





AT Commands Reference Guide 80000ST10025a Rev. 15 – 2012-10-18

APPLICABILITY TABLE

PRODUCT
GT863-PY
GT864-QUAD
GT864-PY
GM862-GPS
GC864-QUAD
GC864-QUAD V2
GC864-DUAL
GC864-DUAL V2
GC868-DUAL
GE863-GPS
GE863-SIM
GE863-PRO ³
GE864-QUAD
GE864-QUAD AUTOMOTIVE V2
GE864-QUAD ATEX
GE864-QUAD V2
GE864-DUAL V2
GE864-GPS
GE865-QUAD
GL865-DUAL
GL868-DUAL
GE910-QUAD

SW Versions

7.03.03 / 7.02.08 10.0x.xx6

> 02.0x.009 13.00.002



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1. Introduction

1.1. Scope

This document is aimed in providing an detailed specification and a comprehensive listing as a reference for the whole set of AT command

1.2. Audience

Readers of this document should be familiar with Telit modules and their ease of controlling by means of AT Commands.

1.3. Contact Information, Support

For general contact, technical support, to report documentation errors and to order manuals, contact Telit Technical Support Center (TTSC) at:

TS-EMEA@telit.com

TS-NORTHAMERICA@telit.com

TS-LATINAMERICA@telit.com

TS-APAC@telit.com

Alternatively, use:

http://www.telit.com/en/products/technical-support-center/contact.php

For detailed information about where you can buy the Telit modules or for recommendations on accessories and components visit:

http://www.telit.com

To register for product news and announcements or for product questions contact Telit Technical Support Center (TTSC).

Our aim is to make this guide as helpful as possible. Keep us informed of your comments and suggestions for improvements.

Telit appreciates feedback from the users of our information.

1.4. Document Organization

This document contains the following chapters:

<u>Chapter 1: "Introduction"</u> provides a scope for this document, target audience, contact and support information, and text conventions.

<u>Chapter 2: "Overview"</u> about the aim of this document and implementation suggestions.

<u>Chapter 3: "AT Commands"</u> The core of this reference guide.





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1.5. Text Conventions



<u>Danger – This information MUST be followed or catastrophic equipment failure or bodily injury may occur.</u>



Caution or Warning – Alerts the user to important points about integrating the module, if these points are not followed, the module and end user equipment may fail or malfunction.



Tip or Information – Provides advice and suggestions that may be useful when integrating the module.

All dates are in ISO 8601 format, i.e. YYYY-MM-DD.

1.6. Related Documents

- 3GPP TS 27.007 specification and rules http://www.3gpp.org/ftp/Specs/archive/27 series/27.007/
- 3GPP TS 27.005 specification and rules http://www.3gpp.org/ftp/Specs/archive/27_series/27.005/
- Hayes standard AT command set



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2. Overview

2.1. About the document

This document is to describe all AT commands implemented on the Telit wireless modules listed on the Applicabilty Table.



NOTE:

Telit suggests all the system developers to use always the newer AT Commands Interface Style defined by AT#SELINT=2; and in case you are starting a new design we highly recommend you to use the newer AT Commands Interface Style defined by AT#SELINT=2 which gives you a possibility to include all Telit's new features and also all future implementations.

Moreover, Telit suggests to use the following settings to get the performance most customers are looking for:

AT#SMSMODE=1 AT#REGMODE=1



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3. AT COMMANDS

The Telit wireless module family can be controlled via the serial interface using the standard AT commands¹. The Telit wireless module family is compliant with:

- 1. Hayes standard AT command set, in order to maintain the compatibility with existing SW programs.
- 2. 3GPP TS 27.007 specific AT command and GPRS specific commands.
- 3. 3GPP TS 27.005 specific AT commands for SMS (Short Message Service) and CBS (Cell Broadcast Service)
- 4. FAX Class 1 compatible commands

Moreover Telit wireless module family supports also Telit proprietary AT commands for special purposes.

The following is a description of how to use the AT commands with the Telit wireless module family.

3.1. Definitions

The following syntactical definitions apply:

- <**CR>** Carriage return character, is the command line and result code terminator character, which value, in decimal ASCII between 0 and 255, is specified within parameter S3. The default value is 13.
- **Linefeed character**, is the character recognised as line feed character. Its value, in decimal ASCII between 0 and 255, is specified within parameter **S4**. The default value is 10. The line feed character is output after carriage return character if verbose result codes are used (**V1** option used) otherwise, if numeric format result codes are used (**V0** option used) it will not appear in the result codes.
- <...> Name enclosed in angle brackets is a syntactical element. They do not appear in the command line.
- [...] Optional subparameter of a command or an optional part of TA information response is enclosed in square brackets. Brackets themselves do not appear in the command line. When subparameter is not given in AT commands which have a Read command, new value equals to its previous value. In AT commands which do not store the values of any of their subparameters, and so have not a Read command, which are called *action type* commands, action should be done on the basis of the recommended default setting of the subparameter.

¹ The AT is an ATTENTION command and is used as a prefix to other parameters in a string. The AT command combined with other parameters can be set up in the communications package or typed in manually as a command line instruction.combined with other parameters can be set up in the communications package or typed in manually as a command line instruction.





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3.2. AT Command Syntax

The syntax rules followed by Telit implementation of either Hayes AT commands, GSM commands and FAX commands are very similar to those of standard basic and extended AT commands. A special command (#SELINT, see §3.5.2.1.1) has been introduced in order to have an AT interface very close to the standard one.

There are two types of extended command:

- **Parameter type commands**. This type of commands may be "set" (to store a value or values for later use), "read" (to determine the current value or values stored), or "tested" (to determine ranges of values supported). Each of them has a test command (trailing =?) to give information about the type of its subparameters; they also have a Read command (trailing?) to check the current values of subparameters.
- **Action type commands.** This type of command may be "executed" or "tested".
- "executed" to invoke a particular function of the equipment, which generally involves more than the simple storage of a value for later use
- "tested" to determine:

(if the command **#SELINT=0** or **#SELINT=1** has been issued, see §3.5.2.1.1)

if subparameters are associated with the action, the ranges of subparameters values that are supported; if the command has no subparameters, issuing the correspondent Test command (trailing =?) raises the result code "ERROR".

Note: issuing the Read command (trailing?) causes the command to be executed.

(if the command **#SELINT=2** has been issued, see §3.5.2.1.1)

whether or not the equipment implements the Action Command (in this case issuing the correspondent Test command - trailing =? - returns the \mathbf{OK} result code), and, if subparameters are associated with the action, the ranges of subparameters values that are supported.

Action commands don't store the values of any of their possible subparameters.

Moreover:

• (for #SELINT=0 or #SELINT=1 only)

An enhanced test command (trailing =??) has been introduced to maintain backward compatibility for those commands whose subparameters changed the range of possible values from version to version.

• (for #SELINT=2 only)

The response to the Test Command (trailing =?) may be changed in the future by Telit to allow the description of new values/functionalities





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• (for #SELINT=2 only)

If all the subparameters of a parameter type command +CMD (or #CMD or \$CMD) are optional, issuing AT+CMD=<CR> (or AT#CMD=<CR> or AT\$CMD=<CR>) causes the OK result code to be returned and the previous values of the omitted subparameters to be retained.

3.2.1. String Type Parameters

A string, either enclosed between quotes or not, is considered to be a valid string type parameter input. According to V25.ter space characters are ignored on the command line and may be used freely for formatting purposes, unless they are embedded in numeric or quoted string constants; therefore a string containing a space character has to be enclosed between quotes to be considered a valid string type parameter (e.g. typing AT+COPS=1,0,"A1" is the same as typing AT+COPS=1,0,A1; typing AT+COPS=1,0,A BB" is different from typing AT+COPS=1,0,A BB).

When **#SELINT=0** (or 1) mode is selected, a string not enclosed between quotes is changed in upper case (e.g. **mickey** become **MICKEY**), while a string enclosed between quotes is case sensitive.

When #SELINT=2 mode is selected, a string is always case sensitive.

A small set of commands requires always to write the input string parameters within quotes: this is explicitly reported in the specific descriptions.

3.2.2. Command Lines

A command line is made up of three elements: the **prefix**, the **body** and the **termination character**.

The **command line prefix** consists of the characters "AT" or "at", or, to repeat the execution of the previous command line, the characters "A/" or "a/" or AT#/ or at#/.

The **termination character** may be selected by a user option (parameter S3), the default being **<CR>**.

The basic structures of the command line are:

- ATCMD1<CR> where AT is the command line prefix, CMD1 is the body of a basic command (nb: the name of the command never begins with the character "+") and <CR> is the command line terminator character
- ATCMD2=10<CR> where 10 is a subparameter
- AT+CMD1;+CMD2=, ,10<CR> These are two examples of extended commands (nb: the name of the command always begins with the character "+"2). They are delimited with semicolon. In the second command the subparameter is omitted.

² The set of **proprietary AT commands** differentiates from the standard one because the name of each of them begins with either "@", "#", "\$" or "*". **Proprietary AT commands** follow the same syntax rules as **extended commands**





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- +CMD1?<CR> This is a Read command for checking current subparameter values
- +CMD1=?<CR> This is a test command for checking possible subparameter values

These commands might be performed in a single command line as shown below:

ATCMD1 CMD2=10+CMD1;+CMD2=, ,10;+CMD1?;+CMD1=?<CR>

anyway it is always preferable to separate into different command lines the basic commands and the extended commands; furthermore it is suggested to avoid placing several action commands in the same command line, because if one of them fails, then an error message is received but it is not possible to argue which one of them has failed the execution.

If command V1 is enabled (verbose responses codes) and all commands in a command line has been performed successfully, result code <CR><LF>OK<CR><LF> is sent from the TA to the TE, if subparameter 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 and no subsequent commands in the command line are processed.

If command V0 is enabled (numeric responses codes), and all commands in a command line has been performed successfully, result code 0<CR> is sent from the TA to the TE, if sub-parameter 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 4<CR> and no subsequent commands in the command line are processed.

In case of errors depending on ME operation, **ERROR** (or 4) response may be replaced by +CME ERROR: <err> or +CMS ERROR: <err>.



NOTE:

The command line buffer accepts a maximum of 80 characters. If this number is exceeded none of the commands will be executed and TA returns **ERROR**.

3.2.2.1. ME Error Result Code - +CME ERROR: <err>

This is NOT a command, it is the error response to +Cxxx 3GPP TS 27.007 commands.

Syntax: +CME ERROR: <err>

Parameter: <err> - error code can be either numeric or verbose (see +CMEE). The possible values of <err> are reported in the table:

Numeric Format	Verbose Format
Numeric Pormat	verbose rormat





Numeric Format	Verbose Format
Numeric Format	General errors:
0	phone failure
0	No connection to phone
2	phone-adaptor link reserved
3	operation not allowed
4	operation not supported
5	PH-SIM PIN required
10	SIM not inserted
11	SIM PIN required
12	SIM PUK required
13	SIM FOR required SIM failure
13	SIM busy
	·
15	SIM wrong
16	incorrect password
17	SIM PIN2 required
18	SIM PUK2 required
20	memory full
21	invalid index
22	not found
23	memory failure
24	text string too long
25	invalid characters in text string
26	dial string too long
27	invalid characters in dial string
30	no network service
31	network time-out
32	network not allowed - emergency calls only
40	network personalization PIN required
41	network personalization PUK required
42	network subset personalization PIN required
43	network subset personalization PUK required
44	service provider personalization PIN required
45	service provider personalization PUK required
46	corporate personalization PIN required
47	corporate personalization PUK required
	General purpose error:
100	unknown
	S related errors to a failure to perform an Attach:
103	Illegal MS (#3)*
106	Illegal ME (#6)*
107	GPRS service not allowed (#7)*
111	PLMN not allowed (#11)*
112	Location area not allowed (#12)*
113	Roaming not allowed in this location area (#13)*
	ted errors to a failure to Activate a Context and others:
132	service option not supported (#32)*
133	requested service option not subscribed (#33)*
134	service option temporarily out of order (#34)*
148	unspecified GPRS error
149	PDP authentication failure
150	invalid mobile class

























Numeric Format	Verbose Format
1 (1) 1) 1 1 1 1 1 1 1 1	Network survey errors:
(only if command	1 #SELINT=0 or #SELINT=1 has been issued - see §3.5.2.1.1):
257	Network survey error (No Carrier)*
258	Network survey error (Busy)*
259	Network survey error (Wrong request)*
260	Network survey error (Aborted)*
	IP Easy related errors
(only if command	#SELINT=0 or #SELINT=1 has been issued - see §3.5.2.1.1):
400	generic undocumented error
401	wrong state
402	wrong mode
403	context already activated
404	stack already active
405	activation failed
406	context not opened
407	cannot setup socket
408	cannot resolve DN
409	time-out in opening socket
410	cannot open socket
411	remote disconnected or time-out
412	connection failed
413	tx error
414	already listening
	FTP related errors
(only if command	#SELINT=0 or #SELINT=1 has been issued - see §3.5.2.1.1):
420	ok
421	connect
422	disconnect
423	error
424	wrong state
425	can not activate
426	can not resolve name
427	can not allocate control socket
428	can not connect control socket
429	bad or no response from server
430	not connected
431	already connected
432	context down
433	no photo available
434	can not send photo
(only if co	IP Easy related errors ommand #SELINT=2 has been issued - see §3.5.2.1.1):
550	generic undocumented error
551	wrong state
552	wrong mode
553	context already activated
554	stack already active
555	activation failed
556	context not opened
557	cannot setup socket
558	cannot resolve DN
559	timeout in opening socket
560	cannot open socket























Numeric Format	Verbose Format	
561	remote disconnected or time-out	
562	connection failed	
563	tx error	
564	already listening	
566	can not resume socket	
567	wrong APN	
568	wrong PDP	
569	service not supported	
570	QOS not accepted	
571	NSAPI already used	
572	LLC or SNDCP failure	
573	network reject	
	Custom SIM Lock related errors:	
586	MCL personalisation PIN required	
200	FTP related errors	
(only if co	ommand #SELINT=2 has been issued - see §3.5.2.1.1):	
600	Generic undocumented error	
601	wrong state	
602	Can not activate	
603	Can not resolve name	
604	Can not allocate control socket	
605	Can not connect control socket	
606	Bad or no response from server	
607	Not connected	
608	Already connected	
609	Context down	
610	No photo available	
611	Can not send photo	
612	Resource used by other instance	
613	Data socket yet opened in CmdMode	
614	FTP CmdMode data socket closed	
	Network survey errors:	
	command #SELINT=2 has been issued - see §3.5.2.1.1):	
657	Network survey error (No Carrier)*	
658	Network survey error (Busy)*	
659	Network survey error (Wrong request)*	
660	Network survey error (Aborted)*	
	SAP related errors:	
	ommand #SELINT=2 has been issued - see §3.5.2.1.1):	
731	Unspecified	
732	Activation command is busy	
733	Activation started with CMUX off	
734	Activation started on invalid CMUX	
736	Remote SIM already active	
737	Invalid parameter	
SSL related errors (only if command #SELINT=2 has been issued - see §3.5.2.1.1):		
830	SSL generic error	
831	SSL cannot activate	
832	SSL socket error	
833	SSL not connected	
834	SSL already connected	
835	SSL already activated	

























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Numeric Format	Verbose Format	
836	SSL not activated	
837	SSL certs and keys wrong or not stored	
838	SSL error enc/dec data	
839	SSL error during handshake	
840	SSL disconnected	
PING related errors (only if command #SELINT=2 has been issued - see §3.5.2.1.1):		
900	Generic undocumented error	
901	Timeout	
902	Destination unreachable	
903	Can not resolve name	
904	Context down	
SiRFInstantFix related errors		
920	SGEE update initialization stage failed	
921	SGEE file is not newer than the last stored one	
922	SGEE update generic error	

^{*(}values in parentheses are GSM 04.08 cause codes)

3.2.2.2. Message Service Failure Result Code - +CMS ERROR: <err>

This is NOT a command, it is the error response to +Cxxx 3GPP TS 27.005 commands.

Syntax: +CMS ERROR: <err>

Parameter: <err> - numeric error code.

The **<err>** values are reported in the table:

Numeric Format	Meaning
0127	GSM 04.11 Annex E-2 values
128255	3GPP TS 23.040 sub clause 9.2.3.22
	values
300	ME failure
301	SMS service of ME reserved
302	operation not allowed
303	operation not supported
304	invalid PDU mode parameter
305	invalid text mode parameter
310	SIM not inserted
311	SIM PIN required
312	PH-SIM PIN required
313	SIM failure
314	SIM busy
315	SIM wrong
316	SIM PUK required
317	SIM PIN2 required



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Numeric Format	Meaning
318	SIM PUK2 required
320	memory failure
321	invalid memory index
322	memory full
330	SMSC address unknown
331	no network service
332	network time-out
500	unknown error

3.2.3. Information Responses And Result Codes

The TA response, in case of verbose response format enabled, for the previous examples command line could be as shown below:

• information response to +CMD1?

<CR><LF>+CMD1:2,1,10<CR><LF>

• information response to +CMD1=?

<CR><LF>+CMD1(0-2),(0,1),(0-15)<CR><LF>

• final result code <CR><LF>OK<CR><LF>

Moreover there are other two types of result codes:

- result codes that inform about progress of TA operation (e.g. connection establishment CONNECT)
- result codes that indicate occurrence of an event not directly associated with issuance of a command from TE (e.g. ring indication **RING**).

Here the basic result codes according to ITU-T V25Ter recommendation

Result Codes	
Numeric form	Verbose form
0	OK
	CONNECT
1	or
	$CONNECT < text>^3$
2	RING
3	NO CARRIER
4	ERROR
5	CONNECT 1200 ⁴
6	NO DIALTONE

³ For SELINT 0,1 <text> is only "300"; for SELINT 2 <text> can be "300", "1200", "2400", "4800", "9600", "14400" or "1200/75"

⁴ Valid for SELINT 0,1 only





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Result Codes	
7	BUSY
8	NO ANSWER
10	CONNECT 2400 ⁴
11	CONNECT 4800 ⁴
12	CONNECT 9600 ⁴
15	CONNECT 14400 ⁴
23	CONNECT 1200/75 ⁴

3.2.4. Command Response Time-Out

Every command issued to the Telit modules returns a result response, if response codes are enabled (default). The time needed to process the given command and return the response varies, depending on the command type. Commands that do not interact with the SIM or the network, and only involve internal setups or readings, have an immediate response. Commands that interact with the SIM or the network could take many seconds to send a response, depending on SIM configuration (e.g., number of contacts stored in the phonebook, number of stored SMS), or on the network the command may interact with.

In the table below are listed only the commands whose interaction with the SIM or the network could lead to long response timings. When not otherwise specified, timing is referred to set command.

For phonebook and SMS writing and reading related commands, timing is referred to commands issued after phonebook sorting is completed.

For DTMF sending and dialling commands timing is referred to module registered on network ("AT+CREG?" answer is "+CREG: 0,1" or "+CREG: 0,5").

For Python commands, timing is referred to commands issued with module in idle, flash memory not full and not fragmented, and after the first Python command. The first Python command to be issued causes a system initialization that could last a couple of minutes. Baud rate is fixed at 115200.

Command	Estimated maximum time to get response (Seconds)
+COPS	30 (test command)
+CLCK	25 (SS operation) 5 (FDN enabling/disabling)
+CLAC	5
+CPWD	15 (SS operation) 5 (PIN modification)
+CLIP	15 (read command)
+CLIR	15 (read command)
+CCFC	15
+CCWA	15
+CHLD	30
+CPIN	5
+CPBS	5 (FDN enabling/disabling)
+CPBR	5 (single reading) 15 (complete reading of a 250 records full phonebook)



Command	Estimated maximum time to get response (Seconds)
	10 (string present in a 250 records full
+CPBF	phonebook)
	5(string not present)
+CPBW	5
+CACM	5
+CAMM	5
+CPUC	5
+VTS	20 (transmission of full "1234567890*#ABCD" string with no delay between tones, default duration)
+CSCA	,
+CSAS	5 (read and set commands) 5
+CSAS +CRES	5
+CMGS	60 after CTRL-Z for SMS not concatenated; 1 to get '>' prompt
+CMSS	60 after CTRL-Z; 1 to get '>' prompt
+CMGW	5 after CTRL-Z for SMS not concatenated; 1 to get '>' prompt
+CMGD	5 (single SMS cancellation) 25 (cancellation of 50 SMS)
+CMGR	5
+CMGL	20 (full listing of 50 SMS)
+CGACT	150
+CGATT	10
D	30 (voice call) Timeout set with ATS7 (data call)
A	30 (voice call) Timeout set with ATS7 (data call)
Н	30
+CHUP	5
+COPN	10
+CPOL	10 (set command; read command of 84 records)
+CRSM	5
+FRH	Timeout set with ATS7
+FTH	Timeout set with ATS7
+FRM	Timeout set with ATS7
+FTM	Timeout set with ATS7
+FRS	Timeout set with the command itself
+FTS	Timeout set with the command itself
#MBN	10
#TONE	5 (if no duration specified)
#ADC	5
#EMAILD	20
#EMAILACT	150
#SEMAIL	170 (context activation + DNS resolution)
#MSCLASS	15
#SPN	5
#STSR	10



Command	Estimated maximum time to get response (Seconds)
#CCID	5
#GPRS	150
#SKTD	140 (DNS resolution + timeout set with AT#SKTCT)
#SKTOP	290 (context activation + DNS resolution + timeout set with AT#SKTCT)
#QDNS	20
#FTPOPEN	100
#FTPCLOSE	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPTYPE	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPDELE	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPPWD	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPCWD	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPLIST	500 (timeout set with AT#FTPTO, in case no response is received from server) + time to get listing
#FTPFSIZE	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPPUT	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPAPP	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPGET	500 (timeout set with AT#FTPTO, in case no response is received from server)
#FTPGETPKT	500 (timeout set with AT#FTPTO, in case no response is received from server)
#SGACT	150
#SH	3
#SD	140 (DNS resolution + connection timeout set with AT#SCFG)
#CSURV	10 to start data output; 120 seconds to complete scan
#CSURVC	10 to start data output; 120 seconds to complete scan























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Command	Estimated maximum time to get response (Seconds)	
#CSURVU	10 to start data output; 120 seconds to complete	
#CSOK V O	scan	
#CSURVUC	10 to start data output; 120 seconds to complete	
#ESCRV CC	scan	
#CSURVB	10 to start data output; 120 seconds to complete	
,, es est v s	scan	
#CSURVBC	10 to start data output; 120 seconds to complete	
Western Se	scan	
#CSURVP	10 to start data output; 120 seconds to complete	
West 1	scan	
#CSURVPC	10 to start data output; 120 seconds to complete	
	scan	
#LSCRIPT	10 (40 files, 10 Kbyte each)	
#REBOOT	5	
	30 seconds for a 100 Kbyte file	
#RSCRIPT		
"RSCRII I	30 seconds timeout and ERROR message if no	
	bytes are received on the serial line	
	35 seconds for a 100 Kbyte file	
#WSCRIPT	30 seconds timeout and ERROR message if no	
	bytes are sent on the serial line and the file has	
	not been completely sent	
#DSCRIPT	120	
\$GPSAI	5	

3.2.5. Command Issuing Timing

The chain Command -> Response shall always be respected and a new command must not be issued before the module has terminated all the sending of its response result code (whatever it may be).

This applies especially to applications that "sense" the **OK** text and therefore may send the next command before the complete code **<CR><LF>OK<CR><LF>** is sent by the module.

It is advisable anyway to wait for at least 20ms between the end of the reception of the response and the issue of the next AT command.

If the response codes are disabled and therefore the module does not report any response to the command, then at least the 20ms pause time shall be respected.

During command mode, due to hardware limitations, under severe CPU load the serial port can loose some characters if placed in autobauding at high speeds. Therefore if you encounter this problem fix the baud rate with **+IPR** command.

3.3. Storage

3.3.1. Factory Profile And User Profiles





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The Telit wireless modules stores the values set by several commands in the internal non volatile memory (NVM), allowing to remember this setting even after power off. In the NVM these values are set either as **factory profile** or as **user profiles**: there are **two customizable user profiles** and **one factory profile** in the NVM of the device: by default the device will start with user profile 0 equal to factory profile.

For backward compatibility each profile is divided into two sections, one **base section** which was historically the one that was saved and restored in early releases of code, and the **extended section** which includes all the remaining values.

The &W command is used to save the actual values of **both sections** of profiles into the NVM user profile.

Commands &Y and &P are both used to set the profile to be loaded at startup. &Y instructs the device to load at startup only the **base section**. &P instructs the device to load at startup the full profile: **base + extended sections**.

The &F command resets to factory profile values only the command of the base section of profile, while the &F1 resets to factory profile values the full set of base + extended section commands.

The values set by other commands are stored in NVM outside the profile: some of them are stored always, without issuing any &W, some other are stored issuing specific commands (+CSAS, #SLEDSAV, #VAUXSAV, #SKTSAV, #ESAV, #PSAV and \$GPSSAV); all of these values are read at power-up.

The values set by following commands are stored in the profile base section; if **#SELINT=2** they depend on the specific AT instance:

GSM DATA MODE	+CBST
AUTOBAUD	+IPR
COMMAND ECHO	Е
RESULT MESSAGES	Q
VERBOSE MESSAGES	V
EXTENDED MESSAGES	X
FLOW CONTROL OPTIONS	&K, +IFC
DSR (C107) OPTIONS	&S
DTR (C108) OPTIONS	&D
RI (C125) OPTIONS	\R
POWER SAVING	+CFUN
DEFAULT PROFILE	&Y0
S REGISTERS	S0;S2;S3;S4;S5;S7;S12;S25;S30;S38
CHARACTER FORMAT	+ICF

The values set by following commands are stored in the profile extended section and, if the newer AT command interface style has been selected (see **#SELINT=2**), they depend on the specific AT instance (see **+CMUX**):

+FCLASS	+ILRR	+DR
+CSCS	+CR	+CRLP
+CRC	+CSNS	+CVHU





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+CREG	+CLIP	+CLIR
+CCWA	+CUSD	+CAOC
+CSSN	+CIND	+CMER
+CPBS	+CMEE	+CGREG
+CGEREP	+CMGF	+CSDH
+CNMI	#QSS	#ACAL ⁵
#TEMPMON ⁶	#ACALEXT	#ECAM
#SMOV	#MWI	#NITZ
#SKIPESC	#E2ESC	#STIA
\$GPSNMUN	#CESTHLCK	#CFLO
+CSTF	+CSDF	+CTZU
+CAPD	+CCWE	+CSIL
+CTZR	#CFF	#CODECINFO

The values set by following commands are stored in the profile extended section and they don't depend on the specific AT instance (see +CMUX):

+CALM	+CRSL	+CMUT ⁵
+CLVL ⁵	+VTD	+CSCB ⁷
#CAP ⁵	#SRS ⁵	#SRP ⁵
#STM ⁵	#DVI	#E2SMSRI
#DAC	#CODEC	#SHFEC ⁵
#HFMICG ⁵	#HSMICG	#SHFSD ⁵
#SPKMUT	#NITZ	#E2SLRI
#SIMDET	#TEMPMON ⁶	#PSEL
#HFRECG	#HSRECG	#SHFAGC
#SHSAGC	#SHSEC	#SHSNR
#SHFNR	#SHSSD	#TSVOL
#CPUMODE	#DVIEXT	

The values set by following commands are automatically stored in NVM, without issuing any storing command and independently from the profile (unique values), and are automatically restored at startup:

#SELINT	+COPS ⁸	+CGCLASS
+CGDCONT	+CGQMIN	+CGQREQ
#REGMODE	#PLMNODE	#COPSMODE
#DIALMODE	#BND	#AUTOBND
#ENS	#SCFG	#JDR
#ENHSIM	#AUTOATT	#TXMONMODE
#TTY	#ICMP	#GSMCONT
#NWSCANTMR	#SMSMODE	#DNS

⁵ If #SELINT=2 they depend on the CMUX 0 instance only



⁶ It is partially stored in NVM, moreover only a part of it can depend on the specific **CMUX** instance; see command description.

⁷ +CSCB is still stored in the profile extended section only for backward compatibility issues: its actual storing and restoring are accomplished issuing **+CSAS** and **+CRES**8 It is partially stored in NVM; see command description.



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#TCPMAXDAT	#TCPREASS	#SWLEVEL
#CPASMODE	#FASTCCID	+CGSMS
#V24MODE	+CPLS	#SIMINCFG
#RS485		

The values set by following commands are stored in NVM on demand, issuing specific commands and independently from the profile:

+CSCA	+CSMP	+CSCB
-------	-------	-------

stored by +CSAS⁹ command and restored by +CRES⁹ command

#SLED		
-------	--	--

stored by #SLEDSAV10 command

# X7 A I I V	
#VAUA	

stored by #VAUXSAV11 command

#USERID	#PASSW	#PKTSZ
#DSTO	#SKTTO	#SKTSET
#SKTCT		

stored by #SKTSAV command and automatically restored at startup; factory default valutes are restored by #SKTRST command

#ESMTP	#EADDR	#EUSER
#EPASSW		

stored by #ESAV command and automatically restored at startup; factory default valutes are restored by #ERST command.

\$GPSP	\$GPSD	\$GPSAT
\$GPSAP	\$GPSS	\$GPSCON

stored by \$GPSSAV command and automatically restored at startup; factory default valutes are restored by \$GPSRST command

#BIQUADIN	# BIQUADINEX	# BIQUADOUT
# BIQUADOUTEX		

stored by #PSAV command and automatically restored at startup; factory default valutes are restored by #PRST command.

¹¹ Valid for **#SELINT=2** only.



⁹ Both commands +CSAS (see §3.x.3.2.5) and +CRES (see §3.x.3.2.6) deal with non-volatile memory, intending for it either the NVM and the SIM storage.

¹⁰ Valid for #SELINT=2 only.



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3.4. AT Commands Availability Table

The following table shows the link Software Version / Product. It is used jointly with the second reported table to verify if the selected AT command is supported by the couple Software Version / Product.

Software Version	Applicable products				
SW 7.03.xx3	GE864-QUAD, GC864-QUAD, GC864-DUAL, GM862-GPS, GE863-SIM, GE863-GPS, GE863-PRO ³				
SW 10.00.xx6	GE865-QUAD, GC864-QUAD V2, GC864-DUAL V2, GE864-QUAD V2, GE864-DUAL V2, GE864-QUAD AUTOMOTIVE V2, GE864-QUAD ATEX, GL865-DUAL, GL868-DUAL, GT863-PY, GT864-PY, GT864-QUAD, GE864-GPS				
SW 2.0x.xx9	GC868-DUAL				
SW 13.00.002	GE910-QUAD				

The following table lists the AT commands set and matches the availability of every single command with the Telit module by means of the software version as showed on the table above.

COMMAND	SW 7.03.xx3	SW 10.00.xx6	SW 2.0x.xx9	SW 13.00.002	Function	Page		
Command Line General Format – Command Line Prefixes								
AT	•	•	•	•	Starting A Command Line	46		
A /	•	•	•	•	Last Comm Automatic Repetition Prefix	46		
AT#/	•	•	•	•	Repeat last command	47		
#SELINT	•	•	•	•	Select Interface Style	49		
Hayes AT Commands – Generic Modem Control								
&F	•	•	•	•	Set To Factory-Defined Configuration	50		
Z	•	•	•	•	Soft Reset	50		
+FCLASS	•	•	•	•	Select Active Service Class	50		
&Y	•	•	•	•	Designate A Default Reset Basic Profile	51		
&P	•	•	•	•	Designate A Default Reset Full Profile	51		
&W	•	•	•	•	Store Current Configuration	51		
&Z	•	•	•	•	Store Telephone Number In The Module Internal Phonebook	52		
&N	•	•	•	•	Display Internal Phonebook Stored Numbers	52		
+GMI	•	•	•	•	Manufacturer Identification	52		
+GMM	•	•	•	•	Model Identification	53		
+GMR	•	•	•	•	Revision Identification	53		
+GCAP	•	•	•	•	Capabilities List	53		
+GSN	•	•	•	•	Serial Number	53		
&V	•	•	•	•	Display Current Base Configuration And Profile	53		
&V0	•	•	•	•	Display Current Configuration And Profile	54		
&V1	•	•	•	•	S Registers Display	54		
&V3	•	•	•	•	Extended S Registers Display	54		
&V2	•	•	•	•	Display Last Connection Statistics	55		
\ V	•	•	•	•	Single Line Connect Message	55		















COMN	MAND	SW 7.03.xx3	SW 10.00.xx6	SW 2.0x.xx9	SW 13.00.002	Function	Page
+G(CI	•	•	•	•	Country Of Installation	55
%]	L	•	•	•	•	Line Signal Level	55
%(Q	•	•	•	•	Line Quality	56
L	_	•	•	•	•	Speaker Loudness	56
M	1	•	•	•	•	Speaker Mode	56
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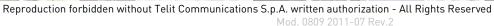






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Not available on GE863-PRO³

Not available on GM862-GPS, GL865-DUAL, GL868-DUAL

Command available only on GE864-QUAD and GC864-QUAD, GL865-DUAL, GL865-QUAD and GL868-DUAL

Solution of GL865-DUAL, GL865-DUAL, GL865-DUAL



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 $^{^{16}}$ Not available on GE865-QUAD, GE864-DUAL V2, GE864-QUAD AUTOMOTIVE V2, GL865-DUAL, GL868-DUAL, GC864-DUAL V2, GE864-QUAD ATEX $^{\circ}$

¹⁸ Only available on GL865-QUAD, GL865-DUAL, GL868-DUAL



¹⁷ Not available for GC864-DUAL, GC864-DUAL V2, GE864-DUAL V2, GL865-DUAL, GL868-DUAL and GC868-DUAL



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¹⁹ Not available on GL865-QUAD, GL865-DUAL, GL868-DUAL 20 Not available on GE865-QUAD, GL865-DUAL, GL868-DUAL 21 GM862-GPS excluded

²² GE864-QUAD AUTOMOTIVE V2, GE864-GPS e GL865-QUAD only





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FTP configuration

Set restart position

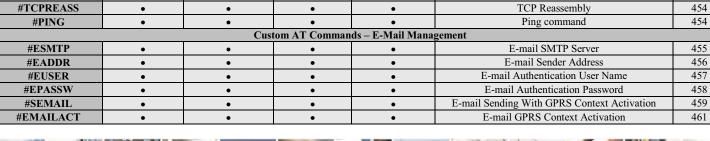
SW 7.03.xx3 SW 10.00.xx6 SW 2.0x.xx9 SW 13.00.002 COMMAND Function Page #PADFWD PAD forward character 402 Base64 encoding/decoding of data sent/received on a #BASE64 402 • • • skt send UDP data to a specific remote host 404 #SSENDUDP send UDP data to a specific remote host extended #SSENDUDPEXT 406 • 407 #ST Socket Type • • • #SLASTCLOSURE Detect the cause of a socket disconnection 409 Custom AT Commands - FTP #FTPTO FTP Time-Out 410 411 #FTPOPEN FTP Open • FTP Close #FTPCLOSE 411 • • **#FTPPUT** FTP Put 412 FTP Get 413 #FTPGET • • • #FTPGETPKT FTP Get in command mode 414 #FTPTYPE FTP Type 414 415 FTP Read Message #FTPMSG • #FTPDELE FTP Delete 415 • • • • #FTPPWD FTP Print Working Directory 416 FTP Change Working Directory 417 #FTPCWD • • • #FTPLIST FTP List 417 #FTPAPP FTP append 418 send data on a FTP data port 419 #FTPAPPEXT #FTPFSIZE Get file size 418 • • • • #FTPRECV Receive data in command mode 422

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#SKTTO	•	•	•	•	Socket Inactivity Time-Out	429
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#SKTL	•	•	•	•	Socket Listen	443
@SKTL	•	•	•	•	Socket Listen Improved	447
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#FRWL	•	•	•	•	Firewall Setup	450
#GDATAVOL	•	•	•	•	GPRS Data Volume	452

Custom AT Commands - Enhanced IP Easy Extension

•

•







#FTPCFG

#FTPREST

#GDATAVOL #ICMP

#TCPMAXDAT

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•





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•



•





ICMP Support

Maximum TCP Payload Size





453

454

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421



COMMAND	SW 7.03.xx3	SW 10.00.xx6	SW 2.0x.xx9	SW 13.00.002	Function	Page		
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#ESAV	•	•	•	•	E-mail Parameters Save	465		
#ERST	•	•	•	E-mail Parameters Reset		466		
#EMAILMSG	•	•	•	•	SMTP Read Message	467		
#SMTPCL	-	•	•	•	send mail with attachment	467		
#NTP		•	-	-	Network Time	468		
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#JDR #JDRENH	-	•	•	•	control Jammed Detect & Report feature	505		
#3DKENII	-	=	mands - Fasy Scr	int® Extension - I	Python Interpreter ²³	303		
#WSCRIPT	• ²⁴	•	manus - Easy Sci	-	Write Script	508		
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#LSCRIPT	● ²⁴	•	- List Script Names		515			
#DSCRIPT	•24	•		-	Delete Script	517		
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#CMUXSCR	•24	•		-	CMUX Interface Enable	519		
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#RSEN	•	•	•		Remote SIM Enable	535		

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\$GPSR	•	•	•	GPS Reset	520			
\$GPSD	•	•	•	GPS Device Type Set	521			
\$GPSSW	•	•	•	GPS Software Version	525			
\$GPSAT	•	•	•	GPS Antenna Type Definition	522			
\$GPSAV ²⁵	•	-	-	GPS Antenna Supply Voltage Readout	524			

Python is a registered trademark of the Python Software Foundation.
 Not available on GE863-PRO³
 GE864-GPS Excluded





























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	Custom AT Commands - GPS Application							
COMMAND	GM862-GPS, GE863-GPS	GE865-QUAD,GL865- QUAD, GL868-DUAL, GL868-QUAD	GE864-GPS	Function	Page			
\$GPSAI ²⁴	•	-	-	GPS Antenna Current Readout	524			
\$GPSAP ²⁴	•	-	-	GPS Antenna Protection	524			
\$GPSS ^{26,24}	•	-	-	GPS NMEA Serial Port Speed	525			
\$GPSNMUN	•	•	•	Unsolicited GPS NMEA Data Configuration	526			
\$GPSACP	•	•	•	GPS Actual Position Information	527			
\$GPSCON	•	•	•	Direct Access To GPS Module	529			
\$GPSPRG ²⁴	•		•	Set The GPS Module In Programming Mode	529			
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\$GPSIFIX	-	•	•	Set GPS SiRFInstantFix [™] Parameters	534			
\$FTPGETIFIX	-	•	•	Get SGEE File for SiRFInstantFix TM	532			
\$GPSGPIO	-	•	-	GPIO Configuration for GPS control	533			

3.5. AT Commands References

3.5.1. Command Line General Format

3.5.1.1. Command Line Prefixes

3.5.1.1.1. Starting A Command Line - AT

AT - Starting A Com	<mark>nand Line</mark>	SELINT 0 / 1 / 2
AT	The prefix AT, or at, is a two-character abbreviation (ATtentio	n), always used to
	start a command line to be sent from TE to TA, with the only ex	ception of AT#/
	prefix	
Reference	3GPP TS 27.007	

3.5.1.1.2. Last Command Automatic Repetition - A/

A/ - Last Command A	utomatic Repetition	SELINT 0 / 1 / 2
A /	If the prefix A/ or a/ is issued, the MODULE immediately execu	te once again the
	body of the preceding command line. No editing is possible and	no termination
	character is necessary. A command line may be repeated multiple	e times through
	this mechanism, if desired.	
	If A/ is issued before any command line has been executed, the p line is assumed to have been empty (that results in an OK result	_
	Note: this command works only at fixed IPR.	

 $^{^{26}}$ Available for the GPS producs with the following Order-Num.: 3990250689 and 3990250690





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A/ - Last Command A	utomatic Repetition	SELINT 0 / 1 / 2
	Note: the custom prefix AT#/ has been defined: it causes the last	command to be
	executed again too; but it doesn't need a fixed IPR.	
Reference	V25ter	

3.5.1.1.3. Repeat Last Command - AT#/

AT#/ - Repeat Last Co	<mark>mmand</mark>	SELINT 0 / 1 / 2
AT#/	The prefix is used to execute again the last received command.	

3.5.2. General Configuration Commands

3.5.2.1. AT Interface Backward Compatibility

There are some slight modifications amongst the AT interfaces of Telit products. In order to keep backward compatibility and on the same time to give the opportunity to the customer to get competitor compatibility, Telit modules offer the specific command #SELINT to switch the behaviour of the device and its AT command interface. It is up to the user to select the AT interface he prefers.

The following table shows which AT commands interface can be applied and is default for the specific product:

Product	#SELINT=0	#SELINT=1	#SELINT=2
GT863-PY			•(default)
GT864-QUAD			•(default)
GT864-PY			•(default)
GM862-GPS	•	•	•(default)
GE863-SIM	•	•(default)	•
GE863-GPS	•	•	•(default)
GE863-PRO ³			•(default)
GE864-QUAD	•	•	•(default)
GE864-QUAD V2	•	•	•(default)
GE864-GPS			•(default)





Product	#SELINT=0	#SELINT=1	#SELINT=2
GE864-QUAD ATEX			•(default)
GE864-QUAD AUTOMOTIVE V2			•(default)
GC864-QUAD with and without SIM Holder	•	•	•(default)
GC864-QUAD V2 with and without SIM Holder	•	•	•(default)
GC864-DUAL and GC864-DUAL V2			•(default)
GE864-DUAL V2			•(default)
GE865-QUAD			•(default)
GL865-DUAL			•(default)
GL868-DUAL			•(default)
GC868-DUAL			•(default)
GE910-QUAD			•(default)



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3.5.2.1.1. Select Interface Style - #SELINT

#SELINT - Select Inter	#SELINT - Select Interface Style SELINT 0 / 1	
AT#SELINT[= <v>]</v>	Set command sets the AT command interface style depending or Parameter: <v> - AT command interface style 0 - switches the AT command interface of the products, to the C GM862-GPRS interface style 1 - switches the AT command interface of the products, to the C PYTHON, QUAD-PY, TRIZIUM and GE863-QUAD, PY 2 - switches the AT command interface style of the product, to like GE864, GC864 and the GPS products²⁷</v>	GM862-GSM and GM862-PCS, interface style
	Note: If parameter is omitted then the behaviour of Set command read command.	l is the same as
AT#SELINT?	Read command reports the current interface style.	
AT#SELINT=?	Test command reports the available range of values for paramete	r <v>.</v>
Note	It's suggested to reboot the module after every #SELINT setting	·

#SELINT - Select Inte	#SELINT - Select Interface Style SELINT 2		
AT#SELINT=[<v>]</v>	Set command sets the AT command interface style depending or	n parameter <v></v> .	
	Parameter: <v> - AT command interface style 0 - switches the AT command interface of the products, to the GM862-GPRS interface style 1 - switches the AT command interface of the products, to the GPYTHON, QUAD-PY, TRIZIUM and GE863-QUAD, PY 2 - switches the AT command interface style of the product, to like GE864, GC864 and the GPS products Command CPS C</v>	GM862-PCS, interface style	
AT#SELINT?	Read command reports the current interface style.		
AT#SELINT=?	Test command reports the available range of values for parameter	er <v>.</v>	
Note	It's suggested to reboot the module after every #SELINT setting	<u>7</u> .	
Note	Issuing AT#SELINT= <v> when the 3GPP TS 27.010 multiplex</v>	ing protocol	
	control channel has been enabled (see +CMUX) causes an ERR	OR result code to	
	be returned.		
Note	Issuing AT#SELINT= <v> when the ENS functionality has been</v>	n previously	
	enabled (see #ENS) causes an ERROR result code to be returned	d.	
Note	Issuing AT#SELINT= <v> when the SMS Commands Operation</v>		
	previously enabled (see #SMSMODE) causes an ERROR resul	t code to be	
	returned.		

²⁷ Under the **#SELINT=2**, all the new functionalities like CMUX, SAP, Multisocket are available. Moreover, all the AT commands have been improved according to the ETSI specifications.





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3.5.3. Hayes Compliant AT Commands

3.5.3.1. Generic Modem Control

3.5.3.1.1. Set To Factory-Defined Configuration - &F

&F - Set To Factory-D	efined Configuration	SELINT 0 / 1 / 2
AT&F[<value>]</value>	Execution command sets the configuration parameters to default manufacturer; it takes in consideration hardware configuration sy	_
	manufacturer-defined criteria.	vitches and other
	Parameter:	
	<value>:</value>	
	0 - just the factory profile base section parameters are considered	
	1 - either the factory profile base section and the extended section (full factory profile).	on are considered
	Note: if parameter <value></value> is omitted, the command has the same	ne behaviour as
	AT&F0	
Reference	V25ter.	

3.5.3.1.2. Soft Reset - Z

Z - Soft Reset	SELINT 0 / 1 / 2
ATZ[<n>]</n>	Execution command loads the base section of the specified user profile and the extended section of the default factory profile.
	Parameter:
	<n>></n>
	01 - user profile number
	Note: any call in progress will be terminated.
	Note: if parameter <n> is omitted, the command has the same behaviour as ATZ0.</n>
Reference	V25ter.

3.5.3.1.3. Select Active Service Class - +FCLASS

+FCLASS - Select Ac	tive Service Class	SELINT 0 / 1 / 2
AT+FCLASS= <n></n>	Set command sets the wireless module in specified connec voice), hence all the calls done afterwards will be data or v	
	Parameter:	
	<n> 0 - data</n>	
	1 - fax class 1	
	8 - voice	



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+FCLASS - Select Act	ive Service Class	SELINT 0 / 1 / 2
AT+FCLASS?	Read command returns the current configuration value of the par	ameter <n>.</n>
AT+FCLASS=?	Test command returns all supported values of the parameters <n></n>	>.
Reference	3GPP TS 27.007	

3.5.3.1.4. Default Reset Basic Profile Designation - &Y

&Y - Default Reset 1	Basic Profile Designation SELINT 0 / 1 / 2
AT&Y[<n>]</n>	Execution command defines the basic profiles which will be loaded on startup.
	Parameter: <n> 01 - profile (default is 0): the wireless module is able to store 2 complete configurations (see &W).</n>
	Note: differently from command Z<n></n> , which loads just once the desired profile, the one chosen through command &Y will be loaded on every startup. Note: if parameter is omitted, the command has the same behaviour as AT&Y0

3.5.3.1.5. Default Reset Full Profile Designation - &P

&P - Default Reset Fu	ıll Profile Designation	SELINT 0 / 1 / 2
AT&P[<n>]</n>	Execution command defines which full profile will be loaded on	startup.
	Parameter: <n> 01 – profile number: the wireless module is able to store 2 full (see command &W).</n>	l configurations
	Note: differently from command Z < n >, which loads just once the one chosen through command &P will be loaded on every st	•
	Note: if parameter is omitted, the command has the same behavi	our as AT&P0
Reference	Telit Specifications	

3.5.3.1.6. Store Current Configuration - &W

&W - Store Current C	onfiguration SELINT 0 / 1 / 2
AT&W[<n>]</n>	Execution command stores on profile <n> the complete configuration of the device</n>
	Parameter:
	<n>></n>





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&W - Store Current Configuration		SELINT 0 / 1 / 2
	01 - profile	
	Note: if parameter is omitted, the command has the same behavior	our of AT&W0.

3.5.3.1.7. Store Telephone Number - &Z

&Z - Store Telephone	Number In The Wireless Module Internal Phonebook SELINT 0 / 1 / 2
AT&Z <n>=<nr></nr></n>	Execution command stores in the record <n> the telephone number <nr>. The records cannot be overwritten, they must be cleared before rewriting.</nr></n>
	Parameters:
	<n> - phonebook record</n>
	<nr> - telephone number (string type)</nr>
	Note: the wireless module has a built in non volatile memory in which 10 telephone numbers of a maximum 24 digits can be stored
	Note: to delete the record <n> the command AT&Z<n>=<cr> must be issued.</cr></n></n>
	Note: the records in the module memory can be viewed with the command &N, while the telephone number stored in the record n can be dialed by giving the command ATDS= $< n>$.

3.5.3.1.8. Display Stored Numbers - &N

&N - Display Internal	Phonebook Stored Numbers	SELINT 0 / 1 / 2
AT&N[<n>]</n>	Execution command returns the telephone number stored at the < internal memory.	n > position in the
	Parameter: <n> - phonebook record number Note: if parameter <n> is omitted then all the internal records are</n></n>	e shown.

3.5.3.1.9. Manufacturer Identification - +GMI

+GMI - Manufacturer	Identification	SELINT 0/1/2
AT+GMI	Execution command returns the manufacturer identification.	
	Note: this is one of the commands whose output differs dependin #SELINT setting.	g on the last
Reference	V.25ter	



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3.5.3.1.10. Model Identification - +GMM

+GMM - Model Identit	<mark>fication</mark>	SELINT 0 / 1 / 2
AT+GMM	Execution command returns the model identification.	
Reference	V.25ter	

3.5.3.1.11. Revision Identification - +GMR

+GMR - Revision Identification		SELINT 0 / 1 / 2
AT+GMR	Execution command returns the software revision identification.	
Reference	V.25ter	

3.5.3.1.12. Capabilities List - +GCAP

+GCAP - Capabilities	<u>List</u>	SELINT 0 / 1 / 2
AT+GCAP	Execution command returns the equipment supported command	set list.
	Where:	
	+CGSM: GSM ETSI command set	
	+FCLASS: Fax command set	
	+DS: Data Service common modem command set	
	+MS: Mobile Specific command set	
Reference	V.25ter	

3.5.3.1.13. Serial Number - +GSN

+GSN - Serial Number		SELINT 0 / 1 / 2
AT+GSN	Execution command returns the device board serial number.	
	Note: The number returned is not the IMSI, it is only the board n	umber
Reference	V.25ter	

3.5.3.1.14. Display Configuration And Profile - &V

&V - Display Current	Base Configuration And Profile	SELINT 0 / 1 / 2
AT&V	Execution command returns some of the base configuration p settings.	arameters
	Note: this is one of the commands whose output differs dep #SELINT setting.	pending on the last
	Note: the row of information about CTS (C106) OPTIONS is it only for compatibility reasons and represents only a dummy value.	•



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3.5.3.1.15. Display Configuration And Profile - &V0

&V0 - Display C	urrent Configuration And Profile SELINT 0 / 1 /	2
AT&V0	Execution command returns all the configuration parameters settings.	
	Note: this command is the same as &V, it is included only for backwar compatibility.	rds
	Note: this is one of the commands whose output differs depending on the la #SELINT setting.	ast
	Note: the row of information about CTS (C106) OPTIONS is in the output of & only for compatibility reasons and represents only a dummy value.	V0

3.5.3.1.16. S Registers Display - &V1

&V1 - S Registers Disp	<mark>olay</mark>		SELINT 0 / 1 / 2				
AT&V1	Execution command returns the value of the S registers in decimal and hexadecimal						
	value in the format:						
	REG DEC	HEX					
	<reg0> <dec></dec></reg0>	<hex></hex>					
	<reg1> <dec></dec></reg1>	<hex></hex>					
	where						
	<regn> - S register number</regn>						
	000005						
	007						
	012						
	025						
	038						
	<dec> - current value in deci</dec>	mal notation					
	<hex> - current value in hexa</hex>	adecimal notation					

3.5.3.1.17. Extended S Registers Display - &V3

&V3 - Extended	S Registers Display		SELINT 0 / 1 / 2
AT&V3	Execution command re	eturns the value of the S reg	isters in decimal and hexadecimal
	value in the format:		
	REG DEC	HEX	
	<reg0> <dec></dec></reg0>	<hex></hex>	
	<reg1> <dec></dec></reg1>	<hex></hex>	
	where		
	<regn> - S register nu</regn>	mber	
	000005		
	007		





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&V3 - Extended S Regi	isters Display	SELINT 0 / 1 / 2
	012	
	025	
	030	
	038	
	<dec> - current value in decimal notation</dec>	
	<hex> - current value in hexadecimal notation</hex>	

3.5.3.1.18. Display Last Connection Statistics - &V2

&V2 - Display Last	SELINT 0 / 1 / 2		
AT&V2	Execution command returns the last connection statistics &	connection	failure
	reason.		

3.5.3.1.19. Single Line Connect Message - \V

V - Single Line Connect Message SELINT 0 / 1				
AT\V <n></n>	Execution command set single line connect message.			
	Parameter:			
	<n></n>			
	0 - off			
	1 - on			

3.5.3.1.20. Country Of Installation - +GCI

+GCI - Country Of Ins	<mark>stallation</mark>	SELINT 0 / 1 / 2			
AT+GCI= <code></code>	Set command selects the installation country code according to				
	ITU-T.35 Annex A.				
	Parameter:				
	<code></code>				
	59 - it currently supports only the Italy country code				
AT+GCI?	Read command reports the currently selected country code.				
AT+GCI=?	Test command reports the supported country codes.				
Reference	V25ter.				

3.5.3.1.21. Line Signal Level - %L

%L - Line Signal Leve	<u>l</u>										SEL	INT	<mark>0 / 1 / 2</mark>
AT%L	It	has	no	effect	and	is	included	only	for	backward	compatibility	with	landline
	mo	oder	ns										



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3.5.3.1.22. Line Quality - %Q

%Q - Line Quality								SEL	INT	0/1/2
AT%Q	It has r	no effect	and i	s included	only	for	backward	compatibility	with	landline
	modems	S								

3.5.3.1.23. Speaker Loudness - L

L - Speaker Loudness											SEL	INT (0/1/2
ATL <n></n>	It h	as no	effect	and	is	included	only	for	backward	compatib	ility	with	landline
	mod	lems											

3.5.3.1.24. Speaker Mode - M

M - Speaker Mode		SELINT 0 / 1 / 2
ATM <n></n>	It has no effect and is included only for backward compatible	ility with landline
	modems	

3.5.3.1.25. Master Reset - +CMAR

+CMAR – Master Reset	SELINT 0 / 1
AT+CMAR=< phone lock code>	This command requests the MT to reset user data. The user data in the phone will be reset to default values.
	Parameters: < phone lock code> - string type representing an 8 digits security code. It must be verified before performing the master reset.
	Note: issuing the command will cause an NVM formatting. After the formatting is completed the module will automatically reboot. It is strongly recommended to issue an AT+CFUN=4 command before starting to format NVM, in order to not interfere with the formatting process.
	Note: the command is available for SELINT 0 and 1 only in 10.00.xx3 release and onwards.
AT+CMAR=?	Test command tests for command existence.

+CMAR – Master Reset	SELINT 2
AT+CMAR=< phone lock	This command requests the MT to reset user data. The user data in the
code>	phone will be reset to default values.
	Parameters:





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	<pre><phone code="" lock=""> - string type representing an 8 digits security code. It must be verified before performing the master reset.</phone></pre>
	Note: issuing the command will cause an NVM formatting. After the formatting is completed the module will automatically reboot. It is strongly recommended to issue an AT+CFUN=4 command before starting to format NVM, in order to not interfere with the formatting process.
AT+CMAR=?	Test command tests for command existence.

3.5.3.2. DTE - Modem Interface Control

3.5.3.2.1. Command Echo - E

E - Command Echo	SELINT 0 / 1 / 2
ATE[<n>]</n>	Set command enables/disables the command echo.
	Parameter: <n> 0 - disables command echo 1 - enables command echo (factory default), hence command sent to the device are echoed back to the DTE before the response is given.</n>
	Note: if parameter is omitted, the command has the same behaviour of ATE0
Reference	V25ter

3.5.3.2.2. Quiet Result Codes - Q

Q - Quiet Result Codes		SELINT 0 / 1
ATQ[<n>]</n>	Set command enables or disables the result codes.	
	Parameter: <n> 0 - enables result codes (factory default) 1 - every result code is replaced with a <cr> 2 - disables result codes</cr></n>	
	Note: After issuing either ATQ1 or ATQ2 every information t response to commands is not affected	ext transmitted in
	Note: if parameter is omitted, the command has the same beha	viour as ATQ0
Example	After issuing ATQ1	
	AT+CGACT=?	
	+CGACT: (0-1) a <cr> ends the response</cr>	





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Q - Quiet Result Codes	SELINT 0/1	
Reference Q - Quiet Result Codes	After issuing ATQ2 AT+CGACT=? +CGACT: (0-1) nothing is appended to the response V25ter SELINT 2	
ATQ[<n>]</n>	Set command enables or disables the result codes. Parameter: <n> 0 - enables result codes (factory default) 1 - disables result codes 2 - disables result codes (only for backward compatibility) Note: After issuing either ATQ1 or ATQ2 every information text transmitted in response to commands is not affected Note: if parameter is omitted, the command has the same behaviour of ATQ0</n>	
Example	After issuing ATQ1 or ATQ2 AT+CGACT=? +CGACT: (0-1) nothing is appended to the response	
Reference	V25ter	

3.5.3.2.3. Response Format - V

V - Response Format		SELINT 0/1/	
ATV[<n>]</n>	Set command determines the contents of the header and trailer transmitted with result codes and information responses. It also determines if result codes are transmitted in a numeric form or an alphanumeric form (see [§3.2.3 Information Responses And Result Codes] for the table of result codes).		
	Parameter:		
	<n></n>		
	0 - limited headers and trailers and	numeric format of result codes	
	information responses	<text><cr><lf></lf></cr></text>	
	result codes	<numeric code=""><cr></cr></numeric>	
	1 - full headers and trailers and ver	rbose format of result codes (factory default)	



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V - Response Format				SELINT 0 / 1 / 2
		information responses	<cr><lf></lf></cr>	
			<text><cr><lf></lf></cr></text>	
		result codes	<cr><lf></lf></cr>	
			<verbose code=""><cr><]</cr></verbose>	LF>
		•	tion responses is not affected l	
Reference	V25ter		minute in the state of the first	

3.5.3.2.4. Extended Result Codes - X

X - Extended Result Co	SELINT 0 / 1 / 2
ATX[<n>]</n>	Set command selects the result code messages subset used by the modem to inform the DTE of the result of the commands.
	Parameter: <n> - (factory default is 1) 0 - on entering dial-mode CONNECT result code is given; OK, CONNECT, RING, NO CARRIER, ERROR, NO ANSWER result codes are enabled. Dial tone and busy detection (NO DIALTONE and BUSY result codes) are disabled. 14 - on entering dial-mode CONNECT <text> result code is given; all the other result codes are enabled.</text></n>
	Note: If parameter is omitted, the command has the same behaviour of ATX0
Note	For complete control on CONNECT response message see also +DR command.
Reference	V25ter

3.5.3.2.5. Identification Information - I

I - Identification Inform	nation	SELINT 0 / 1 / 2
ATI[<n>]</n>	Execution command returns one or more lines of information tex	at followed by a
	result code.	
	Parameter:	
	<n>></n>	
	0 - numerical identifier	
	1 - module checksum	
	2 - checksum check result	
	3 - manufacturer	
	4 - product name	
	5 - DOB version	



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I - Identification	Information SELINT 0 / 1 / 2
	Note: this is one of the commands whose output differs depending on the last #SELINT setting.
	Note: if parameter is omitted, the command has the same behaviour of ATI0
Reference	V25ter

3.5.3.2.6. Data Carrier Detect (DCD) Control - &C

&C - Data Carrie	r Detect (DCD) Control SELINT 0 / 1 /	2
AT&C[<n>]</n>	Set command controls the RS232 DCD output behaviour.	
	Parameter: <n> 0 - DCD remains high always. 1 - DCD follows the Carrier detect status: if carrier is detected DCD is high, otherwise DCD is low. (factory default) 2 - DCD off while disconnecting</n>	
	Note: if parameter is omitted, the command has the same behaviour of AT&C0	
Reference	V25ter	

3.5.3.2.7. Data Terminal Ready (DTR) Control - &D

&D - Data Termi	&D - Data Terminal Ready (DTR) Control SELINT 0 / 1		
AT&D[<n>]</n>	Set command controls the Module behaviour to the RS232 DTR transitions.		
	Parameter:		
	<n></n>		
	0 - device ignores DTR transitions (factory default)		
	1 - when the MODULE is connected, the High to Low transition of DTR pin sets the device in command mode, the current connection is NOT closed		
	2 - when the MODULE is connected, the High to Low transition of DTR pin set the device in command mode and the current connection is closed		
	3 - device ignores DTR transitions		
	4 - C108/1 operation is disabled		
	5 - C108/1 operation is enabled; same behaviour as for <n>=2</n>		
	Note: if a connection has been set up issuing either #SKTD or #SKTOP, then AT&D1 has the same effect as AT&D2.		
	ATCOT has the same criect as ATCOZ.		
	Note: if AT&D2 has been issued and the DTR has been tied low, autoanswering is		
	inhibited and it is possible to answer only issuing command ATA.		
	Note: if parameter is omitted, the command has the same behaviour as AT&D0		
Reference	V25ter		



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&D - Data Term	inal Ready (DTR) Control SELINT 2
AT&D[<n>]</n>	Set command controls the Module behaviour to the RS232 DTR transitions.
	Parameter: <n></n>
	0 - device ignores DTR transitions (factory default); if + CVHU current setting is
	different from 2 then every setting AT&D0 is equivalent to AT&D5
	1 - when the MODULE is connected, the High to Low transition of DTR pin sets
	the device in command mode, the current connection is NOT closed; if +CVHU current setting is different from 2 then issuing AT&D1 is equivalent to
	AT&D5
	2 - when the MODULE is connected, the High to Low transition of DTR pin sets the device in command mode and the current connection is closed; if + CVHU
	current setting is different from 2 then issuing AT&D2 is equivalent to
	AT&D5
	3 - device ignores DTR transitions; if +CVHU current setting is different from 2 then issuing AT&D3 is equivalent to AT&D5
	4 - C108/1 operation is disabled; if +CVHU current setting is different from 2 then issuing AT&D4 is equivalent to AT&D5
	5 - C108/1 operation is enabled; same behaviour as for <n>=2</n>
	Note: if a connection has been set up issuing either #SKTD or #SKTOP, then AT&D1 has the same effect as AT&D2. If a connection has been set up issuing AT#SD then AT&D1 and AT&D2 have different effect, as described above.
	Note: if AT&D2 has been issued and the DTR has been tied Low , autoanswering is inhibited and it is possible to answer only issuing command ATA .
	Note: if parameter is omitted, the command has the same behaviour of AT&D0
Reference	V25ter

3.5.3.2.8. Standard Flow Control - \Q

\Q - Standard Flo	<mark>ow Control</mark>	SELINT 0 / 1 / 2
$AT\setminus Q[< n>]$	Set command controls the RS232 flow control behaviour.	
	Parameter:	
	<n></n>	
	0 - no flow control	
	1 - software bi-directional with filtering (XON/XOFF)	
	2 - hardware mono-directional flow control (only CTS activ	e)
	3 - hardware bi-directional flow control (both RTS/CTS act	
	Note: if parameter is omitted, the command has the same behavior	aviour as AT\Q0





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\Q - Standard Flow Control		SELINT 0 / 1 / 2
	Note: Hardware flow control (AT\Q3) is n	ot active in command mode.
	Note: \Q's settings are functionally a subse	et of &K's ones.
Reference	V25ter	

3.5.3.2.9. Flow Control - &K

&K - Flow Control		SELINT 0 / 1 / 2
&K - Flow Control AT&K[<n>]</n>	Set command controls the RS232 flow control behaviour. Parameter: <n> 0 - no flow control 1 - hardware mono-directional flow control (only CTS active) 2 - software mono-directional flow control (XON/XOFF) 3 - hardware bi-directional flow control (both RTS/CTS active) 4 - software bi-directional with filtering (XON/XOFF) 5 - pass through: software bi-directional without filtering (XON 6 - both hardware bi-directional flow control (both RTS/CTS a bi-directional flow control (XON/XOFF) with filtering Note: &K has no Read Command. To verify the current setting check the settings of the active profile issuing AT&V</n>) (factory default) N/XOFF) active) and software our as AT&K0
	check the settings of the active profile issuing AT&V . Note: Hardware flow control (AT&K3) is not active in commandation.	d mode.

3.5.3.2.10. Data Set Ready (DSR) Control - &S

&S - Data Set Ready	y (DSR) Control SELINT 0 / 1 / 2
AT&S[<n>]</n>	Set command controls the RS232 DSR pin behaviour.
	Parameter:
	<n></n>
	0 - always High
	1 - follows the GSM traffic channel indication.
	2 - High when connected
	3 - High when device is ready to receive commands (factory default).
	Note: if option 1 is selected then DSR is tied High when the device receives from the network the GSM traffic channel indication.
	Note: in power saving mode the DSR pin is always tied Low .



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&S - Data Set Ready (DSR) Control		SELINT 0 / 1 / 2
	Note: if parameter is omitted, the command has the same behavior	our of AT&S0
	Note: If Selint=2 is selected, and option 1 and 2 are active, DSI in case of GSM voice connection	R will not tied High

3.5.3.2.11. Ring (RI) Control - \R

R - Ring (RI) Control	SELI	NT 0 / 1 / 2
$AT\R[< n>]$	Set command controls the RING output pin behaviour.	
	Parameter: <n> 0 - RING on during ringing and further connection 1 - RING on during ringing (factory default)</n>	
	2 - RING follows the ring signal Note: to check the ring option status use the &V command. Note: if parameter is omitted, the command has the same behaviour of A	AT\R0

3.5.3.2.12. Fixed DTE Interface Rate - +IPR

+IPR - Fixed DTE Int	erface Rate	SELINT 0 / 1
AT+IPR= <rate></rate>	Set command specifies the DTE speed at which the device accep during command mode operations; it may be used to fix the DTE speed.	
	Parameter: <rate> 0300 1200 2400 4800 9600 19200 38400 57600 115200 If <rate> is set to 0, then automatic speed detection is enabled an format (see +ICF) is set to auto-detect. (default)</rate></rate>	
	If <rate></rate> is specified and not 0, DTE-DCE speed is fixed at that hence no speed auto-detection (autobauding) is enabled.	speed,



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+IPR - Fixed DTE Interface Rate		SELINT 0 / 1
	Note: While in autobauding mode the 300 baud rate is not suppo	rted.
AT+IPR?	Read command returns the current value of +IPR parameter.	
AT+IPR=?	Test command returns the supported serial port speed list.	
Reference	V25ter	

+IPR - Fixed DTE I	
AT+IPR= <rate></rate>	Set command specifies the DTE speed at which the device accepts commands during command mode operations; it may be used to fix the DTE-DCE interface speed. Parameter: <rate></rate>
AT+IPR?	Read command returns the current value of +IPR parameter.
AT+IPR=?	Test command returns the list of supported autodetectable <rate> values and the list of fixed-only <rate> values in the format: +IPR:(list of supported autodetectable <rate> values), (list of fixed-only <rate> values)</rate></rate></rate></rate>
Reference	V25ter

3.5.3.2.13. DTE-Modem Local Flow Control - +IFC

+IFC - DTE-Modem L	<mark>ocal Flow Control</mark>	SELINT 0 / 1 / 2
AT+IFC= <by_te>,</by_te>	Set command selects the flow control behaviour of the serial por	t in both directions:
<by_ta></by_ta>	from DTE to modem (<by_ta> option) and from modem to DT</by_ta>	E (<by_te>)</by_te>



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+IFC - DTE-Moo	dem Local Flow Control SELINT 0 / 1 / 2
	Parameters: Parameters:
AT+IFC?	Read command returns active flow control settings. Note: If flow control behavior has been set with AT&Kn command with the parameter that is not allowed by AT+IFC the read command AT+IFC? will return: +IFC: 0,0
AT+IFC=?	Test command returns all supported values of the parameters <by_te></by_te> and <by_ta></by_ta> .
Reference	V25ter

3.5.3.2.14. DTE-Modem Local Rate Reporting - +ILRR

+ILRR - DTE-Modem	Local Rate Reporting	SELINT 0 / 1 / 2
AT+ILRR= <n></n>	Set command controls whether or not the +ILRR: <rate> inform</rate>	nation text is
	transmitted from the modem (module) to the DTE .	
	Parameter:	
	<n>></n>	
	0 - local port speed rate reporting disabled (factory default)	
	1 - local port speed rate reporting enabled	
	Note: If AT+IPR=0 (in autobauding) local port speed reported we note: this information if enabled is sent upon connection.	vill be 0.
AT+ILRR?	Read command returns active setting of < n >.	
AT+ILRR=?	Test command returns all supported values of the parameter <n></n>	>
Reference	V25ter	



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3.5.3.2.15. DTE-Modem Character Framing - +ICF

+ICF - DTE-Modem C	Character Framing SELINT 0 / 1 / 2	2
AT+ICF= <format></format>	Set command defines the asynchronous character framing to be used when	
[, <parity>]</parity>	autobauding is disabled.	
	Parameters:	
	< format> - determines the number of bits in the data bits, the presence of a parity	
	bit, and the number of stop bits in the start-stop frame. 0 – autodetection (not available for GE910-QUAD)	
	1 - 8 Data, 2 Stop	
	2 - 8 Data, 1 Parity, 1 Stop	
	3 - 8 Data, 1 Stop	
	5 - 7 Data, 1 Parity, 1 Stop	
	<pre><parity> - determines how the parity bit is generated and checked, if present;</parity></pre>	
	setting this subparameter is mandatory and has a meaning only if	
	<pre><format> subparameter is either 2 or 5 (for GE910-QUAD meaningless)</format></pre>	ı
	<pre></pre>	
	0 - Odd 1 - Even	
AT+ICF?	Read command returns current settings for subparameters <format></format> and <parity></parity>	_
mi ici.	If current setting of subparameter settings for susparameters and subparameter setting of subparameters.	
	subparameter <parity></parity> will always represented as 0.	
AT+ICF=?	Test command returns the ranges of values for the parameters <format></format> and	
	<pre><parity></parity></pre>	
Reference	V25ter	
Example	Auto detect	
	AT+ICF = 0 OK	
	8N2	
	AT+ICF = 1	
	OK	
	801	
	AT+ICF = 2,0	
	OK	
	8E1	
	AT+ICF = 2,1	
	OK	
	8N1	
	AT+ICF=3	
	OK OK	
	701	



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+ICF - DTE-Modem Character Framing	SELINT 0 / 1 / 2
AT+ICF = 5,0	
OK	
7E1	
AT+ICF = 5,1	
OK	

3.5.3.3. Call Control

3.5.3.3.1. Dial - D

D – Dial	SELINT 0 / 1
ATD <number>[;]</number>	Execution command starts a call to the phone number given as parameter. If ";" is present, a VOICE call to the given number is performed, regardless of the current value of the connection mode set by +FCLASS command.
	Parameter: <number> - phone number to be dialed</number>
	Note: type of call (data, fax or voice) depends on last +FCLASS setting.
	Note: the numbers accepted are 0-9 and *,#,"A", "B", "C", "D","+".
	Note: for backwards compatibility with landline modems modifiers "T", "P", "R", ",", "W", "!", "@" are accepted but have no effect.
ATD> <str>[;]</str>	Issues a call to phone number which corresponding alphanumeric field is <str></str> ; all available memories will be searched for the correct entry.
	If ";" is present a voice call is performed.
	Parameter: <str> - alphanumeric field corresponding to phone number; it must be enclosed in quotation marks.</str>
	Note: parameter <str></str> is case sensitive.
	Note: used character set should be the one selected with command Select TE character set +CSCS.
ATD> <mem><n>[;]</n></mem>	Issues a call to phone number in phonebook memory storage mem , entry location n (available memories may be queried with AT+CPBS=?). If ";" is present a voice call is performed.
	Parameters: <mem> - phonebook memory storage SM - SIM phonebook</mem>



D – Dial	SELINT 0 / 1
<u> </u>	FD - SIM fixed dialling-phonebook
	LD - SIM last-dialling-phonebook
	MC - device missed (unanswered received) calls list
	RC - ME received calls list
	The Trib Tood value had
	<n> - entry location; it should be in the range of locations available in the memory</n>
	used.
ATD> <n>[;]</n>	Issues a call to phone number in entry location <n> of the active phonebook</n>
	memory storage (see +CPBS).
	If ";" is present a voice call is performed.
	Parameter:
	<n> - active phonebook memory storage entry location; it should be in the range</n>
	of locations available in the active phonebook memory storage.
ATDL	Issues a call to the last number dialed.
ATDS= <nr>[;]</nr>	Issues a call to the number stored in the MODULE internal phonebook position
A1DS=\III -[,]	number <nr>.</nr>
	If ";" is present a VOICE call is performed.
	ii , is present a voice can is performed.
	Parameter:
	<nr> - internal phonebook position to be called (See either &N and &Z)</nr>
ATD <number>I[;]</number>	Issues a call overwriting the CLIR supplementary service subscription default
ATD <number>i[;]</number>	value for this call
	If ";" is present a VOICE call is performed.
	ii , is present a voice can is performed.
	I - invocation, restrict CLI presentation
	i - suppression, allow CLI presentation
ATD <number>G[;]</number>	Issues a call checking the CUG supplementary service information for the current
ATD <number>g[;]</number>	call. Refer to +CCUG command.
ATD \	If ";" is present a VOICE call is performed.
ATD*/mmg_ga>	This command is specific of GPRS functionality and causes the MT to perform
ATD* <gprs_sc> [*<addr>][*[<l2p>]</l2p></addr></gprs_sc>	whatever actions are necessary to establish communication between the TE and
	the external PDN.
[*[<cid>]]]]#</cid>	the external PDN.
	Parameters:
	<pre><gprs_sc> - GPRS Service Code, a digit string (value 99) which identifies a</gprs_sc></pre>
	request to use the GPRS
	<addr> - string that identifies the called party in the address space applicable to</addr>
	the PDP.
	<l2p> - a string which indicates the layer 2 protocol to be used (see +CGDATA</l2p>
	command). For communications software that does not support
	arbitrary characters in the dial string, the following numeric
	equivalents shall be used:
	1 - PPP
	<cid> - a digit which specifies a particular PDP context definition (see</cid>
	+CGDCONT command).
	Cobcon command).



<mark>D – Dial</mark>		SELINT 0 / 1
Example	To dial a number in SIM phonebook entry 6: ATD>SM6 OK	
	To have a voice call to the 6-th entry of active phonebook: ATD>6; OK	
	To call the entry with alphanumeric field "Name": ATD>"Name"; OK	
Reference	V25ter.	

D – Dial	SELINT 2
ATD <number>[;]</number>	Execution command starts a call to the phone number given as parameter. If ";" is present, a voice call to the given number is performed, regardless of the current value of the connection mode set by +FCLASS command.
	Parameter: <number> - phone number to be dialed</number>
	Note: type of call (data, fax or voice) depends on last +FCLASS setting.
	Note: the numbers accepted are 0-9 and *,#,"A", "B", "C", "D","+".
	Note: for backwards compatibility with landline modems modifiers "T", "P", "R", ",", "W", "!", "@" are accepted but have no effect.
ATD> <str>[;]</str>	Issues a call to phone number which corresponding alphanumeric field is <str></str> ; all available memories will be searched for the correct entry.
	If ";" is present a voice call is performed.
	Parameter: <str> - alphanumeric field corresponding to phone number; it must be enclosed in quotation marks.</str>
	Note: parameter <str></str> is case sensitive.
	Note: used character set should be the one selected with +CSCS.
ATD> <mem><n>[;]</n></mem>	Issues a call to phone number in phonebook memory storage <mem>, entry location <n> (available memories may be queried with AT+CPBS=?). If ";" is present a voice call is performed.</n></mem>
	Parameters: <mem> - phonebook memory storage SM - SIM phonebook</mem>



<mark>D – Dial</mark>	SELINT 2
	FD - SIM fixed dialling-phonebook
	LD - SIM last-dialling-phonebook
	MC - device missed (unanswered received) calls list
	RC - ME received calls list
	MB - mailbox numbers stored on SIM, if this service is provided by the SIM (see
	#MBN).
	<n> - entry location; it should be in the range of locations available in the memory</n>
	used.
ATD> <n>[;]</n>	Issues a call to phone number in entry location <n> of the active phonebook</n>
	memory storage (see +CPBS).
	If ";" is present a voice call is performed.
	Parameter:
	<n> - active phonebook memory storage entry location; it should be in the range</n>
	of locations available in the active phonebook memory storage.
ATDL	Issues a call to the last number dialed.
ATDS= <nr>[;]</nr>	Issues a call to the number stored in the MODULE internal phonebook position
	number <nr>.</nr>
	If ";" is present a voice call is performed.
	Parameter:
ATED 4 1 STEEL	<nr> - internal phonebook position to be called (See commands &N and &Z) Learner and the command of t</nr>
ATD <number>I[;]</number>	Issues a call overwriting the CLIR supplementary service subscription default value for this call
ATD <number>i[;]</number>	
	If ";" is present a voice call is performed.
	I - invocation, restrict CLI presentation
	i - suppression, allow CLI presentation
ATD <number>G[;]</number>	Issues a call checking the CUG supplementary service information for the current
ATD <number>g[;]</number>	call. Refer to +CCUG command.
ATD stumber si,j	If ";" is present a voice call is performed.
ATD* <gprs_sc></gprs_sc>	This command is specific of GPRS functionality and causes the MT to perform
[* <addr>][*[<l2p>]</l2p></addr>	whatever actions are necessary to establish communication between the TE and
[*[<cid>]]]]#</cid>	the external PDN.
[[]]]	
	Parameters:
	<pre><gprs_sc> - GPRS Service Code, a digit string (value 99) which identifies a</gprs_sc></pre>
	request to use the GPRS
	<addr> - string that identifies the called party in the address space applicable to</addr>
	the PDP.
	<l2p> - a string which indicates the layer 2 protocol to be used (see +CGDATA</l2p>
	command). For communications software that does not support
	arbitrary characters in the dial string, the following numeric
	equivalents shall be used:
	1 - PPP
	<cid> - a digit which specifies a particular PDP context definition (see</cid>



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D – Dial		SELINT 2
	+CGDCONT command).	
Example	To dial a number in SIM phonebook entry 6: ATD>SM6 OK	
	To have a voice call to the 6-th entry of active phonebook: ATD>6; OK	
	To call the entry with alphanumeric field "Name": ATD>"Name"; OK	
Reference	V25ter.	

3.5.3.3.2. Tone Dial - T

T - Tone Dial	SELINT 0 / 1 / 2
ATT	Set command has no effect is included only for backward compatibility with
	landline modems.
Reference	V25ter.

3.5.3.3.3. Pulse Dial - P

P - Pulse Dial	SELINT 0 / 1 / 2
ATP	Set command has no effect is included only for backward compatibility with
	landline modems.
Reference	V25ter.

3.5.3.3.4. Answer - A

<mark>A - Answer</mark>	SELINT 0 / 1 / 2
ATA	Execution command is used to answer to an incoming call if automatic answer is disabled.
	Note: This command MUST be the last in the command line and must be followed immediately by a <cr></cr> character.
Reference	V25ter.

3.5.3.3.5. **Disconnect - H**





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H - Disconnect	SELINT 0 / 1 / 2	
ATH	Execution command is used to close the current conversation (voice, data or fax).	
	Note: this command can be issued only in command mode; when a data conversation is active the device is in on-line mode (commands are not sensed and characters are sent to the other party), hence escape sequence (see register S2) is required before issuing this command, otherwise if &D1 option is active, DTR pin has to be tied Low to return in command mode.	
Reference	V25ter.	

3.5.3.3.6. Return To On Line Mode - O

O - Return To On Line	Mode	SELINT 0 / 1
АТО	Execution command is used to return to on-line mode from of there's no active connection it returns ERROR .	command mode. If
	Note: After issuing this command, if the device is in conversa commands to the device you must return to command mode by sequence (see register S2) or tying low DTR pin if &D1 option is	issuing the escape
Reference	V25ter.	

O - Return To C	<mark>On Line Mode</mark>	SELINT 2			
ATO		Execution command is used to return to on-line mode from command mode. If there's no active connection it returns NO CARRIER .			
	Note: After issuing this command, if the device is commands to the device you must return to comm sequence (see register S2) or tying low DTR pin	and mode by issuing the escape			
Reference	V25ter.	_			

3.5.3.4. Modulation Control

3.5.3.4.1. Modulation Selection - +MS

+MS - Modulation So	<mark>election</mark>	SELINT 0 / 1 / 2
AT+MS=	Set command has no effect is included only for backward comp	atibility with
<carrier></carrier>	landline modems.	
[, <automode></automode>		
[, <min_rate></min_rate>	Parameters:	
[, <max_rate>]]]</max_rate>	carrier> - a string which specifies the preferred modem carrie originating or answering a connection	r to use in
	V21	
	V22	
	V22B	
	V23C	



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+MS - Modulation So	<mark>election</mark>	SELINT 0 / 1 / 2
	V32	
	V34	
	- it enables/disables automatic modulation negotia 0 - disabled">- disabled	tion.
	1 - enabled. It has effect only if it is defined for the associated i	modulation.
	<min rate=""> - it specifies the lowest value at which the DCE ma</min>	
	connection.	•
	0 - unspecified	
	<max rate=""> - it specifies the highest value at which the DCE m</max>	nay establish a
	connection.	•
	0 - unspecified	
	30014400 - rate in bps	
	*	
	Note: to change modulation requested use +CBST command.	
AT+MS?	Read command returns the current value of <carrier></carrier> , <autom< b=""></autom<>	ode>, <min_rate>,</min_rate>
	<max_rate> parameters.</max_rate>	_
AT+MS=?	Test command returns all supported values of the <carrier></carrier> , <a< b=""></a<>	utomode>,
	<min_rate>, <max_rate> parameters.</max_rate></min_rate>	

3.5.3.4.2. Line Quality And Auto Retrain - %E

%E - Line Quality Mon	<mark>nitor And Auto Retrain Or Fallback/Fallforward</mark>	SELINT 0 / 1 / 2
AT%E <n></n>	Execution command has no effect and is included of	only for backward compatibility
	with landline modems.	

3.5.3.5. Compression Control

3.5.3.5.1. Data Compression - +DS

+DS - Data Compr	ession SELINT 0 / 1 / 2	
AT+DS=[<n>]</n>	AT+DS=[<n>] Set command sets the V42 compression parameter.</n>	
	Parameter:	
	<n></n>	
	0 - no compression, it is currently the only supported value; the command has no	
	effect, and is included only for backward compatibility	
AT+DS?	Read command returns current value of the data compression parameter.	
AT+DS=?	Test command returns all supported values of the parameter <n></n>	
Reference	V25ter	

3.5.3.5.2. Data Compression Reporting - +DR

+DR - Data Compressi	<mark>on Reporting</mark>	SELINT 0 / 1 / 2
AT+DR= <n></n>	Set command enables/disables the data compression	reporting upon connection.





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+DR - Data Comp	ression Reporting SELINT 0 / 1 / 2
	Parameter: <n> 0 - data compression reporting disabled; 1 - data compression reporting enabled upon connection.</n>
	Note: if enabled, the following intermediate result code is transmitted before the final result code:
	+DR: <compression> (the only supported value for <compression> is "NONE")</compression></compression>
AT+DR?	Read command returns current value of <n>.</n>
AT+DR=?	Test command returns all supported values of the parameter <n></n>
Reference	V25ter

3.5.3.6. S Parameters

Basic commands that begin with the letter "S" are known as "S-Parameters". The number following the "S" indicates the "parameter number" being referenced. If the number is not recognized as a valid parameter number, an **ERROR** result code is issued.

If no value is given for the subparameter of an **S-Parameter**, an **ERROR** result code will be issued and the stored value left unchanged.

Note: what follows is a special way to select and set an **S-parameter**:

- 1. **ATS***n*<**CR**> selects *n* as current parameter number. If the value of *n* is in the range (0, 2, 3, 4, 5, 7, 10, 12, 25, 30, 38), this command establishes **S***n* as last selected parameter. Every value out of this range and less than 256 can be used but has no meaning and is maintained only for backward compatibility with landline modems.
- 2. AT=<value><CR> or ATS=<value><CR> set the contents of the selected S-parameter

Example:

ATS7<CR> establishes S7 as last selected parameter.

AT=40<CR> sets the content of S7 to 40 ATS=15<CR> sets the content of S7 to 15.

3. AT? returns the current value of the last S-parameter accessed

Reference	V25ter and RC56D/RC336D





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3.5.3.6.1. Number Of Rings To Auto Answer - S0

S0 - Number Of Rings	To Auto Answer SELINT 0 / 1
ATS0[= <n>]</n>	Set command sets the number of rings required before device automatically
	answers an incoming call.
	Parameter:
	<n> - number of rings</n>
	0 - auto answer disabled (factory default)
	1255 - number of rings required before automatic answer.
ATS0?	Read command returns the current value of S0 parameter.
ATS0=?	Test command returns the range for <n> without command echo and parenthesis.</n>
Note	For either Read and Test command the format of the numbers in output is always 3
	digits, left-filled with 0s
Note	Automatically answer is not enabled if current instance is in
	online mode
Reference	V25ter

S0 - Number Of Rings	To Auto Answer	SELINT 2
ATS0=[<n>]</n>	Set command sets the number of rings required before device au answers an incoming call.	tomatically
	Parameter:	
	<n> - number of rings</n>	
	0 - auto answer disabled (factory default)	
	1255 - number of rings required before automatic answer.	
ATS0?	Read command returns the current value of S0 parameter .	
Reference	V25ter	

3.5.3.6.2. Ring Counter - S1

S1 - Ring Counter	SELINT 0/1
ATS1	S1 is incremented each time the device detects the ring signal of an incoming ca
	S1 is cleared as soon as no ring occur.
	Note: the form ATS1 has no effect.
ATS1?	Read command returns the value of S1 ring counter.
ATS1=?	Test command returns the range of values for S1 ring counter without comman
	echo and parenthesis.
Note	For either Read and Test command the format of the numbers in output is always
	digits, left-filled with 0s

S1 - Ring Counter		SELINT 2
ATS1	S1 is incremented each time the device detects the ring signal of	an incoming call.



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S1 - Ring Count	<mark>er</mark>	SELINT 2
	S1 is cleared as soon as no ring occur.	
	Note: the form ATS1 has no effect.	
ATS1?	Read command returns the value of this parameter.	

3.5.3.6.3. Escape Character - S2

S2 - Escape Character	SELINT 0 / 1	
ATS2[= <char>]</char>	Set command sets the ASCII character to be used as escape character.	
	Parameter: <char> - escape character decimal ASCII 0255 - factory default value is 43 (+). Note: the escape sequence consists of three escape characters preceded and followed by <i>n</i> ms of idle (see \$12 to set <i>n</i>).</char>	
ATS2?	Read command returns the current value of S2 parameter.	
ATS2=?	Test command returns the range for <char></char> without command echo and parenthesis	
Note	For either Read and Test command the format of the numbers in output is always 3 digits, left-filled with 0s	

S2 - Escape Characte	r SELINT 2	2
ATS2=[<char>]</char>	Set command sets the ASCII character to be used as escape character.	
	Parameter:	
	<char> - escape character decimal ASCII</char>	
	0255 - factory default value is 43 (+).	
	Note: the escape sequence consists of three escape characters preceded and followed by n ms of idle (see S12 to set n).	
ATS2?	Read command returns the current value of S2 parameter.	
	Note: the format of the numbers in output is always 3 digits, left-filled with	0s

3.5.3.6.4. Command Line Termination Character - S3

S3 - Command Line T	<mark>ermination Character</mark>	SELINT 0 / 1	
ATS3[= <char>]</char>	Set command sets the value of the character either recognize	d by the device as	
	command line terminator and generated by the device as part of and terminator for result codes and information text, along with \$500.000 and terminator for result codes and information text.	*	
	Parameter:		
	<pre><char> - command line termination character (decimal ASCII)</char></pre>		





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S3 - Command 1	ine Termination Character SELINT 0 / 1
	0127 - factory default value is 13 (ASCII CR)
	Note: the "previous" value of S3 is used to determine the command line termination character for entering the command line containing the S3 setting command. However the result code issued shall use the "new" value of S3 (as set during the
	processing of the command line).
ATS3?	Read command returns the current value of S3 parameter.
ATS3=?	Test command returns the range for <char></char> without command echo an parenthesis.
Note	For either Read and Test command the format of the numbers in output is always digits, left-filled with 0s
Reference	V25ter

S3 - Command Line T	Cermination Character	SELINT 2
ATS3=[<char>]</char>	Set command sets the value of the character either recognized by command line terminator and generated by the device as part of and terminator for result codes and information text, along with	the header, trailer,
	Parameter:	
	<pre><char> - command line termination character (decimal ASCII) 0127 - factory default value is 13 (ASCII <cr>)</cr></char></pre>	
	Note: the "previous" value of S3 is used to determine the comma character for entering the command line containing the S3 setting However the result code issued shall use the "new" value of S3 (processing of the command line)	g command.
ATS3?	Read command returns the current value of S3 parameter.	
	Note: the format of the numbers in output is always 3 digits, left-	-filled with 0s
Reference	V25ter	

3.5.3.6.5. Response Formatting Character - S4

S4 - Response For	matting Character SELINT 0 / 1		
ATS4[= <char>]</char>	Set command sets the value of the character generated by the device as part of the		
	header, trailer, and terminator for result codes and information text, along with the		
	S3 parameter.		
	Parameter:		
	<char> - response formatting character (decimal ASCII)</char>		
	0127 - factory default value is 10 (ASCII LF)		
	Note: if the value of S4 is changed in a command line the result code issued in response of that command line will use the new value of S4 .		
ATS4?	Read command returns the current value of S4 parameter.		



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S4 - Response Formatt	ing Character	SELINT 0 / 1
ATS4=?	Test command returns the range for <char></char> without command e	cho and parenthesis
Note	For either Read and Test command the format of the numbers in digits, left-filled with 0s	output is always 3
Reference	V25ter	

S4 - Response Formatt	ing Character SELINT 2
ATS4=[<char>]</char>	Set command sets the value of the character generated by the device as part of the header, trailer, and terminator for result codes and information text, along with the S3 parameter.
	Parameter: <char> - response formatting character (decimal ASCII) 0127 - factory default value is 10 (ASCII LF)</char>
	Note: if the value of S4 is changed in a command line the result code issued in response of that command line will use the new value of S4 .
ATS4?	Read command returns the current value of S4 parameter. Note: the format of the numbers in output is always 3 digits, left-filled with 0s
Reference	V25ter

3.5.3.6.6. Command Line Editing Character - S5

S5 - Command Line I	Editing Character SELINT 0 / 1
ATS5[= <char>]</char>	Set command sets the value of the character recognized by the device as a request to delete from the command line the immediately preceding character.
	Parameter: <char> - command line editing character (decimal ASCII) 0127 - factory default value is 8 (ASCII BS).</char>
ATS5?	Read command returns the current value of S5 parameter.
ATS5=?	Test command returns the range for <char></char> without command echo and parenthesis.
Note	For either Read and Test command the format of the numbers in output is always 3 digits, left-filled with 0s
Reference	V25ter

S5 - Command Line	Editing Character SELINT 2
ATS5=[<char>]</char>	Set command sets the value of the character recognized by the device as a request
	to delete from the command line the immediately preceding character.
	Parameter:
	<char> - command line editing character (decimal ASCII)</char>



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S5 - Command l	ine Editing Character SELINT 2	
	0127 - factory default value is 8 (ASCII BS)	
ATS5?	Read command returns the current value of S5 parameter.	
	Note: the format of the numbers in output is always 3 digits, left-filled with 0s	<u> </u>
Reference	V25ter	

3.5.3.6.7. Connection Completion Time-Out - S7

S7 - Connection Con	rpletion Time-Out SELINT 0 / 1
ATS7[= <tout>]</tout>	Set command sets the amount of time, in seconds, that the device shall allow between either answering a call (automatically or by A command) or completion of signalling of call addressing information to network (dialling), and establishment of a connection with the remote device. Parameter: <tout> - number of seconds 1255 - factory default value is 60.</tout>
ATS7?	Read command returns the current value of S7 parameter.
ATS7=?	Test command returns the range for <tout></tout> without command echo and parenthesis.
Note	For either Read and Test command the format of the numbers in output is always 3 digits, left-filled with 0s
Reference	V25ter

S7 - Connection Comp	<mark>letion Time-Out</mark>	SELINT 2	
ATS7=[<tout>]</tout>	Set command sets the amount of time, in seconds, that the device shall allow		
	between either answering a call (automatically or by A command) or completion of		
	signalling of call addressing information to network (dialling), and establishment of		
	a connection with the remote device.		
	Parameter:		
	<tout> - number of seconds</tout>		
	1255 - factory default value is 60		
ATS7?	Read command returns the current value of S7 parameter .		
		011 1 11 0	
	Note: the format of the numbers in output is always 3 digits, left-	filled with 0s	
Reference	V25ter		

3.5.3.6.8. — Carrier Off With Firm Time - S10

S10 -Carrier Off With Firm Time SELINT 0 /		SELINT 0 / 1 / 2
ATS10	Execution command has no effect and is included only for backy	ward compatibility
	with landline modems	





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3.5.3.6.9. Escape Prompt Delay - S12

S12 - Escape Prompt D	Oelay SELINT 0 / 1	
ATS12[= <time>]</time>	Set command sets:	
	 the minimum period, before receipt of the first character of the three esca character sequence, during which no other character has to be detected in order to accept it as valid first character; the maximum period allowed between receipt of first, or second, character 	n
	of the three escape character sequence and receipt of the next;	CI
	3) the minimum period, after receipt of the last character of the three escape character sequence, during which no other character has to be detected in order to accept the escape sequence as a valid one.	
	Parameter: <time> - expressed in fiftieth of a second 20255 - factory default value is 50.</time>	
	Note: after CONNECT result code it is possible to accept the first character of the three escape character sequence without having to wait for a minimum period to be passed.	
ATS12?	Read command returns the current value of S12 parameter.	
ATS12=?	Test command returns the range for <time></time> without command echo and parenthesis.	
Note	For either Read and Test command the format of the numbers in output is always digits, left-filled with 0s	3

S12 - Escape Prompt D	<mark>elay</mark>	SELINT 2
ATS12=[<time>]</time>	Set command sets: 1) the minimum period, before receipt of the first character.	er of the three escane
	character sequence, during which no other character has order to accept it as valid first character;	s to be detected in
	2) the maximum period allowed between receipt of first of the three escape character sequence and receipt of the r	
	3) the minimum period, after receipt of the last character character sequence, during which no other character has order to accept the escape sequence as a valid one.	*
	Parameter:	
	<time> - expressed in fiftieth of a second</time>	
	20255 - factory default value is 50.	
	Note: the minimum period S12 has to pass after CONNECT re too, before a received character is accepted as valid first character.	



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S12 - Escape Prompt Delay		SELINT 2
	three escape character sequence.	
ATS12? Read command returns the current value of S12 parameter.		
	Note: the format of the numbers in output is always 3 digits, le	ft-filled with 0s

3.5.3.6.10. Delay To DTR Off - S25

S25 - Delay To DTR	Off SELINT 0 / 1		
ATS25[= <time>]</time>	Set command defines the amount of time, in hundredths of second, that the device will ignore the DTR for taking the action specified by command &D.		
	Parameter:		
	<time> - expressed in hundredths of a second</time>		
	0255 - factory default value is 5.		
	Note: the delay is effective only if its value is greater than 5.		
ATS25?	Read command returns the current value of S25 parameter.		
ATS25=?	Test command returns the range for <time></time> without command echo and parenthesis.		
	Note: the output depends on the choice made through #SELINT command.		
Note	For either Read and Test command the format of the numbers in output is always 3 digits, left-filled with 0s		

S25 -Delay To DTR Of	f SELINT 2	
ATS25=[<time>]</time>	Set command defines the amount of time, in hundredths of second, that the device will ignore the DTR for taking the action specified by command &D.	
	Parameter: <time> - expressed in hundredths of a second 0255 - factory default value is 5.</time>	
	Note: the delay is effective only if its value is greater than 5.	
ATS25?	Read command returns the current value of S25 parameter .	
	Note: the format of the numbers in output is always 3 digits, left-filled with 0s	

3.5.3.6.11. Disconnect Inactivity Timer - S30

S30 - Disconnect Inactivity Timer SELINT 0 /		SELINT 0 / 1	
ATS30[= <tout>]</tout>	Set command defines the inactivity time-out in minutes. The deno characters are exchanged for a time period of at least <tout></tout>	nand defines the inactivity time-out in minutes. The device disconnects if exters are exchanged for a time period of at least <tout></tout> minutes.	
	Parameter:		



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S30 - Disconnect	Inactivity Timer SELINT 0 / 1
	<tout> - expressed in minutes 0 - disabled, disconnection due to inactivity is disabled (factory default). 1255 - inactivity time-out value.</tout>
ATS30?	Read command returns the current value of S30 parameter.
ATS30=?	Test command returns the range for <tout></tout> without command echo and parenthesis. Note: the output depends on the choice made through #SELINT command.
Note	For either Read and Test command the format of the numbers in output is always 3 digits, left-filled with 0s

S30 -Disconnect Inactivity Timer SELIN	
ATS30=[<tout>]</tout>	Set command defines the inactivity time-out in minutes. The device disconnects if no characters are exchanged for a time period of at least <tout></tout> minutes.
	Parameter: <tout> - expressed in minutes 0 - disabled, disconnection due to inactivity is disabled (factory default). 1127 - inactivity time-out value</tout>
ATS30?	Read command returns the current value of S30 parameter .
	Note: the format of the numbers in output is always 3 digits, left-filled with 0s

3.5.3.6.12. Delay Before Forced Hang Up - S38

S38 -Delay Before For	S38 -Delay Before Forced Hang Up SELINT 0 / 1		
ATS38[= <delay>]</delay>	Set command sets the delay, in seconds, between the device's receipt of H command (or ON -to- OFF transition of DTR if device is programmed to follow the signal) and the disconnect operation.		
	Parameter: <delay> - expressed in seconds</delay>		
	0254 - the device will wait <delay></delay> seconds for the remote device to acknowledge all data in the device buffer before disconnecting (factory default value is 0).		
	255 - the device doesn't time-out and continues to deliver data in the buffer until the connection is lost or the data is delivered.		
	Note: delay parameter can be used to ensure that data in device buffer is sent before device disconnects.		
ATS38?	Read command returns the current value of S38 parameter.		
ATS38=?	Test command returns the range of supported values for <delay></delay> without command echo and parenthesis.		
Note	For either Read and Test command the format of the numbers in output is always 3 digits, left-filled with 0s		



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S38 -Delay Before Forced Hang Up SELINT 2		
ATS38=[<delay>]</delay>	Set command sets the delay, in seconds, between the device's recommand (or ON -to- OFF transition of DTR) and the disconnection	-
	Parameter:	
	<delay> - acknowledge timer in units of seconds</delay>	
	0254 - the device will wait <delay></delay> seconds for the remote de	
	acknowledge all data in the device buffer before discordefault value is 0).	nnecting (factory
	255 - the device doesn't time-out and continues to attempt to de	eliver data in the
	buffer until the connection is lost or the data is delivered.	
	Note: <delay></delay> parameter can be used to ensure that data in device before device disconnects.	ce buffer is sent
A TEC200		
ATS38?	Read command returns the current value of S38 parameter .	
	Note: the format of the numbers in output is always 3 digits, left-	-filled with 0s

3.5.4. 3GPP TS 27.007 AT Commands

3.5.4.1. General

3.5.4.1.1. Request Manufacturer Identification - +CGMI

+CGMI - Request Manufacturer Identification		SELINT 0 / 1
AT+CGMI	Execution command returns the device manufacturer identific	ation code without
	command echo. The output depends on the choice made command.	through #SELINT
AT+CGMI?	Read command has the same behaviour as Execution command	
Reference	3GPP TS 27.007	

+CGMI - Request Ma	nufacturer Identification		SELINT 2
AT+CGMI	Execution command returns the device manufacturer identification code without		
	command echo. The output depends on the choice made through #SELINT		
	command.		
AT+CGMI=?	Test command returns O	K result code.	
Reference	3GPP TS 27.007		_

3.5.4.1.2. Request Model Identification - +CGMM

+CGMM - Request Model Identification SELINT 0 / 1					<mark>' 0 / 1</mark>				
AT+CGMM	Execution	command	returns	the	device	model	identification	code	without
	command e	echo.							





