7 Call Related Commands

7.1. ATA   Answer an Incoming Call

ATA Answer an Incoming Call	
Execution Command **ATA**	Response TA sends off-hook to the remote station. Response in case of data call, if successfully connected **CONNECT<text>** TA switches to data mode. Note: **<text>** output only if **ATX<value>** parameter setting with the **<value>** >0. When TA returns to command mode after call release: **OK** Response in case of voice call, if successfully connected: **OK** Response if no connection: **NO CARRIER**
Reference V.25ter	

NOTES

1. Any additional commands on the same command line are ignored.
2. 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.
3. See also **ATX**.

Example

RING	// A voice call is ringing
AT+CLCC	
+CLCC: 1,1,4,0,0,"02154450290",129,""	
OK	

ATA	// Accept the voice call with **ATA**
OK	

7.2. ATD Mobile Originated Call to Dial a Number

ATD Mobile Originated Call to Dial a Number	
Execution Command **ATD<n>[<mgsm][;]**	Response This command can be used to set up outgoing voice, data or FAX calls. It also serves to control supplementary services. If no dial tone and (parameter setting **ATX2** or **ATX4**): **NO DIALTONE** If busy and (parameter setting **ATX3** or **ATX4**): **BUSY** If a connection cannot be established: **NO CARRIER** If connection is successful and non-voice call. **CONNECT<text>** TA switches to data mode. **<text>** output only if **ATX<value>** parameter setting with the **<value>** >0 When TA returns to command mode after call release: **OK** If connection is successful and voice call: **OK**
Reference V.25ter	

Parameter

<n>   String of dialing digits and optionally V.25ter modifiers
              dialingdigits:**0-9, * , #, +, A, B, C**
               Following V.25ter modifiers are ignored:
               ,(comma), T, P, !, W, @

Emergency call:
<n>   Standardized emergency number 112(no SIM needed)

\<mgsm\>	String of **GSM** modifiers:	
	l	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	

NOTES

1. 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.
2. Parameter "l" and "i" only if no *# code is within the dial string.
3. **\<n\>** is default value for last number that can be dialed by **ATDL**.
4. *# codes sent with **ATD** are treated as voice calls. Therefore, the command must be terminated with a semicolon ";".
5. See **ATX** command for setting result code and call monitoring parameters.
6. Responses returned after dialing with ATD
   - For voice call two different responses mode can be determined. TA returns "**OK**" immediately either after dialing was completed or after the call was established. The setting is controlled by **AT+COLP**. Factory default is **AT+COLP=0**, which causes the TA returns "**OK**" immediately after dialing was completed, otherwise TA will returns "**OK**", "**BUSY**", "**NO DIAL TONE**", "**NO CARRIER**".
7. Using **ATD** during an active voice call:
   - 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.

Example

ATD10086;	// Dialing out the party's number
OK	

7.3. ATH   Disconnect Existing Connection

ATH Disconnect Existing Connection	
Execution Command	Response
ATH[n]	Disconnect existing call by local TE from command line and terminate call.
	OK

Reference	
V.25ter	

Parameter

<n>	0	Disconnect from line and terminate call

> **NOTE**
>
> **OK** is issued after circuit 109(DCD) is turned off, if it was previously on.

7.4. +++ Switch From Data Mode to Command Mode

+++ Switch From Data Mode to Command Mode	
Execution Command **+++**	Response This command is only available during TA is in data mode, such as, a CSD call, a GPRS connection and a transparent TCPIP 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 with the remote server or, accordingly, the GPRS connection. **OK**
Reference V.25ter	

> **NOTES**
>
> 1. To prevent the "**+++**" escape sequence from being misinterpreted as data, it should comply to following sequence:
>   - No characters entered for T1 time (0.5 seconds).
>   - "**+++**" characters entered with no characters in between. For CSD call or PPP online mode, the interval between two "**+**" MUST should be less than 1 second and for a transparent TCPIP connection, the interval MUST should be less than 20 ms.
>   - No characters entered for T1 time (0.5 seconds).
>   - Switch to command mode, otherwise go to step 1.
> 2. To return from command mode back to data or PPP online mode: Enter **ATO**
>   - Another way to change to command mode is through DTR, see **AT&D** command for the details.

7.5. ATO   Switch from Command Mode to Data Mode

ATO Switch from Command Mode to Data Mode	
Execution Command **ATO[n]**	Response TA resumes the connection and switches back from command mode to data mode. If connection is not successfully resumed: **NO CARRIER** else TA returns to data mode from command mode **CONNECT <text>**
Reference V.25ter	

Parameter

<n>	0	Switch from command mode to data mode

NOTE

TA returns to data mode from command mode **CONNECT <text>**,**<text>** only if parameter setting is X>0.

7.6. ATP   Select Pulse Dialing

ATP Select Pulse Dialing	
Execution Command **ATP**	Response **OK**
Reference V.25ter	

NOTE

No effect in GSM.

7.7. ATS0 Set Number of Rings before Automatically Answering Call

ATS0 Set Number of Rings before Automatically Answering Call	
Read Command **ATS0?**	Response **\<n\>** **OK**
Write Command **ATS0=\<n\>**	Response This parameter setting determines the number of rings before auto-answer. **OK**
Reference V.25ter	

Parameter

\<n\>	<u>0</u>	Automatic answering is disabled
	1-255	Enable automatic answering on the ring number specified

---

NOTE

If **\<n\>** is set too high, the calling party may hang up before the call can be answered automatically.

Example

ATS0=3	// Set three rings before automatically answering a call
OK	
RING	// Call coming
RING	
RING	// Automatically answering the call after three rings

7.8. ATS6 Set Pause before Blind Dialing

ATS6 Set Pause before Blind Dialing	
Read Command **ATS6?**	Response **\<n\>** **OK**

Write Command **ATS6=\<n>**	Response **OK**
Reference V.25ter	

Parameter

\<n>	0-2-10	Number of seconds to wait before blind dialing

NOTE

No effect in GSM

7.9. 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**
Write 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**
Reference V.25ter	

Parameter

\<n>	1-60-255	Number of seconds to wait for connection completion

---

NOTES

1. If called party has specified a high value for **ATS0=\<n>**, call setup may fail.
2. The correlation between **ATS7** and **ATS0** is important, for example: Call may fail if **ATS7=30** and **ATS0=20**.
3. **ATS7** is only applicable to data call.

7.10. ATS8   Set the Number of Seconds to Wait for Comma Dial Modifier

ATS8 Set the Number of Seconds to Wait for Comma Dial Modifier	
Read Command **ATS8?**	Response **<n>** **OK**
Write Command **ATS8=<n>**	Response **OK**
Reference V.25ter	

Parameter

<n>	0	No pause when comma encountered in dial string
	1-<u>2</u>-255	Number of seconds to wait

NOTE

No effect in GSM.

7.11. ATS10   Set Disconnect Delay after Indicating the Absence of Data Carrier

ATS10 Set Disconnect Delay after Indicating the Absence of Data Carrier	
Read Command **ATS10?**	Response **<n>** **OK**
Write Command **ATS10=<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 disconnection, the TA remains connected. **OK**
Reference V.25ter	

Parameter

\<n>	1-<u>15</u>-254	Number of delay in 100ms

7.12. ATT   Select Tone Dialing

ATT Select Tone Dialing	
Execution Command **ATT**	Response **OK**
Reference V.25ter	

> **NOTE**

No effect in GSM.

7.13. 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**
Read Command **AT+CBST?**	Response **+CBST: \<speed>,\<name>,\<ce>** **OK**
Write 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**
Reference GSM 07.07	

Parameter

\<speed\>	0	Adaptive baud
	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)
	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
\<ce\>	0	Transparent
	<u>1</u>	Non-transparent
	2	Both, transparent preferred
	3	Both, non-transparent preferred

NOTE

GSM 02.02 lists the allowed combinations of the sub parameters.

