Manual Reference

AT Command Set
(GSM 07.07, GSM 07.05)

for SIEMENS Mobile Phone

S25

and Derivatives

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29	AT+CSCB	Select cell broadcast messages			✔	✔	✔	✔
29	AT+CMGC	Send an SMS command			✔	✔	✔	✔

1.2. AT Command Set

Remote-control operation of the GSM mobile telephone runs via a serial interface, where AT+C commands according to GSM 07.07 and GSM 07.05 as well as several manufacturer-specific AT commands are available. These commands are described in more detail on the following pages.

The commands are entered by way of the operating functions of the respective base unit. This converts the operating functions to AT commands so that the mobile phone can execute the required action. The following should be noted:

The modem guideline V.25ter applies to the sequence of the interface commands. According to this guideline, commands should begin with the character string **"AT"** and end with **"<CR>" (= 0x0D).** The input of a command is acknowledged by the display of "OK" or "ERROR". **A command currently in process is interrupted by each additional character entered**. This means that you should not enter the next command until you have received the acknowledgment; otherwise the current command is interrupted.

The commands supported are listed in the following tables:

1.2.1. Hayes-Standard Commands
The Hayes-standard commands correspond to the commands of AT Hayes-compatible modems.

Command	Function
A/	Repeat last command
AT...	Prefix for all other commands
ATA	Accept call
ATD<str>;	Dial the dialing string <str> with the voice utility Valid dial modifiers: "T" (tone dialing), "P" (pulse dialing) is ignored. The character ";" is important, for this tells the phone that the call should be set up with the voice utility. Otherwise an attempt is made to set up a data call, which the phone immediately acknowledges with "ERROR".
ATD><n>;	Dial the telephone number from the current telephone book location number <n> The telephone book is selected with the command at+cpbs
ATD><mem><n>;	Dial the telephone number from the telephone book <mem> location number <n>
ATDL	Dial last telephone number
ATE0	Deactivate command echo
ATE1	Activate command echo
ATH[0]	Separate connection
ATQ0	Display acknowledgments
ATQ1	Suppress acknowledgments
ATV0	Output acknowledgments as numbers

Command	Function
ATV1	Output acknowledgments as text
AT&F[0]	Reset to stored profile
AT&V	Display active and stored profiles
ATZ	Set to default configuration
AT+GCAP	Output the capabilities list

1.2.2. Acknowledgments for Normal Data Communication

Response	Numeric	Meaning
OK	0	Command executed, no errors
RING	2	Ring detected
NO CARRIER	3	Link not established or disconnected
ERROR	4	Invalid command or command line too long
NO DIALTONE	6	No dial tone, dialing impossible, wrong mode
BUSY	7	Remote station busy

1.3. AT Commands and Responses According to GSM 07.07 and GSM 07.05

According to GSM, it is possible to execute an AT command in various forms.

Test command	AT+CXXX**=?**	The telephone responds by sending the list of parameters and value ranges; these can be set using the affiliated Write command or by means of internal processes.
Read command	AT+CXXX**?**	This command tells you the current value setting of the parameter(s).
Write command	AT+CXXX**=<...>**	This command is used to set parameters that can be set.
Execute command	AT+CXXX	The Execute command reads non-settable parameters which are influenced by internal processes in the telephone.

1.3.1. AT Cellular Commands According to GSM 07.07

AT+CGMI	Issue manufacturer ID code
Test command AT+CGMI=?	Response OK
Execute command AT+CGMI	Response <manufacturer> Parameter <manufacturer> Name of manufacturer (SIEMENS) **Important**: There is a leading output prefix +CGMI in models before the S25.

AT+CGMM	Issue model ID code
Test command AT+CGMM=?	Response OK
Execute command AT+CGMM	Response <model> Parameter <model> Name of telephone (MOBILE) **Important**: There is a leading output prefix +CGMM in models before the S25.

AT+CGMR	Output the GSM telephone version
Test command AT+CGMR=?	Response OK
Execute command AT+CGMR	Response <revision> Parameter <revision> Version of the telephone software **Important**: There is a leading output prefix +CGMR in models before the S25.

AT+CGSN	Output the serial number (IMEI)
Test command AT+CGSN=?	Response OK
Execute command AT+CGSN	Response <sn> Parameter <sn> IMEI of the telephone **Important**: There is a leading output prefix +CGMI in models before the S25.

AT+GSN	Output the serial number (IMEI)
Test command AT+GSN=?	Response OK
Execute command AT+GSN	Response +GSN: <sn> Parameter <sn> IMEI of the telephone **Important**: The output prefix +GSN may be missing in future versions.

AT+CHUP	Terminate call
Test command AT+CHUP=?	Response OK
Execute command AT+CHUP	Response OK/ERROR
	Description: All active calls and all calls on hold are terminated.

