	All	
Q0	Return result codes	Async: req Pkt: req	All	
Q1	Do not return result codes	Async: req Pkt: req	All	

IS-707 AT Commands (CDMA)

Parameter	Description	IS-707 requirement	Supported targets	Explanation
V0	Displays result codes as numbers	Async: req Pkt: req	All	
V1	Displays result codes as words	Async: req Pkt: opt	All	
X0	Sends a CONNECT message when a connection is established by blind dialing; ignores dial tone and busy signal	Async: req Pkt: N/A	All	Remote Async/Fax command
X1	Enables additional result code <i>CONNECT <rate></i> ; disables dial tone and busy detection	Async: req Pkt: N/A	All	Remote Async/Fax command

IS-707 AT Commands (CDMA)

Parameter	Description	IS-707 requirement	Supported targets	Explanation
I	Request identification information; no value accepted	Optional	All	<p>Gobi1000: Returns manufacturer, model number, firmware version number, ESN and +MS, +ES, +DS, +FCLASS commands. For example: ■ ATI ■ Manufacturer: Qualcomm Incorporated ■ Model: 88 ■ Revision: D1050-xxxxxxx 1 [Apr 18 2008 14:00:00] ■ ESN: 0x80CB3ED7 ■ +GCAP: +CIS707-A, CIS-856, CIS-856-A, CIS707,+MS, +ES, +DS, +FCLASS</p> <p>Gobi2000: Returns manufacturer, model number, firmware version number, Software Version Number (SVN), IMEI and +GCAP: +CGSM,+DS commands For example: ■ ATI ■ Manufacturer: Qualcomm HS-USB ■ Model: 12 ■ Revision: D1025-xxxxxxx 1 [Dec 1 2008 09:18:40] ■ SVN: 01 ■ IMEI: 351602000598605 ■ +GCAP: +CGSM,+DS</p>
X2	Enables additional result codes <i>CONNECT <rate></i> and <i>NO DIALTONE</i> ; disables busy detection; enables dial tone detection	Async: req Pkt: N/A	All	Remote Async/Fax command

IS-707 AT Commands (CDMA)

Parameter	Description	IS-707 requirement	Supported targets	Explanation
X3	Enables additional result codes <i>CONNECT <rate></i> and <i>BUSY</i> ; enables busy detection; disables dial tone detection	Async: req Pkt: N/A	All	Remote Async/Fax command
X4	Enables additional result codes <i>CONNECT <rate></i> , <i>BUSY</i> , and <i>NO DIALTONE</i> ; enables busy and dial tone detection	Async: req Pkt: N/A	All	Remote Async/Fax command
Z0	Resets to default configuration	Async: req Pkt: req	All	
&C0	Circuit 109 (CF) always ON	Async: req Pkt: req	All	
&C1	Circuit 109 (CF) ON in accordance with the specified service	Async: req Pkt: req	All	
&C2	Circuit 109 (CF) always ON except wink on channel disconnect	No reference	All	Qualcomm implementation
&D0	Ignore circuit 108/2 (CD)	Async: req Pkt: req	All	
&D1	Enter online command state following On-to-Off transition of circuit 108/2	Async: req Pkt: req	All	Async service: as stated Pkt: End call following On-to-Off transition of 108/2.
&D2	Enter command state following On-to-Off transition of circuit 108/2	Async: req Pkt: req	All	End call following On-to-Off transition of 108/2.
&F0	Effect is implementation-dependent	Async: req Pkt: req	All	Same behavior as Z

1
2

Table 3-3 IS-707.3 Table 7.1.2-1. Basic S-Registers

Register	Value	Description	IS-707 requirement	Supported targets	Explanation
S0	0 (default) [1 to 255]	Disables automatic answering [Enables automatic answering after (Value - 1) × 6 sec]	Async: req Pkt: N/A	All	
S3	13 (default)	Carriage Return character	Async: req Pkt: opt	All	
S4	10 (default)	Line Feed character	Async: req Pkt: opt	All	
S5	8 (default)	Backspace character	Async: req Pkt: opt	All	
S6	2 to 10 (2 is default)	Pause before blind dialing	Async: req Pkt: N/A	All	Remote Async/Fax command
S7	1 to 255 (50 is default)	Number of seconds to establish end-to-end data connection	Async: req Pkt: opt	All	Remote Async/Fax command
S8	0 to 255 (2 is default)	Number of seconds to pause when “,” is encountered in dial string	Async: req Pkt: N/A	All	Remote Async/Fax command
[S9]	0 to 255 (6 is default)	Carrier detect threshold in increments of 0.1 sec	Async: req Pkt: N/A	All	Remote Async/Fax command
S10	1 to 254 (14 is default)	Number of tenths of a second from carrier loss to disconnect	Async: req Pkt: N/A	All	Remote Async/Fax command
	[255]	[Disable carrier detect]	—	All	—
[S11]	50 to 255 (95 is default)	DTMF tone duration and spacing in milliseconds	Async: opt Pkt: N/A	All	Remote Async/Fax command

1 **Table 3-4 IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 1 of 5)**

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+DR	IS-131	Data Compression Reporting. This extended-format numeric parameter controls whether the extended-format +DR: intermediate result code is transmitted from the IWF over the U _m interface.	Async: req Pkt: opt	All	Remote Async/Fax command. Not relevant for packet service.
+DS	IS-131	Data Compression. This extended-format compound parameter controls the V.42bis data compression function on the PSTN link if provided in the IWF.	Async: req Pkt: opt	All	Remote Async/Fax command. Not relevant for packet service.
+EB	IS-131	Break Handling in Error Control Operation. This extended-format compound parameter is used to control the manner of V.42 operation on the PSTN link (if present in the IWF).	Async: req Pkt: opt	All	Remote Async/Fax command. Not relevant for packet service.
+EFCS	IS-131	This extended-format numeric parameter controls the use of the 32-bit frame check sequence option in V.42 on the PSTN link (if present in the IWF).	Async: req Pkt: N/A	All	Remote Async/Fax command. Not relevant for packet service.
+ER	IS-131	Error Control Reporting. This extended-format numeric parameter controls whether the extended-format +ER: intermediate result code is transmitted from the IWF over the U _m interface.	Async: req Pkt: opt	All	Remote Async/Fax command. Not relevant for packet service.
+ES	IS-131	Error Control Selection. This extended-format compound parameter is used to control the manner of operation of the V.42 protocol on the PSTN link (if present in the IWF).	Async: req Pkt: N/A	All	Remote Async/Fax command. Not relevant for packet service.

