

# AT Command Reference

(Based on Release 7.7.0.3, 08/26/2022)

**NOTE:** The AT command options define the possible options for each command, but they may not define the actual capability of the terminal (i.e., some options may not be supported in the current software release).

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# Help commands

## AT ??: List supported AT commands

**Description:** Lists all supported AT commands and result codes starting with <prefix>. Besides this, there is also the possibility to type "AT <command> ??" on the command line to get a detailed description of the <command>.

**References:** None

**Group:** Help commands

**Syntax:** Extended format

Command	Possible response(s)
AT ??=[<prefix>[,<mode>]]	
	<help text>
AT ??	<help text>
AT ???	n/a
AT ??=?	?: (list of supported <mode>s)

### Defined values

<prefix>: string

<mode>: decimal (0-3); Type of listing

- 0 interactive (only headlines)
- 1 short (only headlines)
- 2 long (complete information)
- 3 HTML (readable with an internet browser)

<help text>: alphanumeric

## ITU-T V.25ter: DTE-DCE Interface Commands

### AT S: Set register

<b>Description:</b>	Sets a register which controls the operation of the DCE.
<b>References:</b>	ITU-T V.25ter
<b>Group:</b>	DTE-DCE Interface Commands
<b>Syntax:</b>	Basic format

Command	Possible response(s)
AT S<reg id>=<reg value> to set or S<reg id>? to read the register	
	Read response: <reg value> (3 decimal digits) +CME ERROR: <err>

#### Defined values

<reg id>:	decimal (0,2-8,10-11,19); ID of a register
<reg value>:	decimal (Depending on id)
<S0 value>:	decimal (0-255); Automatic answer <b>0</b> disabled (default) <b>1-255</b> Number of RINGs until automatic answer
<S2 value>:	decimal (1-255); PPP character to abort online mode <b>43</b> + (default)
<S3 value>:	decimal (0-127); Command line termination character <b>13</b> CR (default)
<S4 value>:	decimal (0-127); Response formatting character <b>10</b> LF (default)
<S5 value>:	decimal (0-127); Command line editing character <b>8</b> BS (default)
<S6 value>:	decimal (2-10); Pause before blind dialing, in seconds <b>2</b> (default)
<S7 value>:	decimal (1-255); Connection completion timeout, in seconds <b>60</b> (default)
<S8 value>:	decimal (0-255); Comma dial modifier time, in seconds <b>2</b> (default)
<S10 value>:	decimal (1-254); Automatic disconnect delay, in tenths of seconds <b>1</b> (default)
<S11 value>:	decimal (50-255); Length of DTMF tone duration, in milliseconds <b>95</b> (default)

## AT E: Command echo

<b>Description:</b>	Sets whether or not the DCE echoes characters received from the DTE during command and online command state.
<b>References:</b>	ITU-T V.25ter
<b>Group:</b>	DTE-DCE Interface Commands
<b>Syntax:</b>	Basic format

Command	Possible response(s)
AT E[<value>]	
	+CME ERROR: <err>

### Defined values

<value>:	decimal (0-1); Echo
	0 off
	1 on (default)

## ITU-T V.25ter: Call Control Commands

### AT D: Dial

<b>Description:</b>	Originates a call (or sends a supplementary service string to the network). All characters appearing on the same command line after the "D" are considered part of the call addressing information to be signalled to the network, or modifiers used to control the signalling process, up to a semicolon character or the end of the command line. It is also possible to dial a number from the phonebook. <a href="#">ATD</a> without an argument can be used to modify a call (Voice <-> FAX).
<b>References:</b>	ITU-T V.25ter, ETSI GSM 07.07
<b>Group:</b>	Call Control Commands
<b>Syntax:</b>	Basic format

Command	Possible response(s)
AT D[(<dial string> <pb dial>)[<clir>][<cug>][<semi>]][,<mode>]	
	CONNECT CONNECT <text> NO CARRIER BUSY NO ANSWER NO DIALTONE OK +CME ERROR: <err>

### Defined values

<dial string>:	:= {<digit> <modifier>};
	Simple dialing
<pb dial>:	:= '>(<alpha> <pb> <index>);

<clir>:	Dialing from phonebook character (I,i); Override the CLIR supplementary service subscription default value for this call <ul style="list-style-type: none"> <li><b>I</b> invocation (restrict CLI presentation)</li> <li><b>i</b> suppression (allow CLI presentation)</li> </ul>
<cug>:	character (G,g); Control the CUG supplementary service information for this call; uses index and info values set with command <a href="#">AT+CCUG</a>
<semi>:	character (;); When semicolon character is given after dialing digits (or modifiers), a voice call originated to the given address (ignoring AT+FCLASS). TA returns to command state immediately.
<digit>:	character (0-9,*,#,+A-C,a-c); Dialing digits
<modifier>:	character (D,,,T,P,t,p,!,W,@); Call modifiers (ignored)
<alpha>:	string (0-tlength(pb)); Alpha-tag of a phonebook entry
<pb>:	alphanumeric; Name of phonebook memory (w/o quotes) see <a href="#">AT+CPBS</a>
<index>:	decimal (1-total(pb)); Index in phonebook memory
<mode>:	string ("0","1","2","3"); Mode <ul style="list-style-type: none"> <li><b>0</b> voice (64kbps)</li> <li><b>1</b> data (UDI/RDI)</li> <li><b>2</b> 4kbps voice</li> <li><b>3</b> 3.1kHz audio</li> </ul>

## AT H: Hook control

<b>Description:</b>	Instructs the DCE to disconnect from the line, terminating any call in progress.
<b>References:</b>	ITU-T V.25ter
<b>Group:</b>	Call Control Commands
<b>Syntax:</b>	Basic format

Command	Possible response(s)
AT H[<value>]	

### Defined values

<value>:	decimal (0); Value <ul style="list-style-type: none"> <li><b>0</b> Disconnect and terminate call</li> </ul>
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## ETSI GSM 07.07: General Commands

### AT +CGMI: Request Manufacturer Identification

<b>Description:</b>	Returns information to identify the ME manufacturer.
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGMI=...	n/a
AT +CGMI	<manufacturer> +CME ERROR: <err>
AT +CGMI?	n/a
AT +CGMI=?	

**Defined values**

<manufacturer>:                    alphanumeric

**AT +CGMM: Request Model Identification**

**Description:**                    Returns information to identify the ME model.  
**References:**                    ETSI GSM 07.07  
**Group:**                            General Commands  
**Syntax:**                          Extended format

Command	Possible response(s)
AT +CGMM=...	n/a
AT +CGMM	<model> +CME ERROR: <err>
AT +CGMM?	n/a
AT +CGMM=?	

**Defined values**

<model>:                            alphanumeric

**AT +CGMN: Request Manufacturer Name**

**Description:**                    Returns information to identify the ME manufacturer name.  
**References:**                    ETSI GSM 07.07  
**Group:**                            General Commands  
**Syntax:**                          Extended format

Command	Possible response(s)
AT +CGMN=...	n/a
AT +CGMN	<manufName> +CME ERROR: <err>
AT +CGMN?	n/a



AT +CGMN=?	
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**Defined values**

<manufName>: alphanumeric

**AT +CGMP: Request Manufacturer Part Number**

**Description:** Returns information to identify the ME part number.

**References:** ETSI GSM 07.07

**Group:** General Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CGMP=...	n/a
AT +CGMP	<manufPartNum> +CME ERROR: <err>
AT +CGMP?	n/a
AT +CGMP=?	

**Defined values**

<manufPartNum>: alphanumeric

**AT +GMR: Request Revision Identification**

**Description:** Returns information to identify the TA version, revision level or date.

**References:** ETSI GSM 07.07

**Group:** General Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +GMR=...	n/a
AT +GMR	<revision> +CME ERROR: <err>
AT +GMR?	n/a
AT +GMR=?	

**Defined values**

<revision>: alphanumeric

**AT +CGMR: Request Revision Identification**

**Description:** Returns information to identify the ME version, revision level or date.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGMR=...	n/a
AT +CGMR	<revision> +CME ERROR: <err>
AT +CGMR?	n/a
AT +CGMR=?	

**Defined values**

<revision>: alphanumeric

**AT +CGMS: Request Manufacturer Serial Number**

**Description:** Returns information to identify the ME serial number.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGMS=...	n/a
AT +CGMS	<manufSerNum> +CME ERROR: <err>
AT +CGMS?	n/a
AT +CGMS=?	

**Defined values**

<manufSerNum>: alphanumeric

**AT +CGSN: Request Product Serial Number Identification**

**Description:** Returns information to identify the individual ME. Typically IMEI (International Mobile station Equipment Identity).  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGSN=...	n/a
AT +CGSN	<sn> +CME ERROR: <err>
AT +CGSN?	n/a
AT +CGSN=?	

**Defined values**

<sn>: alphanumeric

**AT +CSCS: Select TE Character Set**

**Description:** Informs the TA about the character set used by the TE. TA is then able to convert character strings correctly between TE and ME character sets.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CSCS=[<chset>]	
	+CME ERROR: <err>
AT +CSCS	n/a
AT +CSCS?	+CSCS: <chset>
AT +CSCS=?	+CSCS: (list of supported <chset>s)

**Defined values**

<chset>: string ("IRA","GSM","PCCP437","8859-1")

**AT +CIMI: Request International Mobile Subscriber Identity (IMSI)**

**Description:** Return IMSI to identify the individual SIM card  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CIMI=...	n/a
AT +CIMI	+CME ERROR: <err>

AT +CIMI?	n/a
AT +CIMI=?	

**Defined values**

<imsi>: string ("IMSI")

**AT +CCLK: Time of Day (UTC), as known to the terminal**

**Description:** Return UTC time of day, if GPS fix and/or network time is available. If the time is not available (i.e., no GPS fix or network time is available), then "UNAVAILABLE" is returned. Time format is "yy/MM/dd, hh:mm:ss zz", where characters indicate the year (two last digits), month, day, hour, minutes, seconds, and time zone (indicates the difference, expressed in quarters of an hour, between the local time and GMT; range 47...+48). E.g. 6th of May 1994, 22:10:00 GMT+2 hours equals to "94/05/06,22:10:00+08". NOTE: This MT does not support time zone information (it always reports UTC time), so the zz characters of <time> are not returned.

**References:** ETSI GSM 07.07

**Group:** General Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CCLK=...	n/a
AT +CCLK	n/a
AT +CCLK?	+CCLK: <time>
AT +CCLK=?	n/a

**Defined values**

<time>: string ("yy/MM/dd, hh:mm:ss")

**AT +CNUM: Subscriber Number**

**Description:** Returns MSISDNs related to the subscriber (stored in SIM or ME).

**References:** ETSI GSM 07.07

**Group:** General Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CNUM=...	n/a
AT +CNUM	+CNUM: [<alpha>,<number>,<type>,<speed>,<service>,<itc>]] [ <CR><LF> +CNUM: [<alpha>,<number>,<type>,<speed>,<service>,<itc>]] [... ] +CME ERROR: <err>
AT +CNUM?	n/a
AT +CNUM=?	

**Defined values**

<alpha>:	string
<number>:	string
<type>:	decimal (0-255)
<speed>:	decimal (0-81)
<service>:	decimal (0-5)
<itc>:	decimal (0-1)

**AT +CREG: Network Registration**

<b>Description:</b>	Controls reporting of unsolicited result code +CREG.
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CREG=[<mode>]	
	+CME ERROR: <err>
AT +CREG	n/a
AT +CREG?	+CREG: <mode>,<stat>[,<lac>,<ci>] +CME ERROR: <err>
AT +CREG=?	+CREG: (list of supported <mode>s)

**Defined values**

<mode>:	decimal (0-2); report <b>0</b> off <b>1</b> registration only <b>2</b> registration and location information
<stat>:	decimal (0-5); Status <b>0</b> not registered <b>1</b> registered (home) <b>2</b> not registered (searching) <b>3</b> registration denied <b>4</b> unknown <b>5</b> registered (roaming)
<lac>:	string (4); location area code
<ci>:	string (4); cell ID

**AT +COPS: Operator Selection**

<b>Description:</b>	Forces an attempt to select and register with the network operator. <mode> is used to select whether the selection is done automatically by the ME or is forced by this command to operator <oper> (it shall be given in <format>).
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +COPS=[<mode>[,<format>[,<oper>]]]	
	+CME ERROR: <err>
AT +COPS	n/a
AT +COPS?	+COPS: <mode>[,<format>,<oper>] +CME ERROR: <err>
AT +COPS=?	+COPS: [list of supported (<stat>,<oper long>,<oper short>,<oper num>)s] [,<list of supported <mode>s>,<list of supported <format>s>] +CME ERROR: <err>

**Defined values**

<mode>:	decimal (0-2); Mode <ul style="list-style-type: none"> <li>0 automatic</li> <li>1 manual</li> <li>2 deregister</li> </ul>
<format>:	decimal (0-2); Format <ul style="list-style-type: none"> <li>0 long alphanumeric</li> <li>1 short alphanumeric</li> <li>2 numeric</li> </ul>
<oper long>:	string
<oper short>:	string
<oper num>:	string
<stat>:	decimal (0-3); Status <ul style="list-style-type: none"> <li>0 unknown</li> <li>1 available</li> <li>2 current</li> <li>3 forbidden</li> </ul>
<oper>:	:= (<oper long> <oper short> <oper num>); // operator depending on <format>

**AT +CPOL: Preferred PLMN List**

<b>Description:</b>	Used to edit PLMN List on SIM card
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CPOL=[<index>[,<format>[,<oper>[,<GSM_AcT>,<GSM_COMP_AcT>, <GSM_UTRA_AcT>]]]]	
	+CME ERROR: <err>
AT +CPOL	n/a
AT +CPOL?	<index>,<format>,<oper>[,<GSM_AcT>,<GSM_COMP_AcT>,<GSM_UTRA_AcT> ]
AT +CPOL=?	+CPOL: (list of supported <index>s)

**Defined values**

<index>:	decimal (0-255); index
<format>:	decimal (0-2); Format <ul style="list-style-type: none"> <li>0 long alphanumeric</li> <li>1 short alphanumeric</li> <li>2 numeric</li> </ul>
<oper long>:	string
<oper short>:	string
<oper num>:	string
<GSM_AcT>:	decimal (0-1); GSM Access Technology <ul style="list-style-type: none"> <li>0 Access technology not selected</li> <li>1 Access technology selected</li> </ul>
<GSM_COMP_AcT>:	decimal (0-1); GSM COMP Access Technology <ul style="list-style-type: none"> <li>0 Access technology not selected</li> <li>1 Access technology selected</li> </ul>
<GSM_UTRA_AcT>:	decimal (0-1); GSM UTRA Access Technology <ul style="list-style-type: none"> <li>0 Access technology not selected</li> <li>1 Access technology selected</li> </ul>
<oper>:	:= (<oper long> <oper short> <oper num>); // operator depending on <format>

**AT +CPLS: Preferred PLMN List**

<b>Description:</b>	Select a Preferred PLMN List to edit on SIM card
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CPLS=<PLMNSelector>	
	+CME ERROR: <err>
AT +CPLS	n/a
AT +CPLS?	+CME ERROR: <err>

AT +CPLS=?	+CPLS: (list of supported <PLMNSelector>s)
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**Defined values**

<PLMNSelector>: decimal (0-2); PLMN Selector

- 0 User controlled PLMN with EFPLMNwAcT/EFPLMNsel
- 1 Operator controlled PLMN selector with EFOPLMNwAcT
- 2 HPLMN selector with EFHPLMNwAcT

**AT +CLCK: Facility Lock**

**Description:** Used to lock, unlock or interrogate a MT or a network facility <fac>. Password is normally needed to do such actions.

**References:** ETSI GSM 07.07

**Group:** General Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CLCK=<fac>,<mode>[,<password>[,<class>]]	
	+CME ERROR: <err> when <mode>=2 and command successful: +CLCK: <status>[,<class>[<CR><LF>+CLCK: <status>,<class>[...]]
AT +CLCK	n/a
AT +CLCK?	n/a
AT +CLCK=?	+CLCK: (list of supported <fac>s) +CME ERROR: <err>

**Defined values**

<fac>: string; Facility

- "PS" Phone to SIM Lock
- "SC" SIM Lock (PIN1)
- "PN" Network Personalization
- "PU" Network Subset Personalization
- "PP" Service Provider Personalization
- "PC" Corporate Personalization

<mode>: decimal (0-2); Mode

- 0 unlock
- 1 lock
- 2 query status

<password>: string; Password

<class>: decimal (1-7); Sum of

- 1 voice
- 2 data
- 4 fax



(default is 7)  
 decimal (0-1); Status  
**0** not active  
**1** active

&lt;status&gt;:

## AT +CPWD: Change Password

**Description:** Sets a new password for the facility lock function defined by command +CLCK.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CPWD=<fac>,<oldpwd>,<newpwd>	
	+CME ERROR: <err>
AT +CPWD	n/a
AT +CPWD?	n/a
AT +CPWD=?	+CPWD: list of supported (<fac>,<pwdlength>)s +CME ERROR: <err>

### Defined values

<fac>: string; Facility  
**"PS"** Phone to SIM Lock  
**"SC"** SIM Lock (PIN1)  
**"PN"** Network Personalization  
**"PU"** Network Subset Personalization  
**"PP"** Service Provider Personalization  
**"PC"** Corporate Personalization

<oldpwd>: string; Old Password

<newpwd>: string; New Password

## AT +CCUG: Closed User Group

**Description:** This command allows control of the Closed User Group supplementary service.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CCUG=<n>[,<index>[,<info>]]	

	OK +CME ERROR: <err>
AT +CCUG	n/a
AT +CCUG?	<n>,<index>,<info>
AT +CCUG=?	+CCUG: (list of supported <n>s)[,(list of supported <index>s)[,(list of supported <info>s)]]

**Defined values**

<n>:	decimal (0-1); Reporting <b>0</b> disable <b>1</b> enable
<index>:	decimal (0-10); Index <b>0-9</b> CUG index <b>10</b> no index(preferred CUG taken from subscriber data)
<info>:	decimal (0-5); Info <b>0</b> no information <b>1</b> suppress OA <b>2</b> suppress preferential CUG <b>3</b> suppress OA and preferential CUG

**AT +CLCC: List Current Calls**

**Description:** List Current Calls of MT. If command succeeds but no calls are available, no information response is sent. If no number was available for a call, 'UNKNOWN' appears as the <number> field. If the <status> field is 255, the <number> field indicates the cause code associated with the call (instead of the phone number).

