

Nowacom

GNS-30CR AT Command Set

0 Version History

Chapter	Page	What is new

1 Introduction

1.1 Scope of the document

This document presents the AT Command Set for Novacom cellular GNS - 30CR (engine SIM300C)

1.2 Related documents

1.3 Conventions and abbreviations

In this document, the GSM engines are referred to as following term:

- 1) ME (Mobile Equipment);
- 2) MS (Mobile Station);
- 3) TA (Terminal Adapter);
- 4) DCE (Data Communication Equipment) or facsimile DCE(FAX modem, FAX board);

In application, controlling device controls the GSM engine by sending AT Command via its serial interface. The controlling device at the other end of the serial line is referred to as following term:

- 1) TE (Terminal Equipment);
- 2) DTE (Data Terminal Equipment) or plainly “the application” which is running on an embedded system;

1.4 AT Command syntax

The "AT" or "at" prefix must be set at the beginning of each command line. To terminate a command line enter <CR>.

Commands are usually followed by a response that includes.”<CR><LF><response><CR><LF>”

Throughout this document, only the responses are presented, <CR><LF> are omitted intentionally.

The AT command set implemented by SIM300C is a combination of GSM07.05, GSM07.07 and ITU-T recommendation V.25ter and the AT commands developed by SIMCOM.

Note: Only enter AT command through serial port after SIM300C is power on and Unsolicited Result Code “RDY” is received from serial port. And if unsolicited result code”SCKS: 0” returned it indicates SIM card isn’t present.

All these AT commands can be split into three categories syntactically: “**basic**”, “**S parameter**”, and “**extended**”. These are as follows:

1.4.1 Basic syntax

These AT commands have the format of “AT<x><n>”, or “AT&<x><n>”, where “<x>”is the command, and “<n>”is/are the argument(s) for that command. An example of this is “ATE<n>”, which tells the DCE whether received characters should be echoed back to the DTE according to the value of “<n>”. “<n>” is optional and a default will be used if missing.

1.4.2 S parameter syntax

These AT commands have the format of “ATS<n>=<m>”, where “<n>” is the index of the S

register to set, and “<*m*>” is the value to assign to it. “<*m*>” is optional; if it is missing, then a default value is assigned.

1.4.3 Extended Syntax

These commands can operate in several modes, as following table:

Table 1: Types of AT commands and responses

Test command	AT+< <i>x</i> >=?	The mobile equipment returns the list of parameters and value ranges set with the corresponding Write command or by internal processes.
Read command	AT+< <i>x</i> >?	This command returns the currently set value of the parameter or parameters.
Write command	AT+< <i>x</i> >=<...>	This command sets the user-definable parameter values.
Execution command	AT+< <i>x</i> >	The execution command reads non-variable parameters affected by internal processes in the GSM engine

1.4.4 Combining AT commands on the same command line

You can enter several AT commands on the same line. In this case, you do not need to type the “AT” or “at” prefix before every command. Instead, you only need type “AT” or “or” at the beginning of the command line. Please note to use a semicolon as command delimiter.

The command line buffer can accept a maximum of 256 characters. If the characters entered exceeded this number then none of the command will executed and TA will returns “**ERROR**”.

1.4.5 Entering successive AT commands on separate lines

When you need to enter a series of AT commands on separate lines, please note that you need to wait the final response (for example OK, CME error, CMS error) of last AT command you entered before you enter the next AT command.

1.5 Supported character sets

The SIM300C AT command interface defaults to the **GSM** character set. The SIM300C supports the following character sets:

- GSM format
- UCS2
- HEX
- IRA
- PCCP437
- PCDN
- 8859_1

The character set can be set and interrogated using the “**AT+CSCS**” command (GSM 07.07).

The character set is defined in GSM specification 07.05.

The character set affects transmission and reception of SMS and SMS Cell Broadcast messages, the entry and display of phone book entries text field and SIM Application Toolkit alpha strings.

1.6 Flow control

Flow control is very important for correct communication between the GSM engine and DTE. For in the case such as a data or fax call, the sending device is transferring data faster than the receiving side is ready to accept. When the receiving buffer reaches its capacity, the receiving device should be capable to cause the sending device to pause until it catches up.

There are basically two approaches to achieve data flow control: software flow control and hardware flow control. SIM300C support both two kinds of flow control. In Multiplex mode, it is recommended to use the hardware flow control.

1.6.1 Software flow control (XON/XOFF flow control)

Software flow control sends different characters to stop (XOFF, decimal 19) and resume (XON, decimal 17) data flow. It is quite useful in some applications that only use three wires on the serial interface.

The default flow control approach of SIM300C is hardware flow control (RTS/CTS flow control), to enable software flow control in the DTE interface and within GSM engine, type the following AT command:

```
AT+IFC=1,1
```

This setting is stored volatile, for use after restart, **AT+IFC=1,1** should be stored to the user profile with **AT&W**.

Ensure that any communications software package (e.g. ProComm Plus, Hyper terminal or WinFax Pro) uses software flow control.

NOTE:

Software Flow control should not be used for data calls where binary data will be transmitted or received (e.g. TCP/IP) as the DTE interface may interpret binary data as flow control characters.

1.6.2 Hardware flow control (RTS/CTS flow control)

Hardware flow control achieves the data flow control by controlling the RTS/CTS line. When the data transfer should be suspended, the CTS line is set inactive until the transfer from the receiving buffer has completed. When the receiving buffer is ok to receive more data, CTS goes active once again.

To achieve hardware flow control, ensure that the RTS/CTS lines are present on your application platform.

2 AT Commands According to V.25TER

These AT command are designed according to the ITU-T (International Telecommunication Union, Telecommunication sector) V.25ter document.

2.1 Overview of AT Commands According to V.25TER

Command	Description
A/	RE-ISSUES LAST AT COMMAND GIVEN
ATA	ANSWER INCOMING CALL
ATD	MOBILE ORIGINATED CALL TO DIALABLE NUMBER
ATD<<MEM><N>	ORIGINATE CALL TO PHONE NUMBER IN MEMORY <MEM>
>	
ATD<<N>	ORIGINATE CALL TO PHONE NUMBER IN CURRENT MEMORY
ATD<<STR>	ORIGINATE CALL TO PHONE NUMBER IN MEMORY WHICH CORRESPONDS TO ALPHANUMERIC FIELD <STR>
ATDL	REDIAL LAST TELEPHONE NUMBER USED
ATE	SET COMMAND ECHO MODE
ATH	DISCONNECT EXISTING CONNECTION
ATI	DISPLAY PRODUCT IDENTIFICATION INFORMATION
ATL	SET MONITOR SPEAKER LOUDNESS
ATM	SET MONITOR SPEAKER MODE
+++	SWITCH FROM DATA MODE OR PPP ONLINE MODE TO COMMAND MODE
ATO	SWITCH FROM COMMAND MODE TO DATA MODE
ATP	SELECT PULSE DIALLING
ATQ	SET RESULT CODE PRESENTATION MODE
ATS0	SET NUMBER OF RINGS BEFORE AUTOMATICALLY ANSWERING THE CALL
ATS3	SET COMMAND LINE TERMINATION CHARACTER
ATS4	SET RESPONSE FORMATTING CHARACTER
ATS5	SET COMMAND LINE EDITING CHARACTER
ATS6	SET PAUSE BEFORE BLIND DIALLING
ATS7	SET NUMBER OF SECONDS TO WAIT FOR CONNECTION COMPLETION
ATS8	SET NUMBER OF SECONDS TO WAIT WHEN COMMA DIAL MODIFIER USED
ATS10	SET DISCONNECT DELAY AFTER INDICATING THE ABSENCE OF DATA CARRIER

GNS-30CR AT Command Set

ATT	SELECT TONE DIALLING
ATV	SET RESULT CODE FORMAT MODE
ATX	SET CONNECT RESULT CODE FORMAT AND CALL MONITORING
ATZ	SET ALL CURRENT PARAMETERS TO USER DEFINED PROFILE
AT&C	SET DCD FUNCTION MODE
AT&D	SET DTR FUNCTION MODE
AT&F	SET ALL CURRENT PARAMETERS TO MANUFACTURER DEFAULTS
AT&V	DISPLAY CURRENT CONFIGURATION
AT&W	STORE CURRENT PARAMETER TO USER DEFINED PROFILE
AT+DR	V.42BIS DATA COMPRESSION REPORTING CONTROL
AT+DS	V.42BIS DATA COMPRESSION CONTROL
AT+GCAP	REQUEST COMPLETE TA CAPABILITIES LIST
AT+GMI	REQUEST MANUFACTURER IDENTIFICATION
AT+GMM	REQUEST TA MODEL IDENTIFICATION
AT+GMR	REQUEST TA REVISION IDENTIFICATION
AT+GOI	REQUEST GLOBAL OBJECT IDENTIFICATION
AT+GSN	REQUEST TA SERIAL NUMBER IDENTIFICATION (IMEI)
AT+ICF	SET TE-TA CONTROL CHARACTER FRAMING
AT+IFC	SET TE-TA LOCAL DATA FLOW CONTROL
AT+ILRR	SET TE-TA LOCAL RATE REPORTING MODE
AT+IPR	SET FIXED LOCAL RATE

2.2 Detailed Description of AT Commands According to V.25TER

2.2.1 A/ Reissues the last command given

A/ Reissues the last command given	
Execution command	Response
A/	Re-issues the previous command Note: It does not have to end with terminating character.
	Parameter
Reference	Note
V.25ter	This command does not work when the serial multiplexer is active

2.2.2 ATA Answers a call

ATA Answers a call	
Executing command ATA	<p>Response</p> <p>TA sends off-hook to the remote station.</p> <p>Note1: Any additional commands on the same command line are ignored.</p> <p>Note2: This command may be aborted generally by receiving a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.</p> <p>Response in case of data call, if successfully connected</p> <p>CONNECT<text> TA switches to data mode.</p> <p>Note: <text> output only if ATX<value> parameter setting with the <value> >0</p> <p>When TA returns to command mode after call release</p> <p>OK</p> <p>Response in case of voice call, if successfully connected</p> <p>OK</p> <p>Response if no connection</p> <p>NO CARRIER</p>
	Parameter
Reference V.25ter	Note See also ATX

2.2.3 ATD Mobile originate call to dial a number

ATD Mobile originate call to dial a number	
Execution command ATD[<n>][<mgs m>];]	<p>Response</p> <p>This command can be used to set up outgoing <i>voice, data or fax calls</i>. It also serves to control <i>supplementary services</i>.</p> <p>Note: This command may be aborted generally by receiving an ATH command or a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.</p> <p>If no dial tone and (parameter setting ATX2 or ATX4)</p> <p>NO DIALTONE</p> <p>If busy and (parameter setting ATX3 or ATX4)</p> <p>BUSY</p> <p>If a connection cannot be established</p> <p>NO CARRIER</p>

	<p>If connection successful and non-voice call. CONNECT<text> TA switches to data mode. Note: <text> output only if ATX<value> parameter setting with the <value> >0</p> <p>When TA returns to command mode after call release OK</p> <p>If connection successful and voice call OK</p> <p>Response in case of voice call, if successfully connected OK</p>
	<p>Parameter</p> <p><n> string of dialing digits and optionally V.25ter modifiers dialing digits: 0-9, *, #, +, A, B, C Following V.25ter modifiers are ignored: ,(comma), T, P, !, W, @</p> <p>Emergency call:</p> <p><n> Standardized emergency number 112(no SIM needed)</p> <p><mgsms> string of GSM modifiers:</p> <p>I Activates CLIR (Disables presentation of own number to called party)</p> <p>i Deactivates CLIR (Enable presentation of own number to called party)</p> <p>G Activates Closed User Group invocation for this call only</p> <p>g Deactivates Closed User Group invocation for this call only</p> <p><;> only required to set up voice call , return to command state</p>
<p>Reference V.25ter</p>	<p>Note</p> <ul style="list-style-type: none"> ● Parameter “I” and “i” only if no *# code is within the dial string ● <n> is default for last number that can be dialed by ATDL ● *# codes sent with ATD are treated as voice calls. Therefore, the command must be terminated with a semicolon “;” ● See ATX command for setting result code and call monitoring parameters. <p>Responses returned after dialing with ATD</p> <ul style="list-style-type: none"> ● For voice call two different responses mode can be determined. TA returns “OK” immediately either after dialing was completed or after the call is established. The setting is controlled by AT+COLP. Factory

	<p>default is AT+COLP=0, this cause the TA returns “OK” immediately after dialing was completed, otherwise TA will returns “OK”, “BUSY”, “NO DIAL TONE”, “NO CARRIER”.</p> <p>Using ATD during an active voice call:</p> <ul style="list-style-type: none"> ● When a user originates a second voice call while there is already an active voice call, the first call will be automatically put on hold. ● The current states of all calls can be easily checked at any time by using the AT+CLCC command.
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2.2.4 ATD> <mem><n> Originate call to phone number in memory <mem>

ATD><mem><n> Originate call to phone number in memory <mem>	
Execution command	Response
ATD><mem><n> >[<I>][<G>][;]	<p>This command can be used to dial a phone number from a specific phonebook.</p> <p>Note: This command may be aborted generally by receiving an ATH command or a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.</p> <p>If error is related to ME functionality +CME ERROR: <err></p> <p>If no dial tone and (parameter setting ATX2 or ATX4) NO DIALTONE</p> <p>If busy and (parameter setting ATX3 or ATX4) BUSY</p> <p>If a connection cannot be established NO CARRIER</p> <p>If connection successful and non-voice call. CONNECT<text> TA switches to data mode. Note: <text> output only if ATX<value> parameter setting with the <value> >0</p> <p>When TA returns to command mode after call release OK</p> <p>If successfully connected and voice call OK</p>

	<p>Parameter</p> <p><mem> Phonebook</p> <p>"DC" ME dialled calls list</p> <p>"FD" SIM fixed dialling-phonebook</p> <p>"LD" SIM dialled calls list</p> <p>"MC" ME missed (unanswered received) calls list</p> <p>"ME" ME phonebook</p> <p>"ON" SIM (or ME) own numbers (MSISDNs) list</p> <p>"RC" ME received calls list</p> <p>"SM" SIM phonebook</p> <p><n> Integer type memory location should be in the range of locations available in the memory used</p> <p><mgsms> string of GSM modifiers:</p> <p>I Activates CLIR (Disables presentation of own number to called party)</p> <p>i Deactivates CLIR (Enable presentation of own number to called party)</p> <p>G Activates Closed User Group invocation for this call only</p> <p>g Deactivates Closed User Group invocation for this call only</p> <p><;> only required to set up voice call , return to command state</p>
<p>Reference</p> <p>V.25ter</p>	<p>Note</p> <ul style="list-style-type: none"> ● There is no <mem> for emergency call ("EN"). ● Parameter "I" and "i" only if no *# code is within the dial string ● *# codes sent with ATD are treated as voice calls. Therefore, the command must be terminated with a semicolon ";" ● See ATX command for setting result code and call monitoring parameters. ● For example: The command "ATD>SM7;" is going to dial the phone number stored at location 7 in SIM phone book.

2.2.5 ATD> <n> Originate call to phone number in current memory

ATD><n> Originate call to phone number in current memory	
Execution command	Response
ATD><n>[<I>][<G>][;]	<p>This command can be used to dial a phone number from current phonebook memory.</p> <p>Note: This command may be aborted generally by receiving an ATH command or a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.</p> <p>If error is related to ME functionality +CME ERROR: <err></p> <p>If no dial tone and (parameter setting ATX2 or ATX4) NO DIALTONE</p> <p>If busy and (parameter setting ATX3 or ATX4) BUSY</p> <p>If a connection cannot be established NO CARRIER</p> <p>If connection successful and non-voice call. CONNECT<text> TA switches to data mode. Note: <text> output only if ATX<value> parameter setting with the <value> >0</p> <p>When TA returns to command mode after call release OK</p> <p>If successfully connected and voice call OK</p>
	Parameter
<n>	Integer type memory location should be in the range of locations available in the memory used
<mgsms>	string of GSM modifiers: I Actives CLIR (Disables presentation of own number to called party) i Deactivates CLIR (Enable presentation of own number to called party) G Activates Closed User Group invocation for this call only g Deactivates Closed User Group invocation for this call only
<;>	only required to set up voice call , return to command state

Reference	Note
V.25ter	<ul style="list-style-type: none"> ● Parameter “I” and “i” only if no *# code is within the dial string ● *# codes sent with ATD are treated as voice calls. Therefore, the command must be terminated with a semicolon “;” ● See ATX command for setting result code and call monitoring parameters.

2.2.6 ATD> <str> Originate call to phone number in memory which corresponding alpha num field

ATD><str> Originate call to phone number in memory which corresponding alpha num field

Execution command	Response
ATD><str>[I][G][;]	<p>This command make the TA attempts to set up an outgoing call to stored number.</p> <p>All available memories are searched for the entry <str>.</p> <p>Note: This command may be aborted generally by receiving an ATH command or a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.</p> <p>If error is related to ME functionality +CME ERROR: <err></p> <p>If no dial tone and (parameter setting ATX2 or ATX4) NO DIALTONE</p> <p>If busy and (parameter setting ATX3 or ATX4) BUSY</p> <p>If a connection cannot be established NO CARRIER</p> <p>If connection successful and non-voice call. CONNECT<text> TA switches to data mode. Note: <text> output only if ATX<value> parameter setting with the <value> >0</p> <p>When TA returns to command mode after call release OK</p> <p>If successfully connected and voice call OK</p>

	<p>Parameter</p> <p><str> string type value (“x”), which should equal to an alphanumeric field in at least one phone book entry in the searched memories. str formatted as current TE character set specified by +CSCS.</p> <p><mgsms> string of GSM modifiers:</p> <ul style="list-style-type: none"> I Actives CLIR (Disables presentation of own number to called party) i Deactivates CLIR (Enable presentation of own number to called party) G Activates Closed User Group invocation for this call only g Deactivates Closed User Group invocation for this call only <p><;> only required to set up voice call , return to command state</p>
<p>Reference V.25ter</p>	<p>Note</p> <ul style="list-style-type: none"> ● Parameter “I” and “i” only if no *# code is within the dial string ● *# codes sent with ATD are treated as voice calls. Therefore, the command must be terminated with a semicolon “;” ● See ATX command for setting result code and call monitoring parameters.

2.2.7 ATDL Redial last telephone number used

ATDL Redial last telephone number used	
<p>Execution command</p> <p>ATDL</p>	<p>Response</p> <p>This command redials the last voice and data call number used.</p> <p>Note: This command may be aborted generally by receiving an ATH command or a character during execution. The aborting is not possible during some states of connection establishment such as handshaking.</p> <p>If error is related to ME functionality +CME ERROR: <err></p> <p>If no dial tone and (parameter setting ATX2 or ATX4) NO DIALTONE</p> <p>If busy and (parameter setting ATX3 or ATX4) BUSY</p> <p>If a connection cannot be established NO CARRIER</p> <p>If connection successful and non-voice call.</p>

	<p>CONNECT<text> TA switches to data mode.</p> <p>Note: <text> output only if ATX<value> parameter setting with the <value> >0</p> <p>When TA returns to command mode after call release</p> <p>OK</p> <p>If successfully connected and voice call</p> <p>OK</p>
Reference V.25ter	<p>Note</p> <ul style="list-style-type: none"> ● See ATX command for setting result code and call monitoring parameters.

2.2.8 ATE Set command echo mode

ATE Set command echo mode							
Set command ATE[<value>]	<p>Response</p> <p>This setting determines whether or not the TA echoes characters received from TE during command state.</p> <p>OK</p>						
	<p>Parameter</p> <table> <tr> <td><value></td> <td>0</td> <td>Echo mode off</td> </tr> <tr> <td></td> <td><u>1</u></td> <td>Echo mode on</td> </tr> </table>	<value>	0	Echo mode off		<u>1</u>	Echo mode on
<value>	0	Echo mode off					
	<u>1</u>	Echo mode on					
Reference V.25ter	Note						

2.2.9 ATH Disconnect existing connection

ATH Disconnect existing connection				
Execution command ATH[n]	<p>Response</p> <p>Disconnect existing call by local TE from command line and terminate call</p> <p>OK</p> <p>Note: OK is issued after circuit 109(DCD) is turned off, if it was previously on.</p>			
	<p>Parameter</p> <table> <tr> <td><n></td> <td>0</td> <td>disconnect from line and terminate call</td> </tr> </table>	<n>	0	disconnect from line and terminate call
<n>	0	disconnect from line and terminate call		
Reference V.25ter	Note			

2.2.10 ATI Display product identification information

ATI Display product identification information	
Execution command ATI	Response TA issues product information text Example: SIMCOM_Ltd SIMCOM_SIM300C Revision: 1008B02SIM300C32_ATMEL OK
Reference V.25ter	Parameter Note

2.2.11 ATL Set monitor speaker loudness

ATL Set monitor speaker loudness													
Set command ATL[value]	Response OK												
	Parameter <table border="0"> <tr> <td><value></td> <td>0</td> <td>low speaker volume</td> </tr> <tr> <td></td> <td>1</td> <td>low speaker volume</td> </tr> <tr> <td></td> <td>2</td> <td>medium speaker volume</td> </tr> <tr> <td></td> <td>3</td> <td>high speaker volume</td> </tr> </table>	<value>	0	low speaker volume		1	low speaker volume		2	medium speaker volume		3	high speaker volume
<value>	0	low speaker volume											
	1	low speaker volume											
	2	medium speaker volume											
	3	high speaker volume											
Reference V.25ter	Note <ul style="list-style-type: none"> The two commands ATL and ATM are implemented only for V.25 compatibility reasons and have no effect. 												

2.2.12 ATM Set monitor speaker mode

ATM Set monitor speaker mode										
Set command ATM[value]	Response OK									
	Parameter <table border="0"> <tr> <td><value></td> <td>0</td> <td>speaker is always off</td> </tr> <tr> <td></td> <td>1</td> <td>speaker on until TA inform TE that carrier has been detected</td> </tr> <tr> <td></td> <td>2</td> <td>speaker is always on when TA is off-hook</td> </tr> </table>	<value>	0	speaker is always off		1	speaker on until TA inform TE that carrier has been detected		2	speaker is always on when TA is off-hook
<value>	0	speaker is always off								
	1	speaker on until TA inform TE that carrier has been detected								
	2	speaker is always on when TA is off-hook								
Reference V.25ter	Note <ul style="list-style-type: none"> The two commands ATL and ATM are implemented only for V.25 compatibility reasons and have no effect. 									

2.2.13 +++ Switch from data mode or PPP online mode to command mode

Switch from data mode or PPP online mode to command mode	
Execution command +++	<p>Response</p> <p>This command is only available during a CSD call or a GPRS connection. The +++ character sequence causes the TA to cancel the data flow over the AT interface and switch to command mode. This allows you to enter AT command while maintaining the data connection to the remote server or, accordingly, the GPRS connection.</p> <p>OK</p> <p>To prevent the +++ escape sequence from being misinterpreted as data, it should comply to following sequence:</p> <ol style="list-style-type: none"> 1. No characters entered for T1 time (0.5 seconds) 2. “+++” characters entered with no characters in between 3. No characters entered for T1 timer (0.5 seconds) 4. Switch to command mode, otherwise go to step 1. <p>Parameter</p>
Reference V.25ter	<p>Note</p> <ul style="list-style-type: none"> ● To return from command mode back to data or PPP online mode: Enter ATO.

2.2.14 ATO Switch from command mode to data mode

ATO Switch from command mode to data mode	
Execution command ATO[n]	<p>Response</p> <p>TA resumes the connection and switches back from command mode to data mode.</p> <p>If connection is not successfully resumed</p> <p>NO CARRIER</p> <p>else</p> <p>TA returns to data mode from command mode CONNECT <text> Note: <text> only if parameter setting X>0</p> <p>Parameter</p> <p><n> 0 switch from command mode to data mode</p>
Reference V.25ter	<p>Note</p>

2.2.15 ATP Select pulse dialing

ATP Select pulse dialing	
Set command ATP	<p>Response</p> <p>OK</p>

	Parameter
Reference V.25ter	Note <ul style="list-style-type: none"> ● No effect in GSM

2.2.16 ATQ Set result code presentation mode

ATQ Set result code presentation mode							
Set command ATQ[<n>]	<p>Response</p> <p>This parameter setting determines whether or not the TA transmits any result code to the TE. Information text transmitted in response is not affected by this setting.</p> <p>If <n>=0: OK</p> <p>If <n>=1: (none)</p> <p>Parameter</p> <table border="0"> <tr> <td><n></td> <td><u>0</u></td> <td>TA transmits result code</td> </tr> <tr> <td></td> <td>1</td> <td>Result codes are suppressed and not transmitted</td> </tr> </table>	<n>	<u>0</u>	TA transmits result code		1	Result codes are suppressed and not transmitted
<n>	<u>0</u>	TA transmits result code					
	1	Result codes are suppressed and not transmitted					
Reference V.25ter	Note						

2.2.17 ATS0 set number of rings before automatically answering the call

ATS0 Set number of rings before automatically answering the call							
Read command ATS0?	<p>Response</p> <p><n> OK</p>						
Set command ATS0=[<n>]	<p>Response</p> <p>This parameter setting determines the number of rings before auto-answer. OK</p> <p>Parameter</p> <table border="0"> <tr> <td><n></td> <td><u>0</u></td> <td>automatic answering is disable</td> </tr> <tr> <td></td> <td>1-255</td> <td>enable automatic answering on the ring number specified</td> </tr> </table>	<n>	<u>0</u>	automatic answering is disable		1-255	enable automatic answering on the ring number specified
<n>	<u>0</u>	automatic answering is disable					
	1-255	enable automatic answering on the ring number specified					
Reference V.25ter	Note <ul style="list-style-type: none"> ● If <n> is set too high, the calling party may hang up before the call can be answered automatically. 						

2.2.18 ATS3 Set command line termination character

ATS3 Set command line termination character	
Read command ATS3?	<p>Response</p> <p><n> OK</p>

GNS-30CR AT Command Set

Set command ATS3=[<n>]	Response This parameter setting determines the character recognized by TA to terminate an incoming command line. The TA also returns this character in output. OK
	Parameter <n> 0- <u>13</u> -127 command line termination character
Reference V.25ter	Note ● Default 13 = CR.

2.2.19 ATS4 Set response formatting character

ATS4 Set response formatting character	
Read command ATS4?	Response <n> OK
Set command ATS4=[<n>]	Response This parameter setting determines the character generated by the TA for result code and information text. OK
	Parameter <n> 0- <u>10</u> -127 response formatting character
Reference V.25ter	Note ● Default 10 = LF.

2.2.20 ATS5 Set command line editing character

ATS5 Set command line editing character	
Read command ATS5?	Response <n> OK
Set command ATS5=[<n>]	Response This parameter setting determines the character recognized by TA as a request to delete from the command line the immediately preceding character. OK
	Parameter <n> 0- <u>8</u> -127 response formatting character
Reference V.25ter	Note ● Default 8 = Backspace.

2.2.21 ATS6 Set pause before blind dialing

ATS6 Set pause before blind dialing	
Read command ATS6?	Response <n> OK
Set command ATS6=[<n>]	Response OK
	Parameter <n> 0- <u>2</u> -255 number of seconds to wait before blind dialing
Reference V.25ter	Note ● No effect for GSM

2.2.22 ATS7 set number of seconds to wait for connection completion

ATS7 Set number of seconds to wait for connection completion	
Read command ATS7?	Response <n> OK
Set command ATS7=[<n>]	Response This parameter setting determines the amount of time to wait for the connection completion in case of answering or originating a call. OK
	Parameter <n> 0- <u>60</u> -255 number of seconds to wait for connection completion
Reference V.25ter	Note ● If called party has specified a high value for ATS0=<n> , call setup may fail. ● The correlation between ATS7 and ATS0 is important Example: Call may fail if ATS7=30 and ATS0=20. ● ATS7 is only applicable to data call.