7.14. AT+CSTA   Select Type of Address

AT+CSTA Select Type of Address	
Test Command **AT+CSTA=?**	Response **+CSTA:** (list of supported **\<type\>**s) **OK**
Read Command **AT+CSTA?**	Response **+CSTA: \<type\>** **OK**
Reference GSM 07.07	

Parameter

\< type \>	Current address type setting.

129	Unknown type (IDSN format number)
145	International number type (ISDN format)
161	National number type (IDSN format)

7.15. AT+CLCC   List Current Calls of ME

AT+CLCC List Current Calls of ME	
Test Command **AT+CLCC=?**	Response **OK**
Execution Command **AT+CLCC**	Response TA returns a list of current calls of ME. If command succeeds but no calls are available, no information response is sent to TE. **[+CLCC: <id1>,<dir>,<stat>,<mode>,<mpty>[, <number>,<type>[,""]]** **[<CR><LF>+CLCC: <id2>,<dir>,<stat>,<mode>,<mpty>[, <number>,<type>[,""]]** **[...]]]** **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<idx>	Integer type; call identification number as described in GSM 02.30 sub clause 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/tele service	
	0	Voice

	1	Data
	2	FAX
	9	Unknown
<mpty>	0	Call is not one of multiparty (conference) call parties
	1	Call is one of multiparty (conference) call parties
<number>	Phone number in string type in format specified by **<type>**	
<type>	Type of address of octet in integer format	
	129	Unknown type(IDSN format number)
	145	International number type (ISDN format)

Example

AT+CLCC
+CLCC: 1,0,0,0,0,"10086",129,""   // List the current call of ME

OK

7.16. AT+CR Service Reporting Control

AT+CR **Service Reporting Control**	
Test Command **AT+CR=?**	Response +CR: (list of supported **<mode>**s) OK
Read Command **AT+CR?**	Response +CR: **<mode>** OK
Write Command **AT+CR=[<mode>]**	Response TA controls whether or not intermediate result code **+CR: <serv>** is returned from the TA to the TE when a call set up. OK
Reference GSM 07.07	

Parameter

<mode>	0	Disable
	1	Enable
<serv>	ASYNC	Asynchronous transparent
	SYNC	Synchronous transparent

REL ASYNC Asynchronous non-transparent
REL SYNC Synchronous non-transparent

NOTE

Intermediate result code:

If it is 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.

7.17. AT+CRC   Set Cellular Result Codes for Incoming Call Indication

AT+CRC Set Cellular Result Codes for Incoming Call Indication	
Test Command **AT+CRC=?**	Response **+CRC:** (list of supported **<mode>**s) **OK**
Read Command **AT+CRC?**	Response **+CRC: <mode>** **OK**
Write Command **AT+CRC=[<mode>]**	Response TA controls whether or not the extended format of incoming call indication is used. **OK**
Reference GSM 07.07	

Parameter

<mode>	0	Disable extended format
	1	Enable extended format

NOTE

Unsolicited result code:

When it is enabled, an incoming call is indicated to the TE with unsolicited result code **+CRING: <type>** instead of the normal **RING**.

Parameter

<type>	ASYNC	Asynchronous transparent

SYNC	Synchronous transparent
REL ASYNC	Asynchronous non-transparent
REL SYNC	Synchronous non-transparent
FAX	Facsimile
VOICE	Voice

Example

AT+CRC=1	// Enable extended format
OK	
+CRING: VOICE	// Indicate incoming call to the TE
ATH	
OK	
AT+CRC=0	// Disable extended format
OK	
RING	// Indicate incoming call to the TE
ATH	
OK	

7.18. AT+CRLP   Select Radio Link Protocol Parameter

AT+CRLP Select Radio Link Protocol Parameter	
Test Command **AT+CRLP=?**	Response TA returns values supported. RLP (Radio Link Protocol) versions 0 and 1 share the same parameter set. TA returns only one line for this set (where **<verx>** is not present). **+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) **OK**
Read Command **AT+CRLP?**	Response 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). **+CRLP: <iws>,<mws>,<T1>,<N2>,<ver1>,<T4>** **OK**
Write Command	Response

AT+CRLP=[<iws>[,<mws>[,<T1>[,<N2>[,<ver>[,<T4>]]]]]]	TA sets radio link protocol (RLP) parameters used when non-transparent data calls are set up. **OK**
Reference GSM 07.07	

Parameter

<iws>	0-61	Interworking window size (IWF to MS)
<mws>	0-61	Mobile window size(MS to IWF)
<T1>	39-255	Acknowledgment timer T1 in a unit of 10ms
<N2>	1-255	Retransmission attempts N2
<verx>	RLP	RLP version number in integer format. When version indication is not present, it shall equal 0.
<T4>	3-255	Re-sequencing period in integer format, in a unit of 10 ms

7.19. AT+CSNS   Single Numbering Scheme

AT+CSNS Single Numbering Scheme	
Test Command **AT+CSNS=?**	Response **+CSNS:** (list of supported **<mode>**s) **OK**
Read Command **AT+CSNS?**	Response **+CSNS: <mode>** **OK**
Write Command **AT+CSNS=[<mode>]**	Response **OK** **ERROR**
Reference GSM 07.07	

Parameter

<mode>	0	Voice
	1	Alternating voice/FAX, voice first
	2	FAX
	3	Alternating voice/data, voice first
	4	Data

5	Alternating voice/FAX, FAX first
6	Alternating voice/data, data first
7	Voice followed by data

7.20. AT+CMOD   Configure Alternating Mode Calls

AT+CMOD Configure Alternating Mode Calls	
Test Command **AT+CMOD=?**	Response **+CMOD:** (list of supported **<mode>**s) **OK**
Write Command **AT+CMOD=[<mode>]**	Response **OK** **ERROR**
Reference GSM 07.07	

Parameter

<mode>	0	Single mode
	1	Alternating voice/FAX
	2	Alternating voice/data
	3	Voice followed by data

7.21. AT+QSFR   Preference Speech Coding

AT+QSFR Preference Speech Coding	
Test Command **AT+QSFR=?**	Response **+QSFR:** (list of supported **<mode>**s) **OK**
Read Command **AT+QSFR?**	Response **+QSFR: <mode>** **OK**
Write Command **AT+QSFR=<mode>**	Response **OK** **ERROR**

Reference	

Parameter

<mode>	0	Automatic mode
	1	FR
	2	HR
	3	EFR
	4	AMR_FR
	5	AMR_HR
	6	FR and EFR, FR priority
	7	EFR and FR, EFR priority
	8	EFR and HR, EFR priority
	9	EFR and AMR_FR, EFR priority
	10	AMR_FR and FR, AMR_FR priority
	11	AMR_FR and HR, AMR_FR priority
	12	AMR_FR and EFR, AMR_FR priority
	13	AMR_HR and FR, AMR_HR priority
	14	AMR_HR and HR, AMR_HR priority
	15	AMR_HR and EFR, AMR_HR priority

NOTE

This setting is stored in the non-volatile memory and will be used whenever the module is powered up again.

