AT command set

– M1HS, N501HS, H600 –

Contents

1 Introduction

1.1 Purpose

This document discusses, in detail, the AT commands that are implemented in ONDA M1HS, N501HS, H600

UMTS/GPRS wireless card. All the AT commands follow 3GPP (R99) TS27.005 and TS27.007.

1.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AT	Attention; this two-character abbreviation is always used to start a command line to be sent from TE to TA
ETSI	European Telecommunications Standards Institute
ITU-T	International Telecommunication Union - Telecommunications Standardization Sector
ME	Mobile Equipment
MT	Mobile Termination
SIM	Subscriber Identity Module
TA	Terminal Adaptor, e.g. a GSM data card (equal to DCE; Data Circuit terminating Equipment)
TE	Terminal Equipment, e.g. a computer (equal to DTE; Data Terminal Equipment)
UICC	Universal Integrated Circuit Card
USIM	Universal Subscriber Identity Module

2 General Commands

2.1 command echo E

2.1.1 Syntax

Table2-1: ATE basic command syntax

Command	Possible response(s)
E[<value>]	<CR><LF>OK<CR><LF>

2.1.2 Description

This command is used to set TA echoes commands back or not.

2.1.3 Defined values

< value >:

0: TA doesn’t echo commands back

1: TA echoes commands back

default 1 i.e. TA echoes commands back

2.1.4 e.g.

Command: ATE1
Response: OK

2.2 Display Signal quality +CSQ

2.2.1 Syntax

Table2-2: +CSQ action command syntax

Command	Possible response(s)
+CSQ	<CR><LF>+CSQ: <rssi>,<ber><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CSQ=?	<CR><LF>+CSQ: (list of supported <rssi>s),(list of supported <ber>s) <CR><LF><CR><LF>OK<CR><LF>

2.2.2 Description

Execution command +CSQ returns received signal strength indication <rssi> and channel bit error rate <ber> from the MT.

Test command +CSQ=? returns values supported as compound values.

2.2.3 Defined values

<rssi>:

0 -113 dBm or less

1 -111 dBm

2...30 -109... -53 dBm

31 -51 dBm or greater

99 not known or not detectable

<ber> (in percent):

0...7 as RXQUAL values in the table in GSM 05.08 [20] sub-clause 8.2.4

99 not known or not detectable

2.2.4 e.g.

Command: AT+CSQ
Response: +CSQ: 30,99
OK

2.3 Request revision identification +CGMR

2.3.1 Syntax

Table2-3: +CGMR action command syntax

Command	Possible response(s)
+CGMR	<CR><LF>+CGMR:<revision><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CGMR=?	<CR><LF>OK<CR><LF>

2.3.2 Description

Execution command causes the TA to return one or more lines of information text <revision>, determined by the MT manufacturer, which is intended to permit the user of the TA to identify the version, revision level or date, or other pertinent information of the MT to which it is connected to. Typically, the text will consist of a single line containing the version of the product, but manufacturers may choose to provide more information if desired.

2.3.3 Defined values

<revision>: the total number of characters, including line terminators, in the information text shall not exceed 31 characters.

2.3.4 e.g.

Command: AT+CGMR

Response: P660M1V1.0.3B02 P660M1V1.0.3B02 1 [Apr 2 2005 18:00:00]

OK

2.4 Request international mobile subscriber identity +CIMI

2.4.1 Syntax

Table2-4: +CIMI action command syntax

Command	Possible response(s)
+CIMI	<CR><LF>+CIMI: <IMSI><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CIMI=?	<CR><LF>OK<CR><LF>

2.4.2 Description

Execution command causes the TA to return <IMSI>, which is intended to permit the TE to identify the individual active application in the UICC (GSM or USIM) or SIM card which is

attached to MT.

2.4.3 Defined values

<IMSI>: International Mobile Subscriber Identity (string without double quotes).

2.4.4 e.g.

Command: AT+CIMI
Response: 460001194914416
OK

2.5 Request product serial number identification +CGSN

2.5.1 Syntax

Table2-5: +CGSN action command syntax

Command	Possible response(s)
+CGSN	<CR><LF>+CGSN: <IMEI><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CGSN=?	<CR><LF>OK<CR><LF>

2.5.2 Description

Execution command causes the TA to return one or more lines of information text <IMEI>, determined by the MT manufacturer, which is intended to permit the user of the TA to identify the individual MT to which it is connected to. Typically, the text will consist of a single line containing the IMEI (International Mobile station Equipment Identity) number of the MT, but manufacturers may choose to provide more information if desired.

2.5.3 Defined values

<IMEI>: the IMEI value in NV.

2.5.4 e.g.

Command: AT+CGSN
Response: 356722000068154
OK

3 SMS Commands

3.1 Message Format +CMGF

3.1.1 Syntax

Table3-1: +CMGF parameter command syntax

Command	Possible response(s)
+CMGF[=<mode>]	<CR><LF>OK<CR><LF>
+CMGF?	<CR><LF>+CMGF: <mode><CR><LF><CR><LF>OK<CR><LF>
+CMGF=?	<CR><LF>+CMGF: (list of supported <mode>s)<CR><LF><CR><LF>OK<CR><LF>

3.1.2 Description

Set command tells the TA, which input and output format of messages to use. <mode> indicates the format of messages used with send, list, read and write commands and unsolicited result codes resulting from received messages. Mode can be either PDU mode (entire TP data units used) or text mode (headers and body of the messages given as separate parameters).

Test command returns supported modes as a compound value.

3.1.3 Defined values

<mode>:

0 PDU mode (default when implemented)

1 text mode

3.1.4 e.g.

Command: AT+CMGF=0

Response: OK

3.2 New Message Indications +CMTI

3.2.1 Syntax

Table3-2: +CMTI parameter command syntax

Command	Possible response(s)
	<CR><LF>+CMTI: <mem>,<index><CR><LF>

3.2.2 Description

When new message is received and stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code.