**References:** ETSI GSM 07.07

**Group:** General Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CLCC=...	n/a
AT +CLCC	+CLCC: <call_id>,<direction>,<status>,<mode>,<multiparty>[, <number>] +CME ERROR: <err>
AT +CLCC?	n/a
AT +CLCC=?	+CLCC: [list of supported <call_id>, <direction>, <status>, <mode>, <multiparty>] +CME ERROR: <err>

**Defined values**

<call_id>:	decimal (0-255); Call ID/index
<direction>:	decimal (0-1,255); Direction of Call <b>0</b> Mobile Originated <b>1</b> Mobile Terminated

**255** inactive/invalid  
 <status>: decimal (0-5,255); Call Status  
     **0** active  
     **1** held  
     **2** dialing (MO)  
     **3** alerting (MO)  
     **4** incoming (MT)  
     **5** waiting (MT)  
     **255** inactive/invalid  
 <mode>: decimal (0-2,255); Calling Mode  
     **0** voice  
     **1** data  
     **2** fax  
     **255** inactive/invalid  
 <multiparty>: decimal (0-1); Multi-Party Call  
     **0** no  
     **1** yes  
 <number>: string; Phone number (or cause code)

### AT +CUSD: Unstructured Supplementary Service Data

**Description:** Allows control of the Unstructured Supplementary Service Data(USSD) according to 3GPP TS 22.090 [23]. Both network and mobile initiated operations are supported.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CUSD=[<n>[,<str>[,<dcs>]]]	
	+CME ERROR: <err>
AT +CUSD	n/a
AT +CUSD?	+CUSD: <n>
AT +CUSD=?	+CUSD: (list of supported <n>s)

#### Defined values

<n>: decimal (0-2); Disable/Enable +CUSD Result Code  
 <str>: string; USSD string  
 <dcs>: decimal (0); Data Coding Scheme  
 <m>: decimal (0-5); m value

**AT +CPAS: Phone Activity Status**

**Description:** Used to interrogate the ME before requesting action from the phone.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CPAS=...	n/a
AT +CPAS	+CPAS: <pas> +CME ERROR: <err>
AT +CPAS?	n/a
AT +CPAS=?	+CPAS: (list of supported <pas>s) +CME ERROR: <err>

**Defined values**

<pas>: decimal (0-5); Status

- 0 ready (ME allows commands from TA/TE)
- 1 unavailable (ME does not allow commands from TA/TE)
- 2 unknown
- 3 ringing (ready, but the ringer is active)
- 4 call in progress (ready, but a call is active)
- 5 asleep (ME is unable to process commands from TA/TE because it is in low functionality state)

**AT +CFUN: Set Phone Functionality**

**Description:** Selects the level of functionality in the ME.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CFUN=[<level>[,<reset>]]	
	+CME ERROR: <err>
AT +CFUN	n/a
AT +CFUN?	+CFUN: <level> +CME ERROR: <err>
AT +CFUN=?	+CFUN: (list of supported <level>s),(list of supported <reset>s) +CME ERROR: <err>

**Defined values**

<level>:	decimal (0-5); Level <b>0</b> minimum functionality <b>1</b> full functionality <b>2</b> FUN_NO_TRANSMIT <b>3</b> FUN_NO_RECEIVE <b>4</b> FUN_NO_T_AND_R <b>5</b> FUN_RESERVED
<reset>:	decimal (0-1); Reset the ME before setting it to <level> <b>0</b> no <b>1</b> yes

**AT +CPIN: Enter PIN**

<b>Description:</b>	Sends to the ME a password which is necessary before it can be operated. If the PIN required is a PUK, a new PIN must also be given.
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CPIN=<pin>[,<newpin>]	
	+CME ERROR: <err>
AT +CPIN	n/a
AT +CPIN?	+CPIN: <code> +CME ERROR: <err>
AT +CPIN=?	

**Defined values**

<pin>:	string; PIN
<newpin>:	string; New PIN
<code>:	alphanumeric

**AT +CBC: Battery Charge**

<b>Description:</b>	Returns battery connection status <bc> and battery charge level <bcl> of the ME.
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)

AT +CBC=...	n/a
AT +CBC	+CBC: <bc>,<bcl> +CME ERROR: <err>
AT +CBC?	n/a
AT +CBC=?	+CBC: (list of supported <bc>s),(list of supported <bcl>s)

**Defined values**

<bc>:	decimal (0-3); Status <ul style="list-style-type: none"> <li>0 ME is powered by the battery</li> <li>1 ME has a battery connected, but is not powered by it</li> <li>2 ME does not have a battery connected</li> <li>3 Recognized power fault, calls inhibited</li> </ul>
<bcl>:	decimal (0-100); Battery Capacity <ul style="list-style-type: none"> <li>0 battery exhausted or not connected</li> <li>1-100 percent of capacity remaining</li> </ul>

**AT +CIND: Indicator**

<b>Description:</b>	Set the values of MT indicators.
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CIND=<battchg>	
	+CME ERROR: <err>
AT +CIND	
AT +CIND?	+CIND: <battchg>,<signal>,<sounder>,<message>,<call>,<smsfull>,<buzzer>,<button>,<leds>]]]]]] +CME ERROR: <err>
AT +CIND=?	+CIND: (list of supported <battchg>s)[, (list of supported <signal>s)[, (list of supported <sounder>s)[, (list of supported <message>s)[, (list of supported <call>s)[, (list of supported <smsfull>s)[, (list of supported <buzzer>s)[, (list of supported <button>s)[, (list of supported <leds>s)]]]]]] ]]

**Defined values**

<battchg>:	decimal (0-5); Battery Charge indicator (0: disabled, 1: enabled)
<signal>:	decimal (0-5); Signal level indicator
<sounder>:	decimal (0-1); Sounder indicator
<message>:	decimal (0-1); Message indicator
<call>:	decimal (0-11); Call count indicator
<smsfull>:	decimal (0-1); SMS memory indicator
<buzzer>:	decimal (0-1); Buzzer on/off indicator

<button>: decimal (0-1); Button on/off indicator  
 <leds>: decimal (0-1); leds on/off indicator

## AT +CPBS: Select Phonebook Memory Storage

**Description:** Selects phonebook memory storage <storage>, which is used by other phonebook commands.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CPBS=<storage>	
	+CME ERROR: <err>
AT +CPBS	n/a
AT +CPBS?	+CPBS: <storage>[,<used>,<total>] +CME ERROR: <err>
AT +CPBS=?	+CPBS: (list of supported <storage>s)

### Defined values

<storage>: string constant ("SM","LD","FD"); Storage  
     **"SM"** SIM phonebook  
     **"LD"** SIM last-dialing phonebook  
     **"FD"** fix-dialing phonebook  
 <used>: decimal (used(pb)); Number of used locations in selected memory  
 <total>: decimal (total(pb)); Total number of locations in selected memory

## AT +CPBR: Read Phonebook Entries

**Description:** Returns phonebook entries in location number range <index1>...<index2> from the current phonebook memory storage selected with [AT+CPBS](#).  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CPBR=<index1>[,<index2>]	
	+CPBR: <index1>,<number>,<type>,<alpha>[<CR><LF> +CPBR: <index2>,<number>,<type>,<alpha>[...]] +CME ERROR: <err>
AT +CPBR	n/a
AT +CPBR?	n/a

AT +CPBR=?	+CPBR: (list of supported <index>s),<nlength>,<tlength> +CME ERROR: <err>
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**Defined values**

<index1>:	decimal (1-total(pb)); start index
<index2>:	decimal (1-total(pb)); end index
<number>:	string (0-nlength(pb)); phone number
<type>:	decimal (0-255); type of phone number
<alpha>:	string (0-tlength(pb)); alpha-tag assigned to phone number
<index>:	decimal (1-total(pb)); index in phonebook
<nlength>:	decimal (nlength(pb)); maximum length of field <number>
<tlength>:	decimal (tlength(pb)); maximum length of field <alpha>

**AT +CPBW: Write/Delete Phonebook Entry**

<b>Description:</b>	Writes phonebook entry in location number <index> in the current phonebook memory storage selected with <a href="#">AT+CPBS</a> . If only <index> is given, the entry is deleted. If <index> is left out, entry is written to the first free location.
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	General Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CPBW=[<index>][,<number>[,<type>[,<alpha>]]]	
	+CME ERROR: <err>
AT +CPBW	n/a
AT +CPBW?	n/a
AT +CPBW=?	+CPBW: (list of supported <index>s),<nlength>, (list of supported <type>s),<tlength> +CME ERROR: <err>

**Defined values**

<index>:	decimal (1-total(pb)); index in phonebook
<number>:	string (0-nlength(pb)); phone number
<type>:	decimal (129,145); type of phone number
<alpha>:	string (0-tlength(pb)); alpha-tag assigned to phone number
<nlength>:	decimal (nlength(pb)); maximum length of field <number>
<tlength>:	decimal (tlength(pb)); maximum length of field <alpha>

**AT +CRSM: Restricted SIM Access**

<b>Description:</b>	Transmits to the ME the SIM <command> and its required parameters. ME handles internally all SIM-ME interface locking and file selection routines. As response to the command, ME sends the actual SIM information parameters and response data. Failure in the execution of the command in the SIM
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is reported in <sw1> and <sw2> parameters. See also GSM 11.11.

**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CRSM=<command>[,<fileid>[,<P1>,<P2>,<P3>[,<data>]]]	
	+CRSM: <sw1>,<sw2>[,<response>] +CME ERROR: <err>
AT +CRSM	n/a
AT +CRSM?	n/a
AT +CRSM=?	+CRSM: (list of supported <command>s), (list of supported <fileid>s)

### Defined values

<command>: decimal (176,178); Command  
**176** READ BINARY  
**178** READ RECORD

<fileid>: decimal (36609-36620); Supported identifiers of an elementary data file on SIM  
**36609** POS-IND  
**36610** INM-CUG  
**36611** DP-NAME  
**36612** SERV-LOGO  
**36613** SUPP-LOGO  
**36614** APN  
**36615** SUP-TEL  
**36616** SUP-EMAIL  
**36617** SUP-URL  
**36618** SRV-URL  
**36619** DP-INFO-URL  
**36620** SP-NAME

<P1>: decimal (0); Parameter passed on to the SIM  
<P2>: decimal (0); See <P1>  
<P3>: decimal (0-255); See <P1>  
<data>: alphanumeric; Not supported  
<sw1>: decimal; Information from the SIM about the execution of the actual command.  
<sw2>: decimal; See <sw1>  
<response>: alphanumeric; Response data

## AT +CMAR: Master Reset

**Description:** Restore Factory defaults.

**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CMAR=<passwd>	
	+CME ERROR: <err>
AT +CMAR	
AT +CMAR?	
AT +CMAR=?	

**Defined values**

<passwd>: string constant ("password"); Password  
**"pass"** password

**AT +CMEE: Report Mobile Equipment Error**

**Description:** Defines the reporting of ME errors. See ERROR, +CME, +CMS.  
**References:** ETSI GSM 07.07  
**Group:** General Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CMEE=[<level>]	
	+CME ERROR: <err>
AT +CMEE	n/a
AT +CMEE?	+CMEE: <level>
AT +CMEE=?	+CMEE: (list of supported <level>s)

**Defined values**

<level>: decimal (0-2); +CME ERROR <err> result code  
**0** disabled - instead ERROR is used  
**1** enabled - numeric <err> values  
**2** enabled - verbose <err> values

**ETSI GSM 07.05: General Configuration Commands****AT +CSMS: Select Message Service**

**Description:** Selects <service> and returns types of messages supported by the ME: <mt> for mobile terminated messages, <mo> for mobile originated messages and <bm> for broadcast type messages.

**References:** ETSI GSM 07.05

**Group:** General Configuration Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CSMS=[<service>]	
	+CSMS: <mt>,<mo>,<bm> +CMS ERROR: <err>
AT +CSMS	n/a
AT +CSMS?	+CSMS: <service>,<mt>,<mo>,<bm>
AT +CSMS=?	+CSMS: (list of supported <service>s)

#### Defined values

<service>: decimal (0); Service  
**0** GSM 07.05 Phase 2

<mt>: decimal (0-1); MT  
**1** supported

<mo>: decimal (0-1); MO  
**1** supported

<bm>: decimal (0-1); BM  
**1** supported

### AT +CPMS: Preferred Message Storage

**Description:** Selects memory storages <mem1>, <mem2> and <mem3> to be used for reading, writing, etc.

**References:** ETSI GSM 07.05

**Group:** General Configuration Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CPMS=<mem1>[,<mem2>[,<mem3>]]	
	+CPMS: <used1>,<total1>,<used2>,<total2>,<used3>,<total3> +CMS ERROR: <err>
AT +CPMS	n/a
AT +CPMS?	+CPMS: <mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>,<mem3>,<used3>,<total3> +CMS ERROR: <err>
AT +CPMS=?	+CPMS: (list of supported <mem1>s),(list of supported <mem2>s), (list of supported <mem3>s)

**Defined values**

<mem1>:	string constant ("SM"); Memory from which messages are read and deleted ( <a href="#">AT+CMGL</a> , <a href="#">AT+CMGR</a> , <a href="#">AT+CMGD</a> ) "SM" SIM message storage
<mem2>:	string constant ("SM"); Memory to which writing and sending operations are made ( <a href="#">AT+CMSS</a> , <a href="#">AT+CMGW</a> ).
<mem3>:	string constant ("BM"); Memory to which received SMs are preferred to be stored. Received CBMs are always stored in "BM". Received status reports are always stored in "SR".
<used1>:	decimal; Number of messages currently in <mem1>
<total1>:	decimal; Total number of message locations in <mem1>
<used2>:	decimal; Number of messages currently in <mem2>
<total2>:	decimal; Total number of message locations in <mem2>
<used3>:	decimal; Number of messages currently in <mem3>
<total3>:	decimal; Total number of message locations in <mem3>

**AT +CMGF: Message Format**

<b>Description:</b>	Command tells the TA, which input and output format of message to use. <mode> can be either PDU or text mode.
<b>References:</b>	ETSI GSM 07.05
<b>Group:</b>	General Configuration Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CMGF=[<mode>]	
	+CMS ERROR: <err>
AT +CMGF	n/a
AT +CMGF?	+CMGF: <mode>
AT +CMGF=?	+CMGF: (list of supported <mode>s)

**Defined values**

<mode>:	decimal (0-1); Mode <b>0</b> PDU (default) <b>1</b> text
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**ETSI GSM 07.05: Message Configuration Commands****AT +CSCA: Service Center Address**

<b>Description:</b>	Updates SMSC address, through which mobile originated SMs are transmitted. Setting is used by <a href="#">AT+CMGS</a> and <a href="#">AT+CMGW</a> .
<b>References:</b>	ETSI GSM 07.05
<b>Group:</b>	Message Configuration Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CSCA=<sca number>[,<sca type>]	
	+CMS ERROR: <err>
AT +CSCA	n/a
AT +CSCA?	+CSCA: <sca number>,<sca type>
AT +CSCA=?	

**Defined values**

<sca number>: string  
 <sca type>: decimal (0-255)

**AT +CSMP: Set Text Mode Parameters**

**Description:** Select values for additional parameters needed when SM is sent to the network or placed in a storage when text format message mode is selected. The format of <vp> is given by <fo>.

**References:** ETSI GSM 07.05

**Group:** Message Configuration Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CSMP=[<fo>[,<vp int> <vp str>][,<pid>[,<dcs>]]]	
	+CMS ERROR: <err>
AT +CSMP	n/a
AT +CSMP?	+CSMP: <fo>,<vp int> <vp str>,<pid>,<dcs>
AT +CSMP=?	

**Defined values**

<fo>: decimal (0-255); first octet of SMS  
 <vp int>: decimal (0-255); Relative TP-Validity-Period  
 <vp str>: string (20); Absolute TPVP format in "yy/MM/dd,hh:mm:ss[+/-]zz", where zz is Time Zone  
 <pid>: decimal (0-255); TP-Protocol-Identifier  
 <dcs>: decimal (0-255); Data Coding Scheme

**AT +CSDH: Show Text Mode Parameters**

**Description:** Controls whether detailed header information is shown in text mode result codes ( AT+CMT, [AT+CMGL](#), [AT+CMGR](#)).