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+CGMM - Request Mo	odel Identification	SELINT 0 / 1
Reference	3GPP TS 27.007	

+CGMM - Request Model Identification SELINT 2		
AT+CGMM	Execution command returns the device model identification code without	
	command echo.	
AT+CGMM=?	Test command returns OK result code.	
Reference	3GPP TS 27.007	

3.5.4.1.3. Request Revision Identification - +CGMR

+CGMR - Request Rev	SELINT 0 / 1	
AT+CGMR	Execution command returns device software revision number	without command
	echo.	
AT+CGMR?	Read command has the same behaviour as Execution command	
Reference	3GPP TS 27.007	

+CGMR - Request Revision Identification SELIN			
AT+CGMR	Execution command returns device software revision number without command		
	echo.		
AT+CGMR=?	Test command returns OK result code.		
Reference	3GPP TS 27.007		

3.5.4.1.4. Request Product Serial Number Identification - +CGSN

+CGSN - Request Prod	luct Serial Number Identification	SELINT 0 / 1
AT+CGSN	Execution command returns the product serial number, identifi	ed as the IMEI of
	the mobile, without command echo.	
AT+CGSN?	Read command has the same behaviour as Execution command	
Reference	3GPP TS 27.007	

+CGSN - Request Product Serial Number Identification SELINT 2			
AT+CGSN	Execution command returns the product serial number, identified as the IMEI of		
	the mobile, without command echo.		
AT+CGSN=?	Test command returns OK result code.		
Reference	3GPP TS 27.007		

3.5.4.1.5. Select TE Character Set - +CSCS

+CSCS - Select TE Cha	<mark>aracter Set</mark>	SELINT 0 / 1
AT+CSCS	Set command sets the current character set used by the device.	
[= <chset>]</chset>		
	Parameter:	
	<chset> - character set</chset>	
	"IRA" - ITU-T.50	





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+CSCS - Select TE Ch	naracter Set	SELINT 0 / 1
	"8859-1" - ISO 8859 Latin 1	
	"PCCP437" - PC character set Code Page 437.	
	"UCS2" - 16-bit universal multiple-octet coded character set (IS	SO/IEC10646)
	Note: If parameter is omitted then the behaviour of Set comm Read command.	nand is the same as
AT+CSCS?	Read command returns the current value of the active character s	set.
AT+CSCS=?	Test command returns the supported values of the parameter <ch< td=""><td>nset>.</td></ch<>	nset>.
	For compatibility with previous versions, Test command returns	
	+CSCS: ("IRA")	
	An enhanced version of Test command has been defined: A provides the complete range of values for <chset></chset> .	AT+CSCS=??, that
AT+CSCS=??	Enhanced test command returns the supported values of the para	meter <chset></chset>
Reference	3GPP TS 27.007	

+CSCS - Select TE Cha	aracter Set	SELINT 2
AT+CSCS=	Set command sets the current character set used by the device.	
[<chset>]</chset>		
	Parameter:	
	<chset> - character set</chset>	
	"GSM" - GSM default alphabet (3GPP TS 23.038)	
	"IRA" - international reference alphabet (ITU-T T.50)	
	"8859-1" - ISO 8859 Latin 1 character set	
	"PCCP437" - PC character set Code Page 437	
	"UCS2" - 16-bit universal multiple-octet coded character set (IS	O/IEC10646)
AT+CSCS?	Read command returns the current value of the active character se	et.
AT+CSCS=?	Test command returns the supported values for parameter <chset></chset>	>.
Reference	3GPP TS 27.007	

3.5.4.1.6. International Mobile Subscriber Identity (IMSI) - +CIMI

+CIMI - Request Inter	national Mobile Subscriber Identify (IMSI)	SELINT 0 / 1	
AT+CIMI	Execution command returns the value of the Internal Mobile	Subscriber Identity	
	stored in the SIM without command echo.		
	Note: a SIM card must be present in the SIM card housing, otherwise the commar		
	returns ERROR.		
AT+CIMI?	Read command has the same behaviour as Execution command		
Reference	3GPP TS 27.007		

+CIMI - Request International Mobile Subscriber Identify (IMSI)		
AT+CIMI	Execution command returns the value of the Internal Mobile	ile Subscriber Identity



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+CIMI - Request In	SELINT 2	
	stored in the SIM without command echo.	
	Note: a SIM card must be present in the SIM card housi returns ERROR .	ng, otherwise the command
AT+CIMI=?	Test command returns OK result code.	
Reference	3GPP TS 27.007	_

3.5.4.1.7. Multiplexing Mode - +CMUX

+CMUX - Multiplexing Mode	SELINT 2
AT+CMUX=	Set command is used to enable/disable the 3GPP TS 27.010 multiplexing
<mode></mode>	protocol control channel.
[, <subset></subset>	
[,, <n1></n1>	Parameters:
	<mode> multiplexer transparency mechanism</mode>
	0 - basic option; it is currently the only supported value.
	<subset></subset>
	0 - UIH frames used only; it is currently the only supported value.
	<n1> max frame size, it indicates the maximum length of the</n1>
	information field of CMUX frame (point 5.7.2 of 3GPP TS
	07.10)
	1 to MaxFrameSize
	Note: after entering the <i>Multiplexed Mode</i> an inactive timer of five
	seconds starts. If no CMUX control channel is established before this
	inactivity timer expires the engine returns to <i>AT Command Mode</i>
	Note: CMUX cannot work with the automatic speed detection; the speed
	must be set with AT+IPR= <rate> (before sending AT+CMUX).</rate>
	Note: all the CMUX protocol parameters are fixed as defined in
	GSM07.10 and cannot be changed. From version 10.00.006 is it possible
	to set <n1>; to get its maximum value use the test command.</n1>
	Note: the default max frame size is: N1=127; using this configuration, the
	largest allowed CMUX frame (including start and end flag) is 133 bytes
	long.
	Note: to set a N1 greater then 127, it is mandatory to configure the
1 T 1 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C	module using the command AT#CPUMODE=3
AT+CMUX?	Read command returns all the current values of the parameters in the
	format:
	+CMUV. modes couperts <n1></n1>
AT+CMUX=?	+CMUX: <mode>, <subset>,, <n1></n1></subset></mode>
AITCMUA-:	Test command returns the range of supported values for parameters
	<mode>, <subset> and <n1>.</n1></subset></mode>



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3.5.4.1.8. Select Wireless Network - +WS46

+WS46 - PCCA STD-	+WS46 - PCCA STD-101 Select Wireless Network SELINT 2			
AT+WS46=[<n>]</n>	Set command selects the cellular network (Wireless Data Service, WDS) to operate with the TA (WDS-Side Stack Selection).			
	Parameter: <n> - integer type, it is the WDS-Side Stack to be used by the TA. 12 - GSM digital cellular</n>			
AT+WS46?	Read command reports the currently selected cellular network, in the format: + WS46: <n></n>			
AT+WS46=?	Test command reports the range for the parameter <n>.</n>			
Reference	3GPP TS 27.007			

3.5.4.1.9. Select preferred MT power class - +CPWC

+CPWC – Select p	referred MT power class	SELINT 2			
AT+CPWC=	The set command is used to	The set command is used to select the preferred MT power class for each GSM			
[<class></class>	frequency band supported.	juency band supported.			
[, <band>]]</band>					
	<class>: numeric parameter its possible values are:</class>	<pre><class>: numeric parameter which indicates the power class preference to be used; its possible values are:</class></pre>			
	•	0 - default power class for the relevant band			
	-	ses on DCS1800 and PCS1900 bands;			
		4, 5 - allowable power classes on GSM900 and GSM850 bands;			
	Using this command is possi according to the following ta	ble to reduce the Nominal Maximum output power bles:			
	GSM900 and GSM850				
	Power class Nominal Maximum output power				
	4 (default) 2 W (33 dBm)				
	5	0,8 W (29 dBm)			



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	DCS1800 Power class			
		Nominal Maximum output power		
	1 (default)	1 W (30 dBm)		
	2	0,25 W (24 dBm)		
	PCS1900			
	Power class Nominal Maximum output power			
	1 (default)	1 W (30 dBm)		
	2	0,25 W (24 dBm)		
AT+CPWC?	Note: if <class></class> is given but <band></band> is left out, the power class setting is applied to GSM900 and GSM850 bands. Note: the setting is saved in NVM (and available on following reboot). The read command returns the currently output power class and default output			
	power class for each supported frequency band in the format: +CPWC: <curr_class1>,<def_class1>,<band1> [,<curr_class2>,<def_class2>,<band2>[]] Note: <band1> parameter and its associated power class parameters refer to the currently used frequency band.</band1></band2></def_class2></curr_class2></band1></def_class1></curr_class1>			
	••	<pre>ted bands and their power classes in the format:</pre>		
	3GPP TS 27.007 and GSM 05			

3.5.4.2. Call Control

3.5.4.2.1. Hang Up Call - +CHUP

+CHUP - Hang Up Call		SELINT 0 / 1 / 2
AT+CHUP	Execution command cancels all active and held calls, also if a n is running.	nulti-party session
AT+CHUP=?	Test command returns the OK result code	
Reference	3GPP TS 27.007	





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3.5.4.2.2. Select Bearer Service Type - +CBST

+CBST - Select Bearer	Sarvica Tyna	SELINT 0 / 1
AT+CBST	Set command sets the bearer service <name> with data rate</name>	
[= <speed></speed>	connection element <ce></ce> to be used when data calls are original	•
[, <name></name>	also used during mobile terminated data call setup, in case o	_
[, <name> [,<ce>]]]</ce></name>	scheme calls (refer +CSNS).	1 single numbering
[, \(\mathcal{C}\)]]	scheme cans (refer *C5145).	
	Parameters:	
	<pre><speed> - data rate</speed></pre>	
	0 - autobauding (automatic selection of the speed, factory defau	11t)
	1 - 300 bps (V.21)	1111)
	2 - 1200 bps (V.22)	
	3 - 1200/75 bps (V.23)	
	4 - 2400 bps (V.22bis)	
	6 - 4800 bps (V.32)	
	7 - 9600 bps (V.32)	
	14 - 14400 bps (V.34)	
	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)	
	75 - 14400 bps (V110 or X.31 flag stuffing)	
	<name> - bearer service name</name>	
	0 - data circuit asynchronous (factory default)	
	<ce> - connection element</ce>	
	0 - transparent	
	1 - non transparent (default)	
	Note: the settings	
	AT+CBST=0,0,0	
	AT+CBST=14,0,0	
	AT+CBST=75,0,0	
	are not supported.	
	Note: If all parameters are omitted then the behaviour of Set co	mmand is the same
	as Read command.	
	Note: the following settings are recommended	
	AT+CBST=71,0,1 for mobile-to-mobile calls	
	AT+CBST=7,0,1 for mobile-to-fix calls	
AT+CBST?	Read command returns current value of the parameters < spec	ed>, <name> and</name>
	<pre><ce></ce></pre>	,
AT+CBST=?	Test command returns the supported range of values for the para	meters.
Reference	3GPP TS 27.007	
	1	





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+CBST - Select Bearen	Service Type SELINT 2
AT+CBST=	Set command sets the bearer service <name></name> with data rate <speed></speed> , and the
[<speed></speed>	connection element <ce></ce> to be used when data calls are originated. This setting is
[, <name></name>	also used during mobile terminated data call setup, in case of single numbering
E-1	scheme calls (refer +CSNS).
[, <ce>]]]</ce>	scheme calls (refer +CSNS). Parameters: <speed> - data rate 0 - autobauding (automatic selection of the speed, factory default) 1 - 300 bps (V.21) 2 - 1200 bps (V.22) 3 - 1200/75 bps (V.23) 4 - 2400 bps (V.22bis) 6 - 4800 bps (V.32) 7 - 9600 bps (V.32) 14 - 14400 bps (V.34) 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) 75 - 14400 bps (V.110 or X.31 flag stuffing) **rame* - bearer service name 0 - data circuit asynchronous (factory default) **ce* - connection element 0 - transparent 1 - non transparent (default) Note: the settings **AT+CBST=14,0,0 **AT+CBST=14,0,0 **AT+CBST=75,0,0 are not supported. Note: the following settings are recommended **AT+CBST=71,0,1 for mobile-to-mobile calls **AT+CBST=77,0,1 for mobile-to-fix calls</speed>
AT+CBST?	Read command returns current value of the parameters <speed></speed> , <name></name> and
	<ce></ce>
AT+CBST=?	Test command returns the supported range of values for the parameters.
Reference	3GPP TS 27.007

3.5.4.2.3. Radio Link Protocol - +CRLP

+CRLP - Ra	<mark>dio Link P</mark>	<mark>rotocol</mark>	SELINT 0 / 1 / 2
AT+CRLP=	[<iws></iws>	Set command sets Radio Link Protocol (RLP) parameters use	ed when non-





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+CRLP - Radio Link F	Protocol	SELINT 0/1/2
[, <mws>[,<t1></t1></mws>	transparent data calls are originated	
[, <n2>[,<ver>]]]]]</ver></n2>		
	Parameters:	
	<iws> - IWF window Dimension</iws>	
	161 - factory default value is 61	
	<mws> - MS window Dimension</mws>	
	161 - default value is 61	
	<t1> - acknowledge timer (10 ms units).</t1>	
	39255 - default value is 78	
	<n2> - retransmission attempts</n2>	
	1255 - default value is 6	
	<pre><ver> - protocol version 0</ver></pre>	
AT+CRLP?	Read command returns the current value of the RLP protocol par	ameters.
AT+CRLP=?	Test command returns supported range of values of the RLP prot	ocol parameters.
Reference	3GPP TS 27.007	

3.5.4.2.4. Service Reporting Control - +CR

+CR - Service Report	ting Control SELINT 0 / 1 / 2
AT+CR=[<mode>]</mode>	Set command controls whether or not intermediate result code +CR is returned from TA to TE.
	Parameter:
	<mode></mode>
	0 - disables +CR reporting (factory default)
	1 - enables +CR reporting: the intermediate result code is transmitted at the point during connect negotiation at which the TA has determined which speed and quality of service will be used, before any error control or data compression reports are transmitted, and before the intermediate result code CONNECT is transmitted. Its format is:
	+CR: <serv></serv>
	where:
	<pre><serv> ASYNC - asynchronous transparent SYNC - synchronous transparent REL ASYNC - asynchronous non-transparent REL SYNC - synchronous non-transparent.</serv></pre>
	Note: this command replaces V.25ter [14] command Modulation Reporting Control



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+CR - Service Reporting Control	
	(+MR), which is not appropriate for use with a GSM terminal.
AT+CR?	Read command returns whether or not intermediate result code +CR is enabled, in the format:
	+CR: <mode></mode>
AT+CR=?	Test command returns the supported range of values of parameter <mode></mode> .
Reference	3GPP TS 27.007

3.5.4.2.5. Extended Error Report - +CEER

+CEER - Extended Er	ror Report SELINT 0 / 1
AT+CEER	Execution command returns one or more lines of information text <report> offering the TA user an extended error report, in the format: +CEER: <report> This report regards some error condition that may occur: • the failure in the last unsuccessful call setup (originating or answering) • the last call release Note: if none of the previous conditions has occurred since power up then "No error" condition is reported</report></report>
AT+CEER?	Read command reports a information text regarding some error condition that may occur
AT+CEER=?	Test command returns OK result code.
Reference	3GPP TS 27.007, GSM 04.08

+CEER - Extended Err	<mark>ror Report</mark>	SELINT 2
AT+CEER	Execution command returns one or more lines of information text offering the TA user an extended error report, in the format: +CEER: <report> This report regards some error condition that may occur: • the failure in the last unsuccessful call setup (originating or an extended) the last call release Note: if none of the previous conditions has occurred since power "Normal, unspecified" condition is reported</report>	nswering)
AT+CEER=?	Test command returns OK result code.	



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+CEER - Extended Err	<mark>ror Report</mark>	SELINT 2
Reference	3GPP TS 27.007, GSM 04.08	

3.5.4.2.6. Cellular Result Codes - +CRC

+CRC - Cellular Resu	+CRC - Cellular Result Codes SELINT 0 / 1	
AT+CRC= <mode></mode>	Set command controls whether or not the extended format of incindication is used.	coming call
	Parameter: <mode></mode>	
	0 - disables extended format reporting (factory default)1 - enables extended format reporting	
	When enabled, an incoming call is indicated to the TE with unse	olicited result code:
	+CRING: <type></type>	
	instead of the normal RING.	
	where	
	<type> - call type:</type>	
	DATA	
	FAX - facsimile (TS 62)	
	VOICE - normal voice (TS 11)	
AT+CRC?	Read command returns current value of the parameter <mode></mode> .	
AT+CRC=?	Test command returns supported values of the parameter <mode< th=""><th>>.</th></mode<>	> .
Reference	3GPP TS 27.007	

+CRC - Cellular Resu	lt Codes SELINT 2
AT+CRC=	Set command controls whether or not the extended format of incoming call
[<mode>]</mode>	indication is used.
	Parameter: <mode> 0 - disables extended format reporting (factory default) 1 - enables extended format reporting: When enabled, an incoming call is indicated to the TE with unsolicited result code +CRING: <type> instead of the normal RING.</type></mode>
	where
	<type> - call type:</type>
	ASYNC - asynchronous transparent data



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+CRC - Cellular Result Codes SELINT		SELINT 2
	SYNC - synchronous transparent data	
	REL ASYNC - asynchronous non-transparent data	
	REL SYNC - synchronous non-transparent data	
	FAX - facsimile (TS 62)	
	VOICE - normal voice (TS 11)	
AT+CRC?	Read command returns current value of the parameter <mode>.</mode>	
AT+CRC=?	Test command returns supported values of the parameter <mode></mode>	>.
Reference	3GPP TS 27.007	

3.5.4.2.7. Single Numbering Scheme - +CSNS

+CSNS - Single Number	ering Scheme SELINT 0 / 1 / 2
AT+CSNS= [<mode>]</mode>	Set command selects the bearer to be used when no bearer capability information is provided within a mobile terminated call. The command has to be set before the call comes. Parameter values set with +CBST command shall be used when <mode> equals to a data service.</mode>
	Parameter: <mode> 0 - voice (factory default) 2 - fax (TS 62) 4 - data</mode>
	Note: if +CBST parameter is set to a value that is not applicable to single numbering calls, ME/TA shall map the value to the closest valid one. E.g. if user has set <speed>=71, <name>=0 and <ce>=1 (non-transparent asynchronous 9600 bps V.110 ISDN connection) for mobile originated calls, ME/TA shall map the values into non-transparent asynchronous 9600 bps V.32 modem connection when single numbering scheme call is answered.</ce></name></speed>
AT+CSNS?	Read command returns current value of the parameter <mode></mode> .
AT+CSNS=?	Test command returns supported values of parameter <mode></mode> .
Reference	3GPP TS 27.007

3.5.4.2.8. Voice Hang Up Control - +CVHU

+CVHU - Voice Hai	g Up Control SELINT 0 / 1
AT+CVHU[=	Set command selects whether ATH or " drop DTR " shall cause a voice connection
<mode>]</mode>	to be disconnected or not.
	Parameter:
	<mode></mode>
	0 - "Drop DTR" ignored but OK result code given. ATH disconnects.





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+CVHU - Voice Hang	<mark>g Up Control</mark>	SELINT 0 / 1
	1 - "Drop DTR" and ATH ignored but OK result code given.	
	2 - " Drop DTR " behaviour according to &D setting. ATH discordefault).	onnects (factory
	Note: if parameter <mode></mode> is omitted the behaviour of Set comm. Read command.	nand is the same as
AT+CVHU?	Read command reports the current value of the <mode> paramete</mode>	er,
	+CVHU: <mode></mode>	
AT+CVHU=?	Test command reports the range of supported values for paramete	er <mode></mode>

+CVHU - Voice Hang	Up Control SELINT 2
AT+CVHU=	Set command selects whether ATH or " drop DTR " shall cause a voice connection
[<mode>]</mode>	to be disconnected or not.
	Parameter: <mode> 0 - "Drop DTR" ignored but OK result code given. ATH disconnects. 1 - "Drop DTR" and ATH ignored but OK result code given. 2 - "Drop DTR" behaviour according to &D setting. ATH disconnects (factory default).</mode>
AT+CVHU?	Read command reports the current value of the <mode></mode> parameter, in the format: +CVHU: <mode></mode>
AT+CVHU=?	Test command reports the range of supported values for parameter <mode></mode>

3.5.4.3. Network Service Handling

3.5.4.3.1. Subscriber Number - +CNUM

+CNUM - Subscriber Number		
AT+CNUM	Execution command returns the MSISDN (if the phone number of the device habeen stored in the SIM card) in the format:	S
	+CNUM: <number>,<type></type></number>	
	where	
	<number> - string containing the phone number in the format <type></type></number>	
	<type> - type of number:</type>	
	129 - national numbering scheme	
	145 - international numbering scheme (contains the character "+").	
Reference	3GPP TS 27.007	

+CNUM - Subscriber N	<mark>umber</mark>	SELINT 2
AT+CNUM		
	If the ENS functionality has not been	



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+CNUM - Subscriber	· Number	SELINT 2
- CI(CIVI SUBSCIENCE	previously enabled (see #ENS)	
	Execution command returns the MSISDN (if the phone number been stored in the SIM card) in the format:	of the device has
	+CNUM: <alpha>,<number>,<type></type></number></alpha>	
	If the ENS functionality has been previousl enabled (see #ENS)	у
	Execution command returns the MSISDN (if the phone number been stored in the SIM card) in the format:	of the device has
	+CNUM: <alpha>,<number>,<type>[<cr><lf> +CNUM: <alpha>,<number>,<type>[]]</type></number></alpha></lf></cr></type></number></alpha>	
	where: <alpha> - alphanumeric string associated to <number>; used of be the one selected with +CSCS. <number> - string containing the phone number in the format <type> - type of number: 129 - national numbering scheme 145 - international numbering scheme (contains the character)</type></number></number></alpha>	<type></type>
AT+CNUM=?	Test command returns the OK result code	· <i>J</i> ·
Reference	3GPP TS 27.007	

3.5.4.3.2. Read Operator Names - +COPN

+COPN - Read Operat	t <mark>or Names</mark>	SELINT 0 / 1
AT+COPN	Execution command returns the list of operator names from the I	ME in the format:
	+COPN: <numeric1>,<alpha1>[<cr><lf><cr><lf> +COPN: <numeric2>,<alpha2>[]]</alpha2></numeric2></lf></cr></lf></cr></alpha1></numeric1>	
	where: <numericn> - string type, operator in numeric format (see +CO <alphan> - string type, operator in long alphanumeric format (see</alphan></numericn>	-
	Note: each operator code <numericn> that has an alphanumeric <alphan> in the ME memory is returned</alphan></numericn>	equivalent
Reference	3GPP TS 27.007	



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+COPN - Read Ope	rator Names SELINT 2	
AT+COPN	Execution command returns the list of operator names from the ME in the format:	
	+COPN: <numeric1>,<alpha1>[<cr><lf> +COPN: <numeric2>,<alpha2>[]]</alpha2></numeric2></lf></cr></alpha1></numeric1>	
	where: <numericn> - string type, operator in numeric format (see +COPS) <alphan> - string type, operator in long alphanumeric format (see +COPS)</alphan></numericn>	
	Note: each operator code <numericn> that has an alphanumeric equivalent <alphan> in the ME memory is returned</alphan></numericn>	
AT+COPN=?	Test command returns the OK result code	
Reference	3GPP TS 27.007	

3.5.4.3.3. Network Registration Report - +CREG

+CREG - Networl	-CREG - Network Registration Report SELINT 0 / 1		
AT+CREG[=	Set command enables/disables network registration reports depending on the		
[<mode>]]</mode>	parameter <mode></mode> .		
	Parameter: <mode> 0 - disable network registration unsolicited result code (factory default) 1 - enable network registration unsolicited result code 2 - enable network registration unsolicited result code with network Cell identification data</mode>		
	If <mode>=1, network registration result code reports:</mode>		
	+CREG: <stat></stat>		
	where <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</stat>		
	If <mode>=2, network registration result code reports:</mode>		
	+CREG: <stat>[,<lac>,<ci>]</ci></lac></stat>		
	where: <lac> - Local Area Code for the currently registered on cell</lac>		



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+CREC - Notwork	Registration Report SELINT 0 / 1	
-CREG - Network	Ci> - Cell Id for the currently registered on cell	
	Note: <lac> and <ci> are reported only if <mode>=2 and the mobile is registered on some network cell. Note: issuing AT+CREG<cr> is the same as issuing the Read command.</cr></mode></ci></lac>	
	Note: issuing AT+CREG=<cr></cr> is the same as issuing the command AT+CREG=0<cr></cr> .	
AT+CREG?	Read command reports the <mode></mode> and <stat></stat> parameter values in the format:	
	+CREG: <mode>,<stat>[,<lac>,<ci>]</ci></lac></stat></mode>	
	Note: Lac> and Ci> are reported only if mode>=2 and the mobile is registered on some network cell.	
AT+CREG=?	Test command returns the range of supported <mode></mode>	
Example	AT OK at+creg? +CREG: 0,2 OK (the MODULE is in network searching state) at+creg? +CREG: 0,2 OK at+creg? +CREG: 0,2 OK at+creg? +CREG: 0,2 OK at+creg? +CREG: 0,1	
	OK (the MODULE is registered) at+creg? +CREG: 0,1 OK	
Reference	3GPP TS 27.007	

+CREG - Network Reg	<mark>gistration Report</mark>	SELINT 2
AT+CREG=	Set command enables/disables network registration reports depen	nding on the
[<mode>]</mode>	parameter <mode></mode> .	
	Parameter:	



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+CREG - Network	Registration Report	SELINT 2
	<mode></mode>	
	 0 - disable network registration unsolicited result code (fac 1 - enable network registration unsolicited result code 2 - enable network registration unsolicited result code with identification data 	•
	If <mode>=1, network registration result code reports:</mode>	
	+CREG: <stat></stat>	
	where <stat> 0 - not registered, ME is not currently searching a new 1 - registered, home network 2 - not registered, but ME is currently searching a new 3 - registration denied 4 -unknown 5 - registered, roaming</stat>	
	If <mode>=2</mode> , network registration result code reports:	
	+CREG: <stat>[,<lac>,<ci>]</ci></lac></stat>	
	where:	
	registered on some network cell.	
AT+CREG?	Read command reports the <mode></mode> and <stat></stat> parameter v + CREG: <mode></mode> , <stat></stat> [, <lac></lac> , <ci></ci>]	ralues in the format:
	Note: Lac> and Ci> are reported only if mode>=2 and registered on some network cell.	the mobile is
AT+CREG=?	Test command returns the range of supported <mode></mode>	
Example	AT OK at+creg? +CREG: 0,2 OK (the MODULE is in network searching state) at+creg? +CREG: 0,2	
	OK at+creg?	



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+CREG - Network	Registration Report SELINT 2
	+CREG: 0,2 OK
	at+creg? +CREG: 0,2 OK at+creg?
	+CREG: 0,1 OK (the MODULE is registered) at+creg? +CREG: 0,1
Reference	OK 3GPP TS 27.007
Note	There are situations in which the presentation of the URC controlled by +CREG slightly different from ETSI specifications: e.g. it is possible to have an excessive presentation of the URC +CREG: 4. We identified this behaviour and decided to maintain it as default for backward compatibility issues. It is indeed possible to avoid it simply issuing AT#REGMODE=1 (see #REGMODE): this puts the Operation Mode of Registration Status Commands in 'Enhanced Registration Operation Mode' which is more formal.

3.5.4.3.4. Operator Selection - +COPS

+COPS - Operator Sel	lection SELINT 0 / 1
AT+COPS[=	Set command forces an attempt to select and register the GSM network operator.
[<mode></mode>	<mode> parameter defines whether the operator selection is done automatically or</mode>
[, <format></format>	it is forced by this command to operator <oper></oper> .
[, <oper>]]]]</oper>	The operator <oper></oper> shall be given in format <format></format> .
	The behaviour of +COPS command depends on the last #COPSMODE setting.
	(#COPSMODE=0)
	Parameters:
	<mode></mode>
	 0 - automatic choice (the parameter <oper> will be ignored) (factory default)</oper> 1 - manual choice unlocked (network is kept as long as available, then it can be changed with some other suited networks to guarantee the service) 2 - deregister from GSM network; the MODULE is kept unregistered until a +COPS with <mode>=0, 1, 4 or 5 is issued</mode>
	3 - set only <format></format> parameter (the parameter <oper></oper> will be ignored)
	4 - manual/automatic (<oper> field shall be present); if manual selection fails, automatic mode (<mode>=0) is entered</mode></oper>
	5 - manual choice locked (network is kept fixed, if the chosen network is not available, then the mobile has no service)



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	<pre><format> 0 - alphanumeric long form (max length 16 digits)</format></pre>	
	0 - alphanumeric long form (max length 16 digits)	
	1 - alphanumeric short form	
	2 - Numeric 5 or 6 digits [country code (3) + network code	(2 or 3)]
	<pre><oper>: network operator in format defined by <format> pa</format></oper></pre>	nrameter.
	(#COPSMODE=1) Parameters:	
	<pre><mode> 0 - automatic choice (the parameter <oper> will be ignored 1 - manual choice (<oper> field shall be present) 2 - deregister from GSM network; the MODULE is keep</oper></oper></mode></pre>	
	+COPS with <mode>=0, 1 or 4 is issued 3 - set only <format> parameter (the parameter <oper> wi</oper></format></mode>	ll be ignored)
	4 - manual/automatic (<oper></oper> field shall be present); if automatic mode (<mode>=0</mode>) is entered	manual selection fails,
	<pre><format> 0 - alphanumeric long form (max length 16 digits)</format></pre>	
	2 - Numeric 5 or 6 digits [country code (3) + network code	(2 or 3)]
	<pre><oper>: network operator in format defined by <format> pa</format></oper></pre>	nrameter.
	Note: <mode> parameter setting is stored in NVM and avail is not 3 (i.e.: set only <format> parameter).</format></mode>	able at next reboot, if it
	Note: if <mode>=1 or 4 (or 5 if #COPSMODE=0), the sel in NVM too and is available at next reboot (this will happen inserted)</mode>	
	Note: <format></format> parameter setting is never stored in NVM	
	Note: issuing AT+COPS < CR> is the same as issuing the Re	ead command.
	Note: issuing AT+COPS= <cr> is the same as i AT+COPS=0<cr>.</cr></cr>	ssuing the command
AT+COPS?	Read command returns current value of <mode>,<format> <format>; if no operator is selected, <format> and <oper></oper></format></format></format></mode>	-
	+COPS: <mode>[, <format>, <oper>]</oper></format></mode>	
AT+COPS=?	Test command returns a list of quadruplets, each representin the network.	g an operator present in



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+COPS - Operator Sel	ection SELINT 0 / 1
- COID Operator Ser	The behaviour of Test command depends on the last #COPSMODE setting.
	g.
	(#COPSMODE=0)
	The command outputs as many rows as the number of quadruplets, each of them is
	the format:
	+COPS: (<stat>,<oper (in="" <format="">=0)>,"",</oper></stat>
	<pre><oper (in="" <format="">=2)>)</oper></pre>
	where
	<stat> - operator availability</stat>
	0 - unknown
	1 - available
	2 - current
	3 - forbidden
	(#COPSMODE=1)
	The quadruplets in the list are separated by commas:
	The quadruplets in the list are separated by commas.
	+COPS: [list of supported (<stat>,<oper (in="" <format="">=0)>,,</oper></stat>
	<pre><oper (in="" <format="">=2)>)s][,,(list of supported <mode>s),</mode></oper></pre>
	(list of supported <format>s)]</format>
	(
	where
	<stat> - operator availability</stat>
	0 - unknown
	1 - available
	2 - current
	3 - forbidden
	Note: since with this command a network scan is done, this command may requir
	some seconds before the output is given.
	Note: The value of parameter <oper></oper> (in <format>=0</format>) is the same as the forme
	GM862 family products.
Reference	3GPP TS 27.007

+COPS - Operator Se	<mark>lection</mark>	SELINT 2
AT+COPS=	Set command forces an attempt to select and register the GSM n	etwork operator.
[<mode></mode>	<mode> parameter defines whether the operator selection is don</mode>	e automatically or
[, <format></format>	it is forced by this command to operator <oper></oper> .	
[, <oper>]]]</oper>	The operator <oper></oper> shall be given in format <format></format> .	
Parameters:		
	<mode></mode>	





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+COPS - Operator	Selection SELINT 2	
+COPS - Operator	SELINT 2 0 - automatic choice (the parameter <oper> will be ignored) (factory default) 1 - manual choice (<oper> field shall be present) 2 - deregister from GSM network; the MODULE is kept unregistered until a +COPS with <mode>=0, 1 or 4 is issued 3 - set only <format> parameter (the parameter <oper> will be ignored) 4 - manual/automatic (<oper> field shall be present); if manual selection fails, automatic mode (<mode>=0) is entered <format> 0 - alphanumeric long form (max length 16 digits) 2 - Numeric 5 or 6 digits [country code (3) + network code (2 or 3)] <oper>: network operator in format defined by <format> parameter.</format></oper></format></mode></oper></oper></format></mode></oper></oper>	
	Note: <mode> parameter setting is stored in NVM and available at next reboot, is not 3 (i.e.: set only <format> parameter). Note: if <mode>=1 or 4, the selected network is stored in NVM too and is available at next reboot (this will happen even with a new SIM inserted)</mode></format></mode>	if it
	Note: <format></format> parameter setting is never stored in NVM	
AT+COPS?	Read command returns current value of <mode>,<format> and <oper> in format<format>; if no operator is selected, <format> and <oper> are omitted +COPS: <mode>[, <format>, <oper>]</oper></format></mode></oper></format></format></oper></format></mode>	at
AT+COPS=?	Test command returns a list of quadruplets, each representing an operator present the network. The quadruplets in the list are separated by commas: +COPS: [list of supported (<stat>,<oper (in="" <format="">=0)>,,</oper></stat>	
Dafaranas	some seconds before the output is given.	
Reference	3GPP TS 27.007	

3.5.4.3.5. Facility Lock/Unlock - +CLCK

+CLCK - Facility Lock	<mark>k/Unlock</mark>	SELINT 0 / 1
AT+CLCK=	Execution command is used to lock or unlock a ME o a net	work facility.



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+CLCK - Facility Loc	ck/Unlock SELINT 0 / 1
<fac>,<mode></mode></fac>	
[, <passwd></passwd>	Parameters:
[, <class>]]</class>	<fac> - facility</fac>
[, <ciass>]]</ciass>	 "SC" - SIM (PIN request) (device asks SIM password at power-up and when this lock command issued) "AO"- BAOC (Barr All Outgoing Calls) "OI" - BOIC (Barr Outgoing International Calls) "OX" - BOIC-exHC (Barr Outgoing International Calls except to Home Country) "AI" - BAIC (Barr All Incoming Calls) "IR" - BIC-Roam (Barr Incoming Calls when Roaming outside the home country) "AB" - All Barring services (applicable only for <mode>=0)</mode> "AG" - All outGoing barring services (applicable only for <mode>=0)</mode> "AC" - All inComing barring services (applicable only for <mode>=0)</mode> "FD" - SIM fixed dialling memory feature (if PIN2 authentication has not been
	done during the current session, PIN2 is required as <passwd></passwd>) "PN" - network Personalisation "PU" - network subset Personalisation
	<mode> - defines the operation to be done on the facility 0 - unlock facility 1 - lock facility 2 - query status</mode>
	<pre><passwd> - shall be the same as password specified for the facility from the DTE user interface or with command Change Password +CPWD</passwd></pre>
	<class> - sum of integers each representing a class of information (default is 7) 1- voice (telephony) 2 - data (refers to all bearer services) 4 - fax (facsimile services) 8 - short message service 16 - data circuit sync 32 - data circuit async 64 - dedicated packet access 128 - dedicated PAD access</class>
	Note: when <mode>=2 and command successful, it returns:</mode>
	+CLCK: <status></status>
	where <status> - current status of the facility 0 - not active 1 - active</status>
AT+CLCK=?	Test command reports all the facility supported by the device.
Reference .	3GPP TS 27.007





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+CLCK - Facility Lock	<mark>k/Unlock</mark>	SELINT 0 / 1
Note	The improving command @CLCK has been defined.	

Note	The improving command @CLCK has been defined	d.
+CLCK - Facility 1	Lock/Unlock	SELINT 2
AT+CLCK=	Execution command is used to lock or unlock a ME	o a network facility.
<fac>,<mode></mode></fac>		
[, <passwd></passwd>	Parameters:	
[, <class>]]</class>	<fac> - facility</fac>	
	"PS" - PH-SIM (lock PHone to SIM card) MT asks	s password when other than

used cards thus not requiring password when they are inserted "PF" - lock Phone to the very First inserted SIM card (MT asks password when other than the first SIM card is inserted)

"SC" - SIM (PIN request) (device asks SIM password at power-up and when this lock command issued)

current SIM card inserted; MT may remember certain amount of previously

"AO"- BAOC (Barr All Outgoing Calls)

"OI" - BOIC (Barr Outgoing International Calls)

"OX" - BOIC-exHC (Barr Outgoing International Calls except to Home Country)

"AI" - BAIC (Barr All Incoming Calls)

"IR" - BIC-Roam (Barr Incoming Calls when Roaming outside the home country)

"AB" - All Barring services (applicable only for <mode>=0)

"AG" - All outGoing barring services (applicable only for <mode>=0)

"AC" - All inComing barring services (applicable only for <mode>=0)

"FD" - SIM fixed dialling memory feature (if PIN2 authentication has not been done during the current session, PIN2 is required as <passwd>)

"PN" - network Personalisation

"PU" - network subset Personalisation

"PP" - service Provider Personalization

"PC" - Corporate Personalization

"MC" – Multi Country Lock²⁸

<mode> - defines the operation to be done on the facility

0 - unlock facility

1 - lock facility

2 - query status

<passwd> - shall be the same as password specified for the facility from the DTE user interface or with command Change Password +CPWD

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

1 - voice (telephony)

2 - data (refers to all bearer services)

4 - fax (facsimile services)

8 - short message service

16 - data circuit sync

32 - data circuit async

64 - dedicated packet access

128 - dedicated PAD access

²⁸ Only available on software version 10.00.00x





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+CLCK - Facility	Lock/Unlock	SELINT 2
	Note: when <mode>=2 and command successful, it returns +CLCK: <status>[,<class1>[<cr><lf>+CLCK: <status []]<="" th=""><th></th></status></lf></cr></class1></status></mode>	
	where <status> - the current status of the facility</status>	
	0 - not active 1 - active <classn> - class of information of the facility</classn>	
AT+CLCK=?	Test command reports all the facilities supported by the de	vice.
Reference	3GPP TS 27.007	
Example	Querying such a facility returns an output on three rows, the second for data, the third for fax:	he first for voice, the
	AT+CLCK ="AO",2 +CLCK: <status>,1 +CLCK: <status>,2 +CLCK: <status>,4</status></status></status>	

3.5.4.3.6. Facility Improved Lock/Unlock - @CLCK

@CLCK - Facility Imp	oroved Lock/Unlock	SELINT 0 / 1
AT@CLCK=	Execution command is used to lock or unlock a ME or a network	k facility.
<fac>,<mode></mode></fac>		
[, <passwd></passwd>	Parameters:	
[, <class>]]</class>	<fac> - facility</fac>	
	"SC" - SIM (PIN request) (device asks SIM password at power-	-up and when this
	lock command issued)	
	"AO"- BAOC (Barr All Outgoing Calls)	
	"OI" - BOIC (Barr Outgoing International Calls)	
	"OX" - BOIC-exHC (Barr Outgoing International Calls except	to Home Country)
	"AI" - BAIC (Barr All Incoming Calls)	
	"IR" - BIC-Roam (Barr Incoming Calls when Roaming outside	the home country)
	"AB" - All Barring services (applicable only for <mode>=0</mode>)	
	"AG" - All outGoing barring services (applicable only for <mo< th=""><th>*</th></mo<>	*
	"AC" - All inComing barring services (applicable only for <mo< th=""><th></th></mo<>	
	"FD" - SIM fixed dialling memory feature (if PIN2 authenticati	
	done during the current session, PIN2 is required as <pre>pa</pre>	asswd>)
	"PN" - network Personalisation	
	"PU" - network subset Personalisation	
	<mode> - defines the operation to be done on the facility</mode>	
	0 - unlock facility	
	1 - lock facility	
	·	
	2 - query status	



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@CLCK - Facility]	mproved Lock/Unlock	SELINT 0 / 1
	<pre><passwd> - shall be the same as password specified for to user interface or with command Change Pas</passwd></pre>	
	<class> - sum of integers each representing a class of info 1- voice (telephony) 2 - data (refers to all bearer services) 4 - fax (facsimile services) 8 - short message service 16 - data circuit sync 32 - data circuit async 64 - dedicated packet access 128 - dedicated PAD access</class>	ormation (default is 7)
	Note: when <mode>=2</mode> and command successful, it return@CLCK: <status></status> [, <class1></class1> [<cr><lf>@CLCK: <status></status>,<class2></class2>[]]</lf></cr>	ns:
	where <status> - the current status of the facility 0 - not active 1 - active <classn> - class of information of the facility</classn></status>	
AT@CLCK=?	Test command reports all the facilities supported by the d	levice.
Reference	3GPP TS 27.007	
Example	Querying such a facility returns an output on three rosecond for data, the third for fax:	ws, the first for voice, the
	AT@CLCK ="AO",2 @CLCK: <status>,1 @CLCK: <status>,2 @CLCK: <status>,4</status></status></status>	

3.5.4.3.7. Change Facility Password - +CPWD

+CPWD - Change Facility Password SELINT 0 / 1		SELINT 0 / 1
AT+CPWD= <fac>,</fac>	Execution command changes the password for the facility lock	function defined by
<oldpwd>,</oldpwd>	command Facility Lock +CLCK.	
<newpwd></newpwd>		
	Parameters:	
	<fac> - facility</fac>	
	"SC" - SIM (PIN request)	
	"AB" - All barring services	
	"P2" - SIM PIN2	



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+CPWD - Change	Facility Password SELINT 0 / 1	
	<pre><oldpwd> - string type, it shall be the same as password specified for the facility</oldpwd></pre>	
Note: parameter <oldpwd> is the old password while <newpwd> is the old password while</newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></newpwd></oldpwd>		
Example	available facilities and the maximum length of their password (<pwdlength></pwdlength>) at+cpwd=? +CPWD: ("SC",8),("AB",4),("P2",4)	
Reference	OK 3GPP TS 27.007	

+CPWD - Change Facility Password SELINT 2	
AT+CPWD= <fac>,</fac>	Execution command changes the password for the facility lock function defined by
<oldpwd>,</oldpwd>	command Facility Lock +CLCK.
<newpwd></newpwd>	
	Parameters:
	<fac> - facility</fac>
	"SC" - SIM (PIN request)
	"AB" - All barring services
	"P2" - SIM PIN2
	"PS"- SIM VO
	<pre><oldpwd> - string type, it shall be the same as password specified for the facility</oldpwd></pre>
AT+CPWD=?	Test command returns a list of pairs (sac >, spwdlength>) which presents the
	available facilities and the maximum length of their password (pwdlength)
Example	at+cpwd=? +CPWD: ("SC",8),("AB",4),("P2",8),("PS",8)
D 0	OK
Reference	3GPP TS 27.007

3.5.4.3.8. Calling Line Identification Presentation - +CLIP

+CLIP - Calling Line I	dentification Presentation	SELINT 0 / 1	
AT+CLIP[=[< n>]]	Set command enables/disables the presentation of the CLI (Calling Line Identity) at		
	the TE. This command refers to the GSM supplementary service CLIP (Calling		
	Line Identification Presentation) that enables a called subscriber	to get the CLI of	
	the calling party when receiving a mobile terminated call.		
	Parameters:		





+CLIP - Calling Line	Identification Presentation	SELINT 0 / 1
	<n></n>	
	0 - disables CLI indication (factory default)	
	1 - enables CLI indication If enabled the device reports after each RING the response: +CLIP: <number>,<type>,"",128,<alpha>,<cli_validity> where: <number> - string type phone number of format specified by <type></type></number></cli_validity></alpha></type></number>	
	<type> - type of address octet in integer format</type>	, r
	128 - both the type of number and the numbering plan are unkn	nown
	129 - unknown type of number and ISDN/Telephony numbering	
	145 - international type of number and ISDN/Telephony numb the character "+")	
	/	> corresponding to
	<alpha> - string type; alphanumeric representation of <number> corresponding the entry found in phonebook; used character set should be the one selected with command Select TE character set +CSCS.</number></alpha>	
	<cli validity=""></cli>	
	 0 - CLI valid 1 - CLI has been withheld by the originator. 2 - CLI is not available due to interworking problems or limitation or originating network. Note: in the +CLIP: response they are currently not reported either the subaddress information (it's always "" after the 2nd comma) and the subaddress type information (it's always 128 after the 3rd comma) Note: issuing AT+CLIP<cr> is the same as issuing the Read command.</cr> 	
	Note: issuing AT+CLIP=<cr></cr> is the same as issuing the comm AT+CLIP=0<cr></cr> .	mand
AT+CLIP?	Read command returns the presentation status of the CLI in the	format:
	+CLIP: <n>,<m></m></n>	
	where:	
	<n></n>	
	0 - CLI presentation disabled	
	1 - CLI presentation enabled	
	<m> - status of the CLIP service on the GSM network</m>	
	0 - CLIP not provisioned	
	1 - CLIP provisioned	
	2 - unknown (e.g. no network is present)	



+CLIP - Calling Line	Identification Presentation	SELINT 0 / 1
	Note: This command issues a status request to the network, her seconds to give the answer due to the time needed to exchange	-
AT+CLIP=?	Test command returns the supported values of the parameter <	 >
Reference	3GPP TS 27.007	
Note	The command changes only the report behaviour of the device CLI supplementary service setting on the network.	e, it does not change

+CLIP - Calling Line l	Identification Presentation	SELINT 2
+CLIP - Calling Line AT+CLIP=[<n>]</n>	Set command enables/disables the presentation of the CLI (Calling the TE. This command refers to the GSM supplementary services. Line Identification Presentation) that enables a called subscriber the calling party when receiving a mobile terminated call. Parameters: <n> 0 - disables CLI indication (factory default) 1 - enables CLI indication If enabled the device reports after each RING the response: +CLIP: <number>,<type>,"",128,<alpha>,<cli_validity> where: <number> - string type phone number of format specified by <t <type=""> - type of address octet in integer format 128 - both the type of number and the numbering plan are unknown.</t></number></cli_validity></alpha></type></number></n>	ng Line Identity) at cCLIP (Calling to get the CLI of ype> own
	129 - unknown type of number and ISDN/Telephony numbering 145 - international type of number and ISDN/Telephony number the character "+") <alpha> - string type; alphanumeric representation of <numbers +cso<="" character="" command="" entry="" found="" in="" phonebook;="" select="" selected="" set="" shows="" te="" th="" the="" used="" with=""><th>g plan ering plan (contains > corresponding to uld be the one</th></numbers></alpha>	g plan ering plan (contains > corresponding to uld be the one
	 CLI_validity> 0 - CLI valid 1 - CLI has been withheld by the originator. 2 - CLI is not available due to interworking problems or limitatinetwork. 	ion or originating
	Note: in the +CLIP: response they are currently not reported eith information (it's always "" after the 2 nd comma) and the subadd information (it's always 128 after the 3 rd comma)	ner the subaddress ress type
AT+CLIP?	Read command returns the presentation status of the CLI in the f +CLIP: <n>,<m></m></n>	Format:



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+CLIP - Calling Line	Identification Presentation	SELINT 2
	where:	
	<n></n>	
	0 - CLI presentation disabled	
	1 - CLI presentation enabled	
	<m> - status of the CLIP service on the GSM network</m>	
	0 - CLIP not provisioned	
	1 - CLIP provisioned	
	2 - unknown (e.g. no network is present)	
	Note: This command issues a status request to the network, hence seconds to give the answer due to the time needed to exchange details.	•
AT+CLIP=?	Test command returns the supported values of parameter <n></n>	
Reference	3GPP TS 27.007	
Note	The command changes only the report behaviour of the device, i	it does not change
	CLI supplementary service setting on the network.	

3.5.4.3.9. Calling Line Identification Restriction - +CLIR

+CLIR - Calling Line	Identification Restriction	SELINT 0 / 1
AT+CLIR[=[<n>]]</n>	Set command overrides the CLIR subscription when temporary is a default adjustment for all following outgoing calls. This adjusted by using the opposite command. This command refers to CLIR-service (GSM 02.81) that allows a to enable or disable the presentation of the CLI to the called part a call. Parameter: <n> - facility status on the Mobile 0 - CLIR facility according to CLIR service network status 1 - CLIR facility active (CLI not sent) 2 - CLIR facility not active (CLI sent) Note: issuing AT+CLIR<cr> is the same as issuing the Read of</cr></n>	mode is provisioned ustment can be a calling subscriber y when originating
	Note: issuing AT+CLIR= <cr> is the same as issuing the commaT+CLIR=0<cr>.</cr></cr>	mand
AT+CLIR?	Read command gives the default adjustment for all outgoing call triggers an interrogation of the provision status of the CLIR serv <n> - facility status on the Mobile</n>	
	0 - CLIR facility according to CLIR service network status 1 - CLIR facility active (CLI not sent) 2 - CLIR facility not active (CLI sent) <m> - facility status on the Network</m>	



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+CLIR - Calling Line	Identification Restriction	SELINT 0 / 1
	0 - CLIR service not provisioned	
	1 - CLIR service provisioned permanently	
	2 - unknown (e.g. no network present, etc.)	
	3 - CLI temporary mode presentation restricted	
	4 - CLI temporary mode presentation allowed	
AT+CLIR=?	Test command reports the supported values of parameter <n>.</n>	
Reference	3GPP TS 27.007	
Note	This command sets the default behaviour of the device in outgoi	ng calls.

+CLIR - Calling Line	Identification Restriction SELINT 2
AT+CLIR=[<n>]</n>	Set command overrides the CLIR subscription when temporary mode is provisioned as a default adjustment for all following outgoing calls. This adjustment can be revoked by using the opposite command. This command refers to CLIR-service (GSM 02.81) that allows a calling subscriber to enable or disable the presentation of the CLI to the called party when originating a call.
	Parameter: <n> - facility status on the Mobile 0 - CLIR facility according to CLIR service network status 1 - CLIR facility active (CLI not sent) 2 - CLIR facility not active (CLI sent)</n>
AT+CLIR?	Read command gives the default adjustment for all outgoing calls (<n>) and also triggers an interrogation of the provision status of the CLIR service (<m>), where <n> - facility status on the Mobile 0 - CLIR facility according to CLIR service network status 1 - CLIR facility active (CLI not sent) 2 - CLIR facility not active (CLI sent) <m> - facility status on the Network 0 - CLIR service not provisioned 1 - CLIR service provisioned permanently 2 - unknown (e.g. no network present, etc.) 3 - CLI temporary mode presentation restricted 4 - CLI temporary mode presentation allowed</m></n></m></n>
AT+CLIR=?	Test command reports the supported values of parameter < n >.
Reference	3GPP TS 27.007
Note	This command sets the default behaviour of the device in outgoing calls.

3.5.4.3.10. Call Forwarding Number And Conditions - +CCFC

+CCFC - Call Forward	ding Number And Condition	SELINT 0 / 1 / 2
AT+CCFC=	Execution command controls the call forwarding supplementary	nentary service.





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+CCFC - Call Forwarding Number And Condition

SELINT 0 / 1 / 2

<reason>,

<cmd>[,<number>[,< type>[,<class> [,,,<time>]]] Registration, erasure, activation, deactivation, and status query are supported.

Parameters:

<reason>

- 0 unconditional
- 1 mobile busy
- 2 no reply
- 3 not reachable
- 4 all calls (not with query command)
- 5 all conditional calls (not with query command)

<cmd>

- 0 disable
- 1 enable
- 2 query status
- 3 registration
- 4 erasure
- <number> string type phone number of forwarding address in format specified by <type> parameter
- <type> type of address octet in integer format :
- 129 national numbering scheme
- 145 international numbering scheme (contains the character "+")
- <class> sum of integers each representing a class of information which the command refers to; default 7 (voice + data + fax)
- 1 voice (telephony)
- 2 data
- 4 fax (facsimile services)
- 8 short message service
- 16 data circuit sync
- 32 data circuit async
- 64 dedicated packet access
- 128 dedicated PAD access
- <time> time in *seconds* to wait before call is forwarded; it is valid only when <reason> "no reply" is enabled (<cmd>=1) or queried (<cmd>=2)
- 1..30 automatically rounded to a multiple of 5 seconds (default is 20)

Note: when **<cmd>=2** and command successful, it returns:

+CCFC: <status>,<class1>[,<number>,<type>[,,,<time>]][<CR><LF> +CCFC: <status>,<class2>[,<number>,<type>[,,,<time>]][...]]

where

<status> - current status of the network service





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+CCFC - Call For	warding Number And Condition	SELINT 0 / 1 / 2	
	0 - not active		
	1 - active	1 - active	
	<classn> - same as <class></class></classn>		
	<time> - it is returned only when <reason>=2 ("no reply") and <cmd>=2.</cmd></reason></time>		
	The other parameters are as seen before.		
AT+CCFC=?	Test command reports supported values for the parameter <	<reason>.</reason>	
Reference	3GPP TS 27.007		
Note	When querying the status of a network service (<cmd>=2)</cmd>	the response line for 'not	
	active' case (<status>=0) should be returned only if service</status>	e is not active for any	
	<class>.</class>	•	

3.5.4.3.11. Call Waiting - +CCWA

+CCWA - Call Waiting	SELINT 0/1
AT+CCWA[=	Set command allows the control of the call waiting supplementary service.
[<n>[,<cmd></cmd></n>	Activation, deactivation, and status query are supported.
[, <class>]]]]</class>	
	Parameters:
	<n> - enables/disables the presentation of an unsolicited result code:</n>
	0 - disable
	1 - enable
	<cmd></cmd> - enables/disables or queries the service at network level:
	0 - disable
	1 - enable
	2 - query status
	<class></class> - is a sum of integers each representing a class of information which the
	command refers to; default is 7 (voice + data + fax)
	1 - voice (telephony)
	2 - data
	4 - fax (facsimile services)
	8 - short message service
	16 - data circuit sync
	32 - data circuit async
	64 - dedicated packet access
	128 - dedicated PAD access
	Note: the response to the query command is in the format:
	+CCWA: <status>, <class1>[<cr><lf></lf></cr></class1></status>
	+CCWA: <status>, <class2>[]]</class2></status>
	, , , , , , , , , , , , , , , , , , , ,
	where
	<status> represents the status of the service:</status>
	0 - inactive
	1 - active



+CCWA - Call Waiting	SELINT 0 / 1
	<classn> - same as <class></class></classn>
	Note: the unsolicited result code enabled by parameter < n > is in the format:
	+CCWA: <number>,<type>,<class>,<alpha>,<cli_validity></cli_validity></alpha></class></type></number>
	where <number> - string type phone number of calling address in format specified by <type></type></number>
	<type> - type of address in integer format <class> - see before</class></type>
	<alpha> - string type; alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with +CSCS.</number></alpha>
	<cli_validity> 0 - CLI valid</cli_validity>
	1 - CLI has been withheld by the originator2 - CLI is not available due to interworking problems or limitations of originating network
	Note: if parameter <cmd></cmd> is omitted then network is not interrogated.
	Note: in the query command the class parameter must not be issued.
	Note: the difference between call waiting report disabling (AT+CCWA = 0,1,7) and call waiting service disabling (AT+CCWA = 0,0,7) is that in the first case the call waiting indication is sent to the device by network but this last one does not report it to the DTE; instead in the second case the call waiting indication is not generated by the network. Hence the device results busy to the third party in the 2^{nd} case while in the 1^{st} case a ringing indication is sent to the third party.
	Note: The command AT+CCWA=1,0 has no effect a non sense and must not be issued.
	Note: issuing AT+CCWA<cr></cr> is the same as issuing the Read command.
	Note: issuing AT+CCWA= <cr> is the same as issuing the command AT+CCWA=0<cr>.</cr></cr>
AT+CCWA?	Read command reports the current value of the parameter <n>.</n>
AT+CCWA=?	Test command reports the supported values for the parameter <n>.</n>
Reference	3GPP TS 27.007

+CCWA - Call Waiting		SELINT 2
AT+CCWA=	Set command allows the control of the call waiting supplementar	y service.
[<n>[,<cmd></cmd></n>	Activation, deactivation, and status query are supported.	
[, <class>]]]</class>		



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+CCWA - Call Waiting SELINT 2

Parameters:

<n> - enables/disables the presentation of an unsolicited result code:

0 - disable

1 - enable

<md> - enables/disables or queries the service at network level:

0 - disable

1 - enable

2 - query status

<class> - is a sum of integers each representing a class of information which the command refers to; default is 7 (voice + data + fax)

1 - voice (telephony)

2 - data

4 - fax (facsimile services)

8 - short message service

16 - data circuit sync

32 - data circuit async

64 - dedicated packet access

128 - dedicated PAD access

Note: the response to the query command is in the format:

+CCWA: <status>, <class1>[<CR><LF>

+CCWA: <status>, <class2>[...]]

where

<status> represents the status of the service:

0 - inactive

1 - active

<classn> - same as <class>

Note: the unsolicited result code enabled by parameter <n> is in the format::

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

where:

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

<type> - type of address in integer format

<class> - see before

<alpha> - string type; alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with +CSCS.

<cli_validity>

0 - CLI valid

1 - CLI has been withheld by the originator

2 - CLI is not available due to interworking problems or limitations of originating network





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+CCWA - Call Waiting	SELINT 2
	Note: if parameter <cmd></cmd> is omitted then network is not interrogated. Note: in the query command the class parameter must not be issued.
	Note: the difference between call waiting report disabling (AT+CCWA = 0,1,7) and call waiting service disabling (AT+CCWA = 0,0,7) is that in the first case the call waiting indication is sent to the device by network but this last one does not report it to the DTE; instead in the second case the call waiting indication is not generated by the network. Hence the device results busy to the third party in the 2^{nd} case while in the 1^{st} case a ringing indication is sent to the third party.
	Note: The command AT+CCWA=1,0 has no effect a non sense and must not be issued
AT+CCWA?	Read command reports the current value of the parameter <n>.</n>
AT+CCWA=?	Test command reports the supported values for the parameter <n>.</n>
Reference	3GPP TS 27.007

3.5.4.3.12. Call Holding Services - +CHLD

+CHLD - Call Holding	SEI SEI	LINT 0 / 1
AT+CHLD= <n></n>	Execution command controls the network call hold service. With this possible to disconnect temporarily a call and keep it suspended while by the network, contemporary it is possible to connect another party of multiparty connection.	e it is retained
	Parameter:	
	<n></n>	
	0 - releases all held calls, or sets the UDUB (User Determined User indication for a waiting call.	Busy)
	1 - releases all active calls (if any exist), and accepts the other (held call	or waiting)
	1X - releases a specific active call X	
	2 - places all active calls (if any exist) on hold and accepts the other waiting) call.	(held or
	2X - places all active calls on hold except call X with which commube supported	unication shall
	3 - adds an held call to the conversation	
	Note: "X" is the numbering (starting with 1) of the call given by the s setting up or receiving the calls (active, held or waiting) as seen by th subscriber. Calls hold their number until they are released. New calls lowest available number.	ne served
	Note: where both a held and a waiting call exist, the above procedure waiting call (i.e. not to the held call) in conflicting situation.	es apply to the



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+CHLD - Call Holdin	g Services	SELINT 0 / 1
AT+CHLD=?	Test command returns the list of supported < n > s .	
	+CHLD: (0,1,2,3)	
	Note: consider what has been written about the Set command r a specific call (X).	elating the actions on
Reference	3GPP TS 27.007	
Note	ONLY for VOICE calls	

+CHLD - Call Holdi	ng Services SELINT 2
AT+CHLD=[<n>]</n>	Execution command controls the network call hold service. With this service it is
	possible to disconnect temporarily a call and keep it suspended while it is retained
	by the network, contemporary it is possible to connect another party or make a
	multiparty connection.
	Parameter:
	<n>></n>
	0 - releases all held calls, or sets the UDUB (User Determined User Busy) indication for a waiting call. (only from version D)
	1 - releases all active calls (if any exist), and accepts the other (held or waiting) call
	1X - releases a specific active call X
	2 - places all active calls (if any exist) on hold and accepts the other (held or waiting) call.
	2X - places all active calls on hold except call X with which communication shall be supported (only from version D).
	3 - adds an held call to the conversation
	4 - connects the two calls and disconnects the subscriber from both calls (Explicit Call Transfer (ECT))
	Note: "X" is the numbering (starting with 1) of the call given by the sequence of setting up or receiving the calls (active, held or waiting) as seen by the served subscriber. Calls hold their number until they are released. New calls take the lowest available number.
	Note: where both a held and a waiting call exist, the above procedures apply to the waiting call (i.e. not to the held call) in conflicting situation.
AT+CHLD=?	Test command returns the list of supported < n > s .
	+CHLD: (0,1,1X,2,2X,3,4)
Reference	3GPP TS 27.007
Note	ONLY for VOICE calls

3.5.4.3.13. Unstructured Supplementary Service Data - +CUSD





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+CUSD - Unstructured Supplementary Service Data

SELINT 0 / 1

AT+CUSD[= [<n>[,<str> [,<dcs>]]]] Set command allows control of the Unstructured Supplementary Service Data (USSD [GSM 02.90]).

Parameters:

<n> - is used to disable/enable the presentation of an unsolicited result code.

- 0 disable the result code presentation in the **DTA**
- 1 enable the result code presentation in the **DTA**

<str> - USSD-string (when <str> parameter is not given, network is not interrogated)

- If **<dcs>** indicates that GSM338 default alphabet is used **ME/TA** converts GSM alphabet into current TE character set (see **+CSCS**)
- 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 3.38 Cell Broadcast Data Coding Scheme in integer format (default is 0).

Note: the unsolicited result code enabled by parameter <n> is in the format:

+CUSD: $\langle m \rangle [, \langle str \rangle, \langle dcs \rangle]$ to the TE

where:

<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)
- 2 USSD terminated by the network
- 3 other local client has responded
- 4 operation not supported
- 5 network time out

Note: in case of successful mobile initiated operation, **DTA** waits the USSD response from the network and sends it to the **DTE** before the final result code. This will block the AT command interface for the period of the operation.

Note: issuing **AT+CUSD<CR>** is the same as issuing the Read command.

Note: issuing **AT+CUSD=<CR>** is the same as issuing the command **AT+CUSD=0<CR>**.

AT+CUSD?

Read command reports the current value of the parameter <n>





+CUSD - Unstructured Supplementary Service Data SELINT 0 / 1		SELINT 0 / 1
AT+CUSD=?	Test command reports the supported values for the parameter <n< td=""><td>></td></n<>	>
Reference	3GPP TS 27.007	
Note	Only mobile initiated operations are supported	

+CUSD - Unstructured	l Supplementary Service Data	SELINT 2
AT+CUSD=	Set command allows control of the Unstructured Supplementary	Service Data
[<n>[,<str></str></n>	(USSD [GSM 02.90]).	
[, <dcs>]]]</dcs>		
	Parameters:	
	<n> - is used to disable/enable the presentation of an unsolicited</n>	l result code.
	0 - disable the result code presentation in the DTA	
	1 - enable the result code presentation in the DTA	
	2 - cancel an ongoing USSD session (not applicable to read con	mmand
	response)	mlr ia mat
	<pre><str> - USSD-string (when <str> parameter is not given, netwo interrogated)</str></str></pre>	ork is not
	- If dcs indicates that GSM338 default alphabet is used MI	F/TA converts
	GSM alphabet into current TE character set (see +CSCS).	L/ 1/1 Converts
	- If dcs indicates that 8-bit data coding scheme is used: MI	E/ TA converts
	each 8-bit octet into two IRA character long hexadecimal nu	
	with integer value 42 is presented to TE as two characters 24	
	<dcs> - GSM 3.38 Cell Broadcast Data Coding Scheme in integ</dcs>	ger format (default
	is 0).	
	Note: the unsolicited result code enabled by parameter <n> is in</n>	the format:
	17 is in	the format.
	+CUSD: <m>[,<str>,<dcs>] to the TE</dcs></str></m>	
	where:	
	<m>:</m>	
	0 - no further user action required (network initiated USSD-No	tify, or no further
	information needed after mobile initiated operation).	
	1 - further user action required (network initiated USSD-Reque	est, or further
	information needed after mobile initiated operation) 2 - USSD terminated by the network	
	3 - other local client has responded	
	4 - operation not supported	
	5 - network time out	
AT+CUSD?	Read command reports the current value of the parameter <n></n>	
AT+CUSD=?	Test command reports the supported values for the parameter <	1>
Reference	3GPP TS 27.007	
Note	Only mobile initiated operations are supported	





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3.5.4.3.14. Advice Of Charge - +CAOC

+CAOC - Advice Of Charge

SELINT 0 / 1

AT+CAOC[= [<mode>]] Set command refers to the Advice of Charge supplementary services that enable subscriber to get information about the cost of calls; the command also includes the possibility to enable an unsolicited event reporting of the Current Call Meter (CCM) information.

Parameter:

<mode>

- 0 query CCM value
- 1 disables unsolicited CCM reporting
- 2 enables unsolicited CCM reporting

Note: the unsolicited result code enabled by parameter **<mode>** is in the format:

+CCCM: <ccm>

where:

<ccm> - current call meter in home units, string type: three bytes of the CCM value in hexadecimal format (e.g. "00001E" indicates decimal value 30)

Note: the unsolicited result code +CCCM is sent when the CCM value changes, but not more than every 10 seconds.

Note: issuing **AT+CAOC<CR>** is the same as issuing the Read command.

Note: issuing AT+CAOC=<CR> is the same as issuing the command





+CAOC - Advice Of Charge		<mark>Γ 0 / 1</mark>
	AT+CAOC=0 <cr>.</cr>	
AT+CAOC?	Read command reports the value of parameter <mode></mode> in the format:	
	+CAOC: <mode></mode>	
AT+CAOC=?	Test command reports the supported values for <mode></mode> parameter.	
	Note: the representation format doesn't match the v.25ter §5.7.3 "Informat formats for test commands". The output is:	tion text
Reference	+CAOC: 0, 1, 2 3GPP TS 27.007	
Note		mmoducad
Note	+CAOC command returns an estimate of the cost of the current call only,	•
	by the MS and based on the information provided by either AoCI or AOC	C
	supplementary services; it is not stored in the SIM.	

+CAOC - Advice Of C	harge SELINT 2
AT+CAOC=	Set command refers to the Advice of Charge supplementary services that enable
<mode></mode>	subscriber to get information about the cost of calls; the command also includes the
	possibility to enable an unsolicited event reporting of the Current Call Meter
	(CCM) information.
	Parameter:
	<mode></mode>
	0 - query CCM value
	1 - disables unsolicited CCM reporting
	2 - enables unsolicited CCM reporting
	Note: the unsolicited result code enabled by parameter <mode></mode> is in the format:
	+CCCM: <ccm></ccm>
	where:
	ccm> - current call meter in home units, string type: three bytes of the CCM value in hexadecimal format (e.g. "00001E" indicates decimal value 30)
	Note: the unsolicited result code +CCCM is sent when the CCM value changes, but
	not more than every 10 seconds.
AT+CAOC?	Read command reports the value of parameter <mode></mode> in the format:
	+CAOC: <mode></mode>
AT+CAOC=?	Test command reports the supported values for <mode></mode> parameter.
Reference	3GPP TS 27.007
Note	+CAOC command returns an estimate of the cost of the current call only, produced
	by the MS and based on the information provided by either AoCI or AOCC
	supplementary services; it is not stored in the SIM.



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3.5.4.3.15. List Current Calls - +CLCC

+CLCC - List Current	t Calls SELINT 0 / 1
AT+CLCC	Execution command returns the list of current calls and their characteristics in the
	format:
	[+CLCC: <id1>,<dir>,<stat>,<mode>,<mpty>,<number>,<type></type></number></mpty></mode></stat></dir></id1>
	[<cr><lf>+CLCC:<id2>,<dir>,<stat>,<mode>,<mpty>,<number>,<type>[</type></number></mpty></mode></stat></dir></id2></lf></cr>
	[]]]
	where:
	<idn> - call identification number</idn>
	<dir> - call direction</dir>
	0 - mobile originated call
	1 - mobile terminated call
	<stat> - state of the call</stat>
	0 - active
	1 - held
	2 - dialling (MO call)
	3 - alerting (MO call)
	4 - incoming (MT call)
	5 - waiting (MT call)
	<mode> - call type</mode>
	0 - voice
	1 - data
	2 - fax
	9 - unknown
	<mpty> - multiparty call flag</mpty>
	0 - call is not one of multiparty (conference) call parties
	1 - call is one of multiparty (conference) call parties
	<number> - string type phone number in format specified by <type></type></number>
	<type> - type of phone number octet in integer format</type>
	129 - national numbering scheme
	145 - international numbering scheme (contains the character "+")
	Note: If no call is active then only OK message is sent. This command is useful in
	conjunction with command +CHLD to know the various call status for call holding.
Reference	3GPP TS 27.007

+CLCC - List Current Calls

SELINT 2





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+CLCC - List Current Calls SELINT 2	
AT+CLCC	Execution command returns the list of current calls and their characteristics in the
AI+CLCC	
	format:
	LICECCO SIAS Alles artes and a contra considera deman
	[+CLCC: <id1>,<dir>,<stat>,<mode>,<mpty>,<number>,<type></type></number></mpty></mode></stat></dir></id1>
	, <alpha>[<cr><lf>+CLCC:<id2>,<dir>,<stat>,<mode>,</mode></stat></dir></id2></lf></cr></alpha>
	<mpty>,<number>,<type>,<alpha>[]]]</alpha></type></number></mpty>
	where:
	<idn> - call identification number</idn>
	<dir> - call direction</dir>
	0 - mobile originated call
	1 - mobile terminated call
	<stat> - state of the call</stat>
	0 - active
	1 - held
	2 - dialing (MO call)
	3 - alerting (MO call)
	4 - incoming (MT call)
	5 - waiting (MT call)
	<mode> - call type</mode>
	0 - voice
	1 - data
	2 - fax
	9 - unknown
	<mpty> - multiparty call flag</mpty>
	0 - call is not one of multiparty (conference) call parties
	1 - call is one of multiparty (conference) call parties
	<number> - string type phone number in format specified by <type></type></number>
	<type> - type of phone number octet in integer format</type>
	129 - national numbering scheme
	145 - international numbering scheme (contains the character "+")
	<alpha> - string type; alphanumeric representation of <number> corresponding to</number></alpha>
	the entry found in phonebook; used character set should be the one
	selected with +CSCS.
	Note: If no call is active then only OK message is sent. This command is useful in
	conjunction with command +CHLD to know the various call status for call holding.
AT+CLCC=?	Test command returns the OK result code
Reference	3GPP TS 27.007

3.5.4.3.16. SS Notification - +CSSN

+CSSN - SS Notifie	<mark>cation</mark>	SELINT 0 / 1
AT+CSSN[=	It refers to supplementary service related network initiated notific	cations.
[<n>[,<m>]]]</m></n>	Set command enables/disables the presentation of notification re-	sult codes from TA
	to TE.	





+CSSN - SS Notification	on SELINT 0 / 1
	Parameters: <n> - sets the +CSSI result code presentation status</n>
	0 - disable 1 - enable
	<m> - sets the +CSSU result code presentation status 0 - disable 1 - enable</m>
	When <n>=1 and a supplementary service notification is received after a mobile originated call setup, an unsolicited code:</n>
	+CSSI: <code1></code1>
	is sent to TE before any other MO call setup result codes, where: <code1>: 0 - unconditional call forwarding is active 1 - some of the conditional call forwarding are active 2 - call has been forwarded 3 - call is waiting 5 - outgoing calls are barred 6 - incoming calls are barred </code1>
	When <m>=1 and a supplementary service notification is received during a mobile terminated call setup or during a call, an unsolicited result code</m>
	+CSSU: <code2></code2>
	is sent to TE , where: < code2> : 0 - this is a forwarded call (MT call setup) 2 - call has been put on hold (during a voice call) 3 - call has been retrieved (during a voice call)
	Note: issuing AT+CSSN<cr></cr> is the same as issuing the Read command.
	Note: issuing AT+CSSN= <cr> is the same as issuing the command AT+CSSN=0<cr>.</cr></cr>
AT+CSSN?	Read command reports the current value of the parameters.
AT+CSSN=? Reference	Test command reports the supported range of values for parameters <n>, <m>. 3GPP TS 27.007</m></n>

	+CSSN - SS Notifica	<mark>tion</mark>	SELINT 2
	AT+CSSN=[<n></n>	It refers to supplementary service related network ini	tiated notifications.





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+CSSN - SS Notification	SELINT 2
[, <m>]]</m>	Set command enables/disables the presentation of notification result codes from TA
	to TE.
	Parameters:
	<n> - sets the +CSSI result code presentation status</n>
	0 - disable
	1 - enable
	<m> - sets the +CSSU result code presentation status</m>
	0 - disable
	1 - enable
	When <n>=1 and a supplementary service notification is received after a mobile originated call setup, an unsolicited code:</n>
	+CSSI: <code1></code1>
	is sent to TE before any other MO call setup result codes, where:
	<pre><code1>:</code1></pre>
	0 - unconditional call forwarding is active
	1 - some of the conditional call forwardings are active
	2 - call has been forwarded
	3 - call is waiting
	5 - outgoing calls are barred
	6 - incoming calls are barred
	When <m>=1</m> and a supplementary service notification is received during a mobile
	terminated call setup or during a call, an unsolicited result code:
	+CSSU: <code2></code2>
	is sent to TE, where:
	<code2>:</code2>
	0 - this is a forwarded call (MT call setup)
	2 - call has been put on hold (during a voice call)
	3 - call has been retrieved (during a voice call).
AT+CSSN?	Read command reports the current value of the parameters.
AT+CSSN=?	Test command reports the supported range of values for parameters <n>, <m>.</m></n>
Reference	3GPP TS 27.007

3.5.4.3.17. Closed User Group - +CCUG

+CCUG - Closed User	Group Supplementary Service Control	SELINT 0 / 1
AT+CCUG[= Set command allows control of the Closed User Group supplementary service		supplementary service
[<n>[,<index> [GSM 02.85].</index></n>		
[, <info>]]]]</info>		
	Parameters:	





+CCUG - Closed Use	r Group Supplementary Service Control	SELINT 0 / 1
	<n>></n>	
	0 - disable CUG temporary mode (factory default).	
	1 - enable CUG temporary mode: it enables to control the CUG information on the air interface as a default adjustment for all following outgoing calls.	
	<index></index>	
	09 - CUG index	
	10 - no index (preferential CUG taken from subscriber data) ((default)
	<info> 0 - no information (default)</info>	
	1 - suppress Outgoing Access (OA)	
	2 - suppress preferential CUG	
	3 - suppress OA and preferential CUG	
	Note: issuing AT+CCUG<cr></cr> is the same as issuing the Rea	nd command.
	Note: issuing AT+CCUG=<cr></cr> is the same as issuing the co	ommand
	AT+CCUG=0 <cr>.</cr>	
AT+CCUG?	Read command reports the current value of the parameters	
AT+CCUG=?	Test command reports the supported range of values for the	e parameters <n>,</n>
	<index>, <info></info></index>	
Reference	3GPP TS 27.007	

+CCUG - Closed User	Group Supplementary Service Control	SELINT 2
AT+CCUG= Set command allows control of the Closed User Group supplementary services		entary service
[<n>[,<index></index></n>	[GSM 02.85].	
[, <info>]]]</info>		
	Parameters:	
	<n></n>	
	0 - disable CUG temporary mode (factory default).	
	1 - enable CUG temporary mode: it enables to control the CUG	information on the
	air interface as a default adjustment for all following outgoin	g calls.
	<index></index>	
	09 - CUG index	
	10 - no index (preferential CUG taken from subscriber data) (de	efault)
	<info></info>	
	0 - no information (default)	
	1 - suppress Outgoing Access (OA)	
	2 - suppress preferential CUG	
	3 - suppress OA and preferential CUG	
AT+CCUG?	Read command reports the current value of the parameters	
AT+CCUG=?	Test command returns the OK result code	
Reference	3GPP TS 27.007	



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3.5.4.3.18. Preferred Operator List - +CPOL

+CPOL - Preferred O	+CPOL - Preferred Operator List SELINT 2		
AT+CPOL= Execution command writes an entry in the SIM list of preferred operators.		operators.	
[<index>][,<format></format></index>	[<index>][,<format></format></index>		
[, <oper>]]</oper>	Parameters:		
	<index> - integer type; the order number of operator in the SIM preferred operator</index>		
	list		
	1 <i>n</i>		
	<format></format>		
	2 - numeric <oper></oper>		
	<pre><oper> - string type</oper></pre>		
	Note: if <index></index> is given but <oper></oper> is left out, entry is deleted. If <oper></oper> is given but <index></index> is left out, <oper></oper> is put in the next free location. If only <format></format> is given, the format of the <oper></oper> in the read command is changed.		
AT+CPOL?	AT+CPOL? Read command returns all used entries from the SIM list of preferred operators.		
AT+CPOL=?	Test command returns the whole <index></index> range supported by the SIM and the		
	range for the parameter <format></format>		
Reference	3GPP TS 27.007	·	

3.5.4.3.19. Selection of preferred PLMN list - +CPLS

+CPLS - Selection of preferred PLMN list SELINT	
AT+CPLS= <list></list>	The execution command is used to select a list of preferred PLMNs in the SIM/USIM. Parameters: list>: 0 - User controlled PLMN selector with Access Technology EFPLMNwAcT, if not found in the SIM/UICC then PLMN preferred list EFPLMNsel (this file is only available in SIM card or GSM application selected in UICC) 1 - Operator controlled PLMN selector with Access Technology EFOPLMNwAcT 2 - HPLMN selector with Access Technology EFHPLMNwAcT Note: the value set by command is directly stored in NVM and doesn't depend on the specific CMUX instance.
AT+CPLS?	Read command returns the selected PLMN selector < list> from the SIM/USIM.
AT+CPLS=?	Test command returns the whole index range supported st> s by the SIM/USIM.

3.5.4.3.20. Call deflection - +CTFR

+CTFR – Call deflection SELINT 2





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AT+CTFR= <number>[,<type>]</type></number>	Set command is used to request a service that causes an incoming alerting call to be forwarded to a specified number. This is based on the GSM/UMTS supplementary service CD (Call Deflection; refer 3GPP TS 22.072). Parameters: <number>: string type phone number of format specified by <type></type></number>
	<type>: type of address octet in integer format; default 145 when dialling string includes international access code character "+", otherwise 129 Note: Call Deflection is only applicable to an incoming value call.</type>
	Note: Call Deflection is only applicable to an incoming voice call
AT+CTFR=?	Test command tests for command existence

3.5.4.4. Mobile Equipment Control

3.5.4.4.1. Phone Activity Status - +CPAS

+CPAS - Phone Ac	ctivity Status SELINT 0 / 1
AT+CPAS	Execution command reports the device status in the form:
	+CPAS: <pas></pas>
	Where:
	<pre><pas> - phone activity status</pas></pre>
	0 - ready (device allows commands from TA/TE)
	1 - unavailable (device does not allow commands from TA/TE)
	2 - unknown (device is not guaranteed to respond to instructions)
	3 - ringing (device is ready for commands from TA/TE , but the ringer is active)
	4 - call in progress (device is ready for commands from TA/TE , but a call is in progress)
AT+CPAS?	Read command has the same effect as Execution command.
AT+CPAS=?	Test command reports the supported range of values for <pas></pas> .
	Note: although +CPAS is an execution command, ETSI 07.07 requires the Tecommand to be defined.
Reference	3GPP TS 27.007

+CPAS - Phone Activit	y Status	SELINT 2
AT+CPAS	Execution command reports the device status in the form:	
	+CPAS: <pas></pas>	



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+CPAS - Phone Ac	tivity Status	SELINT 2
	Where:	
	<pre><pas> - phone activity status</pas></pre>	
	0 - ready (device allows commands from TA/TI	E)
	1 - unavailable (device does not allow command	ds from TA/TE)
	2 - unknown (device is not guaranteed to respon	nd to instructions)
	3 - ringing (device is ready for commands from	TA/TE , but the ringer is active)
	4 - call in progress (device is ready for comman	ds from TA/TE , but a call is in
	progress)	
AT+CPAS=?	Test command reports the supported range of val	ues for <pas>.</pas>
	Note: although +CPAS is an execution command	d, ETSI 07.07 requires the Test
	command to be defined.	
Example	ATD03282131321;	
_	OK ATTI CDAG	
	AT+CPAS +CPAS: 4 the called phone h	as answered to your call
	the canea phone no	as answered to your call
	OK	
	ATH	
D 0	OK	
Reference	3GPP TS 27.007	

3.5.4.4.2. Set Phone Functionality - +CFUN

+CFUN - Set Phone Functionality SELINT 0 / 1		
AT+CFUN=<fun></fun> Set command selects the level of functionality in the ME .		
	Parameter:	
	<fun> - is the power saving function mode</fun>	
	0 - minimum functionality, NON-CYCLIC SLEEP mode: in th	*
	interface is not accessible. Consequently, once you have set	
	not send further characters. Otherwise these characters remai	•
	buffer and may delay the output of an unsolicited result code	-
	event, or rising RTS line, stops power saving and takes the N	AE back to full
	functionality level <fun>=1</fun> .	1 (10
	1 - mobile full functionality with power saving disabled (factor	y default)
	2 - disable TX	
	4 - disable either TX and RX	
	5 - mobile full functionality with power saving enabled	
	Note: issuing AT+CFUN=4 actually causes the module to perfo	rm aither a network
	deregistration and a SIM deactivation.	ini cinici a network
	deregistration and a Shvi deactivation.	
	Note: if power saving enabled, it reduces the power consumption	n during the idle
	time, thus allowing a longer standby time with a given battery ca	•
	time, thus and thing a ronger standary time with a given outlery et	ipacity.
	Note: to place the module in power saving mode, set the <fun></fun> 1	parameter at value



+CFUN - Set Phone	Functionality SELINT 0 / 1
	= 5 and the line DTR (RS232) must be set to OFF . Once in power saving, the CTS line switch to the OFF status to signal that the module is really in power saving condition. During the power saving condition, before sending any AT command on the serial line, the DTR must be set to ON (0V) to exit from power saving and must be waited for the CTS (RS232) line to go in ON status. Until the DTR line is ON , the module will not return back in the power saving condition.
	Note: the power saving function does not affect the network behavior of the MODULE, even during the power save condition the module remains registered on the network and reachable for incoming calls or SMS. If a call arrives during the power save, then the module will wake up and proceed normally with the unsolicited incoming call code
AT+CFUN?	Read command reports the current level of functionality.
AT+CFUN=?	Test command returns the list of supported values for <fun></fun> For compatibility with previous versions, Test command returns +CFUN: (1, 5)
	An enhanced version of Test command has been defined: AT+CFUN=?? , that provides the complete range of values for <fun></fun> .
AT+CFUN=??	Enhanced test command returns the list of supported values for <fun></fun>
Reference	3GPP TS 27.007

+CFUN - Set Phone Fu	<mark>inctionality</mark>	SELINT 2
AT+CFUN=	Set command selects the level of functionality in the ME.	
[<fun>[,<rst>]]</rst></fun>		
	Parameters:	
	<fun> - is the power saving function mode</fun>	
	0 - minimum functionality, NON-CYCLIC SLEEP mode: in th	is mode, the AT
	interface is not accessible. Consequently, once you have set	
	not send further characters. Otherwise these characters remain	
	buffer and may delay the output of an unsolicited result code	
	event, or rising RTS line, stops power saving and takes the N	ME back to full
	functionality level <fun>=1</fun> .	
	1 - mobile full functionality with power saving disabled (factor	y default)
	2 - disable TX	
	4 - disable both TX and RX	
	5 - mobile full functionality with power saving enabled	
	7 - CYCLIC SLEEP mode: in this mode, the serial interface is	periodically
	enabled while CTS is active. If characters are recognized on	
	the ME stays active for 2 seconds after the last character was	s sent or received.
	ME exits SLEEP mode only, if AT+CFUN=1 is entered	
	9 – just as 0 but with different wake-up events (see SW User Gu	ide)



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+CFUN - Set Phone Fu	inctionality SELINT 2
	<rst> - reset flag 0 - do not reset the ME before setting it to <fun> functionality level 1 - reset the device. The device is fully functional after the reset. This value is available only for <fun> = 1 and for 10.00.xxx release Note: issuing AT+CFUN=4[,0] actually causes the module to perform either a network deregistration and a SIM deactivation. Note: if power saving enabled, it reduces the power consumption during the idle time, thus allowing a longer standby time with a given battery capacity. Note: to place the module in power saving mode, set the <fun> parameter at value = 5 and the line DTR (RS232) must be set to OFF. Once in power saving, the CTS line switch to the OFF status to signal that the module is really in power saving condition. During the power saving condition, before sending any AT command on the serial line, the DTR must be set to ON (0V) to exit from power saving and it must be waited for the CTS (RS232) line to go in ON status. Until the DTR line is ON, the module will not return back in the power saving condition.</fun></fun></fun></rst>
	Note: the power saving function does not affect the network behaviour of the MODULE, even during the power save condition the module remains registered on the network and reachable for incoming calls or SMS. If a call incomes during the power save, then the module will wake up and proceed normally with the unsolicited incoming call code
AT+CFUN?	Read command reports the current setting of <fun></fun> .
AT+CFUN=?	Test command returns the list of supported values for <fun></fun> and <rst></rst> .
Reference	3GPP TS 27.007

3.5.4.4.3. Enter PIN - +CPIN

+CPIN - Enter PIN	SELINT 0 / 1				
AT+CPIN[= <pin></pin>	Set command sends to the device a password which is necessary before it can be				
[, <newpin>]]</newpin>	operated (SIM PIN, SIM PUK, PH-SIM PIN, etc.).				
	If the PIN required is SIM PUK or SIM PUK2, the <newpin> is required. This</newpin>				
	second pin, <newpin>, will replace the old pin in the SIM.</newpin>				
	The command may be used to change the SIM PIN by sending it with both				
	parameters <pin> and <newpin> when PIN request is pending; if no PIN request is</newpin></pin>				
	pending the command will return an error code and to change the PIN the command				
	+CPWD must be used instead.				
	Parameters:				
	<pi><pin> - string type value</pin></pi>				
	<newpin> - string type value.</newpin>				





+CPIN - Enter PIN	SELINT 0/1
	To check the status of the PIN request use the command AT+CPIN?
	Note: If all parameters are omitted then the behaviour of Set command is the same as Read command.
AT+CPIN?	Read command reports the PIN/PUK/PUK2 request status of the device in the form:
	+CPIN: <code> where: <code> - PIN/PUK/PUK2 request status code READY - ME is not pending for any password SIM PIN - ME is waiting SIM PIN to be given SIM PUK - ME is waiting SIM PUK to be given PH-SIM PIN - ME is waiting phone-to-SIM card password to be given PH-FSIM PIN - ME is waiting phone-to-very first SIM card password to be given PH-FSIM PUK - ME is waiting phone-to-very first SIM card unblocking password to be given SIM PIN2 - ME is waiting SIM PIN2 to be given; this <code> is returned only when the last executed command resulted in PIN2 authentication failure (i.e. +CME ERROR: 17) SIM PUK2 - ME is waiting SIM PUK2 to be given; this <code> is returned only when the last executed command resulted in PUK2 authentication failure (i.e. +CME ERROR: 18) PH-NET PIN - ME is waiting network personalization password to be given PH-NET PUK - ME is waiting network personalization unblocking password to be given PH-NETSUB PIN - ME is waiting network subset personalization password to be given PH-NETSUB PUK - ME is waiting network subset personalization unblocking password to be given PH-SP PIN - ME is waiting service provider personalization password to be given PH-SP PIN - ME is waiting service provider personalization unblocking password to be given PH-CORP PIN - ME is waiting corporate personalization unblocking password to be given PH-CORP PUK - ME is waiting corporate personalization unblocking password to be given PH-CORP PUK - ME is waiting Corporate personalization unblocking password to be given PH-MCL PIN - ME is waiting Multi Country Lock password to be given</code></code></code></code>
	Note: Pin pending status at startup depends on PIN facility setting, to change or query the default power up setting use either the AT+CLCK=SC, <mode>, <pin></pin></mode>
AT+CPIN=?	command or the AT@CLCK=SC, <mode>, <pin> command. Test command returns OK result code.</pin></mode>
Example	AT+CMEE=1 OK AT+CPIN?



+CPIN - Enter PIN			SELINT 0 / 1
	+CME ERROR: 10	error: you have to insert the SIM	1
	AT+CPIN? +CPIN: READY OK	you inserted the SIM and device is not waiting for	r PIN to be given
Note	What follows is a list SIM PIN or SIM PU	t of the commands which are accepted when K	ME is pending

A	#GPIO	#CSURVB	+CPIN
D	#ADC	#CSURVBC	+CSQ
Н	#DAC	#CSURVF	+CCLK
0	#VAUX	#CSURVNLF	+CALA
E	#CBC	#CSURVEXT	+CRSM
I	#AUTOATT	#JDR	+CALM
L	#MONI	#WSCRIPT	+CRSL
M	#SERVINFO	#ESCRIPT	+CLVL
P	#COPSMODE	#RSCRIPT	+CMUT
Q	#QSS	#LSCRIPT	+CMEE
S	#DIALMODE	#DSCRIPT	+CGREG
T	#ACAL	#REBOOT	+CBC
V	#ACALEXT	#STARTMODESCR	+CSDH
X	#CODEC	#EXECSCR	+CNMI
Z	#SHFEC		+FMI
&C	#HFMICG	#PLMNMODE	+FMM
&D	#HSMICG	+FCLASS	+FMR
&F	#SHFSD	+GCAP	+FTS
&K	#BND	+GCI	+FRS
&N	#AUTOBND	+IPR	+FTM
&P	#RTCSTAT	+IFC	+FRM
&S	#USERID	+ILRR	+FTH
&V	#PASSW	+ICF	+FRH
&W	#PKTSZ	+MS	+FLO
&Y	#DSTO	+DS	+FPR
&Z	#SKTTO	+DR	+FDD
%E	#SKTSET	+CGMI	\$GPSP
%L	#SKTOP	+CGMM	\$GPSPS
%Q	#SKTCT	+CGMR	\$GPSR
\ Q	#SKTSAV	+GMI	\$GPSD
\ R	#SKTRST	+GMM	\$GPSSW
\ V	#ESMTP	+GMR	\$GPSAT
#SELINT	#EADDR	+CGSN	\$GPSAV
#CGMI	#EUSER	+GSN	\$GPSAI
#CGMM	#EPASSW	+CHUP	\$GPSAP
#CGMR	#SEMAIL	+CRLP	\$GPSS
#CGSN	#EMAILD	+CR	\$GPSNMUN
1	1	1	



+CPIN - Enter PIN					SELINT 0 / 1
		#CAP	#ESAV	+CRC	\$GPSACP
		#SRS	#ERST	+CSNS	\$GPSWK
		#SRP	#EMAILMSG	+CREG	\$GPSSAV
		#STM	#CSURV	+COPS	\$GPSRST
		#PCT	#CSURVC	+CLIP	\$GPSCON
		#SHDN	#CSURVU	+CPAS	\$GPSPRG
		#WAKE	#CSURVUC	+CFUN	
		#QTEMP			
	SIM c	ard is not inser	ted yet.	and +CNMI, can b	can be issued even if the be issued even if ME is
Reference	3GPP	TS 27.007			

+CPIN - Enter PIN		SELINT 2			
AT+CPIN= <pin></pin>	Set command sends to the device a password which is necessary	before it can be			
[, <newpin>]</newpin>	operated (SIM PIN, SIM PUK, PH-SIM PIN, etc.).				
	If the PIN required is SIM PUK or SIM PUK2, the <newpin></newpin> is required. This second pin, <newpin></newpin> will replace the old pin in the SIM. The command may be used to change the SIM PIN by sending it with both parameters <pin></pin> and <newpin></newpin> when PIN request is pending; if no PIN request is				
	pending the command will return an error code and to change the	e PIN the command			
	+CPWD must be used instead.				
	Parameters:				
	<pre><pin> - string type value</pin></pre>				
	<newpin> - string type value.</newpin>				
	To deal of the control of the contro				
	To check the status of the PIN request use the command AT+CPIN?				
	Note: If all parameters are omitted then the behaviour of Set con	nmand is the same			
	as Read command.				
AT+CPIN?	Read command reports the PIN/PUK/PUK2 request status of the	device in the form:			
	+CPIN: <code></code>				
	where:				
	<code> - PIN/PUK/PUK2 request status code</code>				
	READY - ME is not pending for any password				
	SIM PIN - ME is waiting SIM PIN to be given				
	SIM PUK - ME is waiting SIM PUK to be given				
	PH-SIM PIN - ME is waiting phone-to-SIM card password to b				
	PH-FSIM PIN - ME is waiting phone-to-very first SIM card pa	ssword to be			
	given				



+CPIN - Enter PIN				SELINT 2			
	PH-FSIM PUK -	ME is waiting phone	to-very first SIM ca				
		bassword to be given		\mathcal{S}			
	-	s waiting SIM PIN2		de> is returned only			
		the last executed cor					
	failur	e (i.e. +CME ERRO	PR: 17)				
				code > is returned only			
				PUK2 authentication			
	fail	ure (i.e. +CME ERR	OR: 18)				
	PH-NET PIN - M	IE is waiting network	personalization pass	sword to be given			
	PH-NET PUK - N	ME is waiting networ	k personalization un	blocking password to be			
		given	-				
	PH-NETSUB PIN		work subset persona	lization password to be			
	DII METCHD DI	given	.4	-1!4!1-11-!			
	PH-NETSUB PU	K - ME is waiting ne password to be g		alization unblocking			
	PH-SP PIN - ME			on password to be given			
		E is waiting service p					
		bassword to be given		C			
		ME is waiting corpor		bassword to be given			
	PH-CORP PUK -	· ME is waiting corpo	orate personalization	unblocking password to			
	1	oe given	•				
	Note: Pin pending status at startup depends on PIN facility						
		ower up setting use t	he command				
	AT+CLCK=SC, <mode>,<pin></pin></mode>						
AT+CPIN=?	Test command re	turns OK result co	de.				
Example	AT+CMEE=1						
	OK ATLICED IS						
	AT+CPIN? +CME ERROR: 10 error: you have to insert the SIM						
	AT+CPIN?						
	+CPIN: READY you inserted the SIM and device is not waiting for PIN to be given						
	OK						
Note		ist of the commands	which are accepted y	when MF is nending			
Note	What follows is a list of the commands which are accepted when ME is pending SIM PIN or SIM PUK						
	Shvi i ii v oi Shvi i	OK					
	A	#DAC	#CSURVNLF	+CPIN			
	D	#VAUX	#CSURVEXT	+CSQ			
	Н	#VAUXSAV	#JDR	+CIND			
	0	#CBC	#WSCRIPT	+CMER			
	E	#AUTOATT	#ESCRIPT	+CCLK			
	Ι	#MONI	#RSCRIPT	+CALA			
	L	#SERVINFO	#LSCRIPT	+CALD			
	M	#QSS	#DSCRIPT	+CRSM			
	P	#DIALMODE	#REBOOT	+CALM			
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PIN - Enter PIN				SELINT 2
	S	#ACALEXT	#STARTMODESCR	+CLVL
	T	#CODEC	#EXECSCR	+CMUT
	V	#SHFEC	#RSEN	+CLAC
	X	#HFMICG	#CCID	+CMEE
	Z	#HSMICG		+CGREG
	&C	#SHFSD	#PLMNMODE	+CBC
	&D	#BND	#V24CFG	+CSDH
	&F	#AUTOBND	#V24	+CNMI
	&K	#RTCSTAT	+FCLASS	+FMI
	&N	#USERID	+GCAP	+FMM
	&P	#PASSW	+GCI	+FMR
	&S	#PKTSZ	+IPR	+FTS
	&V	#DSTO	+IFC	+FRS
	&W	#SKTTO	+ILRR	+FTM
	&Y	#SKTSET	+ICF	+FRM
	&Z	#SKTOP	+MS	+FTH
	%E	#SKTCT	+DS	+FRH
	%L	#SKTSAV	+DR	+FLO
	%Q	#SKTRST	+CGMI	+FPR
	\ Q	#SPKMUT	+CGMM	+FDD
	\R	#ESMTP	+CGMR	\$GPSP
	\ V	#EADDR	+GMI	\$GPSPS
	#SELINT	#EUSER	+GMM	\$GPSR
	#CGMI	#EPASSW	+GMR	\$GPSD
	#CGMM	#SEMAIL	+CGSN	\$GPSSW
	#CGMR	#EMAILD	+GSN	\$GPSAT
	#CGSN	#ESAV	+CMUX	\$GPSAV
	#CAP	#ERST	+CHUP	\$GPSAI
	#SRS	#EMAILMSG	+CRLP	\$GPSAP
	#SRP	#CSURV	+CR	\$GPSS
	#STM	#CSURVC	+CRC	\$GPSNMUN
	#PCT	#CSURVU	+CSNS	\$GPSACP
	#SHDN	#CSURVUC	+CREG	\$GPSWK
	#WAKE	#CSURVB	+COPS	\$GPSSAV
	#QTEMP	#CSURVBC	+CLIP	\$GPSRST
	#GPIO	#CSURVF	+CPAS	\$GPSCON
	#ADC		+CFUN	\$GPSPRG

All the above commands, but the ones in the grayed cells, can be issued even if the SIM card is not inserted yet.