IS-707 AT Commands (CDMA)

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+ESR	IS-131	This extended-format numeric parameter controls the use of the selective repeat (SREJ) option in V.42 on the PSTN link (if present in the IWF).	Async: req Pkt: N/A	All	Remote Async/Fax command. Not relevant for packet service.
+ETBM	IS-131	This extended-format compound parameter controls the handling of data remaining in IWF buffers upon service termination.	Async: req Pkt: opt	All	Remote Async/Fax command. Not relevant for packet service.

Table 3-5 IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 2 of 5)

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+GCAP	IS-131	This extended-format command causes the MT2 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 MT2 to identify the minimum capabilities of the MT2. An MT2 conforming to this standard shall include the following items, as a minimum, in the result code for the +GCAP command: +CIS707, +MS, +ES, +DS, +FCLASS	Async: req Pkt: opt	All	Mobile will return: +CIS707 (+CIS707-A when IS-2000 is defined), +MS, +ES, +DS, +FCLASS
+GMI	IS-131	Requests manufacturer identification. Gobi1000 returns QUALCOMM INCORPORATED. Gobi2000 returns the value set in the device's NV memory.	Async: req Pkt: opt	All	Gobi1000: ■ Returns QUALCOMM INCORPORATED Gobi2000: ■ Default returns QUALCOMM INCORPORATED The return value is customizable and varies with the NV#0x5078 setting inside the module.

IS-707 AT Commands (CDMA)

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+GMM	IS-131	Requests model identification.	Async: req Pkt: opt	All	Gobi1000: Returns 88 (model ID) Gobi2000: Default returns Qualcomm HS-USB. The return value is customizable and varies with the NV#0x5079 setting inside the module.

Table 3-6 IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 3 of 5)

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+GMR	IS-131	This command causes the MT2 to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the MT2 to identify the version, revision level or date, or other pertinent information of the device. Typically, the text will consist of a single line containing the version of the product, but manufacturers may choose to provide any information desired.	Async: req Pkt: opt	All	Mobile returns firmware revision and timestamp
+GOI	IS-131	This command causes the MT2 to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the MT2 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.	Async: req Pkt: opt	All	No information text provided

IS-707 AT Commands (CDMA)

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+GSN	IS-131	This command causes the MT2 to transmit one or more lines of information text, determined by the manufacturer, which is intended to permit the user of the MT2 to identify the individual device. Typically, the text will consist of a single line containing a manufacturer-determined alphanumeric string, but manufacturers may choose to provide any information desired.	Async: req Pkt: opt	All	Mobile returns ESN: xx xx xx xx in hexadecimal format
+ICF	IS-131	TE2-MT2 Character Framing. This extended-format compound parameter is used to determine the local serial port start-stop (asynchronous) character framing that the MT2 shall use while accepting TE2 commands and while transmitting information text and result codes to the TE2, if this is not determined automatically (see +IPR).	Async: req Pkt: req	All	Qualcomm R _m interface fixed at 8 data bits, no parity, 1 stop bit. Error returned for any other parameters.

1
2

1 **Table 3-7 IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 4 of 5)**

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+IFC	IS-131	TE2-MT2 Local Flow Control. This extended-format compound parameter is used to control the operation of local flow control between the TE2 and MT2 [1].	Async: req Pkt: req	All	Hardware and software flow control supported for both async and packet services
+ILRR	IS-131	TE2-MT2 Local Rate Reporting. This extended-format numeric parameter controls whether the extended-format +ILRR:<rate> information text is transmitted from the MT2 to the TE2.	Async: req Pkt: opt	All	Mobile accepts only OFF
+IPR	IS-131	Fixed Rm Rate. This numeric extended-format parameter specifies the data rate at which the MT2 will accept commands, in addition to 1200 bit/s or 9600 bit/s (as required in EIA/TIA-602). It may be used to select operation at rates at which the MT2 is not capable of automatically detecting the data rate being used by the TE2.	Async: req Pkt: req	All	Rm rate fixed at 19200 bps. Mobile will only accept 19200 as a valid parameter
+MA	IS-131	Modulation Automode Control. This extended-format compound parameter is a list of modulations that the base station may use to connect with the remote DCE in automode operation, for answering or originating data calls, as additional alternatives to the modulation specified in the +MS command.	Async: req Pkt: N/A	All	Remote Async/Fax command

IS-707 AT Commands (CDMA)

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+MR	IS-131	Modulation Reporting Control. This 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.	Async: req Pkt: N/A	All	Remote Async/Fax command
+MS	IS-131	Modulation Selection. This extended-format compound parameter is used to control the manner of operation of the modulation capabilities in the IWF.	Async: req Pkt: N/A	All	Remote Async/Fax command

Table 3-8 IS-707.3 Table 7.2-1. Extended AT Configuration Commands (Part 5 of 5)

Cmd	Value per	Description	IS-707 requirement	Supported targets	Explanation
+MV18R	IS-131	V.18 Reporting Control. This extended-format numeric parameter controls whether the extended-format +MV18R: result code is transmitted from the IWF to the mobile station.	Async: opt Pkt: N/A	All	Remote Async/Fax command*
+MV18S	IS-131	V.18 Selection. This extended-format compound parameter is used to control the manner of operation of the V.18 capabilities (if present in the IWF).	Async: opt Pkt: N/A	All	Remote Async/Fax command*

*TIA/EIA/IS-131 states that this command applies only when the V.42 error control is being used, or when fallback to nonerror control mode is specified to include buffering and flow control. In this standard, this command applies independently of the use and setting of V.42. If V.42 is not used or not configured appropriately, data loss may occur.