3.2.3 Defined values

<mem1>: string type

"ME"ME message storage
"SM"(U)SIM message storage
"SR" status report storage

<index>: integer type; value in the range of location numbers supported by the associated memory

3.3 New SMS-STATUS-REPORT Indications +CDSI

3.3.1 Syntax

Table3-3: +CMTI parameter command syntax

Command	Possible response(s)
	<CR><LF>+CDSI: <mem>,<index><CR><LF>

3.3.2 Description

When new SMS-STATUS-REPORT is received and stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code.

3.3.3 Defined values

<mem1>: string type

"ME"ME message storage

"SM"(U)SIM message storage

"SR" status report storage

<index>: integer type; value in the range of location numbers supported by the associated memory

3.4 Configuration of New Message Indications to TE +CNMI

3.4.1 Syntax

Table3-4: +CNMI parameter command syntax

Command	Possible response(s)
+CNMI=[<mode>[,<mt>[,<bm>[,<ds>[,<bfr>]]]]]	<CR><LF>OK<CR><LF> <CR><LF>+CMS ERROR: <err><CR><LF>
+CNMI?	<CR><LF>+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr><CR><LF><CR><LF> OK<CR><LF>
+CNMI=?	<CR><LF>+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) <CR><LF><CR><LF>OK<CR><LF>

3.4.2 Description

Set command selects the procedure, how receiving of new messages from the network is indicated to the TE when TE is active.

Test command gives the settings supported by the TA as compound values.

3.4.3 Defined values

<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>:

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 using unsolicited result code:

+CMTI: <mem>,<index>

2 SMS-DELIVERs (except class 2 messages and messages in the message waiting indication group (store message)) 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 command Show Text Mode Parameters +CSDH)

If ME has its own display device then class 0 messages and messages in the message waiting indication group (discard message) may be copied to both ME display and to TE. In this case, ME shall send the acknowledgement to the network.

Class 2 messages and messages in the message waiting indication group (store message) result in indication as defined in <mt>=1.

3 Class 3 SMS-DELIVERs are routed directly to TE using unsolicited result codes defined in <mt>=2. Messages of other data coding schemes result in indication as defined in <mt>=1.

+CMTI: <mem>,<index>

<bm>:

0 No CBM indications are routed to the TE.

<ds>:

0 No SMS-STATUS-REPORTs are routed to the TE.

1 SMS-STATUS-REPORTs are routed to the TE using unsolicited result code:

+CDS: <length><CR><LF><pdu> (PDU mode enabled)

or

+CDS: <fo>,<mr>,[<ra>],[<tora>],<scts>,<dt>,<st> (text mode enabled)

2 If SMS-STATUS-REPORT is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code:

+CDSI: <mem>,<index>

<bfr>:

0 TA buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1...3 is entered (OK response shall be given before flushing the codes).

1 TA buffer of unsolicited result codes defined within this command is cleared when <mode> 1...3 is entered.

3.4.4 e.g.

Command: AT+CNMI=3,1,0,2,0

Response: OK

3.5 Delete Message +CMGD

3.5.1 Syntax

Table3-5: +CMGD action command syntax

Command	Possible response(s)
+CMGD=<index>[,<delflag>]	<CR><LF>OK<CR><LF> <CR><LF>+CMS ERROR: <err><CR><LF>
+CMGD=?	<CR><LF>+CMGD: (list of supported <index>s)[,(list of supported <delflag>s)]<CR><LF><CR><LF>OK<CR><LF>

3.5.2 Description

Execution command deletes message from preferred message storage <mem1> location <index>. If <delflag> is present and not set to 0 then the ME shall ignore <index> and follow the rules for <delflag> shown below. If deleting fails, final result code +CMS ERROR:<err> is returned.

Test command shows the valid memory locations and optionally the supported values of <delflag>.

3.5.3 Defined values

<index>: integer type; value in the range of location numbers supported by the associated memory

<delflag>: an integer indicating multiple message deletion request as follows:

0 (or omitted) Delete the message specified in <index>

1 Delete all read messages from preferred message storage, leaving unread messages and stored mobile originated messages (whether sent or not) untouched

2 Delete all read messages from preferred message storage and sent mobile originated messages, leaving unread messages and unsent mobile originated messages untouched

3 Delete all read messages from preferred message storage, sent and unsent mobile originated messages leaving unread messages untouched.

4 Delete all messages from preferred message storage including unread messages.

3.5.4 e.g.

Command: AT+CMGD=2
Response: OK

3.6 Preferred Message Storage +CPMS

3.6.1 Syntax

Table3-6: +CPMS parameter command syntax

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

+CPMS=?	+CPMS: (list of supported <mem1>s),(list of supported <mem2>s), (list of supported <mem3>s)

3.6.2 Description

Set command selects memory storages <mem1>, <mem2> and <mem3> to be used for reading, writing, etc. If chosen storage is not appropriate for the ME (but is supported by the TA), final result code +CMS ERROR: <err> shall be returned. See chapter Message Service Failure Result Code for a list of possible <err> values.

Test command returns lists of memory storages supported by the TA.

3.6.3 Defined values

<mem1>: string type; memory from which messages are read and deleted (commands List Messages +CMGL, Read Message +CMGR and Delete Message +CMGD); defined values (others are manufacturer specific):

"ME"ME message storage

"SM"(U)SIM message storage

<mem2>: string type; memory to which writing and sending operations are made (commands Send Message from Storage +CMSS and Write Message to Memory +CMGW)); refer <mem1> for defined values

<mem3>: string type; memory to which received SMs are preferred to be stored (unless forwarded directly to TE; refer command New Message Indications +CNMI); refer <mem1> for defined values; received CBMs are always stored in "BM" (or some manufacturer specific storage) unless directly forwarded to TE; received status reports are always stored in "SR" (or some manufacturer specific storage) unless directly forwarded to TE

<total1>: integer type; total number of message locations in <mem1>

<total2>: integer type; total number of message locations in <mem2>

<total3>: integer type; total number of message locations in <mem3>

<used1>: integer type; number of messages currently in <mem1>

<used2>: integer type; number of messages currently in <mem2>

<used3>: integer type; number of messages currently in <mem3>

3.6.4 e.g.