8 SMS Commands

8.1. AT+CSMS   Select Message Service

AT+CSMS Select Message Service	
Test Command **AT+CSMS=?**	Response **+CSMS:** (list of supported **<service>**s) **OK**
Read Command **AT+CSMS?**	Response **+CSMS: <service>,<mt>,<mo>,<bm>** **OK**
Write Command **AT+CSMS=<service>**	Response **+CSMS: <mt>,<mo>,<bm>** **OK** If error is related to ME functionality: **+CMS ERROR: <err>**
Reference GSM 07.05	

Parameter

<service>	0	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 ew command syntax may be supported (e.g. correct routing of messages with new Phase 2+ data coding schemes))
	128	SMS PDU mode - TPDU only used for ending/receiving SMSs
<mt>		Mobile Terminated Messages
	0	Type not supported
	1	Type supported
<mo>		Mobile Originated Messages
	0	Type not supported
	1	Type supported
<bm>		Broadcast Type Messages

0	Type not supported
1	Type supported

8.2. AT+CMGF Select SMS Message Format

AT+CMGF Select SMS Message Format	
Test Command **AT+CMGF=?**	Response **+CMGF:** (list of supported **<mode>**s) **OK**
Read Command **AT+CMGF?**	Response **+CMGF: <mode>** **OK**
Write Command **AT+CMGF=[<mode>]**	Response TA sets parameter to denote which kind of I/O format of messages is used. **OK**
Reference GSM 07.05	

Parameter

<mode>	0	PDU mode
	1	Text mode

8.3. AT+CSCA SMS Service Center Address

AT+CSCA SMS Service Center Address	
Test Command **AT+CSCA=?**	Response **OK**
Read Command **AT+CSCA?**	Response **+CSCA: <sca>,<tosca>** **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 sending and writing 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. **OK** If error is related to ME functionality: **+CME ERROR: \<err\>**
Reference GSM 07.05	

Parameter

\<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** in TS 07.07); 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 to **\<toda\>**)

> **NOTE**
>
> The Command writes the parameters in NON-VOLATILE memory.

Example

AT+CSCA="+8613800210500",145	// SMS service center address
OK	
AT+CSCA?	// Query SMS service center address
+CSCA: "+8613800210500",145	
OK	

8.4. AT+CPMS   Preferred SMS Message Storage

AT+CPMS Preferred SMS Message Storage	
Test Command **AT+CPMS=?**	Response **+CPMS:** (list of supported **\<mem1\>**s),(list of supported **\<mem2\>**s),(list of supported **\<mem3\>**s) **OK**
Read Command **AT+CPMS?**	Response **+CPMS:**

	<mem1>,<used1>,<total1>,<mem2>,<used2>,<total2>,<mem3>,<used3>,<total3>	
	OK	
Write Command **AT+CPMS=<mem1>[,<mem2>[,<mem3>]]**	Response TA selects memory storages **<mem1>**, **<mem2>** and **<mem3>** to be used for reading, writing, etc. **+CPMS:** **<used1>,<total1>,<used2>,<total2>,<used3>,<total3>** **OK** If error is related to ME functionality: **+CMS ERROR: <err>**	
Reference GSM 07.05		

Parameter

<mem1>	Messages to be read and deleted from this memory storage
	"SM" SIM message storage
	"ME" Mobile Equipment message storage
	"MT" Sum of "SM" and "ME" storages
<mem2>	Messages will be written and sent to this memory storage
	"SM" SIM message storage
	"ME" Mobile Equipment message storage
	"MT" Sum of "SM" and "ME" storages
<mem3>	Received messages will be placed in this memory storage
	if routing to PC is not set ("**+CNMI**")
	"SM" SIM message storage
	"ME" Mobile Equipment message storage
	"MT" Sum of "SM" and "ME" storages
<usedx>	Integer type; Number of messages currently in **<memx>**
<totalx>	Integer type; Number of messages storable in **<memx>**

NOTE

The message storages of SIM and ME offer maximum space for 60, the SIM message storage will be priority stored. The SIM storage offer maximum space for 50, the ME storage offer maximum space for 10.

Example

AT+CPMS="SM","SM","SM"   // Set SMS message storage as "SM"

+CPMS: 0,50,0,50,0,50

OK
AT+CPMS?   // Query the current SMS message storage
+CPMS: "SM",0,50,"SM",0,50,"SM",0,50

OK

8.5. AT+CMGD Delete SMS Message

AT+CMGD Delete SMS Message	
Test Command **AT+CMGD=?**	Response **+CMGD:** (list of supported **\<index>**s),(list of supported **\<delflag>**s) **OK**
Write Command **AT+CMGD=\<index>[,\<delflag>]**	Response TA deletes message from preferred message storage **\<mem1>** location **\<index>**. **OK** **ERROR** If error is related to ME functionality: **+CMS ERROR:\<err>**
Reference GSM 07.05	

Parameter

\<index>	Integer type; value in the range of location numbers supported by the associated memory
\<delflag>	<u>0</u> Delete message specified in **\<index>**
	1 Delete all read messages from **\<mem1>** storage, leaving unread messages and stored mobile originated messages (whether sent or not) untouched
	2 Delete all read messages from **\<mem1>** storage and sent mobile originated messages, leaving unread messages and unsent mobile originated messages untouched
	3 Delete all read messages from **\<mem1>** storage, sent and unsent mobile originated messages, leaving unread messages untouched
	4 Delete all messages from **\<mem1>** storage

Example

AT+CMGD=1	// Delete message specified in **<index>=1**
OK	
AT+CMGD=1,4	// Delete all messages from **<mem1>** storage
OK	

8.6. AT+CMGL   List SMS Messages from Preferred Store

AT+CMGL List SMS Messages from Preferred Store	
Test Command **AT+CMGL=?**	Response **+CMGL:** (list of supported **<stat>**s) **OK**
Write Command **AT+CMGL=<stat>[,<mode>]**	Response 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'. 1) If text mode (**+CMGF=1**) and command successful: for SMS-SUBMITs and/or SMS-DELIVERs: **+CMGL:** **<index>,<stat>,<oa/da>,[<alpha>],[<scts>][,<tooa/toda>,<length>]<CR><LF><data>[<CR><LF>** **+CMGL:** **<index>,<stat>,<da/oa>,[<alpha>],[<scts>][,<tooa/toda>,<length>]<CR><LF><data>[...]]** for SMS-STATUS-REPORTs: **+CMGL:** **<index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>[<CR><LF>** **+CMGL:** **<index>,<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>[...]]** for SMS-COMMANDs: **+CMGL: <index>,<stat>,<fo>,<ct>[<CR><LF>** **+CMGL: <index>,<stat>,<fo>,<ct>[...]]** for CBM storage: **+CMGL:<index>,<stat>,<sn>,<mid>,<page>,<pages><CR><LF><data>[<CR><LF>** **+CMGL:**

	<index>,<stat>,<sn>,<mid>,<page>,<pages><CR><LF><data>[...]] **OK** 2) If PDU mode (**+CMGF=0**) and Command successful: **+CMGL:<index>,<stat>,[<alpha>],<length><CR><LF><pdu><CR><LF>** **+CMGL:** **<index>,<stat>,[alpha],<length><CR><LF><pdu>[...]]** **OK** 3)If error is related to ME functionality: **+CMS ERROR: <err>**
Reference GSM 07.05	

Parameter

<stat>	1) If text mode	
	"REC UNREAD"	Received unread messages
	"REC READ"	Received read messages
	"STO UNSENT"	Stored unsent messages
	"STO SENT"	Stored sent messages
	"ALL"	All messages
	2) If PDU mode	
	0	Received unread messages
	1	Received read messages
	2	Stored unsent messages
	3	Stored sent messages
	4	All messages
<mode>	0	Normal(default)
	1	Not change status of the specified SMS record
<alpha>	String type alphanumeric representation of **<da>** or **<oa>** corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific; used character set should be the one selected with command select TE character set **+CSCS** (see definition of this command in TS 07.07)	
<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 (refer to command **+CSCS** in TS 07.07); type of address given by **<toda>**	
<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 **<fo>** indicates that GSM 03.40 TPUser-Data-Header-Indication is not set – if TE character set other than "HEX" (refer to Command Select TE character set	

         +CSCS in TS 07.07):ME/TA converts GSM alphabet into current TE character set according to rules of Annex A

- if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number (e.g. character P (GSM 23) is presented as 17 (IRA 49 and 55))
- 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))

In the case of CBS: GSM 03.41 CBM Content of Message in text mode responses; format:

- if **<dcs>** indicates that GSM 03.38 default alphabet is used
- if TE character set other than "HEX" (refer to Command **+CSCS** in GSM 07.07): ME/TA converts GSM alphabet into current TE character set according to rules of Annex A
- if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number
- 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 of the currently selected TE character set (refer to command **+CSCS** in TS 07.07); 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 to **<dt>**)
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of **<da>** is + (IRA 43) default value is 145, otherwise default value is 129)
<tooa>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (refer to **<toda>**)

NOTE

If parameter is omitted the command returns the list of SMS with "REC UNREAD" status.