All the above commands, but +CSDH and +CNMI, can be issued even if ME is waiting for phone-To-SIM card password to be given





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+CPIN - Enter PIN	SELI	INT 2
Reference	3GPP TS 27.007	

3.5.4.4.4. Signal Quality - +CSQ

+CSQ - Signal Quality	SELINT 0 / 1
AT+CSQ	Execution command reports received signal quality indicators in the form:
	+CSQ: <rssi>,<ber></ber></rssi>
	where
	<rssi> - received signal strength indication</rssi>
	0 - (-113) dBm or less
	1 - (-111) dBm
	230 - (-109)dBm(-53)dBm / 2 dBm per step
	31 - (-51)dBm or greater
	99 - not known or not detectable
	 ber> - bit error rate (in percent)
	0 - less than 0.2%
	1 - 0.2% to 0.4%
	2 - 0.4% to 0.8%
	3 - 0.8% to 1.6%
	4 - 1.6% to 3.2%
	5 - 3.2% to 6.4%
	6 - 6.4% to 12.8%
	7 - more than 12.8%
	99 - not known or not detectable
	Note: this command should be used instead of the %Q and %L commands, since
	GSM relevant parameters are the radio link ones and no line is present,
	hence %Q %L and have no meaning.
AT+CSQ?	Read command has the same effect as Execution command.
AT+CSQ=?	Test command returns the supported range of values of the parameters <rssi> and</rssi>
-	 /ber>.
	Note: although +CSQ is an execution command without parameters, ETSI 07.07
	requires the Test command to be defined.
Reference	3GPP TS 27.007

+CSQ - Signal Quality		SELINT 2
AT+CSQ	Execution command reports received signal quality indicators in	the form:
	+CSQ: <rssi>,<ber></ber></rssi>	
	where	
	<pre><rssi> - received signal strength indication</rssi></pre>	
	0 - (-113) dBm or less	
	1 - (-111) dBm	



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+CSQ - Signal Quality	SELINT 2
	230 - (-109)dBm(-53)dBm / 2 dBm per step
	31 - (-51)dBm or greater
	99 - not known or not detectable
	 - bit error rate (in percent)
	0 - less than 0.2%
	1 - 0.2% to 0.4%
	2 - 0.4% to 0.8%
	3 - 0.8% to 1.6%
	4 - 1.6% to 3.2%
	5 - 3.2% to 6.4%
	6 - 6.4% to 12.8%
	7 - more than 12.8%
	99 - not known or not detectable
	Note: this command should be used instead of the %Q and %L commands, since GSM relevant parameters are the radio link ones and no line is present, hence %Q and %L have no meaning.
AT+CSQ=?	Test command returns the supported range of values of the parameters <rssi></rssi> and <ber></ber> .
	Note: although +CSQ is an execution command without parameters, ETSI 07.07 requires the Test command to be defined.
Reference	3GPP TS 27.007

3.5.4.4.5. Indicator Control - +CIND

+CIND - Indicator C	ontrol SELINT 0/1/2	
AT+CIND= [<state> [,<state>[,]]]</state></state>	Set command is used to control the registration state of ME indicators, in order to automatically send the +CIEV URC, whenever the value of the associated indicat changes. The supported indicators (<descr>) and their order appear from test</descr>	
b www bwin	command AT+CIND=? Parameter:	
	<state> - registration state</state>	
	0 - the indicator is deregistered; there's no unsolicited result code (+CIEV URC) automatically sent by the ME to the application, whenever the value of the associated indicator changes; the value can be directly queried with +CIND? 1 - the indicator is registered: an unsolicited result code (+CIEV URC) is automatically sent by the ME to the application, whenever the value of the associated indicator changes; it is still possible to query the value through +CIND? (default)	
	Note: When the ME is switched on all of the indicators are in registered mode.	
AT+CIND?	Read command returns the current value of ME indicators, in the format:	
	+CIND: <ind>[,<ind>[,]]</ind></ind>	
	Note: the order of the values <ind>s</ind> is the same as that in which the associated	



+CIND - Indicator	<mark>r Control</mark>	SELINT 0/1/2
	indicators appear from test command AT+CIND=?	
AT+CIND=?	Test command returns pairs, where string value descr is a	description (max. 16
	chars) of the indicator and compound value is the supported v	• `
	in the format:	,
	+CIND: ((<descr>, (list of supported <ind>s))[,(<descr>, (list of supported <ind>s)][,(<descr>, (list of supported <ind>s)][,(<descri, (list="" <ind="" of="" supported="">s)][,(<descri, (list="" <ind="" of="" supported="">s)][,(<descri, (list="" <ind="" of="" supported="">s)][,(<descri, (list="" <ind="" of="" supported="">s)][,(<descri,< td=""><td>list of supported</td></descri,<></descri,></descri,></descri,></descri,></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr></ind></descr>	list of supported
	<ind>s))[,]])</ind>	11
	where:	
	<pre><descr> - indicator names as follows (along with their <ind></ind></descr></pre>	ranges)
	"battchg" - battery charge level	C ,
	<ind> - battery charge level indicator range</ind>	
	05	
	99 - not measurable	
	"signal" - signal quality	
	<ind> - signal quality indicator range</ind>	
	07	
	99 - not measurable	
	"service" - service availability	
	<ind> - service availability indicator range</ind>	
	0 - not registered to any network	
	1 - registered	
	"sounder" - sounder activity	
	<ind> - sounder activity indicator range</ind>	
	0 - there's no any sound activity	
	1 - there's some sound activity	
	"message" - message received	
	<ind> - message received indicator range</ind>	
	0 - there is no unread short message at memory location "	SM"
	1 - unread short message at memory location "SM"	
	"call" - call in progress	
	<ind> - call in progress indicator range</ind>	
	0 - there's no calls in progress	
	1 - at least a call has been established	
	"roam" - roaming	
	<ind> - roaming indicator range</ind>	
	0 - registered to home network or not registered	
	1 - registered to other network	
	"smsfull" - a short message memory storage in the MT has b	become full (1), or
	memory locations are available (0)	
	<ind> - short message memory storage indicator range</ind>	
	0 - memory locations are available	
	1 - a short message memory storage in the MT has become	e full.
	"rssi" - received signal (field) strength	
	<ind> - received signal strength level indicator range</ind>	
	0 - signal strength \leq (-112) dBm	
	14 - signal strength in (-97) dBm(-66) dBm (15 dBm ste	eps)
	5 - signal strength \geq (-51) dBm	



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+CIND - Indicator Control		SELINT 0/1/2
	99 - not measurable	
Example	Next command causes all the indicators to be registered AT+CIND=1,1,1,1,1,1,1,1 Next command causes all the indicators to be de-registered AT+CIND=0,0,0,0,0,0,0,0 Next command to query the current value of all indicators AT+CIND? CIND: 4,0,1,0,0,0,0,0,2 OK	
Note	See command +CMER	
Reference	3GPP TS 27.007	

3.5.4.4.6. Mobile Equipment Event Reporting - +CMER

+CMER - Mobile Equ	ipment Event Reporting SELINT 0/1/2		
AT+CMER=	Set command enables/disables sending of unsolicited result codes from TA to TE		
[<mode></mode>	in the case of indicator state changes (n.b.: sending of URCs in the case of key		
[, <keyp></keyp>	pressings or display changes are currently not implemented).		
[, <disp></disp>			
[, <ind></ind>	Parameters:		
[, <bfr>]]]]]</bfr>	<mode> - controls the processing of unsolicited result codes</mode>		
	0 - discard +CIEV Unsolicited Result Codes.		
	1 - discard +CIEV Unsolicited Result Codes when TA-TE link is reserved (e.g.		
	on-line data mode); otherwise forward them directly to the TE.		
	2 - buffer +CIEV Unsolicited Result Codes in the TA when TA-TE link is		
	reserved (e.g. on-line data mode) and flush them to the TE after reservation;		
	otherwise forward them directly to the TE.		
	3 - forward +CIEV Unsolicited Result Codes directly to the TE; when TA is in		
	on-line data mode each +CIEV URC is replaced with a Break (100 ms), and is		
	stored in a buffer; once the ME goes into command mode (after +++ was		
	entered), all URCs stored in the buffer will be output.		
	<keyp> - keypad event reporting</keyp>		
	0 - no keypad event reporting		
	<disp> - display event reporting</disp>		
	0 - no display event reporting		
	<ind> - indicator event reporting</ind>		
	0 - no indicator event reporting		
	2 - indicator event reporting		
	0 - TA buffer of unsolicited result codes is cleared when <mode> 13 is entered</mode>		



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+CMER - Mobile Equ	ipment Event Reporting	SELINT 0/1/2
	Note: After AT+CMER has been switched on, URCs for all regis will be issued. Although it is possible to issue the command when SIM PIN is possible to issue the command when SIM PIN is possible to give a correct indicated because with pending PIN it is not possible to give a correct indicated status. To issue the command when SIM PIN is pending you have "message" and "smsfull" indicators in AT+CIND first.	ending, it will in AT+CIND, cation about SMS
AT+CMER?	Read command returns the current setting of parameters, in the formula +CMER: <mode>,<keyp>,<disp>,<ind>,<bfr></bfr></ind></disp></keyp></mode>	ormat:
AT+CMER=?	Test command returns the range of supported values for paramete <keyp>, <disp>, <ind>, <bfr>, in the format: +CMER: (list of supported <mode>s),(list of supported <keyp (list="" <disp="" of="" supported="">s),(list of supported <ind>s),(list of supported </ind></keyp></mode></bfr></ind></disp>s),(list of supported <ind>s),(list of supported <ind>s)</ind></ind></keyp>	o>s),
Reference	3GPP TS 27.007	_

3.5.4.4.7. Select Phonebook Memory Storage - +CPBS

+CPBS - Select Phoneb	oook Memory Storage	SELINT 0 / 1
AT+CPBS[=	Set command selects phonebook memory storage <storage>, wh</storage>	nich will be used by
<storage>]</storage>	other phonebook commands.	
	Parameter:	
	<storage></storage>	
	"SM" - SIM phonebook	
	"FD" - SIM fixed dialling-phonebook (only phase 2/2+ SIM)	
	"LD" - SIM last-dialling-phonebook (+CPBF is not applicable	O /
	"MC" - device missed (unanswered received) calls list (+CPBF	is not applicable
	for this storage)	,
	"RC" - ME received calls list (+CPBF is not applicable for this	s storage)
	Note: If a superstantia a mitted they got a superstant has the same ha	harriann an Daad
	Note: If parameter is omitted then Set command has the same be command.	naviour as Read
AT+CPBS?	Read command returns the actual values of the parameter stora	gas the number of
ATTCIBS:	occupied records <used></used> and the maximum index number <tota< b=""></tota<>	
	+CPBS: <storage>,<used>,<total></total></used></storage>	
	Note: For <storage>="MC"</storage> : if there are more than one missed same number the read command will return only the last call	calls from the
AT+CPBS=?	Test command returns the supported range of values for the para	meters <storage></storage> .



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+CPBS - Select Phoneb	oook Memory Storage	SELINT 0 / 1
	Note: the presentation format of the Test command output is the set of available values for <storage></storage> , each of them enclosed in parenthesis:	
	+CPBS: ("SM"),("FD"),("LD"),("MC"),("RC")	
Reference	3GPP TS 27.007	

+CPBS - Select Phonel	oook Memory Storage SELINT 2
AT+CPBS=	Set command selects phonebook memory storage <storage>, which will be used by</storage>
<storage></storage>	other phonebook commands.
	Parameter:
	<storage></storage>
	"SM" - SIM phonebook
	"FD" - SIM fixed dialling-phonebook (only phase 2/2+ SIM)
	"LD" - SIM last-dialling-phonebook (+CPBF is not applicable for this storage)
	"MC" - device missed (unanswered received) calls list (+CPBF is not applicable
	for this storage)
	"RC" - ME received calls list (+CPBF is not applicable for this storage).
	"MB" - mailbox numbers stored on SIM; it is possible to select this storage only
	if the mailbox service is provided by the SIM (see #MBN).
AT+CPBS?	Read command returns the actual values of the parameter <storage>, the number of</storage>
	occupied records <used></used> and the maximum index number <total></total> , in the format:
	+CPBS: <storage>,<used>,<total></total></used></storage>
	Note: For <storage>="MC"</storage> : if there are more than one missed calls from the same
	number the read command will return only the last call
ATLCDDC 9	
AT+CPBS=?	Test command returns the supported range of values for the parameters <storage></storage> .
Reference	3GPP TS 27.007

3.5.4.4.8. Read Phonebook Entries - +CPBR

+CPBR - Read Phonel	oook Entries	SELINT 0 / 1	
AT+CPBR=	Execution command returns phonebook entries in location	on number range	
<index1></index1>	<pre><index1><index2> from the current phonebook memory sto</index2></index1></pre>	orage selected with	
[, <index2>]</index2>	+CPBS. If <index2> is omitted, only location <index1> is returned.</index1></index2>		
	Parameters: <index1> - integer type value in the range of location numbers of phone memory <index2> - integer type value in the range of location numbers of phone memory</index2></index1>		



+CPBR - Read Phonebook Entries		SELINT 0 / 1		
	The response format is:			
	+CPBR: <index>,<number>,<type>,<text></text></type></number></index>			
	where: <index> - the current position number of the PB index (to see t</index>	he range of values		
	use +CPBR=?)			
	<number> - string type phone number in format <type></type></number>			
	<type> - type of phone number octet in integer format 129 - national numbering scheme</type>			
	145 - international numbering scheme (contains the character "+")			
	<text> - the alphanumeric text associated to the number; used character set should be the one selected with command +CSCS.</text>			
	Note: if "MC" is the current selected phonebook memory storage, all the missed calls coming from the same number will be saved as one missed call and +CPBR will show just one line of information.			
	Note: If all queried locations are empty (but available), no intwill be returned, while if listing fails in an ME error, +CME returned.			
AT+CPBR=?	Test command returns the supported range of values of the parar	neters in the form:		
	+CPBR: (<minindex> - <maxindex>),<nlength>,<tlength></tlength></nlength></maxindex></minindex>			
	where:			
	<minindex> - the minimum <index> number, integer type</index></minindex>			
	<maxindex> - the maximum <index> number, integer type</index></maxindex>			
	<nlength> - maximum <number> field length, integer type</number></nlength>			
	<pre><tlength> - maximum <name> field length, integer type</name></tlength></pre>			
Note	Remember to select the PB storage with +CPBS command commands.	before issuing PB		
Reference	3GPP TS 27.007			

+CPBR - Read Phonebook Entries		SELINT 2	
AT+CPBR=	Execution command returns phonebook entries in location number range		
<index1></index1>	<index1><index2> from the current phonebook memory storage selected with</index2></index1>		
[, <index2>]</index2>	+CPBS. If <index2> is omitted, only location <index1> is returned.</index1></index2>		
	Parameters: <index1> - integer type, value in the range of location numbers of the currently selected phonebook memory storage (see +CPBS). <index2> - integer type, value in the range of location numbers of the currently selected phonebook memory storage (see +CPBS). The response format is: [+CPBR: <index1>,<number>,<type>,<text>[<cr><lf></lf></cr></text></type></number></index1></index2></index1>		



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+CPBR - Read Pho	<mark>onebook Entries</mark>	SELINT 2
	+CPBR: <index2>,<number>,<type>,<text>[]]]</text></type></number></index2>	
	where: <indexn> - the location number of the phonebook entry <number> - string type phone number of format <type> <type> - type of phone number octet in integer format 129 - national numbering scheme 145 - international numbering scheme (contains the charact <text> - the alphanumeric text associated to the number; use be the one selected with command +CSCS. Note: if "MC" is the currently selected phonebook memory selected phonebook memory selected.</text></type></type></number></indexn>	d character set should
	missed calls coming from the same number will be saved as +CPBR will show just one line of information. Note: If all queried locations are empty (but available), no in will be returned, while if listing fails in an ME error, +CME returned.	one missed call and formation text lines
AT+CPBR=?		
	+CPBR: (<minindex> - <maxindex>),<nlength>,<tlength< td=""><td>1></td></tlength<></nlength></maxindex></minindex>	1>
	where: <minindex> - the minimum <index> number, integer type <maxindex>- the maximum <index> number, integer type <nlength> - maximum <number> field length, integer type <tlength> - maximum <name> field length, integer type</name></tlength></number></nlength></index></maxindex></index></minindex>	
	Note: the value of <nlength> could vary, depending on when functionality has been previously enabled (see #ENS), in the 1. if "SM" memory storage has been selected (see +CP supports the Extension1 service 2. if "FD" memory storage has been selected (see +CP supports the Extension2 service 3. if "MB" memory storage has been selected (see +CP supports the Extension2 service</nlength>	e following situations: PBS) and the SIM BS) and the SIM
Note	supports the Extension6 service Remember to select the PB storage with + CPBS command be	pefore issuing PB
D C	commands.	_
Reference	3GPP TS 27.007	

3.5.4.4.9. Find Phonebook Entries - +CPBF

+CPBF - Find Phonebook Entries SELINT 0 / 1		
AT+CPBF=	Execution command returns phonebook entries (from the current phonebook	
<findtext></findtext>	memory storage selected with +CPBS) which alphanumeric field start with string	
	<findtext>.</findtext>	





+CPBF - Find Pho	nebook Entries SELINT 0 / 1
	Parameter: <findtext> - string type, it is NOT case sensitive; used character set should be the one selected with command +CSCS.</findtext>
	The command returns a report in the form:
	+CPBF: <index1>,<number>,<type>,<text>[[]<cr><lf> +CPBF: <indexn>,<number>,<type>,<text>]</text></type></number></indexn></lf></cr></text></type></number></index1>
	where <index< b=""><i>n</i>>, <number></number>, <type></type>, and <text></text> have the same meaning as in the command +CPBR report.</index<>
	Note: + CPBF is not applicable if the current selected storage (see + CPBS) is either "MC", either "RC" or "LD".
	Note: if no PB records satisfy the search criteria then an ERROR message is reported.
AT+CPBF=?	Test command reports the maximum lengths of <number></number> and <text></text> fields.
	+CPBF: [<max_number_length>],[<max_text_length>]</max_text_length></max_number_length>
Note	Remember to select the PB storage with +CPBS command before issuing PB commands.
Reference	3GPP TS 27.007

+CPBF - Find Ph	onebook Entries SELINT 2	
AT+CPBF=	Execution command returns phonebook entries (from the current phonebook	
<findtext></findtext>	memory storage selected with +CPBS) which alphanumeric field start with string	
	<findtext>.</findtext>	
	Parameter:	
	<fi>dtext> - string type; used character set should be the one selected with command +CSCS.</fi>	
	The command returns a report in the form:	
	[+CPBF: <index1>,<number>,<type>,<text>[<cr><lf></lf></cr></text></type></number></index1>	
	+CPBF: <index2>,<number>,<type>,<text>[]]]</text></type></number></index2>	
	where:	
	<indexn> - the location number of the phonebook entry</indexn>	
	<number> - string type phone number of format <type></type></number>	
	<type> - type of phone number octet in integer format</type>	
	129 - national numbering scheme	
	145 - international numbering scheme (contains the character "+")	
İ	<text> - the alphanumeric text associated to the number; used character set should</text>	



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+CPBF - Find Phoneb	ook Entries	SELINT 2	
Tind I nones	be the one selected with command +CSCS.	SEETITE 2	
	Note: +CPBF is not applicable if the current selected storage (see +CPBS) is either "MC", either "RC" or "LD".		
	Note: if <findtext>="""</findtext> the command returns all the phonebook records.		
	Note: if no PB records satisfy the search criteria then an ERROR reported.	R message is	
AT+CPBF=?	Test command reports the maximum lengths of <number></number> and <text></text> fields, in to format:		
	+CPBF: [<nlength>],[<tlength>]</tlength></nlength>		
	where: <nlength> - maximum length of field <number>, integer type <tlength> - maximum length of field <text>, integer type</text></tlength></number></nlength>		
	Note: the value of <nlength> could vary, depending on whether of functionality has been previously enabled (see #ENS), in the follows: 1. if "SM" memory storage has been selected (see +CPBS) supports the Extension1 service 2. if "FD" memory storage has been selected (see +CPBS) supports the Extension2 service 1. if "MB" memory storage has been selected (see +SIM supports the Extension6 service</nlength>	owing situations: and the SIM and the SIM	
Note	Remember to select the PB storage with +CPBS command	before issuing PB	
	commands.		
Reference	3GPP TS 27.007		

3.5.4.4.10. Write Phonebook Entry - +CPBW

+CPBW - Write Phonebook Entry SELINT 0 / 1		SELINT 0 / 1
AT+CPBW=	Execution command stores at the position <index></index> a phonebool	k record defined by
[<index>]</index>	<number>, <type> and <text> parameters</text></type></number>	
[, <number> [,<type></type></number>		
[, <text>]]]</text>	Parameters:	
	<index> - record position</index>	
	<number> - string type, phone number in the format <type></type></number>	
	<type> - the type of number</type>	
	129 - national numbering scheme	
	145 - international numbering scheme (contains the character "-	+")
	<text></text> - the text associated to the number, string type; used characteristics	acter set should be
	the one selected with command +CSCS.	



+CPBW - Write Phone	<mark>ebook Entry</mark>	SELINT 0 / 1
	Note: If record number <index></index> already exists, it will be overwr	ritten.
	Note: if only <index></index> is given, the record number <index></index> is deleted.	
	Note: if <index></index> is omitted or <index></index> =0, the number <number></number> is stored in the first free phonebook location.	
	(example at+cpbw=0,2,129,"Testo" and at+cpbw=,2,129,"Testo")	
	Note: omission of all the subparameters causes an ERROR resu	lt code.
AT+CPBW=?	•	
	+CPBW: (list of supported <index>s),<nlength>, (list of supported <type>s),<tlength></tlength></type></nlength></index>	
	where: <nlength> - integer type value indicating the maximum length o <tlength> - integer type value indicating the maximum length o</tlength></nlength>	
Reference	3GPP TS 27.007	I IICIU \text>
Note	Remember to select the PB storage with +CPBS command commands.	before issuing PB

+CPBW - Write Phone	ebook Entry	SELINT 2
AT+CPBW=	Execution command writes phonebook entry in location number	<index> in the</index>
[<index>]</index>	current phonebook memory storage selected with +CPBS.	
[, <number> [,<type></type></number>		
[, <text>]]]</text>	Parameters:	
	<index> - integer type, value in the range of location numbers of selected phonebook memory storage (see +CPBS).</index>	f the currently
	<pre><number> - string type, phone number in the format <type></type></number></pre>	
	<pre><type> - the type of number</type></pre>	
	129 - national numbering scheme	. !!>
	145 - international numbering scheme (contains the character "- <text> - the text associated to the number, string type; used char the one selected with command +CSCS.</text>	
	Note: If record number <index></index> already exists, it will be overwr	ritten.
	Note: if either <number>, <type> and <text> are omitted, the p location <index> is deleted.</index></text></type></number>	honebook entry in
	Note: if <index></index> is omitted or <index></index> =0, the number <numbe< b=""> first free phonebook location.</numbe<>	r> is stored in the



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+CPBW - Write Ph	onebook Entry SELINT 2
	(example at+cpbw=0,"+390404192701",129,"Text" and at+cpbw=,"+390404192701",129,"Text")
	Note: if either "LD", "MC" or "RC" memory storage has been selected (see +CPBS) it is possible just to delete the phonebook entry in location <index>, therefore parameters <number>, <type> and <text> must be omitted.</text></type></number></index>
AT+CPBW=?	Test command returns location range supported by the current storage as a compound value, the maximum length of <number></number> field, supported number format of the storage and maximum length of <text></text> field. The format is:
	+CPBW: (list of supported <index>s),<nlength>, (list of supported <type>s),<tlength></tlength></type></nlength></index>
	where: <nlength> - integer type value indicating the maximum length of field <number>.</number></nlength>
	<tl><tl><tl><tl><tl><th< td=""></th<></tl></tl></tl></tl></tl>
	Note: the value of <nlength> could vary, depending on whether or not the ENS functionality has been previously enabled (see #ENS), in the following situations: 1. if "SM" memory storage has been selected (see +CPBS) and the SIM supports the Extension1 service</nlength>
	if "FD" memory storage has been selected (see +CPBS) and the SIM supports the Extension2 service
	 if "MB" memory storage has been selected (see +CPBS) and the SIM supports the Extension6 service
Reference	3GPP TS 27.007
Note	Remember to select the PB storage with +CPBS command before issuing PB commands.

3.5.4.4.11. Clock Management - +CCLK

+CCLK - Clock	<mark>Management</mark>	SELINT 0 / 1
AT+CCLK	Set command sets the real-time clock of the ME.	
[= <time>]</time>		
	Parameter:	
	<time> - current time as quoted string in the format : "yy/MM</time>	/dd,hh:mm:ss±zz"
	yy - year (two last digits are mandatory), range is 0099	
	MM - month (two last digits are mandatory), range is 0112	
	dd - day (two last digits are mandatory);	
	The range for dd(day) depends either on the month and or	n the year it refers to.
	Available ranges are:	
	(0128)	
	(0129)	
	(0130)	
	(0131)	



+CCLK - Clock M	anagement SELINT 0 / 1
	Trying to enter an out of range value will raise an error
	hh - hour (two last digits are mandatory), range is 0023 mm - minute (two last digits are mandatory), range is 0059 ss - seconds (two last digits are mandatory), range is 0059 ±zz - time zone (indicates the difference, expressed in quarter of an hour, between
the local time and GMT; two last digits are mandatory), range	
	Note: If the parameter is omitted the behaviour of Set command is the same as Rea command.
AT+CCLK?	Read command returns the current setting of the real-time clock, in the format <time>.</time>
	Note: the three last characters of <time></time> are not returned by +CCLK? because the ME doesn't support time zone information.
AT+CCLK=?	Test command returns the OK result code.
Example	AT+CCLK="02/09/07,22:30:00+00" OK AT+CCLK? +CCLK: 02/09/07,22:30:25
	OK
Reference	3GPP TS 27.007

+CCLK - Clock Mana	<mark>gement</mark>	SELINT 2
AT+CCLK= <time></time>	Set command sets the real-time clock of the ME .	
	Parameter:	
	<time> - current time as quoted string in the format: "yy/MM/do</time>	d,hh:mm:ss±zz"
	yy - year (two last digits are mandatory), range is 0099	
	MM - month (two last digits are mandatory), range is 0112	
	dd - day (two last digits are mandatory);	
	The range for dd(day) depends either on the month and on	the year it refers to.
	Available ranges are:	
	(0128)	
	(0129)	
	(0130)	
	(0131)	
	Trying to enter an out of range value will raise an error	
	hh - hour (two last digits are mandatory), range is 0023	
	mm - minute (two last digits are mandatory), range is 0059	
	ss - seconds (two last digits are mandatory), range is 0059	
	\pm zz - time zone (indicates the difference, expressed in quarter of	
	the local time and GMT; two last digits are mandatory), r	
AT+CCLK?	Read command returns the current setting of the real-time clock,	, in the format



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+CCLK - Clock Mana	<mark>gement</mark>	SELINT 2
	<time>.</time>	
	Note: the three last characters of <time></time> , i.e. the time zone infor returned by +CCLK? only if the #NITZ URC 'extended' forma (see #NITZ).	
AT+CCLK=?	Test command returns the OK result code.	
Example	AT+CCLK="02/09/07,22:30:00+00" OK AT+CCLK? +CCLK: 02/09/07,22:30:25 OK	
Reference	3GPP TS 27.007	

3.5.4.4.12. Alarm Management - +CALA

5.5.4.4.12. Alai iii Management - FCALIA		
+CALA - Alarm Mana	gement SELINT 0 / 1	
AT+CALA[= <time>[,<n>[,<type></type></n></time>	Set command stores in the internal Real Time Clock an alarm time with respective settings. It is possible to set up a recurrent alarm for one or more days in the week.	
[, <text>[,<recurr> [,<silent>]]]]]</silent></recurr></text>	Currently just one alarm can be set.	
	When the RTC time reaches the alarm time then the alarm starts, the behaviour of the MODULE depends upon the setting <type></type> and if the device was already ON at the moment when the alarm time had come.	
	Parameters:	
	<time> - current alarm time as quoted string "" - (empty string) deletes the current alarm and resets all the +CALA parameters to the "factory default" configuration</time>	
	"hh:mm:ss±zz" - format to be used only when issuing +CALA with parameter <recurr> too.</recurr>	
	"yy/MM/dd,hh:mm:ss±zz" - generic format: it's the same as defined for +CCLK (see)	
	<n> - index of the alarm 0 - The only value supported is 0.</n>	
	<type> - alarm behaviour type</type>	
	0 - reserved for other equipment use.	
	1 - the MODULE simply wakes up fully operative as if the ON/OFF button had been pressed. If the device is already ON at the alarm time, then it does nothing (default).	
	2 - the MODULE wakes up in "alarm mode" if at the alarm time it was off, otherwise it remains fully operative. In both cases the MODULE issues an unsolicited code every 3s:	
	+CALA: <text></text>	
	where <text></text> is the +CALA optional parameter previously set.	



+CALA - Alarm M	SELINT 0 / 1
	The device keeps on sending the unsolicited code every 3s until a #WAKE or #SHDN command is received or a 90 seconds timer expires. If the device is in "alarm mode" and it does not receive the #WAKE command within 90 seconds then it shuts down. 3 - the MODULE wakes up in "alarm mode" if at the alarm time it was off, otherwise it remains fully operative. In both cases the MODULE starts playing the alarm tone on the selected path for the ringer (see #SRP) The device keeps on playing the alarm tone until a #WAKE or #SHDN command is received or a 90 seconds timer expires. If the device is in "alarm mode" and it does not receive the #WAKE command within 90s then it shuts down. 4 - the MODULE wakes up in "alarm mode" if at the alarm time it was off, otherwise it remains fully operative. In both cases the MODULE brings the pin GPIO6 high, provided its <direction> has been set to alarm output, and keeps it in this state until a #WAKE or #SHDN command is received or a 90 seconds timer expires. If the device is in "alarm mode" and it does not receive the #WAKE command within 90s then it shuts down. 5 - the MODULE will make both the actions as for <type>=2 and <type>=3. 6 - the MODULE will make both the actions as for <type>=2 and <type>=4. 7 - the MODULE will make both the actions as for <type>=3 and <type>=4. <text> - unsolicited alarm code text string. It has meaning only if <type> is equal to 2 or 5 or 6. <re> <re> <re> <re> </re> </re> **C**17*[.*]7*[.*]7* it sets a recurrent alarm for one or more days in the week; the digits 1 to 7 corresponds to the days in the week (Monday is 1). **O" - it sets a recurrent alarm for all days in the week. **silent> - integer type indicating if the alarm is silent or not. 0 - the alarm will be silent. During the "alarm mode" the device will not make any network scan and will not register to any network and therefore is not able to dial or receive any call or SMS, the only commands that can be issued to the MODULE in this state are the #WAKE and #SHD</re></re></type></text></type></type></type></type></type></type></direction>
AT+CALA?	Read command returns the list of current active alarm settings in the ME, in the format: [+CALA: <time>,<n>,<type>,[<text>],<recurr>,<silent>]</silent></recurr></text></type></n></time>
	Note: if no alarm is present a <cr><lf></lf></cr> is issued.
AT+CALA=?	Test command returns the list of supported index values (currently just 0), alarm



SELINT 2

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+CALA - Alarm Mar	nagament CF	LINT 0 / 1
TCALA - Alai III Mai	8	
	types and maximum length of the text to be displayed, in the format:	
	+CALA: (list of supported <n>s),(list of supported <type>s),<tler< td=""><td>ngth></td></tler<></type></n>	ngth>
	where:	
	<n> and <type> as before</type></n>	
	<tlength> - maximum <text> field length, integer type</text></tlength>	
	Note: an enhanced version of Test command has been defined, AT+C providing the range of available values for <rlength></rlength> and <silent></silent> to	
AT+CALA=??	Test command returns the list of supported index values (currently ju types, maximum length of the text to be displayed, maximum length and supported <silent></silent> s, in the format:	, ·
	+CALA: (list of supported <n>s),(list of supported <type>s),<tler <rlength>,(list of supported <silent>s)</silent></rlength></tler </type></n>	ngth>,
	where:	
	<n>, <type>, <tlength> and <silent> as before</silent></tlength></type></n>	
	<pre><rlength> - maximum <recurr> field length, integer type</recurr></rlength></pre>	
Example	AT+CALA="02/09/07,23:30:00+00" OK	
Reference	ETSI 07.07, ETSI 27.007	

AT+CALA=	Set command stores in the internal Real Time Clock an alarm time with respective
<time>[,<n>[,<type></type></n></time>	settings. It is possible to set up a recurrent alarm for one or more days in the week.
[, <text>[,<recurr></recurr></text>	Currently just one alarm can be set.
[, <silent>]]]]]</silent>	
	When the RTC time reaches the alarm time then the alarm starts, the behaviour of the MODULE depends upon the setting <type></type> and if the device was already ON at the moment when the alarm time had come.
	Parameters:
	<time> - current alarm time as quoted string</time>
	"" - (empty string) deletes the current alarm and resets all the +CALA parameters to the "factory default" configuration
	"hh:mm:ss±zz" - format to be used only when issuing +CALA with parameter <recurr> too.</recurr>
	"yy/MM/dd,hh:mm:ss±zz" - generic format: it's the same as defined for +CCLK
	(see)
	<n> - index of the alarm</n>

1 - the MODULE simply wakes up fully operative as if the ON/OFF button had

0 - The only value supported is 0. <type> - alarm behaviour type

0 - reserved for other equipment use.

+CALA - Alarm Management



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+CALA - Alarm Management

SELINT 2

been pressed. If the device is already ON at the alarm time, then it does nothing (default).

2 - the MODULE wakes up in "alarm mode" if at the alarm time it was off, otherwise it remains fully operative. In both cases the MODULE issues an unsolicited code every 3s:

+CALA: <text>

where **<text>** is the **+CALA** optional parameter previously set.

The device keeps on sending the unsolicited code every 3s until a **#WAKE** or **#SHDN** command is received or a 90 seconds timer expires. If the device is in "alarm mode" and it does not receive the **#WAKE** command within 90s then it shuts down.

- 3 the MODULE wakes up in "alarm mode" if at the alarm time it was off, otherwise it remains fully operative. In both cases the MODULE starts playing the alarm tone on the selected path for the ringer (see command #SRP)

 The device keeps on playing the alarm tone until a #WAKE or #SHDN command is received or a 90 s time-out occurs. If the device is in "alarm mode" and it does not receive the #WAKE command within 90s then it shuts down.
- 4 the MODULE wakes up in "alarm mode" if at the alarm time it was off, otherwise it remains fully operative. In both cases the MODULE brings the pin GPIO6 high, provided its **<direction>** has been set to alarm output, and keeps it in this state until a **#WAKE** or **#SHDN** command is received or a 90 seconds timer expires. If the device is in "alarm mode" and it does not receive the **#WAKE** command within 90s then it shuts down.
- 5 the MODULE will make both the actions as for type=2 and <type>=3.
- 6 the MODULE will make both the actions as for type=2 and <type>=4.
- 7 the MODULE will make both the actions as for type=3 and <type>=4.
- 8 the MODULE wakes up in "alarm mode" if at the alarm time it was off, otherwise it remains fully operative. In both cases the MODULE sets **High** the **RI** output pin. The **RI** output pin remains **High** until next **#WAKE** issue or until a 90s timer expires. If the device is in "alarm mode" and it does not receive the **#WAKE** command within 90s. After that it shuts down.
- <text> unsolicited alarm code text string. It has meaning only if <type> is equal to 2 or 5 or 6.
- <recurr> string type value indicating day of week for the alarm in one of the following formats:
- "<1..7>[,<1..7>[, ...]]" it sets a recurrent alarm for one or more days in the week; the digits 1 to 7 corresponds to the days in the week (Monday is 1). "0" it sets a recurrent alarm for all days in the week.
- <silent> integer type indicating if the alarm is silent or not.
- 0 the alarm will not be silent:
- 1 the alarm will be silent.

During the "alarm mode" the device will not make any network scan and will not





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+CALA - Alarm Mar	nagement SELINT 2
	register to any network and therefore is not able to dial or receive any call or SMS, the only commands that can be issued to the MODULE in this state are the #WAKE and #SHDN, every other command must not be issued during this state. Note: it is mandatory to set at least once the RTC (issuing +CCLK) before it is possible to issue +CALA with <type>=8</type>
AT+CALA?	Read command returns the list of current active alarm settings in the ME, in the format: [+CALA: <time>,<n>,<type>,[<text>],<recurr>,<silent>]</silent></recurr></text></type></n></time>
AT+CALA=?	Test command returns the list of supported index values (currently just 0), alarm types, maximum length of the text to be displayed, maximum length of <recurr> and supported <silent>s, in the format: +CALA: (list of supported <n>s),(list of supported <type>s),<tlength>, <rlength>,(list of supported <silent>s)</silent></rlength></tlength></type></n></silent></recurr>
Example	AT+CALA="02/09/07,23:30:00+00" OK
Reference	ETSI 07.07, ETSI 27.007

3.5.4.4.13. Postpone alarm - +CAPD

+CAPD – postpone or dismiss an alarm		SELINT 2
AT+CAPD=[<sec>]</sec>	Set command postpones or dismisses a currently active Parameters: <sec>: integer type value indicating the number of secondarm (maximum 60 seconds). If <sec> is set to 0 (defadismissed.</sec></sec>	e alarm.
AT+CAPD=?	Test command reports the supported range of values fo	r parameter <sec></sec>

3.5.4.4.14. Setting date format - +CSDF

+CSDF – setting date format	<mark>SE</mark>	LINT 2
AT+CSDF=[<mode></mode>	This command sets the date format of the date information	presented to





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[, <auxmode>]]</auxmode>	the user, which is specified by use of the <mode></mode> parameter. The
[; \auxinouc]]	<mode> affects the date format on the phone display and doesn't affect the</mode>
	date format of
	the AT command serial interface, so it not used.
	The command also sets the date format of the TE-TA interface, which is
	specified by use of the <auxmode></auxmode> parameter (i.e., the <auxmode></auxmode>
	affects the <time></time> of AT+CCLK and AT+CALA). If the parameters are
	omitted then this sets the default value of <mode></mode> .
	Parameters:
	<mode>:</mode>
	1 DD-MMM-YYYY (default)
	2 DD-MM-YY
	3 MM/DD/YY
	4 DD/MM/YY
	5 DD.MM.YY
	6 YYMMDD
	7 YY-MM-DD
	<auxmode>:</auxmode>
	1 yy/MM/dd (default)
	2 yyyy/MM/dd
	Note: The <time> format of +CCLK and +CALA is</time>
	"yy/MM/dd,hh:mm:ss+zz" when <auxmode>=1 and it is</auxmode>
	"yyyy/MM/dd,hh:mm:ss+zz" when <auxmode>=2.</auxmode>
AT+CSDF?	Read command reports the currently selected <mode></mode> and <auxmode></auxmode> in
	the format:
	+CSDF: <mode>,<auxmode></auxmode></mode>
AT+CSDF=?	Test command reports the supported range of values for parameters
	<mode> and <auxmode></auxmode></mode>

3.5.4.4.15. Setting time format - +CSTF

+CSTF – setting time format		SELINT 2
AT+CSTF=[<mode>]</mode>	This command sets the time format of the time informa	tion presented to
	the user, which is specified by use of the <mode></mode> para	meter. The
	<mode> affects the time format on the phone display a</mode>	nd doesn't affect
	the time format of	
	the AT command serial interface, so it not actually not	used.
	Parameters:	
	<mode>:</mode>	



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	1 HH:MM (24 hour clock; default) 2 HH:MM a.m./p.m.
AT+CSTF?	Read command reports the currently selected <mode> in the format: +CSTF: <mode></mode></mode>
AT+CSTF=?	Test command reports the supported range of values for parameter <mode></mode>

3.5.4.4.16. Time Zone reporting - +CTZR

+CTZR - Time Zone reporting	SELINT 2
AT+CTZR= <onoff></onoff>	This command enables and disables the time zone change event reporting. If the reporting is enabled the MT returns the unsolicited result code +CTZV: <tz> whenever the time zone is changed. Parameters: <onoff>: 0 Disable time zone change event reporting (default) 1 Enable time zone change event reporting</onoff></tz>
AT+CTZR?	Read command reports the currently selected <onoff></onoff> in the format: +CTZR: <onoff></onoff>
AT+CTZR=?	Test command reports the supported range of values for parameter <nooff></nooff>

3.5.4.4.17. Automatic Time Zone update - +CTZU

+CTZU – automatic Time Zone update SELINT 2	
AT+CTZU= <onoff></onoff>	This command enables and disables automatic time zone update via NITZ.
	Parameters:
	<onoff>:</onoff>
	0 Disable automatic time zone update via NITZ (default)
	1 Enable automatic time zone update via NITZ
	Note: despite of the name, the command AT+CTZU=1 enables automatic
	update of the date and time set by AT+CCLK command (not only time
	zone). This happens when a Network Identity and Time Zone (NITZ)
	message is sent by the network. This command is the ETSI standard
	equivalent of Telit custom command AT#NITZ=1. If command
	AT+CTZU=1, or AT#NITZ=1 (or both) has been issued, NITZ message
	will cause a date and time update.



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AT+CTZU?	Read command reports the currently selected <onoff></onoff> in the format: +CTZU: <onoff></onoff>
AT+CTZU=?	Test command reports the supported range of values for parameter <nooff></nooff>

3.5.4.4.18. Restricted SIM Access - +CRSM

3.5.4.4.18. Restric	ted SIM Access - +CRSM
+CRSM - Restricted S	IM Access SELINT 0 / 1 / 2
AT+CRSM= <command/>	Execution command transmits to the ME the SIM <command/> and its required parameters. ME handles internally all SIM-ME interface locking and file selection
[, <fileid></fileid>	routines. As response to the command, ME sends the actual SIM information
[, <p1>,<p2>,<p3></p3></p2></p1>	parameters and response data.
[, <data>]]]</data>	
	Parameters:
	<command/> - command passed on by the ME to the SIM
	176 - READ BINARY
	178 - READ RECORD
	192 - GET RESPONSE
	214 - UPDATE BINARY
	220 - UPDATE RECORD
	242 - STATUS
	'fileid' - identifier of an elementary data file on SIM. Mandatory for every command except STATUS.
	<p1>,<p2>,<p3> - parameter passed on by the ME to the SIM; they are mandatory for every command except GET RESPONSE and STATUS 0255</p3></p2></p1>
	<data> - information to be read/written to the SIM (hexadecimal character format).</data>
	The response of the command is in the format:
	+CRSM: <sw1>,<sw2>[,<response>]</response></sw2></sw1>
	where:
	<sw1>,<sw2> - information from the SIM about the execution of the actual command either on successful or on failed execution. <response> - on a successful completion of the command previously issued it gives the requested data (hexadecimal character format). It's not returned after a successful UPDATE BINARY or UPDATE RECORD command.</response></sw2></sw1>





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+CRSM - Restricte	d SIM Access SELINT 0 / 1 / 2
	Note: this command requires PIN authentication. However commands READ BINARY and READ RECORD can be issued before PIN authentication and if the SIM is blocked (after three failed PIN authentication attempts) to access the contents of the Elementary Files.
	Note: use only decimal numbers for parameters <command/> , <fileid></fileid> , <p1></p1> , <p2></p2> and <p3></p3> .
AT+CRSM=?	Test command returns the OK result code
Reference	3GPP TS 27.007, GSM 11.11

3.5.4.4.19. Alert Sound Mode - +CALM

+CALM - Alert Sound	Mode SELINT 0 / 1		
AT+CALM[=	Set command is used to select the general alert sound mode of the device.		
<mode>]</mode>			
	Parameter:		
	<mode></mode>		
	0 - normal mode		
	1 - silent mode; no sound will be generated by the device, except for alarm sound		
	2 - stealth mode; no sound will be generated by the device		
	Note: if silent mode is selected then incoming calls will not produce alerting sounds but only the unsolicited messages RING or +CRING .		
	Note: If parameter is omitted then the behaviour of Set command is the same as		
	Read command.		
AT+CALM?	Read command returns the current value of parameter <mode></mode> .		
AT+CALM=?	Test command returns the supported values for the parameter <mode></mode> as compound value.		
	For compatibility with previous versions, Test command returns +CALM: (0,1)		
	An enhanced version of Test command has been defined: AT+CALM=?? , that provides the complete range of values for <mode></mode> .		
AT+CALM=??	Enhanced test command returns the complete range of values for the parameter mode> as compound value:		
	+CALM: (0-2)		
Reference	3GPP TS 27.007		

+CALM - Alert So	und Mode	SELINT 2
AT+CALM=	Set command is used to select the general alert sound	mode of the device.
<mode></mode>		
	Parameter:	
	<mode></mode>	



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+CALM - Alert Sou	<mark>ınd Mode</mark>	SELINT 2
	0 - normal mode 1 - silent mode; no sound will be generated by the device, exce 2 - stealth mode; no sound will be generated by the device	
	Note: if silent mode is selected then incoming calls will not probut only the unsolicited messages RING or + CRING .	duce alerting sounds
AT+CALM?	Read command returns the current value of parameter <mode></mode>	,
AT+CALM=?	Test command returns the supported values for the parameter < compound value. +CALM: (0-2)	mode> as
Reference	3GPP TS 27.007	

3.5.4.4.20. Ringer Sound Level - +CRSL

+CRSL - Ringer Soun	d Level SELINT 0
AT+CRSL[=	Set command is used to select the incoming call ringer sound level of the device.
<level>]</level>	
	Parameter:
	ringer sound level
	0 - Off
	1 - low
	2 - middle
	3 - high
	4 - progressive
	Note: if parameter is omitted then the behaviour of Set command is the same as
	Read command
AT+CRSL?	Read command reports the current <level></level> setting of the call ringer in the format:
	+CRSL: <level></level>
AT+CRSL=?	Test command reports < level> supported values as compound value.
	For commotibility with marriage yearsions. Test common dustrums
	For compatibility with previous versions, Test command returns
	+CRSL: (0-3)
	An enhanced version of Test command has been defined: AT+CRSL=??, that
	provides the complete range of values for <level></level> , that
AT+CRSL=??	Enhanced Test command returns the complete range of supported values for the
	parameter <mode>:</mode>
	+CRSL: (0-4)
Reference	3GPP TS 27.007

+CRSL - Ringer Sound	<mark>l Level</mark>	SELINT 1
AT+CRSL[=	Set command is used to select the incoming call ringer sound le	evel of the device.



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+CRSL - Ringer Sou	<mark>nd Level</mark>	SELINT 1
<level>]</level>		
	Parameter:	
	<le><level> - ringer sound level</level></le>	
	0 - Off	
	1 - low	
	2 - middle	
	3 - high	
	4 - progressive	
	Note: if parameter is omitted then the behaviour of Set comm	and is the same as
	Read command	
AT+CRSL?	Read command reports the current <level></level> setting of the call ring	ger in the format:
	+CRSL: <level></level>	
AT+CRSL=?	Test command reports < level> supported values as compound va	alue, in the format:
	+CRSL: (0-4)	
	Note: an enhanced version of Test command has been defined: A	T+CRSL=??.
AT+CRSL=??	Enhanced Test command returns the complete range of support	orted values for the
	parameter <mode></mode> :	
	+CRSL: (0-4)	
Reference	3GPP TS 27.007	

+CRSL - Ringer Sound Level SELINT 2		
AT+CRSL= <level></level>	Set command is used to select the incoming call ringer sound level of the device.	
	Parameter:	
	ringer sound level	
	0 - Off	
	1 - low	
	2 - middle	
	3 - high	
	4 - progressive	
AT+CRSL?	Read command reports the current < level> setting of the call ringer in the format:	:
	+CRSL: <level></level>	
AT+CRSL=?	Test command reports < level > supported values as compound value.	
	+CRSL: (0-4)	
Reference	3GPP TS 27.007	

3.5.4.4.21. Loudspeaker Volume Level - +CLVL





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+CLVL - Loudspeaker	: Volume Level SELINT 0 / 1
AT+CLVL[=	Set command is used to select the volume of the internal loudspeaker audio output
<level>]</level>	of the device.
	Parameter:
	level> - loudspeaker volume
	0max - the value of max can be read by issuing the Test command AT+CLVL=?
	Note: If the parameter is omitted the behavior of Set command is the same as Read command.
AT+CLVL?	Read command reports the current <level></level> setting of the loudspeaker volume in the format:
	+CLVL: <level></level>
AT+CLVL=?	Test command reports <level></level> supported values range in the format:
	+CLVL: (0-max)
Reference	3GPP TS 27.007

+CLVL - Loudspeaker	r Volume Level SELINT 2	
AT+CLVL= <level></level>	Set command is used to select the volume of the internal loudspeaker audio output	
	of the device.	
	Parameter:	
	level> - loudspeaker volume	
	0max - the value of max can be read by issuing the Test command AT+CLVL=?	
AT+CLVL?	Read command reports the current <level></level> setting of the loudspeaker volume in	
	the format:	
	+CLVL: <level></level>	
AT+CLVL=?	Test command reports <level></level> supported values range in the format:	
	+CLVL: (0-max)	
Reference	3GPP TS 27.007	

3.5.4.4.22. Microphone Mute Control - +CMUT

+CMUT - Microphone	Mute Control	SELINT 0 / 1
AT+CMUT[=[<n>]]</n>	Set command enables/disables the muting of the microphone audio line during a	
	voice call.	
	Parameter:	
	<n>></n>	
	0 - mute off, microphone active (factory default)	
	1 - mute on, microphone muted.	
	Note: this command mutes/activates both microphone audio path	s, internal mic and
	external mic.	



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+CMUT - Microphone	Mute Control	SELINT 0 / 1
	Note: issuing AT+CMUT<cr></cr> is the same as issuing the Read	command.
	Note: issuing AT+CMUT= <cr> is the same as issuing the com AT+CMUT=0<cr>.</cr></cr>	mand
AT+CMUT?	Read command reports whether the muting of the microphone audio line during a voice call is enabled or not, in the format:	
	+CMUT: <n></n>	
AT+CMUT=?	Test command reports the supported values for < n > parameter.	
Reference	3GPP TS 27.007	_

+CMUT - Microphone	Mute Control SELINT 2
AT+CMUT= <n></n>	Set command enables/disables the muting of the microphone audio line during a voice call.
	Parameter:
	<n>></n>
	0 - mute off, microphone active (factory default)
	1 - mute on, microphone muted.
	Note: this command mutes/activates both microphone audio paths, internal mic and external mic.
AT+CMUT?	Read command reports whether the muting of the microphone audio line during a
	voice call is enabled or not, in the format:
	+CMUT: <n></n>
AT+CMUT=?	Test command reports the supported values for <n> parameter.</n>
Reference	3GPP TS 27.007

3.5.4.4.23. Silence command - +CSIL

+CSIL - silence command	SELINT 2
AT+CSIL=[<mode>]</mode>	This command enables/disables the silent mode. When the phone is in silent mode, all signalling tones from MT are suppressed. Parameters: <mode>: 0 Silent mode off (default) 1 Silent mode on</mode>
AT+CSIL?	Read command reports the currently selected <mode></mode> in the format: +CSIL: <mode></mode>
AT+CSIL=?	Test command reports the supported range of values for parameter



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<mode></mode>

3.5.4.4.24. Accumulated Call Meter - +CACM

+CACM - Accumu	lated Call Meter SELINT 0 / 1
AT+CACM[= <pwd>]</pwd>	Set command resets the Advice of Charge related Accumulated Call Meter stored in SIM (ACM): it contains the total number of home units for both the current and preceding calls.
	Parameter: <pwd> - to access this command PIN2 is required; if PIN2 has been already input once after startup, it is required no more</pwd>
	Note: If the parameter is omitted the behavior of Set command is the same as Read command.
AT+CACM?	Read command reports the current value of the SIM ACM in the format:
	+CACM: <acm></acm>
	where: <acm> - accumulated call meter in home units, string type: three bytes of the ACM value in hexadecimal format (e.g. "00001E" indicates decimal value 30)</acm>
	Note: the value <acm></acm> is in units whose price and currency are defined with command +CPUC
AT+CACM=?	Test command returns the OK result code
Reference	3GPP TS 27.007

+CACM - Accum	ulated Call Meter SELINT	2
AT+CACM=	Set command resets the Advice of Charge related Accumulated Call Meter	stored in
[<pwd>] SIM (ACM): it contains the total number of home units for both the preceding calls.</pwd>		t and
	Parameter:	
	<pwd> - to access this command PIN2; if PIN2 has been already input one startup, it is required no more</pwd>	e after
AT+CACM?	Read command reports the current value of the SIM ACM in the format:	
	+CACM: <acm></acm>	
	where:	
	<acm> - accumulated call meter in home units, string type: three bytes of t</acm>	he



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+CACM - Accumu	lated Call Meter	SELINT 2
	ACM value in hexadecimal format (e.g. "00001E" indicates decimal value 30)	
	Note: the value <acm></acm> is in home units; price per unit ar with command +CPUC	nd currency are defined
AT+CACM=?	Test command returns the OK result code	
Reference	3GPP TS 27.007	

3.5.4.4.25. Accumulated Call Meter Maximum - +CAMM

+CAMM - Accumulate	ed Call Meter Maximum SELINT 0 / 1		
AT+CAMM[=	Set command sets the Advice of Charge related Accumulated Call Meter Maximum		
<acmmax></acmmax>	Value stored in SIM (ACMmax). This value represents the maximum number of		
[, <pwd>]]</pwd>	home units allowed to be consumed by the subscriber. When ACM reaches		
	<acmmax> value further calls are prohibited.</acmmax>		
	Parameter: <acmmax> - ACMmax value, integer type: it is the maximum number of home units allowed to be consumed by the subscriber. <pwd> - PIN2; if PIN2 has been already input once after startup, it is</pwd></acmmax>		
	required no more		
	Note: <acmmax>=0 value disables the feature.</acmmax>		
	Note: if the parameters are omitted the behavior of Set command is the same as Read command.		
AT+CAMM?	Read command reports the ACMmax value stored in SIM in the format:		
	+CAMM: <acmm></acmm>		
	where:		
	<acmm> - ACMmax value in home units, string type: ACMmax value in decimal</acmm>		
	format.		
Reference	3GPP TS 27.007		

+CAMM - Accumulate	ed Call Meter Maximum	SELINT 2		
AT+CAMM=	Set command sets the Advice of Charge related Accumulated Call Meter Maximum			
[<acmmax></acmmax>	Value stored in SIM (ACMmax). This value represents the maximum number of			
[, <pwd>]]</pwd>	home units allowed to be consumed by the subscriber. When ACM reaches			
	<acmmax> value further calls are prohibited.</acmmax>			
	·			
	Parameter:			
	<acmmax> - ACMmax value, integer type: it is the maximum number of home units allowed to be consumed by the subscriber.<pwd> - PIN2; if PIN2 has been already input once after startup, it is</pwd></acmmax>			
	required no more			



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+CAMM - Accumul	ated Call Meter Maximum	SELINT 2	
	Note: $\langle acmmax \rangle = 0$ value disables the feature.		
AT+CAMM?	Read command reports the ACMmax value stored in SIM in	Read command reports the ACMmax value stored in SIM in the format:	
	+CAMM: <acmm></acmm>		
	where:		
	<acmm> - ACMmax value in home units, string type: three bytes of the ACMmax value in hexadecimal format (e.g. "00001E" indicates decimal value 30)</acmm>		
AT+CAMM=?	Test command returns the OK result code		
Reference	3GPP TS 27.007		

3.5.4.4.26. Price per Unit and Currency Table - +CPUC

+CPUC - Price Per Un	it And Currency Table	SELINT 0 / 1
AT+CPUC[=	Set command sets the values of Advice of Charge related Price p	er Unit and
<currency>,</currency>	Currency Table stored in SIM (PUCT). The PUCT information can be used to	
<ppu>[,<pwd>]]</pwd></ppu>	convert the home units (as used in commands +CAOC, +CACM	I and +CAMM)
	into currency units.	
	Parameters:	
		T TION DEL
	<currency></currency> - string type; three-character currency code (e.g. LI'	
	etc); used character set should be the one selecte +CSCS.	d with command
	ppu> - price per unit, string type (dot is used as decimal separa "1989.27"	tor) e.g.
	<pwd> - SIM PIN2; if PIN2 has been already input once after st</pwd>	artup, it is required
	no more	
	Notes if the manuscript and another daths habasis and Categorius and	1:. 41
	Note: if the parameters are omitted the behavior of Set command	i is the same as
A THE CONTROL	Read command.	
AT+CPUC?	Read command reports the current values of <currency></currency> and <p< b=""></p<>	pu> parameters
	in the format:	
	+CPUC: <currency>,<ppu></ppu></currency>	
Reference	3GPP TS 27.007	

+CPUC - Price Per Un	+CPUC - Price Per Unit And Currency Table SELINT 2		
AT+CPUC=	Set command sets the values of Advice of Charge related Price per Unit and		
<currency>,</currency>	Currency Table stored in SIM (PUCT). The PUCT information can be used to		
<ppu>[,<pwd>]</pwd></ppu>	convert the home units (as used in commands +CAOC, +CACM and +CAMM)		
	into currency units.		
	Parameters:		
	<pre><currency> - string type; three-character currency code (e.g. "LIT", "L. ",</currency></pre>		
	"USD", "DEM" etc); used character set should be the o	one selected with	
	command +CSCS.		





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+CPUC - Price Per U	nit And Currency Table	SELINT 2
	<pre><ppu> - price per unit, string type (dot is used as decimal separa</ppu></pre>	, 0
AT+CPUC?	Read command reports the current values of <currency></currency> and < in the format: +CPUC: <currency></currency> , <ppu></ppu>	ppu> parameters
AT+CPUC=?	Test command returns the OK result code	
Reference	3GPP TS 27.007	

3.5.4.4.27. Call meter maximum event - +CCWE

+CCWE – Call Meter maximum	m event SELINT 2
AT+CCWE= <mode></mode>	Set command is used to enable/disable sending of an unsolicited result code +CCWV shortly before the ACM (Accumulated Call Meter) maximum value is reached. The warning is issued approximately when 30 seconds call time remains. It is also issued when starting a call if less than 30 seconds call time remains. Parameters: <mode>: O Disable the call meter warning event (default) 1 Enable the call meter warning event Note: the set command will respond with an error if the Accumulated Call Meter service is not active in SIM</mode>
AT+CCWE?	Read command reports the currently selected <mode> in the format: +CCWE: <mode></mode></mode>
AT+CCWE=?	Test command reports the supported range of values for parameter <mode></mode>

3.5.4.4.28. Available AT Commands - +CLAC

+CLAC - Available AT	Commands	SELINT 2
AT+CLAC	Execution command causes the ME to return the AT commands	that are available
	for the user, in the following format:	





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+CLAC - Available	AT Commands	SELINT 2
	<at cmd1="">[<cr><lf><at cmd2="">[]]</at></lf></cr></at>	
	where:	
	AT cmdn> - defines the AT command including the pre-	fix AT
AT+CLAC=?	Test command returns the OK result code	
Reference	3GPP TS 27.007	

3.5.4.4.29. **Delete Alarm - +CALD**

+CALD - Delete Alarm	1	SELINT 2
AT+CALD= <n></n>	Execution command deletes an alarm in the ME	
	Parameter: <n> - alarm index 0</n>	
AT+CALD=?	Test command reports the range of supported values for <n> para</n>	ameter.
Reference	3G TS 27.007	

3.5.4.4.30. Read ICCID - +CCID

+CCID - Read ICCID	(Integrated Circuit Card Identification)	SELINT 0 / 1
AT+CCID	Execution command reads on SIM the ICCID (card identified	cation number that
	provides a unique identification number for the SIM)	
AT+ CCID?	Read command has the same effect as Execution command.	
AT+CCID=?	Test command reports OK .	

3.5.4.4.31. Generic SIM access - +CSIM

+CSIM – Generic SIM	access	SELINT 0 / 1 / 2
AT+CSIM= <lock></lock>	Between two successive +CSIM command the SIM-ME is avoid commands can modify wrong SIM file. The locking SIM-ME interface must be done explicitly respectively at end of the +CSIM commands sequence.	g and unlocking of the





+CSIM – Generic SIM	access	SELINT 0 / 1 / 2
	Parameters: <lock>=1 locking of the interface <lock>=0 unlocking of the interface</lock></lock>	•
	In case that TE application does not use the unlock covalue, ME releases the locking.	
AT+CSIM= <length>, <command/></length>	The ME shall send the <command/> as it is to the SIM. As response to the command, ME sends back the actual SIM <response></response> to the TA as it is.	
	Parameters: <le><lenght>: number of the characters that are sent to TI<response> (two times the actual length of the comma</response><command/>: command passed on by the ME to the Sin GSM 11.11 (hexadecimal character format)</lenght></le>	and or response)
	The response of the command is in the format: +CSIM: <length>,<response></response></length>	
	where: < response> : response to the command passed on by the SIM to the ME in the format as described in GSM 11.11 (hexadecimal character format).	
	Error case: +CME ERROR: <err> possible <err> values (numeric format followed by verbose format):</err></err>	
	3 operation not allowed (operation mode is not allowed by the ME, wrong interface lock/unlock status)	
	4 operation not supported (wrong format or parameters of the command)	
AT+CSIM=?	13 SIM failure (SIM no response) Test command returns the OK result code.	
Example	Lock SIM interface AT+CSIM=1 OK	
	STATUS AT+CSIM=10,"A0F2000002" +CSIM: 8,"00009000"	
	ОК	
	STATUS AT+CSIM=10,A0F2000016 +CSIM:48,"000002A87F2002000000000099300220	0800838A838A9000"



+CSIM – Gener	ric SIM access SELIN	NT 0 / 1 / 2
	ОК	
	SELECT EF 6F07 AT+CSIM=14,A0A40000026F07 +CSIM: 4,"9F0F"	
	ОК	
	GET RESPONSE AT+CSIM=10,A0C000000F +CSIM: 34,"000000096F0704001A001A010200009000"	
	ОК	
	SELECT EF 6F30 AT+CSIM=14,A0A40000026F30 +CSIM: 4,"9F0F"	
	OK	
	READ BINARY AT+CSIM=10,A0B00000FC +CSIM:508,"FFFFFF13008313009013005413003013006513003 30001131109130130130098130077130059130043130081130095 0016330420130041FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	13014013002313 1FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
	OK Unlock SIM interface AT+CSIM=0 OK	
Note	For the following instructions (value of the second byte): A4: SELECT 10: TERMINAL PROFILE C2: ENVELOPE 14: TERMINAL RESPONSE A2: SEEK the value of the fifth byte of <command/> must be equal to the nu	mber of bytes



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+CSIM – Generic SIM	access	SELINT 0 / 1 / 2
	which follow (data starting from 6 th byte) and this must be otherwise the command is not send to the SIM and CME_	
Note	After the locking of the SIM-ME interface (AT+CSIM=1) accessible only by AT+CSIM commands (#QSS: 0). The will be automatically deregistered to avoid the TE comma application. They will be automatically reconditioned after SIM-ME interface. After the unlocking of the SIM-ME interface it will be necessary to enter it another time.	GSM and GPRS services nds alter the GSM r the unlocking of the

3.5.4.4.32. Set Voice Mail Number - +CSVM

+CSVM – Set Voice Mail Number	SELINT 2
AT+CSVM= <mode>[,<number>[,<type< th=""><th>The number to the voice mail server is set with this command.</th></type<></number></mode>	The number to the voice mail server is set with this command.
>]]	The parameters <number></number> and <type></type> can be left out if the
	parameter <mode></mode> is set to 0.
	Parameters:
	<mode></mode>
	0 – disable the voice mail number
	1 – enable the voice mail number (factory default)
	<number> - string type phone number of format specified by</number>
	<type></type>
	<type> - type of address octet in integer format</type>
	129 - unknown type of number and ISDN/Telephony
	numbering plan
	145 - international type of number and ISDN/Telephony numbering plan (contains the character "+")
	numbering plan (contains the character +)
	Note: Set command only checks for parameters values validity;
	it does not any actual write to SIM to update voice mail number.
AT+CSVM?	Read command returns the currently selected voice mail number
	and the status (i.e. enabled/disabled) in the format
	+CSVM: <mode>,<number>,<type></type></number></mode>
AT+CSVM=?	Test command reports the range for the parameters <mode></mode> and



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+CSVM - Set Voice Mail Number	SELINT 2
	<type>.</type>

3.5.4.5. Mobile Equipment Errors

3.5.4.5.1. Report Mobile Equipment Error - +CMEE

+CMEE - Report Mol	oile Equipment Error	SELINT 0 / 1
AT+CMEE[=[<n>]]</n>	Set command enables/disables the report of result code:	
	+CME ERROR: <err></err>	
	as an indication of an error relating to the +Cxxx commands issue When enabled, device related errors cause the +CME ERROR: code instead of the default ERROR final result code. ERROR is normally when the error message is related to syntax, invalid parfunctionality.	<pre><err> final result s anyway returned</err></pre>
	Parameter: <n> - enable flag 0 - disable +CME ERROR:</n> 1 - enable +CME ERROR: 2 - enable +CME ERROR: <err> reports, with <err> in numer</err></err>	ic format
	Note: issuing AT+CMEE<cr></cr> is the same as issuing the Read of	command.
	Note: issuing AT+CMEE= <cr> is the same as issuin AT+CMEE=0<cr>.</cr></cr>	ng the command
AT+CMEE?	Read command returns the current value of subparameter <n></n>	
	+CMEE: <n></n>	
AT+CMEE=?	Test command returns the range of values for subparameter < n >	in the format:
	+CMEE: 0, 1, 2 Note: the representation format of the Test command output parenthesis.	is not included in
Note	+CMEE has no effect on the final result code +CMS	
Reference	3GPP TS 27.007	
11010101100	3011 10 27.007	

+CMEE - Report Mob	<mark>oile Equipment Error</mark>	SELINT 2
AT+CMEE=[<n>]</n>	Set command enables/disables the report of result code:	
	+CME ERROR: <err> as an indication of an error relating to the +Cxxx commands iss</err>	sued.



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+CMEE - Report Mol	bile Equipment Error	SELINT 2
	When enabled, device related errors cause the +CME ERROR: code instead of the default ERROR final result code. ERROR in normally when the error message is related to syntax, invalid parfunctionality.	s anyway returned
	Parameter: <n> - enable flag</n>	
	0 - disable +CME ERROR: <err> reports, use only ERROR r 1 - enable +CME ERROR:<err> reports, with <err> in nume 2 - enable +CME ERROR: <err> reports, with <err> in verber</err></err></err></err></err>	eric format
AT+CMEE?	Read command returns the current value of subparameter <n>: +CMEE: <n></n></n>	
AT+CMEE=?	Test command returns the range of values for subparameter <n></n>	•
Note	+CMEE has no effect on the final result code +CMS	
Reference	3GPP TS 27.007	

3.5.4.5.2. Set CMEE mode - #CMEEMODE

#CMEEMODE – Set CMEE mode SELIN	
AT#CMEEMODE= <mode></mode>	This command allows to extend the set of error codes reported by CMEE to the GPRS related error codes.
	Parameters: <mode>: 0 - disable support of GPRS related error codes by AT+CMEE (default) 1 - enable support of GPRS related error codes by AT+CMEE</mode>
	This parameter is stored in the user profile
AT#CMEEMODE?	Read command reports the currently selected < mode > in the format: #CMEEMODE: <mode></mode>
AT#CMEEMODE =?	Test command reports the supported range of values for parameter < mode >

3.5.4.6. Voice Control

3.5.4.6.1. DTMF Tones Transmission - +VTS

+VTS - DTMF Tones T	<mark>Transmission</mark>	SELINT 0 / 1
AT+VTS=	Execution command allows the transmission of DTMF tones.	
<dtmfstring></dtmfstring>		
[,duration]	Parameters:	





+VTS - DTMF Tone	<mark>s Transmission</mark>	SELINT 0 / 1
	<dtmfstring> - string of <dtmf>s, i.e. ASCII characters in to it allows the user to send a sequence of DTMF tones, enduration that was defined through +VTD command. <duration> - duration of a tone in 1/100 sec.; this parameter if the length of first parameter is just one ASCII characters of the length of the first parameter is just one ASCII characters of the length of the length of the sec.; this parameter is just one ASCII characters of the length /duration></dtmf></dtmfstring>	the set (0-9), #,*,(A-D); ach of them with a r can be specified only eter epending on the <duration< a=""> (in 10 ms LASS).</duration<>
	Note: the character P does not correspond to any DTMF tone a pause of 3 seconds between the preceding and succeeding	
AT+VTS=?	For compatibility with previous versions, Test command rete+VTS: (),(),() An enhanced version of Test command has been defined: A provides the correct range of values for <dtmf>.</dtmf>	
AT+VTS=??	Test command provides the list of supported <dtmf>s</dtmf> and the <duration>s</duration> in the format: (list of supported <dtmf>s</dtmf>)[,(list of supported <duration></duration>	••
Reference	3GPP TS 27.007 and TIA IS-101	

+VTS - DTMF Tones T	<mark>Fransmission</mark>	SELINT 2
AT+VTS=	Execution command allows the transmission of DTMF tones.	
<dtmfstring></dtmfstring>		
[,duration]	Parameters:	
	<dtmfstring></dtmfstring> - string of <dtmf>s</dtmf> , i.e. ASCII characters in the s	et (0-9) ,
	#,*,(A-D),P; it allows the user to send a sequence of DTMI	F tones, each of
	them with a duration that was defined through +VTD comr	nand.
	<duration></duration> - duration of a tone in 1/100 sec.; this parameter car	be specified only
	if the length of first parameter is just one ASCII character	
	0 - a single DTMF tone will be transmitted for a duration deper	nding on the
	network, no matter what the current +VTD setting is.	
	1255 - a single DTMF tone will be transmitted for a time <du< b=""></du<>	ration> (in 10 ms
	multiples), no matter what the current +VTD setting is.	
	Note: this commands operates in voice mode only (see +FCLAS	SS).
	Note: the character P does not correspond to any DTMF tone, but a pause of 3 seconds between the preceding and succeeding DTM	*



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+VTS - DTMF Tones T	Transmission	SELINT 2
AT+VTS=?	Test command provides the list of supported <dtmf>s</dtmf> and the list of supported	
	<duration>s in the format:</duration>	
	(list of supported <dtmf>s)[,(list of supported <duration>s)]</duration></dtmf>	
Reference	3GPP TS 27.007 and TIA IS-101	

3.5.4.6.2. Tone Duration - +VTD

+VTD - Tone Duration	TD - Tone Duration SELINT 0 / 1	
AT+VTD[=	Set command sets the length of tones transmitted with +VTS command.	
<duration>]</duration>		
	Parameter:	
	<duration> - duration of a tone</duration>	
	0 - the duration of every single tone is dependent on the networ	k (factory default)
	1255 - duration of every single tone in 1/10 sec.	
	Note: If parameter is omitted the behavior of Set command is the command.	e same as Read
AT+VTD?	Read command reports the current Tone Duration, in the format:	
	<duration></duration>	
AT+VTD=?	Test command provides the list of supported duration >s in the	format:
	(list of supported <duration>s)</duration>	
Reference	3GPP TS 27.007 and TIA IS-101	

+VTD - Tone Duration		SELINT 2
AT+VTD=	Set command sets the length of tones transmitted with +VTS command.	
<duration></duration>		
	Parameter:	
	<duration> - duration of a tone</duration>	
	0 - the duration of every single tone is dependent on the network	(factory default)
	1255 - duration of every single tone in 1/10 sec.	
AT+VTD?	Read command reports the current Tone Duration, in the format:	_



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+VTD - Tone Duration		SELINT 2
	<duration></duration>	
AT+VTD=?	Test command provides the list of supported <duration>s</duration> in the	format:
	(list of supported <duration>s)</duration>	
Reference	3GPP TS 27.007 and TIA IS-101	

3.5.4.7. Commands For GPRS

3.5.4.7.1. GPRS Mobile Station Class - +CGCLASS

+CGCLASS - GPRS N	<mark>Aobile Station Class</mark>	SELINT 0 / 1
AT+CGCLASS	Set command sets the GPRS class according to <class> paramet</class>	er.
[= <class>]</class>		
	Parameter:	
	<class> - GPRS class</class>	
	"B" - GSM/GPRS (factory default)	
	"CG" - class C in GPRS only mode (GPRS only)	
	"CC" - class C in circuit switched only mode (GSM only)	
	Note: the setting is saved in NVM (and available on following re	eboot).
	Note: if parameter <class></class> is omitted, then the behaviour of Set same as Read command.	command is the
AT+CGCLASS?	Read command returns the current value of the GPRS class in the	ne format:
	+CGLASS: <class></class>	
AT+CGCLASS=?	Test command reports the range for the parameter <class></class>	

+CGCLASS - GPRS mobile station class SELIN		SELINT 2
AT+CGCLASS=	Set command sets the GPRS class according to <class></class> parameter.	
[<class>]</class>		
	Parameter:	
	<class> - GPRS class</class>	



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+CGCLASS - GPRS n	<mark>10bile station class</mark>	SELINT 2
	"B" - GSM/GPRS (factory default) "CG" - class C in GPRS only mode (GPRS only) "CC" - class C in circuit switched only mode (GSM only)	
	Note: the setting is saved in NVM (and available on following	g reboot).
AT+CGCLASS?	Read command returns the current value of the GPRS class in +CGLASS: <class></class>	the format:
AT+CGCLASS=?	Test command reports the range for the parameter <class></class>	

3.5.4.7.2. GPRS Attach Or Detach - +CGATT

+CGATT - GPRS Atta	ch Or Detach SELINT 0 / 1	
AT+CGATT[=	Execution command is used to attach the terminal to, or detach the terminal from,	
<state>]</state>	the GPRS service depending on the parameter <state></state> .	
	Parameter:	
	<state> - state of GPRS attachment</state>	
	0 - detached	
	1 - attached	
	Note: If the parameter is omitted the behavior of Execution command is the same as	
	Read command.	
AT+CGATT?	Read command returns the current GPRS service state.	
AT+CGATT=?	Test command requests information on the supported GPRS service states.	
Example	AT+CGATT?	
	+CGATT: 0	
	OK	
	AT+CGATT=?	
	+CGATT: (0,1)	
	OK	
	AT+CGATT=1	
	OK	
Reference	3GPP TS 27.007	
	SELINT 2	
AT+CGATT=[Execution command is used to attach the terminal to, or detach the terminal from,	



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+CGATT - GPRS Atta	ich Or Detach	SELINT 0 / 1
<state>]</state>	the GPRS service depending on the parameter <state></state> .	
	Parameter:	
	<state> - state of GPRS attachment</state>	
	0 - detached	
	1 - attached	
AT+CGATT?	Read command returns the current GPRS service state.	
AT+CGATT=?	Test command requests information on the supported GPRS ser	vice states.
Example	AT+CGATT?	
_	+CGATT: 0	
	OK	
	AT+CGATT=?	
	+CGATT: (0,1)	
	OK	
	AT+CGATT=1	
	OK	
Reference	3GPP TS 27.007	

3.5.4.7.3. GPRS Event Reporting - +CGEREP

+CGEREP - GPRS Ev	vent Reporting SELINT 2	
AT+CGEREP=	Set command enables or disables sending of unsolicited result codes +CGEV:	
[<mode>[,<bfr>]]</bfr></mode>	XXX (see below) from TA to TE in the case of certain events occurring in the TA	
	or the network.	
	Parameters:	
	<mode> - controls the processing of URCs specified with this command</mode>	
	0 - Buffer unsolicited result codes in the TA . If TA result code buffer is full, the	
	oldest one can be discarded. No codes are forwarded to the TE .	
	1 - Discard unsolicited result codes when TA-TE link is reserved (e.g. in on-line	
	data mode); otherwise forward them directly to the TE .	
	2 - Buffer unsolicited result codes in the TA when TA-TE link is reserved (e.g. in	
	on-line data mode) and flush them to the TE when TA-TE link becomes	
	available; otherwise forward them directly to the TE .	
	<pre> <</pre>	
	0 - TA buffer of unsolicited result codes defined within this command is cleared when <mode>=1 or 2 is entered.</mode>	
	1 - TA buffer of unsolicited result codes defined within this command is flushed to	
	the TE when <mode>=1</mode> or 2 is entered (OK response shall be given before	
	flushing the codes)	
	Unsolicited Result Codes	
	The following unsolicited result codes and the corresponding events are defined:	
	+CGEV: REJECT <pdp_type>, <pdp_addr></pdp_addr></pdp_type>	



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+CGEREP - GPRS Ev	vent Reporting SELINT 2
	A network request for PDP context activation occurred when the TA was unable to report it to the TE with a + CRING unsolicited result code and was automatically rejected
	+CGEV: NW REACT <pdp_type>, <pdp_addr>, [<cid>] The network has requested a context reactivation. The <cid> that was used to reactivate the context is provided if known to TA</cid></cid></pdp_addr></pdp_type>
	+CGEV: NW DEACT <pdp_type>, <pdp_addr>, [<cid>] The network has forced a context deactivation. The <cid> that was used to activate the context is provided if known to TA</cid></cid></pdp_addr></pdp_type>
	+CGEV: ME DEACT <pdp_type>, <pdp_addr>, [<cid>] The mobile equipment has forced a context deactivation. The <cid> that was used to activate the context is provided if known to TA</cid></cid></pdp_addr></pdp_type>
	+CGEV: NW DETACH The network has forced a GPRS detach. This implies that all active contexts have been deactivated. These are not reported separately
	+CGEV: ME DETACH The mobile equipment has forced a GPRS detach. This implies that all active contexts have been deactivated. These are not reported separately
	+CGEV: ME CLASS <class> The mobile equipment has forced a change of MS class. The highest available class is reported (see +CGCLASS)</class>
AT+CGEREP?	Read command returns the current <mode> and <bfr> settings, in the format:</bfr></mode>
	+CGEREP: <mode>,<bfr></bfr></mode>
AT+CGEREP=?	Test command reports the supported range of values for the +CGEREP command parameters.
Reference	3GPP TS 27.007

3.5.4.7.4. GPRS Network Registration Status - +CGREG

+CGREG - GPRS	Network Registration Status	SELINT 0 / 1	
AT+CGREG[=	Set command controls the presentation of an unsolicited	Set command controls the presentation of an unsolicited result code	
[<n>]]</n>	+CGREG: (see format below).		
Parameter:			
	<n> - result code presentation mode</n>		
	0 - disable network registration unsolicited result code		
	1 - enable network registration unsolicited result code;	if there is a change in the	
	terminal GPRS network registration status, it is issued	d the unsolicited result	



+CGREG - GPRS Ne	twork Registration Status	SELINT 0 / 1
	code:	·
	LCCPTC	
	+CGREG: <stat></stat>	
	where:	
	<stat> - registration status</stat>	
	0 - not registered, terminal is not currently searching a new	w operator to register
	to	
	1 - registered, home network	
	2 - not registered, but terminal is currently searching a nev	w operator to register
	to	
	3 - registration denied 4 - unknown	
	5 - registered, roaming	
	2 - enable network registration and location information unso	licited result code: if
	there is a change of the network cell, it is issued the unsolic	
	+CGREG: <stat>[,<lac>,<ci>]</ci></lac></stat>	
	where:	
	<stat> - registration status (see above for values)</stat>	
	<lac> - location area code in hexadecimal format (e.g. "000)</lac>	C3" equals 195 in
	decimal)	
	<ci>- cell ID in hexadecimal format</ci>	
	Note: <lac> and <ci> are reported only if <mode>=2 and the</mode></ci></lac>	mobile is registered
	on some network cell.	
	Note: issuing AT+CGREG<cr></cr> is the same as issuing the Ro	ead command.
	Note: issuing AT+CGREG=<cr></cr> is the same as issuing the o	nammand
	AT+CGREG=0 <cr>.</cr>	Command
AT+CGREG?	Read command returns the status of result code presentation m	ode <n> and the</n>
	integer <stat> which shows whether the network has currently</stat>	
	registration of the terminal in the format:	
	COPTO A SALA LA	
	+CGREG: <n>,<stat>[,<lac>,<ci>]</ci></lac></stat></n>	
	Note: <lac> and <ci> are reported only if <mode>=2 and the</mode></ci></lac>	mobile is registered
	on some network cell.	11100110 10 105101010
AT+CGREG=?	Test command returns supported values for parameter <n></n>	
Reference	3GPP TS 27.007	

+CGREG - GPRS Netv	work Registration Status	SELINT 2
AT+CGREG=[<n>]</n>	Set command controls the presentation of an unsolicited result code	
+CGREG: (see format below).		





+CGREG - GPRS No	etwork Registration Status SELINT 2	
+CGREG - GPRS N	Parameter: <n> - result code presentation mode 0 - disable network registration unsolicited result code 1 - enable network registration unsolicited result code; if there is a change in the terminal GPRS network registration status, it is issued the unsolicited result code: +CGREG: <stat> where: <stat> - registration status 0 - not registered, terminal is not currently searching a new operator to regist to 1 - registered, home network 2 - not registered, but terminal is currently searching a new operator to regist to</stat></stat></n>	er
	3 - registration denied 4 - unknown 5 - registered, roaming 2 - enable network registration and location information unsolicited result code; there is a change of the network cell, it is issued the unsolicited result code: +CGREG: <stat>[,<lac>,<ci>]</ci></lac></stat>	if
	where: <stat> - registration status (see above for values) <lac> - location area code in hexadecimal format (e.g. "00C3" equals 195 in decimal) <ci>- cell ID in hexadecimal format.</ci></lac></stat>	
	Note: <lac> and <ci> are reported only if <mode>=2 and the mobile is registered on some network cell.</mode></ci></lac>	1
AT+CGREG?	Read command returns the status of result code presentation mode <n> and the integer <stat> which shows whether the network has currently indicated the registration of the terminal in the format:</stat></n>	
	+CGREG: <n>,<stat>[,<lac>,<ci>] Note: <lac> and <ci> are reported only if <mode>=2 and the mobile is registered.</mode></ci></lac></ci></lac></stat></n>	d
	on some network cell.	
AT+CGREG=?	Test command returns supported values for parameter <n></n>	
Reference	3GPP TS 27.007	



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3.5.4.7.5. Define PDP Context - +CGDCONT

+CGDCONT - Define	PDP Context SELINT 0 / 1		
AT+CGDCONT[=	Set command specifies PDP context parameter values for a PDP context identified		
[<cid></cid>	by the (local) context identification parameter, <cid></cid>		
[, <pdp_type></pdp_type>			
[, <apn></apn>	Parameters:		
, <pdp addr=""></pdp>	<cid> - (PDP Context Identifier) numeric parameter which specifies a particular</cid>		
[, <d_comp></d_comp>	PDP context definition.		
[, <h_comp></h_comp>	1max - where the value of max is returned by the Test command		
[, <pd1></pd1>	<pdp_type> - (Packet Data Protocol type) a string parameter which specifies the</pdp_type>		
[,[,pdN]]]]]]]]	type of packet data protocol		
	"IP" - Internet Protocol		
	<apn> - (Access Point Name) a string parameter which is a logical name that is</apn>		
	used to select the GGSN or the external packet data network. If the value		
	is empty ("") or omitted, then the subscription value will be requested.		
	<pdp_addr> - a string parameter that identifies the terminal in the address space</pdp_addr>		
	applicable to the PDP. The allocated address may be read using the		
	+CGPADDR command.		
	<d_comp> - numeric parameter that controls PDP data compression</d_comp>		
	0 - off (default if value is omitted)		
	1 - on		
	<h_comp> - numeric parameter that controls PDP header compression</h_comp>		
	0 - off (default if value is omitted)		
	1 - on		
	<pre><pd1>,, <pdn> - zero to N string parameters whose meanings are specific to the <pre><pdp type=""></pdp></pre></pdn></pd1></pre>		
	• •		
	Note: a special form of the Set command, +CGDCONT= <cid>, causes the values</cid>		
	for context number <cid></cid> to become undefined.		
	Note: issuing AT+CGDCONT<cr></cr> is the same as issuing the Read command.		
	Note: issuing AT+CGDCONT= <cr> returns the OK result code.</cr>		
AT+CGDCONT?	Read command returns the current settings for each defined context in the format:		
	+CGDCONT: <cid>,<pdp_type>,<apn>,<pdp_addr>,<d_comp>,</d_comp></pdp_addr></apn></pdp_type></cid>		
	<h_comp>[,<pd1>[,[,pdN]]]<cr><lf>[<cr><lf>+CGDCONT:</lf></cr></lf></cr></pd1></h_comp>		
	<cid>,<pdp_type>,<apn>,<pdp_addr>,<d_comp>,<h_comp></h_comp></d_comp></pdp_addr></apn></pdp_type></cid>		
ATL COD CONT. 0	[, <pd1>[,[,pdN]]]<cr><lf>[]]</lf></cr></pd1>		
AT+CGDCONT=?	Test command returns values supported as a compound value AT+CGDCONT=1,"IP", "APN","10.10.10.10",0,0		
Example	OK		
	AT+CGDCONT?		
	+CGDCONT: 1,"IP","APN","10.10.10.10",0,0		
	OK		
	AT+CGDCONT=? +CGDCONT: (1-5),"IP",,,(0-1),(0-1)		
	-CODCOTT. (1-3), II ,,,(V-1),(V-1)		



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+CGDCONT - Define PDP Context		SELINT 0 / 1
	OK	
Reference	3GPP TS 27.007	

	ntext SELINT 2
<mark>+CGDCONT </mark>	Set command specifies PDP context parameter values for a PDP context
	identified by the (local) context identification parameter, < cid>
[, <pdp_type></pdp_type>	identified by the (local) context identification parameter, \cid
[, <apn></apn>	Parameters:
[, <pdp_addr></pdp_addr>	<cid>- (PDP Context Identifier) numeric parameter which specifies a</cid>
	particular PDP context definition.
[, <d_comp> [,<h comp=""></h></d_comp>	1max - where the value of max is returned by the Test command
- ·	PDP type> - (Packet Data Protocol type) a string parameter which
[, <pd1></pd1>	specifies the type of packet data protocol
[,[,pdN]]]]]]]]	"IP" - Internet Protocol
	"IPV6" - Internet Protocol version 6
	< APN> - (Access Point Name) a string parameter which is a logical name
	that is used to select the GGSN or the external packet data
	network. If the value is empty ("") or omitted, then the
	subscription value will be requested.
	<pre><pdp_addr> - a string parameter that identifies the terminal in the</pdp_addr></pre>
	address space applicable to the PDP. The allocated
	address may be read using the +CGPADDR command.
	d_comp> - numeric parameter that controls PDP data compression
	0 - off (default if value is omitted)
	1 - on
	- on - numeric parameter that controls PDP header compression
	0 - off (default if value is omitted)
	1 - on
	<pre><pre><pd><pd1>,, <pdn> - zero to N string parameters whose meanings are</pdn></pd1></pd></pre></pre>
	specific to the PDP type>
	specific to the ADI_type
	Note: a special form of the Set command, +CGDCONT= <cid>, causes</cid>
	the values for context number <cid></cid> to become undefined.
AT+CGDCONT?	Read command returns the current settings for each defined context in the
TIT CODCOTT	format:
	+CGDCONT: <cid>,<pdp type="">,<apn>,<pdp addr="">,<d comp="">,</d></pdp></apn></pdp></cid>
	<pre><h_comp>[,<pd1>[,[,pdN]]][<cr><lf>+CGDCONT: <cid>,</cid></lf></cr></pd1></h_comp></pre>
	<pre><pdp type="">,<apn>,<pdp addr="">,<h comp="">,<h comp=""></h></h></pdp></apn></pdp></pre>
	[, <pd1>[,[,pdN]]][]]</pd1>
AT+CGDCONT=?	Test command returns values supported as a compound value

3.5.4.7.6. Quality Of Service Profile - +CGQMIN

+CGQMIN - Quality Of Service Profile (Minimum Acceptable)

SELINT 0 / 1





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+CGQMIN - Quality	Of Service Profile (Minimum Acceptable)	SELINT 0 / 1
AT+CGQMIN[=	Set command allows to specify a minimum acceptable profile	which is checked by
[<cid></cid>	the terminal against the negotiated profile returned in the Act	ivate PDP Context
[, <precedence></precedence>	Accept message.	
[, <delay></delay>		
[, <reliability></reliability>	Parameters:	
[, <peak></peak>	<cid> - PDP context identification (see +CGDCONT).</cid>	
[, <mean>]]]]]]</mean>	<pre><pre><pre><pre>< - precedence class</pre></pre></pre></pre>	
	<delay> - delay class</delay>	
	<reliability> - reliability class</reliability>	
	<pre><peak> - peak throughput class</peak></pre>	
	<mean> - mean throughput class</mean>	
	If a value is omitted for a particular class then this class is not	t checked.
	Note: a special form of the Set command, +CGQMIN= <cid></cid>	causes the requested
	profile for context number <cid></cid> to become undefined.	
	Note: issuing AT+CGQMIN <cr> is the same as issuing the</cr>	e Read command.
	Note: issuing AT+CGQMIN=<cr></cr> returns the OK result code.	
AT+CGQMIN?	Read command returns the current settings for each defined context in the format:	
	+CGQMIN: <cid>,<pre>,<delay>,<reliability>,<p< th=""><th>eak>.</th></p<></reliability></delay></pre></cid>	eak>.
	<mean><cr><lf>[<cr><lf>+CGQMIN: <cid>,<pre>,<pre></pre></pre></cid></lf></cr></lf></cr></mean>	
	<delay>,<reliability>,<peak>,<mean><cr><lf>[]]</lf></cr></mean></peak></reliability></delay>	,
	If no PDP context has been defined, it has no effect and OK 1	esult code is returned.
AT+CGQMIN=?	Test command returns as a compound value the type of the cu	
	the supported values for the subparameters in the format:	
	+CGQMIN: <pdp_type>,(list of supported <pre><pre>cedence</pre></pre></pdp_type>	>s),
	(list of supported <delay>s),(list of supported <reliability></reliability></delay>	
	(list of supported <peak>s),(list of supported <mean>s)</mean></peak>	
	Note: only the "IP" PDP Type is currently supported.	
Example	AT+CGQMIN=1,0,0,3,0,0	
1	OK	
	AT+CGQMIN? +CGQMIN: 1,0,0,5,0,0	
	, COQ111111. 1,0,0,3,0,0	
	OK	
	AT+CGQMIN=?	
	+CGQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-19,31)	
	OK	
Reference	3GPP TS 27.007; GSM 03.60	

+CGQMIN - Quality Of Service Profile (Minimum Acceptable)

SELINT 2





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+CGQMIN - Quality	Of Service Profile (Minimum Acceptable)	SELINT 2
AT+CGQMIN=	Set command allows to specify a minimum acceptable profile w	hich is checked by
[<cid></cid>	the terminal against the negotiated profile returned in the Activa	te PDP Context
[, <precedence></precedence>	Accept message.	
[, <delay></delay>		
[, <reliability></reliability>	Parameters:	
[, <peak></peak>	<cid> - PDP context identification (see +CGDCONT command).</cid>	
[, <mean>]]]]]]</mean>	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	
	<delay> - delay class</delay>	
	<reliability> - reliability class</reliability>	
	<pre><peak> - peak throughput class</peak></pre>	
	<mean> - mean throughput class</mean>	
	If a value is omitted for a particular class then this class is not ch	necked.
	Note: a special form of the Set command, +CGQMIN= <cid> ca</cid>	auses the requested
	profile for context number <cid></cid> to become undefined.	
AT+CGQMIN?	Read command returns the current settings for each defined con-	text in the format:
	+CGQMIN: <cid>,<pre>,<delay>,<reliability>,<pea< th=""><th>k>.</th></pea<></reliability></delay></pre></cid>	k>.
	<mean>[<cr><lf>+CGQMIN: <cid>,<pre>,<pre>,</pre></pre></cid></lf></cr></mean>	
	<delay>,<reliability>,<peak>,<mean>[]]</mean></peak></reliability></delay>	
	If no PDP context has been defined, it has no effect and OK resu	
AT+CGQMIN=?	Test command returns as a compound value the type of the curre	ent PDP context and
	the supported values for the subparameters in the format:	
	+CGQMIN: <pdp_type>,(list of supported <pre><pre>cedence>s)</pre></pre></pdp_type>	
	(list of supported <delay>s), (list of supported <reliability>s),</reliability></delay>	
	(list of supported <peak>s), (list of supported <mean>s)</mean></peak>	,
	Notes and add of SD2 DDD. Town in commendations and a	
F1.	Note: only the "IP" PDP_Type is currently supported. AT+CGQMIN=1,0,0,3,0,0	
Example	OK	
	AT+CGQMIN?	
	+CGQMIN: 1,0,0,5,0,0	
	OK	
	AT+CGQMIN=?	
	+CGQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)	
	OK	
Reference	3GPP TS 27.007; GSM 03.60	

3.5.4.7.7. Quality Of Service Profile - +CGQREQ

+CGQREQ - Quality (Of Service Profile (Requested)		SELINT 0 / 1
AT+CGQREQ[=	Set command allows to specify	a Quality of Service Profile that i	s used when the





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+CGOREO - Quality	Of Service Profile (Requested)	SELINT 0 / 1
[<cid></cid>	terminal sends an Activate PDP Context Request message to the	
[, <precedence></precedence>	specifies a profile for the context identified by the (local) context	
[, <delay></delay>	parameter, <cid>.</cid>	
[, <reliability></reliability>		
[, <peak></peak>	Parameters:	
[, <mean>]]]]]]</mean>	<cid> - PDP context identification (see +CGDCONT command).</cid>	
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	,
	<delay> - delay class</delay>	
	<reliability> - reliability class</reliability>	
	<pre><peak> - peak throughput class</peak></pre>	
	<mean> - mean throughput class</mean>	
	If a value is omitted for a particular class then this class is not ch	necked.
	Note: a special form of the Set command, +CGQREQ= <cid>c</cid>	auses the requested
	profile for context number < cid> to become undefined.	auses the requesteu
	p-02110 102 00110111 1101110 01 010 00 00001110 0110011110 011	
	Note: issuing AT+CGQREQ <cr> is the same as issuing the R</cr>	Read command.
	Note: issuing AT+CGQREQ= <cr> returns the OK result cod</cr>	e.
AT+CGQREQ?	Read command returns the current settings for each defined con	text in the format:
	+CGQREQ: <cid>,<pre>,<delay>,<reliability>,<pea< th=""><th></th></pea<></reliability></delay></pre></cid>	
	<pre><mean><cr><lf>[<cr><lf>+CGQREQ: <cid>,<pre>,<pre>,<pre></pre></pre></pre></cid></lf></cr></lf></cr></mean></pre>	ence>,
	<delay>,<reliability>,<peak>,<mean><cr><lf>[]]</lf></cr></mean></peak></reliability></delay>	
	If no PDP context has been defined, it has no effect and OK rest	
AT+CGQREQ=?	Test command returns as a compound value the type of the curre	ent PDP context and
	the supported values for the subparameters in the format:	
	LOGODEO DE MARIO LA	
	+CGQREQ: <pdp_type>,(list of supported <pre><pre>cedence>s)</pre></pre></pdp_type>	
	(list of supported <delay>s),(list of supported <reliability>s),</reliability></delay>	,
	(list of supported <peak>s),(list of supported <mean>s)</mean></peak>	
	Note: only the "IP" PDP Type is currently supported.	
E1-	AT+CGOREQ?	
Example	+CGQREQ: 1,0,0,3,0,0	
	OK	
	AT+CGQREQ=1,0,0,3,0,0 OK	
	AT+CGQREQ=?	
	+CGQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-19,31)	
	OV	
Reference	OK 3GPP TS 27.007; GSM 03.60	
Kelelelice	JULT 19 71.001, OSM 03.00	

+CGQREQ - Quality Of Service Profile (Requested)

SELINT 2





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+CGQREQ - Quality	y Of Service Profile (Requested)	SELINT 2
AT+CGQREQ=	Set command allows to specify a Quality of Service Profile th	at is used when the
[<cid></cid>	terminal sends an Activate PDP Context Request message to t	he network. It
[, <precedence></precedence>	specifies a profile for the context identified by the (local) cont	ext identification
[, <delay></delay>	parameter, <cid>.</cid>	
[, <reliability></reliability>		
[, <peak></peak>	Parameters:	
[, <mean>]]]]]]</mean>	<cid> - PDP context identification (see +CGDCONT comma</cid>	and).
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	
	<delay> - delay class</delay>	
	<reliability> - reliability class</reliability>	
	<pre><peak> - peak throughput class</peak></pre>	
	<mean> - mean throughput class</mean>	
	If a value is omitted for a particular class then this class is not	checked.
	Note: a special form of the Set command, +CGQREQ= <cid></cid>	causes the requested
	profile for context number <cid></cid> to become undefined.	•
AT+CGQREQ?	Read command returns the current settings for each defined co	ontext in the format:
	+CGQREQ: <cid>,<pre>,<delay>,<reliability>,[<cr><lf>+CGQREQ: <cid>,<pre>,<pre>,<reliability>,<peak>,<mean>[]]</mean></peak></reliability></pre></pre></cid></lf></cr></reliability></delay></pre></cid>	eak>,
	If no PDP context has been defined, it has no effect and OK re	esult code is returned.
AT+CGQREQ=?	Test command returns as a compound value the type of the cuthe supported values for the subparameters in the format:	rrent PDP context and
	+CGQREQ: <pdp_type>,(list of supported <pre><pre>cedence></pre></pre></pdp_type>	>s) ,
	(list of supported <delay>s),(list of supported <reliability></reliability></delay>	s),
	(list of supported <peak>s),(list of supported <mean>s)</mean></peak>	
	Note: only the "IP" PDP Type is currently supported.	
Example	AT+CGQREQ?	
1	+CGQREQ: 1,0,0,3,0,0	
	OK	
	AT+CGQREQ=1,0,0,3,0,0	
	OK AT+CGQREQ=?	
	+CGQREQ=? +CGQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)	
	OK	
Reference	3GPP TS 27.007; GSM 03.60	

3.5.4.7.8. PDP Context - +CGACT

+CGACT - PDP Context Activate Or Deactivate

SELINT 0 / 1





+CGACT - PDP Conte	ext Activate Or Deactivate SELINT 0 / 1
AT+CGACT[=	Execution command is used to activate or deactivate the specified PDP context(s)
[<state>[,<cid></cid></state>	
[, <cid>[,]]]]]</cid>	Parameters:
	<state> - indicates the state of PDP context activation</state>
	0 - deactivated
	1 - activated
	<cid> - a numeric parameter which specifies a particular PDP context definition (see +CGDCONT)</cid>
	Note: if no <cid></cid> s are specified the activation/deactivation form of the command activates/deactivates all defined contexts.
	Note: issuing AT+CGACT<cr></cr> is the same as issuing the Read command.
	Note: issuing AT+CGACT= <cr> returns the OK result code.</cr>
AT+CGACT?	Read command returns the current activation state for all the defined PDP contexts
	in the format:
	+CGACT: <cid>,<state><cr><lf>[<cr><lf>+CGACT:</lf></cr></lf></cr></state></cid>
	<cid>,<state><cr><lf>[]]</lf></cr></state></cid>
AT+CGACT=?	Test command reports information on the supported PDP context activation states
	parameters in the format:
	LCCACT. (0.1)
Evample	+CGACT: (0-1) AT+CGACT?
Example	+CGACT: 1,1
	OK
	AT+CGACT=1,1 OK
Reference	3GPP TS 27.007

+CGACT - PDP Conte	ext Activate Or Deactivate	SELINT 2
AT+CGACT=	Execution command is used to activate or deactivate the specified	d PDP context(s)
[<state>[,<cid></cid></state>		
[, <cid>[,]]]]</cid>	Parameters:	
	<state></state> - indicates the state of PDP context activation	
	0 - deactivated	
	1 - activated	
	<pre><cid> - a numeric parameter which specifies a particular PDP co (see +CGDCONT command)</cid></pre>	ntext definition
	Note: if no <cid></cid> s are specified the activation/deactivation form activates/deactivates all defined contexts.	of the command
AT+CGACT?	Read command returns the current activation state for all the defi	ned PDP contexts
	in the format:	
	+CGACT: <cid>,<state>[<cr><lf>+CGACT: <cid>,<state< th=""><th>>[]]</th></state<></cid></lf></cr></state></cid>	>[]]



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+CGACT - PDP Con	text Activate Or Deactivate	SELINT 2
AT+CGACT=?	Test command reports information on the supported PDP context parameters in the format:	t activation states
	+CGACT: (0,1)	
Example	AT+CGACT=1,1	
	OK	
	AT+CGACT?	
	+CGACT: 1,1	
	OK	
Reference	3GPP TS 27.007	

3.5.4.7.9. Show PDP Address - +CGPADDR

+CGPADDR - Show P	PDP Address SELINT 0 / 1
AT+CGPADDR=	Execution command returns a list of PDP addresses for the specified context
[<cid>[,<cid></cid></cid>	identifiers in the format:
[,]]]	
	+CGPADDR: <cid>[,<pdp addr=""> <cr><lf>[<cr><lf></lf></cr></lf></cr></pdp></cid>
	+CGPADDR: <cid>[,<pdp_addr>]<cr><lf>[]]</lf></cr></pdp_addr></cid>
	Parameters:
	<cid>- a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command). If no <cid> is specified, the addresses for all defined contexts are returned.</cid></cid>
	<pdp_addr> - a string that identifies the terminal in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the +CGDCONT command when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>; if no address is available the <pdp_addr> parameter is not shown</pdp_addr></cid></pdp_addr>
AT+CGPADDR=?	Test command returns a list of defined <cid></cid> s.
Example	AT#GPRS=1 +IP: xxx.yyy.zzz.www
	OK
	AT+CGPADDR=1 +CGPADDR: 1,"xxx.yyy.zzz.www"
	OK
	AT+CGPADDR=?
	+CGPADDR: (1)



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+CGPADDR - Show PDP Address		SELINT 0 / 1
	OK	
Reference	3GPP TS 27.007	

+CGPADDR - Show I	PDP Address SELINT 2
AT+CGPADDR= [<cid>[,<cid>[,]]]</cid></cid>	Execution command returns a list of PDP addresses for the specified context identifiers in the format: +CGPADDR: <cid>,<pdp_addr>[<cr><lf>+CGPADDR: <cid>,<pdp_addr>[]] Parameters: <cid> - a numeric parameter which specifies a particular PDP context definition (see +CGDCONT command). If no <cid> is specified, the addresses for all defined contexts are returned. <pdp_addr> - a string that identifies the terminal in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the +CGDCONT command when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>; if no address is available the empty string ("") is represented as <pdp_addr></pdp_addr></cid></pdp_addr></cid></cid></pdp_addr></cid></lf></cr></pdp_addr></cid>
AT+CGPADDR=?	Test command returns a list of defined <cid></cid> s.
Example	AT#GPRS=1 +IP: xxx.yyy.zzz.www OK AT+CGPADDR=1 +CGPADDR: 1,"xxx.yyy.zzz.www" OK AT+CGPADDR=? +CGPADDR: (1) OK 3GPP TS 27.007

3.5.4.7.10. Enter Data State - +CGDATA

+CGDATA - Enter Da	<mark>ata State</mark>	SELINT 0 / 1
AT+CGDATA=	Execution command causes to perform whatever actions are necessary	essary to establish a
[<l2p>,[<cid></cid></l2p>	communication with the network using one or more GPRS PDP to	types.
[, <cid>[,]]]]</cid>		
	Parameters:	
	<l2p> - string parameter that indicates the layer 2 protocol to be</l2p>	used
	"PPP" - PPP Point-to-point protocol	
	<cid> - numeric parameter which specifies a particular PDP cont</cid>	text definition (see



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+CGDATA - Enter	Data State	SELINT 0 / 1
	+CGDCONT command).	
	Note: if parameter <l2p></l2p> is omitted, the layer 2 protocol is	unspecified
AT+CGDATA=?	Test command reports information on the supported layer 2 protocols.	
	Note: the representation format of the Test command output parenthesis	t is not included in
Example	AT+CGDATA=? +CGDATA: "PPP"	
	OK AT+CGDATA="PPP",1 CONNECT	
Reference	3GPP TS 27.007	

+CGDATA - Enter Da	ta State SELINT 2	
AT+CGDATA=	Execution command causes to perform whatever actions are necessary to establish a	
[<l2p>,[<cid></cid></l2p>	communication with the network using one or more GPRS PDP types.	
[, <cid>[,]]]]</cid>		
	Parameters:	
	<l2p> - string parameter that indicates the layer 2 protocol to be used</l2p>	
	"PPP" - PPP Point-to-point protocol	
	<cid>-</cid> numeric parameter which specifies a particular PDP context definition (see	
	+CGDCONT command).	
	Note: if parameter < L2P > is omitted, the layer 2 protocol is unspecified	
AT+CGDATA=?	Test command reports information on the supported layer 2 protocols.	
Example	AT+CGDATA=?	
•	+CGDATA: ("PPP")	
	OK	
	AT+CGDATA="PPP",1	
	CONNECT	
Reference	3GPP TS 27.007	

3.5.4.7.11. Modify PDP context - +CGCMOD

+CGCMOD - Modify PDP context SELINT 2		SELINT 2
AT+CGCMOD=[<cid1></cid1>	The execution command is used to modify the specifie	d PDP context(s)
[, <cid2>[,,<cidn>]]]</cidn></cid2>	with respect to QoS profiles.	
	If no <cidi></cidi> is specified the command modifies all acti	ve contexts.
	Parameters:	



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	<cidi>: a numeric parameter which specifies a particular PDP context</cidi>
AT+CGCMOD=?	Test command returns a list of <cid></cid> s associated with active contexts.