2.2.23 ATS8 set number of second to wait for comma dial modifier

ATS8 Set number of second to wait for comma dial modifier	
Read command ATS8?	Response <n> OK
Set command ATS8=[<n>]	Response OK
	Parameter <n> 0 no pause when comma encountered in dial string 1-255 number of seconds to wait
Reference V.25ter	Note ● No effect for GSM

2.2.24 ATN10 Set disconnect delay after indicating the absence of data carries

ATN10 Set disconnect delay after indicating the absence of data carrier	
Read command ATN10?	Response <n> OK
Set command ATN10=<n>	Response This parameter setting determines the amount of time that the TA will remain connected in absence of data carrier. If the data carrier is once more detected before disconnect, the TA remains connected. OK
	Parameter <n> 1- <u>15</u> -255 number of tenths seconds of delay
Reference V.25ter	Note

2.2.25 ATT Select tone dialing

ATT Select tone dialing	
Set command ATT	Response OK
	Parameter
Reference V.25ter	Note ● No effect in GSM

2.2.26 ATV Set result code format mode

ATV Set result code format mode	
Set command ATV<value>	Response This parameter setting determines the contents of the header and trailer transmitted with result codes and information responses. When <value>=0 0 When <value>=1 OK
	Parameter <value> 0 Information response: <text><CR><LF> Short result code format: <numeric code><CR> <u>1</u> Information response: <CR><LF><text><CR><LF> Long result code format: <CR><LF><verbose code><CR><LF>
Reference V.25ter	Note

2.2.27 ATX Set CONNECT result code

ATX Set CONNECT result code																
Set command ATX[<value>]	<p>Response</p> <p>This parameter setting determines whether or not the TA detected the presence of dial tone and busy signal and whether or not TA transmits particular result codes</p> <p>OK</p>															
	<p>Parameter</p> <table border="0"> <tr> <td style="padding-right: 20px;"><value></td> <td style="padding-right: 20px;">0</td> <td>CONNECT result code only returned, dial tone and busy detection are both disabled</td> </tr> <tr> <td></td> <td>1</td> <td>CONNECT<text> result code only returned, dial tone and busy detection are both disabled</td> </tr> <tr> <td></td> <td>2</td> <td>CONNECT<text> result code returned, dial tone detection is enabled, busy detection is disabled</td> </tr> <tr> <td></td> <td>3</td> <td>CONNECT<text> result code returned, dial tone detection is disabled, busy detection is enabled</td> </tr> <tr> <td></td> <td>4</td> <td>CONNECT<text> result code returned, dial tone and busy detection are both enabled</td> </tr> </table>	<value>	0	CONNECT result code only returned, dial tone and busy detection are both disabled		1	CONNECT<text> result code only returned, dial tone and busy detection are both disabled		2	CONNECT<text> result code returned, dial tone detection is enabled, busy detection is disabled		3	CONNECT<text> result code returned, dial tone detection is disabled, busy detection is enabled		4	CONNECT<text> result code returned, dial tone and busy detection are both enabled
<value>	0	CONNECT result code only returned, dial tone and busy detection are both disabled														
	1	CONNECT<text> result code only returned, dial tone and busy detection are both disabled														
	2	CONNECT<text> result code returned, dial tone detection is enabled, busy detection is disabled														
	3	CONNECT<text> result code returned, dial tone detection is disabled, busy detection is enabled														
	4	CONNECT<text> result code returned, dial tone and busy detection are both enabled														
Reference V.25ter	Note															

2.2.28 ATZ set all current parameters to user defined profile

ATZ Set all current parameters to user defined profile	
Set command ATZ[<value>]	<p>Response</p> <p>TA sets all current parameters to the user defined profile.</p> <p>OK</p>
	<p>Parameter</p> <p><value> <u>0</u> Reset to profile number 0</p>
Reference V.25ter	<p>Note</p> <ul style="list-style-type: none"> ● The user defined profile is stored in non volatile memory; ● If the user profile is not valid, it will default to the factory default profile; ● Any additional commands on the same command line are ignored.

2.2.29 AT&C Set circuit Data Carrier Detect (DCD) function mode

AT&C Set circuit Data Carrier Detect (DCD) function mode							
Set command AT&C[<value>]	<p>Response</p> <p>This parameter determines how the state of circuit 109(DCD) relates to the detection of received line signal from the distant end.</p> <p>OK</p>						
	<p>Parameter</p> <table border="0"> <tr> <td style="padding-right: 20px;"><value></td> <td style="padding-right: 20px;">0</td> <td>DCD line is always ON</td> </tr> <tr> <td></td> <td>1</td> <td>DCD line is ON only in the presence of data carrier</td> </tr> </table>	<value>	0	DCD line is always ON		1	DCD line is ON only in the presence of data carrier
<value>	0	DCD line is always ON					
	1	DCD line is ON only in the presence of data carrier					

Reference V.25ter	Note
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2.2.30 AT&D Set circuit Data Terminal Ready (DTR) function mode

AT&D Set circuit Data Terminal Ready (DTR) function mode										
Set command AT&D[<value>]	Response This parameter determines how the TA responds when circuit 108/2(DTR) is changed from the ON to the OFF condition during data mode. OK									
	Parameter <table border="0"> <tr> <td style="padding-right: 20px;"><value></td> <td style="padding-right: 20px;">0</td> <td>TA ignores status on DTR</td> </tr> <tr> <td></td> <td>1</td> <td>ON->OFF on DTR: Change to command mode with remaining the connected call</td> </tr> <tr> <td></td> <td>2</td> <td>ON->OFF on DTR: Disconnect call, change to command mode. During state DTR = OFF is auto-answer off.</td> </tr> </table>	<value>	0	TA ignores status on DTR		1	ON->OFF on DTR: Change to command mode with remaining the connected call		2	ON->OFF on DTR: Disconnect call, change to command mode. During state DTR = OFF is auto-answer off.
<value>	0	TA ignores status on DTR								
	1	ON->OFF on DTR: Change to command mode with remaining the connected call								
	2	ON->OFF on DTR: Disconnect call, change to command mode. During state DTR = OFF is auto-answer off.								
Reference V.25ter	Note									

2.2.31 AT&F Set all current parameters to manufacturer defaults

AT&F Set all current parameters to manufacturer defaults	
Execution command AT&F[<value>]	Response TA sets all current parameters to the manufacturer defined profile. OK
	Parameter <value> 0 set all TA parameters to manufacturer defaults.
Reference V.25ter	Note

2.2.32 AT&V Display current configuration

AT&V Display current configuration	
Execution command AT&V[<n>]	Response TA returns the current parameter setting. <current configurations text> OK
	Parameter <n> 0 profile number
Reference V.25ter	Note

2.2.33 AT&W Store current parameter to user defined profile

AT&W Store current parameter to user defined profile	
Execution command AT&W[<n>]	Response TA stores the current parameter setting in the user defined profile. OK
	Parameter <n> <u>0</u> profile number to store to
Reference V.25ter	Note <ul style="list-style-type: none"> ● The user defined profile is stored in non volatile memory.

2.2.34 AT+DR V.42bis data compression reporting control

AT+DR V.42bis data compression reporting control													
Test command AT+DR=?	Response +DR:(list of supported <value>s) OK												
	Parameter See set command.												
Read command AT+DR?	Response +DR: <value> OK												
	Parameter See set command.												
Set command AT+DR=<value>	Response This parameter setting determines whether or not intermediate result code of the current data compressing is reported by TA to TE after a connection establishment. OK												
	Parameter <table border="0"> <tr> <td><value></td> <td><u>0</u></td> <td>reporting disabled</td> </tr> <tr> <td></td> <td>1</td> <td>reporting enabled</td> </tr> </table>	<value>	<u>0</u>	reporting disabled		1	reporting enabled						
<value>	<u>0</u>	reporting disabled											
	1	reporting enabled											
Reference V.25ter	Note <ul style="list-style-type: none"> ● If the <value> is set to 1, then the intermediate result code reported at call set up is: <table border="0"> <tr> <td>+DR: <type></td> <td>NONE</td> <td>data compression is not in use</td> </tr> <tr> <td></td> <td>V42B</td> <td>Rec. V42bis is in use in both direction</td> </tr> <tr> <td></td> <td>V42B RD</td> <td>Rec. V42bis is in use in receive direction only</td> </tr> <tr> <td></td> <td>V42B TD</td> <td>Rec. V42bis is in use in transmit direction only</td> </tr> </table> 	+DR: <type>	NONE	data compression is not in use		V42B	Rec. V42bis is in use in both direction		V42B RD	Rec. V42bis is in use in receive direction only		V42B TD	Rec. V42bis is in use in transmit direction only
+DR: <type>	NONE	data compression is not in use											
	V42B	Rec. V42bis is in use in both direction											
	V42B RD	Rec. V42bis is in use in receive direction only											
	V42B TD	Rec. V42bis is in use in transmit direction only											

2.2.35 AT+DS V.42bis data compression control

AT+DS V.42bis data compression control																									
Test command AT+DS=?	Response +DS:(list of supported <p0>s), (list of supported <n>s), (list of supported <p1>s), (list of supported <p2>s) OK																								
	Parameter See set command.																								
Read command AT+DS?	Response +DR: <p0>,<n>,<p1>,<p2> OK																								
	Parameter See set command.																								
Set command AT+DS=[<p0>,<n>,<p1>,<p2>]]]	Response This parameter setting determines the possible data compression mode by TA at the compression negotiation with the remote TA after a call set up. OK																								
	Parameter <table border="0"> <tr> <td><p0></td> <td>0</td> <td>NONE</td> </tr> <tr> <td></td> <td>1</td> <td>transmit only</td> </tr> <tr> <td></td> <td>2</td> <td>receive only</td> </tr> <tr> <td></td> <td><u>3</u></td> <td>both direction, but allow negotiation</td> </tr> <tr> <td><n></td> <td><u>0</u></td> <td>allow negotiation of p0 down</td> </tr> <tr> <td></td> <td>1</td> <td>do not allow negotiation of p0 - disconnect on difference</td> </tr> <tr> <td><p1></td> <td><u>512-2048</u></td> <td>dictionary size</td> </tr> <tr> <td><p2></td> <td>6-255</td> <td>maximum string size (default 20)</td> </tr> </table>	<p0>	0	NONE		1	transmit only		2	receive only		<u>3</u>	both direction, but allow negotiation	<n>	<u>0</u>	allow negotiation of p0 down		1	do not allow negotiation of p0 - disconnect on difference	<p1>	<u>512-2048</u>	dictionary size	<p2>	6-255	maximum string size (default 20)
<p0>	0	NONE																							
	1	transmit only																							
	2	receive only																							
	<u>3</u>	both direction, but allow negotiation																							
<n>	<u>0</u>	allow negotiation of p0 down																							
	1	do not allow negotiation of p0 - disconnect on difference																							
<p1>	<u>512-2048</u>	dictionary size																							
<p2>	6-255	maximum string size (default 20)																							
Reference V.25ter	Note <ul style="list-style-type: none"> ● This command is only for data call; ● GSM transmits the data transparent. The remote TA may support this compression; ● This command must be used in conjunction with command AT+CRLP to enable compression (+CRLP=X,X,X,X,1,X). 																								

2.2.36 AT+GCAP Request complete TA capabilities list

AT+GCAP Request complete TA capabilities list	
Test command AT+GCAP=?	Response OK
	Parameter
Execution command AT+GCAP	Response TA reports a list of additional capabilities. +GCAP: <name>s OK

	Parameter <name> e.g.: +CGSM, +FCLASS, +DS
Reference V.25ter	Note

2.2.37 AT+GMI Request manufacture identification

AT+GMI Request manufacture identification	
Test command AT+GMI=?	Response OK
	Parameter
Execution command AT+GMI	TA reports one or more lines of information text which permit the user to identify the manufacturer. SIMCOM_Ltd OK
	Parameter
Reference V.25ter	Note

2.2.38 AT+GMM Request TA model identification

AT+GMM Request TA model identification	
Test command AT+GMM=?	Response OK
	Parameter
Execution command AT+GMM	TA reports one or more lines of information text which permit the user to identify the specific model of device. SIMCOM_SIM300C OK
	Parameter
Reference V.25ter	Note

2.2.39 AT+GMR Request TA model identification

AT+GMR Request TA model identification	
Test command AT+GMR=?	Response OK
	Parameter

Execution command AT+GMR	TA reports one or more lines of information text which permit the user to identify the version, revision level or data or other information of the device. Revision: 1008B02SIM300C_ATMEL OK
	Parameter
Reference V.25ter	Note

2.2.40 AT+GOI Request global object identification

AT+GOI Request global object identification	
Test command AT+GOI=?	Response OK
	Parameter
Execution command AT+GOI	Response TA reports one or more lines of information text which permit the user to identify the device, based on the ISO system for registering unique object identifiers. SIM300C OK
	Parameter <Object Id> identifier of device type see X.208, 209 for the format of <Object Id>
Reference V.25ter	Note

2.2.41 AT+GSN Request TA serial number identification (IMEI)

AT+GSN Request TA serial number identification(IMEI)	
Test command AT+GSN=?	Response OK
	Parameter
Execution command AT+GSN	Response TA reports the IMEI (international mobile equipment identifier) number in information text which permit the user to identify the individual ME device. <sn> OK
	Parameter <sn> IMEI of the telephone(International Mobile station Equipment Identity)

Reference V.25ter	Note <ul style="list-style-type: none"> ● The serial number (IMEI) is varied by individual ME device.
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2.2.42 AT+ICF Set TE-TA control character framing

AT+ICF Set TE-TA control character framing																															
Test command AT+ICF=?	Response +ICF:(list of supported <format>s), (list of supported <parity>s) OK																														
	Parameter See set command.																														
Read command AT+ICF?	Response +ICF: <format>,<parity> OK																														
	Parameter See set command.																														
Set command AT+ICF=[<format>],[<parity>]	Response This parameter setting determines the serial interface character framing format and parity received by TA from TE. OK																														
	Parameter <table border="0"> <tr> <td><format></td> <td>1</td> <td>8 data 0 parity 2 stop</td> </tr> <tr> <td></td> <td>2</td> <td>8 data 1 parity 1 stop</td> </tr> <tr> <td></td> <td><u>3</u></td> <td>8 data 0 parity 1 stop</td> </tr> <tr> <td></td> <td>4</td> <td>7 data 0 parity 2 stop</td> </tr> <tr> <td></td> <td>5</td> <td>7 data 1 parity 1 stop</td> </tr> <tr> <td></td> <td>6</td> <td>7 data 0 parity 1 stop</td> </tr> <tr> <td><parity></td> <td>0</td> <td>odd</td> </tr> <tr> <td></td> <td>1</td> <td>even</td> </tr> <tr> <td></td> <td>2</td> <td>mark (1)</td> </tr> <tr> <td></td> <td><u>3</u></td> <td>space (0)</td> </tr> </table>	<format>	1	8 data 0 parity 2 stop		2	8 data 1 parity 1 stop		<u>3</u>	8 data 0 parity 1 stop		4	7 data 0 parity 2 stop		5	7 data 1 parity 1 stop		6	7 data 0 parity 1 stop	<parity>	0	odd		1	even		2	mark (1)		<u>3</u>	space (0)
<format>	1	8 data 0 parity 2 stop																													
	2	8 data 1 parity 1 stop																													
	<u>3</u>	8 data 0 parity 1 stop																													
	4	7 data 0 parity 2 stop																													
	5	7 data 1 parity 1 stop																													
	6	7 data 0 parity 1 stop																													
<parity>	0	odd																													
	1	even																													
	2	mark (1)																													
	<u>3</u>	space (0)																													
Reference V.25ter	Note <ul style="list-style-type: none"> ● The command is applied for command state; ● The setting of AT+IPR=0 forces AT+ICF=0; ● The <parity> field is ignored if the <format > field specifies no parity. 																														

2.2.43 AT+IFC Set TE-TA local data flow control

AT+IFC Set TE-TA local data flow control	
Test command AT+IFC=?	Response +IFC:(list of supported <dce_by_dte>s), (list of supported <dte_by_dce>s) OK

	Parameter See set command.
Read command AT+IFC?	Response +IFC: <dce_by_dte>,<dte_by_dce> OK
	Parameter See set command.
Set command AT+IFC=[<dce_by_dte>[,<dte_by_dce>]]	Response This parameter setting determines the data flow control on the serial interface for data mode. OK
	Parameter <dce_by_dte> specifies the method will be used by TE at receive of data from TA 0 None 1 XON/XOFF, don't pass characters on to data stack <u>2</u> line 133: Ready for Receiving 3 XON/XOFF, pass characters on to data stack <dte_by_dce> specifies the method will be used by TA at receive of data from TE 0 None 1 XON/XOFF <u>2</u> line 106: Clear to send(CTS)
Reference V.25ter	Note <ul style="list-style-type: none"> ● This flow control is applied for data mode; ● SIMCOM use the RTS for this method.

2.2.44 AT+ILRR Set TE-TA local rate reporting mode

AT+ILRR Set TE-TA local rate reporting mode	
Test command AT+ILRR=?	Response +ILRR:(list of supported <value>s OK
	Parameter See set command.
Read command AT+ILRR?	Response +ILRR: <value> OK
	Parameter See set command.

GNS-30CR AT Command Set

<p>Set command</p> <p>AT+ILRR=<value></p>	<p>Response</p> <p>This parameter setting determines whether or not an intermediate result code of local rate is reported at connection establishment. The rate is applied after the final result code of the connection is transmitted to TE.</p> <p>OK</p> <hr/> <p>Parameter</p> <p><value> <u>0</u> Disables reporting of local port rate</p> <p> 1 Enables reporting of local port rate</p>
<p>Reference</p> <p>V.25ter</p>	<p>Note</p> <ul style="list-style-type: none"> ● If the <value> is set to 1, the following intermediate result will come out on connection to indicate the port rate settings <p>+ILRR:<rate></p> <p><rate> port rate setting on call connection in Baud per second</p> <p>0(AutoBauding ,see chapter 2.2.45.1)</p> <p>300</p> <p>1200</p> <p>2400</p> <p>4800</p> <p>9600</p> <p>19200</p> <p>28800</p> <p>38400</p> <p>57600</p> <p><u>115200</u></p>

2.2.45 AT+IPR Set TE-TA fixed local rate

<p>AT+IPR Set TE-TA fixed local rate</p>	
<p>Test command</p> <p>AT+IPR=?</p>	<p>Response</p> <p>+IPR: (list of supported auto detectable <rate>s),(list of supported fixed-only<rate>s)</p> <p>OK</p> <hr/> <p>Parameter</p> <p>See set command.</p>
<p>Read command</p> <p>AT+IPR?</p>	<p>Response</p> <p>+IPR: <rate></p> <p>OK</p> <hr/> <p>Parameter</p> <p>See set command.</p>
<p>Set command</p> <p>AT+IPR=<value></p>	<p>Response</p> <p>This parameter setting determines the data rate of the TA on the serial interface. The rate of command takes effect following the issuance of any result code associated with the current command line.</p> <p>OK</p>

	<p>Parameter</p> <p><rate> Baud-rate per second</p> <p>0(AutoBauding ,see chapter 2.2.45.1)</p> <p>300</p> <p>1200</p> <p>2400</p> <p>4800</p> <p>9600</p> <p>19200</p> <p>28800</p> <p>38400</p> <p>57600</p> <p><u>115200</u></p>
<p>Reference</p> <p>V.25ter</p>	<p>Note</p> <p>Factory setting is AT+IPR=0 (autobauding) .It can be restored with AT&F and AT&Z when you modified the bit rate's value..</p>

2.2.45.1 AutoBauding

Synchronization between DTE and DCE ensure that DTE and DCE are correctly synchronized and the bit rate used by the DTE is detected by the DCE (= ME). To allow the bit rate to be synchronized simply issue an "AT" or "at" string. This is necessary when you start up the module while autobauding is enabled. It is recommended to wait 3 to 5 seconds before sending the first AT character. Otherwise undefined characters might be returned.

If you want to use autobauding and autoanswer at the same time, you can easily enable the DTE-DCE synchronization, when you activate autobauding first and then configure the autoanswer mode.

Restrictions on autobauding operation

- The serial interface has to be operated at 8 data bits, no parity and 1 stop bit (factory setting).
- Only the strings .AT. or .at. can be detected (neither .aT. nor .At.).
- Unsolicited Result Codes that may be issued before the ME detects the new bit rate (by receiving the first AT command string) will be sent at the previously detected bit rate.
- The Unsolicited Result Codes “RDY” and so on are not indicated when you start up the ME while autobauding is enabled.
- It is not recommended to switch to autobauding from a bit rate that cannot be detected by the autobaud mechnism (e.g. 300 baud). Responses to +IPR=0 and any commands on the same line might be corrupted.
- See also Chapter 2.2.44.

Autobauding and bit rate after restart

The most recently detected bit rate cannot be stored when module is powered down (Store bit rate determined with AT&W). Therefore, module will detect bit rate again after restart.

3 AT Commands According to GSM07.07

3.1 Overview of AT Command According to GSM07.07

Command	Description
AT+CACM	ACCUMULATED CALL METER(ACM) RESET OR QUERY
AT+CAMM	ACCUMULATED CALL METER MAXIMUM(ACMMAX) SET OR QUERY
AT+CAOC	ADVICE OF CHARGE
AT+CBST	SELECT BEARER SERVICE TYPE
AT+CCFC	CALL FORWARDING NUMBER AND CONDITIONS CONTROL
AT+CCUG	CLOSED USER GROUP CONTROL
AT+CCWA	CALL WAITING CONTROL
AT+CEER	EXTENDED ERROR REPORT
AT+CGMI	REQUEST MANUFACTURER IDENTIFICATION
AT+CGMM	REQUEST MODEL IDENTIFICATION
AT+CGMR	REQUEST REVISION IDENTIFICATION
AT+CGSN	REQUEST PRODUCT SERIAL NUMBER IDENTIFICATION (IDENTICAL WITH +GSN)
AT+CSCS	SELECT TE CHARACTER SET
AT+CSTA	SELECT TYPE OF ADDRESS
AT+CHLD	CALL HOLD AND MULTIPARTY
AT+CIMI	REQUEST INTERNATIONAL MOBILE SUBSCRIBER IDENTITY
AT+CKPD	KEYPAD CONTROL
AT+CLCC	LIST CURRENT CALLS OF ME
AT+CLCK	FACILITY LOCK
AT+CLIP	CALLING LINE IDENTIFICATION PRESENTATION
AT+CLIR	CALLING LINE IDENTIFICATION RESTRICTION
AT+CMEE	REPORT MOBILE EQUIPMENT ERROR
AT+COLP	CONNECTED LINE IDENTIFICATION PRESENTATION
AT+COPS	OPERATOR SELECTION
AT+CPAS	MOBIL EQUIPMENT ACTIVITY STATUS
AT+CPBF	FIND PHONEBOOK ENTRIES
AT+CPBR	READ CURRENT PHONEBOOK ENTRIES
AT+CPBS	SELECT PHONEBOOK MEMORY STORAGE
AT+CPBW	WRITE PHONEBOOK ENTRY
AT+CPIN	ENTER PIN
AT+CPWD	CHANGE PASSWORD
AT+CR	SERVICE REPORTING CONTROL
AT+CRC	SET CELLULAR RESULT CODES FOR INCOMING CALL

	INDICATION
AT+CREG	NETWORK REGISTRATION
AT+CRLP	SELECT RADIO LINK PROTOCOL PARAM.ETER
AT+CRSM	RESTRICTED SIM ACCESS
AT+CSQ	SIGNAL QUALITY REPORT
AT+FCLASS	FAX: SELECT, READ OR TEST SERVICE CLASS
AT+FMI	FAX: REPORT MANUFACTURED ID
AT+FMM	FAX: REPORT MODEL ID
AT+FMR	FAX: REPORT REVISION ID
AT+VTD	TONE DURATION
AT+VTS	DTMF AND TONE GENERATION
AT+CMUX	MULTIPLEXER CONTROL
AT+CNUM	SUBSCRIBER NUMBER
AT+CPOL	PREFERRED OPERATOR LIST
AT+COPN	READ OPERATOR NAMES
AT+CFUN	SET PHONE FUNCTIONALITY
AT+CCLK	CLOCK
AT+CSIM	GENERIC SIM ACCESS
AT+CALM	ALERT SOUND MODE
AT+CRSL	RINGER SOUND LEVEL
AT+CLVL	LOUDSPEAKER VOLUME
AT+CMUT	MUTE CONTROL
AT+CPUC	PRICE PER UNIT CURRENCY TABLE
AT+CCWE	CALL METER MAXIMUM EVENT
AT+CBC	BATTERY CHARGE
AT+CUSD	UNSTRUCTURED SUPPLEMENTARY SERVICE DATA
AT+CSSN	SUPPLEMENTARY SERVICES NOTIFICATION

3.2 Detailed Descriptions of AT Command According to GSM07.07

3.2.1 AT+CACM Accumulated Call Meter (ACM) Reset or Query

AT+CACM Accumulated Call Meter(ACM) Reset or Query	
Test command AT+CACM=?	Response OK Parameter
Read command AT+CACM?	Response TA returns the current value of ACM. +CACM: <acm> OK If error is related to ME functionality: +CME ERROR: <err> Parameters

	<p><acm></p> <p>string type; three bytes of the current ACM value in hexa-decimal format (e.g. "00001E" indicates decimal value 30)</p> <p>000000 - FFFFFFFF</p>
<p>Set command</p> <p>AT+CACM=[<passwd>]</p>	<p>Parameters</p> <p><passwd> string type: SIM PIN2</p> <p>Response</p> <p>TA resets the Advice of Charge related accumulated call meter (ACM) value in SIM file EF (ACM). ACM contains the total number of home units for both the current and preceding calls.</p> <p>OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p>
<p>Reference</p> <p>GSM 07.07 [13]</p>	<p>Note</p>

3.2.2 AT+CAMM Accumulated call meter maximum (ACM max) reset or query

AT+CAMM Accumulated call meter maximum(ACM max) reset or query	
<p>Test command</p> <p>AT+CAMM=?</p>	<p>Response</p> <p>OK</p> <p>Parameter</p>
<p>Read command</p> <p>AT+ CAMM?</p>	<p>Response</p> <p>TA returns the current value of ACM max.</p> <p>+CAMM: <acmmax> OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters</p> <p>see set command</p>
<p>Set command</p> <p>AT+CAMM=[<acmmax>[,<passwd>]]</p>	<p>Response</p> <p>TA sets the Advice of Charge related accumulated call meter maximum value in SIM file EF (ACM max). ACM max contains the maximum number of home units allowed to be consumed by the subscriber.</p> <p>OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters</p> <p><acmmax> string type; three bytes of the max. ACM value in hexa-decimal format (e.g. "00001E" indicates decimal value 30)</p> <p>000000 disable ACMmax feature</p> <p>000001-FFFFFF</p> <p><passwd> string type</p>

SIM PIN2	
Reference GSM 07.07 [13]	Note

3.2.3 AT+CAOC Advice of Charge

AT+CAOC Advice of Charge	
Test command AT+CAOC=?	Response +CAOC: list of supported <mode>s OK Parameters see execution command
Read command AT+CAOC?	Response +CAOC: <mode> OK Parameters see execution command
Execution command AT+CAOC=<mode>	Response TA sets the Advice of Charge supplementary service function mode. If error is related to ME functionality: +CME ERROR: <err> If <mode>=0, TA returns the current call meter value +CAOC: <ccm> OK If <mode>=1, TA deactivates the unsolicited reporting of CCM value OK If <mode>=2, TA activates the unsolicited reporting of CCM value OK Parameter <mode> 0 query CCM value 1 deactivate the unsolicited reporting of CCM value 2 activate the unsolicited reporting of CCM value <ccm> string type; three bytes of the current CCM value in hex-decimal format (e.g. "00001E" indicates decimal value 30); bytes are similarly coded as ACMmax value in the SIM 000000-FFFFFF
Reference GSM 07.07 [13]	Note