Example

AT+CMGF=1	// Set SMS message format as text mode
OK	
AT+CMGL="ALL"	// List all messages from message storage

+CMGL: 1,"STO UNSENT","","",
This is a test from Quectel

+CMGL: 2,"STO UNSENT","","",
This is a test from Quectel,once again.

OK

8.7. AT+CMGR Read SMS Message

AT+CMGR Read SMS Message	
Test Command **AT+CMGR=?**	Response **OK**
Write Command **AT+CMGR=<index>[,<mode>]**	Response 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'. 1) If text mode (**+CMGF=1**) and command is executed successfully: for SMS-DELIVER: **+CMGR:** **<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data>** for SMS-SUBMIT: **+CMGR:** **<stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>],<sca>,<tosca>,<length>]<CR><LF><data>** for SMS-STATUS-REPORTs: **+CMGR:** **<stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** for SMS-COMMANDs: **+CMGR:** **<stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>],[<toda>],<length><CR><LF><cdata>]** for CBM storage: **+CMGR:** **<stat>,<sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data>** 2) If PDU mode (+CMGF=0) and command successful:

	+CMGR: <stat>,[<alpha>],<length><CR><LF><pdu> **OK** 3) If error is related to ME functionality: **+CMS ERROR: <err>**
Reference GSM 07.05	

Parameter

<index>	Integer type; value in the range of location numbers supported by the associated memory
<mode>	0 Normal
	1 Not change the status of the specified SMS record
<alpha>	String type alphanumeric representation of **<da>** or **<oa>** corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific
<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** in TS 07.07); type of address given by **<toda>**
<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 **<fo>** indicates that GSM 03.40 TPUser-Data-Header-Indication is not set
	− if TE character set other than "HEX" (refer to command select TE character set **+CSCS** in TS 07.07):ME/TA converts GSM alphabet into current TE character set according to rules of Annex A
	− if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number (e.g. character P (GSM 23) is presented as 17 (IRA 49 and 55))
	− 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))
	In the case of CBS: GSM 03.41 CBM Content of Message in text mode responses; format
	− if **<dcs>** indicates that GSM 03.38 default alphabet is used
	− if TE character set other than "HEX" (refer to command **+CSCS** in GSM 07.07): ME/TA converts GSM alphabet into current TE character set according to rules of Annex A
	− if TE character set is "HEX": ME/TA converts each 7-bit character of GSM alphabet into two IRA character long hexadecimal number
	− 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
<dcs>	Depending on the command or result code: GSM 03.38 SMS Data Coding Scheme (default value is 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 value is 17), SMS-STATUS-REPORT, or SMS-COMMAND (default value is 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** in TS 07.07); 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
<pid>	GSM 03.40 TP-Protocol-Identifier in integer format (default value is 0)
<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** in TS 07.07); type of address given by **<tosca>**
<scts>	GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer to **<dt>**)
<stat>	PDU mode text mode Explanation 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
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of **<da>** is + (IRA 43) default value is 145, otherwise default is 129)
<tooa>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer to **<toda>**)
<tosca>	GSM 04.11 RP SC address Type-of-Address octet in integer format (default refer to **<toda>**)
<vp>	Depending on SMS-SUBMIT **<fo>** setting: GSM 03.40 TP-Validity-Period either in integer format (default value is 167) or in time-string format (refer to **<dt>**)

Example

+CMTI: "SM",3	// Indicates that new message has been received and saved to **<index>=3** of "SM"
AT+CMGR=3	// Read message
+CMGR: "REC UNREAD","+8615021012496","","2010/09/25 15:06:37+32",145,4,0,241,"+8 61800210500",145,27 **This is a test from Quectel**	

OK

8.8. AT+CMGS   Send SMS Message

AT+CMGS Send SMS Message	
Test Command **AT+CMGS=?**	Response **OK**
Write Command 1) If text mode (**+CMGF=1**): **AT+CMGS=\<da>[,\<toda>]**\<CR> **text is entered** \<ctrl-Z/ESC> ESC quits without sending 2) If PDU mode (**+CMGF=0**): **AT+CMGS=\<length>**\<CR> **PDU is given** \<ctrl-Z/ESC>	Response TA sends message from a TE to the network (SMS-SUBMIT). Message reference value **\<mr>** is returned to the TE on successful message delivery. Optionally (when **+CSMS \<service>** value is 1 and network supports) **\<scts>** is returned. Values can be used to identify message upon unsolicited delivery status report result code. 1) If text mode (**+CMGF=1**) and sent successfully: **+CMGS: \<mr>** **OK** 2) If PDU mode (**+CMGF=0**) and sent successfully: **+CMGS: \<mr>** **OK** 3)If error is related to ME functionality: **+CMS ERROR: \<err>**
Reference GSM 07.05	

Parameter

\<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** in TS 07.07); type of address given by **\<toda>**
\<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of **\<da>** is + (IRA 43) default value is 145, otherwise default value is 129)
\<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)
\<mr>	GSM 03.40 TP-Message-Reference in integer format

Example

AT+CMGF=1	// Set SMS message format as text mode
OK	
AT+CSCS="GSM"	// Set character set as GSM which is used by the TE
OK	
AT+CMGS="15021012496"	
> **This is a test from Quectel**	// Enter in text,<CTRL+Z> send message,<ESC> quits without sending
+CMGS: 247	
OK	

8.9. AT+CMGW   Write SMS Message to Memory

AT+CMGW Write SMS Message to Memory	
Test Command **AT+CMGW=?**	Response **OK**
Write Command 1) If text mode (+CMGF=1): **AT+CMGW[=<oa/da>[,<tooa/toda>[,<stat>]]]** <CR> **text is entered** <ctrl-Z/ESC> <ESC> quits without sending 2) If PDU mode (+CMGF=0): **AT+CMGW=<length>[,<stat>]**<CR> **PDU is given** <ctrl-Z/ESC>	Response 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 unsent', but parameter **<stat>** also allows other status values to be given. If writing is successful: **+CMGW: <index>** **OK** If error is related to ME functionality: **+CMS ERROR: <err>**
Reference GSM 07.05	

Parameter

<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** in TS 07.07);type of address given by **<tooa>**
<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** in TS 07.07); type of address given by **<toda>**

<tooa>	GSM 04.11 TP-Originating-Address Type-of-Address octet in integer format (default refer to **<toda>**)
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of **<da>** is + (IRA 43) default value is 145, otherwise default value is 129)
	129 Unknown type(IDSN format number)
	145 International number type(ISDN format)

<stat>	PDU mode	text mode	Explanation
	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

<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)
<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
<index>	Index of message in selected storage **<mem2>**

Example

AT+CMGF=1	// Set SMS message format as text mode
OK	
AT+CSCS="GSM"	// Set character set as GSM which is used by the TE
OK	
AT+CMGW="15021012496"	
> This is a test from Quectel	// Enter in text, <CTRL+Z> write message, <ESC> quits without sending
+CMGW: 4	
OK	