AT+CEER	Query the reason for disconnection of last call
Test command AT+CEER=?	Response OK
Execute command AT+CEER	Response +CEER: <report> Parameter <report> Disconnection reason reported as number

AT+CREG	Power status
Test command AT+CREG=?	Response +CREG: (list of supported <n>s) OK/ERROR/+CME ERROR

	Parameter
	<n> 0 Suppresses the unexpected network-status messages
	          1 Displays the unexpected network-status
	              messagesOK/ERROR/+CME ERROR

Read command AT+CREG?	Response +CREG: <n>,<stat>[,<lac>,<ci>] OK/ERROR/+CME ERROR

	Parameter
	<n> See Test command
	<stat> 0 Not checked in, not seeking
	          1 Checked in
	          2 Not checked in, but seeking a network
	          3 Check-in denied by network
	          4 Unknown
	          5 Registered, roaming
	<lac> Hexadecimal 2-byte string type of location area code
	<ci> Hexadecimal 2-byte string type of cell ID

Write command AT+CREG=<n>	Parameter <n> See Test command Response OK/ERROR/+CME ERROR
	Unexpected message +CREG: <stat>

AT+COPS	Commands concerning selection of network operator

Test command
AT+COPS=?
	Response
	+COPS: [list of supported (<stat>,long alphanumeric
	<oper>,,numeric <oper>)s][,,(list of supported <mode>s),(list of
	supported <format>s)]
	OK/ERROR/+CME ERROR
	Parameter
	<stat> 0 Unknown
	          1 Useful network operator
	          2 Used network operator
	          3 Prohibited network operator
	<oper> Operator in the format according to <mode>

Read command
AT+COPS?
	Response
	+COPS: <mode>[,<format>,<oper]
	OK/ERROR/+CME ERROR
	Parameter
	<mode> 0 Automatic mode
	          1 Manual selection of network operator
	          3 Setting of format
	          4 Automatic, manual selected
	<format> 0 Long alphanumeric
	          2 Numeric <oper>
	<oper> Network operator

Write command AT+COPS=<mode>[,<format>[,<oper]]	Parameter <mode> See Read command <format> See Read command If <mode> = 1, <format> can only = 2 <oper> In numeric form only Response OK/ERROR/+CME ERROR

AT+CLCK	Switch blocking on and off **Revision to GSM 07.07 according to CR TDOC ETSI/SMG4 187/96**

Test command
AT+CLCK=?
	Response
	+CLCK: (list of supported \<fac\>s)
	OK/ERROR/+CME ERROR
	Parameter
	\<fac\> "CS" Keyboard lock
	           "PS" Phone locked to SIM (device code)
	           "SC" SIM card (PIN)
	           "FD" FDN lock
	           "AO" BAOC (bar all outgoing calls)
	           "OI" BOIC (bar outgoing international calls)
	           "OX" BOIC-exHC (bar outgoing international calls except to home country)
	           "AI" BAIC (bar all incoming calls)
	           "IR" BIC-Roam (bar incoming calls when roaming outside the home country)
	           "AB" All Barring services
	           "AG" All outgoing barring services
	           "AC" All incoming barring services

Write command
AT+CLCK=\<fac\>, \<mode\>[, \<passwd\>[,\<class\>]]
	Parameter
	\<fac\> See Test command
	\<mode\> 0 Cancels block
	                1 Activates block
	                2 Queries block status
	\<passwd\> Password
	\<class\> 1 Voice
	                2 Data
	                4 Fax
	                7 All classes (default value)
	Response
	If \<mode\>=2 and command is successful
	+CLCK: \<status\>[,\<class1\>[\<CR\>\<LF\>
	+CLCK: \<status\>, class2....]]
	Parameter
	\<status\> 0 On
	                1 Off
	OK/ERROR/+CME ERROR

AT+CPWD	Change password to a block
Test command AT+CPWD=?	Response +CPWD: list of supported (\<fac\>, \<pwdlength\>)s OK/ERROR/+CME ERROR Parameter \<fac\> "P2" PIN2 otherwise See Test command for AT+CLCK command, without "FD" \<pwdlength\> Password length
Write command AT+CPWD=\<fac\>, \<oldpwd\>, \<newpwd\>	Parameter \<fac\> See Test command for AT+CLCK command \<oldpwd\>, \<newpwd\> Old and new password Response OK/ERROR/+CME ERROR

AT+CLIP	Display telephone number of calling party		
Test command AT+CLIP=?	Response +CLIP: (list of supported \<n>s) OK/ERROR/+CME ERROR		
	Parameter		
	\<n>	0	Suppresses the unexpected messages
		1	Displays the unexpected messages
Read command AT+CLIP?	Response +CLIP: \<n>, \<m> OK/ERROR/+CME ERROR		
	Parameter		
	\<n>		See Test command
	\<m>	0	CLIP not booked
		1	CLIP booked
		2	Unknown
Write command AT+CLIP=\<n>	Parameter		
	\<n>		See Read command
	Response		
	OK/ERROR/+CME ERROR		
	Unexpected message		
	+CLIP: \<num>,\<type> Telephone number of caller		

