Nokia 6090
AT Command Set

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Change History:

1.0	05 Apr 99	Outline	Initial version
1.1	14. Apr 99	Outline	Update AT-Commands
1.2	01.Jun 99	Outline	Insertion of detailed AT-Commands description
1.3	13-Jan-00	Outline	Updates
1.31	27-Mar-00	Outline	Updates
2.00	15-Jan-01	Specifications	After complete redisign, rg SW version 5.20
2.30	09-May-01	Specifications	Update rg SW version 5.30
2.31	27-Jun-01	Specifications	Update to AT+CPBR examples

Contents overview:

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Introduction

This document describes the AT commands supported by the Nokia 6090 and their associated parameters. A short description, the syntax, the setting values and responses of the AT commands are presented. An example of use is also provided when relevant.

Sending a command or a parameter that is not supported by the Nokia 6090 causes an error response.

Computers use AT commands to communicate with modems. Most communications applications, however, have a user-friendly interface that hides AT commands from the user. You issue AT commands via your communications application. When the software in the Nokia 6090 has received an AT command, it responds with a message that is displayed on the screen of the device you are using.

Note that the **"AT"** or **"at"** prefix must be included at the beginning of each command line.

Supported Standards

All mandatory **ITU-T V.25ter**, ETSI **GSM 07.07**, and **ETSI GSM 07.05** commands, together with optional commands applicable to the Nokia 6090, are included in this document. Also included are de facto commands widely used among modems, and commands specific to the Nokia 6090. Note that V.25ter is a combination of three TIA standards (TIA-602, TIA-615, IS-131).

Some voice commands from TIA-695 (formerly known as PN-3131 and IS-101) are supported by the Nokia 6090.

Three different fax command sets are supported. These are class 1 (TIA-578-A), class 2 (TIA SP-2388) and class 2.0 (TIA-592 or ITU-T T.32).

NOTE: This document is intended to provide an overview and brief description of each command supported by the Nokia 6090.. Further details can be found by referring to the respective command source documents indicated below:

Web sites of the standardisation organisations:

ETSI: http://www.etsi.fr

ITU: http://www.itu.ch

TIA: http://www.industry.net/tia/

Abbreviations

The following abbreviations used throughout this document are intended to convey the meaning indicated below:

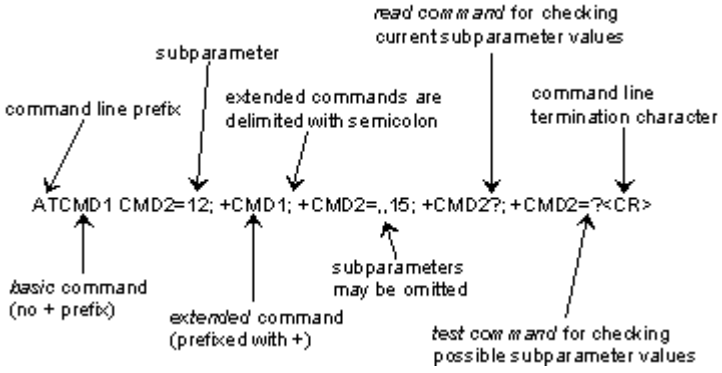
AT	ATtention
CBM	Cell Broadcast Message
CTS	Clear To Send
DCD	Data Carrier Detect
DCE	Data Circuit-Terminating Equipment, i.e., here the data card (see also TA below)
DSR	Data Set Ready
DTE	Data Terminal Equipment (see also TE below)
DTR	Data Terminal Ready
FBUS	Fast asynchronous serial bus
IMEI	International Mobile Equipment Identity (ME serial number)
IMSI	International Mobile Subscriber Identity
ME	Mobile Equipment, here: Nokia 6090
MO	Mobile Originated
MT	Mobile Terminated
NMP	Nokia Mobile Phones
OA	Outgoing access
PDU	Protocol Data Unit
RLSD	Received Line Signal Detector
RTS	Request To Send
SIM	Subscriber Identity Module
SM	Short Message
SMSC	Short Message Service Centre
TA	Terminal Adapter, the physical equipment where AT command interpreter resides (is Nokia 6090, too)
TE	Terminal Equipment, the physical equipment from where applications communicate with TA using AT commands, e.g. a computer
UI	User Interface

AT Command Syntax

Note that the **"AT"** or **"at"** prefix must be included at the beginning of each command line. Several AT commands may be typed on the same line. In such cases, it is only necessary to type the "AT" or "at" prefix at the beginning of each command line. Angled brackets (e.g. <n>) are used in command syntax is the setting value typed in as a part of the command. If the value is optional, it is enclosed into square brackets. When you select a setting value with an AT command, the setting is valid until you change it.

Command Line

See figure below for general structure of a command line.

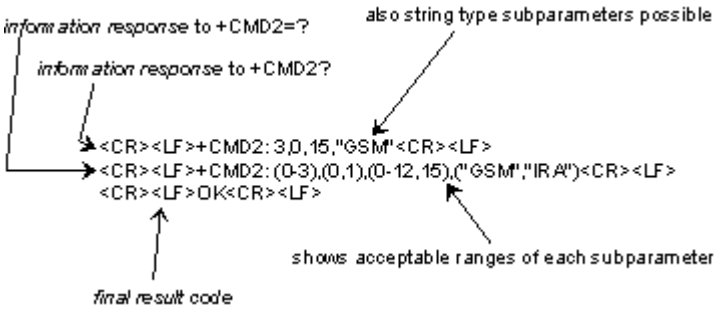


Basic structure of a command line
(ETSI, GSM 07.07 version 5.4.0, chapter 4.1.)

Standardised basic commands are found only in V.25ter. GSM commands use syntax rules of extended commands. Every extended command has a test command (=?) to test the existence of the command and to give information about the type of its subparameters. Parameter type commands also have a read command (?) to check the current values of subparameters. Action type commands do not store the values of any of their possible subparameters, and therefore do not have a read command.
If verbose responses are enabled with command V1 (see page 64) and all commands in a command line have been performed successfully, result code *<CR><LF>OK<CR><LF>* is sent from the TA to the TE. If numeric responses are enabled with command V0 (see page 64), result code 0<CR> is sent instead.
If verbose responses are enabled with command V1 and subparameters values of a command are not accepted by the TA (or command itself is invalid, or command cannot be performed for some reason), result code *<CR><LF>ERROR<CR><LF>* is sent to the TE and no subsequent commands in the command line are processed. If numeric responses are enabled with command V0, result code *4<CR>* is sent instead. *ERROR* (or *4*) response may be replaced by *+CME ERROR: <err>* or *+CMS ERROR: <err>* when the command was not processed due to an error related to ME or network operation.

Information Responses and Result Codes

The TA response for the example command line in the figure above could be as shown below. Here, the verbose response format is enabled with command V1 (see page 64). If numeric format V0 had been used, the <CR><LF> information response headers would have been left out and final result code would appear as *0<CR>*.



Response to a command line
(ETSI, GSM 07.07 version 5.4.0, chapter 4.2.)

So-called intermediate result codes inform about progress of TA operation (e.g. connection establishment *CONNECT*), and so-called unsolicited result codes indicate occurrence of an event not directly associated with commands issued by the TE (e.g. ring indication *RING*).

Command Line and Response Formatting Commands

The table below summarises the commands relating to command line and response formatting. All are applicable to GSM terminals.

Command	Description
S3=<value>	command line termination character
S4=<value>	response formatting character
S5=<value>	command line editing character
E<value>	command echo
Q<value>	result code suppression
V<value>	TA response format
X<value>	defines CONNECT result code format; values manufacturer specific
+CMEE=<n>	ME error reporting control

Sources:

GSM 07.07: Digital cellular telecommunications system (Phase 2+); AT command set for GSM Mobile Equipment (ME); version 5.40; Oct 1997.

ITU-T Recommendation V.25ter - Serial asynchronous automatic dialling and control; Aug 1995, section 5.

AT Commands for Nokia 6090

In alphabetical order (with description)

A/ Repeat Last Command Line

A/ can be used as the first characters in a command line replacing normal AT. Also lowercase (a/) accepted. (V.25ter)

? Help

Returns information about implemented AT commands.
The Help command returns with the response:

“AT" or "at" prefix must be included at the beginning of each command line.
It is possible to type several AT commands on the same command line. In such cases, it is only necessary to type the "AT" or "at" command once at the beginning of each command line.

Syntax of AT+ Commands
To select, display or assign a value for a setting, type in AT+
the command string followed by "=n", "?", or "=?", and press <ENTER>:

- AT<+command>=n to write in a new setting with the command.
- AT<+command>? displays the current setting for the command
- AT<+command>=? displays all possible setting values that can be used with the command.

&C Define DCD Usage [circuit 109 (RLSD) behaviour]

This command determines how the state of the DCD V.24 signal relates to the detection on received line signal from the distant end. (V.25ter.)

Syntax:

AT&C[0]	Keep DCD always ON.
AT&C1	Enable normal DCD usage. **Default option**.

&D Define DTR Usage [circuit 108 (DTR) behaviour]

This command defines how the DTR V.24 signal from the DTE is handled. Command &Q effect is present. (V.25ter.)

Syntax:

AT&D[0]	DTR is ignored if &Q0 is selected. DTR ON-OFF hangs up call if &Q2 is selected. (&Q effect is a de facto feature.)
AT&D1	DTR ON-OFF causes a transition to on-line command state, if there is call in progress.
AT&D2	DTR ON-OFF hangs up the call. **Default option**.
AT&D3	DTR ON-OFF hangs up the call and resets the data parameters to the start-up values (like command Z). This is a de facto feature.

&F Restore Factory Settings

This command restores all the factory settings including all the S-register settings but does not save them. Command parameters that are reset to their factory defaults are: S3, S4, S5, E, Q, V, X, &C, &D, +IFC, +ILRR, S25, &S, &Q, +CSCS, S0, S7, S8, S10, +DS, +DR, +ES, +EB, +EFCS, +ER, +ETBM, S2, S12, +CSTA, +CMOD, +CBST, +CRLP, +CR, +CRC, +CSNS, +CREG, +CLIP, +CLIR, +COLP, +CCUG, +CCWA (only <n>), +CUSD (only <n>), +CSSN, +CMEC, +CPBS, +CMEE, +CSMS, +CPMS, +CMGF, +CSCA, +CSMP, +CSDH, +CSCB, +CNMI.

Syntax:

AT&F[0]	Restore factory settings.

&K Select Flow Control

This command selects the local flow control mode. This command changes the same setting as +IFC. Use of +IFC is recommended. (De facto.)

Syntax:

AT&K[0]	Disable flow control.
AT&K3	Set hardware flow control (CTS/RTS). **Default option**.
AT&K4	Set software flow control (XON/XOFF)

&Q Define Communications Mode Option

This command defines the dialling and on-line options. (De facto.)

Syntax:

AT&Q[0]	Enable normal asynchronous operation. **Default option**.
AT&Q2	Enable DTR controlled dial. DTR OFF to ON causes a call to be made to the number stored in the TA dial slot zero. DTR ON to OFF hangs up the call.

&S Define DSR Option

This command defines how the DSR V.24 signal is handled. (De facto.)

Syntax:

AT&S[0]	Keep DSR always ON.
AT&S1	Enable normal DSR usage. **Default option**.

&V View Active Configuration

This command displays the current values of the S-registers. (V.25ter)

Syntax:

AT&V[0]	View active configuration. (All command parameter values defined under &F and &Y settings).
AT&V1	Show settings in stored profile 0. (All command parameter values defined under &W).
AT&V2	Show settings in stored profile 1. (All command parameter values defined under &W).

Response is for V1 and V2:
E1 Q0 V1 X5 &C1 &D2 &Q0 &S1
S00:000 S01:000 S02:043 S03:013 S04:010 S05:008 S07:060 S08:002
S10:100 S12:050 S14:010 S21:112 S22:016 S25:000 S27:000 S34:002
S35:007 S38:000 S39:000 S40:000 S41:001 S42:061 S43:061 S44:048
S45:006 S46:000 S47:000 S48:000

&W Store Configuration

This command stores the current settings to one of two user profiles. Command parameters that are stored to a profile are the same as listed under the command &F (see page 11) except the parameters of the following commands which are not stored: +CMOD, +CSCA, +CSMP. (De facto.)

Syntax:

AT&W[0]	Store settings to user profile 0.
AT&W1	Store settings to user profile 1.

Please note that AT&W is not supported so as to save previously used baudrate. Appropriate AT command to set the baudrate has to be sent each time the Nokia 6090 is started.
The Antenna Motor Control line (AMC) can give an indication to an external device that the 6090 is powered on, then the device can send the appropriate AT-command in order the Nokia 6090 to switch to 9600 bps again.

&Y Select Power-Up Configuration

This command defines from which user profile (0 or 1) parameters are loaded when the Nokia 6090 is activated. This setting is not included in the settings that are stored in a user profile. The command &F does not affect this setting. (De facto.)

Syntax:

AT&Y[0]	Parameters are loaded from user profile 0.
AT&Y1	Parameters are loaded from user profile 1.

+++ Escape

During on-line data state, the online command state can be entered by giving three same characters in a sequence. The character is defined by S-register S2. The default character is '+'. Before and after the sequence there must be a pause of at least the time defined by S-register S12. By setting S12 to zero, escape sequence detection can be disabled. (De facto.)

Syntax:

+++	Enter on-line command state. '+' is default character.

+CALA Alarm

Sets and reads the alarm in the ME. If <type> indicates a daily alarm time, only hour and minute fields of <time> are used (in responses, rest are set to zero). Time zone is not supported, and it is ignored when 'set' command is used, and 'read' command does not return the time zone characters in <time>. Disabled alarms are not returned by 'read' command. (GSM 07.07.)

Syntax:

AT+CALA=<time>[,<n>[, <type>]]	**Default option** is [,1,0].
AT+CALA?	Query current setting. Response is +CALA: [<time>,0,1]
AT+CALA=?	Show supported values. Response is +CALA: (1), (list of supported <type>'s), (0)

Parameters:

<time>: refer to command +CCLK (see page 16)

<n>: integer type value indicating index of alarm

1

<type>: integer type value indicating the type of the alarm:

0	Disable

Example:
AT+CALA="01/01/01,16:14:00+00"

Sets the Alarm to 16:14 daily. Year, seconds and time zone are ignored. Time must be set in ME.

AT+CALA="01/01/01,16:14:00+00",0,0

Deactivates the alarm. Year, seconds and time zone are ignored. Time must be set in ME.

+CAOC Advice of Charge

Returns current call meter value (in home units) from ME. (GSM 07.07)

Syntax:

AT+CAOC?	Response is +CAOC: <ccm>
AT+CAOC=?	OK

Parameters:

<ccm>: string type; three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30); value is in home units and bytes are similarly coded as ACMmax value in the SIM.