3.5.4.8. Commands For Battery Charger

3.5.4.8.1. Battery Charge - +CBC

+CBC - Battery Char	ge SELINT 0 / 1
AT+CBC	Execution command returns the current Battery Charge status in the format:
	+CBC: <bcs>,<bcl></bcl></bcs>
	where:
	 bcs> - battery charge status
	0 - ME is powered by the battery
	1 - ME has a battery connected, and charger pin is being powered2 - ME does not have a battery connected
	3 - Recognized power fault, calls inhibited
	 bcl> - battery charge level, only if <bcs>=0</bcs>
	0 - battery is exhausted, or ME does not have a battery connected
	25 - battery charge remained is estimated to be 25%
	50 - battery charge remained is estimated to be 50%
	75 - battery charge remained is estimated to be 75% 100 - battery is fully charged.
	100 - battery is runy charged.
	Note: <bes>=1</bes> indicates that the battery charger supply is inserted and the battery is being recharged if necessary with it. Supply for ME operations is taken anyway from VBATT pins.
	Note: without battery/power connected on VBATT pins or during a power fault the unit is not working, therefore values bcs>=2 and bcs>=3 will never appear.
	Note: <bcl> indicates battery charge level only if battery is connected and charger is not connected</bcl>
AT+CBC?	Read command has the same effect as Execution command.
AT+CBC=?	Test command returns parameter values supported as a compound value.
	For compatibility with previous versions, Test command returns
	+CBC: (0-2),(0-100)
	An enhanced version of Test command has been defined: AT+CBC=?? , that provides the complete range of values for bcs> and <bcl>></bcl> .
ATL ODG 22	Note: although +CBC is an execution command, ETSI 07.07 requires the Test command to be defined.
AT+CBC=??	Enhanced test command returns the complete range of values for <bcs></bcs> and <bcl></bcl> :



+CBC - Battery Charge	SELINT 0 / 1	
	+CBC: (0-3),(0-100)	
Example	AT+CBC +CBC: 0,75	
N	OK	
Note	The ME does not make differences between being powered by a battery or by a power supply on the VBATT pins, so it is not possible to distinguish between these two cases.	
Reference	3GPP TS 27.007	

+ CBC - Battery C	<mark>harge</mark>	SELINT 2
AT+CBC	Execution command returns the current Battery Charge status	s in the format:
	+CBC: <bcs>,<bcl></bcl></bcs>	
	where:	
	 bcs > - battery status	
	0 - ME is powered by the battery	
	1 - ME has a battery connected, and charger pin is being po	wered
	2 - ME does not have a battery connected	
	3 - Recognized power fault, calls inhibited	
	0 - battery is exhausted, or ME does not have a battery conr	nected
	25 - battery charge remained is estimated to be 25%	
	50 - battery charge remained is estimated to be 50%	
	75 - battery charge remained is estimated to be 75% 100 - battery is fully charged.	
	Note: <bcs></bcs> =1 indicates that the battery charger supply is insbeing recharged if necessary with it. Supply for ME operation VBATT pins.	
	Note: without battery/power connected on VBATT pins or dunit is not working, therefore values <bcs>=2</bcs> and <bcs>=3</bcs> v	.
	Note: <bcl> indicates battery charge level only if battery is constrained is not connected</bcl>	onnected and charger
AT+CBC=?	Test command returns parameter values supported as a comp	ound value.
	+CBC: (0-3),(0-100)	



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+ CBC - Battery Char	rge SELINT 2
	Note: although +CBC is an execution command, ETSI 07.07 requires the Tes command to be defined.
Example	AT+CBC +CBC: 0,75 OK
Note	The ME does not make differences between being powered by a battery or by a power supply on the VBATT pins, so it is not possible to distinguish between these two cases.
Reference	3GPP TS 27.007

3.5.5. 3GPP TS 27.005 AT Commands for SMS and CBS

3.5.5.1. General Configuration

3.5.5.1.1. Select Message Service - +CSMS

+CSMS - Select M	lessage Service SELINT 0 / 1
AT+CSMS	Set command selects messaging service <service></service> . It returns the types of messages
[= <service>]</service>	supported by the ME:
	Parameter:
	<pre><service></service></pre>
	0 - The syntax of SMS AT commands is compatible with GSM 27.005 (factory default)
	Set command returns current service setting along with the types of messages supported by the ME:
	+CSMS: <service>,<mt>,<mo>,<bm></bm></mo></mt></service>
	where:
	<mt> - mobile terminated messages support</mt>
	0 - type not supported
	1 - type supported
	<mo> - mobile originated messages support</mo>
	0 - type not supported
	1 - type supported
	<pre> </pre>
	0 - type not supported 1 - type supported
	Note: If parameter is omitted then the behavior of Set command is the same as Read



+CSMS - Select M	essage Service SELINT 0 / 1
	command.
AT+CSMS?	Read command reports current service setting along with supported message type in the format:
	+CSMS: <service>,<mt>,<mo>,<bm></bm></mo></mt></service>
	where:
	<service> - messaging service (see above)</service>
	<mt> - mobile terminated messages support (see above)</mt>
	<mo> - mobile originated messages support (see above)</mo>
	 bm> - broadcast type messages support (see above)
AT+CSMS=?	Test command reports a list of all services supported by the device. The supported
	value of the parameter <service></service> .
Reference	GSM 27.005; 3GPP TS 23.040; 3GPP TS 23.041

+CSMS - Select M	SELINT 2
AT+CSMS=	Set command selects messaging service <service></service> . It returns the types of messages
<service></service>	supported by the ME:
	Parameter:
	<service></service>
	0 - The syntax of SMS AT commands is compatible with GSM 27.005 (factory default)
	Set command returns the types of messages supported by the ME :
	+CSMS: <mt>,<mo>,<bm></bm></mo></mt>
	where:
	<mt> - mobile terminated messages support</mt>
	0 - type not supported
	1 - type supported
	<mo> - mobile originated messages support</mo>
	0 - type not supported
	1 - type supported
	0 - type not supported 1 - type supported
AT+CSMS?	Read command reports current service setting along with supported message types
ATTCSMS:	in the format:
	in the format.
	+CSMS: <service>,<mt>,<mo>,<bm></bm></mo></mt></service>
	where:
	<service> - messaging service (see above)</service>
	<mt> - mobile terminated messages support (see above)</mt>



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+CSMS - Select Message Service SELINT 2		
	<mo> - mobile originated messages support (see above)</mo>	
	 bm> - broadcast type messages support (see above)	
AT+CSMS=?	Test command reports the supported value of the parameter <ser< th=""><th>vice>.</th></ser<>	vice>.
Reference	GSM 27.005; 3GPP TS 23.040; 3GPP TS 23.041	

3.5.5.1.2. Preferred Message Storage - +CPMS

+CPMS - Preferred Message Storage SELINT 0 / 1				
AT+CPMS[=	Set command selects memory storages <memr>, <memw> and <mems> to be</mems></memw></memr>			
<memr></memr>	used for reading, writing, sending and storing SMs.			
[, <memw></memw>				
[, <mems>]]]</mems>	Parameters:			
	<memr> - memory from which messages are read and deleted</memr>			
	"SM" - SIM SMS memory storage			
	"ME" - ME internal storage			
	<memw> - memory to which writing and sending operations are made</memw>			
	"SM" - SIM SMS memory storage			
	<mems> - memory to which received SMs are preferred to be stored</mems>			
	"SM" - SIM SMS memory storage			
	The command returns the memory storage status in the format:			
	+CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals></totals></useds></totalw></usedw></totalr></usedr>			
	where			
	<usedr> - number of SMs stored into <memr></memr></usedr>			
	<totalr> - max number of SMs that <memr> can contain</memr></totalr>			
	<usedw> - number of SMs stored into <memw></memw></usedw>			
	<totalw> max number of SMs that <memw> can contain</memw></totalw>			
	<useds> - number of SMs stored into <mems></mems></useds>			
	<totals> - max number of SMS that <mems> can contain</mems></totals>			
	Note: The only supported memory storage for writing and sending SMs is the SIM internal memory "SM", so <memw>=<mems>="SM".</mems></memw>			
	Note: the received class 0 SMS are stored in the "ME" memory regardless the <mems> setting and they are automatically deleted at power off.</mems>			
	Note: If all parameters are omitted the behavior of Set command is the same as			
	Read command.			
AT+CPMS?	Read command reports the message storage status in the format:			
	+CPMS: <memr>,<usedr>,<totalr>,<memw>,<usedw>,<totalw>,<mems>,<useds>,<totals></totals></useds></mems></totalw></usedw></memw></totalr></usedr></memr>			



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+CPMS - Preferred	+CPMS - Preferred Message Storage SELINT 0 / 3		
		<memw> and <mems> are the selected storage memories for and storing respectively.</mems></memw>	
AT+CPMS=?	Test command re	ports the supported values for parameters <memr>, <memw> and</memw></memr>	
	<mems></mems>		
Example		"SM",5,10,"SM",5,10	
	OK	you have 5 out of 10 SMS SIM positions occupied	
Reference	GSM 27.005		

+CPMS - Preferred Message Storage

SELINT 2

Note: the behaviour of command +**CPMS** differs depending on whether or not the improved SMS commands operation mode has been enabled (see #**SMSMODE**)

(#SMSMODE=0)

#	AT+CPMS=	Set command selects memory storages <memr>, <memw> and <mems> to</mems></memw></memr>
S	<memr></memr>	be used for reading, writing, sending and storing SMs.
M	[, <memw></memw>	
S	[, <mems>]]</mems>	Parameters:
M		<memr> - memory from which messages are read and deleted</memr>
О		"SM" - SIM SMS memory storage
D		"ME" - ME internal storage
Е		<memw> - memory to which writing and sending operations are made</memw>
=		"SM" - SIM SMS memory storage
0		<mems> - memory to which received SMs are preferred to be stored</mems>
		"SM" - SIM SMS memory storage
		The command returns the memory storage status in the format:
#		
S		+CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals></totals></useds></totalw></usedw></totalr></usedr>
M		
S		where:
M		<usedr> - number of SMs stored into <memr></memr></usedr>
О		<totalr> - max number of SMs that <memr> can contain</memr></totalr>
D		<usedw> - number of SMs stored into <memw></memw></usedw>
Е		<totalw> max number of SMs that <memw> can contain</memw></totalw>
=		<useds> - number of SMs stored into <mems></mems></useds>
0		<totals> - max number of SMs that <mems> can contain</mems></totals>



Note: The only supported memory storage for writing and sending SMs is the SIM internal memory "SM", so <memw>=<mems>="SM"." Note: the received class 0 SMS are stored in the "ME" memory regardless the <mems> setting and they are automatically deleted at power off. AT+CPMS?</mems></mems></memw>	+CP	MS - Preferred Mess	age Storage	SELINT 2	
SIM internal memory "SM", so <memw>=<mems>="SM". </mems></memw>		Treferred Wiess	age blorage	OLLIVI 2	
SIM internal memory "SM", so <memw>=<mems>="SM". </mems></memw>			Note: The only supported memory storage for writing and sending SMs is the		
Note: the received class 0 SMS are stored in the "ME" memory regardless the senting and they are automatically deleted at power off.					
AT+CPMS? Read command reports the message storage status in the format: +CPMS: <memr>, <usedr>, <totalr>, <mems>, <usedr>, <totalr>, <mems>, <usedr>, <totalr>, <mems>, <usedr>, <totalr>, <mems>, <usedr>, <usedra, <usedra,="" <usedra,<="" th=""><th>#</th><th></th><th colspan="3">, , , , , , , , , , , , , , , , , , , ,</th></usedra,></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></usedr></mems></totalr></usedr></mems></totalr></usedr></mems></totalr></usedr></mems></totalr></usedr></memr>	#		, , , , , , , , , , , , , , , , , , , ,		
Read command reports the message storage status in the format: +CPMS: \(\text{memr}, \susedr^2, \stotalr^2, \smmw^2, \susedw^2, \stotalw^2, \stotalw^2, \smmw^2, \susedw^2, \stotalw^2, \smmw^2, \smmw^	S		Note: the received class 0 SMS are stored in the "M	E" memory regardless the	
# AT+CPMS= Set command selects memory storages <memr>, (smems) to be used for reading, writing, sending and storing SMs. # AT+CPMS= Set command selects memory storages <memr>, (smems) to be used for reading, writing, sending and storing SMs. # AT+CPMS= Set command selects memory storages <memr>, (smems) to be used for reading, writing, sending and storing SMs. # AT+CPMS= Set command selects memory storages <memr>, (smems) to be used for reading, writing, sending and storing SMs. # AT+CPMS= Set command selects memory storages <memr>, (smems) to be used for reading, writing, sending and storing SMs. # Parameters: (smemr> to be used for reading, writing, sending and storing SMs. Parameters: (smemr> - memory from which messages are read and deleted "SM" - SIM SMS memory storage (smems) - memory to which writing and sending operations are made "SM" - SIM SMS memory storage (smems) - memory to which writing and sending operations are made "SM" - SIM SMS memory storage (smems) - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage (smems) - memory</memr></memr></memr></memr></memr>			<mems> setting and they are automatically deleted</mems>	at power off.	
CPMS: \text{ \text{ memr}, \text{ suedr}, \text{ \text{ totalr}, \text{ memw}, \text{ suedw}, \text{ \text{ totalw}}, \text{ \text{ mems}, \text{ sueds}, \text{ \text{ totals}}} \		AT+CPMS?	Read command reports the message storage status in	n the format:	
Company	_				
where <memr>, <memw> and <mems> are the selected storage memories for reading, writing and storing respectively. AT+CPMS=? Test command reports the supported values for parameters <memr>, <memw> and <mems> Example AT+CPMS? +CPMS: "SM",5,10,"SM",5,10,"SM",5,10 OK (you have 5 out of 10 SMS SIM positions occupied) Reference GSM 27.005 # AT+CPMS= </mems></memw></memr></mems></memw></memr>	_			sedw>, <totalw>,</totalw>	
where <memr>, <memw> and <mems> are the selected storage memories for reading, writing and storing respectively. AT+CPMS=? Test command reports the supported values for parameters <memr>, <memw> and <mems> Example AT+CPMS: "SM",5,10,"SM",5,10,"SM",5,10 OK (you have 5 out of 10 SMS SIM positions occupied) Reference GSM 27.005 # AT+CPMS=</mems></memw></memr></mems></memw></memr>			<mems>,<useds>,<totals></totals></useds></mems>		
for reading, writing and storing respectively. AT+CPMS=? Test command reports the supported values for parameters <memr>, <memw> and <mems> Example AT+CPMS: "SM",5,10,"SM",5,10,"SM",5,10 OK (you have 5 out of 10 SMS SIM positions occupied) Reference GSM 27.005 # AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. AT+CPMS= Set command selects memory storages <memr> semm> semm></memr></mems></memw></memr></mems></memw></memr>			and an amount an amount and amounts are the sal		
# AT+CPMS=? Test command reports the supported values for parameters <memr>, <memw> and <mems> Example AT+CPMS? +CPMS: "SM",5,10,"SM",5,10 OK (you have 5 out of 10 SMS SIM positions occupied) # AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. AT+CPMS= Set command selects memory storages <memr> smemr> smems> smems></memr></mems></memw></memr></mems></memw></memr>				ected storage memories	
Sample AT+CPMS?		ATLCDMC-9		motore (more)	
Example AT+CPMS? +CPMS: "SM",5,10,"SM",5,10 OK (you have 5 out of 10 SMS SIM positions occupied) Reference GSM 27.005 # AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. </mems></memw></memr>		AI+CPNIS=:		meters memr >,	
# CPMS: "SM",5,10,"SM",5,10,"SM",5,10 OK (you have 5 out of 10 SMS SIM positions occupied) Reference		Evampla			
Reference GSM 27.005	#	Example			
Reference (you have 5 out of 10 SMS SIM positions occupied) (#SMSMODE=1) # AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. AT+CPMS= Set command selects memory storages <memr> and sending operations SMs. Parameters: <memr> - memory from which messages are read and deleted "SM" - SIM SMS memory storage <memw> - memory to which writing and sending operations are made "SM" - SIM SMS memory storage <mems> - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage The command returns the memory storage status in the format:</mems></memw></memr></memr></mems></memw></memr></mems></memw></memr>	S				
# AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. AT+CPMS=</mems></memw></memr>					
# AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. M [,<memw> [,<memr> - memory from which messages are read and deleted "SM" - SIM SMS memory storage <memw> - memory to which writing and sending operations are made "SM" - SIM SMS memory storage <mems> - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage The command returns the memory storage status in the format: # CPMS: <usedr>, <totalr>, <usedw>, <totalw>, <useds>, <totals> where: <usedr> - number of SMs stored into <memr> <usedw> - number of SMs stored into <memw></memw></usedw></memr></usedr></totals></useds></totalw></usedw></totalr></usedr></mems></memw></memr></memw></mems></memw></memr>		Dafamanaa			
# AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. M [,<memw> [,<memw> [,<memr> - memory from which messages are read and deleted "SM" - SIM SMS memory storage <memw> - memory to which writing and sending operations are made "SM" - SIM SMS memory storage <mems> - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage The command returns the memory storage status in the format: # CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> where: <usedr> - number of SMs stored into <memr> <usedw> - number of SMs stored into <memr> cusedw> - number of SMs stored into <memw></memw></memr></usedw></memr></usedr></totals></useds></totalw></usedw></totalr></usedr></mems></memw></memr></memw></memw></mems></memw></memr>	M	Reference	GSM 27.005		
# AT+CPMS= Set command selects memory storages <memr>, <memw> and <mems> to be used for reading, writing, sending and storing SMs. M [,<memw> [,<memw> [,<memr> - memory from which messages are read and deleted "SM" - SIM SMS memory storage <memw> - memory to which writing and sending operations are made "SM" - SIM SMS memory storage <mems> - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage The command returns the memory storage status in the format: # CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> where: <usedr> - number of SMs stored into <memr> <usedw> - number of SMs stored into <memr> cusedw> - number of SMs stored into <memw></memw></memr></usedw></memr></usedr></totals></useds></totalw></usedw></totalr></usedr></mems></memw></memr></memw></memw></mems></memw></memr>					
be used for reading, writing, sending and storing SMs. [, <memw> [,<memw> [,<memr>- memory from which messages are read and deleted</memr></memw></memw>			(#SMSMODE=1)		
M [, <memw> [,<mems>]] Parameters: <memr> - memory from which messages are read and deleted "SM" - SIM SMS memory storage <memw> - memory to which writing and sending operations are made "SM" - SIM SMS memory storage <mems> - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage The command returns the memory storage status in the format: # +CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> where: <usedr> - number of SMs stored into <memr> <usedr> - max number of SMs that <memr> can contain <usedw> - number of SMs stored into <memw></memw></usedw></memr></usedr></memr></usedr></totals></useds></totalw></usedw></totalr></usedr></mems></memw></memr></mems></memw>	#	AT+CPMS=	•		
Parameters: <pre></pre>			be used for reading, writing, sending and storing SM	ſs.	
<pre> // Simple state</pre>		_			
"SM" - SIM SMS memory storage <memw> - memory to which writing and sending operations are made "SM" - SIM SMS memory storage <mems> - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage The command returns the memory storage status in the format: # +CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> where: <usedr> - number of SMs stored into <memr> <usedr> - number of SMs that <memr> can contain <usedw> - number of SMs stored into <memw></memw></usedw></memr></usedr></memr></usedr></totals></useds></totalw></usedw></totalr></usedr></mems></memw>		[, <mems>]]</mems>		1 1 1 . 1	
<pre>Comemw> - memory to which writing and sending operations are made "SM" - SIM SMS memory storage </pre> <pre></pre>				ind deleted	
"SM" - SIM SMS memory storage <mems> - memory to which received SMs are preferred to be stored "SM" - SIM SMS memory storage The command returns the memory storage status in the format: +CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> where: <usedr> - number of SMs stored into <memr> <usedr> - max number of SMs that <memr> can contain <usedw> - number of SMs stored into <memw></memw></usedw></memr></usedr></memr></usedr></totals></useds></totalw></usedw></totalr></usedr></mems>	_		·	narations are made	
<pre></pre>				perations are made	
The command returns the memory storage status in the format: +CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> where: susedr> - number of SMs stored into <memr></memr></totals></useds></totalw></usedw></totalr></usedr>				erred to be stored	
The command returns the memory storage status in the format: +CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> where: <usedr> - number of SMs stored into <memr> <usedr> - max number of SMs that <memr> can contain <usedw> - number of SMs stored into <memw></memw></usedw></memr></usedr></memr></usedr></totals></useds></totalw></usedw></totalr></usedr>	1		"SM" - SIM SMS memory storage		
# +CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<useds>,<totals> M where: S <usedr> - number of SMs stored into <memr> M <totalr> - max number of SMs that <memr> can contain <usedw> - number of SMs stored into <memw></memw></usedw></memr></totalr></memr></usedr></totals></useds></totalw></usedw></totalr></usedr>			and and and another, the ange		
where: s			The command returns the memory storage status in	the format:	
where: s					
where: <use> <use< th=""><th>#</th><th></th><th>+CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<u< th=""><th>seds>,<totals></totals></th></u<></totalw></usedw></totalr></usedr></th></use<></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use></use>	#		+CPMS: <usedr>,<totalr>,<usedw>,<totalw>,<u< th=""><th>seds>,<totals></totals></th></u<></totalw></usedw></totalr></usedr>	seds>, <totals></totals>	
S <usedr> - number of SMs stored into <memr> M <totalr> - max number of SMs that <memr> can contain <usedw> - number of SMs stored into <memw></memw></usedw></memr></totalr></memr></usedr>					
M < totalr> - max number of SMs that <memr> can contain <usedw> - number of SMs stored into <memw></memw></usedw></memr>					
O <usedw> - number of SMs stored into <memw></memw></usedw>			<usedr> - number of SMs stored into <memr></memr></usedr>		
			Andalus man want an ECM of	· · · · · · ·	
CIMINIA STRUV THITTING OF VIVIE THAT A MARMIN S AGO ACOTOIN	M			ontain	
	M O		<usedw> - number of SMs stored into <memw></memw></usedw>		
L Substance of Sivis stored into Allems	M O D		<usedw> - number of SMs stored into <memw> <totalw> max number of SMs that <memw> can co</memw></totalw></memw></usedw>		
\text{\text{totalw}} max number of SMs that \text{\text{memw}} can contain			<totalr> - max number of SMs that <memr> can co</memr></totalr>	ontain	
= <totals></totals> - max number of SMs that <mems></mems> can contain	M O D E		<usedw> - number of SMs stored into <memw> <totalw> max number of SMs that <memw> can co <useds> - number of SMs stored into <mems></mems></useds></memw></totalw></memw></usedw>	ontain	



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+CPI	MS - Preferred Message	Storage SELINT 2
1 #		Note: The only supported memory storage for reading, writing and sending SMs is the SIM internal memory "SM": <memr>=<memw>=<mems>="SM".</mems></memw></memr>
S M S M O	AT+CPMS?	Read command reports the message storage status in the format: +CPMS: <memr>,<usedr>,<totalr>,<memw>,<usedw>,<totalw>,<mems>,<useds>,<totals></totals></useds></mems></totalw></usedw></memw></totalr></usedr></memr>
D E		where <memr></memr> , <memw></memw> and <mems></mems> are the selected storage memories for reading, writing and storing respectively.
1	AT+CPMS=?	Test command reports the supported values for parameters <memr>, <memw> and <mems></mems></memw></memr>
	Example	AT+CPMS? +CPMS: "SM",5,10,"SM",5,10,"SM",5,10 OK (you have 5 out of 10 SMS SIM positions occupied)
	Reference	GSM 27.005

3.5.5.1.3. Message Format - +CMGF

+CMGF - Message For	rmat SELINT 0 / 1			
AT+CMGF[=	Set command selects the format of messages used with send, list, read and write			
[<mode>]]</mode>	commands.			
	Parameter: <mode></mode>			
	0 - PDU mode, as defined in GSM 3.40 and GSM 3.41 (factory default) 1 - text mode			
	Note: issuing AT+CMGF<cr></cr> is the same as issuing the Read command.			
	Note: issuing AT+CMGF= <cr> is the same as issuing the command AT+CMGF=0<cr>.</cr></cr>			
AT+CMGF?	Read command reports the current value of the parameter <mode></mode> .			
AT+CMGF=?	Test command reports the supported value of <mode></mode> parameter.			
Reference	GSM 27.005			

+CMGF - Message Format SELINT 2		SELINT 2
AT+CMGF= Set command selects the format of messages used with send		read and write
[<mode>]</mode>	commands.	
	Parameter:	





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+CMGF - Message For	rmat	SELINT 2
	<mode></mode>	
	0 - PDU mode, as defined in GSM 3.40 and GSM 3.41 (factory	default)
	1 - text mode	
AT+CMGF?	Read command reports the current value of the parameter < mode	e>.
AT+CMGF=?	Test command reports the supported value of <mode> parameter</mode>	ſ .
Reference	GSM 27.005	

3.5.5.2. Message Configuration

3.5.5.2.1. Service Center Address - +CSCA

+CSCA - Service Cer	+CSCA - Service Center Address SELINT 0 / 1	
AT+CSCA[=	Set command sets the Service Center Address to be used for	mobile originated SMS
[<number></number>	transmissions.	
[, <type>]]]</type>		
	Parameter:	
	<pre><number> - SC phone number in the format defined by <typ< pre=""></typ<></number></pre>	oe>
	<type> - the type of number</type>	
	129 - national numbering scheme	
	145 - international numbering scheme (contains the character	er "+")
	Note: to use the SM service, is mandatory to set a Service C service requests will be directed.	enter Address at which
	Note: in Text mode, this setting is used by send and write mode, setting is used by the same commands, but only w SMSC address coded into the pdu parameter equals zero.	
	Note: the current settings are stored through +CSAS	
	Note: issuing AT+CSCA<cr></cr> is the same as issuing the Re	ad command.
	Note: issuing AT+CSCA= <cr> causes an OK result code t</cr>	o be issued.
AT+CSCA?	Read command reports the current value of the SCA in the fo	ormat:
	+CSCA: <number>,<type></type></number>	
	Note: if SCA is not present the device reports an error message	ge.



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+CSCA - Service Center Address SELINT 0		SELINT 0 / 1
AT+ CSCA=?	Test command returns the OK result code.	
Reference GSM 27.005		

+CSCA -Service Cente	er Address SELINT 2
AT+CSCA=	Set command sets the Service Center Address to be used for mobile originated SMS
<number></number>	transmissions.
[, <type>]</type>	
	Parameter:
	<number> - SC phone number in the format defined by <type></type></number>
	<type> - the type of number</type>
	129 - national numbering scheme
	145 - international numbering scheme (contains the character "+")
	Note: to use the SM service, is mandatory to set a Service Center Address at which service requests will be directed.
	Note: in Text mode, this setting is used by send and write commands; in PDU mode, setting is used by the same commands, but only when the length of the SMSC address coded into the <pdu></pdu> parameter equals zero.
	Note: the current settings are stored through +CSAS
AT+CSCA?	Read command reports the current value of the SCA in the format:
	+CSCA: <number>,<type></type></number>
	Note: if SCA is not present the device reports an error message.
AT+CSCA=?	Test command returns the OK result code.
Reference	GSM 27.005

3.5.5.2.2. Set Text Mode Parameters - +CSMP

+CSMP - Set Text Mod	<mark>de Parameters</mark>	SELINT 0 / 1
AT+CSMP[=	Set command is used to select values for additional parameters for	or storing and
[<f<sub>0></f<sub>	sending SMs when the text mode is used (+CMGF=1)	
[, <vp></vp>		
[, <pid></pid>	Parameters:	
[, <dcs>]]]]]</dcs>	<fo> - depending on the command or result code:</fo>	
	first octet of 3GPP TS 23.040 SMS-DELIVER, SMS-SUBI	MIT (default 17),
	SMS-STATUS-REPORT, or SMS-COMMAND (default 2)) in integer format.
	<pre><vp> - depending on SMS-SUBMIT <fo> setting:</fo></vp></pre>	
	3GPP TS 23.040 TP-Validity-Period either in integer form	nat (default 167) or
	in quoted time-string format	
	<pid>- 3GPP TS 23.040 TP-Protocol-Identifier in integer forma</pid>	t (default 0).
	dcs> - depending on the command or result code:	
	3GPP TS 23.038 SMS Data Coding Scheme (default 0), or Cell



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+CSMP - Set Text	CSMP - Set Text Mode Parameters SELINT 0 / 1	
	Broadcast Data Coding Scheme	
	Note: the current settings are stored through +CSAS	
	Note: issuing AT+CSMP<cr></cr> is the same as issuing the Read command.	
	Note: issuing AT+CSMP= <cr> is the same as issuing the command AT+CSMP=0<cr>.</cr></cr>	
	Note: <vp></vp> , <pid></pid> and <dcs></dcs> default values are loaded from first SIM <i>SMS Parameters</i> profile, if present. If it is not present, then the default values are those above indicated.	
AT+CSMP?	Read command reports the current setting in the format:	
AT+CSMP=?	+CSMP: < fo>, <vp>,<pid>,<dcs> Test command reports the supported range of values for <fo>, <vp>, <pid> and <dcs> parameters.</dcs></pid></vp></fo></dcs></pid></vp>	
Example	Set the parameters for an outgoing message with 24 hours of validity period and default properties:	
	AT+CSMP=17,167,0,0 OK	
Reference	GSM 27.005; 3GPP TS 23.040; 3GPP TS 23.038	

+CSMP - Set Text Mode Parameters

SELINT 2

Note: the behaviour of command +CPMS differs depending on whether or not the improved SMS commands operation mode has been enabled (see #SMSMODE)

(#SMSMODE=0)

#	AT+CSMP=	Set command is used to select values for additional parameters for storing
S	[<fo></fo>	and sending SMs when the text mode is used (AT+CMGF=1)
M	[, <vp></vp>	
S	[, <pid></pid>	Parameters:
M	[, <dcs>]]]]</dcs>	<fo> - first octet of 3GPP TS 23.040 SMS-SUBMIT in integer format</fo>
О		(default 17, i.e. SMS-SUBMIT with validity period in relative format).
D		As first octet of a PDU has the following bit field description (we'll
Е		refer to bit[7]bit[6]bit[5]bit[4]bit[3]bit[2]bit[1]bit[0]):
=		<pre>bit[1]bit[0]: Message Type Indicator, 2-bit field describing the message</pre>
0		type: all the combinations are converted in [01] (default is [01]);
		[00] - converted in [01]
		[01] - SMS-SUBMIT
		[10] - converted in [01]
#		[11] - converted in [01]
S		bit[2]: Reject Duplicates, 1-bit field: user is not responsible for setting
M		this bit and, if any set, it will have no meaning (default is [0]);



+CSI	+CSMP - Set Text Mode Parameters SELINT 2	
S		bit[4]bit[3]: Validity Period Format, 2-bit field indicating whether or
M		not the Validity Period field is present (default is [10]):
О		[00] - Validity Period field not present
D		[01] - Validity Period field present in <i>enhanced format</i> : it is currently
Е		converted in [00], i.e. not present
=		[10] - Validity Period field present in <i>relative format</i> , (i.e. integer type,
0		see below)
		[11] - Validity Period field present in absolute format (i.e. quoted
		time-string type); we strongly suggest to not use this format
		because its implementation is currently under refinement
#		bit[5]: Status Report Request, 1-bit field indicating the MS is requesting
S		a status report (default is [0]);
M		[0] - MS is not requesting a status report
S		[1] - MS is requesting a status report
M		bit[6]: User Data Header Indicator, 1-bit field: user is not responsible
O		for setting this bit and, if any set, it will have no meaning (default
D		is [0]);
Е		bit[7]: Reply Path, 1-bit field indicating the request for Reply Path
=		(default is [0]);
0		[0] - Reply Path not requested
		[1] - Reply Path requested
		<vp>- depending on <fo> setting: if <fo> asks for a Validity Period in</fo></fo></vp>
44		relative format <vp> shall be integer type (default 167, i.e. 24 hours);</vp>
#		if <fo></fo> asks for a Validity Period in <i>absolute format</i> we strongly
S		suggest to modify it in <i>relative format</i> , because the implementation of this topic is currently under refinement and it is currently not possible
M S		
M		to set <vp></vp> with a quoted time string type. (for <i>relative format</i> only:)
O		$0143 - (\langle \mathbf{vp} \rangle + 1) \times 5 \text{ minutes};$
D		144167 - 12 hours + ((vp> - 143) x 30 minutes);
E		$168196 - (\langle \mathbf{vp} \rangle - 166) \times 1 \text{ day};$
=		$197255 - (\langle \mathbf{vp} \rangle - 192) \times 1 \text{ week};$
0		157255 (Apr 152) X 1 WOOK,
		<pid>- 3GPP TS 23.040 TP-Protocol-Identifier in integer format (default 0).</pid>
		<dcs> - depending on the command or result code: 3GPP TS 23.038 SMS</dcs>
		Data Coding Scheme (default 0), or Cell Broadcast Data Coding
#		Scheme
S		
M		Note: the current settings are stored through <u>+CSAS</u>
S		Note: vp> , pid> and dcs> default values are loaded from first SIM <i>SMS</i>
M		Parameters profile, if present. If it is not present, then the default values are
О		those above indicated.
D	AT+CSMP?	Read command reports the current setting in the format:
E	TII . ODIVII .	Touch commune reports the current setting in the formut.
=		+CSMP: < fo>, <vp>,<pid>,<dcs></dcs></pid></vp>
0	AT+CSMP=?	Test command returns the OK result code.



+CSMP - Set Text M	
Example	Set the parameters for an outgoing message with 24 hours of validity period and default properties:
	AT+CSMP=17,167,0,0 OK
Reference	GSM 27.005; 3GPP TS 23.040; 3GPP TS 23.038
<u>'</u>	(#SMSMODE=1)
# AT+CSMP=	Set command is used to select values for additional parameters for storing
S [<fo></fo>	and sending SMs when the text mode is used (AT+CMGF=1)
M [, <vp></vp>	and soliding sixts when the text mode is used (111 · civil G1 · 1)
S [, <pid></pid>	Parameters:
M [, <dcs>]]]]</dcs>	<fo> - first octet of 3GPP TS 23.040 SMS-SUBMIT or SMS-DELIVER, in</fo>
0	integer format (default 17, i.e. SMS-SUBMIT with validity period in
D	relative format). As first octet of a PDU has the following bit field
Е	description (bit[7]bit[6]bit[5]bit[4]bit[3]bit[2]bit[1]bit[0]):
=	bit[1]bit[0]: Message Type Indicator, 2-bit field describing the message
1	type;
	[00] - SMS-DELIVER;
	[01] - SMS-SUBMIT (default);
	bit[2]: Reject Duplicates, 1-bit field: user is not responsible for setting
#	this bit and, if any set, it will have no meaning (default is [0]);
S	bit[4]bit[3]: Validity Period Format, 2-bit field indicating whether or
M	not the Validity Period field is present (default is [10]):
S	[00] - Validity Period field not present
M	[01] - Validity Period field present in enhanced format(i.e. quoted
O	time-string type, see below)
D	[10] - Validity Period field present in relative format, (i.e. integer type,
Е	see below)
=	[11] - Validity Period field present in absolute format (i.e. quoted
1	time-string type, see below)
	bit[5]: Status Report Request, 1-bit field indicating the MS is requesting
	a status report (default is [0]);
	[0] - MS is not requesting a status report
#	[1] - MS is requesting a status report
S	bit[6]: User Data Header Indicator, 1-bit field: user is not responsible
M	for setting this bit and, if any set, it will have no meaning (default
S	is [0]);
M	bit[7]: Reply Path, 1-bit field indicating the request for Reply Path
O	(default is [0]);
D	[0] - Reply Path not requested
E	[1] - Reply Path requested
=	<vp>- depending on <fo> setting:</fo></vp>
1	a) if <fo></fo> asks for a <i>Not Present</i> Validity Period, <vp></vp> can be any
	type and it will be not considered;
	b) if <fo></fo> asks for a Validity Period in <i>relative format</i> , <vp></vp> shall



+CSN	MP - Set Text Mode Parameters	SELINT 2
		efault 167, i.e. 24 hours);
#	0143 - (< vp> +	
S	` ·	$ars + ((\langle vp \rangle - 143) \times 30 \text{ minutes})$
M	168196 - (<vp></vp>	
S	197255 - (<vp></vp>	· · · · · · · · · · · · · · · · · · ·
M		Validity Period in <i>absolute format</i> , <vp></vp> shall
О		ring type (see +CCLK); this is the only
D		S S S S S S S S S S
Е	message type	
=		Validity Period in <i>enhanced format</i> , <vp></vp> shall
1		adecimal representation (string type) of 7
	octets, as follows:	
		s the Validity Period Functionality Indicator,
		way in which the other 6 octets are used; let's
#		field description:
S	bit[7]: extension	on bit
M		no more VP Fuctionality Indicator extension
S	octets to fo	ollow
M	bit[6]: Single S	Shot SM;
O	[0] - the SC is	not required to make up to one delivery
D	attempt	
E	[1] - the SC is	required to make up to one delivery attempt
=	bit[5]bit[4]bit	[3]: reserved
1	[000]	
	bit[2]bit[1]bit[0]: Validity Period Format	
	[000] - No Validity Period specified	
	[001] - Validity Period specified as for the relative format.	
#		ving octet contains the VP value as described
S		the other octets are 0's.
M		ty Period is relative in integer representation.
S		ving octet contains the VP value in the range 0
M		presenting 0 to 255 seconds; all the other octets
0	are 0's.	
D		ty Period is relative in semi-octet
Е	-	tion. The following 3 octets contain the relative
=		ours, Minutes and Seconds, giving the length of
1		y period counted from when the SMS-SUBMIT
		by the SC; all the other octets are 0's.
		Protocol-Identifier in integer format (default 0).
J I		or result code: 3GPP TS 23.038 SMS Data Coding 1 Broadcast Data Coding Scheme
#	Scheme (default 0), of Cer	i Dioadeast Data Coding Seneme
S	NT-4 At	stored through LCCAC
M	Note: the current settings are s	stored inrough +CSAS
S	NT-4 2 1	CCAC the come value to a fact on large int
M		CSAS the vp> value too, but only as integer
О	type, i.e. only in its <i>relative fo</i>	rmaī



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+CSI	MP - Set Text Mode	Parameters SELINT 2
D		
E = 1		Note: <vp></vp> , <pid></pid> and <dcs></dcs> default values are loaded from first SIM <i>SMS Parameters</i> profile, if present. If it is not present, then the default values are those above indicated.
	AT+CSMP?	Read command reports the current setting in the format:
#		+CSMP: <fo>,<vp>,<pid>,<dcs></dcs></pid></vp></fo>
S M		Note: if the Validity Period Format (<fo></fo> 's bit[4]bit[3]) is [00] (i.e. <i>Not Present</i>), <vp></vp> is represented just as a quoted empty string ("").
S	AT+CSMP=?	Test command returns the OK result code.
M O D	Example	Set the parameters for an outgoing message with 24 hours of validity period and default properties:
E =		AT+CSMP=17,167,0,0 OK
1		Set the parameters for an outgoing message with validity period in enhanced format: the <vp></vp> string actually codes 24 hours of validity period.
# S		AT+CSMP=9,"01A80000000000" OK
M S M		Set the parameters for an outgoing message with validity period in enhanced format: the <vp></vp> string actually codes 60 seconds of validity period.
O D E		AT+CSMP=9,"023C0000000000" OK
= 1		Set the parameters for an outgoing message with validity period in enhanced format: the <vp></vp> string actually codes 29 hours 85 minutes 30 seconds of validity period.
		AT+CSMP=9,"03925803000000" OK
	Reference	GSM 27.005; 3GPP TS 23.040; 3GPP TS 23.038

3.5.5.2.3. Show Text Mode Parameters - +CSDH

+CSDH - Show Text Mode Parameters SELINT		SELINT 0 / 1
AT+CSDH[=	Set command controls whether detailed header information is s	shown in text mode
[<show>]]</show>	(+CMGF=1) result codes.	





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+CSDH - Show Text	Mode Parameters SELINT 0 / 1
	Parameter: <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 the values in result codes Note: issuing AT+CSDH<cr> is the same as issuing the Read command. Note: issuing AT+CSDH=<cr> is the same as issuing the command AT+CSDH=0<cr>.</cr></cr></cr></cdata></length></toda></da></mn></pid></tooa></toda></length></dcs></pid></vp></fo></tosca></sca></show>
AT+CSDH?	Read command reports the current setting in the format: +CSDH: <show></show>
AT+CSDH=?	Test command reports the supported range of values for parameter <show></show>
Reference	GSM 27.005

+CSDH - Show Text M	CSDH - Show Text Mode Parameters SELINT 2		
AT+CSDH=	Set command controls whether detailed header information is she	own in text mode	
[<show>]</show>	(AT+CMGF=1) result codes.		
	Parameter: <show> 0 - do not show header values defined in commands +CSCA and <tosca>, <fo>, <vp>, <pid> and <dcs>) nor <length>, <tod +cmgl,="" +cmgr="" +cmt,="" <pid="" codes="" for="" in="" mode.="" result="" show="" sms-commands="" sms-deliver="" submits="" text="">, <mn>, <da>, <toda>, <length> or <cdata> 1 - show the values in result codes</cdata></length></toda></da></mn></tod></length></dcs></pid></vp></fo></tosca></show>	a> or <tooa> in as and SMS-</tooa>	
AT+CSDH?	Read command reports the current setting in the format:		
	+CSDH: <show></show>		
AT+CSDH=?	Test command reports the supported range of values for paramet	er <show></show>	
Reference	GSM 27.005		

3.5.5.2.4. Select Cell Broadcast - +CSCB

+CSCB -Select Cell Broadcast Message Types		SELINT 0 / 1
AT+CSCB[=	Set command selects which types of Cell Broadcast Messages a	re to be received by





+CSCB -Select Cell Br	roadcast Message Types SEI	LINT 0 / 1	
[<mode></mode>	the device.		
[, <mids></mids>			
[, <dcss>]]]]</dcss>	Parameter:		
	<mode></mode>		
	0 - the message types defined by <mids></mids> and <dcss></dcss> are acc default)	cepted (factory	
	1 - the message types defined by <mids></mids> and <dcss></dcss> are rejected		
	<mids> - Message Identifiers, string type: all different possible combinations of the CBM message identifiers; default is empty string (""").</mids>		
	<dcss> - Data Coding Schemes, string type: all different possible combinations of CBM data coding schemes; default is empty string ("").</dcss>		
	Note: the current settings are stored through +CSAS Note: issuing AT+CSCB <cr> is the same as issuing the Read command.</cr>		
	Note: issuing AT+CSCB= <cr> is the same as issuing AT+CSCB=0<cr>.</cr></cr>	the command	
AT+CSCB?	Read command reports the current value of parameters <mode></mode> <dcss></dcss> .	>, <mids> and</mids>	
AT+CSCB=?	Test command returns the range of values for parameter <mode></mode> .		
Example	AT+CSCB? +CSCB: 1,"",""		
	OK (all CBMs are accepted, none is rejected) AT+CSCB=0,"0,1,300-315,450","0-3" OK		
Reference	GSM 27.005, 3GPP TS 23.041, 3GPP TS 23.038.		

+CSCB -Select Cell Br	-CSCB -Select Cell Broadcast Message Types SELINT 2		
AT+CSCB=	Set command selects which types of Cell Broadcast Messages at	re to be received by	
[<mode>[,<mids></mids></mode>	the device.		
[, <dcss>]]]</dcss>			
	Parameters:		
	<mode></mode>		
	0 - the message types defined by <mids></mids> and <dcss></dcss> are accept default)	oted (factory	
	1 - the message types defined by <mids></mids> and <dcss></dcss> are reject	ted	
	<mids> - Message Identifiers, string type: all different possible CBM message identifiers; default is empty string ("").</mids>		
	<dcss> - Data Coding Schemes, string type: all different possibl</dcss>	e combinations of	
	CBM data coding schemes; default is empty string (""	").	
	Note: the current settings are stored through +CSAS		
AT+CSCB?	Read command reports the current value of parameters <mode></mode>	, <mids></mids> and	
	<dcss>.</dcss>		
AT+CSCB=?	Test command returns the range of values for parameter < mode:	>.	



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+CSCB -Select Cell F	Broadcast Message Types	S	SELINT 2
Example	AT+CSCB? +CSCB: 1,"","" OK AT+CSCB=0,"0,1,300-315,450","0-3" OK	all CBMs are accepted, none is rejecte	ed)
Reference	GSM 27.005, 3GPP TS 23.041, 3G	PP TS 23.038.	_

3.5.5.2.5. Save Settings - +CSAS

+CSAS - Save Settings	SELINT 0 / 1
AT+CSAS [= <profile>]</profile>	Execution command saves settings which have been made by the +CSCA, +CSMP and +CSCB commands in local non volatile memory.
[Passas]	Parameter: <pre> <pre> <pre></pre></pre></pre>
	Note: If parameter is omitted the settings are saved in the non volatile memory.
	Note: +CSCB <mids> (Message Identifiers) parameter can be saved to SIM only if the "Cell broadcast message identifier selection" file is present on the SIM itself. This file, if present, has storage for only a single set of data. Therefore, it is not possible to save different <mids> in different SIM profiles; <mids> value, once changed and saved, will be the same for all SIM profiles.</mids></mids></mids>
AT+CSAS?	Read command has the same effect as Execution command with parameter omitted.
AT+CSAS=?	Test command returns the possible range of values for the parameter <profile></profile> .
Reference	GSM 27.005

+CSAS - Save Settings	SELINT 2
AT+CSAS	Execution command saves settings which have been made by the +CSCA, +CSMP
[= <profile>]</profile>	and +CSCB commands in local non volatile memory.
	Parameter: <pre> <pre> <pre> <pre></pre></pre></pre></pre>



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+CSAS - Save Settings	SELINT 2	
	Note: +CSCB <mids> (Message Identifiers) parameter can be saved to SIM only</mids>	
	if the "Cell broadcast message identifier selection" file is present on the SIM itself.	
	This file, if present, has storage for only a single set of data. Therefore, it is not	
	possible to save different <mids> in different SIM profiles; <mids> value, once</mids></mids>	
	changed and saved, will be the same for all SIM profiles.	
AT+CSAS=?	Test command returns the possible range of values for the parameter <profile></profile> .	
Reference	GSM 27.005	

3.5.5.2.6. Restore Settings - +CRES

+CRES - Restore Setti	ngs SELINT 0 / 1	
AT+CRES	Execution command restores message service settings saved by +CSCA comman	ıd
[= <profile>]</profile>	from either NVM or SIM.	
	Parameter: <pre> <pre> <pre> <pre></pre></pre></pre></pre>	re
AT+CRES?	Read command has the same effect as Execution command with parameter omitted	1.
AT+CRES=?	Test command returns the possible range of values for the parameter <profile></profile> .	
Reference	GSM 27.005	

+CRES - Restore	Settings SELINT 2
AT+CRES	Execution command restores message service settings saved by +CSAS command
[= <profile>]</profile>	from either NVM or SIM.
	Parameter:
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>
	0 - it restores message service settings
	from NVM.
	1n - it restores message service settings from SIM. The value of n depends on the SIM and its max is 3.
	Note: certain settings may not be supported by the SIM and therefore they are always restored from NVM, regardless the value of <profile></profile> .
	Note: If parameter is omitted the command restores message service settings from NVM.
AT+CRES=?	Test command returns the possible range of values for the parameter <profile></profile> .



SELINT 0 / 1

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+CRES - Restore Settings		SELINT 2
Reference	GSM 27.005	

3.5.5.3. Message Receiving And Reading

3.5.5.3.1. **New Message Indications - +CNMI**

+CNMI - New Message Indications To Terminal Equipment AT+CNMI[=[<mode>[,<mt> [,<bm>[,<ds> [,<bfr>]]]]]]

Set command selects the behaviour of the device on how the receiving of new messages from the network is indicated to the DTE.

Parameter:

<mode> - unsolicited result codes buffering option

- 0 Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications.
- 1 Discard indication and reject new received message unsolicited result codes when **TA-TE** link is reserved, otherwise forward them directly to the **TE**.
- 2 Buffer unsolicited result codes in the TA in case the DTE is busy and flush them to the **TE** after reservation. Otherwise forward them directly to the **TE**.
- 3 if <mt> is set to 1 an indication via 100 ms break is issued when a SMS is received while the module is in GPRS online mode. It enables the hardware ring line for 1 s. too.

<mt> - result code indication reporting for SMS-DELIVER

- 0 No SMS-DELIVER indications are routed to the TE.
- 1 If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the **TE** using the following unsolicited result code:

+CMTI: <memr>,<index>

where:

<memr> - memory storage where the new message is stored "SM"

"ME"

<index> - location on the memory where SM is stored.

2 - SMS-DELIVERs (except class 2 messages and messages in the message waiting indication group) are routed directly to the TE using the following unsolicited result code:

(PDU Mode)

+CMT: ,<length><CR><LF><pdu>

where:

<le>ength> - PDU length

<pd><pdu> - PDU message

(TEXT Mode)

+CMT:<0a>,,<scts>/,<tooa>,<fo>,<pid>,<dcs>, <sca>.<tosca>,<length>/<CR><LF><data> (the information written in





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+CNMI - New Message Indications To Terminal Equipment

SELINT 0 / 1

italics will be present depending on **+CSDH** last setting) where:

<oa> - originating address, string type converted in the currently selected character set (see +CSCS)

<scts> - arrival time of the message to the SC

<tooa>, <tosca> - type of number <oa> or <sca>:

129 - number in national format

145 - number in international format (contains the "+")

<**fo> -** first octet of 3GPP TS 23.040

<pid> - Protocol Identifier

<dcs> - Data Coding Scheme

<sca> - Service Centre address, string type, converted in the currently selected character set (see +CSCS)

<length> - text length<data> - TP-User-Data

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

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

 bm> - broadcast reporting option

- 0 Cell Broadcast Messages are not sent to the DTE
- 2 New Cell Broadcast Messages are sent to the **DTE** with the unsolicited result code:

(PDU Mode)

+CBM: <PDU>

where:

<PDU> - message PDU

(TEXT Mode)

+CBM:<sn>,<mid>,<dcs>,<pag>,<pags><CR><LF><data>

where:

<sn> - message serial number

<mid> - message ID

<dcs> - Data Coding Scheme

<pag> - page number

<pags> - total number of pages of the message

<data> - CBM Content of Message

<ds> - SMS-STATUS-REPORTs reporting option

- $\mathbf{0}$ status report receiving is not reported to the \mathbf{DTE}
- 1 the status report is stored and is also sent to the **DTE** with the following unsolicited result code:





+CNMI - New Mes	sage Indications To Terminal Equipment	SELINT 0 / 1
	(PDU Mode)	
	+CDS: <length><cr><lf><pdu></pdu></lf></cr></length>	
	where:	
	<le>ength> - PDU length</le>	
	< PDU > - message PDU	
	(TEXT Mode)	
	+CDS: <fo>,<mr>,,,<scts>,<dt>,<st></st></dt></scts></mr></fo>	
	where:	
	<fo> - first octet of the message PDU</fo>	
	<mr> - message reference number</mr>	
	<scts> - arrival time of the message to the SC</scts>	
	<dt> - sending time of the message</dt>	
	<st> - message status as coded in the PDU</st>	
	2 - if a status report is stored, then the following unsolicited 1+CDSI: <memr>,<index></index></memr>	result code is sent:
	where:	
	<pre><memr> - memory storage where the new message is s</memr></pre>	tored
	"SM"	liored
	<index> - location on the memory where SM is stored</index>	
	 bfr> - buffered result codes handling method: 0. TA buffer of uncelliated result codes defined within this	aammand is flushed to
	0 - TA buffer of unsolicited result codes defined within this of the TE when <mode>=13 is entered (OK response shall flushing the codes)</mode>	
	1 - TA buffer of unsolicited result codes defined within this of when <mode>=13</mode> is entered.	command is cleared
	Note: issuing AT+CNMI <cr> is the same as issuing the Rea</cr>	nd command.
	Note: issuing AT+CNMI=<cr></cr> is the same as issuing the co AT+CNMI=0<cr></cr> .	ommand
AT+CNMI?	Read command returns the current parameter settings for +CN form:	MII command in the
	+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr></bfr></ds></bm></mt></mode>	
AT+CNMI=?	Test command reports the supported range of values for the +0	CNMI command
	parameters.	
	For compatibility with previous versions, Test command return	ns:
	+CNMI: $(0-2), (\theta-3), (\theta,2), (\theta-2), (\theta,1)$	
	An enhanced version of Test command has been defined: AT-	
	provides the complete range of values for parameter <mode></mode> .	
AT+CNMI=??	Enhanced test command reports the supported range of values	for all the +CNMI



+CNMI - New Me	essage Indications To Terminal Equipment	SELINT 0 / 1
	command parameters.	
Reference	GSM 27.005	
Note	DTR signal is ignored, hence the indication is sent even if the DTE is inactive	
	(DTR signal is Low). In this case the unsolicited result code may be lost so if	
	MODULE remains active while DTE is not, at DTE startup is suggested to check	
	whether new messages have reached the device meanw	while with command
	AT+CMGL=0 that lists the new messages received.	

+CNMI - New Message Indications To Terminal Equipment SELINT 2					
	Note: the behaviour of command +CNMI differs depending on whether or not the improved SMS commands				
opera	operation mode has been enabled (see #SMSMODE)				
(#SMSMODE=0)					
#	AT+CNMI=[Set command selects the behaviour of the device on how the receiving of			
S	<mode>[,<mt></mt></mode>	new messages from the network is indicated to the DTE .			
M	[, <bm>[,<ds></ds></bm>	D			
S	[, <bfr>]]]]]</bfr>	Parameter:			
M O		mode> - unsolicited result codes buffering option 0 - Buffer unsolicited result codes in the TA. If TA result code buffer is full,			
D		indications can be buffered in some other place or the oldest indications			
E		may be discarded and replaced with the new received indications.			
=		1 - Discard indication and reject new received message unsolicited result			
0		codes when TA-TE link is reserved, otherwise forward them directly to			
		the TE.			
		2 - Buffer unsolicited result codes in the TA in case the DTE is busy and			
		flush them to the TE after reservation. Otherwise forward them directly			
#		to the TE.			
S		3 - if <mt> is set to 1 an indication via 100 ms break is issued when a SMS</mt>			
M		is received while the module is in GPRS online mode. It enables the			
S		hardware ring line for 1 s. too.			
M		<mt> - result code indication reporting for SMS-DELIVER</mt>			
0		0 - No SMS-DELIVER indications are routed to the TE.			
D		1 - If SMS-DELIVER is stored into ME/TA, indication of the memory			
E =		location is routed to the TE using the following unsolicited result code: +CMTI: <mems>,<index></index></mems>			
0		where:			
		<mems> - memory storage where the new message is stored (see</mems>			
		+CPMS)			
		<index> - location on the memory where SMS is stored.</index>			
#		2 - SMS-DELIVERs (except class 2 messages and messages in the "store"			
S		message waiting indication group) are routed directly to the TE using			
M		the following unsolicited result code:			
S					
M		(PDU Mode)			
О		+CMT: <alpha>,<length><cr><lf><pdu></pdu></lf></cr></length></alpha>			



+CNI	MI - New Message Indications To Terminal Equipment SELINT 2	
D	where:	
Е	<alpha> - alphanumeric representation of originator/destination</alpha>	
=	number corresponding to the entry found in MT	
0	phonebook; used character set should be the one selected	
	with command +CSCS.	
	<le>ength> - PDU length</le>	
	<pdu> - PDU message</pdu>	
#	r	
S	(TEXT Mode)	
M	+CMT:<0a>, <alpha>,<scts>[,<to0a>,<fo>,<pid>,<dcs>,</dcs></pid></fo></to0a></scts></alpha>	
S	<sca>,<tosca>,<tength>/<cr><lf><data> (the information written</data></lf></cr></tength></tosca></sca>	
M	in italics will be present depending on +CSDH last setting)	
O	where:	
D	<oa> - originating address, string type converted in the currently</oa>	
E	selected character set (see +CSCS)	
=	<alpha> - alphanumeric representation of <oa>; used character set</oa></alpha>	
0	should be the one selected with command +CSCS.	
U	<scts> - arrival time of the message to the SC</scts>	
	< tooa>, $< tosca>$ - type of number $< oa>$ or $< sca>$:	
	129 - number in national format	
#	145 - number in international format (contains the "+")	
$\frac{\pi}{S}$	<fo> - first octet of 3GPP TS 23.040</fo>	
M	<pre><pid> - Instructed of SQFF 13 23.040</pid></pre>	
S	<pre><pre><pre></pre></pre></pre> <pre><dcs> - Data Coding Scheme</dcs></pre>	
M	<acs> - Data Coding Scheme <sca> - Service Centre address, string type, converted in the currently</sca></acs>	
O	selected character set (see +CSCS)	
D	<pre><length> - text length</length></pre>	
E	<data> - TP-User-Data</data>	
E =		
	• If <dcs></dcs> indicates that GSM03.38 default alphabet is used and	
0	<fo> indicates that GSM03.40 TP-User-Data-Header-Indication</fo>	
	is not set (bit 6 of <fo></fo> is 0), each character of GSM alphabet will	
	be converted into current TE character set (see +CSCS)	
ш	• If <dcs></dcs> indicates that 8-bit or UCS2 data coding scheme is used	
#	or <fo></fo> indicates that GSM03.40 TP-User-Data-Header-	
S	Indication is set (bit 6 of <fo></fo> is 1), each 8-bit octet will be	
M	converted into two IRA character long hexadecimal number (e.g.	
S	octet 0x2A will be converted as two characters 0x32 0x41)	
M		
0	Class 2 messages and messages in the "store" message waiting	
D	indication group result in indication as defined in <mt>=1.</mt>	
Е	3 - Class 3 SMS-DELIVERs are routed directly to TE using unsolicited	
=	result codes defined in <mt>=2. Messages of other data coding schemes</mt>	
0	result in indication as defined in <mt>=1.</mt>	
	 bm> - broadcast reporting option	
	0 - Cell Broadcast Messages are not sent to the DTE	
	2 - New Cell Broadcast Messages are sent to the DTE with the unsolicited	



+CNI	MI - New Message Indications To Terminal Equipment SELINT 2	
#	result code:	
S		
M	(PDU Mode)	
S	+CBM; <pdu></pdu>	
M	where:	
0	< PDU> - message PDU	
D E	(TEVT Mode)	
E =	(TEXT Mode) +CBM: <sn>,<mid>,<dcs>,<pag>,<pag><cr><lf><data></data></lf></cr></pag></pag></dcs></mid></sn>	
0	where:	
Ů	<sn> - message serial number</sn>	
	<mid>- message ID</mid>	
	<dcs> - Data Coding Scheme</dcs>	
#	<pre><pag> - page number</pag></pre>	
S	<pre><pags> - total number of pages of the message</pags></pre>	
M	<data> - CBM Content of Message</data>	
S	• If <dcs></dcs> indicates that GSM03.38 default alphabet is used, each	
M	character of GSM alphabet will be converted into current TE	
O	character set (see +CSCS)	
D	• If <dcs></dcs> indicates that 8-bit or UCS2 data coding scheme is used,	
Е	each 8-bit octet will be converted into two IRA character long	
=	hexadecimal number (e.g. octet 0x2A will be converted as two	
0	characters 0x32 0x41)	
	<ds> - SMS-STATUS-REPORTs reporting option</ds>	
	0 - status report receiving is not reported to the DTE	
#	1 - the status report is stored and is also sent to the DTE with the following	
S	unsolicited result code:	
M		
S	(PDU Mode)	
M	+CDS: <length><cr><lf><pdu></pdu></lf></cr></length>	
O	where:	
D	<le>ength> - PDU length</le>	
E	<pdu> - message PDU</pdu>	
0	(TEVT Mode)	
O	(TEXT Mode) +CDS: <fo>,<mr>,,,<scts>,<dt>,<st></st></dt></scts></mr></fo>	
	where:	
	<fo> - first octet of the message PDU</fo>	
#	<pre><mr> - message reference number; 3GPP TS 23.040 TP-Message-</mr></pre>	
S	Reference in integer format	
M	<scts> - arrival time of the message to the SC</scts>	
S	<dt> - sending time of the message</dt>	
M	<st> - message status as coded in the PDU</st>	
0		
D	2 - if a status report is stored, then the following unsolicited result code is	



+CN	MI - New Message Indi	ications To Terminal Equipment	SELINT 2					
E = 0 # S M		sent: +CDSI: <memr>,<index> where: <memr> - memory storage where the new message "SM" <index> - location on the memory where SMS is st bfr> - buffered result codes handling method: 0 - TA buffer of unsolicited result codes defined within the flushed to the TE when <mode>=13 is entered (OI)</mode></index></memr></index></memr>	e is stored tored this command is					
S M O D		given before flushing the codes) 1 - TA buffer of unsolicited result codes defined within cleared when <mode>=13 is entered.</mode>	this command is					
0	AT+CNMI?	Read command returns the current parameter settings for in the form: +CNMI: <mode>,<mt>,<bm>,<ds>,<bfr></bfr></ds></bm></mt></mode>	+CNMI command					
#	AT+CNMI=?	Test command reports the supported range of values for the +CNMI command parameters.						
S	Reference	GSM 27.005						
M S M O D E = 0	Note	DTR signal is ignored, hence the indication is sent even in inactive (DTR signal is Low). In this case the unsolicited lost so if MODULE remains active while DTE is not, at I suggested to check whether new messages have reached to meanwhile with command AT+CMGL=0 that lists the near received.	I result code may be OTE startup is he device					
		(#SMSMODE=1)						
# S M S M O	AT+CNMI=[<mode>[,<mt> [,<bm>[,<ds> [,<bfr>]]]]]</bfr></ds></bm></mt></mode>	Set command selects the behaviour of the device on how new messages from the network is indicated to the DTE . Parameter: <mode> - unsolicited result codes buffering option 0 - Buffer unsolicited result codes in the TA. If TA result in the translation of the translation of the translation of the translation of the device on how new messages from the network is indicated to the DTE.</mode>	lt code buffer is full,					
D E = 1		indications can be buffered in some other place or the may be discarded and replaced with the new received 1 - Discard indication and reject new received message to codes when TA-TE link is reserved, otherwise forward the TE .	d indications. unsolicited result					



+CNI	MI - New Message Indications To Terminal Equipment SELINT 2	
	2 - Buffer unsolicited result codes in the TA in case the DTE is busy a	nd
	flush them to the TE after reservation. Otherwise forward them dir	ectly
#	to the TE.	
S	3 - if <mt> is set to 1 an indication via 100 ms break is issued when a</mt>	
M	is received while the module is in GPRS online mode. It enables the	ie
S	hardware ring line for 1 s. too.	
M	<mt> - result code indication reporting for SMS-DELIVER</mt>	
0	0 - No SMS-DELIVER indications are routed to the TE and messages	are
D	stored in SIM.	
Е	1 - If SMS-DELIVER is stored into ME/TA, indication of the memory	
=	location is routed to the TE using the following unsolicited result of	ode:
1	+CMTI: <mems>,<index></index></mems>	
	where:	
	<mems> - memory storage where the new message is stored (see +CPMS)</mems>	
#	<index> - location on the memory where SMS is stored.</index>	
S	2 - SMS-DELIVERs (except class 2 messages and messages in the "st	
M	message waiting indication group) are routed directly to the TE us	ng
S	the following unsolicited result code:	
M		
0	(PDU Mode)	
D	+CMT: <alpha>,<length><cr><lf><pdu></pdu></lf></cr></length></alpha>	
Е	where:	
1	<alpha> - alphanumeric representation of originator/destination</alpha>	
1	number corresponding to the entry found in MT phonebook; used character set should be the one selection.	et a d
	with command +CSCS.	icu
	<length> - PDU length</length>	
#	<pre><pdu> - PDU message</pdu></pre>	
S	Pun 12 0 millionge	
M	(TEXT Mode)	
S	+CMT:<0a>, <alpha>,<scts>/,<tooa>,<fo>,<pid>,<dcs>,</dcs></pid></fo></tooa></scts></alpha>	
M	<sca>,<tosca>,<length>J<cr><lf><data> (the information writer)</data></lf></cr></length></tosca></sca>	tten
О	in italics will be present depending on +CSDH last setting)	
D	where:	
E	<oa> - originating address, string type converted in the currently</oa>	
=	selected character set (see +CSCS)	
1	<alpha> - alphanumeric representation of <oa>; used character s</oa></alpha>	et
	should be the one selected with command +CSCS.	
	<scts> - arrival time of the message to the SC</scts>	
.,	<tooa>, <tosca> - type of number <oa> or <sca>:</sca></oa></tosca></tooa>	
#	129 - number in national format	
S	145 - number in international format (contains the "+")	
M	<fo> - first octet of 3GPP TS 23.040 (nid) Protocol Identified</fo>	
S	<pre><pid> - Protocol Identifier</pid></pre>	
M	<dcs> - Data Coding Scheme</dcs>	



+CNI	AI - New Message Indications To Terminal Equipment SELINT 2
О	<sca> - Service Centre address, string type, converted in the currently</sca>
D	selected character set (see +CSCS)
E	length> - text length
=	<data> - TP-User-Data</data>
1	• If <dcs></dcs> indicates that GSM03.38 default alphabet is used and
	<fo> indicates that GSM03.40 TP-User-Data-Header-Indication</fo>
	is not set (bit 6 of <fo></fo> is 0), each character of GSM alphabet will
	be converted into current TE character set (see +CSCS)
#	• If <dcs></dcs> indicates that 8-bit or UCS2 data coding scheme is used
S	or <fo></fo> indicates that GSM03.40 TP-User-Data-Header-
M	Indication is set (bit 6 of <fo></fo> is 1), each 8-bit octet will be
S	converted into two IRA character long hexadecimal number (e.g.
M	octet 0x2A will be converted as two characters 0x32 0x41)
0	
D	Class 2 messages and messages in the "store" message waiting
Е	indication group result in indication as defined in <mt>=1.</mt>
1	3 - Class 3 SMS-DELIVERs are routed directly to TE using unsolicited
1	result codes defined in <mt>=2. Messages of other data coding schemes</mt>
	result in indication as defined in <mt>=1</mt> .
	bm> - broadcast reporting option Or Call Proadcast Massages are not contact the PTE
#	 0 - Cell Broadcast Messages are not sent to the DTE 2 - New Cell Broadcast Messages are sent to the DTE with the unsolicited
S	result code:
M	result code.
S	(PDU Mode)
M	+CBM: <length><cr><lf><pdu></pdu></lf></cr></length>
О	where:
D	<le>ength> - PDU length</le>
E	<pdu> - message PDU</pdu>
=	
1	(TEXT Mode)
	+CBM: <sn>,<mid>,<dcs>,<pag>,<pags><cr><lf><data></data></lf></cr></pags></pag></dcs></mid></sn>
	where:
#	<sn> - message serial number</sn>
S S	<mid>- message ID</mid>
M	<dcs> - Data Coding Scheme</dcs>
S	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>
M	<pre><pags> - total number of pages of the message <data> - CBM Content of Message</data></pags></pre>
O	• If <dcs< b="">> indicates that GSM03.38 default alphabet is used, each</dcs<>
D	character of GSM alphabet will be converted into current TE
Е	character set (see +CSCS)
=	• If <dcs></dcs> indicates that 8-bit or UCS2 data coding scheme is used,
1	each 8-bit octet will be converted into two IRA character long
	hexadecimal number (e.g. octet 0x2A will be converted as two
	characters 0x32 0x41)



+CN	<mark>MI - New Message I</mark>	ndications To Terminal Equipment	SELINT 2
# S M S M O D E =		<pre><ds> - SMS-STATUS-REPORTs reporting option 0 - status report receiving is not reported to the DT. 1 - the status report is sent to the DTE with the follocode:</ds></pre>	
0		<pdu> - message PDU (TEXT Mode)</pdu>	
# S M S O D E = 1		+CDS: <fo>,<mr>,<ra>,<tora>,<scts>,<dt>,<mr>,<mr>,<ra>,<tora>,<scts>,<dt>,<mr>,<mr>,<ra>,<tora>,<scts>,<dt>,<mr>,<mr>,<ra>,<tora>,<scts>,<dt>,<mr>,<mr>,<ra>,<ra>,<scts>,<dt>,<mr>,<ra>,<ra>,<ra>,<ra>,<ra>,<ra>,<ra>,<r< td=""><td>23.040 TP-Message-ted in the currently</td></r<></ra></ra></ra></ra></ra></ra></ra></mr></dt></scts></ra></ra></mr></mr></dt></scts></tora></ra></mr></mr></dt></scts></tora></ra></mr></mr></dt></scts></tora></ra></mr></mr></dt></scts></tora></ra></mr></fo>	23.040 TP-Message-ted in the currently
# S M S M O D E = 1		2 - if a status report is stored, then the following un sent: +CDSI: <memr>,<index> where: <memr> - memory storage where the new memory storage where storage storage storage where storage where storage where storage storage storage storage where storage st</memr></index></memr>	essage is stored S is stored ithin this command is d (OK response shall be
# S M	AT+CNMI?	Read command returns the current parameter setting in the form:	s for +CNMI command
S M	AT+CNMI=?	+CNMI: <mode>,<mt>,<bm>,<ds>,<bfr> Test command reports the supported range of values command parameters.</bfr></ds></bm></mt></mode>	for the +CNMI



+CN	MI - New Message Inc	dicatio	ons To	Termin	<mark>ıal Equipm</mark>	ent		SEL	INT 2	
О	Reference	GS	GSM 27.005							
D E = 1	Note	ina los sug me	DTR signal is ignored, hence the indication is sent even inactive (DTR signal is Low). In this case the unsolicit lost so if MODULE remains active while DTE is not, at suggested to check whether new messages have reached meanwhile with command AT+CMGL=0 that lists the received.					licited resul ot, at DTE s ched the dev	t code may be tartup is vice	
# S M S	Note	ino po	It has been necessary to take the following decisions to get over any incoherence problem in a multiplexed environment (see +CMUX), due possibility to have contemporaneous different settings of parameter <m different="" sessions:<="" td=""></m>							
M O D E			<mt> set</mt>	Indicate a strings in sessions	ge Class or tion group, as in the DCS	SM Class SM is an In	s is No Class OR is 0 or 1 or 3 OR adication with 'Discard'	SM C	lass is 3	
1			<mt< td=""><td>at>=2 for so ANI >=anyvalu session at>=3 for so ANI</td><td>ue for other n(s) ession "0"</td><td>URC is s</td><td colspan="2">URC is shown only on session "0"</td><td colspan="2">URC is shown only</td></mt<>	at>=2 for so ANI >=anyvalu session at>=3 for so ANI	ue for other n(s) ession "0"	URC is s	URC is shown only on session "0"		URC is shown only	
# S M S M O		tab	The URC behaviour in all the other cases follows rules reported on below table concerning <mt> parameter. Storing and ackowledgement on the other hand follow rules specified on instance 0.</mt>							
D E =	Note					which URC is shown and if the DELIVER SM nt> parameter value and the SM class.				
1							SM CLASS			
					0 / msg waiting discard	1 / no class	2	3	msg waiting store	
			<mt></mt>	0	Store in <mems></mems>	Store in <mems></mems>	Store in SIM	Store in <mems></mems>	Store in <mems></mems>	
				1	Store in <mems> - Send ind +CMTI</mems>	Store in <mems> - Send ind +CMTI</mems>	Store in SIM - Send ind +CMTI	Store in <mems> - Send ind +CMTI</mems>	Store in <mems> - Send ind +CMTI</mems>	



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+CN	MI - New Message Indic	ndications To Terminal Equipment SELINT 2						
			2	Route msg to TE: +CMT ²⁹	Route msg to TE: +CMT ^I	Store in SIM - Send ind +CMTI	Route msg to TE: + CMT ^I	Store in <mems> - Send ind +CMTI</mems>
			3	Store in <mems> - Send ind +CMTI</mems>	Store in <mems>- Send ind +CMTI</mems>	Store in SIM - Send ind +CMTI	Route msg to TE: +CMT ¹	Store in <mems> - Send ind +CMTI</mems>
		where < +CPMS		s the memor	ry where th	e received m	nessages are	e stored (see
	Note	incohere	nce prob ty to hav	olem in a mu ve contempo	take the following decision to get over an a multiplexed environment (see +CMUX), dumporaneous different settings of parameter <			(X), due to the
		<ds> settings in different sessions</ds>						
		<pre><ds>=1 for session "0" AND <ds>=2 for at least one of the other sessions</ds></ds></pre> URC +CDS is shown only on "0" and no status report is sto SIM						
		<ds>=</ds>		for session "0" AND t one of the othe	r sessions		hown on an	y session and red on SIM

3.5.5.3.2. List Messages - +CMGL

+CMGL - List Message	<mark>es</mark>	SELINT 0 / 1
AT+CMGL	Execution command reports the list of all the messages with	status value <stat></stat>
[= <stat>]</stat>	stored into <memr></memr> message storage (<memr></memr> is the message	storage for read and
	delete SMs as last settings of command + CPMS).	
	The parameter type and the command output depend on t command +CMGF (message format to be used)	he last settings of
	(PDU Mode)	
	Parameter:	
	<stat></stat>	

²⁹ The SM is not stored!





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+CMGL - List Messages

SELINT 0 / 1

- 0 new message
- 1 read message
- 2 stored message not yet sent
- 3 stored message already sent
- 4 all messages.

Each message to be listed is represented in the format:

+CMGL: <index>,<stat>,<length><CR><LF><pdu>

where

<index> - message position in the memory storage list.

<stat> - status of the message

length> - length of the PDU in bytes

<pd><pdu> - message in PDU format according to GSM 3.40

(Text Mode)

Parameter:

<stat>

"REC UNREAD" - new message

"REC READ" - read message

"STO UNSENT" - stored message not yet sent

"STO SENT" - stored message already sent

"ALL" - all messages.

Each message to be listed is represented in the format (the information written in italics will be present depending on +CSDH last setting):

+CMGL: <index>,<stat>,<oa/da>,,[,<tooa/toda>,<length>] <CR><LF> <data>

where

<index> - message position in the storage

<stat> - message status

<oa/da> - originator/destination address, string type, represented in the currently
selected character set (see +CSCS)

<tooa/toda> - type of number <oa/da>

129 - number in national format

145 - number in international format (contains the "+")

<length> - text length

<data> - TP-User-Data

Each message delivery confirm is represented in the format:

+CMGL: <index>,<stat>,<fo>,<mr>,,,<scts>,<dt>,<st>





+CMGL - List Message	SELINT 0 / 1
	where
	<index> - message position in the storage</index>
	<stat> - message status</stat>
	<fo> - first octet of the message PDU</fo>
	<mr> - message reference number</mr>
	<scts> - arrival time of the message to the SC</scts>
	<dt> - sending time of the message</dt>
	<st> - message status as coded in the PDU</st>
	Note: OK result code is sent at the end of the listing.
	Note: If parameter is omitted the command returns the list of sms with "REC UNREAD" status.
AT+CMGL?	Read command has the same effect as Execution command with parameter omitted
AT+CMGL=?	Test command returns a list of supported <stat>s</stat>
Note	If Text Mode (+CMGF=1) the Test command output is not included in parenthesis
	AT+CMGL=?
	+CMGL: "REC UNREAD", "REC READ", "STO UNSENT",
	"STO SENT","ALL"
Note	The improving command @CMGL has been defined
Reference	GSM 27.005

+CM	GL - List Message	s	SELINT 2				
	Note: the behaviour of command +CMGL differs depending on whether or not the improved SMS commands operation mode has been enabled (see #SMSMODE)						
(#SMSMODE=0)							
#	AT+CMGL	Execution command reports the list of all the messa	ges with status value				
S	[= <stat>]</stat>	<stat> stored into <memr> message storage (<mer< td=""><td>nr> is the message</td></mer<></memr></stat>	nr > is the message				
M	storage for read and delete SMs as last settings of command + CPMS).						
S			,				
M		The parameter type and the command output dependent	d on the last settings of				





+CM	GL - List Messages		SELINT 2
О		command +CMGF (message format to be used)	
D		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
E		(PDU Mode)	
=		Parameter:	
0		<stat></stat>	
		0 - new message	
		1 - read message	
		2 - stored message not yet sent	
#		3 - stored message already sent	
S		4 - all messages.	
M			
S		If there is at least one message to be listed the representati	ion format is:
M			_
0		+CMGL: <index>,<stat>,<alpha>,<length><cr><lf< td=""><td>><pdu></pdu></td></lf<></cr></length></alpha></stat></index>	> <pdu></pdu>
D		[<cr><lf></lf></cr>	
E		+CMGL: <index>,<stat>,<alpha>,<length><cr><lf< td=""><td>><pau>[]]</pau></td></lf<></cr></length></alpha></stat></index>	> <pau>[]]</pau>
=		where:	
0			
		<pre><index> - message position in the memory storage list.</index></pre> <pre><stat> - status of the message</stat></pre>	
		<pre><stat -="" <alpha="" message="" of="" status="" the=""> - string type alphanumeric representation of <da< pre=""></da<></stat></pre>	> or <00>
#		corresponding to an entry found in the phoneb	,
S		set is the one selected with command +CSCS.	
M		<pre><length> - length of the PDU in bytes</length></pre>	•
S		chight - length of the FDO in bytes cpdu> - message in PDU format according to GSM 3.40	
M		paur message in 1 DO format according to Obivi 5.10	
0		(Text Mode)	
D		Parameter:	
E		<stat></stat>	
=		"REC UNREAD" - new message	
0		"REC READ" - read message	
		"STO UNSENT" - stored message not yet sent	
		"STO SENT" - stored message already sent	
		"ALL" - all messages.	
#		-	
S		The representation format for stored messages (either sent	t or unsent) or
M		received messages (either read or unread, not message del	livery confirm) is
S		(the information written in italics will be present dependir	ng on +CSDH last
M		setting):	
О			
D			
Е		+CMGL: <index>,<stat>,<oa da="">,<alpha>,<scts>[,<to< td=""><td>oa/toda>,</td></to<></scts></alpha></oa></stat></index>	oa/toda>,
=		<pre><length>J<cr><lf><data>[<cr><lf></lf></cr></data></lf></cr></length></pre>	
0		+CMGL: <index>,<stat>,<oa da="">,<alpha>,<scts>[,<to< td=""><td>oa/toda>,</td></to<></scts></alpha></oa></stat></index>	oa/toda>,
		<length>J<cr><lf><data>[]]</data></lf></cr></length>	



+CMGL - List Messages	SELINT 2
	where:
#	<index> - message position in the storage</index>
S	<stat> - message status</stat>
M	<oa da=""> - originator/destination address, string type, represented in the</oa>
S	currently selected character set (see +CSCS)
M	<alpha> - string type alphanumeric representation of <da> or <oa>,</oa></da></alpha>
О	corresponding to an entry found in the phonebook; used character
D	set is the one selected with command +CSCS.
E	<scts> - TP-Service Centre Time Stamp in Time String Format</scts>
=	<tooa toda=""> - type of number <oa da=""></oa></tooa>
0	129 - number in national format
	145 - number in international format (contains the "+")
	tength> - text length
	<data> - TP-User-Data</data>
#	• If <dcs></dcs> indicates that GSM03.38 default alphabet is used, each
S	character of GSM alphabet will be converted into current TE character
M	set (see +CSCS)
S	• If <dcs></dcs> indicates that 8-bit or UCS2 data coding scheme is used, each
M	8-bit octet will be converted into two IRA character long hexadecimal
О	number (e.g. octet 0x2A will be converted as two characters 0x32 0x41)
D	
E	If there is at least one message delivery confirm to be listed the
=	representation format is:
0	
	+CMGL: <index>,<stat>,<fo>,<mr>,,,<scts>,<dt>,<st>[<cr><lf></lf></cr></st></dt></scts></mr></fo></stat></index>
	+CMGL: <index>,<stat>,<fo>,<mr>,<ra>,<tora>,<scts>,<dt>,<st></st></dt></scts></tora></ra></mr></fo></stat></index>
	[]]
#	
S	where
M	<index> - message position in the storage</index>
S	<stat> - message status</stat>
M	<fo> - first octet of the message PDU</fo>
О	<mr> - message reference number; 3GPP TS 23.040 TP-Message-</mr>
D	Reference in integer format
E	<scts> - arrival time of the message to the SC</scts>
=	<dt>- sending time of the message</dt>
0	<st> - message status as coded in the PDU</st>
	Note: If parameter is omitted the command returns the list of sms with " REC
	UNREAD" status.
#	Note: the audenia which the masses are more to the CMCV in the
S	Note: the order in which the messages are reported by +CMGL is the same
M	order in which these messages have been processed by the module
S	Design and the street of the control
M AT+CMGL?	Read command has the same effect as Execution command with parameter
	omitted.



+CM	GL - List Messages	SELINT 2
0	AT+CMGL=?	Test command returns a list of supported stat >s
Ď	Reference	GSM 27.005, 3GPP TS 23.040
Е		3511271000,2311 15 2510 10
=		
0		
		(#SMSMODE=1)
#	AT+CMGL	Execution command reports the list of all the messages with status value
S	[= <stat>]</stat>	<stat> stored into <memr> message storage (<memr> is the message</memr></memr></stat>
M		storage for read and delete SMs as last settings of command +CPMS).
S		
M		The parameter type and the command output depend on the last settings of
O		command +CMGF (message format to be used)
D		
Е		(PDU Mode)
=		Parameter:
1		<stat></stat>
		0 - new message
		1 - read message
		2 - stored message not yet sent
#		3 - stored message already sent
S		4 - all messages.
M		
S		If there is at least one message to be listed the representation format is:
M		
О		+CMGL:
D		<index>,<stat>,<alpha>,<length><cr><lf><pdu>[<cr><lf></lf></cr></pdu></lf></cr></length></alpha></stat></index>
Е		+CMGL: <index>,<stat>,<alpha>,<length><cr><lf><pdu>[]]</pdu></lf></cr></length></alpha></stat></index>
=		
1		where:
		<index> - message position in the memory storage list.</index>
		<stat> - status of the message</stat>
		<alpha> - string type alphanumeric representation of <da> or <oa>,</oa></da></alpha>
#		corresponding to an entry found in the phonebook; used character
S		set is the one selected with command +CSCS.
M		<le>ength> - length of the PDU in bytes</le>
S		<pre><pdu> - message in PDU format according to GSM 3.40</pdu></pre>
M		
0		(Text Mode)
D		Parameter:
Е		<stat></stat>
=		"REC UNREAD" - new message
1		"REC READ" - read message
		"STO UNSENT" - stored message not yet sent
		"STO SENT" - stored message already sent



+CM	GL - List Messages		SELINT 2
	8	"ALL" - all messages.	1
#		1.22 wit in 100 mg voi	
S		The representation format for stored messages (either sent	or unsent) or
M		received messages (either read or unread, not message del	
S		(the information written in italics will be present depending	
		•	ig on +CSDH last
M		setting):	
0			
D			
Е		+CMGL: <index>,<stat>,<oa da="">,<alpha>,<scts>/,<to< th=""><th>oa/toda>,</th></to<></scts></alpha></oa></stat></index>	oa/toda>,
=		<length>J<cr><lf><data>[<cr><lf></lf></cr></data></lf></cr></length>	
1		+CMGL: <index>,<stat>,<oa da="">,<alpha>,<scts>/,<to< th=""><th>oa/toda>,</th></to<></scts></alpha></oa></stat></index>	oa/toda>,
		<length>J<cr><lf><data>[]]</data></lf></cr></length>	
		where:	
#		<index> - message position in the storage</index>	
S		<stat> - message position in the storage <stat> - message status</stat></stat>	
M		<pre><oa da=""> - originator/destination address, string type , repr</oa></pre>	esented in the
S		currently selected character set (see +CSCS)	oscinca in the
M		<alpha> - string type alphanumeric representation of <da< th=""><th>> or <00></th></da<></alpha>	> or <00>
O		corresponding to an entry found in the phoneb	
D		set is the one selected with command +CSCS.	
E		<scts> - TP-Service Centre Time Stamp in Time String Fo</scts>	omat
=		<tooa toda=""> - type of number <oa da=""> 129 - number in national format</oa></tooa>	
1			
		145 - number in international format (contains the "+")	
		<length> - text length</length>	
		<data> - TP-User-Data</data>	
#		• If <dcs></dcs> indicates that GSM03.38 default alphabet is	
S		character of GSM alphabet will be converted into cu	rrent TE character
M		set (see +CSCS)	
S		• If <dcs></dcs> indicates that 8-bit or UCS2 data coding scl	
M		8-bit octet will be converted into two IRA character	•
О		number (e.g. octet 0x2A will be converted as two ch	
D		• If <fo> indicates that a UDH is present each 8-bit oc</fo>	tet will be
E		converted into two IRA character long hexadecimal	number. The
=		<length> indicates text length in characters without I</length>	JDH length.
1			-
		If there is at least one message delivery confirm to be listed	ed the
		representation format is:	
#		+CMGL: <index>,<stat>,<fo>,<mr>,<ra>,<tora>,<sct< th=""><th>s>.<dt>.<st></st></dt></th></sct<></tora></ra></mr></fo></stat></index>	s>. <dt>.<st></st></dt>
S		CR> <lf></lf>	, ac , se
M		+CMGL: <index>,<stat>,<fo>,<mr>,<ra>,<tora>,<sct< th=""><th>s> <dt> <st></st></dt></th></sct<></tora></ra></mr></fo></stat></index>	s> <dt> <st></st></dt>
S		+CMGL. \muex>,\stat>,\10>,\mir>,\1a>,\t01a>,\sct []]	o-, \ur, \or
M		[•••]]	
O		where	
U		WHELE	



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+CM	GL - List Messages		SELINT 2
D E		<index> - message position in the storage <stat> - message status</stat></index>	
=		<pre><fo> - first octet of the message PDU <mr> - message reference number; 3GPP TS 23.040 TP-N</mr></fo></pre>	Massaga
1		Reference in integer format	ressage-
		<pre><ra> - recipient address, string type , represented in the cu character set (see +CSCS)</ra></pre>	rrently selected
#		<tora> - type of number <ra></ra></tora>	
S		<scts> - arrival time of the message to the SC</scts>	
M		<a href="https://www.new.new.new.new.new.new.new.new.new.</td><td></td></tr><tr><th>S
M
O</th><th></th><th><st> - message status as coded in the PDU Note: If parameter is omitted the command returns the list</th><th>of sms with " rec<="" th="">	
D		UNREAD" status.	
Е		Note: the order in which the messages are reported by +CI	MGL corresponds
1		to their position in the memory storage	
	AT+CMGL=?	Test command returns a list of supported <stat></stat> s	
	Reference	GSM 27.005, 3GPP TS 23.040	

3.5.5.3.3. List Messages - @CMGL

@CMGL - List M	essages Improved SELINT 0
AT@CMGL	Execution command reports the list of all the messages with status value <stat></stat>
[= <stat>]</stat>	stored into <memr> message storage (<memr> is the message storage for read and</memr></memr>
	delete SMs as last settings of command +CPMS).
	The parameter type and the command output depend on the last settings of command +CMGF (message format to be used)
	(PDU Mode)
	Parameter:
	<stat></stat>
	0 - new message
	1 - read message
	2 - stored message not yet sent
	3 - stored message already sent
	4 - all messages.
	Each message to be listed is represented in the format:
	@CMGL: <index>,<stat>,<length><cr><lf><pdu></pdu></lf></cr></length></stat></index>
	where



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@CMGL - List Messages Improved

SELINT 0

<index> - message position in the memory storage list.

<stat> - status of the message

length> - length of the PDU in bytes

<pdu> - message in PDU format according to GSM 3.40

(Text Mode)

Parameter:

<stat>

"REC UNREAD" - new message

"REC READ" - read message

"STO UNSENT" - stored message not yet sent

"STO SENT" - stored message already sent

"ALL" - all messages.