AT+CCFC	Call forwarding		
Test command AT+CCFC=?	Response +CCFC: (list of supported \<reas>s) OK/ERROR/+CME ERROR		
	Parameter		
	\<reas>	0	Always
		1	If busy
		2	If no answer
		3	If not available
		4	All reasons (0-3)
		5	All conditional reasons (1-3)
Write command AT+CCFC=\<reas>, \<mode>[, \<num>[, \<type>[,\<class> [,,,\<time>]]]]	Parameter		
	\<reas>		See Test command
	\<mode>	0	Deactivate
		1	Activate
		2	Query
		3	Install
		4	Delete
	\<num>		Telephone number
	\<type>		Type of telephone number
	\<class>	1	Voice
		2	Data
		4	Fax
		7	All classes
	\<time>	1-30	Time, rounded to a multiple of five seconds
	Response		
	If \<mode>=2 and command is successful +CCFC: \<status>, \<class1>[, \<num>, \<type>[,,, \<time>]][\<CR>\<LF>+CCFC: ....] OK/ERROR/+CME ERROR		
	Parameter		
	\<status>	0	Not active
		1	Active

AT+CHLD	Call hold and multiparty
Test command AT+CHLD=?	Response [+CHLD: (list of supported <n>s)] OK/ERROR/+CME ERROR
Write command AT+CHLD=[<n>]	Parameter <n> 0 Terminates all held calls or sets UDUB (**U**ser **D**etermined **U**ser **B**usy) for a waiting call 1 Terminates all active calls (if there are any) and accepts the other call (waiting call or held call) 1X Terminates call number X (X= 1-7) 2 Puts all active calls on hold (if there are any) and accepts the other call (waiting call or held call) as active 2X Puts all active calls except call X (X= 1-7) on hold 3 Connects the call put on hold to the active call For terminating Terminating all calls except waiting calls is done with "AT+CHUP" Note: Command scope depends on the SIM clearing and/or on the network support Response OK/ERROR/+CME ERROR

AT+CPAS	Query the telephone status
Test command AT+CPAS=?	Response +CPAS: (list of supported <pas>s) OK/ERROR/+CME ERROR Parameter <pas> 0 Ready 3 Incoming call (phone is ringing) 4 Call is active
Execute command AT+CPAS	Response +CPAS: <pas> OK/ERROR/+CME ERROR Parameter <pas> See Test command OK/ERROR/+CME ERROR

AT+CPIN	Enter PIN and query block
Test command AT+CPIN=?	Response OK

Read command
AT+CPIN?
	Response
	+CPIN: <code>
	OK/ERROR/+CME ERROR
	Parameter
	<code>
	READY No further input necessary
	SIM PIN SIM PIN input necessary
	SIM PUK SIM PUK input necessary
	PH-SIM PIN Device-code (theft protection) input necessary
	PH-SIM PUK Device-code PUK (theft protection) input necessary
	SIM PIN2 PIN2, e.g. for editing the FDN book;
	                        only possible if previous command was acknowledged with
	                        +CME ERROR:17
	SIM PUK2 Only possible if previous command was acknowledged with
	                        error +CME ERROR:18
	The required error message can (must) be provoked by an attempted Write
	                        command.

Write command AT+CPIN=<pin>[, <new pin>	Parameter <pin> Password for appropriate block; if the block is a PUK, then a <new pin> is necessary. <new pin> New password for the block Response OK/ERROR/+CME ERROR

AT+CBC	Battery charge

Test command
AT+CBC=?
	Response
	+CBC: (list of supported <bcs>s),(list of supported <bcl>s)
	OK/ERROR/+CME ERROR
	Parameter
	<bcs> 0 ME is supplied from battery
	              1 ME has battery but is not supplied from there
	              2 ME has no battery connected
	              3 Error
	<bcl> 0 Battery is flat, but no more actions possible
	                1-100 charge in per cent

Execute command AT+CBC	Response +CBC: <bcs>,<bcl>

AT+CSQ	Output signal quality

Test command
AT+CSQ=?
	Response
	+CSQ: (list of supported <rssi>s), list of supported <ber>)
	OK/ERROR/+CME ERROR
	Parameter
	    <rssi> Reception level:
	           0 -113 dBm or less
	           1 -111 dBm
	           2-30 -109 to -53 dBm
	           31 -51 dBm or more
	           99 Unknown
	
	    <ber> Bit error rate:
	           0-7 Like RXQUAL values from Table GSM 05.08 in Section 8.2.4
	           99 Unknown

Execute command AT+CSQ	Response +CSQ: <rssi>, <ber> OK/ERROR/+CME ERROR Parameter <rssi> See Test command <ber> See Test command

AT+CPBS	Select a telephone book

Test command
AT+CPBS=?
	Response
	+CPBS: (list of supported <sto>s)
	OK/ERROR/+CME ERROR
	Parameter
	    <sto> "FD" SIM fix-dialing phonebook
	             "SM" SIM phonebook
	             "ME" ME phonebook
	             "DC" ME Dialled Calls List
	             "ON" SIM (or ME) own numbers (MSISDNs) list
	             "LD" SIM last-dialling phonebook
	             "MC" ME missed (unanswered received) calls list
	             "RC" ME received calls list
	
	*For description of telephone-book features, see *Appendix A*
	
	Note: "DC" and "LD" are never both available.