**References:** ETSI GSM 07.05

**Group:** Message Configuration Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CSDH=[<show>]	
	+CMS ERROR: <err>
AT +CSDH	n/a
AT +CSDH?	+CSDH: <show>
AT +CSDH=?	+CSDH: (list of supported <show>s)

#### Defined values

<show>: decimal (0-1); Show/Hide  
**0** hide values  
**1** show values

## AT +CSCB: Select Cell Broadcast Message Types

**Description:** Selects which types of CBMs are to be received by the ME. The set of messages is defined by <mids> and <dcss>.  
**References:** ETSI GSM 07.05  
**Group:** Message Configuration Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CSCB=[<mode>[,<mids>[,<dcss>]]]	
	+CMS ERROR: <err>
AT +CSCB	n/a
AT +CSCB?	+CSCB: <mode>,<mids>,<dcss>
AT +CSCB=?	+CSCB: (list of supported <mode>s)

#### Defined values

<mode>: decimal (0-0); accept messages  
**0** in set  
**1** not in set  
<mids>: string; list of CBM identifiers  
<dcss>: string; list of CBM data coding schemes

## AT +CSAS: Save Settings

**Description:** Saves active message service settings ( [AT+CSCA](#), [AT+CSMP](#), [AT+CSCB](#)) to a non-volatile memory. A TA can contain several <profile>s.  
**References:** ETSI GSM 07.05

**Group:** Message Configuration Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CSAS=[<profile>]	
	+CMS ERROR: <err>
AT +CSAS	+CMS ERROR: <err>
AT +CSAS?	n/a
AT +CSAS=?	+CSAS: (list of supported <profile>s)

**Defined values**

<profile>: decimal (0-4); profile index

**AT +CRES: Restore Settings**

**Description:** Restores message service settings ( [AT+CSCA](#), [AT+CSMP](#), [AT+CSCB](#)) from a non-volatile memory. A TA can contain several <profile>s.  
**References:** ETSI GSM 07.05  
**Group:** Message Configuration Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CRES=[<profile>]	
	+CMS ERROR: <err>
AT +CRES	+CMS ERROR: <err>
AT +CRES?	n/a
AT +CRES=?	+CRES: (list of supported <profile>s)

**Defined values**

<profile>: decimal (0-4); profile index

**ETSI GSM 07.05: Message Receiving and Reading Commands****AT +CNMI: New Message Indications to TE**

**Description:** Selects the procedure, how receiving of new messages from the network is indicated to the TE when TE is active.  
**References:** ETSI GSM 07.05  
**Group:** Message Receiving and Reading Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CNMI=[<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]	
	+CMS ERROR: <err>
AT +CNMI	n/a
AT +CNMI?	+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr>
AT +CNMI=?	+CNMI: (list of supported <mode>s),(list of supported <mt>s), (list of supported <bm>s),(list of supported <ds>s), (list of supported <bfr>s)

**Defined values**

<mode>:	decimal (1); Mode <ul style="list-style-type: none"> <li>1 Discard indication and reject new received message unsolicited result code when TA-TE link is reserved. Otherwise forward them directly to TE</li> </ul>
<mt>:	decimal (0-1); SMS-DELIVERs
<bm>:	decimal (0); CBMs
<ds>:	decimal (0,2); SMS-STATUS-REPORTs
<bfr>:	decimal (0); When <mode> 1..3 is entered, TA buffer of unsolicited result code defined within this command is <ul style="list-style-type: none"> <li>0 flushed to the TE</li> <li>1 cleared</li> </ul>

**AT +CMGL: List Messages**

<b>Description:</b>	Returns messages with status value <stat> from message storage <mem1> to the TE. In PDU mode <stat> is an integer else a string. If status of the message is 'unread', status in storage changes to 'read'. <a href="#">AT+CSDH</a> controls the returned parameters in text mode.
<b>References:</b>	ETSI GSM 07.05
<b>Group:</b>	Message Receiving and Reading Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CMGL=(<stat int> <stat str>)	
	<p>if text mode and command successful:</p> <p>1) SMS-SUBMITs and/or SMS-DELIVERs:  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;oa/da&gt;,[&lt;alpha&gt;],[&lt;scts&gt;][, &lt;tooa/toda&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;  &lt;data&gt;[&lt;CR&gt;&lt;LF&gt;  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;oa/da&gt;,[&lt;alpha&gt;],[&lt;scts&gt;][, &lt;tooa/toda&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;  &lt;data&gt;[...]]</p> <p>2) SMS-STATUS-REPORTs:  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;, &lt;dt&gt;,&lt;st&gt;[&lt;CR&gt;&lt;LF&gt;  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;, &lt;dt&gt;,&lt;st&gt;[...]]</p> <p>3) SMS-COMMANDs:  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;fo&gt;,&lt;ct&gt;[&lt;CR&gt;&lt;LF&gt;  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;fo&gt;,&lt;ct&gt;[...]]</p> <p>4) CBM storage:  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt;  &lt;data&gt;[&lt;CR&gt;&lt;LF&gt;  +CMGL: &lt;index&gt;,&lt;stat str&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt;</p>



	<pre> &lt;data&gt;[...] if PDU mode and command successful: +CMGL: &lt;index&gt;,&lt;stat int&gt;,[&lt;alpha&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt; &lt;pdu&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL: &lt;index&gt;,&lt;stat int&gt;,[&lt;alpha&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt; &lt;pdu&gt;[...]] otherwise: +CMS ERROR: &lt;err&gt; </pre>
AT +CMGL	like +CMGL=4 or "ALL"
AT +CMGL?	n/a
AT +CMGL=?	PDU: +CMGL: (list of supported <stat int>s) Text: +CMGL: (list of supported <stat str>s)

### Defined values

<stat int>:	decimal (0-4); used in PDU mode
	<ul style="list-style-type: none"> <li><b>0</b> unread</li> <li><b>1</b> read</li> <li><b>2</b> unsend</li> <li><b>3</b> sent</li> <li><b>4</b> all</li> </ul>
<stat str>:	string; used in text mode
	<ul style="list-style-type: none"> <li><b>"REC UNREAD"</b> unread</li> <li><b>"REC READ"</b> read</li> <li><b>"STO UNSENT"</b> unsend</li> <li><b>"STO SENT"</b> sent</li> <li><b>"ALL"</b> all</li> </ul>
<index>:	decimal (1-total(mem1)); Index to <mem1> (see <a href="#">AT+CPMS</a> )
<oa/da>:	string
<alpha>:	string
<scts>:	string
<tooa/toda>:	decimal (0-255)
<length>:	decimal (0-255)
<data>:	alphanumeric
<pdu>:	alphanumeric
<fo>:	decimal (0-255); first octet of SMS
<mr>:	decimal (n); TP-Message-Reference
<ra>:	string; TP-Recipient-Address
<tora>:	decimal (0-255)
<dt>:	string (20); TP-Discharge-Time
<st>:	decimal (n); TP-Status
<ct>:	decimal (n); TP-Command-Type
<sn>:	decimal (n); CBM Serial Number
<mid>:	decimal (n); CBM Message Identifier
<page>:	decimal (0-15); CBM Page Parameter (bits 4-7)

&lt;pages&gt;:

decimal (0-15); CBM Page Parameter (bits 0-3)

**AT +CMGR: Read Message**

**Description:** Returns message with location value <index> from message storage <mem1> to the TE. [AT+CSDH](#) controls the amount of returned values. If status of the message is 'received unread', status in the storage changes to 'received read'.

**References:** ETSI GSM 07.05

**Group:** Message Receiving and Reading Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CMGR=<index>	<p>if text mode and command successful:</p> <p>1) SMS-DELIVER: +CMGR: &lt;stat str&gt;,&lt;oa&gt;,[&lt;alpha&gt;],&lt;scts&gt;[,&lt;tooa&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcs&gt;,&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt; // <a href="#">AT+CSDH</a> &lt;data&gt;</p> <p>2) SMS-SUBMIT: +CMGR: &lt;stat str&gt;,&lt;da&gt;,[&lt;alpha&gt;],[&lt;toda&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcs&gt;,[&lt;vp&gt;],&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt; // <a href="#">AT+CSDH</a> &lt;data&gt;</p> <p>3) SMS-STATUS-REPORT: +CMGR: &lt;stat str&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;</p> <p>4) SMS-COMMAND: +CMGR: &lt;stat str&gt;,&lt;fo&gt;,&lt;ct&gt;[,&lt;pid&gt;],[&lt;mn&gt;],[&lt;da&gt;],[&lt;toda&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt; // <a href="#">AT+CSDH</a> &lt;cdata&gt;</p> <p>5) CBM storage: +CMGR: &lt;stat str&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;dcs&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt; &lt;data&gt;</p> <p>if PDU mode and command successful: +CMGR: &lt;stat int&gt;,[&lt;alpha&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt; &lt;pdu&gt;</p> <p>otherwise: +CMS ERROR: &lt;err&gt;</p>
AT +CMGR	n/a
AT +CMGR?	n/a
AT +CMGR=?	

**Defined values**

<index>: decimal (1-total(mem1)); Index to <mem1> (see [AT+CPMS](#))

<stat str>: string; Status

"REC UNREAD"	unread
"REC READ"	read
"STO UNSENT"	unsent
"STO SEND"	send

<oa>: string; TP-Originating-Address

<tooa>: decimal (0-255); type of <oa>

<alpha>:	string; alpha-tag in phonebook
<scts>:	string; TP-Service-Center-Time-Stamp
<fo>:	decimal (0-255); first octet of SMS
<pid>:	decimal (0-255); TP-Protocol-Identifier
<dc>:	decimal (0-255); SM or CBM Data Coding Scheme
<sca>:	string; RP service center address
<tosca>:	decimal; type of <sca>
<length>:	decimal (0-255); length of <data> or <cdata>
<data>:	alphanumeric; TP-User-Data
<da>:	string; TP-Destination-Address
<toda>:	decimal; type of <da>
<vp>:	:= (<vp str> <vp int>); // TPVP depending on <fo>
<vp str>:	string (20); Absolute TPVP format in "yy/MM/dd,hh:mm:ss[+/-]zz", where zz is Time Zone
<vp int>:	decimal (0-255); Relative TP-Validity-Period
<mr>:	decimal (n); TP-Message-Reference
<ra>:	string; TP-Recipient-Address
<tora>:	decimal (0-255); type of <ra>
<dt>:	string (20); TP-Discharge-Time
<st>:	decimal (n); TP-Status
<ct>:	decimal (n); TP-Command-Type
<mn>:	decimal; TP-Message-Number
<cdata>:	alphanumeric; TP-Command-Data
<sn>:	decimal; CBM Serial Number
<mid>:	decimal; CBM Message Identifier
<page>:	decimal (0-15); CBM Page Parameter (bits 4-7)
<pages>:	decimal (0-15); CBM Page Parameter (bits 0-3)
<stat int>:	decimal (0-3); Status <ul style="list-style-type: none"> <li>0 unread</li> <li>1 read</li> <li>2 unsent</li> <li>3 send</li> </ul>
<pdu>:	alphanumeric

## ETSI GSM 07.05: Message Sending and Writing Commands

### AT +CMGS: Send Message

<b>Description:</b>	Sends message from a TE to the network (SMS-SUBMIT). Message reference value <mr> is returned to the TE on successful message delivery. Optionally (when <a href="#">AT+CSMS</a> <service> value is 1 and network supports) <scts> is returned (in pdu mode <ackpdu>).
<b>References:</b>	ETSI GSM 07.05
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CMGS= if text mode: <da>[,<toa>]<CR>text_is_entered<ctrl-z/ESC> if pdu mode: <length><CR>pdu_is_given<ctrl-z/ESC>	
	if text mode: +CMGS: <mr>[,<scts>] if pdu mode: +CMGS: <mr>[,<ackpdu>] if sending fails: +CMS ERROR: <err>
AT +CMGS	n/a
AT +CMGS?	n/a
AT +CMGS=?	

**Defined values**

<da>:	string; recipient address
<toa>:	decimal (0-255)
<length>:	decimal (1-n)
<mr>:	decimal (n); TP-Message-Reference
<scts>:	string; TP-Service-Center-Time-Stamp
<ackpdu>:	string (1-n)

**AT +CMSS: Send Message from Storage**

**Description:** Sends message from with location value <index> from preferred message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND). If new recipient address <da> is given for SMS-SUBMIT, it shall be used instead of the one stored with the message. Reference value <mr> is returned to the TE on successful message delivery. Optionally (when [AT+CSMS](#) <service> value is 1 and network supports) <scts> is returned (in pdu mode <ackpdu>).

**References:** ETSI GSM 07.05

**Group:** Message Sending and Writing Commands

**Syntax:** Extended format

Command	Possible response(s)
AT +CMSS=<index>[,<da>[,<toa>]]	
	if text mode: +CMSS: <mr>[,<scts>] if pdu mode: +CMSS: <mr>[,<ackpdu>] if sending fails: +CMS ERROR: <err>
AT +CMSS	n/a

AT +CMSS?	n/a
AT +CMSS=?	

**Defined values**

<index>:	decimal (1-n); location in <mem2>
<da>:	string; recipient address
<toa>:	decimal (0-255)
<mr>:	decimal (n); TP-Message-Reference
<scts>:	string; TP-Service-Center-Time-Stamp
<ackpdu>:	string (1-n)

**AT +CMGW: Write Message to Memory**

<b>Description:</b>	Stores message to memory storage <mem2> and returns the location <index>. If <stat> is not given status will be set to 'unsent'.
<b>References:</b>	ETSI GSM 07.05
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CMGW= if text mode: <address>[,<toa>[,<stat str>]]<CR>text_is_entered<ctrl-z/ESC> if pdu mode: <length>[,<stat int>]<CR>pdu_is_given<ctrl-z/ESC>	
	+CMGW: <index> +CMS ERROR: <err>
AT +CMGW	n/a
AT +CMGW?	n/a
AT +CMGW=?	

**Defined values**

<address>:	string
<toa>:	decimal (0-255)
<stat int>:	decimal (0-3); Status <b>0</b> unread <b>1</b> read <b>2</b> unsent <b>3</b> send
<stat str>:	string; Status String <b>"REC UNREAD"</b> <b>"REC READ"</b> <b>"STO UNSENT"</b>

**"STO SEND"**

<length>: decimal (1-n)  
 <index>: decimal (1-n)

**AT +CMGD: Delete Message**

**Description:** Deletes message from preferred message storage <mem1> (see [AT+CPMS](#)) location <index>.  
**References:** ETSI GSM 07.05  
**Group:** Message Sending and Writing Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CMGD=<index>[,<del_flag>]	
	+CMS ERROR: <err>
AT +CMGD	n/a
AT +CMGD?	n/a
AT +CMGD=?	+CMGD: (list of supported <index>s)[, (list of supported <del_flag>s)]

**Defined values**

<index>: decimal (1-n)  
 <del\_flag>: decimal (0-4); delete\_flag

- 0 Delete the message specified in index
- 1 Delete all read msgs except unread & stored msgs
- 2 Delete all read & sent messages except unread & stored msgs
- 3 Delete all read, sent & unsent msgs except unread & stored msgs
- 4 Delete all msgs from preferred msg storage, including unread msgs

**AT +CGDCONT: Define PDP Context**

**Description:** Specifies PDP context parameter values for a PDP context identified by the (local) context identification parameter, <cid>  
**References:** ETSI GSM 07.07  
**Group:** Message Sending and Writing Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGDCONT=<cid>[,<pdp_type>[,<apn>[,<pdp_address>[,<d_comp>[,<h_comp>[, <pd1>[,<pd2>[,<pd3>[,<pd4>]]]]]]]]]]	
	+CME ERROR: <err>
AT +CGDCONT	n/a
AT +CGDCONT?	+CGDCONT: <cid>,<pdp_type>,<apn>,<pdp_address>,<d_comp>,<h_comp>,<pd1>,<pd2>,<pd3>,<pd4>,<pd5>,<pd6>[<CR><LF>]

	+CGDCONT: <cid>,<pdp_type>,<apn>,<pdp_address>,<d_comp>,<h_comp> ,<pd1>,<pd2>,<pd3>,<pd4>,<pd5>,<pd6>[...]
AT +CGDCONT=?	+CGDCONT: (list of supported <cid>s), (list of supported <pdp_type>s),,(list of supported <d_comp>s), (list of supported <h_comp>s),,,,,,

**Defined values**

<cid>:	decimal (1-11); PDP Context Identifier
<pdp_type>:	string ("IP", "PPP"); Packet Data Protocol types
<apn>:	string; Access Point Name
<pdp_address>:	string; Global IP address (0.0.0.0 if inactive)
<d_comp>:	decimal (0-3); data compression parameter <ul style="list-style-type: none"> <li>0 off (default if value is omitted)</li> <li>1 on (manufacturer preferred compression - not supported)</li> <li>2 V.42bis (not supported)</li> <li>3 V.44 (not supported)</li> </ul>
<h_comp>:	decimal (0-4); header compression parameter <ul style="list-style-type: none"> <li>0 off (default if value is omitted)</li> <li>1 on (manufacturer preferred compression - not supported)</li> <li>2 RFC1144 (not supported)</li> <li>3 RFC2507 (supported but not controllable with this parameter)</li> <li>4 RFC3095 (not supported)</li> </ul>
<pd1>:	string; apn-username (optional)
<pd2>:	string; apn-password (optional)
<pd3>:	string; TE address (optional)
<pd4>:	
<pd5>:	string; DNS1 (read-only)
<pd6>:	string; DNS2 (read-only)

**AT +CGDSCONT: Define Secondary PDP Context**

<b>Description:</b>	Specifies PDP context parameter values for a Secondary PDP context identified by the (local) context identification parameter, <cid>
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGDSCONT=<cid>[,<p_cid>[,<d_comp>[,<h_comp>]]]	
	+CME ERROR: <err>
AT +CGDSCONT	n/a
AT +CGDSCONT?	+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp>[<CR><LF> +CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp>[...]]
AT +CGDSCONT=?	+CGDSCONT: (list of supported <cid>s), (list of supported <p_cid>s),(list of supported <d_comp>s), (list of supported <h_comp>s)