Table 3-9 IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 1 of 4)

Command	Description	IS-707 requirement	Supported targets	Explanation
+CXT=<value>	Cellular Extension. Values are; <ul style="list-style-type: none"> ■ 0 – Do not pass unrecognized commands to the IWF ■ 1 – When detecting an unrecognized AT command, open transport layer connection and pass unrecognized command to the IWF 	Async: req Pkt: N/A	All	
+CFG="<string>"	Configuration String. The string (up to and including the termination character) will be stored by the MT2 and sent to the base station prior to dialing. Each transmission of an AT+CFG command from the TE2 replaces the contents of the previous string. The string may be up to 248 characters.	Async: req Pkt: N/A	All	
+CAD?	Query Analog or Digital Service. Returns are: <ul style="list-style-type: none"> ■ 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 are reserved 	Async: opt Pkt: opt	All	2 (TDMA) not supported
+CDR	U _m Interface Data Compression Reporting. This extended-format numeric parameter controls whether the extended-format +CDR: intermediate result code is transmitted by the MT2. The result code is the same as for the TIA/EIA/IS-131 +DR: result code.	Async: req Pkt: N/A	All	

Table 3-10 IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 2 of 4)

Command	Description	IS-707 requirement	Supported targets	Explanation
+CDS*	U _m Interface Data Compression. This extended-format compound parameter controls the V.42bis data compression function on the U _m interface. The command format is the same as for the TIA/EIA/IS-131 +DS command.	Async: req Pkt: N/A	All	Current Gobi device does not support V.42bis compression; mobile only accepts 0 as a valid setting
+CRM=<value>	Set R _m Interface Protocol. Values are: <ul style="list-style-type: none"> ■ 0 – Asynchronous data or fax ■ 1 – Packet data service, relay layer R_m interface ■ 2 – Packet data service, network layer R_m interface, PPP ■ 3 – Packet data service, network layer R_m interface, SLIP ■ 4 – STU-III service ■ 5 to 127 – Reserved for future use ■ 128 to 255 – Reserved for manufacturer-specific use Note: The default value for the +CRM parameter shall be 0 if this value is supported by the MT2. If 0 is not supported, the default +CRM value shall be manufacturer-specific.	Async: req Pkt: req	All	Mode selection occurs automatically based on data received

Table 3-11 IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 3 of 4)

Command	Description	IS-707 requirement	Supported targets	Explanation
+CQD=<value>	Command State Inactivity Timer (see 3.9.1.3). Values are: <ul style="list-style-type: none"> 0 – Ignored 1 to 255 – Release call after 5x<value> sec have elapsed without activity; the default <value> shall be 10, corresponding to 50 sec 	Async: req Pkt: N/A	All	Remote Async/Fax command
+CRC=<value>	Cellular Result Codes (see Table 7.4.2-1). Values are: <ul style="list-style-type: none"> 0 – Disable cellular result codes; default value 1 – Enable cellular result codes 	Async: req Pkt: N/A	All	Remote Async/Fax command
+CSQ?*	Query Received Signal Quality. Returns the Signal Quality Measure <SQM> and the Frame Error Rate <FER>	Async: req Pkt: N/A	All	Remote Async/Fax command

Table 3-12 IS-707.3 Table 7.4.1-1. CDMA AT Parameter Commands (Part 4 of 4)

Command	Description	IS-707 requirement	Supported targets	Explanation
AT+CMUX = <n>	Select Multiplex Option. Values are: <ul style="list-style-type: none"> 1 – Multiplex option 1 2 – Multiplex option 2 	Async: opt Pkt: opt	All	—

NOTE The exact meaning of the SQM shall be manufacturer-defined. The lowest quality reported by SQM shall be defined as value 00. The highest quality reported by SQM shall be defined as value 31.

Table 3-13 IS-707.3 Table 7.4.1-4. Cellular AT Commands for Packet Data Services

Command	Description	Implementation status	Explanation
+CTA=<value>	Set/read/test U _m packet data inactivity timer; values are: <ul style="list-style-type: none"> 0 – Traffic channel not released during inactivity periods 1 to 255 – Release the traffic channel after <value> 1-sec intervals have elapsed since last sending or receiving RLP data frames on the U_m interface Default value is 20.	All	Relevant only for packet service operation
+CPS=<value>*	Select the service option to be used for packet data service; values shall be as specified in TSB58	Not implemented	
+CPSR=<value>*	Enable/disable packet call state reporting; values are: <ul style="list-style-type: none"> 0 – Disable call state reporting 1 – Enable call state reporting 	Not implemented	Call state reporting <i>not</i> supported
+CPTC=<value>*	Control traffic channel state without affecting the IWF Link Layer connection; values are: <ul style="list-style-type: none"> 0 – Release traffic channel 1 – Originate traffic channel 	Not implemented	
+CPER=<value>*	Enable/disable packet call event reporting; values are: <ul style="list-style-type: none"> 0 – Disable call event reporting 1 – Enable call event reporting 	Not implemented	Packet call event reporting <i>not</i> supported

3.2 Proprietary AT command set (CDMA)

This section provides the details for the Qualcomm-proprietary AT command set implementation for DMSS software. The definition and purpose of each proprietary AT command implemented by Qualcomm is described in Table 3-14.

Table 3-14 Vendor-specific AT commands

Command	Description	Operation
\$QCQNC	Enable/disable Quick Net Connect (QNC)	Values are: <ul style="list-style-type: none"> 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
\$QCMTOM*	Originate mobile-to-mobile packet data call using Qualcomm proprietary service option number	Complete command is AT\$QCMTOM = <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.

IS-707 AT Commands (CDMA)

Command	Description	Operation
\$QCPREV	Protocol revision in use	Returns one of the following codes: <ul style="list-style-type: none"> ■ 1 – JSTD008 ■ 3 – IS_95A ■ 4 – IS_95B ■ 6 – IS_2000
&V	Dump configuration parameters	This command will dump the status of all AT parameters. This includes the single-letter parameters not otherwise readable, but does not include the +QC parameters.
&C2	Carrier detect pin behavior	This command setting will wink (briefly transition off, then back on) the Rm port carrier detect pin when packet data calls end.
\$QCSO=	Set data service option number set; saves to nonvolatile memory	Values are: <ul style="list-style-type: none"> ■ 0 – Pre-707 service option numbers (RS 1: Async 4, G3 Fax 5, packet 7; RS 2: Async 12, G3 Fax 13, packet 15) ■ 1 – Proprietary service option numbers (RS 1: Async 4, G3 Fax 5, packet 7; RS 2: Async 0x8021, G3 Fax 0x8022, packet 0x8020) ■ 2 – IS-707 service option numbers (RS 1: Async 0x1004, G3 Fax 0x1005, packet 0x1007; RS 2: Async 12, G3 Fax 13, packet 15)
\$QCCLR	Clear mobile error log	This command will clear the mobile error log.
\$QCPKND*	Enable/disable automatic packet detection after a dial command	Values are: <ul style="list-style-type: none"> ■ 0 – Disable packet no dial; if a PPP packet is received by the mobile without a just prior dial command (i.e., AtDX #), then the mobile will not originate a packet (or QNC) data call ■ 1 – Enable packet no dial; reception of a PPP packet without a just prior dial command will originate a PPP packet (or QNC) call
\$QCDMR=	Set DM baud rate	19200, 38400, 57600, 115200
\$QCMDR=	Set Medium Data Rate (MDR) (also known as HSPD) setting	Values are: <ul style="list-style-type: none"> ■ 0 – MDR service only The mobile will originate with SO 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.
\$QCSCRM	Enable/disable mobile from SCRMing	Values are: <ul style="list-style-type: none"> ■ 0 – Mobile never SCRMs ■ 1 – Mobile can SCRM as needed <p>Command applies only to SO 33 calls. This value is stored in NV. The default value is 1.</p>