3.2.4 AT+CBST Select Bearer Service Type

AT+CBST Select Bearer Service Type	
Test command AT+CBST=?	Response +CBST: (list of supported <speed>s) ,(list of supported <name>s) ,(list of supported <ce>s) OK Parameter see set command

GNS-30CR AT Command Set

Read command AT+CBST?	Response +CBST: <speed>,<name>,<ce> OK Parameter see set command																																																												
Set command AT+CBST=[<speed>] [,<name>[,<ce>]]]	Response TA selects the bearer service <name> with data rate <speed>, and the connection element <ce> to be used when data calls are originated. OK Parameter <table border="0"> <tr> <td><speed></td> <td>0</td> <td>autobauding</td> </tr> <tr> <td></td> <td>1</td> <td>300 bps(V.21)</td> </tr> <tr> <td></td> <td>2</td> <td>1200 bps(V.22)</td> </tr> <tr> <td></td> <td>3</td> <td>1200/75 bps(V.23)</td> </tr> <tr> <td></td> <td>4</td> <td>2400 bps(V.22bis)</td> </tr> <tr> <td></td> <td>5</td> <td>2400 bps(V.26ter)</td> </tr> <tr> <td></td> <td>6</td> <td>4800 bps(V.32)</td> </tr> <tr> <td></td> <td><u>7</u></td> <td>9600 bps(V.32)</td> </tr> <tr> <td></td> <td>12</td> <td>9600 bps(V.34)</td> </tr> <tr> <td></td> <td>14</td> <td>14400 bps(V.34)</td> </tr> <tr> <td></td> <td>65</td> <td>300 bps (V.110)</td> </tr> <tr> <td></td> <td>66</td> <td>1200 bps(V.110 or X.31 flag stuffing)</td> </tr> <tr> <td></td> <td>68</td> <td>2400 bps(V.110 or X.31 flag stuffing)</td> </tr> <tr> <td></td> <td>70</td> <td>4800 bps(V.110 or X.31 flag stuffing)</td> </tr> <tr> <td></td> <td>71</td> <td>9600 bps(V.110 or X.31 flag stuffing)</td> </tr> <tr> <td></td> <td>75</td> <td>14400 bps(V.110 or X.31 flag stuffing)</td> </tr> </table> <table border="0"> <tr> <td><name></td> <td><u>0</u></td> <td>asynchronous modem</td> </tr> <tr> <td></td> <td>2</td> <td>PAD access (asynchronous)</td> </tr> </table> <table border="0"> <tr> <td><ce></td> <td>0</td> <td>transparent</td> </tr> <tr> <td></td> <td><u>1</u></td> <td>non-transparent</td> </tr> </table>	<speed>	0	autobauding		1	300 bps(V.21)		2	1200 bps(V.22)		3	1200/75 bps(V.23)		4	2400 bps(V.22bis)		5	2400 bps(V.26ter)		6	4800 bps(V.32)		<u>7</u>	9600 bps(V.32)		12	9600 bps(V.34)		14	14400 bps(V.34)		65	300 bps (V.110)		66	1200 bps(V.110 or X.31 flag stuffing)		68	2400 bps(V.110 or X.31 flag stuffing)		70	4800 bps(V.110 or X.31 flag stuffing)		71	9600 bps(V.110 or X.31 flag stuffing)		75	14400 bps(V.110 or X.31 flag stuffing)	<name>	<u>0</u>	asynchronous modem		2	PAD access (asynchronous)	<ce>	0	transparent		<u>1</u>	non-transparent
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<ce>	0	transparent																																																											
	<u>1</u>	non-transparent																																																											
Reference GSM 07.07 [14]	Note GSM 02.02[1]: lists the allowed combinations of the sub parameters																																																												

3.2.5 AT+CCFC Call Forwarding Number And Conditions Control

AT+CCFC Call Forwarding Number And Conditions Control	
Test Command AT+CCFC=?	Response +CCFC: (list of supported <reads>) OK
	Parameters see Write command

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Write Command	Response
AT+CCFC = <reads>, <mode> [, <number> [, <type> [, <class> [, <subaddr> [, <satype> [, <time>]]]]]]	<p>TA controls the call forwarding supplementary service. Registration, erasure, activation, deactivation, and status query are supported.</p> <p>Only ,<reads> and <mode> should be entered with mode (0-2,4)</p> <p>If <mode><=2 and command successful</p> <p>OK</p> <p>If there is a network error: +CCFC: 0, 0</p> <p>If <mode>=2 and command successful (only in connection with <reads> 0 – 3)</p> <p>For registered call forward numbers: +CCFC: <status>, <class1>[, <number>, <type> [, <time>]] [<cr><LF>+CCFC:] OK</cr></p> <p>If no call forward numbers are registered (and therefore all classes are inactive): +CCFC: <status>, <class> OK</p> <p>where <status>=0 and <class>=7</p> <p>If error is related to ME functionality: +CME ERROR: <err></p>
	<p>Parameters</p> <p><reads></p> <p>0 unconditional 1 mobile busy 2 no reply 3 not reachable 4 all call forwarding (0-3) 5 all conditional call forwarding (1-3)</p> <p><mode></p> <p>0 disable 1 enable 2 query status 3 registration 4 erasure</p> <p><number> string type phone number of forwarding address in format specified by <type></p> <p><type> type of address in integer format; default 145 when dialing string includes international access code character "+", otherwise 129</p> <p><subaddr> string type subaddress of format specified by <satype></p>

	<p><satype> type of subaddress in integer; default 128</p> <p><class> 1 voice 2 data 4 fax 7 all classes</p> <p><time> time, rounded to a multiple of 5 sec. 1...20..30</p> <p><status> 0 not active 1 active</p>
Reference	
GSM07.07	

3.2.6 AT+CCUG Closed User Group control

AT+CCUG Closed User Group control																									
<p>Read Command</p> <p>AT+CCUG?</p>	<p>Response</p> <p>+CCUG: <n>,<index>,<info> OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameter</p> <p>see write command</p>																								
<p>Test Command</p> <p>AT+CCUG=?</p>	<p>Response</p> <p>OK</p>																								
<p>Write Command</p> <p>AT+CCUG=[<n>] [<index>,<info >]]]</p>	<p>TA sets the Closed User Group supplementary service parameters as a default adjustment for all following calls.</p> <p>OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameter</p> <table> <tr> <td><n></td> <td><u>0</u></td> <td>disable CUG</td> </tr> <tr> <td></td> <td>1</td> <td>enable CUG</td> </tr> <tr> <td><index></td> <td><u>0</u>..9</td> <td>CUG index</td> </tr> <tr> <td></td> <td>10</td> <td>no index (preferred CUG taken from subscriber data)</td> </tr> <tr> <td><info></td> <td><u>0</u></td> <td>no information</td> </tr> <tr> <td></td> <td>1</td> <td>suppress OA (Outgoing Access)</td> </tr> <tr> <td></td> <td>2</td> <td>suppress preferential CUG</td> </tr> <tr> <td></td> <td>3</td> <td>suppress OA and preferential CUG</td> </tr> </table>	<n>	<u>0</u>	disable CUG		1	enable CUG	<index>	<u>0</u> ..9	CUG index		10	no index (preferred CUG taken from subscriber data)	<info>	<u>0</u>	no information		1	suppress OA (Outgoing Access)		2	suppress preferential CUG		3	suppress OA and preferential CUG
<n>	<u>0</u>	disable CUG																							
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<index>	<u>0</u> ..9	CUG index																							
	10	no index (preferred CUG taken from subscriber data)																							
<info>	<u>0</u>	no information																							
	1	suppress OA (Outgoing Access)																							
	2	suppress preferential CUG																							
	3	suppress OA and preferential CUG																							
Reference																									

3.2.7 AT+CCWA Call Waiting Control

AT+CCWA Call Waiting Control																													
Read Command AT+CCWA?	Response +CCWA: <n> OK																												
Test Command AT+CCWA=?	Response +CCWA: (list of supported <n>s) OK																												
Write Command AT+CCWA=[<n> <mode>,<class>] >]]	<p>Response</p> <p>TA controls the Call Waiting supplementary service. Activation, deactivation and status query are supported.</p> <p>If there is a network error: +CCWA: 0, 0</p> <p>If <mode><=2 and command successful OK</p> <p>If <mode>=2 and command successful +CCWA:<status>,<class1>[<CR><LF>+CCWA:<status>,<class2>[...]] OK</p> <p>Note :< status>=0 should be returned only if service is not active for any <class> i.e. +CCWA: 0, 7 will be returned in this case.</p> <p>When mode=2, all active call waiting classes will be reported. In this mode the command is abort able by pressing any key.</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameter</p> <table border="0"> <tr> <td><n></td> <td><u>0</u></td> <td>disable presentation of an unsolicited result code</td> </tr> <tr> <td></td> <td>1</td> <td>enable presentation of an unsolicited result code</td> </tr> </table> <table border="0"> <tr> <td><mode></td> <td>when <mode> parameter not given, network is not interrogated</td> </tr> <tr> <td></td> <td>0 disable</td> </tr> <tr> <td></td> <td>1 enable</td> </tr> <tr> <td></td> <td>2 query status</td> </tr> </table> <table border="0"> <tr> <td><class></td> <td>is a sum of integers each representing a class of information</td> </tr> <tr> <td></td> <td>1 voice (telephony)</td> </tr> <tr> <td></td> <td>2 data (bearer service)</td> </tr> <tr> <td></td> <td>4 fax (teleservice)</td> </tr> <tr> <td></td> <td><u>7</u> default(equals to all classes)</td> </tr> </table> <table border="0"> <tr> <td><status></td> <td>0 not active</td> </tr> <tr> <td></td> <td>1 enable</td> </tr> </table>	<n>	<u>0</u>	disable presentation of an unsolicited result code		1	enable presentation of an unsolicited result code	<mode>	when <mode> parameter not given, network is not interrogated		0 disable		1 enable		2 query status	<class>	is a sum of integers each representing a class of information		1 voice (telephony)		2 data (bearer service)		4 fax (teleservice)		<u>7</u> default(equals to all classes)	<status>	0 not active		1 enable
<n>	<u>0</u>	disable presentation of an unsolicited result code																											
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<mode>	when <mode> parameter not given, network is not interrogated																												
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	4 fax (teleservice)																												
	<u>7</u> default(equals to all classes)																												
<status>	0 not active																												
	1 enable																												
	<p>Unsolicited result code</p> <p>When the presentation Call Waiting at the TA is enabled (and Call Waiting is enabled) and a terminating call set up has attempted during an established call, an unsolicited result code is returned: +CCWA: <number>,<type>,<class>[,<alpha>]</p>																												
	<p>Parameter</p> <p><number> string type phone number of calling address in format</p>																												

	<p>specified by <type></p> <p><type> type of address octet in integer format;</p> <p>129 Unknown type(ISDN format number)</p> <p>128 Unknown type(unknown number format)</p> <p>161 National number type(ISDN format)</p> <p>145 International number type(ISDN format)</p> <p>177 Network specific number(ISDN format)</p> <p><alpha> optional string type alphanumeric representation of <number> corresponding to the entry found in phone book</p>
Reference	
GSM 07.07	

3.2.8 AT+CEER Extended error report

AT+CEER Extended error report	
Test command	Response
AT+CEER=?	OK
Execution command	Response
AT+CEER	TA returns an extended report of the reason for the last call release. +CEER: <report> OK
	Parameters
	<report> Reason for last call release as number code
Reference	Note
GSM 07.07 [13]	

3.2.9 AT+CGMI Request manufacturer identification

AT+CGMI Request manufacturer identification	
Test command	Response
AT+CGMI=?	OK
Execution command	Response
AT+CGMI	TA returns manufacturer identification text. <manufacturer> OK
	Parameters
	<manufacturer>
Reference	Note
GSM 07.07 [13]	

3.2.10 AT+CGMM Request model identification

AT+CGMM Request model identification	
Test command	Response
AT+CGMM=?	OK
Execution command	Response
AT+CGMM	TA returns product model identification text. <model> OK

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	Parameters <model>
Reference GSM 07.07 [13]	Note

3.2.11 AT+CGMR Request revision identification

AT+CGMR Request revision identification	
Test command AT+CGMR=?	Response OK
Execution command AT+CGMR	Response TA returns product software version identification text. <revision> OK Parameters <revision>
Reference GSM 07.07 [13]	Note

3.2.12 AT+CGSN Request product serial number identification (Identical with +GSN)

AT+CGSN Request product serial number identification (Identical with +GSN)	
Test command AT+CGSN=?	Response OK
Execution command AT+CGSN	Response see +GSN <sn> OK Parameters see +GSN
Reference GSM 07.07 [13]	Note

3.2.13 AT+CSCS Select TE Character Set

AT+CSCS Select TE Character Set	
Test command AT+CSCS=?	Response +CSCS: (list of supported <chset>s) Parameters <chset> "GSM" GSM default alphabet. "HEX" character strings consist only of hexadecimal numbers from 00 to FF; "IRA" international reference alphabet "PCCP" PC character set Code "PCDN" PC Danish/Norwegian character set "UCS2" UCS2 alphabet "8859-1" ISO 8859 Latin I character set
Set command	Response

AT+CSCS=[<chset>]	Sets which character set <chset> are used by the TE. The TA can then convert character strings correctly between the TE and ME character sets. Parameter <chset> see Test command
Reference GSM 07.07 [13]	Note

3.2.14 AT+CSTA Select Type of Address

AT+CSTA Select Type of Address	
Test command AT+CSTA=?	Response +CSTA: (128,129,145, 161,177)
Read command AT+CSTA?	Response +CSTA: <type> OK Parameters < type > Current address type setting.
Reference GSM 07.07 [13]	Note The ATD command overrides this setting when a number is dialed. 129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)

3.2.15 AT+CHLD Call hold and multiparty

AT+CHLD Call hold and multiparty	
Test Command AT+CHLD=?	Response +CHLD: list of supported <n>s OK
Write Command AT+CHLD=[<n>]	Response TA controls the supplementary services Call Hold, Multiparty and Explicit Call Transfer. Calls can be put on hold, recovered, released, added to conversation, and transferred. Note These supplementary services are only applicable to tele service 11 (Speech: Telephony). OK If error is related to ME functionality: +CME ERROR: <err>

	<p>Parameters</p> <p><n></p> <p>0 Terminate all held calls or UDUB (User Determined User Busy) for a waiting call</p> <p>1 Terminate all active calls (if any) and accept the other call (waiting call or held call)</p> <p>1X Terminate the specific call number X (X= 1-7)(active, waiting or held)</p> <p>2 Place all active calls on hold (if any) and accept the other call (waiting call or held call) as the active call</p> <p>2X Place all active calls except call X (X= 1-7) on hold</p> <p>3 Add the held call to the active calls</p>
Reference	

3.2.16 AT+CIMI Request international mobile subscriber identity

AT+CIMI Request international mobile subscriber identity	
<p>Test command</p> <p>AT+CIMI=?</p>	<p>Response</p> <p>OK</p> <p>Parameters</p>
<p>Execution command</p> <p>AT+CIMI</p>	<p>Response</p> <p>TA returns <IMSI>for identifying the individual SIM which is attached to ME.</p> <p>+CIMI: <IMSI> OK</p> <p>If error is related to ME functionality:</p> <p>+CME ERROR: <err></p> <p>Parameter</p> <p><IMSI> International Mobile Subscriber Identity (string without double quotes)</p>
<p>Reference</p> <p>GSM 07.07 [13]</p>	

3.2.17 AT+CKPD Keypad Control

AT+CKPD Keypad Control	
<p>Test command</p> <p>AT+ CKPD=?</p>	<p>Response</p> <p>OK</p> <p>Parameters</p>
<p>Execution command</p> <p>AT+CKPD=<keys> > [,<time>[,<pause>]]</p>	<p>Response</p> <p>TA emulates ME keypad by giving each keystroke as a character in a string <keys>. <time>*0.1 seconds is the time to stroke each key and <pause>*0.1 seconds is the length of pause between two strokes.</p> <p>Keystrokes <keys> are emulated.</p>

	<p>OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters</p> <p><keys> string of characters representing keys as listed in the following table (based on PCCA STD-101 Annex table I-3):</p> <table border="1"> <thead> <tr> <th>Char.:</th> <th>ASCII-Code:</th> <th>Note:</th> </tr> </thead> <tbody> <tr> <td>#</td> <td>35</td> <td>hash (number sign)</td> </tr> <tr> <td>*</td> <td>42</td> <td>star (*)</td> </tr> <tr> <td>0... 9</td> <td>48... 57</td> <td>number keys</td> </tr> <tr> <td>:</td> <td>58</td> <td>escape character for manufacturer specific keys</td> </tr> <tr> <td>D/d</td> <td>68/100</td> <td>volume down</td> </tr> <tr> <td>E/e</td> <td>69/101</td> <td>connection end (END)</td> </tr> <tr> <td>R/r</td> <td>82/114</td> <td>recall last number (R/RCL/MR)</td> </tr> <tr> <td>S/s</td> <td>83/115</td> <td>connection start (SEND)</td> </tr> <tr> <td>U/u</td> <td>85/117</td> <td>volume up</td> </tr> </tbody> </table> <p><time> 0...255 seconds (default value is manufacturer specific, but should be so long that a normal ME can handle keystrokes correctly)</p> <p><pause> 0... 25.5 seconds (default value is manufacturer specific, but should be so long that a normal ME can handle keystrokes correctly)</p>	Char.:	ASCII-Code:	Note:	#	35	hash (number sign)	*	42	star (*)	0... 9	48... 57	number keys	:	58	escape character for manufacturer specific keys	D/d	68/100	volume down	E/e	69/101	connection end (END)	R/r	82/114	recall last number (R/RCL/MR)	S/s	83/115	connection start (SEND)	U/u	85/117	volume up
Char.:	ASCII-Code:	Note:																													
#	35	hash (number sign)																													
*	42	star (*)																													
0... 9	48... 57	number keys																													
:	58	escape character for manufacturer specific keys																													
D/d	68/100	volume down																													
E/e	69/101	connection end (END)																													
R/r	82/114	recall last number (R/RCL/MR)																													
S/s	83/115	connection start (SEND)																													
U/u	85/117	volume up																													
Reference																															
GSM 07.07 [13]																															

3.2.18 AT+CLCC List current calls of ME

AT+CLCC List current calls of ME	
Test command	Response
AT+CLCC=?	OK
	Parameters
Execution command	Response
AT+CLCC	<p>TA returns a list of current calls of ME.</p> <p>Note: If command succeeds but no calls are available, no information response is sent to TE.</p> <p>[+CLCC: <id1>,<dir>,<stat>,<mode>,<empty>[,<number>,<type>[,<alpha>]]</p> <p>[<CR><LF>+CLCC: <id2>,<dir>,<stat>,<mode>,<empty>[,<number>,<type>[,<alpha>]]</p> <p>[...]] OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters</p> <p><idx> integer type; call identification number as described in GSM</p>

	<p>02.30[19] sub clause 4.5.5.1; this number can be used in +CHLD command operations</p> <p><dir> 0 mobile originated (MO) call 1 mobile terminated (MT) call</p> <p><stat> state of the call: 0 active 1 held 2 dialing (MO call) 3 alerting (MO call) 4 incoming (MT call) 5 waiting (MT call)</p> <p><mode> bearer/tele service: 0 voice 1 data 2 fax 9 unknown</p> <p><mpty> 0 call is not one of multiparty (conference) call parties 1 call is one of multiparty (conference) call parties</p> <p><number> string type phone number in format specified by <type></p> <p><type> type of address of octet in integer format; 129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)</p> <p><alpha>string type alphanumeric representation of <number> corresponding to the entry found in phone book</p>
Reference	
GSM 07.07 [13][14]	

3.2.19 AT+CLCK Facility lock

AT+CLCK Facility lock	
Test command	Response
AT+CLCK=?	+CLCK: (list of supported <fac>s) OK
	Parameter
	see execution command

Execution command	Response
AT+CLCK = <fac> , <mode> [,<passwd> [,<class>]]	<p>This command is used to lock, unlock or interrogate a ME or a network facility <fac>. Password is normally needed to do such actions. When querying the status of a network service (<mode>=2) the response line for 'not active' case (<status>=0) should be returned only if service is not active for any <class>.</p> <p>If <mode><>2 and command is successful OK</p> <p>If <mode>=2 and command is successful +CLCK: <status>[,<class1>[<CR><LF> +CLCK: <status>, class2....]] OK</p>
	<p>Parameter</p> <p><fac></p> <ul style="list-style-type: none"> "PS" PH-SIM (lock Phone to SIM card) (ME asks password when other than current SIM card inserted; ME may remember certain amount of previously used cards thus not requiring password when they are inserted) "SC" SIM (lock SIM card) (SIM asks password in ME power-up and when this lock command issued) "AO" BAO (Barr All Outgoing Calls) (refer GSM02.88[6] clause 1) "OI" BOIC (Barr Outgoing International Calls) (refer GSM02.88[6] clause 1) "OX" BOIC-exHC (Barr Outgoing International Calls except to Home Country) (refer GSM02.88[6] clause 1) "AI" BAIC (Barr All Incoming Calls) (refer GSM02.88[6] clause 2) "IR" BIC-Roam (Barr Incoming Calls when Roaming outside the home country) (refer GSM02.88 [6] clause 2) "AB" All Barring services (refer GSM02.30[19]) (applicable only for <mode>=0) "AG" All out Going barring services (refer GSM02.30[19]) (applicable only for <mode>=0) "AC" All in Coming barring services (refer GSM02.30[19]) (applicable only for <mode>=0) "PN" Network Personalization (refer GSM 02.22[33]) "PU" network subset Personalization (refer GSM 02.22[33]) "PP" service Provider Personalization (refer GSM 02.22[33]) "PC" Corporate Personalization (refer GSM 02.22[33]) <p><mode></p> <ul style="list-style-type: none"> 0 unlock 1 lock <u>2</u> query status <p><passwd> password</p> <p><class></p> <ul style="list-style-type: none"> 1 voice 2 data

	<p>4 fax</p> <p><u>7</u> all classes (default)</p> <p><status> 0 off</p> <p>1 on</p>
Reference GSM 07.07 [14]	Note

3.2.20 AT+CLIP calling line identification presentation

AT+CLIP Calling line identification presentation																
Read Command AT+CLIP?	<p>Response</p> <p>+CLIP: <n>, <m></p> <p>OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters see write command</p>															
Test Command AT+CLIP=?	<p>Response</p> <p>+CLIP: (list of supported <n>s)</p> <p>OK</p> <p>Parameters see write command</p>															
Write Command AT+CLIP=<n>	<p>Response</p> <p>TA enables or disables the presentation of the CLI at the TE. It has no effect on the execution of the supplementary service CLIP in the network.</p> <p>OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters</p> <table border="0"> <tr> <td><n></td> <td>0</td> <td>suppress unsolicited result codes</td> </tr> <tr> <td></td> <td>1</td> <td>display unsolicited result codes</td> </tr> <tr> <td><m></td> <td>0</td> <td>CLIP not provisioned</td> </tr> <tr> <td></td> <td>1</td> <td>CLIP provisioned</td> </tr> <tr> <td></td> <td>2</td> <td>unknown</td> </tr> </table>	<n>	0	suppress unsolicited result codes		1	display unsolicited result codes	<m>	0	CLIP not provisioned		1	CLIP provisioned		2	unknown
<n>	0	suppress unsolicited result codes														
	1	display unsolicited result codes														
<m>	0	CLIP not provisioned														
	1	CLIP provisioned														
	2	unknown														

	<p>Unsolicited result code</p> <p>When the presentation of the CLI at the TE is enabled (and calling subscriber allows), an unsolicited result code is returned after every RING (or +CRING: <type>) at a mobile terminating call.</p> <p>+CLIP: <number>, <type>,<alphaId></p> <p>Parameter</p> <p><number> string type phone number of calling address in format specified by <type></p> <p><type> type of address octet in integer format;</p> <p>129 Unknown type(ISDN format number)</p> <p>128 Unknown type(unknown number format)</p> <p>161 National number type(ISDN format)</p> <p>145 International number type(ISDN format)</p> <p>177 Network specific number(ISDN format)</p> <p><alphaId> string type alphanumeric representation of <number> corresponding to the entry found in phone book</p>
Reference	

3.2.21 AT+CLIR Calling Line Identification Restriction

AT+CLIR Calling Line Identification Restriction	
<p>Read Command</p> <p>AT+CLIR?</p>	<p>Response</p> <p>+CLIR: <n>, <m></p> <p>OK</p> <p>If error is related to ME functionality:</p> <p>+CME ERROR: <err></p> <hr/> <p>Parameters</p> <p>see write command</p>
<p>Test Command</p> <p>AT+CLIR=?</p>	<p>Response</p> <p>+CLIR: (list of supported <n>s)</p> <p>OK</p>
<p>Write Command</p> <p>AT+CLIR=<n></p>	<p>Response</p> <p>TA restricts or enables the presentation of the CLI to the called party when originating a call.</p> <p>The command overrides the CLIR subscription (default is restricted or allowed) when temporary mode is provisioned as a default adjustment for all following outgoing calls. This adjustment can be revoked by using the opposite command.</p> <p>OK</p>

	<p>If error is related to ME functionality: +CME ERROR: <err></p>
	<p>Parameters</p> <p><n> (parameter sets the adjustment for outgoing calls):</p> <p><u>0</u> presentation indicator is used according to the subscription of the CLIR service</p> <p>1 CLIR invocation</p> <p>2 CLIR suppression</p> <p><m> (parameter shows the subscriber CLIR service status in the network):</p> <p>0 CLIR not provisioned</p> <p>1 CLIR provisioned in permanent mode</p> <p>2 unknown (e.g. no network, etc.)</p> <p>3 CLIR temporary mode presentation restricted</p> <p>4 CLIR temporary mode presentation allowed</p>
Reference	

3.2.22 AT+CMEE Report mobile equipment error

AT+CMEE Report mobile equipment error	
<p>Test command</p> <p>AT+CMEE=?</p>	<p>Response</p> <p>+CMEE: (list of supported <n>s) OK</p> <p>Parameters</p> <p>see set command</p>
<p>Read command</p> <p>AT+CMEE?</p>	<p>Response</p> <p>+CMEE: <n> OK</p> <p>Parameters</p> <p>see set command</p>
<p>Set command</p> <p>AT+CMEE=<n></p>	<p>Response</p> <p>TA disables or enables the use of result code +CME ERROR: <err> as an indication of an error relating to the functionality of the ME.</p> <p>OK</p> <p>Parameters</p> <p><n> <u>0</u> disable result code</p> <p> 1 enable result code and use numeric values</p> <p> 2 enable result code and use verbose values</p>
Reference	GSM 07.07 [13]

3.2.23 AT+COLP Connected Line Identification Presentation

AT+COLP Connected Line Identification Presentation	
Read Command AT+COLP?	<p>Response</p> <p>+COLP: <n>,<m> OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters</p> <p>See write command</p>
Test Command AT+COLP=?	<p>Response</p> <p>+COLP: (list of supported <n>s) OK</p> <p>Parameters</p> <p>See write command</p>
Write Command AT+COLP=[<n>]	<p>Response</p> <p>TA enables or disables the presentation of the COL (Connected Line) at the TE for a mobile originated call. It has no effect on the execution of the supplementary service COLR in the network.</p> <p>Intermediate result code is returned from TA to TE before any +CR or V.25ter responses.</p> <p>OK</p> <p>Parameters</p> <p><n> (parameter sets/shows the result code presentation status in the TA):</p> <p><u>0</u> disable</p> <p>1 enable</p> <p><m> (parameter shows the subscriber COLP service status in the network):</p> <p>0 COLP not provisioned</p> <p>1 COLP provisioned</p> <p>2 unknown (e.g. no network, etc.)</p> <p>intermediate result code</p> <p>When enabled (and called subscriber allows), an intermediate result code is returned before any +CR or V.25ter responses:</p> <p>+COLP:<number>,<type>[,<subaddr>,<satype> [,<alpha>]]</p>