Read command AT+CPBS?	Response +CPBS: <sto> OK/ERROR/+CME ERROR Parameter <sto> See Test command
Write command AT+CPBS=<sto>	Parameter <sto> See Test command Response OK/ERROR/+CME ERROR

AT+CPBR	Read a telephone-book entry
Test command AT+CPBR=?	Response +CPBR: (list of supported <index>s), <nlength>, <tlength> OK/ERROR/+CME ERROR Parameter <index> Location number <nlength> Max. length of telephone number <tlength> Max. length of text corresponding to the number
Write command AT+CPBR=<index1>[, <index2>]	Response +CPBR: <index1>, <nummer>, <typ>, <text>[<CR><LF> +CPBR: ..... +CPBR: <index2>, <nummer>, <typ>, <text>] OK/ERROR/+CME ERROR Parameter <index1> Location number where the read of the entry starts <index2> Location number where the read of the entry ends <nummer> Telephone number <typ> Type of number <text> Text corresponding to the telephone number **NOTE:** In models before the S25, empty phonebook records are reported as follows: **+CPBR: <index1>,empty** In S25ff, those empty entries don't produce any output.

AT+CPBW	Write a telephone-book entry
Test command AT+CPBW=?	Response +CPBW: (list of supported <index>s), <nlength>, <tlength> OK/ERROR/+CME ERROR Parameter <index> Location number <nlength> Max. length of telephone number <tlength> Max. length of text corresponding to the number
Write command AT+CPBW=[<index>], [<nummer>, [<typ>, [<text>]]]	Parameter <index> Location number at which the entry is written <nummer> Telephone number <typ> Type of number <text> Text corresponding to the telephone number Response OK/ERROR/+CME ERROR Note: The following characters in <text> must be entered via the escape sequence:

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)

'0' (GSM null) may cause problems on application level when using the function strlen() and should thus be represented by an escape sequence when necessary

AT+CMEE	Expanded error messages according to GSM 07.07

Test command
AT+CMEE=?
	Response
	+CMEE: (list of supported \<n>s)
	Parameter
	\<n> 0 Suppresses the expanded error format
	        1 Expanded error messages as number
	        2 Expanded error messages as text

Read command AT+CMEE?	Response +CMEE: \<n> Parameter \<n> See Read command
Write command AT+CMEE=\<n>	Parameter \<n> See Read command Response OK/ERROR/+CME ERROR
	Description: **The following CME errors are possible:** 0 PHONE FAILURE 1 NO CONNECTION TO PHONE 2 PH-TA LINK RESERVED 3 OPERATION NOT ALLOWED 4 OPERATION NOT SUPPORT 5 PH-SIM PIN REQUIRED 10 SIM NOT INSERTED 11 SIM PIN REQUIRED 12 SIM PUK REQUIRED 13 SIM FAILURE 14 SIM BUSY 15 SIM WRONG 16 INCORRECT PASSWORD 17 SIM PIN2 REQUIRED 18 SIM PUK2 REQUIRED 20 MEMORY FULL 21 INVALID INDEX 22 NOT FOUND 23 MEMORY FAILURE 24 TEXT TOO LONG 25 INV CHAR IN TEXT 26 DIAL STRING TOO LONG 27 INV CHAR IN DIAL 30 NO NETWORK SERVICE 31 NETWORK TIMEOUT 100 UNKNOWN 512 CALL BARRED BY BLACKLIST 513 PHONE LINK RESERVED 514 INVALID DIAL STRING 515 PHONE BUSY 550 PH-SIM PUK REQUIRED 551 NTF-SIM PIN REQUIRED

	552 NTF-SIM PUK REQUIRED
	553 PH-NET PIN REQUIRED
	554 PH-NET PUK REQUIRED
	555 PH-SP PIN REQUIRED
	556 PH-SP PUK REQUIRED
	557 PH-CP PIN REQUIRED
	558 PH-CP PUK REQUIRED
	559 FEATURE PIN REQUIRED
	560 FEATURE PUK REQUIRED
	The following CMS errors have been defined for SMS:
	300 ME FAILURE
	301 SMS SERVICE OF ME RESERVED
	302 OPERATION NOT ALLOWED
	303 OPERATION NOT SUPPORTED
	304 INVALID PDU PARAMETER
	305 INVALID TEXT MODE
	310 SIM NOT INSERTED
	311 SIM PIN NECESSARY
	312 PH-SIM PIN NECESSARY
	313 SIM FAILURE
	314 SIM BUSY
	315 SIM WRONG
	320 MEMORY FAILURE
	321 INVALID MEMORY FAILURE
	322 MEMORY FULL
	330 SMSC ADDRESS UNKNOWN
	331 NO NETWORK SERVICE
	332 NETWORK TIMEOUT
	340 NO +CNMA ACK EXPECTED
	500 UNKNOWN ERROR

AT+VTS	Send a DTMF tone
Test command AT+VTS=?	Response +VTS: <dtmf>,<duration> OK/ERROR/+CME ERROR Parameter <dtmf> 0-9,#,*,A-D, exactly one character <duration> Duration of tone in (duration/10) seconds

Write command
 	
AT+VTS=
<dtmf>
[,<duration>]
or
AT+VTS=
<dtmf-string>
	Parameter
	<dtmf> **One** character from the list, see Test command<duration>
	                          See Test command
	<dtmf-string> max. 29 characters in quotation marks ("..."), then a duration cannot
	                          be specified
	
	Response
	OK/ERROR/+CME ERROR
	
	Important: There is a leading output prefix +VTS in models before the S25.