+CBST Select Bearer Service Type

Set command selects the bearer service <name> with data rate <speed>, and the connection element <ce> to be used when data calls are originated (GSM 02.02). Values may also be used during mobile terminated data call setup, especially in case of single numbering scheme calls (see the command +CSNS, page 48). Test command returns values supported by the TA as compound values. (GSM 07.07)

Syntax:

AT+CBST=[<speed>[, <name>[, <ce>]]]	Select bearer service type. **Default option** is 0, 0, 1.
AT+CBST?	Query current setting. Response is +CBST: <speed>, <name>, <ce>
AT+CBST=?	Show supported values. Response is +CBST: (list of supported <speed>'s), (list of supported <name>'s), (list of supported <ce>'s)

Parameters:

<speed>:	
0	autobauding (automatic selection of the speed; this setting is possible in case of 3.1 kHz modem and non-transparent service)
1	300 bps (V.21)
2	1200 bps (V.22)
3	1200/75 bps (V.23)
4	2400 bps (V.22bis)
5	2400 bps (V.26ter)
6	4800 bps (V.32)
7	9600 bps (V.32)
65	300 bps (V.110)
66	1200 bps (V.110)
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)

<name>:	
0	data circuit asynchronous (UDI or 3.1 kHz modem)
2	PAD Access (asynchronous) (UDI)

<ce>:	
0	transparent
1	non-transparent
2	both, transparent preferred
3	both, non-transparent preferred

Note: The <name> parameter '2' can only be used, in combination with valid <speed> and <ce> parameters.
Certain combinations with <name>= 2 are not allowed. For example, if the settings were at+cbst=0,0,1 and you set after this at+cbst=0,2,1 . The ME will return "Error" because the setting at+cbst=0,2,1 is not allowed.
The parameter shall be used in an appropriate context. i.e. at+cbst=66,2,1, is accepted.

+CCFC Call Forwarding Number and Conditions

This commands allows control of the call forwarding supplementary service according to GSM 02.82.. <reason> values 4 and 5 are only applicable for <mode>=0. When status request response from network indicates that SS is active for specific data bearer services (e.g. 'circuit async'), AT interface indicates only 'data' (<class>=2) ('not active' case is displayed only when SS is not active to any service; i.e. +CCFC: 0,7). (GSM 07.07)

Syntax:

AT+CCFC=<reason>, <mode>[,<number> [,<type>[,<class> [,<subaddr> [,<satype>[, <time>]]]]]]	When <mode>=2 the response is +CCFC: <status>,<class1>[,<number>,<type> [,<subaddr>,<satype>[,<time>]]] [<CR><LF>+CCFC: <status>,<class2>[,<number> ,<type>[,<subaddr>,<satype>[,<time>]]] [...]]. **Default option** is [,,, 129/145,7 ,,128,20]
AT+CCFC=?	Show supported <reason>'s.

Parameters:
<reason>:

0	unconditional
1	mobile busy
2	no reply
3	not reachable
4	all call forwarding (GSM 02.30)
5	all conditional call forwarding (GSM 02.30)

<mode>:

0	disable
1	enable
2	query status
3	registration
4	erasure

<number>: string type phone number of forwarding address in format specified by <type>

<type>: type of address octet in integer format (GSM 04.08); default 145 when dialling string includes international access code character "+", otherwise 129

<class> is a sum of integers each representing a class of information (default 7 equals to all classes):

1	voice
2	data
4	fax

also all other values below 128 are reserved

<subaddr>: string type subaddress of format specified by <satype>

<satype>: type of subaddress octet in integer format (GSM 04.08), default 128

<time>: 1...30 when "no reply" is enabled or queried, this gives the time in seconds to wait before call is forwarded, default value 20

<status>:

0	not active
1	active

Examples*:*
AT+CCFC=1,2
Queries the status of “mobile busy” (i.e. the mobile is on, a call is active but the user/network turned off the “Call waiting service”)
Response:
+CCFC: 1,1,"+499501231234 ",145

The first number is the status (here: on), the second is classx (here: voice) and the international number to which the call forwarding for this case (here: +499501231234).

AT+CCFC=2,2
Queries the status of “no reply” (i.e. the mobile is on but the user does not answer the call) and displays the settings.

AT+CCFC=3,2
Queries the status of “not reachable” (i.e. the mobile is out of network range) and displays the settings.

AT+CCFC=0,2
Queries the status of “unconditional” (i.e.all other reasons and/or all calls) and displays the settings.
Response:
+CCFC: 1,4,"+499501231234",145
Same number as above, but here the classx is fax only.

AT+CCFC=0,0
Disables the call forwarding for the reason “unconditional”.
AT+CCFC=0,2
Response:
+CCFC: 0,7
Nothing is set.

Now we set it to the state as before:
AT+CCFC=0,3,"+499501231234",145,4

AT+CCFC=2,3,"+499501231234",145,7,,,20
This forwards “no reply” for all class after 20sec to the above number.
Response:
+CCFC: 1,1,"+499501231234",145
+CCFC: 1,2,"+499501231234",145
This shows only voice and data, because fax was set via “unconditional” and “no response” consequently does not apply.

All of the above combinations are very network dependent. Ask your network operator if you have the rights to set forwardings, which won't work, for you.

+CCLK Clock

Sets and reads the real time clock of ME. Time zone is not supported, and it is ignored when 'set' command is used (but must be given), and 'read' command does not return the time zone characters in <time>. (GSM 07.07)

Syntax:

AT+CCLK=<time>	
AT+CCLK?	Query current setting. Response is +CCLK: <time>.
AT+CCLK=?	OK

Parameters:

<time>: string type value; format is "yy/MM/dd,hh:mm:ss±zz", where characters indicate year (two last digits), month, day, hour, minutes, seconds and time zone (indicates the difference, expressed in quarters of an hour, between the local time and GMT; range -47...+48). E.g. 6th of May 1994, 22:10:00 GMT+2 hours equals to "94/05/06,22:10:00+08"

Example:
AT+CCLK="01/01/01,16:14:00+00"
Sets the Time to 16:14. Date , seconds and time zone are ignored.

+CCUG Closed User Group

Selects CUG information to be sent to network with dial command D (see page 58). (GSM 07.07)

Syntax:

AT+CCUG=[<n>[,<index>[,<info>]]]	**Default option** is 0,0,0.
AT+CCUG?	Query current setting. Response is +CCUG: <n>,<index>,<info>
AT+CCUG=?	OK

Parameters:

<n>:	
0	disable CUG temporary mode
1	enable CUG temporary mode
<index>:	
0…9	CUG index
<info>:	
0	no information
1	suppress OA

+CCWA Call Waiting

This command allows control of the call waiting supplementary service and presentation of +CCWA unsolicited result code according to GSM 02.83. When status request response from network indicates that SS is active for specific data bearer services (e.g. 'circuit async'), AT interface indicates only 'data' (=2) ('not active' case is displayed only when SS is not active to any service; i.e. +CCWA: 0,7). (GSM 07.07)

Syntax:

AT+CCWA=[<n>[,<mode>[,<class>]]]	When <mode>=2: the response is +CCWA: <status>,<class1> [<CR><LF>+CCWA: <status>,<class2> [...]] **Default option** is 0[,,7].
AT+CCWA?	Query current setting. Response is +CCWA:<n>
AT+CCWA=?	Show supported values. Response is +CCWA:(list of supported <n>'s).

Parameters:

<n>	(sets/shows the result code presentation status in the TA):
0	disable
1	enable
<mode>	(when <mode> parameter is not given, network is not interrogated):
0	disable
1	enable
2	query status
<classx>	is a sum of integers each representing a class of information (default 7 equals to all classes):
1	voice
2	data
4	fax
also all other values below 128 are reserved	
<status>:	
0	not active
1	active

<number>: string type phone number of calling address in format specified by <type>

<type>: type of address octet in integer format (GSM 04.08)

<alpha>: optional string type alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with command Select TE Character Set +CSCS

Examples*:*
AT+CCWA=1,2
Queries the status of the “Call waiting service”

AT+CCWA=1,1,4
Set call waiting for fax only.

AT+CCWA=0,0,2
Disables call waiting for fax only.

AT+CCWA=1,1
Sets call waiting for voice, fax and data.

AT+CCWA=0,0
Disables the “Call waiting service”

All of the above combinations are very network dependent. Ask your network operator if you have the rights to set forwardings that wouldn’t work for you.
If call waiting is active, you are doing a call and you are called you might see:
+CCWA: "",145,1
Alternatively, you may see the callers number:.
+CCWA: "+499501231234",145,1

Now you could change active calls with the +CHLD command.

+CEER Extended Error Report

This command causes the Nokia 6090 to return one or more lines of information text, which should offer the user an extended report of the reason for failure in the last unsuccessful call setup (originating or answering). Typically, the text will consist of a single line containing the failure information given by the GSM network in a textual format. ***<report>*** is the textual representation of network cause value as listed in GSM 04.08 annex H. (GSM 07.07)

Syntax:

AT+CEER	Display error report. Response is +CEER: <report>
AT+CEER=?	OK

<report>: the total number of characters, including line terminators, in the information text do not exceed 2041 characters. Text does not contain the sequence 0<CR> or OK<CR>.

+CGMI Request ME Manufacturer Identification

This command displays the ME manufacturer identification. (GSM 07.07.)

Syntax:

AT+CGMI	Display manufacturer identification. Response is Nokia Mobile Phones
AT+CGMI=?	OK

+CGMM Request ME Model Identification

This command displays the ME model identification. TA and ME are in the same physical entity, the response of the command +GMM is identical. (GSM 07.07)

Syntax:	
AT+CGMM	Display model identification. Response is Nokia 6090 - GSM900 Fixed Mobile Phone
AT+CGMM=?	OK

+CGMR Request ME Revision Identification

This command displays the ME revision identification. Response is the Nokia 6090 SW version, HW version is not supported. TA and ME are in the same physical entity, the response of the command +GMR is identical. (GSM 07.07)

Syntax:	
AT+CGMR	Display revision identification.
AT+CGMR=?	OK

+CGSN Request ME Serial Number Identification

This command displays the ME serial number, or the IMEI. TA and ME are in the same physical entity, the response of the command +GSN is identical. (GSM 07.07.)

Syntax:	
AT+CGSN	Display serial number.
AT+CGSN=?	OK

+CHLD Call Related Supplementary Services

Controls call hold, multiparty and explicit call transfer supplementary service operations similarly as defined in GSM 02.30 (GSM 07.07)

Syntax:	
AT+CHLD=[<n>]	
AT+CHLD=?	Show supported values. Response is +CHLD: (list of supported <n>'s).

<n> values:	
0	release waiting call or held calls;
1	release active calls and accept other (waiting or held) call;
1x	release active call x;
2	active calls on hold and accept other (waiting or held) call;
2x	active multiparty call on hold except call x;
3	add held call to multiparty call;
4	connect held and active (or MO alerting) call with each other (locally both calls are disconnected).

+CHUP Hang Up Call

This command hangs up the call, also when an alternating mode call is active. This is an assured procedure to terminate an alternating mode call. (GSM 07.07).

Syntax:

AT+CHUP	Hang up call. Response is OK.
AT+CHUP=?	OK

+CIMI Request international mobile subscriber identity

Execution command causes the 6090 to return <IMSI>, which is intended to permit the TE to identify the individual SIM which is attached to 6090.
Important note: This feature is available in 5.300 SW or later.

Syntax:

AT+CIMI	<IMSI>
AT+CIMI=?	OK

Parameters:

<IMSI> : International Mobile Subscriber Identity

Example*:*
AT+CIMI
Request IMSI

Response:
262092100065749 (dependent on SIM IMSI number)

OK

+CIND Indicator Control

Queries the current status of ME physical indicators. Indicator writing not supported ('set' command returns always ERROR, or +CME ERROR when allowed by +CMEE). (GSM 07.07)

Syntax:

AT+CIND?	Query current setting. Response is +CIND: <ind>[,<ind>[,...]]
AT+CIND=?	Show supported values. Response is +CIND:(<descr>,(list of supported)), see GSM 07.07

Parameters:

<ind>: integer type value, which shall be in range of corresponding <descr>

<descr> values reserved and their <ind> ranges:

"message"	message received (0-1)
"call"	call in progress (0-1)
"smsfull"	a short message memory storage in the MT has become full (1), or memory locations are available (0); i.e. the range is (0-1)

Examples:
AT+CIND=?
Request all suported indicators

Response:
+CIND: ("message",(0,1)),("call",(0,1)),("smsfull",(0,1))

OK

AT+CIND?
Request current status of indicators.

Response:
+CIND: 1,0,0

OK

Explanation:
message indicator is ON
call indicator is OFF
smsfull indicator is OFF

+CKPD Keypad Control

Execution command emulates ME keypad by giving each keystroke as a character in a string <key>. <time> * 0.1 seconds is the time to stroke each key and <pause> * 0.1 seconds is the length of pause between two strokes.
The +CKPD command can be only executed, if the <keyp> value of the +CMEC command is 2. See also +CMEC command, page 26.
Important note: This feature is available in SW version 5.300 or later.

Syntax:

AT+CKPD=<keys>[,<time> [,<pause>]]	**Default option** is [,1,1].
AT+CKPD=?	OK

Parameters:
<keys>: string of characters representing keys as listed in the following table

<key>:	
*** or \2A**	star (*)
# or \23	hash (number sign)
0 or \30	key 0
1 or \31	key 1
2 or \32	key 2
3 or \33	key 3
4 or \34	key 4
5 or \35	key 5
6 or \36	key 6
7 or \37	key 7
8 or \38	key 8
9 or \39	key 9
C, c, \43 or \63	clear display (C / CLR)
D, d, \44 or \64	volume down
E, e, \45 or \65	connection end
M, m, \4D or \6D	menu (MENU)
S, s, \53 or \73	connection start (SEND)
U, u, \55 or \75	volume up
V, v, \56 or \76	down arrow
\5B	soft key 1 (also MENU key)
\5D	soft key 2 (also CLR key)
\5E	up arrow

For some <key> parameter, you can also used their HEX values. This values must be indicated with a "\".
In example.: "c" -> "\63"
"C" -> "\43"
The last three <key> values (soft key 1, soft key 2 and up arrow) can be only used with their HEX values.

Examples:
AT+CKPD="D"
Simulation of keypress down as if was done by the human user of the phone. For example it can be used to change the volume during a call.

AT+CKPD="\5B911"
This keypress combination causes the Nokia 6090 to go to Menu 9-1-1.

AT+CKPD="vV\56\76"
This keypress combination causes the Nokia 6090 to activate the down arrow keypress four times.

AT+CKPD="m9221"
Change the currently selected ringing tone to "Wiliam Tell" ringing tone.

AT+CKPD="m915"
Mute the ringing tone.

AT+CKPD="c",10
Makes the Nokia 6090 go back to the idle display state from any sub-menu. This command simulates the “c” keypress with a duration of one second.