**Defined values**

<cid>:	decimal (1-11); PDP Context Identifier
<p_cid>:	decimal (1-11); Primary PDP Context Identifier
<d_comp>:	decimal (0-3); data compression parameter <ol style="list-style-type: none"> <li>0 off (default if value is omitted)</li> <li>1 on (manufacturer preferred compression - not supported)</li> <li>2 V.42bis (not supported)</li> <li>3 V.44 (not supported)</li> </ol>
<h_comp>:	decimal (0-4); header compression parameter <ol style="list-style-type: none"> <li>0 off (default if value is omitted)</li> <li>1 on (manufacturer preferred compression - not supported)</li> <li>2 RFC1144 (not supported)</li> <li>3 RFC2507 (supported but not controllable with this parameter)</li> <li>4 RFC3095 (not supported)</li> </ol>

**AT +CGEQREQ: 3G Quality of Service Profile (Requested)**

<b>Description:</b>	Specifies a profile for the context identified by the (local)context identification parameter, <cid>
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGEQREQ=<cid>[,<trafficClass>[,<max_br_ul>[,<max_br_dl>[,<guar_br_ul>[,<guar_br_dl>[,<dlv_order>[,<maxSduSize>[,<sduErrRatio>[,<resBERatio>[,<delErrSdus>[,<trfrDelay>[,<trafHdlPrio>]]]]]]]]]] ]	
	+CME ERROR: <err>
AT +CGEQREQ	n/a
AT +CGEQREQ?	+CGEQREQ: <cid>,<trafficClass>,<max_br_ul>,<max_br_dl>,<guar_br_ul>,<guar_br_dl>,<dlv_order>,<maxSduSize>,<sduErrRatio>,<resBERatio>,<delErrSdus>,<trfrDelay>,<trafHdlPrio>[<CR><LF> +CGEQREQ: <cid>,<trafficClass>,<max_br_ul>,<max_br_dl>,<guar_br_ul>,<guar_br_dl>,<dlv_order>,<maxSduSize>,<sduErrRatio>,<resBERatio>,<delErrSdus>,<trfrDelay>,<trafHdlPrio>[...]]
AT +CGEQREQ=?	+CGEQREQ: (list of supported <pdp_type>s), (list of supported <cid>s),(list of supported <trafficClass>s), (list of supported <max_br_ul>s), (list of supported <max_br_dl>s), (list of supported <guar_br_ul>s), (list of supported <guar_br_dl>s), (list of supported <dlv_order>s), (list of supported <maxSduSize>s), (list of supported <sduErrRatio>s), (list of supported <resBERatio>s), (list of supported <delErrSdus>s), (list of supported <trfrDelay>s), (list of supported <trafHdlPrio>s)

**Defined values**

<cid>:	decimal (1-11); PDP Context Identifier
<trafficClass>:	decimal (0-4); The type of application <ol style="list-style-type: none"> <li>0 conversational</li> <li>1 streaming</li> <li>2 interactive</li> <li>3 background</li> </ol>



	<b>4</b> subscribed value <b>0</b> no <b>1</b> yes <b>2</b> subscribed value
<max_br_ul>:	decimal (0-896); maximum bit rate ul
<max_br_dl>:	decimal (0-512); maximum bit rate dl
<guar_br_ul>:	decimal (0-896); guaranteed bit rate ul
<guar_br_dl>:	decimal (0-512); guaranteed bit rate dl
<dlv_order>:	decimal (0-2); delivery order
<maxSduSize>:	decimal (0-255); maximum sdu size
<sduErrRatio>:	string; sdu error ratio
<resBERatio>:	string; residual bit error ratio
<delErrSdus>:	decimal (0-3); delivery of erroneous sdus <b>0</b> no <b>1</b> yes <b>2</b> no detect <b>3</b> subscribed value
<trfrDelay>:	decimal (0-255); transfer delay
<trafHdlPrio>:	decimal (0-255); traffic handling priority
<pdp_type>:	string ("IP"); Packet Data Protocol types <b>"IP"</b>

## AT +CGQREQ: Quality of Service Profile (Requested)

<b>Description:</b>	Specifies a profile for the context identified by the (local)context identification parameter, <cid>
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGQREQ=<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]]	
	+CME ERROR: <err>
AT +CGQREQ	n/a
AT +CGQREQ?	+CGQREQ: <cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>[ <CR><LF> +CGQREQ: <cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>[ ...]]
AT +CGQREQ=?	+CGQREQ: (list of supported <cid>s), (list of supported <precedence>s),(list of supported <delay>s), (list of supported <reliability>s), (list of supported <peak>s), (list of supported <mean>s)

### Defined values

<cid>:	decimal (1-11); PDP Context Identifier
<precedence>:	decimal (0-3); precedence class

<delay>:	decimal (0-4); delay class
<reliability>:	decimal (0-5); reliability class
<peak>:	decimal (0-9); peak throughput class
<mean>:	decimal (31); mean throughput class

## AT +CGQMIN: Quality of Service Profile (Minimum Acceptable)

<b>Description:</b>	Specifies a profile for the context identified by the (local)context identification parameter, <cid>
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGQMIN=<cid>[,<precedence>[,<delay>[,<reliability>[,<peak>[,<mean>]]]]]	
	+CME ERROR: <err>
AT +CGQMIN	n/a
AT +CGQMIN?	+CGQMIN: <cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>[ <CR><LF> +CGQMIN: <cid>,<precedence>,<delay>,<reliability>,<peak>,<mean>[ ...]]
AT +CGQMIN=?	+CGQMIN: (list of supported <cid>s), (list of supported <precedence>s),(list of supported <delay>s), (list of supported <reliability>s), (list of supported <peak>s), (list of supported <mean>s)

### Defined values

<cid>:	decimal (1-11); PDP Context Identifier
<precedence>:	decimal (0-3); precedence class
<delay>:	decimal (0-4); delay class
<reliability>:	decimal (0-5); reliability class
<peak>:	decimal (0-9); peak throughput class
<mean>:	decimal (31); mean throughput class

## AT +CGEQMIN: 3G Quality of Service Profile (Minimum Acceptable)

<b>Description:</b>	Specifies a profile for the context identified by the (local)context identification parameter, <cid>
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGEQMIN=<cid>[,<trafficClass>[,<max_br_ul>[,<max_br_dl>[,<guar_br_ul>[, <guar_br_dl>[,<dlv_order>[,<maxSduSize>[,<sduErrRatio>[, <resBERatio>[,<delErrSdus>[, <trfrDelay>[,<trafHdlPrio>]]]]]]]]]]]] ]]	
	+CME ERROR: <err>

AT +CGEQMIN	n/a
AT +CGEQMIN?	+CGEQMIN: <cid>,<trafficClass>,<max_br_ul>,<max_br_dl>,<guar_br_ul>,<guar_br_dl>,<dlv_order>,<maxSduSize>,<sduErrRatio> ,<resBERatio>,<delErrSdus>,<trfrDelay>,<trafHdlPrio>[<CR><LF> +CGEQMIN: <cid>,<trafficClass>,<max_br_ul>,<max_br_dl>,<guar_br_ul>,<guar_br_dl>,<dlv_order>,<maxSduSize>,<sduErrRatio> ,<resBERatio>,<delErrSdus>,<trfrDelay>,<trafHdlPrio>[...]]
AT +CGEQMIN=?	+CGEQMIN: (list of supported <pdp_type>s), (list of supported <cid>s), (list of supported <trafficClass>s), (list of supported <max_br_ul>s), (list of supported <max_br_dl>s), (list of supported <guar_br_ul>s), (list of supported <guar_br_dl>s), (list of supported <dlv_order>s), (list of supported <maxSduSize>s), (list of supported <sduErrRatio>s), (list of supported <resBERatio>s), (list of supported <delErrSdus>s), (list of supported <trfrDelay>s), (list of supported <trafHdlPrio>s)

**Defined values**

<cid>:	decimal (1-11); PDP Context Identifier
<trafficClass>:	decimal (0-4); The type of application <b>0</b> conversational <b>1</b> streaming <b>2</b> interactive <b>3</b> background
<max_br_ul>:	decimal (0-896); maximum bit rate ul
<max_br_dl>:	decimal (0-512); maximum bit rate dl
<guar_br_ul>:	decimal (0-896); guaranteed bit rate ul
<guar_br_dl>:	decimal (0-512); guaranteed bit rate dl
<dlv_order>:	decimal (0-2); delivery order <b>0</b> no <b>1</b> yes
<maxSduSize>:	decimal (0-255); maximum sdu size
<sduErrRatio>:	string; sdu error ratio
<resBERatio>:	string; residual bit error ratio
<delErrSdus>:	decimal (0-3); delivery of erroneous sdus <b>0</b> no <b>1</b> yes <b>2</b> no detect
<trfrDelay>:	decimal (0-255); transfer delay
<trafHdlPrio>:	decimal (0-255); traffic handling priority
<pdp_type>:	string ("IP"); Packet Data Protocol types <b>"IP"</b>

**AT +CGEQNEG: 3G Quality of Service Profile (Negotiated)**

<b>Description:</b>	Specifies a negotiated 3g QoS profile for the context identified by the (local)context identification parameter, <cid>
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGEQNEG=<active_cid>[,<active_cid>]	
	+CGEQNEG: <active_cid>,<trafficClass>,<max_br_ul>,<max_br_dl>,<guar_br_ul>,<guar_br_dl>,<dlv_order>,<maxSduSize>,<sduErrRatio> ,<resBERatio>,<dlvErrSdus>,<trfrDelay>,<trafHdlPrio>[<CR><LF> +CGEQNEG: <active_cid>,<trafficClass>,<max_br_ul>,<max_br_dl>,<guar_br_ul>,<guar_br_dl>,<dlv_order>,<maxSduSize>,<sduErrRatio> ,<resBERatio>,<dlvErrSdus>,<trfrDelay>,<trafHdlPrio>[...]]
AT +CGEQNEG	n/a
AT +CGEQNEG?	
AT +CGEQNEG=?	+CGEQNEG: (list of supported <active_cid>s)

**Defined values**

<active_cid>:	decimal (1-11); Active PDP Context Identifier
<trafficClass>:	decimal (0-4); The type of application <ul style="list-style-type: none"> <li>0 conversational</li> <li>1 streaming</li> <li>2 interactive</li> <li>3 background</li> </ul>
<max_br_ul>:	decimal (0-896); maximum bit rate ul
<max_br_dl>:	decimal (0-512); maximum bit rate dl
<guar_br_ul>:	decimal (0-896); guaranteed bit rate ul
<guar_br_dl>:	decimal (0-512); guaranteed bit rate dl
<dlv_order>:	decimal (0-2); delivery order <ul style="list-style-type: none"> <li>0 no</li> <li>1 yes</li> </ul>
<maxSduSize>:	decimal (0-255); maximum sdu size
<sduErrRatio>:	string; sdu error ratio
<resBERatio>:	string; residual bit error ratio
<dlvErrSdus>:	decimal (0-3); delivery of erroneous sdus <ul style="list-style-type: none"> <li>0 no</li> <li>1 yes</li> <li>2 no detect</li> </ul>
<trfrDelay>:	decimal (0-255); transfer delay
<trafHdlPrio>:	decimal (0-255); traffic handling priority

**AT +CGATT: Attach or Detach**

<b>Description:</b>	Attach the MT to, or detach the MT from, the Packet Domain service
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
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AT +CGATT=<state>[,<conntype>]	
	+CME ERROR: <err>
AT +CGATT	n/a
AT +CGATT?	+CGATT: <cs_state>,<ps_state>
AT +CGATT=?	+CGATT: (list of supported <state>s) (list of supported <conntype>s)

**Defined values**

<state>:	decimal (0-1); State <b>0</b> detached <b>1</b> attached
<conntype>:	decimal (1-4); connection type <b>1</b> CS <b>2</b> PS <b>3</b> Both (Combined) <b>4</b> Power off (Detach only)
<cs_state>:	decimal (0-1); CS state <b>0</b> detached <b>1</b> attached
<ps_state>:	decimal (0-1); PS state <b>0</b> detached <b>1</b> attached

**AT +CGACT: PDP Context Activate or Deactivate**

<b>Description:</b>	Activate or deactivate the specified PDP context(s).
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGACT=<state>[,<cid>]	
	+CME ERROR: <err>
AT +CGACT	n/a
AT +CGACT?	+CGACT: <cid>,<state>[<CR><LF> +CGACT: <cid>,<state>[...]]
AT +CGACT=?	+CGACT: (list of supported <state>s)

**Defined values**

<state>:	decimal (0-1); State
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**0** deactivated**1** activated

&lt;cid&gt;: decimal (1-11); PDP Context Identifier

**AT +CGCMOD: PDP Context Modify**

**Description:** Modify the specified PDP context(s) with respect to QoS profiles and TFTs.  
**References:** ETSI GSM 07.07  
**Group:** Message Sending and Writing Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGCMOD=[<cid>]	
	+CME ERROR: <err>
AT +CGCMOD	
AT +CGCMOD?	n/a
AT +CGCMOD=?	+CGCMOD: (list of supported <cid>s)

**Defined values**

&lt;cid&gt;: decimal (1-11); PDP Context Identifier

**AT +CGTFT: Traffic Flow Template**

**Description:** Allows TE to specify a Packet Filter for a Traffic Flow Template  
**References:** ETSI GSM 07.07  
**Group:** Message Sending and Writing Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGTFT=<cid>[,<pktFilterId>,<evalPrecIdx>[,<addr_n_mask>[,<protocolNum> [,<dstPortRange>[,<srcPortRange>[,<spi>[,<tos_n_mask>[, <flow_label>]]]]]]]]]	
	+CME ERROR: <err>
AT +CGTFT	n/a
AT +CGTFT?	+CGTFT: <cid>,<pktFilterId>,<evalPrecIdx>,<addr_n_mask>,<protocolNum>,<dstPortRange>,<srcPortRange>,<spi>,<tos_n_mask>,<flow_label>[<CR><LF> +CGTFT: <cid>,<pktFilterId>,<evalPrecIdx>,<addr_n_mask>,<protocolNum>,<dstPortRange>,<srcPortRange>,<spi>,<tos_n_mask>,<flow_label>[...]]
AT +CGTFT=?	+CGTFT: (list of supported <cid>s), (list of supported <pktFilterId>s), (list of supported <evalPrecIdx>s), (list of supported <addr_n_mask>s), (list of supported <protocolNum>s), (list of supported <dstPortRange>s), (list of supported <srcPortRange>s), (list of supported <spi>s), (list of supported <tos_n_mask>s), (list of supported <flow_label>s)

**Defined values**

<cid>:	decimal (1-11); PDP Context Identifier
<pktFilterId>:	decimal (1-8); packet filter identifier
<evalPrecIdx>:	decimal (0-255); evaluation precedence index
<addr_n_mask>:	string; source address and subnet mask
<protocolNum>:	decimal (0-255); protocol number
<dstPortRange>:	string; destination port range
<srcPortRange>:	string; source port range
<spi>:	decimal; ipsec security parameter index
<tos_n_mask>:	string; tos and mask
<flow_label>:	decimal; flow label

**AT +CGDATA: Data Mode**

<b>Description:</b>	Causes the MT to perform whatever actions are necessary to establish communication between the TE and the network using one or more Packet Domain PDP types. This may include performing a PS attach and one or more PDP context activations.
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGDATA=<cid>[,<>[,<pdp_type>]	
	+CME ERROR: <err>
AT +CGDATA	
AT +CGDATA?	
AT +CGDATA=?	+CGDATA: (list of supported <pdp_type>s), (list of supported <cid>s)

**Defined values**

<cid>:	decimal (1-11); PDP Context Identifier
<pdp_type>:	string ("IP", "PPP"); Packet Data Protocol types

**AT +CGPADDR: Show PDP Address**

<b>Description:</b>	Specifies PDP address for specified context identification parameter <cid>
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGPADDR=<cid>	

	+CME ERROR: <err>
AT +CGPADDR	n/a
AT +CGPADDR?	+CGPADDR: <cid>,<pdp_address>
AT +CGPADDR=?	+CGPADDR: (list of supported <cid>s)

**Defined values**

<cid>: decimal (1-11); PDP Context Identifier  
 <pdp\_address>: string; Global IP address

**AT +CGCLASS: GPRS Mobile Station Class**

**Description:** Mode of operation set by the TE, independent of the current serving cell capability and independent of the current serving cell Access Technology.  
**References:** ETSI GSM 07.07  
**Group:** Message Sending and Writing Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGCLASS=<mt_class>	
	+CME ERROR: <err>
AT +CGCLASS	<mt_class>
AT +CGCLASS?	+CGCLASS: <mt_class>
AT +CGCLASS=?	+CGCLASS: (list of supported <mt_class>s)

**Defined values**

<mt\_class>: string; Class mode of Operation: BGAN Class A  
**A** MT would operate simultaneous PS and CS service  
**B** MT would operate PS and CS services but not simultaneously  
**CG** MT would only operate PS services  
**CC** MT would only operate CS services

**AT +CGEREP: GPRS Packet Domain Event Reporting**

**Description:** Enables or Disables sending of unsolicited result codes, +CGEV from MT to TE  
**References:** ETSI GSM 07.07  
**Group:** Message Sending and Writing Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGEREP=<mode>[,<bfr>]	



	+CME ERROR: <err>
AT +CGEREP	n/a
AT +CGEREP?	<mode>[,<bfr>]
AT +CGEREP=?	+CGEREP: (list of supported <mode>s)[,(list of supported <bfr>s) ]

**Defined values**

<mode>:	decimal (0-2); mode <ul style="list-style-type: none"> <li>0 buffer unsolicited result codes</li> <li>1 forward without buffering</li> <li>2 forward without buffering</li> </ul>
<bfr>:	decimal (0-1); buffer settings <ul style="list-style-type: none"> <li>0 buffer of unsolicited result codes is cleared</li> <li>1 buffer of unsolicited result codes is flushed to the TE</li> </ul>