8.10. 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>]]	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.
	1) If text mode (**+CMGF=1**) and sent successfully: **+CMSS: <mr> [,<scts>]**
	OK
	2) If PDU mode(**+CMGF=0**) and sent successfully; **+CMSS: <mr> [,<ackpdu>]**
	OK
	3) If error is related to ME functionality: **+CMS ERROR: <err>**
Reference GSM 07.05	

Parameter

<index>	Integer type; value in the range of location numbers supported by the associated memory
<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** in TS 07.07); type of address given by **<toda>**
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of **<da>** is + (IRA 43) default value is 145, otherwise default value is 129)
<mr>	GSM 03.40 TP-Message-Reference in integer format
<scts>	GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer to **<dt>**)
<ackpdu>	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

8.11. AT+CMGC Send SMS Command

AT+CMGC Send SMS Command	
Test Command	Response

AT+CMGC=?	OK
Write Command 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 2) If PDU mode (**+CMGF=**0): **AT+CMGC=<length>**<CR> **PDU is given** <ctrl-Z/ESC>	Response 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. 1) If text mode(**+CMGF=1**) and sent successfully: **+CMGC: <mr> [,<scts>]** **OK** 2) If PDU mode(**+CMGF=0**) and sent successfully: **+CMGC: <mr> [,<ackpdu>]** **OK** 3)If error is related to ME functionality: **+CMS ERROR: <err>**
Reference GSM 07.05	

Parameter

<fo>	First octet of GSM 03.40 SMS-COMMAND (default value is 2) in integer format
<ct>	GSM 03.40 TP-Command-Type in integer format (default value is 0)
<pid>	GSM 03.40 TP-Protocol-Identifier in integer format (default value is 0)
<mn>	GSM 03.40 TP-Message-Number in integer format
<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** in TS 07.07); type of address given by **<toda>**
<toda>	GSM 04.11 TP-Destination-Address Type-of-Address octet in integer format (when first character of **<da>** is + (IRA 43) default value is 145, otherwise default value is 129) 129 Unknown type(IDSN format number) 145 International number type(ISDN format)
<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)
<mr>	GSM 03.40 TP-Message-Reference in integer format
<scts>	GSM 03.40 TP-Service-Centre-Time-Stamp in time-string format (refer to **<dt>**)
<ackpdu>	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

8.12. AT+CNMI   New SMS Message Indications

AT+CNMI New SMS Message Indications	
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) **OK**
Read Command **AT+CNMI?**	Response **+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr>** **OK**
Write Command **AT+CNMI=[<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]**	Response TA selects the procedure on how the received new messages from the network are indicated to the TE when TE is active, e.g. DTR signal is ON. If TE is inactive (e.g. DTR signal is OFF), receiving message should be done as specified in GSM 03.38. **OK** If error is related to ME functionality: **ERROR**
Reference GSM 07.05	

Parameter

<mode>	0	Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications
	1	Discard indication and reject new received message unsolicited result codes when TA-TE link is reserved (e.g. in on-line data mode). Otherwise forward them directly to the TE
	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
	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
<mt>		(The rules for storing received SMS depend on its data coding scheme (refer to GSM 03.38 [2]), preferred memory storage (**+CPMS**) setting and this value):
	0	No SMS-DELIVER indications are routed to the TE

	1	If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE by using unsolicited result code: **+CMTI: <mem>,<index>**
	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>],<scts> [,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><data>** (Text mode enabled; about parameters in italics, refer to Command Show Text Mode Parameters **+CSDH**). Class 2 messages result in indication as defined in **<mt>**=1
	3	Class 3 SMS-DELIVERs are routed directly to TE by using unsolicited result codes defined in **<mt>**=2. Messages of other classes result in indication as defined in **<mt>**=1
<bm>		(The rules for storing received CBMs depend on its data coding scheme (refer to GSM 03.38 [2]), the setting of Select CBM Types (**+CSCB**) and this value):
	0	No CBM indications are routed to the TE
	2	New CBMs are routed directly to the TE by using unsolicited result code: **+CBM: <length><CR><LF><pdu>** (PDU mode enabled) or **+CBM: <sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data>** (Text mode enabled)
	3	Class 3 CBMs are routed directly to TE by using unsolicited result codes defined in <bm>=2. If CBM storage is supported, messages of other classes result in indication as defined in <bm>=1
<ds>	0	No SMS-STATUS-REPORTs are routed to the TE
	1	SMS-STATUS-REPORTs are routed to the TE by using unsolicited result code: **+CDS: <length><CR><LF><pdu>** (PDU mode enabled) or **+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st>** (Text mode enabled)
<bfr>	0	TA buffer of unsolicited result codes defined in this command is flushed to the TE when **<mode>** 1...3 is entered (**OK** response shall be given before flushing the codes)

NOTE

Unsolicited result code

+CMTI: <mem>,<index>	Indicates that new message has been received
+CMT: [<alpha>],<length><CR><LF><pdu>	Short message is output directly
+CBM: <length><CR><LF><pdu>	Cell broadcast message is output directly

Example

AT+CMGF=1	// Set SMS message format as text mode
OK	
AT+CSCS="GSM"	// Set character set as GSM which is used by the TE
OK	
AT+CNMI=2,1	// SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE

OK

+CMTI: "SM",5	// Indicate that new message has been received
AT+CNMI=2,2	// Set SMS-DELIVERs are routed directly to the TE
OK	

+CMT: "+8615021012496"," ","2010/09/25 17:25:01+32",145,4,0,241,"+8613800210500",145,27	
This is a test from Quectel	// Short message is output directly

8.13. AT+CRES   Restore SMS Settings

AT+CRES Restore SMS Settings	
Test Command **AT+CRES=?**	Response **+CRES:** (list of supported **<profile>**s) **OK**
Write Command **AT+CRES[=<profile>]**	Response TA restores SMS settings from non-volatile memory to active memory. A TA can contain several profiles of settings. Settings specified in commands service centre address **+CSCA**, set message parameters **+CSMP** and select cell broadcast message types **+CSCB** (if implemented) are restored. Certain settings may not be supported by the storage (e.g. SIM SMS parameters) and therefore can not be restored. **OK** If error is related to ME functionality: **ERROR**
Reference GSM 07.05	

Parameter

<profile>	<u>0</u>-3	Manufacturer specific profile number where settings are to be stored

8.14. AT+CSAS   Save SMS Settings

AT+CSAS   Save SMS Settings

Test Command	Response
AT+CSAS=?	**+CSAS:** (list of supported **\<profile>**s)
	OK
Write Command	Response
AT+CSAS[=\<profile>]	TA saves active message service settings to non-volatile memory. A TA can contain several profiles of settings. Settings specified in commands service centre address +CSCA, Set Message Parameters **+CSMP** and Select cell broadcast message Types **+CSCB** (if implemented) are saved. Certain settings may not be supported by the storage (e.g. SIM SMS parameters) and therefore can not be saved.
	OK
	If error is related to ME functionality:
	ERROR
Reference	
GSM 07.05	

Parameter

\<profile>	0-3	Manufacturer specific profile number where settings are to be stored

8.15. AT+CSCB   Select Cell Broadcast SMS Messages

AT+CSCB Select Cell Broadcast SMS Messages	
Test Command	Response
AT+CSCB=?	**+CSCB:** (list of supported **\<mode>**s)
	OK
Read Command	Response
AT+CSCB?	**+CSCB: \<mode>,\<mids>,\<dcss>**
	OK
Write Command	Response
AT+CSCB=\<mode>[,mids>[,\<dcss>]]	TA selects which types of CBMs are to be received by the ME.
	OK
	If error is related to ME functionality:
	+CMS ERROR: \<err>
Reference	
GSM 07.05	

Parameter

\<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 to **\<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 to **\<dcs\>**) (default is empty string) e.g. "0-3,5"

NOTE

The Command writes the parameters in NON-VOLATILE memory.