AT+VTD	Set duration of a DTMF tone
Test command AT+VTD=?	Response +VTD: (list of supported <duration>s) OK/ERROR/+CME ERROR Parameter <duration> 1-255 Duration of tone in (duration/10) seconds
Read command AT+VTD?	Response +VTD: <duration> OK/ERROR/+CME ERROR
Write command AT+VTD= <duration>	Parameter <duration> See Test command Response OK/ERROR **Important**: There is a leading output prefix +VTD in models before the S25.

AT+WS46	Select wireless network
Test command AT+WS46=?	Response +WS46: (list of supported <n>s) OK
Read command AT+WS46?	Response +WS46: <n> OK/ERROR/+CME ERROR Parameter <n> Integer; WDS side stack 12 GSM digital cellular
Write command AT+WS46=[< n>]	Response OK/ERROR/+CME ERROR **Important**: There is a leading output prefix +WS46 in models before the S25.

AT+CSCS	Select TE character set
Test command AT+CSCS=?	Response +CSCS: (list of supported <chset>s) OK
Read command AT+CSCS?	Response +CSCS: <chset> OK/ERROR/+CME ERROR Parameter <chset> String; determines which TE character set is used
Write command AT+CSCS= [<chset>]	Response OK/ERROR/+CME ERROR

AT+CAOC	Advice of charge
Test command AT+CAOC=?	Response OK
Execute command AT+CAOC	Response +CAOC: <ccm> OK/ERROR/+CME ERROR Parameter <ccm> Updated hexadecimal call meter, measured in home units; coding analogous to ACMmax on the SIM

AT+CSSN	Supplementary service notifications **Revision according to GSM 07.07 Version 5.0.0**

Test command
AT+CSSN=?
	Response
	+CSSN: (list of supported <n>s), (list of supported <m>s)
	Parameter
	<n> 0 Suppresses the +CSSI messages
	             1 Activates the +CSSI messages
	<m> 0 Suppresses the +CSSU messages
	             1 Activates the +CSSU messages
	For supported +CSSI/+CSSU messages, see also **Fehler!**
	Verweisquelle konnte nicht gefunden werden.

Read command AT+CSSN?	Response +CSSN: <n>,<m> Parameter <n> See Test command <m> See Test command
Write command AT+CSSN=<n>[,<m>]	Parameter <n> See Read command <m> See Read command

	Unexpected message
	+CSSI: <code1>
	+CSSU: <code2>
	Parameter
	<code1> Intermediate result code
	           3 Waiting call is pending
	<code2> Unsolicited result code
	           5 Held call was terminated

AT+CRSM	Restricted SIM access
Test command AT+CRSM=?	Response OK

Write command
+CRSM=<command>[,<file id>
[,<P1>,<P2>,<P3>[,<data>]]]
	Response
	+CRSM: <sw1>,<sw2>[,<response>]
	OK/ERROR/+CME ERROR
	
	Parameter
	<command>:178 READ RECORD
	           192 GET RESPONSE
	           214 UPDATE BINARY
	           220 UPDATE RECORD
	           242 STATUS
	<fileid>: Integer, identifier of the data file on the SIM, mandatory for every command except STATUS (see GSM 11.11)
	<P1>, <P2>, <P3>:
	        Integer, transferal parameter from ME to SIM, mandatory for every command except GET RESPONSE,STATUS (see GSM 11.11)
	<data>: Hexadecimal string; information that is to be written to the SIM
	<sw1>, <sw2>: Integer; information from the SIM as to how/whether the command was executed
	<response>: Hexadecimal string; given when a command was successfully processed
	
	Note: The write access to CK boxes receives only limited support and differs from device to device.

AT+CIMI	Output of IMSI
Test command AT+CIMI=?	Response OK
Execute command AT+CIMI	Response <imsi> Parameter <imsi> International Mobile Subscriber Identity (IMSI)

AT+CACM	Accumulated call meter
Test command AT+CACM=?	Response OK
Read command AT+CACM?	Response +CACM: <acm> OK/ERROR/+CME ERROR Parameter <acm> Accumulated call meter in hexadecimal format, measured in home units; coding analogous to ACMmax on the SIM
Write command AT+CACM=[< passwd>]	Response OK/ERROR/+CME ERROR Parameter <passwd> String type; usually PIN2

AT+CAMM	Accumulated call meter maximum
Test command AT+CAMM=?	Response OK

Read command
AT+CAMM?
	Response
	+CAMM: <acmmax>
	OK/ERROR/+CME ERROR
	Parameter
	<acmmax> Accumulated call meter maximum in hexadecimal
	            format, measured in home units; coding analogous to
	            ACMmax on the SIM

Write command AT+CAMM= [<acmmax>[,< passwd>]]	Response OK/ERROR/+CME ERROR Parameter <acmmax> (see Read command) <passwd> String type; usually PIN2

AT+CLCC	List Current Calls
Test command AT+CLCC=?	Response OK

Execute command
AT+CLCC
	Response
	[+CLCC: <id1>,<dir>,<stat>,<mode>,<mpty>,
	<number>,<type>]
	[<CR><LF>+CLCC: <id2>,<dir>,<stat>,<mode>,<mpty>,
	<number>,<type>
	[...]]]
	