**AT +CGREG: GPRS Network Registration Indication**

<b>Description:</b>	Reports changes in network registration. Controlled by <a href="#">AT+CGREG</a> .
<b>References:</b>	ETSI GSM 07.07
<b>Group:</b>	Message Sending and Writing Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT +CGREG=<n>	
	<stat> +CME ERROR: <err>
AT +CGREG	n/a
AT +CGREG?	<n>[,<stat>[,<lac>]]
AT +CGREG=?	+CGREG: (list of supported <n>s)[,(list of supported <stat>s)[,l 2]]

**Defined values**

<n>:	decimal (0-2); Reporting <ul style="list-style-type: none"> <li>0 disable +CGREG reporting</li> <li>1 enable +CGREG reporting</li> <li>2 enable +CGREG and location info</li> </ul>
<stat>:	decimal (0-5); Status <ul style="list-style-type: none"> <li>0 not registered</li> <li>1 registered (home)</li> <li>2 not registered (searching)</li> <li>3 registration denied</li> <li>4 unknown</li> </ul>

5 registered (roaming)

&lt;lac&gt;: string (4); location area code

&lt;ci&gt;: string (4); cell ID

**AT +CGSMS: Select Service for MO SMS Messages**

**Description:** MO SMS messages  
**References:** ETSI GSM 07.07  
**Group:** Message Sending and Writing Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT +CGSMS=<n>	
	<◇> +CME ERROR: <err>
AT +CGSMS	n/a
AT +CGSMS?	<n>
AT +CGSMS=?	+CGSMS: (list of supported <n>s)

**Defined values**

<n>: decimal (0-3); service preference

- 0 Packet Domain
- 1 Circuit Domain
- 2 Packet Preferred
- 3 Circuit Preferred

**Inmarsat Specific AT Commands****AT \_IPOINT: Antenna Pointing**

**Description:** Used to enter/exit antenna pointing mode  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT _IPOINT=<exit_ptg>[,<ipointRptng>]	
	<exit_ptg>:<ipointRptng> +CME ERROR: <err>
AT _IPOINT	+CME ERROR: <err>

AT_IPOINT?	<exit_ptg>:<ipointRptng>
AT_IPOINT=?	_IPOINT: (list of supported <exit_ptg>s)

**Defined values**

<exit_ptg>:	decimal (0-1); Exit Pointing <b>0</b> Antenna Pointing Active <b>1</b> Antenna Pointing Terminated
<ipointRptng>:	decimal (0-1); Unsolicited Reports <b>0</b> Disable unsolicited result codes <b>1</b> Enable unsolicited result codes

**AT\_IGPS: GPS Location Information**

<b>Description:</b>	Supports read/set operations on GPS location. Unsolicited results
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IGPS=<lat_deg>	
	+CME ERROR: <err>
AT_IGPS	
AT_IGPS?	_IGPS: <lat_deg>,<lon_deg>,<type>,<status>,<time>
AT_IGPS=?	_IGPS: (list of supported <lat_deg>s),(list of supported <lon_deg>s), (list of supported <type>s)(list of supported <status>s), (list of supported <time>s)

**Defined values**

<lat_deg>:	decimal (-90.00-90.00); Latitude in decimal degrees (minutes & seconds converted to decimal degrees)
<lon_deg>:	decimal (-180.00-180.00); Longitude, also in decimal
<type>:	string constant ("2D","3D","Stored","Acquiring"); Fix Quality <b>"2D"</b> , GPS receiver has a 2D fix <b>"3D"</b> , GPS receiver has a 3D fix <b>"Stored"</b> , GPS receiver is off; Lat & Lon are stored values of latest fix <b>"Acquiring"</b> , attempting to acquire a fix
<status>:	string constant ("allowed","barred","undetermined"); Fix status <b>"allowed"</b> Terminal is permitted to display GPS <b>"barred"</b> GPS operation barred at the location <b>"undetermined"</b> GPS network-policy not received
<time>:	decimal; Timestamp

## AT\_INIS: Network Interface Status

<b>Description:</b>	Used to query the status of network interface.
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_INIS=<func>	
	<func>: <dec_value> +CME ERROR: <err>
AT_INIS	+CME ERROR: <err>
AT_INIS?	<func>: <dec_value>
AT_INIS=?	_INIS: (list of supported <func>s)

### Defined values

<func>:	string constant ("ETH","WLAN","USB","ISDN"); Interface <b>"ETH"</b> Ethernet <b>"WLAN"</b> Wireless LAN <b>"USB"</b> USB <b>"ISDN"</b> ISDN
<dec_value>:	decimal (0-1); Parameter Value <b>0</b> OFF <b>1</b> ON

## AT\_ITFT: Uplink Traffic Flow Template

<b>Description:</b>	Allows TE to specify a Packet Filter for a Traffic Flow Template
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_ITFT=<cid>[,<pktFilterId>,<evalPrecIdx>[,<addr_n_mask>[,<protocolNum> [,<dstPortRange>[,<srcPortRange>[,<spi>[,<tos_n_mask>]]]]]]]]	
	+CME ERROR: <err>
AT_ITFT	n/a
AT_ITFT?	_ITFT: <cid>,<pktFilterId>,<evalPrecIdx>,<addr_n_mask>,<protocolNum>,<dstPortRange>,<srcPortRange>,<spi>,<tos_n_mask>[ <CR><LF> _ITFT: <cid>,<pktFilterId>,<evalPrecIdx>,<addr_n_mask>,<protocolNum>,<dstPortRange>,<srcPortRange>,<spi>,<tos_n_mask>[. ..]]
AT_ITFT=?	_ITFT: (list of supported <cid>s), (list of supported <pktFilterId>s), (list of supported <evalPrecIdx>s), (list of supported <addr_n_mask>s), (list of supported <protocolNum>s), (list of supported <dstPortRange>s), (list of supported <srcPortRange>s), (list of supported <spi>s),

(list of supported &lt;tos\_n\_mask&gt;s)

**Defined values**

<cid>:	decimal (1-11); PDP Context Identifier
<pktFilterId>:	decimal (1-4); packet filter identifier
<evalPrecIdx>:	decimal (0-255); evaluation precedence index
<addr_n_mask>:	string; destination address and subnet mask
<protocolNum>:	decimal (0-255); protocol number
<dstPortRange>:	string; destination port range
<srcPortRange>:	string; source port range
<spi>:	decimal; ipsec security parameter index
<tos_n_mask>:	string; tos and mask

**AT\_ITEMP: BGAN Terminal Temperature**

<b>Description:</b>	To query the MT temperature and for unsolicited temperature reports
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_ITEMP=<mtTempStatus>,<mtTempScale>	
AT_ITEMP	<mtTempStatus>,<mtTempScale> +CME ERROR: <err>
AT_ITEMP?	<mtTempStatus>,<mtTempScale> +CME ERROR: <err>
AT_ITEMP=?	_ITEMP: (list of supported <mtTempStatus>s)[, (list of supported <mtTempScale>s)]

**Defined values**

<mtTempStatus>:	decimal (0-4); MT Temperature Status <ul style="list-style-type: none"> <li><b>0</b> Normal</li> <li><b>1</b> Hot</li> <li><b>2</b> Very Hot</li> <li><b>3</b> Very Very Hot</li> <li><b>4</b> Too Hot</li> </ul>
<mtTempScale>:	decimal (-40 to +80); MT Temperature Scale (degrees C)

**AT\_ILOG: Retrieve Log File**

<b>Description:</b>	Retrieve syslog file from BGAN terminal.
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**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_ILOG=	
	<logfile>[,<lines>[,<action>[,<start>]]]
AT_ILOG	n/a
AT_ILOG?	_ILOG: (list of supported <logfile>s)
AT_ILOG=?	_ILOG: (list of supported <logfile>s), (list of supported <lines>s),(list of supported <action>s), (list of supported <start>s)

**Defined values**

<logfile>: string (syslog); log file name  
 <lines>: decimal (0-65535); lines to items to return  
 <action>: decimal (0-1); action command  
     **0** No action(default)  
     **1** Erase log file(not supported)  
 <start>: decimal (0-65535); start offset

**AT\_ISLEEP: MT Sleep Status Indicator**

**Description:** Indicates the sleep status information. Unsolicited reporting of sleep state  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_ISLEEP=	
AT_ISLEEP	+CME ERROR: <err>
AT_ISLEEP?	<SleepStatus>, <SleepTimeout> +CME ERROR: <err>
AT_ISLEEP=?	_ISLEEP: (list of supported <SleepStatus>s)[, (list of supported <SleepTimeout>s)]

**Defined values**

<SleepStatus>: decimal (0-1); MT Sleep Status  
 <SleepTimeout>: decimal (20-40); Time left for the MT to go to sleep

**AT\_IMETER: Call Metering**

**Description:** BGAN terminal call metering  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT _IMETER=	
	<meter_type>[,<mode>] +CME ERROR: <err>
AT _IMETER	n/a
AT _IMETER?	
AT _IMETER=?	_IMETER: (list of supported <meter_type>s), (list of supported <mode>s)

**Defined values**

<meter\_type>: string ("CS", "CS\_SESSION", "CS\_TRIP", "PS", "PS\_RX", "PS\_TX", "PS\_SESSION\_RX", "PS\_SESSION\_TX", "PS\_TRIP", "PS\_TRIP\_RX", "PS\_TRIP\_TX"); Call Meters  
 <mode>: decimal (0-3); mode used in exec command

- 0 read
- 1 disable unsolicited meter reporting
- 2 enable unsolicited meter reporting
- 3 reset meter counter

**AT \_ISIG: Signal Strength Indicator**

**Description:** Used for querying C/No values or request C/No reports.  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT _ISIG=<cn0_report>[,<interval>]	
	<cn0_report>: <cn0_report>[,<interval>] +CME ERROR: <err>
AT _ISIG	_ISIG: <c_n0_value>
AT _ISIG?	_ISIG: <cn0_report>
AT _ISIG=?	_ISIG: (list of supported <cn0_report>s)[, (list of supported <interval>s)]

**Defined values**

<cn0\_report>: decimal (0-1); C/No reports

- 0 Disable unsolicited result code
- 1 Enable unsolicited result code

<interval>: decimal (0-255); Average C/No measurements over this many frames (e.g. 1 = average every frame, 2 = average over 2 frames); 0 = use default of 6 frames (480msec)

<c\_n0\_value>: decimal (0-255); C/No Value

## AT\_IBALARM: Alarm Indicator

**Description:** Alarm Category & Condition Indicator.

**References:** None

**Group:** Inmarsat Specific AT Commands

**Syntax:** Extended format

Command	Possible response(s)
AT_IBALARM=	
	<rep_mode> +CME ERROR: <err>
AT_IBALARM	+CME ERROR: <err>
AT_IBALARM?	<alarm_cat>,<alarm_status> +CME ERROR: <err>
AT_IBALARM=?	_IBALARM: (list of supported <rep_mode>s)

### Defined values

<rep\_mode>: decimal (0-1); Reporting mode

- 0 Basic mode
- 1 Verbose mode

<alarm\_status>: decimal (0-1); Outstanding Alarms/Status

- 0 Alarm Inactive
- 1 Alarm Active

<alarm\_cat>: decimal (1-14); Alarms Category

- 1 SIM PIN Error
- 2 PCB Core Overheat
- 3 GPS HW Failure
- 4 GPS Communication Failure
- 5 Antenna Communication Failure
- 6 SIM Not Present
- 7 Battery Overheat (N/A some platforms)
- 8 Battery Low (N/A some platforms)
- 9 SIM Not Supported
- 10 BDE <-> Antenna Mismatch
- 11 Cable Cal Tx Gain Exceeded
- 12 Battery too Hot to Charge



**AT\_ISATINFO: BGAN Satellite Information**

**Description:** CM satellite table information.  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_ISATINFO=...	n/a
AT_ISATINFO	_ISATINFO: <sat_id>,<lon_deg>[...] +CME ERROR: <err>
AT_ISATINFO?	n/a
AT_ISATINFO=?	_ISATINFO: (list of supported <sat_id>s),(list of supported <lon_deg>s)

**Defined values**

<sat\_id>: decimal (1-32); Satellite ID  
 <lon\_deg>: decimal (0.0-359.9); Longitude degrees

**AT\_ISATVIS: BGAN Satellite(s) Visible**

**Description:** CM satellite table information.  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_ISATVIS=...	n/a
AT_ISATVIS	_ISATVIS: <sat_id>,<elevation>[...] +CME ERROR: <err>
AT_ISATVIS?	n/a
AT_ISATVIS=?	_ISATVIS: (list of supported <sat_id>s),(list of supported <elevation>s)

**Defined values**

<sat\_id>: decimal (1-32); Satellite ID  
 <elevation>: decimal (0-90); Satellite elevation (degrees)

**AT\_ISATCUR: BGAN Current Satellite**

**Description:** CM satellite table information.  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_ISATCUR=<sat_id>	
AT_ISATCUR	n/a
AT_ISATCUR?	<sat_id>
AT_ISATCUR=?	_ISATCUR: (list of supported <sat_id>s)

**Defined values**

<sat\_id>: decimal (1-255); Satellite ID

**AT\_IBNOTIFY: Control Unsolicited Commands**

**Description:** Control sending of unsolicited result codes for commands "\_IGPS", "\_IPOINT", "\_ITEMP", "\_ISIG", "\_ISLEEP", "\_IMETER", "+CBC", "+CGEV", "+CLCC", "+CGPADDR", "\_IHGF", "\_IHREBOOT", "\_IHSTATUS", "+CMTI", "\_IHPIN", "\_IHPACKET", "\_IHSMS", "\_IHBEAM", and "\_IBALARM".  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IBNOTIFY=	
	<command_code>[,<status>] +CME ERROR: <err>
AT_IBNOTIFY	+CME ERROR: <err>
AT_IBNOTIFY?	_IBNOTIFY: <command_code>,<status>
AT_IBNOTIFY=?	_IBNOTIFY: (list of supported <command_code>s), (list of supported <status>s)

**Defined values**

<command\_code>: string; Command codes

"_IGPS"	unsolicited result code
"_IPOINT"	unsolicited result code
"_ITEMP"	unsolicited result code
"_ISIG"	unsolicited result code
"_ISLEEP"	unsolicited result code

"_IMETER"	unsolicited result code
"_CBC"	unsolicited result code
"_CGEV"	unsolicited result code
"_CLCC"	unsolicited result code
"_CGPADDR"	unsolicited result code
"_IHGF"	unsolicited result code
"_IHREBOOT"	unsolicited result code
"_IHSTATUS"	unsolicited result code
"_CMTI"	unsolicited result code
"_IHPIN"	unsolicited result code
"_IHPACKET"	unsolicited result code
"_IHSMS"	unsolicited result code
"_IHBEAM"	unsolicited result code
"_IBALARM"	unsolicited result code

<status>: decimal (0-1); On/Off  
 0 Disable the sending of this unsolicited result code  
 1 Enable the sending of this unsolicited result code

### AT\_IERROR: BGAN Terminal Error Reports

**Description:** Unsolicited error reports  
**References:** None  
**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IERROR=<rejCode>	
AT_IERROR	n/a
AT_IERROR?	
AT_IERROR=?	

**Defined values**

<rejCode>: decimal (1-5); Rejection codes  
 1 ierror\_code\_mc\_failure  
 2 ierror\_code\_congestion  
 3 ierror\_code\_unsupported\_lai  
 4 ierror\_code\_unsupported\_ue\_class  
 5 ierror\_code\_usim\_required

<deregCode>: decimal (11-122); Deregistration codes  
 11 ierror\_code\_reg\_completion\_failure

12	ierror_code_service_area_barred
13	ierror_code_gps_position_required
14	ierror_code_network_reset
15	ierror_code_ue_inactivity
16	ierror_code_pos_not_received
17	ierror_code_fix_old
18	ierror_code_decryption_error
19	ierror_code_invalid_gps_pos
20	ierror_code_oper_initiated_dereg
21	ierror_code_num_tracked_sats_error
121	ierror_code_gps_hw_failure
122	ierror_code_ext_ant_comms_error

## AT\_ICPWD: Change Facility Password

<b>Description:</b>	Sets a new password for the facility lock function defined by command_ICLCK.
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_ICPWD=<fac>,<oldpwd>,<newpwd>	
	+CME ERROR: <err>
AT_ICPWD	n/a
AT_ICPWD?	n/a
AT_ICPWD=?	("AD", "RS") +CME ERROR: <err>

### Defined values

<fac>:	string; Facility "AD" Administrator Lock "RS" Remote SMS Lock
<oldpwd>:	string; Old Password
<newpwd>:	string; New Password

## AT\_IHDEFAPN: Change the UT's default APN

<b>Description:</b>	Replaces the current Default APN with the provided APN and makes it the Default APN. Also updates all the ACA entries (except for Static ACA or M2M entries not using the current Default APN) with the provided APN. If force_default flag is set, updates ALL ACA/M2M entries, not just the ones that were using the current Default APN.
<b>References:</b>	None

**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHDEFAPN=<apn_name>[,<apn_uname>[,<apn_pswd>[,<force_default>]]]	
	_IHDEFAPN: <apn_name>[,<apn_uname>[,<apn_pswd>[,<force_default>] ]]
AT_IHDEFAPN	
AT_IHDEFAPN?	_IHDEFAPN: <apn_name>,<apn_uname>,<apn_pswd>,<force_default> +CME ERROR: <err>
AT_IHDEFAPN=?	_IHDEFAPN: (list of supported <apn_name>s), (list of supported <apn_uname>s),(list of supported <apn_pswd>s) , (list of supported <force_default>s)

**Defined values**

<apn\_name>: string; New Default APN name  
 <apn\_uname>: string; Username for the new Default APN  
 <apn\_pswd>: string; Password for the new Default APN  
 <force\_default>: decimal (0-1); Force Default APN Mode  
     **0** Do not force onto non-default ACA entries (this is the default; also see description above)  
     **1** Also force the new Default APN to ACA entries that don't currently use the old Default APN

**AT\_IGETFW: Get firmware file from FTP server**

**Description:** Download firmware file from FTP server using specified parameters. Note that the APN/credentials must be provided on "non-M2M" platforms (if applicable), whereas on "M2M" platforms, they default to correct values if omitted.