Command: AT+CPMS?

Response: +CPMS: "SM",10,40,"SM",10,40,"ME",1,100

OK

3.7 Service Centre Address +CSCA

3.7.1 Syntax

Table3-7: +CSCA parameter command syntax

Command	Possible response(s)
+CSCA=<sca>[,<tosca>]	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CSCA?	<CR><LF>+CSCA: <sca>,<tosca><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CSCA=?	<CR><LF>OK<CR><LF>

3.7.2 Description

Set command updates the SMSC address, through which mobile originated SMs are transmitted. In text mode, setting is used by send and write 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.

3.7.3 Defined values

<sca>: RP SC address Address-Value field in string format

<tosca>: RP SC address Type-of-Address octet in integer format

3.7.4 e.g.

Command: AT+CSCA="+8613800290500"
Response: OK

3.8 Send Message +CMGS

3.8.1 Syntax

Table3-8: +CMGS action command syntax

Command	Possible response(s)
+CMGS=<length><CR> **PDU is given**<ctrl-Z/ESC>	**if PDU mode(+CMGF=0) and sending successful:** <CR><LF>+CMGS: <mr>[,<ackpdu>]<CR><LF><CR><LF>OK<CR><LF> **if sending fails:** <CR><LF>+CMS ERROR: <err><CR><LF>

+CMGS=?	<CR><LF>OK<CR><LF>

3.8.2 Description

Execution command 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. If sending fails in a network or an ME error, final result code +CMS ERROR: <err> is returned. This command should be abortable.

3.8.3 Defined values

<length>: integer type value indicating the length of the actual TP data unit in octets
<mr>: TP-Message-Reference in integer format
<ackpdu>: RP-User-Data element of RP-ACK PDU
<ctrl-Z>: must be used to indicate the ending of PDU

3.8.4 e.g.

Command: AT+CMGS=24
>0891683108200905F0040D91683151120800F70008509092313454800462C
94E01< ctrl-Z >
Response: OK

3.9 Write Message to Memory +CMGW

3.9.1 Syntax

Table3-9: +CMGW action command syntax

Command	Possible response(s)
+CMGW=<length>[,<stat>]<CR>**PDU is given**<ctrl-Z/ESC>	<CR><LF>+CMGW: <index><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CMS ERROR: <err><CR><LF>
+CMGW=?	<CR><LF>OK<CR><LF>

3.9.2 Description

Execution command stores a message 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> allows also other status values to be given. (ME/TA manufacturer may choose to use different default <stat> values for different message types.) The entering of PDU is done similarly as specified in command Send Message +CMGS. If writing fails, final result code +CMS ERROR: <err> is returned.

3.9.3 Defined values

<length>: integer type value indicating the length of the actual TP data unit in octets

<stat>: integer type in PDU mode (default 0), or string type in text mode (default "REC UNREAD"); indicates the status of message in memory; defined values:

0	"REC UNREAD"	received unread message (i.e. new message)
1	"REC READ"	received read message
2	"STO UNSENT"	stored unsent message (only applicable to SMs)
3	"STO SENT"	stored sent message (only applicable to SMs)
4	"ALL"	all messages (only applicable to +CMGL command)

<index>: integer type; value in the range of location numbers supported by the associated memory

3.9.4 e.g.

Command: AT+CMGW=24
>089168310820090 5F0040D91683151120800F700085090923134548004 62C
94E01< ctrl-Z >
Response: +CMGW: 9
OK

3.10 List Messages +CMGL

3.10.1 Syntax

Table3-10: +CMGL action command syntax

Command	Possible response(s)
+CMGL[=<stat>]	**if PDU mode and command successful:** [<CR><LF>+CMGL: <index>,<stat>,[<reserved>],<length><CR><LF><pdu> [<CR><LF>+CMGL:<index>,<stat>,[<reserved>],<length><CR><LF><pdu> [...]]<CR><LF>]<CR><LF>OK<CR><LF> **otherwise:** <CR><LF>+CMS ERROR: <err><CR><LF>
+CMGL=?	<CR><LF>+CMGL: (list of supported <stat>s) <CR><LF><CR><LF>OK<CR><LF>

3.10.2 Description

Execution command returns messages with status value <stat> from preferred message storage <mem1> to the TE. Entire data units <pdu> are returned. If status of the message is 'received unread', status in the storage changes to 'received read'. If listing fails, final result code +CMS ERROR: <err> is returned.

Test command shall give a list of all status values supported by the TA.

3.10.3 Defined values

<stat>: integer type in PDU mode (default 0), or string type in text mode (default "REC UNREAD"); indicates the status of message in memory; defined values:

0	"REC UNREAD"	received unread message (i.e. new message)
1	"REC READ"	received read message
2	"STO UNSENT"	stored unsent message (only applicable to SMs)
3	"STO SENT"	stored sent message (only applicable to SMs)
4	"ALL"	all messages (only applicable to +CMGL command)

<length>: integer type value indicating the length of the actual TP data unit in octets

3.10.4 e.g.

Command: AT+CMGL=4

Response:

+CMGL: 0,1,,22

089168310820090 5F0240D91683109294348F0000050909251317400 02ED32

+CMGL: 1,1,,24

089168310820090 5F0040D91683151120800F70008509092313454800462C94E01

+CMGL: 7,1,,27

089168310820090 5F0200D91683109294348F0000050909261403000 08E6B3997C269BCF

OK

3.11 Read Message +CMGR

3.11.1 Syntax

Table3-11: +CMGR action command syntax

Command	Possible response(s)
+CMGR=<index>	**if PDU mode and command successful:** <CR><LF>+CMGR: <stat>,[<reserved>],<length><CR><LF><pdu><CR><LF> <CR><LF>OK<CR><LF> **otherwise:** <CR><LF>+CMS ERROR: <err><CR><LF>
+CMGR=?	<CR><LF>OK<CR><LF>

3.11.2 Description

Execution command returns message with location value <index> from preferred message storage <mem1> to the TE. Status of the message and entire message data unit <pdu> is returned. If status of the message is 'received unread', status in the storage changes to

'received read'. If reading fails, final result code +CMS ERROR: <err> is returned.