+CLCC List Current Calls

Returns list of currently available calls in ME. (GSM 07.07)

Syntax:

AT+CLCC	Response is [+CLCC: <id1>, <dir>, <stat>, <mode>, <mpty>[,,,<alpha>] [<CR><LF>+CLCC: <id2>, <dir>, <stat>, <mode>, <mpty> [,,,<alpha>] [...]]]
AT+CLCC=?	OK

Parameters:
<idx>: integer type; call identification number as described in GSM 02.30; this number can be used in +CHLD command operations

<dir>:	
0	mobile originated (MO) call
1	mobile terminated (MT) call

<stat> (state of call):	
0	active
1	held
2	dialling (MO call)
3	alerting (MO call)
4	incoming (MT call)
5	waiting (MT call)

<mode> (bearer/teleservice):	
0	voice
1	data
2	fax
3	voice followed by data, voice mode
4	alternating voice/data, voice mode
5	alternating voice/fax, voice mode
6	voice followed by data, data mode
7	alternating voice/data, data mode
8	alternating voice/fax, fax mode
9	unknown

<mpty>:	
0	call is not one of multiparty (conference) call parties
1	call is one of multiparty (conference) call

parties

<alpha>: string type alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with command Select TE Character Set +CSCS

Examples:
AT+CLCC
List all current call status

Response:
+CLCC: 2,0,1,9,0
+CLCC: 4,0,,9,0,,,"FRANK D1"

OK

Explanation:

+CLCC: 2,0,1,9,0
2 -> call id
0 -> mobile originated call
1 -> call is on hold
9 -> mode is unknown
0 -> call is not one of multparty call

+CLCC: 4,0,,9,0,,,"FRANK D1"
4 -> call id
0 -> mobile originated call
-> status byte not known
9 -> mode is unknown
0 -> call is not one of multparty call
“FRANK D1” -> corresponding phonebook entry

+CLCK Facility Lock

Enables/disables or queries the state of SIM/ME security features (PIN/security code query or fixed dialling feature) or call barring supplementary services. <fac> values "AB", "AG" and "AC" are only applicable for <mode>=0. Only security code levels 'phone' and 'none' can be handled with this command. If 'memory' level is set and status is queried (+CLCK="PS",2), AT interface indicates 'not active' (+CLCK: 0). When SS status request response from network indicates that SS is active for specific data bearer services (e.g. 'circuit async'), AT interface indicates only 'data' (<class>=2) ('not active' case is displayed only when SS is not active to any service; i.e. +CLCK: 0,7). (GSM 07.07)

Syntax:

AT+CLCK=<fac>, <mode>[, <passwd> [,<class>]]	When <mode>=2: the response is +CLCK: <status>[,<class1> [<CR><LF>+CLCK: <status>,<class2> […]]]. **Default option** is [,,,7].
AT+CLCK=?	Show supported values. Response is +CLCK:(list of supported <fac>'s).

Parameters:

<fac>:	
"PS"	PH-SIM (lock PHone to SIM card) (ME asks password when other than current SIM card inserted)
"SC"	SIM (lock SIM card) (SIM asks password in ME power-up and when this lock command issued)
"AO"	BAOC (Barr All Outgoing Calls) (GSM 02.88, clause 1)
"OI"	BOIC (Barr Outgoing International Calls) (GSM 02.88, clause 1)
"OX"	BOIC-exHC (Barr Outgoing International Calls except to Home Country) (GSM 02.88, clause 1)
"AI"	BAIC (Barr All Incoming Calls) (GSM 02.88, clause 2)
"IR"	BIC-Roam (Barr Incoming Calls when Roaming outside the home country) (GSM 02.88, clause 2)
"AB"	All Barring services (GSM 02.30)
"AG"	All outGoing barring services (GSM 02.30)
"AC"	All inComing barring services (GSM 02.30)
"FD"	SIM fixed dialling memory feature (if PIN2 authentication has not been done during the current session, PIN2 is required as <passwd>)

<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 ME user interface or with command Change Password +CPWD

<classx>:	is a sum of integers each representing a class of information (default 7 equals to all classes):
1	voice
2	data
4	fax
also all other values below 128 are reserved	

Examples:
AT+CLCK="PS",1,"12345"
Locks Phone to SIM card with “Security code” confirmation (“12345”).

AT+CLCK="FD",1,"0000"
Locks SIM card fixed dialling memory after PIN2 confirmation (“0000”).

The barring service commands are network dependent. “FD” and “SC” are SIM dependent. If you have problems ask your network operator if you have the rights to change this values.

+CLIP Calling Line Identification Presentation

Controls presentation of +CLIP unsolicited result code or returns CLIP subscription status from network. Nokia 6090 does not support network status query, <m> equals always 2. (GSM 07.07)

Syntax:

AT+CLIP=[<n>]	**Default option** is 0.
AT+CLIP?	Query current setting. Response is +CLIP: <n>,<m>
AT+CLIP=?	Show supported values. Response is +CLIP☹list of supported <’>'s).

Parameters:

<n>:	
0	Disable
1	Enable
<m>:	shows the subscriber CLIP service status in the network
2	unknown

+CLIR Calling Line Identification Restriction

Enables/disables own number sending to network or returns CLIR subscription status from network. (GSM 07.07). The Nokia 6090 does not support network status query, <m> always-equal 2.

Syntax:

AT+CLIR=[<n>]	**Default option** is 0.
AT+CLIR?	Query current setting. Response is +CLIR: <n>,<m>
AT+CLIR=?	Show supported values. Response is +CLIR: (list of supported <n>’s).

Parameters:

<n>:	
2	CLIR suppression
<m>:	shows the subscriber CLIR service status in the network
2	unknown

+CMEC ME Control Mode

Selects whether ME or TE (or both) are allowed to update ME physical UI components. Display writing and Indicator updating are not supported. (GSM 07.07.)

Syntax:

AT+CMEC=[<keyp>[,<disp> [,<ind>]]]	**Default option** is 0 [,0] [,0].
AT+CMEC?	Query current setting. Response is +CMEC: <keyp>, 0, 0
AT+CMEC=?	Show supported values. Response is +CMEC: (list of supported <keyp>'s), (0), (0)

Parameters:

<keyp>:	
0	ME can be operated only through its keypad
2	ME can be operated from both ME keypad and TE

<disp>:	
0	only ME can write to its display

<ind>:	
0	only ME can set the status of its indicators (command +CIND can only be used to read the indicators); see 20

+CMEE Report Mobile Equipment Error

This command controls the presentation of extended error information result code. See also result code +CME ERROR. (07.07)

Syntax:

AT+CMEE=[<n>]	**Default option** is 0.
AT+CMEE?	+CMEE: <n>
AT+CMEE=?	Response is +CMEE: (list of supported <n>'s).

Parameters:

<n>:	
0	disable +CME ERROR: <err> result code and use ERROR instead
1	enable +CME ERROR: <err> result code and use numeric <err> values
2	enable +CME ERROR: <err> result code and use verbose <err> values

+CMER ME Event Reporting

Enables/disables the presentation of unsolicited keypad and indicator result codes. Important note: This feature is avaible in 5.300 SW or later.

Syntax:

AT+CMER=[<mode>[,<keyp>[,<disp>[,<ind>[,<bfr>]]]]]	**Default option** is [2],0,[0],0,[0].
AT+CMER?	+CMER: <mode>,<keyp>,<disp>,<ind>,<bfr>
AT+CMER=?	Response is +CMER: (list of supported <mode>'s), (list of supported <keyp>'s), (list of supported <disp>'s), (list of supported <ind>'s), (list of supported <bfr>'s).

Parameters:

<mode>:	
2	buffer unsolicited result code in the TA when TA-TE link is reserved and flush them to the TE after reservation; otherwise forward them directly to the TE

<keyp>:	
0	no keypad event reporting
2	keypad event reporting using result code +CKEV: <key>,<press>

<displ>:	
0	no display event reporting

<ind>:	
0	no indicator event reporting
1	indicator event reporting using result code +CIEV: <ind>, <value>. <ind> indicates the indicator order number as specified for +CIND and <value> is the new value of the indicator

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

Example:
AT+CMER=2,2,0,1
This command enables unsolicited keypad and indicator result codes.

+CMGC Send Command

Text/PDU entering as specified in 07.05. If SMSC address is not set/restored during the current session (i.e. +CSCA? returns +CSCA: "",129) it must be automatically read from SIM/ME (location 1). In PDU mode, all kind of GSM 03.40 MO TPDUs can be sent with this command (operation equals to +CMGS). (GSM 07.05)

Syntax:

text mode (+CMGF=1): **AT+CMGC=<fo>,<ct>[,<pid>[,<mn>[,<da>[, <toda>]]]]<CR>** text is entered <ctrl-Z/ESC>	Response is (+CMGF=1) and sending ok: +CMGC: <mr>[,<scts>] **Default option** is text mode [2,0,0,0,"",129/145]
PDU mode (+CMGF=0): **AT+CMGC=<length><CR>** PDU is given <ctrl-Z/ESC>	Response is (+CMGF=0) and sending ok: +CMGC: <mr>[,<ackpdu>]
AT+CMGC=?	OK

+CMGD Delete Message

Execution command deletes message from preferred message storage <mem1> location <index>. If deleting fails, final result code +CMS ERROR: <err> is returned. (GSM 07.05)

Syntax:

AT+CMGD=<index>	
AT+CMGD=?	OK

+CMGF Message Format

This 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). Text mode uses the value of parameter <chset> specified by command Select TE Character Set +CSCS to inform the character set to be used in the message body in the TA-TE interface. (GSM 07.05)

Syntax:

AT+CMGF=[<mode>]	**Default option** is 0.
AT+CMGF?	Query current setting. Response is +CMGF: <mode>
AT+CMGF=?	Show supported values. Response is +CMGF:(list of supported <mode>'s)

***Parameters**:*

<mode>:

0	PDU mode. **Default option**.
1	text mode

Examples:

To show an incoming SMS on an external Display:
AT+CMGF=1
AT+CNMI=2,1,0,1,0
+CMTI: "SM",1 //received SMS on the 1st SMS-location on the SIM card

To show the content of the SMS:
AT+CMGR=<index> // read SMS from 1st SMS-location on the SIM card

+CMGL List Messages

This command returns messages with a status value from a preferred message storage selected with the AT+CPMS command (see page 41). <alpha> and CBM memory not supported. (GSM 07.05) Only<stat>=0 and 4 are applicable. (GSM 07.05)

Syntax:

AT+CMGL[=<stat>]	***Responses:*** **text mode (+CMGF=1), SMS-DELIVER or SMS-SUBMIT:**
	+CMGL: <index>,<stat>,<oa/da>,[<alpha>],[<scts>] [,<tooa/toda>,<length>] [<CR><LF>
	+CMGL: <index>,<stat>,<oa/da>,[<alpha>],[<scts>] [,<tooa/toda>,<length>][…]]
	text mode (+CMGF=1), SMS-STATUS-REPORT:
	+CMGL: <index>,<stat>,<fo>,<mr>,[<ra>],[<tora>], <scts>,<dt>,<st>[<CR><LF>
	+CMGL: <index>,<stat>,<fo>,<mr>,[<ra>],[<tora>], <scts>,<dt>,<st>[...]]
	text mode (+CMGF=1), SMS-COMMAND:
	+CMGL: <index>,<stat>,<fo>,<ct>[<CR><LF>
	+CMGL: <index>,<stat>,<fo>,<ct>[...]]
	PDU mode (+CMGF=0):
	+CMGL: <index>,<stat>,[<alpha>],<length><CR> <LF><pdu>[<CR><LF>
	+CMGL:<index>,<stat>,[<alpha>],<length > <CR><LF><pdu>[...]].
Default option	"REC UNREAD" for +CMGF=1
	0 for +CMGF=0
AT+CMGL=?	Show supported values.
	Response in text mode (+CMGF=1):
	+CMGL: ("REC UNREAD","ALL")
	Response in PDU mode (+CMGF=0):
	+CMGL: (0,4)

<stat> for +CMGF=0:

0	**received unread**
4	**all**

<stat> for +CMGF=1:

“REC UNREAD”	**received unread**
“ALL”	**all**

Example:

AT+CMGL
List all messages on the SIM in the selected mode (change with +CMGF)

Response:
+CMGL: 1,"STO UNSENT","+499501231234",,
abcdefg
+CMGL: 2,"STO UNSENT","+499501231234",,
abcdefghi
+CMGL: 3,"STO UNSENT","+499501231234",,
abcdefghi

OK

+CMGR Read Message

This command returns a message with a location value <index> from a preferred message storage selected with the AT+CPMS command. 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. <alpha> and CBM memory are not supported. (GSM 07.05)

Syntax:

AT+CMGR=<index>	***Responses:***
	text mode (+CMGF=1), SMS-DELIVER:
	+CMGR: <stat>,<oa>,[<alpha>],<scts>[,<tooa>, <fo>,<pid>,<dcs>,<sca>,<tosca>,<length>] <CR><LF><data>
	text mode (+CMGF=1), SMS-SUBMIT:
	+CMGR: <stat>,<da>,[<alpha>][,<toda>,<fo>, <pid>,<dcs>,[<vp>],<sca>,<tosca>,<lengt h>] <CR><LF><data>
	text mode (+CMGF=1), SMS-STATUS-REPORT:
	+CMGR: <stat>,<fo>,<mr>,[<ra>],[<tora>],<scts>,dt >,<st>
	text mode (+CMGF=1), SMS-COMMAND:
	+CMGR: <stat>,<fo>,<ct>[,<pid>,[<mn>],[<da>], [<toda>],<length><CR><LF><cdata>]
	PDU mode (+CMGF=0):
	+CMGR: <stat>,[<alpha>],<length><CR><LF><pdu >

AT+CMGR=?	OK

Example:
AT+CMGR=5
List message in SIM index 5 in the selected mode (change with +CMGF).

Response:
+CPBR: 5,"+499501231234",145,"MARC"

OK

+CMGS Send Message

This command sends a message to the network. A message reference value <mr> is returned to the DTE on successful message delivery. Sending can be cancelled by using the <ESC> character. <ctrl-Z> must be used to indicate the ending of the message body. Values can be used to identify message upon unsolicited delivery status report result code. If sending fails in a network or a ME error, final result code +CMS ERROR: <err> is returned. (GSM 07.05)

Syntax:

text mode (+CMGF=1): AT+CMGS=<da>[,<toda>]<CR> text is entered<ctrl-Z/ESC>	Response when text mode (+CMGF=1) and sending ok: +CMGS: <mr>[,<scts>]
PDU mode (+CMGF=0): AT+CMGS=<length><CR> PDU is given<ctrl-Z/ESC>	Response when PDU mode (+CMGF=0) and sending ok: +CMGS: <mr>[,<ackpdu>]

Default option for text mode: [,129/145]

AT+CMGS=?	OK

Parameters:

<length>	length of the actual PDU in octets
<pdu>	service centre address followed by GSM 03.40 Protocol Data Unit in hexadecimal format
<mr>	message reference number

Example:
AT+CMGF=1;+CMGS="0067800987666"
Sets the phone to “text mode” and begins to send a message to 0067800987666.
Response:
>
Enter now the data you want to send, like:
Hello, this is a SMS originated from a computer.<ctrl-Z >
Response:
+CMGS: <mr>

You have successfully sent a message.
(The right network SMSC must be set in the ME or set via +CSCA command)

+CMGW Write Message to Memory

This command stores a message in a preferred memory storage selected with AT+CPMS command. Memory location of a stored message is returned. By default, message status will be set to "STO UNSENT", but parameter also allows other status values to be given. Entering of text is done similarly as specified in command +CMGS Send Message (see page 30). If writing fails, final result code +CMS ERROR: <err> is returned.