Each message to be listed is represented in the format (the information written in italics will be present depending on +CSDH last setting):

@CMGL: <index>,<stat>,<oa/da>,,[,<tooa/toda>,<length>] <CR><LF> <data>

CIC LI

where

<index> - message position in the storage

<stat> - message status

<oa/da> - originator/destination address, string type, represented in the currently selected character set (see +CSCS)

<tooa/toda> - type of number <oa/da>

129 - number in national format

145 - number in international format (contains the "+")

<le>length> - text length

<data> - TP-User-Data

Each message delivery confirm is represented in the format:

@CMGL: <index>,<stat>,<fo>,<mr>,,,<scts>,<dt>,<st>

where

<index> - message position in the storage

<stat> - message status

<fo> - first octet of the message PDU

<mr> - message reference number</ri>

<scts> - arrival time of the message to the SC

<dt> - sending time of the message

<st> - message status as coded in the PDU

Note: The command differs from the +CMGL because at the end of the listing a





@CMGL - List Messa	@CMGL - List Messages Improved SELINT 0		
	<cr><lf> is put before the OK result code.</lf></cr>		
	Note: If parameter is omitted the command returns the list UNREAD" status.	of sms with "REC	
AT@CMGL?	Read command has the same effect as Execution command with	parameter omitted	
AT@CMGL=?	Test command returns a list of supported <stat>s</stat>		
Note	If Text Mode (+CMGF=1) the Test command output is not included in parenthesis		
	AT@CMGL=? @CMGL: "REC UNREAD","REC READ","STO UNSENT", "STO SENT","ALL"		
Reference	GSM 27.005		

@CMGL - List Messa	<mark>ges Improved</mark>	SELINT 1
AT@CMGL	Execution command reports the list of all the messages with	status value <stat></stat>
[= <stat>]</stat>	stored into <memr> message storage (<memr> is the message</memr></memr>	storage for read and
	delete SMs as last settings of command +CPMS).	
	The parameter type and the command output depend on t	the last settings of
	command +CMGF (message format to be used)	
	(PDU Mode)	
	Parameter:	
	<stat></stat>	
	0 - new message	
	1 - read message	
	2 - stored message not yet sent	
	3 - stored message already sent	
	4 - all messages.	
	Each message to be listed is represented in the format:	
	@CMGL: <index>,<stat>,<length><cr><lf><pdu></pdu></lf></cr></length></stat></index>	
	where	
	<index> - message position in the memory storage list.</index>	
	<stat> - status of the message</stat>	
	length> - length of the PDU in bytes	
	<pre><pdu> - message in PDU format according to GSM 3.40</pdu></pre>	
	(Text Mode)	
	Parameter:	
	<stat></stat>	
	"REC UNREAD" - new message	
	"REC READ" - read message	
	"STO UNSENT" - stored message not yet sent	



@CMGL - List Mes	ssages Improved	SELINT 1
	"STO SENT" - stored message already sent	
	"ALL" - all messages.	
	Each message to be listed is represented in the format:	
	@CMGL: <index>,<stat>,<oa da="">[,,,<tooa toda="">,<length>]</length></tooa></oa></stat></index>	
	<cr><lf> <data></data></lf></cr>	
	where	
	<index> - message position in the storage</index>	
	<stat> - message status</stat>	1 : 41 41 -
	 <oa da=""> - originator/destination address, string type, represented</oa> 	a in the currently
	selected character set (see +CSCS) <tooa toda=""> - type of number <oa da=""></oa></tooa>	
	129 - number in national format	
	145 - number in international format (contains the "+")	
	<pre>length> - text length</pre>	
	<data> - TP-User-Data</data>	
	and II Cool Build	
	Each message delivery confirm is represented in the format:	
	@CMGL: <index>,<stat>,<fo>,<mr>,,,,<scts>,<dt>,<st></st></dt></scts></mr></fo></stat></index>	
	where	
	<index> - message position in the storage</index>	
	<stat> - message status</stat>	
	<fo> - first octet of the message PDU</fo>	
	<mr> - message reference number</mr>	
	<scts> - arrival time of the message to the SC</scts>	
	<dt> - sending time of the message</dt>	
	<st> - message status as coded in the PDU</st>	
	N. T. I. 1.100 C. A. L. C.M.C. I.	1 0 1 1: 4:
	Note: The command differs from the +CMGL because at the er	nd of the listing a
	<cr><lf> is put before the OK result code.</lf></cr>	
	Note: If parameter is omitted the command returns the list of	sms with "RFC
	UNREAD" status.	SIIIS WIGH ICC
AT@CMGL?	Read command has the same effect as Execution command with pa	arameter omitted
AT@CMGL=?	Test command returns a list of supported <stat>s</stat>	
Note	If Text Mode (+CMGF=1) the Test command output is not includ	ed in parenthesis
	. , , , , , , , , , , , , , , , , , , ,	•
	AT@CMGL=?	
	@CMGL: "REC UNREAD","REC READ","STO UNSENT"	,
	"STO SENT","ALL"	
Reference	GSM 27.005	



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3.5.5.3.4. Read Message - +CMGR

+CMGR - Read Message

SELINT 0 / 1

AT+CMGR= <index>

Execution command reports the message with location value **<index>** from <memr> message storage (<memr> is the message storage for read and delete SMs as last settings of command +CPMS).

Parameter:

<index> - message index.

The output depends on the last settings of command +CMGF (message format to be used)

(PDU Mode)

The output has the following format:

+CMGR: <stat>,<length><CR><LF><pdu>

where

<stat> - status of the message

0 - new message

1 - read message

2 - stored message not yet sent

3 - stored message already sent

length> - length of the PDU in bytes.

pdu> - message in PDU format according to GSM 3.40.

The status of the message and entire message data unit **pdu** is returned.

(Text Mode)

Output format for received messages (the information written in italics will be present depending on +CSDH last setting):

+CMGR: <stat>,<oa>,,<scts> /,<tooa>,<fo>,<pid>,<dcs>,<sca>, <tosca>,<length>/<CR><LF><data>

Output format for either sent or unsent messages:

+CMGR: <stat>,<da>,/,<toda>,<fo>,<pid>,<dcs>, <sca>,<tosca>,<length>/<CR><LF><data>

Output format for message delivery confirm:

+CMGR: <stat>,<fo>,<mr>,,,<scts>,<dt>,<st>

where:

<stat> - status of the message

"REC UNREAD" - new received message unread

"REC READ" - received message read

"STO UNSENT" - message stored not yet sent





+CMGR - Read Mess	<mark>age</mark>	SELINT 0 / 1
	"STO SENT" - message stored already sent	
	<fo> - first octet of the message PDU</fo>	
	<mr> - message reference number</mr>	
	<scts> - arrival time of the message to the SC</scts>	
	<dt> - sending time of the message</dt>	
	<st> - message status as coded in the PDU</st>	
	<pre><pid> - Protocol Identifier</pid></pre>	
	<dcs> - Data Coding Scheme</dcs>	
	 <oa> - Originator address, string type represented in the current</oa> 	ly selected
	character set (see +CSCS)	
	<a>da> - Destination address, string type represented in the current	ntly selected
	character set (see +CSCS)	
	<sca> - Service Centre number</sca>	
	<pre><tooa>,<toda>,<tosca> - type of number <oa>,<da>,<sca></sca></da></oa></tosca></toda></tooa></pre>	
	129 - number in national format	
	145 - number in international format (contains the "+")	
	length> - text length	
	<data> - TP-User_data</data>	
	Note: in both cases if status of the message is 'received unread', storage changes to 'received read'.	status in the
	Note: an error result code is sent on empty record <index></index> .	
AT+CMGR=?	Test command returns the OK result code.	
Note	The improving command @CMGR has been defined	
Reference	GSM 27.005	

+CM	GR - Read Message		SELINT 2
	Note: the behaviour of command +CMGR differs depending on whether or not the improved SMS commands operation mode has been enabled (see #SMSMODE)		
	(#SMSMODE=0)		
#	# AT+CMGR= Execution command reports the message with location value <index> from</index>		
S	S <index> <memr> message storage (<memr> is the message storage for read and</memr></memr></index>		
M	M delete SMs as last settings of command +CPMS).		
S			



+CM	GR - Read Message	SELINT 2	
M	Treat Hessage	Parameter:	
O		<index> - message index.</index>	
D		THUCA - INCOSUGE INCO.	
E		The output depends on the last settings of command +CMCE (massage	
E =		The output depends on the last settings of command +CMGF (message	
		format to be used)	
0		(DDII M. J.)	
		(PDU Mode)	
		If there is a message in location <index></index> , the output has the following	
11		format:	
#			
S		+CMGR: <stat>,<alpha>,<length><cr><lf><pdu></pdu></lf></cr></length></alpha></stat>	
M			
S		where	
M		<stat> - status of the message</stat>	
O		0 - new message	
D		1 - read message	
E		2 - stored message not yet sent	
=		3 - stored message already sent	
0		<alpha> - string type alphanumeric representation of <da> or <oa>,</oa></da></alpha>	
		corresponding to an entry found in the phonebook; used character	
		set is the one selected with command +CSCS.	
		<pre><length> - length of the PDU in bytes.</length></pre>	
#		pdu> - message in PDU format according to GSM 3.40.	
S			
M		The status of the message and entire message data unit pdu is returned.	
S			
M		(Text Mode)	
О		If there is a Received message in location <index></index> the output format is (the	
D		information written in <i>italics</i> will be present depending on +CSDH last	
E		setting):	
=		+CMGR: <stat>,<oa>,<alpha>,<scts>/,<tooa>,<fo>,<pid>,</pid></fo></tooa></scts></alpha></oa></stat>	
0		<dcs>,<sca>,<tosca>,<length>/<cr><lf><data></data></lf></cr></length></tosca></sca></dcs>	
		If there is either a Sent or an Unsent message in location <index></index> the	
		output format is:	
#		+CMGR: <stat>,<da>,<alpha>/,<toda>,<fo>,<pid>,<dcs>,<vp>,</vp></dcs></pid></fo></toda></alpha></da></stat>	
S		<sca>,<tosca>,<length>/<cr><lf><data></data></lf></cr></length></tosca></sca>	
M		, , , , , , , , , , , , , , , , , , , ,	
S		If there is a Message Delivery Confirm in location <index></index> the output	
M		format is:	
O		+CMGR: <stat>,<fo>,<mr>,,,<scts>,<dt>,<st></st></dt></scts></mr></fo></stat>	
Ď			
E		where:	
=		<stat> - status of the message</stat>	
0		"REC UNREAD" - new received message unread	
		"REC READ" - received message read	



+CM	GR - Read Message	SELINT 2	
		"STO UNSENT" - message stored not yet sent	
		"STO SENT" - message stored already sent	
#		<fo> - first octet of the message PDU</fo>	
S		<mr> - message reference number; 3GPP TS 23.040 TP-Message-</mr>	
M		Reference in integer format	
S		<scts> - arrival time of the message to the SC</scts>	
M		<dt> - sending time of the message</dt>	
О		<st> - message status as coded in the PDU</st>	
D		<pre><pid> - Protocol Identifier</pid></pre>	
Е		<dcs> - Data Coding Scheme</dcs>	
=		< <i>vp></i> - Validity period; only the integer format is supported	
0		<oa> - Originator address, string type represented in the currently selected character set (see +CSCS)</oa>	ļ
		<da> - Destination address, string type represented in the currently selected character set (see +CSCS)</da>	d
#		<alpha> - string type alphanumeric representation of <da> or <oa>,</oa></da></alpha>	
S		corresponding to an entry found in the phonebook; used charac	eter
M		set is the one selected with command +CSCS.	
S		<sca> - Service Centre number</sca>	
M		<tooa>,<toda>,<tosca> - type of number <oa>,<da>,<sca></sca></da></oa></tosca></toda></tooa>	
О		129 - number in national format	
D		145 - number in international format (contains the "+")	
E		length> - text length	
=		<data> - TP-User_data</data>	
0		 If <dcs> indicates that GSM03.38 default alphabet is used, each character of GSM alphabet will be converted into current TE character set (see +CSCS)</dcs> 	er
		· · · · · · · · · · · · · · · · · · ·	ch
#		• If <dcs></dcs> indicates that 8-bit or UCS2 data coding scheme is used, each 8-bit octet will be converted into two IRA character long hexadecimal	
S		number (e.g. octet 0x2A will be converted as two characters 0x32 0x4	
M		number (e.g. octet 0x2/1 will be converted as two characters 0x32 0x-	T1)
S		Note: in both cases if status of the message is 'received unread', status in th	ne
M		storage changes to 'received read'.	
О			
D		Note: an error result code is sent on empty record <index></index> .	
Е	AT+CMGR=?	Test command returns the OK result code	
=	Reference	GSM 27.005	
0			
		(#SMSMODE=1)	
#	AT+CMGR=	Execution command reports the message with location value <index></index> from	n
S	<index></index>	<pre><memr> message storage (<memr> is the message storage for read and</memr></memr></pre>	
M		delete SMs as last settings of command +CPMS).	
S			
M		Parameter:	



+CM	GR - Read Message		SELINT 2
0		<index> - message index.</index>	1
D		muca- message maca.	
E		The output depends on the last settings of command +C	MGF (message
=		format to be used)	MGT (message
1		Tormat to be used)	
1		(PDU Mode)	
		If there is a message in location index , the output has	the following
		format:	the following
#		Tormat.	
S		+CMGR: <stat>,<alpha>,<length><cr><lf><pdu></pdu></lf></cr></length></alpha></stat>	
M		+CMGK. \stat/,\aipha/,\length/\CK\LF\\puu	
S		where	
M			
O		<stat> - status of the message 0 - new message</stat>	
D		1 - read message	
E			
E =		2 - stored message not yet sent3 - stored message already sent	
1		<alpha> - string type alphanumeric representation of <</alpha>	40> or <00>
1		corresponding to an entry found in the phonel	
		set is the one selected with command +CSCS	
		<pre><length> - length of the PDU in bytes.</length></pre>	•
++			0
#		<pre><pdu> - message in PDU format according to GSM 3.4</pdu></pre>	0.
S		The status of the message and entire message data unit <	ndu> is returned
M S		The status of the message and entire message data unit	·puu/ is returned.
M		(Toyt Mode)	
O		(Text Mode) If there is a Received message in location <index> the</index>	output format is (the
D		information written in <i>italics</i> will be present depending	
E		setting):	on (CSDII last
=		+CMGR: <stat>,<oa>,<alpha>,<scts>/,<tooa>,<fo>,<</fo></tooa></scts></alpha></oa></stat>	nid
1		<pre><dcs>,<sca>,<tosca>,<length>/<cr><lf><data></data></lf></cr></length></tosca></sca></dcs></pre>	·piu>,
1		\ucs>,\scu>,\oscu>,\ength>j\CR>\Lr>\uata>	
		If there is either a Sent or an Unsent message in locatio	n <inday></inday> the
		output format is:	ii \index> tile
#		+CMGR: <stat>,<da>,<alpha>/,<toda>,<fo>,<pid>,<</pid></fo></toda></alpha></da></stat>	'dec> [<vn>]</vn>
S T		<pre><sca>,<tosca>,<length>/<cr><lf><data></data></lf></cr></length></tosca></sca></pre>	ucs-,[\vp-],
M		Scu-, voscu-, vengin-j CR-\LI-\data-	
S		If there is a Message Delivery Confirm in location <in< td=""><td>dex> the output</td></in<>	dex> the output
M		format is:	uca- incomput
O		+CMGR: <stat>,<fo>,<mr>,<ra>,<tora>,<scts>,<dt></dt></scts></tora></ra></mr></fo></stat>	> <st></st>
D		1011010 3tar, 10r, 11111, 11ar, 1011ar, 13tt5, 10r	9 -01-
E		where:	
=		<stat> - status of the message</stat>	
1		"REC UNREAD" - new received message unread	
1		"REC READ" - new received message unread	
		"STO UNSENT" - message stored not yet sent	



+CMGR - Read Message	SELINT 2	
	"STO SENT" - message stored already sent	
#	solution in the stage stored arready sens solution in the stage stored arready sens	
S	<mr> - message reference number; 3GPP TS 23.040 TP-Message-</mr>	
M	Reference in integer format	
S	<ra> - recipient address, string type, represented in the currently selected</ra>	
M	character set (see +CSCS)	
0	<tora> - type of number <ra></ra></tora>	
D	<scts> - arrival time of the message to the SC</scts>	
E	<pre><dt> - sending time of the message</dt></pre>	
	<st> - message status as coded in the PDU</st>	
1	<pid>- Protocol Identifier</pid>	
1	<dcs> - Data Coding Scheme</dcs>	
	<vp> - Validity Period; its format depends on SMS-SUBMIT <fo> setting</fo></vp>	
	(see +CSMP):	
#	a) Not Present if <fo></fo> tells that the Validity Period Format is Not	
S	Present	
M	b) <i>Integer</i> type if <fo></fo> tells that the <i>Validity Period Format is</i>	
S	Relative	
M	c) Quoted time-string type if <fo></fo> tells that the Validity Period	
O	Format is Absolute	
D	d) Quoted hexadecimal representation of 7 octets if <fo></fo> tells that	
E	the Validity Period Format is Enhanced .	
	<oa> - Originator address, string type represented in the currently selected</oa>	
1	character set (see +CSCS)	
1	<da> - Destination address, string type represented in the currently selected</da>	
	character set (see +CSCS)	
	<alpha> - string type alphanumeric representation of <da> or <oa>,</oa></da></alpha>	
#	corresponding to an entry found in the phonebook; used character	
S	set is the one selected with command +CSCS.	
M	<sca> - Service Centre number</sca>	
S	<tooa>,<toda>,<tosca> - type of number <oa>,<da>,<sca></sca></da></oa></tosca></toda></tooa>	
M	129 - number in national format	
0	145 - number in international format (contains the "+")	
D	length> - text length	
E	<data> - TP-User_data</data>	
=	• If <dcs></dcs> indicates that GSM03.38 default alphabet is used, each	
1	character of GSM alphabet will be converted into current TE character	
	set (see +CSCS)	
	• If dcs indicates that 8-bit or UCS2 data coding scheme is used, each	
	8-bit octet will be converted into two IRA character long hexadecimal	
	number (e.g. octet 0x2A will be converted as two characters 0x32 0x41)	
	Note: in both cases if status of the message is 'received unread', status in the	
	storage changes to 'received read'.	
AT+CMGR=?	Test command returns the OK result code	
Reference	GSM 27.005	



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3.5.5.3.5. Read Message - @CMGR

@CMGR - Read Message Improved

SELINT 0

AT@CMGR= <index>

Execution command reports the message with location value <index> from <memr> message storage (<memr> is the message storage for read and delete SMs as last settings of command +CPMS).

Parameter:

<index> - message index.

The output depends on the last settings of command +CMGF (message format to be used)

(PDU Mode)

The output has the following format:

@CMGR: <stat>,<length><CR><LF><pdu>

where

<stat> - status of the message

- 0 new message
- 1 read message
- 2 stored message not yet sent
- 3 stored message already sent

length> - length of the PDU in bytes.

<pd><pdu> - message in PDU format according to GSM 3.40.

The status of the message and entire message data unit <pdu> is returned.

(Text Mode)

Output format for received messages (the information written in italics will be present depending on +CSDH last setting):

@CMGR: <stat>,<oa>,,<scts> [,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>|<CR><LF><text>

Output format for either sent or unsent messages:

@CMGR: <stat>,<da>,/,<toda>,<fo>,<pid>,<dcs>,,

<sca>,<tosca>,<length>/<CR><LF><text>

Output format for message delivery confirm:

@CMGR: <stat>,<fo>,<mr>,,,<scts>,<dt>,<st>

where:

<stat> - status of the message

"REC UNREAD" - new received message unread





@CMGR - Read M	essage Improved	SELINT 0
	"REC READ" - received message read	
	"STO UNSENT" - message stored not yet sent	
	"STO SENT" - message stored already sent	
	<pre><fo> - first octet of the message PDU</fo></pre>	
	<mr> - message reference number</mr>	
	<scts> - arrival time of the message to the SC</scts>	
	<dt> - sending time of the message</dt>	
	<st> - message status as coded in the PDU</st>	
	<pre><pid> - Protocol Identifier</pid></pre>	
	<dcs> - Data Coding Scheme</dcs>	
	<oa> - Originator address, string type represented in the cu</oa>	urrently selected
	character set (see +CSCS)	
	<da> - Destination address, string type represented in the character set (see +CSCS)</da>	currently selected
	<sca> - Service Centre number</sca>	
	<tooa>,<toda>,<tosca> - type of number <oa>,<da>,<sca< th=""><th><i>a</i>></th></sca<></da></oa></tosca></toda></tooa>	<i>a</i> >
	129 - number in national format	
	145 - number in international format (contains the "+")	
	<length> - text length</length>	
	<text> - message text</text>	
	Note: the command differs from the +CMGR because after <text></text> a <cr><lf></lf></cr> is put before the OK result code.	er the message <pdu></pdu> or
	Note: in both cases if status of the message is 'received uni	read', status in the
	storage changes to 'received read'.	
	Note: an error result code is sent on empty record <index></index>	·.
AT@CMGR=?	Test command has no effect; the answer is OK	
Reference	GSM 27.005	

@CMGR - Read M	SELINT 1	
AT@CMGR=	Execution command reports the message with location value <index></index> from	
<index></index>	<pre><memr> message storage (<memr> is the message storage for read and delete SMs</memr></memr></pre>	
	as last settings of command +CPMS).	
	Parameter:	
	<index> - message index.</index>	
	The output depends on the last settings of command +CMGF (message format to be used)	
	(PDU Mode) The output has the following format:	
	@CMGR: <stat>,<length><cr><lf><pdu></pdu></lf></cr></length></stat>	



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@CMGR - Read Message Improved

SELINT 1

where

<stat> - status of the message

0 - new message

1 - read message

2 - stored message not yet sent

3 - stored message already sent

length> - length of the PDU in bytes.

<pdu> - message in PDU format according to GSM 3.40.

The status of the message and entire message data unit **<pdu>** is returned.

(Text Mode)

Output format for received messages:

@CMGR: <stat>,<oa>,,<scts> [,<tooa>,<fo>,<pid>,<dcs>,<sca>,<tosca>,<length>]<CR><LF><text>

Output format for either sent or unsent messages:

@CMGR: <stat>,<da>[,,<toda>,<fo>,<pid>,<dcs>,,

<sca>,<tosca>,<length>]<CR><LF><text>

Output format for message delivery confirm:

@CMGR: <stat>,<fo>,<mr>,,,<scts>,<dt>,<st>

where:

<stat> - status of the message

"REC UNREAD" - new received message unread

"REC READ" - received message read

"STO UNSENT" - message stored not yet sent

"STO SENT" - message stored already sent

<fo> - first octet of the message PDU

<mr> - message reference number</ri>

<scts> - arrival time of the message to the SC

<dt> - sending time of the message

<st> - message status as coded in the PDU

<pid>- Protocol Identifier

<dcs> - Data Coding Scheme

<oa> - Originator address, string type represented in the currently selected character set (see +CSCS)

<da> - Destination address, string type represented in the currently selected character set (see +CSCS)</br>

<sca> - Service Centre number

<tooa>,<toda >,<tosca> - type of number <oa>,<da>,<sca>

129 - number in national format

145 - number in international format (contains the "+")

<le>dength> - text length





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@CMGR - Read Message Improved		SELINT 1
	<text> - message text</text>	
	Note: the command differs from the +CMGR be <text> a <cr><lf> is put before the OK result</lf></cr></text>	© 1
	Note: in both cases if status of the message is 'rec storage changes to 'received read'.	ceived unread', status in the
	Note: an error result code is sent on empty record	l <index>.</index>
AT@CMGR=?	Test command has no effect; the answer is OK	
Reference	GSM 27.005	

3.5.5.4. Message Sending And Writing

3.5.5.4.1. Send Message - +CMGS

+CMGS - Send Messag	ge	SELINT 0 / 1
(PDU Mode)	(PDU Mode)	
AT+CMGS=	Execution command sends to the network a message.	
<length></length>		
	Parameter:	
	<length> - length of the PDU to be sent in bytes (excluding the soctets).</length>	SMSC address
	7164	
	After command line is terminated with <cr></cr> , the device respon character sequence prompt:	ds sending a four
	<cr><lf><greater_than><space> (IRA 13, 10, 62, 32)</space></greater_than></lf></cr>	
	and waits for the specified number of bytes.	
	Note: the DCD signal shall be in ON state while PDU is given.	
	Note: the echoing of given characters back from the TA is control command E	olled by echo
	Note: the PDU shall be hexadecimal format (each octet of the PI IRA character long hexadecimal number) and given in one line.	DU is given as two
	Note: when the length octet of the SMSC address (given in the P the SMSC address set with command +CSCA is used; in this case	
	of-Address octet shall not be present in the PDU .	
	To send the message issue Ctrl-Z char (0x1A hex).	
	To exit without sending the message issue ESC char (0x1B hex)	



+CMGS - Send Mess	sage SELINT 0 / 1
	If message is successfully sent to the network, then the result is sent in the format:
	+CMGS: <mr></mr>
	where
	<mr> - message reference number.</mr>
	Note: if message sending fails for some reason, an error code is reported.
	Note: care must be taken to ensure that during the command execution, which matake several seconds, no other SIM interacting commands are issued.
(Text Mode)	(Text Mode)
AT+CMGS= <da> [,<toda>]</toda></da>	Execution command sends to the network a message.
[,~toua~]	Parameters:
	<da> - destination address, string type.</da>
	<toda> - type of destination address</toda>
	129 - number in national format
	145 - number in international format (contains the "+")
	After command line is terminated with <cr></cr> , the device responds sending a four character sequence prompt:
	<cr><lf><greater_than><space> (IRA 13, 10, 62, 32)</space></greater_than></lf></cr>
	After this prompt text can be entered; the entered text should be formatted as follows:
	 if current <dcs> (see +CSMP) indicates that GSM03.38 default alphabet is used and current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is not set, then ME/TA converts the entered text into GSM alphabet, according to GSM 27.005, Annex A; backspace can be used to delete last character and carriage returns can be used.</fo></dcs> if current <dcs> (see +CSMP) indicates that 8-bit or UCS2 data coding scheme is used or current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data Header-Indication is set, the entered text should consist of two IRA character lon hexadecimal numbers which ME/TA converts into 8-bit octet (e.g. the 'asterisk' will be entered as 2A (IRA50 and IRA65) and this will be converted to an octet with integer value 0x2A)</fo></dcs>
	Note: the DCD signal shall be in ON state while text is entered.
	Note: the echoing of entered characters back from the TA is controlled by echo command E



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+CMGS - Send Messag	<mark>e</mark>	SELINT 0 / 1
	To send the message issue Ctrl-Z char (0x1A hex).	
	To exit without sending the message issue ESC char (0x1B hex)).
	If message is successfully sent to the network, then the result is	sent in the format:
	+CMGS: <mr></mr>	
	where	
	<mr> - message reference number.</mr>	
	Note: if message sending fails for some reason, an error code is	reported.
	Note: care must be taken to ensure that during the command extake several seconds, no other SIM interacting commands are issued to the several seconds.	•
	Note: it is possible to send a concatenation of at most 10 SMs; the number of chars depends on the dcs : 1530 chars if 3GPP TS 2 alphabet is used, 1340 chars if 8-bit is used, 670 chars if UCS2 i	23.038 default
Note	To avoid malfunctions is suggested to wait for the +CMGS	S: <mr> or +CMS</mr>
	ERROR: <err> response before issuing further commands.</err>	
Reference	GSM 27.005	·

+CMGS - Send Message

SELINT 2

Note: the behaviour of command +CMGS differs depending on whether or not the improved SMS commands operation mode has been enabled (see #SMSMODE)

(#SMSMODE=0)

#	(PDU Mode)	(PDU Mode)
S	AT+CMGS=	Execution command sends to the network a message.
M	<length></length>	
S		Parameter:
M		<length> - length of the PDU to be sent in bytes (excluding the SMSC)</length>
О		address octets).
D		7164
Е		
=		After command line is terminated with <cr></cr> , the device responds sending a
0		four character sequence prompt:
		<cr><lf><greater_than><space> (IRA 13, 10, 62, 32)</space></greater_than></lf></cr>
#		and waits for the specified number of bytes.
S		
M		Note: the DCD signal shall be in ON state while PDU is given.
S		-
M		Note: the echoing of given characters back from the TA is controlled by echo
О		command E
D		



+CM	GS - Send Message	SELINT 2
E		Note: the PDU shall be hexadecimal format (each octet of the PDU is given
=		as two IRA character long hexadecimal number) and given in one line.
0		as two first character long hexadecimal number) and given in one line.
U		Note: when the length estat of the SMSC address (given in the DDI) equals
		Note: when the length octet of the SMSC address (given in the PDU) equals
		zero, the SMSC address set with command +CSCA is used; in this case the
		SMSC Type-of-Address octet shall not be present in the PDU .
#		
S		To send the message issue Ctrl-Z char (0x1A hex).
M		To exit without sending the message issue ESC char (0x1B hex).
S		
M		If message is successfully sent to the network, then the result is sent in the
О		format:
D		
E		+CMGS: <mr></mr>
=		TCMOS, NIII?
0		where
U		
		<mr> - message reference number; 3GPP TS 23.040 TP-Message-</mr>
		Reference in integer format.
#		Note: if message sending fails for some reason, an error code is reported.
S		
M		Note: care must be taken to ensure that during the command execution,
S		which may take several seconds, no other SIM interacting commands are
M		issued.
О	(Text Mode)	(Text Mode)
D	AT+CMGS= <da></da>	Execution command sends to the network a message.
Е	[, <toda>]</toda>	β
=	i, tour j	Parameters:
0		<da> - destination address, string type represented in the currently selected</da>
		character set (see +CSCS).
		· · · · · · · · · · · · · · · · · · ·
		<toda> - type of destination address</toda>
.11		129 - number in national format
#		145 - number in international format (contains the "+")
S		
M		After command line is terminated with < CR>, the device responds sending a
S		four character sequence prompt:
M		
О		<cr><lf><greater_than><space> (IRA 13, 10, 62, 32)</space></greater_than></lf></cr>
D		
Е		After this prompt text can be entered; the entered text should be formatted as
=		follows:
0		
		- if current <dcs></dcs> (see +CSMP) indicates that GSM03.38 default alphabet is
		used and current <fo></fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-
.11		User-Data-Header-Indication is not set, then ME/TA converts the entered
#	<u></u>	text into GSM alphabet, according to GSM 27.005, Annex A; backspace



+CM	GS - Send Message		SELINT 2	
S		can be used to delete last character and carriage return		
M		- if current <dcs></dcs> (see +CSMP) indicates that 8-bit or UC		
S		scheme is used or current <fo></fo> (see +CSMP) indicates that 3GPP TS		
M		23.040 TP-User-Data-Header-Indication is set, the entered text should		
О		consist of two IRA character long hexadecimal numbers which ME/TA		
D		converts into 8-bit octet (e.g. the 'asterisk' will be ente	red as 2A (IRA50	
E		and IRA65) and this will be converted to an octet with integer value 0x2A)		
=				
0		Note: the DCD signal shall be in ON state while text is entered.		
-11		Note: the echoing of entered characters back from the TA echo command E	is controlled by	
#		To send the masse as issue Ctul 7 shor (Ov1 A here)		
S M		To send the message issue Ctrl-Z char (0x1A hex). To exit without sending the message issue ESC char (0x1	P hay)	
S		To exit without sending the message issue ESC that (0x1	b liex).	
M		If message is successfully sent to the network, then the re	sult is sent in the	
O		format:		
D				
Е		+CMGS: <mr></mr>		
=				
0		where		
		<mr> - message reference number; 3GPP TS 23.040 TP- Reference in integer format.</mr>	Message-	
# S		Note: if message sending fails for some reason, an error c	ode is reported.	
M		Note: care must be taken to ensure that during the comma	nd execution,	
S		which may take several seconds, no other SIM interacting	g commands are	
M		issued.		
O				
D		Note: it is possible to send a concatenation of at most 10 S	·	
Е		number of chars depends on the dcs : 1530 chars if 3GF		
=		default alphabet is used, 1340 chars if 8-bit is used, 670 c	nars II UCS2 IS	
0	AT+CMGS=?	used. Test command resturns the OK result code.		
	Note	To avoid malfunctions is suggested to wait for the +CMC	GS: <mr> or +CMS</mr>	
		ERROR: <err></err> response before issuing further command		
	Reference	GSM 27.005		
	(#SMSMODE=1)			
#	(PDU Mode)	(PDU Mode)		
S	AT+CMGS=	Execution command sends to the network a message.		
M	<length></length>			
S		Parameter:		
M	<u></u>	<pre><length> - length of the PDU to be sent in bytes (excludity)</length></pre>	ng the SMSC	



+CMGS - Send Message	SELINT 2
0	address octets).
D	7164
E	
=	After command line is terminated with <cr></cr> , the device responds sending a
1	four character sequence prompt:
	<cr><lf><greater_than><space> (IRA 13, 10, 62, 32)</space></greater_than></lf></cr>
# S	and waits for the specified number of bytes.
M S	Note: the DCD signal shall be in ON state while PDU is given.
M O D	Note: the echoing of given characters back from the TA is controlled by echo command ${\bf E}$
E =	Note: the PDU shall be hexadecimal format (each octet of the PDU is given as two IRA character long hexadecimal number) and given in one line.
1	Note: when the length octet of the SMSC address (given in the PDU) equals zero, the SMSC address set with command +CSCA is used; in this case the SMSC Type-of-Address octet shall not be present in the PDU .
S M S	To send the message issue Ctrl-Z char (0x1A hex). To exit without sending the message issue ESC char (0x1B hex).
M O D	If message is successfully sent to the network, then the result is sent in the format:
E =	+CMGS: <mr></mr>
1	where <mr> - message reference number; 3GPP TS 23.040 TP-Message- Reference in integer format.</mr>
# S	Note: if message sending fails for some reason, an error code is reported.
M S M	Note: care must be taken to ensure that during the command execution, which may take several seconds, no other SIM interacting commands are issued.
O (Text Mode)	(Text Mode)
D AT+CMGS= <da></da>	,
E [, <toda>]</toda>	
	Parameters:
1	<da> - destination address, string type represented in the currently selected</da>
	character set (see +CSCS).
	<toda> - type of destination address</toda>



+CMGS - Send Message	SELINT 2	
	129 - number in national format	
#	145 - number in international format (contains the "+")	
S		
M	After command line is terminated with <cr></cr> , the device responds sending a	
S	four character sequence prompt:	
M		
О	<cr><lf><greater than=""><space> (IRA 13, 10, 62, 32)</space></greater></lf></cr>	
D		
E	After this prompt text can be entered; the entered text should be formatted as	
=	follows:	
1		
# S M S	- if current <dcs> (see +CSMP) indicates that GSM03.38 default alphabet is used and current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is not set, then ME/TA converts the entered text into GSM alphabet, according to GSM 27.005, Annex A; backspace can be used to delete last character and carriage returns can be used; after every <cr> entered by the user the sequence <cr><lf><greather than=""><space> is sent to the TE.</space></greather></lf></cr></cr></fo></dcs>	
M	- if current <dcs></dcs> (see +CSMP) indicates that 8-bit or UCS2 data coding	
O	scheme is used or current <fo></fo> (see +CSMP) indicates that 3GPP TS	
D	23.040 TP-User-Data-Header-Indication is set, the entered text should	
E	consist of two IRA character long hexadecimal numbers which ME/TA	
= 1	converts into 8-bit octet (e.g. the 'asterisk' will be entered as 2A (IRA50 and IRA65) and this will be converted to an octet with integer value 0x2A)	
	Note: the DCD signal shall be in ON state while text is entered.	
# S M	Note: the echoing of entered characters back from the TA is controlled by echo command ${\bf E}$	
S	To send the message issue Ctrl-Z char (0x1A hex).	
M	To exit without sending the message issue ESC char (0x1B hex).	
O	2 2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
D	If message is successfully sent to the network, then the result is sent in the	
E	format:	
=		
1	+CMGS: <mr></mr>	
#	where <mr> - message reference number; 3GPP TS 23.040 TP-Message-Reference in integer format.</mr>	
S M S	Note: if message sending fails for some reason, an error code is reported.	
M	Note: care must be taken to ensure that during the command execution, which may take several seconds, no other SIM interacting commands are	



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+CM	GS - Send Message		SELINT 2
О		issued.	
D			
Е		Note: it is possible to send a concatenation of at most 10 S	SMs; the maximum
=		number of chars depends on the dcs : 1520 chars if 3GP	P TS 23.038
1		default alphabet is used, 1330 chars if 8-bit is used, 660 ch	
		used. If entered text is longer than this maximum value an	error is raised
	AT+CMGS=?	Test command resturns the OK result code.	
	Note	To avoid malfunctions is suggested to wait for the +CMG	S: < mr > or + CMS
		ERROR: <err></err> response before issuing further command	ds.
	Reference	GSM 27.005	

3.5.5.4.2. Send Message From Storage - +CMSS

+CMSS - Send Message From Storage		SELINT 0 / 1	
AT+CMSS=	Execution command sends to the network a message which is a	lready stored in the	
<index>[,<da></da></index>	<memw> storage (see +CPMS) at the location <index>.</index></memw>		
[, <toda>]]</toda>			
	Parameters:		
	<index> - location value in the message storage <memw> of the message to send</memw></index>		
	<da> - destination address, string type represented in the currently selected character set (see +CSCS); if it is given it shall be used instead of the one stored with the message.</da>		
	<toda> - type of destination address</toda>		
	129 - number in national format		
	145 - number in international format (contains the "+")		
	If message is successfully sent to the network then the result is so	ent in the format:	
	+CMSS: <mr></mr>		
	where:		
	<mr> - message reference number.</mr>		
	If message sending fails for some reason, an error code is reported	ed:	
	+CMS ERROR: <err></err>		
	Note: to store a message in the memw storage see command -	+CMGW.	
	Note: care must be taken to ensure that during the command ex		
	take several seconds, no other SIM interacting commands are iss		
Note	To avoid malfunctions is suggested to wait for the +CMSS: <mr> or +CN</mr>		
	ERROR: <err></err> response before issuing further commands.		
Reference	GSM 27.005		



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+CMSS - Send Messag	ge From Storage SELINT 2		
AT+CMSS=	Execution command sends to the network a message which is already stored in the	;	
<index>[,<da></da></index>	<memw> storage (see +CPMS) at the location <index>.</index></memw>		
[, <toda>]]</toda>			
	Parameters:		
	<index> - location value in the message storage <memw> of the message to send</memw></index>		
	<da> - destination address, string type represented in the currently selected</da>		
	character set (see +CSCS); if it is given it shall be used instead of the one		
	stored with the message.		
	<toda> - type of destination address</toda>		
	129 - number in national format		
	145 - number in international format (contains the "+")		
	If message is successfully sent to the network then the result is sent in the format:		
	+CMSS: <mr></mr>		
	where:		
	<mr> - message reference number.</mr>		
	If message sending fails for some reason, an error code is reported:		
	+CMS ERROR: <err></err>		
	Note: to store a message in the <memw></memw> storage see command +CMGW .		
	Note: care must be taken to ensure that during the command execution, which may	r	
	take several seconds, no other SIM interacting commands are issued.		
AT+CMSS=?	Test command resturns the OK result code.		
Note	To avoid malfunctions is suggested to wait for the +CMSS: <mr> or +CMS</mr>		
	ERROR: <err> response before issuing further commands.</err>		
Reference	GSM 27.005		

3.5.5.4.3. Write Message To Memory - +CMGW

+CMGW - Write Message To Memory SELINT 0 / 1			
(PDU Mode)	(PDU Mode)		
AT+CMGW=	Execution command writes in the memw memory storage a new message.		
<length></length>			
[, <stat>]</stat>	Parameter:		
	length> - length in bytes of the PDU to be written.		
	7164		
	<stat> - message status.</stat>		
	0 - new message		



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+CMGW - Write Message To Memory

SELINT 0 / 1

- 1 read message
- 2 stored message not yet sent (default)
- 3 stored message already sent

The device responds to the command with the prompt '>' and waits for the specified number of bytes.

To write the message issue **Ctrl-Z** char (0x1A hex).

To exit without writing the message issue **ESC** char (0x1B hex).

If message is successfully written in the memory, then the result is sent in the format:

+CMGW: <index>

where:

<index> - message location index in the memory <memw>.

If message storing fails for some reason, an error code is reported.

Note: care must be taken to ensure that during the command execution, no other SIM interacting commands are issued.

Note: in PDU Mode, only SUBMIT messages can be stored in memory and only with status 2 or 3.

(Text Mode)

AT+CMGW[=<da>[, <toda>

[,<stat>]]]

(Text Mode)

Execution command writes in the **memw** memory storage a new message.

Parameters:

<da> - destination address, string type represented in the currently selected character set (see +CSCS).

<toda> - type of destination address.

129 - number in national format

145 - number in international format (contains the "+")

<stat> - message status.

"REC UNREAD" - new received message unread

"REC READ" - received message read

"STO UNSENT" - message stored not yet sent (default)

"STO SENT" - message stored already sent

After command line is terminated with **<CR>**, the device responds sending a four character sequence prompt:

<CR><LF><greater_than><space> (IRA 13, 10, 62, 32)

After this prompt text can be entered; the entered text should be formatted as























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+CMGW - Write Message To Memory

SELINT 0 / 1

follows:

- if current <dcs> (see +CSMP) indicates that GSM03.38 default alphabet is used and current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is not set, then ME/TA converts the entered text into GSM alphabet, according to GSM 27.005, Annex A; backspace can be used to delete last character and **carriage returns** can be used.
- if current <dcs> (see +CSMP) indicates that 8-bit or UCS2 data coding scheme is used or current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is set, the entered text should consist of two IRA character long hexadecimal numbers which ME/TA converts into 8-bit octet (e.g. the 'asterisk' will be entered as 2A (IRA50 and IRA65) and this will be converted to an octet with integer value 0x2A)

Note: the **DCD** signal shall be in ON state while text is entered.

Note: the echoing of entered characters back from the TA is controlled by echo command E

To write the message issue Ctrl-Z char (0x1A hex). To exit without writing the message issue **ESC** char (0x1B hex).

If message is successfully written in the memory, then the result is sent in the format:

+CMGW: <index>

where:

<index> - message location index in the memory <memw>.

If message storing fails for some reason, an error code is reported.

Note: care must be taken to ensure that during the command execution, no other SIM interacting commands are issued.

Note: it is possible to save a concatenation of at most 10 SMs; the maximum number of chars depends on the **<dcs>**: 1530 chars if 3GPP TS 23.038 default alphabet is used, 1340 chars if 8-bit is used, 670 chars if UCS2 is used.

Note: in Text Mode, only SUBMIT messages can be stored in memory and only with status "STO UNSENT" or "STO SENT".

Reference

GSM 27.005

Note

To avoid malfunctions is suggested to wait for the +CMGW: <index> or +CMS **ERROR:** <err> response before issuing further commands.

+CMGW - Write Message To Memory

SELINT 2





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+CMGW - Write Message To Memory

SELINT 2

Note: the behaviour of command +CMGW differs depending on whether or not the improved SMS commands operation mode has been enabled (see #SMSMODE).

/ III CO TO 1	 	~ `
/ # C N /	ODE=	411
# > V	<i>,</i>	111

(#SMSMODE=0)			
#	(PDU Mode)	(PDU Mode)	
S	AT+CMGW=	Execution command writes in the memw memory storage a new	
M	<length></length>	message.	
S	[, <stat>]</stat>		
M		Parameter:	
О		<le>ength> - length in bytes of the PDU to be written.</le>	
D		7164	
E		<stat> - message status.</stat>	
=		0 - new message	
0		1 - read message	
		2 - stored message not yet sent (default)	
		3 - stored message already sent	
#		The device responds to the command with the prompt '>' and waits for the	
S		specified number of bytes.	
M		specified number of system.	
S		To write the message issue Ctrl-Z char (0x1A hex).	
M		To exit without writing the message issue ESC char (0x1B hex).	
O			
D		If message is successfully written in the memory, then the result is sent in	
E		the format:	
=			
0		+CMGW: <index></index>	
		where:	
		<pre><index> - message location index in the memory <memw>.</memw></index></pre>	
#		- micssage rocation mack in the memory - memw	
S		If message storing fails for some reason, an error code is reported.	
M			
S		Note: care must be taken to ensure that during the command execution, no	
M		other SIM interacting commands are issued.	
O			
D	(Text Mode)	(Text Mode)	
Е		Execution command writes in the memw memory storage a new	
=	[, <toda></toda>	message.	
0	[, <stat>]]]</stat>		
#			
S M O	AT+CMGW[= <da></da>	(Text Mode) Execution command writes in the <memw> memory storage a new</memw>	



+CMG	V - Write Message To Memory SELI	NT 2
S	<pre><stat> - message status.</stat></pre>	111 M
M	"REC UNREAD" - new received message unread	
О	"REC READ" - received message read	
D	"STO UNSENT" - message stored not yet sent (default)	
E	"STO SENT" - message stored already sent	
=		
0	After command line is terminated with <cr></cr> , the device respon four character sequence prompt:	ds sending a
#	<cr><lf><greater_than><space> (IRA 13, 10, 62, 32)</space></greater_than></lf></cr>	
\mathbf{S}	After this prompt text can be entered; the entered text should be	formatted as
M	follows:	ioimatted as
S	Tollows.	
M	- if current <dcs></dcs> (see +CSMP) indicates that GSM03.38 defaul	t alphabet is
О	used and current <fo></fo> (see +CSMP) indicates that 3GPP TS 2	
D	User-Data-Header-Indication is not set, then ME/TA converts	the entered
E	text into GSM alphabet, according to GSM 27.005, Annex A;	
_	can be used to delete last character and carriage returns can be	
0	- if current <dcs></dcs> (see +CSMP) indicates that 8-bit or UCS2 dat	
	scheme is used or current <fo></fo> (see +CSMP) indicates that 3C	
	23.040 TP-User-Data-Header-Indication is set, the entered text	
44	consist of two IRA character long hexadecimal numbers which	
# S	converts into 8-bit octet (e.g. the 'asterisk' will be entered as 2	
M	and IRA65) and this will be converted to an octet with integer	value UXZA)
S	Note: the DCD signal shall be in ON state while text is entered.	
M	Trote. the DeD signal shall be in oir state while text is entered.	
O	Note: the echoing of entered characters back from the TA is cont	rolled by
D	echo command E	
E		
0	To write the message issue Ctrl-Z char (0x1A hex).	
	To exit without writing the message issue ESC char (0x1B hex).	
	If message is successfully written in the memory, then the result	is sent in
#	the format:	
S		
M	+CMGW: <index></index>	
S	where:	
M	<index> - message location index in the memory <memw>.</memw></index>	
$\begin{bmatrix} D \\ O \end{bmatrix}$	If managed atoming 6:11- Comment and a second at 1	.1
D	If message storing fails for some reason, an error code is reporte	a.
E =	Note: care must be taken to ensure that during the command exec	cution no
$\begin{bmatrix} - \\ 0 \end{bmatrix}$	other SIM interacting commands are issued.	
U	other shirt interacting confinialities are issued.	



CMGW - Write Messa	ge To Memory	SELINT 2
	Note: it is possible to save a concatenation of at r number of chars depends on the des : 1530 cha default alphabet is used, 1340 chars if 8-bit is used.	ars if 3GPP TS 23.038
AT+CMGW=?	Test command returns the OK result code.	
Reference	GSM 27.005	
Note	To avoid malfunctions is suggested to wait for th +CMS ERROR: <err> response before issuing</err>	
	(#SMSMODE=1)	
# (PDU Mode)	(PDU Mode)	
AT+CMGW= < AT+CMGW= < c c c c c c c c c c c c c	Execution command writes in the memw men message.	nory storage a new
(1) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Parameter: <length> - length in bytes of the PDU to be writt 7164 - message status. 0 - new message (received unread message; definessages (3GPP TS 23.040 SMS-DELIVER messages 1 - read message) 2 - stored message not yet sent (default for SUB)</length>	ault for DELIVER ssages))
#	23.040 SMS-SUBMIT messages)) 3 - stored message already sent The device responds to the command with the prespecified number of bytes.	ompt '>' and waits for the
)) E	To write the message issue Ctrl-Z char (0x1A he To exit without writing the message issue ESC collisions. If message is successfully written in the memory.	har (0x1B hex).
1	the format: +CMGW: <index></index>	,
# 5	where: <index> - message location index in the memory If message storing fails for some reason, an error</index>	
M O D E	Note: care must be taken to ensure that during the other SIM interacting commands are issued.	e command execution, no
=	Note: in PDU mode, not only SUBMIT messages	s can be stored in SIM as r



+CM	GW - Write Message T	To Memory SELINT 2
1 #		#SMSMODE=0, but also DELIVER and STATUS REPORT messages (3GPP TS 23.040 SMS-STATUS-REPORT messages). SUBMIT messages can only be stored with status 2 or 3; DELIVER and STATUS REPORT messages can only be stored with status 0 or 1.
" S M S M O D E = 1	(Text Mode) AT+CMGW[= <da> [,<toda> [,<stat>]]]</stat></toda></da>	Text Mode) Execution command writes in the <memw> memory storage a new message. Parameters: <da> - destination address, string type represented in the currently selected character set (see +CSCS). <toda> - type of destination address. 129 - number in national format 145 - number in international format (contains the "+") <stat> - message status. "REC UNREAD" - new received message unread (default for DELIVER messages) "REC READ" - received message read "STO UNSENT" - message storage person storage net yet sent (default for SURMIT).</stat></toda></da></memw>
S M O D E = 1		"STO UNSENT" - message stored not yet sent (default for SUBMIT messages) "STO SENT" - message stored already sent After command line is terminated with <cr>, the device responds sending a four character sequence prompt: <cr><lf><greater_than><space> (IRA 13, 10, 62, 32)</space></greater_than></lf></cr></cr>
# S M O D E = 1		After this prompt text can be entered; the entered text should be formatted as follows: - if current <dcs> (see +CSMP) indicates that GSM03.38 default alphabet is used and current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is not set, then ME/TA converts the entered text into GSM alphabet, according to GSM 27.005, Annex A; backspace can be used to delete last character and carriage returns can be used; after every <cr> entered by the user the sequence <cr><lf><greather_than><space> is sent to the TE. - if current <dcs> (see +CSMP) indicates that 8-bit or UCS2 data coding scheme is used or current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is set, the entered text should consist of two IRA character long hexadecimal numbers which ME/TA converts into 8-bit octet (e.g. the 'asterisk' will be entered as 2A (IRA50 and IRA65) and this will be converted to an octet with integer value 0x2A)</fo></dcs></space></greather_than></lf></cr></cr></fo></dcs>
M		Note: the DCD signal shall be in ON state while text is entered.



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MGW - Write Mess	age To Memory SELINT 2
	Note: the echoing of entered characters back from the TA is controlled by echo command E
	To write the message issue Ctrl-Z char (0x1A hex).
	To exit without writing the message issue ESC char (0x1B hex).
	If message is successfully written in the memory, then the result is sent in the format:
	+CMGW: <index></index>
	where: <index> - message location index in the memory <memw>.</memw></index>
	If message storing fails for some reason, an error code is reported.
	Note: care must be taken to ensure that during the command execution, no other SIM interacting commands are issued.
	Note: it is possible to save a concatenation of at most 10 SMs; the maximum number of chars depends on the <dcs></dcs> : 1530 chars if 3GPP TS 23.038 default alphabet is used, 1340 chars if 8-bit is used, 670 chars if UCS2 is used. If entered text is longer than this maximum value an error is raised.
	Note: in text mode, not only SUBMIT messages can be stored in SIM as per #SMSMODE=0, but also DELIVER messages.
	The type of saved message depends upon the current <fo> parameter (see +CSMP). For a DELIVER message, current <vp> parameter (see +CSMP) is used to set the message Service Centre Time Stamp <scts>, so it has to be an absolute time string, e.g. "09/01/12,11:15:00+04".</scts></vp></fo>
	SUBMIT messages can only be stored with status "STO UNSENT" or "STO SENT"; DELIVER messages can only be stored with status "REC UNREAD" or "REC READ".
AT+CMGW=?	Test command returns the OK result code.
Reference	GSM 27.005
Note	To avoid malfunctions is suggested to wait for the +CMGW: <index> or +CMS ERROR: <err> response before issuing further commands.</err></index>

3.5.5.4.4. Delete Message - +CMGD

+CMGD - Delete Mess	<mark>age</mark>	SELINT 0 / 1
AT+CMGD= Execution command deletes from memory <memr></memr> the message(s).		e(s).
<index></index>		





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+CMGD - Delete M	lessage SELINT 0 / 1
[, <delflag>]</delflag>	Parameter: <index> - message index in the selected storage <memr> that can have values form 1 to N, where N depends on the available space (see +CPMS) <delflag> - an integer indicating multiple message deletion request. 0 (or omitted) - delete message specified in <index> 1 - delete all read messages from <memr> storage, leaving unread messages and stored mobile originated messages (whether sent or not) untouched 2 - delete all read messages from <memr> storage and sent mobile originated messages, leaving unread messages and unsent mobile originated messages untouched 3 - delete all read messages from <memr> storage, sent and unsent mobile originated messages, leaving unread messages untouched 4 - delete all messages, leaving unread messages untouched 4 - delete all messages from <memr> storage. Note: if <delflag> is present and not set to 0 then <index> is ignored and ME shall follow the rules for <delflag> shown above. Note: if the location to be deleted is empty, an error message is reported.</delflag></index></delflag></memr></memr></memr></memr></index></delflag></memr></index>
AT+CMGD=?	Test command shows the valid memory locations and optionally the supported values of <delflag>. +CMGD: (list of supported <index>s)[,(list of supported <delflag>s)]</delflag></index></delflag>
Example	AT+CMGD=? +CMGD: (1,2,3,6,7,17,18,19,20,37,38,39,47),(0-4) OK
Reference	GSM 27.005

+CMGD - Delete Message

SELINT 2

Note: the behaviour of command +CMGD differs depending on whether or not the improved SMS commands operation mode has been enabled (see **#SMSMODE**).

(#SMSMODE=0)

#	AT+CMGD=	Execution command deletes from memory memr the message(s).		
S	<index></index>	Entertain communic defects from memory memor the message(s).		
M	[, <delflag>]</delflag>	Parameter:		
S	[, woming]	<pre><index> - message index in the selected storage <memr> that can have</memr></index></pre>		
M		values form 1 to N, where N depends on the available space (see +CPMS)		
0		delflag> - an integer indicating multiple message deletion request.		
D		0 (or omitted) - delete message specified in <index></index>		
Е		1 - delete all read messages from memr > storage, leaving unread		
=		messages and stored mobile originated messages (whether sent or not)		
0		untouched		
		2 - delete all read messages from memr storage and sent mobile		
		originated messages, leaving unread messages and unsent mobile		
		originated messages untouched		





















+CMC	GD - Delete Message		SELINT 2
# S M S M O D E =	AT+CMGD=?	3 - delete all read messages from <memr> storage, sent originated messages, leaving unread messages untouc 4 - delete all messages from <memr> storage. Note: if <delflag> is present and not set to 0 then, if <ind 0,="" <index=""> is ignored and ME shall follow the rules for above. Note: if the location to be deleted is empty, an error mess Test command shows the valid memory locations and opt supported values of <delflag>. +CMGD: (supported <index>s list)[,(supported <delflag)]< th=""><th>and unsent mobile hed ex> is greater than delflag> shown age is reported. ionally the</th></delflag)]<></index></delflag></ind></delflag></memr></memr>	and unsent mobile hed ex> is greater than delflag> shown age is reported. ionally the
]	Example	AT+CMGD=? +CMGD: (1,2,3,6,7,17,18,19,20,37,38,39,47),(0-4) OK	ng 5 2250/j
]	Reference	GSM 27.005	
<u> </u>		(#SMSMODE=1)	
S	AT+CMGD= <index> [,<delflag>]</delflag></index>	Parameter: <index> - message index in the selected storage <memr> values form 1 to N, where N depends on the available spa <delflag> - an integer indicating multiple message deletic 0 (or omitted) - delete message specified in <index> 1 - delete all read messages from <memr> storage, leav messages and stored mobile originated messages (who untouched 2 - delete all read messages from <memr> storage and s originated messages, leaving unread messages and un originated messages untouched 3 - delete all read messages from <memr> storage, sent originated messages, leaving unread messages untouched 4 - delete all messages from <memr> storage, sent originated messages, leaving unread messages untouch 4 - delete all messages from <memr> storage. Note: if <delflag> is present and not set to 0 then, if <ind 0,="" <index=""> is ignored and ME shall follow the rules for above.</ind></delflag></memr></memr></memr></memr></memr></index></delflag></memr></index>	that can have ace (see +CPMS) on request. ing unread ether sent or not) sent mobile sent mobile and unsent mobile hed ex> is greater than
E = 1	AT+CMGD=?	Test command shows the valid memory locations and opt supported values of <delflag>. +CMCD: (supported <index>s list)! (supported <delflag>)</delflag></index></delflag>	·
	Example	+CMGD: (supported <index>s list)[,(supported <delfl (1,2,3,6,7,17,18,19,20,37,38,39,47),(0-4)<="" +cmgd:="" at+cmgd="?" td=""><td>ag/5 1151/J</td></delfl></index>	ag/5 1151/J



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+C	MGD - Delete Message		SELINT 2
		OK	
	Reference	GSM 27.005	

3.5.5.4.5. Select service for MO SMS messages - +CGSMS

+CGSMS – Select serv	+CGSMS – Select service for MO SMS messages SELINT 2				
AT+CGSMS= [<service>]</service>	The set command is used to specify the service or service preference that the MT will use to send MO SMS messages.				
	<service>: a numeric parameter which indicates the service or service preference be used</service>				
	0 - GPRS 1 - circuit switched (default) 2 - GPRS preferred (use circuit switched if SMS via GPRS service not available of GPRS not registered) 3 - circuit switched preferred (use GPRS if SMS via GSM service not available of GSM not registered)				
	Note: the <service> value is saved on NVM as global parameter</service>				
AT+CGSMS?	The read command returns the currently selected service or service p the form: +CGSMS: <service></service>	oreference in			
AT+CGSMS=?	Test command reports the supported list of currently available <serv< th=""><th>ice>s.</th></serv<>	ice>s.			



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3.5.6. FAX Class 1 AT Commands

3.5.6.1. General Configuration

3.5.6.1.1. Manufacturer ID - +FMI

+FMI - Manufacturer ID SELINT		SELINT 0
AT+FMI?	Read command reports the manufacturer ID. The output	t depends on the choice
	made through #SELINT command.	
Example	AT+FMI?	
1	Telit_Mobile_Terminals	
	OK	
Reference	ITU T.31 and TIA/EIA-578-A specifications	

+FMI - Manufacturer	<mark>ID</mark>	SELINT 1/2
AT+FMI?	Read command reports the manufacturer ID. The output depe	ends on the choice
	made through #SELINT command.	
Example	AT+FMI?	
1	Telit	
	OK	
Reference	ITU T.31 and TIA/EIA-578-A specifications	

3.5.6.1.2. **Model ID - +FMM**

+FMM - Model ID		SELINT 0 / 1 / 2
AT+FMM?	Read command reports the model ID	
Reference	ITU T.31 and TIA/EIA-578-A specifications	

3.5.6.1.3. Revision ID - +FMR

+FMR - Revision ID		SELINT 0 / 1 / 2
AT+FMR?	Read command reports the software revision ID	
Reference	ITU T.31 and TIA/EIA-578-A specifications	



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3.5.6.2. Transmission/Reception Control

3.5.6.2.1. Stop Transmission And Pause - +FTS

+FTS - Stop Transm	ission And Pause SELINT 0 / 1 / 2
AT+FTS= <time></time>	Execution command causes the modem to terminate a transmission and wait for <time> 10ms intervals before responding with OK result.</time>
	Parameter: <time> - duration of the pause, expressed in 10ms intervals. 0255</time>
AT+FTS=?	Test command returns all supported values of the parameter <time></time> . Note: test command result is without command echo
Reference	ITU T.31 and TIA/EIA-578-A specifications

3.5.6.2.2. Wait For Receive Silence - +FRS

+FRS - Wait For Re	ceive Silence SELINT 0 / 1 / 2	
AT+FRS= <time></time>	Execution command causes the modem to listen and report OK when silence been detected for the specified period of time. This command will terminate when the required silence period is detected or when the DTE sends another character other than XON or XOFF .	nen
	Parameter: <time> - amount of time, expressed in 10ms intervals0255</time>	
AT+FRS=?	Test command returns all supported values of the parameter <time></time> . Note: test command result is without command echo.	
Reference	ITU T.31 and TIA/EIA-578-A specifications	



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Transmit Data Modulation - +FTM 3.5.6.2.3.

+FTM - Transmit Data	Modulation	SELINT	0/1	
AT+FTM= <mod></mod>	Execution command causes the module to transmit facsin modulation defined by the parameter <mod></mod> .	nile data	using	the
	Parameter:			
	<mod> - carrier modulation</mod>			
	24 - V27ter/2400 bps			
	48 - V27ter/4800 bps			
	72 - V29/7200 bps			
	96 - V29/9600 bps			
AT+FTM=?	Test command returns all supported values of the parameter < r	nod>.		
	Note: the output is not bracketed and without command echo.			
Reference	ITU T.31 and TIA/EIA-578-A specifications			

+FTM - Transmit Data	SELINT 2
AT+FTM= <mod></mod>	Execution command causes the module to transmit facsimile data using the
	modulation defined by the parameter <mod></mod> .
	Parameter:
	<mod> - carrier modulation</mod>
	24 - V27ter/2400 bps
	48 - V27ter/4800 bps
	72 - V29/7200 bps
	96 - V29/9600 bps
AT+FTM=?	Test command returns all supported values of the parameter <mod></mod> .
	••
	Note: test command result is without command echo.
Reference	ITU T.31 and TIA/EIA-578-A specifications























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3.5.6.2.4. Receive Data Modulation - +FRM

+FRM - Receive Data	Modulation SELINT 0 / 1
AT+FRM= <mod></mod>	Execution command causes the module to receive facsimile data using the
	modulation defined by the parameter <mod></mod> .
	Parameter:
	<mod> - carrier modulation</mod>
	24 - V27ter/2400 bps
	48 - V27ter/4800 bps
	72 - V29/7200 bps
	96 - V29/9600 bps
AT+FRM=?	Test command returns all supported values of the parameter <mod></mod> .
	•
	Note: the output is not bracketed and without command echo.
Reference	ITU T.31 and TIA/EIA-578-A specifications

+FRM - Receive Data	Modulation Modulation	SELINT 2
AT+FRM= <mod></mod>	Execution command causes the module to receive facsimi modulation defined by the parameter <mod></mod> .	le data using th
	Parameter:	
	<mod> - carrier modulation</mod>	
	24 - V27ter/2400 bps	
	48 - V27ter/4800 bps	
	72 - V29/7200 bps	
	96 - V29/9600 bps	
AT+FRM=?	Test command returns all supported values of the parameter <mo< th=""><th>od>.</th></mo<>	od>.
	Note: test command result is without command echo.	
Reference	ITU T.31 and TIA/EIA-578-A specifications	

3.5.6.2.5. Transmit Data With HDLC Framing - +FTH

+FTH - Transmit Data	With HDLC Framing	SELINT 0 / 1 / 2
AT+FTH= <mod></mod>	Execution command causes the module to transmit facsimile protocol and the modulation defined by the parameter <mod></mod> .	data using HDLC
	Parameter:	
	<mod> - carrier modulation</mod>	
	3 - V21/300 bps	
AT+FTH=?	Test command returns all supported values of the parameter <mo< th=""><th>od>.</th></mo<>	od>.
	Note: test command result is without command echo.	
Reference	ITU T.31 and TIA/EIA-578-A specifications	



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3.5.6.2.6. Receive Data With HDLC Framing - +FRH

+FRH - Receive Data	With HDLC Framing SELINT 0 / 1 / 2
AT+FRH= <mod></mod>	Execution command causes the module to receive facsimile data using HDLC protocol and the modulation defined by the parameter <mod>. Parameter:</mod>
	<mod> - carrier modulation</mod>
	3 - V21/300 bps
AT+FRH=?	Test command returns all supported values of the parameter <mod></mod> .
	Note: test command result is without command echo.
Reference	ITU T.31 and TIA/EIA-578-A specifications

3.5.6.3. Serial Port Control

3.5.6.3.1. Select Flow Control - +FLO

+FLO - Select Flow C	Control Specified By Type SELINT 0 / 1 / 2
AT+FLO= <type></type>	Set command selects the flow control behaviour of the serial port in both directions: from DTE to DTA and from DTA to DTE . Parameter: <type> - flow control option for the data on the serial port 0 - flow control None 1 - flow control Software (XON-XOFF) 2 - flow control Hardware (CTS-RTS) – (factory default)</type>
	Note: This command is a shortcut of the +IFC command. Note: +FLO's settings are functionally a subset of &K's ones.
AT+FLO?	Read command returns the current value of parameter <type> Note: If flow control behavior has been set with AT&Kn command with the parameter that is not allowed by AT+FLO the read command AT+FLO? will return: +FLO: 0</type>
AT+FLO=?	Test command returns all supported values of the parameter <type></type> . Note: test command result is without command echo.
Reference	ITU T.31 and TIA/EIA-578-A specifications



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3.5.6.3.2. Serial Port Rate - +FPR

+FPR - Select Seria	al Port Rate SELINT 0 / 1 / 2
AT+FPR= <rate></rate>	Set command selects the serial port speed in both directions, from DTE to DTA and from DTA to DTE . When autobauding is selected, then the speed is detected automatically.
	Parameter: <rate> - serial port speed selection 0 – autobauding</rate>
	Note: it has no effect and is included only for backward compatibility with landline modems
AT+FPR?	Read command returns the current value of parameter <rate></rate>
AT+FPR=?	Test command returns all supported values of the parameters <rate></rate> . Note: test command result is without command echo.
Reference	ITU T.31 and TIA/EIA-578-A specifications

3.5.6.3.3. Double Escape Character Replacement - +FDD

+FDD - Double Escape	Character Replacement Control SELINT 0 / 1 / 2
AT+FDD= <mode></mode>	Set command concerns the use of the <dle>_{pair to encode consecutive escape characters (<10h><10h>) in user data.}</dle>
	Parameter
	<mode></mode>
	0 - currently the only available value. The DCE decode of <dle>_{is}</dle>
	either <dle><dle> or discard. The DCE encode of <10h><10h> is</dle></dle>
	<dle><dle><dle><dle></dle></dle></dle></dle>
AT+FDD?	Read command returns the current value of parameter <mode></mode>
AT+FDD=?	Test command returns all supported values of parameter <mode></mode> .
	Note: test command result is without command echo.
Reference	ITU T.31 and TIA/EIA-578-A specifications



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3.5.7. Custom AT Commands

3.5.7.1. General Configuration AT Commands

3.5.7.1.1. Network Selection Menu Availability - +PACSP

+PACSP - Network	+PACSP - Network Selection Menu Availability SELINT 2		
AT+PACSP?	Read command returns the current value of the mode parameter in the format:		
	+PACSP <mode></mode>		
	where: <mode> - PLMN mode bit (in CSP file on the SIM)</mode>		
	0 - restriction of menu option for manual PLMN selection.		
	1 - no restriction of menu option for Manual PLMN selection.		
AT+PACSP=?	Test command returns the OK result code.		
Note	The command is available only if the ENS functionality has been previously		
	enabled (see #ENS)		

3.5.7.1.2. Manufacturer Identification - #CGMI

#CGMI - Manufacture	er Identification	SELINT 0 /	<mark>′ 1</mark>
AT#CGMI	Execution command returns the device manufacturer identi	fication code	e with
	command echo. The output depends on the choice made	through #SE	LINT
	command.		
AT#CGMI?	Read command has the same effect as the Execution command		

#CGMI - Manufacturer Identification SELIN		SELINT 2
AT#CGMI	Execution command returns the device manufacturer identification code with	
	command echo. The output depends on the choice made through #SELINT	
	command.	
AT#CGMI=?	Test command returns the OK result code.	

3.5.7.1.3. Model Identification - #CGMM

#CGMM - Model Identification		SELINT 0 / 1
AT#CGMM	Execution command returns the device model identification co	ode with command
	echo.	
AT#CGMM?	Read command has the same effect as the Execution command	

#CGMM - Model Ident	tification et al. a la company de la company	SELINT 2
AT#CGMM	Execution command returns the device model identification code	with command
	echo.	
AT#CGMM=?	Test command returns the OK result code.	





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3.5.7.1.4. Revision Identification - #CGMR

#CGMR - Revision Identification SELINT 0 / 1		SELINT 0 / 1
AT#CGMR	Execution command returns device software revision number wi	th command echo.
AT#CGMR?	Read command has the same effect as the Execution command	

#CGMR - Revision Identification		SELINT 2
AT#CGMR Execution command returns device software revision number with command e		th command echo.
AT#CGMR=?	Test command returns the OK result code.	

3.5.7.1.5. Product Serial Number Identification - #CGSN

#CGSN - Product Serial Number Identification		SELINT 0 / 1
AT#CGSN	Execution command returns the product serial number, identified as the IMEI of the	
	mobile, with command echo.	
AT#CGSN?	Read command has the same effect as the Execution command	

#CGSN - Product Serial Number Identification		SELINT 2
AT#CGSN	Execution command returns the product serial number, identified as the IMEI of the	
	mobile, with command echo.	
AT#CGSN=?	Test command returns the OK result code.	

3.5.7.1.6. International Mobile Subscriber Identity (IMSI) - #CIMI

#CIMI - International Mobile Subscriber Identity (IMSI) SELINT 0 / 1			
AT#CIMI	Execution command returns the international mobile subscriber identity, identified		
	as the IMSI number, with command echo.	•	
AT#CIMI?	Read command has the same effect as the Execution command		

#CIMI - International Mobile Subscriber Identity (IMSI) SELINT 2			
AT#CIMI	Execution command returns the international mobile subscriber identity, identified		
	as the IMSI number, with command echo.		
AT#CIMI=?	Test command returns the OK result code.		

3.5.7.1.7. Read ICCID (Integrated Circuit Card Identification) - #CCID

#CCID - Read ICCID	SELINT 2
AT#CCID	Execution command reads on SIM the ICCID (card identification number that
	provides a unique identification number for the SIM)
AT#CCID=?	Test command returns the OK result code.

3.5.7.1.8. Service Provider Name - #SPN





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#SPN - Service Provider Name		SELINT 2		
AT#SPN	Execution command returns the service provider string contained in the SIM field SPN , in the format:			
	#SPN: <spn></spn>			
	where:			
	<pre><spn> - service provider string contained in the SIM field SPN, is currently selected character set (see +CSCS).</spn></pre>	represented in the		
	Note: if the SIM field SPN is empty, the command returns just the	ne OK result code.		
AT#SPN=?	Test command returns the OK result code.			

3.5.7.1.9. Extended Numeric Error report - #CEER

#CEER – Extended numeric error report		SELINT 2
AT#CEER	Execution command causes the TA to return a nume	eric code in the format
	#CEER: <code></code>	
	which should offer the user of the TA a report of the	reason for
	• the failure in the last unsuccessful call setup (original)	ginating or answering);
	• the last call release;	
	• the last unsuccessful GPRS attach or unsuccessful	al PDP context activation
	• the last GPRS detach or PDP context deactivation	

Note: if none of the previous conditions has occurred since power up then $\bf 0$ is reported (i.e. $\bf No~error$, see below)

<code> values as follows

Value	Diagnostic
0	No error
1	Unassigned (unallocated) number
3	No route to destination
6	Channel unacceptable
8	Operator determined barring
16	Normal call clearing
17	User busy
18	No user responding
19	User alerting, no answer
21	Call rejected
22	Number changed
26	Non selected user clearing
27	Destination out of order
28	Invalid number format (incomplete number)





#CEER – Extended numeric error re	eport SELINT 2
	·
29	Facility rejected
30 31	Response to STATUS ENQUIRY Normal, unspecified
31 34	No circuit/channel available
	Network out of order
38	
41	Temporary failure
42	Switching equipment congestion Access information discarded
43 44	
47	Requested circuit/channel not available
	Resources unavailable, unspecified
49	Quality of service unavailable
50	Requested facility not subscribed
55	Incoming calls barred with in the CUG
57 58	Bearer capability not authorized
	Bearer capability not presently available
63	Service or option not available, unspecified
65	Bearer service not implemented
68	ACM equal to or greater than ACMmax
69	Requested facility not implemented
70	Only restricted digital information bearer capability is available
70	
79 81	Service or option not implemented, unspecified Invalid transaction identifier value
87	User not member of CUG
88	Incompatible destination
91	Invalid transit network selection
95	Semantically incorrect message
96	Invalid mandatory information
97	Message type non-existent or not implemented
98	Message type not compatible with protocol state
99	Information element non-existent or not implemented
100	Conditional IE error
100	Message not compatible with protocol state
101	Recovery on timer expiry
111	Protocol error, unspecified
127	Interworking, unspecified
127	GPRS related errors
224	MS requested detach
225	NWK requested detach
226	Unsuccessful attach cause NO SERVICE
227	Unsuccessful attach cause NO ACCESS
228	Unsuccessful attach cause GPRS SERVICE REFUSED
229	PDP deactivation requested by NWK
230	PDP deactivation requested by NWK PDP deactivation cause LLC link activation Failed
231	PDP deactivation cause NWK reactivation with same TI
\[\(\alpha J \)	1 D1 deactivation cause is with reactivation with same 11



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#CEER – Extended	<mark>l numeric error r</mark>	eport SELINT 2		
	232	PDP deactivation cause GMM abort		
	233	PDP deactivation cause LLC or SNDCP failure		
	234	PDP unsuccessful activation cause GMM error		
	235	PDP unsuccessful activation cause NWK reject		
	236	PDP unsuccessful activation cause NO NSAPI available		
	237	PDP unsuccessful activation cause SM refuse		
	238	PDP unsuccessful activation cause MMI ignore		
	239	PDP unsuccessful activation cause Nb Max Session Reach		
	256	PDP unsuccessful activation cause wrong APN		
	257	PDP unsuccessful activation cause unknown PDP address or		
		type		
	258	PDP unsuccessful activation cause service not supported		
	259	PDP unsuccessful activation cause QOS not accepted		
	260	PDP unsuccessful activation cause socket error		
		Other custom values		
	240	FDN is active and number is not in FDN		
	241	Call operation not allowed		
	252	Call barring on outgoing calls		
	253	Call barring on incoming calls		
	254	Call impossible		
	255	Lower layer failure		
AT#CEER=?	Test comma	and returns OK result code.		
Reference	GSM 04.08			

3.5.7.1.10. Extended error report for Network Reject cause - #CEERNET

#CEERNET - Ext error report for Network reject cause AT#CEERNET Execution command causes the TA to return a numeric code in the format #CEERNET: <code>

which should offer the user of the TA a report for the last mobility management(MM) or session management(SM) procedure not accepted by the network and a report of detach or deactivation causes from network.

<code> values as follows

Value	Diagnostic
2	IMSI UNKNOWN IN HLR
3	ILLEGAL MS
4	IMSI UNKNOWN IN VISITOR LR
5	IMEI NOT ACCEPTED
6	ILLEGAL ME
7	GPRS NOT ALLOWED
8	GPRS AND NON GPRS NOT ALLOWED
9	MS IDENTITY CANNOT BE DERIVED BY NETWORK



#CEERNET – Ext	t error repo	ort for Network reject cause	SELINT 2
	10	IMPLICITLY DETACHED	<u> </u>
	11	PLMN NOT ALLOWED	
	12	LA NOT ALLOWED	
	13	ROAMING NOT ALLOWED	
	14	GPRS NOT ALLOWED IN THIS PLMN	
	15	NO SUITABLE CELLS IN LA	
	16	MSC TEMP NOT REACHABLE	
	17	NETWORK FAILURE	
	22	CONGESTION	
	25	LLC OR SNDCP FAILURE	
	26	INSUFFICIENT RESOURCES	
	27	MISSING OR UNKNOWN APN	
	28	UNKNOWN PDP ADDRESS OR PDP TYPE	
	29	USER AUTHENTICATION FAILED	
	30	ACTIVATION REJECTED BY GGSN	
	31	ACTIVATION REJECTED UNSPECIFIED	
	32	SERVICE OPTION NOT SUPPORTED	
	33	REQ. SERVICE OPTION NOT SUBSCRIBED	
	34	SERV.OPTION TEMPORARILY OUT OF ORDER	8
	35	NSAPI ALREADY USED	
	36	REGULAR DEACTIVATION	
	37	QOS NOT ACCEPTED	
	38	SMN NETWORK FAILURE	
	39	REACTIVATION REQUIRED	
	40	FEATURE NOT SUPPORTED	
	41	SEM ERROR IN TPF	
	42	SYNT ERROR IN TPF	
	43	UNKNOWN PDP CNTXT	
	44	SEM ERR IN PKT FILTER	
	45	SYNT ERR IN PKT FILTER	
	46	PDP CNTXT WITHOUT TPF ACT	
	48	RETRY ON NEW CELL ENTRY	
	81	INVALID TRANSACTION IDENTIFIER	
	95	SEMANTICALLY INCORRECT MESSAGE	
	96	INVALID MANDATORY INFORMATION	O IMPED
	97	MSG TYPE NON EXISTENT OR NOT IMPLEME	
	98	MSG TYPE NOT COMPATIBLE WITH PROTOC	OLSTATE
	99	IE NON_EXISTENT OR NOT IMPLEMENTED	
	100	CONDITIONAL IE ERROR	A TOPO
	101	MSG NOT COMPATIBLE WITH PROTOCOL ST	AIE
	Note: car	PROTOCOL ERROR UNSPECIFIED uses 15, 41 to 46 are not considered for R98 pro-	ducts(GSM 04.08).
AT#CEERNET=?	Test com	mand returns OK result code.	
Reference	GSM 24.	008 for REL4 and GSM 04.08 for R98	



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3.5.7.1.11. Select Registration Operation Mode - #REGMODE

#REGMODE – Select	Registration Operation Mode SELINT 2		
AT#REGMODE=	There are situations in which the presentation of the URCs controlled by either		
<mode></mode>	+CREG and +CGREG are slightly different from ETSI specifications. We		
	identified this behaviour and decided to maintain it as default for backward		
	compatibility issues, while we're offering a more formal 'Enhanced Operation		
	Mode' through #REGMODE.		
	Set command sets the operation mode of registration status commands.		
	Parameter:		
	<mode> - operation mode of registration status commands</mode>		
	0 - basic operation mode (default for all products, except GE865-QUAD, GE864-		
	DUAL V2, GL865-DUAL, GL868-DUAL and GE910-QUAD)		
	1 - enhanced operation mode (default for GE865-QUAD, GE864-DUAL V2,		
	GL865-DUAL, GL868-DUAL and GE910-QUAD)		
AT#REGMODE?	Read command returns the current registration operation mode.		
AT#REGMODE=?	Test command reports the available range of values for parameter < mode>		
Note	The affected commands are +CREG and +CGREG		

3.5.7.1.12. SMS Commands Operation Mode - #SMSMODE

#SMSMODE - SMS C	*SMSMODE - SMS Commands Operation Mode SELINT 2				
AT#SMSMODE=	Set command enables/disables the improved SMS commands op	peration mode			
<mode></mode>					
	Parameter:				
	<mode> - SMS commands operation mode</mode>				
	0 - disable improved SMS commands operation mode (default	for all products,			
	except GE865-QUAD, GE864-DUAL V2, GL865-DUAL and G	GL868-DUAL)			
	1 - enable improved SMS commands operation mode (default f	for GE865-QUAD,			
	GE864-DUAL V2, GL865-DUAL and GL868-DUAL)				
	2 –when FDN are enabled, check for presence of SMS service centre address in the				
	FDN phonebook; if not present, SMS cannot be sent				
AT#SMSMODE?	Read command reports whether the improved SMS commands of	peration mode is			
	enabled or not, in the format:				
	#SMSMODE: <mode></mode>				
	(<mode> described above)</mode>				
AT#SMSMODE=?	Test command reports the supported range of values for paramet				
Note	The SMS commands affected by #SMSMODE are: +CPMS , +	CNMI, +CMGS,			
	+CMGW, +CMGL, +CMGR, +CMGD, +CSMP				



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3.5.7.1.13. PLMN List Selection - #PLMNMODE

#PLMNMODE - PLM	N List Selection	SELINT 0 / 1 / 2
AT#PLMNMODE=	Set command selects the list of PLMN names to be used currentl	у
[<plmnlist>]</plmnlist>		
	Parameter:	
	<pre><ple><ple><ple><ple><ple><ple><ple><pre><pre><pre><pre><pre><pre><pre><pr< th=""><th></th></pr<></pre></pre></pre></pre></pre></pre></pre></ple></ple></ple></ple></ple></ple></ple></pre>	
	0 - PLMN names list, currently used in commands like +COPS	or #MONI, is
	fixed and depends upon currently selected interface (see #SE	LINT) (default for
	all products, except GE865-QUAD, GE864-DUAL V2, GL8	65-DUAL, GL865-
	QUAD and GL868-DUAL)	
	1 - PLMN names list is not fixed and can be updated in newer s	oftware versions
	(default for GE865-QUAD, GE864-DUAL V2, GL865-DUA	L, GL865-QUAD,
	GL868-DUAL and GE910-QUAD)	
	Note: <pl>parameter is saved in NVM</pl>	
AT#PLMNMODE?	Read command reports whether the currently used list of PLMN	names is fixed or
	not, in the format:	
	#PLMNMODE: <plmnlist></plmnlist>	
	(<pl>plmnlist> described above)</pl>	
AT#PLMNMODE=?	Test command returns the supported range of values for paramet	er <plmnlist></plmnlist> .

3.5.7.1.14. Display PIN Counter - #PCT

#PCT - Display l	PIN Counter SI	ELINT 0 / 1
AT#PCT	Execution command reports the PIN/PUK or PIN2/PUK2 input rendepending on + CPIN requested password in the format:	naining attempts,
	#PCT: <n> where:</n>	
	<n> - remaining attempts 0 - the SIM is blocked.</n>	
	13 - if the device is waiting either SIM PIN or SIM PIN2 to be gi 110 - if the device is waiting either SIM PUK or SIM PUK2 to be	
AT#PCT?	Read command has the same behaviour as Execution command.	

#PCT - Display	PIN Counter	SELINT 2
AT#PCT	Execution command reports the PIN/PUK or PIN2/PUK2 input remaining depending on +CPIN requested password in the format:	
	#PCT: <n></n>	
	where:	
	<n> - remaining attempts</n>	



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#PCT - Display PIN Co	<mark>ounter</mark>	SELINT 2
	0 - the SIM is blocked.	
13 - if the device is waiting either SIM PIN or SIM PIN2 to be given.		given.
	110 - if the device is waiting either SIM PUK or SIM PUK2 to	be given.
AT#PCT=?	Test command returns the OK result code.	

3.5.7.1.15. Software Shut Down - #SHDN

#SHDN - Softwar	Shutdown SELINT 0 / 1	
AT#SHDN	Execution command causes device detach from the network and shut dow Before definitive shut down an OK response is returned.	n.
	Note: after the issuing of this command any previous activity is terminated and t device will not respond to any further command.	he
	Note: to turn it on again Hardware pin ON/OFF must be tied low .	
AT#SHDN?	Read command has the same behaviour as Execution command.	

#SHDN - Softwar	<mark>re Shutdown</mark>	SELINT 2
AT#SHDN	Execution command causes device detach from the network and shut down. Before definitive shut down an OK response is returned.	
	Note: after the issuing of this command any previous device will not respond to any further command.	us activity is terminated and the
	Note: to turn it on again Hardware pin ON/OFF mu	ist be tied low .
AT#SHDN=?	Test command returns the OK result code.	

3.5.7.1.16. Extended Reset - #Z

#Z – Extended reset	SELINT 2
AT#Z= <profile></profile>	Set command loads both base section and extended section of the specified user profile stored with AT&W and selected with AT&P. Parameter <pre>profile></pre> 0 - user profile 0
AT#Z=?	1 – user profile 1 Test command tests for command existence.



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3.5.7.1.17. Periodic Reset - #ENHRST

#ENHRST – Periodic ReSeT		SELINT 2
AT#ENHRST= <mod>[,<del< th=""><th>Set command enables/disables the unit reset after <delay< th=""><th>y> minutes.</th></delay<></th></del<></mod>	Set command enables/disables the unit reset after <delay< th=""><th>y> minutes.</th></delay<>	y> minutes.
ay>]		
	Parameters:	
	<mod></mod>	
	0 – disables the unit reset (factory default) 1 – enables the unit reset only for one time	
	2 – enables the periodic unit reset	
	<pre><delay> - time interval after that the unit reboots; nume</delay></pre>	eric value in minutes
	Note: the settings are saved automatically in NVM only	if old or new mod
	is 2. Any change from 0 to 1 or from 1 to 0 is not stored	in NVM
	Note: the particular case AT#ENHRST=1,0 causes the irreboot. In this case if AT#ENHRST=1,0 follows an AT stores some parameters in NVM, it is recommended to it least 5 seconds before to issue AT#ENHRST=1,0, to per NVM storing.	command that nsert a delay of at
AT#ENHRST?	Read command reports the current parameter settings fo command in the format:	r # EHNRST
	# EHNRST: < mod >[, <delay>,<remaintime>]</remaintime></delay>	
	<remaintime> - time remaining before next reset</remaintime>	
AT#ENHRST=?	Test command reports supported range of values for par	rameters <mod> and</mod>
P 1	<pre><delay>.</delay></pre>	
Examples	AT#ENHRST=1,60	
	Module reboots after 60 minutes	
	AT#ENHRST=1,0	
	Module reboots now	
	AT#ENHRST=2,60	
	Module reboots after 60 minutes and indefinitely aft power on	er every following



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3.5.7.1.18. Wake From Alarm Mode - #WAKE

#WAKE - Wake From	Alarm Mode	SELINT 0 / 1
AT#WAKE[=	Execution command stops any eventually present alarm activity	and, if the module
<opmode>]</opmode>	is in alarm mode, it exits the alarm mode and enters the normal operating	
	mode.	
	Parameter:	
	<pre><opmode> - operating mode; any input is possible: no contro <opmode> value, although it is mandatory to have it; the alarm mode, enters the normal operating mode, any stopped (e.g. alarm tone playing) and an OK result code is re</opmode></opmode></pre>	e module exits the alarm activity is
	Note: if parameter is omitted, the command returns the opera te device in the format:	ting status of the
	#WAKE: <status></status>	
	where:	
	<status></status>	
	0 - normal operating mode	
	1 - alarm mode or normal operating mode with some alarm	activity.
	Note: the alarm mode is indicated by status ON of hardware pir ON of pin DSR , the power saving status is indicated by a CTS OFF status; the normal operating status is indicated by DSR -	S - OFF and DSR -
	Note: during the alarm mode the device will not make any network	
	not register to any network and therefore is not able to dial or i SM, the only commands that can be issued to the MODULE in	•
	#WAKE and #SHDN, every other command must not be issued	
AT#WAKE?	Read command has the same effect as Execution command womitted.	
AT#WAKE=?	Test command returns OK result code.	

#WAKE - Wake From	Alarm Mode	SELINT 2
AT#WAKE=	Execution command stops any eventually present alarm activity	and, if the module
[<opmode>]</opmode>	is in alarm mode, it exits the alarm mode and enters the normal operating	
	mode.	
	Parameter:	
	<pre><opmode> - operating mode</opmode></pre>	
	0 - normal operating mode; the module exits the alarm mode , e operating mode , any alarm activity is stopped (e.g. alarm to	
	OK result code is returned.	





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#WAKE - Wake From	Alarm Mode	SELINT 2	
	Note: the alarm mode is indicated by status ON of hardware pir	CTS and by status	
	ON of pin DSR; the power saving status is indicated by a CTS - OFF and DSR -		
	OFF status; the normal operating status is indicated by DSR - ON .		
	Note: during the alarm mode the device will not make any network scan and will		
	not register to any network and therefore is not able to dial or red	•	
	SM, the only commands that can be issued to the MODULE in the		
	#WAKE and #SHDN , every other command must not be issued during this state.		
AT#WAKE?	Read command returns the operating status of the device in the format:		
	#WAKE: <status></status>		
	where:		
	<status></status>		
	0 - normal operating mode		
	1 - alarm mode or normal operating mode with some alarm	activity.	
AT#WAKE=?	Test command returns OK result code.	_	

3.5.7.1.19. Query Temperature Overflow - #QTEMP

#QTEMP - Query Ten		SELINT 0 / 1
AT#QTEMP	Set command has currently no effect. The interpretation of parameters	meter <mode></mode> is
[= <mode>]</mode>	currently not implemented.	
	Note: if parameter <mode></mode> is omitted the behaviour of Set comma	and is the same as
	Read command	
	Note: Only <mode>=0</mode> is accepted.	
AT#QTEMP?	Read command queries the device internal temperature sensor for and reports the result in the format:	over temperature
	#QTEMP: <temp> where</temp>	
	<temp> - over temperature indicator</temp>	
	0 - the device temperature is in the <i>working range</i>	
	1 - the device temperature is out of the <i>working range</i>	
	Note: typical <i>temperature working range</i> is (-10°C+55°C); anywastrongly recommended to consult the "Hardware User Guide" to ve temperature working range of your module	
#QTEMP=?	Test command reports supported range of values for parameter <m< th=""><th>node>.</th></m<>	node>.
Note	The device should not be operated out of its <i>temperature w</i> temperature is out of range proper functioning of the device is not of	0 0 1



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#QTEMP - Query Ten	perature Overflow SELINT 2	
AT#QTEMP=	Set command has currently no effect. The interpretation of parameter	
[<mode>]</mode>	<mode> is currently not implemented: any value assigned to it will simply have no</mode>	
	effect.	
AT#QTEMP?	Read command queries the device internal temperature sensor for over temperature	
	and reports the result in the format:	
	#QTEMP: <temp></temp>	
	where	
	<temp> - over temperature indicator</temp>	
	0 - the device temperature is in the <i>working range</i>	
	1 - the device temperature is out of the <i>working range</i>	
	Note: typical <i>temperature working range</i> is (-10°C+55°C); anyway you are strongly recommended to consult the "Hardware User Guide" to verify the real temperature working range of your module	
#QTEMP=?	Test command reports supported range of values for parameter <mode></mode> .	
Note	The device should not be operated out of its temperature working range, elsewhere	
	proper functioning of the device is not ensured.	

3.5.7.1.20. Temperature Monitor - #TEMPMON

#TEMPMON - Temperature Monitor SELINT 2		SELINT 2
AT#TEMPMON=	Set command sets the behaviour of the module internal temperat	ure monitor.
<mod></mod>	Parameters:	
[, <urcmode></urcmode>	rarameters.	
[, <action></action>	<mod></mod>	
[, <hyst_time></hyst_time>	0 - sets the command parameters.	
[, <gpio>]]]]</gpio>	1 - triggers the measurement of the module internal temperature result in the format:	e, reporting the
	#TEMPMEAS: <level>,<value></value></level>	
	where: <level> - threshold level</level>	
	-2 - extreme temperature lower bound (see Note) -1 - operating temperature lower bound (see Note) 0 - normal temperature 1 - operating temperature upper bound (see Note) 2 - extreme temperature upper bound (see Note)	



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<value> - actual temperature expressed in Celsius degrees.

Setting of the following optional parameters has meaning only if <mod>=0

<urr><urcmode> - URC presentation mode.

- 0 it disables the presentation of the temperature monitor URC
- 1 it enables the presentation of the temperature monitor URC, whenever the module internal temperature reaches either operating or extreme levels; the unsolicited message is in the format:

#TEMPMEAS: <level>,<value>

where:

<level> and <value> are as before

- <action> sum of integers, each representing an action to be done whenever the module internal temperature reaches either operating or extreme levels (default is 0). If <action> is not zero, it is mandatory to set the <hyst time> parameter too.
- 0..7 as a sum of:
 - 0 no action
 - 1 automatic shut-down when the temperature is beyond the extreme bounds
 - 2 RF TX circuits automatically disabled (using +CFUN=2) when operating temperature bounds are reached. When the temperature is back to normal the module is brought back to the previous state, before RF TX disabled.
 - 4 the output pin **<GPIO>** is tied HIGH when operating temperature bounds are reached; when the temperature is back to normal the output pin **<GPIO>** is tied LOW. If this **<action>** is required, it is mandatory to set the **<GPIO>** parameter too.
- <hyst_time> hysteresis time: all the actions happen only if the extreme or operating bounds are maintained at least for this period. This parameter is needed and required if <action> is not zero.
- 0..255 time in seconds
- **GPIO>** GPIO number. valid range is "any output pin" (see "Hardware User's Guide"). This parameter is needed and required only if **action>=4** is required.

Note: the URC presentation mode **<urcmode>** is related to the current AT instance only (see **+cmux**); last **<urcmode>** settings are saved for every instance as extended profile parameters, thus it is possible to restore them either if the multiplexer control channel is released and set up, back and forth.

Note: last **<action>**, **<hyst time>** and **<GPIO>** settings are saved in NVM too,



	but they are not related to the current CMUX instance only (see +cmux).		
AT#TEMPMON?	Read command reports the current parameter settings for #TEMPMON command in the format:		
	#TEMPMON: <urcmode>,<action>[,<hyst time="">[,</hyst></action></urcmode>	<gpio> </gpio>	
AT#TEMPMON=?	Test command reports the supported range of values for parameters <mod>, <urcmode>, <action>, <hyst time=""> and <gpio></gpio></hyst></action></urcmode></mod>		
Note	In the following table typical temperature bounds are recept GE864-QUAD AUTOMOTIVE V2 and GE864		
	Extreme Temperature Lower Bound	-30°C	
	Operating Temperature Lower Bound	-10°C	
	Operating Temperature		
	Operating Temperature Upper Bound	55°C	
	Extreme Temperature Upper Bound	80°C	
	Extreme Temperature Lower Bound	-50°C	
	Operating Temperature Lower Bound	-30°C	
	Operating Temperature		
	Operating Temperature Upper Bound	85°C	
	Extreme Temperature Upper Bound	120°C	



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3.5.7.1.21. Set General Purpose Output - #SGPO

#SGPO - Set Genera	al Purpose Output SELINT 0 / 1
AT#SGPO[=	Set command sets the value of the general purpose output pin GPIO2 .
[<stat>]]</stat>	
	Parameter:
	<stat></stat>
	0 - output pin cleared to 0 (Low)
	1 - output pin set to 1 (High)
	Note: the GPIO2 is an OPEN COLLECTOR output, the command sets the transistor base level, hence the open collector output is negated: AT#SGPO=0 sets the open collector output High AT#SGPO=1 sets the open collector output Low A pull up resistor is required on pin GPIO2 . Note: issuing AT#SGPO <cr> is the same as issuing the Read command.</cr>
	Note: issuing AT#SGPO= <cr> is the same as issuing the command AT#SGPO=0<cr>.</cr></cr>
AT#SGPO?	Read command reports the #SGPO command setting, hence the opposite status of
	the open collector pin in the format:
	#SGPO: <stat>.</stat>
AT#SGPO=?	Test command reports the supported range of values of parameter <stat></stat> .
Note	This command is meaningful only for GM862 family

3.5.7.1.22. General Purpose Input - #GGPI

#GGPI - General Purp	ose Input	SELINT 0 / 1
AT#GGPI[=[<dir>]]</dir>	Set command sets the general purpose input pin GPIO1 .	
	Parameter:	
	<pre><dir> - auxiliary input GPIO1 setting</dir></pre>	
	0 - the Read command AT#GGPI? reports the logic input level pin.	el read from GPIO1
	Note: The device has an insulated input pin (the input goes the decoupling transistor) which can be used as a logic general process to the read behaviour for this pin, since only disupported, the issue of this command is not needed. In future uses the behavior of the read input may be more complete.	purpose input. This irect read report is
	Note: If parameter is omitted then the behaviour of Set comm	and is the same as



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#GGPI - General Purp	ose Input	SELINT 0 / 1
AT#GGPI?	Read command reports the read value for the input pin GPIO1, in	n the format:
	#GGPI: <dir>,<stat></stat></dir>	
	where	
	<pre><dir> - direction setting (see #GGPI=<dir>)</dir></dir></pre>	
	<stat> - logic value read from pin GPIO1</stat>	
	Note: Since the reading is done after the insulating transistor, th	a rapartad valua is
	the opposite of the logic status of the GPIO1 input pin.	e reported value is
	11 5	
AT#GGPI=?	Test command reports supported range of values for parameter <	<dir>.</dir>
Note	This command is meaningful only for GM862 family	·

3.5.7.1.23. General Purpose Input/Output Pin Control - #GPIO

#GPIO - General Purp	ose Input/Output Pin Control	SELINT 0/1/2
AT#GPIO=[<pin>, <mode>[,<dir>]]</dir></mode></pin>	Execution command sets the value of the general purpose output according to <dir></dir> and <mode></mode> parameter. Not all configurations for the three parameters are valid.	pin GPIO<pin></pin>
	Parameters: <pin> - GPIO pin number; supported range is from 1 to a value of the control of the</pin>	that danands on the
	hardware.	mat depends on the
	<mode> - its meaning depends on <dir> setting:</dir></mode>	
	0 - no meaning if dir >= 0 - INPUT	
	- output pin cleared to 0 (Low) if <dir>=1 - OUTPUT</dir>	
	- no meaning if <dir>=2 - ALTERNATE FUNCTION</dir>	
	- no meaning if <dir>=3 - TRISTATE PULL DOWN</dir>	
	1 - no meaning if <dir>=0 - INPUT</dir>	
	- output pin set to 1 (High) if <dir>=1 - OUTPUT</dir>	
	 no meaning if <dir>=2 - ALTERNATE FUNCTION</dir> no meaning if <dir>=3 - TRISTATE PULL DOWN</dir> 	
	2 - Reports the read value from the input pin if dir>=0 - INPU	ĭ T
	- Reports the read value from the input pin if dir >=1 - OUT	
	- Reports a no meaning value if dir >=2 - ALTERNATE FU	
	- Reports a no meaning if <dir>=3</dir> - TRISTATE PULL DOV	
	<dir> - GPIO pin direction</dir>	
	0 - pin direction is INPUT	
	1 - pin direction is OUTPUT	
	2 - pin direction is ALTERNATE FUNCTION (see Note).	
	3 - pin is set to PULL DOWN (see Note)	
	Note: when <mode>=2 (and <dir> is omitted) the command rep</dir></mode>	orts the direction
	and value of pin GPIO <pin> in the format:</pin>	



#GPIO - General Purp	ose Input/Output Pin Control	SELINT 0/1/2
	#GPIO: <dir>,<stat></stat></dir>	
	where: <dir> - current direction setting for the GPIO<pin> <stat></stat></pin></dir>	
	 □ logic value read from pin GPIO<pin> in the case the pinput;</pin> □ logic value present in output of the pin GPIO<pin> in the case the pinput;</pin> 	
	<pre></pre>	ne pin <dir></dir> is set
	Note: "ALTERNATE FUNCTION" value is valid only for follow GPIO4 - alternate function is "RF Transmission Control GPIO5 - alternate function is "RF Transmission Monitor GPIO6 - alternate function is "Alarm Output" (see +CA #ALARMPIN) GPIO7 - alternate function is "Buzzer Output" (see #SI	ol" or" ALA and
	Note: while using the pins in the alternate function, the GPIO read/write access that pin is not accessible and shall be avoided.	
	For GM862 family products only	
	☐ GPIO1 is input only and GPIO2 is output only. ☐ since the GPIO1 reading is done after an insulating transis value is the opposite of the logic status of the GPIO1 input	
	1. GPIO2 is an OPEN COLLECTOR output, the command se base level, hence the open collector output is negated	ets the transistor
	Note: Tristate pull down settings is available only on some products it is not available, automatically the setting is reverted to IN product HW userguide to verify if Tristate pull down settings is a the default at system startup	PUT. Check the available and if it is
AT#GPIO?	Read command reports the read direction and value of all GPIO	pins, in the format:
	#GPIO: <dir>,<stat>[<cr><lf>#GPIO: <dir>,<stat>[]]</stat></dir></lf></cr></stat></dir>	
	where	
	<dir> - as seen before</dir>	
	<stat> - as seen before</stat>	
AT#GPIO=?	Test command reports the supported range of values of the comm	nand parameters
Example	<pre><pin>, <mode> and <dir>. AT#GPIO=3,0,1</dir></mode></pin></pre>	_
Lizampic	$A1\pi 0110-5,0,1$	



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#GPIO - General Purpose Input/Output Pin Control	SELINT 0/1/2
OK	
AT#GPIO=3,2	
#GPIO: 1,0	
OK	
AT#GPIO=4,1,1	
OK	
AT#GPIO=5,0,0	
OK	
AT#GPIO=6,2	
#GPIO: 0,1	
OK	

3.5.7.1.24. Alarm Pin - #ALARMPIN

#ALARMPIN – Alarm	n Pin SELINT 2
AT#ALARMPIN=	Set command sets the GPIO pin for the ALARM pin
<pin></pin>	
	Parameters:
	<pin></pin>
	defines which GPIO shall be used as ALARM pin instead of GPIO6/ALARM. For the <pin></pin> actual range check the "Hardware User Guide". Default value is 6.
	Note: the setting is saved in NVM
	Note: setting <pin></pin> equal to 0 disables the ALARM pin
AT#ALARMPIN?	Read command returns the current parameter settings for #ALARMPIN command
	in the format:
	#ALARMPIN: <pin></pin>
AT#ALARMPIN=?	Test command reports the supported range of values for parameter <pin></pin> .