IS-707 AT Commands (CDMA)

Command	Description	Operation
\$QCTRL	Enable/disable R-SCH throttling	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – Mobile never throttles R-SCH ■ 1 – Mobile can throttle R-SCH as needed <p>Command applies only to SO 33 calls. This value is stored in NV. The default value is 1.</p>
\$QCHDRC	For 1xEV, select a fixed DRC value	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – NULL rate ■ 1 – 38.4 Kbps ■ 2 – 76.8 Kbps ■ 3 – 153.6 Kbps ■ 4 – 307.2 Kbps (short) ■ 5 – 307.2 Kbps (long) ■ 6 – 614.4 Kbps (short) ■ 7 – 614.4 Kbps (long) ■ 8 – 921.6 Kbps ■ 9 – 1228.8 Kbps (short) ■ A – 1228.8 Kbps (long) ■ B – 1843.2 Kbps ■ C – 2457.6 ■ F – Variable rate mode <p>The default value is F.</p> <p>Note: Command applies only to 1xEV connections</p> <p>Note: Test feature only</p>
\$QCHDRR	For 1xEV, select a fixed reverse rate	<p>Values are:</p> <ul style="list-style-type: none"> ■ 1 – 9.6 Kbps ■ 2 – 19.2 Kbps ■ 3 – 38.4 Kbps ■ 4 – 76.8 Kbps ■ 5 – 153.6 Kbps ■ F – Variable rate mode <p>The default value is F.</p> <p>Note: Command applies only to 1xEV connections</p> <p>Note: Test feature only</p>
\$QCHDRT	For 1xEV, toggle early termination	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 = Early termination disabled ■ 1 = Early termination enabled <p>The default value is 1.</p> <p>Note: Command applies only to 1xEV connections</p> <p>Note: Test feature only</p>

Command	Description	Operation
\$QCMIP	Enable/disable Mobile IP	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – Mobile IP disabled, Simple IP only ■ 1 – Mobile IP preferred <p>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 an LCP C-Req).</p> <p>However, if a Mobile IP session is registered, and 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 (e.g., by dropping DCD to a laptop).</p> <ul style="list-style-type: none"> ■ 2 – Mobile IP only <p>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 (e.g., by dropping DCD to a laptop).</p> <p>This value is stored in NV. The default value is 0.</p> <p>Note: 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.</p> <p>Note: This change is not supported by DMSS 5105 Release 1.0 Commercial.</p> <p>Note: 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 SO 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.</p> <p>Note: 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.</p> <p>Note: This AT command is for test purposes only and should not be changed by the mobile phone user.</p>
\$QCMIEP	Enable/disable currently active profile	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – Disables the currently active profile (profile is unavailable until it is reenabled) ■ 1 – Enables the currently active profile
\$QCMIPGETP	Return all information corresponding to the specified profile number	<p>Returns are:</p> <ul style="list-style-type: none"> ■ 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.
\$QCMIPMASPI	Set MN-AAA SPIs for the currently active profile	<p>Two arguments – SPI value and one of the following:</p> <ul style="list-style-type: none"> ■ 0 – Do not commit to NV ■ 1 – Commit to NV <p>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.</p>

Command	Description	Operation
\$QCMIPMASSX	Set MN-AAA shared secret for the currently active profile in HEX	Two arguments – hexadecimal number and one of the following: <ul style="list-style-type: none"> ■ 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.
\$QCMIPMHSPi	Set MN-HA SPIs for the currently active profile	Two arguments – SPI value and one of the following: <ul style="list-style-type: none"> ■ 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.
\$QCMIPMHSS	Set MN-HA shared secret for the currently active profile	Two arguments – string corresponding to the shared secret to be stored and one of the following: <ul style="list-style-type: none"> ■ 0 – Do not commit to NV ■ 1 – 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.
\$QCMIPMHSSX	Set MN-HA shared secret for the currently active profile in HEX	Two arguments – hexadecimal number and one of the following: <ul style="list-style-type: none"> ■ 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.
\$QCMIPNAI	Set NAI for the currently active profile	Two arguments – string corresponding to NAI to be stored and one of the following: <ul style="list-style-type: none"> ■ 0 – Do not commit to NV ■ 1 – 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.
\$QCMIPP	Select MIP user profile to be active	This takes a profile number between 0 and 5. The value is stored in NV. This AT command is expected to be used by users to configure dial-up networking.
\$QCMIPRT	Set reverse tunneling for the currently active profile	First argument is: <ul style="list-style-type: none"> ■ 0 – Do not request reverse tunneling ■ 1 – Request reverse tunneling Second argument is: <ul style="list-style-type: none"> ■ 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.

IS-707 AT Commands (CDMA)

Command	Description	Operation
\$QCMIPT	Enable/disable the use of RFC 2002bis authentication	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – Use of RFC 2002bis authentication is disabled; RFC 2002 style authentication is used instead ■ 1 – Use of RFC 2002bis authentication is enabled <p>Note: This AT command is for test purposes only and should not be changed by the mobile phone user.</p>
\$QCMPIMASS	Set MN-AAA shared secret for the currently active profile	<p>Two arguments – String corresponding to the shared secret to be stored and one of the following:</p> <ul style="list-style-type: none"> ■ 0 – Do not commit to NV ■ 1 – Commit to NV <p>Note: Double quotes are required only if the string contains a comma.</p> <p>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.</p>
\$QCVAD=	Pearrangement setting; respond to a page message that has a voice service option with a page response that has a data service option	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – Off ■ 1 – Fax for next call ■ 2 – Fax for all calls ■ 3 – Async for next call ■ 4 – Async for all calls
\$QCIOTA=	IOTA session management	<p>Values are:</p> <ul style="list-style-type: none"> ■ Start – Start the IOTA session ■ Stop – Stop the IOTA session ■ Boot_url – Program the boot URL; only used for Sprint testing. Do not change this setting on production devices. ■ Boot_naiurl – Program the boot NAI_URL; only used for Sprint testing. Do not change this setting on production devices. ■ Web_info – Program server ports; only used for Sprint testing. Do not change this setting on production devices. ■ Trusted_domain – Program the trusted domain; only used for Sprint testing. Do not change this setting on production devices. ■ Ds_phone_rdg_url – Program RDF URL and fixed for Gobi1000. Do not change this setting on production devices.