3.11.3 Defined values

<stat>: integer type in PDU mode (default 0), or string type in text mode (default "REC UNREAD"); indicates the status of message in memory; defined values:

0 "REC UNREAD" received unread message (i.e. new message)
1 "REC READ" received read message
2 "STO UNSENT" stored unsent message (only applicable to SMs)
3 "STO SENT" stored sent message (only applicable to SMs)
4 "ALL" all messages (only applicable to +CMGL command)

<length>: integer type value indicating the length of the actual TP data unit in octets

3.11.4 e.g.

Command: AT+CMGR=7
Response: +CMGR: 1,,27
0891683108200905F0200D91683109294348F000005090926140300008E6B3
997C269BCF
OK

4 Commands for Safety Configuration

4.1 Change password +CPWD

4.1.1 Syntax

Table 4-1: +CPWD action command syntax

Command	Possible response(s)
+CPWD=<fac>,<oldpwd>, <newpwd>	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CPWD=?	<CR><LF>+CPWD: list of supported (<fac>,<pwdlength>)s<CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

4.1.2 Description

Action command sets a new password for the facility lock function defined by command Facility Lock +CLCK.

Test command returns a list of pairs, which present the available facilities and the maximum length of their password.

4.1.3 Defined values

<fac>: values reserved by the present document:

"SC" SIM (lock SIM/UICC card) (SIM/UICC asks password in MT power-up and when this lock command issued)

<oldpwd>, <newpwd>: string type; <oldpwd> shall be the same as password specified for the facility from the MT user interface or with command Change Password +CPWD and <newpwd> is the new password; maximum length of password can be determined with <pwdlength>

<pwdlength>: integer type maximum length of the password for the facility

4.1.4 e.g.

Command: AT+CPWD="SC","1234","4321"

Response: OK

4.2 Enter PIN +CPIN

4.2.1 Syntax

Table 4-2: +CPIN parameter command syntax

Command	Possible response(s)
+CPIN=<pin>[,<newpin>]	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CPIN?	<CR><LF>+CPIN: <code><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CPIN=?	<CR><LF>OK<CR><LF>

4.2.2 Description

Set command sends to the MT a password which is necessary before it can be operated (SIM PIN, SIM PUK, etc.). If the PIN is to be entered twice, the TA shall automatically repeat the PIN. If no PIN request is pending, no action is taken towards MT and an error message, +CME ERROR, is returned to TE.

If the PIN required is SIM PUK or SIM PUK2, the second pin is required. This second pin, <newpin>, is used to replace the old pin in the active application in the UICC (GSM or USIM) or SIM card.

Read command returns an alphanumeric string indicating whether some password is required or not.

When the User Interface is started, MT will use this read command automatically.

4.2.3 Defined values

<pin>, <newpin>: string type values

<code> values reserved by the present document:

READY	MT is not pending for any password
SIM PIN	MT is waiting UICC/SIM PIN to be given
SIM PUK	MT is waiting UICC/SIM PUK to be given
SIM PIN2	MT is waiting active application in the UICC (GSM or USIM) or SIM card PIN2 to be given
SIM PUK2	MT is waiting active application in the UICC (GSM or USIM) or SIM card PUK2 to be given

4.2.4 e.g.

Command: AT+CPIN?
Response: +CPIN: SIM PUK2
OK

4.3 Facility lock +CLCK

4.3.1 Syntax

Table 4-3: +CLCK action command syntax

Command	Possible response(s)
+CLCK=<fac>,<mode>[,<passwd>[,<class>]]	**when <mode>=2 and command successful:** <CR><LF>+CLCK:<status>[,<class1>[<CR><LF>+CLCK:<status>,<class2>[...]]<CR><LF><CR><LF>OK<CR><LF> **when <mode>≠2 and command successful:** <CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CLCK=?	<CR><LF>+CLCK: (list of supported <fac>s)<CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

4.3.2 Description

Execute command is used to lock, unlock or interrogate a MT or a network facility <fac>. Password is normally needed to do such actions. When querying the status of a network service (<mode>=2) the response line for 'not active' case (<status>=0) should be returned only if service is not active for any <class>. This command should be abortable when network facilities are set or interrogated.

Test command returns facility values supported as a compound value.

4.3.3 Defined values

<fac> values reserved by the present document:

"SC" SIM (lock SIM/UICC card) (SIM/UICC asks password in MT power-up and when this lock command issued)

<mode>:

0 unlock
1 lock
2 query status

<status>:

0 not active
1 active

<passwd>: string type; shall be the same as password specified for the facility from the MT user interface or with command Change Password +CPWD

<classx> is a sum of integers each representing a class of information (default 7):

1 voice (telephony)
2 data
4 fax (facsimile services)
8 short message service

4.3.4 e.g.

Command: AT+CLCK="SC",0,"1234"
Response: OK

5 Commands for UMTS Packet Domain

5.1 Define PDP Context +CGDCONT

5.1.1 Syntax

Table 5-1: +CGDCONT parameter command syntax

Command	Possible response(s)
+CGDCONT=<cid>[,<PDP_type>[,<APN>[,<PDP_addr>[,<d_comp>[,<h_comp>]]]]]	<CR><LF>OK<CR><LF>
+CGDCONT?	<CR><LF>+CGDCONT: <cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp>[<CR><LF>+CGDCONT: <cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp>[...]]<CR><LF><CR><LF>OK<CR><LF>
+CGDCONT=?	<CR><LF>+CGDCONT: (range of supported <cid>s), <PDP_type>,,,(list of supported <d_comp>s),(list of supported <h_comp>s)

	[<CR><LF>+CGDCONT: (range of supported <cid>s), <PDP_type>,,,(list of supported <d_comp>s), (list of supported <h_comp>s)[...]]<CR><LF><CR><LF>OK<CR><LF>

5.1.2 Description

The set command specifies PDP context parameter values for a PDP context identified by the (local) context identification parameter, <cid>. The number of PDP contexts that may be in a defined state at the same time is given by the range returned by the test command.