	OK/ERROR/+CME ERROR
	Parameter
	<idx>: integer type; call identification number as described in GSM 02.30
	    [19] subclause 4.5.5.1; this number can be used in +CHLD command
	    operations
	<dir>:
	0 mobile originated (MO) call
	1 mobile terminated (MT) call
	<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)
	<mode> (bearer/teleservice):
	0 voice
	1 data
	2 fax
	3 voice followed by data, voice mode
	4 alternating voice/data, voice mode
	5 alternating voice/fax, voice mode
	6 voice followed by data, data mode
	7 alternating voice/data, data mode
	8 alternating voice/fax, fax mode
	9 unknown
	<mpty>:
	0 call is not one of multiparty (conference) call parties
	1 call is one of multiparty (conference) call parties
	<number>: string type phone number in format specified by <type>
	<type>: type of address octet in integer format

AT+CCLK	Clock
Test command AT+CCLK=?	Response OK
Write command AT+CCLK=<time>	Response OK/ERROR/+CME ERROR Parameter: <time> see Test commnd

AT+COPN	Read operator names
Test command AT+COPN=?	Response OK
Execute command AT+COPN	Response +COPN:numeric <oper>,long alphanumeric <oper><CR><LF> +COPN:..... OK/ERROR/+CME ERROR Parameter <oper> Network operator in numeric and alphanumeric notation

1.3.2. AT Commands According to GSM 07.05 for SMS

The GSM 07.05 commands are used for operating the SMS functions of the GSM mobile phone. The GSM module MOBILE supports the SMS PDU mode.

AT+CSMS	Selection of message service **Revision according to GSM 07.05 Version 5.0.0**
Test command AT+CSMS=?	Response +CSMS: (list of supported <service>s) Parameter <service> 0 GSM 3.40 and 3.41 1 GSM 3.40 and 3.41 and compatibility of the AT command syntax for phase 2+ (*NOTE*: *Deactivating the phase 2+ compatibility is only possible if the direct output of short messages +CNMI=2,2 or +CNMI=2,3 is not activated. If necessary, the latter should be deactivated first).*

Read command
AT+CSMS?
	Response
	+CSMS: <service>,<mt>,<mo>,<bm>
	Parameter
	<service> 0 GSM 3.40 and 3.41
	<mt> Mobile terminated messages
	     1 Type supported
	<mo> Mobile originated messages
	     1 Type supported
	<bm> Broadcast type messages
	     0 Type not supported

Write command AT+CSMS=<service>	Parameter <service> 0 GSM 3.40 and 3.41 Response +CSMS: <mt>,<mo>,<bm> OK/ERROR/+CMS ERROR

AT+CPMS	Selection of SMS memory **Revision according to GSM 07.05 Version 4.7.0**

Test command
AT+CPMS=?
	Response
	+CPMS: (list of supported <mem1>s),(list of supported <mem2>s) ,(list of supported <mem3>s)
	Parameter
	<mem1> Memory from which messages are read and deleted
	        "SM" SIM-messages memory
	<mem2> Memory to which messages are written and sent
	        "SM" SIM-messages memory
	<mem3> Memory in which received messages are stored, if forwarding to the PC is not set ("+CNMI")
	        "SM" SIM-messages memory

Read command AT+CPMS?	Response +CPMS: <mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>,<mem3>,<used3>,<total3> Parameter <memx> Memory from which messages are read and deleted <usedx> Number of messages currently in <memx> <totalx> Number of storable messages in <memx>
Write command AT+CPMS=<mem1>[,<mem2>[,<mem3>]]	Parameter <mem1> See Test command <mem2> See Test command <mem3> See Test command Response +CPMS: <used1>,<total1>,<used2>,<total3>,<used3>,<total3> OK/ERROR/+CMS ERROR

AT+CMGF	SMS format
Test command AT+CMGF=?	Response +CMGF: (list of supported <mode>s) Parameter <mode>: 0 PDU mode
Read command AT+CMGF?	Response +CMGF: <mode> Parameter <mode>: 0 PDU mode
Write command AT+CMGF=[<mode>]	Parameter <mode>: 0 PDU mode Response OK/ERROR

AT+CSCA	Address of the SMS service center
Test command AT+CSCA=?	Response OK
Read command AT+CSCA?	Response +CSCA: <sca>,<tosca> Parameter <sca> Service-center address in string format <tosca> Service-center address format
Write command AT+CSCA=<sca>[,<tosca>]	Parameter <sca> Service-center address in string format <tosca> Service-center address format Response OK/ERROR

AT+CNMI	Display new incoming SMS **Revision according to GSM 07.05 Version 4.7.0**