1

3.3 In-band control AT command

Table 3-15 In-band control AT command

AT command	Command purpose	IS-707 requirement	Explanation
+IBC*	In-Band Control Compound Parameter. The AT+IBC compound parameter provides for the enabling, disabling, and configuration of in-band control service. See Section 8 of ANSI/TIA/EIA-617 for a complete description of this command.	Async: N/A Pkt: opt	Optional for packet service. Needed for in-band control over R _m interface. This capability not implemented by Qualcomm.

3.4 Cellular identification AT command

Table 3-16 Cellular identification AT command

AT command	Command purpose	IS-707 requirement	Explanation
+CGCAP*	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. 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	Async: opt Pkt: N/A	Remote Async/Fax command

IS-707 AT Commands (CDMA)

AT command	Command purpose	IS-707 requirement	Explanation
+CGMI	Requests manufacturer identification	Async: opt Pkt: N/A	Gobi1000: ■ Returns Qualcomm Incorporated Gobi2000 ■ Default returns Qualcomm Incorporated The return value is customizable and varies with the NV#0x5078 setting inside the module.
+CGMM*	Requests model identification	Async: opt Pkt: N/A	Gobi1000: ■ Returns 88 Gobi2000: ■ Default returns Qualcomm HS-USB The return value is customizable and varies with the NV#0x5079 setting inside the module.
+CGMR*	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 version, revision level or date, or other pertinent information of the device. Typically, the text will consist of a single line containing the version of the product, but manufacturers may choose to provide any information desired.	Async: opt Pkt: N/A	Remote Async/Fax command
+CGOI*	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.	Async: opt Pkt: N/A	Remote Async/Fax command

AT command	Command purpose	IS-707 requirement	Explanation
+CGSN	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 individual device. The text typically consists of a single line containing a manufacturer determined alphanumeric string, but manufacturers may choose to provide any information desired.	Async: opt Pkt: N/A	Remote Async/Fax command
at+mdn	Mobile Directory Number. This command returns the mobile directory number of the device.		Usage is: <ul style="list-style-type: none"> ■ at+mdn ■ at+mdn? Supported targets are Gobi2000 and later.

3.5 Packet data AT commands (CDMA)

Table 3-17 summarizes all AT commands that are used frequently when making packet data calls. This information can be used as a quick reference when testing packet data calls.

Table 3-17 AT commands for packet data services

AT command	Command purpose	Background	Settings
at&cX	Carrier detect pin settings	Carrier detect pin is the RS-232 signal pin that informs the DTE device (laptop) of the state of the DCE device communications channel.	Values are: <ul style="list-style-type: none"> ■ X=0 – Leave carrier detect pin asserted at all times ■ X=1 – Carrier detect pin asserted when mobile is on the traffic channel; otherwise, deasserted (default setting) ■ X=2 – Carrier detect asserted at all times but will wink (deassert briefly then reassert) when the traffic channel drops
at&dX	Data Terminal Ready (DTR) pin settings	DTR pin is the RS-232 signal that the DTE device uses to drop the DCE communications channel.	Values are: <ul style="list-style-type: none"> ■ X=0 – Ignore DTR ■ X=1 – Answer packet call when DTR is asserted; drop traffic channel on DTR deasserts (default) ■ X=2 – Same as X=1

IS-707 AT Commands (CDMA)

AT command	Command purpose	Background	Settings
at\$qcqnc=X	Enable/disable Quick Net Connect (QNC) capability	QNC is a different means of performing basic packet data service.	Values are: <ul style="list-style-type: none"> ■ X=0 – Disable QNC (use packet data service option numbers) (default for HSPD builds) ■ X=1 – Enable QNC (use async data service option numbers for packet data calls)
at\$qcso=X	Service option set settings	The Qualcomm mobile is capable of using pre-IS707 (IS-99 and IS-653) and IS-707 service options.	Values are: <ul style="list-style-type: none"> ■ X=0 – Use pre-IS-707 service option numbers (only affects Rate Set 1 service option numbers) ■ X=2 – Use IS-707/IS-707A service option numbers (default for HSPD builds)
at+cta=X	Inactive channel timeout setting	This command is used to set the timeout value for dropping the traffic channel X seconds after data flow ceases. It is used in conjunction with dormant mode operation.	The value for X is the number of seconds of channel inactivity before the traffic channel is dropped. Zero (0) means leave channel up indefinitely (default is 0).
at+cmux=A,B*	Multiplex option settings	This command is used to set the maximum number of multiplex options for the forward and reverse links for MDR (HSPD) calls.	Values are: <ul style="list-style-type: none"> ■ A – Maximum multiplex option to use for the forward link; valid numbers are 1 to F (hexadecimal). ■ B – Maximum multiplex option to use for the reverse link; valid numbers are 1 and 2; default is C,2. Rules are: <ul style="list-style-type: none"> ■ If A is omitted, it is assumed to have the same value as B. If A is not omitted, its value remains the same as the previous invocation (or the default). A and B must be either both odd or both even. ■ If A and B are both odd, the phone will originate data calls using Rate Set 1. If A and B are both even, the phone will originate data calls using Rate Set 2.

IS-707 AT Commands (CDMA)

AT command	Command purpose	Background	Settings
at\$qcmdr=X	MDR settings	This command specifies the manner in which packet data calls are originated.	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – MDR service only The mobile will originate with SO 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 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.
at\$qcscrm=X	SCRM enable/disable	For IS2000 mobiles, this enables/disables the mobile from SCRMing.	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – Mobile never SCRMs ■ 1 – Mobile can SCRM as needed <p>Command only applies to SO 33 calls. This value is stored in NV. The default is 1.</p> <p>*For MSM5000, MSM5105, and MSM5100 ASICs only.</p>
at\$qctrl=X	R-SCH throttling enable/disable	For IS2000 mobiles, this enables/disables the mobile from throttling the R-SCH. The R-SCH is throttled when the assigned R-SCH rate is considered “too high” and could overutilize the CPU.	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – Mobile never throttles R-SCH ■ 1 – Mobile can throttle R-SCH as needed <p>Command only applies to SO 33 calls. This value is stored in NV. The default value is 1.</p>

IS-707 AT Commands (CDMA)