	<p>Parameters</p> <p><number> string type phone number of format specified by <type></p> <p><type> type of address octet in integer format;</p> <p>129 Unknown type(ISDN format number)</p> <p>128 Unknown type(unknown number format)</p> <p>161 National number type(ISDN format)</p> <p>145 International number type(ISDN format)</p> <p>177 Network specific number(ISDN format)</p> <p><subaddr> string type sub address of format specified by <satype></p> <p><satype> type of sub address octet in integer format (refer GSM 04.08 [8] sub clause 10.5.4.8)</p> <p><alpha> optional string type alphanumeric representation of <number> corresponding to the entry found in phone book</p>
Reference	

3.2.24 AT+COPS Operator selection

AT+COPS Operator selection	
<p>Test command</p> <p>AT+COPS=?</p>	<p>Response</p> <p>TA returns a list of quadruplets, each representing an operator present in the network. Any of the formats may be unavailable and should then be an empty field. The list of operators shall be in order: home network, networks referenced in SIM, and other networks.</p> <p>+COPS: list of supported(<stat>, long alphanumeric <oper>, numeric <oper>)'s [, (list of supported <mode>)'s], (list of supported <format>)'s] OK</p> <p>If error is related to ME functionality:</p> <p>+CME ERROR: <err></p> <p>Parameters</p> <p>see set command</p>
<p>Read command</p> <p>AT+COPS?</p>	<p>Response</p> <p>TA returns the current mode and the currently selected operator. If no operator is selected, <format> and <oper> are omitted.</p> <p>+COPS: <mode>[, <format>[, <oper>]] OK</p> <p>If error is related to ME functionality:</p> <p>+CME ERROR: <err></p> <p>Parameters</p> <p>see set command</p>

<p>Set command</p> <p>AT+COPS = <mode> [, <format>[, <oper>]]</p>	<p>Response</p> <p>TA forces an attempt to select and register the GSM network operator. If the selected operator is not available, no other operator shall be selected (except <mode>=4). The selected operator name format shall apply to further read commands (+COPS?).</p> <p>OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p> <p>Parameters</p> <table border="0"> <tr> <td><stat></td> <td>0</td> <td>unknown</td> </tr> <tr> <td></td> <td>1</td> <td>operator available</td> </tr> <tr> <td></td> <td>2</td> <td>operator current</td> </tr> <tr> <td></td> <td>3</td> <td>operator forbidden</td> </tr> <tr> <td><oper></td> <td></td> <td>operator in format as per <mode></td> </tr> <tr> <td><mode></td> <td>0</td> <td>automatic mode; <oper> field is ignored</td> </tr> <tr> <td></td> <td>1</td> <td>manual operator selection; <oper> field shall be present</td> </tr> <tr> <td></td> <td>2</td> <td>manual deregister from network</td> </tr> <tr> <td></td> <td>3</td> <td>set only <format> (for read command +COPS?) – not shown in Read command response</td> </tr> <tr> <td></td> <td>4</td> <td>manual/automatic selected; if manual selection fails, automatic mode (<mode>=0) is entered</td> </tr> <tr> <td><format></td> <td>0</td> <td>long format alphanumeric <oper>;can be up to 16 characters long</td> </tr> <tr> <td></td> <td>1</td> <td>short format alphanumeric <oper></td> </tr> <tr> <td></td> <td>2</td> <td>numeric <oper>; GSM Location Area Identification number</td> </tr> </table>	<stat>	0	unknown		1	operator available		2	operator current		3	operator forbidden	<oper>		operator in format as per <mode>	<mode>	0	automatic mode; <oper> field is ignored		1	manual operator selection; <oper> field shall be present		2	manual deregister from network		3	set only <format> (for read command +COPS?) – not shown in Read command response		4	manual/automatic selected; if manual selection fails, automatic mode (<mode>=0) is entered	<format>	0	long format alphanumeric <oper>;can be up to 16 characters long		1	short format alphanumeric <oper>		2	numeric <oper>; GSM Location Area Identification number
<stat>	0	unknown																																						
	1	operator available																																						
	2	operator current																																						
	3	operator forbidden																																						
<oper>		operator in format as per <mode>																																						
<mode>	0	automatic mode; <oper> field is ignored																																						
	1	manual operator selection; <oper> field shall be present																																						
	2	manual deregister from network																																						
	3	set only <format> (for read command +COPS?) – not shown in Read command response																																						
	4	manual/automatic selected; if manual selection fails, automatic mode (<mode>=0) is entered																																						
<format>	0	long format alphanumeric <oper>;can be up to 16 characters long																																						
	1	short format alphanumeric <oper>																																						
	2	numeric <oper>; GSM Location Area Identification number																																						
<p>Reference</p> <p>GSM 07.07 [14]</p>																																								

3.2.25 AT+CPAS Mobile equipment activity status

<p>AT+CPAS Mobile equipment activity status</p>	
<p>Test command</p> <p>AT+CPAS=?</p>	<p>Response</p> <p>+CPAS: (list of supported <pas>s) OK</p> <p>Parameters</p> <p>see execution command</p>
<p>Execution command</p> <p>AT+CPAS</p>	<p>Response</p> <p>TA returns the activity status of ME.</p> <p>+CPAS: <pas> OK</p> <p>If error is related to ME functionality: +CME ERROR: <err></p>

	<p>Parameters</p> <table> <tr> <td><pas></td> <td>0</td> <td>ready</td> </tr> <tr> <td></td> <td>2</td> <td>unknown (ME is not guaranteed to respond to instructions)</td> </tr> <tr> <td></td> <td>3</td> <td>incoming call (ringing)</td> </tr> <tr> <td></td> <td>4</td> <td>call in progress or call hold</td> </tr> </table>	<pas>	0	ready		2	unknown (ME is not guaranteed to respond to instructions)		3	incoming call (ringing)		4	call in progress or call hold
<pas>	0	ready											
	2	unknown (ME is not guaranteed to respond to instructions)											
	3	incoming call (ringing)											
	4	call in progress or call hold											
Reference													
GSM 07.07 [13]													

3.2.26 AT+CPBF Find phone book entries

AT+CPBF Find phone book entries	
<p>Test command</p> <p>AT+CPBF=?</p>	<p>Response</p> <p>+CPBF: [maximum length of field <nlength>],[maximum length of field <tlength>]</p> <p>OK</p>
	<p>Parameter</p> <p>see execution command</p>
<p>Execution command</p> <p>AT+CPBF=<find text></p>	<p>Response</p> <p>TA returns phone book entries (from the current phone book memory storage selected with +CPBS) which contain alphanumeric string <findtext>.</p> <p>[+CPBF: <index1>, <number>,<type>, <text>[[...] <CR><LF>+CBPF: <index2>,<number>,<type>,<text>]</p> <p>OK</p>
	<p>Parameter</p> <p><index1>, <index2> integer type values in the range of location numbers of phone book memory</p> <p><number> string type phone number of format <type></p> <p><type> type of address octet in integer format ; 129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)</p> <p><findtext>, <text> string type field of maximum length <tlength> in current TE character set specified by +CSCS.</p> <p><nlength> integer type value indicating the maximum length of field <number></p> <p><tlength> integer type value indicating the maximum length of field <text></p>

Reference	Note
GSM 07.07 [13]	

3.2.27 AT+CPBR Read current phone book entries

AT+CPBR Read current phone book entries	
Test command	Response
AT+CPBR=?	TA returns location range supported by the current storage as a compound value and the maximum lengths of <number> and <text> fields. +CPBR: (list of supported <index>s), <nlength>, <tlength> OK
	Parameter
	<index> location number <nlength> max. length of phone number <tlength> max. length of text for number
Execution command	Response
AT+CPBR= <index1> [, <index2>]	TA returns phone book entries in location number range <index1>...<index2> from the current phone book memory storage selected with +CPBS. If <index2> is left out, only location <index1> is returned. +CPBR: <index1>, <number>, <type>, <text>[<CR><LF>+CPBR:+CPBR: <index2>, <number>, <type>, <text>] OK
	Parameter
	<index1> read as of this location number <index2> read to this location number <number> phone number <type> type of number <text> ext for phone number in current TE character set specified by +CSCS.
Reference	Note
GSM 07.07 [13]	

3.2.28 AT+CPBS Select phone book memory storage

AT+CPBS Select phone book memory storage	
Test command	Response
AT+CPBS=?	+CPBS: (list of supported <storage>s) OK
	Parameter
	see set command

<p>Read command AT+CPBS?</p>	<p>Response +CPBS: <storage> OK</p> <p>Parameter See set command.</p>																																				
<p>Set command AT+CPBS=<storage></p>	<p>Response TA selects current phone book memory storage, which is used by other phone book commands. OK</p> <p>Parameter</p> <table border="0"> <tr> <td><storage></td> <td>"MC"</td> <td>ME missed (unanswered) calls list</td> </tr> <tr> <td></td> <td>"RC"</td> <td>ME received calls list</td> </tr> <tr> <td></td> <td>"DC"</td> <td>ME dialed calls list(+CPBW may not be applicable or this storage)(same as LD)</td> </tr> <tr> <td></td> <td>"LA"</td> <td>Last Number All list (LND/LNM/LNR)</td> </tr> <tr> <td></td> <td>"ME"</td> <td>ME phonebook</td> </tr> <tr> <td></td> <td>"BN"</td> <td>SIM barred dialed number</td> </tr> <tr> <td></td> <td>"SD"</td> <td>SIM service dial number</td> </tr> <tr> <td></td> <td>"VM"</td> <td>SIM voice mailbox</td> </tr> <tr> <td></td> <td>"FD"</td> <td>SIM fix dialing-phone book</td> </tr> <tr> <td></td> <td>"LD"</td> <td>SIM last-dialing-phone book</td> </tr> <tr> <td></td> <td>"ON"</td> <td>SIM (or ME) own numbers (MSISDNs) list</td> </tr> <tr> <td></td> <td>"SM"</td> <td>SIM phonebook</td> </tr> </table>	<storage>	"MC"	ME missed (unanswered) calls list		"RC"	ME received calls list		"DC"	ME dialed calls list(+CPBW may not be applicable or this storage)(same as LD)		"LA"	Last Number All list (LND/LNM/LNR)		"ME"	ME phonebook		"BN"	SIM barred dialed number		"SD"	SIM service dial number		"VM"	SIM voice mailbox		"FD"	SIM fix dialing-phone book		"LD"	SIM last-dialing-phone book		"ON"	SIM (or ME) own numbers (MSISDNs) list		"SM"	SIM phonebook
<storage>	"MC"	ME missed (unanswered) calls list																																			
	"RC"	ME received calls list																																			
	"DC"	ME dialed calls list(+CPBW may not be applicable or this storage)(same as LD)																																			
	"LA"	Last Number All list (LND/LNM/LNR)																																			
	"ME"	ME phonebook																																			
	"BN"	SIM barred dialed number																																			
	"SD"	SIM service dial number																																			
	"VM"	SIM voice mailbox																																			
	"FD"	SIM fix dialing-phone book																																			
	"LD"	SIM last-dialing-phone book																																			
	"ON"	SIM (or ME) own numbers (MSISDNs) list																																			
	"SM"	SIM phonebook																																			
<p>Reference GSM 07.07 [13]</p>	<p>Note</p>																																				

3.2.29 AT+CPBW Write phone book entry

<p>AT+CPBW Write phone book entry</p>	
<p>Test command AT+CPBW=?</p>	<p>Response</p> <p>TA returns location range supported by the current storage, the maximum length of <number> field, supported number formats of the storage, and the maximum length of <text> field.</p> <p>+CPBW: (list of supported <index>s), <nlength>, (list of supported <typ>s), <tlength></p> <p>OK</p> <p>Parameter see execution command</p>

<p>Execution command</p> <p>AT+CPBW= <index1> [, <number>, [<type>, [<text>]]]</p>	<p>Response</p> <p>TA writes phone book entry in location number <index> in the current phone book memory storage selected with +CPBS. Entry fields written are phone number <number> (in the format <type>) and text <text> associated with the number. If those fields are omitted, phone book entry is deleted. If <index> is left out, but <number> is given, entry is written to the first free location in the phone book.</p> <p>OK</p> <hr/> <p>Parameter</p> <p><nlength> max. length of phone number <tlength> max. length of text for number <index> location number <number> phone number <type> type of number; 129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)</p> <p><text> text for phone number in current TE character set specified by +CSCS.</p> <p>Note: The following characters in <text> must be entered via the escape sequence:</p> <table border="1"> <thead> <tr> <th>GSM char.</th> <th>Seq. Seq.(hex)</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>\</td> <td>\5C 5C 35 43</td> <td>(backslash)</td> </tr> <tr> <td>“</td> <td>\22 5C 32 32</td> <td>(string delimiter)</td> </tr> <tr> <td>BSP</td> <td>\08 5C 30 38</td> <td>(backspace)</td> </tr> <tr> <td>NULL</td> <td>\00 5C 30 30</td> <td>(GSM null)</td> </tr> </tbody> </table> <p>‘0’ (GSM null) may cause problems for application layer software when reading string lengths.</p>	GSM char.	Seq. Seq.(hex)	Note	\	\5C 5C 35 43	(backslash)	“	\22 5C 32 32	(string delimiter)	BSP	\08 5C 30 38	(backspace)	NULL	\00 5C 30 30	(GSM null)
GSM char.	Seq. Seq.(hex)	Note														
\	\5C 5C 35 43	(backslash)														
“	\22 5C 32 32	(string delimiter)														
BSP	\08 5C 30 38	(backspace)														
NULL	\00 5C 30 30	(GSM null)														
<p>Reference</p> <p>GSM 07.07 [13]</p>	<p>Note</p>															

3.2.30 AT+CPIN Enter PIN

<p>AT+CPIN Enter PIN</p>	
<p>Test command</p> <p>AT+CPIN=?</p>	<p>Response</p> <p>OK</p> <hr/> <p>Parameter</p> <p>see execution command</p>

<p>Execution command AT+CPIN?</p>	<p>Response TA returns an alphanumeric string indicating whether some password is required or not. +CPIN: <code> OK</p> <p>Parameter <code> READY no further entry needed SIM PIN ME is waiting for SIM PIN SIM PUK ME is waiting for SIM PUK PH_SIM PIN ME is waiting for phone to SIM card (antitheft) PH_SIM PUK ME is waiting for SIM PUK (antitheft) SIM PIN2 PIN2, e.g. for editing the FDN book possible only if preceding command was acknowledged with +CME ERROR:17 SIM PUK2 possible only if preceding command was acknowledged with error +CME ERROR: 18.</p>
<p>Set command AT+CPIN=<pin> [, <new pin>]</p>	<p>Response TA stores a password which is necessary before it can be operated (SIM PIN, SIM PUK, PH-SIM PIN, etc.). If the PIN is to be entered twice, the TA shall automatically repeat the PIN. If no PIN request is pending, no action is taken and an error message, +CME ERROR, is returned to TE. If the PIN required is SIM PUK or SIM PUK2, the second pin is required. This second pin, <new pin>, is used to replace the old pin in the SIM. OK</p> <p>Parameter <pin> string type; password <new pin> string type; If the PIN required is SIM PUK or SIMPUK2: new password</p>
<p>Reference GSM 07.07 [13]</p>	<p>Note</p>

3.2.31 AT+CPWD Change password

<p>AT+CPWD Change password</p>	
<p>Test command AT+CPWD=?</p>	<p>Response TA returns a list of pairs which present the available facilities and the maximum length of their password. +CPWD: list of supported (<fac>, <pwdlength>) OK</p> <p>Parameter <fac> otherwise see execution command, without "FD" <pwdlength> integer max. length of password</p>

<p>Execution command AT+CPWD = <fac>, [<oldpwd>], <newpwd></p>	<p>Response TA sets a new password for the facility lock function. OK</p> <p>Parameter <fac></p> <p>"SC" SIM (lock SIM card) (SIM asks password in ME power-up and when this lock command issued)</p> <p>"AO" BAOB (Barr All Outgoing Calls) (refer GSM02.88[6] clause 1)</p> <p>"OI" BOIC (Barr Outgoing International Calls) (refer GSM02.88[6] clause 1)</p> <p>"OX" BOIC-exHC (Barr Outgoing International Calls except to Home Country) (refer GSM02.88[6] clause 1)</p> <p>"AI" BAIC (Barr All Incoming Calls) (refer GSM02.88[6] clause 2)</p> <p>"IR" BIC-Roam (Barr Incoming Calls when Roaming outside the home country) (refer GSM02.88 [6] clause 2)</p> <p>"AB" All Barring services (refer GSM02.30[19]) (applicable only for <mode>=0)</p> <p>"AG" All outgoing barring services (refer GSM02.30[19]) (applicable only for <mode>=0)</p> <p>"AC" All incoming barring services (refer GSM02.30[19]) (applicable only for <mode>=0)</p> <p>"P2" SIM PIN2<oldpwd> password specified for the facility from the user interface or with command. If an old password has not yet been set, <oldpwd> is not to enter.</p> <p><newpwd> new password</p>
<p>Reference GSM 07.07 [13]</p>	<p>Note</p>

3.2.32 AT+CR Service Reporting Control

<p>AT+CR Service Reporting Control</p>	
<p>Test command AT+CR=?</p>	<p>Response +CR: list of supported <mode>s OK</p> <p>Parameters see set command</p>
<p>Read command AT+CR?</p>	<p>Response +CR: <mode> OK</p>

GNS-30CR AT Command Set

	Parameters see set command												
Set command AT+CR=<mode>	<p>Response</p> <p>TA controls whether or not intermediate result code +CR: <serv> is returned from the TA to the TE at a call set up.</p> <p>OK</p> <p>Parameters</p> <table> <tr> <td><mode></td> <td><u>0</u></td> <td>disable</td> </tr> <tr> <td></td> <td>1</td> <td>enable</td> </tr> </table>	<mode>	<u>0</u>	disable		1	enable						
<mode>	<u>0</u>	disable											
	1	enable											
	<p>Intermediate result code</p> <p>If enabled, an intermediate result code is transmitted at the point during connect negotiation at which the TA has determined which speed and quality of service will be used, before any error control or data compression reports are transmitted, and before any final result code (e.g. CONNECT) is transmitted.</p> <p>+CR:<serv></p> <p>Parameters</p> <table> <tr> <td><serv></td> <td>ASYNC</td> <td>asynchronous transparent</td> </tr> <tr> <td></td> <td>SYNC</td> <td>synchronous transparent</td> </tr> <tr> <td></td> <td>REL ASYNC</td> <td>asynchronous non-transparent</td> </tr> <tr> <td></td> <td>REL SYNC</td> <td>synchronous non-transparent</td> </tr> </table>	<serv>	ASYNC	asynchronous transparent		SYNC	synchronous transparent		REL ASYNC	asynchronous non-transparent		REL SYNC	synchronous non-transparent
<serv>	ASYNC	asynchronous transparent											
	SYNC	synchronous transparent											
	REL ASYNC	asynchronous non-transparent											
	REL SYNC	synchronous non-transparent											
Reference GSM 07.07 [13]													

3.2.33 AT+CRC Set Cellular Result Codes for incoming call indication

AT+CRC Set Cellular Result Codes for incoming call indication							
Test command AT+CRC=?	<p>Response</p> <p>+CRC: list of supported <mode>s</p> <p>OK</p> <p>Parameters</p> <p>see set command</p>						
Read command AT+CRC?	<p>Response</p> <p>+CRC: <mode></p> <p>OK</p> <p>Parameters</p> <p>see set command</p>						
Set command AT+CRC=<mode> >	<p>Response</p> <p>TA controls whether or not the extended format of incoming call indication is used.</p> <p>OK</p> <p>Parameters</p> <table> <tr> <td><mode></td> <td><u>0</u></td> <td>disable extended format</td> </tr> <tr> <td></td> <td>1</td> <td>enable extended format</td> </tr> </table>	<mode>	<u>0</u>	disable extended format		1	enable extended format
<mode>	<u>0</u>	disable extended format					
	1	enable extended format					

	<p>Unsolicited result code</p> <p>When enabled, an incoming call is indicated to the TE with unsolicited result code +CRING: <type> instead of the normal RING.</p> <p>Parameters</p> <table> <tr> <td><type></td> <td>ASYNC</td> <td>asynchronous transparent</td> </tr> <tr> <td></td> <td>SYNC</td> <td>synchronous transparent</td> </tr> <tr> <td></td> <td>REL ASYNC</td> <td>asynchronous non-transparent</td> </tr> <tr> <td></td> <td>REL SYNC</td> <td>synchronous non-transparent</td> </tr> <tr> <td></td> <td>FAX</td> <td>facsimile</td> </tr> <tr> <td></td> <td>VOICE</td> <td>voice</td> </tr> </table>	<type>	ASYNC	asynchronous transparent		SYNC	synchronous transparent		REL ASYNC	asynchronous non-transparent		REL SYNC	synchronous non-transparent		FAX	facsimile		VOICE	voice
<type>	ASYNC	asynchronous transparent																	
	SYNC	synchronous transparent																	
	REL ASYNC	asynchronous non-transparent																	
	REL SYNC	synchronous non-transparent																	
	FAX	facsimile																	
	VOICE	voice																	
Reference																			
GSM 07.07 [13]																			

3.2.34 AT+CREG Network registration

AT+CREG Network registration	
Test command	Response
AT+CREG=?	+CREG: list of supported <n>s OK
	Parameters
	see set command
Read command	Response
AT+CREG?	<p>TA returns the status of result code presentation and an integer <stat> which shows whether the network has currently indicated the registration of the ME. Location information elements <lac> and <ci> are returned only when <n>=2 and ME is registered in the network.</p> <p>+CREG: <n>,<stat>[,<lac>,<ci>] OK</p> <p>If error is related to ME functionality:</p> <p>+CME ERROR: <err></p>
Set command	Response
AT+CREG=[<n>]	<p>TA controls the presentation of an unsolicited result code +CREG: <stat> when <n>=1 and there is a change in the ME network registration status.</p> <p>OK</p>

	<p>Parameters</p> <p><n> 0 disable network registration unsolicited result code</p> <p> 1 enable network registration unsolicited result code +CREG: <stat></p> <p> 2 enable network registration unsolicited result code with location information</p> <p><stat> 0 not registered, ME is not currently searching a new operator to register to</p> <p> 1 registered, home network</p> <p> 2 not registered, but ME is currently searching a new operator to register to</p> <p> 3 registration denied</p> <p> 4 unknown</p> <p> 5 registered, roaming</p> <hr/> <p>Unsolicited result code</p> <p>When <n>=1 and there is a change in the ME network registration status: +CREG: <stat></p> <p>Parameters</p> <p>see set command</p>
<p>Reference</p> <p>GSM 07.07 [13]</p>	

3.2.35 AT+CRLP Select Radio Link Protocol parameter

AT+CRLP Select Radio Link Protocol parameter	
<p>Test command</p> <p>AT+CRLP=?</p>	<p>Response</p> <p>TA returns values supported. RLP versions 0 and 1 share the same parameter set. TA returns only one line for this set (where <verx> is not present).</p> <p>+CRLP: (list of supported <iws>s), (list of supported <mws>s), (list of supported <T1>s), (list of supported <N2>s), (list of supported <ver1>s), (list of supported <T4>s)</p> <p>...</p> <p>OK</p> <hr/> <p>Parameters</p> <p>see set command</p>
<p>Read command</p> <p>AT+CRLP?</p>	<p>Response</p> <p>TA returns current settings for RLP version. RLP versions 0 and 1 share the same parameter set. TA returns only one line for this set (where <verx> is not present).</p> <p>+CRLP: <iws>,<mws>,<T1>,<N2>,<ver1>,<T4></p> <p>...</p> <p>OK</p>

GNS-30CR AT Command Set

	Parameters see set command
Set command AT+CRLP=[<iws> >[,<mws>[,<T1>[,<N2>[,<ver>[,<T4>]]]]]	Response TA sets radio link protocol (RLP) parameters used when non-transparent data calls are setup. OK
	Parameters <iws> 0-61-255 Interworking window size (IWF to MS) <mws> 0-61-255 Mobile window size(MS to IWF) <T1> 0-48-255 acknowledgment timer T1 in 10 ms units) <N2> 0-6-255 retransmission attempts N2 <verx> 0-1 RLP version number in integer format; when Version indication is not present it shall equal 0. Note: Versions 0 and 1 share the same parameter set. <T4> 0-3-255 re-sequencing period in integer format, in units of 10 ms. This is NOT used for RLP versions 0 and 1.
Reference GSM 07.07 [13]	

3.2.36 AT+CRSM Restricted SIM access

AT+CRSM Restricted SIM access	
Test command AT+CRSM=?	Response OK
Write command AT+CRSM=<command>[,<fileId> [,<P1>,<P2>,<P3> > [,<data>]]]	Response +CRSM: <sw1>, <sw2> [,<response>] OK / ERROR / +CME ERROR: <err> Parameter <command> 176 READ BINARY 178 READ RECORD 192 GET RESPONSE 214 UPDATE BINARY 220 UPDATE RECORD 242 STATUS all other values are reserved; refer GSM 11.11. <fileId> integer type; this is the identifier for an elementary data file on SIM. Mandatory for every command except STATUS <P1>,<P2>,<P3> integer type, range 0 - 255 parameters to be passed on by the ME to the SIM; refer GSM 11.11. <data> information which shall be written to the SIM (hex-decimal character format) <sw1>, <sw2> integer type, range 0 - 255

	<p>status information from the SIM about the execution of the actual command. These parameters are delivered to the TE in both cases, on successful or failed execution of the command; refer GSM 11.11.</p> <p><response> response of a successful completion of the command previously issued (hexadecimal character format)</p>
Reference	
GSM 07.07	
GSM 11.11	

3.2.37 AT+CSQ Signal Quality Report 1

AT+CSQ Signal Quality Report 1	
Test command	Response
AT+CSQ=?	+CSQ: (list of supported <rssis>),(list of supported <ber>s)
Execution command	Response
AT+CSQ	<p>+CSQ: <rssis>,<ber></p> <p>+<i>CME ERROR</i>: <err></p> <p>Execution command returns received signal strength indication <rssis> and channel bit error rate <ber> from the ME. Test command returns values supported by the TA.</p>
	<p>Parameters</p> <p><rssis>:</p> <p>0 -113 dBm or less</p> <p>1 -111 dBm</p> <p>2...30 -109... -53 dBm</p> <p>31 -51 dBm or greater</p> <p>99 not known or not detectable</p> <p><ber> (in percent):</p> <p>0...7 as RXQUAL values in the table in GSM 05.08 [20] subclause 8.2.4</p> <p>99 not known or not detectable</p>
Reference	Note
GSM 07.07 [13]	

3.2.38 AT+FCLASS Select mode

AT+FCLASS Select mode	
Test command	Response
AT+FCLASS=?	+FCLASS: list of supported <n>s)
	OK
	Parameter
	see set command

Read command AT+ FCLASS?	Response + FCLASS: <n> OK
	Parameter See set command.
Set command AT+FCLASS=<n>	Response TA sets a particular mode of operation (data fax). This causes the TA to process information in a manner suitable for that type of information OK
	Parameter <n> <u>0</u> data 1 fax class 1 (TIA-578-A)
Reference GSM 07.07 [13]	Note