Syntax:

text mode (+CMGF=1): AT+CMGW[=<oa/da>[,<tooa/toda>[,<stat>]]]<CR> text is entered <ctrl-Z/ESC>	Response for successful storing: +CMGW: <index>
Default option: [,129/145, "STO UNSENT"]	

PDU mode (+CMGF=0): AT+CMGW=<length>[,<stat>]<CR> PDU is given <ctrl-Z/ESC>	Response for successful storing: +CMGW: <index>
Default option: [,2]	
AT+CMGW=?	OK

Parameters:

<addr>	origin or destination address	
<type>	type of origin or destination address, 129 for normal and 145 for international access (number contains '+' character)	
<stat>		
	"REC UNREAD"	received unread message
	"REC READ"	received read message
	"STO UNSENT"	stored unsent message (default)
	"STO SENT"	stored sent message
<index>	location number	

Example:
AT+CMGF=1;+CMGW="+499501231234”
Sets the phone to “text mode” and begins to store a message to +499501231234 destination number.
Response:
>
Enter now the data you want to send, like:
This is an unsent SMS on my SIM from my computer.<ctrl-Z >

Response:
+CMGW: <index> You have successfully stored a message.

Monitor Log from above example:
AT+CMGF=1;+CMGW="+499501231234"
> hello Nokia
+CMGW: 4

OK

AT+CMGL
List all SMS!

Response:
+CMGL: 1,"STO UNSENT","+499501231234",,
abcdefghi
+CMGL: 2,"STO UNSENT","+499501231234",,
abcdefghi
+CMGL: 3,"STO UNSENT","+499501231234",,
abcdefghi
+CMGL: 4,"STO UNSENT","+499501231234",,
hello Nokia

OK

+CMMS More Messages to Send

This command controls the continuity of SMS relay protocol link. If enabled (and supported by network), several consecutive messages can be sent (+CMGS etc.) much faster as link is kept open.(GSM 07.05)

Syntax:

AT+CMMS=<n>	**Default option** is 0.
AT+CMMS?	Query current setting. Response is +CMMS: <n>
AT+CMMS=?	Show supported values. Response is +CMMS: (list of supported <n>'s)

Parameters:

<n>:	
0	Disable. **Default option**
1	Keep enabled until time between message send commands exceeds five seconds (then switch <n> back to 0),
2	Enable (this affects also 07.05 block mode).

+CMOD Call Mode

This command sets the call mode for further dialling command ATD or for next answering command ATA . To prevent the possibility that alternating mode calls are originated or answered accidentally, <mode> is automatically reset to value 0 after each call. Note that alternating call-answering operations from an external UI may change +CMOD values. (GSM 07.07).

Syntax:

AT+CMOD=[<mode>]	Set call mode. **Default option** is 0.
AT+CMOD?	Query current setting. Response is +CMOD:<mode>.
AT+CMOD=?	Show supported modes. Response is +CMOD: (list of supported <mode>'s).

Values for <mode>:

0	single mode (default)
1	alternating voice/fax (teleservice 61)

2	alternating voice/data (bearer service 61)
3	voice followed by data (bearer service 81)

+CMSS Send Message from Storage

This command sends a message with the location value <index> from a preferred message storage selected with AT+CPMS command (see page 41). If a new recipient address <da> is given, it shall be used instead of the one stored with the message. Reference value <mr> is returned to DTE on successful message delivery. (GSM 07.05)

Syntax:

AT+CMSS=<index>[, <da>[,<toda>]]	***Responses:*** **text mode (+CMGF=1) and sending ok:** +CMSS: <mr>[,<scts>]
	PDU mode (+CMGF=0) and sending ok: +CMSS: <mr>[,<ackpdu>]
: [,"",129/145]	
AT+CMSS=?	OK

Parameters:

<index>	location number
<mr>	message reference number
<da>	destination address
<toda>	type of destination address, 129 for normal and 145 for international access ('+' character automatically added to address)

Example:
AT+CMSS=1
Sends the message on index 1 to the da address, which is in the message.
Response:
+CMSS: <mr>

You have successfully sent this message.

+CNMA New Message Acknowledgement to ME/TA

This command confirms correct reception of a new message (SMS-DELIVER or SMS-STATUS-REPORT) which is routed directly to the TE. This acknowledgement command (causing ME to send RP-ACK to the network) is used when +CSMS (see page 48) parameter <service> equals 1. TA does not send another +CMT or +CDS result code to TE before previous one is acknowledged. If ME does not get acknowledgement within required time (network timeout), ME send RP-ERROR to the network. ME/TA automatically disable routing to TE by setting both <mt> and <ds> values of +CNMI to zero. (GSM 07.05 PDU entering as specified in GSM 07.05).

Syntax:

text mode (+CMGF=1): **AT+CNMA**	
PDU mode (+CMGF=0): **AT+CNMA[=<n>[,<length>[<CR>** PDU is given<ctrl-Z/ESC>**]]]**	
AT+CNMA=?	Show supported values. Response for PDU mode (+CMGF=0) is: +CNMA: (0-2)

Parameter:

<n>:	
0	command operates similarly as defined for the tect mode
1	send RP-ACK
2	send RP-Error

+CNMI New Message Indications to TE

This command selects the procedure for indicating the reception of new messages from the network to the DTE. For a detailed description of the syntax of indication responses, see Result Codes at page 77. (GSM 07.05)

Syntax:

AT+CNMI=[<mode> [,<mt> [, <bm> [,<ds> [,<bfr>]]]]]	Select indication procedure.
AT+CNMI?	Query current setting.
	Response is +CNMI: <mode>, <mt>, <bm>, <ds>, <bfr>.
AT+CNMI=?	Show valid values. Response is +CNMI: lists of supported (<mode>'s), (<mt>'s), (<bm>'s), (<ds>'s), (<bfr>'s).

Parameters:

<mode>

0	buffer all indications
1	no indications when the DTE-DCE link is reserved (on-line data mode)
2	buffer indications when the DTE-DCE link is reserved, (e.g. in on-line data mode), and flush them to the DTE after reservation has ended

<mt>

0	no received message indications are routed to the DTE
1	indication of received message is routed to the DTE using a result code +CMTI
2	received messages (except class 2 messages, which result only in +CMTI indication) are routed directly to the DTE using a result code +CMT
3	class 3 received messages are routed directly to the DTE using a result code +CMT and messages of other classes using a result indication +CMTI

<bm>

0	no cell broadcast indications are routed to the DTE
2	cell broadcast messages are routed directly to the DTE using a result code +CBM
3	class 3 CBMs are routed directly to TE using unsolicited result codes defined in <bm>=2

<ds>

0	no status reports are routed to the DTE
1	status reports are routed to the DTE using a result code +CDS
2	status reports indication of the memory location is routed to the TE using a result code +CDSI

<bfr>

0	buffer of indications is flushed to the DTE when <mode> 1 or 2 is entered
1	buffer of indications is cleared when <mode> 1 or 2 is entered

Examples:

To show an incoming SMS on an external Display:

```
AT+CMGF=1
AT+CNMI=2,1,0,1,0
+CMTI: "SM",1          //received SMS on the 1st SMS-location on the SIM card
```

To show the content of the SMS:

```
AT+CMGF=1                                   // Switch to Textmode
AT+CNMI=2,1,0,1,0   // New Message Indication to Terminal Equipment
                    // New SMS Delivery Indication
AT+CMGR=<index >
```

+COLP Connected Line Identification Presentation

Controls presentation of +COLP intermediate result code or returns COLP subscription status from network. Nokia 6090 does not support network status query, <m> equals always 2. (GSM 07.07)

Syntax:

AT+COLP=[<n>]	Select bearer service type. **Default option** is 0.
AT+COLP?	Query current setting. Response is +COLP: <n>,<m>
AT+COLP=?	Show supported values. Response is +COLP: (list of supported <n>'s).

Parameters:

<n >:	parameter sets/shows the result code presentation status in the TA:
0	disable
1	enable
<m >:	parameter shows the subscriber COLP service status in the network:
2	unknown (e.g. no network, etc.)

+COPS Operator selection

Set command forces an attempt to select and register the GSM network operator. <mode> is used to select whether the selection is done automatically by the Nokia 6090 or is forced by this command to operator <oper>, which is given in format <format>.
Important note: This feature is avaible in 5.300 SW or later.

Syntax:

AT+COPS=[<mode>[,<format>[,<oper>]]]	select operator
AT+COPS?	Query current setting. Response is +COPS: <mode>[,<format>,<oper>]
AT+COLP=?	Show supported values. Response is +COLP: [(list of supported <stat>), numeric<oper>] [,, (list of supported <mode>'s), (list of supported <format>'s)].

Parameters:

<mode>:	network mode, which is choose to select the network
0	automatic (<oper> field is ignored)
1	manual (<oper> shall be presented)
<format>:	parameter shows the network operator code:
2	numeric <oper>
<oper>:	network operator code
<stat>:	Availability of the operator
0	unknown
1	available
2	current
3	forbidden

Examples:
AT+COPS=1,2,”26202”

This commands forces a manual network selection to operator “26202”
1 - manual network selection
2 - operator code is given in numeric format
“26202” - operator

AT+COPS=0
This command activated automatic network selection.

AT+COPS=?
This command show all available networks.

Response:
+COPS: (1,,,"24407"),(2,,,"24702"),,(0,1),(2)

OK

Explanation:
1,,"24407” - operator “24407” can be seen and is available (1)
2,,"24702” - operator “24702” is the current network (2)

+CPAS Phone Activity Status

Returns the general status of ME. TA and ME are in one physical entity, test command reports still that <pas>=1 is available although it will not be reported ever. (GSM 07.07)

Syntax:

AT+CPAS	Response is +CPAS:<pas>.
AT+CPAS=?	Show supported values. Response is +CPAS: (list of supported <pas>'s)

Parameters:

<pas>:	
0	ready (ME allows commands from TA/TE)
1	unavailable (ME does not allow commands from TA/TE)
3	ringing (ME is ready for commands from TA/TE, but the ringer is active)
4	call in progress (ME is ready for commands from TA/TE, but a call is in progress)

+CPBF Find Phone Book Entries

If searched text is not found from entries in current memory, response is empty. (GSM 07.07)

Syntax:

AT+CPBF=<findtext>	Response is [+CPBF: <index1>,<number>,<type>,<text>[[...] +CPBF: <index2>,<number>,<type>,<text>]]
AT+CPBF=?	Show supported values. Response is +CPBF: <nlength>,<tlength>

Parameters:

<index1>, <index2>: 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 (GSM 04.08)

<findtext>, <text>: string type field of maximum length <tlength>; character set as specified by command Select TE Character Set +CSCS

<nlength>: integer type value indicating the maximum length of field <number>
ME: ***<nlength>***= 30; Rest depends on SIM.

<tlength>: integer type value indicating the maximum length of field <text>
ME: ***<tlength>***= 16; Rest depends on SIM.

Example:
If you have an entry called “Weather” on your SIM, you can find it this way:
AT+CPBF="Weather"
Response:
+CPBF: 88,"+499501231234 ",129,"Weather"

You can search whole areas if you only enter “A”:
+CPBF: 59,"+499501231235",145,"Alex"
+CPBF: 01,"+499501231236",145,"Andy"
+CPBF: 67,"+499501231237 ",129,"Antonia"

Notes:
1. Find searches only the phonebook defined by the current setting of +CPBS. Use +CPBS prior to +CPBF to switch to other phonebooks as appropriate. See command +CPBS for further details.
2. Find compares the search string against the first characters of each stored phonebook entry. A phonebook for example with entries "Linda" and "Catlin", and a search for entry "Li" will return only entry "Linda".

+CPBR Read Phone Book Entries

If given index range is valid but all entries in it are empty, response is empty. (GSM 07.07)

Syntax:

AT+CPBR=<index1>[, <index2>]	Response is [+CPBR: <index1>, <number>, <type>, <text>[[...] +CPBR: <index2>, <number>, <type>, <text>]]
AT+CPBR=?	Show supported values. Response is +CPBR: (<index>-list),[<nlength>],[<tlength>]

Parameters:

<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 (GSM 04.08)

<text>: string type field of maximum length <tlength>; character set as specified by command Select TE Character Set +CSCS

<nlength>: integer type value indicating the maximum length of field <number>
ME: ***<nlength>***= 30; Rest depends on SIM.

<tlength>: integer type value indicating the maximum length of field <text>
ME: ***<tlength>***= 16; Rest depends on SIM.

Examples:
This command is good if you want a range or even all entries.
AT+CPBR=1,100
Returns all entries from index 1 to 100.

AT+CPBR=26
Returns the entry from index 26.

If you want to search on another storage see command +CPBS.

Note:
Depending upon SIM, not all phonebooks selectable by AT+CPBS return a list of supported values when interrogated by CPBR=?. Those not supporting values may return an error message. However, entries can still be viewed by giving a valid range.

For example, if the phonebook "DC" were selected by AT+CPBS="DC", then requesting a list of supported values may result in an error as follows:
AT+CPBR=?
ERROR

However, phonebook entries can still be viewed as follows (assuming an entry exists at index 0 only):
AT+CPBR=0,10

+CPBR: 0,"555333",129,""

OK

+CPBS Select Phone Book Memory Storage

Selects memory where phonebook commands operate. (GSM 07.07)

Syntax:

AT+CPBS=<storage>	**Default option** is "SM".
AT+CPBS?	Query current setting. Response is +CPBS: <storage>[,<used>,<total>].
AT+CPBS=?	Show supported values. Response is +CPBS: (list of supported <storage>'s)

Parameters:

<storage>:	
"ME"	ME phonebook
"SM"	SIM phonebook
"FD"	SIM fixdialling-phonebook
"EN"	emergency number
"MC"	missed calls
"DC"	dialled calls
"RC"	received calls

<used>: integer type value indicating the number of used locations in selected memory

<total>: integer type value indicating the total number of locations in selected memory; ME: ***<total>***= 150; Rest depends on SIM.

Examples:
To select the internal phonebook of ME
AT+CPBS="ME"
To switch to phonebook on SIM card:
AT+CPBS="SM"
Note: it is only possible to read one phonebook at one time. Switching from one memory storage to the other one is possible using AT+CPBS.

To show the 5 last missed calls:
AT+CPBS="MC" (MC : Missed Calls)
AT+CPBR=0,4

To show the last 5 dialled numbers
AT+CPBS="DC" (DC : ME dialled calls list)
AT+CPBR=0,4 (this gives the list of the i.e. last 5 calls)

Note that the last number dialled or last missed call is always stored at location 0. As new missed calls are received, or new numbers dialled, existing numbers are shifted up one storage location (i.e. previous number stored at 0 is shifted to 1, 1 shifted to 2, etc.)