AT command	Command purpose	Background	Settings
at\$QCMIP	Enable/disable Mobile IP (MIP)	This enables/disables MIP functionality in the mobile.	<p>Values are:</p> <ul style="list-style-type: none"> ■ 0 – MIP disabled, Simple IP (SIP) only ■ 1 – MIP preferred <p>In the initial MIP registration, if the network does not support Mobile IP, then the mobile automatically reverts to SIP (force a PPP renegotiation by sending a LCP C-Req).</p> <p>However, if a MIP session is registered and then the mobile enters a network that does not support MIP, the mobile will drop the session and inform the upper layers of the failure (e.g., by dropping DCD to a laptop).</p> <ul style="list-style-type: none"> ■ 2 – MIP only <p>The mobile will make data calls only when MIP 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 (e.g., by dropping DCD to a laptop).</p> <p>This value is stored in NV. The default value is 0.</p> <p>Note: 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.</p> <p>Note: This change is <i>not</i> supported by DMSS 5105 Release 1.0 Commercial.</p>

AT command	Command purpose	Background	Settings
\$QCHDRC	For 1xEV, select a fixed DRC value	This test command provides an interface for fixing the DRC rate for the access terminal. This overrides the variable rate mode and will cause the access network to only schedule data on the forward link at the fixed DRC rate. Note that this command applies only to the 1xEV air interface.	Values are: <ul style="list-style-type: none"> ■ 0 – NULL rate ■ 1 – 38.4 Kbps ■ 2 – 76.8 Kbps ■ 3 – 153.6 Kbps ■ 4 – 307.2 Kbps (short) ■ 5 – 307.2 Kbps (long) ■ 6 – 614.4 Kbps (short) ■ 7 – 614.4 Kbps (long) ■ 8 – 921.6 Kbps ■ 9 – 1228.8 Kbps (short) ■ A – 1228.8 Kbps (long) ■ B – 1843.2 Kbps ■ C – 2457.6 ■ F – Variable rate mode The default value is F. Note: Command applies only to 1xEV connections Note: Test feature only
\$QCHDRR	For 1xEV, select a fixed reverse rate	This test command provides an interface for fixing the reverse rate for the access terminal. This overrides the variable rate mode and will cause the reverse link to transmit only at the fixed reverse rate. Note that this command applies only to the 1xEV air interface.	Values are: <ul style="list-style-type: none"> ■ 1 – 9.6 Kbps ■ 2 – 19.2 Kbps ■ 3 – 38.4 Kbps ■ 4 – 76.8 Kbps ■ 5 – 153.6 Kbps ■ F – Variable rate mode The default value is F. Note: Command applies only to 1xEV connections Note: Test feature only
\$QCHDRT	For 1xEV, toggle early termination	This test command provides an interface for enabling and disabling the physical layer ACK early termination scheme for the AT. Note that this applies only to the 1xEV air interface.	Values are: <ul style="list-style-type: none"> ■ 0 – Early termination disabled ■ 1 – Early termination enabled The default value is 1. Note: Command applies only to 1xEV connections Note: Test feature only

*This command format is for MDR (HSPD) builds only. Non-MDR builds use the IS-707 +cmux format (at+cmux=X where X can be 1 for Rate Set 1 or 2 for Rate Set 2).

4 Carrier-Proprietary AT Commands

This chapter provides the details of the AT command set implementation required by specific network providers.

4.1 AT commands

4.1.1 AT&T

Table 4-1 AT&T AT commands

Command	Description	3GPP requirement	Explanation	Supported targets	Applicable mode
+CSAS	The settings specified in commands Service Center Address +CSCA, Set Message Parameters +CSMP, and Select Cell Broadcast Message Types +CSCB (if implemented) are saved to a nonvolatile memory.	27.005: Optional	Proprietary AT commands, AT&T Connection Manager	All	WCDMA/GSM
+CRES	The settings stored in profile using +CSAS are restored from nonvolatile memory to active memory	27.005: Optional	Proprietary AT commands, AT&T Connection Manager	All	WCDMA/GSM
+PACSP	This is required to indicate whether the network selection menu is available to the user (ENS support). Valid responses are: ■ +PACSP0 – Menu should be disabled ■ +PACSP1 – Menu enabled	N/A	Proprietary AT commands, AT&T Connection Manager	All	WCDMA/GSM

Command	Description	3GPP requirement	Explanation	Supported targets	Applicable mode
\$CSQ	\$CSQ is derived from the standard +CSQ, but with the addition of the <Ec/Io> variable. This allows the GSM standard to evolve without affecting this implementation of this command.	N/A	Proprietary AT commands, AT&T Connection Manager	All	WCDMA/GSM
\$CREG	\$CREG is derived from the standard +CREG, but with the addition of the <PSC> variable. This allows the GSM standard to evolve without affecting this implementation of this command.	N/A	Proprietary AT commands, AT&T Connection Manager and Test Automation AT commands	All	WCDMA/GSM
\$CCLK	The only change to the standard +CCLK is addition of the support with default format: Defined values.	N/A	Proprietary AT commands, AT&T Connection Manager	All	WCDMA/GSM
*CNTI	This displays the access technology. Refer to GSM 07.07 subclause 9.2 for possible <err> values.	N/A	Proprietary AT commands, AT&T Connection Manager	All	WCDMA/GSM

4.1.2 Vodafone

There are currently no proprietary AT commands for Vodafone.

4.1.3 T-Mobile

Table 4-2 T-Mobile AT commands

Command	Description	Explanation	Supported targets	Applicable mode
AT+CGEQNEG=?	3G quality of service profile (negotiated)		Not implemented	

4.1.4 Verizon Wireless

Table 4-3 Verizon Wireless AT commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$QCMR=3	Set data service option preference to SO33		All	CDMA
AT\$QCMR=2	Set data service option to SO15 with QNC override		All	CDMA
AT\$QCMR?	Respond with current setting (3, 2, 1, or 0 as above)		All	CDMA
AT\$QCQNC=0	Disable circuit-switched data QNC (disable fallback)		All	CDMA
AT\$QCQNC=1	Allow circuit-switched data QNC		All	CDMA
AT\$QCQNC?	Respond with current setting (1 or 0 as above)		All	CDMA
AT\$QCMIP=2	Mobile IP only		All	CDMA

4.1.5 Sprint PCS

Table 4-4 Sprint PCS AT commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$SPMDN?	The device must provide access to read and write a phone number, MSID (or IMSI_S), and any other value which may need to be read or written when the device is activated for use on the Sprint network, such as access overload class and the user lock value. Sprint will probably not require the write capabilities here as they will not require the phone to be activated from the PC, but the software does display the device's phone number (MDN) and it should be readable. The response should be a 10-digit phone number, e.g., 9135551212.		Gobi1000 only	CDMA