3.2.39 AT+FMI FAX: select read or test service class

AT+FMI FAX: select read or test service class	
Test command AT+ FMI =?	Response OK
	Parameter see set command
Read command AT+ FMI	Response TA reports one or more lines of information text which permit the user to identify the manufacturer. <manufacturer Id> OK
	Parameter <manufacturer Id>
Reference EIA/TIA-578-D	Note

3.2.40 AT+FMM FAX: report model ID

AT+FMM FAX: report model ID	
Test command AT+ FMM =?	Response OK
	Parameter see set command
Read command AT+ FMM	Response TA reports one or more lines of information text which permit the user to identify the specific model of device. <model Id> OK

	Parameter <model Id>
Reference EIA/TIA-578-D	Note

3.2.41 AT+FMR FAX: report revision ID

AT+FMR FAX: report revision ID	
Test command AT+ FMR =?	Response OK
	Parameter see set command
Read command AT+ FMR	Response TA reports one or more lines of information text which permit the user to identify the version, revision level or data or other information of the device. <Revision Id> OK
	Parameter <Revision Id>
Reference EIA/TIA-578-D	Note

3.2.42 AT+VTD=<n> Tone duration

AT+VTD=<n> Tone duration	
Test command AT+VTD=?	Response +VTD: list of supported <n>s OK
	Parameters see set command
Read command AT+VTD?	Response +VTD: <n> OK
	Parameters see set command
Set command AT+VTD = <duration>	Response This command refers to an integer <n> that defines the length of tones emitted as a result of the +VTS command. This does not affect the D command. OK
	Parameters <n> 0 default setting 1-255 duration of the tone in 1/10 seconds

Reference GSM 07.07 [13]	Note
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3.2.43 AT+VTS DTMF and tone generation

AT+VTS DTMF and tone generation	
Test command AT+VTS=?	Response +VTS: list of supported <dtmf>s, list of supported <duration>s OK
	Parameters see set command
Set command AT+VTS=<dtmf-string>	Response This command allows the transmission of DTMF tones and arbitrary tones in voice mode. These tones may be used (for example) when announcing the start of a recording period. Note: D is used only for dialing. OK If error is related to ME functionality: +CME ERROR: <err> Note: The command is writing only. Parameters <dtmf-string> which has a max length of 20 characters, must be entered between double quotes (“ ”) and consists of combinations of the following separated by commas: 1) <dtmf> A single ASCII characters in the set 0-9, #,*, A-D. This is interpreted as a sequence of DTMF tones whose duration is set by the +VTD command. 2) {<dtmf>, <duration>} This is interpreted as a DTMF tone whose duration is determined by <duration>. <duration> duration of the tone in 1/10 seconds range :1-255
Reference GSM 07.07 [13]	Note

3.2.44 AT+CMUX Serial Multiplexer control

AT+CMUX Serial Multiplexer control	
Test command AT+CMUX=?	Response +CMUX: (list of supported <mode>s)
	Parameter See set command
Set command AT+CMUX=<m	Response +CME ERROR: <err>

ode>[,<subset>[, <port_speed>[, N1>[,<T1>[,<N2>[,<T2>[,<T3>[, <k>]]]]]]]]	Parameters <table border="0"> <tr> <td><mode></td> <td><u>0</u></td> <td>Basic option (i.e. No multiplexer in operation)</td> </tr> <tr> <td></td> <td>1</td> <td>Advanced option (GSM 07.10 multiplexer)</td> </tr> <tr> <td></td> <td>2</td> <td>Proprietary option (manufacturer specific multiplexer)</td> </tr> </table> <subset>	<mode>	<u>0</u>	Basic option (i.e. No multiplexer in operation)		1	Advanced option (GSM 07.10 multiplexer)		2	Proprietary option (manufacturer specific multiplexer)									
<mode>	<u>0</u>	Basic option (i.e. No multiplexer in operation)																	
	1	Advanced option (GSM 07.10 multiplexer)																	
	2	Proprietary option (manufacturer specific multiplexer)																	
Read command AT+CMUX ?	Response: +CMUX: (mode-1),0,5,127,10,3,30,10,2 OK <i>ERROR</i>																		
Reference GSM 07.07 [13]	Note <table border="0"> <thead> <tr> <th>Channel Number</th> <th>Type</th> <th>DLCI</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>Multiplexer Control</td> <td>0</td> </tr> <tr> <td>1</td> <td>07.07 and 07.05</td> <td>1</td> </tr> <tr> <td>2</td> <td>07.07 and 07.05</td> <td>2</td> </tr> <tr> <td>3</td> <td>07.07 and 07.05</td> <td>3</td> </tr> <tr> <td>4</td> <td>07.07 and 07.05</td> <td>4</td> </tr> </tbody> </table>	Channel Number	Type	DLCI	None	Multiplexer Control	0	1	07.07 and 07.05	1	2	07.07 and 07.05	2	3	07.07 and 07.05	3	4	07.07 and 07.05	4
Channel Number	Type	DLCI																	
None	Multiplexer Control	0																	
1	07.07 and 07.05	1																	
2	07.07 and 07.05	2																	
3	07.07 and 07.05	3																	
4	07.07 and 07.05	4																	

3.2.45 AT+CNUM Subscriber Number

AT+CNUM Subscriber Number																							
Test command AT+CNUM=?	Response																						
Execution command AT+CNUM	Response +CNUM: [<alpha1>,<number1>,<type1>[,<speed>,<service>[,<itc>]] [<CR><LF>+CNUM: [<alpha2>,<number2>,<type2>[,<speed>,<service> [,<itc>]] [...]] +CME ERROR: <err>																						
	Parameters <table border="0"> <tr> <td><alphax></td> <td>optional alphanumeric string associated with <numberx>; used character set should be the one selected with command Select TE Character Set +CSCS</td> </tr> <tr> <td><numberx></td> <td>string type phone number of format specified by <typex></td> </tr> <tr> <td><typex></td> <td>type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7)</td> </tr> <tr> <td><speed></td> <td>as defined by the +CBST command</td> </tr> <tr> <td><service></td> <td>(service related to the phone number:) <table border="0"> <tr> <td>0</td> <td>asynchronous modem</td> </tr> <tr> <td>1</td> <td>synchronous modem</td> </tr> <tr> <td>2</td> <td>PAD Access (asynchronous)</td> </tr> <tr> <td>3</td> <td>Packet Access (synchronous)</td> </tr> <tr> <td>4</td> <td>Voice</td> </tr> <tr> <td>5</td> <td>Fax</td> </tr> </table> </td> </tr> </table>	<alphax>	optional alphanumeric string associated with <numberx>; used character set should be the one selected with command Select TE Character Set +CSCS	<numberx>	string type phone number of format specified by <typex>	<typex>	type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7)	<speed>	as defined by the +CBST command	<service>	(service related to the phone number:) <table border="0"> <tr> <td>0</td> <td>asynchronous modem</td> </tr> <tr> <td>1</td> <td>synchronous modem</td> </tr> <tr> <td>2</td> <td>PAD Access (asynchronous)</td> </tr> <tr> <td>3</td> <td>Packet Access (synchronous)</td> </tr> <tr> <td>4</td> <td>Voice</td> </tr> <tr> <td>5</td> <td>Fax</td> </tr> </table>	0	asynchronous modem	1	synchronous modem	2	PAD Access (asynchronous)	3	Packet Access (synchronous)	4	Voice	5	Fax
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<numberx>	string type phone number of format specified by <typex>																						
<typex>	type of address octet in integer format (refer GSM 04.08 [8] subclause 10.5.4.7)																						
<speed>	as defined by the +CBST command																						
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1	synchronous modem																						
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	<p><itc> (information transfer capability:)</p> <p>0 3.1 kHz</p> <p>1 UDI</p>
Reference GSM 07.07 [13]	Note

3.2.46 AT+CPOL Preferred operator list

AT+CPOL Preferred operator list.	
Test command AT+CPOL=?	<p>Response</p> <p>+CPOL: (list of supported <index>s),(list of supported <format>s)</p> <p>Parameters</p> <p>see set command</p>
Read command AT+CPOL?	<p>Response</p> <p>+CPOL: <index1>,<format>,<oper1></p> <p>[<CR><LF>+CPOL: <index2>,<format>,<oper2></p> <p>[...]]</p> <p>+<i>CME ERROR</i>: <err></p> <p>Parameter</p> <p><i>See set command</i></p>
Set command AT+CPOL=[<index>][,<format>[,<oper>]]	<p>Response</p> <p>+<i>CME ERROR</i>: <err></p> <p>Parameters</p> <p><index> integer type: order number of operator in SIM preferred operator list</p> <p><format> 0 long format alphanumeric <oper></p> <p>1 short format alphanumeric <oper></p> <p>2 numeric <oper></p> <p><oper> string type: <format> indicates whether alphanumeric or numeric</p> <p>format used (see +COPS command)</p>
Reference GSM 07.07 [13]	Note

3.2.47 AT+COPN Read operator names.

AT+COPN Read operator names.	
Test command AT+COPN=?	Response

GNS-30CR AT Command Set

Execution command AT+COPN	Response +COPN: <numeric1>,<alpha1 > [<CR><LF>+COPN: <numeric2>,<alpha2> [...]] + <i>CME ERROR</i> : <err>
	Parameters <numeric <i>n</i> > string type: operator in numeric format (see +COPS) <alphan> string type: operator in long alphanumeric format (see +COPS)
Reference GSM 07.07 [13]	Note

3.2.48 AT+CFUN Set phone functionality.

AT+CFUN Set phone functionality.																
Test command AT+CFUN=?	Response +CFUN: (list of supported <fun>s), (list of supported <rst>s) + <i>CME ERROR</i> : <err>															
	Parameters see set command															
Read command AT+CFUN?	Response +CFUN: <fun> + <i>CME ERROR</i> : <err>															
	Parameter <i>See set command</i>															
Set command AT+CFUN=<fun>, >, [<rst>]	Response + <i>CME ERROR</i> : <err>															
	Parameters <table border="0"> <tr> <td><fun></td> <td>0</td> <td>minimum functionality</td> </tr> <tr> <td></td> <td>1</td> <td>full functionality (Default)</td> </tr> <tr> <td></td> <td>4</td> <td>disable phone both transmit and receive RF circuits</td> </tr> <tr> <td><rst>:</td> <td>0</td> <td>Set the ME to <fun> power level immediately. This is the default when <rst> is not given.</td> </tr> <tr> <td></td> <td>1</td> <td>Set the ME to <fun> power level after the ME been reset.</td> </tr> </table>	<fun>	0	minimum functionality		1	full functionality (Default)		4	disable phone both transmit and receive RF circuits	<rst>:	0	Set the ME to <fun> power level immediately. This is the default when <rst> is not given.		1	Set the ME to <fun> power level after the ME been reset.
<fun>	0	minimum functionality														
	1	full functionality (Default)														
	4	disable phone both transmit and receive RF circuits														
<rst>:	0	Set the ME to <fun> power level immediately. This is the default when <rst> is not given.														
	1	Set the ME to <fun> power level after the ME been reset.														
Reference GSM 07.07 [13]	Note															

3.2.49 AT+CCLK Clock

AT+CCLK Clock	
Test command AT+CCLK=?	Response
	Parameters
Read command AT+CCLK?	Response +CCLK: <time> +CME ERROR: <err>
	Parameter See set command
Set command AT+CCLK=<time> e>	Response +CME ERROR: <err>
	Parameters <time> string type value; format is "yy/MM/dd,hh:mm:ss+/-time zone (two digits)"; where characters indicate year (two last digits), month, day, hour, minutes, seconds and time zone. E.g: 22:10:00+00 GMT equals to "94/05/06,22:10:00+00" The value scope of "time zone (two digits)" is: 00 – 48. The interval between each time zone is 15 minutes.
Reference GSM 07.07 [13]	Note

3.2.50 AT+CSIM Generic SIM Access

AT+CSIM Generic SIM Access	
Test command AT+CSIM=?	Response
	Parameters
Set command AT+CSIM=<length>,<command>	Response +CSIM: <command>,<response> +CME ERROR: <err>
	Parameters <length> integer type: length of characters sent to the TE in <command> or <response> (i.e. twice the number of octets in the raw data) <command> string type: hex format: GSM 11.11 SIM command sent from the ME to the SIM <response> string type: hex format: GSM 11.11 response from SIM to <command>
Reference GSM 07.07 [13]	Note

3.2.53 AT+CLVL Loud speaker volume level

AT+CLVL Loud speaker volume level	
Test command AT+CLVL=?	Response +CLVL: (list of supported <level>s) +CME ERROR: <err>
	Parameters see set command
Read command AT+CLVL?	Response +CLVL: <level> +CME ERROR: <err>
	Parameter See set command
Set command AT+CLVL=<level>	Response +CME ERROR: <err>
	Parameters <level> integer type value with manufacturer specific range (smallest value represents the lowest sound level)
Reference GSM 07.07 [13]	Note

3.2.54 AT+CMUT Mute control.

AT+CMUT Mute control.	
Test command AT+CMUT=?	Response +CMUT: (list of supported <n>s)
	Parameters see set command
Read command AT+CMUT?	Response +CMUT: <n> +CME ERROR: <err>
	Parameter See set command
Set command AT+CMUT=<n>	Response +CME ERROR: <err>
	Parameters <n> 0 mute off 1 mute on
Reference GSM 07.07 [13]	Note

3.2.55 AT+CPUC Price per Unit and Currency Table

AT+CPUC Price Per Unit and Currency Table	
Test command AT+CPUC=?	Response Parameters see set command
Read command AT+CPUC?	Response +CPUC: <currency>,<ppu> +CME ERROR: <err> Parameter <i>See set command</i>
Set command AT+CPUC=<currency>,<ppu>[,<passwd>]	Response +CME ERROR: <err> Parameters <currency> string type; three-character currency code (e.g. "GBP", "DEM"); character set as specified by command Select TE Character Set +CSCS <ppu> string type; price per unit; dot is used as a decimal separator (e.g. "2.66") <passwd> string type; SIM PIN2
Reference GSM 07.07 [13]	Note

3.2.56 AT+CCWE Call Meter Maximum Event

AT+CCWE Call Meter Maximum Event	
Test command AT+CCWE=?	Response +CCWE: (list of supported <mode>s) +CME ERROR: <err> Parameters see set command
Read command AT+CCWE?	Response +CCWE: <mode> +CME ERROR: <err> Parameter <i>See set command</i>
Set command AT+CCWE=<mode>	Response +CME ERROR: <err> Parameters <mode> <u>0</u> Disable call meter warning event 1 Enable call meter warning event

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	<p><u>Unsolicited result codes supported:</u></p> <p>+CCWV Shortly before the ACM (Accumulated Call Meter) maximum value is reached, an unsolicited result code +CCWV will be sent, if enabled by this command. The warning is issued approximately when 5 seconds call time remains. It is also issued when starting a call if less than 5 s call time remains.</p> <p>Parameters</p>
Reference	Note
GSM 07.07 [13]	GSM 07.07 specifies 30 seconds, so SIMCOM deviate from the specification.

3.2.57 AT+CBC Battery charge

AT+ CBC Battery charge	
Test command	Response
AT+CBC=?	+CBC: (list of supported < bcs >s),(list of supported < bcl >s),(voltage)
	Parameters
	see set command
Read command	Response
AT+CBC?	<i>ERROR</i>
	Parameter
	<i>See set command</i>
Set command	Response
AT+CBC	+CBC: < battery connected status >, < battery charging level >,<voltage> +CME ERROR: <err>
	Parameters
	<p><bcs> charge status</p> <p> 0 ME is not charged</p> <p> 1 ME is charging</p> <p><bcl> battery connection level</p> <p> 0 battery is exhausted, or ME does not have a battery connected</p> <p> 1...100battery has 1-100 percent of capacity remaining vent</p> <p><voltage> battery voltage(mV)</p>
Reference	Note
GSM 07.07 [13]	Support for this command will be hardware dependant and only be used when battery is set to vibrator

3.2.58 AT+CUSD Unstructured supplementary service data

AT+ CUSD Unstructured supplementary service data	
Test command AT+CUSD=?	Response +CUSD: <n>
	Parameters see set command
Read command AT+CUSD?	Response +CUSD:<n>
	Parameter <n>
Set command AT+CUSD=[<n> [,<str>[,<dcs>]]	Response OK ERROR
	Parameters <n> a numeric parameter which indicates control of the unstructured supplementary service data 0 disable the result code presentation in the TA 1 enable the result code presentation in the TA 2 cancel session (not applicable to read command response) <str> string type USSD-string <dcs> Cell Broadcast Data Coding Scheme in integer format (default 0)
Reference GSM 03.38 [25]	Note

3.2.59 AT+CSSN SUPPLEMENTARY SERVICES NOTIFICATION

AT+ CSSN SUPPLEMENTARY SERVICES NOTIFICATION	
Test command AT+CSSN=?	Response +CSSN: (list of supported <n>s), (list of supported <m>s)
	Parameters see set command
Read command AT+CSSN?	Response +CSSN:<n>,<m>
	Parameter see set command
Set command AT+CSSN=[<n> [,<m>]]	Response OK ERROR

	<p>Parameters</p> <p><n> a numeric parameter which indicates whether to show the +CSSI result code presentation status after a mobile originated call setup</p> <p>0 disable</p> <p>1 enable</p> <p><m> a numeric parameter which indicates whether to show the +CSSU result code presentation status during a mobile terminated call setup or during a call, or when a forward check supplementary service notification is received.</p> <p>0 disable</p> <p>1 enable</p>
Reference	Note

4 AT Commands According to GSM07.05

The GSM 07.05 commands are for performing SMS and CBS related operations. SIM300C II supports both Text and PDU modes.

4.1 Overview of AT Commands According to GSM07.05

Command	Description
AT+CMGD	DELETE SMS MESSAGE
AT+CMGF	SELECT SMS MESSAGE FORMAT
AT+CMGL	LIST SMS MESSAGES FROM PREFERRED STORE
AT+CMGR	READ SMS MESSAGE
AT+CMGS	SEND SMS MESSAGE
AT+CMGW	WRITE SMS MESSAGE TO MEMORY
AT+CMSS	SEND SMS MESSAGE FROM STORAGE
AT+CMGC	SEND SMS COMMAND
AT+CNMI	NEW SMS MESSAGE INDICATIONS
AT+CPMS	PREFERRED SMS MESSAGE STORAGE
AT+CRES	RESTORE SMS SETTINGS
AT+CSAS	SAVE SMS SETTINGS
AT+CSCA	SMS SERVICE CENTER ADDRESS
AT+CSCB	SELECT CELL BROADCAST SMS MESSAGES
AT+CSDH	SHOW SMS TEXT MODE PARAMETERS
AT+CSMP	SET SMS TEXT MODE PARAMETERS
AT+CSMS	SELECT MESSAGE SERVICE

4.2 Detailed Descriptions of AT Commands According to GSM07.05

4.2.1 AT+CMGD Delete SMS message

AT+CMGD Delete SMS message	
Read Command AT+CMGD=?	Response +CMGD: <Range of SMS on SIM card can be deleted> OK
Write Command AT+CMGD=<index>	Response TA deletes message from preferred message storage <mem1> location <index>. OK If error is related to ME functionality: +CMS ERROR <err>
	Parameters <index> integer type; value in the range of location numbers supported by the associated memory
Reference GSM 07.05	

4.2.2 AT+CMGF Select SMS Message Format

AT+CMGF Select SMS Message Format	
Read Command AT+CMGF?	Response +CMGF: <mode> OK
	Parameters see write command
Test Command AT+CMGF=?	Response +CMGF: list of supported <mode>s OK
Write Command AT+CMGF=[<mode>]	Response TA sets parameter to denote which input and output format of messages to use. OK
	Parameters <mode> <u>0</u> PDU mode 1 text mode
Reference GSM 07.05	

4.2.3 AT+CMGL List SMS messages from preferred store

AT+CMGL List SMS messages from preferred store

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<p>Test Command</p> <p>AT+CMGL=?</p>	<p>Response</p> <p>+CMGL: list of supported <stat>s</p> <p>OK</p> <hr/> <p>Parameters</p> <p>see write command</p>																														
<p>Write Command</p> <p>AT+CMGL=[<stat>]</p>	<p>Parameters</p> <p>1) If text mode:</p> <table border="0"> <tr> <td><stat></td> <td>"REC UNREAD"</td> <td>Received unread messages (default)</td> </tr> <tr> <td></td> <td>"REC READ"</td> <td>Received read messages</td> </tr> <tr> <td></td> <td>"STO UNSENT"</td> <td>Stored unsent messages</td> </tr> <tr> <td></td> <td>"STO SENT"</td> <td>Stored sent messages</td> </tr> <tr> <td></td> <td>"ALL"</td> <td>All messages</td> </tr> </table> <p>2) If PDU mode:</p> <table border="0"> <tr> <td><stat></td> <td>0</td> <td>Received unread messages (default)</td> </tr> <tr> <td></td> <td>1</td> <td>Received read messages</td> </tr> <tr> <td></td> <td>2</td> <td>Stored unsent messages</td> </tr> <tr> <td></td> <td>3</td> <td>Stored sent messages</td> </tr> <tr> <td></td> <td>4</td> <td>All messages</td> </tr> </table> <p>Response</p> <p>TA returns messages with status value <stat> from message storage <mem1> to the TE. . If status of the message is 'received unread', status in the storage changes to 'received read'.</p> <p>1) If text mode (+CMGF=1) and command successful: for SMS-SUBMITs and/or SMS-DELIVERs:</p> <p>+CMGL:</p> <p><index>,<stat>,<oa/da>,[<alpha>],[<scts>],[<tooa/toda>,<length>]<CR><LF><data>[<CR><LF></p> <p>+CMGL:</p> <p><index>,<stat>,<da/oa>,[<alpha>],[<scts>],[<tooa/toda>,<length>]<CR><LF><data>[...]</p> <p>OK</p> <p>2) If PDU mode (+CMGF=0) and command successful:</p> <p>+CMGL:<index>,<stat>,[<alpha>],<length><CR><LF><pdu><CR><LF></p> <p>+CMGL: <index>,<stat>,[alpha],<length><CR><LF><pdu>[...]</p> <p>OK</p> <p>3)If error is related to ME functionality:</p> <p>+CMS ERROR: <err></p> <p>Parameters</p> <p><alpha> string type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific</p> <p><da> GSM 03.40 TP-Destination-Address Address-Value field in</p>	<stat>	"REC UNREAD"	Received unread messages (default)		"REC READ"	Received read messages		"STO UNSENT"	Stored unsent messages		"STO SENT"	Stored sent messages		"ALL"	All messages	<stat>	0	Received unread messages (default)		1	Received read messages		2	Stored unsent messages		3	Stored sent messages		4	All messages
<stat>	"REC UNREAD"	Received unread messages (default)																													
	"REC READ"	Received read messages																													
	"STO UNSENT"	Stored unsent messages																													
	"STO SENT"	Stored sent messages																													
	"ALL"	All messages																													
<stat>	0	Received unread messages (default)																													
	1	Received read messages																													
	2	Stored unsent messages																													
	3	Stored sent messages																													
	4	All messages																													

	string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by < toda >
< data >	<p>In the case of SMS: GSM 03.40 TP-User-Data in text mode responses; format:</p> <ul style="list-style-type: none"> -if < dcs > indicates that GSM 03.38 default alphabet is used and < fo > indicates that GSM 03.40 TP-User-Data-Header-Indication is not set: ME/TA converts GSM alphabet into current TE character set according to rules of Annex A -if < dcs > indicates that 8-bit or UCS2 data coding scheme is used, or < fo > indicates that GSM 03.40 TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)) <p>In the case of CBS: GSM 03.41 CBM Content of Message in text mode responses; format:</p> <ul style="list-style-type: none"> - if < dcs > indicates that GSM 03.38 default alphabet is used: ME/TA converts GSM alphabet into current TE character set according to rules of Annex A -if < dcs > indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number
< length >	integer type value indicating in the text mode (+CMGF=1) the length of the message body < data > (or < cdata >) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)
< index >	integer type; value in the range of location numbers supported by the associated memory
< oa >	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters; type of address given by < tooa >
< pdu >	In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). In the case of CBS: GSM 03.41 TPDU in hexadecimal format.
< scts >	GSM 03.40 TP-Service-Center-Time-Stamp in time-string format (refer < dt >)
< toda >	GSM 04.11 TP-Destination-Address Type-of-Address octet in

	integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129) <tooa> GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer<toda>)
Reference GSM 07.05	

4.2.4 AT+CMGR Read SMS message

AT+CMGR Read SMS message	
Test Command AT+CMGR=?	Response OK
Write Command AT+CMGR=<index>[,<mode>]	<p>Parameters</p> <p><index> integer type; value in the range of location numbers supported by the associated memory</p> <p><mode> 0 normal 1 not change status of the specified SMS record</p> <p>Response</p> <p>TA returns SMS message with location value <index> from message storage <mem1> to the TE. If status of the message is 'received unread', status in the storage changes to 'received read'.</p> <p>1) If text mode (+CMGF=1) and command successful: for SMS-DELIVER: +CMGR:<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data></p> <p>for SMS-SUBMIT: +CMGR:<stat>,<da>,[<alpha>],[<toda>,<fo>,<pid>,<dcs>,[<vp>],<sca>,<tosca>,<length>]<CR><LF><data></p> <p>2) If PDU mode (+CMGF=0) and command successful: +CMGR: <stat>,[<alpha>],<length><CR><LF><pdu></p> <p>OK</p> <p>3) If error is related to ME functionality: +CMS ERROR: <err></p> <p>Parameters</p> <p><alpha> string type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific</p> <p><da> GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by +CSCS); type of address given by <toda></p> <p><data> In the case of SMS: GSM 03.40 TP-User-Data in text mode responses; format: -if <dcs> indicates that GSM 03.38 default alphabet is used and</p>

	<p><fo> indicates that GSM 03.40 TP-User-Data-Header-Indication is not set: ME/TA converts GSM alphabet into current TE character set according to rules of Annex A</p> <p>-if <dc> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that GSM 03.40 TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))</p> <p>In the case of CBS: GSM 03.41 CBM Content of Message in text mode responses; format:</p> <p>- if <dc> indicates that GSM 03.38 default alphabet is used: ME/TA converts GSM alphabet into current TE character set according to rules of Annex A</p> <p>-if <dc> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number</p>
<dc>	depending on the command or result code: GSM 03.38 SMS Data Coding Scheme (default 0), or Cell Broadcast Data Coding Scheme in integer format
<fo>	depending on the command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format
<length>	integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)
<mid>	GSM 03.41 CBM Message Identifier in integer format
<oa>	GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted characters of the currently selected TE character set (specified by +CSCS);; type of address given by <toa>
<pdu>	In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). In the case of CBS: GSM 03.41 TPDU in hexadecimal format.
<sca>	GSM 04.11 RP SC address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are

	<p>are converted to characters of the currently selected TE character set (specified by +CSCS);; type of address given by <tosca></p> <p><scts> GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer <dt>)</p> <p><stat></p> <ul style="list-style-type: none"> 0 "REC UNREAD" Received unread messages 1 "REC READ" Received read messages 2 "STO UNSENT" Stored unsent messages 3 "STO SENT" Stored sent messages 4 "ALL" All messages <p><toda> GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129)</p> <p><tooa> GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer<toda>)</p> <p><tosca> GSM 04.11 RP SC address Type-of-Address octet in integer format (default refer <toda>)</p> <p><vp> depending on SMS-SUBMIT <fo> setting: GSM 03.40 TP-Validity-Period either in integer format (default 167) or in time-string format (refer <dt>)</p>
Reference	
GSM 07.05	