3.5.7.1.25. STAT_LED GPIO Setting - #SLED

#SLED - STAT_LED (GPIO Setting	SELINT 2
AT#SLED= <mode></mode>	Set command sets the behaviour of the STAT_LED GPIO	
[, <on_duration></on_duration>		
[, <off_duration>]]</off_duration>	Parameters:	
	<mode> - defines how the STAT_LED GPIO is handled</mode>	
	0 - GPIO tied Low (default for GL865-DUAL, GL868-DUAL)	and GE910-
	QUAD)	
	1 - GPIO tied High	



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#SLED - STAT_LED	GPIO Setting	SELINT 2
	2 - GPIO handled by Module Software (factory default)	
	3 - GPIO is turned on and off alternatively, with period defined	by the sum
	<on_duration> + <off_duration></off_duration></on_duration>	
	<pre><on_duration> - duration of period in which STAT_LED GPIO</on_duration></pre>	O is tied High while
	<mode>=3</mode>	
	1100 - in tenth of seconds (default is 10)	
	<pre><off_duration> - duration of period in which STAT_LED GPI</off_duration></pre>	O is tied Low while
	<mode>=3</mode>	
	1100 - in tenth of seconds (default is 10)	
	Note: values are saved in NVM by command #SLEDSAV	
	Note: at module boot the STAT_LED GPIO is always tied High value until the first NVM reading.	and holds this
AT#SLED?	Read command returns the STAT_LED GPIO current setting, in	n the format:
	#SLED: <mode>,<on_duration>,<off_duration></off_duration></on_duration></mode>	
AT#SLED=?	Test command returns the range of available values for parameter	ers <mode>,</mode>
	<on_duration> and <off_duration>.</off_duration></on_duration>	

3.5.7.1.26. Save STAT_LED GPIO Setting - #SLEDSAV

#SLEDSAV - Save STA	AT_LED GPIO Setting	SELINT 2
AT#SLEDSAV	Execution command saves STAT_LED setting in NVM.	
AT#SLED=?	Test command returns OK result code.	

3.5.7.1.27. SMS Ring Indicator - #E2SMSRI

#E2SMSRI - SMS Rin	<mark>g Indicator</mark>	SELINT 0 / 1
AT#E2SMSRI[=	Set command enables/disables the Ring Indicator pin respon-	se to an incoming SMS
[<n>]]</n>	message. If enabled, a negative going pulse is generated on	receipt of an incoming
	SMS message. The duration of this pulse is determined by the	e value of < n> .
	Parameter: <n> - RI enabling 0 - disables RI pin response for incoming SMS messages (f. 501150 - enables RI pin response for incoming SMS mess is the duration in ms of the pulse generated on receipt or</n>	ages. The value of <n></n>
	Note: if +CNMI=3,1 command is issued and the module is a 100 ms break signal is sent and a 1 sec. pulse is generated the RI pin response is either enabled or not. Note: issuing AT#E2SMSRI <cr> is the same as issuing the</cr>	on RI pin, no matter if



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#E2SMSRI - SMS I	Ring Indicator SELINT 0 / 1
	Note: issuing AT#E2SMSRI=<cr></cr> returns the OK result code.
AT#E2SMSRI?	Read command reports the duration in ms of the pulse generated on receipt of an incoming SM, in the format:
	#E2SMSRI: <n></n>
	Note: as seen before, the value <n>=0 means that the RI pin response to an incoming SM is disabled.</n>
AT#E2SMSRI=?	Reports the range of supported values for parameter <n></n>

#E2SMSRI - SMS Ring	g Indicator SELINT 2
AT#E2SMSRI=	Set command enables/disables the Ring Indicator pin response to an incoming SMS
[<n>]</n>	message. If enabled, a negative going pulse is generated on receipt of an incoming
	SMS message. The duration of this pulse is determined by the value of <n>.</n>
	Parameter:
	<n> - RI enabling</n>
	0 - disables RI pin response for incoming SMS messages (factory default)
	501150 - enables RI pin response for incoming SMS messages. The value of < n >
	is the duration in ms of the pulse generated on receipt of an incoming SM.
	Note: if +CNMI=3,1 command is issued and the module is in a GPRS connection,
	a 100 ms break signal is sent and a 1 sec. pulse is generated on RI pin, no matter if
	the RI pin response is either enabled or not.
AT#E2SMSRI?	Read command reports the duration in ms of the pulse generated on receipt of an
	incoming SM, in the format:
	#E2SMSRI: <n></n>
	Note: as seen before, the value <n>=0 means that the RI pin response to an</n>
	incoming SM is disabled.
AT#E2SMSRI=?	Reports the range of supported values for parameter <n></n>

3.5.7.1.28. Analog/Digital Converter Input - #ADC

#ADC - Analog/Digital	Converter Input	SELINT 0 / 1
AT#ADC[=	Execution command reads pin <adc> voltage, converted by ADC</adc>	C, and outputs it in
<adc>,<mode></mode></adc>	the format:	
[, <dir>]]</dir>	#ADC: <value></value>	
	where: <value> - pin<adc> voltage, expressed in mV</adc></value>	



#ADC - Analog/Digita	l Converter Input	SELINT 0 / 1
	Parameters:	
	<adc> - index of pin</adc>	
	For the number of available ADCs see HW User Guide	
	<mode> - required action</mode>	
	2 - query ADC value	
	<pre><dir> - direction; its interpretation is currently not implemented</dir></pre>	
	0 - no effect.	
	If all parameters are omitted the command reports all pins voltage, convADC, in the format:	
	#ADC: <value>[<cr><lf>#ADC: <value>[]]</value></lf></cr></value>	
	Note: The command returns the last valid measure.	
AT#ADC?	Read command has the same effect as Execution command when the same effe	hen all parameters
	are omitted.	
AT#ADC=?	Test command reports the supported range of values of the co	ommand parameters
	<adc>, <mode> and <dir>.</dir></mode></adc>	

#ADC - Read Analog/I	Digital Converter input	SELINT 2
AT#ADC=	Execution command reads pin <adc> voltage, converted by ADC</adc>	C, and outputs it in
[<adc>,<mode></mode></adc>	the format:	
[, <dir>]]</dir>		
	#ADC: <value></value>	
	where: <value> - pin<adc> voltage, expressed in mV</adc></value>	
	Parameters:	
	<adc> - index of pin</adc>	
	For the number of available ADCs see HW User Guide	
	<mode> - required action 2 - query ADC value <dir> - direction; its interpretation is currently not implemented 0 - no effect.</dir></mode>	
	Note: The command returns the last valid measure.	
AT#ADC?	Read command reports all pins voltage, converted by ADC, in the	ne format:
	#ADC: <value>[<cr><lf>#ADC: <value>[]]</value></lf></cr></value>	
AT#ADC=?	Test command reports the supported range of values of the comm	nand parameters
	<adc>, <mode> and <dir>.</dir></mode></adc>	



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3.5.7.1.29. Digital/Analog Converter Control - #DAC

#DAC - Digital/Analog	<mark>g Converter Control</mark>	SELINT 0 / 1
AT#DAC[=	Set command enables/disables the DAC_OUT pin.	
<enable></enable>		
[, <value>]]</value>	Parameters:	
	<enable> - enables/disables DAC output.</enable>	
	0 - disables pin; it is in high impedance status (factory default)	
	1 - enables pin; the corresponding output is driven	
	<pre><value> - scale factor of the integrated output voltage; it</value></pre>	must be present if
	01023 - 10 bit precision	
	01025 - 10 bit precision	
	Note: integrated output voltage = MAX_VOLTAGE * value	/ 1023
	Note: if all parameters are omitted then the behaviour of Set co	ommand is the same
	as the Read command.	
AT#DAC?	Read command reports whether the DAC_OUT pin is currer along with the integrated output voltage scale factor, in the form	
	along with the integrated output voltage scale factor, in the form	at.
	#DAC: <enable>,<value></value></enable>	
AT#DAC=?	Test command reports the range for the parameters <enable></enable> an	nd <value></value> .
Example	Enable the DAC out and set its integrated output to the 50% of the max value:	
	AT#DAC=1,511	
	OK	
	Disable the DAC out:	
	AT#DAC=0	
	OK	
Note	With this command the DAC frequency is selected internally.	
	D/A converter must not be used during POWERSAVING.	
	DAC OUT line must be integrated (for example with a low	band pass filter) in
	order to obtain an analog voltage.	- /
	For a more in depth description of the integration filter refer to	o the hardware user
	guide.	

#DAC - Digital/An	<mark>alog Converter Control</mark>	SELINT 2
AT#DAC=	Set command enables/disables the DAC_OUT pin.	
[<enable></enable>		
[, <value>]]</value>	Parameters:	
	<pre><enable> - enables/disables DAC output.</enable></pre>	
	0 - disables pin; it is in high impedance status (factory de	efault)
	1 - enables pin; the corresponding output is driven	
	<value> - scale factor of the integrated output voltage; it r</value>	nust be present if



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#DAC - Digital/A	nalog Converter Control SELINT 2	
	<enable>=1 01023 - 10 bit precision</enable>	
	Note: integrated output voltage = MAX_VOLTAGE * value / 1023	
AT#DAC?	Read command reports whether the DAC_OUT pin is currently enabled or no along with the integrated output voltage scale factor, in the format:	ot,
	#DAC: <enable>,<value></value></enable>	
AT#DAC=?	Test command reports the range for the parameters <enable></enable> and <value></value> .	
Example	Enable the DAC out and set its integrated output to the 50% of the max value:	:
	AT#DAC=1,511 OK	
	OK .	
	Disable the DAC out:	
	AT#DAC=0 OK	
Note	With this command the DAC frequency is selected internally.	
	D/A converter must not be used during POWERSAVING.	
	DAC_OUT line must be integrated (for example with a low band pass filter) is order to obtain an analog voltage.	in
	For a more in depth description of the integration filter refer to the hardware u guide.	ıser

3.5.7.1.30. Auxiliary Voltage Output Control - #VAUX

#VAUX- Auxiliary Vol	#VAUX- Auxiliary Voltage Output Control SELINT 0 / 1	
AT#VAUX[= <n>,</n>	Set command enables/disables the Auxiliary Voltage pins output	•
<stat>]</stat>		
	Parameters:	
	<n> - VAUX pin index</n>	
	1 - there is currently just one VAUX pin	
	<stat></stat>	
	0 - output off	
	1 - output on	
	2 - query current value of VAUX pin	
	Note: when <stat>=2</stat> and command is successful, it returns:	
	#VAUX: <value></value>	
	where:	
	<value> - power output status</value>	



#VAUX- Auxiliary Vo	<mark>ltage Output Control</mark>	SELINT 0 / 1
	0 - output off	
	1 - output on	
	Note: If all parameters are omitted the command has the same command.	behaviour as Read
	Note: for the GPS product (GE863-GPS): if the Auxiliary Vo disabled while GPS is powered on they'll both also be turned of	C 1
	Note: for the GPS products, at commands \$GPSP, \$GPSPS, VAUX and can interfere with AT# command.	\$GPSWK control
AT#VAUX?	Read command reports whether the Auxiliary Voltage pin enabled or not, in the format:	output is currently
	#VAUX: <value></value>	
AT#VAUX=?	Test command reports the supported range of values for paramet	ters <n>, <stat>.</stat></n>
NOTE:	Command available only on GE864-QUAD and GC864-QUAD	with SW 10.00.xxx

#VAUX- Auxiliary	Voltage Output Control SELINT 2	
AT#VAUX=	Set command enables/disables the Auxiliary Voltage pins output.	
[<n>,<stat>]</stat></n>		
	Parameters:	
	<n> - VAUX pin index</n>	
	1 - there is currently just one VAUX pin	
	<stat></stat>	
	0 - output off	
	1 - output on	
	2 - query current value of VAUX pin	
	Note: when <stat>=2</stat> and command is successful, it returns:	
	#VAUX: <value></value>	
	where:	
	<value> - power output status</value>	
	0 - output off	
	1 - output on	
	Note: for the GPS product (GE863-GPS): if the Auxiliary Voltage pins output is	
	disabled while GPS is powered on they'll both also be turned off.	
	Note: for the GPS products, at commands \$GPSP, \$GPSPS, \$GPSWK control	
	VAUX and can interfere with AT# command.	
	Note: the current setting is stored through #VAUXSAV	
AT#VAUX?	Read command reports whether the Auxiliary Voltage pin output is currently	



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#VAUX- Auxiliary Voltage Output Control SELIN		
	enabled or not, in the format:	
	#VAUX: <value></value>	
AT#VAUX=?	Test command reports the supported range of values for parameters <n>, <sta< th=""><th>t>.</th></sta<></n>	t>.
NOTE:	Command available only on GE864-QUAD and GC864-QUAD with SW 10.0	00.xxx

3.5.7.1.31. Auxiliary Voltage Output Save - #VAUXSAV

#VAUXSAV - Auxiliar	<mark>y Voltage Output Save</mark>	SELINT 2
AT#VAUXSAV	Execution command saves the actual state of #VAUX pin to	o NVM. The state will
	be reload at power-up.	
AT#VAUXSAV=?	Test command returns the OK result code.	

3.5.7.1.32. V24 Output pins mode - #V24MODE

#V24MODE - V24 Output	Pins Mode SELINT 2
AT#V24MODE= <port>,</port>	Set command sets the <port></port> serial interface functioning <mode></mode> .
<mode>,</mode>	
<when></when>	Parameters:
	<pre><port> - serial port:</port></pre>
	0 – ASC0 (AT command port)
	1 – ASC1 (trace port)
	<mode> - AT commands serial port interface hardware pins mode:</mode>
	0 – Tx and Rx pins are set in push/pull function during power saving. (default)
	1 – Tx and Rx pins are set in open drain function during power saving.
	2 – Reserved
	<when> - When the command is applied:</when>
	0 – Always (default)
	1 – In power saving only
AT#V24MODE?	Read command returns actual functioning <mode></mode> for all ports in the format:
	#V24MODE: 0, <mode_port0>,<when0>[<cr><lf></lf></cr></when0></mode_port0>
	#V24MODE: 1, <mode_port1>,<when1> [<cr><lf></lf></cr></when1></mode_port1>
	Where:
	< mode port0> - mode of the serial port 0,
	< mode port1> - mode of the serial port 1,
	$\langle \text{when } 0 \rangle$ - when setting for serial port 0,
	<when1> - when setting for serial port 1</when1>
AT#V24MODE=?	Test command reports supported range of values for parameters <port></port> , <mode></mode>
	and <when>.</when>



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3.5.7.1.33. V24 Output Pins Configuration - #V24CFG

#V24CFG - V24 Outpu	t Pins Configuration SELINT 2
AT#V24CFG= <pin>,</pin>	Set command sets the AT commands serial port interface output pins mode.
<mode></mode>	
	Parameters:
	<pre><pin> - AT commands serial port interface hardware pin:</pin></pre>
	0 - DCD (Data Carrier Detect)
	1 - CTS (Clear To Send)
	2 - RI (Ring Indicator)
	3 - DSR (Data Set Ready)
	4 - DTR (Data Terminal Ready). This is not an output pin: we maintain this value
	only for backward compatibility, but trying to set its state raises the result code "ERROR"
	5 - RTS (Request To Send). This is not an output pin: we maintain this value only
	for backward compatibility, but trying to set its state raises the result code
	"ERROR"
	<mode> - AT commands serial port interface hardware pins mode:</mode>
	0 - AT commands serial port mode: output pins are controlled by serial port device
	driver. (default)
	1 - GPIO mode: output pins are directly controlled by #V24 command only.
AT#V24CFG?	Read command returns actual mode for all the pins (either output and input) in the
	format:
	#V24CFG: <pin1>,<mode1>[<cr><lf><cr><lf></lf></cr></lf></cr></mode1></pin1>
	#V24CFG: <pin2>,<mode2>[]]</mode2></pin2>
	, , , , , , , , , , , , , , , , , , ,
	Where:
	<pre><pinn> - AT command serial port interface HW pin</pinn></pre>
	<moden> - AT commands serial port interface hardware pin mode</moden>
AT#V24CFG=?	Test command reports supported range of values for parameters <pin> and</pin>
	<mode>.</mode>

3.5.7.1.34. V24 Output Pins Control - #V24

*V24 - V24 Output Pins Control SELINT 2		SELINT 2
AT#V24= <pin></pin>	Set command sets the AT commands serial port interface output	pins state.
[, <state>]</state>		
	Parameters:	
	<pre><pin> - AT commands serial port interface hardware pin:</pin></pre>	
	0 - DCD (Data Carrier Detect)	
	1 - CTS (Clear To Send)	
	2 - RI (Ring Indicator)	
	3 - DSR (Data Set Ready)	





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#V24 - V24 Outpu	t Pins Control SELINT 2
	 4 - DTR (Data Terminal Ready). This is not an output pin: we maintain this value only for backward compatibility, but trying to set its state raises the result code "ERROR" 5 - RTS (Request To Send). This is not an output pin: we maintain this value only for backward compatibility, but trying to set its state raises the result code "ERROR" <state> - State of AT commands serial port interface output hardware pins(0, 1, 2, 3) when pin is in GPIO mode (see #V24CFG):</state> 0 - Low 1 - High Note: if <state> is omitted the command returns the actual state of the pin <pi>pin>.</pi></state>
AT#V24?	Read command returns actual state for all the pins (either output and input) in the format: #V24: <pin1>,<state1>[<cr><lf> #V24: <pin2>,<state2>[]] where <pinn> - AT command serial port interface HW pin <staten> - AT commands serial port interface hardware pin state</staten></pinn></state2></pin2></lf></cr></state1></pin1>
AT#V24=?	Test command reports supported range of values for parameters <pin> and <state>.</state></pin>

3.5.7.1.35. RF Transmission Monitor Mode - #TXMONMODE

#TXMONMODE- RF	<mark>Fransmission Monitor Mode</mark>	SELINT 2
AT#TXMONMODE=	Set TXMON pin behaviour.	
<mode></mode>		
	Parameter:	
	<mode></mode>	
	0 - TXMON pin goes high when a call is started and it drops do is ended. It also goes high when a location update starts, and when the location update procedure stops. Finally it goes high transmission and receiving. Even if the TXMON in this case output, the read command AT#GPIO=5,2 returns #GPIO:2 in alternate mode.	it drops down h during SMS is set as GPIO in
	1 - TXMON is set in alternate mode and the Timer unit control TXMON goes high 200μs before TXEN goes high. Then poraising and there is the burst transmission. Finally TXMON after power ramps stop falling down. This behaviour is repeatransmission burst.	ower ramps start drops down 47µs
	Note: if user sets GPIO 5 as input or output the TXMON does no	ot follow the above



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#TXMONMODE- RF	Transmission Monitor Mode	SELINT 2
	behaviour.	
	Note: if <mode></mode> is change during a call from 1 to 0, TXMON go restored to 1, TXMON behaves as usual, following the bursts. Note: this command is not supported in GM862 product family.	oes down. If it is
AT#TXMONMODE?	Read command reports the <mode> parameter set value, in the fe</mode>	ormat:
	#TXMONMODE: <mode></mode>	
AT#TXMONMODE=?	Test command reports the supported values for mode paramet	ter.

3.5.7.1.36. Battery And Charger Status - #CBC

#CBC- Battery And C	harger Status S	SELINT 0 / 1
AT#CBC	Execution command returns the current Battery and Charger state	in the format:
	#CBC: <chargerstate>,<batteryvoltage></batteryvoltage></chargerstate>	
	where:	
	< ChargerState > - battery charger state	
	0 - charger not connected	
	1 - charger connected and charging	
	2 - charger connected and charge completed	
	<batteryvoltage></batteryvoltage> - battery voltage in units of ten millivolts: it is	-
	voltage only if charger is not connected; if the charger is con-	nected this value
	depends on the charger voltage.	
AT#CBC?	Read command has the same meaning as Execution command.	
AT#CBC=?	Test command returns the OK result code.	

#CBC- Battery And Cl	harger Status SELINT 2	
AT#CBC	Execution command returns the current Battery and Charger state in the format:	
	#CBC: <chargerstate>,<batteryvoltage></batteryvoltage></chargerstate>	
	where:	
	< ChargerState > - battery charger state	
	0 - charger not connected	
	1 - charger connected and charging	
	2 - charger connected and charge completed	
	BatteryVoltage> - battery voltage in units of ten millivolts: it is the real batter	·y
	voltage only if charger is not connected; if the charger is connected this val	lue
	depends on the charger voltage.	
AT#CBC=?	Test command returns the OK result code.	



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3.5.7.1.37. GPRS Auto-Attach Property - #AUTOATT

#AUTOATT - Auto-At	tach Property	SELINT 0 / 1
AT#AUTOATT	Set command enables/disables the TE GPRS auto-attach property	y.
[= <auto>]</auto>		
	Parameter:	
	<auto></auto>	
	0 - disables GPRS auto-attach property	
	1 - enables GPRS auto-attach property (factory default): after the #AUTOATT=1 has been issued (and at every following start will automatically try to attach to the GPRS service.	tup) the terminal
	Note: If parameter is omitted then the behaviour of Set command Read command.	is the same as
AT#AUTOATT?	Read command reports whether the auto-attach property is current in the format:	ntly enabled or not,
	#AUTOATT: <auto></auto>	
AT#AUTOATT=?	Test command reports available values for parameter <auto></auto> .	

#AUTOATT - Auto-At	ttach Property	SELINT 2
AT#AUTOATT=	Set command enables/disables the TE GPRS auto-attach propert	y.
[<auto>]</auto>		
	Parameter:	
	<auto></auto>	
	0 - disables GPRS auto-attach property	
	1 - enables GPRS auto-attach property (factory default): after the	ne command
	#AUTOATT=1 has been issued (and at every following star	tup) the terminal
	will automatically try to attach to the GPRS service.	
AT#AUTOATT?	Read command reports whether the auto-attach property is curre	ntly enabled or not,
	in the format:	
	#AUTOATT: <auto></auto>	
AT#AUTOATT=?	Test command reports available values for parameter <auto></auto> .	

3.5.7.1.38. Multislot Class Control - #MSCLASS

#MSCLASS - Multisle	ot Class Control	SELINT 0 / 1
AT#MSCLASS[=	Set command sets the multislot class	
<class>[,</class>		
<autoattach>]]</autoattach>	Parameters:	
	<class> - multislot class; take care: class 7 is not supported.</class>	
	16 - GPRS class	
	810 - GPRS class	





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#MSCLASS - Multisl	ot Class Control	SELINT 0 / 1
	<autoattach></autoattach>	
	0 - the new multislot class is enabled only at the next detareboot.	ch/attach or after a
	1 - the new multislot class is enabled immediately, automated / attach procedure.	atically forcing a detach
	Note: if all parameters are omitted the behaviour of set comread command.	nmand is the same as
AT#MSCLASS?	Read command reports the current value of the multislot cla	ass in the format:
	#MSCLASS: <class></class>	
AT#MSCLASS=?	Test command reports the range of available values for par-	ameter <class>.</class>

#MSCLASS - Multislo	ot Class Control	SELINT 2
AT#MSCLASS=	Set command sets the multislot class	
[<class>[,</class>		
<autoattach>]]</autoattach>	Parameters:	
	<class> - multislot class; take care: class 7 is not supported.</class>	
	16 - GPRS class	
	810 - GPRS class	
	<autoattach></autoattach>	
	0 - the new multislot class is enabled only at the next detach/at reboot.	tach or after a
	1 - the new multislot class is enabled immediately, automatical / attach procedure.	lly forcing a detach
AT#MSCLASS?	Read command reports the current value of the multislot class in	n the format:
	#MSCLASS: <class></class>	
AT#MSCLASS=?	Test command reports the range of available values for both par	rameters <class></class>
	and <autoattach>.</autoattach>	

3.5.7.1.39. Cell Monitor - #MONI

#MONI - Cell Monitor		SELINT 0 / 1
AT#MONI[= [<number>]]</number>	#MONI is both a set and an execution command.	
[shumber >]]	Set command sets one cell out of seven, in a the neighbour list of including it, from which we extract GSM-related information.	f the serving cell
	Parameter:	
	<pre><number> 06 - it is the ordinal number of a cell, in a-the neighbour list of</number></pre>	the serving cell



#MONI - Cell Monitor		SELINT 0 / 1
	(default 0, serving cell). 7 - it is a special request to obtain GSM-related informations seven cells in the neighbour list of the serving cell.	from the whole set of
	Note: issuing AT#MONI <cr> is the same as issuing the Rea</cr>	d command.
	Note: issuing AT#MONI= <cr> is the same as issuing the co AT#MONI=0<cr>.</cr></cr>	mmand
AT#MONI?	Execution command reports GSM-related informations for selededicated channel (if exists).	ected cell and
	a) When extracting data for the serving cell and the network format is: #MONI: <netname> BSIC:<bsic> RxQual:<qual> L ARFCN:<arfcn> PWR:<dbm> dBm TA: <timadv></timadv></dbm></arfcn></qual></bsic></netname>	
	b)When the network name is unknown, the format is: #MONI: Cc: <cc> Nc:<nc> BSIC:<bsic> RxQual:<qr id:<id=""> ARFCN:<arfcn> PWR:<dbm> dBm TA: <t< td=""><td></td></t<></dbm></arfcn></qr></bsic></nc></cc>	
	c) When extracting data for an adjacent cell, the format is: #MONI: Adj Cell <n> [LAC:<lac> Id:<id>] ARFCN PWR:<dbm> dBm</dbm></id></lac></n>	: <arfcn></arfcn>
	where: <netname> - name of network operator <cc> - country code <nc> - network operator code <n> - progressive number of adjacent cell <bsic> - base station identification code <qual> - quality of reception 07 <lac> - localization area code <id> - cell identifier <arfcn> - assigned radio channel <dbm> - received signal strength in dBm <timadv> - timing advance</timadv></dbm></arfcn></id></lac></qual></bsic></n></nc></cc></netname>	
	Note: TA: <timadv></timadv> is reported only for the serving cell. 1. If the last setting done by #MONI is 7 , the execution of a table-like formatted output, as follows:	command produces
	a. First row reports the identifying name of the 'empty and 'empt	



#MONI - Cell Monitor	SELINT 0 / 1	
	MN <cr><lf></lf></cr>	
	 b. Second row reports a complete set of GSM-related information for the serving cell: #MONI: S: <bsic> <lac> <id> <arfcn> <dbm> <c1value> <c2value> <ti madv=""> <qual> <netname> <cr> <lf></lf></cr></netname></qual></ti></c2value></c1value></dbm></arfcn></id></lac></bsic> 	
	c. 3 rd to 8 th rows report a reduced set of GSM-related information the cells in the neighbours: #MONI: N <n> <bsic> <lac> <id> <arfcn> <dbm> <c1value> <c2value> <cr><lf>]</lf></cr></c2value></c1value></dbm></arfcn></id></lac></bsic></n>	
	where: <c1value> - C1 reselection parameter <c2value> - C2 reselection parameter other parameters as before</c2value></c1value>	
AT#MONI=?	Test command reports the maximum number of cells, in the neighbour list of the serving cell, from which we can extract GSM-related informations, along with the ordinal number of the current selected cell, in the format:	
	#MONI: (<maxcellno>,<cellset>)</cellset></maxcellno>	
	where: <maxcellno> - maximum number of cells, in the neighbour list of the serving of from which we can extract GSM-related informations (for compatibility with previous versions of code this value is always 5).</maxcellno>	
	<cellset> - the last setting done with command #MONI.</cellset>	
	An enhanced version of the Test command has been defined: AT#MONI=??	
	Note: The serving cell is the current serving cell or the last available serving cell the module loses coverage.	l, if
AT#MONI=??	Enhanced test command reports the maximum number of cells, in a the neighbor list of the serving cell and including it, from which we can extract GSM-related informations, along with the ordinal number of the current selected cell, in the format:	ur
	#MONI: (<maxcellno>,<cellset>)</cellset></maxcellno>	
	where: <maxcellno> - maximum number of cells, in a-the neighbour list of the serving cell and including it, from which we can extract GSM-related informations.</maxcellno>	_



#MONI - Cell Monitor		SELINT 0 / 1
	value is always 7. <cellset> - the last setting done with command #MONI.</cellset>	
	Note: The serving cell is the current serving cell or the last available the module loses coverage.	able serving cell, if
Example	Set command selects the cell 0 at#moni=0 OK	
	Execution command reports GSM-related information for cell 0 at#moni	
	#MONI: I WIND BSIC:70 RxQual:0 LAC:55FA Id:1D23 ARFCN:736 PWR:-	-83dbm TA:1
	Set command selects the special request to obtain GSM-related if the whole set of seven cells in the neighbour list of the serving ceat#moni=7 OK	· ·
	Execution command reports the requested information in table-lat#moni #MONI: Cell BSIC LAC Cellid ARFCN Power C1 C2 TA RxQual PLI #MONI: S 70 55FA 1D23 736 -83dbm 19 33 1 0 I WIND #MONI: N1 75 55FA 1297 983 -78dbm 26 20 #MONI: N2 72 55FA 1289 976 -82dbm 22 16 #MONI: N3 70 55FA 1D15 749 -92dbm 10 18 #MONI: N4 72 55FA 1D0D 751 -92dbm 10 18 #MONI: N5 75 55FA 1296 978 -95dbm 9 3 #MONI: N6 70 55FA 1D77 756 -99dbm 3 11	·
	OK	
Note	The refresh time of the measures is preset to 3 sec. The timing advance value is meaningful only during calls or GP.	RS transfers active.
Note	The serving cell is the current serving cell or the last available se module loses coverage.	erving cell, if the

#MONI - Cell Monitor		SELINT 2
AT#MONI[=	#MONI is both a set and an execution command.	
[<number>]]</number>		
	Set command sets one cell out of seven, in a the neighbour list of including it, from which extract GSM-related information.	f the serving cell
	Parameter:	
	<number></number>	
	06 - it is the ordinal number of the cell, in a-the neighbour list (default 0, serving cell).	of the serving cell
	7 - it is a special request to obtain GSM-related information from	m the whole set of



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#MONI - Cell Monitor SELINT 2

seven cells in the neighbour list of the serving cell.

Execution command (AT#MONI<CR>) reports GSM-related information for selected cell and dedicated channel (if exists).

- 2. If the last setting done by **#MONI** is in the range **[0..6]**, the output format is as follows:
 - d) When extracting data for the serving cell and the network name is known the format is:

#MONI: <netname> BSIC: <bsic> RxQual: <qual> LAC: <lac> Id: <id> ARFCN: <arfcn> PWR: <dBm> dBm TA: <timadv>

e) When the network name is unknown, the format is:

#MONI: Cc:<cc> Nc:<nc> BSIC:<bsic> RxQual:<qual> LAC:<lac> Id:<id> ARFCN:<arfcn> PWR:<dBm> dBm TA: <timadv>

f) When extracting data for an adjacent cell, the format is:

#MONI: Adj Cell<n> [LAC:<lac> Id:<id>] ARFCN:<arfcn> PWR:<dBm> dBm

where:

<netname> - name of network operator

<cc> - country code

<nc> - network operator code

<n> - progressive number of adjacent cell

 bsic> - base station identification code

<qual> - quality of reception

0..7

<lac> - localization area code

<id> - cell identifier

<arfcn> - assigned radio channel

<dBm> - received signal strength in dBm

<timadv> - timing advance

Note: TA: <timadv> is reported only for the serving cell.

- 3. If the last setting done by **#MONI** is **7**, the execution command produces a table-like formatted output, as follows:
 - a. First row reports the identifying name of the 'columns'

#MONI:

Cell BSIC LAC CellId ARFCN Power C1 C2 TA RxQual PL MN<CR><LF>

b. Second row reports a complete set of GSM-related information for



#MONI - Cell Monitor		SELINT 2
#IVIONI - Cen Ivionitor	the serving cell:	SELINI 2
	#MONI:	
	S: <bsic> <lac> <id> <arfcn> <dbm> <c1value></c1value></dbm></arfcn></id></lac></bsic>	<c2value> <ti< td=""></ti<></c2value>
	madv> <qual> <netname><cr><lf></lf></cr></netname></qual>	
	c. 3 rd to 8 th rows report a reduced set of GSM-related the cells in the neighbours: #MONI: N <n> <bsic> <lac> <id> <arfcn> <dbm> <c1val <="" <cr=""><lf>]</lf></c1val></dbm></arfcn></id></lac></bsic></n>	
	where: <c1value> - C1 reselection parameter <c2value> - C2 reselection parameter other parameters as before</c2value></c1value>	
AT#MONI=?	Test command reports the maximum number of cells, in a the ne serving cell excluding it, from which we can extract GSM-relate along with the ordinal number of the current selected cell, in the	ed informations,
	#MONI: (<maxcellno>,<cellset>)</cellset></maxcellno>	
	where: <maxcellno> - maximum number of cells, in a-the neighbour l cell and excluding it, from which we can extract of informations. This value is always 6.</maxcellno>	_
	CellSet> - the last setting done with command #MONI.	
Example	Set command selects the cell 0 at#moni=0 OK	
	Execution command reports GSM-related information for cell 0 at#moni	
	#MONI: I WIND BSIC:70 RxQual:0 LAC:55FA Id:1D23 ARFCN:736 PWR: OK	-83dbm TA:1
	Set command selects the special request to obtain GSM-related the whole set of seven cells in the neighbour list of the serving coat#moni=7 OK	· ·
	Execution command reports the requested information in table-lat#moni #MONI: Cell BSIC LAC Cellid ARFCN Power C1 C2 TA RxQual PL #MONI: S 70 55FA 1D23 736 -83dbm 19 33 1 0 I WIND #MONI: N1 75 55FA 1297 983 -78dbm 26 20 #MONI: N2 72 55FA 1289 976 -82dbm 22 16 #MONI: N3 70 55FA 1D15 749 -92dbm 10 18 #MONI: N4 72 55FA 1D0D 751 -92dbm 10 18	



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#MONI - Cell Monitor	S	SELINT 2
	#MONI: N5 75 55FA 1296 978 -95dbm 9 3	
	#MONI: N6 70 55FA 1D77 756 -99dbm 3 11	
	OK	
Note	The refresh time of the measures is preset to 3 sec.	
	The timing advance value is meaningful only during calls or GPRS	S transfers active.
Note	The serving cell is the current serving cell or the last available serv	ving cell, if the
	module loses coverage.	

3.5.7.1.40. Serving Cell Information - #SERVINFO

#SERVINFO - Serving Cell Information SELINT 0 / 1		<mark>/ 1</mark>
AT#SERVINFO	Execution command reports information about serving cell, in the format:	
	#SERVINFO: <b-arfcn>,<dbm>,<netnameasc>,<netcode>,</netcode></netnameasc></dbm></b-arfcn>	
	<pre><bsic>,<lac>,<ta>,<gprs>[,[<pb-arfcn>],[<nom>],</nom></pb-arfcn></gprs></ta></lac></bsic></pre>	
	<pre></pre>	
	where:	
	<b-arfcn> - BCCH ARFCN of the serving cell</b-arfcn>	
	<dbm> - received signal strength in dBm</dbm>	
	<netnameasc> - operator name, quoted string type</netnameasc>	
	<netcode> - string representing the network operator in numeric format: 5</netcode>	or 6
	digits [country code (3) + network code (2 or 3)]	
	<bsic> - Base Station Identification Code</bsic>	
	<lac> - Localization Area Code</lac>	
	<ta> - Time Advance: it's available only if a GSM or GPRS is running</ta>	
	<gprs> - GPRS supported in the cell</gprs>	
	0 - not supported	
	1 - supported	
	The following information will be present only if GPRS is supported in the < PB-ARFCN> -	cell
	• if PBCCH is supported by the cell	
	o if its content is the PBCCH ARFCN of the serving cell	l, ther
	< PB-ARFCN> is available	
	 else the label "hopping" will be printed 	
	• else PB-ARFCN is not available	
	<nom> - Network Operation Mode</nom>	
	"["	
	" <u>II"</u>	
	<rac> - Routing Area ColoUr Code</rac>	
	<pat> - Priority Access Threshold</pat>	



#SERVINFO - Serving Cell Information SELII		SELINT 0 / 1
	0 36 Note: during a call, a SMS sending/receiving or a location upda <gprs>, <pb-arfcn>, <nom>, <rac> and <pat> para make sense.</pat></rac></nom></pb-arfcn></gprs>	
AT#SERVINFO?	Read command has the same effect as Execution command	
AT#SERVINFO=?	Test command tests for command existence (available only for following versions)	10.0x.xx5 and

#SERVINFO - Serving Cell Information SELINT 2		SELINT 2
AT#SERVINFO	Execution command reports information about serving cell	, in the format:
	#SERVINFO: <b-arfcn>,<dbm>,<netnameasc>,<n< th=""><th>*</th></n<></netnameasc></dbm></b-arfcn>	*
	<bsic>,<lac>,<ta>,<gprs>[,[<pb-arfcn>],[<nc< th=""><th>)Μ>],</th></nc<></pb-arfcn></gprs></ta></lac></bsic>)Μ>] ,
	<rac>[,<pat>]]</pat></rac>	
	where:	
	<b-arfcn> - BCCH ARFCN of the serving cell</b-arfcn>	
	<dbm> - received signal strength in dBm</dbm>	
	<netnameasc> - operator name, quoted string type</netnameasc>	
	<netcode> - string representing the network operator in n</netcode>	umeric format: 5 or 6
	digits [country code (3) + network code (2 or 3)]	
	<bsic> - Base Station Identification Code</bsic>	
	<lac> - Localization Area Code</lac>	
	<ta> - Time Advance: it's available only if a GSM or GP</ta>	RS is running
	<gprs> - GPRS supported in the cell</gprs>	
	0 - not supported	
	1 - supported	
	The following information will be present only if GPRS is < PB-ARFCN> -	supported in the cell
	• if PBCCH is supported by the cell	
	o if its content is the PBCCH ARFCN o	f the serving cell, then
	< PB-ARFCN> is available	
	o else the label "hopping" will be printed	1
	• else PB-ARFCN is not available	
	<nom> - Network Operation Mode</nom>	
	"I"	
	"II"	
	"III"	
	<rac> - Routing Area Colour Code</rac>	
	<pat> - Priority Access Threshold</pat>	



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#SERVINFO - Serving	Cell Information	SELINT 2
	0 36 Note: during a call, a SMS sending/receiving or a location upda <gprs>, <pb-arfcn>, <nom>, <rac> and <pat> para make sense.</pat></rac></nom></pb-arfcn></gprs>	
AT#SERVINFO=?	Test command tests for command existence (available only for	10.0x.xx5 and
	following versions)	

3.5.7.1.41. +**COPS Mode -** #**COPSMODE**

#COPSMODE - +COPS	#COPSMODE - +COPS Mode SELINT 0	
AT#COPSMODE [= <mode>]</mode>	Set command sets the behaviour of +COPS command (see +Co	OPS).
	Parameter:	
	<mode></mode>	
	0 - +COPS behaviour like former GM862 family products (de 1 - +COPS behaviour compliant with ETSI format	efault)
	Note: The setting is saved in NVM (and available on following	reboot).
	Note: if parameter <mode></mode> is omitted the behaviour of Set cor as Read command.	mmand is the same
AT#COPSMODE?	Read command returns the current behaviour of +COPS comm	nand, in the format:
	#COPSMODE: <mode></mode>	
	where	
	<mode> - +COPS behaviour as seen before.</mode>	
AT#COPSMODE=?	Test command returns the range of available values for parame	ter <mode>.</mode>
Note	It's suggested to reboot the module after every #COPSMODE	setting.

3.5.7.1.42. Query SIM Status - #QSS

#QSS - Query SIM St	atus et a la companyation de la	SELINT 0 / 1
AT#QSS[=	Set command enables/disables the Query SIM Status unsolicited	indication in the
[<mode>]]</mode>	ME.	
	Parameter:	
	<mode> - type of notification</mode>	
	0 - disabled (factory default); it's possible only to query the curr	ent SIM status



#QSS - Query SIM Statu	SELINT 0 / 1
	through Read command AT#QSS? 1 - enabled; the ME informs at every SIM status change through the following unsolicited indication:
	#QSS: <status></status>
	where: <status> - current SIM status 0 - SIM NOT INSERTED 1 - SIM INSERTED</status>
N	Note: issuing AT#QSS <cr> is the same as issuing the Read command.</cr>
AT#QSS?	tead command reports whether the unsolicited indication #QSS is currently nabled or not, along with the SIM status, in the format:
	QSS: <mode>,<status> <mode> and <status> are described above)</status></mode></status></mode>
AT#QSS=?	est command returns the supported range of values for parameter mode .

#QSS - Query SI	M Status SELINT 2
AT#QSS=	Set command enables/disables the Query SIM Status unsolicited indication in the
[<mode>]</mode>	ME.
	Parameter:
	<mode> - type of notification</mode>
	0 - disabled (factory default); it's possible only to query the current SIM status through Read command AT#QSS?
	1 - enabled; the ME informs at every SIM status change through the following basic unsolicited indication:
	#QSS: <status></status>
	where:
	<status> - current SIM status</status>
	0 - SIM NOT INSERTED
	1 - SIM INSERTED
	2 - enabled; the ME informs at every SIM status change through the following unsolicited indication:
	#QSS: <status></status>
	where:
	<status> - current SIM status</status>
	0 - SIM NOT INSERTED



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#QSS - Query SIM	<mark>I Status</mark>	SELINT 2
	1 - SIM INSERTED 2 - SIM INSERTED and PIN UNLOCKED 3 - SIM INSERTED and READY (SMS and possible).	l Phonebook access are
	Note: the command reports the SIM status change after 2. We suggest to set <mode>=2 and save the value power off the module. The proper SIM status will power on.</mode>	in the user profile, then
AT#QSS?	Read command reports whether the unsolicited indication enabled or not, along with the SIM status, in the format	
	#QSS: <mode>,<status> (<mode> and <status> are described above)</status></mode></status></mode>	
AT#OSS=?	Test command returns the supported range of values for	r parameter <mode></mode> .

3.5.7.1.43. ATD Dialing Mode - #DIALMODE

#DIALMODE - ATD 1	Dialing Mode	SELINT 0 / 1
AT#DIALMODE[=	Set command sets ATD modality.	
<mode>]</mode>	·	
	Parameter:	
	<mode></mode>	
	0 - (voice call only) OK result code is received as soon as it staringing (factory default)	arts remotely
	1 - (voice call only) OK result code is received only after the call and NO CARRIER resu	
	2 - (voice call and data call) the following custom result codes monitoring step by step the call status:	
	DIALING (MO in progress)	
	RINGING (remote ring)	
	CONNECTED (remote call accepted)	
	RELEASED (after ATH)	
	DISCONNECTED (remote hang-up)	
	Note: The setting is saved in NVM and available on following re	eboot.
	Note: In case a BUSY tone is received and at the same time AT will return NO CARRIER instead of DISCONNECTED .	X0 is enabled ATD
	Note: if parameter <mode></mode> is omitted the behaviour of Set command.	mand is the same as
AT#DIALMODE?	Read command returns current ATD dialing mode in the format	:
	#DIALMODE: <mode></mode>	
AT#DIALMODE=?	Test command returns the range of values for parameter < mode	>



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#DIALMODE - Dialin	ng Mode SE	ELINT 2
AT#DIALMODE=	Set command sets dialing modality.	
[<mode>]</mode>		
	Parameter:	
	<mode></mode>	
	0 - (voice call only) OK result code is received as soon as it starts ringing (factory default)	remotely
	1 - (voice call only) OK result code is received only after the calle	ed party
	answers. Any character typed aborts the call and OK result code	e is received.
	2 - (voice call and data call) the following custom result codes are	received,
	monitoring step by step the call status:	
	DIALING (MO in progress)	
	RINGING (remote ring)	
	CONNECTED (remote call accepted)	
	RELEASED (after ATH)	
	DISCONNECTED (remote hang-up)	
	Note: In case a BUSY tone is received and at the same time ATX0 is	is enabled ATD
	will return NO CARRIER instead of DISCONNECTED .	
	Note: The setting is saved in NVM and available on following reboo	ot.
AT#DIALMODE?	Read command returns current ATD dialing mode in the format:	
	#DIALMODE: <mode></mode>	
AT#DIALMODE=?	Test command returns the range of values for parameter <mode></mode>	<u>-</u>

3.5.7.1.44. Automatic Call - #ACAL

#ACAL - Automatic C	<mark>'all</mark>	SELINT 0 / 1
AT#ACAL[=	Set command enables/disables the automatic call function.	
[<mode>]]</mode>		
	Parameter:	
	<mode></mode>	
	 0 - disables the automatic call function (factory default) 1 - enables the automatic call function. If enabled (and &D2 has been issued), the transition OFF/ON of DTR causes an automatic call to the first number (position 0) stored in the internal phonebook. Note: type of call depends on the last issue of command +FCLASS. 	
	Note: issuing AT#ACAL <cr> is the same as issuing the Read</cr>	command.
AT#ACAL?	Read command reports whether the automatic call function is cu not, in the format:	rrently enabled or



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#ACAL - Automatic Call		SELINT 0 / 1
	#ACAL: <mode></mode>	
AT#ACAL=?	Test command returns the supported range of values for parameter	er <mode></mode> .
Note	See &Z to write and &N to read the number on module internal p	honebook.

#ACAL - Automatic C	SELINT 2
AT#ACAL= [<mode>]</mode>	Set command enables/disables the automatic call function.
[mode]	Parameter: <mode> 0 - disables the automatic call function (factory default) 1 - enables the automatic call function. If enabled (and &D2 has been issued), the transition OFF/ON of DTR causes an automatic call to the first number (position 0) stored in the internal phonebook. Note: type of call depends on the last issue of command +ECL ASS.</mode>
	Note: type of call depends on the last issue of command +FCLASS.
AT#ACAL?	Read command reports whether the automatic call function is currently enabled or not, in the format: #ACAL: <mode> Note: as a consequence of the introduction of the command #ACALEXT (Extended Automatic Call) it is possible that the Read Command returns a value supported by #ACALEXT but NOT supported by #ACAL.</mode>
	AT#ACAL?
	#ACAL: 2
	OK
	Due to this possible situation it is strongly recommended not to use contemporaneously both commands.
AT#ACAL=?	Test command returns the supported range of values for parameter <mode></mode> .
Note	See &Z to write and &N to read the number on module internal phonebook.

3.5.7.1.45. Extended Automatic Call - #ACALEXT

#ACALEXT - Extended Automatic Call SELINT 0 / 1 / 2		
AT#ACALEXT=	Set command enables/disables the extended automatic call function	on.
<mode>,<index></index></mode>		
	Parameters:	
	<mode></mode>	



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#ACALEXT - Extende	ed Automatic Call	SELINT 0 / 1 / 2
#ACALEAT - Extende	0 - disables the automatic call function (factory default) 1 - enables the automatic call function from "ME" phonebook. 2 - enables the automatic call function from "SM" phonebook. <index> - it indicates a position in the currently selected phoneb If the extended automatic call function is enabled and &D2 has be transition OFF/ON of DTR causes an automatic call to the numbro position <index> in the selected phonebook.</index></index>	book. been issued, the ber stored in
AT#ACALEXT?	Note: type of call depends on the last issue of command +FCLA Read command reports either whether the automatic call function	
ATHACALEAT.	enabled or not, and the last <index> setting in the format: #ACALEXT: <mode>,<index></index></mode></index>	in is currently
AT#ACALEXT=?	The range of available positions in a phonebook depends on the phonebook. This is the reason why the test command returns threvalues: the first for parameter <mode>, the second for parameter "ME" is the chosen phonebook, the third for parameter <index> chosen phonebook.</index></mode>	ee ranges of r <index> when</index>
Note	Issuing #ACALEXT causes the #ACAL <mode> to be changed Issuing AT#ACAL=1 causes the #ACALEXT <index> to be set It is recommended to NOT use contemporaneously either #ACAL#ACAL</index></mode>	et to default.
Note	See &Z to write and &N to read the number on module internal	phonebook.

3.5.7.1.46. Extended Call Monitoring - #ECAM

#ECAM - Extended Call Monitoring SELINT 0 / 1	
AT#ECAM[= [<onoff>]]</onoff>	This command enables/disables the call monitoring function in the ME .
	Parameter:
	<onoff></onoff>
	0 - disables call monitoring function (factory default)
	1 - enables call monitoring function; the ME informs about call events, such as incoming call, connected, hang up etc. using the following unsolicited indication:
	#ECAM: <ccid>,<ccstatus>,<calltype>,,, [<number>,<type>]</type></number></calltype></ccstatus></ccid>
	where
	<ccid> - call ID</ccid>
	<ccstatus> - call status</ccstatus>
	0 - idle
	1 - calling (MO)



#ECAM - Extended C	<mark>all Monitoring</mark>	SELINT 0 / 1
	2 - connecting (MO)	
	3 - active	
	4 - hold	
	5 - waiting (MT)	
	6 - alerting (MT)	
	7 - busy	
	<calltype> - call type</calltype>	
	1 - voice	
	2 - data	
	<number> - called number (valid only for <ccstatus>=1)</ccstatus></number>	
	<type> - type of <number></number></type>	
	129 - national number	
	145 - international number	
	Note: the unsolicited indication is sent along with usual CARRIER , BUSY).	codes (OK, NO
	Note: issuing AT#ECAM <cr> is the same as issuing the Read</cr>	d command.
	Note: issuing AT#ECAM=<cr></cr> returns the OK result code.	
AT#ECAM?	Read command reports whether the extended call monit	coring function is
	currently enabled or not, in the format:	
	#ECAM: <onoff></onoff>	
AT#ECAM=?	Test command returns the list of supported values for <onoff></onoff>	

#ECAM - Extended Cal	FECAM - Extended Call Monitoring SELINT 2	
AT#ECAM=	This command enables/disables the call monitoring function in	the ME.
[<onoff>]</onoff>		
	Parameter:	
	<onoff></onoff>	
	0 - disables call monitoring function (factory default)	
	1 - enables call monitoring function; the ME informs about call events, such as incoming call, connected, hang up etc. using the following unsolicited indication:	
	#ECAM: <ccid>,<ccstatus>,<calltype>,,,[<number>,<ty< th=""><th>pe>]</th></ty<></number></calltype></ccstatus></ccid>	pe>]
	where	
	<ccid> - call ID</ccid>	
	<ccstatus> - call status</ccstatus>	
	0 - idle	
	1 - calling (MO)	
	2 - connecting (MO)	
	3 - active	



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#ECAM - Extended Ca	ll Monitoring	SELINT 2
	4 - hold	•
	5 - waiting (MT)	
	6 - alerting (MT)	
	7 - busy	
	<calltype> - call type</calltype>	
	1 - voice	
	2 - data	
	<number> - called number (valid only for <ccstatus>=1)</ccstatus></number>	
	<type> - type of <number></number></type>	
	129 - national number	
	145 - international number	
	Note: the unsolicited indication is sent along with usual codes (CARRIER, BUSY).	OK, NO
AT#ECAM?	Read command reports whether the extended call monitoring fucurrently enabled or not, in the format:	nction is
	#ECAM: <onoff></onoff>	
AT#ECAM=?	Test command returns the list of supported values for <onoff></onoff>	

3.5.7.1.47. SMS Overflow - #SMOV

#SMOV - SMS Overflo	SELINT 0 / 1	
AT#SMOV[=	Set command enables/disables the SMS overflow signalling function.	
[<mode>]]</mode>		
	Parameter:	
	<mode></mode>	
	0 - disables SMS overflow signalling function(factory default)	
	1 - enables SMS overflow signalling function; when the maximum storage capacity has been reached, the following notification is sent:	
	#SMOV: <memo></memo>	
	where <memo> is a string indicating the SMS storage that has reached maximum capacity: "SM" – SIM Memory</memo>	
	Note: issuing AT#SMOV < CR> is the same as issuing the Read command.	
	Note: issuing AT#SMOV= <cr> is the same as issuing the command AT#SMOV=0<cr>.</cr></cr>	
AT#SMOV?	Read command reports whether the SMS overflow signalling function is currently enabled or not, in the format:	



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#SMOV - SMS Overflo	ow	SELINT 0 / 1
	#SMOV: <mode></mode>	
AT#SMOV=?	Test command returns the supported range of values of parameter	r <mode>.</mode>

#SMOV - SMS Overflo	SELINT 2
AT#SMOV=	Set command enables/disables the SMS overflow signalling function.
[<mode>]</mode>	
	Parameter:
	<mode></mode>
	0 - disables SMS overflow signalling function (factory default)
	1 - enables SMS overflow signalling function; when the maximum storage capacity has been reached, the following network initiated notification is sent:
	#SMOV: <memo></memo>
	where <memo> is a string indicating the SMS storage that has reached maximum capacity: "SM" – SIM Memory</memo>
AT#SMOV?	Read command reports whether the SMS overflow signalling function is currently enabled or not, in the format:
	#SMOV: <mode></mode>
AT#SMOV=?	Test command returns the supported range of values of parameter <mode></mode> .

3.5.7.1.48. Mailbox Numbers - #MBN

#MBN - Mailbox Num	#MBN - Mailbox Numbers SELINT 2	
AT#MBN	Execution command returns the mailbox numbers stored on SIM provided by the SIM.	I, if this service is
	The response format is: [#MBN: <index>,<number>,<type>[,<text>][,mboxtype][<cl #mbn:="" <index="">,<number>,<type>[,<text>][,mboxtype][]]</text></type></number></cl></text></type></number></index>	
	where: <index> - record number <number> - string type mailbox number in the format <type> <type> - type of mailbox number octet in integer format 129 - national numbering scheme 145 - international numbering scheme (contains the character "- <text> - the alphanumeric text associated to the number; used che be the one selected with command +CSCS <mboxtype> - the message waiting group type of the mailbox, if "VOICE" - voice "FAX" - fax</mboxtype></text></type></type></number></index>	naracter set should



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#MBN - Mailbox N	<mark>umbers</mark>	SELINT 2
	"EMAIL" - electronic mail "OTHER" - other Note: if all queried locations are empty (but available), no in	nformation text lines
AT#MBN=?	will be returned. Test command returns the OK result code.	

3.5.7.1.49. Message Waiting Indication - #MWI

#MWI - Message Wait	ing Indication SELINT 2
AT#MWI= <enable></enable>	Set command enables/disables the presentation of the message waiting indicator URC.
	Parameter: <enable> 0 - disable the presentation of the #MWI URC 1 - enable the presentation of the #MWI URC each time a new message waiting indicator is received from the network and, at startup, the presentation of the status of the message waiting indicators, as they are currently stored on SIM</enable>
	The URC format is:
	#MWI: <status>,<indicator>[,<count>]</count></indicator></status>
	where: <status> 0 - clear: it has been deleted one of the messages related to the indicator <indicator>. 1 - set: there's a new waiting message related to the indicator <indicator> <indicator> 1 - either Line 1 (CPHS context) or Voice (3GPP context) 2 - Line 2 (CPHS context only) 3 - Fax 4 - E-mail 5 - Other <count> - message counter: network information reporting the number of pending messages related to the message waiting indicator <indicator>.</indicator></count></indicator></indicator></indicator></status>
	The presentation at startup of the message waiting indicators status, as they are currently stored on SIM, is as follows:



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#MWI - Message	Waiting Indication SELINT 2
	#MWI: <status>[,<indicator>[,<count>][<cr><lf></lf></cr></count></indicator></status>
	#MWI: <status>,<indicator>[,<count>][]]]</count></indicator></status>
	where:
	<status></status>
	0 - no waiting message indicator is currently set: if this the case no other information is reported
	1 - there are waiting messages related to the message waiting indicator
	<indicator>.</indicator>
	<indicator></indicator>
	1 - either Line 1 (CPHS context) or Voice (3GPP context)
	2 - Line 2 (CPHS context)
	3 - Fax
	4 - E-mail
	5 - Other
	count> - message counter: number of pending messages related to the message waiting indicator cindicator> as it is stored on SIM.
AT#MWI?	Read command reports wheter the presentation of the message waiting indicator
	URC is currently enabled or not, and the current status of the message waiting
	indicators as they are currently stored on SIM. The format is:
	#MWI: <enable>,<status>[,<indicator>[,<count> [<cr><lf></lf></cr></count></indicator></status></enable>
	#MWI: <enable>,<status>,<indicator>[,<count>][]]]</count></indicator></status></enable>
AT#MWI=?	Test command returns the range of available values for parameter <enable></enable> .

3.5.7.1.50. Audio Codec - #CODEC

#CODEC - Audio Cod	<mark>ec</mark>	SELINT 0 / 1
AT#CODEC[=	Set command sets the audio codec mode.	
<codec>]</codec>		
	Parameter:	
	<codec></codec>	
	0 - all the codec modes are enabled (factory default)	
	131 - sum of integers each representing a specific codec mod	le:
	1 - FR , full rate mode enabled	
	2 - EFR, enhanced full rate mode enabled	
	4 - HR, half rate mode enabled	
	8 - AMR-FR, AMR full rate mode enabled	
	16 - AMR-HR, AMR half rate mode enabled	
	Note: the full rate mode is added by default to any setting in the (as specified in ETSI 04.08), but the call drops if the network as has not been selected by the user.	



#CODEC - Audio (Codec SELINT 0 / 1
	Note: the setting 0 is equivalent to the setting 31.
	Note: The codec setting is saved in the profile parameters. Note: if optional parameter <codec></codec> is omitted the behaviour of Set command is the same as Read command.
AT#CODEC?	Read command returns current audio codec mode in the format: #CODEC: <codec></codec>
AT#CODEC=?	Test command returns the range of available values for parameter <codec></codec>
Example	AT#CODEC=14 OK sets the codec modes HR (4), EFR (2) and AMR-FR (8)

#CODEC - Audio Cod	<mark>ec</mark>	SELINT 2
AT#CODEC=	Set command sets the audio codec mode.	
[<codec>]</codec>		
	Parameter:	
	<codec></codec>	
	0 - all the codec modes are enabled (factory default)	
	131 - sum of integers each representing a specific codec mode	2:
	1 - FR , full rate mode enabled	
	(This is the only option available for SW 13.00.000)	
	2 - EFR, enhanced full rate mode enabled	
	4 - HR, half rate mode enabled	
	8 - AMR-FR, AMR full rate mode enabled	
	16 - AMR-HR , AMR half rate mode enabled	
	Note: the full rate mode is added by default to any setting in the	SETUP message
	(as specified in ETSI 04.08), but the call drops if the network as	signed codec mode
	has not been selected by the user.	
	Note: the setting 0 is equivalent to the setting 31.	
	Note: The codec setting is saved in the profile parameters.	
AT#CODEC?	Read command returns current audio codec mode in the format:	
	#CODEC: <codec></codec>	
AT#CODEC=?	Test command returns the range of available values for parameter	er <codec></codec>
Example	AT#CODEC=14 OK	
	UN	



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#CODEC - Audio Cod	e <mark>c</mark>	SELINT 2
	sets the codec modes HR (4), EFR (2) and AMR-FR (8)	

3.5.7.1.51. Network Timezone - #NITZ

#NITZ - Network Timezone SELINT 0 / 3	
AT#NITZ[=	Set command enables/disables automatic date/time updating and Network
[<val></val>	Timezone unsolicited indication.
[, <mode>]]]</mode>	Date and time information can be sent by the network after GSM registration or after GPRS attach.
	Parameters: <val> 0 - disables automatic set (factory default) 1 - enables automatic set <mode></mode></val>
	 0 - disables unsolicited message (factory default) 1 - enables unsolicited message; after date and time updating the following unsolicited indication is sent:
	#NITZ: "yy/MM/dd,hh:mm:ss"
	where:
	yy - year MM - month (in digits)
	dd - day
	hh - hour
	mm - minute
	ss - second
	Note: issuing AT#NITZ<cr></cr> is the same as issuing the Read command.
	Note: issuing AT#NITZ= <cr> is the same as issuing the command AT#NITZ=0<cr>.</cr></cr>
AT#NITZ?	Read command reports whether automatic date/time updating is currently enabled or not, and whether Network Timezone unsolicited indication is enabled or not, in the format:
	#NITZ: <val>,<mode></mode></val>
AT#NITZ=?	Test command returns supported values of parameters <val></val> and <mode></mode> .

#NITZ - Network Time	<mark>ezone</mark>	SELINT 2
AT#NITZ=	Set command enables/disables (a) automatic date/time updating,	(b) Full Network
[<val></val>	Name applying and (c) #NITZ URC; moreover it permits to char	nge the #NITZ



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#NITZ - Network Timezone

SELINT 2

[,<mode>]]

URC format.

Date and time information can be sent by the network after GSM registration or after GPRS attach.

Parameters:

<val>

- 0 disables (a) automatic data/time updating, (b) Full Network Name applying and (c) #NITZ URC; moreover it sets the #NITZ URC 'basic' format (see <datetime> below) (factory default for all products except GE865-QUAD, GE864-DUAL V2, GL865-DUAL and GL868-DUAL)
- 1..15 as a sum of:
 - 1 enables automatic date/time updating
 - 2 enables Full Network Name applying
 - 4 it sets the **#NITZ** URC 'extended' format (see **<datetime>** below)
 - 8 it sets the **#NITZ** URC 'extended' format with Daylight Saving Time (DST) support (see **<datetime>** below)

(default for GE865-QUAD, GE864-DUAL V2, GL865-DUAL and GL868-DUAL: 7)

<mode>

- 0 disables **#NITZ** URC (factory default)
- 1 enables **#NITZ** URC; after date and time updating the following unsolicited indication is sent:

#NITZ: <datetime>

where:

<datetime> - string whose format depends on subparameter <val>
 "yy/MM/dd,hh:mm:ss" - 'basic' format, if <val> is in (0..3)
 "yy/MM/dd,hh:mm:ss±zz" - 'extended' format, if <val> is in (4..7)
 "yy/MM/dd,hh:mm:ss±zz,d" - 'extended' format with DST support, if <val> is in (8..15)

where:

yy - year

MM - month (in digits)

dd - day

hh - hour

mm - minute

ss - second

- **zz** time zone (indicates the difference, expressed in quarter of an hour, between the local time and GMT; two last digits are mandatory, range is -47..+48)
- **d** number of hours added to the local TZ because of Daylight Saving Time (summertime) adjustment; range is 0-3.

Note: If the DST information isn't sent by the network, then the **<datetime>**





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#NITZ - Network	Timezone	SELINT 2
	parameter has the format "yy/MM/dd,hh:mm:ss±zz"	
AT#NITZ?	Read command reports whether (a) automatic date/time upd Name applying, (c) #NITZ URC (as well as its format) are on the format: #NITZ: <val>,<mode></mode></val>	
AT#NITZ=?	Test command returns supported values of parameters <val></val>	and <mode>.</mode>

3.5.7.1.52. Clock management - #CCLK

#CCLK - Clock Man	agamant	SELINT 2
AT#CCLK= <time></time>	Set command sets the real-time clock of the ME.	SELINI 2
AT#CCLK-\time>	Set command sets the real-time clock of the NIE.	
	Parameter:	
	<time> - current time as quoted string in the format:</time>	
	"yy/MM/dd,hh:mm:ss±zz,d"	
	yy - year (two last digits are mandatory), range is 0099	
	MM - month (two last digits are mandatory), range is 0112	
	dd - day (two last digits are mandatory)	
	The range for dd(day) depends either on the month and o	n the year it refers
	to. Available ranges are:	if the year it refers
	(0128)	
	(0129)	
	(0130)	
	(0131)	
	Trying to enter an out of range value will raise an en	rror
	Trying to enter an out or range (and the range and the	
	hh - hour (two last digits are mandatory), range is 0023	
	mm - minute (two last digits are mandatory), range is 0059	
	ss - seconds (two last digits are mandatory), range is 0059	
	±zz - time zone (indicates the difference, expressed in quarter	of an hour, between
	the local time and GMT; two last digits are mandatory),	
	d – number of hours added to the local TZ because of Daylig	•
	(summertime) adjustment; range is 0-2.	C
AT#CCLK?	Read command returns the current setting of the real-time cloc	k, in the format
	<time>.</time>	
	Note: if the time is set by the network but the DST information	is missing, or the
	time is set by +CCLK command, then the <time></time> format is:	-
	"yy/MM/dd,hh:mm:ss±zz"	
AT#CCLK=?	Test command returns the OK result code.	
Example	AT#CCLK="02/09/07,22:30:00+04,1"	
	OK AT#CCLK?	
	#CCLK: 02/09/07,22:30:25+04,1	
	TO COLLEGE OF THE COL	
	OK	



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3.5.7.1.53. Enhanced Network Selection - #ENS

FENS - Enhanced Network Selection SELINT 2	
AT#ENS=[<mode>]</mode>	Set command is used to activate the ENS functionality.
	Parameter: <mode> 0 - disable ENS functionality (default) 1 - enable ENS functionality; if AT#ENS=1 has been issued, the following values will be automatically set: > at every next power-up a Band GSM 850 and PCS enabled (AT#BND=3) b SIM Application Toolkit enabled on user interface 0 if not previously enabled on a different user interface (AT#STIA=2) > just at first next power-up a Automatic Band Selection enabled (AT#AUTOBND=2) only if the previous setting was equal to AT#AUTOBND=0 b PLMN list not fixed (AT#PLMNMODE=1).</mode>
	Note: the new setting will be available just at first next power-up. Note: If 'Four Band' Automatic Band Selection has been activated (AT#AUTOBND=2), at power-up the value returned by AT#BND? could be different from 3 when ENS functionality is enabled.
	Note: on version 10.0x.xx4 the set command AT#ENS=1 doesn't enable the SIM Application Toolkit if the command AT#ENAUSIM? returns 1.
AT#ENS?	Read command reports whether the ENS functionality is currently enabled or not, in the format: #ENS: <mode> where: <mode> as above</mode></mode>
AT#ENS=?	Test command reports the available range of values for parameter <mode></mode> .
Reference	Cingular Wireless LLC Requirement

3.5.7.1.54. Select Band - #BND

#BND - Select Band		SELINT 0 / 1
AT#BND[=	Set command selects the current band.	





#BND - Select Band	SELINT 0 / 1
[<band>]]</band>	
	Parameter
	<bar> <br< th=""></br<></bar>
	0 - GSM 900MHz + DCS 1800MHz
	1 - GSM 900MHz + PCS 1900MHz
	2 - GSM 850MHz + DCS 1800MHz (available only on quadri-band modules)
	3 - GSM 850MHz + PCS 1900MHz (available only on quadri-band modules)
	Note: This setting is maintained even after power off.
	Note: issuing AT#BND<cr></cr> is the same as issuing the Read command.
	Note: issuing AT#BND= <cr> is the same as issuing the command</cr>
	AT#BND=0 <cr>.</cr>
AT#BND?	Read command returns the current selected band in the format:
	#BND: <band></band>
AT#BND=?	Test command returns the supported range of values of parameter <bah< b="">.</bah<>
	Note: the range of values differs between triband modules and quadric-band
	modules
Note:	Not available for GC864-DUAL, GC864-DUAL V2 and GE864-DUAL V2

#BND - Select Band		SELINT 2
AT#BND=	Set command selects the current band.	
[<band>]</band>		
	Parameter	
	<band>:</band>	
	0 - GSM 900MHz + DCS 1800MHz	
	1 - GSM 900MHz + PCS 1900MHz; this value is not available functionality has been activated (see #ENS)	if the ENS
	2 - GSM 850MHz + DCS 1800MHz (available only on quadri- value is not available if the ENS functionality has been act 3 - GSM 850MHz + PCS 1900MHz (available only on quadri-	ivated (see #ENS)
	Note: This setting is maintained even after power off.	
	Note: if the normal automatic band selection is enabled (AT#AU the last #BND settings can automatically change at power-up; the normally use the command.	,
	Note: if the 'four bands' automatic band selection is enabled (A' then you can issue AT#BND=<bahd></bahd> but it will have no function	



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#BND - Select Band	SELINT 2
	nevertheless every following read command AT#BND? will report that setting.
AT#BND?	Read command returns the current selected band in the format: #BND: <band></band>
AT#BND=?	Test command returns the supported range of values of parameter <bah< b="">. Note: the range of values differs between tri-band modules and quadri-band modules</bah<>
Note:	Not available for GC864-DUAL, GC864-DUAL V2 and GE864-DUAL V2

3.5.7.1.55. Automatic Band Selection - #AUTOBND

#AUTOBND - Automa	*AUTOBND - Automatic Band Selection SELINT 0 / 1	
AT#AUTOBND[=	Set command enables/disables the automatic band selection at po	ower-on.
<value>]</value>		
	Parameter:	
	<value>:</value>	
	0 - disables automatic band selection at power-on (default for a	
	1 - enables automatic band selection at power-on; +COPS=0 is	necessary
	condition to effectively have automatic band selection at nex	-
	automatic band selection stops as soon as a GSM cell is foun	ıd.
	Note: if automatic band selection is enabled the band changes ev	ery about 90
	seconds through available bands until a GSM cell is found.	
	N	1 ' .1
	Note: if parameter <value></value> is omitted the behaviour of Set comm	mand is the same as
	Read command.	
AT#AUTOBND?	Read command returns whether the automatic band selection is e	enabled or not in
	the format:	
	#AUTOBND: <value></value>	
AT#AUTOBND=?	Test command returns the range of supported values for paramet	ter <value< b="">>.</value<>
Note:	Not available for GC864-DUAL, GC864-DUAL V2 and GE864	-DUAL V2

#AUTOBND - Automatic Band Selection SELINT 2		SELINT 2
AT#AUTOBND=	Set command enables/disables the automatic band selection at po	ower-on.
[<value>]</value>		
	Parameter:	
	<value>:</value>	



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#AUTOBND - Automa	itic Band Selection	SELINT 2
#AUTOBND - Automa	0 - disables automatic band selection at <i>next</i> power-up (default except GE865-QUAD, GL865-QUAD and GE910-QUAD) 1 - enables automatic band selection at <i>next</i> power-up; the auto selection stops as soon as a GSM cell is found (deprecated). 2 -enables automatic band selection in four bands (at 850/1900 differently from previous settings it takes <i>immediate</i> effect (QUAD, GL865-QUAD and GE910-QUAD) Note: necessary condition to <i>effectively</i> have automatic band selepower-up (due to either AT#AUTOBND=1 or AT#AUTOBND AT+COPS=0 has to be previously issued Note: if automatic band selection is enabled (AT#AUTOBND=2 every about 90 seconds through available bands until a GSM cellote: if the current setting is equal to AT#AUTOBND=0 and wellote: if the current setti	for all products, matic band and 900/1800); default for GE865- ection at next =2) is that 1) the band changes I is found. re're issuing has been activated
AT#AUTOBND?	Read command returns whether the automatic band selection is the form: #AUTOBND: <value></value>	enabled or not in
AT#AUTOBND=?	Test command returns the range of supported values for paramet	ter <value>.</value>
Note:	Not available for GC864-DUAL, GC864-DUAL V2 and GE864	

3.5.7.1.56. Lock to single band - #BNDLOCK

#BNDLOCK – Lock to single band SELINT 2 AT#BNDLOCK=<LockedBan This command allows to set the single band the device must be locked to, **d**> selectable within those allowed for the specific product. Parameters: <LockedBand>: 0 - disables band locking (factory default); 1 - enables band locking on GSM 900MHz; 2 - enables band locking on DCS 1800MHz; 3 - enables band locking on GSM 850MHz; 4 - enables band locking on PCS 1900MHz. Note: the value set by command is directly stored in NVM and doesn't depend on the specific CMUX instance. Note: the new setting takes effect after a new registration procedure to the network.



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	For this reason it is strongly recommended a power cycle (power-off and power-on the device) after new setting. Another possibility is to keep the device on and to force a new registration to the network as in the following example: - set AT+COPS=1,2,00001 (manual registration to not existing real network) - wait for +CREG: 0,3 - set AT+COPS=0,0 (for automatic registration) or set AT+COPS=1,0, (for manual registration) Note: in case of a four bands device with current setting AT#AUTOBND=0 there might be conflicts between AT#BND and AT#BNDLOCK stored values. It is user responsibility to set proper values avoiding conflicts (no cross check is available between the two commands).
AT#BNDLOCK?	Read command reports the currently stored parameter <lockedband></lockedband> in the format: #BNDLOCK: <lockedband></lockedband>
AT#BNDLOCK=?	Test command reports the supported range of values for parameter LockedBand according to specific product.

3.5.7.1.57. Skip Escape Sequence - #SKIPESC

#SKIPESC - Skip Esc	ape Sequence SELINT 0 / 1
AT#SKIPESC[=	Set command enables/disables skipping the escape sequence +++ while
[<mode>]]</mode>	transmitting during a data connection.
	Parameter: <mode> 0 - doesn't skip the escape sequence; its transmission is enabled (factory default). 1 - skips the escape sequence; its transmission is not enabled.</mode>
	Note: in case of an FTP connection, the escape sequence is not transmitted, regardless of the command setting.
	Note: issuing AT#SKIPESC < CR> is the same as issuing the Read command.
	Note: issuing AT#SKIPESC= <cr> is the same as issuing the command AT#SKIPESC=0<cr>.</cr></cr>
AT#SKIPESC?	Read command reports whether escape sequence skipping is currently enabled or not, in the format:



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#SKIPESC - Skip Escape Sequence		SELINT 0 / 1
	#SKIPESC: <mode></mode>	
AT#SKIPESC=?	Test command reports supported range of values for parameter <	mode>.

#SKIPESC - Skip E	scape Sequence SELINT 2
AT#SKIPESC= [<mode>]</mode>	Set command enables/disables skipping the escape sequence +++ while transmitting during a data connection.
	Parameter: <mode> 0 - doesn't skip the escape sequence; its transmission is enabled (factory default). 1 - skips the escape sequence; its transmission is not enabled. Note: in case of an FTP connection, the escape sequence is not transmitted,</mode>
AT#SKIPESC?	regardless of the command setting. Read command reports whether escape sequence skipping is currently enabled or
AITSMI ESC.	not, in the format: #SKIPESC: <mode></mode>
AT#SKIPESC=?	Test command reports supported range of values for parameter <mode></mode> .

3.5.7.1.58. Escape Sequence Guard Time - #E2ESC

#E2ESC - Escape S	Sequence Guard Time SELINT 0 / 1
AT#E2ESC[=	Set command sets a guard time in seconds for the escape sequence in GPRS to be
[<gt>]]</gt>	considered a valid one (and return to on-line command mode).
	Parameter:
	<gt></gt>
	0 - guard time defined by command S12 (factory default)
	110 - guard time in seconds
	Note: if the Escape Sequence Guard Time is set to a value different from zero, it overrides the one set with S12 .
	Note: issuing AT#E2ESC <cr> is the same as issuing the Read command.</cr>
	Note: issuing AT#E2ESC=<cr></cr> returns the OK result code.
AT#E2ESC?	Read command returns current value of the escape sequence guard time, in the format:
	#E2ESC: <gt></gt>
AT#E2ESC=?	Test command returns the OK result code.

#E2ESC - Escape Sequ	<mark>ence Guard Time</mark>	SELINT 2
AT#E2ESC=	Set command sets a guard time in seconds for the escap	pe sequence in GPRS to be



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#E2ESC - Escape S	equence Guard Time SELINT 2	
[<gt>]</gt>	considered a valid one (and return to on-line command mode).	
	Parameter:	
	<gt></gt>	
	0 - guard time defined by command S12 (factory default)	
	110 - guard time in seconds	
	Note: if the Escape Sequence Guard Time is set to a value different from zero, it overrides the one set with S12 .	
AT#E2ESC?	Read command returns current value of the escape sequence guard time, in the	
	format:	
	#E2ESC: <gt></gt>	
AT#E2ESC=?	Test command returns the range of supported values for parameter <gt>.</gt>	
AT#E2ESC=	Set command sets a guard time in seconds for the escape sequence in GPRS to be	e
[<gt>]</gt>	considered a valid one (and return to on-line command mode).	
	Parameter:	
	<gt></gt>	
	0 - guard time defined by command S12 (factory default)	
	110 - guard time in seconds	
	Note: if the Escape Sequence Guard Time is set to a value different from zero, it overrides the one set with S12 .	

3.5.7.1.59. PPP-GPRS Connection Authentication Type - #GAUTH

#GAUTH - PPP-GPRS	S Connection Authentication Type	SELINT 0 / 1
AT#GAUTH[=	Set command sets the authentication type either for PPP-GPRS and	d PPP-GSM
<type>]</type>	connections.	
	Parameter <type> 0 - no authentication 1 - PAP authentication (factory default) 2 - CHAP authentication Note: if parameter <type> is omitted the behaviour of Set comman Read command.</type></type>	nd is the same as
AT#GAUTH?	Read command reports the current PPP-GPRS connection authenti	ication type in
AI#GAUIII;	the format:	eation type, in
	#GAUTH: <type></type>	
AT#GAUTH=?	Test command returns the range of supported values for parameter	<type>.</type>



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#GAUTH - PPP-GPR	S Connection Authentication Type	SELINT 2
AT#GAUTH=	Set command sets the authentication type either for PPP-GPRS a	nd PPP-GSM
[<type>]</type>	connections.	
	Parameter	
	<type></type>	
	0 - no authentication	
	1 - PAP authentication (factory default)	
	2 - CHAP authentication	
	3 - automatic (PAP and CHAP)	
AT#GAUTH?	Read command reports the current PPP-GPRS connection auther	atiantian type in
AI#GAUIII;	the format:	ilication type, in
	the format.	
	#GAUTH: <type></type>	
AT#GAUTH=?	Test command returns the range of supported values for paramet	er <type>.</type>

3.5.7.1.60. PPP-GPRS Parameters Configuration - #GPPPCFG

#GPPPCFG - PPP-GP	RS Parameters Configuration SELINT 2
AT#GPPPCFG=	Set command sets three parameters for a PPP-GPRS connection.
<hostipaddress></hostipaddress>	
[, <lcptimeout></lcptimeout>	Parameters:
[, <pppmode>]]</pppmode>	AnstIPaddress - Host IP Address that is assigned to the PPP server side (the host application); Sstring type, it can be any valid IP address in the format: xxx.xxx.xxx.xxx. LCPtimeout - LCP response timeout value in 100ms units 10600 - hundreds of ms (factory default is 25) PPPmode - PPP mode 0 - passive mode (default), the module waits the first message coming from the remote application (e.g. LCP Conf Req) before starting the LCP negotiation 1 - active mode, the module starts autonomously the LCP negotiation immediately after the CONNECT message 2 - passive mode, the module waits the first message coming from the remote application (e.g. LCP Conf Req) before starting the LCP negotiation; LCP termination is performed by the module 3 - active mode, the module starts autonomously the LCP negotiation immediately after the CONNECT message; LCP termination is performed by the module Note: if <hostipaddress>="0.0.0.0" (factory default) the Host IP Address assigned to the host application is the previous remote IP Address obtained by the</hostipaddress>
	Network.
AT# GPPPCFG?	Read command reports the current PPP-GPRS connection parameters in the



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#GPPPCFG - PPP-GP	PRS Parameters Configuration	SELINT 2
	format:	
	#GPPPCFG: <hostipaddress>,<lcptimeout>,<pppmode></pppmode></lcptimeout></hostipaddress>	
AT# GPPPCFG=?	Test command returns the range of supported values for parameter	er <lcptimeout></lcptimeout>
	and PPPmode >, in the format:	
	#GPPPCFG: (10-600),(0-3)	

3.5.7.1.61. Enables/disables PPP compression - #GPPPCFGEXT

#GPPPCFGEXT - ena	GPPPCFGEXT – enables/disables PPP compression SELINT 2		
AT#GPPPCFGEXT	Set command enables/disables the use of protocol and address/co	ontrol field	
= <comp>[,<unused_< th=""><th>compression in PPP.</th><th></th></unused_<></comp>	compression in PPP.		
A>[, <unused_b>[,<u< th=""><th></th><th></th></u<></unused_b>			
nused_C>]]]	Parameter:		
	< Comp >		
	0 – disables compression		
	1 – enables compression (default)		
AT#GPPPCFGEXT?	Read command returns the current configuration parameters val	ue:	
	#GPPPCFGEXT: < Comp >,0,0,0 <cr><lf></lf></cr>		
AT#GPPPCFGEXT=	Test command returns the range of supported values for all the p	arameters.	
?			

3.5.7.1.62. RTC Status - #RTCSTAT

#RTCSTAT - RTC St	<mark>atus</mark>	SELINT 0 / 1
AT#RTCSTAT[=	Set command resets the RTC status flag.	
<status>]</status>		
	Parameter:	
	<status></status>	
	0 - Set RTC Status to RTC HW OK	
	Note: the initial value of RTC status flag is RTC HW Error an until a command AT#RTCSTAT=0 is issued.	d it doesn't change
	Note: if a power failure occurs and the buffer battery is down t is set to 1. It doesn't change until command AT#RTCSTAT=0	
	Note: if parameter <status></status> is omitted the behaviour of Set cor as Read command.	mmand is the same
AT#RTCSTAT?	Read command reports the current value of RTC status flag, in the	he format:



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#RTCSTAT - RTC Status		SELINT 0 / 1
	(VD) TO COST A TO	_
	#RTCSTAT: <status></status>	
AT#RTCSTAT=? Test command returns the range of supported values for parameter <status></status>		er <status></status>

#RTCSTAT - RTC St	atus	SELINT 2
AT#RTCSTAT=	Set command resets the RTC status flag.	
[<status>]</status>		
	Parameter:	
	<status></status>	
	0 - Set RTC Status to RTC HW OK	
	Note: the initial value of RTC status flag is RTC HW Error and until a command AT#RTCSTAT=0 is issued.	it doesn't change
	Note: if a power failure occurs and the buffer battery is down the is set to 1. It doesn't change until command AT#RTCSTAT=0 is	
AT#RTCSTAT?	Read command reports the current value of RTC status flag, in th	e format:
	#RTCSTAT: <status></status>	
AT#RTCSTAT=?	Test command returns the range of supported values for parameter	er <status></status>

3.5.7.1.63. GSM Antenna Detection - #GSMAD

#GSMAD - GSM Ante	nna Detection SELINT 2
AT#GSMAD=	Set command sets the behaviour of antenna detection algorithm
<mod>,</mod>	
[<urcmode></urcmode>	Parameters:
[, <interval></interval>	<mod></mod>
[, <detgpio></detgpio>	0 - antenna detection algorithm not active
[, <repgpio>]]]]</repgpio>	 1 - periodic activation of the antenna detection algorithm; detection is started every <interval> period, using <detgpio> for detection; if the algorithm detects a change in the antenna status the module is notified by URC #GSMAD (see format below)</detgpio></interval> 2 - instantaneous activation of the antenna detection algorithm; if the algorithm detects a change in the antenna status the module is notified by URC #GSMAD (see format below); this instantaneous activation doesn't affect a periodic activation eventually started before. This modality is obsolete and is maintained only for backward compatibility. We suggest to use the modality 3 URC format: #GSMAD: <pre></pre>



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- 0 antenna connected.
- 1 antenna connector short circuited to ground.
- 2 antenna connector short circuited to power.
- 3 antenna not detected (open).
- 3 instantaneous activation of the antenna detection algorithm as modality 2 but in this case the command doesn't return until the algorithm ended. The returned value is the antenna presence> status just detected. Format:

AT#GSMAD=3

#GSMAD:

OK

This instantaneous activation doesn't affect a periodic activation eventually started before, then the output format would be:

AT#GSMAD=3

#GSMAD:

OK

#GSMAD: // URC resulting of previous #GSMAD=1

- <ur><urcmode> URC presentation mode. It has meaning and can be set only if<mod> is 1.
- 0 it disables the presentation of the antenna detection URC
- 1 it enables the presentation of the antenna detection URC, whenever the antenna detection algorithm detects a change in the antenna status; the unsolicited message is in the format:

#GSMAD: cerce>

where:

presence> is as before

<interval> - duration in seconds of the interval between two consecutive antenna detection algorithm runs (default is 120). It has meaning and can be set only if <mod> is 1.

..1..3600 - seconds

<detGPIO> - defines which GPIO shall be used as input by the Antenna Detection algorithm. For the <detGPIO> actual range see Test Command

<repGPIO> - defines which GPIO shall be used by the Antenna Detection algorithm to report antenna condition. It has meaning only if <mod> is 1. For the <repGPIO> actual range see Test Command.



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	Note: the URC presentation mode <urcmode></urcmode> is related to the current AT instance only (see +cmux); last <urcmode></urcmode> settings are saved for every instance as extended profile parameters, thus it is possible to restore them either if the multiplexer control channel is released and set up, back and forth. Note: GPIO is set to LOW when antenna is connected. Set to HIGH otherwise Note: #GSMAD parameters, excluding <urcmode></urcmode> , are saved in NVM.
AT#GSMAD?	Read command returns the current parameter settings for #GSMAD command in the format: #GSMAD : <mod>,<urcmode>,<interval>,<detgpio>,<repgpio></repgpio></detgpio></interval></urcmode></mod>
AT#GSMAD=?	Test command reports the supported range of values for parameters <mod>, <urcmode>, <interval>, <detgpio> and <repgpio>.</repgpio></detgpio></interval></urcmode></mod>

3.5.7.1.64. SIM Detection Mode - #SIMDET

#SIMDET - SIM Detect	ction Mode	SELINT 2
AT#SIMDET=	Set command specifies the SIM Detection mode	_
<mode></mode>		
	Parameter:	
	<mode> - SIM Detection mode</mode>	
	0 - ignore SIMIN pin and simulate the status 'SIM Not Inserted	ď'
	1 - ignore SIMIN pin and simulate the status 'SIM Inserted'	
	2 - automatic SIM detection through SIMIN Pin (default)	
AT#SIMDET?	Read command returns the currently selected Sim Detection Mo	ode in the format:
	#SIMDET: <mode>,<simin></simin></mode>	
	where:	
	<mode> - SIM Detection mode, as before</mode>	
	<simin> - SIMIN pin real status</simin>	
	0 - SIM not inserted	
	1 - SIM inserted	
AT#SIMDET=?	Test command reports the supported range of values for parame	ter <mode></mode>

3.5.7.1.65. SIM Enhanced Speed - #ENHSIM

#ENHSIM - SIM Enha	anced Speed	SELINT 2
AT#ENHSIM=	Set command activates or deactivates the Sim Enhanced Speed F	unctionality.
<mod></mod>		
	Parameter:	
	<mod></mod>	





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	0 - Not Active (default for all 7.3.xxx software release) 1 - BRF is (F=512 D=8) (default for 10.00.xxx software release) (For BRF definition refer to ISO-7816-3 Note: value <mod> is saved in NVM and will be used since next module startup or new SIM insertion. Note: module will use the slowest speed between the one programmed and the one supported by the SIM.</mod>
AT#ENHSIM?	Read command returns whether the Sim Enhanced Speed Functionality is currently activated or not, in the format: #ENHSIM: <mod></mod>
AT#ENHSIM=?	Test command reports the supported range of values for parameter <mod></mod> .
Reference	GSM 11.11, ISO-7816-3
Note	It is strongly suggested to verify which is the maximum speed supported by the final application

3.5.7.1.66. Subscriber number - #SNUM

Number SELINT 2
Set command writes the MSISDN information related to the subscriber (own
number) in the EFmsisdn SIM file.
Parameter:
<index> - record number</index>
The number of record in the EFmsisdn depends on the SIM. If the ENS
functionality has not been previously enabled (see <u>#ENS</u>), <index>=1 is the only</index>
value admitted. If only <index></index> value is given, then delete the EFmsisdn record in
location <index></index> is deleted.
<number> - string containing the phone number</number>
The string could be written between quotes. If the ENS functionality has been
previously enabled (see <u>#ENS</u>) "+" at start only is also admitted (international
numbering scheme).
salahas alahammada strina arasistahta samahas Defeatambada isamata
<alpha> - alphanumeric string associated to <number>. Default value is empty string ("") atherwise the used character set should be the one selected with LCSCS.</number></alpha>
string (""), otherwise the used character set should be the one selected with +CSCS. The string could be written between quotes, the number of characters depends on
the SIM. If empty string is given (""), the corresponding <alpha></alpha> will be an empty
string.
Note: the command return ERROR if EFmsisdn file is not present in the SIM or if
MSISDN service is not allocated and activated in the SIM Service Table (see 3GPP)



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	TS 11.11).
AT#SNUM=?	Test command returns the OK result code

3.5.7.1.67. SIM Answer to Reset - #SIMATR

#SIMATR – SIM Answer	Γο Reset	ELINT 2
AT#SIMATR This command returns the characters collected from the Reset/ATR procedure.		Reset/ATR
	Note: The ATR is the information presented by the SIM t beginning of the card session and gives operational requir (ISO/IEC 7816-3).	

3.5.7.1.68. CPU Clock Mode - #CPUMODE

#CPUMODE - CPU C	lock Mode SELINT 2	٦
AT#CPUMODE=	Set command specifies the CPU clock mode	
<mode></mode>		
	Parameter:	
	<mode></mode>	
	0 - normal CPU clock @26Mhz	
	1 - CPU clock @52Mhz	
	2 - CPU clock @52Mhz, during GPRS TX/RX only	
	3 – CPU clock @104Mhz	
	4 - CPU clock @104Mhz, during GPRS TX/RX only	
	Note: using <mode></mode> greater than 0, the power consumption will increase	
AT#CPUMODE?	Read command returns the currently selected CPU clock mode in the format:	
	#CPUMODE: <mode></mode>	
AT#CPUMODE=?	Test command reports the supported range of values for parameter <mode></mode> .	

3.5.7.1.69. GSM Context Definition - #GSMCONT

#GSMCONT - GSM C	<mark>ontext Definition</mark>	SELINT 2
AT#GSMCONT=	Set command specifies context parameter values for the only C	SM context,
<cid>[,<p_type>,</p_type></cid>	identified by the (local) context identification parameter 0.	





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<csd_num>]</csd_num>	
	Parameters:
	<cid>- context Identifier; numeric parameter which specifies the only GSM context</cid>
	< P_type> - protocol type; a string parameter which specifies the type of protocol "IP" - Internet Protocol
	< CSD_num > - phone number of the internet service provider
	Note: issuing #GSMCONT=0 causes the values for context number 0 to become undefined.
AT#GSMCONT?	Read command returns the current settings for the GSM context, if defined, in the
	format:
	+GSMCONT: <cid>,<p_type>,<csd_num></csd_num></p_type></cid>
AT#GSMCONT=?	Test command returns the supported range of values for all the parameters.

3.5.7.1.70. IPEGSM configurations - #GSMCONTCFG

#GSMCONTCFG - IPEGSM configurations		SELINT 2
AT#GSMCONTCFG=	Set command sets the IPEGSM configuration.	
<actto>[,<unused_a></unused_a></actto>		
[, <unused_b>[,<unused_c>]]]]</unused_c></unused_b>	Parameters:	
	<actto> - activation timer value</actto>	
	0 – no timer (default)	
	5065535 – timeout value in hundreds of milli	seconds
	Note: this timeout starts as soon as the PPP acti to EasyGPRS User Guide). It does not include t CSD call to be established.	`
	Note: the value set by command is directly store doesn't depend on the specific AT instance.	ed in NVM and
AT#GSMCONTCFG?	Read command returns the current configuration value:	n parameters
	#GSMCONTCFG: <actto>,0,0,0<cr><lf></lf></cr></actto>	
AT#GSMCONTCFG=?	Test command returns the range of supported vasubparameters.	alues for all the

3.5.7.1.71. Show Address - #CGPADDR

#CGPADDR - Show A	ddress SELINT 2
AT#CGPADDR=	Execution command returns either the IP address for the GSM context (if specified)





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[<cid>[</cid>	, <cid></cid>
[,]]]	

and/or a list of PDP addresses for the specified PDP context identifiers

Parameters:

<cid> - context identifier

0 - specifies the GSM context (see +**GSMCONT**).

1..5 - numeric parameter which specifies a particular PDP context definition (see +CGDCONT command).

Note: if no **<cid>** is specified, the addresses for all **defined** contexts are returned.

Note: issuing the command with more than 6 parameters raises an error.

Note: the command returns only one row of information for every specified **<cid>**, even if the same **<cid>** is present more than once.

The command returns a row of information for every specified **<cid>** whose context has been already defined. No row is returned for a <cid> whose context has not been defined yet. Response format is:

#CGPADDR: <cid>,<address>[<CR><LF> #CGPADDR: <cid>,<address>[...]]

where:

<cid> - context identifier, as before

<address> - its meaning depends on the value of <cid>

- a) if <cid> is the (only) GSM context identifier (<cid>=0) it is the dynamic address assigned during the GSM context activation.
- b) if **<cid>** is a PDP context identifier (**<cid>** in (1..5)) it is a string that identifies the terminal in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the +CGDCONT command when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>.

Note: if no address is available the empty string ("") is represented as **<address>**.

AT#CGPADDR=?

Test command returns a list of defined <cid>s.

Example

AT#SGACT=0,1

#SGACT: xxx.yyy.zzz.www

AT#CGPADDR=0

#CGPADDR: 0,"xxx.yyy.zzz.www"

AT#CGPADDR=? #CGPADDR: (0)





























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OK

3.5.7.1.72. Network Scan Timer - #NWSCANTMR

#NWSCANTMR - Net	work Scan Timer SELINT 2
AT#NWSCANTMR=	Set command sets the Network Scan Timer that is used by the module to schedule
<tmr></tmr>	the next network search when it is without network coverage (no signal).
	Parameter:
	<tmr> - timer value in units of seconds</tmr>
	5 3600 - time in seconds (default 5 secs.)
AT#NWSCANTMR	Execution command reports time, in seconds, when the next scan activity will be
	executed. The format is:
	#NWSCANTMREXP: <time></time>
	Note: if <time></time> is zero it means that the timer is not running
AT#NWSCANTMR?	Read command reports the current parameter setting for #NWSCANTMR
	command in the format:
	#NWSCANTMR: <tmr></tmr>
AT#NWSCANTMR=?	Test command reports the supported range of values for parameter <tmr></tmr>
Note	How much time it takes to execute the network scan depends either on how much
	bands have been selected and on network configuration (mean value is 5 seconds)

3.5.7.1.73. Call Establishment Lock - #CESTHLCK

#CESTHLCK - Call e	stablishment lock SELINT 2
AT#CESTHLCK=	This command can be used to disable call abort before the DCE enters connected
[<closure_type>]</closure_type>	state.
	< closure_type >: 0 - Aborting the call setup by reception of a character is generally possible at any time before the DCE enters connected state (default) 1 - Aborting the call setup is disabled until the DCE enters connected state
AT#CESTHLCK?	Read command returns the current setting of <closure_type></closure_type> parameter in the format: #CESTHLCK: <closure_type></closure_type>
AT#CESTHLCK=?	Test command returns the supported range of values for the <closure_type></closure_type> parameter



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3.5.7.1.74. Phone Activity Status - #CPASMODE

#CPASMODE – AT+CPAS answer mode SELINT 2		
AT#CPASMODE= <mode></mode>	Set command enables/disables a modified AT+CPAS command response when the command is issued before an incoming call starts ringing (RING unsolicited code sent to the TE). If <mode> is 0, AT+CPAS response will be +CPAS: 4 otherwise the response will be +CPAS: 3 Parameter: <mode> - AT+CPAS response selection 0 - standard AT+CPAS response (factory default) 1 - modified AT+CPAS response. Note: the value set by command is directly stored in NVM and doesn't depend on the specific AT instance</mode></mode>	
AT#CPASMODE?	Read command reports the currently selected <mode></mode> in the format: #CPASMODE: <mode></mode>	
AT#CPASMODE=?	Test command reports the supported range of values for parameter <mode></mode>	

3.5.7.1.75. ICCID SIM file reading mode - #FASTCCID

#FASTCCID - Set IC	CID SIM file reading mode SELINT 2	
AT#FASTCCID=	The set command is used to specify the ICCID reading mode.	
[<fast>]</fast>		
	<fast>: a numeric parameter which indicates the reading mode</fast>	
	0 – the ICCID value is read from the SIM card each time the AT#CCID command is issued and not during SIM card initialization (default)	
	1 – the ICCID value is read from the SIM card during SIM card initialization	
	Note: the value is saved in NVM and has effect only at the next power cycle.	
AT#FASTCCID?	The read command returns the currently selected reading mode in the form:	
	#FASTCCID: <fast></fast>	
AT#FASTCCID=?	Test command reports the supported list of currently available <fast>s.</fast>	



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3.5.7.1.76. Write to I2C - #I2CWR

#I2CWR – Write to I2C	SELINT 2
-----------------------	----------

AT#I2CWR= <sdaPin>, <sclPin>, <deviceId>, <registerId>,

<len>

This command is used to Send Data to an I2C peripheral connected to module GPIOs

<sdaPin >: GPIO number for SDA . Valid range is "any input/output pin" (see Test Command.)