A special form of the set command, +CGDCONT= <cid> causes the values for context number <cid> to become undefined.

The read command returns the current settings for each defined context.

The test command returns values supported as a compound value. If the MT supports several PDP types, <PDP_type>, the parameter value ranges for each <PDP_type> are returned on a separate line.

5.1.3 Defined values

<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

X.25	ITU-T/CCITT X.25 layer 3 (Obsolete)
IP	Internet Protocol (IETF STD 5)
IPV6	Internet Protocol, version 6 (IETF RFC 2460)
OSPIH	Internet Hosted Octet Stream Protocol (Obsolete)
PPP	Point to Point Protocol (IETF STD 51)

<APN>: (Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.

If the value is null or omitted, then the subscription value will be requested.

<PDP_address>: a string parameter that identifies the MT in the address space applicable to the PDP.

If the value is null or omitted, then a value may be provided by the TE during the PDP startup procedure or, failing that, a dynamic address will be requested.

The read form of the command will continue to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using the +CGPADDR command.

<d_comp>: a numeric parameter that controls PDP data compression (applicable for SNDCP only) (refer 3GPP TS 04.65 [59])

0 - off (default if value is omitted)

1 - on (manufacturer preferred compression)

2 - V.42bis

Other values are reserved.

<h_comp>: a numeric parameter that controls PDP header compression (refer 3GPP TS 04.65 [59])

0 – off (default if value is omitted)

1 – on (manufacturer preferred compression)

2 – RFC1144

3 – RFC2507

Other values are reserved.

<pd1>, … <pdN>: zero to N string parameters whose meanings are specific to the <PDP_type>

5.1.4 e.g.

Command: AT+CGDCONT=1,"IP","mms.com",,0,0

Response: OK

6 Commands for Phonebook

6.1 Read phonebook entries +CPBR

6.1.1 Syntax

Table 6-1: +CPBR action command syntax

Command	Possible response(s)
+CPBR=<index1>[,<index2>]	[<CR><LF>+CPBR:<index1>,<number><type><text>[[…]<CR><LF>+CPBR:<index2>,<number><type><text><CR><LF>]]<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CPBR=?	<CR><LF>+CPBR:(list of supported <index>s),[<nlength>],[<tlength>]<CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

6.1.2 Description

Execution command returns phonebook entries in location number range <index1>... <index2> from the current phonebook memory storage selected with +CPBS. If <index2> is left out, only location <index1> is returned. Entry fields returned are location number <indexn>, phone number stored there <number> (of format <type>) and text <text> associated with the number. If all queried locations are empty (but available), no information text lines may be returned. If listing fails in an MT error, +CME ERROR: <err> is returned.

Test command returns location range supported by the current storage as a compound value and the maximum lengths of <number> and <text> fields. In case of SIM/UICC storage, the lengths may not be available. If MT is not currently reachable, +CME ERROR: <err> is

returned.

6.1.3 Defined values

<index1>, <index2>, <index>: integer type values in the range of location numbers of phonebook memory

<number>: string type phone number of format <type>

<type>: type of address octet in integer format

<text>: string type field of maximum length <tlength>

<nlength>: integer type value indicating the maximum length of field <number>

<tlength>: integer type value indicating the maximum length of field <text>

6.1.4 e.g.

Command: AT+CPBR=3,7

Response: +CPBR: 3,"13989245045",129,"805F204E09"
+CPBR: 4,"13989245045",129,"805F204E09"
+CPBR: 5,"88888888",129,"6A69616E686169"
+CPBR: 6,"13989245045",129,"805F204E09"
+CPBR: 7,"88888888",129,"6A69616E686169"
OK

6.2 Write phonebook entry +CPBW

6.2.1 Syntax

Table 6-2: +CPBW action command syntax

Command	Possible response(s)
+CPBW=[<index>][,<number>[,<type>[,<text>]]]	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+CPBW= ?	<CR><LF>+CPBW:(list of supported <index>s),[<nlength>],(list of supported <type>s),[<tlength>]<CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

6.2.2 Description

Execution command writes phonebook entry in location number <index> in the current phonebook 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, phonebook entry is deleted. If <index> is left out, but <number> is given, entry is written to the first free location in the phonebook (the implementation of this feature is manufacturer specific). If writing fails in an MT error, +CME ERROR: <err> is returned.

Test command returns location range supported by the current storage as a compound value, the maximum length of <number> field, supported number formats of the storage, and

the maximum length of <text> field. In case of SIM/UICC storage, the lengths may not be available. If MT is not currently reachable, +CME ERROR: <err> is returned. If storage does not offer format information, the format list should be empty parenthesis.

6.2.3 Defined values

<index>: integer type values in the range of location numbers of phonebook memory
<number>: string type phone number of format <type>
<type>: type of address octet in integer format; default 145 when dialling string includes international access code character "+", otherwise 129
<text>: string type field of maximum length <tlength>
<nlength>: integer type value indicating the maximum length of field <number>
<tlength>: integer type value indicating the maximum length of field <text>

6.2.4 e.g.

Command: AT+CPBW=32,"88723348",129,"79757975"
Response: OK

7 Commands for System Configuration

7.1 Operator selection +COPS

7.1.1 Syntax

Table 7-1: +COPS parameter command syntax

Command	Possible response(s)
+COPS=[<mode>[,<format>[,<oper>]]]	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+COPS?	<CR><LF>+COPS:<mode>[,<format>,<oper>]<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+COPS=?	<CR><LF>+COPS: [list of supported (<stat>,long alphanumeric <oper>,short alphanumeric <oper>,numeric <oper>)s][,,(list of supported <mode>s),(list of supported <format>s)]<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

7.1.2 Description

Set command forces an attempt to select and register the GSM/UMTS network operator. <mode> is used to select whether the selection is done automatically by the MT or is forced by this command to operator <oper> (it shall be given in format <format>). If the selected

operator is not available, no other operator shall be selected (except <mode>=4). The selected operator name format shall apply to further read commands (+COPS?) also. <mode>=2 forces an attempt to deregister from the network. The selected mode affects to all further network registration (e.g. after <mode>=2, MT shall be unregistered until <mode>=0 or 1 is selected). This command should be abortable when registration/deregistration attempt is made.