8.16. AT+CSDH   Show SMS Text Mode Parameters

AT+CSDH Show SMS Text Mode Parameters	
Test Command **AT+CSDH=?**	Response **+CSDH:** (list of supported **\<show\>**s) **OK**
Read Command **AT+CSDH?**	Response **+CSDH: \<show\>** **OK**
Write Command **AT+CSDH=[\<show\>]**	Response TA determines whether detailed header information is shown in text mode result codes. **OK**
Reference GSM 07.05	

Parameter

\<show\>	<u>0</u>	Do not show header values defined in commands **+CSCA** and **+CSMP** (**\<sca\>**, **\<tosca\>**, **\<fo\>**, **\<vp\>**, **\<pid\>** and **\<dcs\>**) nor **\<length\>**, **\<toda\>** or **\<tooa\>** in **+CM**T, **+CMGL**, **+CMGR** result codes for SMS-DELIVERs and SMS-SUBMITs in text mode
	1	Show the values in result codes

Example

AT+CSDH=0
OK
AT+CMGR=3
+CMGR: "REC READ","+8615021012496","","2010/09/25 15:06:37+32"
This is a test from Quectel

OK
AT+CSDH=1
OK
AT+CMGR=3
+CMGR: "REC READ","+8615021012496", ,"2010/09/25 15:06:37+32",145,4,0,241,"+861
3800210500",145,27
This is a test from Quectel

OK

8.17. AT+CSMP   Set SMS Text Mode Parameters

AT+CSMP Set SMS Text Mode Parameters	
Test Command **AT+CSMP=?**	Response **+CSMP:** (list of supported **\<fo>**s), (list of supported **\<vp>**s), (list of supported **\<pid>**s), (list of supported **\<dcs>**s) **OK**
Read Command **AT+CSMP?**	Response **+CSMP: \<fo>,\<vp>,\<pid>,\<dcs>** **OK**
Write Command **AT+CSMP=[\<fo>[,\<vp>[,\<pid>[,\<dcs>]]]]**	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). **OK**
Reference GSM 07.05	

Parameter

<fo>	Depending on the Command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default value is 17), SMS-STATUS-REPORT, or SMS-COMMAND (default value is 2) in integer format. SMS status report is supported under text mode if **<fo>** is set to 49
<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 to **<dt>**)
<pid>	GSM 03.40 TP-Protocol-Identifier in integer format (default value is 0)
<dcs>	GSM 03.38 SMS Data Coding Scheme in Integer format

NOTE

The Command writes the parameters in NON-VOLATILE memory.

8.18. AT+QCLASS0   Store Class 0 SMS to SIM when Receiving Class 0 SMS

AT+QCLASS0 Store Class 0 SMS to SIM when Receiving Class 0 SMS	
Test Command **AT+QCLASS0=?**	Response **+QCLASS0:** (list of supported **<mode>**s) **OK**
Read Command **AT+QCLASS0?**	Response **+QCLASS0: <mode>** **OK**
Write Command **AT+QCLASS0=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	<u>0</u>	Disable to store Class 0 SMS when receiving Class 0 SMS
	1	Enable to store Class 0 SMS when receiving Class 0 SMS

Example

For example message in text mode:

AT+CPMS?
+CPMS: "SM",6,50,"SM",6,50,"SM",6,50

OK
AT+QCLASS0=0   // Disable to store SMS when receiving Class 0 SMS
OK

+CMT: "+8615021012496",,"2010/09/26 09:55:37+32"
TEST1 from Quectel   // Short message is output directly
AT+QCLASS0=1   // Enable to store SMS when receiving Class 0 SMS
OK

+CMTI: "SM",7   // Indicate that new message has been received
AT+CMGR=7
+CMGR: "REC UNREAD","+8615021012496","","2010/09/26 09:56:17+32"
TEST2 from Quectel

OK

8.19. AT+QMGDA   Delete all SMS

AT+QMGDA Delete all SMS	
Test Command **AT+QMGDA=?**	Response **+QMGDA: (listed of supported \<type>s)** **OK**
Write Command **AT+QMGDA=\<type>**	Response **OK** **ERROR** **+CME ERROR: \<err>**
Reference	

Parameter

\<type>	1) If text mode:	
	"DEL READ"	Delete all read messages
	"DEL UNREAD"	Delete all unread messages
	"DEL SENT"	Delete all sent SMS

"DEL UNSENT"	Delete all unsent SMS
"DEL INBOX"	Delete all received SMS
"DEL ALL"	Delete all SMS

2) If PDU mode:

1	Delete all read messages
2	Delete all unread messages
3	Delete all sent SMS
4	Delete all unsent SMS
5	Delete all received SMS
6	Delete all SMS

8.20. AT+QSMSCODE   Configure SMS Code Mode

AT+QSMSCODE Configure SMS Code Mode	
Test Command **AT+QSMSCODE=?**	Response **+QSMSCODE:** (list of supported **\<mode>**s) **OK**
Read Command **AT+QSMSCODE?**	Response **+QSMSCODE: \<mode>** **OK**
Write Command **AT+QSMSCODE=\<mode>**	Response **OK** **ERROR**
Reference	

Parameter

\<mode>	0	Code mode according with NOKIA
	1	Code mode according with SIEMENS
	2	Code mode according with NOKIA, and hexadecimal 0x11 treated as "_" hexadecimal 0x02 treated as "$"

9 Phonebook Commands

9.1. AT+CPBS   Select Phonebook Memory Storage

AT+CPBS Select Phonebook Memory Storage	
Test Command **AT+CPBS=?**	Response **+CPBS:** (list of supported **\<storage\>**s) **OK**
Read Command **AT+CPBS?**	Response **+CPBS: \<storage\>[,\<used\>,\<total\>]** **OK**
Write Command **AT+CPBS=\<storage\>**	Response TA selects current phone book memory storage, which is used by other phone book commands. **OK**
Reference GSM 07.07	

Parameter

\<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
\<used\>		Integer type value indicating the total number of used locations in selected memory
\<total\>		Integer type value indicating the total number of locations in selected memory

NOTE

SIM phonebook record can stores up to 250pcs and ME phonebook record can store up to 200pcs.

9.2. AT+CPBW   Write Phonebook Entry

AT+CPBW Write Phonebook Entry	
Test Command **AT+CPBW=?**	Response 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. **+CPBW:** (The range of supported **<index>**s)**, <nlength>**, (list of supported **<type>**s)**, <tlength>** **OK**
Write Command **AT+CPBW=[<index1>][,<number>[,<type>[,<text>]]]**	Response 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. **OK**
Reference GSM 07.07	

Parameter

<nlength>	Maximum length of phone number
<tlength>	Maximum length of text for number
<index>	Location number
<number>	Phone number
<type>	Type of number
	129 Unknown type(IDSN format number)
	145 International number type(ISDN format)
<text>	Text for phone number in current TE character set specified by **+CSCS**

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 for application layer software when reading string lengths.