Test command
AT+CNMI=?
	Response
	+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)
	Parameter
	<mode> 0 Buffers unexpected messages (but is equiva-lent to rejecting; see <bfr>)
	         2 Buffers unexpected messages if serial interface is occupied, otherwise they are output
	
	<mt> 0 Suppresses unexpected messages for incoming short messages
	      1 Unexpected messages of a received short message (SMS-DELIVER) that is stored on a chip card are output in the form
	        +CMTI: <mem>,<index>
	      2 Unexpected messages of a received short message (SMS-DELIVER) (except class 2 and the message "Waiting Indication Group: *store message*") are output in the form
	        +CMT: [<alpha>],<length><CR><LF><pdu>
	        (<alpha> is not supported)
	        Class 2 and the message "Waiting Indication Group: *store message*" are output as <mt>=1
	      3 Unexpected messages of a received short message (SMS-DELIVER) class 3 are output as <mt>=2. Messages with other data coding schemes are output as <mt>=1.
	(**NOTE**: *<mt>=2 and <mt>=3 are not possible unless the Phase 2+ compatibility has been activated by means of +CSMS=1*)

	<bm>	0	Suppresses unexpected messages for incoming cell broadcast messages
		2	Outputs unexpected messages for cell broadcast messages in the form **+CBM: <length><CR><LF><pdu>**
	<ds>	0	Suppresses unexpected messages for incoming SMS status reports
		2	Outputs unexpected messages for SMS status reports in the form **+CDS: <length><CR><LF><pdu>**
	<bfr>	1	Buffered unexpected messages are rejected when switching from <mode> 0 to <mode> 2.
	<mem>		See +CPMS
	<index>		Index of the record on the chip card
	<alpha> address		alphanumeric representation of the sender
	<length>		Length of <pdu>
	<pdu>		See +CMGL
Read command AT+CNMI?	Response +CNMI: <mode>,<mt>,<bm>,<ds>,<bfr> Parameter <mode> See Test command <mt> See Test command <bm> See Test command <ds> See Test command <bfr> See Test command		
Write command AT+CNMI=[<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]	Parameter <mode> See Test command <mt> See Test command <bm> See Test command <ds> See Test command <bfr> See Test command Response OK/ERROR/+CMS ERROR		
	Unexpected message +CMTI: <mem>,<index> Indication that new message has arrived +CMT: ,<length><CR><LF><pdu> Direct output of the short message +CDS: <length><CR><LF><pdu> Direct output of the status report +CBM: <length><CR><LF><pdu> Direct output of the cell broadcast message		

AT+CNMA	Acknowledgment of a short message directly output (without storing on the chip card) **Revision according to GSM 07.05 Version 5.0.0** *(NOTE: This command is not possible unless the Phase 2+ compatibility has been activated by means of +CSMS=1)*
Test command AT+CNMA=?	Response +CNMA: (list of supported \<n>s) Parameter \<n> 0 Mode of functioning analogous to GSM 07.05 text mode
Write command AT+CNMA[=\<n>]	Parameter \<n> See Test command Response OK/ERROR/+CMS ERROR: \<err>

AT+CMGL	List SMS **Revision according to GSM 07.05 Version 4.7.0**

Test command
AT+CMGL=?
	Response
	+CMGL: (list of supported \<stat>s)
	Parameter
	\<stat>
	            0 "REC UNREAD": received unread messages (default)
	            1 "REC READ": received read messages
	            2 "STO UNSENT": stored unsent messages
	            3 "STO SENT": stored sent messages
	            4 "ALL": all messages

Write command AT+CMGL[=\<stat>]	Parameter \<stat> See Test command Response **If PDU mode (+CMGF=0) and command are successful:** +CMGL: \<index>,\<stat>,[\<alpha>],\<length>\<CR>\<LF>\<pdu> [\<CR>\<LF>+CMGL: \<index>,\<stat>,[alpha],\<length>\<CR>\<LF>\<pdu> [...]] \<pdu> The PDU begins with the service-center address (according to GSM04.11), followed by the TPDU according to GSM03.40 in hexadecimal format **otherwise:** +CMS ERROR: \<err>

AT+CMGR	Read in an SMS **Revision according to GSM 07.05 Version 4.7.0**
Test command AT+CMGR=?	Response OK
Write command AT+CMGR=<index>	Parameter <index> Index of message in selected memory <mem1> Response **If PDU mode (+CMGF=0) and command are successful:** +CMGR: <stat>,[<alpha>],<length><CR><LF><pdu> <pdu> Siehe "AT+CMGL" **otherwise:** +CMS ERROR: <err>

AT+CMGS	Send an SMS
Test command AT+CMGS=?	Response OK
Write command **If PDU mode (+CMGF=0)** +CMGS=<length><CR>*PDU is given* <ctrl-Z/ESC>	Parameter <length> Length of PDU <pdu> See "AT+CMGL" <mr> Message reference Response **If sending is successful:** +CMGS: <mr> **If sending is not successful:** +CMS ERROR: <err>