**References:** None

**Group:** Inmarsat Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IGETFW=<mode>[,<server_ip>[,<server_uname>[,<server_pswd>[,<apn_name>[, <apn_uname>[,<apn_pswd>[,<ftp_dir>[,<filename>]]]]]]]]]	
	_IGETFW: <mode>[,<server_ip>[,<server_uname>[,<server_pswd>[, <apn_name>[,<apn_uname>[,<apn_pswd>[,<ftp_dir>[,<filename>]]]]]] ]]
AT_IGETFW	
AT_IGETFW?	_IGETFW: <mode>,<server_ip>,<server_uname>,<server_pswd>, <apn_name>,<apn_uname>,<apn_pswd>,<ftp_dir>,<filename> +CME ERROR: <err>
AT_IGETFW=?	_IGETFW: (list of supported <mode>s), (list of supported <server_ip>s), (list of supported <server_uname>s), (list of supported <server_pswd>s), (list of supported <apn_name>s),(list of supported <apn_uname>s) ,(list of supported <apn_pswd>s),(list of supported <ftp_dir>s), (list of supported <filename>s)

**Defined values**

<mode>: decimal (0-1); Deferred/immediate mode

<server_ip>:	string; IP address of the FTP server
<server_username>:	string; Username for the FTP server
<server_passwd>:	string; Password for the FTP server
<apn_name>:	string; APN to access the FTP server
<apn_username>:	string; Username for the APN
<apn_passwd>:	string; Password for the APN
<ftp_dir>:	string; Directory from which to get file from on server
<filename>:	string; Name of file to get on server

## AT\_IUPDFW: Trigger firmware update.

<b>Description:</b>	Trigger a firmware update.
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IUPDFW=	
	_IUPDFW: <bin_file> +CME ERROR: <err>
AT_IUPDFW	
AT_IUPDFW?	
AT_IUPDFW=?	_IUPDFW: (list of supported <bin_file>s)

### Defined values

<bin_file>:	string (""); Firmware binary file name
-------------	--

## AT\_ISENDFILE: Send file from UT to FTP server

<b>Description:</b>	Send a file using FTP from the UT to an FTP server
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_ISENDFILE=<local_dir>,<filename>,<ftp_dir>,<ftp_server>,<ftp_username>, <ftp_passwd>[,<apn_name>[,<apn_username>[,<apn_passwd>]]]	
	_ISENDFILE: <local_dir>,<filename>,<ftp_dir>,<ftp_server>, <ftp_username>,<ftp_passwd>[,<apn_name>[,<apn_username>[,<apn_passwd> ]]]
AT_ISENDFILE	
AT_ISENDFILE?	_ISENDFILE: <local_dir>,<filename>,<ftp_dir>,<ftp_server>, <ftp_username>,<ftp_passwd>,<apn_name>,<apn_username>,<apn_passwd> +CME ERROR: <err>

AT_ISENDFILE=?	_ISENDFILE: (list of supported <local_dir>s), (list of supported <filename>s),(list of supported <ftp_dir>s), (list of supported <ftp_server>s), (list of supported <ftp_username>s), (list of supported <ftp_passwd>s),(list of supported <apn_name>s), (list of supported <apn_uname>s), (list of supported <apn_passwd>s)
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**Defined values**

<local_dir>:	string; Directory on UT containing file to be transferred
<filename>:	string; Name of file to be transferred
<ftp_dir>:	string; Directory on FTP server to store the file
<ftp_server>:	string; FTP server name or IP address
<ftp_username>:	string; FTP server username for login
<ftp_passwd>:	string; FTP server password for login
<apn_name>:	string; APN to access the FTP server
<apn_uname>:	string; Username for the APN
<apn_passwd>:	string; Password for the APN

**AT\_IGETFILE: Download file from FTP server to UT**

<b>Description:</b>	Download a file using FTP from a server to the UT
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IGETFILE=<ftp_dir>,<filename>,<local_dir>,<ftp_server>,<ftp_username>,<ftp_passwd>[,<apn_name>[,<apn_uname>[,<apn_passwd>]]]	
	_IGETFILE: <ftp_dir>,<filename>,<local_dir>,<ftp_server>,<ftp_username>,<ftp_passwd>[,<apn_name>[,<apn_uname>[,<apn_passwd> ]]]
AT_IGETFILE	
AT_IGETFILE?	_IGETFILE: <ftp_dir>,<filename>,<local_dir>,<ftp_server>,<ftp_username>,<ftp_passwd>,<apn_name>,<apn_uname>,<apn_passwd> +CME ERROR: <err>
AT_IGETFILE=?	_IGETFILE: (list of supported <ftp_dir>s), (list of supported <filename>s),(list of supported <local_dir>s) ,(list of supported <ftp_server>s), (list of supported <ftp_username>s), (list of supported <ftp_passwd>s),(list of supported <apn_name>s), (list of supported <apn_uname>s), (list of supported <apn_passwd>s)

**Defined values**

<ftp_dir>:	string; Directory on FTP server where file exists
<filename>:	string; Name of file to be transferred
<local_dir>:	string; Directory on UT where file will be stored
<ftp_server>:	string; FTP server name or IP address
<ftp_username>:	string; FTP server username for login
<ftp_passwd>:	string; FTP server password for login
<apn_name>:	string; APN to access the FTP server
<apn_uname>:	string; Username for the APN
<apn_passwd>:	string; Password for the APN

**AT\_IUPDCFG: Install new 'config.txt' file.**

<b>Description:</b>	Activate a new configuration by overwriting 'config.txt' with a new file.
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IUPDCFG=	
	_IUPDCFG: <filename> +CME ERROR: <err>
AT_IUPDCFG	
AT_IUPDCFG?	
AT_IUPDCFG=?	_IUPDCFG: (list of supported <filename>s)

**Defined values**

<filename>: string (""); Name of new file to replace 'config.txt'.

**AT\_IREMWEB: Control HTTP access to UT.**

<b>Description:</b>	Enable/Disable access to Web Server in UT, for specific client IP address(es)
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IREMWEB=<enable>,<httpClntIpLo>[,<httpClntIpHi>[,<apn_name>[,<apn_uname> [,<apn_pswd>]]]]	
	_IREMWEB: <enable>,<httpClntIpLo>[,<httpClntIpHi>[,<apn_name>[,<apn_uname>[,<apn_pswd>]]]]
AT_IREMWEB	
AT_IREMWEB?	_IREMWEB: <enable>,<httpClntIpLo>,<httpClntIpHi>,<apn_name>,<apn_uname>,<apn_pswd> +CME ERROR: <err>
AT_IREMWEB=?	_IREMWEB: (list of supported <enable>s), (list of supported <httpClntIpLo>s), (list of supported <httpClntIpHi>s), (list of supported <apn_name>s),(list of supported <apn_uname>s) ,(list of supported <apn_pswd>s)

**Defined values**

<enable>: decimal (0-1); Enable/Disable Access to Web Server.  
**0** Disable Web Server Access  
**1** Enable Web Server Access



<httpCIntIpLo>:	string; Lower IP address for range of allowed HTTP clients
<httpCIntIpHi>:	string; Upper IP address for range of allowed HTTP clients
<apn_name>:	string; APN for PDP context
<apn_undef>:	string; Username for the APN
<apn_pswd>:	string; Password for the APN

## AT\_ISMSRMT: Enable/Disable remote SMS commands.

<b>Description:</b>	Configure remote SMS commands functionality.
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_ISMSRMT=<status>	
	+CME ERROR: <err>
AT_ISMSRMT	n/a
AT_ISMSRMT?	_ISMSRMT: <status>
AT_ISMSRMT=?	_ISMSRMT: (list of supported <status>s)

### Defined values

<status>:	decimal (0-1); Enable/Disable remote SMS commands.
	<ul style="list-style-type: none"> <li><b>0</b> Disable Remote SMS</li> <li><b>1</b> Enable Remote SMS</li> </ul>

## AT\_IATCROBST: Enable / Disable ATC robustness mode

<b>Description:</b>	Used to enable or disable remote ATC robustness mode.
<b>References:</b>	None
<b>Group:</b>	Inmarsat Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IATCROBST=	
	+CME ERROR: <err>
AT_IATCROBST	
AT_IATCROBST?	_IATCROBST: <rbmode>
AT_IATCROBST=?	_IATCROBST: (list of supported <rbmode>s)

**Defined values**

<rbmode>: decimal (0-1); Robustness mode command status

- 0** Disable robustness mode
- 1** Enable robustness mode

**AT\_ICLCK: Facility Lock Configure**

**Description:** Used to lock, unlock or interrogate a MT facility <fac>. "9450M" mode uses, but regular (not M2M restricted) 9450 mode does not. Password is normally needed to perform such actions.

**References:** None

**Group:** Inmarsat Specific AT Commands

**Syntax:** Extended format

Command	Possible response(s)
AT_ICLCK=<fac>,<mode>[,<password>]	
	+CME ERROR: <err> when <mode>=2 and command successful: _ICLCK: <status><CR><LF>
AT_ICLCK	n/a
AT_ICLCK?	n/a
AT_ICLCK=?	_ICLCK: ("AD", "RS" ) +CME ERROR: <err>

**Defined values**

<fac>: string; Facility

- "AD"** Administrator Lock
- "RS"** Remote SMS Lock

<mode>: decimal (0-2); Mode

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

<password>: string; Password

<status>: decimal (0-1); Facility Status

- 0** not active
- 1** active

**AT\_IMACLOC: Enable/Disable Ethernet MAC filtering.**

**Description:** Configure Ethernet MAC filtering functionality.

**References:** None

**Group:** Inmarsat Specific AT Commands

**Syntax:** Extended format

Command	Possible response(s)
AT_IMACLOC=<status>,<intf>	
	+CME ERROR: <err>
AT_IMACLOC	n/a
AT_IMACLOC?	_IMACLOC: <status>
AT_IMACLOC=?	_IMACLOC: (list of supported <status>s), (list of supported <intf>s)

#### Defined values

<status>: decimal (0-1); Enable/Disable Ethernet MAC filtering.  
**0** Disable MAC filtering  
**1** Enable MAC filtering

<intf>: decimal (0-0); Interface  
**0** ethernet

### AT\_IMACLOCAD: Configure allowed Ethernet MAC addresses.

**Description:** Configure allowed Ethernet MAC addresses and filtering functionality.

**References:** None

**Group:** Inmarsat Specific AT Commands

**Syntax:** Extended format

Command	Possible response(s)
AT_IMACLOCAD=<action>,<intf>[,<mac_addr>]	
	+CME ERROR: <err>
AT_IMACLOCAD	n/a
AT_IMACLOCAD?	_IMACLOCAD: <intf>,<mac_addr>
AT_IMACLOCAD=?	_IMACLOCAD: (list of supported <action>s), (list of supported <intf>s)[, (list of supported <mac_addr>s)[,...]]

#### Defined values

<action>: decimal (0-1); Configure allowed Ethernet MAC addresses.  
**0** Clear MAC addresses  
**1** Update MAC address

<intf>: decimal (0-0); Interface  
**0** ethernet

<mac\_addr>: string (MAC Address); Format: "ab:cd:ef:11:22:33"

## HNS Specific AT Commands

### AT\_IHINIT: Initial Configuration Settings

<b>Description:</b>	Allows TE to configure the UT for specific initialization parameters.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHINIT=<func>[,<value>]	
	<value> +CME ERROR: <err>
AT_IHINIT	
AT_IHINIT?	<func>,<value>
AT_IHINIT=?	_IHINIT: (list of supported <func>s), (list of supported <value>s)

#### Defined values

<func>:	string constant ("BAP","APA","APO","ACA","OBL","PSA","CSA","DHCP","PKA","SIT","APD","NWA","RFC2507_HC","STORE"); Init Parameters																												
	<table> <tr> <td><b>"BAP"</b></td> <td>Bypass Antenna Pointing</td> </tr> <tr> <td><b>"APA"</b></td> <td>Antenna Pointing Audio</td> </tr> <tr> <td><b>"APO"</b></td> <td>Auto Power On</td> </tr> <tr> <td><b>"ACA"</b></td> <td>Auto Context Activation (for DHCP IP TEs; refer to _IHACA for Static IP TEs)</td> </tr> <tr> <td><b>"OBL"</b></td> <td>On-board LEDs</td> </tr> <tr> <td><b>"PSA"</b></td> <td>Automatic PS Attach</td> </tr> <tr> <td><b>"CSA"</b></td> <td>Automatic CS Attach</td> </tr> <tr> <td><b>"DHCP"</b></td> <td>Enable DHCP Server</td> </tr> <tr> <td><b>"PKA"</b></td> <td>Enable 24/7 PDP Context Keep Alive</td> </tr> <tr> <td><b>"SIT"</b></td> <td>Stream Inactivity Timer</td> </tr> <tr> <td><b>"APD"</b></td> <td>Auto PDP Context De-activation</td> </tr> <tr> <td><b>"NWA"</b></td> <td>No Wait AT commands</td> </tr> <tr> <td><b>"RFC2507_HC"</b></td> <td>Enable RFC2507 Header Compression</td> </tr> <tr> <td><b>"STORE"</b></td> <td>Write config.txt to flash (value irrelevant)</td> </tr> </table>	<b>"BAP"</b>	Bypass Antenna Pointing	<b>"APA"</b>	Antenna Pointing Audio	<b>"APO"</b>	Auto Power On	<b>"ACA"</b>	Auto Context Activation (for DHCP IP TEs; refer to _IHACA for Static IP TEs)	<b>"OBL"</b>	On-board LEDs	<b>"PSA"</b>	Automatic PS Attach	<b>"CSA"</b>	Automatic CS Attach	<b>"DHCP"</b>	Enable DHCP Server	<b>"PKA"</b>	Enable 24/7 PDP Context Keep Alive	<b>"SIT"</b>	Stream Inactivity Timer	<b>"APD"</b>	Auto PDP Context De-activation	<b>"NWA"</b>	No Wait AT commands	<b>"RFC2507_HC"</b>	Enable RFC2507 Header Compression	<b>"STORE"</b>	Write config.txt to flash (value irrelevant)
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<b>"RFC2507_HC"</b>	Enable RFC2507 Header Compression																												
<b>"STORE"</b>	Write config.txt to flash (value irrelevant)																												
<value>:	decimal (0-1); Status																												
	<table> <tr> <td><b>0</b></td> <td>OFF</td> </tr> <tr> <td><b>1</b></td> <td>ON</td> </tr> </table>	<b>0</b>	OFF	<b>1</b>	ON																								
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<b>1</b>	ON																												

### AT\_IHWLAN: Wireless LAN Settings

<b>Description:</b>	Allows TE to configure the Wireless LAN parameters. NOTE: a UT reboot is required for the changes to take effect.
<b>References:</b>	None

**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHWLAN=<wlan_parms>[,<value>]	
	<wlan_parms>,(<value> <str_value>) +CME ERROR: <err>
AT_IHWLAN	
AT_IHWLAN?	<wlan_parms>,(<value> <str_value>)
AT_IHWLAN=?	_IHWLAN: (list of supported <wlan_parms>s), (list of supported <value>s)

### Defined values

<wlan\_parms>: string constant

("IF","SSID","CH","MAC","SEC\_MODE","WPA","TKIP","WPA2","AES","MCLOG","MCF","MAC1","MAC2","MAC3","MAC4","MAC5","MAC6","MAC7","MAC8");

WLAN Parameters

"IF"	Wireless LAN Interface On/Off
"SSID"	Broadcast SSID Name
"CH"	Channel Selection
"MAC"	MAC Address of UT's Internal WLAN Device
"SEC_MODE"	WLAN Security: Off=0, WPA=1, WPA2=2
"WPA"	WPA Password
"TKIP"	TKIP Interval (secs)
"WPA2"	WPA2 Password
"AES"	AES Interval (secs)
"MCLOG"	Advanced Logging On/Off
"MCF"	MAC Filtering On/Off
"MAC1"	Allowed MAC Address 1
"MAC2"	Allowed MAC Address 2
"MAC3"	Allowed MAC Address 3
"MAC4"	Allowed MAC Address 4
"MAC5"	Allowed MAC Address 5
"MAC6"	Allowed MAC Address 6
"MAC7"	Allowed MAC Address 7
"MAC8"	Allowed MAC Address 8

<value>: decimal (0-1); Status

0 OFF

1 ON

<str\_value>: string; Parameter Value

### AT\_IHIP: Internet Protocol Settings

**Description:** Allows TE to query IP settings. Note the range restrictions on the Unit IP address. Also note that a minimum of 11 DHCP-assigned addresses must be

provided based on the DHCP\_HI and DHCP\_LO values.