Carrier-Proprietary AT Commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$SPMIPERR?	This must be able to retrieve the last MIP error from the device. (No currently known command)		Gobi1000 only	CDMA
AT\$SPSPC = #####	Where ##### is the SPC, the response is OK or ERROR. This should be needed only if any of the supplied functionality must have the SPC set in order to work properly. This must be able to notify the device of the MSL/SPC to enable access to protected areas of the device, if necessary, to access needed functionality.		Gobi1000 only	CDMA
AT\$PPRL	This must be able to read the PRL number from the device. The response should be the device's current PRL number.		Gobi1000 only	CDMA
AT\$SPSERVICE?	The response should be: <ul style="list-style-type: none"> ■ 0 – No service ■ 1 – 1xRTT service ■ 2 – EV-DO service ■ 3 – EV-DO Rev A ■ 0xFF – Future use The response should indicate the service to which the modem will attempt to connect at the point of response to the command. The device provides notification of a service area (analog, 95A, 95B, 1xRTT, EV-DO, etc.), including notification of changes. With only one port, notification is not likely to occur. The user will likely need to look at the phone to see this information when connected. It should be possible to query the device for current service available.		Gobi1000 only	CDMA
AT\$PSIGDBM?	The response should be signal strength in dBm. Signal strength in dBm can be approximated from CSQ, but an exact response is preferred.		Gobi1000 only	CDMA

Carrier-Proprietary AT Commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$SPLOCKED?	<p>The response should indicate whether the phone is currently locked:</p> <ul style="list-style-type: none"> ■ 0 – Not locked ■ 1 – User locked <p>This must provide the ability to determine whether the device is locked, lock and unlock the device, and change the user lock code. The lock code must be readable (may be MSL-protected). Engineering dialogs are not being provided as with PCMCIA cards, so it will not be necessary to be able to read the lock code, only to determine its state and lock/unlock given the proper code and have the ability to change the lock codes.</p> <p>(No currently known command)</p>		Gobi1000 only	CDMA
AT\$SPUNLOCK=####(##)	<p>For user lock, this must provide the ability to determine if the device is locked, lock and unlock the device, and change the user lock code. The lock code must be readable (may be MSL-protected). Engineering dialogs are not being provided as with PCMCIA cards, so it will not be necessary to be able to read the lock code, only to determine its state and lock/unlock given the proper code and have the ability to change the lock codes.</p> <p>(No currently known command)</p> <p>The command should unlock the phone. ##### is the PIN; it should also accept an SPC (#####).</p> <p>The response should be:</p> <ul style="list-style-type: none"> ■ ERROR – Unable to unlock phone, still locked ■ OK – Phone already unlocked or was unlocked 		Gobi1000 only	CDMA

Carrier-Proprietary AT Commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$SPLOCK=####	<p>For user lock, this must provide the ability to determine if the device is locked, lock and unlock the device, and change the user lock code. The lock code must be readable (may be MSL-protected). Engineering dialogs are not being provided as with PCMCIA cards, so it will not be necessary to be able to read the lock code, only to determine its state and lock/unlock given the proper code and have the ability to change the lock codes.</p> <p>(No currently known command)</p> <p>The command should lock the phone. #### is the PIN, which must be correct before phone is locked.</p> <p>The response should be:</p> <ul style="list-style-type: none"> ■ ERROR – Unable to lock phone, still unlocked ■ OK – Phone already locked or was locked 		Gobi1000 only	CDMA

Carrier-Proprietary AT Commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$SPLOCKCHG=####(##),####	<p>For user lock, this must provide the ability to determine if the device is locked, lock and unlock the device, and change the user lock code. The lock code must be readable (may be MSL-protected). Engineering dialogs are not being provided as with PCMCIA cards, so it will not be necessary to be able to read the lock code, only to determine its state and lock/unlock given the proper code and have the ability to change the lock codes.</p> <p>(No currently known command)</p> <p>The command should change the lock PIN. The first #### is the current PIN; it should also accept an SPC (#####). The second #### should be the new PIN.</p> <p>The response should be:</p> <ul style="list-style-type: none"> ■ ERROR – Unable to change lock PIN ■ OK – Lock PIN changed 		Gobi1000 only	CDMA
AT\$SPROAM?	<p>This provides the ability to set the device to Sprint-only service, automatic service selection, or roam only. There is notification of the roaming state and changes. With only one port, notification is not likely to occur. The user will likely have to look at the phone to see this information. It should be possible to query the device for current status.</p> <p>(No currently known command)</p> <p>The response should indicate phone's current roam setting:</p> <ul style="list-style-type: none"> ■ 0 – Sprint only ■ 1 – Automatic ■ 2 – Roam only 		Gobi1000 only	CDMA

Carrier-Proprietary AT Commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$SPROAM=#	For roaming, this provides the ability to set the device to Sprint-only service, automatic service selection, or roam only. There is notification of the roaming state and changes. With only one port, notification is not likely to occur. The user will likely have to look at the phone to see this information. It should be possible to query the device for current status. (No currently known command) The command should set the phone's roaming state. The values for # should be: <ul style="list-style-type: none"> ■ 0 – Sprint only ■ 1 – Automatic ■ 2 – Roam only The response should be OK or ERROR.		Gobi1000 only	CDMA
AT\$SPERI?	For roaming, this must be able to read the extended roaming indicator from the device. The response should be the roaming index decimal number of Section 4.2.2 in SPCS UI 4.1.0.		Gobi1000 only	CDMA
AT\$SPRMGUARD?	For roam guard, this must be able to read the roam guard state on the phone. The response should indicate if the phone is currently roaming: <ul style="list-style-type: none"> ■ 0 – Roam guard off ■ 1 – Roam guard on 		Gobi1000 only	CDMA
AT\$SPRMGUARD=1	For roam guard, this must be able to send notice to the device to ignore roam guard for the next call. If roam guard is on, it should be ignored for the next call attempt.		Gobi1000 only	CDMA