<sclPin>: GPIO number to be used for SCL. Valid range is "any output pin" (see Test Command).

<deviceId>: address of the I2C device, with the LSB, used for read\write command. It doesn't matter if the LSB is set to 0 or to 1. 10 bit addressing supported.

Value has to be written in hexadecimal form (without 0x).

<registerId>: Register to write data to , range 0..255.
Value has to be written in hexadecimal form (without 0x).

number of data to send. Valid range is 1-254.

The module responds to the command with the prompt '>' and awaits for the data to send.

To complete the operation send **Ctrl-Z** char (**0x1A** hex); to exit without writing the message send **ESC** char (**0x1B** hex).

Data shall be written in Hexadecimal Form.

If data are successfully sent, then the response is **OK**.

If data sending fails for some reason, an error code is reported. Example if CheckAck is set and no Ack signal was received on the I2C bus

E.g.

AT#I2CWR=2,3,20,10,14

> 00112233445566778899AABBCCDD<ctrl-z>

OK

Set GPIO2 as SDA, GPIO3 as SCL;

Device I2C address is 0x20;

0x10 is the address of the first register where to write I2C data;

14 data bytes will be written since register 0x10

NOTE: At the end of the execution GPIO will be restored to the original setting (check AT#GPIO Command) $\,$

NOTE: device address, register address where to read from\ write to, and date bytes have to be written in hexadecimal form without 0x.





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#I2CWR – Write to I20	<mark>C</mark>	SELINT 2
AT#I2CWR=?	Test command reports the supported list of currently available <serv< th=""><th>vice>s.</th></serv<>	vice>s.

3.5.7.1.77. Read to I2C - #I2CRD

#I2CRD – Read to I2C	SELINT 2
AT#I2CRD=	This command is used to Receive Data from an I2C peripheral connected to module
<sdapin>,</sdapin>	GPIOs
<sclpin>,</sclpin>	
<deviceid>,</deviceid>	sdaPin >: GPIO number for SDA . Valid range is "any input/output pin" (see Test
<registerid>,</registerid>	Command.)
<len></len>	
	<sclpin>:</sclpin> GPIO number to be used for SCL. Valid range is "any output pin" (see Command Test).
	deviceId>: address of the I2C device, with the LSB, used for read\write command. It doesn't matter if the LSB is set to 0 or to 1. 10 bit addressing supported.
	Value has to be written in hexadecimal form (without 0x before).
	<pre><registerid>: Register to read data from, range 0255.</registerid></pre>
	Value has to be written in hexadecimal form (without 0x before).
	<le>>: number of data to receive. Valid range is 1-254.</le>
	Data Read from I2C will be dumped in Hex:
	E.g. AT#I2CRD=2,3,20,10,12 #I2CRD: 00112233445566778899AABBCC OK
	NOTE: If data requested are more than data available in the device, dummy data (normally 0x00 or 0xff) will be dumped.
	NOTE: At the end of the execution GPIO will be restored to the original setting (check AT#GPIO Command)
	NOTE: device address, register address where to read from\ write to, and date bytes have to be written in hexadecimal form without 0x.
AT#I2CRD=?	Test command reports the supported list of currently available <service>s.</service>

3.5.7.1.78. Power saving mode ring - #PSMRI

#PSMRI – Power Savi	ng Mode Ring	SELINT 2
AT#PSMRI=	Set command enables/disables the Ring Indicator pin response to	o an





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<x></x>	URC message while modem is in power saving mode. If enabled, a negative going pulse is generated, when URC message for specific event is invoked. The duration of this pulse is determined by the value of <x>. Parameter: <x> - RI enabling 0 - disables RI pin response for URC message(factory default) 50-1150 - enables RI pin response for URC messages. Note: when RING signal from incoming call/SMS/socket listen is enabled, the behaviour for #PSMRI will be ignored. Note: to avoid missing of URC messages while modem is in power saving mode flow control has to be enabled in command mode (AT#CFLO=1) Note: the behavior for #PSMRI is invoked, only when modem is in sleep mode (AT+CFUN=5 and DTR Off on Main UART) Note: the value set by command is stored in the profile extended section and doesn't depend on the specific AT instance</x></x>
AT#PSMRI?	Read command reports the duration in ms of the pulse generated, in the format: #PSMRI: <x></x>
AT#PSMRI=?	Test command reports the supported range of values for parameter <x></x>

3.5.7.1.79. Software level selection - #SWLEVEL

#SWLEVEL – SW Level select	sion SELINT 2
AT#SWLEVEL= <level></level>	Set command enables 2 enhanced features:
	1) It permits to get a faster indication of SIM status when the PIN is not required (see command #QSS)
	2) DTMF duration (see AT+VTS;AT+VTD) can be controlled even for values shorter than 300mS.
	Parameters:
	<level> - SW level</level>
	0 - disable SW level (default for for all products, except GE865-QUAD, GE864-DUAL V2, GL865-DUAL and GL868-DUAL)
	1 - enable SW level (default for GE865-QUAD, GE864-DUAL V2, GL865-DUAL and GL868-DUAL)
	Note1: the value of <level></level> parameter is directly stored in NVM and doesn't depend on the specific AT instance.



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	Note2: please remember that DTMFs are generated at network level, and the real duration can be operator dependant.	
AT#SWLEVEL?	Read command reports the currently selected <level></level> in the format:	
	#SWLEVEL: <level></level>	
AT#SWLEVEL=?	Test command reports the supported range of values for parameter< evel>	

3.5.7.1.80. Control Command Flow - #CFLO

#CFLO – Command F	low Control SELINT 2
AT#CFLO=	Set command enables/disables the flow control in command mode. If enabled,
<enable></enable>	current flow control is applied to both data mode and command mode.
	Parameter: <enable> - 0 - disable flow control in command mode <default value=""> 1 - enable flow control in command mode Note: setting value is saved in the profile</default></enable>
AT#CFLO?	Read command returns current setting value in the format
	#CFLO: <enable></enable>
AT#CFLO=?	Test command returns the range of supported values for parameter <enable></enable>

3.5.7.1.81. Report concatenated SMS indexes - #CMGLCONCINDEX

#CMGLCONCINDEX – Report concatenated SMS indexes SELINT 2			
AT#CMGLCONCINDEX	The command will report a line for each concatenated SMS containing:		
	#CMGLCONCINDEX: N,i,j,k,		
	where N is the number of segments that form the whole conca i,j,k are the SMS indexes of each SMS segment, 0 if se received		
	If no concatenated SMS is present on the SIM, only OF	result code will	
	be returned.		
AT#CMGLCONCINDEX=?	Test command returns OK result code.		
Example	at#cmglconcindex		
	#CMGLCONCINDEX: 3,0,2,3		
	#CMGLCONCINDEX: 5,4,5,6,0,8		
	OK		
	Oix		



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3.5.7.1.82. Codec Information - #CODECINFO

#CODECINFO – Codec Information

SELINT 2

AT#CODECINFO[=<format>[,

<mode>]]

This command is both a set and an execution command.

Set command enables/disables codec information reports depending on the parameter **<mode>**, in the specified **<format>**.

Parameters:

<format>

- 0 numeric format (default)
- 1 textual format

<mode>

- 0 disable codec information unsolicited report (default)
- 1 enable codec information unsolicited report only if the codec changes
- 2 enable short codec information unsolicited report only if the codec changes

If <mode>=1 the unsolicited channel mode information is reported in the following format:

```
(if <format>=0)
#CODECINFO: <codec_used>,<codec_set>
(if <format>=1)
#CODECINFO: <codec_used>,<codec_set1>
[,<codec_set2>[..[,codec_setn]]]
```

If <mode>=2 the unsolicited codec information is reported in the following format:

```
#CODECINFO: <codec_used>
```

The reported values are described below.

Execution command reports codec information in the specified **<format>**.

```
(if <format>=0)
#CODECINFO: <codec_used>,<codec_set>
(if <format>=1)
#CODECINFO: <codec_used>,<codec_set1>
[,<codec_set2>[..[,codec_setn]]]
```

The reported values are:





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#CODECINFO - Codec Information

SELINT 2

(if < format > = 0)

<codec used> - one of the following channel modes:

- 0 no TCH
- 1 full rate speech 1 on TCH
- 2 full rate speech 2 on TCH
- 4 half rate speech 1 on TCH
- 8 full rate speech 3 AMR on TCH
- 16 half rate speech 3 AMR on TCH
- 128 full data 9.6
- 129 full data 4.8
- 130 full data 2.4
- 131 half data 4.8
- 132 half data 2.4
- 133 full data 14.4

<codec set>

- 1..31 sum of integers each representing a specific codec mode:
 - 1 FR, full rate mode enabled
 - 2 EFR, enhanced full rate mode enabled
 - 4 HR, half rate mode enabled
 - 8 FAMR, AMR full rate mode enabled
 - 16 HAMR, AMR half rate mode enabled

(if < format > = 1)

<codec used> - one of the following channel modes:

None - no TCH

FR - full rate speech 1 on TCH

EFR - full rate speech 2 on TCH

HR - half rate speech 1 on TCH

FAMR - full rate speech 3 – AMR on TCH

HAMR - half rate speech 3 - AMR on TCH

FD96 - full data 9.6

FD48 - full data 4.8

FD24 - full data 2.4

HD48 - half data 4.8

HD24 - half data 2.4

FD144 - full data 14.4

<codec setn>

FR - full rate mode enabled

EFR - enhanced full rate mode enabled

HR - half rate mode enabled

FAMR - AMR full rate mode enabled

HAMR - AMR half rate mode enabled





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#CODECINFO – Codec Information SELINT 2			
	Note: The command refers to codec information in speech call and to channel mode in data/fax call. Note: if AT#CODEC is 0, the reported codec set for <format>=0</format> is 31 (all		
	codec).		
AT#CODECINFO?	Read command reports <format></format> and <mode></mode> parameter values in the format: #CODECINFO: <format></format> , <mode></mode>		
AT#CODECINFO=?	Test command returns the range of supported <format></format> and <	node>.	

3.5.7.1.83. Second Interface Instance - #SII

#SII – Second Interface Instanc	e SELINT 2
AT#SII= <inst>[,<rate>[,<form< th=""><th>This command activates one of the three AT instances available, and</th></form<></rate></inst>	This command activates one of the three AT instances available, and
at>[, <parity>]]]</parity>	assigns it to the ASC1 serial port at a particular speed and format.
	Parameters:
	<inst>:</inst>
	is a number that identifies the instance that will be activated on ASC1. The
	parameter is mandatory and can be 0, 1 or 2:
	0 – disables the other AT instance and restores the trace service;
	1 – enables instance 1;
	2 – enables instance 2;
	<rate>:</rate>
	Set command specifies the DTE speed at which the device accepts
	commands during command mode operations; it may be used to fix the
	DTE-DCE interface speed. The default value is 115200. It has sense only
	if <inst></inst> parameter has value either 1 or 2.
	Parameter:
	300
	1200
	2400
	4800
	9600
	19200
	38400
	57600
	115200
	<format>:</format>
	determines the number of bits in the data bits, the presence of a parity bit,
	and the number of stop bits in the start-stop frame. The default value is





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	3,0, (N81) format. It has sense only if <inst></inst> parameter has value either 1
	or 2.
	Parameter:
	1 - 8 Data, 2 Stop
	2 - 8 Data, 1 Parity, 1 Stop
	3 - 8 Data, 1 Stop
	5 - 7 Data, 1 Parity, 1 Stop
	<pre><parity>:</parity></pre>
	determines how the parity bit is generated and checked, if present. It has a
	meaning only if <format></format> parameter has value either 2 or 5 and only if
	<inst> parameter has value either 1 or 2.</inst>
	Parameter:
	0 - Odd
	1 - Even
	Note: the value set by command is directly stored in NVM and doesn't
	depend on the specific AT instance.
	Note: two sets of <rate></rate> , <format></format> and <parity></parity> parameters values are
	stored in NVM: one for instance 1 ($<$ inst $>$ = 1) and the other for instance
	2 (<inst></inst> = 2). The <rate></rate> , <format></format> and <parity></parity> parameters values
	are ignored when <inst></inst> parameter has value 0.
	Note: ASC1 port doesn't support hardware flow control.
AT#SII?	Read command reports the currently active parameters settings in the
	format:
	#SII: <inst>[,<rate>,<format>,<parity>]</parity></format></rate></inst>
	Note: the <rate></rate> , <format></format> and <parity></parity> parameters values are showed
	only if <inst></inst> parameter has value either 1 or 2.
A THCII_9	That a common discount the common to discount of making from the common to the
AT#SII=?	Test command reports the supported range of values for parameter <inst></inst> ,
	<rate>, <format> and <parity></parity></format></rate>

3.5.7.1.84. SIMIN pin configuration - #SIMINCFG

#SIMINCFG – SIMIN pin configuration SELINT 2	
AT#SIMINCFG= <gpio_pin></gpio_pin>	This command allows to configure a General Purpose I/O pin as SIM DETECT input
	Parameters: <gpio pin=""> - GPIO pin number:</gpio>



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	0 – no GPIO pin is selected (default value) 1 to Max_GPIO_Pin_Number
	Note: Max_GPIO_Pin_Number is the highest GPIO pin number available: this value depends on the hardware. (See Test command or Hardware User Guide)
AT#SIMINCFG?	Read command reports the selected GPIO pin in the format:
	#SIMINCFG: <gpio_pin></gpio_pin>
AT#SIMINCFG=?	Test command reports supported range of values for parameter
	<gpio_pin></gpio_pin>

3.5.7.1.85. System turn-off - #SYSHALT

#SYSHALT – system turn-off	SELINT 0,1,2
AT#SYSHALT[=	The module is turned off. It can be awaken by reset pin, alarm or DTR pin
<gpio_restore>,</gpio_restore>	transition to low.
<dtr_wakeup_en>]</dtr_wakeup_en>	Parameters:
	< GPIO_restore >:
	0 – GPIOs and serial ports pins are left unchanged (default)
	1 – GPIO and serial pins are set in input with pull down
	<pre><dtr_wakeup_en>:</dtr_wakeup_en></pre>
	0 – DTR has no effect on module turned off by SYSHALT (default)
	1 – DTR transition from high to low turns on again the module turned off
	by SYSHALT command
AT#SYSHALT?	Read command reports the default state of the parameters
	<pre><gpio_restore> and <dtr_wakeup_en> in the format:</dtr_wakeup_en></gpio_restore></pre>
	#SYSHALT: 0,0
AT#SYSHALT=?	Test command reports supported range of values for all parameters.

3.5.7.1.86. Enable USIM application - #ENAUSIM

#ENAUSIM – Enable USIM application		SELINT 2
AT#ENAUSIM= <enable></enable>	This command enables/disables the USIM application	
	Parameters: <enable>:</enable>	





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	0: USIM application Disabled 1: USIM application Enabled	
	Note: the value set by command is directly stored in NVM and available on following reboot. USIM application activation/deactivation is only performed at power on. Each time enable value is changed a power cycle is needed	
	Note: when the USIM application is enabled, SIM Application Toolkit will be automatically disabled and cannot be activated. In particular, the request of SAT activation (see #STIA) will return ERROR and entering AT#ENS = 1 doesn't activate SAT.	
AT#ENAUSIM?	Read command reports the currently selected <enable></enable> in the format: #ENAUSIM: <enable></enable>	
AT#ENAUSIM=?	Test command reports the supported range of values for parameter <enable></enable>	

3.5.7.1.87. Select language - #LANG

#LANG – select language	SELINT 2
AT#LANG= <lan></lan>	Set command selects the currently used language for displaying different messages Parameter: <lan> - selected language "en" - English (factory default) "it" - Italian</lan>
AT#LANG?	Read command reports the currently selected <lan> in the format: #LANG: <lan></lan></lan>
AT#LANG=?	Test command reports the supported range of values for parameter <lan></lan>

3.5.7.1.88. Call forwarding Flags - #CFF

#CFF - Call Forwarding	<mark>g Flags</mark>	SELINT 2
AT#CFF= <enable></enable>	Set command enables/disables the presentation of the SIM call URC.	forwarding flags
	Parameter:	





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#CFF – Call Forw	arding Flags	SELINT 2
#CFF — Call Forw	<pre>cerable></pre>	all Forwarding , at startup, the ney are currently
	0 – CFU disabled 1 – CFU enabled < fwdtonum > - number incoming calls are forwarded to	
AT#CFF?	Read command reports whether the presentation of the call for is currently enabled or not, and, if the flags field is present in the status of the call forwarding flags as they are currently stored number incoming calls are forwarded to. The format is: #CFF: <enable>[,<status>,< fwdtonum >]</status></enable>	ne SIM, the current
AT#CFF=?	Test command returns the range of available values for parameter <enable></enable> .	

3.5.7.1.89. Hang up call - #CHUP

#CHUP - Hang	<mark>Up Call</mark>	SELINT 2
AT#CHUP	Execution command ends all active and held calls, also if a r	nulti-party session is





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#CHUP - Hang Up Ca	11	SELINT 2
	running. It also allows disconnecting of a data call from a CMU different from the one that was used to start the data call.	X instance
AT#CHUP=?	Test command returns the OK result code	

3.5.7.1.90. Set Encryption algorithm - #ENCALG

#ENCALG – Set Encryption Al	#ENCALG – Set Encryption Algorithm SELINT 2	
AT#ENCALG=[<encgsm>][, <encgprs>]</encgprs></encgsm>	This command enables or disables the GSM and algorithms supported by the module.	l/or GPRS encryption
	Parameters: <encgsm>: 0 – no GSM encryption algorithm 17 - sum of integers each representing a specialgorithm: 1 – A5/1 2 – A5/2 4 – A5/3 255 - reset the default values</encgsm>	ific GSM encryption
	<pre><encgprs>: 0 - no GPRS encryption algorithm 13 - sum of integers each representing a specialgorithm: 1 - GEA1 2 - GEA2 255 - reset the default values </encgprs></pre> Note: the values are stored in NVM and available	
AT#ENCALG?	Read command reports the currently selected < <pre><encgprs>, and the last used <usegsm> and format: #ENCALG: <encgsm>,<encgprs>,<usedg< pre=""></usedg<></encgprs></encgsm></usegsm></encgprs></pre>	<usegprs> in the</usegprs>
	Parameters: <usedgsm>: 0 - no GSM encryption algorithm 1 - A5/1 2 - A5/2 4 - A5/3</usedgsm>	



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	<usedgprs>:</usedgprs>	
	0 – no GPRS encryption algorithm	
	1 – GEA1	
	2 – GEA2	
AT#ENCALG=?	Test command reports the supported range of values for parameters in the	
	format:	
	< encGSM > and <encgprs>.</encgprs>	
Example	AT#ENCALG?	
1	#ENCALG: 5,2,1,1	
	OK	
	AT#ENCALG=5,1	
	OK	
	OK	
	gots the CSM enemention algorithm 45/1 and 45/2 and the CDDS	
	sets the GSM encryption algorithm A5/1 and A5/3, and the GPRS	
	encryption algorithm GEA1.	
	It will be available at the next reboot.	
	AT#ENCALG?	
	#ENCALG: 5,2,1,1	
	The last two values indicate that the last used GSM encryption algorithm	
	is A5/1 and the last used GPRS encryption algorithm is GEA1	
	After reboot	
	AT#ENCALG?	
	#ENCALG: 5,1,1,1	
	(IDI OLDO: 5,1,1,1	

3.5.7.1.91. RS485 enable/disable and configure - #RS485

#RS485 – RS485 enable/disable	and configure	SELINT 2
AT#RS485= <enable></enable>	Set command enables/disables the partial simulation of the RS485	
[, <gpio>]</gpio>	standard using an additional configurable gr	pio. Optionally it allows
	specifying the GPIO to use.	
	Parameters:	
	<enable> - enable/disable the simulation:</enable>	
	0 – disable the protocol simulation	
	1 – enable the protocol simulation	
	Note: if gpio is omitted, the first available (GPIO will be selected.



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	<gpio> - GPIO pin number: The test command returns the range of usable GPIO; this value depends on the hardware. Note: if <enable>=0, <gpio> has no meaning and can be omitted, otherwise it is mandatory to set this parameter.</gpio></enable></gpio>	
	Note: the value set by command is stored in NVM.	
	Note: sending two consecutive enable commands without a disable between them will produce an error; the configuration will remain the first.	
AT#RS485?	Read command reports the current state and the selected GPIO in the format: #RS485: < enable >, < gpio >	
AT#RS485=?	Test command reports the supported range of values for the parameters < enable > and < gpio >	

3.5.7.2. AT Run Commands

3.5.7.2.1. Enable SMS Run AT Service - #SMSATRUN

#SMSATRUN – Enable S	SMS AT Run service	SELINT 2
AT#SMSATRUN=	Set command enables/disables the SMS AT RUN service.	
<mod></mod>		
	Parameter:	
	< mod >	
	0: Service Disabled	
	1: Service Enabled	
	Note1: When the service is active on a specific AT instance (see AT#SMSATRUNCFG), that instance cannot be used for any other s for OTA service that has the highest priority. For example in the multiplexer request to establish the Instance, the be rejected.	
	Note2: the current settings are stored in NVM.	
AT#SMSATRUN?	Read command returns the current settings of <mode> and the value the format:</mode>	e of <stat> in</stat>
	# SMSATRUN: <mod>,<stat></stat></mod>	
	where: <stat> - service status 0 - not active</stat>	



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#SMSATRUN – Enable S	SMS AT Run service SELINT 2	
	1 - active	
AT#SMSATRUN =?	Test command returns the supported values for the SMSATRUN parameters	
Notes:	By default the SMS ATRUN service is disabled	
	It can be activated either by the command AT#SMSATRUN or	
	receiving a special SMS that can be sent from a Telit server.	

3.5.7.2.2. Set SMS Run AT Service parameters - #SMSATRUNCFG

#SMSATRUNCFG – Set SMS AT Run Parameters AT#SMSATRUNCFG= Set command configures the SMS AT RUN service. <instance> [,<urcmod> Parameter: [,<timeout>]] <instance>: AT instance that will be used by the service to run the AT Command. Range 2 - 3, default 3. <urcmod>: 0 – disable unsolicited message 1 - enable an unsolicited message when an AT command is requested via SMS (default). When unsolicited is enabled, the AT Command requested via SMS is indicated to TE with unsolicited result code: #SMSATRUN: <Text> #SMSATRUN: AT+CGMR;+CGSN;+GSN;+CCLK Unsolicited is dumped on the instance that requested the service activation. <timeout>: It defines in minutes the maximum time for a command execution. If timeout expires the module will be rebooted. Range 1 - 60, default 5. Note 1: the current settings are stored in NVM. Note 2: the instance used for the SMS AT RUN service is the same used for the EvMoni service. Therefore, when the #SMSATRUNCFG sets the <instance> parameter, the change is reflected also in the <instance> parameter of the #ENAEVMONICFG command, and viceversa. Note 3: the set command returns ERROR if the command AT#ENAEVMONI? returns 1 as <mod> parameter or the command AT#SMSATRUN? returns 1 as <mod> parameter



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#SMSATRUNCFG – Set SMS AT Run Parameters		
AT#SMSATRUNCFG? Read command returns the current settings of parameters in the format:		
	#SMSATRUNCFG: <instance>,<urcmod>,<timeout></timeout></urcmod></instance>	
AT#SMSATRUNCFG=?	Test command returns the supported values for the SMSATRUNCFG	
	parameters	

3.5.7.2.3. SMS AT Run White List - #SMSATWL

#SMSATWL – SMS A		SELINT 2
AT#SMSATWL=	Set command to handle the white list.	
<action> ,<index> [,<entrytype> [,<string>]]</string></entrytype></index></action>	<action>: 0 - Add an element to the WhiteList 1 - Delete an element from the WhiteList 2 - Print and element of the WhiteList</action>	
	<index>: Index of the WhiteList. Range 1-8</index>	
	< entryType >: 0 - Phone Number 1 - Password	
	NOTE: A maximum of two Password Entry can be present at same time white List	e in the
	<pre><string>: string parameter enclosed between double quotes containing phone number or the password</string></pre>	or the
	Phone number shall contain numerical characters and/or the character "beginning of the string and/or the character "*" at the end of the string. Password shall be 16 characters length	+" at the
	NOTE: When the character "*" is used, it means that all the numbers th with the defined digit are part of the white list.	at begin
	E.g. "+39*" All Italian users can ask to run AT Command via SMS "+39349*" All vodafone users can ask to run AT Command via SMS	S.
AT#SMSATWL?	Read command returns the list elements in the format:	



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#SMSATWL - SMS A	T Run White List	SELINT 2
	#SMSATWL: [<entrytype>,<string>]</string></entrytype>	
AT#SMSATWL=?	Test command returns the supported values for the parameter <action></action>	, <index></index>
	and <entrytype></entrytype>	

3.5.7.2.4. Set TCP Run AT Service parameter - #TCPATRUNCFG

#TCPATRUNCFG- Set TO	CP AT Run Service Parameters	SELINT 2
AT#TCPATRUNCFG=	Set command configures the TCP AT RUN service Para	ameters:
<connid></connid>		
, <instance></instance>	<connid></connid>	
, <tcpport></tcpport>	socket connection identifier. Default 1.	
, <tcphostport></tcphostport>		
, <tcphost></tcphost>	Range 16. This parameter is mandatory.	
[, <urcmod></urcmod>	<instance>:</instance>	
[, <timeout></timeout>	AT instance that will be used by the service to run the A	AT Command. Default
[, <authmode></authmode>	2. Range 2 - 3. This parameter is mandatory.	
[, <retrycnt></retrycnt>		
[, <retrydelay>]]]]</retrydelay>	<tcpport></tcpport>	
	Tcp Listen port for the connection to the service in service 1024. Range 165535. This parameter is mandatory.	er mode. Default
	<tcphostport> Tcp remote port of the Host to connect to, in client mod Range 165535. This parameter is mandatory.</tcphostport>	le. Default 1024.
	<tcphost> IP address of the Host, string type. This parameter can be either: - any valid IP address in the format: "xxx.xxx.xx.x." - any host name to be solved with a DNS query This parameter is mandatory. Default ""."</tcphost>	xxx"
	<ure><ure>curemod>:</ure></ure>	CP socket is
	When unsolicited is enabled, an asynchronous TCP Socindicated to TE with unsolicited result code:	eket connection is
	#TCPATRUN: <iphostaddress></iphostaddress>	
	When unsolicited is enabled, the TCP socket disconnect with unsolicited result code:	tion is indicated to TE



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#TCPATRUNCFG—Set TCP AT Run Service Parameters

SELINT 2

#TCPATRUN: <DISCONNECT>

Unsolicited is dumped on the instance that requested the service activation.

<timeout>:

Define in minutes the maximum time for a command execution. If timeout expires the module will be rebooted. The default value is 5 minutes. Range 1...5.

<authMode>:

determines the authentication procedure in server mode:

- 0-(default) when connection is up, username and password (in this order and each of them followed by a Carriage Return) have to be sent to the module before the first AT command.
- 1- when connection is up, the user receives a request for username and, if username is correct, a request for password. Then a message of "Login successfull" will close authentication phase.

Note: if username and/or password are not allowed (see AT#TCPATRUNAUTH) the connection will close immediately.

<retryCnt>:

in client mode, at boot or after a socket disconnection, this parameter represents the number of attempts that are made in order to re-connect to the Host. Default: 0. Range 0...5.

<retryDelay>:

in client mode, delay between one attempt and the other. In minutes. Default: 2. Range 1...3600.

Note2: the current settings are stored in NVM.

Note3: to start automatically the service when the module is powered-on, the automatic PDP context activation has to be set (see AT#SGACTCFG command).

Note 4: the set command returns ERROR if the command AT#TCPATRUNL? returns 1 as <mod> parameter or the command AT# TCPATRUND? returns 1 as <mod> parameter

AT#TCPATRUNCFG?

Read command returns the current settings of parameters in the format:

#TCPATRUNCFG:

<connId>,<instance>,<tcpPort>,<tcpHostPort>,<tcpHost>,<urcmod>,<ti meout>,<authMode>,<retryCnt>,<retryDelay>



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#TCPATRUNCFG- Set TCP AT Run Service Parameters SELINT 2		SELINT 2
AT#TCPATRUNCFG=?	Test command returns the supported values for the TCPATR	UNCFG
	parameters	

3.5.7.2.5. TCP Run AT Service in listen (server) mode - #TCPATRUNL

#TCPATRUNL — Enables	TCP AT Run Service in listen (server) mode	SELINT 2
AT#TCPATRUNL=	Set command enables/disables the TCP AT RUN service in server	mode. When
<mod></mod>	this service is enabled, the module tries to put itself in TCP listen st	ate.
	Parameter:	
	< mod > 0: Service Disabled	
	1: Service Disabled	
	1. Service Enabled	
	Note1: If SMSATRUN is active on the same instance (see	
	AT#TCPATRUNCFG) the command will return ERROR.	
	Note2: when the service is active it is on a specific AT instance (see	e
	AT#TCPATRUNCFG), that instance cannot be used for any other s	•
	example, if the multiplexer requests to establish the Instance, the re	quest will
	be rejected.	
	Note 2, the assument action as one atoms disc NIVIM	
	Note3: the current settings are stored in NVM.	
	Note4: to start automatically the service when the module is powered	ed-on the
	automatic PDP context activation has to be set (see AT#SGACTCF	·
	command).	
AT#TCPATRUNL?	Read command returns the current settings of <mode> and the valu</mode>	e of <stat></stat>
	in the format:	
	#TCPATRUNL: <mod>,<stat></stat></mod>	
	where:	
	<pre></pre>	
	0 – not in listen	
	1 - in listen or active	
	I III listen of detive	
AT#TCPATRUNL =?	Test command returns the supported values for the TCPATRUNL 1	parameters

3.5.7.2.6. TCP AT Run Firewall List - #TCPATRUNFRWL

	# '	TCPATRUNFRWL - TCP AT Run Firewall List		SELINT 2	
--	-----	---	--	----------	--





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#TCPATRUNFRWL - TCP A	T Run Firewall List SELINT 2
AT# <i>TCPATRUNFRWL</i> =	Set command controls the internal firewall settings for the TCPATRUN
<action>,</action>	connection.
<ip_addr>,</ip_addr>	
<net_mask></net_mask>	Parameters:
	<action> - command action</action>
	0 - remove selected chain
	1 - add an ACCEPT chain
	2 - remove all chains (DROP everything); <ip_addr> and <net_mask></net_mask></ip_addr>
	has no meaning in this case. <ip_addr> - remote address to be added into the ACCEPT chain; string</ip_addr>
	type, it can be any valid IP address in the format:
	XXX.XXX.XXX
	<pre><net_mask> - mask to be applied on the <ip_addr>; string type, it can be</ip_addr></net_mask></pre>
	any valid IP address mask in the format: xxx.xxx.xxx
	Command returns OK result code if successful.
	Firewall general policy is DROP , therefore all packets that are not
	included into an ACCEPT chain rule will be silently discarded.
	When a packet comes from the IP address incoming_IP , the firewall chain
	rules will be scanned for matching with the following criteria:
	incoming_IP & <net_mask> = <ip_addr> & <net_mask></net_mask></ip_addr></net_mask>
	If criteria is matched, then the packet is accepted and the rule scan is
	finished; if criteria is not matched for any chain the packet is silently
	dropped.
	Note1: A maximum of 5 firewall can be present at same time in the List.
	1 toto 1. 11 maximum of 3 mewan can be present at same time in the list.
	Note2: the firewall list is saved in NVM
AT# TCPATRUNFRWL?	Read command reports the list of all ACCEPT chain rules registered in
	the
	Firewall settings in the format:
	#TCPATRUNFRWL: <ip_addr>,<net_mask></net_mask></ip_addr>
	#TCPATRUNFRWL: <ip_addr>,<net_mask></net_mask></ip_addr>
ATHTODATOLINIDAYI _0	Test command returns the allowed values for parameter <action>.</action>
AT#TCPATRUNFRWL=?	rest command returns the allowed values for parameter action> .

3.5.7.2.7. TCP AT Run Authentication Parameters List - #TCPATRUNAUTH

#TCPATRUNAUTH - TCP AT Run Authentication Parameters List

SELINT 2





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# TCPATRUNAUTH – TCP AT R	SELINT 2
AT# TCPATRUNAUTH =	Execution command controls the authentication parameters for the
<action>,</action>	TCPATRUN connection.
<userid>,</userid>	
<pre><passw></passw></pre>	Parameters:
1	<action> - command action</action>
	0 - remove selected chain
	1 - add an ACCEPT chain
	2 - remove all chains (DROP everything); < userid > and < passw >
	has no meaning in this case.
	< userid > - user to be added into the ACCEPT chain; string type, maximum length 50
	<pre>< passw > - password of the user on the < userid >; string type,</pre>
	maximum length 50
	Command returns OK result code if successful.
	Note1: A maximum of 3 entry (password and userid) can be present at same time in the List.
	Note2: the Authentication Parameters List is saved in NVM.
AT#TCPATRUNAUTH?	Read command reports the list of all ACCEPT chain rules registered in
	the Authentication settings in the format:
	#TCPATRUNAUTH: <user_id>,<passw></passw></user_id>
	#TCPATRUNAUTH: <user_id>,<passw></passw></user_id>
	••••
	OK
AT# <i>TCPATRUNAUTH</i> =?	Test command returns the allowed values for parameter <action></action> .

3.5.7.2.8. TCP AT Run in dial (client) mode - #TCPATRUND

#TCPATRUND – Enables TCF	#TCPATRUND – Enables TCP Run AT Service in dial (client) mode SELINT	
AT#TCPATRUND= <mod></mod>	Set command enables/disables the	
	TCP AT RUN service in client mode. When this service is en module tries to open a connection to the Host (the Host is spe AT#TCPATRUNCFG).	
	Parameter:	
	< mod >	
	0: Service Disabled	
	1: Service Enabled	
	Note1: If SMSATRUN is active on the same instance (see	
	AT#TCPATRUNCFG) the command will return ERROR.	



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#TCPATRIIND _ Enables '	TCP Run AT Service in dial (client) mode SELINT	r 2
#1CIAIROND - Enables	SEEMVI	<u>. 4</u>
	Note2: when the service is active it is on a specific AT instance (see AT#TCPATRUNCFG), that instance cannot be used for any other scope. For example if the multiplexer request to establish the Instance, the request will be rejected.	
	Note3: the current setting are stored in NVM	
	Note4: to start automatically the service when the module is powered-on, the automatic PDP context activation has to be set (see AT#SGACTCFG command). Note5: if the connection closes or at boot, if service is enabled and context is active, the module will try to reconnect for the number of attempts specified in AT#TCPATRUNCFG; also the delay between one attempt and the other will be the one specified in AT#TCPATRUNCFG.	
AT# TCPATRUND?	Read command returns the current settings of <mode> and the value of <stat> in the format:</stat></mode>	
	#TCPATRUND: <mod>,<stat></stat></mod>	
	where: <stat> - connection status 0 - not connected 1 - connected or connecting at socket level 2 - not connected but still trying to connect, attempting every delay time (specified in AT#TCPATRUNCFG)</stat>	y
AT#TCPATRUND =?	Test command returns the supported values for the TCPATRUND parameters	

3.5.7.2.9. Closing TCP Run AT Socket - #TCPATRUNCLOSE

#TCPATRUNCLOSE - Closes TCP Run AT Socket SELIN		SELINT 2
AT#TCPATRUNCLOSE	Closes the socket used by TCP ATRUN service.	
	Note: TCP ATRUN status is still enabled after this command, so the	
	service re-starts automatically.	
AT#TCPATRUNCLOSE =?	Test command returns OK	

3.5.7.2.10. TCP AT Run Command Sequence - #TCPATCMDSEQ

#TCPATCMDSEQ – For TCP Run AT Service, allows the user to give AT commands		SELINT 2
<mark>in sequence</mark>		
AT#TCPATCMDSEQ=	Set command enable/disable, for TCP Run AT service, a feature that allows	





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#TCPATCMDSEQ - For TCP Run AT Service, allows the user to give AT commands SELINT 2		
in sequence		
<mod></mod>	giving more than one AT command without waiting for responses. It does not work with commands that uses the prompt '>' to receive the message body text (e.g. "at+cmgs", "at#semail")	
	Parameter:	
	< mod >	
	0: Service Disabled (default)	
	1: Service Enabled	
AT# TCPATCMDSEQ?	Read command returns the current settings of parameters in the format:	
	#TCPATCMDSEQ: <mod></mod>	
AT# TCPATCMDSEQ =?	Test command returns the supported values for the TCPATCMDSEQ	
	parameters	

3.5.7.2.11. TCP Run AT service to a serial port - #TCPATCONSER

#TCPATCONSER - Connects the TCP Run AT service to a serial port SELINT 2		
AT#TCPATCONSER=	Set command sets the TCP Run AT in transparent mode, in order to have	
<port>,<rate></rate></port>	direct access to the serial port specified. Data will be transferred directly,	
	without being elaborated, between the TCP Run AT service and the serial port specified.	
	If the CMUX protocol is running the command will return ERROR.	
	Parameter:	
	<pre><port></port></pre>	
	0-1. Serial port to connect to.	
	< rate >	
	baud rate for data transfer. Allowed values are	
	300,1200,2400,4800,9600,19200,38400,57600,115200.	
	Note1: the command has to be issued from the TCP ATRUN instance Note2: After this command has been issued, if no error has occurred, then a "CONNECT" will be returned by the module to advise that the TCP ATRUN instance is in <i>online mode</i> and connected to the port specified. Note3: To exit from online mode and close the connection, the escape sequence (+++) has to be sent on the TCP ATRUN instance	
AT# TCPATCONSER =?	Test command returns the supported values for the TCPATCONSER parameters	

3.5.7.2.12. Run AT command execution - #ATRUNDELAY





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#ATRUNDELAY – Set the	delay on Run AT command execution SELINT 2	
AT#ATRUNDELAY= <srv>,<delay></delay></srv>	Set command enables the use of a delay before the execution of AT command received by Run AT service (TCP and SMS). It affects just AT commands given through Run AT service.	
	<pre><srv> 0 - TCP Run AT service 1 - SMS Run AT service</srv></pre>	
	<delay> Value of the delay, in seconds. Range 030. Default value 0 for both services (TCP and SMS).</delay>	
	Note1 - The use of the delay is recommended to execute some AT commands that require network interaction or switch between GSM and GPRS services. For more details see the RUN AT User Guide.	
	Note2: The delay is valid till a new AT#ATRUNDELAY is set.	
AT#ATRUNDELAY?	Read command returns the current settings of parameters in the format:	
	#ATRUNDELAY: 0, <delaytcp> #ATRUNDELAY: 1, <delaysms> OK</delaysms></delaytcp>	
AT#ATRUNDELAY=?	Test command returns the supported values for the ATRUNDELAY parameters	

3.5.7.2.13. Enable EvMoni Service - #ENAEVMONI

#ENAEVMONI – Enable l	<mark>EvMoni Service</mark>	SELINT 2
AT#ENAEVMONI=	Set command enables/disables the EvMoni service.	
<mod></mod>		
	Parameter:	
	< mod >	
	0: Service Disabled (default)	
	1: Service Enabled	
	Note1: When the service is active on a specific AT instance, that	
	cannot be used for any other scope, except for OTA service that I	•
	priority. For example in the multiplexer request to establish the I	nstance, the
	request will be rejected.	
	Note2: the current settings are stored in NVM.	
AT#ENAEVMONI?	Read command returns the current settings of <mode> and the va</mode>	alue of <stat></stat>
	in the format:	
	# ENAEVMONI: <mod>,<stat></stat></mod>	



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#ENAEVMONI – Enable EvMoni Service SEL		2
	where: <stat> - service status 0 - not active (default) 1 - active</stat>	
AT#ENAEVMONI =?	Test command returns the supported values for the ENAEVMONI paramete	rs

3.5.7.2.14. EvMoni Service parameter - #ENAEVMONICFG

5.5./.2.14. EVIVIONI Service parameter - #ENAL VIVIONICFG			
#ENAEVMONICFG - Set	EvMoni Service Parameters	SELINT 2	
AT#ENAEVMONICFG=	Set command configures the EvMoni service.		
<instance></instance>			
[, <urcmod></urcmod>	Parameter:		
[, <timeout>]]</timeout>	<instance>:</instance>		
	AT instance that will be used by the service to run the AT Command. Range 2 - 3. (Default: 3)		
	<uremod>:</uremod>		
	0 – disable unsolicited message 1 - enable an unsolicited message when an AT comman after an event is occurred (default)	d is executed	
	When unsolicited is enabled, the AT Command is indicated to TE unsolicited result code:	Ewith	
	#EVMONI: <text></text>		
	e.g.: #EVMONI: AT+CGMR;+CGSN;+GSN;+CCLK		
	Unsolicited is dumped on the instance that requested the service a	activation.	
	<ti>expires the module will be rebooted. (Default: 5)</ti>	n. If timeout	
	Note 1: the current settings are stored in NVM.		
	Note 2: the instance used for the EvMoni service is the same used AT RUN service. Therefore, when the #ENAEVMONICFG sets <instance> parameter, the change is reflected also in the <instance #smsatruncfg="" and="" command,="" of="" th="" the="" viceversa.<=""><th>the</th></instance></instance>	the	
	Note 3: the set command returns ERROR if the command AT#EN returns 1 as <mod> parameter or the command AT#SMSATRUN <mod> parameter</mod></mod>		



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#ENAEVMONICFG – Set EvMoni Service Parameters SELINT 2		
AT#ENAEVMONICFG?	Read command returns the current settings of parameters in the format:	
	#ENAEVMONICFG: <instance>,<urcmod>,<timeout></timeout></urcmod></instance>	
AT# ENAEVMONICFG	Test command returns the supported values for the ENAEVMONICFG	
=?	parameters	

3.5.7.2.15. Event Monitoring - #EVMONI

#EVMONI – Set the single Event Monitoring

SELINT 2

AT#EVMONI= <label>, <mode>, [,<paramType > ,<param>] Set command enables/disables the single event monitoring, configures the related parameter and associates the AT command

string parameter (that has to be enclosed between double quotes) indicating the event under monitoring. It can assume the following values:

- VBATT battery voltage monitoring
- DTR DTR monitoring
- ROAM roaming monitoring
- CONTDEACT context deactivation monitoring
- RING call ringing monitoring
- STARTUP module start-up monitoring
- REGISTERED network registration monitoring
- GPIO1 monitoring on a selected GPIO in the GPIO range
- GPIO2 monitoring on a selected GPIO in the GPIO range
- GPIO3 monitoring on a selected GPIO in the GPIO range
- GPIO4 monitoring on a selected GPIO in the GPIO range
- GPIO5 monitoring on a selected GPIO in the GPIO range
- ADCH1 ADC High Voltage monitoring
- ADCL1 ADC Low Voltage monitoring
- DTMF1 –monitoring on user defined DTMF string
- DTMF2 –monitoring on user defined DTMF string
- DTMF3 –monitoring on user defined DTMF string
- DTMF4 –monitoring on user defined DTMF string

<mode>:

0 - disable the single event monitoring (default)

1 – enable the single event monitoring

<paramType >: numeric parameter indicating the type of parameter contained in <param>. The 0 value indicates that <param> contains the AT command string to execute when the related event has occurred. Other values depend from the type of event.

<param>: it can be a numeric or string value depending on the value of





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#EVMONI – Set the single Event Monitoring

SELINT 2

and on the type of event.

If **<paramType>** is 0, then **<param>** is a string containing the AT command:

- It has to be enclosed between double quotes
- It has to start with the 2 chars AT (or at)
- If the string contains the character ", then it has to be replaced with the 3 characters \22
- the max string length is 96 characters
- if it is an empty string, then the AT command is erased
- If < label> is VBATT, < paramType> can assume values in the range 0 2.
 - o if **<paramType>** = 1, **<param>** indicates the battery voltage threshold in the range 0 500, where one unit corresponds to 10 mV (therefore 500 corresponds to 5 V). (Default: 0)
 - o if **<paramType>** = 2, **<param>** indicates the time interval in seconds after that the voltage battery under the value specified with **<paramType>** = 1 causes the event. The range is 0 255. (Default: 0)
- If **<label>** is DTR, **<paramType>** can assume values in the range 0 2.
 - o if **<paramType>** = 1, **<param>** indicates the status high or low under monitoring. The values are 0 (low) and 1 (high). (Default: 0)
 - if fo if formation if formation = 2, formation indicates the time interval in seconds after that the DTR in the status specified with formation = 1 causes the event. The range is 0 255.
 (Default: 0)
- If **<label>** is ROAM, **<paramType>** can assume only the value 0. The event under monitoring is the roaming state.
- If **<label>** is CONTDEACT, **<paramType>** can assume only the value 0. The event under monitoring is the context deactivation.
- If < label> is RING, < paramType> can assume values in the range 0 1.
 - o if paramType> = 1, indicates the numbers of call rings
 after that the event occurs. The range is 1-50. (Default: 1)
- If **<label>** is STARTUP, **<paramType>** can assume only the value 0. The event under monitoring is the module start-up.
- If **<label>** is REGISTERED, **<paramType>** can assume only the value 0. The event under monitoring is the network registration (to home network or in roaming) after the start-up and the SMS ordening.
- If < label> is GPIOX, < paramType> can assume values in the range 0 3.
 - if <paramType> = 1, <param> indicates the GPIO pin number; supported range is from 1 to a value that depends on the hardware.
 (Default: 1)
 - o if **paramType>** = 2, **<param>** indicates the status high or low under monitoring. The values are 0 (low) and 1 (high). (Default: 0)
 - o if **<paramType>** = 3, **<param>** indicates the time interval in seconds after that the selected GPIO pin in the status specified with **<paramType>** = 1 causes the event. The range is 0 255. (Default: 0)





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#EVMONI – Set the sin	gle Event Monitoring SELINT 2
	• If <label></label> is ADCH1, <paramtype></paramtype> can assume values in the range 0 - 3.
	o if <pre>paramType> = 1, <pre> <pre> indicates the ADC pin number;</pre></pre></pre>
	supported range is from 1 to a value that depends on the hardware.
	(Default: 1)
	o if <pre>paramType></pre> = 2, <param/> indicates the ADC High voltage
	threshold in the range 0 – 2000 mV. (Default: 0)
	o if <paramtype></paramtype> = 3, <param/> indicates the time interval in
	seconds after that the selected ADC pin above the value specified
	with $\langle \mathbf{paramType} \rangle = 1$ causes the event. The range is $0 - 255$.
	 (Default: 0) If <label> is ADCL1, <paramtype> can assume values in the range 0 - 3.</paramtype></label>
	o if <pre>paramType></pre> = 1, <param/> indicates the ADC pin number;
	supported range is from 1 to a value that depends on the hardware.
	(Default: 1)
	o if <pre>paramType></pre> = 2, <param/> indicates the ADC Low voltage
	threshold in the range $0 - 2000$ mV. (Default: 0)
	o if <pre>paramType> = 3, <param/> indicates the time interval in</pre>
	seconds after that the selected ADC pin under the value specified
	with $\langle paramType \rangle = 1$ causes the event. The range is $0 - 255$.
	(Default: 0)
	• If < label> is DTMFX, < paramType> can assume values in the range 0 - 2.
	o if <pre>paramType> = 1, <pre> <pre></pre></pre></pre>
	single DTMF characters have to belong to the range ((0-9),#,*,(A-
	D)); the maximum number of characters in the string is 15
	o if <pre> if <pre> o indicates in icates in indicates indicates in indicates indicates in i</pre></pre></pre></pre></pre></pre></pre></pre></pre>
	DTMF tone must be detected after detecting the previous one, to be
	considered as belonging to the DTMF string. It is common for
	every DTMFX event. The range is (500 – 5000). (Default: 1000)
	every Brivin A event. The range is (500 5000). (Belautt. 1000)
	Note: the DTMF string monitoring is available only for 10.0x.xx5 and following
	versions and if the DTMF decode has been enabled (see #DTMF command)
AT# EVMONI?	Read command returns the current settings for each event in the format:
	#EVMONI: <label>,<mode>,<param0>[,<param1>[,<param2>[,<param3>]]]</param3></param2></param1></param0></mode></label>
	Where <param0></param0> , <param1></param1> , <param2></param2> and <param3></param3> are defined as before
	for <param/> , <param/> , <param/> and <param/> are defined as before for <param/> depending on <label></label> value
	Test command returns values supported as a compound value

3.5.7.2.16. Send Message - #CMGS

#CMGS - Send Message	SELINT 2	<mark>2</mark>
(PDU Mode)	(PDU Mode)	
AT#CMGS=	Execution command sends to the network a message.	



#CMGS - Send Message	SELINT 2
<length>,<pdu></pdu></length>	,
	Parameter: <length> - length of the PDU to be sent in bytes (excluding the SMSC address octets). 7164</length>
	<pdu> - PDU in hexadecimal format (each octet of the PDU is given as two IRA character long hexadecimal number) and given in one line.</pdu>
	Note: when the length octet of the SMSC address (given in the <pdu></pdu>) equals zero, the SMSC address set with command +CSCA is used; in this case the SMSC Type-of-Address octet shall not be present in the <pdu></pdu> .
	If message is successfully sent to the network, then the result is sent in the format:
	#CMGS: <mr></mr>
	where <mr> - message reference number; 3GPP TS 23.040 TP-Message-Reference in integer format.</mr>
	Note: if message sending fails for some reason, an error code is reported.
(Text Mode)	(Text Mode)
AT#CMGS= <da>,<text></text></da>	Execution command sends to the network a message.
,	Parameters:
	<pre><da> - destination address, string type represented in the currently selected</da></pre>
	The entered text should be enclosed between double quotes and formatted as follows:
	 - if current <dcs> (see +CSMP) indicates that GSM03.38 default alphabet is used and current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is not set, then ME/TA converts the entered text into GSM alphabet, according to GSM 27.005, Annex A.</fo></dcs> - if current <dcs> (see +CSMP) indicates that 8-bit or UCS2 data coding scheme is used or current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is set, the entered text should consist of two IRA character long hexadecimal numbers which ME/TA converts into 8-bit octet (e.g. the 'asterisk' will be entered as 2A (IRA50 and IRA65) and this will be converted to an octet with integer value 0x2A)</fo></dcs>



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#CMGS - Send Message	SELINT 2	
	If message is successfully sent to the network, then the result is sent in the format:	
	#CMGS: <mr></mr>	
	where <mr> - message reference number; 3GPP TS 23.040 TP-Message-Reference in integer format.</mr>	
	Note: if message sending fails for some reason, an error code is reported.	
AT#CMGS=?	Test command resturns the OK result code.	
Note	To avoid malfunctions is suggested to wait for the #CMGS: <mr> or #CMS</mr>	
	ERROR: <err> response before issuing further commands.</err>	
Reference	GSM 27.005	

3.5.7.2.17. Write Message To Memory - #CMGW

#CMGW - Write Messa	age To Memory SELIN	T 2		
(PDU Mode)	(PDU Mode)			
AT#CMGW=	Execution command writes in the memw memory storage a new message.			
<length>,<pdu></pdu></length>				
	Parameter:			
	length> - length in bytes of the PDU to be written.			
	7164			
	<pdu> - PDU in hexadecimal format (each octet of the PDU is given as tw IRA character long hexadecimal number) and given in one line.</pdu>	7 0		
	If message is successfully written in the memory, then the result is sent in t format:	the		
	#CMGW: <index></index>			
	where:			
	<index> - message location index in the memory <memw>.</memw></index>			
	If message storing fails for some reason, an error code is reported.			
(Text Mode)	(Text Mode)			
AT#CMGW= <da>,<text></text></da>	Execution command writes in the memw memory storage a new message.			
,	Parameters:			



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#CMGW - Write Messa	age To Memory SELINT 2
	<pre><da> - destination address, string type represented in the currently selected</da></pre>
	follows:
	 - if current <dcs> (see +CSMP) indicates that GSM03.38 default alphabet is used and current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is not set, then ME/TA converts the entered text into GSM alphabet, according to GSM 27.005, Annex A.</fo></dcs> - if current <dcs> (see +CSMP) indicates that 8-bit or UCS2 data coding scheme is used or current <fo> (see +CSMP) indicates that 3GPP TS 23.040 TP-User-Data-Header-Indication is set, the entered text should consist of two IRA character long hexadecimal numbers which ME/TA converts into 8-bit octet (e.g. the 'asterisk' will be entered as 2A (IRA50 and IRA65) and this will be converted to an octet with integer value 0x2A)</fo></dcs>
	If message is successfully written in the memory, then the result is sent in the format:
	#CMGW: <index> where:</index>
	<index> - message location index in the memory <memw>.</memw></index>
	If message storing fails for some reason, an error code is reported.
AT#CMGW=?	Test command returns the OK result code.
Reference	GSM 27.005
Note	To avoid malfunctions is suggested to wait for the #CMGW: <index> or +CMS ERROR: <err> response before issuing further commands.</err></index>

3.5.7.3. FOTA Commands

3.5.7.3.1. OTA Set Network Access Point - #OTASNAP

#OTASNAP – OTA Set	<mark>Network Access Point</mark>	SELINT 0/1	
AT#OTASNAP=	Set command specifies the SMS number that the module has to use to send the		
<addr>[,<company_na< th=""><th colspan="2">Remote Registration SM. If the current IMSI hasn't been yet registered, the</th></company_na<></addr>	Remote Registration SM. If the current IMSI hasn't been yet registered, the		
me>]	Remote Registration SM is automatically sent.		
	Parameters:		





#OTASNAP – OTA Se	t Network Access Point	SELINT 0/1
	<addr> - string parameter which specifies the phone number</addr>	
	<pre><company_name> - string parameter containing a client identifier</company_name></pre>	
	Note1: a special form of the Set command, #OTASNAP=""" , causes the deletion of the SMS number	
	Note2: the value of <addr></addr> parameter can be overwritten from the OTA ser the Provisioning SMS Note3: a change of the value of <company_name></company_name> parameter causes a new FOTA Registration procedure	
	Note4: if the <company_name></company_name> is an empty string, an ERROR	is returned
	Note5: the setting is saved in NVM	
AT#OTASNAP?	Read command reports the current settings in the format:	
	#OTASNAP: <addr>[,<company_name>]</company_name></addr>	
AT#OTASNAP	Execution command has the same effect as the Read command	
AT#OTASNAP =?	Test command returns the maximum length of <addr> field and maximum length of <company_name> field. The format is: #OTASNAP: <nlength>,<tlength></tlength></nlength></company_name></addr>	
	where:	
	<nlength> - integer type value indicating the maximum length of</nlength>	
	<tlength> - integer type value indicating the maximum length or</tlength>	f field
Evenula	<pre><company_name> AT#OTASNAP="SMS Number","Client Alpha"</company_name></pre>	
Example	OK	
	AT#OTASNAP?	
	#OTASNAP:"SMS Number","Client Alpha"	
	OK AT#OTASNAP=? #OTASNAP: 21,15	
	OK	

#OTASNAP – OTA Set	Network Access Point	SELINT 2
AT#OTASNAP=	Set command specifies the SMS number that the module has to u	se to send the
<addr>[,<company_na< th=""><th colspan="2">Remote Registration SM. If the current IMSI hasn't been yet registered, the</th></company_na<></addr>	Remote Registration SM. If the current IMSI hasn't been yet registered, the	
me>]	Remote Registration SM is automatically sent.	
	Parameters: <addr> - string parameter which specifies the phone number <company_name> - string parameter containing a client identifies</company_name></addr>	er





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#OTASNAD OTAS	Set Network Access Point SELINT 2	
WOTASNAT - OTA S	Note1: a special form of the Set command, #OTASNAP="", causes the deletion of the SMS number	1
	Note2: the value of <addr></addr> parameter can be overwritten from the OTA server by the Provisioning SMS	
	Note3: a change of the value of <company_name></company_name> parameter causes a new FOTA Registration procedure	
	Note4: if the <company_name></company_name> is an empty string, an ERROR is returned	
	Note5: the setting is saved in NVM	
AT#OTASNAP?	Read command reports the current settings in the format:	
	#OTASNAP: <addr>[,<company name="">]</company></addr>	
AT#OTASNAP =?	Test command returns the maximum length of <addr></addr> field and maximum length of <company_name></company_name> field. The format is:	
	#OTASNAP: <nlength>,<tlength></tlength></nlength>	
	where:	
	<nlength> - integer type value indicating the maximum length of field <addr> <tlength> - integer type value indicating the maximum length of field</tlength></addr></nlength>	
Example	<pre><company_name> AT#OTASNAP="SMS Number","Client Alpha" OK AT#OTASNAP? #OTASNAP?"</company_name></pre> #OTASNAP:"SMS Number","Client Alpha"	
	OK AT#OTASNAP=? #OTASNAP: 21,15	
	OK	

3.5.7.3.2. OTA Set User Answer - #OTASUAN

#OTASUAN – OTA Se	t User Answer	SELINT 0/1
AT#OTASUAN=	Set command:	
<response>[,<mode>[</mode></response>	a) enables or disables sending of unsolicited result code	#OTAEV that asks
, <bfr>]]</bfr>	the TE to accept or reject the Management Server req	uest to download a
	firmware	
	b) allows the TE to accept or reject the request	
	Parameters:	





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#OTASUAN – OTA Set User Answer

SELINT 0/1

<response> - numeric parameter used to accept or reject the download request

- 0 the request is rejected
- 1 the request is accepted
- 2 the request is delayed indefinitely: the URC is prompted indefinitely until the request is accepted or reject
- <mode> numeric parameter that controls the processing of unsolicited result code
 #OTAEV
- 0 –buffer unsolicited result codes in the MT; if MT result code buffers is full, the oldest ones can be discarded. No codes are forwarded to the TE.
- 1 –discard unsolicited result codes when MT-TE link is reserved (e.g. in on-line data mode); otherwise forward them directly to the TE
- 2 -buffer unsolicited result codes in the MT when MT-TE link is reserved (e.g. in on-line data mode) and flush them to the TE when MT-TE link becomes available; otherwise forward them directly to the TE
-

 numeric parameter that controls the effect on buffered codes when <mode>

 1 or 2 is entered
- 0 MT buffer of unsolicited result codes #OTAEV is cleared when **<mode>** 1 or 2 is entered
- 1 MT buffer of unsolicited result codes #OTAEV is flushed to TE when <mode> 1 or 2 is entered

Note: the following unsolicited result codes and the corresponding events are defined:

#OTAEV: Do you want to upgrade the firmware?

A management server request to start the firmware upgrade. The user answer is expected

#OTAEV: User Answer Timeout

Expected User Answer not received within server defined time interval

#OTAEV: Automatic Fw Upgrade Requested An automatic Fw Upgrade procedure has started

#OTAEV: Start Fw Download
The firmware download is started

#OTAEV: Fw Download Complete
The firmware download is finished

#OTAEV: OTA Fw Upgrade Failed The Fw upgrade has failed

#OTAEV: Module Upgraded To New Fw The Fw upgrade is successfully finished





#OTASUAN – OTA S	et User Answer SELINT 0/1
	#OTAEV: Server notified about successfull FW Upgrade The final SMS has been sent to the server notifying the successful FW upgrade
	"#OTAEV: Registered" The module has registered itself to a server
	"#OTAEV: Not registered" The registration procedure has failed
	"#OTAEV: Company Name Registered" The company name is registered
	"#OTAEV: Company Name not registered" The company name is not registered
	"#OTAEV: Provisioned" A server has provisioned the module
	"#OTAEV: Notified" A server has notified the module
AT# OTASUAN?	Read command reports the current settings in the format:
	#OTASUAN: , <mode>,<bfr></bfr></mode>
AT#OTASUAN	Execution command has the same effect as the Read command
AT#OTASUAN =?	Test command returns values supported as a compound value
Example	AT#OTASUAN=,2,1
	OK
	AT#OTASUAN?
	#OTASUAN: ,2,1 OK
	AT#OTASUAN =?
	#OTASUAN: (0-2),(0-2),(0,1)
	OK

#OTASUAN – OTA Se	t User Answer	SELINT 2
AT#OTASUAN=	Set command:	
<response>[,<mode>[</mode></response>	a) enables or disables sending of unsolicited result code	#OTAEV that asks
, <bfr>]]</bfr>	the TE to accept or reject the Management Server req	uest to download a
	firmware	
	b) allows the TE to accept or reject the request	
	Parameters:	
	<response> - numeric parameter used to accept or reject the dov</response>	vnload request



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#OTASUAN – OTA Set User Answer

SELINT 2

- 0 the request is rejected
- 1 the request is accepted
- 2 the request is delayed indefinitely: the URC is prompted indefinitely until the request is accepted or reject
- <mode> numeric parameter that controls the processing of unsolicited result code **#OTAEV**
- 0 -buffer unsolicited result codes in the MT; if MT result code buffers is full, the oldest ones can be discarded. No codes are forwarded to the TE.
- 1 -discard unsolicited result codes when MT-TE link is reserved (e.g. in on-line data mode); otherwise forward them directly to the TE
- 2 -buffer unsolicited result codes in the MT when MT-TE link is reserved (e.g. in on-line data mode) and flush them to the TE when MT-TE link becomes available; otherwise forward them directly to the TE
-

 1 or 2 is entered
- 0 MT buffer of unsolicited result codes #OTAEV is cleared when **<mode>** 1 or 2 is entered
- 1 MT buffer of unsolicited result codes #OTAEV is flushed to TE when <mode> 1 or 2 is entered

Note: the following unsolicited result codes and the corresponding events are defined:

#OTAEV: Do you want to upgrade the firmware?

A management server request to start the firmware upgrade. The user answer is expected

#OTAEV: User Answer Timeout

Expected User Answer not received within server defined time interval

#OTAEV: Automatic Fw Upgrade Requested An automatic Fw Upgrade procedure has started

#OTAEV: Start Fw Download The firmware download is started

#OTAEV: Fw Download Complete The firmware download is finished

#OTAEV: OTA Fw Upgrade Failed The Fw upgrade has failed

#OTAEV: Module Upgraded To New Fw The Fw upgrade is successfully finished



























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#OTASUAN – OTA S	et User Answer SELINT 2
WOTTISCHE OTTES	#OTAEV: Server notified about successful FW Upgrade
	The final SMS has been sent to the server notifying the successful FW upgrade
	"#OTAEV: Registered"
	The module has registered itself to a server
	"#OTAEV: Not registered"
	The registration procedure has failed
	"#OTAEV: Company Name Registered"
	The company name is registered
	"#OTAEV: Company Name not registered"
	The company name is not registered
	"#OTAEV: Provisioned"
	A server has provisioned the module
	"#OTAEV: Notified"
	A server has notified the module
AT# OTASUAN?	Read command reports the current settings in the format:
	#OTASUAN: , <mode>,<bfr></bfr></mode>
AT#OTASUAN =?	Test command returns values supported as a compound value
Example	AT#OTASUAN=,2,1
	OK
	AT#OTASUAN?
	#OTASUAN: ,2,1
	OK AT#OTASUAN =?
	#OTASUAN: (0-2),(0-2),(0,1)
	OK

3.5.7.3.3. OTA Set Ring Indicator - #OTASETRI

#OTASETRI - OTA S	et Ring Indicator	SELINT 0/1
AT#OTASETRI=	Set command enables/disables the Ring Indicator pin response	to a manual OTA
[<n>]</n>	server request to start the firmware upgrade. If enabled, a negat generated when the URC "#OTAEV: Do you want to upgrade t	0 01
	prompted (see AT#OTASUAN command). The duration of this by the value of < n >.	
	Parameter:	
	<n> - RI enabling</n>	



#OTASETRI - OTA S	et Ring Indicator SELINT 0/1
	 0 - disables RI pin response when the URC "#OTAEV: Do you want to upgrade the firmware?" is prompted (factory default) 501150 - enables RI pin response. The value of <n> is the duration in ms of the pulse generated when the URC "#OTAEV: Do you want to upgrade the firmware?" is prompted.</n> Note: if the <response> parameter of the AT#OTASUAN command has the value 2, then the URC is prompted indefinitely until the Fw update request is accepted or reject and, for every URC, a pulse is generated.</response>
	Note: the setting is saved in the profile parameters
AT#OTASETRI?	Read command reports the duration in ms of the pulse generated when the URC "#OTAEV: Do you want to upgrade the firmware?" is prompted, in the format: #OTASETRI: <n> Note: as seen before, the value <n>=0 means that the RI pin response to the URC is</n></n>
	disabled.
AT#OTASETRI	Execution command has the same effect as the Read command
AT#OTASETRI =?	Reports the range of supported values for parameter <n></n>

#OTASETRI - OTA S	et Ring Indicator SELINT 2	
AT#OTASETRI=	Set command enables/disables the Ring Indicator pin response to a manual OTA	
[<n>]</n>	server request to start the firmware upgrade. If enabled, a negative going pulse is generated when the URC "#OTAEV: Do you want to upgrade the firmware?" is	
	prompted (see AT#OTASUAN command). The duration of this pulse is determined by the value of < n >.	
	Parameter:	
	<n> - RI enabling 0 disable PI singular the LIPC "#OTAFIL D</n>	
	0 - disables RI pin response when the URC "#OTAEV: Do you want to upgrade the firmware?" is prompted (factory default)	
	501150 - enables RI pin response. The value of < n > is the duration in ms of the pulse generated when the URC "#OTAEV: Do you want to upgrade the firmware?" is prompted.	
	Note: if the <response> parameter of the AT#OTASUAN command has the value 2, then the URC is prompted indefinitely until the Fw update request is accepted or reject and, for every URC, a pulse is generated.</response>	
	Note: the setting is saved in the profile parameters	
AT#OTASETRI?	Read command reports the duration in ms of the pulse generated when the URC "#OTAEV: Do you want to upgrade the firmware?" is prompted, in the format:	
	#OTASETRI: <n></n>	



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#OTASETRI - OTA S	et Ring Indicator	SELINT 2
	Note: as seen before, the value <n>=0 means that the l disabled.</n>	RI pin response to the URC is
AT#OTASETRI =?	Reports the range of supported values for parameter <	n>

3.5.7.3.4. Saves IP port and IP address for OTA over IP - #OTAIPCFG

#OTAIPCFG – Saves IP port at	#OTAIPCFG – Saves IP port and IP address for OTA over IP SELINT 0/1		
AT#OTAIPCFG= <iport>,<ip< th=""><th>This command saves in NVM the IP port number and IP address of the</th></ip<></iport>	This command saves in NVM the IP port number and IP address of the		
addr>[, <unused>]</unused>	OTA server.		
	Parameters:		
	<pre><iport>: IP port of the OTA server</iport></pre>		
	<ipaddr>: IP address of the OTA server, string type. This parameter can be any valid IP address in the format: "xxx.xxx.xxx."</ipaddr>		
	Note: the values set by the command are directly stored in NVM and don't depend on the specific CMUX instance.		
	Note2: a special form of the Set command, #OTAIPCFG= <iport>,"" sets the IP address to "0.0.0.0".</iport>		
AT#OTAIPCFG?	Read command reports the currently selected <iport< b=""> > and <ipaddr< b="">> in the format:</ipaddr<></iport<>		
	#OTAIPCFG: <iport>,<ipaddr>,0</ipaddr></iport>		
AT#OTAIPCFG	Execution command has the same effect as the Read command		
AT#OTAIPCFG =?	Test command reports the range of supported values for parameters		
	<pre><iport> and <unused></unused></iport></pre>		

#OTAIPCFG – Saves IP port an	nd IP address for OTA over IP SELINT 2
AT#OTAIPCFG= <iport>,<ip< th=""><th>This command saves in NVM the IP port number and IP address of the</th></ip<></iport>	This command saves in NVM the IP port number and IP address of the
addr>[, <unused>]</unused>	OTA server.
	Parameters: <iport>: IP port of the OTA server <ipaddr>: IP address of the OTA server, string type. This parameter can be any valid IP address in the format: "xxx.xxx.xxx."</ipaddr></iport>
	Note: the values set by the command are directly stored in NVM and don't depend on the specific CMUX instance.
	Note2: a special form of the Set command, #OTAIPCFG= <iport>,"" sets the IP address to "0.0.0.0".</iport>



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AT#OTAIPCFG?	Read command reports the currently selected <iport< b=""> > and <ipaddr< b="">> in the format:</ipaddr<></iport<>	
	#OTAIPCFG: <iport>,<ipaddr>,0</ipaddr></iport>	
AT#OTAIPCFG=?	Test command reports the range of supported values for parameters	
	<iport> and <unused></unused></iport>	

3.5.7.3.5. Starts an OTA Update over IP - #OTAIPUPD

#OTAIPUPD – Starts an	OTA Update over IP SELINT 0/1/2
#OTAIPUPD - Starts an AT#OTAIPUPD	This command starts an OTA Update over IP. Note: in order to complete the update, the device has to be registered in the OTA server. Note: it is necessary to set some parameters beforehand: the bearer (CSD or GPRS) and the APN, through the command AT#OTASNAPIPCFG, the IP port and IP address, through the command AT#OTAIPCFG. After the command AT#OTAIPUPD has been set, some unsolicited messages will inform the user about the status of the update process:
	 #OTAEV: Start Fw Download #OTAEV: Fw Download Complete #OTAEV: Module Upgraded To New FW #OTAEV: Server notified about successfull FW Upgrade
	Or, in case of failure: - #OTAEV: OTA FW Upgrade Failed
AT#OTAIPUPD?	Read command reports the current status of the OTA over IP: the value 1 is returned if the OTA over IP is running (in this case the user shall receive the unsolicited messages), 0 otherwise. #OTAIPUPD: <status></status>
AT#OTAIPUPD =?	Test command tests for command existence



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3.5.7.3.6. OTA Set IP port and address for OTA over IP - #OTASNAPIP

#OTASNAPIP – OTA	Set IP port and address for OTA over IP SELINT 0/1
AT#OTASNAPIP=	Set command specifies the IP port number and IP address that the module has to use
<iport>,<ipaddr>[,<</ipaddr></iport>	to send the Remote Registration message. If the current IMSI hasn't been yet
mynumber>[, <compa< th=""><th>registered, the Remote Registration message is automatically sent.</th></compa<>	registered, the Remote Registration message is automatically sent.
ny name>[, <unused></unused>	
	Parameters:
	<pre><iport> - IP port of the OTA server</iport></pre>
	<ipaddr> - IP address of the OTA server, string type.</ipaddr>
	This parameter can be any valid IP address in the format: "xxx.xxx.xxx.xxx"
	<mynumber> - string parameter which specifies the phone number of the client</mynumber>
	company name> - string parameter containing a client identifier
	Note1: the command returns ERROR if the APN has not been set through the
	command AT#OTASNAPIPCFG
	Note2: a special form of the Set command, #OTASNAP= <iport>,"", sets the IP</iport>
	address to "0.0.0.0".
	Note3: the values of <iport></iport> and <ipaddr></ipaddr> parameters can be overwritten from
	the OTA server by any SMS (Command, RSA Discovery Registration)
	Note4: a change of the value of <company name=""></company> parameter causes a new FOTA
	Registration procedure
	Note5: if the <company name=""></company> is an empty string, an ERROR is returned
	Note6: all the settings are saved in NVM but < mynumber>
AT#OTASNAPIP?	Read command reports the current settings in the format:
	,
	#OTASNAPIP: <iport>,<ipaddr>[,<company_name>],0</company_name></ipaddr></iport>
AT#OTASNAPIP	Execution command has the same effect as the Read command
AT#OTASNAPIP =?	Test command returns the range for Port values and the maximum length of
11111 0 11101 (111 11	<pre><mynumber> field and of <company name=""> field. The format is:</company></mynumber></pre>
	#OTASNAPIP: (0-65535),, <nlength>,<tlength></tlength></nlength>
	· (· · · · · ·) // · · · · · · · · · · ·
	where:
	<pre><nlength> - integer type value indicating the maximum length of field</nlength></pre>
	<mynumber></mynumber>
	<tl><tl><tl><tl><tl><tl><tl><tl><tl><tl></tl></tl></tl></tl></tl></tl></tl></tl></tl></tl>
	<pre><company name=""></company></pre>

#OTASNAPIP – OTA Set IP port and address for OTA over IP

SELINT 2





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#OTASNAPIP – OTA	Set IP port and address for OTA over IP SELINT 2
AT#OTASNAPIP=	Set command specifies the IP port number and IP address that the module has to use
<iport>,<ipaddr>[,<</ipaddr></iport>	to send the Remote Registration massage. If the current IMSI hasn't been yet
mynumber>[, <compa< th=""><th>registered, the Remote Registration message is automatically sent.</th></compa<>	registered, the Remote Registration message is automatically sent.
ny_name>[, <unused></unused>	
]]]	Parameters:
	< IPort> - IP port of the OTA server
	<ipaddr> - IP address of the OTA server, string type.</ipaddr>
	This parameter can be any valid IP address in the format: "xxx.xxx.xxx.xxx"
	<pre><mynumber> - string parameter which specifies the phone number of the client</mynumber></pre>
	<pre><company_name> - string parameter containing a client identifier</company_name></pre>
	Note1: the command returns ERROR if the APN has not been set through the
	command AT#OTASNAPIPCFG
	Note2: a special form of the Set command, #OTASNAP= <iport>,"", sets the IP address to "0.0.0.0".</iport>
	Note3: the values of <iport></iport> and <ipaddr></ipaddr> parameters can be overwritten from the OTA server by any SMS (Command, RSA Discovery Registration)
	Note4: a change of the value of <company_name></company_name> parameter causes a new FOTA Registration procedure
	Note5: if the <company_name></company_name> is an empty string, an ERROR is returned
	Note6: all the settings are saved in NVM but < mynumber>
AT#OTASNAPIP?	Read command reports the current settings in the format:
	#OTASNAPIP: <iport>, <ipaddr>[, <company_name>],0</company_name></ipaddr></iport>
AT#OTASNAPIP =?	Test command returns the range for IPort > values and the maximum length of
	<pre><mynumber> field and of <company_name> field. The format is:</company_name></mynumber></pre>
	#OTASNAPIP: (40-65535),, <nlength>,<tlength></tlength></nlength>
	where:
	<nlength> - integer type value indicating the maximum length of field</nlength>
	<mynumber></mynumber>
	<pre><tlength> - integer type value indicating the maximum length of field</tlength></pre>
	<pre><company_name></company_name></pre>

3.5.7.3.7. OTA Set Access Point Name for OTA over IP - #OTASNAPIPCFG

#OTASNAPIPCFG – OTA Set Access Point Name for OTA over IP

SELINT 0/1





#OTASNAPIPCFG - (OTA Set Access Point Name for OTA over IP SELINT 0/1
AT#OTASNAPIPCF	Set command specifies the bearer (GSM or GPRS) and the APN that the module
G=	has to use to send the Remote Registration message.
 <bearer>,<apn>[,<u< th=""><th>The APN is the Access Point Name in case of GPRS bearer or the internet service</th></u<></apn></bearer>	The APN is the Access Point Name in case of GPRS bearer or the internet service
sername>, <password< th=""><th>provider number in case of GSM bearer.</th></password<>	provider number in case of GSM bearer.
>[, <rsptimeout>]]</rsptimeout>	
	Parameters:
	 /bearer>
	0 – Undefined (default value)
	1 – GSM
	2 - GPRS
	<apn> - string parameter; in case of GPRS bearer: Access Point Name, a logical name that is used to select the GGSN or the external packet data network; in case of GSM bearer: phone number of the internet service provider</apn>
	<username> - string parameter, used only if the context requires it</username>
	<pre><password> - string parameter, used only if the context requires it</password></pre>
	<pre><rsptimeout> - used when waiting for a response from OTA server, after the module has sent a message: if there's no response within this timeout period the TCP connection is closed. 0 - no timeout</rsptimeout></pre>
	165535 - timeout value in seconds (default 300 s.)
	Note1: if the <bearer></bearer> is set to 0, then the APN is erased. If the bearer is already 0, any <apn></apn> or <username></username> or <password></password> will not be set
	Note2: the values of <bearer></bearer> , <apn></apn> , <username></username> and <password></password> parameters can be overwritten from the OTA server by any SMS (Command, RSA Discovery Registration)
	Note3: all the settings are saved in NVM
AT#OTASNAPIPCF G?	Read command reports the current settings in the format:
	#OTASNAPIPCFG:
	<pre><pre><bearer>,<apn>[,<username>[,<password>[,<rsptimeout>]]]</rsptimeout></password></username></apn></bearer></pre></pre>
AT#OTASNAPIPCF G	Execution command has the same effect as the Read command
AT#OTASNAPIPCF	Test command returns the range for <bearer></bearer> values, the maximum length of
G =?	<apn>, <username> and <password> string parameters and the range for</password></username></apn>
	<pre><rsptimeout> values. The format is:</rsptimeout></pre>
	#OTASNAPIPCFG: (0-2),99,49,49,(0-65535)



#OTASNAPIPCFG –	OTA Set Access Point Name for OTA over IP SELINT 2
AT#OTASNAPIPCF	Set command specifies the bearer (GSM or GPRS) and the APN that the module
G=	has to use to send the Remote Registration message.
 bearer>, <apn>[,<u< th=""><th>The APN is the Access Point Name in case of GPRS bearer or the internet service</th></u<></apn>	The APN is the Access Point Name in case of GPRS bearer or the internet service
sername>, <password< th=""><th>provider number in case of GSM bearer.</th></password<>	provider number in case of GSM bearer.
>[, <rsptimeout>]]</rsptimeout>	
	Parameters:
	 dearer>
	0 – Undefined (default value)
	1 – GSM
	2 - GPRS
	<apn> - string parameter; in case of GPRS bearer: Access Point Name, a logical name that is used to select the GGSN or the external packet data network; in case of GSM bearer: phone number of the internet service provider</apn>
	<username> - string parameter, used only if the context requires it</username>
	<pre><password> - string parameter, used only if the context requires it</password></pre>
	<pre><rsptimeout> - used when waiting for a response from OTA server, after the module has sent a message: if there's no response within this timeout period the TCP connection is closed. 0 - no timeout</rsptimeout></pre>
	165535 - timeout value in seconds (default 300 s.)
	Note1: if the <bearer></bearer> is set to 0, then the APN is erased. If the bearer is already 0, any <apn></apn> or <username></username> or <password></password> will not be set
	Note2: the values of <bearer></bearer> , <apn></apn> , <username></username> and <password></password> parameters can be overwritten from the OTA server by any SMS (Command, RSA Discovery Registration)
	Note3: all the settings are saved in NVM
AT#OTASNAPIPCF G?	Read command reports the current settings in the format:
	#OTASNAPIPCFG:
	<pre><bearer>,<apn>[,<username>[,<password>[,<rsptimeout>]]]</rsptimeout></password></username></apn></bearer></pre>
AT#OTASNAPIPCF	Test command returns the range for <bearer></bearer> values, the maximum length of
G =?	<apn>, <username> and <password> string parameters and the range for</password></username></apn>
	<rsptimeout></rsptimeout> values. The format is:
	#OTASNAPIPCFG: (0-2),99,49,49,(0-65535)



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3.5.7.4. Multisocket AT Commands

3.5.7.4.1. Socket Status - #SS

#SS - Socket Status	SELINT 2
AT#SS[= <connid>]</connid>	Execution command reports the current status of the socket:
	Parameters:
	<connid> - socket connection identifier</connid>
	16
	The response format is:
	#SS: <connid>,<state>,<locip>,<locport>,<remip>,<remport></remport></remip></locport></locip></state></connid>
	where:
	<connid> - socket connection identifier, as before</connid>
	<state> - actual state of the socket:</state>
	0 - Socket Closed.
	1 - Socket with an active data transfer connection.
	2 - Socket suspended.
	3 - Socket suspended with pending data.
	4 - Socket listening.
	5 - Socket with an incoming connection. Waiting for the user accept or shutdown command.
	IP address associated by the context activation to the socket.
	locPort> - two meanings:
	- the listening port if we put the socket in listen mode.
	- the local port for the connection if we use the socket to connect to a remote machine.
	<remip> - when we are connected to a remote machine this is the remote IP address.</remip>
	<remport> - it is the port we are connected to on the remote machine.</remport>
	Note: issuing #SS <cr> causes getting information about status of all the sockets;</cr>
	the response format is:
	#SS: <connid1>,<state1>,<locip1>,<locport1>,<remip1>,<remport1> <cr><lf></lf></cr></remport1></remip1></locport1></locip1></state1></connid1>
	 #SS: <connid6>,<state6>,<locip6>,<locport6>,<remip6>,<remport6></remport6></remip6></locport6></locip6></state6></connid6>
AT#SS=?	Test command reports the range for parameter <connid>.</connid>





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#SS - Socket Status	SELINT 2
Example	AT#SS #SS: 1,3,91.80.90.162,61119,88.37.127.146,10510 #SS: 2,4,91.80.90.162,1000 #SS: 3,0 #SS: 4,0 #SS: 5,3,91.80.73.70,61120,88.37.127.146,10509 #SS: 6,0
	OK
	Socket 1: opened from local IP 91.80.90.162/local port 61119 to remote IP 88.37.127.146/remote port 10510 is suspended with pending data
	Socket 2: listening on local IP 91.80.90.162/local port 1000
	Socket 5: opened from local IP 91.80.73.70/local port 61120 to remote IP 88.37.127.146/remote port 10509 is suspended with pending data
	AT#SS=2
	#SS: 2,4,91.80.90.162,1000
	ок
	We have information only about socket number 2

3.5.7.4.2. Socket Info - #SI

#SI - Socket Info		SELINT 2
AT#SI[= <connid>]</connid>	Execution command is used to get information about socket data	traffic.
	Parameters:	
	<connid> - socket connection identifier</connid>	
	16	
	The response format is:	
	#SI: <connid>,<sent>,<received>,<buff_in>,<ack_waiting></ack_waiting></buff_in></received></sent></connid>	
	where:	
	<pre><connid> - socket connection identifier, as before</connid></pre>	
	<sent></sent> - total amount (in bytes) of sent data since the last time th	ne socket
	connection identified by <connid></connid> has been opened	
	<pre><received> - total amount (in bytes) of received data since the la</received></pre>	st time the socket
	connection identified by <connid></connid> has been open	ed
	 buff_in> - total amount (in bytes) of data just arrived through the	he socket



#SI - Socket Info	SELINT 2
#31 - SUCKET HITU	connection identified by <connid></connid> and currently buffered, not yet read <ack_waiting></ack_waiting> - total amount (in bytes) of sent and not yet acknowledged data since the last time the socket connection identified by <connid></connid> has been opened Note: parameters associated with a socket identified by <connid></connid> are cleared when the socket itself is connected again(#SD or #SA after #SL). Until then, if previous connection has been established and closed, old values are yet available. Note: not yet acknowledged data are available only for TCP connections; the value <ack_waiting></ack_waiting> is always 0 for UDP connections.
	Note: issuing #SI <cr> causes getting information about data traffic of all the sockets; the response format is: #SI: <connid1>,<sent1>,<received1>,<buff_in1>,<ack_waiting1> <cr><lf> #SI: <connid6>,<sent6>,<received6>,<buff_in6>,<ack_waiting6></ack_waiting6></buff_in6></received6></sent6></connid6></lf></cr></ack_waiting1></buff_in1></received1></sent1></connid1></cr>
AT#SI=?	Test command reports the range for parameter <connid></connid> .
Example	AT#SI #SI: 1,123,400,10,50 #SI: 2,0,100,0,0 #SI: 3,589,100,10,100 #SI: 4,0,0,0,0 #SI: 5,0,0,0,0 #SI: 6,0,98,60,0
	OK Sockets 1,2,3,6 are opened with some data traffic. For example socket 1 has 123 bytes sent, 400 bytes received, 10 byte waiting to be read and 50 bytes waiting to be acknowledged from the remote side. AT#SI=1 #SI: 1,123,400,10,50 OK We have information only about socket number 1



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3.5.7.4.3. Context Activation - #SGACT

#SGACT - Context Activation AT#SGACT=<cid>, Execution command is used to activate or deactivate either the GSM context or the <stat>[,<userId>, specified PDP context. <pwd>] Parameters: <cid> - PDP context identifier 0 - specifies the GSM context 1..5 - numeric parameter which specifies a particular PDP context definition <stat> 0 - deactivate the context 1 - activate the context <userId> - string type, used only if the context requires it <pwd> - string type, used only if the context requires it Note: context activation/deactivation returns **ERROR** if there is not any socket associated to it (see AT#SCFG). Note: after the GSM context has been activated, you can use either Multisocket, or FTP or Email AT commands to send/receive TCP/IP packets via GSM. Note: to deactivate the GSM context, AT#SGACT=0,0 has to be issued on the same serial port used when the context was activated. Note: GSM context activation is affected by AT+CBST command. In particular, GSM context activation is just allowed with "non transparent" data calls. Note: activating a GSM context while a PDP context is already activated causes the PDP context to be suspended. Note: if GSM context is active, it is not allowed any PDP context activation. AT#SGACT? Returns the state of all the contexts that have been defined through the commands **+CGDCONT** or **#GSMCONT** #SGACT: <cid1>,<Stat1><CR><LF> #SGACT: <cid5>,<Stat5> where: <cidn> - as <cid> before <statn> - context status 0 - context deactivated





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#SGACT - Context Activation SELINT 2	
	1 - context activated
AT#SGACT=?	Test command reports the range for the parameters <cid></cid> and <stat></stat>
Note	It is strongly recommended to use the same command (e.g. #SGACT) to activate
	the context, deactivate it and interrogate about its status.

3.5.7.4.4. Socket Shutdown - #SH

#SH - Socket Shutdow	n n	SELINT 2
AT#SH= <connid></connid>	This command is used to close a socket. Parameter: <connid> - socket connection identifier 16</connid>	
AT#SH=?	Test command reports the range for parameter <connid></connid> .	

3.5.7.4.5. Socket Configuration - #SCFG

#SCFG - Socket Config	guration gur	SELINT 2
AT#SCFG=	Set command sets the socket configuration parameters.	
<connid>,<cid>,</cid></connid>		
<pktsz>,<maxto>,</maxto></pktsz>	Parameters:	
<connto>,<txto></txto></connto>	<pre><connid> - socket connection identifier</connid></pre>	
	16	
	<cid> - PDP context identifier</cid>	
	0 - specifies the GSM context	
	15 - numeric parameter which specifies a particular PDP cont	
	<pre><pktsz> - packet size to be used by the TCP/UDP/IP stack for c</pktsz></pre>	data sending.
	0 - select automatically default value(300).	
	11500 - packet size in bytes.	
	<pre><maxto> - exchange timeout (or socket inactivity timeout); if t</maxto></pre>	here's no data
	exchange within this timeout period the connection is closed.	
	0 - no timeout	
	165535 - timeout value in seconds (default 90 s.)	• , ,1
	connTo> - connection timeout; if we can't establish a connection within this timeout period, an error is raised.	ion to the remote
	101200 - timeout value in hundreds of milliseconds (default 6	500)
	<txto> - data sending timeout; after this period data are sent als than max packet size.</txto>	so if they're less
	0 - no timeout	
	1255 - timeout value in hundreds of milliseconds (default 50)	
	Note: these values are automatically saved in NVM.	
	Note: if DNS resolution is required, max DNS resolution time(2	0 sec) has to be



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#SCFG - Socket C	SCFG - Socket Configuration SELINT 2	
	considered in addition to <connto></connto>	
AT#SCFG?	Read command returns the current socket configuration parameters values for all the six sockets, in the format: #SCFG: <connid1>,<cid1>,<pktsz1>,<maxto1>,<connto1>,<txto1> <cr><lf> #SCFG: <connid6>,<cid6>,<pktsz6>,<maxto6>,<connto6>,<txto6> <cr><lf></lf></cr></txto6></connto6></maxto6></pktsz6></cid6></connid6></lf></cr></txto1></connto1></maxto1></pktsz1></cid1></connid1>	
AT#SCFG=?	Test command returns the range of supported values for all the subparameters.	
Example	at#scfg? #SCFG: 1,1,300,90,600,50 #SCFG: 2,2,300,90,600,50 #SCFG: 3,2,250,90,600,50 #SCFG: 4,1,300,90,600,50 #SCFG: 5,1,300,90,600,50 #SCFG: 6,1,300,90,600,50 OK	

3.5.7.4.6. Socket Configuration Extended - #SCFGEXT

#SCFGEXT - Socket Configuration	#SCFGEXT - Socket Configuration Extended SELINT 2		
AT#SCFGEXT=	Set command sets the socket configuration extended	l parameters.	
<conned>,<srmode>,</srmode></conned>			
<recvdatamode>,</recvdatamode>	Parameters:		
<keepalive>,</keepalive>	<connid> - socket connection identifier</connid>		
[, <listenautorsp></listenautorsp>	16		
[, <senddatamode>]</senddatamode>			
]	<srmode> - SRing unsolicited mode</srmode>		
	0 - Normal (default):		
	SRING : <connid> where <connid> is the socket</connid></connid>	connection	
	identifier		
	1 – Data amount:		
	SRING: <connid>,<recdata> where <recdata> is</recdata></recdata></connid>	s the amount of	
	data received on the socket connection number <cor< th=""><th>nnId></th></cor<>	nnId>	
	2 - Data view:		
	SRING: <connid>,<recdata>,<data> same as bef</data></recdata></connid>	fore and <data> is</data>	
	data received displayed following <datamode> valu</datamode>	ie	
	3 – Data view with UDP datagram informations:		
	SRING: <sourceip>,<sourceport><connid>,<rec< th=""><th>Data>,</th></rec<></connid></sourceport></sourceip>	Data>,	
	<dataleft>,<data> same as before with <sourceip>,</sourceip></data></dataleft>		



<pre></pre>		41.7.0.4.4.4.20.4.200.4
<pre><recvdatamode> - data view mode for received data in command mode(AT#SRECV or <srmode> = 2) 0- text mode (default) 1- hexadecimal mode <keepalive> - Set the TCP Keepalive value in minutes 0 - Deactivated (default) 1 - 240 - Keepalive time in minutes <!-- ListenAutoRsp--> - Set the listen auto-response mode, that affects the commands AT#SL and AT#SLUDP 0 - Deactivated (default) 1 - Activated <senddatamode> - data mode for sending data in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of auto- response mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT:<connldl>, <srmodel>, <datamodel>, <keepalivel>, AT#SCFGEXT:<connldl>, <srmodel>, <datamode6>, <keepalive6>, **SCFGEXT:<connld6>, <srmode6>, <datamode6>, <keepalive6>, </keepalive6></datamode6></srmode6></connld6></keepalive6></datamode6></srmodel></connldl></keepalivel></datamodel></srmodel></connldl></senddatamode></keepalive></srmode></recvdatamode></pre>		<dataleft< a="">> that means the number of bytes left in the UDP datagram</dataleft<>
in command mode(AT#SRECV or <srmode> = 2) 0- text mode (default) 1- hexadecimal mode <pre></pre></srmode>		Note: <srmode> value 3 is not available in SW 13.00.002</srmode>
0- text mode (default) 1- hexadecimal mode *keepalive> - Set the TCP Keepalive value in minutes 0 - Deactivated (default) 1 - 240 - Keepalive time in minutes *ListenAutoRsp> - Set the listen auto-response mode, that affects the commands AT#SL and AT#SLUDP 0 - Deactivated (default) 1 - Activated *sendDataMode> - data mode for sending data in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of auto-response mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>, </keepalive1></datamode1></srmode1></connid1>		
1- hexadecimal mode *keepalive> - Set the TCP Keepalive value in minutes 0 - Deactivated (default) 1 - 240 - Keepalive time in minutes *ListenAutoRsp> - Set the listen auto-response mode, that affects the commands AT#SL and AT#SLUDP 0 - Deactivated (default) 1 - Activated *sendDataMode> - data mode for sending data in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of auto-response mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connidl>, <srmodel>, <datamodel>, <keepalivel>, ListenAutoRspl>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, ListenAutoRsp6>,0<cr><lf></lf></cr> </keepalive6></datamode6></srmode6></connid6></lf></cr></keepalivel></datamodel></srmodel></connidl>		· · · · · · · · · · · · · · · · · · ·
<pre></pre>		· /
### O - Deactivated (default) 1 - 240 - Keepalive time in minutes **ListenAutoRsp** - Set the listen auto-response mode, that affects the commands AT#SL and AT#SLUDP 0 - Deactivated (default) 1 - Activated **sendDataMode** - data mode for sending data in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of auto-response mode or in case of no auto-response mode, see the description of the two commands. ###################################		I- hexadecimal mode
### O - Deactivated (default) 1 - 240 - Keepalive time in minutes **ListenAutoRsp** - Set the listen auto-response mode, that affects the commands AT#SL and AT#SLUDP 0 - Deactivated (default) 1 - Activated **sendDataMode** - data mode for sending data in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of auto-response mode or in case of no auto-response mode, see the description of the two commands. ###################################		<pre><keepalive> - Set the TCP Keepalive value in minutes</keepalive></pre>
<pre> </pre> <pre> /pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>		-
the commands AT#SL and AT#SLUDP 0 - Deactivated (default) 1 - Activated <pre> /pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>		1 – 240 – Keepalive time in minutes
<pre> <senddatamode> - data mode for sending data in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of auto- response mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT:</senddatamode></pre> connId1>, <srmode1>,<datamode1>,<keepalive1>, </keepalive1></datamode1></srmode1>		the commands AT#SL and AT#SLUDP 0 - Deactivated (default)
in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>, <listenautorsp1>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp1></keepalive1></datamode1></srmode1></connid1>		1 – Activated
in command mode(AT#SSEND) 0 - data represented as text (default) 1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>, <listenautorsp1>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp1></keepalive1></datamode1></srmode1></connid1>		<senddatamode> - data mode for sending data</senddatamode>
1 - data represented as sequence of hexadecimal numbers (from 00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connld1>, <srmode1>, <datamode1>, <keepalive1>, <listenautorsp1>,0<cr><lf> #SCFGEXT:<connld6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf> #SCFGEXT:<connld6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connld6></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connld6></lf></cr></listenautorsp1></keepalive1></datamode1></srmode1></connld1>		_
00 to FF) Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>, <listenautorsp1>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp1></keepalive1></datamode1></srmode1></connid1>		0 - data represented as text (default)
Each octet of the data is given as two IRA character long hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>,<datamode1>,<keepalive1>, #SCFGEXT:<connid6>, <srmode6>,<datamode6>,<keepalive6>, #SCFGEXT:<connid6>, <srmode6>,<datamode6>,<keepalive6>,</keepalive6></datamode6></srmode6></connid6></keepalive6></datamode6></srmode6></connid6></keepalive1></datamode1></srmode1></connid1>		1 - data represented as sequence of hexadecimal numbers (from
hexadecimal number Note: these values are automatically saved in NVM. Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>, <listenautorsp1>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp1></keepalive1></datamode1></srmode1></connid1>		00 to FF)
Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>,<datamode1>,<keepalive1>, *ListenAutoRsp1>,0<cr><lf> **CR><lf> ************************************</lf></lf></cr></keepalive1></datamode1></srmode1></connid1>		
Note: Keepalive is available only on TCP connections. Note: for the behaviour of AT#SL and AT#SLUDP in case of autoresponse mode or in case of no auto-response mode, see the description of the two commands. AT#SCFGEXT? Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>,<datamode1>,<keepalive1>, *ListenAutoRsp1>,0<cr><lf> **CR><lf> ************************************</lf></lf></cr></keepalive1></datamode1></srmode1></connid1>		Note: these values are automatically saved in NVM.
response mode or in case of no auto-response mode, see the description of the two commands. Read command returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>, <listenautorsp1>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>, <datamode6>, <keepalive6>, <listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp1></keepalive1></datamode1></srmode1></connid1>		· ·
parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>,</keepalive1></datamode1></srmode1></connid1>		response mode or in case of no auto-response mode, see the
parameters values for all the six sockets, in the format: #SCFGEXT: <connid1>, <srmode1>, <datamode1>, <keepalive1>,</keepalive1></datamode1></srmode1></connid1>	AT#SCFGEXT?	Read command returns the current socket extended configuration
<pre><listenautorsp1>,0<cr><lf> #SCFGEXT:<connid6>, <srmode6>,<datamode6>,<keepalive6>, <listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6></keepalive6></datamode6></srmode6></connid6></lf></cr></listenautorsp1></pre>	ATHISCI GEAT.	
<listenautorsp6>,0<cr><lf></lf></cr></listenautorsp6>		
AT#SCFGEXT=? Test command returns the range of supported values for all the subparameters.	AT#SCFGEXT=?	5 11
Example Socket 1 set with data view sring, text data mode, a keepalive time of 30	Example	Socket 1 set with data view sring, text data mode, a keepalive time of 30



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minutes and listen auto-response set.