**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHIP=<ip_parms>[,<str_value>]	
	<ip_parms>,<str_value> +CME ERROR: <err>
AT_IHIP	
AT_IHIP?	<ip_parms>,<str_value>
AT_IHIP=?	_IHIP: (list of supported <ip_parms>s)

#### Defined values

<ip\_parms>: string constant ("DNS","DNS2","UNITIP","SUBNET","NETMODE","DHCP\_LO","DHCP\_HI"); BGAN Terminal IP Parameters

"DNS" DNS server IP (4 octets)  
 "DNS2" Secondary DNS server IP (4 octets)  
 "UNITIP" BGAN Unit IP: Syntax [0-255].[0-255].[0-255].[0-255], but no 0.0.0.0 or 255.255.255.255 addresses allowed  
 "SUBNET" DHCP/IP Subnet Mask (4 octets)  
 "NETMODE" Network Mode [NAT, NAPT, RELAY]  
 "DHCP\_LO" DHCP server lo address (start address) last octet, range [1-254]  
 "DHCP\_HI" DHCP server hi address (end address) last octet, range [1-254]

<str\_value>: string; Parameter Value

### AT\_IHSTATUS: HNS Terminal Status

**Description:** Allows TE to query terminal status.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHSTATUS=<param>	
	<param>,<dec_value> <str_value> +CME ERROR: <err>
AT_IHSTATUS	
AT_IHSTATUS?	<param>,<dec_value> <str_value>
AT_IHSTATUS=?	_IHSTATUS: (list of supported <param>s)

#### Defined values

<param>:	string constant ("CIPH","CONN","TRAF","FLTS","MAC","GPS","WLAN","CSC","CLASS","ANT"); BGAN Terminal Status Parameters <b>"CIPH"</b> Ciphering <b>"CONN"</b> Connectivity <b>"TRAF"</b> Traffic Monitor <b>"FLTS"</b> Faults <b>"MAC"</b> MAC Address <b>"GPS"</b> GPS Status & Position <b>"WLAN"</b> Wireless LAN Status <b>"CSC"</b> Circuit Switched Connection Status <b>"CLASS"</b> UE Class <b>"ANT"</b> External Antenna Status
<dec_value>:	decimal (0-1); Parameter Value <b>0</b> OFF <b>1</b> ON
<str_value>:	string; Parameter Value

## AT\_IHSET: HNS Set Terminal Configuration

<b>Description:</b>	Allows TE to configure UT specific parameters.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHSET=<set>[,<str_value>]	
	<set>,<str_value> +CME ERROR: <err>
AT_IHSET	
AT_IHSET?	<set>,<str_value>
AT_IHSET=?	_IHSET: (list of supported <set>s)

### Defined values

<set>:	string constant ("MSN_SPEECH","MSN_AUDIO","MSN_UDI","MSN_RDI","SAT_SELECT","MAN_NAME","MAN_ID","MODEL_NO","PART_NO","SERIAL_NO","REV_ID"); BGAN Terminal ISDN Parameters <b>"SAT_SELECT"</b> DEFAULT SATELLITE SELECTION <b>"MAN_NAME"</b> MANUFACTURER NAME <b>"MAN_ID"</b> MANUFACTURER ID <b>"MODEL_NO"</b> MANUFACTURER MODEL NUMBER <b>"PART_NO"</b> MANUFACTURER PART NUMBER <b>"SERIAL_NO"</b> MANUFACTURER SERIAL NUMBER <b>"REV_ID"</b> MANUFACTURER REVISION NUMBER
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<str\_value>: string; Parameter Value

## AT\_IHREAD: HNS Terminal Version Information

**Description:** Allows TE to configure UT specific parameters.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHREAD=<param>	
	<param>,<str_value> +CME ERROR: <err>
AT_IHREAD	
AT_IHREAD?	<param>,<str_value>
AT_IHREAD=?	_IHREAD: (list of supported <param>s)

### Defined values

<param>: string constant ("SW","FW","ROM","IMEI","PIC","ATB","AHW","HPA","ASN","AHV","CLASS","WLAN"); BGAN Terminal Version Info

"SW" software version  
"FW" firmware version  
"ROM" ROM version  
"IMEI" IMEI of the unit  
"PIC" PIC version  
"ATB" ATB version (external antenna only)  
"AHW" ATB HW version (external antenna only)  
"HPA" HPA version (external antenna only)  
"ASN" ASN (Antenna Serial Number) of the unit (external antenna only)  
"AHV" AHV (Antenna Hardware Variant) of the unit (external antenna only)  
"CLASS" CLASS version (external antenna only)  
"WLAN" WLAN Chipset and Version Information

<str\_value>: string; Parameter Value

## AT\_IHDEFcnt: Define a Default PDP Context

**Description:** Specifies PDP context parameter values for a PDP context.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
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<dlv_order>:	decimal (0-2); delivery order <b>0</b> no <b>1</b> yes <b>2</b> subscribed value
<maxSduSize>:	decimal (0-255); maximum sdu size
<sduErrRatio>:	string ((1-255)E(0-9)); sdu error ratio
<resBERatio>:	string ((1-255)E(0-9)); residual bit error ratio
<dlvErrSdus>:	decimal (0-3); delivery of erroneous sdus <b>0</b> no <b>1</b> yes <b>2</b> no detect <b>3</b> subscribed value
<trfrDelay>:	decimal (0-255); transfer delay
<trafHdlPrio>:	decimal (0-255); traffic handling priority

## AT\_IHACA: Automatic Context Activation

<b>Description:</b>	Allows TE to configure Automatic PDP Context activation. Note that this command is used to configure ACA for TEs with Static IP addresses; the _IHINIT AT Command has an "ACA" parameter that shows the status of/controls the use of ACA for TEs with DHCP-assigned IP addresses.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHACA=<aca_id>,<enable>,[<lo_ip_addr>,<hi_ip_addr>[,<qos>[,<apn>[,<username>[,<password>]]]]]	
	+CME ERROR: <err>
AT_IHACA	n/a
AT_IHACA?	_IHACA: <aca_id>,<enable>,<lo_ip_addr>,<hi_ip_addr>,<qos>,<apn>,<username>,<password>[<CR><LF>] _IHACA: <aca_id>,<enable>,<lo_ip_addr>,<hi_ip_addr>,<qos>,<apn>,<username>,<password>[...]
AT_IHACA=?	_IHACA: (list of supported <aca_id>s), (list of supported <enable>s),(list of supported <lo_ip_addr>s), (list of supported <hi_ip_addr>s), (list of supported <qos>s), (list of supported <apn>s),(list of supported <username>s), (list of supported <password>s)

### Defined values

<aca_id>:	decimal (1-6); ACA Identifier
<enable>:	decimal (0-2); ACA Enable <b>0</b> disabled <b>1</b> enabled <b>2</b> data activated
<lo_ip_addr>:	string; Low limit for PDP address space
<hi_ip_addr>:	string; High limit for PDP address space
<qos>:	decimal (2-7); QoS <b>2</b> Background

- 3 32kbps streaming
- 4 64kbps streaming
- 5 128kbps streaming
- 6 256kbps streaming
- 7 X-Stream streaming

<apn>: string; Access Point Name (APN)  
 <username>: string; APN username  
 <password>: string; APN password

## AT\_IHTM: Set CM to Test Mode

**Description:** Sets the CM to work in test mode, for cable calibration  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHTM=<testmode>	
	+CME ERROR: <err>
AT_IHTM	n/a
AT_IHTM?	<testmode>
AT_IHTM=?	(list of supported <testmode>s)

### Defined values

<testmode>: decimal (0-1); Mode  
 0 disabled  
 1 enabled

## AT\_IHTXCW: Transmit CW

**Description:** Orders CM to transmit CW  
 - First call will set the CW to 12dB reference point  
 - Subsequent calls (with <pwr\_sense>) will increase or decrease by 1dB from previous value  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHTXCW=<frequency>,<offset>,[<pwr_sense>]	
	OK

	+CME ERROR: <err>
AT_IHTXCW	n/a
AT_IHTXCW?	<status>[,<frequency>,<offset>]
AT_IHTXCW=?	n/a

**Defined values**

<frequency>:	decimal (6000-25400); Channel Number
<offset>:	decimal (0-1); 1.25 kHz offset disable/enable
<pwr_sense>:	decimal (0-1); Power backoff - sense <b>0</b> (default) Positive backoff (+1dB) <b>1</b> Negative backoff (-1dB)
<status>:	decimal (0-1); Status <b>0</b> CW Tx OFF <b>1</b> CW Tx ON

**AT\_IHSTXCW: Stop CW Transmission**

<b>Description:</b>	Orders CM to Stop CW Transmission.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHSTXCW=...	n/a
AT_IHSTXCW	<status> +CME ERROR: <err>
AT_IHSTXCW?	<status>
AT_IHSTXCW=?	n/a

**Defined values**

<status>:	decimal (0-1); Status <b>0</b> CW Tx OFF <b>1</b> CW Tx ON
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**AT\_IHTXMOD: Transmit Modulated Signal**

<b>Description:</b>	Ask CM to transmit modulated signal.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHTXMOD=<frequency>,<offset>,<bearer>,<coding>,<delay>,<ts>,<backoff>	
	+CME ERROR: <err>
AT_IHTXMOD	n/a
AT_IHTXMOD?	<status>[,<frequency>,<offset>,<bearer>,<coding>,<delay>,<ts>,<backoff>]
AT_IHTXMOD=?	n/a

**Defined values**

<frequency>:	decimal (6000-25400); Channel Number
<offset>:	decimal (0-1); 1.25 kHz offset disable/enable
<bearer>:	decimal (7); Bearer type: R20T4.5Q
<coding>:	decimal (0); Coding type: R
<delay>:	decimal (0); Time delay: 0
<ts>:	decimal (65535); Time slot: all slots
<backoff>:	decimal (0); 0dB backoff -- maximum power
<status>:	decimal (0-1); Status <ul style="list-style-type: none"> <li><b>0</b> modulated Tx OFF</li> <li><b>1</b> modulated Tx ON</li> </ul>

**AT\_IHSTXMOD: Stop Modulated Signal Transmission**

<b>Description:</b>	Command CM to stop modulated signal transmission.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHSTXMOD=	
	<status>
AT_IHSTXMOD	<status>
AT_IHSTXMOD?	<status>
AT_IHSTXMOD=?	n/a

**Defined values**

<status>:	decimal (0-1); Status <ul style="list-style-type: none"> <li><b>0</b> modulated Tx OFF</li> <li><b>1</b> modulated Tx ON</li> </ul>
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**AT\_IHGFACQ: Ask PSAB Acquisition Status**

**Description:** CM scans PSAB channel found by ADE and reports acquisition status.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHGFACQ=<frequency>,<offset>	
	+CME ERROR: <err>
AT_IHGFACQ	
AT_IHGFACQ?	
AT_IHGFACQ=?	_IHGFACQ: (list of supported <frequency>s), (list of supported <offset>s)

**Defined values**

<frequency>: decimal (6000-25400); Frequency  
 <offset>: decimal (0-1); 1.25 kHz offset disable/enable

**AT\_IHSIGACQ: Ask Signal Acquisition Status**

**Description:** CM compares receive signal level to minimal bearer level  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHSIGACQ=...	n/a
AT_IHSIGACQ	_IHSIGACQ: : <status>
AT_IHSIGACQ?	
AT_IHSIGACQ=?	_IHSIGACQ: (list of supported <status>s),(list of supported <>s)

**Defined values**

<status>:  
 decimal (0-1); Signal Acquisition Status  
 0 Signal Acquisition Failed  
 1 Signal Acquisition Succeeded

**AT\_IHGF: Obtain Satellite Information for Antenna Pointing**

**Description:** Report satellite information, location, and frequency for all visible satellites.

**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHGF=...	n/a
AT_IHGF	_IHGF: <numSatsVisible>,<desired_sat>[,<lon_deg>,<lon_min>,<lon_sense>,<sat_id>,<frequency>,<offset>,<frequency>,<offset>] +CME ERROR: <err>
AT_IHGF?	
AT_IHGF=?	_IHGF: (list of supported <numSatsVisible>s), (list of supported <desired_sat>s), (list of supported <lon_deg>s), (list of supported <lon_min>s), (list of supported <lon_sense>s), (list of supported <sat_id>s), (list of supported <frequency>s), (list of supported <offset>s), (list of supported <frequency>s), (list of supported <offset>s)

**Defined values**

<sat\_id>: decimal (0-255); Satellite ID  
 <desired\_sat>: decimal (0-255); Desired Satellite ID  
 <lon\_deg>: decimal (0-180); Longitude degrees  
 <lon\_min>: decimal (0-59); Longitude minutes  
 <lon\_sense>: decimal (0-1); Longitude sense  
     **0** East (+)  
     **1** West (-)  
 <frequency>: decimal (6000-25400); Frequency  
 <offset>: decimal (0-1); 1.25 kHz offset disable/enable  
 <numSatsVisible>: decimal (0-8); Number of visible satellites

**AT\_IHGPS: Initiate or Update GPS Information to CM**

**Description:** BCP should send GPS information at power on and as needed.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHGPS=<lat_deg>,<lat_min>,<lat_sense>,<lon_deg>,<lon_min>,<lon_sense>,<time>[,<fix>,<altitude>,<alt_sense>,<nos>,<hdop>]	
	+CME ERROR: <err>
AT_IHGPS	n/a
AT_IHGPS?	n/a
AT_IHGPS=?	n/a

**Defined values**

<lat_deg>:	decimal (0-90); Latitude degrees
<lat_min>:	decimal (0-59); Latitude minutes
<lat_sense>:	decimal (0-1); Latitude sense <b>0</b> North (+) <b>1</b> South (-)
<lon_deg>:	decimal (0-180); Longitude degrees
<lon_min>:	decimal (0-59); Longitude minutes
<lon_sense>:	decimal (0-1); Longitude sense <b>0</b> East (+) <b>1</b> West (-)
<time>:	string (20); Time format in "yy/MM/dd,hh:mm:ss[+/-]zz", where zz is Time Zone
<fix>:	decimal (0-2); Fix quality <b>0</b> non-fix <b>1</b> 2D fix <b>2</b> 3D fix
<altitude>:	decimal (0-33554431); Altitude
<alt_sense>:	decimal (0-1); Altitude sense <b>0</b> Above WGS84 ellipsoid <b>1</b> Below WGS84 ellipsoid
<nos>:	decimal (0-32); Number of GPS satellites
<hdop>:	decimal (0-16383); Horizontal dilution of precision

## AT\_IHPWROFF: CM Accomplishes Deregistration Procedure

<b>Description:</b>	CM accomplishes deregistration procedure upon receiving power off indication.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHPWROFF=...	n/a
AT_IHPWROFF	+CME ERROR: <err>
AT_IHPWROFF?	n/a
AT_IHPWROFF=?	n/a

## AT\_IHREBOOT: Reboot Terminal

<b>Description:</b>	User may use to reboot terminal from handset menu (if applicable).
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format



Command	Possible response(s)
AT_IHREBOOT=	
	+CME ERROR: <err>
AT_IHREBOOT	
AT_IHREBOOT?	
AT_IHREBOOT=?	

## AT\_IHCCAL: Send Cable Calibration Data to CM

<b>Description:</b>	CM may adjust nominal TX power according to cable loss at different frequency.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHCCAL=<frequency>,<backoff>,<pwr_sense>,<commit>	
	+CME ERROR: <err>
AT_IHCCAL	n/a
AT_IHCCAL?	_IHCCAL: <frequency>,<backoff>
AT_IHCCAL=?	n/a

### Defined values

<frequency>:	decimal (6000-25400); Frequency
<backoff>:	decimal (0-65535); Power backoff - attenuation
<pwr_sense>:	decimal (0-1); Power backoff - sense <b>0</b> Positive backoff (+) <b>1</b> Negative backoff (-)
<commit>:	decimal (0-1); Commit flag <b>0</b> Do not commit values <b>1</b> Commit values

## AT\_IHSWUPG: SW Upgrade Indication

<b>Description:</b>	SW upgrade indication.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHSWUPG=<module>	
	<module>,<filename> +CME ERROR: <err>
AT_IHSWUPG	
AT_IHSWUPG?	
AT_IHSWUPG=?	

**Defined values**

<module>: string ("IB", "ADE"); Module  
 <filename>: string; File name

**AT\_IHSWDATA: Request a block of image file.**

**Description:** BCP requests a block of the module's image file.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHSWDATA=<module>,<block_number>	
	<block_number>[,<block>,<crc>] +CME ERROR: <err>
AT_IHSWDATA	
AT_IHSWDATA?	
AT_IHSWDATA=?	

**Defined values**

<module>: string ("IB", "ADE"); Module  
 <block\_number>: decimal (0-65535); Block number (0 indicates all data has been transferred)  
 <block>: string; Data block  
 <crc>: decimal (0-65535); CRC for current block

**AT\_IHLOG: Write String to Console and Syslog**

**Description:** Write string to console and syslog for testing.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHLOG=<info>	
	+CME ERROR: <err>
AT_IHLOG	n/a
AT_IHLOG?	n/a
AT_IHLOG=?	n/a

**Defined values**

<info>: string; Information to log.

**AT\_IHPIN: Query PIN/PUK Status**

**Description:** Query PIN/PUK status.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHPIN=...	n/a
AT_IHPIN	n/a
AT_IHPIN?	
AT_IHPIN=?	n/a

**Defined values**

<pin\_retries>: decimal; Remaining tries of PIN input  
 <puk\_retries>: decimal; Remaining tries of PUK input

**AT\_IHPACKET: Report PS Call Log Information**

**Description:** Reports PS call log information. If the PDP Context ID provided is active, then current information is provided. If the specified PDP Context ID's connection is currently closed, then the last information recorded for that Context ID is reported (information is recorded for future reporting when a PDP Context is closed, regardless of the \_IHPACKET setting in \_IBNOTIFY). Note that in regard to streaming support, only the "non-M2M" terminals support streaming ("M2M" terminals do not support streaming).