Carrier-Proprietary AT Commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$SPLOCATION?	For location service, this may provide the ability to determine and set the location services state. The response should indicate if the phone currently has location services on or off: ■ 0 – Location services off ■ 1 – Location services on		Gobi1000 only	CDMA
AT\$SPLOCATION=#	For location service, this may provide the ability to determine and set the location services state. The command should turn location services on or off: ■ 0 – Turn location services off ■ 1 – Turn location services on The response should be OK or ERROR.		Gobi1000 only	CDMA
AT\$SPRESET	For modem reset, if support for other functionality is needed the vendor must supply a mechanism to trigger a modem reset. This is necessary only if setting another value on the device requires a phone reset (or repower) in order for the change to take effect. The command should reset the phone (power off, power on, or internal reset).		Gobi1000 only	CDMA
AT\$GPS_MODE	Values are: ■ 0 – Speed ■ 1 – Accuracy ■ 2 – Data ■ 3 – MS-assisted ■ 4 – MS-based ■ 5 – Standalone		Gobi1000 only	CDMA

Carrier-Proprietary AT Commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$\$PDE_TRS	<p>This is for checking the current setting communication mode. This setting defines the communication method with PDE. Values are:</p> <ul style="list-style-type: none"> ■ 0 – TCP; for AT command ■ 1– DBM (this is not used) ■ 2– UI; for UI, during data communication GPS interface with Vision Connection Manager (SCM) automatically set up <p>For AT command operation, the value should be 0.</p> <p>It uses an NV value, so check this value before GPS operation with AT command.</p>		Gobi1000 only	CDMA
AT\$\$GET_POS	This displays GPS results.		Gobi1000 only	CDMA
AT\$\$GPS_INFO	This is an additional AT command for detail.		Gobi1000 only	CDMA
AT\$\$GPS_PDEADDR	This is for the IP address.		Gobi1000 only	CDMA
AT\$\$GPS_Port	This is for the port.		Gobi1000 only	CDMA
AT\$\$INIT_MASK = 0	This is an MS-based operation, cold start; eph, alm, pos data erase.		Gobi1000 only	CDMA
AT\$\$GPS_STOP	This cancels GPS operation.		Gobi1000 only	CDMA
AT\$\$A_TRACKING	This is for tracking and operates as MS-based.		Gobi1000 only	CDMA

Table 4-5 Sprint OMA-DM AT commands (Gobi2000 only)

Command	Description	Explanation	Supported targets	Applicable mode
AT+OMADM	For provisioning, this initiates the OMA-DM CIDC session: +OMADM Values are: <ul style="list-style-type: none"> 0 – Disable 1 – Enable (default) 2 – Initiate CIDC 3 – Show detail logging messages ? – Show the current 	Status may be: <ul style="list-style-type: none"> Provisioning in progress Provisioning successful Provisioning failed Device is currently programmed 	Gobi2000 and later	CDMA
AT+PRL	For PRL updates, this initiates the OMA-DM CIPRL session: AT+PRL +PRL Values are: <ul style="list-style-type: none"> 0 – Disable NIPRL/CIPRL updates 1 – Enable NIPRL/CIPRL updates (default) 		Gobi2000 and later	CDMA
AT+FUMO	For firmware updates, this initiates the OMA-DM FUMO session.		Not supported	CDMA

5 Gobi-Specific Manufacturing AT Command Set

This chapter describes a subset of the AT command interface that is designed for Gobi manufacturing and design-related testing.

5.1 AT commands

Table 5-1 AT commands

Command	Description	Explanation	Supported targets	Applicable mode
AT\$QCTEMP	Provides the current temperature of the DUT as measured by the onboard thermostat	Result: Temperature in degrees Celsius Note: Temperature is measured via a thermistor in RTR6285™	All	CDMA and WCDMA
AT\$QCVOLT	Provides the input voltage level of VMAIN_3.3 as measured by the DUT power management IC	Result: Voltage in millivolts	All	CDMA and WCDMA
AT\$QCGSN	Provides the MEID or ESN (if MEID is unavailable and ESN is available) of DUT	Result: MEID or ESN (if MEID is unavailable) Note: If the DUT contains an MEID, the response will be a 16-digit hexadecimal number. If the DUT contains an ESN, the response will be an 8-digit hexadecimal number.	All	CDMA and WCDMA
AT+GSN	Provides the ESN (CDMA image only) or IMEI (WCDMA image only) of the DUT	Result: ESN, if available, when a CDMA image is loaded; IMEI when a WCDMA image is loaded	All	CDMA(ESN) or WCDMA(IM EI)

Gobi-Specific Manufacturing AT Command Set

Command	Description	Explanation	Supported targets	Applicable mode
AT+CGSN	Provides IMEI number of DUT	Result: IMEI number of module	All	WCDMA only
AT+GMR	Provides firmware revision of main image currently running on DUT	Result: Firmware revision and timestamp	All	CDMA and WCDMA
AT\$QCHWREV	Provides MDM1000 chip hardware revision	Result: MDM1000 chip hardware version (e.g., part=352, version=2)	All	CDMA and WCDMA
AT+CIMI	Provides IMSI number for SIM card connected to DUT	Result: IMSI number of SIM card	All	WCDMA only
AT+ICCID	Provides ICCID of SIM card connected to DUT	Result: ICCID of SIM card	All	WCDMA only
AT+CPIN	Checks PIN status and provides/changes PIN of SIM card connected to DUT	Result: PIN status and PIN of SIM card	All	WCDMA only
AT\$QCAGC=<band>,<rx_chan>[,<path>]	Provides RSSI for selected receive path, band, and channel	Result: RSSI in dBm Note: For usage information, enter AT\$QCAGC=?	All	For Gobi1000: ■ CDMA (Sprint carrier only) and WCDMA (no GSM) For Gobi2000: ■ CDMA and WCDMA
AT\$QCBOOTVER	Returns boot image version	Result: Boot image version of the module	Gobi2000 and later	CDMA and WCDMA

Gobi-Specific Manufacturing AT Command Set

Command	Description	Explanation	Supported targets	Applicable mode
AT\$QCALLUP=<band>,<tx_chan>[,<on/off>]	Enables or disables the WCDMA transmitter at maximum transmit power on the specified band and channel	Result: Maximum transmit enabled/disabled Note: For usage information, enter AT\$QCALLUP=?	All	CDMA only
AT\$QCBANDPREF=<persistence>,<band_indices>	Sets the band preferences of the device	Result: Band preferences set and also saved in NV memory based on persistence parameter Note: For usage information, enter AT\$QCBANDPREF=? Persistence=1 indicates that the band setting will be saved across power cycles. Cmd will return OK as long as there is at least one support band in the list of bands. For example, \$QCBANDPREF = 1, "27,28" will set the band preferences to WCDMA 2100 and WCDMA 1900 only.	Gobi2000 D1025*3587 and later	WCDMA only

1