Read command returns the current mode and the currently selected operator. If no operator is selected, <format> and <oper> are omitted.

Test command returns a list of quadruplets, each representing an operator present in the network. Quadruplet consists of an integer indicating the availability of the operator <stat>, long and short alphanumeric format of the name of the operator, and numeric format representation of the operator. Any of the formats may be unavailable and should then be an empty field. The list of operators shall be in order: home network, networks referenced in SIM/UICC, and other networks.

It is recommended (although optional) that after the operator list TA returns lists of supported <mode>s and <format>s. These lists shall be delimited from the operator list by two commas.

7.1.3 Defined values

<mode>:

0 automatic (<oper> field is ignored)

1 manual (<oper> field shall be present)

2 deregister from network

3 set only <format> (for read command +COPS?), do not attempt registration/deregistration (<oper> field is ignored); this value is not applicable in read command response

4 manual/automatic (<oper> field shall be present); if manual selection fails, automatic mode (<mode>=0) is entered

<format>:

0 long format alphanumeric <oper>

1 short format alphanumeric <oper>

2 numeric <oper>

<oper>: string type; <format> indicates if the format is alphanumeric or numeric; long alphanumeric format can be up to 16 characters long and short format up to 8 characters; numeric format is the GSM Location Area Identification number which consists of a three BCD digit country code coded as in ITU-T E.212 Annex A [10], plus a two BCD digit network code, which is administration specific; returned <oper> shall not be in BCD format, but in IRA characters converted from BCD; hence the number has structure: (country code digit 3)(country code digit 2)(country code digit 1)(network code digit 2)(network code digit 1)

<stat>:

0 unknown

1 available

2 current

3 forbidden

7.1.4 e.g.

Command: AT+COPS?

Response: +COPS: 0,0,"Telecom Italia Mobile"

OK

8 Commands for STK Service

8.1 Get STK Main Menu +ZSTM

8.1.1 Syntax

Table 8-1: +ZSTM parameter command syntax

Command	Possible response(s)
+ZSTM	<CR><LF><item_number_N>,<title>[,<item1_id>,<item1_text>[,<item2_id>,<item2_text>[…,<itemN_id>,<itemN_text>]]]<CR><LF><CR><LF>OK<CR><LF>

8.1.2 Description

This command is used to inquire the STK main menu information.

8.1.3 Defined values

<item_number_N> : the number of main menus

<title> : the title of the main menu

<item1_id> : the ID of item1

<item1_text> : the text of item1

<item2_id> : the ID of item2

<item2_text> : the text of item2

……

<itemN_id> : the ID of itemN

<itemN_text> : the text of itemN

8.1.4 e.g.

Command: AT+ZSTM

Response: 7,8052A8611F57305E26;1,808D448BAF901F9012;2,805A314E5

8.2 Select Main Menu Item +ZSELM

8.2.1 Syntax

Table 8-2: +ZSELM parameter command syntax

Command	Possible response(s)
+ZSELM=<menu_item_id>	<CR><LF>OK<CR><LF>

8.2.2 Description

This command is used to select the STK main menu item.

8.2.3 Defined values

<menu_item_id> : the ID of selected main menu item; this ID is obtained in the response of AT+ZSTM, the range of this value is from 0 to 255.

8.2.4 e.g.

Command: AT+ZSELM=6

Response: OK

+ZSTI: 3,;19,8079FB52A852A97406;50,8065E05FE75C0F52A9624B;51,8

8.3 Sub-menu Items Reports +ZSTI

8.3.1 Syntax

Table 8-3: +ZSTI parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZSTI:<num_items_N>,<item_title>;<itme1_id>,<item1_text>;<item2_id>,<item2_text>;……<itemN_id>,<itemN_text><CR><LF>

8.3.2 Description

When users select one of the main menu item, the sub-items under this main menu item is reported to TE using unsolicited code.

8.3.3 Defined values

<num_items_N> : the number of items

<item_title> : the title of item

<item1_id> : the ID of item1
<item1_text> : the text of item1
<item2_id> : the ID of item2
<item2_text> : the text of item2
……
<itemN_id> : the ID of itemN
<itemN_text> : the text of itemN

8.4 Select Sub-menu Item +ZSELI

8.4.1 Syntax

Table 8-4: +ZSELI parameter command syntax

Command	Possible response(s)
+ZSELI=<item_id>	<CR><LF>OK<CR><LF>

8.4.2 Description

This command is used to select the STK sub-menu item.

8.4.3 Defined values

<item_id> : the ID of selected sub-menu item; this ID is obtained in the report of AT+ZSTI, the range of this value is from 0 to 255.

8.4.4 e.g.

Command: AT+ZSELI=18
Response: OK
+ZSTI: 2,;1,805B9E65F68BDD8D39;2,80538653F28BDD8D39;

8.5 Requests for Text Display +ZDIST

8.5.1 Syntax

Table 8-5: +ZDIST parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZDIST: <immediate_rsp_required>,<text_string><CR><LF>

8.5.2 Description

When (U)SIM card requests for displaying text, the text string is reported to TE using unsolicited code.

8.5.3 Defined values

<immediate_rsp_required> :

1: need immediate response
2: don't need immediate response

<text_string> : the text string reported to display

8.6 Requests for Character Input +ZGINK

8.6.1 Syntax

Table 8-6: +ZGINK parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZGINK:<hint_text>,<input_dcs><CR><LF>

8.6.2 Description

When (U)SIM card requests for inputting a single character, the request is reported to TE using unsolicited code.