4.2.5 AT+CMGS Send SMS message

AT+CMGS Send SMS message	
Test Command	Response
AT+CMGS=?	OK

<p>Write Command</p> <p>1) If text mode (+CMGF=1): +CMGS=<da>[,<toda>]<CR> text is entered <ctrl-Z/ESC> ESC quits without sending</p> <p>2) If PDU mode (+CMGF=0): +CMGS=<length> ><CR> PDU is given <ctrl-Z/ESC></p>	<p>Parameters</p> <p><da> GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by +CSCS); type of address given by <toda></p> <p><toda> GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format 129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)</p> <p><length> integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)</p>
	<p>Response</p> <p>TA transmits SMS message from a TE to the network (SMS-SUBMIT). Message reference value <mr> is returned to the TE on successful message delivery. Value can be used to identify message upon unsolicited delivery status report result code.</p> <p>1) If text mode(+CMGF=1) and sending successful: +CMGS: <mr> OK</p> <p>2) If PDU mode(+CMGF=0) and sending successful: +CMGS: <mr> OK</p> <p>3)If error is related to ME functionality: +CMS ERROR: <err></p> <p>Parameters</p> <p><mr> GSM 03.40 TP-Message-Reference in integer format</p>
<p>Reference</p> <p>GSM 07.05</p>	

4.2.6 AT+CMGW Write SMS message to memory

<p>AT+CMGW Write SMS message to memory</p>	
<p>Test Command</p> <p>AT+CMGW=?</p>	<p>Response</p> <p>OK</p>

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Write Command	Response
<p>1) If text mode (+CMGF=1): AT+CMGW=[<oa/da>[,<tooa/toda>]] <CR> text is entered <ctrl-Z/ESC> <ESC> quits without sending</p>	<p>TA transmits SMS message (either SMS-DELIVER or SMS-SUBMIT) from TE to memory storage <mem2>. Memory location <index> of the stored message is returned. By default message status will be set to 'stored unsend', but parameter <stat> allows also other status values to be given.</p> <p>If writing is successful: +CMGW: <index> OK</p> <p>If error is related to ME functionality: +CMS ERROR: <err></p>
<p>2) If PDU mode (+CMGF=0): AT+CMGW=<length><CR> PDU is given <ctrl-Z/ESC></p>	<p>Parameters</p> <p><oa> GSM 03.40 TP-Originating-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by +CSCS);; type of address given by <tooa></p> <p><da> GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by +CSCS);; type of address given by <toda></p> <p><tooa> GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer <toda>)</p> <p><toda> GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format</p> <p>129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)</p> <p><length> integer type value indicating in the text mode (+CMGF=1) the length of the message body <data> (or <cdata>) in characters; or in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)</p> <p><pdu> In the case of SMS: GSM 04.11 SC address followed by GSM 03.40 TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)). In the case of CBS: GSM 03.41 TPDU in hexadecimal format.</p>

	<index> Index of message in selected storage <mem2>
Reference	
GSM 07.05	

4.2.7 AT+CMSS Send SMS message from storage

AT+CMSS Send SMS message from storage	
Test Command	Response
AT+CMSS=?	OK
Write Command	Response
AT+CMSS=<index>[,<da>[,<toda>]]	<p>TA sends message with location value <index> from message storage <mem2> to the network (SMS-SUBMIT). If new recipient address <da> is given, it shall be used instead of the one stored with the message. Reference value <mr> is returned to the TE on successful message delivery. Values can be used to identify message upon unsolicited delivery status report result code.</p> <p>1) If text mode(+CMGF=1) and sending successful: +CMGS: <mr> OK</p> <p>2) If PDU mode(+CMGF=0) and sending successful: +CMGS: <mr> OK</p> <p>3) If error is related to ME functionality: +CMS ERROR: <err></p>
	Parameters
	<p><index> integer type; value in the range of location numbers supported by the associated memory</p> <p><da> GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by +CSCS);; type of address given by <toda></p> <p><toda> GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format 129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)</p> <p><mr> GSM 03.40 TP-Message-Reference in integer format</p>
Reference	
GSM 07.05	

4.2.8 AT+CMGC Send SMS Command

AT+CMGC Send SMS Command	
Test Command	Response
AT+CMGC=?	OK
<p>Write Command</p> <p>1) If text mode (+CMGF=1): AT+CMGC=<fo> ><ct>[<pid>[,<mn>[,<da>[,<toda>]]]]<CR> text is entered <ctrl-Z/ESC> ESC quits without sending</p> <p>2) If PDU mode (+CMGF=0): AT+CMGC=<length><CR> PDU is given <ctrl-Z/ESC></p>	<p>Parameters</p> <p><fo> first octet of GSM 03.40 SMS-COMMAND (default 2) in integer format</p> <p><ct> GSM 03.40 TP-Command-Type in integer format (default 0)</p> <p><pid> GSM 03.40 TP-Protocol-Identifier in integer format (default 0)</p> <p><mn> GSM 03.40 TP-Message-Number in integer format</p> <p><da> GSM 03.40 TP-Destination-Address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by +CSCS);; type of address given by <toda></p> <p><toda> GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format 129 Unknown type(ISDN format number) 128 Unknown type(unknown number format) 161 National number type(ISDN format) 145 International number type(ISDN format) 177 Network specific number(ISDN format)</p> <p><length> integer type value indicating in PDU mode (+CMGF=0), the length of the actual TP data unit in octets (i.e. the RP layer SMSC address octets are not counted in the length)</p>

	<p>Response</p> <p>TA transmits SMS Command message from a TE to the network (SMS-COMMAND). Message reference value <mr> is returned to the TE on successful message delivery. Value can be used to identify message upon unsolicited delivery status report result code.</p> <p>1) If text mode(+CMGF=1) and sending successful: +CMGC: <mr> OK</p> <p>2) If PDU mode(+CMGF=0) and sending successful: +CMGC: <mr> OK</p> <p>3) If error is related to ME functionality: +CMS ERROR: <err></p> <p>Parameters</p> <p><mr> GSM 03.40 TP-Message-Reference in integer format</p>
<p>Reference</p> <p>GSM 07.05</p>	

4.2.9 AT+CNMI New SMS message indications

AT+CNMI New SMS message indications	
<p>Test Command</p> <p>AT+CNMI=?</p>	<p>Response</p> <p>+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) OK</p> <p>Parameters</p> <p>see write command</p>
<p>Read Command</p> <p>AT+CNMI?</p>	<p>Response</p> <p>+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr> OK</p> <p>Parameters</p> <p>see write command</p>
<p>Write Command</p> <p>AT+CNMI=[<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]</p>	<p>Response</p> <p>TA selects the procedure for how the receiving of new messages from the network is indicated to the TE when TE is active, e.g. DTR signal is ON. If TE is inactive (e.g. DTR signal is OFF), message receiving should be done as specified in GSM 03.38.</p> <p>OK</p> <p>If error is related to ME functionality: +CMS ERROR: <err></p>

Parameters	
<mode>	<p>0 Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications.</p> <p>1 Discard indication and reject new received message unsolicited result codes when TA-TE link is reserved (e.g. in on-line data mode). Otherwise forward them directly to the TE.</p> <p>2 Buffer unsolicited result codes in the TA when TA-TE link is reserved (e.g. in on-line data mode) and flush them to the TE after reservation. Otherwise forward them directly to the TE.</p> <p>3 Forward unsolicited result codes directly to the TE. TA-TE link specific inband technique used to embed result codes and data when TA is in on-line data mode.</p>
<mt>	<p>(the rules for storing received SMSs depend on its data coding scheme (refer GSM 03.38 [2]), preferred memory storage (+CPMS) setting and this value):</p> <p>0 No SMS-DELIVER indications are routed to the TE.</p> <p>1 If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code: +CMTI: <mem>,<index></p> <p>2 SMS-DELIVERs (except class 2) are routed directly to the TE using unsolicited result code: +CMT: [<alpha>],<length><CR><LF><pdu> (PDU mode enabled) or +CMT: <oa>, [<alpha>],<sects> [,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data> (text mode enabled; about parameters in italics, refer command Show Text Mode Parameters +CSDH). Class 2 messages result in indication as defined in <mt>=1.</p> <p>3 Class 3 SMS-DELIVERs are routed directly to TE using unsolicited result codes defined in <mt>=2. Messages of other classes result in indication as defined in <mt>=1.</p>
<bm>	<p>(the rules for storing received CBMs depend on its data coding scheme (refer GSM 03.38 [2]), the setting of Select CBM Types (+CSCB) and this value):</p> <p>0 No CBM indications are routed to the TE.</p> <p>2 New CBMs are routed directly to the TE using unsolicited result code: +CBM: <length><CR><LF><pdu> (PDU mode enabled) or</p>

	<p>+CBM: <sn>,<mid>,<dc>,<page>,<pages><CR><LF><data> (text mode enabled).</p> <p><ds> 0 No SMS-STATUS-REPORTs are routed to the TE. 1 SMS-STATUS-REPORTs are routed to the TE using unsolicited result code: +CDS: <length><CR><LF><pdu> (PDU mode enabled) or +CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (text mode enabled)</p> <p><bfr> 0 TA buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1...3 is entered (OK response shall be given before flushing the codes). 1 TA buffer of unsolicited result codes defined within this command is cleared when <mode> 1...3 is entered.</p>
	<p>Unsolicited result code</p> <p>+CMTI: <mem>,<index> Indication that new message has been received</p> <p>+CMT: ,<length><CR><LF><pdu> Short message is output directly</p> <p>+CBM: <length><CR><LF><pdu> Cell broadcast message is output directly</p>
Reference	
GSM 07.05	

4.2.10 AT+CPMS Preferred SMS Message Storage

AT+CPMS Preferred SMS Message Storage	
Read Command	Response
AT+CPMS?	<p>+CPMS:<mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>,<mem3>,<used3>,<total3> OK</p> <p>If error is related to ME functionality: +CMS ERROR</p>
	Parameters
	see write command
Test Command	Response
AT+CPMS=?	<p>+CPMS: (list of supported <mem1>s),(list of supported <mem2>s) ,(list of supported <mem3>s)</p>
	Parameters
	see write command

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<p>Write Command</p> <p>AT+CPMS= <code><mem1></code> <code>[,<mem2></code> <code>[,<mem3>]]</code></p>	<p>Response</p> <p>TA selects memory storages <code><mem1></code>, <code><mem2></code> and <code><mem3></code> to be used for reading, writing, etc.</p> <p>+CPMS:<code><used1></code>,<code><total1></code>,<code><used2></code>,<code><total2></code>,<code><used3></code>,<code><total3></code></p> <p>OK</p> <p>If error is related to ME functionality: +CMS ERROR:<code><err></code></p> <hr/> <p>Parameters</p> <p><mem1> Messages to be read and deleted from this memory storage "SM" SIM message storage</p> <p><mem2> Messages will be written and sent to this memory storage "SM" SIM message storage</p> <p><mem3> Received messages will be placed in this memory storage if routing to PC is not set ("CNMI") "SM" SIM message storage</p> <p><usedx> Number of messages currently in <code><memx></code></p> <p><totalx> Number of messages storable in <code><memx></code></p>
<p>Reference</p> <p>GSM 07.05</p>	

4.2.11 AT+CRES Restore SMS settings

<p>AT+CRES Restore SMS settings</p>	
<p>Test Command</p> <p>AT+CRES=?</p>	<p>Response</p> <p>+CRES: list of supported <code><profile></code>s</p> <p>OK</p>
<p>Write Command</p> <p>AT+CRES=[<profile>]</p>	<p>Response</p> <p>TA restores SMS settings for <code>+CMGF</code>, <code>+CNMI</code>, <code>+CSDH</code> from non-volatile memory to active memory.</p> <p>OK</p> <p>If error is related to ME functionality: +CMS ERROR:<code><err></code></p> <hr/> <p>Parameters</p> <p><profile> <u>0</u> manufacturer specific profile number where setting are to be stored</p>
<p>Reference</p> <p>GSM 07.05</p>	

4.2.12 AT+CSAS Save SMS settings

AT+CSAS Save SMS settings	
Test Command AT+CSAS=?	Response +CSAS: list of supported <profile>s OK
Write Command AT+CSAS=[<profile>]	Response TA saves current message service settings for +CMGF, +CNMI, +CSDH, to a non-volatile memory. OK If error is related to ME functionality: +CMS ERROR:<err>
	Parameters <profile> <u>0</u> manufacturer specific profile number where settings are to be stored
Reference GSM 07.05	

4.2.13 AT+CSCA SMS Service Center Address

AT+CSCA SMS Service Center Address	
Read Command AT+CSCA?	Response +CSCA: <sca>,<tosca> OK
	Parameters see write command
Test Command AT+CSCA=?	Response OK
Write Command AT+CSCA = <sca>[,<tosca>]	Response TA updates the SMSC address, through which mobile originated SMS are transmitted. In text mode, setting is used by send and writes commands. In PDU mode, setting is used by the same commands, but only when the length of the SMSC address coded into <pdu> parameter equals zero. Note: The command writes the parameters in NON-VOLATILE memory. OK
	Parameters <sca> GSM 04.11 RP SC address Address-Value field in string format; BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set (specified by +CSCS);; type of address given by <tosca> <tosca> Service center address format GSM 04.11 RP SC address Type-of-Address octet in integer format (default refer <toda>)

Reference	
GSM 07.05	

4.2.14 AT+CSCB Select cell broadcast SMS messages

AT+CSCB Select cell broadcast SMS messages													
Read Command	Response												
AT+CSCB?	+CSCB: <mode>,<mids>,<dcss> OK												
	Parameters												
	see write command												
Test Command	Response												
AT+CSCB=?	+CSCB: list of supported <mode>s OK												
	Parameters												
	see write command												
Write Command	Response												
AT+CSCB= [<mode>[,<mids>[,<dcss>]]]	TA selects which types of CBMs are to be received by the ME. Note: The command writes the parameters in NON-VOLATILE memory. OK												
	Parameters												
	<table border="0"> <tr> <td><mode></td> <td>0</td> <td>message types specified in <mids> and <dcss> are accepted</td> </tr> <tr> <td></td> <td>1</td> <td>message types specified in <mids> and <dcss> are not accepted</td> </tr> <tr> <td><mids></td> <td></td> <td>string type; all different possible combinations of CBM message identifiers (refer <mid>) (default is empty string); e.g. "0,1,5,320-478,922".</td> </tr> <tr> <td><dcss></td> <td></td> <td>string type; all different possible combinations of CBM data coding schemes (refer <dc>) (default is empty string); e.g. "0-3,5".</td> </tr> </table>	<mode>	0	message types specified in <mids> and <dcss> are accepted		1	message types specified in <mids> and <dcss> are not accepted	<mids>		string type; all different possible combinations of CBM message identifiers (refer <mid>) (default is empty string); e.g. "0,1,5,320-478,922".	<dcss>		string type; all different possible combinations of CBM data coding schemes (refer <dc>) (default is empty string); e.g. "0-3,5".
<mode>	0	message types specified in <mids> and <dcss> are accepted											
	1	message types specified in <mids> and <dcss> are not accepted											
<mids>		string type; all different possible combinations of CBM message identifiers (refer <mid>) (default is empty string); e.g. "0,1,5,320-478,922".											
<dcss>		string type; all different possible combinations of CBM data coding schemes (refer <dc>) (default is empty string); e.g. "0-3,5".											
Reference													
GSM 07.05													

4.2.15 AT+CSDH Show SMS text mode parameters

AT+CSDH Show SMS text mode parameters	
Read Command	Response
AT+CSDH?	+CSDH: <show> OK
	Parameters
	see write command
Test Command	Response
AT+CSDH=?	+CSDH: list of supported <show>s OK

	Parameters see write command
Write Command AT+CSDH=<show> w>	Response TA determines whether detailed header information is shown in text mode result codes. OK
	Parameters <show> <u>0</u> do not show header values defined in commands +CSCA and +CSMP (<sca>, <tosca>, <fo>, <vp>, <pid> and <dc>) nor <length>, <toda> or <tooa> in +CMT, +CMGL, +CMGR result codes in text mode 1 show the values in result codes
Reference GSM 07.05	

4.2.16 AT+CSMP Set SMS text mode parameters

AT+CSMP Set SMS text mode parameters	
Read Command AT+CSMP?	Response +CSMP:<fo>,<vp>,<pid>,<dc> OK
	Parameters see write command
Test Command AT+CSMP=?	Response +CSMP:(list of supported <fo>s),(list of supported <vp>s) OK
	Parameters see write command
Write Command AT+CSMP=[<fo> >[<vp>[,<pid>[,<dc>]]]]	Response TA selects values for additional parameters needed when SM is sent to the network or placed in a storage when text mode is selected (+CMGF=1). It is possible to set the validity period starting from when the SM is received by the SMSC (<vp> is in range 0.. 255) or define the absolute time of the validity period termination (<vp> is a string). Note: The command writes the parameters in NON-VOLATILE memory. OK

	Parameters
	<p><fo> depending on the command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format</p> <p><vp> depending on SMS-SUBMIT <fo> setting: GSM 03.40 TP-Validity-Period either in integer format (default 167) or in time-string format (refer <dt>)</p> <p><pid> GSM 03.40 TP-Protocol-Identifier in integer format.</p> <p><dc> GSM 03.38 SMS Data Coding Scheme in Integer format.</p>
Reference	
GSM 07.05	

4.2.17 AT+CSMS Select Message Service

AT+CSMS Select Message Service	
Read Command	Response
AT+CSMS?	<p>+CSMS: <service>,<mt>,<mo>,<bm></p> <p>OK</p>
	Parameters
	see write command
Test Command	Response
AT+CSMS=?	<p>+CSMS: list of supported <service>s</p> <p>OK</p>
	Parameters
	see write command
Write Command	Response
AT+CSMS= <service>	<p>+CSMS: <mt>,<mo>,<bm> OK</p> <p>If error is related to ME functionality:</p> <p>+CMS ERROR: <err></p>

	Parameters
<service>	<p><u>0</u> GSM 03.40 and 03.41 (the syntax of SMS AT commands is compatible with GSM 07.05 Phase 2 version 4.7.0; Phase 2+ features which do not require new command syntax may be supported (e.g. correct routing of messages with new Phase 2+ data coding schemes))</p> <p>128 SMS PDU mode - TPDU only used for sending/receiving SMSs.</p> <p><mt> Mobile Terminated Messages:</p> <p>0 Type not supported</p> <p>1 Type supported</p> <p><mo> Mobile Originated Messages:</p> <p>0 Type not supported</p> <p>1 Type supported</p> <p><bm> Broadcast Type Messages:</p> <p>0 Type not supported</p> <p>1 Type supported</p>
Reference	
GSM 07.05	

4.3 Configuration commands for SMS

AT+SMALPHAID	CONFIGURE ALPHAID LOOKUP WHEN DISPLAYING SMS's
AT+SMEXTRAINFO	CONFIGURE EXTRA SMS INFORMATION DISPLAY
AT+SMEXTRAUNSOL	CONFIGURE EXTRA UNSOLICITED SMS MESSAGE

4.3.1 AT+SMALPHAID CONFIGURE ALPHAID LOOKUP WHEN DISPLAYING SMS's

AT+SMALPHAID CONFIGURE ALPHAID LOOKUP WHEN DISPLAYING SMS's	
Test command	Response
+SMALPHAID=?	+ SMALPHAID: (list of supported <mode>s)
	OK
	Parameter
	See set command
Read command	Response
+SMALPHAID?	+SMALPHAID :<mode>
	OK
	Parameter
	See set command
Set command	Response
+SMALPHAID	OK
=<mode>	Parameter

	<p><mode> Enable/disable the Alphaid lookup for phonenumbers when displaying sms</p> <p><u>0</u> disable the Alphaid(default)</p> <p>1 enable the Alphaid</p>
Reference	Note

4.3.2 AT+SMEXTRAINFO CONFIGURE EXTRA SMS INFORMATION DISPLAY

AT+SMEXTRAINFO CONFIGURE EXTRA SMS INFORMATION DISPLAY

<p>Test command</p> <p>+SMEXTRAINFO=?</p>	<p>Response</p> <p>+SMEXTRAINFO: (list of supported <mode>s)</p> <p>OK</p> <p>Parameter</p> <p>See set command</p>
<p>Read command</p> <p>+ SMEXTRAINFO?</p>	<p>Response</p> <p>+ SMEXTRAINFO :<mode></p> <p>OK</p> <p>Parameter</p> <p>See set command</p>
<p>Set command</p> <p>+SMALPHAID</p> <p>=<mode></p>	<p>Response</p> <p>OK</p> <p>Parameter</p> <p><mode> Enable/disable the extra non-standard information on some commands and messages</p> <p><u>0</u> disable the extra non-standard information</p> <p>1 enable the extra non-standard information</p>
Reference	<p>Note</p> <p>e.g. Adds an extra field onto the AT+CSCA command:</p> <p>+CSCA: "+447802000332",145,"BT Cellnet SMS"</p>

4.3.3 AT+SMEXTRAUNSOL CONFIGURE EXTRA UNSOLICITED SMS MESSAGE

AT+SMEXTRAUNSOL CONFIGURE EXTRA UNSOLICITED SMS MESSAGE

<p>Test command</p> <p>+SMEXTRAUNSOL=?</p>	<p>Response</p> <p>+ SMEXTRAUNSOL: (list of supported <mode>s)</p> <p>OK</p> <p>Parameter</p> <p>See set command</p>
<p>Read command</p> <p>+ SMEXTRAUNSOL?</p>	<p>Response</p> <p>+ SMEXTRAUNSOL :<mode></p>

	OK Parameter See set command
Set command +SMEXTRAUNSOL =<mode>	Response OK Parameter <mode> Enable/disable the extra unsolicited messages. 0 disable the extra unsolicited message 1 enable the extra unsolicited message
Reference	Note

5 AT Commands for GPRS Support

5.1 Overview of AT Commands for GPRS Support

Command	Description
AT+CGATT	ATTACH/DETACH FROM GPRS SERVICE
AT+CGDCONT	DEFINE PDP CONTEXT
AT+CGQMIN	QUALITY OF SERVICE PROFILE (MINIMUM ACCEPTABLE)
AT+CGQREQ	QUALITY OF SERVICE PROFILE (REQUESTED)
AT+CGACT	CONTEXT ACTIVATION
AT+CGDATA	ENTER DATA STATE
AT+CGPADDR	SHOW PDP ADDRESS
AT+CGCLASS	GPRS MOBILE STATION CLASS
AT+CGEREP	CONTROL UNSOLICITED GPRS EVENT REPORTING
AT+CGREG	NETWORK REGISTRATION STATUS
AT+CGSMS	SELECT SERVICE FOR MO SMS MESSAGES
AT+CGCOUNT	GPRS PACKET COUNTERS

5.2 Detailed Descriptions of AT Commands for GPRS Support

5.2.1 AT+CGATT Attach or detach from GPRS service

AT+CGATT Attach or detach from GPRS service	
Test command +CGATT=?	Response +CGATT: (list of supported <state>s) Parameter See set command
Read command +CGATT?	Response +CGATT:<state> Parameter

	See set command
Set command +CGATT=[<state >]	Response OK ERROR Parameter <state> indicates the state of GPRS attachment 0 – detached 1 – attached Other values are reserved and will result in an ERROR response to the execution command.
Reference GSM07.07	Note

5.2.2 AT+CGDCONT Define PDP context

AT+CGDCONT Define PDP context	
Test command +CGDCONT=?	Response +CGDCONT: (range of supported <cid>s), <PDP_ type>, <APN>, <PDP_addr>, (list of supported <data_comp>s), <list of supported <head_comp>s), Parameter See set command
Read command +CGDCONT?	Response +CGDCONT: <cid>,<PDP_type>,<APN>,<PDP_addr>,<data_comp>,<head_comp> [<CR><LF>+CGDCONT: <cid>,<PDP_type>,<APN>,<PDP_addr>,<data_comp>,<head_comp> [...]] Parameter See set command
Set command +CGDCONT=[<c id>[,<PDP_type>, [APN>[,<PDP_ad dr>[,<d_comp>[, <h_comp>]]]]]]	Response OK ERROR Parameter <cid> (PDP Context Identifier) a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value=1) is returned by the test form of the command. <PDP_type> (Packet Data Protocol type) a string parameter which specifies the type of packet data protocol X25 ITU-T/CCITT X.25 layer 3 IP Internet Protocol (IETF STD 5) OSPIH Internet Hosted Octet Stream Protocol PPP Point to Point Protocol (IETF STD 51)

	<p><APN> (Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network. If the value is null or omitted, then the subscription value will be requested.</p> <p><PDP_addr> a string parameter that identifies the MT in the address space applicable to the PDP. If the value is null or omitted, then a value may be provided by the TE during the PDP startup procedure or, failing that, a dynamic address will be requested. The read form of the command will continue to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using the +CGPADDR command.</p> <p><d_comp> a numeric parameter that controls PDP data compression 0 – off (default if value is omitted) 1 – on Other values are reserved</p> <p><h_comp> a numeric parameter that controls PDP data compression 0 – off (default if value is omitted) 1 – on Other values are reserved Note: At present only one data compression algorithm (V.42bis) is provided in SNDCP. If and when other algorithms become available, a command will be provided to select one or more of these.</p>
Reference GSM07.07	Note

5.2.3 AT+CGQMIN Quality of service profile (minimum acceptable)

AT+CGQMIN Quality of service profile (minimum acceptable)	
Test command +CGQMIN=?	<p>Response</p> <p>+CGQMIN: <PDP_type>,(list of supported <precedence>s),(list of supported <delay>s),(list of supported <reliability>s),<list of supported <peak>s),(list of supported <mean>s) [<CR><LF>+CGQMIN:<PDP_type>,(list of supported <precedence>s),(list of supported <delay>s),(list of supported <reliability>s),<list of supported <peak>s),(list of supported <mean>s) [...]]</p> <p>Parameter See set command</p>
Read command +CGQMIN?	<p>Response</p> <p>+CGQMIN:<cid>,<precedence>,<delay>,>reliability>,<peak>,<mean> [<CR><LF>+CGQMIN:<cid>,<precedence>,<delay>,<reliability>,<peak>,<</p>

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	<p><mean> [...] Parameter See set command</p>
<p>Set command +CGQMIN=[<state>]</p>	<p>Response OK ERROR Parameter <cid> a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command) The following parameter are defined in GSM 03.60 <precedence> a numeric parameter which specifies the precedence class <delay> a numeric parameter which specifies the delay class <reliability> a numeric parameter which specifies the reliability class <peak> a numeric parameter which specifies the peak throughput class <mean> a numeric parameter which specifies the mean throughput class</p>
<p>Reference GSM07.07</p>	<p>Note</p>

5.2.4 AT+CGQREQ Quality of service profile (requested)

AT+CGQREQ Quality of service profile (requested)	
<p>Test command +CGQREQ=?</p>	<p>Response +CGQREQ: <PDP_type>,(list of supported <precedence>s),(list of supported <delay>s),(list of supported <reliability>s),<list of supported <peak>s),(list of supported <mean>s) [<CR><LF>+CGQREQ:<PDP_type>,(list of supported <precedence>s),(list of supported <delay>s),(list of supported <reliability>s),<list of supported <peak>s),(list of supported <mean>s) [...] Parameter See set command</p>
<p>Read command +CGQREQ?</p>	<p>Response +CGQREQ:<cid>,<precedence>,<delay>,>reliability>,<peak>,<mean> [<CR><LF>+CGQMIN:<cid>,<precedence>,<delay>,<reliability>,<peak>,<mean> [...] Parameter See set command</p>
<p>Set command +CGQREQ=[<cid> >[,<precedence>[,<delay>[,<reliabil</p>	<p>Response OK ERROR Parameter</p>

<p>ity>[,<peak>[,<mean>]]]]]]</p>	<p><cid> a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command)</p> <p>The following parameter are defined in GSM 03.60</p> <p><precedence> a numeric parameter which specifies the precedence class</p> <p><delay> a numeric parameter which specifies the delay class</p> <p><reliability> a numeric parameter which specifies the reliability class</p> <p><peak> a numeric parameter which specifies the peak throughput class</p> <p><mean> a numeric parameter which specifies the mean throughput class</p>
<p>Reference GSM07.07</p>	<p>Note</p>

5.2.5 AT+CGACT PDP context activate or deactivate

<p>AT+CGACT PDP context activate or deactivate</p>	
<p>Test command +CGACT=?</p>	<p>Response +CGACT: (list of supported <state>s)</p> <p>Parameter See set command</p>
<p>Read command +CGACT?</p>	<p>Response +CGACT:<cid>,<state> [<CR><LF>+CGACT:<cid>,<state> [...]]</p> <p>Parameter See set command</p>
<p>Set command +CGACT=[<state>[,<cid>[,<cid>[,...]]]]</p>	<p>Response OK NO CARRIER ERROR</p> <p>Parameter <state> indicates the state of PDP context activation 0 – deactivated 1 – activated Other values are reserved and will result in an ERROR response to the execution command.</p> <p><cid> a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command)</p>
<p>Reference GSM07.07</p>	<p>Note If context is deactivated successfully, NO CARRIER is returned</p>

5.2.6 AT+CGDATA PDP context activate or deactivate

<p>AT+CGDATA PDP context activate or deactivate</p>	
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Test command +CGDATA=?	Response +CGDATA: (list of supported <L2P>s) Parameter See set command
Set command +CGDATA=[<L2P>[,<cid>[,<cid>[,...]]]]	Response OK ERROR Parameter <L2P> a string parameter that indicates the layer 2 protocol to be used between the TE and MT: PPP – Point to Point protocol for a PDP such as IP Other values are not supported and will result in an ERROR response to the execution command. <cid> a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command)
Reference GSM07.07	Note The command does not fully implement the CGDATA command as specified in GSM 07.07. The command will not enter data state once the PDP context has been activated and will simply generate the result code “OK” if the context has been successfully activated.