+CPBW Write Phone Book Entry

<index> must always be given. (07.07)

Syntax:

AT+CPBW=[<index>] [, <number>[, <type>[, <text>]]]	**Default option** is [,,129/145].
AT+CPBW=?	Show supported values. Response is +CPBW: (<index>-list),[<nlength>], (129,145),[<tlength>]

Parameters:

<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 (GSM 04.08) ; default 145 when dialling string includes international access code character "+", otherwise 129

<text>: string type field of maximum length <tlength>; character set as specified by command Select TE Character Set +CSCS

<nlength>: integer type value indicating the maximum length of field <number>
ME: ***<nlength>***= 30 // rest depends on SIM.

<tlength>: integer type value indicating the maximum length of field <text>
ME: ***<tlength>***= 16 // rest depends on SIM.

Example:
AT+CPBW=78,"+499501231234",145,"My Boss"
(Note that no space character is allowed within the phone number)
This saves the international (145) number +499501231234with the title My Boss on index 78 in the storage memory.

+CPIN Enter PIN

Used to enter device passwords that ME is querying, or to query whether ME is currently querying a password. When last executed AT command failed in PIN2/PUK2 authentication error (or security code error in case of memory updating), read command returns PIN2/PUK2 (or security code) <code> although the operation of ME is not blocked. (GSM 07.07)

Syntax:

AT+CPIN=<pin>	
AT+CPIN?	Query current setting. Response is +CPIN: <code>
AT+CPIN=?	OK

Parameters:

<pin>: string type values

<code>:	
READY	ME is not pending for SIM password
SIM PIN	ME is waiting SIM PIN to be given

Example:
AT+CPIN="0000"
Enter PIN code

Response, if the PIN code is correct:
OK

+CPMS Preferred Message Storage

This command selects memory storages to be used for reading/deleting <mem1>, writing/sending <mem2>, and receiving <mem3> short messages. Amount of used and available message locations in each memory is returned as response. (GSM 07.05)

Syntax:

AT+CPMS=<mem1>[, < mem2>[, <mem3>]]	Select preferred storage. Response is +CPMS: <used1>, <total1>, <used2>, <total2>, <used3>, <total3> Default option is "SM","SM","SM"
AT+CPMS?	Current setting query. Response is +CPMS: <mem1>, <used1>, <total1>, <mem2>, <used2>, <total2>, <mem3>, <used3>, <total3>
AT+CPMS=?	Show supported values. Response is+CPMS: (list of <mem1> locations), (list of <mem2> locations), (list of <mem3> locations)

Parameters:

<mem1>	"ME" "SM"
<mem2>	"ME" "SM"
<mem3>	"SM"

+CPWD Change Password

Changes passwords of SIM/ME/network features. "AB" = network/barring password. (GSM 07.07)

Syntax:

AT+CPWD=<fac>,<oldpwd>,<newpwd>	
AT+CPWD=?	Show supported values.

<fac>:

"PS"	PH-SIM (lock PHone to SIM card) (ME asks password when other than current SIM card inserted)
"SC"	SIM (lock SIM card) (SIM asks password in ME power-up and when this lock command issued)
"AB"	All Barring services (GSM 02.30)
"P2"	SIM PIN2

<oldpwd>, <newpwd>: string type; <oldpwd> shall be the same as password specified for the facility from the ME 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

Examples:
AT+CPWD=?
Show supported values

Response:
+CPWD: ("PS",5),("SC",8),("AB",4),("P2",8)

OK

AT+CPWD="PS","12345","21345"
changes “Security code” from the old 12345 value, to 21345.

AT+CPWD="SC","0000","12345678"
changes “PIN code” from the old 0000 value, to 12345678.

AT+CPWD="P2","5678","12345678"
changes “PIN2 code” from the old 5678 value, to 12345678.

+CR Service Reporting Control

This command controls the presentation of the +CR intermediate result code. If enabled, the result code is transmitted at the point during the connect negotiation during which the speed and quality of service to be used have been determined, before any error control or data compression reports are transmitted, and before any final result code (e.g., *CONNECT*) is transmitted. (GSM 07.07)

Syntax:

AT+CR=<mode>	Set service reporting control mode. **Default option** is 0.
AT+CR?	Query current setting. Response is +CR:<mode>.
AT+CR=?	Show supported values. Response is +CR:(list of supported <mode>'s).

Parameters for <mode>:

0	Disable reporting.
1	Enable reporting.

+CRC Cellular Result Codes

This command controls whether or not the extended format incoming call indication is used. When enabled, an incoming call is indicated to the DTE with the result code ***+CRING:<type>*** instead of the normal ***RING***. See also section Result Codes from page 77 onwards. (GSM 07.07)

Syntax:

AT+CRC=[<mode>]	Set incoming call indication mode. **Default option** is 0.
AT+CRC?	Query current setting Response is +CRC:<mode>
AT+CRC=?	Show supported modes. Response is +CRC:(list of supported <mode>'s).

Values for <mode>:

0	Disable extended format call indication.
1	Enable extended format call indication.

+CREG Network Registration

Controls presentation of +CREG unsolicited result code or returns current registration status. (GSM 07.07)

Syntax:

AT+CREG=[<n>]	**Default option** is 0.
AT+CREG?	Query current setting. Response is +CREG: <n>,<stat>[,<lac>,<ci>]
AT+CREG=?	Show supported values.

Parameters:

<n>:	
0	disable network registration unsolicited result code
1	enable network registration unsolicited result code +CREG: <stat>
2	enable network registration and location information unsolicited result code +CREG: <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 193 in decimal)

<ci>: string type; two byte cell ID in hexadecimal format

Examples:
/* Nokia 6090 is switched on */

at+creg=?
request, which values are supported

Response:
+CREG: (0-2)

OK

at+creg?
Request the current settings

Response:
+CREG: 0,2

OK

at+creg=2
Set <n> value to 2

Response:
OK

at+creg?
Request the current settings

Response:
+CREG: 2,2

OK

at+cpin="0000"
enter PIN code

Response:
OK

Nokia 6090 responds with unsolicited result code:
+CREG: 2

+CREG: 1,"011D","0F5B"

+CRES Restore Settings

This command restores short message service (SMS) settings (+CSMP and +CSCA parameters) from SIM to active memory. All settings specified in commands Service Centre Address +CSCA, Set Message Parameters +CSMP and Select Cell Broadcast Message Types +CSCB are restored. (GSM 07.05)

First <profile> location is 1. Values restored are those that are available in SIM database (GSM 11.11). If any of protocol id, data coding scheme or validity period is returned from SIM/ME, +CSMP parameter <fo> is forced to be SMS-SUBMIT (i.e. bits 1-0 are set to '01'). In addition, if validity period is returned, <fo> is forced to indicate relative validity period format (i.e. bits 4-3 are set to '10'). Rest of the <fo> bits are set to zero.

Syntax:

AT+CRES=1	Restore settings.
AT+CRES=?	Display the supported profile numbers for reading and writing of settings. Response is +CRES: (1).

+CRLP Radio Link Protocol

This command selects the Radio Link Protocol parameters. (according to GSM 07.07 ETSI specifications)

Syntax:

AT+CRLP=[<iws>[,<mws>[,<T1>[, <N2>]]]]	Set RLP parameters.
AT+CRLP?	Query current setting. Response is +CRLP: <iws>, <mws>, <T1>, <N2>
AT+CRLP=?	Show valid values. Response is +CRLP: (list of supported <iws>'s), (list of supported <mws>'s), (list of supported <T1>'s), (list of supported <N2>'s)

Parameters:

<iws>	IWF to MS window size
<mws>	MS to IWF window size
<T1>	acknowledgement timer T1
<N2>	retransmission attempts N2

+CSAS Save Settings

This command saves active message service settings to SIM. All settings specified in commands Service Centre Address +CSCA and Set Message Parameters +CSMP are saved. (GSM 07.05)

Values stored are those that are available in SIM database (GSM 11.11. Protocol id (<pid>), data coding scheme (<dcs>) and validity period (<vp>) are not stored if +CSMP parameter <fo> does not indicate SMS-SUBMIT (i.e. bits 1-0 are not '01'). In addition, validity period is not stored if <fo> does not indicate relative validity period format (i.e. bits 4-3 are not '10').

Syntax:

AT+CSAS=1	Save settings.
AT+CSAS=?	Display the supported profile numbers for reading and writing of settings. Response is +CSAS: (1).

+CSCA Service Centre Address

This command updates the short message service centre (SMSC) address, through which mobile originated short messages are transmitted (local TA SMSC address). SMSC address may also change when +CRES is actioned. If this value is not set (i.e. not restored from ME or set with this command during the current session) before using +CMGS, +CMGW (in case of SMS-SUBMIT or SMS-COMMAND) or +CMGC command, it must be automatically read from SIM/ME. (GSM 07.05)

Syntax:

AT+CSCA=<sca>[,<tosca>]	Set service centre address. Default setting is "",129.
AT+CSCA?	Current setting query. Response is +CSCA: <sca>,<tosca>.
AT+CSCA=?	OK

Parameters:

<sca>	service centre address
<tosca>	type of address, 129 for normal and 145 for international access (number contains '+' character)

Example:
AT+CSCA="+49000038383",145
This set the international (145) number +49000038383 as SMSC. The settings on the SIM card are not changed.

+CSCB Select Cell Broadcast Message Types

This command selects which types of cell broadcast messages are to be received. (GSM 07.05)

Syntax:

AT+CSCB=[<mode>[, <mids>[, <dcss>]]]	Select message types. Default setting is 0,"","".
AT+CSCB?	Query current setting. Response is +CSCB: <mode>, <mids>, <dcss>.
AT+CSCB=?	Show valid values. Response is +CSCB: (0,1).

Parameters:

<mode>:

0 message types specified in <mids> and <dcss> are accepted

1 message types specified in <mids> and <dcss> are not accepted

<mids>: all different possible combinations of message identifiers, example: "0,1,5,10-20,22"

<dcss>: all different possible combinations of data coding schemes, example: "0-3,5"

+CSCS Select TE Character Set

This command informs the product which character set is used by the DTE. The product is then able to convert character strings correctly between DTE and mobile equipment character sets. (GSM 07.07)

Syntax:

AT+CSCS=<chset>	Select character set.
AT+CSCS?	Query current setting. Response is +CSCS:<chset>
AT+CSCS=?	Show supported character sets. Response is +CSCS: (list of supported <chset>'s).

Values for <chset>:

"GSM"	GSM default alphabet; this setting easily causes software flow control (XON/XOFF) problems.
"HEX"	Character strings consist only of hexadecimal numbers from 00 to FF; e.g., "032FE6" equals three characters with the decimal values 3, 47 and 230.
"IRA"	International Reference Alphabet (ITU-T T.50)
"PCCP437"	PC character set Code Page 437. **Default option**.
"PCDN"	PC Danish/Norwegian character set.
"8859-1"	ISO 8859 Latin 1 character set.

+CSDH Show Text Mode Parameters

This command controls whether detailed header information is shown in text mode short message result codes. (GSM 07.05)

Syntax:

AT+CSDH=[<show>]	Enable or disable showing of detailed header information. **Default setting** is 0.
AT+CSDH?	Query current setting. Response is +CSDH: <show>.
AT+CSDH=?	Show supported values. Response is +CSDH:(list of supported <show>'s).

Values for <show>:

0	do not show header values defined in commands +CSCA and +CSMP (<sca>, <tosca>, <fo>, <vp>, <pid> and <dcs>) nor <length>, <toda> or <tooa> in +CMT, +CMGL, +CMGR result codes for SMS-DELIVERs and SMS-SUBMITs in text mode; for SMS-COMMANDs in +CMGR result code, do not show <pid>, <mn>, <da>, <toda>, <length> or <cdata>
1	show all the values in result codes

+CSMP Set Text Mode Parameters

This command is used to select values for additional parameters needed when short messages are sent, or stored. The parameters are only used in SMS text mode. The values of these parameters may change also when +CRES is actioned. TA accepts only valid SMS-SUBMIT and SMS-DELIVER values in <fo>. (GSM 07.05)

Syntax:

AT+CSMP=[<fo>[, <vp>[, <pid>[, <dcs>]]]]	Set parameter values. **Default setting** is 17,167,0,0.
AT+CSMP?	Current setting query. Response is +CSMP: <fo>, <vp>,<pid>, <dcs>.
AT+CSMP=?	OK

Parameters:

<fo>	depending on the command or result code: first octet of SMS-DELIVER, SMS-SUBMIT (default 17), or SMS-STATUS-REPORT in integer format.
<vp>	depending on SMS-SUBMIT setting: validity period either in integer format (default 167) or in time-string format.
<pid>	protocol identifier in integer format (default 0).
<dcs>	SMS Data Coding Scheme (default 0).

+CSMS Select Message Service

This commands selects the messaging service and returns the type of messages supported. Supported service is specified by GSM 03.40 and 03.41 (service value 0). Main difference between 0 and 1 is that when =1 +CNMA acknowledgement is required to most MT short messages routed directly TE. (GSM 07.05)

Syntax:

AT+CSMS=<service>	Select message service. Response is +CSMS: 1,1,1 **Default setting** is 0.
AT+CSMS?	Query current setting. Response is +CSMS: <service>,<mt>,<mo>,<bm>
AT+CSMS=?	Show supported services. Response is +CSMS: (0,1)

Parameters:

<mt>, <mo>, <bm>:

0	type not supported
1	type supported
<mt>:	mobile terminated messages supported (value 1) or not (value 0)
<mo>:	mobile originated messages supported (value 1) or not (value 0)
<bm>:	broadcast type messages supported (value 1) or not (value 0)

+CSNS Single Numbering Scheme

This command is used to select the bearer service to be used when a call without bearer service capability element is received. The command must be given before the call comes. Parameter values set with the command +CBST are used when <mode> equals to a data service. (GSM 07.07)

Syntax:

AT+CSNS=[<mode>]	Set single numbering scheme mode. The **Default option** is 0.
AT+CSNS?	Query current setting. Response is +CSNS: <mode>
AT+CSNS=?	Show supported modes. Response is +CSNS: (list of supported <mode>'s).

Values for <mode>:

0	voice (default)
2	fax (teleservice 62)
4	data

+CSQ Signal Quality

Returns signal strength as calculated by ME. Bit error rate reporting not supported. (GSM 07.07)

Syntax:

AT+CSQ	Response is +CSQ: <rssi>, 99
AT+CSQ=?	Show supported values. Response is +CSQ: (list of supported <rssi>'s), (99)

Parameters:

<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

+CSSN Supplementary Service Notifications

Controls presentation of +CSSI intermediate result code and +CSSU unsolicited result code. (GSM 07.07.)