8.6.3 Defined values

<hint_text> : the hint character

<input_dcs> : the data code scheme of user input

8.7 Requests for Text String Input +ZGINP

8.7.1 Syntax

Table 8-7: +ZGINP parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZGINP:<hint_text>,<input_dcs>,<max_input_length>,<min_input_length><CR><LF>

8.7.2 Description

When (U)SIM card requests for inputting text string, the request is reported to TE using unsolicited code.

8.7.3 Defined values

<hint_text> : the hint text string

<input_dcs> : the data code scheme of user input

<max_input_length> : the max length that user can input

<min_input_length> : the min length that user can input

8.8 Requests for Build Main Menu +ZPSTM

8.8.1 Syntax

Table 8-8: +ZPSTM parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZPSTM:<menu_number_N>,<menu_title>;<item1_id>,<item1_text>;<item2_id>,<item2_text>;……<itemN_id>,<itemN_text><CR><LF>

8.8.2 Description

When (U)SIM card requests for building main menu, the request is reported to TE using unsolicited code.

8.8.3 Defined values

<menu_number_N > : the number of main menus

<menu _title> : the title of the main menu

<item1_id> : the ID of item1

<item1_text> : the text of item1

<item2_id> : the ID of item2

<item2_text> : the text of item2

……

<itemN_id> : the ID of itemN

<itemN_text> : the text of itemN

8.9 Requests for Rebuild Main Menu +ZEND

8.9.1 Syntax

Table 8-9: +ZEND parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZEND<CR><LF>

8.9.2 Description

When (U)SIM card requests session-end, the request for rebuilding main menu is reported to TE using unsolicited code.

8.9.3 Defined values

No value.

8.10 SMS Sending Status Reports +ZSMSR

8.10.1 Syntax

Table 8-10: +ZSMSR parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZSMSR:<text_string><CR><LF>

8.10.2 Description

When (U)SIM card sends SMS of STK service, the SMS sending status reports is routed to TE using unsolicited code.

8.10.3 Defined values

<text_string> : the text string of STK SMS sending status reports

8.11 Requests for More Time +ZMTime

8.11.1 Syntax

Table 8-11: +ZMTime parameter command syntax

Command	Possible response(s)
	<CR><LF>+ZMTime:<cmd_id><CR><LF>

8.11.2 Description

When (U)SIM card requests for more time, the request is reported to TE using unsolicited code.

8.11.3 Defined values

<cmd_id> : the type of current STK command

8.12 Not Support Current Command Type Reports +Zunsupport

8.12.1 Syntax

Table 8-12: +Zunsupport parameter command syntax

Command	Possible response(s)
	<CR><LF>+Zunsupport:<cmd_id><CR><LF>

8.12.2 Description

When (U)SIM card doesn't support the type of current STK command, the report is routed to TE using unsolicited code.

8.12.3 Defined values

<cmd_id> : the type of current STK command

8.13 Menu Backwards +ZBK

8.13.1 Syntax

Table 8-13: +ZBK parameter command syntax

Command	Possible response(s)
+ZBK=<itemid >	<CR><LF>OK<CR><LF>

8.13.2 Description

This command is used to select that the menu return to the upper menu or main menu.

8.13.3 Defined values

<itemid> : the ID of the item

0 : return to the main menu

1: return to the upper menu

8.13.4 e.g.

Command: AT+ZBK=1

Response: OK

8.14 Input Character +ZINKR

8.14.1 Syntax

Table 8-14: +ZINKR parameter command syntax

Command	Possible response(s)
+ZINKR=<input_dcs>,<len>	<CR><LF>OK<CR><LF>

8.14.2 Description

This command is used to hint users to input character.

8.14.3 Defined values

<input_dcs> : the data code scheme of user input

0 : SMS_DEF_ALPHABET

1 : YES_NO

2 : NUMERICAL_ONLY

3 : UCS2_ALPHABET

<len> : the length of the character

8.15 Input Text String +ZINPR

8.15.1 Syntax

Table 8-15: +ZINPR parameter command syntax

Command	Possible response(s)
+ZINPR=<input_dcs>,<len>	<CR><LF>OK<CR><LF>

8.15.2 Description

This command is used to hint users to input text string.

8.15.3 Defined values

<item_id> : the ID of selected main menu item; this ID is obtained in the response of AT+ZSTM,

the range of this value is from 0 to 255.

<input_dcs> : the data code scheme of user input

0 : SMS_DEF_ALPHABET

1 : YES_NO

2 : NUMERICAL_ONLY

3 : UCS2_ALPHABET

4 : NUMERCIAL_UCS2

<len> : the length of the text string

8.16 Text Display +ZDISTR

8.16.1 Syntax

Table 8-16: + ZDISTR parameter command syntax

Command	Possible response(s)
+ZDISTR	<CR><LF>OK<CR><LF>

8.16.2 Description

This command is used to hint users to validate text string display.

8.16.3 Defined values

No value.

8.16.4 e.g.

Command: AT+ZDISTR

Response: OK

9 Other Extended Commands

9.1 Display operator +ZDON

9.1.1 Syntax

Table 9-1: +ZDON parameter command syntax

Command	Possible response(s)
+ ZDON ?	<CR><LF>+ZDON:<RPLMN>,<RMCC>,<RMNC>,<HPLMN>,<HMCC>,<HMNC>,<ROAM_STATUS><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
	<CR><LF>+ZDONR:<RPLMN>,<RMCC>,<RMNC>,<SRV_DOMAIN>,<ROAM_STATUS><CR><LF>

9.1.2 Description

This command is used to display the current operator, including the name and PLMN. This command can just be used as read command (i.e. AT+ZDON?).

When the operator changes, the new operator information is routed to TE using unsolicited code.