AT+CMSS	Send an SMS from the SMS memory
Test command AT+CMSS=?	Response OK
Write command +CMSS=<index>[,<da>[,<toda>]]	Parameter <index> Index of message in selected memory <mem1> <da> Destination address in string format <toda> Format of destination address <mr> Message reference Response **If sending is successful:** +CMSS: <mr> **If sending is not successful:** +CMS ERROR: <err>

AT+CMGW	Write an SMS to the SMS memory
Test command AT+CMGW=?	Response OK
Write command **If PDU mode (+CMGF=0)** AT+CMGW=<length>[,<stat>]<CR>***PDU is given*** <ctrl-Z/ESC>	Parameter <length> Length of PDU <stat> See command +CMGL <pdu> See "AT+CMGL" <index> Index of message in selected memory <mem1> Response +CMGW: <index> +CMS ERROR: <err>

AT+CMGD	Delete an SMS in the SMS memory
Test command At+CMGD=?	Response OK
Write command AT+CMGD=<index>	Parameter <index> Index of message in the selected memory <mem1> Response OK/ERROR/+CMS ERROR

AT+CSCB	Select cell broadcast messages
Test command AT+CSCB=?	Response +CSCB: (list of supported <mode>s) Parameter <mode> 0 Accepts messages that are defined in <mids> and <dcss> 1 Does not accept messages that are defined in <mids> and <dcss>
Read command AT+CSCB? Write command AT+CSCB=[<mode>[,<mids>[,<dcss>]]]	Response +CSCB: <mode>,<mids>,<dcss> Parameter <mode> See Test command <mids> String type; combinations of CBM message Ids <dcss> String type; combinations of CBM data coding schemes

AT+CMGC	Send an SMS command
Test command AT+CMGC=?	Response OK
Write command **If PDU mode (+CMGF=0)** +CMGC=<length><CR>***PDU is given*** <ctrl-Z/ESC>	Parameter <length> Length of PDU <pdu> See "AT+CMGL" <mr> Message reference Response **If sending is successful:** +CMGC: <mr> **If sending is not successful:** +CMS ERROR: <err>

Appendix A

Features of the Telephone-Book Memory

Name	Description	Category / Access	Write	Delete completely
FD	Fix-dialing number (SIM fix-dialing telephone book)	GSM 07.07 / +CPBS	Allowed (PIN2 required)	
SM	Abbreviate dialing number (SIM telephone book)	GSM 07.07 / +CPBS	Allowed (device code required if FDN replacement is active)	
DC (MD)	Mobile last dialing number (last number redial memory; only if "LD" is not available)	GSM 07.07 / +CPBS	Not allowed	
ON (OW)	Own Numbers (SIM own telephone numbers)	GSM 07.07 (Siemens) / +CPBS (historical)	Allowed	
LD	SIM last dialing number (last number redial memory on SIM)	GSM 07.07 / +CPBS	Not allowed	
ME	Mobile-equipment telephone book (ME dialing numbers)	GSM 07.07 / +CPBS	Allowed (device code required if FDN replacement is active)	
MC (MS)	Missed dialing numbers (unanswered calls)	GSM 07.07 (Siemens) / +CPBS	Not allowed	
RC (CD)	Callback dialing numbers (answered calls)	GSM 07.07 (Siemens) / +CPBS	Not allowed	

Writing to the FDN Phonebook / FDN Replacement

Writing to the fix-dialing number phonebook is protected by PIN2.
A Write sequence (to e.g. record 5) runs as follows:

```
AT+CMEE=2                      //Activate expanded error message
OK
```

```
AT+CPBS=?                          // Listing of available telephone books
+CPBS: "FD","SM","LD"
OK


AT+CPBS="FD"                       // Selection of the FDN telephone book
OK


AT+CPBW=5,1234,,"test"        //  A Write to record 5 is attempted...
+CME ERROR: SIM PIN2 REQUIRED //  ... PIN2 is required for this purpose


AT+CPIN?                           //  Query of the PIN status...
+CPIN: SIM PIN2                    //  ... PIN2 is to be entered


AT+CPIN=12345678                   //   Input of PIN2
OK


AT+CPBW=5,1234,,"test"        // A Write to record 5 is attempted...
OK                                 // PIN2 remains active as long as you use the commands
                                   //  RCCL3_CMD_CPIN, RCCL3_CMD_CPBS,
                                   //  RCCL3_CMD_CPBR, RCCL3_CMD_CPBW,
                                   //  RCCL3_CMD_SPIC.
                                   //  If you use other commands or if none of the
                                   //  above commands are executed within five
                                   //  minutes, the validity of PIN2 is voided.


AT+CPBW=6,5678,,"new test"    //  A Write to record 6 is attempted...
OK


...
```

In addition, if there is no FDN phonebook available on the SIM, it is possible to activate a feature which activates FDN-like behavior for the "SM" and "ME" phonebooks (FDN replacement). (Currently this feature can only be activated via the MMI block/device block/excluding telephone book.)
In this case, the Write to the "SM" and "ME" phonebooks is ensured by the device code (PH-SIM PIN and PH-SIM PUK, respectively).
The sequence for entering the device code is analogous to the above example.