5.2.7 AT+CGPADDR Show PDP address

AT+CGPADDR Show PDP address	
Test command +CGPADDR=?	Response +CGPADDR: (list of defined <cid>s) Parameter See set command
Set command +CGPADDR=[<cid>[,<cid>[,...]]]	Response +CGPADDR: <cid>,<PDP_addr> [<CR><LF>+CGPADDR:<cid>,<PDP_addr>[...]] ERROR Parameter <cid> a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command) If no <cid> is specified, the addresses for all defined contexts are returned. <PDP_addr> a string that identifies the MT in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the +CGDCONT command when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>. <PDP_address> is omitted if none is available.

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Reference	Note
GSM07.07	This command dictates the behavior of PPP in the ME but not that of any other GPRS-enabled foreground layer, e.g. browser.

5.2.8 AT+CGCLASS GPRS mobile station class

AT+CGCLASS GPRS mobile station class	
Test command +CGCLASS=?	Response +CGCLASS: (list of supported <class>s) Parameter See set command
Read command +CGCLASS?	Response +CGCLASS: <class> Parameter See set command
Set command +CGCLASS= [<state> [, <cid> [, <cid> [...]]]]	Response OK ERROR Parameter <class> a string parameter which indicates the GPRS mobile class (in descending order of functionality) A class A (highest) B class B C class C CG class C in GPRS only mode CC class C in circuit switched only mode (lowest)
Reference GSM07.07	Note Class A is not supported by the SIMCOM GPRS solution. Class C is only supported for <class> values of "CG" and "C"

5.2.9 AT+CGEREP Control unsolicited GPRS event reporting

AT+CGEREP Control unsolicited GPRS event reporting	
Test command +CGEREP=?	Response +CGEREP: (list of supported <modes>s) Parameter See set command
Read command +CGEREP?	Response +CGEREP:<mode> Parameter See set command
Set command +CGEREP=<mode>	Response OK ERROR

	<p>1 registered</p> <p><lac> string type; two byte location area code in hexadecimal format (e.g. "00C3" equals 195 in decimal)</p> <p><ci> string type; two bytes cell ID in hexadecimal format</p>
Reference GSM07.07	Note For parameter stat, options 0 and 1 supported only.

5.2.11 AT+CGSMS Select service for MO SMS messages

AT+CGSMS Select service for MO SMS messages	
Test command +CGSMS=?	<p>Response +CGSMS: (list of currently available <service>s)</p> <p>Parameter See set command</p>
Read command +CGSMS?	<p>Response +CGSMS:<service></p> <p>Parameter See set command</p>
Set command +CGSMS=[<service>]	<p>Response OK ERROR</p> <p>Parameter <service> a numeric parameter which indicates the service or service preference to be used</p> <ul style="list-style-type: none"> 0 GPRS 1 circuit switched 2 GPRS preferred (use circuit switched if GPRS not available) 3 circuit switched preferred (use GPRS if circuit switched not available)
Reference GSM07.07	Note The circuit switched service route is the default method

5.2.12 AT+CGCOUNT GPRS packet counters

AT+CGCOUNT GPRS packet counters	
Test command +CGCOUNT=?	<p>Response +CGCOUNT: (list of supported <actions>s),(list of supported <cid>s),(list of supported <period>s)</p> <p>Parameter See set command</p>
Read command +CGCOUNT?	<p>Response +CGCOUNT:<cid>,<state>[,<period>] [<CR><LF>+CGCOUNT:<cid>,<state>[,<period>]</p>

GNS-30CR AT Command Set

	<p>[...]</p> <p>Parameter</p> <p><state> indicates the state of the GPRS counters</p> <p>1 – periodic. The <period> will then also be displayed</p> <p>2 – on GPRS context deactivation. <period> is N/A in this case</p> <p>For other parameters see set command</p>
<p>Set command</p> <p>+CGCOUNT=<action>,<cid>[,<period>]</p>	<p>Response</p> <p>OK</p> <p>ERROR</p> <p>Parameter</p> <p><action> indicates the action to be performed</p> <p>0 – reset counter for specified <cid></p> <p>1 – read counter for specified <cid></p> <p>2 – start reporting counter periodically for specified <cid> defined by <period>. Counter is also reported on context deactivation.</p> <p>3 – report counter on context deactivation for specified <cid></p> <p>4 – stop reporting counter on specified <cid></p> <p><cid> a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command)</p> <p><period> period for periodic packet counter reporting in seconds</p> <p>Unsolicited Result</p> <p>Once a counter has been setup for a <cid> the counter will be displayed as</p> <p>Following either periodically or when the context has been deactivated:</p> <p><uc> a numeric 32 parameter which indicates the number of compressed bytes transferred in the uplink direction displayed in decimal format</p> <p><uu> a numeric 32 bit parameter which indicates the number of uncompressed bytes transferred in the uplink direction displayed in decimal format</p> <p><un> a numeric 32 bit parameter which indicate the number of N-PDUs (i.e. IP packets) transferred in the uplink direction displayed in decimal format</p> <p><dc> a numeric 32 bit parameter which indicates the number of compressed bytes transferred in the downlink direction displayed in decimal format</p> <p><dn> a numeric 32 bit parameter which indicates the number of N-PDUs (i.e. IP packets) transferred in the downlink direction displayed in decimal format</p> <p>Note that the current counter values will be displayed immediately this command is entered for any action (i.e. even stopping the counter display will generate the above unsolicited result code for the cancelled <cid>)</p>
<p>Reference</p> <p>GSM07.07</p>	<p>Note</p> <p>This command displays byte and IP packet counters for GPRS contexts. It is</p>

6.1 Overview of Commands, Responses and Result codes

The following tables outline the AT commands, responses and unsolicited result codes applicable for control of the SIM Application Toolkit protocol via the AT command interface.

Notation	Description
+STC:	<p>Unsolicited result code issued by the CI Task to the application to indicate either:</p> <ul style="list-style-type: none"> there is no STK application available on the SIM there is a proactive SIM command to retrieve and action <p>end of the current proactive command session – used if the user wishes to terminate the current proactive SIM session.</p>
+STGC=...	<p>AT command to Get Command parameters for a proactive SIM command from the CI Task. This will be sent from the application after unsolicited result code +STC: <cmdId> informs it the SIM has issued a proactive SIM command to be performed.</p>
+STCR=...	<p>AT command to provide Command Response parameters for a previously executed proactive SIM command. Its purpose is to relay response data to the lower layers of the SIMCOM protocol stack to allow the Terminal Response SIM command (see [10]) to be returned to the SIM for the current proactive command.</p>
+STPD=...	<p>AT command to provide Profile Download parameters to the CI Task. This contains information relating to the SIM Application Toolkit capabilities of the application, and is used by the SIMAT task to limit its SAT instruction set accordingly.</p> <p>Any application plugging into the serial port should send this command or it will be assumed that the application has no SAT support and will therefore never receive any SAT related information.</p>
+STMS=...	<p>AT Command for selecting a menu option. On power-up the SIM will send the Set-Up-Menu proactive indication. The accessory should load and display the menu structure. This AT command should be used to inform SIM300C of the item selected from the list.</p>
+STEV=...	<p>This command is used to inform the MS that an MMI specific event has occurred.</p>
+STRT=...	<p>AT command for setting the automatic response timer used by the CI Task to issue the Terminal Response (no user response) to a proactive command which has not been processed. The default response time is ten seconds, but it is recommended this is increased when performing SIM Toolkit FTA.</p>
+STTONE=...	<p>AT command for playing SIM Toolkit Tones in both idle and dedicated mode. This command should be used in conjunction with the Play Tone proactive command.</p>

6.2 Definition of Unsolicited Result Codes

Not all proactive commands are required to be visible to the application. For example, the proactive commands More Time and Provide Local Information are transparent and therefore do not require an unsolicited result code to be sent to the user. The commands, which are relevant for user interaction in one form or another, are listed in the following tables.

The output generated for strings is controlled by the +CMGF AT command. The factory default for string output is PDU mode where strings are output in HEX. The tables below illustrate the alternative mechanism of TEXT output; this is obtained by using the +CMGF AT command with a parameter of one.

6.2.1 +STC Command

+STC Informs the application of the type of proactive SIM command data awaiting retrieval.

Result Code: +STC: <cmdId>	Parameters <cmdId> Hexadecimal format of Type of Command . Unique identifier for the current SIM Toolkit proactive command issued by the SIM - The following values are supported: '10' Get Acknowledgement For Set Up Call command '15' Launch Browser command '20' Play Tone command '21' Display Text command '22' Get Inkey command '23' Get Input command '24' Select Item command '25' Set Up Menu command '28' Set Up Idle Mode Text command '40' Open Channel command '14' Send DTMF command '05' Set Up Event List command '81' End of proactive session
Reference	Note The special case is +STC: 0 that is issued when there is no STK application accessible on the SIM.

The following tables in this section detail the information that is distributed to the application for proactive indications using unsolicited result codes. The information applicable to the proactive command is sent to the application using the +STUD (SIM Toolkit Unsolicited Data) results code.

6.2.2 Send SM

Command data for Send Short Message unsolicited proactive command	
Result Code +STUD: 13[,<alphaId>[,<iconId>,<dispMode>]]	Parameters 13 hex notation: Command Type value. See Section 6.2 for values. <alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding ‘0’ : Special case indicating SIM provided a null alphaId and user should not be informed of SMS transaction. If alphaId field is not present it is up to the ME to decide whether to inform the user or not. <iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag <dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) display with alphaId or text string
Reference	Note

6.2.3 Send SS

Command data for Send SS unsolicited proactive command	
Result Code +STUD: 11[,<alphaId>[,<iconId>,<dispMode>]]	Parameters 11 hex notation: Command Type value. See Section 6.2 for values. <alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding to inform user of current transaction. ‘0’ : Special case indicating SIM provided a null alphaId and user should not be informed of SS transaction. If alphaId field is not present it is up to the ME to decide whether to inform the user or not. <iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag <dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string
Reference	Note

6.2.4 Send USSD

Command data for Send USSD unsolicited proactive command	
Result Code +STUD: 12[,<alphaId>[,<iconId>,<dispMode>]]	Parameters 12 hex notation: Command Type value. See Section 6.2 for values. <alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding to inform user of current transaction. ‘0’ : Special case indicating SIM provided a null alphaId and user should not be informed of USSD transaction. If alphaId field is not present it is up to the ME to decide whether to inform the user or not. <iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag <dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string
Reference	Note

6.2.5 Set Up Call

Command data for Set Up Call unsolicited proactive command	
Result Code +STUD: 10,<alphaId>,<dialstring>,<cps>[,<iconId>,<dispMode>]	Parameters 10 hex notation: Command Type value. See Section 6.2 for values. <alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding <dialstring> string format: using either SMS default alphabet or UCS2 alpha field coding <cps> string format: using either SMS default alphabet or UCS2 alpha field coding <iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag <dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string
Reference	Note

6.2.6 Close Channel

Command data for Close Channel proactive command	
Result Code +STUD: 41 [,<alphaId>[,<iconId>,<dispMode>]]	Parameters 41 hex notation: Command Type value. See Section 6.2 for values. <alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding to inform user of current transaction. ‘0’ : Special case indicating SIM provided a null alphaId and the user should not be informed of the current transaction. If alphaId field is not present it is up to the ME to decide whether or not to inform the user. <iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag <dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string
Reference	Note

6.2.7 Receive Data

Command data for Receive Data proactive command	
Result Code +STUD: 42 ,<length>[,<alphaId>[,<iconId>,<dispMode>]]	Parameters 42 hex notation: Command Type value. See Section 6.2 for values. <length> integer type: number of bytes requested in command <alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding to inform user of current transaction. ‘0’ : Special case indicating SIM provided a null alphaId and the user should not be informed of the current transaction. If alphaId field is not present it is up to the ME to decide whether or not to inform the user. <iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag <dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string
Reference	Note

6.2.8 Send Data

Command data for Send Data proactive command	
Result Code +STUD: 43,<length>,<data>[,<alphaId>[,<iconId>,<dispMode>]]	Parameters 43 hex notation: Command Type value. See Section 6.2 for values. <length> integer type: number of bytes of data transmitted <data> string type: channel data – coded as 8bit data. This appears in BCD notation with two TE characters representing one byte of actual data. <alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding to inform user of current transaction. '0' : Special case indicating SIM provided a null alphaId and the user should not be informed of the current transaction. If alphaId field is not present it is up to the ME to decide whether or not to inform the user. <iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag <dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string
Reference	Note

6.2.9 Language Notification

Command data for Language Notification proactive command	
Result Code +STUD: 35[,<language>]	Parameters 35 hex notation: Command Type value. See Section 6.2 for values. <language> language code: coded as pair of alphanumeric characters, as given in ISO 639 [12].
Reference	Note The language parameter is optional. Its inclusion in the result code indicates a specific language notification. Omission from the result code indicates a non-specific language notification, which cancels a previous specific language notification

6.2.10 Run AT

Command data for Run AT Command proactive command	
Result Code +STUD: 34[,<alphaId>[,<	Parameters 34 hex notation: Command Type value. See Section 6.2 for values.

<p>iconId>,<dispMode>]]</p>	<p><alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding to inform user of current transaction. '0' : Special case indicating SIM provided a null alphaId and the user should not be informed of the current transaction. If alphaId field is not present it is up to the ME to decide whether or not to inform the user.</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM. 0 No icon 1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string</p>
<p>Reference</p>	<p>Note</p>

6.2.11 Refresh

<p>Command data for Refresh proactive command</p>	
<p>Result Code +STUD: 01,<refMode>[,<numFiles>,<fileList>]</p>	<p>Parameters</p> <p>01 hex notation: Command Type value. See Section 6.2 for values.</p> <p><refMode > hex notation: command Qualifier information giving the type of Refresh to be performed. 00 SIM Initialisation and Full File Change Notification 01 File Change Notification 02 SIM Initialisation and File Change Notification 03 SIM Initialisation 04 SIM Reset</p> <p><numFiles> integer: gives number of Files in the list</p> <p><fileList> string type, hex notation: gives the full paths for the SIM files, each file being delimited by commas within the string</p>
<p>Reference</p>	<p>Note</p> <p>For <refMode> values '01' and '02' file list data must be provided by the SIM. For all other <refMode> values any included file list information will be ignored. If the optional <fileList> parameter is not present in the result code, we assume that <refMode>s '01' and '02' cannot occur.</p>

6.3 ME Initialisation Procedure

On powering up the ME the SIM's Phase file (EF 0x6FAE) is read. If this indicates the SIM is of Phase 2+ or greater the ME sends a Terminal Profile command (see [3]) to the SIM to inform it of the SIM Application Toolkit capabilities of the ME. The SIM then limits its instruction set based on this profile. This terminal profile data is configurable and resides in an application layer configuration file for ease of customisation. On sending the Profile Download command The SIM will respond with signals that will provide the ME with information on whether the SIM has a SIM Toolkit application present.

If on completing ME initialisation the stack determines that the SIM has no STK capability an unsolicited result code +STC: 0 will be issued to indicate to the user that there is no SIM toolkit availability during the current session.

However, if STK information is available for use by the ME/application then the lower layers of the SIMCom Protocol Stack are informed and the first proactive command to be sent from the SIM to the user will be the Set Up Menu command to allow the available STK menu to be added to the ME's own menu structure (i.e. unsolicited result code +STC: 25 will be issued by the CI Task after it has received this proactive command from the SIMAT task.

6.4 Definition of AT Commands

This section details the AT commands for driving an STK application on the SIM.

6.4.1 AT+STGC SIM Toolkit Get Command parameters

Get proactive Command parameters	
Write Command	Response
+STGC=<cmdId> >	+STGC: <cmdId>,<data>
	Parameter
	<cmdId>hex notation: Command Type value See Section 6.2 for values.
	<data> proactive command specific data, dependent on <cmdId>
Reference	

The <data> information varies between proactive SIM commands, according to the type of command issued by the SIM, as given by <cmdId>. This reflects the useful part of the proactive command from a user's perspective. The result codes returned to the application on a command by command basis are outlined in the following subsections:

6.4.1.1 Display Text

Command data for Display Text proactive command	
Result Code	Parameters
+STGC: 21,<dc>,<text>,<data>	21 hex notation: Command Type value. See Section 6.2 for values.

<p><priority>,<clear>[,<iconId>,<dispMode>[,<response>]]</p>	<p><dcsc> integer: data coding scheme used for <text>. The schemes used are as per GSM 03.38 for SMS</p> <ul style="list-style-type: none"> <u>0</u> 7bit GSM default alphabet (packed) 4 8bit data 8 UCS2 alphabet <p><text> string format: text string in <dcsc> format</p> <p><priority> integer: display priority information</p> <ul style="list-style-type: none"> <u>0</u> Normal priority 1 High priority <p><clear> integer: mode of clearing message</p> <ul style="list-style-type: none"> <u>0</u> Clear after delay 1 User clears message <p><iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM</p> <ul style="list-style-type: none"> 0 No icon 1..255 Icon tag <p><dispMode> integer: denotes use of associated icon</p> <ul style="list-style-type: none"> 0 Display icon only (replaces any text string or alphaId) 1 Display with alpha Id or text string <p><response></p> <ul style="list-style-type: none"> 0 normal response expected 1 immediate response expected.
<p>Reference</p>	<p>Note</p>

6.4.1.2 Get Inkey

Command data for Get Inkey proactive command	
<p>Result Code</p> <p>+STGC: 22,<dcsc>,<text>,<response>,<helpInfo>[,<iconId>,<dispMode>]</p>	<p>Parameters</p> <p>22 hex notation: Command Type value. See Section 6.2 for values.</p> <p><dcsc> integer: data coding scheme used for <text> The schemes used are as per GSM 03.38 for SMS</p> <ul style="list-style-type: none"> <u>0</u> 7bit GSM default alphabet (packed) 4 8bit data 8 UCS2 alphabet <p><text> string format: text string in <dcsc> format</p> <p><response> integer: expected response character format.</p> <ul style="list-style-type: none"> 0 Digits (0-9, *, # and +) only 1 SMS default alphabet 2 UCS2 alphabet 3 Yes/No response only <p><helpInfo></p> <ul style="list-style-type: none"> <u>0</u> no help information available 1 help information available <p><iconId> Numeric tag for the icon to be displayed –</p>

	<p>corresponds to the index in the Image file on the SIM</p> <p>0 No icon</p> <p>1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon</p> <p>0 display icon only (replaces any text string or alphaId)</p> <p>1 display with alpha Id or text string</p>
Reference	<p>Note</p> <p>Entry of the Digits only response is the same regardless of alphabet set – coding of this response is performed within the SIMCOM Protocol Stack when creating the Terminal Response</p>

6.4.1.3 Get Input

Command data for Get Input proactive command

Result Code	Parameters
<p>+STGC:</p> <p>23,<dc>,<text>,<response>,<echo>,<helpInfo>,<minLgth>,<maxLgth>[,<dc>,<default>[,<iconId>,<dispMode>]]</p>	<p>23 hex notation: Command Type value. See Section 6.2 for values.</p> <p><dc> integer: data coding scheme used for <text> or <default>. The schemes used are as per GSM 03.38 for SMS.</p> <p>0 7bit GSM default alphabet (packed)</p> <p>4 8bit data</p> <p>8 UCS2 alphabet</p> <p><text> string format: text string in <dc> format</p> <p><response> integer: expected response characters and their format.</p> <p>1 Digits (0-9, *, # and +) only from SMS default alphabet (unpacked)</p> <p>2 Digits (0-9, *, # and +) only from SMS default alphabet (packed)</p> <p>3 Digits from UCS2 alphabet</p> <p>4 SMS default alphabet (unpacked)</p> <p>5 SMS default alphabet (packed)</p> <p>6 UCS2 alphabet</p> <p><echo> 0 echo input to display</p> <p>1 no echo allowed (see Note)</p> <p><helpInfo> 0 no help information available</p> <p>1 help information available</p> <p><minLgth> Integer: minimum length of expected response,in range 0..255 0 indicates no minimum length requirement</p> <p><maxLgth> Integer: maximum length of expected response, in range 1..255 255 indicates no maximum length requirement</p> <p><iconId> Numeric tag for the icon to be displayed –corresponds to the index in the Image file on the SIM (see [10])</p> <p>0 No icon</p>

	<p>1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon</p> <p>0 display icon only (replaces any text string or alphaId)</p> <p>1 display with alpha Id or text string</p>
Reference	<p>Note</p> <p>Actual input string may not be displayed in this case but can alternatively be masked to indicate key entry using characters from the set (0-9, * and #).</p> <p>If <minLgth> and <maxLgth> are equal, the response string is to be of fixed length.</p>

6.4.1.4 Play Tone

Command data for Play Tone proactive command

<p>Result Code</p> <p>+STGC:</p> <p>20[,<alphaId>[,<tone>[,<duration>]]]</p>	<p>Parameters</p> <p>20 hex notation: Command Type value. See Section 6.2 for values.</p> <p><alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding</p> <p><tone> integer: identifies requested tone type. SST denotes a Standard Supervisory Tone, MPT denotes an ME Proprietary Tone.</p> <ul style="list-style-type: none"> 1 Dial (SST) 2 Called subscriber busy (SST) 3 Congestion (SST) 4 Radio Path acknowledge (SST) 5 Radio path not available / Call dropped (SST) 6 Error / Special information (SST) 7 Call waiting (SST) 8 Ringing Tone (SST) 16 General Beep (MPT) 17 Positive ack (MPT) 18 Negative ack or Error (MPT) <p><duration> integer: duration of the tone to be played, given in milliseconds.</p>
Reference	<p>Note</p> <p>If no tone is specified the ME shall default to the General Beep SST.</p> <p>If no duration is specified the ME default of 500ms is chosen.</p>

6.4.1.5 Set Up Menu

Command data for Set Up Menu proactive command

<p>Result Code</p> <p>+STGC:</p> <p>25,<numItems>,<selection>,<helpInfo>,<remove></p>	<p>Parameters</p> <p>25 hex notation: Command Type value. See Section 6.2 for values.</p> <p><numItems> integer: indicates the number of items accessible in the menu structure.</p>
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<p>Menu<alphaId>[,<iconId>,<dispMode>]<CR><LF> +STGC: <itemId>,<itemText>[,<iconId>,<dispMode>,<nai>]<CR><LF> [+STGC: <itemId>,<itemText>[,<iconId>,<dispMode>,<nai>]<CR><LF> [...]]]</p>	<p>0 is a special case, indicating the existing menu is to be removed from the ME's menu structure.</p> <p><selection> integer: gives preferred user selection method 0 no selection preference 1 soft key selection preferred</p> <p><helpInfo> 0 no help information available 1 help information available</p> <p><removeMenu> 0 do not remove the current menu 1 remove the current menu</p> <p><alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alpha Id or text string</p> <p><itemId>integer: denotes the identifier of the item</p> <p><itemText> string format: using either SMS default alphabet or UCS2 alpha field coding</p> <p><nai> hex notation: next action indicator – this takes one of the allowed values from the Command Type (see section 5.2) range, as specified in [9], section 13.4</p>
Reference	Note

6.4.1.6 Select Item

Command data for Select Item proactive command	
<p>+STGC: 24,<numItems>,<selection>,<helpInfo>,<alphaId>[,<iconId>,<dispMode>]<CR><LF> +STGC: <itemId>,<itemText>[,<iconId>,<dispMode>,<nai>]<CR><LF> [+STGC: <itemId>,<itemText></p>	<p>24 hex notation: Command Type value. See Section 6.2 for values.</p> <p><numItems> integer: indicates the number of items accessible in the menu structure. 0 is a special case, indicating the existing menu is to be removed from the ME's menu structure.</p> <p><selection> integer: gives preferred user selection method 0 no selection preference 1 soft key selection preferred</p> <p><helpInfo> 0 no help information available 1 help information available</p> <p><alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the</p>

ext>[,<iconId>,<dispMode>,<nai><CR><LF>[...]]]	<p>index in the Image file on the SIM</p> <p>0 No icon</p> <p>1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon</p> <p>0 display icon only (replaces any text string or alphaId)</p> <p>2 display with alpha Id or text string</p> <p><itemId> integer: denotes the identifier of the item</p> <p><itemText> string format: using either SMS default alphabet or UCS2 alpha field coding</p> <p><nai> hex notation: next action indicator – this takes one of the allowed values from the Command Type (see section 6.2) range</p>
Reference	Note

6.4.1.7 Get Acknowledgement For Set Up Call

Command data for Set Up Call proactive command	
+STGC: 10,<alphaId>[,<iconId>,<dispMode>]	<p>Parameters</p> <p>10 hex notation: Command Type value. See Section 6.2 for values.</p> <p><alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM</p> <p>0 No icon</p> <p>1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon</p> <p>0 display icon only (replaces any text string or alphaId)</p> <p>1 display with alphaId or text string</p>
Reference	Note

6.4.1.8 Set Up Idle Mode Text

Command data for Set Up Idle Mode Text proactive command	
+STGC: 28,<dcs>,<text>[,<iconId>,<dispMode>]	<p>Parameters</p> <p>28 hex notation: Command Type value. See Section 6.2 for values.</p> <p><dcs > integer: data coding scheme used for <text>. The schemes used are as per GSM 03.38 for SMS.</p> <p>0 7bit GSM default alphabet (packed)</p> <p>4 8bit data</p> <p>8 UCS2 alphabet</p> <p><text> string format: text string in <dcs> format. See Note below.</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the</p>

	<p>index in the Image file on the SIM</p> <p>0 No icon</p> <p>1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon</p> <p>0 display icon only (replaces any text string or alphaId)</p> <p>1 display with alphaId or text string</p>
Reference	<p>Note</p> <p>If the text string given in the result code is Null (i.e. zero length and set as "" in the result code) it implies the existing Idle Mode Text is to be removed.</p>