**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)

AT_IHPACKET=<cid>	
	_IHPACKET: <cid>,<qos>,<units>,<dl_meter>,<ul_meter>,<cause>
AT_IHPACKET	n/a
AT_IHPACKET?	n/a
AT_IHPACKET=?	n/a

**Defined values**

<cid>:	decimal (1-11); PDP context ID
<qos>:	decimal (0-5); QoS <ul style="list-style-type: none"> <li><b>0</b> Background context</li> <li><b>1</b> 32 kbps streaming context</li> <li><b>2</b> 64 kbps streaming context</li> <li><b>3</b> 128 kbps streaming context</li> <li><b>4</b> 256 kbps streaming context</li> </ul>
<units>:	decimal (0-1); <ul style="list-style-type: none"> <li><b>0</b> bytes for non-streaming</li> <li><b>1</b> seconds for streaming</li> </ul>
<dl_meter>:	decimal; meter for downlink
<ul_meter>:	decimal; meter for uplink
<cause>:	decimal (0-255); cause code

**AT\_IHSMS: Report Short Message Delivery Status**

<b>Description:</b>	Report short message delivery status.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHSMS=...	n/a
AT_IHSMS	n/a
AT_IHSMS?	_IHSMS: <direction>,<number>,<length>,<cause>
AT_IHSMS=?	n/a

**Defined values**

<direction>:	decimal (0-1); Direction <ul style="list-style-type: none"> <li><b>0</b> Mobile Originated</li> <li><b>1</b> Mobile Terminated</li> </ul>
<number>:	string; party number
<length>:	decimal (0-255); length of short message in bytes

<cause>: decimal (0-255); cause code

## AT\_IHBEAM: Report Beam ID in which UT is Operating

**Description:** Report beam ID in which UT is operating.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHBEAM=<beam_report>	
	+CME ERROR: <err>
AT_IHBEAM	n/a
AT_IHBEAM?	_IHBEAM: <beam_id>
AT_IHBEAM=?	n/a

### Defined values

<beam\_report>: decimal (0-1); Beam Reporting  
**0** Disable unsolicited result code  
**1** Enable unsolicited result code  
 <beam\_id>: decimal (0-255); spot beam ID

## AT\_IHTIMER: Set Timeouts for Connections and Leases

**Description:** Set timeout, in seconds, for certain connections and leases.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHTIMER=<func>[,<timer_value>]	
	+CME ERROR: <err>
AT_IHTIMER	n/a
AT_IHTIMER?	_IHTIMER: <func>, <timer_value>
AT_IHTIMER=?	_IHTIMER: (list of supported <func>s), (list of supported <timer_value>s)

### Defined values

<func>: string constant ("INACTIVE","DHCP\_IDLE","DHCP\_CONN","DHCP\_RENEW","DHCP\_REBIND"); Init Parameters  
**"INACTIVE"** Streaming connection inactivity timer in seconds

"DHCP_IDLE"	DHCP Lease Time (in seconds) when TE is IDLE
"DHCP_CONN"	DHCP Lease Time (in seconds) when TE has an active PDP context ("Connected Mode")
"DHCP_RENEW"	DHCP Context Lease Renew Time (in seconds), Option 58
"DHCP_REBIND"	DHCP Context Lease Rebind Time (in seconds), Option 59

<timer_value>:	decimal (0-65535); Streaming connection inactivity timer (in seconds)
<dhcp_idle>:	decimal (30-65535); DHCP Lease Time when TE is IDLE (in seconds)
<dhcp_conn>:	decimal (30-65535); DHCP Lease Time when TE has active PDP context (in seconds)
<dhcp_renew>:	decimal (15-65535); DHCP Context Lease Renew Time (in seconds), Option 58
<dhcp_rebind>:	decimal (15-65535); DHCP Context Lease Rebind Time (in seconds), Option 59

## AT\_IHARP: Terminal ARP Entries

<b>Description:</b>	Query ARP table status.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHARP=<rpt_mode>	
	+CME ERROR: <err>
AT_IHARP	_IHARP: <rpt_mode>
AT_IHARP?	_IHARP: <id>, <ip_addr>, <mac_addr>
AT_IHARP=?	n/a

### Defined values

<id>:	decimal; entry id
<ip_addr>:	string (IP); Host IP address
<mac_addr>:	string (MAC); Host MAC address
<rpt_mode>:	decimal (0-1); Unsolicited reporting mode <ul style="list-style-type: none"> <li>0 Disable unsolicited result codes</li> <li>1 Enable unsolicited result codes</li> </ul>

## AT\_IHPING: Terminal-initiated PING.

<b>Description:</b>	Terminal initiated PING.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)

AT_IHPING=<ip_addr>[,<pkt_count>[,<pkt_size>[,<pkt_ttl>[,<rpt_mode>]]]]	
	+CME ERROR: <err>
AT_IHPING	n/a
AT_IHPING?	_IHPING: <status>[,<pkt_size>[,<time>]]
AT_IHPING=?	_IHPING: <rpt_mode>

**Defined values**

<ip_addr>:	string (IP); Destination IP address
<pkt_count>:	decimal (1-255); Packet Count
<pkt_size>:	decimal (0-65535); Packet Size
<pkt_ttl>:	decimal (0-255); Packet Time to Live (hops)
<rpt_mode>:	decimal (0-1); Unsolicited reporting mode. <b>0</b> Disable unsolicited result codes <b>1</b> Enable unsolicited result codes
<status>:	decimal (0-1); ihping success or failure. <b>0</b> success <b>1</b> failure
<time>:	decimal; ihping packet trip time in milliseconds

**AT\_IHTEXT: Terminal Text Message**

<b>Description:</b>	Terminal initiated Text message.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHTEXT=<mesg>,<dest_ip>,<dest_port>[,<mesg_count>[,<intvl>]]	
	+CME ERROR: <err>
AT_IHTEXT	n/a
AT_IHTEXT?	n/a
AT_IHTEXT=?	n/a

**Defined values**

<mesg>:	string (mesg); Text message (50 chars)
<dest_ip>:	string (IP); Destination IP address
<dest_port>:	decimal (1-65535); Destination Port
<mesg_count>:	decimal (1-15); Transmit count (default 5)
<intvl>:	decimal (1-30); Interval (default 1 sec)

**AT\_IHABIT: HNS Antenna Built-In Test**

<b>Description:</b>	Allows TE to configure UT specific parameters.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHABIT=<param>	
	+CME ERROR: <err>
AT_IHABIT	
AT_IHABIT?	_IHABIT: <param>,<result>[...] +CME ERROR: <err>
AT_IHABIT=?	_IHABIT: (list of supported <param>s)

**Defined values**

<param>:	string constant ("AMOTOR","EMOTOR","EEPROM","RF","LNA","MICRO","HPA","CAL","FLASH","ALL"); Command Antenna to perform BIT and check status
	"AMOTOR"      AZIMUTH MOTOR
	"EMOTOR"      ELEVATION MOTOR
	"EEPROM"      EEPROM
	"RF"            RF
	"LNA"          LNA
	"MICRO"        MICRO
	"HPA"          HIGH POWER AMPLIFIER
	"CAL"          CAL
	"FLASH"        FLASH
	"ALL"          ALL TESTS
<result>:	decimal; Test Result

**AT\_IHPBIT: Command UT to Perform Platform Built-In Test and Check Status**

<b>Description:</b>	Perform Platform Built-in Test (BIT) on UT.
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHPBIT=<param>	
	_IHPBIT: <param>,<result>[...]



	+CME ERROR: <err>
AT_IHPBIT	
AT_IHPBIT?	_IHPBIT: <param>,<result>[...] +CME ERROR: <err>
AT_IHPBIT=?	_IHPBIT: (list of supported <param>s)

**Defined values**

<param>: string constant ("POST","MEM","IMG","CNF","ETH","ASIC","DSP","USB","ALL"); Command UT to perform BIT and check status

**"POST"** POST RESULTS

**"MEM"** MEMORY

**"IMG"** IMAGE

**"CNF"** CONFIG

**"ETH"** ETHERNET

**"ASIC"** ASIC

**"DSP"** DSP

**"USB"** USB

**"ALL"** ALL TESTS

<result>: decimal (0-2); Test Result

**AT\_IHEVENT: BGAN Terminal Event Reports**

**Description:** Configures whether certain events will be reported on the AT interface. This command configures whether the unsolicited events shown under <event\_type> will appear on the AT (port 1829) interface or not. Note that when IHEVENTs are reported on the AT interface, they follow the syntax "IHEVENT: <event\_type>,<event\_code>[,<optional\_str>]"

**References:** None

**Group:** HNS Specific AT Commands

**Syntax:** Extended format

Command	Possible response(s)
AT_IHEVENT=<report_mode>	
	+CME ERROR: <err>
AT_IHEVENT	n/a
AT_IHEVENT?	_IHEVENT: <report_mode>
AT_IHEVENT=?	_IHEVENT: (list of supported <report_mode>s)

**Defined values**

<report\_mode>: decimal (0-1); Reporting Mode

**0** Disable Unsolicited Event Notifications

**1** Enable Unsolicited Event Notifications

<event\_type>: decimal (1-255); Event Type

**1** Registration

- 2 Deregistration
- 3 PDP Activation
- 4 PDP Deactivation
- 5 ISDN
- 6 SMS
- 7 USIM
- 8 Attach
- 9 Detach
- 10 Heartbeat
- 11 Hardware
- 12 Power
- 13 Miscellaneous
- 14 Attach (additional)

<event\_code>: decimal (1-255); Event Code  
 <optional\_str>: string; Optional character string

### AT\_IHCIRCUIT: BGAN Terminal CS Call Reports

**Description:** Report CS call log when a CS connection is closed.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHCIRCUIT=<report_mode>	
	+CME ERROR: <err>
AT_IHCIRCUIT	n/a
AT_IHCIRCUIT?	_IHCIRCUIT: <report_mode>
AT_IHCIRCUIT=?	_IHCIRCUIT: (list of supported <report_mode>s)

**Defined values**

<report\_mode>: decimal (0-1); Reporting Mode  
 0 Disable unsolicited CS call notifications  
 1 Enable unsolicited CS call notifications

<bearer>: decimal (0-3); Bearer  
 0 Speech  
 1 3.1 kHz Audio  
 2 UDI (64 kbps)  
 3 RDI (56 kbps)

<direction>: decimal (0-1); Direction  
 0 Mobile Originated (MO)

**1 Mobile Terminated (MT)**

<caller\_id>: string; Caller ID  
**MO calls**      Called Party Number  
**MT calls**      Calling Party Number

<seconds>: decimal; Duration of CS connection  
 <cause>: decimal (0-255); Disconnect cause code

**AT\_IHTEMP: HNS Terminal Temperature**

**Description:** Provides temperature readings.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHTEMP=<module>	
	_IHTEMP: <module>,<value> +CME ERROR: <err>
AT_IHTEMP	n/a
AT_IHTEMP?	n/a
AT_IHTEMP=?	n/a

**Defined values**

<module>: string constant ("VGA", "PD", "VR", "ANT", "ALL"); Module  
**"VGA"**      VGA temperature reading  
**"PD"**      Power Detector temperature reading  
**"VR"**      Board temperature reading  
**"ANT"**      Called temperature reading  
**"ALL"**      All temperature readings

<value>: decimal; Temperature Value

**AT\_IHMETER: Expanded Call Metering**

**Description:** BGAN terminal expanded call metering commands. Note that "non-M2M" platforms support streaming stats, but "M2M" platforms do not.  
**References:** None  
**Group:** HNS Specific AT Commands  
**Syntax:** Extended format

Command	Possible response(s)
AT_IHMETER=	

	<meter_type>[,<context_id>] +CME ERROR: <err>
AT_IHMETER	n/a
AT_IHMETER?	_IHMETER: <meter_type>
AT_IHMETER=?	

**Defined values**

&lt;meter\_type&gt;:

string; meter types

"ALL_TRIP"	Used ONLY for clearing all Trip Meters
"CS_TRIP"	Connection Time for ALL CS calls (seconds)
"CS_TRIP_MO"	Connection Time for MO CS calls (seconds)
"CS_TRIP_MT"	Connection Time for MT CS calls (seconds)
"CS_TRIP_SPEECH"	Connection Time for All CS Speech calls (seconds)
"CS_TRIP_SPEECH_MO"	Connection Time for MO CS Speech calls (seconds)
"CS_TRIP_SPEECH_MT"	Connection Time for MT CS Speech calls (seconds)
"CS_TRIP_AUDIO"	Connection Time for All CS 3.1 kHz Audio calls (seconds)
"CS_TRIP_AUDIO_MO"	Connection Time for MO CS 3.1 kHz Audio calls (seconds)
"CS_TRIP_AUDIO_MT"	Connection Time for MT CS 3.1 kHz Audio calls (seconds)
"CS_TRIP_UDI"	Connection Time for All CS UDI calls (seconds)
"CS_TRIP_UDI_MO"	Connection Time for MO CS UDI calls (seconds)
"CS_TRIP_UDI_MT"	Connection Time for MT CS UDI calls (seconds)
"CS_TRIP_RDI"	Connection Time for All CS RDI calls (seconds)
"CS_TRIP_RDI_MO"	Connection Time for MO CS RDI calls (seconds)
"CS_TRIP_RDI_MT"	Connection Time for MT CS RDI calls (seconds)
"PS_TRIP"	Bytes for all background QoS PDP Contexts
"PS_TRIP_FORWARD"	Bytes for all background QoS PDP Contexts, Forward Direction (RX)
"PS_TRIP_RETURN"	Bytes for all background QoS PDP Contexts, Return Direction (TX)
"PS_TRIP_32K"	Connection Time for all 32 kbps QoS (seconds)
"PS_TRIP_64K"	Connection Time for all 64 kbps QoS (seconds)
"PS_TRIP_128K"	Connection Time for all 128 kbps QoS (seconds)
"PS_TRIP_256K"	Connection Time for all 256 kbps QoS (seconds)
"PS_TRIP_XSTREAM"	Connection Time for all 512 kbps (X-Stream) QoS (seconds)
"PS_TRIP_176K"	Connection Time for all 176 kbps QoS (seconds)
"PS_TRIP_HALF_HDR_64"	Connection Time for all 1/2 HDR / 64K QoS (seconds)
"PS_TRIP_HDR_64"	Connection Time for all HDR / 64K QoS (seconds)
"PS_TRIP_HDR_128"	Connection Time for all HDR / 128K QoS (seconds)
"PS_TRIP_HDR_X-STREAM"	Connection Time for all HDR / X-Stream QoS (seconds)
"CS_SESSION"	Session Time for last/current CS call (seconds)
"PS_SESSION"	Session bytes for last background QoS
"PS_SESSION_FORWARD"	Session forward bytes for last background QoS (RX)
"PS_SESSION_RETURN"	Session return bytes for last background QoS (TX)
"PS_SESSION_STREAM"	Session stream time for last background QoS (seconds)

&lt;context\_id&gt;:

decimal (1-11,255); Context ID Number or Reset Counter

<b>1-11</b>	Context ID Number
<b>255</b>	Reset Meter Counter

## AT\_IHLBS: Location-Based Services Configuration

<b>Description:</b>	Specifies Location-Based Services (LBS) parameter values. LBS Reports can be sent based on "stationary" elapsed time (hrs + mins elapsed), distance moved (checked every "moving" hrs + mins; sent if at least the configured distance has been moved), or both. Note that ALL parameters must be specified; if the current value of a parameter is desired (meaning no change to its value is to occur), then provide an empty value (,,).
<b>References:</b>	None
<b>Group:</b>	HNS Specific AT Commands
<b>Syntax:</b>	Extended format

Command	Possible response(s)
AT_IHLBS=<enable>,<apn>,<apn_uname>,<apn_pwd>,<rpt_pwrup>,<stat_hrs>,<stat_mins>,<mvg_hrs>,<mvg_mins>,<mvg_meters>,<svr_ip_url>,<svr_port>,<clnt_port>,<key>	
	+CME ERROR: <err>
AT_IHLBS	n/a
AT_IHLBS?	_IHLBS: <enable>,<apn>,<apn_uname>,<apn_pwd>,<rpt_pwrup>,<stat_hrs>,<stat_mins>,<mvg_hrs>,<mvg_mins>,<mvg_meters>,<svr_ip_url>,<svr_port>,<clnt_port>,<key>
AT_IHLBS=?	n/a

### Defined values

<enable>:	decimal (0-1); LBS Enable State <b>0</b> LBS is Disabled <b>1</b> LBS is Enabled
<apn>:	string (""); Access Point Name (APN) for Sending LBS Reports (NAT/Relay Mode only)
<apn_uname>:	string (""); APN Username for Sending LBS Reports (NAT/Relay Mode only)
<apn_pwd>:	string (""); APN Password for Sending LBS Reports (NAT/Relay Mode only)
<rpt_pwrup>:	decimal (0-1); Send an LBS Report on Power-Up <b>0</b> Do NOT Send Report on Power-Up <b>1</b> Send Report on Power-Up
<stat_hrs>:	decimal (0-65535); Number of Elapsed Hours before sending a Stationary (Elapsed Time) Report
<stat_mins>:	decimal (0-65535); Number of Elapsed Mins before sending a Stationary (Elapsed Time) Report
<mvg_hrs>:	decimal (0-65535); Number of Elapsed Hours before checking/sending a Moving (Distance Moved) Report
<mvg_mins>:	decimal (0-65535); Number of Elapsed Mins before checking/sending a Moving (Distance Moved) Report
<mvg_meters>:	decimal (0-65535); Minimum number of Meters that must have been moved when sending a Moving (Distance Moved) Report
<svr_ip_url>:	string (""); IP Address or URL of Server to Send LBS Reports to
<svr_port>:	decimal (0-65535); Server Port Number used when sending LBS Reports
<clnt_port>:	decimal (0-65535); Client Port Number used when sending LBS Reports
<key>:	string (""); Encryption Key (8-63 chars)

## Summary of Inmarsat Specific Result Codes

This section describes all result codes specific for Inmarsat terminals.

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