Example

AT+CSCS="GSM"
OK
AT+CPBW=10,"15021012496",129,"QUECTEL"
OK   // Make a new phonebook entry at location 10
AT+CPBW=10   // Delete entry at location 10
OK

9.3. AT+CPBR   Read Current Phonebook Entries

AT+CPBR Read Current Phonebook Entries	
Test Command **AT+CPBR=?**	Response 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**
Write Command **AT+CPBR=<index1>[,<index2>]**	Response 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**
Reference GSM 07.07	

Parameter

\<index\>	Location number
\<nlength\>	Maximum length of phone number
\<tlength\>	Maximum length of name for number
\<index1\>	The first phone book record to read
\<index2\>	The last phonebook record to read
\<number\>	Phone number
\<type\>	Type of number
\<text\>	Text name for phone number in current TE character set specified by **+CSCS**

Example

AT+CSCS="GSM"
OK
AT+CPBR=10   // Query phone book entries in location 10
+CPBR: 10,"15021012496",129,"QUECTEL"

OK

9.4. AT+CPBF Find Phonebook Entries

AT+CPBF Find Phonebook Entries	
Test Command **AT+CPBF=?**	Response **+CPBF: \<nlength\>,\<tlength\>** **OK**
Write Command **AT+CPBF=[\<findtext\>]**	Response TA returns phone book entries (from the current phone book memory storage selected with **+CPBS**) which contain alphanumeric string **\<findtext\>**. **[+CPBF: \<index1\>, \<number\>,\<type\>, \<text\>[[...]** **\<CR\>\<LF\>+CBPF: \<index2\>,\<number\>,\<type\>,\<text\>]** **OK**
Reference GSM 07.07	

Parameter

<findtext>	String type field of maximum length **<tlength>** in current TE character set specified by **+CSCS**.
<index1>	Integer type values in the range of location numbers of phone book memory
<index2>	Integer type values in the range of location numbers of phone book memory
<number>	Phone number in string type of format **<type>**
<type>	Type of address octet in integer format:
	129 Unknown type (IDSN format number)
	145 International number type (ISDN format)
<text>	String type field of maximum length **<tlength>** in current TE character set specified by **+CSCS**
<nlength>	Integer type value indicating the maximum length of field **<number>**
<tlength>	Integer type value indicating the maximum length of field **<text>**

9.5. AT+CNUM   Subscriber Number

AT+CNUM Subscriber Number	
Test Command **AT+CNUM=?**	Response **OK**
Execution Command **AT+CNUM**	Response **+CNUM:** **[<alpha1>],<number1>,<type1>[,<speed>,<service>[,<itc>]]** **[<CR><LF>+CNUM: [<alpha2>],<number2>,<type2>[,<speed>,<service> [,<itc>]]** **[...]]** **OK** **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<alphax>	Optional alphanumeric string associated with **<numberx>**;used character set should be the one selected with command. Select TE character set **+CSCS**
<numberx>	Phone number in string type of format specified by **<typex>**
<typex>	Type of address octet in integer format (refer to GSM 04.08subclause 10.5.4.7)
<speed>	As defined by the **+CBST** command

<service>	(Service related to the phone number:)	
	0	Asynchronous modem
	1	Synchronous modem
	2	PAD Access (asynchronous)
	3	Packet Access (synchronous)
	4	Voice
	5	FAX
<itc>	(Information transfer capability:)	
	0	3.1 kHz
	1	UDI

10 GPRS Commands

10.1. AT+CGATT Attach to/Detach from GPRS Service

AT+CGATT Attach to/Detach from GPRS Service	
Test Command **AT+CGATT=?**	Response **+CGATT:** (list of supported **<state>**s) **OK**
Read Command **AT+CGATT?**	Response **+CGATT: <state>** **OK**
Write Command **AT+CGATT=<state>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

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 Write Command

Example

AT+CGATT=1	// Attach to GPRS service
OK	
AT+CGATT=0	// Detach from GPRS service
OK	
AT+CGATT?	// Query the current GPRS service state
+CGATT: 0	

OK

10.2. AT+CGDCONT   Define PDP Context

AT+CGDCONT Define PDP Context	
Test Command **AT+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) **OK**
Read Command **AT+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>** **…** **OK**
Write Command **AT+CGDCONT=<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>]]]]]**	Response **OK** **ERROR**
Reference GSM 07.07	

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)

<APN>   (Access Point Name) a string parameter that 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

<PDP_addr>A string parameter 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 allocated address may be read using the **+CGPADDR** command

<d_comp> A numeric parameter that controls PDP data compression

0   off (default if value is omitted)

Other values are reserved

<h_comp> A numeric parameter that controls PDP header compression

0   off (default if value is omitted)

Other values are reserved

Example

AT+CGDCONT=1,"IP","CMNET"	// Define PDP context, **<cid>=1,** **<PDP_type>=IP,<APN>=CMNET**
OK	

10.3. AT+CGQREQ   Quality of Service Profile (Requested)

AT+CGQREQ Quality of Service Profile (Requested)	
Test Command **AT+CGQREQ=?**	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) **OK**
Read Command **AT+CGQREQ?**	Response **+CGQREQ:** **<cid>,<precedence>,<delay>,>reliability>,<peak>,<mean >** **<CR><LF>+CGQREQ:** **<cid>,<precedence>,<delay>,<reliability>,<peak >,<mean >** … **OK**
Write Command **AT+CGQREQ=<cid>[,<precedence>[, <delay>[,<reliability>[,<peak>[,<mean >]]]]]**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

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

10.4. AT+CGQMIN   Quality of Service Profile (Minimum Acceptable)

AT+CGQMIN Quality of Service Profile (Minimum Acceptable)	
Test Command **AT+CGQMIN=?**	Response **+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) **OK**
Read Command **AT+CGQMIN?**	Response **+CGQMIN:** **\<cid\>,\<precedence\>,\<delay\>,\<reliability\>,\<peak\>,\<mean\>** **\<CR\>\<LF\>+CGQMIN:** **\<cid\>,\<precedence\>,\<delay\>,\<reliability\>,\<peak\>,\<mean\>** **…** **OK**
Write Command **AT+CGQMIN=\<cid\>[,\<precedence\>[,\<delay\>[,\<reliability\>[,\<peak\>[,\<mean\>]]]]]**	Response **OK** If error is related to ME functionality: **+CME ERROR: \<err\>**
Reference GSM 07.07	

Parameter

\<cid\>	A numeric parameter which specifies a particular PDP context definition (see **+CGDCONT** command)

The following parameters 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

10.5. AT+CGACT   PDP Context Activate or Deactivate

AT+CGACT PDP Context Activate or Deactivate	
Test Command **AT+CGACT=?**	Response **+CGACT:** (list of supported **<state>**s) **OK**
Read Command **AT+CGACT?**	Response **+CGACT:** **<cid>,<state>[<CR><LF>+CGACT:<cid><state>…]** **OK**
Write Command **AT+CGACT=<state>,<cid>**	Response **OK** **NO CARRIER** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

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 Write Command
<cid>	A numeric parameter which specifies a particular PDP context definition (see **+CGDCONT** command)

NOTE

If context is deactivated successfully, **NO CARRIER** is returned.