Syntax:

AT+CSSN=[<n>[,<m>]]	**Default option** is 0, 0.
AT+CSSN?	Query current setting. Response is +CSSN: <n>,<m>
AT+CSSN=?	Show supported values. Response is +CSSN: (list of supported <n>'s), (list of supported <m>'s)

Parameters:

<n>:	parameter sets/shows the +CSSI result code presentation status in the TA:
0	disable
1	enable
<m>:	parameter sets/shows the +CSSU result code presentation status in the TA:
0	disable
1	enable

+CSTA Select Type of Address

Dial command D uses always this setting except when dial string includes international access code character (+). In this case type of address sent to the network defaults to 145 (international/telephony). (GSM 07.07)

Syntax:

AT+CSTA=[<type>]	Select type. **Default option** is 129.
AT+CSTA?	Query current setting. Response is +CSTA: <type>
AT+CSTA=?	Show supported types. Response is +CSTA:(list of supported <type>'s).

Parameters:

<type>:	type of address octet in integer format (refer GSM 04.08)
129	ISDN / telephony numbering plan, national / international unknown
145	ISDN / telephony numbering plan, international number includes international access code character "+"

+CUSD Unstructured Supplementary Service Data

Used to send MO USSD and set the presentation of +CUSD unsolicited result code (MT USSD). Used also to reply to a network initiated USSD (see Result codes section from page 77 onwards). (GSM 07.07)

Syntax:

AT+CUSD=[<n>[,<str>[,<dcs>]]]	Response is +CUSD: <m>[,<str>,<dcs>]. **Default option** is 0[,,0].
AT+CUSD?	Query current setting. Response is +CUSD: <n>
AT+CUSD=?	Show supported values. Response is +CUSD:(list of supported <n>'s).

Parameters:

<n>:	sets/shows the result code presentation status in the TA:
0	disable
1	enable
<str>:	string type USSD-string (when <str> parameter is not given, network is not interrogated):
- if <dcs> indicates that GSM 03.38 default alphabet is used:	
- if TE character set other than "HEX" (refer command Select TE Character Set +CSCS):	ME/TA converts GSM alphabet into current TE character set according to rules of GSM 07.05, 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 data coding scheme is used:	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))
<dcs>:	GSM 03.38, Cell Broadcast Data Coding Scheme in integer format (default 0)
<m>:	
0	no further user action required (network initiated USSD-Notify, or no further information needed after mobile initiated operation)
1	further user action required (network initiated USSD-Request, or further information needed after mobile initiated operation)

+DR Data Compression Reporting

This command controls the presentation of +DR:<compr> intermediate result code. (V.25ter)

Syntax:

AT+DR=<mode>	Set reporting mode. **Default option** is 0.
AT+DR?	Query current setting. Response is +DR: <mode>
AT+DR=?	Show supported modes. Response is +DR:(list of supported <mode>'s).

Parameters:

<mode>	
0	data compression reporting disabled
1	data compression reporting enabled

+DS Data Compression

This command controls the V.42bis and MNP5 data compression functions. V.42bis can be used with transparent and non-transparent data services and MNP5 can be used only with transparent data service. The data service is selected with the command AT+CBST. (V.25ter)

Syntax:

AT+DS=[<dir>[,<neg> [,<P1>[,<P2>]]]]	Set compression parameters.
AT+DS?	Query current setting. Response is +DS: <dir>,<neg>, <P1>,<P2>.
AT+DS=?	Show supported values. Response is +DS: (list of supported <dir>'s), (list of supported <neg>'s), (list of supported <P1>'s), (list of supported <P2>'s).

Parameters:

<dir>	
0	no compression (V.42bis P0=0)
1	V.42bis transmit only or MNP5
2	V.42bis receive only or MNP5
3	V.42bis both directions or MNP5

<neg>	
0	do not disconnect if compression is not negotiated by the remote DCE as specified in <direction>
1	disconnect if compression is not negotiated by the re-mote DCE as specified in <direction>
<P1>	maximum number of dictionary entries which should be negotiated, 512
<P2>	maximum string length to be negotiated, 6 to 32, de-fault 20 (V.42bis P2).

+EB Break Handling in Error Control Operation

This command controls how break signal is handled. Operation mode for a break signal to be sent to remote end is selected with <break-sel>, and <timed> specifies if break length is signalled to the remote end. Default length of a break signal to be sent to local DTE is specified with <def-length> for the cases where break length is not received. These settings are only used in transparent data call (see command +CBST at page 14) with V.42 enabled (see command +ES at page 53). (V.25ter)

Syntax:

AT+EB=[<break-sel>[, <timed>[,<def-length>]]]	Set break parameters. **Default options** are 1, 0, 30.
AT+EB?	Query current setting. Response is +EB: <break-sel>, <timed>, <def-length>.
AT+EB=?	Show supported values. Response is +EB: (list of supported <break-sel>'s), (list of supported <timed>'s), (list of supported <def-length>'s).

Parameters:

<break_sel>	
0	ignore break
1	break sent to data buffer (non-expedited), subsequent data is retained (default)
2	break sent immediately (expedited), subsequent data is retained
3	break sent immediately (expedited), subsequent data is cleared

<timed>	
0	break length not signalled to remote end (default)
1	break length signalled to remote end

<length>	
0	do not deliver break to DTE
1 to 254	default break length in 0,01 second periods (default 30)

+EFCS 32-bit Frame Check Sequence

This command controls the use of the 32-bit frame check sequence option in V.42 error control mode. 32-bit FCS is not supported. This command has no effect on the product, because only 16-bit FCS is supported. (V.25ter)

Syntax:

AT+EFCS=0	Select 16-bit FCS. **Default option** is 0.
AT+EFCS?	Query current setting. Response is +EFCS: 0
AT+EFCS=?	Show supported values. Response is +EFCS: (0).

+ER Error Control Reporting

This command controls whether or not the +ER: <type> result code is transmitted to the DTE. The result code shows the current error control protocol type when transparent data service is used. If enabled, the result code is transmitted at the point after error control negotiation (handshaking). (V.25ter)

Syntax:

AT+ER=<mode>	Set reporting mode. **Default option** is 0.
AT+ER?	Query current setting. Response is +ER: <mode>.
AT+ER=?	Show supported values. Response is +ER: (list of supported <mode>'s).

Parameters:

<mode>	
0	error control reporting disabled
1	error control reporting enabled

+ES Error Control Selection

This command controls the V.42 error control protocol which can be used with transparent data service (see command +CBST at page 14). When mobile originated calls are made the transparent data mode must be selected with the command AT+CBST. The requested mode and the acceptable fallback mode of operation for an initiated call are selected with parameters <orig_rqst> and <orig_fbk>. The third parameter, <ans_fbk>, defines the acceptable fallback mode of operation when a call is answered. (V.25ter)

Syntax:

AT+ES=[<orig_rqst>[,<orig_fbk>[,<ans_fbk>]]]	Set error control parameters. **Default options** are 4, 0, 2.
AT+ES?	Query current setting. Response is +ES: <orig_rqst>, <orig_fbk>, <ans_fbk>.
AT+ES=?	Show supported values. Response is +ES: (list of supported <orig_rqst>'s), (list of supported <orig_fbk>'s), (list of supported <ans_fbk>'s).

Parameters:

<orig_rqst>	
1	initiate call with buffered mode (flow control used)
4	initiate MNP protocol

<orig_fbk>	
0	error control optional, use buffered mode if error control not established
2	error control required, disconnect if error control not established
4	MNP error control required, disconnect if error control not established

<ans_fbk>	
1	error control disabled, use buffered mode
2	error control optional, use buffered mode if error control not established
4	error control required, disconnect if error control not established
6	MNP error control required, disconnect if error control not established

+ETBM Call Termination Buffer Management

This command controls how data remaining in DCE buffers is handled when a call is disconnected. If the call is disconnected locally, <txBuf> parameter controls whether the call is disconnected at once or is it delayed until all sent data is delivered or timer expires. If the call is disconnected at remote end, <txBuf> parameter controls whether the call disconnection response is sent to DTE at once or is it delayed until all received data is delivered to DTE or timer expires. These settings may also be used in non-transparent data call buffer management. (V.25ter)

Syntax:

AT+ETBM=[<txBuf> [,<rxBuf>[,<timer>]]]	Set buffer management parameters. **Default option** is 2, 2, 20.
AT+ETBM?	Query current setting. Response is +ETBM: <txBuf>, <rxBuf>, <timer>.
AT+ETBM=?	Show supported values. Response is +ETBM: (list of supported <txBuf>'s), (list of supported <rxBuf>'s), (list of supported <timer>'s).

Parameters:

<txBuf>	
0	Discards all data in transmit buffer and disconnect.
1	Wait until all data in transmit buffer is sent. If remote end disconnects discard remaining data.
2	Wait until all data in transmit buffer is sent. If remote end disconnects or timer expires discard remaining data. (default)
<rxBuf>	
0	Discards all data in receive buffer and disconnect.
1	Wait until all data in receive buffer is sent to DTE. If local end disconnects discard remaining data.
2	Wait until all data in receive buffer is sent to DTE. If local end disconnects or timer expires discard remaining data. (default)
<timer>	timeout value in seconds for data delivery (0 - 30, default 20)

+GCAP Request Complete Capabilities List

This command displays product information on the overall capabilities of the Nokia 6090. (V.25ter)

Syntax:

AT+GCAP	Display product capabilities. Response is +GCAP: +CGSM,+FCLASS,+DS

+GMI Request TA Manufacturer Identification

This command displays the TA manufacturer identification.(V.25ter)

Syntax:

AT+GMI	Display manufacturer identification. Response is Nokia Mobile Phones

+GMM Request TA Model Identification

This command displays the TA model identification. TA and ME are in the same physical entity, the response of the command +CGMM is identical. (V.25ter)

Syntax:

AT+GMM	Display model identification. Response is Nokia 6090 - GSM900 Fixed Mobile Phone

+GMR Request TA Revision Identification

This command displays the TA revision identification. Response is Nokia 6090 SW version, HW version is not supported. TA and ME are in the same physical entity, the response of the command +CGMR is identical. (V.25ter)

Syntax:

AT+GMR	Display revision identification.

+GSN Request TA Serial Number Identification

This command displays the TA serial number. TA and ME are in the same physical entity, the response of the command +CGSN is identical (i.e. the IMEI number). (V.25ter)

Syntax:

AT+GSN	Display serial number.

+ICF DTE-DCE Character Framing

This command is used to determine the character framing that the Nokia 6090 uses while accepting commands and while transmitting information text and a result code to/from a DTE. Note that reset commands Z and &F do not change this setting. (V.25ter)

Syntax:

AT+ICF=[<format>[, <parity>]]	Recommended default is 3,3.
AT+ICF?	Query current setting. Response is +ICF: <format>,<parity>.
AT+ICF=?	Show valid range of parameters. Response is +ICF:(list of supported <format>'s), (list of supported <parity>'s).

Parameters:

<format>	
3	8 data, no parity, 1 stop
5	7 data, parity, 1 stop
6	7 data, no parity, 1 stop

<parity>	
0	odd
1	even
2	mark
3	space

+IFC DTE-DCE Local Flow Control

This command is used to control the operation of local flow control between the DTE and the Nokia 6090. <DCE_by_DTE> specifies the flow control used by the DTE to control the flow of received data from the Nokia 6090. <DTE_by_DCE> specifies the flow control used by the Nokia 6090 to control the flow of transmitted data from the DTE.

Syntax:

AT+IFC=[<DCE_by_DTE>[, <DTE_by_DCE>]]	Set flow control. Default is 2,2.
AT+IFC?	Query current setting. Response is +IFC: <DCE_by_DTE>, <DTE_by_DCE>.
AT+IFC=?	Show valid range of parameters. Response is+IFC:(list of supported <DCE_by_DTE>'s), (list of supported <DTE_by_DCE>'s)

Parameters:

<DCE_by_DTE>	
0	no flow control
1	XON/XOFF (software) flow control
2	CTS/RTS (hardware) flow control
3	both XON/XOFF and CTS/RTS flow control

<DTE_by_DCE>	
0	no flow control
1	XON/XOFF (software) flow control
2	CTS/RTS (hardware) flow control

+ILRR DTE-DCE Local Rate Reporting

This command controls whether or not the +ILRR:<rate> information text is transmitted to the DTE. If enabled, the result code is transmitted after any modification, error control or data compression reports are transmitted, and before any final result code (e.g., CONNECT) is transmitted. The <rate> is applied after the final result code is transmitted. (V.25ter)

Syntax:

AT+ILRR=<mode>	Set reporting mode. Default is 0.
AT+ILRR?	Query current setting. Response is +ILRR: <mode>.
AT+ILRR=?	Show supported values. Response is +ILRR:(list of supported <mode>'s)

Values for <mode>:

0	local port rate reporting disabled
1	local port rate reporting enabled

+IPR Fixed DTE Rate

This command specifies the data rate at which the Nokia 6090 will accept commands. Nokia 6090 does not support autobauding. Note that reset commands Z and &F do not change this setting.

Syntax:

AT+IPR=<rate>	Set DTE rate. Default is 19200.
AT+IPR?	Query current setting. Response is +IPR: <rate>.
AT+IPR=?	Show valid range of rate. Response is +IPR:(list of supported <rate>'s).

Values for <rate>:

9600	
19200	19200 bps is the default value. Please note that the Nokia 6090 will always boot using this value.
38400	
57600	
115200	

+VTS DTMF Generation

This command is used to send DTMFs. Also the dialling command can be used to send DTMFs (see command D Dial, page 58). (PN-3131)

Syntax:

AT+VTS=[<dtmf>[,<dtmf>,...]]	
AT+VTS=?	Show supported values. Response is ( ),( ),( )

+WS46 Select Wireless Network

Currently there are no values for DCS1800 or PCS1900 but the option '12' could also be used for them. (GSM 07.07, TIA-678)

Syntax:

AT+WS46=[12]	Select wireless network.
AT+WS46?	Query current setting. Response is 12.
AT+WS46=?	Show options. Response is (12).

A Answer

This command answers an incoming call. The call is indicated by the RING or +CRING message on the terminal equipment or by the number 2 if numeric mode has been selected. This command can also be used to switch call mode from voice to data when an alternating call is active. (V.25ter)

Syntax:

ATA	Answer incoming call.

All the result codes below are not in V.25ter. Before one of the codes may be returned some of the following: +CR (or CARRIER), +ER, +DR, or +ILRR (in that order). Answer command is also used to control alternating mode calls (see GSM 07.07).

Result Codes

Possible verbose result codes (V1)	Numeric (V0)	Description
CONNECT	1	data/fax call established; rate 300 bps (or X forbids rate display)
CONNECT 1200	5	data/fax call established; rate 1200 bps
CONNECT 2400	10	data/fax call established; rate 2400 bps
CONNECT 4800	11	data/fax call established; rate 4800 bps
CONNECT 9600	12	data/fax call established; rate 9600 bps
ERROR	4	command cannot be actioned
NO CARRIER	3	call could not be established
OK	0	command aborted

B Communications Standard Option (CCITT/Bell mode)

This command has no effect on the data software. It is included for compatibility reasons. (De facto.)

Syntax:

ATB[<n>]	Values for <n> [0]...1.