6.4.1.9 Send DTMF

Command data for Send DTMF proactive command

<p>Result Code</p> <p>+STGC:</p> <p>14[,<alphaId>[,<iconId>,<dispMode>]]</p>	<p>Parameters</p> <p>14 hex notation: Command Type value. See Section 6.2 for values.</p> <p><alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding to inform user of current transaction. '0' : Special case indicating SIM provided a null alphaId and the user should not be informed of the current transaction. If alphaId field is not present it is up to the ME to decide whether or not to inform the user.</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM</p> <p>0 No icon</p> <p>1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon</p> <p>0 display icon only (replaces any text string or alphaId)</p> <p>1 display with alphaId or text string</p>
Reference	<p>Note</p>

6.4.1.10 Launch Browser

Command data for Launch Browser proactive command

<p>Result Code</p> <p>+STGC:</p> <p>15,<comQual>,<url>[,<browserId>[,<bearer>[,<numFiles>,<provFiles>[,<dcs>,<gateway>[,<alphaId>[,<iconId>,<dispMode>]]]]]]]</p>	<p>Parameters</p> <p>15 hex notation: Command Type value. See Section 6.2 for values.</p> <p><comQual> hex notation: command qualifier information from Command Details Data</p> <p>Object:</p> <p>00 launch browser without making connection, if not already launched</p> <p>01 launch browser making connection, if not already launched</p>
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	<p>02 use existing browser</p> <p>03 close existing browser, launch new browser, making a connection</p> <p>04 close existing browser, launch new browser, using secure session</p> <p><url> string format: 8bit data using GSM default 7bit alphabet. Special case: <url>="" – Null value, so use default URL</p> <p><browserId> hex notation: Browser Id to use. Available values: ‘00’ Use default browser</p> <p><bearer> hex notation: list of allowed bearers in priority order. Possible values: ‘00’ SMS ‘01’ CSD ‘02’ USSD ‘03’ GPRS</p> <p><numFiles> integer: denotes the number of provisioning files given</p> <p><provFiles> string type, hex notation file ids: List of Provisioning File Reference ids. Full Paths are given, delimited within the string by a comma</p> <p><dcS > integer: data coding scheme used for <text>. The schemes used are as per GSM 03.38 for SMS. 0 7bit GSM default alphabet (packed) 4 8bit data 8 UCS2 alphabet</p> <p><gateway> string format: text string in <dcS> format</p> <p><alphaId> string format: using either SMS default alphabet or UCS2 alpha field coding</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM 0 No icon 1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon 0 display icon only (replaces any text string or alphaId) 1 display with alphaId or text string</p>
Reference	Note

6.4.1.11 Open Channel

Command data for Open Channel proactive command	
Result Code	Parameters
+STGC: 40 [,<alphaId>[,<iconId>,<dispMo	40 hex notation: Command Type value. See Section 6.2 for values. <alphaId> string format: using either SMS default alphabet or UCS2

de>]]	<p>alpha field coding to inform user of current transaction.</p> <p>'0' : Special case indicating SIM provided a null alphaId and the user should not be informed of the current transaction.</p> <p>If alphaId field is not present it is up to the ME to decide whether or not to inform the user.</p> <p><iconId> Numeric tag for the icon to be displayed – corresponds to the index in the Image file on the SIM</p> <p>0 No icon</p> <p>1..255 Icon tag</p> <p><dispMode> integer: denotes use of associated icon</p> <p>0 display icon only (replaces any text string or alphaId)</p> <p>1 display with alphaId or text string</p>
Reference	Note

6.4.1.12 Set Up Event List

Command data for Set Up Event List proactive command

Result Code	Parameters
+STGC: 05,<eventList>	<p>05 hex notation: Command Type value. See Section 6.2 for values.</p> <p><eventList> hex: denotes applicable event identifiers.</p> <p>05 User activity event</p> <p>06 Idle Screen Available event</p> <p>08 Language Selection event</p> <p>09 Browser termination event</p> <p>FF Remove existing event list</p>
Reference	<p>Note</p> <p><eventList> value of FF used to remove existing list of events as value 0 can be confused with event MT Call value.</p> <p>This command causes the application to send a GSM 11.14 [9] ENVELOPE (EVENT DOWNLOAD) command to the SIM.</p>

6.4.2 AT+STCR SIM Toolkit Command Response

Once a proactive command has been processed by the application a response needs to be sent to the SIM in the form of a TERMINAL RESPONSE command. It is therefore only a requirement for the application to issue command +STCR for those proactive commands it already retrieved via the +STGC AT command. The general format is shown below:

AT+STCR SIM Toolkit Command Response data

Write Command	Response
+STCR=<cmdId	+CME ERROR: <err>

<p>>,<result>[,<data> >]</p>	<p>Parameter</p> <p><result> hex notation: dependent on the command type – see following sections for each proactive command supported. The values given in the result field for each set of proactive command response parameters the setting of the general result parameter returned to the SIMAT task in the next phase of signaling for building the Terminal Response command.</p> <p><data> additional data provided for certain commands, as required for the Terminal Response returned to the SIM after processing a proactive SIM command</p>
Reference	

For the above AT Command, the data contained within the <data> field varies depending on the current proactive SIM command being processed. The result data available for each of the proactive commands processed by the application is described in the following subsections:

6.4.2.1 Display Text

Command response for Display Text proactive command	
<p>Write Command</p> <p>+STCR=21,<result></p>	<p>Parameters</p> <p>21 hex notation: Command Type value. See Section 6.2 for values.</p> <p><result> integer: possible values:</p> <ul style="list-style-type: none"> 0 Message displayed OK 1 Terminate proactive session 2 User cleared message 3 Screen is busy 4 Backward move requested 5 No response from user
Reference	Note

6.4.2.2 Get Inkey

Command response for Get Inkey proactive command	
<p>Write Command</p> <p>+STCR=22,<result>[,<dcs>,<text>]</p>	<p>Parameters</p> <p>22 hex notation: Command Type value. See Section 6.2 for values.</p> <p><result> integer: possible values:</p> <ul style="list-style-type: none"> 0 Data entered OK 1 Terminate proactive session 2 Help information requested 3 Backward move requested

	<p>4 No response from user</p> <p><dc> integer: data coding scheme used for <text>. The schemes used are as per GSM 03.38 for SMS.</p> <p>0 7bit GSM default alphabet (packed)</p> <p>4 8bit data</p> <p>8 UCS2 alphabet</p> <p><text> string format: text string in <dc> format</p> <p>Special cases are:</p> <p>“00” Negative response entered</p> <p>“01” Positive response entered</p>
Reference	<p>Note</p> <p>The <dc> and <text> information must be provided for <result>=0 as the SIM expects the input to be provided in a Text String Data Object in the Terminal Response SIM command when data has been input.</p>

6.4.2.3 Get Input

Command response for Get Input proactive command	
<p>Write Command</p> <p>+STCR=23,<result>[,<dc>,<text>]</p>	<p>Parameters</p> <p>23 hex notation: Command Type value. See Section 6.2 for values.</p> <p><result> integer: possible values:</p> <p>0 Data entered OK</p> <p>1 Terminate proactive session</p> <p>2 Help information requested</p> <p>3 Backward move requested</p> <p>4 No response from user</p> <p><dc> integer: data coding scheme used for <text>. The schemes used are as per GSM 03.38 for SMS .</p> <p>0 7bit GSM default alphabet (packed)</p> <p>4 8bit data</p> <p>8 UCS2 alphabet</p>
Reference	<p>Note</p> <p>If the <dc> is present but <text> is an empty string this indicates a null text string data object must be sent to the SIM. This is caused by the user making an ‘empty’ input.</p>

6.4.2.4 Play Tone

Command response for Play Tone proactive command	
<p>Write Command</p> <p>+STCR=20,<result></p>	<p>Parameters</p> <p>20 Hex notation: Command Type value. See section 6.2 for values.</p> <p><result> integer: possible values:</p> <p>0 Command performed OK</p> <p>1 Terminate proactive session</p>

	2	Tone not played
	3	Specified tone not supported
Reference	Note	

6.4.2.5 Set Up Menu

Command response for Set Up Menu proactive command	
Write Command +STCR=25,<result> ult>	Parameters 25 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 Menu successfully added/removed 1 User chosen menu item 2 Help information requested 3 Problem with menu operation
Reference	Note

6.4.2.6 Select Item

Command response for Select Item proactive command	
Write Command +STCR=24,<result> ult>[,<itemId>]	Parameters 24 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 Item Selected OK 1 Terminate proactive session 2 Help information requested 3 Backward move requested 4 No response given <itemId> integer: denotes identifier of item selected
Reference	Note

6.4.2.7 Get Acknowledgement For Set Up Call

Command response for Set Up Call proactive command	
Write Command +STCR=10,<result> ult>	Parameters 10 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 user accepted call (conf phase only) 1 user rejected call (conf phase only) 2 user cleared call (any phase)

Reference	Note
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6.4.2.8 Set Up Idle Mode Text

Command response for Set Up Idle Mode Text proactive command

Write Command +STCR=28,<result>	Parameters 28 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 Text successfully added/removed 1 Problem performing command
Reference	Note

6.4.2.9 Send DTMF

Command response for Send DTMF proactive command

Write Command +STCR=13,<result>	Parameters 13 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 DTMF not accepted 1 DTMF required.
Reference	Note

6.4.2.10 Launch Browser

Command response for Launch Browser proactive command

Write Command +STCR=15,<result>	Parameters 15 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 Command performed successfully 1 Command performed – partial comp 2 Command performed – missing info 3 User rejected launch 4 Error – no specific cause given 5 Bearer unavailable 6 Browser unavailable 7 ME cannot process command 8 Network cannot process command 9 Command beyond MEs capabilities.
Reference	Note

6.4.2.11 Open Channel

Command response for Open Channel proactive command	
Write Command +STCR=40,<result>	Parameters 40 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 Channel not accepted 1 Channel required.
Reference	Note

6.4.2.12 Set Up Event List

Command response for Set Up Event List proactive command	
Write Command +STCR=05,<result>	Parameters 05 hex notation: Command Type value. See Section 6.2 for values. <result> integer: possible values: 0 Command performed successfully 1 Cannot perform command.
Reference	Note

6.4.3 AT+STPD SIM Toolkit Profile Download

When an application is plugged into the serial port the command interpreter needs to have knowledge of its SAT capabilities to enable it to route all SAT related signaling to that application if required. If this command is not received it will be assumed that any attached application has no SAT capability and will therefore not send any related signals to it. If the SIM has reported that it does not have any proactive capability then an STC: 0 unsolicited response will be sent to the application.

AT+STPD SIM Toolkit Command Response data	
Write Command +STPD=<length>,<data>	Response OK +CME ERROR: <err> +STC: 0
	Parameter <length > Integer Determines the number of bytes of <data> used for the Profile Download data from the application. <data> List Of Hex Values, two digits each: Hexadecimal representation of the Terminal Profile data
Reference	Note Some octets are optional in the profile, hence the inclusion of a length

	parameter. For example, the following command sets all the bits in octets 3 and 4: AT+STPD=4,0000FFFF.
--	--

6.4.4 AT+STEV SIM Toolkit Event Command

The application can inform the MS of defined MMI events using this command.

AT+STEV SIM Toolkit Event Command	
Test Command AT+STEV=?	Response +STEV: (supported <event> list) +CME ERROR: <err>
Write Command +STEV=<event>,<language>	Response +CME ERROR: <err> Parameter <event> hex two digits: 05 User Activity Event 06 Idle Screen Event 08 Language Selection Event 09 Browser Termination Event FF Clear Current Event List <language> string type up to two characters
Reference	Note The <language> parameter is applicable only to Language Selection Event. For example the language can be set by: AT+STEV=09,"11"

6.4.5 AT+STMS SIM Toolkit Main Menu Selection Command

The application may set up its main menu on receipt of the Set Up Menu SIM Toolkit event. The application can select an item from the menu by sending this AT command to the MS.

AT+STMS SIM Toolkit Menu Selection Command	
Test Command AT+STMS=?	Response +STMS: (range of available <item>s),<0-1> +CME ERROR: <err>
Write Command +STMS=<item>[,<help>]	Response +CME ERROR: <err> Parameter <item> numeric type, giving unique identifier of menu item <help> numeric type
Reference	Note For example, AT+STMS=2,1 will select item 2 from the main menu with help.

6.4.6 AT+STRT SIM Toolkit Response Timer Command

When a proactive command is received from the SIM an automatic response timer is started. If this timer expires before the application has provided a suitable response via the +STCR command,

a Terminal Response is sent to the SIM containing a result of No User Response. This AT command allows the automatic response timeout period to be configured by the application at run-time, thus giving it extended time to respond to certain proactive commands (e.g. the Get Input command may request a long input string to be entered as part of the associated test case). The default setting for the response timer is ten seconds, and the maximum duration available is one hour.

AT+STRT SIM Toolkit Response Timer Command	
Read Command AT+STRT?	Response: +STRT: <duration> +CME ERROR: <err>
	Parameter See Write command
Test Command AT+STRT=?	Response +STRT: (list of supported <duration>s) +CME ERROR: <err>
Write Command +STRT=<duration>	Response +CME ERROR: <err>
	Parameter <duration> numeric type. Minimum = 1s, maximum = 3600s
Reference	Note Default setting is ten seconds

6.4.7 AT+STTONE SIM Toolkit Tone Command

The application may request a tone to be played after receiving the Play Tone proactive command. The application either starts playing the tone with the requested tone Id, or stops playing the current tone depending on the <mode> parameter. Tones may be played in either idle or dedicated mode.

On completion of the current tone, unsolicited result code +STTONE: 0 will be issued by the CI Task. However, if <mode>=0 is used to terminate the tone before it has completed playing there will be no unsolicited result code but only a result code of OK generated by the CI Task.

AT+STTONE SIM Toolkit PLAY TONE COMMAND	
Test Command AT+STTONE=?	Response +STTONE: (list of supported <mode>s),(list of supported <tone>s),<list of supported <duration>s) +CME ERROR: <err>
Write Command	Response +CME ERROR: <err>

GNS-30CR AT Command Set

AT+CALARM	SET ALARM
AT+CADC	READ ADC
AT +CSNS	SINGLE NUMBERING SCHEME
AT +CDSCB	RESET CELLBROADCAST
AT +CMOD	CONFIGRUE ALTERNATION MODE CALLS
AT +CFGRI	INDICATE RI WHEN USING URC
AT+CLTS	GET LOCAL TIMESTAMP
AT+CEXTHS	EXTERNAL HEADSET JACK CONTROL
AT+CEXTBUT	HEADSET BUTTON STATUS REPORTING
AT+CSMINS	SIM INSERTED STATUS REPORTING
AT+CLDTMF	LOCAL DTMF TONE GENERATION
AT+CDRIND	CS VOICE/DATA/FAX CALL OR GPRS PDP CONTEXT TERMINATION INDICATION
AT+CSPN	GET SERVICE PROVIDER NAME FORM SIM
AT+CCVM	GET AND SET THE VOICE MAIL NUMBER ON THE SIM
AT+CBAND	GET AND SET MOBILE OPERATION BAND
AT+CHF	CONFIGURES HANDS FREE OPERATION
AT+CHFA	SWAP THE AUDIO CHANNELS
AT+CSCLK	CONFIGURE SLOW CLOCK
AT+CENG	SWITCH ON OR OFF ENGINEERING MODE
AT+SCLASS0	STORE CLASS 0 SMS TO SIM WHEN RECEIVED CLASS 0 SMS
AT+CCID	SHOW ICCID
AT+CGMSCLASS	SET GPRS MULTISLOT CLASS

7.2 Detailed Descriptions of Commands

7.2.1 AT+ECHO Echo cancellation control

AT+ECHO Echo cancellation control	
Read Command AT+ECHO?	Response : +ECHO(NORMAL_AUDIO): <MAINvoxGain>,<MAINminMicEnergy>,<MAINsampSlncePrd> +ECHO(AUX_AUDIO): <AUXvoxGain>,<AUXminMicEnergy>,<AUXsampSlncePrd> ok
	Parameter: See write command
Test Command AT+ECHO=?	Response : +ECHO: (voxGain),(minMicEnergy),(sampSlncePrd).(channel) ok

	Parameter: See write command
Write Command AT+ECHO= <voxGain>,<min MicEnergy>,<sa mpSlncePrd>,<c hannel>	Response : ok Parameter: < voxGain > int: 0 – 32767 < minMicEnergy > int: 0 – 32767 < sampSlncePrd > int: 0 – 32767 <channel>int 0-1 1 AUX_AUDIO 0 NORMAL_AUDIO
Reference	Note: < voxGain > : the parameter models the acoustic path between ear-piece and microphone. < minMicEnergy > : the parameter sets the minimum microphone energy level to be attained before suppression is allowed. A typical value of this parameter is 20. < sampSlncePrd > : the parameter control the minimum number of speech frames that will be replace with SID frames when an echo is detected. A typical value of this parameter is 4.

7.2.2 AT+SIDET Change the side tone gain level

AT+SIDET Change the side tone gain level	
Read Command AT+SIDET?	Response: + SIDET: < gainlevel> OK Parameter: See write command
Test Command AT+SIDET=?	Response: +SIDET: (gainlevel) OK Parameter: See write command
Write Command AT+SIDET=< gainlevel >	Response: OK Parameters < gainlevel > int: 0 – 32767
Reference	Note The relation between the Side Tone Gain and <gainlevel> is $\text{Side Tone Gain/dB} = 20 \cdot \log(\text{sideTone}/32767)$

7.2.3 AT+CPOWD Power Off

AT+CPOWD Power Off	
Write Command AT+CPOWD = <n>	Response: NORMAL POWER DOWN
	Parameters n: 1 Normal power off (Will disconnect from network)
Reference	Note

7.2.4 AT+SPIC Times remain to input SIM PIN/PUK

AT+SPIC Times remain to input SIM PIN/PUK	
Execution Command AT+SPIC	Response Times remain to input SIM PIN +SPIC: <chv1>,<chv2>,<puk1>,<puk2> OK
	Parameters <chv1>: Times remain to input chv1 <chv2>:Times remain to input chv2 <puk1>: Times remain to input puk1 <puk2>: Times remain to input puk2
Reference	

7.2.5 AT+CMIC Change the microphone gain level

AT+CMIC Change the microphone gain level	
Read Command AT+CMIC?	Response : + CMIC: < gainlevel(Main_Mic) >, <gainlevel(Aux_Mic)> OK
	Parameter: See set command
Test Command AT+CMIC=?	Response : +CMIC: list of supported <channel >s, list of supported < gainlevel >s ok
	Parameter: See set command
Set Command AT+CMIC=	Response : Ok

GNS-30CR AT Command Set

<p><channel>,<gainlevel></p>	<p>Parameter:</p> <p><channel> 0 – Main Microphone 1 – Aux Microphone</p> <p>< gainlevel > int: 0 – 15</p> <p>0 0dB 1 +1.5dB 2 +3.0 dB(default value) 3 +4.5 dB 4 +6.0 dB 5 +7.5 dB 6 +9.0 dB 7 +10.5 dB 8 +12.0 dB 9 +13.5 dB 10 +15.0 dB 11 +16.5 dB 12 +18.0 dB 13 +19.5 dB 14 +21.0 dB 15 +22.5 dB</p>
<p>Reference</p>	<p>Note:</p>

7.2.6 AT+UART Configure dual serial port mode

AT+UART Configure dual serial port mode	
<p>Read Command</p> <p>AT+UART?</p>	<p>Response</p> <p>+UART: <currentUart></p> <p>Ok</p> <p>Parameter:</p> <p>See Write Command</p>
<p>Write Command</p> <p>AT+UART=<uart>[,<baud>]</p>	<p>Response</p> <p>Ok</p> <p>Error</p>

	Parameter currentUart 1 use serial line 1 2 use serial line 2(gprs) 3 use serial line 2 4 last command use serial line 1 5 last command use serial line 2 Uart 1 use serial line 1 2 use serial line 2(gprs) 3 use serial line 2 Baud (If uart is 2 or 3) 9600,19200,28800,38400,57600,115200
Reference	

7.2.7 AT+CALARM Set alarm

AT+CALARM Set alarm	
Read Command AT+CALARM M=?	Response : + CALARM: <state>,<time>,<repeat>,<power> ok Parameter: See set command
Set Command AT+CALARM M= <state>,<time> >,<repeat>,<power>	Response : ok Parameter: < state > an integer parameter which indicates whether enable or disable alarm. 0 CLEAR ALARM 1 SET ALARM < time > a string parameter which indicates the time when alarm arrives. The format is “yy/MM/dd, hh:mm:ss+-zz” where characters indicate the last two digits of year, month, day, hour, minute, second and time zone. The time zone is expressed in quarters of an hour between the local time and GMT, ranging from -47 to +48. < repeat > an integer parameter which indicates the repeat mode 0 None 1 Daily 2 Weekly 3 Monthly <power> an integer parameter which indicates the method of dealing power

	<p>when alarm arrives.</p> <p>0 None</p> <p>Only send “ALARM RING” to serial port</p> <p>1 Alarm power off</p> <p>Send “ALARM RING” to serial port and power off in 5 seconds</p> <p>2 Alarm power on</p> <p>Send “ALARM MODE” to serial port and enter into alarm mode</p> <p>Note: In alarm mode, protocol stack and SIM protocol is closed, only a few AT command can be executed, and system will be powered down after 90 seconds if neither power key is pressed nor functionality is changed to full functionality. If power key is pressed, system will be powered down right now.</p>
Reference	Note:

7.2.8 AT+CADC Read ADC

AT+CADC Read ADC	
Read Command AT+ CADC?	<p>Response :</p> <p>+ CADC: < status>,<value></p> <p>OK</p> <p>Parameter:</p> <p>See test command</p>
Test Command AT+CADC=?	<p>Response :</p> <p>+ CADC: list of supported <status>s, list of supported <value>s</p> <p>OK</p> <p>Parameter:</p> <p><status></p> <p>1 success</p> <p>0 fail</p> <p><value> integer 0-2400</p> <p>Note:</p>

7.2.9 AT+CSNS Single numbering scheme

AT+CSNS Single numbering scheme	
Test command AT+ CSNS =?	<p>Response :</p> <p>+CSNS:(list of supported modes)</p> <p>Parameter</p>
Read command AT+ CSNS?	<p>Response :</p> <p>+CSNS:<mode></p>

GNS-30CR AT Command Set

	Parameter:
Set Command AT+ CSNS=<mode>	Response : Ok Error
	Parameter: <mode> 0 voice 2 fax 4 data
Reference	Note

7.2.10 AT+CDSCB Reset cell broadcast

AT+CDSCB Reset cell broadcast	
Set Command AT+ CDSCB	Response : OK
	Parameter:
Reference	Note Reset the CB module

7.2.11 AT+CMOD Configures alternating mode calls

AT+CMOD Configures alternating mode calls	
Test command AT+ CMOD =?	Response : +CMOD: (0)
	Parameter:
Set Command AT+CMOD=<mode>	Response : OK
	Parameter: <mode> 0
Reference	Note

7.2.12 AT+CFGRI Indicate RI when using URC

AT+CFGRI Indicate RI when using URC	
Read command AT+ CFGRI ?	Response : +CFGRI: <status> ok

GNS-30CR AT Command Set

	Parameter: See set command
Set Command AT+ CFGRI=<status>	Response : OK
	Parameter: <status> 0 on 1 off
Reference	Note

7.2.13 AT+CLTS Get local timestamp

AT+CLTS Get local timestamp	
Test command AT+CLTS=?	Response +CLTS: (the format of timestamp)
	Parameters see set command
	Parameter <i>See set command</i>
Execution command AT+CLTS	Response +CLTS:(timestamp)
	Parameters <timestamp> a string parameter which indicates the local timestamp. The format of timestamp is "yy/MM/dd,hh:mm:ss+/-zz" yy: year MM: month dd: day hh: hour mm: minute ss: second zz: time zone
Reference	Note Support for this command will be network dependant

7.2.14 AT+CEXTHS External headset jack control

AT+ CEXTHS External headset jack control	
Test command AT+CEXTHS=?	Response +CEXTHS: <mode>
	Parameters see set command

GNS-30CR AT Command Set

Read command AT+CEXTHS?	Response +CEXTHS:<mode>,<headset attach>
	Parameter see set command
Set command AT+CEXTHS=<mode>	Response OK ERROR
	Unsolicited result code: +CEXTHS:<mode>,<headset attach>
	Parameters <mode> a numeric parameter which indicates whether an unsolicited event code (indicating whether the headset has been attached/detached) should be sent to the terminal. 0 not send unsolicited event code 1 send unsolicited event code <headset attach> a numeric parameter which indicates whether a headset has been attached or not 0 not attached 1 attached
Reference	Note Support for this command will be hardware dependant

7.2.15 AT+CEXTBUT Headset button status reporting

AT+ CEXTBUT Headset button status reporting	
Test command AT+CEXTBUT=?	Response +CEXTBUT: <mode>
	Parameters see set command
Read command AT+CEXTBUT?	Response +CEXTBUT:<mode>,<headset button press>
	Parameter see set command
Set command AT+CEXTBUT=<mode>	Response OK ERROR
	Unsolicited result code: +CEXTBUT:<mode>,<headset button press>

	<p>Parameters</p> <p><mode> a numeric parameter which indicates whether an unsolicited event code (indicating whether the headset button has been pressed) should be sent to the terminal.</p> <p>0 not send unsolicited event code</p> <p>1 send unsolicited event code</p> <p><headset attach> a numeric parameter which indicates whether a headset button has been pressed or not</p> <p>0 not pressed</p> <p>1 pressed</p>
Reference	<p>Note</p> <p>Support for this command will be hardware dependant</p>

7.2.16 AT+CSMINS SIM inserted status reporting

AT+ CSMINS SIM inserted status reporting	
<p>Test command</p> <p>AT+CSMINS=?</p>	<p>Response</p> <p>+CSMINS: (list of supported <n>s)</p> <p>Parameters</p> <p>see set command</p>
<p>Read command</p> <p>AT+CSMINS?</p>	<p>Response</p> <p>+CSMINS:<n>,<SIM inserted></p> <p>Parameter</p> <p>see set command</p>
<p>Set command</p> <p>AT+CSMINS=[<n>[,<m>]]</p>	<p>Response</p> <p>OK</p> <p>ERROR</p> <p>Parameters</p> <p><n> a numeric parameter which indicates whether to show an unsolicited event code indicating whether the SIM has just been inserted or removed.</p> <p>0 disable</p> <p>1 enable</p> <p>< SIM inserted> a numeric parameter which indicates whether SIM card has been inserted.</p> <p>0 not inserted</p> <p>1 inserted</p>
Reference	Note

7.2.17 AT+CLDTMF Local DTMF tone generation

AT+ CLDTMF Local DTMF tone generation	
Set command AT+CLDTMF=[<n>[,<DTMF string>]]	Response OK ERROR Parameters <n> a numeric parameter(1-255(ms)) which indicates the duration of all DTMF tones in < DTMF -string> in 1/10 secs < DTMF -string> a string parameter which has a max length of 20 chars of form < DTMF >, separated by commas. < DTMF > A single ASCII chars in the set 0-9,#,*,A-D.
Execution command AT+CLDTMF	Response OK Aborts any DTMF tone currently being generated and any DTMF tone sequence.
Reference GSM07.07	Note

7.2.18 AT+CDRIND CS voice/data/fax call or GPRS PDP context termination indication

AT+ CDRIND CS voice/data/fax call or GPRS PDP context termination indication	
Test command AT+CDRIND=?	Response +CDRIND: (list of supported <n>s) Parameters see set command
Read command AT+CDRIND?	Response +CDRIND:<n> Parameter see set command
Set command AT+CDRIND=< n>	Response OK ERROR Parameters <n> a numeric parameter which indicates whether to enable an unsolicited event code indicating whether a CS voice call, CS data, fax call or GPRS session has been terminated. 0 disable 1 enable
Reference	Note