9.1.3 Defined values

<RPLMN>: the name of local operator

<RMCC>: the MCC of local operator

<RMNC>: the MNC of local operator

<HPLMN>: the name of attributive operator

<HMCC>: the MCC of attributive operator

<HMNC>: the MNC of attributive operator

<SRV_DOMAIN>: service domain

CS_ONLY: CS domain service available

PS_ONLY: PS domain service available

CS_PS: CS&PS domain service available

<ROAM_STATUS>:

ROAM _NONE

ROAM _OFF

ROAM _ON

9.1.4 e.g.

Command: AT+ZDON?

Response: +ZDON: "China Mobile",460,0,"China Mobile",460,0,"ROAM_OFF"

OK

9.2 Configuration of Network Selection Mode +ZSNT

9.2.1 Syntax

Table 9-2: +ZSNT parameter command syntax

Command	Possible response(s)
+ZSNT=<cm_mode>,<net_sel_mode>,<pref_acq>	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+ZSNT ?	<CR><LF>+ZSNT:<cm_mode>,<net_sel_mode>,<pref_acq><CR><LF><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+ZSNT= ?	<CR><LF>OK<CR><LF>

9.2.2 Description

This command is used to set and read the network selection mode. The set command format is as follows:

AT+ZSNT=0,0,0 AUTOMATIC network selection，GSM+WCDMA

AT+ZSNT=0,0,1 AUTOMATIC network selection，GSM+WCDMA，GSM preferred

AT+ZSNT=0,0,2 AUTOMATIC network selection，GSM+WCDMA，WCDMA preferred

AT+ZSNT=1,0,0 AUTOMATIC network selection，GSM only

AT+ZSNT=2,0,0 AUTOMATIC network selection，WCDMA only

AT+ZSNT=0,1,0 MANUAL network selection，GSM+WCDMA

AT+ZSNT=1,1,0 MANUAL network selection，GSM only

AT+ZSNT=2,1,0 MANUAL network selection，WCDMA only

9.2.3 Defined values

<cm_mode>: Preferred network mode，as "Preferred" parameter in QPST system panel.

0: AUTOMATIC
1: GSM_ONLY
2: WCDMA_ONLY

<net_sel_mode>: selection of network selection mode, as "preferred selection mode" parameter in QPST system panel.

0: AUTOMATIC network selection
1: MANUAL network selection
2: LIMITIED network selection

<pref_acq>: Preferred network mode acquisition parameter, as "preferred Acquisition" parameter in QPST system panel.

0 : AUTOMATIC order
1 : GSM_WCDMA order
2: WCDMA_GSM order

9.2.4 e.g.

Command: AT+ZSNT=0,0,2
Response: OK

9.3 Check Card Status +ZPAS

9.3.1 Syntax

Table 9-3: +ZPAS parameter command syntax

Command	Possible response(s)
+ZPAS?	<CR><LF>+ZPAS:<network>,<srv_domain><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
	+ZPASR: <network><CR><LF>

9.3.2 Description

This command is used to check card status, including the type of current network and service domain. This command can just be used as read command (i.e. AT+ZPAS?).

When the network changes, the new type of network is routed to TE using unsolicited code.

9.3.3 Defined values

<network>: the type of current network

No Service
Limited Service
GPRS
GSM
UMTS
EDGE
HSDPA

<srv_domain>: service domain

CS_ONLY: CS domain service available.
PS_ONLY: PS domain service available.
CS_PS: CS&PS domain service available.
CAMPED: camped in a cell.

9.3.4 e.g.

Command: AT+ZPAS?
Response: +ZPAS: "GPRS","CS_PS"
OK

9.4 Start Timer +ZSTART

9.4.1 Syntax

Table 9-4: +ZSTART parameter command syntax

Command	Possible response(s)
+ZSTART	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

9.4.2 Description

This command is used to start the timer.

9.4.3 Defined values

No value.

9.4.4 e.g.

Command: AT+ZSTART
Response: OK

9.5 Stop Timer +ZSTOPT

9.5.1 Syntax

Table 9-5: +ZSTOPT parameter command syntax

Command	Possible response(s)
+ZSTOPT	<CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

9.5.2 Description

This command is used to stop the timer.

9.5.3 Defined values

No value.

9.5.4 e.g.

Command: AT+ZSTOPT

Response: OK

9.6 Check Roaming Status +ZCRS

9.6.1 Syntax

Table 9-6: +ZCRS parameter command syntax

Command	Possible response(s)
+ZCRS ?	<CR><LF>+ZCRS:<value><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

9.6.2 Description

This command is used to check roaming status. This command can just be used as read command (i.e. AT+ZCRS?).

9.6.3 Defined values

<value>: roaming status

-1: ROAM_STATUS_NONE

0: ROAM_STATUS_OFF

1: ROAM_STATUS_ON

9.6.4 e.g.

Command: AT+ZCRS?

Response: +ZCRS: 0

OK

9.7 Check PCB No. +ZPCB

9.7.1 Syntax

Table 9-7: +ZPCB parameter command syntax

Command	Possible response(s)
+ZPCB ?	<CR><LF>+ZPCB:<PCB version><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>

9.7.2 Description

This command is used to check PCB No.. This command can just be used as read command (i.e. AT+ZPCB?).

9.7.3 Defined values

<PCB version> : PCB No., the string shall not exceed 64 characters

9.7.4 e.g.

Command: AT+ZPCB?

Response: +ZPCB: P660M1-5.0.0

OK

9.8 Power ON/OFF +ZOPRT

9.8.1 Syntax

Table 9-8: +ZOPRT parameter command syntax

Command	Possible response(s)
+ZOPRT ?	<CR><LF>+ZOPRT:<value><CR><LF>OK<CR><LF> <CR><LF>+CME ERROR: <err><CR><LF>
+ZOPRT=<value>	<CR><LF>OK<CR><LF>

9.8.2 Description

This command is used to set and read modem power. The set command format is as follows:

AT+ZOPRT=5 TURN ON
AT+ZOPRT=6 TURN OFF

9.8.3 Defined values

<value>: Power

5: POWER_ON

6: POWER_OFF

9.8.4 e.g.

Command: AT+ZOPRT?

Response: +ZOPRT: 5

OK