D Dial

This command initiates a call. (V.25ter) When a call is initiated, the command must contain the called party's number or a directory entry which contains the stored number. The ATD command can also be used for sending DTMF tones and for switching call mode from voice to data when an alternating call is active. (GSM 07.07)

When the Nokia 6090 tries to reach a number and fails to establish a connection, further attempts will be delayed, i.e., successive attempts to dial the same number will be rejected for a short period of time, and the response DELAYED will be displayed. The delay period only lasts for a few seconds at first, however, if you continue to try to get the call through and fail, the delay will be prolonged for a few minutes. Finally, the called number will be included on a list of so-called blacklisted numbers. The response BLACKLISTED will be seen on the screen. The data software will not accept any new attempts to that number before you press any key on the cellular phone keypad. This user action erases the number from the list and enables you to call the number again. The purpose of blacklisting numbers is to conserve the network's resources.

NOTE: +VTS command or comma modifier (e.g. "ATD,1234"; in this case the first comma do not cause a pause) can be used to send DTMF digits.

Syntax:

A semicolon character needs be added when a voice call is originated.

ATD[<dial_string>[;]]	Dials the number in a dial_string.
ATD> mem<n> [;]	Originate call to phone number found from location in a specific memory mem, which is one of the two letter memory abbreviations as returned by +CPBS=? (without double quotes); location range can be queried with +CPBR=?; note that

	in case of SIM ADN memory (SM) also D>SIM shall be accepted (due to inconsistency in 07.07).
ATD><n> [;]	Dials a stored number from a data software memory location <n>.
ATD[;]	Dials a stored number from a data software memory location 0.
ATD> <string>	Dial a number assigned to name <string>.
ATDL	Redials the last number that has been dialled during the current session.

<dial-string> Characters

<dial-string> characters	Values	Description
V.25ter dialling digits	0123456789+	accepted as valid digits
	*#ABCD	cause ERROR
V.25ter modifiers	,	in case of voice call: originate call to the number preceding comma, wait for remote answer, pause for length specified with S8 register, and send numbers after comma as DTMF digits; further commas cause pause for length specified with S8 register (all commas are ignored in case of data call)
	T P ! W @	accepted but ignored
V.25ter semicolon	;	voice call originating (must be last character in command line)
GSM 07.07 modifiers	>	direct dialling from phonebook (must be first char after D) (see next table)
	i	allow calling line id presentation for this call
	I	restrict calling line id presentation for this call
	G	control CUG information for this call; use +CCUG values
de facto	L	redial to the number last dialled

See also 07.07 and V.25ter. For voice call example refer 07.07 annex G. Note that I is the only case-sensitive dial-string character.

Result Codes

All result codes are not in V.25ter. Before one of the above codes may be returned some of the following: +CSSI, +COLP, +CR (or CARRIER), +ER, +DR, or +ILRR (in that order).

Possible verbose result codes (V1)	Numeric (V0)	Description
BLACKLISTED	14	call to the number is forbidden until manual reset
BUSY	7	called party is busy
CONNECT	1	data/fax call established; rate 300 bps (or X forbids rate display)
CONNECT 1200	5	data/fax call established; rate 1200 bps
CONNECT 2400	10	data/fax call established; rate 2400 bps
CONNECT 4800	11	data/fax call established; rate 4800 bps
CONNECT 9600	12	data/fax call established; rate 9600 bps
DELAYED	13	call to the number is temporarily (5 sec - 3 min) forbidden
ERROR	4	command cannot be actioned
NO ANSWER	8	called party does not answer
NO CARRIER	3	call could not be established
OK	0	command aborted or voice call started with semicolon character

E Command Echo

This command determines whether characters that are received from the DTE are echoed or not in the command mode. (V.25ter)

Syntax:

ATE[0]	Disable echoing
ATE1	Enable echoing. **Default option**.

Fax Commands

The following fax (+F) command sets are available for use by the Nokia 6090 that supports GSM 03.45 facsimile group 3 transparent:

- Class 1, TIA-578-A
- Class 2, TIA SP-2388
- Class 2.0, TIA-592 and ITU-T T.32

Error correction mode (ECM) in Class 2 and 2.0 is supported.

H Hang Up Call

This command normally hangs up the call. If the alternating call data mode is currently active, ATH does not hang up the call but call mode is switched from data to voice. If you want to disconnect the alternating call, you must use the AT+CHUP command instead. (V.25ter)

Syntax:

ATH[<n>]	Hang up call. <n>=0

I Request Identification Information

This command displays information on the TA. (V.25ter)

Syntax:

ATI[0]	Displays the TA manufacturer identification (same as for +GMI). Response is Nokia Mobile Phones
ATI1	Displays the product serial number (same as for +GSN).
ATI2	Displays the product version (same as for +GMR).
ATI3	Displays the product name (same as for +GMM). Response is Nokia 6090 - GSM900 Fixed Mobile Phone
ATI4...ATI13	Dummy values that are just accepted.

L Monitor Speaker Loudness

This setting is ignored. It is included for compatibility reasons. (V.)

Syntax:

ATL[<n>]	L[0]...L3

M Monitor Speaker Mode

This setting is ignored. It is included for compatibility reasons. (V.25ter)

Syntax:

ATM[<n>]	M[0]...M2

O Return to On-Line Data State

This command is used when you have made a connection with the remote device and have escaped (with the +++ command) to the command mode. Give the command to return from the (on-line) command mode to normal on-line operation. (V.25ter)

Syntax:

ATO[<n>]	Go to on-line state. Response is CONNECT [<speed>].

Result Codes

Possible verbose result codes (V1)	Numeric (V0)	Description
CONNECT	1	data/fax call established; rate 300 bps (or X forbids rate display)
CONNECT 1200	5	data/fax call established; rate 1200 bps
CONNECT 2400	10	data/fax call established; rate 2400 bps
CONNECT 4800	11	data/fax call established; rate 4800 bps
CONNECT 9600	12	data/fax call established; rate 9600 bps
ERROR	4	command cannot be actioned
NO CARRIER	3	call could not be established
OK	0	command aborted

P Select Pulse Dialling

This setting is ignored. It is included for compatibility reasons. (V.25ter)

Syntax:

ATP

Q Result Code Suppression

This command determines whether responses are sent to the DTE or not. Affects only result codes, not information responses. (V.25ter)

Syntax:

ATQ[0]	Enable sending of responses to DTE. **Default option**.
ATQ1	Disable sending of responses to DTE

S0 Automatic Answer

Value indicates number of rings (RING or +CRING result codes) to wait before answering automatically. Value 0 disables auto-answer. (V.25ter)

Syntax:

ATS0=<n>	Values for <n> are 0..255 (default 0).
ATS0?	Query current setting. Response is <n>.

S1 Ring Count

Returns number of rings (RING or +CRING result codes) counted after last MT call setup. (De facto.)

Syntax:

ATS1?	Query current setting. Response is <n>. Values for <n> are 000..255.

S2 Escape Code Character

The default character is a plus sign. See also the command +++ Escape at page 12. (De facto.) The decimal value representing the ASCII value of the new escape character should be given as parameter <n>.

Syntax:

ATS2=<n>	Values for <n>are 0..127 (default 43)
ATS2?	Query current setting. Response is <n>.

S3 Command Line Termination Character

Default character is carriage return. The setting is also used in result code and information response formatting. See also command V, page 64. (V.25ter)

Syntax:

ATS3=<n>	Set termination character. Default is 13.
ATS3?	Show valid values. Response is <n>.

Values for <n>:

000
...
127

S4 Response Formatting Character

Default character is line feed. See also command V, page 64. (V.25ter)

Syntax:

ATS4=<n>	Set response formatting character. Default is 10.
ATS4?	Show valid values. Response is <n>.

Values for <n>:

000
...
127

S5 Command Line Editing Character

Default character is backspace. (V.25ter)

Syntax:

ATS5=<n>	Set response formatting character. Default is 8.
ATS5?	Show valid values. Response is <n>.

Values for <n>:

000
...
127

S6 Pause Before Blind Dialling

This setting is ignored. (V.25ter)

Syntax:

ATS6=<n>	Values for <n> are 2..10.
ATS6?	Query current setting. Response is <n>.

S7 Connection Completion Timeout

Also known as 'no answer timeout'. Value is given in seconds. Value 0 (unlimited time) is not in V.25ter. (V.25ter).

Syntax:

ATS7=<n>	Values for <n> are 0..255 (default 60).
ATS7?	Query current setting. Response is <n>.

S8 Comma Dial Modifier Time

Value is given in seconds. See also command D, page 58. (V.25ter)

Syntax:

ATS8=<n>	Values for <n> are 0..255 (default 2).
ATS8?	Query current setting. Response is <n>.

S10 Automatic Disconnect Delay

Value is given in tenths of a second. Values 0 and 255 (do not disconnect) are not in V.25ter. (V.25ter)

Syntax:

ATS10=<n>	Values for <n> are 0..255 (default 100).
ATS10?	Query current setting. Response is <n>.

S12 Escape Guard Time

Value is in fiftieths of a second (default is one second). See also the command +++ Escape at page 12. (De facto.)

Syntax:

ATS12=<n>	Values for <n> are 0..255 (default 50).
ATS12?	Query current setting. Response is <n>.

S25 Detect DTR Change Time

Time (in seconds) to react on DTR signal change. See also command &D, page 10. (De facto.)

Syntax:

ATS25=<n>	Set DTR change time. Default is 0.
ATS25?	Show valid values. Response is <n>.

Values for <n>:

000
...
255

S46 Force V.42bis Data Compression

Used to force V.42bis on for mobile to mobile connections. 0=disabled, 1=enabled in transmit direction only, 2=enabled in receive direction only, 3=enabled in both directions.

Syntax:

ATS46=<n>	Values for <n>: 0..3 (default 0)
ATS46?	Values for <n>: 000..003

S47 Force Fax Class 2/2.0 Error Correction Mode

Error Correction Mode can be enabled using this register. 0=disabled, 1=enabled with 64 byte frames, 2=enabled with 256 byte frames.

Syntax:

ATS47=<n>	Values for <n>: 0..2 (default 0)
ATS47?	Response is <n>. Values for <n>: 000..002

T Select Tone Dialling

This setting is ignored. It is included for compatibility reasons. (V.25ter)

Syntax:

ATT

V Define DCE Response Format

This command determines whether result codes are transmitted in a numeric format or an alphabetic (or verbose) format. (V.25ter)

Syntax:

ATV[0]	Select numeric (short form) responses. (Numeric V.25ter basic syntax result codes with limited headers and trailers.)
ATV1	Select textual (long) responses. (Verbose V.25ter basic syntax result codes with full headers and trailers.) **Default option**.

X Result Code Selection

This command selectively enables or disables the response codes sent to the DTE. When BUSY, NO ANSWER, DELAYED or BLACKLISTED is not enabled, NO CARRIER is used instead. When CONNECT <rate> with a correct data <rate> is not enabled, a plain CONNECT is used instead. This command does not affect the presentation of other result codes than the ones mentioned below. (V.25ter)

Syntax:

ATX[0]	OK, CONNECT, RING, NO CARRIER, ERROR codes enabled.
ATX1	also CONNECT 1200, CONNECT 2400 enabled.
ATX2	same as value 1
ATX3	also BUSY enabled
ATX4	also NO ANSWER enabled
ATX5	also CONNECT 4800 (or higher data rates), CARRIER, DELAYED, BLACKLISTED enabled. **Default option**.

Z Reset to Default Configuration

This command restores the parameter values of one of the user profiles by recalling the respective settings from the memory. Settings that are not stored in a profile (see command &W, page 12) will be reset to their factory defaults (see command &F, page 11). (V.25ter)

Syntax:

ATZ[0]	Disconnect, reset to stored profile 0.
ATZ1	Disconnect, reset to stored profile 1.

In Functional Groups

TA-TE Interface Commands

Generic Commands

Call Control Commands

Network Service Commands

ME Control and Status Commands

ME Error Command

SMS Commands

FAX Commands

Voice Commands

Miscellaneous Commands

V.25ter

NMP Specific

Error Values

Below are the set of error cases supported by the Nokia 6090.

+CME ERROR Values

The following table indicates which AT commands can return a numeric ***<err> value***.

The table has three columns. GSM defined error numbers are listed in column 2. These are translated by the Nokia 6090 to a Nokia specific error number as shown in column 3. The error code displayed in column 3 is that sent to the TA. See table "Kinds of Errors" for column 3 error descriptions.

AT Command	+CME <err> Value	Kinds of Errors
D><str>		
	3	9
	5	1
	10	2
	11	3
	12	4
	22	7
	23	8
D>mem<n>		
	3	9
	5	1
	10	2
	11	3
	12	4
	21	5, 6
	23	8
D><n>		
	3	9
	5	1
	10	2
	11	3
	12	4
	21	5, 6
	23	8

AT Command	+CME <err> Value	Kinds of Errors
+CLCK=		
	4	15
	5	1
	10	2
	11	3
	12	4
	16	11
	18	12
	23	8
	30	13
	31	23
	100	14
+CPWD=		
	5	1
	10	2
	11	3
	12	4
	16	11
	18	12
	23	8
	30	13
	31	23
	100	14
+CCFC=		
	5	1
	10	2
	11	3
	12	4
	30	13
	31	23
	100	14
+CCWA=		
	5	1
	10	2
	11	3
	12	4
	30	13
	31	23
	100	14
+CHLD=		
	3	9
+COPS=		
	2	26
	3	27
	5	1
	10	2
	11	3
	12	4
	100	28

AT Command	+CME <err> Value	Kinds of Errors
+CUSD=		
	5	1
	10	2
	11	3
	12	4
	30	13
	31	23
	100	14
+CAOC		
	5	1
	10	2
	11	3
	12	4
	23	8
+CPIN=		
	5	1
	10	2
	11	3
	12	4
	16	11
	23	8
+CPIN?		
	10	2
+CMEC=		
	3	22
+CIND=		
	4	15
+CPBS?		
	5	1
	10	2
	11	3
	12	4
	23	8
+CPBR=		
	5	1
	10	2
	11	3
	12	4
	21	5
	23	8
	26	18
+CPBR=?		
	5	1
	10	2
	11	3
	12	4
	23	8

AT Command	+CME <err> Value	Kinds of Errors
+CPBF=		
	5	1
	10	2
	11	3
	12	4
	23	8
+CPBF=?		
	5	1
	10	2
	11	3
	12	4
	23	8
+CPBW=		
	3	24
	4	15
	5	1
	10	2
	11	3
	12	4
	17	16
	18	12
	21	5
	23	8
	24	17
	26	18
	27	19
+CPBW=?		
	5	1
	10	2
	11	3
	12	4
+CIMI		
	10	2
	11	3
+CCLK=		
	5	1
	10	2
	11	3
	12	4
+CALA=		
	5	1
	10	2
	11	3
	12	4

+CME ERROR Values: Kinds of Errors

1	phone security code required to execute the AT command
2	ME does not have a SIM connected to it
3	SIM PIN required to execute the AT command
4	SIM PUK required to execute the AT command
5	phonebook memory location does not exist
6	phonebook memory location is empty
7	match in searched string is not found from any of the memory locations
8	general memory error; e.g. problems in SIM database communication
9	call hold/retrieve/swap/build/split/transfer/deflection failed or cannot be actioned
10	manual network selection is not possible because unavailable or forbidden network name was given, or call is active
11	invalid password was given
12	SIM PUK2 required to execute the AT command
13	there is no network service to complete the request
14	supplementary service command failed due to an unknown error; i.e. an error that is not covered by other <err> values
15	AT interpreter does not support the operation (in case of +CLCK= when <fac>="AB" or ="AG" or ="AC" but <mode>¹0; in case of +CPBW= when <index> is not given but <number> is)
16	SIM PIN2 required to execute the AT command
17	alpha entry to be stored is too long
18	number to be read/stored is too long
19	number to be stored contains characters that are not available in that memory
22	external ME UI cannot be accessed
23	network timeout
24	entries cannot be stored in currently selected phone book memory (e.g. in missed calls list)
25	there is no active voice call
26	link is reserved
27	request is not allowed
28	unknown

+CMS ERROR Values

The following table indicates which SMS AT commands can return a numeric ***<err> value***.