Example

AT+CGDCONT=1,"IP","CMNET"	// Define PDP context
OK	
AT+CGACT=1,1	// Activated PDP
OK	
AT+CGACT=0,1	// Deactivated PDP
NO CARRIER	

10.6. AT+CGDATA　Enter Data State

AT+CGDATA　Enter Data State	
Test Command **AT+CGDATA=?**	Response **+CGDATA:** (list of supported **<L2P>**s) **OK**
Write Command **AT+CGDATA=<L2P>[,<cid>[,<cid>[,…]]]**	Response **OK** **NO CARRIER** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

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)

10.7. AT+CGPADDR　Show PDP Address

AT+CGPADDR　Show PDP Address	
Test Command **AT+CGPADDR=?**	Response **+CGPADDR:** (list of defined **<cid>**s)

	OK
Write Command **AT+CGPADDR=\<cid\>**	Response **+CGPADDR: \<cid\>,\<PDP_addr\>** **OK** **ERROR**
Reference GSM 07.07	

Parameter

\<cid\> A numeric parameter which specifies a particular PDP context definition (see **+CGDCONT** command)

\<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 **\<cid\>**. **\<PDP_ address\>** is omitted if none is available

NOTE

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

Example

AT+CGDCONT=1,"IP","CMNET"   // Define PDP context
OK
AT+CGACT=1,1   // Activated PDP
OK
AT+CGPADDR=1   // Show PDP address
+CGPADDR: 1,"10.76.51.180"

OK

10.8. AT+CGCLASS   GPRS Mobile Station Class

AT+CGCLASS GPRS Mobile Station Class	
Test Command **AT+CGCLASS=?**	Response **+CGCLASS:** (list of supported **\<class\>**s)

	OK
Read Command **AT+CGCLASS?**	Response **+CGCLASS: <class>** **OK**
Write Command **AT+CGCLASS=<class>**	Response **OK** **ERROR** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<class>	A string parameter which indicates the GPRS mobile class (Functionality in descending order)
	  "B" Class B
	  "CG" Class C in GPRS only mode
	  "CC" Class C in circuit switched only mode

10.9. AT+CGEREP   Control Unsolicited GPRS Event Reporting

AT+CGEREP Control Unsolicited GPRS Event Reporting	
Test Command **AT+CGEREP=?**	Response **+CGEREP: (list of supported <mode>s)** **OK**
Read Command **AT+CGEREP?**	Response **+CGEREP: <mode>** **OK**
Write Command **AT+CGEREP=<mode>**	Response **OK** **ERROR**
Reference GSM 07.07	

Parameter

<mode>	0	Buffer unsolicited result codes in the MT; if MT result code buffer is full, the oldest one can be discarded. No codes are forwarded to the TE
	1	Discard unsolicited result codes when MT-TE link is reserved (e.g. in on-line data mode); otherwise forward them directly to the TE

NOTE

Unsolicited Result Codes supported:
+CGEV: NW DEACT <PDP_type>, <PDP_addr>[,<cid>]
+CGEV: ME DEACT <PDP_type>, <PDP_addr>[,<cid>]
+CGEV: NW DETACH
+CGEV: ME CLASS <class>
Parameters
<PDP_type> Packet Data Protocol type (see **+CGDCONT** command)
<PDP_addr> Packet Data Protocol address (see **+CGDCONT** command)
<cid> Context ID (see **+CGDCONT** command)
<class> GPRS mobile class (see **+CGCLASS** command)

10.10. AT+CGREG Network Registration Status

AT+CGREG Network Registration Status	
Test Command **AT+CGREG=?**	Response **+CGREG: (list of supported <n>s)** **OK**
Read Command **AT+CGREG?**	Response **+CGREG: <n>,<stat>[,<lac>,<ci>]** **OK**
Write Command **AT+CGREG=[<n>]**	Response **OK** **ERROR**
Reference GSM 07.07	

Parameter

<n>	0	Disable network registration unsolicited result code
	1	Enable network registration unsolicited result code +CGREG:<stat>

	2	Enable network registration and location information unsolicited result code **+CGREG: <stat>[,<lac>,<ci>]**
<stat>	0	Not registered, ME is not currently searching a new operator to register to
	1	Registered, home network
	2	Not registered, but ME is currently searching a new operator to register to
	3	Registration denied
	4	Unknown
	5	Registered, roaming
<lac>		String type; two byte location area code in hexadecimal format (e.g. "00C3" equals 195 in decimal)
<ci>		String type; two bytes cell ID in hexadecimal format

NOTE

For parameter state, options of 0 and 1 are supported only.

Example

```
AT+CGATT=0
NO CARRIER

+CGREG: 0,"1878","0873"
AT+CGATT=1
OK

+CGREG: 2,"1878","0873"

+CGREG: 1,"1878","0873"
```

10.11. AT+CGSMS   Select Service for MO SMS Messages

AT+CGSMS Select Service for MO SMS Messages	
Test Command **AT+CGSMS=?**	Response **+CGSMS:** (list of currently available **<service>**s) **OK**
Read Command **AT+CGSMS?**	Response **+CGSMS: <service>** **OK**
Write Command	Response

AT+CGSMS=[<service>]	OK
	If error is related to ME functionality:
	+CME ERROR: <err>
Reference	
GSM 07.07	

Parameter

<service>	A numeric parameter which indicates the service or service preference to be used	
	0	GPRS
	1	Circuit switch
	2	GPRS preferred (use circuit switched if GPRS not available)
	3	Circuit switch preferred (use GPRS if circuit switched not available)

NOTE

The circuit switched service route is the default method.

10.12. AT+QGPCLASS   Change GPRS Multi-slot Class

AT+QGPCLASS Change GPRS Multi-slot Class	
Test Command **AT+QGPCLASS=?**	Response **MULTISLOT CLASS:** (list of currently available **<class>**s) **OK**
Read Command **AT+QGPCLASS?**	Response **MULTISLOT CLASS: <class>** **OK**
Write Command **AT+QGPCLASS=<class>**	Response **OK** **ERROR**
Reference	

Parameter

<class>	GPRS multi-slot class

NOTES

Need to reboot for the change of GPRS multi-slot class to take effect.

11 TCPIP Commands

11.1. AT+QIOPEN   Start up TCP or UDP Connection

AT+QIOPEN Start up TCP or UDP Connection	
Test Command **AT+QIOPEN=?**	Response **+QIOPEN:** (list of supported **<mode>**),(**IP address range**),(**port range**) <CR><LF>**+QIOPEN:** (list of supported **<mode>**),(**domain name**),(**port range**) **OK**
Write Command **AT+QIOPEN=[<index>,]<mode>,<IP address>/<domain name>,<port>**	Response If format is right, respond: **OK** Otherwise respond: **ERROR** If the connection has already existed, respond: **ALREADY CONNECT** And then if connection is successful, respond: **[<index>,] CONNECT OK** Otherwise respond: **[<index>,] CONNECT FAIL**
Reference	

Parameter

<index>	A numeric indicates which socket opens the connection. M35 supports at most 6 sockets at the same time. This parameter is necessary only if **AT+QIMUX** was set as 1 (refer to **AT+QIMUX**). When **AT+QIMUX** was set as 0, the parameter MUST be omitted
<mode>	A string parameter which indicates the connection type
	"TCP" Establish a TCP connection
	"UDP" Establish a UDP connection
<IP address>	A string parameter that gives the address of the remote server in dotted decimal style.

\<port\>	The port of the remote server
\<domain name\>	A string parameter which represents the domain name address of the remote server

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NOTES

1. This command is allowed to establish a TCP/UDP connection only when the state is IP INITIAL or IP STATUS or IP CLOSE. So it is necessary to process "**AT+QIDEACT**" or "**AT+QICLOSE**" before establishing a TCP/UDP connection with this command when the state is not IP INITIAL or IP STATUS or IP CLOSE.
2. If **AT+QIMUX** was set as 0 and the current state is CONNECT OK, which means the connection channel is used, it will reply "ALREADY CONNECT" after issuing the Write command.

11.2. AT+QISEND   Send Data through TCP or UDP Connection

AT+QISEND Send Data through TCP or UDP Connection	
Test Command **AT+QISEND=?**	Response **+QISEND: \<length\>** **OK**
Execution Command **AT+QISEND** response"> ", then type data to send, tap CTRL+Z to send, tap ESC to cancel the operation	Response This command is used to send changeable length data. If connection is not established or disconnected: **ERROR** If sending succeeds: **SEND OK** If sending fails: **SEND FAIL**
Write Command **AT+QISEND=[\<index\>,]\<length\>**	Response This command is used to send fixed-length data or send data on the given socket (defined by **\<index\>**). If connection is not established or disconnected: **ERROR** If sending succeeds: **SEND OK** If sending fails: **SEND FAIL**
Reference	