The ***kinds of errors*** that can generate <err> values are listed in numbers. The meanings of the numbers are given under the table (see +CMS ERROR Values: Kinds of Errors at page 76).

AT Command	+CMS <err> Value	Kinds of Errors
+CPMS=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
+CPMS?		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
+CSCB=		
	301	5
	320	6
+CSAS=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
	321	8
+CSAS=?		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
+CRES=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
	321	8
+CRES=?		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6

AT Command	+CMS <err> Value	Kinds of Errors
+CNMI=		
	301	5
	310	2
	320	6
+CMGL=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
+CMGR=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
	321	8
+CNMA=		
	304	11
+CMGS=	0-127	9
	128-255	10
	301	5
	304	11
	305	12
	310	2
	311	3
	312	1
	316	4
	330	7
	331	16
+CMSS=	0-127	9
	128-255	10
	301	5
	302	14
	304	11
	305	12
	310	2
	311	3
	312	1
	316	4
	320	6
	321	8
	330	7
	331	16
+CMGW=		
	301	5
	304	11
	305	12
	310	2
	311	3
	312	1
	316	4
	320	6
	322	13

AT Command	+CMS <err> Value	Kinds of Errors
+CMGL=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
+CMGR=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
	321	8
+CNMA=		
	304	11
	340	15
+CMGS=	0-127	9
	128-255	10
	301	5
	304	11
	305	12
	310	2
	311	3
	312	1
	316	4
	330	7
	331	16
+CMSS=	0-127	9
	128-255	10
	301	5
	302	14
	304	11
	305	12
	310	2
	311	3
	312	1
	316	4
	320	6
	321	8
	330	7
	331	16
+CMGW=		
	301	5
	304	11
	305	12
	310	2
	311	3
	312	1
	316	4
	320	6
	322	13

AT Command	+CMS <err> Value	Kinds of Errors
+CMGD=		
	301	5
	310	2
	311	3
	312	1
	316	4
	320	6
	321	8
+CMGC=	0-127	9
	128-255	10
	301	5
	304	11
	305	12
	310	2
	311	3
	312	1
	316	4
	330	7
	331	16

+CMS ERROR Values: Kinds of Errors

1	phone security code required to execute the AT command
2	ME does not have a SIM connected to it
3	SIM PIN required to execute the AT command
4	SIM PUK required to execute the AT command
5	SMS interface is reserved by some other application
6	general memory error; e.g. problems in SIM database communication
7	message to be sent to network does not contain SMSC address and SMSC address cannot be found from TA or ME
8	memory location does not exist
9	RP layer cause value from network
10	TP layer cause value from network
11	PDU mode is enabled: length of the given PDU is not equivalent with the given <length>, or ME/TA detects that PDU is of invalid format
12	text mode is enabled: too long message is tried to be sent/stored, or +CSMP does not contain valid SMS-SUBMIT (in case of +CMGS=), or ME/TA detects that PDU is of invalid format
13	SMS memory is full
14	<index> given in +CMSS does not contain SMS-SUBMIT or SMS-COMMAND, or <index> given in +CMSS contains SMS-COMMAND and <da> is given
15	no +CNMA acknowledgement expected
16	no network service

Result Codes

V.25ter Result Codes

Basic Syntax Result Codes

OK, ERROR, BUSY, CONNECT, CONNECT <rate>, NO ANSWER, NO CARRIER

See command X (page 64), command D (page 58), command A (Page 58) and command O (page 61). Available <rate>'s depend on the product. (V.25ter).

Notes:
OK may be a result of successful remote initiated in-call modification from data to speech mode. No OK is returned when a voice call is originated/answered through external ME UI.
CONNECT[<rate>] a result of successful remote initiated in-call modification from speech to data mode (when alternating calls supported by the product).
NO CARRIER can also indicate a remote hangup of a speech call.
RING: see +CRC command, page 42. MT voice calls or alternating voice/data calls starting with voice shall not result to this indication unless +FCLASS=8 has been set. When RING result code is enabled (+CRC=0), alternating MT voice/fax calls starting with voice shall be automatically switched into fax mode by TA (if call is answered through TA with +CMOD=0). Note that RING result code is not given for waiting calls. (V.25ter).

+DR Data Compression Report

+DR: <compr>

is given when +DR=1; informs about the presence of V.42bis data compression in the established connection

<compr>	
NONE	data compression not in use
V42B	V.42bis in use in both directions
V42B RD	V.42bis in use in receive direction only
V42B TD	V:42bis in use in transmit direction only
MNP5	MNP5 in use

This intermediate result code is given after (possible) +ER result code. (V.25ter).
See details about this command page 51

+ER Error Control Report

+ER: <type>

is given when +ER=1 and a transparent data call is established; informs about the presence of V.42 LAPM or alternative error control protocol in the established connection.

<type>	
NONE	error control not in use
LAPM	V.42 LAPM protocol in use
ALT	MNP protocol in use

This intermediate result code is given after (possible) +CR result code. (V.25ter).
See details about this command page 53

+ILRR DTE-DCE Local Rate Report

+ILRR: <rate>[,<rxRate>]

is given when +ILRR=1; informs about the local port rate after connection establishment.

The <rxRate> parameter is not needed by Nokia 6090. This intermediate result code is given after (possible) +DR result code. (V.25ter).
See details about this command page 56

De Facto Result Codes

Call Repeat Restriction Result Codes

BLACKLISTED and DELAYED. See dialling command D, page 58.

This mechanism is mandatory. (GSM 02.07 Annex A).

CARRIER Error Control Negotiation Start

This code is given after (possible) +COLP result code during MO data call setup. During MT data call setup this is the first intermediate result code. Note that if +CR result code sending is active, it shall replace this code. See also command X, page 64.

GSM 07.07 Result Codes

+CCWA Call Waiting

+CCWA: <number>,<type>,<class>[,<alpha>]

is given when +CCWA=1 and incoming MT call is received when there is active or held calls in ME (discarded if in on-line data state and V.80 in-band mode is disabled or not supported).

Note that this result code is not repeated similarly as RING, but given only once. Alpha not supported by Nokia 6090. (GSM 07.07).
See details about this command page 17

+CIEV Indicator Event

+CIEV: <ind>,<value>

is given when +CMER <ind> value is 1 and a indicator on the ME display is changed. Important note: This feature is avaible in 5.300 SW or later.

See details about this command page 26

+CKEV Keypress Indication

+CKEV: <key>,<press>

is given when +CMER <keyp> value is 2 and a key on the ME keyboard is pressed. Important note: This feature is avaible in 5.300 SW or later.

See details about this command page 26

+CLIP Calling Line Identification Report

+CLIP: <number>,<type>[, <subaddr>,<satype>[,<alpha>]]

is given when +CLIP=1 and number received from network when MT call received (no active or held calls in ME).

This result code is sent to TE after every RING (or +CRING) result code. Subaddress and alpha not supported by Nokia 6090. (GSM 07.07).

See details about this command page 25

+CME ERROR Mobile Equipment Error

+CME ERROR: <err>

is given instead of ERROR when +CMEE=1 or =2 and error is related to ME or network operation.

See also the Error Values section, page 68. (GSM 07.07)

+COLP Connected Line Identification Report

+COLP: <number>,<type>[,<subaddr>,<satype>[,<alpha>]]

is given when +COLP=1 and number received from network when MO call established.

This intermediate result code is given after (possible) +CSSI result code. Subaddress and alpha not supported by Nokia 6090. (GSM 07.07) .
See details about this command page 35.

+CR Data service report

+CR: <type>

is given when +CR=1 and data call established; informs about the type of data call being established.

This intermediate result code is given after (possible) +COLP result code during MO data call setup. During MT data call setup this is the first intermediate result code. Note that this result code shall replace CARRIER result code (when X5 is set). (GSM 07.07).
See details about this command page 42.

+CREG Network Registration

+CREG: <stat>[,<lac>,<cid>]

- when +CREG=1:
given when <stat> value changes; given after NO CARRIER if network lost when on-line

- when +CREG=2:
given when <stat> value changes and when network cell (<lac> and <cid>) of ME changes; given after NO CARRIER if network lost when on-line; if V.80 is enabled, result code is sent in-band during on-line data mode (GSM 07.07).
See details about this command page 43.

+CRING Distinctive Ring

+CRING: <type>

is given when +CRC=1 and incoming MT call (no active or held calls in ME).

Note that this code replaces the V.25ter RING result code. (GSM 07.07).
See information about +CRC command page 42.

+CSSI Intermediate Supplementary Service Notification

+CSSI: <code1>[,<index>]

is given when +CSSN=1 and some supplementary service notification is given by network during MO call establishment.

This is the first intermediate result code after dial command D. Supported <code1>'s depend on the supplementary services implemented in a product. (GSM 07.07).

<code1>:	
0	unconditional call forwarding is active
1	some of the conditional call forwardings

	are active
2	call has been forwarded
3	call is waiting
4	this is a CUG call (also <index> present)
5	outgoing calls are barred
6	incoming calls are barred
7	CLIR suppression rejected
8	call has been deflected

<index>: refer "Closed user group +CCUG"

See details about +CSSN Supplementary Service Notifications page 49.

+CSSU Unsolicited Supplementary Service Notification

+CSSU: <code2>[,<index>[,<number>, <type>[,<saddr>,<satype>]]]

is given when +CSSN=,1 and some supplementary service notification is given by network during MT call setup or during a voice call; note that also remote release of a held call is informed with this result code.

In MT call setup case, this result code is sent to TE after every (possible) +CLIP result code. In case of a waiting call, this is given after +CCWA result code (but discarded if TA is in on-line data. (GSM 07.07).

<code2>:	
0	this is a forwarded call (MT call setup)
1	this is a CUG call (also <index> present) (MT call setup)
2	call has been put on hold (during a voice call)
3	call has been retrieved (during a voice call)
4	multiparty call entered (during a voice call)
5	call on hold has been released (this is not a SS notification) (during a voice call)
6	forward check SS message received (can be received whenever)
7	call is being connected (alerting) with the remote party in alerting state in explicit call transfer operation (during a voice call)
8	call has been connected with the other remote party in explicit call transfer operation (also number and subaddress parameters may be present) (during a voice call or MT call setup)
9	this is a deflected call (MT call setup)

<index>: refer "Closed user group +CCUG"

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

<type>: type of address octet in integer format (GSM 04.08)

<saddr>: string type subaddress of format specified by <satype>

<satype>: type of subaddress octet in integer format (GSM 04.08)

See details about +CCWA page 17.

+CUSD Network Initiated Unstructured Supplementary Service Data

+CUSD: <m>,<str>,<dcs>
is given when +CUSD=1 and network initiated 'notify' or 'request' USSD message received; discarded if in on-line data state (also when V.80 in-band mode is enabled).

Note that only the first 'request' message during a network initiated USSD session yields to this unsolicited result code. Rests are information responses of +CUSD command. (GSM 07.07)
See details about this command page 50.

GSM 07.05 Result Codes

+CBM New CBM

text mode:
+CBM: <sn>,<mid>,<dcs>,<page>,<pages><CR><LF><data>

PDU mode:
+CBM: <length><CR><LF><pdu>

- when +CNMI=0:
messages are discarded

- when +CNMI=1-2:
messages are forwarded directly to TE (CBMs cannot be received during a call)

See also command +CNMI, page 34. (GSM 07.05).
See details about +CBM page 50.

+CDS New SMS-STATUS-REPORT

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

PDU mode:
+CDS: <length><CR><LF><pdu>

- when +CNMI=0:
routed messages are buffered into TA/ME (if buffer is full, 'memory capacity exceeded' is sent to network)

- when +CNMI=1:
in on-line data state routed messages are rejected (e.g. 'memory capacity exceeded' is sent to network and when command mode is entered 'memory available' is sent to network); in command mode forwarded directly to TE

- when +CNMI=2:
in on-line data state routed messages are buffered into TA/ME (if buffer is full, 'memory capacity exceeded' is sent to network and when command mode is entered 'memory available' should be sent to network); in command mode forwarded directly to TE

See also command +CNMI, page 34. (GSM 07.05).

+CDSI New SMS-STATUS-REPORT Indication

+CDSI: <mem>,<index>

- when +CNMI=0:
indications are buffered into TA/ME

- when +CNMI=1:
in on-line data state indications are discarded; in command mode forwarded directly to TE

- when +CNMI=2:
in on-line data state indications are buffered into TA/ME; in command mode forwarded directly to TE

See also command +CNMI, page 34. (GSM 07.05).

+CMS ERROR Message Service Failure

+CMS ERROR: <err>
given instead of ERROR when error is related to ME or network operation
See also the Error Values section, page 68. (GSM 07.05).

+CMT New SMS-DELIVER

text mode:
+CMT: <oa>,[<alpha>],<scts> [,<tooa>,<fo>,<pid>,<dcs>,<sca>, <tosca>,<length>]<CR><LF><data>

PDU mode:
+CMT: [<alpha>],<length> <CR><LF><pdu>

- when +CNMI=0:
routed messages are buffered into TA/ME (if buffer is full, 'memory capacity exceeded' is sent to network)

- when +CNMI=1:
in on-line data state routed messages are rejected (e.g. 'memory capacity exceeded' is sent to network and when command mode is entered 'memory available' is sent to network); in command mode forwarded directly to TE

- when +CNMI=2:
in on-line data state routed messages are buffered into TA/ME (if buffer is full, 'memory capacity exceeded' is sent to network and when command mode is entered 'memory available' is sent to network); in command mode forwarded directly to TE

<alpha> not supported by Nokia 6090. See also command +CNMI, page 34. (GSM 07.05).

See details about +CNMI, page 34.

+CMTI New SMS-DELIVER Indication

+CMTI: <mem>,<index>

- when +CNMI=0:
indications are buffered into TA/ME

- when +CNMI=1:
in on-line data state indications are discarded; in command mode forwarded directly to TE

- when +CNMI=2:
in on-line data state indications are buffered into TA/ME; in command mode forwarded directly to TE

See also command +CNMI, page 34