Socket 3 set with data amount sring, hex recv data mode, no keepalive and listen auto-response not set.

Socket 4 set with hex recv and send data mode

at#scfgext?

#SCFGEXT: 1,2,0,30,1,0 #SCFGEXT: 2,0,0,0,0,0 #SCFGEXT: 3,1,1,0,0,0 #SCFGEXT: 4,0,1,0,0,1 #SCFGEXT: 5,0,0,0,0,0 #SCFGEXT: 6,0,0,0,0,0

OK

3.5.7.4.7. Socket configuration Extended 2 - #SCFGEXT2

#SCFGEXT2 - Socket Configuration Extended

AT#SCFGEXT2=

<connId>,<bufferStart>,

[,<abortConnAttempt>

[,<unused B>

[,<unused C >[,<unused D>]]]]

Set command sets the socket configuration extended parameters for features not included in #SCFGEXT command.

Parameters:

<connId> - socket connection identifier

1..6

 bufferStart> - Set the sending timeout method based on new data received from the serial port.

(<txTo> timeout value is set by #SCFG command)
Restart of transmission timer will be done when new data
are received from the serial port.

0 - old behaviour for transmission timer (#SCFG command 6th parameter old behaviour, start only first time if new data are received from the serial port)

1 - new behaviour for transmission timer: restart when new data received from serial port

Note: is necessary to avoid overlapping of the two methods. Enabling new method, the old method for transmission timer(#SCFG) is automatically disabled to avoid overlapping.

Note: check if new data have been received from serial port is done with a granularity that is directly related to #SCFG <txTo> setting





	with a maximum period of 1 sec.
	<abortconnattempt> - Enable connection attempt(#SD/#SKTD/#SKTOP) abort before CONNECT(online mode) or OK(command mode)</abortconnattempt>
	0 – Not possible to interrupt connection attempt 1 – It is possible to interrupt the connection attempt (<connto> set by #SCFG or DNS resolution running if required)</connto>
	and give back control to AT interface by reception of a character. As soon as the control has been given to the AT interface the ERROR message will be received on the interface itself.
	Note: values are automatically saved in NVM.
AT#SCFGEXT2?	Read command returns the current socket extended configuration parameters values for all the six sockets, in the format:
	#SCFGEXT2: <connid1>,<bufferstart1>,0,0,0,0<cr><lf></lf></cr></bufferstart1></connid1>
	#SCFGEXT2: <connid6>,<bufferstart6>,0,0,0,0<cr><lf></lf></cr></bufferstart6></connid6>
AT#SCFGEXT2=?	Test command returns the range of supported values for all the subparameters.
Example	AT#SCFGEXT2=1,1 OK
	AT#SCFGEXT2=2,1 OK
	AT#SCFGEXT2? #SCFGEXT2: 1,1,0,0,0,0 #SCFGEXT2: 2,1,0,0,0,0 #SCFGEXT2: 3,0,0,0,0,0 #SCFGEXT2: 4,0,0,0,0,0
	#SCFGEXT2: 5,0,0,0,0,0 #SCFGEXT2: 6,0,0,0,0,0
	OK
	AT#SCFG? #SCFG: 1,1,300,90,600,50 #SCFG: 2,1,300,90,600,50



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#SCFG: 3,1,300,90,600,50 #SCFG: 4,2,300,90,600,50 #SCFG: 5,2,300,90,600,50 #SCFG: 6,2,300,90,600,50

OK

AT#SCFG=1,1,300,90,600,30

OK

Current configuration: socket with connId 1 and 2 are configured with new transmission timer behaviour.

<txTo> corresponding value has been changed(#SCFG) for connId 1, for connId 2 has been left to default value.

3.5.7.4.8. Socket Dial - #SD

#SD - Socket Dial SELINT 2 Execution command opens a remote connection via socket. AT#SD=<connId>, <txProt>,<rPort>, <IPaddr> Parameters: [,<closureType> <connId> - socket connection identifier [,<lPort> [,<connMode>]]] <txProt> - transmission protocol 0 - TCP 1 - UDP <rPort> - remote host port to contact 1..65535 < IPaddr> - address of the remote host, string type. This parameter can be either: any valid IP address in the format: "xxx.xxx.xxx.xxx" any host name to be solved with a DNS query <closureType> - socket closure behaviour for TCP when remote host has closed 0 - local host closes immediately (default) 255 - local host closes after an escape sequence (+++) or immediately in case of an abortive disconnect from remote. <IPort> - UDP connections local port 1..65535 <connMode> - Connection mode 0 - online mode connection (default) 1 - command mode connection Note: <closureType> parameter is valid for TCP connections only and has no



effect (if used) for UDP connections.



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#SD - Socket Dial	SELINT 2
	Note: IPort> parameter is valid for UDP connections only and has no effect (if used) for TCP connections.
	Note: if we set <connmode></connmode> to online mode connection and the command is successful we enter in online data mode and we see the intermediate result code CONNECT . After the CONNECT we can suspend the direct interface to the socket connection (nb the socket stays open) using the escape sequence (+++): the module moves back to command mode and we receive the final result code OK after the suspension. After such a suspension, it's possible to resume it in every moment (unless the socket inactivity timer timeouts, see #SCFG) by using the #SO command with the corresponding <connid></connid> .
	Note: if we set <connmode></connmode> to command mode connection and the command is successful, the socket is opened and we remain in command mode and we see the result code OK .
	Note: if there are input data arrived through a connected socket and not yet read because the module entered command mode before reading them (after an escape sequence or after #SD has been issued with <connmode></connmode> set to command mode connection), these data are buffered and we receive the SRING URC (SRING presentation format depends on the last #SCFGEXT setting); it's possible to read these data afterwards issuing #SRECV . Under the same hypotheses it's possible to send data while in command mode issuing #SSEND
	Note: resume of the socket(#SO) after suspension or closure(#SH) has to be done on the same instance on which the socket was opened through #SD. In fact, suspension has been done on the instance itself.
AT#SD=?	Test command reports the range of values for all the parameters.
Example	Open socket 1 in online mode
	AT#SD=1,0,80,"www.google.com",0,0,0 CONNECT
	Open socket 1 in command mode
	AT#SD=1,0,80,"www.google.com",0,0,1 OK

3.5.7.4.9. Socket Restore - #SO

#SO - Socket Restore		SELINT 2
AT#SO= <connid></connid>	Execution command resumes the direct interface to a socket connection which has	
	been suspended by the escape sequence.	
	Parameter:	



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#SO - Socket Restore		SELINT 2
	<pre><connid> - socket connection identifier</connid></pre>	
	16	
AT#SO=?	Test command reports the range of values for <connid></connid> paramet	er.

3.5.7.4.10. Socket Listen - #SL

#SL - Socket Listen	SELINT 2
AT#SL= <connid>,</connid>	This command opens/closes a socket listening for an incoming TCP connection on
stenState>,	a specified port.
listenPort>	
>[, <closure type="">]</closure>	Parameters:
	<connid> - socket connection identifier</connid>
	16
	stenState> -
	0 - closes socket listening
	1 - starts socket listening
	listenPort> - local listening port
	165535
	<closure type=""> - socket closure behaviour for TCP when remote host has closed 0 - local host closes immediately (default)</closure>
	255 - local host closes after an escape sequence (+++) or immediately in case of an
	abortive disconnect from remote.
	Note: if successful, the command returns a final result code OK .
	If the ListenAutoRsp flag has not been set through the command AT#SCFGEXT
	(for the specific connId), then, when a TCP connection request comes on the input port, if the sender is not filtered by internal firewall (see #FRWL), an URC is received:
	+SRING : <connid></connid>
	Afterwards we can use #SA to accept the connection or #SH to refuse it.
	If the ListenAutoRsp flag has been set, then, when a TCP connection request comes on the input port, if the sender is not filtered by the internal firewall (see command #FRWL), the connection is automatically accepted: the CONNECT indication is given and the modem goes into online data mode.
	If the socket is closed by the network the following URC is received:
	#SL: ABORTED
	Note: when closing the listening socket listenPort> is a don't care parameter
AT#SL?	Read command returns all the actual listening TCP sockets.



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#SL - Socket Listen	SELINT 2
AT#SL=?	Test command returns the range of supported values for all the subparameters.
Example	Next command opens a socket listening for TCP on port 3500 without. AT#SL=1,1,3500 OK

3.5.7.4.11. Socket Listen UDP - #SLUDP

3.5./.4.11. Socket Listen UDP - #SLUDP				
#SLUDP - Socket Liste				
AT#SLUDP= <connid< th=""><th>This command opens/closes a socket listening for an incoming UDP connection</th><th></th></connid<>	This command opens/closes a socket listening for an incoming UDP connection			
>,	on a specified port.			
stenState>,				
	Parameters:			
	<pre><connid> - socket connection identifier</connid></pre>			
	16			
	stenState> -			
	0 - closes socket listening			
	1 - starts socket listening			
				
	165535			
	Note: if successful, the command returns a final result code OK .			
	If the ListenAutoRsp flag has not been set through the command AT#SCFGEXT			
	(for the specific connId), then, when an UDP connection request comes on the			
	input port, if the sender is not filtered by internal firewall (see #FRWL), an URC			
	is received:			
	+SRING: <connid></connid>			
	Afterwards we can use #SA to accept the connection or #SH to refuse it.			
	If the ListenAutoRsp flag has been set, then, when an UDP connection request			
	comes on the input port, if the sender is not filtered by the internal firewall (see			
	command #FRWL), the connection is automatically accepted: the CONNECT			
	indication is given and the modem goes into online data mode .			
	If the socket is closed by the network the following URC is received:			
	#SLUDP: ABORTED			
	Note: when closing the listening socket < listenPort> is a don't care			
	parameter			



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#SLUDP - Socket Listen UDP SELINT 2		SELINT 2
AT#SLUDP?	Read command returns all the actual listening UDP sockets.	
AT#SLUDP=?	Test command returns the range of supported values for all the st	ıbparameters.
Example	Next command opens a socket listening for UDP on port 3500. AT#SLUDP=1,1,3500 OK	

3.5.7.4.12. Socket Accept - #SA

#SA - Socket Accept	SELINT 2	
AT#SA= <connid></connid>	Execution command accepts an incoming socket connection after an URC	
[, <connmode>]</connmode>	SRING: <connid></connid>	
	Parameter: <connid> - socket connection identifier 16 <connmode> - Connection mode, as for command #SD. 0 - online mode connection (default) 1 - command mode connection Note: the SRING URC has to be a consequence of a #SL issue. Note: setting the command before to having received a SRING will result in an ERROR indication, giving the information that a connection request has not yet been received</connmode></connid>	
AT#SA=?	Test command reports the range of values for all the parameters.	

3.5.7.4.13. Receive Data In Command Mode - #SRECV

#SRECV - Receive Data In Command Mode SELINT 2		SELINT 2
AT#SRECV=	Execution command permits the user to read data arrived through a connected socket,	
<connid>,</connid>	but buffered and not yet read because the module entered command mode before	
<maxbyte>,[<udpinf< th=""><th colspan="2">reading them; the module is notified of these data by a SRING URC, whose</th></udpinf<></maxbyte>	reading them; the module is notified of these data by a SRING URC, whose	
0>]	presentation format depends on the last #SCFGEXT setting.	
	Parameters:	
	<pre><connid> - socket connection identifier</connid></pre>	
	16	
	<maxbyte> - max number of bytes to read</maxbyte>	
	11500	
	<udpinfo></udpinfo>	
	0 – UDP information disabled (default)	





#SRECV - Receive Data In Command Mode SELINT 2		
#SRECV - Receive D		
	1 - UDP information enabled: data are read just until the end of the UDP datagram and the response carries information about the remote IP address and port and about	
	the remaining bytes in the datagram.	
	AT#SRECV= <connid>,<maxbytes>,1</maxbytes></connid>	
	#SRECV: <sourceip>, <sourceport> <connid>, <recdata>,</recdata></connid></sourceport></sourceip>	
	dataLeft>	
	data	
	Note: issuing #SRECV when there's no buffered data raises an error.	
	Trote. Issuing #SREE V when there is no buffered data raises an error.	
	Note: The <udpinfo></udpinfo> parameter is not available in SW 13.00.002.	
AT#SRECV=?	Test command returns the range of supported values for parameters	
	<pre>< connId >,< maxByte > and <udpinfo></udpinfo></pre>	
Example	SRING URC (<srmode> be 0, <datamode> be 0) telling data have just come through</datamode></srmode>	
-	connected socket identified by <connid>=1 and are now buffered</connid>	
	SRING: 1	
	Read in text format the buffered data	
	AT#SRECV=1,15 #SRECV: 1,15	
	stringa di test	
	Stanga di 1901	
	OK	
	Or:	
	if the received datagram, received from <ipaddr <ipport="" and=""> is of 60 bytes</ipaddr>	
	AT#SRECV=1,15,1 #SRECV: <ipaddr>,<ipport>,1,15,45</ipport></ipaddr>	
	stringa di test	
	OK	
	SRING URC (<srmode> be 1, <datamode> be 1) telling 15 bytes data have just come</datamode></srmode>	
	through connected socket identified by <connid>=2 and are now buffered</connid>	
	SRING: 2,15	
	Read in hexadecimal format the buffered data	
	AT#SRECV=2,15	
	#SRECV: 2,15	
	737472696e67612064692074657374	
	OK	
	Or:	
	if the received datagram, received from <ipaddr <ipport="" and=""> is of 60 bytes</ipaddr>	
	AT#SRECV=2,15	
	#SRECV: <ipaddr>,<ipport>,2,15,45 737472696e67612064692074657374</ipport></ipaddr>	
	13/11/20/000/01/20040/20/403/3/4	
	OK	



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#SRECV - Receive Data In Command Mode		SELINT 2
	SRING URC (<srmode> be 2, <datamode> be 0) displaying (in text for that have just come through connected socket identified by <connecessary #srecv="" 3,15,="" data="" data;="" di="" in="" issue="" no="" read="" remain="" sring:="" stringa="" test<="" th="" the="" to="" urc=""><th>nnId > = 3; it's no</th></connecessary></datamode></srmode>	nnId > = 3; it's no

3.5.7.4.14. Send Data In Command Mode - #SSEND

#SSEND - Send Da	ata In Command Mode	SELINT 2
AT#SSEND=	Execution command permits, while the module is in comman	d mode, to send
<connid></connid>	data through a connected socket.	
	n .	
	Parameters:	
	<connid> - socket connection identifier</connid>	
	16	
	The device responds to the command with the prompt 52	
	<pre><greater_than><space> and waits for the data to send.</space></greater_than></pre>	
	To complete the operation send Ctrl-Z char (0x1A hex); to ex-	it without writing
	the message send ESC char (0x1B hex).	
	If data are successfully sent, then the response is OK .	
	If data sending fails for some reason, an error code is reported	
	Note: the maximum number of bytes to send is 1024 bytes for	versions till
	7.03.02/7.02.07 and from 10.0x.xx0 till 10.0x.xx2,	
	1500(TCP)/1472(UDP) bytes for versions starting from 10.0x	
	; trying to send more data will cause the surplus to be discarded	d and lost.
	Note: it's possible to use #SSEND only if the connection was the ME is raising an error.	opened by #SD, else
	Note: a byte corresponding to BS char(0x08) is treated with its meaning; therefore previous byte will be cancelled(and BS chartent)	
AT#SSEND=?	Test command returns the range of supported values for param	eter <connid></connid>
Example	Send data through socket number 2	
	AT#SSEND=2	
	>Test <ctrl-z></ctrl-z>	
	OK	



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3.5.7.4.15. Send data in Command Mode extended - #SSENDEXT

#SSENDEXT - Send l	Data In Command Mode extended SELINT 2
AT#SSENDEXT= <connid>, <bytestosend></bytestosend></connid>	Execution command permits, while the module is in command mode , to send data through a connected socket including all possible octets (from 0x00 to 0xFF).
	Parameters:
	<pre><connid> - socket connection identifier 16</connid></pre>
	< bytestosend > - number of bytes to be sent
	Please refer to test command for range
	The device responds to the command with the prompt '>'
	<pre><greater_than><space> and waits for the data to send. When <bytestosend> bytes have been sent, operation is automatically completed.</bytestosend></space></greater_than></pre>
	If data are successfully sent, then the response is OK .
	If data sending fails for some reason, an error code is reported.
	Note: it's possible to use #SSENDEXT only if the connection was opened by #SD , else the ME is raising an error.
	Note: all special characters are sent like a generic byte. (For instance: 0x08 is simply sent through the socket and don't behave like a BS, i.e. previous character is not deleted)
AT#SSENDEXT=?	Test command returns the range of supported values for parameters < connId > and <bytestosend></bytestosend>
Example	Open the socket in command mode: at#sd=1,0, <port>,"IP address",0,0,1 OK</port>
	Give the command specifying total number of bytes as second parameter:
	at#ssendext=1,256 >; // Terminal echo of bytes sent is displayed here OK
	All possible bytes(from 0x00 to 0xFF) are sent on the socket as generic bytes.

3.5.7.4.16. IP Easy Authentication Type - #SGACTAUTH

#SGACTAUTH – Eas	y IP Authentication Type	SELINT 2
AT#SGACTAUTH=	Set command sets the authentication type for IP Easy	





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#SGACTAUTH – Eas	y IP Authentication Type	SELINT 2
<type></type>	This command has effect on the authentication mode used on AT#S0 AT#GPRS commands.	GACT or
	Parameter	
	<type></type>	
	0 - no authentication	
	1 - PAP authentication (factory default)	
	2 - CHAP authentication	
	Note: the parameter is not saved in NVM	
	Note: PAP Authentication is default when AT#SGACT contains use password.	rname e/o
	No Authentication is default when AT#SGACT doesn't contains use password.	rname and
AT#SGACTAUTH?	Read command reports the current IP Easy authentication type, in th	e format:
	#SGACTAUTH: <type></type>	
AT#SGACTAUTH =?	Test command returns the range of supported values for parameter <	type>.

3.5.7.4.17. Context activation and configuration - #SGACTCFG

#SGACTCFG - Context Act	ivation and Configuration	SELINT 2
AT#SGACTCFG= <cid>, <retry>, [,<delay> [,<urcmode>]]</urcmode></delay></retry></cid>	Execution command is used to enable or disable the automatic activation/reactivation of the context for the specified PDP context, to set the maximum number of attempts and to set the delay between an attempt and the next one. The context is activated automatically after every GPRS Attach or after a NW PDP CONTEXT deactivation if at least one IPEasy socket is configured to this context (see AT#SCFG).	
	Parameters:	
	<pre><cid> - PDP context identifier (see +CGDCONT command) 15 - numeric parameter which specifies a particular PDP context</cid></pre>	ext definition
	<retry> - numeric parameter which specifies the maximum numb activation attempts in case of activation failure. The value belong following range: 0 - 15 0 - disable the automatic activation/reactivation of the context (decorated)</retry>	gs to the
	<delay> - numeric parameter which specifies the delay in second attempt and the next one. The value belongs to the following range.</delay>	
	< urcmode > - URC presentation mode	



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	0 - disable unsolicited result code (default) 1 - enable unsolicited result code, after an automatic activation/reactivation, of the local IP address obtained from the network. It has meaning only if <auto>=1. The unsolicited message is in the format:</auto>
	#SGACT: <ip_address></ip_address>
	reporting the local IP address obtained from the network.
	Note: the URC presentation mode <urcmode> is related to the current AT instance only. Last <urcmode> setting is saved for every instance as extended profile parameter, thus it is possible to restore it even if the multiplexer control channel is released and set up, back and forth.</urcmode></urcmode>
	Note: < retry > and <delay> setting are global parameter saved in NVM</delay>
	Note: if the automatic activation is enabled on a context, then it is not allowed to modify by the command AT#SCFG the association between the context itself and the socket connection identifier; all the other parameters of command AT#SCFG are modifiable while the socket is not connected
AT#SGACTCFG?	Read command reports the state of all the five contexts, in the format:
	#SGACTCFG: <cid1>,<retry1>,<delay1>, < urcmode >CR><lf></lf></delay1></retry1></cid1>
	#SGACTCFG: <cid5>,<retry5>,<delay5>,< urcmode ></delay5></retry5></cid5>
	where: <cidn> - as <cid> before <retryn> - as <retry> before <delayn> - as <delay> before < urcmode > - as < urcmode > before</delay></delayn></retry></retryn></cid></cidn>
AT#SGACTCFG =?	Test command reports supported range of values for parameters <cid> >,<retry>,<delay>and < urcmode ></delay></retry></cid>

3.5.7.4.18. Context activation and configuration extended - #SGACTCFGEXT

#SGACTCFGEXT - context a	activation configuration extended	SELINT 2
AT#SGACTCFGEXT=	Execution command is used to enable new features related to	
<cid>,</cid>	context activation.	
<abortattemptenable></abortattemptenable>		
[, <unused></unused>	Parameters:	
[, <unused></unused>		
[, <unused></unused>	<pre><cid> - PDP context identifier (see +CGDCONT context)</cid></pre>	nmand)
]]]	15 - numeric parameter which specifies a particula	r PDP context definition
	<abortattemptenable></abortattemptenable>	





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	0 – old behaviour: no abort possible while attempting context activation
	1 – abort during context activation attempt is possible by sending a byte on the serial port. It takes effect on successive GPRS context activation attempt through #SGACT command in the following manner. While waiting for AT#SGACT= <cid>,1 response(up to 150 s) is possible to abort attempt by sending a byte and get back AT interface control(NO CARRIER indication).</cid>
	Note: If we receive delayed CTXT ACTIVATION ACCEPT after abort, network will be automatically informed of our aborted attempt through relative protocol messages(SM STATUS) and will also close on its side. Otherwise, if no ACCEPT is received after abort, network will be informed later of our PDP state through other protocol messages (routing area update for instance).
AT# SGACTCFGEXT?	Read command reports the state of all the five contexts, in the format:
	#SGACTCFGEXT: <cid1>,< abortAttemptEnable1 >,0,0,0<cr><lf> #SGACTCFGEXT: <cid5>,< abortAttemptEnable5 >,0,0,0<cr><lf></lf></cr></cid5></lf></cr></cid1>
	where: <cidn> - as <cid> before <abortattemptenable n=""> - as <abortattemptenable> before</abortattemptenable></abortattemptenable></cid></cidn>
	Note: values are automatically saved in NVM.
AT#SGACTCFGEXT=?	Test command reports supported range of values for all parameters

3.5.7.4.19. PAD command features - #PADCMD

#PADCMD – PAD command for	eatures SELINT 2
AT#PADCMD= <mode></mode>	This command sets features of the pending data flush to socket, opened with AT#SD command.
	Parameters: <mode>: Bit 1: 1 - enable forwarding; 0 - disable forwarding; Other bits reserved;</mode>
	Note: forwarding depends on character defined by AT#PADFWD
AT#PADCMD?	Read command reports the currently selected <mode></mode> in the format:
	#PADCMD: mode
AT#PADCMD=?	Test command reports the supported range of values for parameter



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3.5.7.4.20. PAD forward character - #PADFWD

#PADFWD - PAD forward character SELINT 2	
AT#PADFWD= <char></char>	This command sets the char that immediately flushes pending data to
[, <mode>]</mode>	socket, opened with AT#SD command.
	Parameters:
	<char>:</char>
	a number, from 0 to 255, that specifies the asci code of the char used to
	flush data
	<mode>:</mode>
	flush mode,
	0 – normal mode (default);
	1 – reserved;
	Note: use AT#PADCMD to enable the socket char-flush activity.
AT#PADFWD?	Read command reports the currently selected <char></char> and <mode></mode> in the
	format:
	#PADFWD: <char>,mode</char>
AT#PADFWD=?	Test command reports the supported range of values for parameters
	<char> and <mode>.</mode></char>

3.5.7.4.21. Base64 encoding/decoding of data sent/received on a socket - #BASE64

#BASE64 - Base64 encoding/decoding o	#BASE64 – Base64 encoding/decoding of data sent/received on a skt SELINT 2		
AT#BASE64=	Set command enables base64 encoding and/or decoding of data		
<connid>,<enc>,<dec></dec></enc></connid>	sent/received to/from the socket in online or in command mode.		
[, <unused_b></unused_b>			
[, <unused_c>]]</unused_c>	Parameters:		
	<pre><connid> - socket connection identifier</connid></pre>		
	16		
	<enc></enc>		
	0 – no encoding of data received from serial port.		
	1 - MIME RFC2045 base64 encoding of data recei	ved from serial port	
	that have to be sent to <connid> socket.</connid>		
	N		
	Note: as indicated from RFC2045 the encoded outp	ut stream is represented	
	in lines of no more than 76 characters each.	CDIE	
	Lines are defined as sequences of octets separated b	y a CRLF sequence.	



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2 - RFC 3548 base64 encoding of data received from serial port that have to be sent to <connId> socket.

Note: as indicated from RFC3548 CRLF have not to be added.

<dec>

0 – no decoding of data received from socket <connId>.

1 - MIME RFC2045 base64 decoding of data received from socket <connId> and sent to serial port.

(Same rule as for <enc> regarding line feeds in the received file that has to be decoded)

2 - RFC3548 base64 decoding of data received from socket <connId> and sent to serial port.

(Same rule as for <enc> regarding line feeds in the received file that has to be decoded)

Note: it is possible to use command to change current <enc>/<dec> settings for a socket already opened in command mode or in online mode after suspending it.

(In this last case obviously it is necessary to set AT#SKIPESC=1).

Note: to use #BASE64 in command mode, if data to send exceed maximum value for #SSENDEXT command, they have to be divided in multiple parts.

These parts have to be a multiple of 57 bytes, except for the last one, to distinguish EOF condition.

(Base64 encoding rules)

For the same reason if #SRECV command is used by the application to receive data, a multiple of 78 bytes has to be considered.

Note: to use #SRECV to receive data with <dec> enabled, it is necessary to consider that:

reading <maxByte> bytes from socket, user will get less due to decoding that is performed.

Note: on version 10.0x.xx3 only <connId> 1 is available.

Note: values are automatically saved in NVM.

AT# BASE64?

Read command returns the current <enc>/<dec> settings for all the six sockets, in the format:

BASE64:<connId1><enc1>,<dec1>,0,0<CR><LF>

BASE64:<connId6>,<enc6>,<dec6>,0,0<CR><LF>





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AT# BASE64=?	Test command returns the range of supported values for all the subparameters.
Example	AT#SKIPESC=1 OK
	AT#SD= <connid>,<txprot>,<rport>,<ipaddr> CONNECT //Data sent without modifications(default)</ipaddr></rport></txprot></connid>
	++++ (suspension) OK
	at#base64= <connid>,1,0 OK</connid>
	AT#SO= <connid> CONNECT // Data received from serial port are encoded // base64 before to be sent on the socket</connid>
	+++ (suspension) OK
	at#base64= <connid>,0,1 OK</connid>
	AT#SO= <connid> CONNECT // Data received from socket are decoded // base64 before to be sent on the serial port +++ (suspension)</connid>

3.5.7.4.22. Send UDP data to a specific remote host - #SSENDUDP

#SSENDUDP – send UDP data to a	<mark>a specific remote host</mark>	SELINT 2
AT#SSENDUDP= <connid></connid>	This command permits, while th	e module is in command mode, to send
, <remoteip>,<remoteport></remoteport></remoteip>	data over UDP to a specific rem	ote host.





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	UDP connection has to be previously completed with a first remote host through #SLUDP / #SA. Then, if we receive data from this or another host, we are able to send data to it.
	Like command #SSEND , the device responds with '> ' and waits for the data to send.
	Parameters: <connid> - socket connection identifier 16</connid>
	<pre><remoteip> - IP address of the remote host in dotted decimal notation, string type: "xxx.xxx.xxx."</remoteip></pre>
	<remoteport> - remote host port 165535</remoteport>
	Note: after SRING that indicates incoming UDP data and issuing #SRECV to receive data itself, through #SS is possible to check last remote host (IP/Port).
	Note: if successive resume of the socket to online mode Is performed(#SO), connection with first remote host is restored as it was before.
	Note: the maximum number of bytes to send is 1472 bytes
AT#SSENDUDP=?	Test command reports the supported range of values for parameters <pre><connid>,<remoteip> and <remoteport></remoteport></remoteip></connid></pre>
Example	Starts listening on <locport>(previous setting of firewall through #FRWL has to be done)</locport>
	AT#SLUDP=1,1, <locport> OK</locport>
	SRING: 1 // UDP data from a remote host available
	AT#SA=1,1 OK
	SRING: 1
	AT#SI=1 #SI: 1,0,0,23,0 // 23 bytes to read



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OK

AT#SRECV=1,23 #SRECV:1,23 message from first host

OK

AT#SS=1

#SS: 1,2,<LocIP>,<LocPort>,<RemIP1>,<RemPort1>

OK

AT#SSENDUDP=1,<RemIP1>,<RemPort1>
>response to first host
OK

SRING: 1 // UDP data from a remote host available

AT#SI=1

#SI: 1,22,23,24,0 // 24 bytes to read

OK

AT#SRECV=1,24 #SRECV:1,24 message from second host

OK

AT#SS=1

#SS: 1,2,<LocIP>,<LocPort>,<RemIP2>,<RemPort2> OK

Remote host has changed, we want to send a reponse:

AT#SSENDUDP=1,<RemIP2>,<RemPort2>
>response to second host
OK

3.5.7.4.23. Send UDP data to a specific remote host extended - #SSENDUDPEXT

#SSENDUDPEXT – send UDP data to a specific remote host extended

SELINT 2





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AT#SSENDUDPEXT = <connid>,<bytestosend>, ,<remoteip>,<remoteport></remoteport></remoteip></bytestosend></connid>	This command permits, while the module is in command mode, to send data over UDP to a specific remote host including all possible octets(from 0x00 to 0xFF)	
	As indicated about #SSENDUDP: UDP socket has to be previously opened through #SLUDP / #SA, then we are able to send data to different remote hosts	
	Like #SSENDEXT, the device responds with the prompt '> ' and waits for the data to send, operation is automatically completed when bytestosend> have been sent.	
	Parameters: <connid> - socket connection identifier 16</connid>	
	 bytestosend> - number of bytes to be sent 1-1472	
	<pre><remoteip> - IP address of the remote host in dotted decimal notation, string type: "xxx.xxx.xxx.xxx"</remoteip></pre>	
	<remoteport> - remote host port 165535</remoteport>	
AT#SSENDUDPEXT=?	Test command reports the supported range of values for parameters <connid>,<bytestosend>,<remoteip> and <remoteport></remoteport></remoteip></bytestosend></connid>	

3.5.7.4.24. Socket Type - #ST

#ST – Socket Type	SELINT 2	
AT#ST	Set command reports the current type of the socket (TCP/UDP) and its direction	
[= <connid>]</connid>	(Dialer / Listener)	
	Parameter: < ConnId > - socket connection identifier 16	
	The response format is:	
	#ST: <connid>,<type>,<direction></direction></type></connid>	
	where	
	< connId > - socket connection identifier	



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#ST – Socket Type		SELINT 2
	16	
	< type > - socket type	
	0 – No socket	
	1 – TCP socket	
	2 – UDP socket	
	< direction > - direction of the socket	
	0 – No	
	1 – Dialer 2 – Listener	
	Z – Listeller	
	Note: issuing #ST<cr></cr> causes getting information about ty	pe of all the sockets;
	the response format is:	
	#ST: <connid1>,<type1>,<direction1></direction1></type1></connid1>	
	<cr><lf></lf></cr>	
	#ST: <connid6>,< type 6>,< direction 6></connid6>	
AT#ST=?	Test command reports the range for parameter <connid>.</connid>	
Example	single socket:	
Example	single socket.	
	AT#ST=3	
	#ST: 3,2,1	
	Socket 3 is an UDP dialer.	
	All sockets:	
	AT#ST	
	#ST: 1,0,0	
	#ST: 2,0,0	
	#ST: 3,2,1	
	#ST: 4,2,2	
	#ST: 5,1,1	
	#ST: 6,1,2	
	π31.0,1,2	
	Socket 1 is closed.	
	Socket 2 is closed.	
	Socket 3 is an UDP dialer	
	Socket 4 is an UDP listener	
	Socket 5 is a TCP dialer	
	Socket 6 is a TCP listener	



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3.5.7.4.25. Detect the cause of a socket disconnection - #SLASTCLOSURE

#SLASTCLOSURE – Detect the cause of a socket disconnection

SELINT 2

AT#SLASTCLOSURE= [<connId>]

Execution command reports socket disconnection cause

Parameters:

<connId> - socket connection identifier

The response format is:

#SLASTCLOSURE: <connId>, <cause>

<connId> - socket connection identifier, as before

<cause> - socket disconnection cause:

- 0 not available(socket has not yet been closed)
- 1.- remote host TCP connection close due to FIN/END: normal remote disconnection decided by the remote application
- 2 -. remote host TCP connection close due to RST, all others cases in which the socket is aborted without indication from peer (for instance because peer doesn't send ack after maximum number of retransmissions/peer is no more alive).

All these cases include all the "FATAL" errors after recy or send on the TCP socket(named as different from EWOULDBLOCK)

- 3.- socket inactivity timeout
- 4.- network deactivation(PDP context deactivation from network)

Note: any time socket is re-opened, last disconnection cause is reset. Command report 0(not available).

Note: user closure cause(#SH) is not considered and if a user closure is performed after remote disconnection, remote disconnection cause remains saved and is not overwritten.

Note: if more consecutive closure causes are received, the original disconnection cause is saved.

(For instance: if a TCP FIN is received from remote and later a TCP RST because we continue to send data,



























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	FIN cause is saved and not overwritten) Note: also in case of <closuretype></closuretype> (#SD) set to 255, if the socket has not yet been closed by user after the escape sequence, #SLASTCLOSURE indicates remote disconnection cause if it has been received.	
	Note: in case of UDP, cause 2 indicates abnormal(local) disconnection. Cause 3 and 4 are still possible. (Cause 1 is obviously never possible)	
AT#SLASTCLOSURE=?	Test command reports the supported range for parameter <connid></connid>	

3.5.7.5. FTP AT Commands

3.5.7.5.1. FTP Time-Out - #FTPTO

#FTPTO - FTP Time-	Out SELINT 0 / 1
AT#FTPTO[=	Set command sets the time-out used when opening either the FTP control channel
<tout>]</tout>	or the FTP traffic channel.
	Parameter:
	<tout> - time-out in 100 ms units</tout>
	1005000 - hundreds of ms (factory default is 100)
	Note: The parameter is not saved in NVM.
	Note: if parameter <tout></tout> is omitted the behaviour of Set command is the same as Read command.
AT#FTPTO?	Read command returns the current FTP operations time-out, in the format:
	#FTPTO: <tout></tout>
AT#FTPTO=?	Test command returns the range of supported values for parameter <tout></tout>

#FTPTO - FTP Time-	Out SELINT 2
AT#FTPTO=	Set command sets the time-out used when opening either the FTP control channel
[<tout>]</tout>	or the FTP traffic channel.
	Parameter:
	<tout> - time-out in 100 ms units</tout>
	1005000 - hundreds of ms (factory default is 100)
	Note: The parameter is not saved in NVM.
AT#FTPTO?	Read command returns the current FTP operations time-out, in the format:



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#FTPTO - FTP Time-C	Out SELINT 2	
	#FTPTO: <tout></tout>	
AT#FTPTO=?	Test command returns the range of supported values for parameter <tout></tout>	

3.5.7.5.2. FTP Open - #FTPOPEN

#FTPOPEN - FTP Ope	en SELINT 0 / 1
AT#FTPOPEN=	Execution command opens an FTP connection toward the FTP server.
<server:port>,</server:port>	
<username>,</username>	Parameters:
<pre><password>[,</password></pre>	<pre><server:port> - string type, address and port of FTP server (factory default port</server:port></pre>
<mode>]</mode>	21).
	<username></username> - string type, authentication user identification string for FTP.
	<pre><password> - string type, authentication password for FTP.</password></pre>
	<mode></mode>
	0 - active mode (default)
	1 - passive mode
	Note: Before opening an FTP connection the GPRS context must have been
	activated by AT#GPRS=1

#FTPOPEN - FTP Ope	en SELINT 2
AT#FTPOPEN=	Execution command opens an FTP connection toward the FTP server.
[<server:port>,</server:port>	
<username>,</username>	Parameters:
<pre><password>[,</password></pre>	<server:port></server:port> - string type, address and port of FTP server (factory default port
<mode>]]</mode>	21).
	<username></username> - string type, authentication user identification string for FTP.
	<pre><password> - string type, authentication password for FTP.</password></pre>
	<mode></mode>
	0 - active mode (factory default)
	1 - passive mode
	Note: Before opening an FTP connection either the GSM context must have been activated by AT#SGACT=0,1 or the PDP context #1 must have been activated by
	AT#SGACT=1,1 or by AT#GPRS=1
AT#FTPOPEN=?	Test command returns the OK result code.

3.5.7.5.3. FTP Close - #FTPCLOSE





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#FTPCLOSE - FTP Close		SELINT 0 / 1
AT#FTPCLOSE	Execution command closes an FTP connection.	
AT#FTPCLOSE?	Read command behavior is the same as Execution command.	

#FTPCLOSE - FTP Cl	<mark>ose</mark>	SELINT 2
AT#FTPCLOSE	Execution command closes an FTP connection.	
AT#FTPCLOSE=?	Test command returns the OK result code.	

3.5.7.5.4. FTP Put - #FTPPUT

#FTPPUT - FTP Put	SELINT 0/1	
AT#FTPPUT=	Execution command, issued during an FTP connection, opens a data connection and	
<filename></filename>	starts sending <filename></filename> file to the FTP server.	
	If the data connection succeeds, a CONNECT indication is sent, afterward a NO CARRIER indication is sent when the socket is closed.	
	Parameter: <filename> - string type, name of the file (maximum length 200 characters) Note: use the escape sequence +++ to close the data connection.</filename>	
	Note: The command causes an ERROR result code to be returned if no FTP connection has been opened yet.	
AT#FTPPUT=?	Test command returns the OK result code.	

#FTPPUT - FTP Put	SELINT 2
AT#FTPPUT=	Execution command, issued during an FTP connection, opens a data connection and
[[<filename>],</filename>	starts sending <filename></filename> file to the FTP server.
[<connmode>]]</connmode>	
	If the data connection succeeds, a CONNECT indication is sent.
	afterward a NO CARRIER indication is sent when the socket is closed.
	Note: if we set <connmode></connmode> to 1, the data connection is opened and we remain in command mode and we see the result code OK (instead of CONNECT)
	Parameters:
	<filename></filename> - string type, name of the file (maximum length 200 characters)
	<connmode></connmode>
	0 - online mode



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#FTPPUT - FTP Put		SELINT 2
	1 – command mode	
	Note: use the escape sequence +++ to close the data connection.	
	Note: The command causes an ERROR result code to be returne has been opened yet.	d if no FTP connection
	Note: The <connmode> parameter is not available in SW 13.00.0</connmode>	002.
AT#FTPPUT=?	Test command reports the supported range of values for paramete <connmode></connmode>	ers <filename></filename> and

3.5.7.5.5. FTP Get - #FTPGET

#FTPGET - FTP Get		SELINT 0 / 1
AT#FTPGET=	Execution command, issued during an FTP connection, opens a	data connection and
<filename></filename>	starts getting a file from the FTP server.	
	If the data connection succeeds a CONNECT indication is sent, otherwise a NO	
	CARRIER indication is sent.	
	The file is received on the serial port.	
	Parameter:	
	<filename> - file name, string type.</filename>	
	Note: The command causes an ERROR result code to be return	ned in case no FTP
	connection has been opened yet.	
	Note: Command closure should always be handled by application	
	download stall situations a timeout should be implemented by the	e application.

#FTPGET - FTP Get		SELINT 2
AT#FTPGET=	Execution command, issued during an FTP connection, opens a	data connection and
[<filename>]</filename>	starts getting a file from the FTP server.	
	If the data connection succeeds a CONNECT indication is sent.	
	The file is received on the serial port.	
	Parameter: <filename> - file name, string type.</filename>	
	Note: The command causes an ERROR result code to be returned connection has been opened yet.	ed in case no FTP
	Note: Command closure should always be handled by application	
	download stall situations a timeout should be implemented by the	e application.
AT#FTPGET=?	Test command returns the OK result code.	



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3.5.7.5.6. FTP GET in command mode - #FTPGETPKT

#FTPGETPKT - FTP Ge	et in command mode SELINT 2
AT#FTPGETPKT=	Execution command, issued during an FTP connection, opens a data connection and
<filename></filename>	starts getting a file from the FTP server while remaining in command mode .
[, <viewmode>]</viewmode>	
	The data port is opened and we remain in command mode and we see the result
	code OK .
	Retrieval from FTP server of "remotefile" is started, but data are only buffered in the module.
	It's possible to read data afterwards issuing #FTPRECV command
	Parameters:
	<filename> - file name, string type (maximum length: 200 characters).</filename>
	<viewmode> - permits to choose view mode; numeric parameter:</viewmode>
	0 – text format (default)
	1 – hexadecimal format
	Note: The command causes an ERROR result code to be returned in case no FTP connection has been opened yet.
	Note: Command closure should always be handled by application. In order to avoid download stall situations a timeout should be implemented by the application.
AT#FTPGETPKT?	Read command reports current download state for <filename> with <viewmode> chosen, in the format:</viewmode></filename>
	#FTPGETPKT: <remotefile>,<viewmode>,<eof></eof></viewmode></remotefile>
	where <eof></eof> is a numeric parameter:
	0 = file currently being transferred
	1 = complete file has been transferred to FTP client
	*
AT#FTPGETPKT=?	Test command returns the OK result code.

3.5.7.5.7. FTP Type - #FTPTYPE

#FTPTYPE - FTP Typ	o <mark>e</mark>	SELINT 0 / 1
AT#FTPTYPE[=	Set command, issued during an FTP connection, sets the file tran	sfer type.
<type>]</type>		
	Parameter:	
	<type> - file transfer type:</type>	
	0 - binary	
	1 - ascii	





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#FTPTYPE - FTP T	Type SELINT 0 /	1
	Note: The command causes an ERROR result code to be returned if no connection has been opened yet.) FTP
	Note: If the parameter is omitted then the behaviour of Set command is the sa Read command.	me of
#FTPTYPE?	Read command returns the current file transfer type, in the format: #FTPTYPE: <type></type>	
#FTPTYPE=?	Test command returns the range of available values for parameter <type></type> :	
	#FTPTYPE: (0,1)	

#FTPTYPE - FTP T	ype SELINT 2	
AT#FTPTYPE=	Set command, issued during an FTP connection, sets the file transfer type.	
[<type>]</type>		
	Parameter:	
	<type> - file transfer type:</type>	
	0 - binary	
	1 - ascii	
	Note: The command causes an ERROR result code to be returned if no FTP connection has been opened yet.	
#FTPTYPE?	Read command returns the current file transfer type, in the format:	
	#FTPTYPE: <type></type>	
#FTPTYPE=?	Test command returns the range of available values for parameter <type></type> :	
	WEIGHTS/DE (0.1)	
	#FTPTYPE: (0,1)	

3.5.7.5.8. FTP Read Message - #FTPMSG

#FTPMSG - FTP Read	<mark>Message</mark>	SELINT 0 / 1
AT#FTPMSG	Execution command returns the last response from the server.	
AT#FTPMSG?	Read command behaviour is the same as Execution command.	

#FTPMSG - FTP Read	<mark>Message</mark>	SELINT 2
AT#FTPMSG	Execution command returns the last response from the server.	
AT#FTPMSG=?	Test command returns the OK result code.	

3.5.7.5.9. FTP Delete - #FTPDELE





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#FTPDELE - FTP Dele	ete SELII	NT 0 / 1
AT#FTPDELE= <filename></filename>	Execution command, issued during an FTP connection, deletes a file from remote working directory.	om the
	Parameter: <filename> - string type, it's the name of the file to delete.</filename>	
	Note: The command causes an ERROR result code to be returned if no connection has been opened yet.	FTP
	Note: In case of delayed server response, it is necessary to check if ERR indication is temporary due to timing out while waiting. In this case #FTPMSG response will result temporary empty. (Checking later #FTPMSG response will match with delayed server response will match with delayed server response will match with delayed server response.)	

#FTPDELE - FTP Dele	SELINT 2
AT#FTPDELE= [<filename>]</filename>	Execution command, issued during an FTP connection, deletes a file from the remote working directory.
	Parameter: <filename> - string type, it's the name of the file to delete.</filename>
	Note: The command causes an ERROR result code to be returned if no FTP connection has been opened yet.
	Note: In case of delayed server response, it is necessary to check if ERROR indication is temporary due to timing out while waiting. In this case #FTPMSG response will result temporary empty. (Checking later #FTPMSG response will match with delayed server response)
AT#FTPDELE=?	Test command returns the OK result code.

3.5.7.5.10. FTP Print Working Directory - #FTPPWD

#FTPPWD - FTP Prin	<mark>it Working Directory</mark>	SELINT 0 / 1
AT#FTPPWD	Execution command, issued during an FTP connection, shows	the current working
	directory on FTP server.	
	Note: The command causes an ERROR result code to be a connection has been opened yet.	returned if no FTP

#FTPPWD - FTP Print	Working Directory	SELINT 2
AT#FTPPWD	Execution command, issued during an FTP connection, sho	ws the current working
	directory on FTP server.	





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#FTPPWD - FTP Prin	t Working Directory	SELINT 2
	Note: The command causes an ERROR result code to be returned connection has been opened yet.	ed if no FTP
AT#FTPPWD=?	Test command returns the OK result code.	•

3.5.7.5.11. FTP Change Working Directory - #FTPCWD

#FTPCWD - FTP Change Working Directory		SELINT 0 / 1	
AT#FTPCWD=	Execution command, issued during an FTP connection, of	changes the	working
<dirname></dirname>	directory on FTP server.		
	Parameter: <dirname> - string type, it's the name of the new working dire. Note: The command causes an ERROR result code to be connection has been opened yet.</dirname>	•	no FTP

#FTPCWD - FTP Char	nge Working Directory SELINT 2
AT#FTPCWD=	Execution command, issued during an FTP connection, changes the working
[<dirname>]</dirname>	directory on FTP server.
	Parameter: <dirname> - string type, it's the name of the new working directory.</dirname>
	Note: The command causes an ERROR result code to be returned if no FTP connection has been opened yet.
AT#FTPCWD=?	Test command returns the OK result code.

3.5.7.5.12. FTP List - #FTPLIST

#FTPLIST - FTP List		SELINT 0 / 1		
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#FTPLIST - FTP List		SELINT 0 / 1
AT#FTPLIST[= <name>]</name>	Execution command, issued during an FTP connection, opens a starts getting from the server the list of contents of the specific properties of the specified file. Parameter: <name> - string type, it's the name of the directory or file.</name>	data connection and
	Note: The command causes an ERROR result code to be a connection has been opened yet. Note: issuing AT#FTPLIST<cr></cr> opens a data connection and the server the list of contents of the working directory.	

#FTPLIST - FTP List	SELINT 2
AT#FTPLIST[=	Execution command, issued during an FTP connection, opens a data connection and
[<name>]]</name>	starts getting from the server the list of contents of the specified directory or the properties of the specified file.
	Parameter:
	<name> - string type, it's the name of the directory or file.</name>
	Note: The command causes an ERROR result code to be returned if no FTP connection has been opened yet.
	Note: issuing AT#FTPLIST <cr> opens a data connection and starts getting from</cr>
	the server the list of contents of the working directory.
AT#FTPLIST=?	Test command returns the OK result code.

3.5.7.5.13. Get file size - #FTPFSIZE

#FTPFSIZE – Get file	size from FTP server	SELINT 2
AT#FTPFSIZE=	Execution command, issued during an FTP connection, permits to	o get file size of
<filename></filename>	<filename> file.</filename>	
	Note: FTPTYPE=0 command has to be issued before FTPFSIZE commutations transfer type to binary mode.	nand, to set file
AT# FTPFSIZE=?	Test command returns the OK result code.	

3.5.7.5.14. FTP Append - #FTPAPP

#FTPAPP - FTP Apper	<mark>nd</mark>	SELINT 2
AT#FTPAPP=	Execution command, issued during an FTP connection, opens a	data connection and





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#FTPAPP - FTP Appe	nd SELINT 2
[[<filename>],</filename>	append data to existing <filename> file.</filename>
<connmode>]</connmode>	
	If the data connection succeeds, a CONNECT indication is sent,
	afterward a NO CARRIER indication is sent when the socket is closed.
	Note: if we set <connmode></connmode> to 1, the data connection is opened and we remain in command mode and we see the result code OK (instead of CONNECT)
	Parameter: <filename> - string type, name of the file.</filename>
	<connmode></connmode>
	0 - online mode
	1 – command mode
	Note: use the escape sequence +++ to close the data connection.
	Note: The command causes an ERROR result code to be returned if no FTP connection has been opened yet.
	Note: The <connmode> parameter is not available in SW 13.00.002.</connmode>
AT#FTPAPP=?	Test command reports the supported range of values for parameters <filename></filename> and <connmode></connmode>

3.5.7.5.15. send data on a FTP data port while the module is in command mode - #FTPAPPEXT

#FTPAPPEXT – send data on a	FTP data port while the module is in command mode SELINT 2
AT#FTPAPPEXT=	This command permits to send data on a FTP data port while
 bytestosend>[,< eof >]	the module is in command mode.
	FTP data port has to be previously opened through #FTPPUT
	(or #FTPAPP) with <connmode></connmode> parameter set to command mode
	connection.
	Parameters:
	< bytestosend > - number of bytes to be sent
	11500
	<eof> - data port closure</eof>
	0 – normal sending of data chunk
	1 – close data port after sending data chunk





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	The device responds to the command with the prompt <greater_than><space> and waits for the data to send. When <bytestosend> bytes have been sent, operation is automatically completed. If (all or part of the) data are successfully sent, then the response is: #FTPAPPEXT: <sentbytes> OK Where <sentbytes> are the number of sent bytes. Note: <sentbytes> could be less than <bytestosend> If data sending fails for some reason, an error code is reported.</bytestosend></sentbytes></sentbytes></sentbytes></bytestosend></space></greater_than>
AT#FTPAPPEXT=?	Test command reports the supported range of values for parameters bytestosend> and eof>
Example	AT#FTPOPEN="IP",username,password OK AT#FTPPUT= <filename>,1 -> the new param 1 means that we open the connection in command mode OK // Here data socket will stay opened, but interface will be //available(command mode) AT#FTPAPPEXT=Size > write here the binary data. As soon Size byte are written, data are sent and OK is returned #FTPAPPEXT: <sentbytes> OK // Last #FTPAPPEXT will close the data socket, because // second(optional) parameter has this meaning:</sentbytes></filename>



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AT#FTPAPPEXT=Size,1

>...write here the binary data. As soon Size byte are written, data are sent and OK is returned

#FTPAPPEXT: <SentBytes>

OK

// If the user has to reopen the data port to send another

// (or append to the same) file, he can restart with the

// FTPPUT(or FTPAPP.)

//Then FTPAPPEXT,... to send the data chunks on the //reopened data port.

// Note: if while sending the chunks the data port is closed

// from remote, user will be aware of it because #FTPAPPEXT // will indicate ERROR and cause (available if previously //issued the command

AT+CMEE=2) will indicate that

//socket has been closed.

// Also in this case obviously, data port will have to be //reopened with

FTPPUT and so on...(same sequence)

3.5.7.5.16. Set restart position - # FTPREST

#FTPREST – Set restart position for FTP GET

SELINT 2

AT#FTPREST= <restartposition>

Set command sets the restart position for successive FTPGET (or FTPGETPKT) command.

It permits to restart a previously interrupted FTP download from the selected position in byte.

Parameter:

<restartposition> position in byte of restarting for successive FTPGET
FTPGETPKT)

Note:

It's necessary to issue FTPTYPE=0 before successive FTPGET (or FTPGETPKT command) to set binary file transfer type.

Note:

Setting <restartposition> has effect on successive FTP download.

After successive successfully initiated FTPGET(or FTPGETPKT) command

<restartposition> is automatically reset.

Note: value set for <restartposition> has effect on next data transfer(data port opened by FTPGET or FTPGETPKT).

Then <restartposition> value is automatically assigned to 0 for next download.





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#FTPREST – Set resta	art position for FTP GET	SELINT 2
AT# FTPREST?	Read command returns the current <restartposition></restartposition>	
	#FTPREST: <restartposition></restartposition>	
AT# FTPREST=?	Test command returns the OK result code.	_

3.5.7.5.17. Receive Data In Command Mode - #FTPRECV

#FTPRECV – Receive	Data In Command Mode S	SELINT 2
AT#FTPRECV= 	Execution command permits the user to transfer at most remote file, provided that retrieving from the FTP server has been	2
	previous #FTPGETPKT command, onto the serial port. This number is limited to the current number of bytes of the remote	e file which have
	been transferred from the FTP server. Parameters:	
	<pre></pre>	
	Note: it's necessary to have previously opened FTP data port and s and buffering of remote file through #FTPGETPKT command	
	Note: issuing #FTPRECV when there's no FTP data port opened raises an error.	
	Note: data port will stay opened if socket is temporary waiting to redata(FTPRECV returns 0 and FTPGETPKT gives a EOF 0 indication of the state of t	
AT# FTPRECV?	Read command reports the number of bytes currently received from the format:	m FTP server, in
	#FTPRECV: <available></available>	



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#FTPRECV - Receive	e Data In Command Mode	SELINT 2
AT# FTPRECV=?	Test command returns the range of supported values for 	
Example	AT#FTPRECV? #FTPRECV: 3000	
	OK	
	Read required part of the buffered data:	
	AT#FTPRECV=400 #FTPRECV: 400	
	Text row number 1 * 111111111111111111111111111111111	
	OK	
	AT#FTPRECV =200 #FTPRECV: 200 88888 * Text row number 9 * 999999999999999999999999999999999	
	Note: to check when you have received complete file it's possibl AT#FTPGETPKT read command:	e to use
	AT#FTPGETPKT? #FTPGETPKT: sample.txt,0,1	
	ОК	
	(you will get <eof> set to 1)</eof>	

3.5.7.5.18. FTP configuration - #FTPCFG





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#FTPCFG – ftp configuration	SELINT 2
AT#FTPCFG= <tout>,<ippign< th=""><th><tout> - time-out in 100 ms units</tout></th></ippign<></tout>	<tout> - time-out in 100 ms units</tout>
oring>[, <ftpsen>]</ftpsen>	1005000 - hundreds of ms (factory default is 100)
	Set command sets the time-out used when opening either the FTP control channel or the FTP traffic channel.
	Note: The parameter is not saved in NVM.
	<ippignoring> 0: No IP Private ignoring. During a FTP passive mode connection client uses the IP address received from server, even if it is a private IPV4 address.</ippignoring>
	1: IP Private ignoring enabled. During a FTP passive mode connection if the server sends a private IPV4 address the client doesn't consider this and connects with server using the IP address used in AT#FTPOPEN.
	[, <ftpsen>] 0 – Disable FTPS security: all FTP commands will perform plain FTP connections. 1 – Enable FTPS security: from now on any FTP session opened through FTP commands will be compliant to FTPS protocol, providing authentication and encrypted communication.</ftpsen>
	Note: in FTPS mode, FTP commands response time is generally bigger than in normal FTP mode. This latency is mainly due to the SSL handshake that has to be done at the opening of the FTP session (#FTPOPEN) and whenever a data exchange is required (#FTPPUT, #FTPGET etcetera).
	Note: FTP security cannot be enabled if an SSL socket has been activated by means of #SSLD or #SSLFASTD. Moreover, trying to dial an SSL socket when <enable></enable> =1 raises an error.
	Note: any <enable></enable> change is forbidden during an open FTP connection (with or without security). Furthermore, SSL configuration settings are forbidden during FTPS connections
AT#FTPCFG?	Read command reports the currently selected parameters in the format: #FTPCFG: <tout>, <ippignoring>, <ftpsen></ftpsen></ippignoring></tout>
AT+FTPCFG=?	Test command reports the supported range of values for parameter(s) <tout>,<ippignoring> and <ftpsen></ftpsen></ippignoring></tout>



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3.5.7.6. Enhanced IP Easy Extension AT Commands

3.5.7.6.1. Authentication User ID - #USERID

#USERID - Authentica	ation User ID	SELINT 0 / 1
AT#USERID	Set command sets the user identification string to be used durin	g the authentication
[= <user>]</user>	step.	
	Parameter: <user> - string type, it's the authentication User Id; the max length the output of Test command, AT#USERID=? (faction empty string ""). Note: If parameter is omitted then the behaviour of Set committed command.</user>	ctory default is the
AT#USERID?	Read command reports the current user identification string, in the format:	
A TOWN CORDED O	#USERID: <user>.</user>	
AT#USERID=?	Test command returns the maximum allowed length of the string	g parameter <user></user> .
Example	AT#USERID="myName" OK	
	AT#USERID?	
	#USERID: "myName"	
	OK	

#USERID - Authentica	ation User ID SELINT 2
AT#USERID=	Set command sets the user identification string to be used during the authentication
[<user>]</user>	step.
	Parameter: <user> - string type, it's the authentication User Id; the max length for this value is the output of Test command, AT#USERID=? (factory default is the empty string ""). Note: this command is not allowed for sockets associated to a GSM context (see #SCFG).</user>
AT#USERID?	Read command reports the current user identification string, in the format: #USERID: <user></user>
AT#USERID=?	Test command returns the maximum allowed length of the string parameter <user></user> .
Example	AT#USERID="myName" OK AT#USERID? #USERID: "myName"
	OK

3.5.7.6.2. Authentication Password - #PASSW





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#PASSW - Authentication Password SELINT 0/1	
AT#PASSW=	Set command sets the user password string to be used during the authentication
<pwd></pwd>	step.
	Parameter:
	<pwd> - string type, it's the authentication password; the max length for this value.</pwd>
	is the output of Test command, AT#PASSW=? (factory default is the
	empty string "").
AT#PASSW=?	Test command returns the maximum allowed length of the string parameter < pwd >
Example	AT#PASSW="myPassword"
•	OK

#PASSW - Authentica	tion Password SELINT 2		
AT#PASSW=	Set command sets the user password string to be used during the authentication		
[<pwd>]</pwd>	step.		
	Parameter: <pwd>- string type, it's the authentication password; the max length for this value is the output of Test command, AT#PASSW=? (factory default is the empty string "").</pwd>		
	Note: this command is not allowed for sockets associated to a GSM context (see #SCFG).		
AT#PASSW=?	Test command returns the maximum allowed length of the string parameter <pwd></pwd> .		
Example	AT#PASSW="myPassword"		
_	OK		

3.5.7.6.3. Packet Size - #PKTSZ

#PKTSZ - Packet Size	SELINT 0 / 1
AT#PKTSZ[=	Set command sets the default packet size to be used by the TCP/UDP/IP stack for
[<size>]]</size>	data sending.
	Parameter: <size> - packet size in bytes 0 - automatically chosen by the device 1512 - packet size in bytes (factory default is 300) Note: issuing AT#PKTSZ<cr> is the same as issuing the Read command.</cr></size>
	Note: issuing AT#PKTSZ= <cr> is the same as issuing the command AT#PKTSZ=0<cr>.</cr></cr>
AT#PKTSZ?	Read command reports the current packet size value.
	Note: after issuing command AT#PKTSZ=0 , the Read command reports the value automatically chosen by the device.



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#PKTSZ - Packet Size		SELINT 0 / 1
AT#PKTSZ=?	Test command returns the allowed values for the parameter <siz< td=""><td>e>.</td></siz<>	e>.
Example	AT#PKTSZ=100 OK AT#PKTSZ? #PKTSZ: 100	
	OK AT#PKTSZ=0 OK AT#PKTSZ? #PKTSZ: 300 ->value automatically chosen by device	
	OK	

#PKTSZ - Packet Size	SELINT 2
AT#PKTSZ=	Set command sets the default packet size to be used by the TCP/UDP/IP stack for
[<size>]</size>	data sending.
	Parameter:
	<size> - packet size in bytes</size>
	0 - automatically chosen by the device
	11500 - packet size in bytes (factory default is 300)
	Note: this command is not allowed for sockets associated to a GSM context (see
	#SCFG).
AT#PKTSZ?	Read command reports the current packet size value.
	Note: after issuing command AT#PKTSZ=0 , the Read command reports the value automatically chosen by the device.
AT#PKTSZ=?	Test command returns the allowed values for the parameter <size></size> .
Example	AT#PKTSZ=100
_	OK
	AT#PKTSZ? #PKTSZ: 100
	WI KIOZ. 100
	OK
	AT#PKTSZ=0
	OK AT#PKTSZ?
	#PKTSZ: 300 ->value automatically chosen by device
	OK

3.5.7.6.4. Data Sending Time-Out - #DSTO

#DSTO - Data Sending Time-Out		SELINT 0 / 1	
AT#DSTO[=	Set command sets the maximum time that the module aw	aits before	sending
[<tout>]]</tout>	anyway a packet whose size is less than the default one.		
	Parameter:		





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#DSTO - Data Sending	Time-Out	SELINT 0 / 1	
	<tout> - packet sending time-out in 100ms units (factory default is 50) 0 - no time-out, wait forever for packets to be completed before send. 1255 hundreds of ms</tout>		
	Note: In order to avoid low performance issues, it is suggested to set the data sending time-out to a value greater than 5.		
	Note: this time-out applies to data whose size is less than packet size and whose sending would have been delayed for an undefined time until new data to be sent had been received and full packet size reached.		
	Note: issuing AT#DSTO<cr></cr> is the same as issuing the Read command.		
	Note: issuing AT#DSTO= <cr> is the same as issuing the command AT#DSTO=0<cr>.</cr></cr>		
AT#DSTO?	Read command reports the current data sending time-out value.		
AT#DSTO=?	Test command returns the allowed values for the parameter <tout></tout> .		
Example	AT#DSTO=10 ->1 sec. time-out OK AT#DSTO? #DSTO: 10		
	OK		

#DSTO -Data Sending	Time-Out SELINT 2			
AT#DSTO=	Set command sets the maximum time that the module awaits before sending			
[<tout>]</tout>	anyway a packet whose size is less than the default one.			
	Parameter: <tout> - packet sending time-out in 100ms units (factory default is 50) 0 - no time-out, wait forever for packets to be completed before send. 1255 hundreds of ms</tout>			
	Note: In order to avoid low performance issues, it is suggested to set the data sending time-out to a value greater than 5.			
	Note: this time-out applies to data whose size is less than packet size and whose sending would have been delayed for an undefined time until new data to be sent had been received and full packet size reached.			
	Note: this command is not allowed for sockets associated to a GSM context (see #SCFG).			
AT#DSTO?	Read command reports the current data sending time-out value.			
AT#DSTO=?	Test command returns the allowed values for the parameter <tout></tout> .			
Example	AT#DSTO=10 ->1 sec. time-out			
	OK AT#DSTO?			
	#DSTO: 10			



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#DSTO -Data Sending	<mark>Fime-Out</mark>	SELINT 2
	OK	

3.5.7.6.5. Socket Inactivity Time-Out - #SKTTO

#SKTTO - Socket Inac	tivity Time-Out	SELINT 0 / 1	
AT#SKTTO[=	Set command sets the maximum time with no data exchanging	g on the socket that	
[<tout>]]</tout>	the module awaits before closing the socket and deactivating the GPRS context.		
	Parameter: <tout> - socket inactivity time-out in seconds units 0 - no time-out. 165535 - time-out in sec. units (factory default is 90). Note: this time-out applies when no data is exchanged through the time and therefore the socket connection has to be automatically context is deactivated only if it has been activated issuing #SKT activated issuing #SKTD, now it stays activated. Note: issuing AT#SKTTO<cr> is the same as issuing the Reactivated issuing AT#SKTTO=CR>.</cr></tout>	y closed; the GPRS TOP; if it has been d command.	
AT#SKTTO?	Read command reports the current socket inactivity time-out value		
AT#SKTTO=?	Test command returns the allowed values for parameter <tout></tout> .		
Example	AT#SKTTO=30 ->(30 sec. time-out)		
	OK AT#SKTTO?		
	#SKTTO: 30		
	OK		

#SKTTO - Socket Inac	ctivity Time-Out SELINT 2
AT#SKTTO=	Set command sets the maximum time with no data exchanging on the socket that
[<tout>]</tout>	the module awaits before closing the socket and deactivating the GPRS context.
	Parameter: <tout> - socket inactivity time-out in seconds units 0 - no time-out. 165535 - time-out in sec. units (factory default is 90). Note: this time-out applies when no data is exchanged in the socket for a long time and therefore the socket connection has to be automatically closed; the GPRS context is deactivated only if it has been activated issuing #SKTOP; if it has been activated issuing #SKTD, now it stays activated. Note: this command is not allowed for sockets associated to a GSM context (see</tout>



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#SKTTO - Socket I	nactivity Time-Out	SELINT 2	
	#SCFG).		
AT#SKTTO?	Read command reports the current socket inactivit	Read command reports the current socket inactivity time-out value.	
AT#SKTTO=?	Test command returns the allowed values for parameter <tout></tout> .		
Example	AT#SKTTO=30 ->(30 sec. time-out) OK AT#SKTTO? #SKTTO: 30 OK		

3.5.7.6.6. Socket Definition - #SKTSET

#SKTSET - Socket Det	<mark>finition</mark>	SELINT 0 / 1
AT#SKTSET[=	Set command sets the socket parameters values.	
<socket type="">,</socket>	•	
<remote port="">,</remote>	Parameters:	
<remote addr="">,</remote>	<socket type=""> - socket protocol type</socket>	
[<closure type="">],</closure>	0 - TCP (factory default)	
[<local port="">]]</local>	1 - UDP	
	<pre><remote port=""> - remote host port to be opened</remote></pre>	
	065535 - port number (factory default is 3333)	
	<pre><remote addr=""> - address of the remote host, string type. This page.</remote></pre>	arameter can be
	either:	
	- any valid IP address in the format: xxx.xxx.xxx	
	- any host name to be solved with a DNS query in the for	mat: <host name=""></host>
	(factory default is the empty string "")	
	<closure type=""> -</closure> socket closure behaviour for TCP when remote	e host has closed
	0 - local host closes immediately (default)	
	255 - local host closes after an escape sequence (+++) or imme	diately in case of an
	abortive disconnect from remote.	,
	local port> - local host port to be used on UDP socket	
	065535 - port number	
	1	
	Note: <closure type=""></closure> parameter is valid only for TCP socket type	pe, for UDP sockets
	shall be left unused.	
	Note: <local port=""> parameter is valid only for UDP socket type.</local>	, for TCP sockets
	shall be left unused.	,
	Note: The resolution of the host name is done when opening the	socket, therefore if
	an invalid host name is given to the #SKTSET command, then of	error message will
	be issued.	
	Note: the DNS Query to be successful requests that:	
	- the GPRS context 1 is correctly set with +CGDCONT	
	- the authentication parameters are set (#USERID, #PASSV	V)
	- the GPRS coverage is enough to permit a connection.	•



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#SKTSET - Socket	Definition SELINT 0 / 1	
	Note: If all parameters are omitted then the behaviour of Set command is the same as Read command.	
AT#SKTSET?	Read command reports the socket parameters values, in the format: AT#SKTSET: <socket type="">,<remote port="">,<remote addr="">, <closure type="">,<local port=""></local></closure></remote></remote></socket>	
AT#SKTSET=?	Test command returns the allowed values for the parameters.	
Example	AT#SKTSET=0,1024,"123.255.020.001" OK AT#SKTSET=0,1024,"www.telit.net" OK	
Note	Issuing command #QDNS will overwrite <remote addr=""> setting.</remote>	

#SKTSET - Socket De	finition SELINT 2		
AT#SKTSET=	Set command sets the socket parameters values.		
[<socket type="">,</socket>			
<remote port="">,</remote>	Parameters:		
<remote addr="">,</remote>	<socket type=""> - socket protocol type</socket>		
[<closure type="">],</closure>	0 - TCP (factory default)		
[<local port="">]]</local>	1 - UDP		
	<pre><remote port=""> - remote host port to be opened</remote></pre>		
	065535 - port number (factory default is 3333)		
	<pre><remote addr=""> - address of the remote host, string type. This parameter can be</remote></pre>		
	either:		
	- any valid IP address in the format: xxx.xxx.xxx		
	- any host name to be solved with a DNS query in the format: <host name=""></host>		
	(factory default is the empty string "")		
	<closure type=""></closure> - socket closure behaviour for TCP when remote host has closed		
	0 - local host closes immediately (default)		
	255 - local host closes after an escape sequence (+++) or immediately in case of a abortive disconnect from remote.		
	local port> - local host port to be used on UDP socket		
	065535 - port number		
	Note: <closure type=""></closure> parameter is valid only for TCP socket type, for UDP sockets shall be left unused.		
	Note: <local port=""> parameter is valid only for UDP socket type, for TCP sockets shall be left unused.</local>		
	Note: The resolution of the host name is done when opening the socket, therefore if an invalid host name is given to the #SKTSET command, then an error message will be issued.		
	Note: the DNS Query to be successful requests that:		



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#SKTSET - Socket D	Definition SELI	NT 2
	 the GPRS context 1 is correctly set with +CGDCONT the authentication parameters are set (#USERID, #PASSW) the GPRS coverage is enough to permit a connection. 	
	Note: this command is not allowed for sockets associated to a GSM cor#SCFG).	ntext (see
AT#SKTSET?	Read command reports the socket parameters values, in the format: AT#SKTSET: <socket type="">,<remote port="">,<remote addr="">, <closure type="">,<local port=""></local></closure></remote></remote></socket>	
AT#SKTSET=? Example	Test command returns the allowed values for the parameters. AT#SKTSET=0,1024,"123.255.020.001" OK AT#SKTSET=0,1024,"www.telit.net" OK	
Note	Issuing command #QDNS will overwrite <remote addr=""> setting.</remote>	

3.5.7.6.7. Socket Open - #SKTOP

#SKTOP - Socket Open	SELINT 0/1			
AT#SKTOP	Execution command activates the context number 1, proceeds with the			
	authentication with the user ID and password previously set by #USERID and			
	#PASSW commands, and opens a socket connection with the host specified in the			
	#SKTSET command. Eventually, before opening the socket connection, it issues			
	automatically a DNS query to solve the IP address of the host name.			
	If the connection succeeds a CONNECT indication is sent, otherwise a NO			
	CARRIER indication is sent.			
AT#SKTOP?	Read command behaviour is the same as Execution command.			
Example	AT#SKTOP			
•	GPRS context activation, authentication and socket open			
	CONNECT			

#SKTOP - Socket Open	1	SELINT 2	
AT#SKTOP	Execution command activates the context number 1, proceeds with the		
	authentication with the user ID and password previously set by #USERID and		
	#PASSW commands, and opens a socket connection with the host specified in the		
	#SKTSET command. Eventually, before opening the socket connection, it issues		
	automatically a DNS query to solve the IP address of the host name.		
	If the connection succeeds a CONNECT indication is sent, otherwise a NO CARRIER indication is sent.		
	Note: this command is not allowed for sockets associated to a GSM context (see		
	#SCFG).	·	
AT#SKTOP=?	Test command returns the OK result code.		
Example	AT#SKTOP		
_	GPRS context activation, authentication and socket open		



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#SKTOP - Socket Ope	n	SELINT 2
	CONNECT	
Note	This command is obsolete. It's suggested to use the couple #SGA instead of it.	ACT and #SO

3.5.7.6.8. Query DNS - #QDNS

#QDNS - Query DNS		SELINT 0 / 1
AT#QDNS= <host name=""></host>	Execution command executes a DNS query to solve the host nan address.	ne into an IP
Host name	Parameter:	
	<host name=""> - host name, string type.</host>	
	If the DNS query is successful then the IP address will be reported code, as follows:	ed in the result
	#QDNS: <host name="">,<ip address=""></ip></host>	
	where	
	<host name=""> - string type</host>	
	<pre><ip address=""> - string type, in the format "xxx.xxx.xxx"</ip></pre>	
	Note: the command has to activate the GPRS context if it was no	ot previously
	activated. In this case the context is deactivated after the DNS qu	iery.
Note	This command requires that the authentication parameters are co the GPRS network is present.	errectly set and that
Note	Issuing command #QDNS will overwrite <remote addr=""> setting #SKTSET.</remote>	g for command

#QDNS - Query DNS	SELINT 2
AT#QDNS=	Execution command executes a DNS query to solve the host name into an IP
[<host name="">]</host>	address.
	Parameter:
	<host name=""> - host name, string type.</host>
	If the DNS query is successful then the IP address will be reported in the result
	code, as follows:
	#QDNS: <host name="">,<ip address=""></ip></host>
	where
	''
	<host name=""> - string type</host>
	<pre><ip address=""> - string type, in the format "xxx.xxx.xxx.xxx"</ip></pre>



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#QDNS - Query DNS	SELINT 2
	Note: the command has to activate the GPRS context if it was not previously activated. In this case the context is deactivated after the DNS query. It also works with GSM context, but the GSM context has to be activated before.
AT#QDNS=?	Test command returns the OK result code.
Note	This command requires that the authentication parameters are correctly set and that the GPRS network is present (or GSM, if GSM context is used).
Note	Issuing command #QDNS will overwrite <remote addr=""> setting for command #SKTSET.</remote>
Note	This command is available only on the first virtual port of CMUX and works on the PDP context 1 and on the first ConnId (see AT#SCFG)

3.5.7.6.9. DNS Response Caching - #CACHEDNS

#CACHEDNS - DNS I	#CACHEDNS - DNS Response Caching SELINT 2		
AT#CACHEDNS= [<mode>]</mode>	Set command enables caching a mapping of domain names to IP addresses, as does a resolver library.		
	Parameter: <mode> 0 - caching disabled; it cleans the cache too 1 - caching enabled Note: the validity period of each cached entry (i.e. how long a DNS response remains valid) is determined by a value called the Time To Live (TTL), set by the administrator of the DNS server handing out the response.</mode>		
	Note: If the cache is full (8 elements) and a new IP address is resolved, an element is deleted from the cache: the one that has not been used for the longest time. Note: it is recommended to clean the cache, if command +CCLK has been issued		
	while the DNS Response Caching was enabled.		
AT#CACHEDNS?	Read command reports whether the DNS Response Caching is currently enabled or not, in the format:		
ATHCA CHEDNIC 0	#CACHEDNS: <mode></mode>		
AT#CACHEDNS=?	Test command returns the currently cached mapping along with the range of available values for parameter mode , in the format:		
	#CACHEDNS: [<hostn1>,<ipaddr1>,[,[<hostnn>,<ipaddrn>,]]](0,1)</ipaddrn></hostnn></ipaddr1></hostn1>		
	where: <hostnn> - hostname, string type <ipaddrn> - IP address, string type, in the format "xxx.xxx.xxx."</ipaddrn></hostnn>		



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3.5.7.6.10. Manual DNS Selection - #DNS

#DNS – Manual DNS Selection SELI	
AT#DNS= <cid>,</cid>	Set command allows to manually set primary and secondary DNS servers either for
<pre><pre><pre><pre>primary>,</pre></pre></pre></pre>	a PDP context defined by +CGDCONT or for a GSM context defined by
<secondary></secondary>	#GSMCONT
	Parameters:
	<cid>- context identifier</cid>
	0 - specifies the GSM context
	15 - numeric parameter which specifies a particular PDP context definition
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>
	"xxx.xxx.xxx" used for the specified cid; we're using this value
	instead of the primary DNS server come from the network (default is
	"0.0.0.0")
	<secondary> - manual secondary DNS server, string type, in the format</secondary>
	"xxx.xxx.xxx" used for the specified cid; we're using this
	value instead of the secondary DNS server come from the
	network (default is "0.0.0.0").
	NI 4 'C 4 '
	Note: if <pri>primary></pri> is "0.0.0.0" and <secondary></secondary> is not "0.0.0.0", then issuing
	AT#DNS= raises an error.
	Note: if <primary></primary> is "0.0.0.0" we're using the primary DNS server come from
	the network as consequence of a context activation.
	was not not as company of a company when
	Note: if <primary> is not "0.0.0.0" and <secondary> is "0.0.0.0", then we're</secondary></primary>
	using only the manual primary DNS server.
	Note: the context identified by <cid></cid> has to be previously defined, elsewhere
	issuing AT#DNS= raises an error.
	Note: the context identified by <cid></cid> has to be not activated yet, elsewhere issuing
	AT#DNS= raises an error.
AT#DNS?	Read command returns the manual DNS servers set either for every defined PDP
AI#DNS:	context and for the single GSM context (only if defined), in the format:
	context and for the single derived context (only if defined), in the format.
	[#DNS: <cid>,<primary>,<secondary>[<cr><lf></lf></cr></secondary></primary></cid>
	#DNS: <cid>,<primary>,<secondary>]</secondary></primary></cid>
AT#DNS=?	Test command reports the supported range of values for the <cid></cid> parameter.only,
	in the format:
	HDNC. (0.5)
	#DNS: (0,5),,



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#DNS – Manual DNS Selection		e <mark>ction</mark>	SELINT 2
ĺ			

3.5.7.6.11. Socket TCP Connection Time-Out - #SKTCT

#SKTCT - Socket TCP	Connection Time-Out SEI	LINT 0 / 1
AT#SKTCT[=	Set command sets the TCP connection time-out for the first CON	NECT answer
<tout>]</tout>	from the TCP peer to be received.	
	Parameter:	
	<tout> - TCP first CONNECT answer time-out in 100ms units</tout>	
	101200 - hundreds of ms (factory default value is 600).	
	Notes this time set and is substantial to the time that the TCD start	
	Note: this time-out applies only to the time that the TCP stack	waits for the
	CONNECT answer to its connection request.	
	Note: The time for activate the GPRS and resolving the name with to (if the peer was specified by name and not by address) is not counted out.	
	Note: if parameter is omitted then the behaviour of Set command	is the same as
	Read command.	
AT#SKTCT?	Read command reports the current TCP connection time-out.	
AT#SKTCT=?	Test command returns the allowed values for parameter <tout></tout> .	·
Example	AT#SKTCT=600	
	OK	
	socket first connection answer time-out has been set to 60 s.	

#SKTCT - Socket TCP	Connection Time-Out	SELINT 2
AT#SKTCT=	Set command sets the TCP connection time-out for the first CO	NNECT answer
[<tout>]</tout>	from the TCP peer to be received.	
	Parameter: <tout> - TCP first CONNECT answer time-out in 100ms units 101200 - hundreds of ms (factory default value is 600). Note: this time-out applies only to the time that the TCP stack w CONNECT answer to its connection request. Note: The time for activate the GPRS and resolving the name w</tout>	vaits for the ith the DNS query
	(if the peer was specified by name and not by address) is not coulout. Note: this command is not allowed for sockets associated to a G #SCFG).	
AT#SKTCT?	Read command reports the current TCP connection time-out.	
AT#SKTCT=?	Test command returns the allowed values for parameter <tout></tout> .	



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#SKTCT - Socket TCP	Connection Time-Out	SELINT 2
Example	AT#SKTCT=600 OK	
	socket first connection answer time-out has been set to 60 s.	

3.5.7.6.12. Socket Parameters Save - #SKTSAV

#SKTSAV - Socket Parameters Save SELINT 0 / 1	
AT#SKTSAV	Execution command stores the current socket parameters in the NVM of the device.
	The socket parameters to store are:
	- User ID
	- Password
	- Packet Size
	- Socket Inactivity Time-Out
	- Data Sending Time-Out
	- Socket Type (UDP/TCP)
	- Remote Port
	- Remote Address
	- TCP Connection Time-Out
Example	AT#SKTSAV
1	OK
	socket parameters have been saved in NVM
Note	If some parameters are not previously specified then a default value will be stored.

#SKTSAV - Socket	#SKTSAV - Socket Parameters Save SELINT 2		
AT#SKTSAV	Execution command stores the current socket parameters in the NVM of the device.		
	The socket parameters to store are:		
	- User ID - Password		
	- Packet Size		
	- Socket Inactivity Time-Out		
	- Data Sending Time-Out		
	- Socket Type (UDP/TCP)		
	- Remote Port		
	- Remote Address		
	- TCP Connection Time-Out		
	Note: this command is not allowed for sockets associated to a GSM context (see #SCFG).		
AT#SKTSAV=?	Test command returns the OK result code.		
Example	AT#SKTSAV		
	OK socket parameters have been saved in NVM		
Note	If some parameters have not been previously specified then a default value will be stored.		



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3.5.7.6.13. Socket Parameters Reset - #SKTRST

#SKTRST - Socket Par	cameters Reset	SELINT	<mark>0 / 1</mark>
AT#SKTRST	Execution command resets the socket parameters to the	"factory	default"
	configuration and stores them in the NVM of the device.		
	The socket parameters to reset are:		
	- User ID		
	- Password		
	- Packet Size		
	- Socket Inactivity Time-Out		
	- Data Sending Time-Out		
	- Socket Type		
	- Remote Port		
	- Remote Address		
	- TCP Connection Time-Out		
Example	AT#SKTRST	·	
	OK		
	socket parameters have been reset		

#SKTRST - Socket Par	cameters Reset	SELINT	2
AT#SKTRST	Execution command resets the socket parameters to the	"factory	default"
	configuration and stores them in the NVM of the device.		
	The socket parameters to reset are:		
	- User ID		
	- Password		
	- Packet Size		
	- Socket Inactivity Time-Out		
	- Data Sending Time-Out		
	- Socket Type		
	- Remote Port		
	- Remote Address		
	- TCP Connection Time-Out		
AT#SKTRST=?	Test command returns the OK result code.		
Example	AT#SKTRST		
	OK		
	socket parameters have been reset		

3.5.7.6.14. GPRS Context Activation - #GPRS

#GPRS - GPRS Contex	xt Activation	SELINT 0 / 1
AT#GPRS[=	Execution command deactivates/activates the GPRS context, even	entually proceeding
[<mode>]]</mode>	with the authentication with the parameters given with #PASSW	and #USERID.
	Parameter:	
	<mode> - GPRS context activation mode</mode>	
	0 - GPRS context deactivation request	





#GPRS - GPRS C	ontext Activation	SELINT 0 / 1
	1 - GPRS context activation request	
	In the case that the GPRS context has been activated, the preceded by the intermediate result code:	result code OK is
	+IP: <ip_address_obtained></ip_address_obtained>	
	reporting the local IP address obtained from the network.	
	Note: issuing AT#GPRS <cr> reports the current status of the format:</cr>	ne GPRS context, in
	#GPRS: <status></status>	
	where: <status> 0 - GPRS context deactivated 1 - GPRS context activated 2 - GPRS context activation pending.</status>	
	Note: issuing AT#GPRS= <cr> is the same as issuit AT#GPRS=0<cr>.</cr></cr>	ing the command
	Note: if you request a GPRS context deactivation during a call is AT#GPRS=0 or AT#EMAILACT=0 and then, after the call te to request a GPRS context activation through #GPRS, you need following sequence of three commands	rmination, you want
	AT#GPRS=1 OK AT#GPRS=0 OK AT#GPRS=1 OK	
AT#GPRS?	Read command has the same effect as the Execution command A	AT#GPRS <cr></cr>
AT#GPRS=?	Test command returns the allowed values for parameter mode :	
Example	AT#GPRS=1 +IP: 129.137.1.1 OK Now GPRS Context has been activated and our IP is 129.137.1. AT#GPRS=0 OK	
Note	Now GPRS context has been deactivated, IP is lost. It is strongly recommended to use the same command (e.g. #GP context, deactivate it and interrogate about its status.	PRS) to activate the



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#GPRS - GPRS Context Activation

SELINT 2

AT#GPRS= [<mode>]

Execution command deactivates/activates the **PDP context #1**, eventually proceeding with the authentication with the parameters given with **#PASSW** and **#USERID**.

Parameter:

<mode> - PDP context activation mode

- 0 PDP context #1 deactivation request
- 1 PDP context #1 activation request

In the case that the **PDP context #1** has been activated, the result code **OK** is preceded by the intermediate result code:

+IP: <ip_address_obtained>

reporting the local IP address obtained from the network.

Note: at least a **socket identifier** needs to be associated with **PDP context** #1 in order to every #**GPRS** action be effective; by default the **PDP context** #1 is associated with **socket identifiers 1, 2** and **3**, but it is possible to modify these associations through #**SCFG**. Trying to issue a #**GPRS** action when **no socket identifier** is associated with **PDP context** #1 raises an error.

Note: if the **PDP context #1** has been activated issuing **AT#GPRS=1**, then

- if you request to deactivate the **PDP context #1** issuing **AT#EMAILACT=0** an **ERROR** is raised and nothing happens
- if you request to deactivate the PDP context #1 during a call issuing
 AT#GPRS=0 and then, after the call termination, you want to activate the PDP
 context #1 again through #GPRS, you need to issue the following sequence of
 three commands

AT#GPRS=1

OK

AT#GPRS=0

OK

AT#GPRS=1

OK

(Analogous considerations if you want to request the activation of **PDP context** #1 issuing AT#EMAILACT=1, see #EMAILACT)

Note: this command is not allowed if GSM context has been activated (see AT#SGACT=0,1).

AT#GPRS?

Read command reports the current status of the **PDP context #1**, in the format:

#GPRS: <status>





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#GPRS - GPRS Co	ontext Activation SELINT 2
	where: <status> 0 - PDP context #1 deactivated 1 - PDP context #1 activated 2 - PDP context #1 activation pending.</status>
AT#GPRS=?	Test command returns the allowed values for parameter <mode></mode> .
Example	AT#GPRS=1 +IP: 129.137.1.1 OK Now PDP Context #1 has been activated and our IP is 129.137.1.1 AT#GPRS=0 OK Now PDP Context #1 has been deactivated, IP is lost.
Note	It is strongly recommended to use the same command (e.g. #GPRS) to activate the context, deactivate it and interrogate about its status.

3.5.7.6.15. Socket Dial - #SKTD

#SKTD - Socket Dial	SELINT 0/1
AT#SKTD	Set command opens the socket towards the peer specified in the parameters.
[= <socket type="">,</socket>	
<remote port="">,</remote>	Parameters:
<remote addr="">,</remote>	<socket type=""> - socket protocol type</socket>
[<closure type="">],</closure>	0 - TCP (factory default)
[<local port="">]]</local>	1 - UDP
	<pre><remote port=""> - remote host port to be opened</remote></pre>
	065535 - port number (factory default is 0)
	<pre><remote addr=""> - address of the remote host, string type. This parameter can be either:</remote></pre>
	- any valid IP address in the format: xxx.xxx.xxx
	- any host name to be solved with a DNS query in the format: <host name=""></host> (factory default is the empty string "")
	<pre><closure type=""> - socket closure behaviour for TCP when remote host has closed 0 - local host closes immediately (default)</closure></pre>
	255 - local host closes after an escape sequence (+++) or immediately in case of an abortive disconnect from remote.
	local port> - local host port to be used on UDP socket
	065535 - port number
	Note: <closure type=""></closure> parameter is valid only for TCP socket type, for UDP sockets shall be left unused.
	Note: <local port=""> parameter is valid only for UDP socket type, for TCP sockets shall be left unused.</local>



#SKTD - Socket Dial	SELINT 0/1
inger is government to the second sec	Note: the resolution of the host name is done when opening the socket, therefore if an invalid host name is given to the #SKTD command, then an error message will be issued. Note: the command to be successful requests that: - the GPRS context 1 is correctly set with +CGDCONT - the authentication parameters are set (#USERID, #PASSW) the GPRS coverage is enough to permit a connection - the GPRS has been activated with AT#GPRS=1
AT#SKTD?	as Read command. Read command reports the socket dial parameters values, in the format: AT#SKTD: <socket type="">,<remote port="">,<remote addr="">,</remote></remote></socket>
AT#SKTD=?	Test command returns the allowed values for the parameters.
Example	AT#SKTD=0,1024,"123.255.020.001",255 CONNECT AT#SKTD=1,1024,"123.255.020.001", ,1025 CONNECT In this way my local port 1025 is opened to the remote port 1024 AT#SKTD=0,1024,"www.telit.net", 255 CONNECT
Note	The main difference between this command and #SKTOP is that this command does not interact with the GPRS context status, leaving it ON or OFF according to the #GPRS setting, therefore when the connection made with AT#SKTD is closed the context (and hence the local IP address) is maintained.

#SKTD - Socket Dial	SELINT 2
AT#SKTD=	Set command opens the socket towards the peer specified in the parameters.
[<socket type="">,</socket>	
<remote port="">,</remote>	Parameters:
<remote addr="">,</remote>	<socket type=""> - socket protocol type</socket>
[<closure type="">],</closure>	0 - TCP (factory default)
[<local port="">]]</local>	1 - UDP
	<pre><remote port=""> - remote host port to be opened</remote></pre>
	165535 - port number
	<pre><remote addr=""> - address of the remote host, string type. This parameter can be</remote></pre>
	either:
	- any valid IP address in the format: xxx.xxx.xxx
	- any host name to be solved with a DNS query in the format: <host name=""></host>
	(factory default is the empty string "")
	<closure type=""> -</closure> socket closure behaviour for TCP when remote host has closed



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#SKTD - Socket Dial	SELINT 2
Some Plat	0 - local host closes immediately (default) 255 - local host closes after an escape sequence (+++) or immediately in case of an abortive disconnect from remote. <local port=""> - local host port to be used on UDP socket 065535 - port number Note: <closure type=""> parameter is valid only for TCP socket type, for UDP sockets shall be left unused. Note: <local port=""> parameter is valid only for UDP socket type, for TCP sockets shall be left unused. Note: the resolution of the host name is done when opening the socket, therefore if an invalid host name is given to the #SKTD command, then an error message will be issued. Note: the command to be successful requests that: - the GPRS context 1 is correctly set with +CGDCONT - the authentication parameters are set (#USERID, #PASSW) the GPRS coverage is enough to permit a connection - the GPRS has been activated with AT#GPRS=1</local></closure></local>
	#SCFG).
AT#SKTD?	Read command reports the socket dial parameters values, in the format: AT#SKTD: <socket type="">,<remote port="">,<remote addr="">, <closure type="">,<local port=""></local></closure></remote></remote></socket>
AT#SKTD=?	Test command returns the allowed values for the parameters.
Example	AT#SKTD=0,1024,"123.255.020.001",255 CONNECT AT#SKTD=1,1024,"123.255.020.001", ,1025 CONNECT In this way my local port 1025 is opened to the remote port 1024 AT#SKTD=0,1024,"www.telit.net", 255 CONNECT
Note	The main difference between this command and #SKTOP is that this command does not interact with the GPRS context status, leaving it ON or OFF according to the #GPRS setting, therefore when the connection made with #SKTD is closed the context (and hence the local IP address) is maintained.

3.5.7.6.16. Socket Listen - #SKTL

#SKTL - Socket Listen SE	ELINT 0 / 1	
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#SKTL - Socket Listen

SELINT 0 / 1

AT#SKTL [=<mode>, <socket type>, <input port>, [<closure type>]] Execution command opens/closes the socket listening for connection requests.

Parameters:

<mode> - socket mode

0 - closes socket listening

1 - starts socket listening

<socket type> - socket protocol type

0 - TCP

<input port> - local host input port to be listened

0..65535 - port number

<closure type> - socket closure behaviour for TCP when remote host has closed

0 - local host closes immediately (default)

255 - local host closes after an escape sequence (+++) or immediately in case of an abortive disconnect from remote.

Command returns the **OK** result code if successful.

Note: the command to be successful requests that:

- the GPRS context 1 is correctly set with +CGDCONT
- the authentication parameters are set (#USERID, #PASSW)
- the GPRS coverage is enough to permit a connection
- the GPRS has been activated with AT#GPRS=1

When a connection request comes on the input port, if the sender is not filtered by the internal firewall (see command #FRWL), an unsolicited code is reported:

+CONN FROM: <remote addr>

Where:

<remote addr> - host address of the remote machine that contacted the device.

When the connection is established the **CONNECT** indication is given and the modem goes into data transfer mode.

On connection close or when context is closed with **#GPRS=0** the socket is closed and no listen is anymore active.

If the context is closed by the network while in listening, the socket is closed, no listen is anymore active and an unsolicited code is reported:

#SKTL: ABORTED

Note: if all parameters are omitted the command returns the current socket listening **status** and the last settings of parameters **<input port>** and **<closure type>**, in the format:



#SKTL - Socket Listen	SELINT 0 / 1
	#SKTL: <status>,<input port=""/>,<closure type=""></closure></status>
	where
	<status> - socket listening status</status>
	0 - socket not listening
	1 - socket listening
AT#SKTL?	Read command has the same effect as Execution command when parameters are omitted.
AT#SKTL=?	Test command returns the allowed values for parameters <mode>, <input port=""/></mode>
	and <closure type="">.</closure>
Example	Activate GPRS AT#GPRS=1 +IP: ###.###.###
	OK Start listening
	AT#SKTL=1,0,1024
	OK
	or
	AT#SKTL=1,0,1024,255 OK
	OK .
	Receive connection requests
	+CONN FROM: 192.164.2.1
	CONNECT
	exchange data with the remote host
	send escape sequence
	NO CARRIER
	Now listen is not anymore active
	to stop listening
	AT#SKTL=0,0,1024, 255 OK
Note	The main difference between this command and the #SKTD is that #SKTL does
11010	not contact any peer, nor does any interaction with the GPRS context status, leaving
	it ON or OFF according to the # GPRS setting, therefore when the connection made
	with #SKTL is closed the context (and hence the local IP address) is maintained.
	with #52222 is closed the context (and nonce the four if address) is maintained.
	The improving command @SKTL has been defined.

#SKTL - Socket Listen	SELINT 2
AT#SKTL	Execution command opens/closes the socket listening for connection requests.
=[<mode>,</mode>	
<socket type="">,</socket>	Parameters:
<input port=""/> ,	<mode> - socket mode</mode>
[<closure type="">]]</closure>	0 - closes socket listening



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#SKTL - Socket Listen		
	1 - starts socket listening	
	<socket type=""> - socket protocol type 0 -TCP (default)</socket>	
	1- UDP	
	<pre><input port=""/> - local host input port to be listened</pre>	
	165535 - port number	
	<pre><closure type=""> - socket closure behaviour for TCP when remote host has close</closure></pre>	ed
	0 - local host closes immediately (default)	
	255 - local host closes after an escape sequence (+++) or immediately in case	of an
	abortive disconnect from remote.	
	Command returns the OK result code if successful.	
	Note: the command to be successful requests that:	
	- the GPRS context 1 is correctly set with +CGDCONT	
	- the authentication parameters are set (#USERID, #PASSW)	
	- the GPRS coverage is enough to permit a connection	
	- the GPRS has been activated with AT#GPRS=1	
	When a connection request comes on the input port, if the sender is not filtered the internal firewall (see command #FRWL), an unsolicited code is reported:	. by
	+CONN FROM: <remote addr=""></remote>	
	Where:	
	<remote addr=""> - host address of the remote machine that contacted the development of the remote machine that contacted the remote machine that contacted the remote machine the remote machine that contacted the remote machine /remote>	vice.
	When the connection is established the CONNECT indication is given and the modem goes into data transfer mode.	;
	On connection close or when context is closed with #GPRS=0 the socket is closed and no listen is anymore active.	sed
	If the context is closed by the network while in listening, the socket is closed, r listen is anymore active and an unsolicited code is reported:	10
	#SKTL: ABORTED	
	Note: when closing the listening socket <input port=""/> is a don't care parameter	
AT#SKTL?	Read command returns the current socket listening status and the last settings parameters <input port=""/> and <closure type=""></closure> , in the format:	of
	#SKTL: <status>,<socket type="">, <input port=""/>,<closure type=""></closure></socket></status>	





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#SKTL - Socket Listen	SELINT 2	
	Where	
	<status> - socket listening status</status>	
	0 - socket not listening	
	1 - socket listening	
AT#SKTL=?	Test command returns the allowed values for parameters <mode>, <socket td="" type<=""><td>pe>,</td></socket></mode>	pe>,
	<pre><input port=""/> and <closure type="">.</closure></pre>	
Example	Activate GPRS	
_	AT#GPRS=1	
	+IP: ###.###.###	
	OK	
	Start TCP listening	
	AT#SKTL=1,0,1024	
	OK	
	or	
	AT#SKTL=1,0,1024,255	
	OK	
	Receive TCP connection requests	
	+CONN FROM: 192.164.2.1	
	CONNECT	
	exchange data with the remote host	
	send escape sequence	
	+++	
	NO CARRIER	
	Now listen is not anymore active	
	to stop listening	
	AT#SKTL=0,0,1024, 255	
Note	The main difference between this command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is that #SKTL does not be the command and #SKTD is the command and *SKTD is	
Note		
	contact any peer, nor does any interaction with the GPRS context status, leaving	_
	ON or OFF according to the #GPRS setting, therefore when the connection m	
	with #SKTL is closed the context (and hence the local IP address) is maintained	ed.

3.5.7.6.17. Socket Listen Improved - @SKTL

@SKTL - Socket List	<mark>en Improved</mark>	SELINT 0 / 1
AT@SKTL	Execution command opens/closes the socket listening for connec	ction requests.
[= <mode>,</mode>		
<socket type="">,</socket>	Parameters:	
<input port=""/> ,	<mode> - socket mode</mode>	
[<closure type="">]]</closure>	0 - closes socket listening	
	1 - starts socket listening	
	<socket type=""> - socket protocol type</socket>	
	0 - TCP	





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@SKTL - Socket Listen Improved

SELINT 0 / 1

<input port> - local host input port to be listened

0..65535 - port number

<closure type> - socket closure behaviour for TCP when remote host has closed
0 - local host closes immediately (default)

255 - local host closes after an escape sequence (+++) or immediately in case of an abortive disconnect from remote.

Command returns the **OK** result code if successful.

Note: the command to be successful requests that:

- the GPRS context 1 is correctly set with +CGDCONT
- the authentication parameters are set (#USERID, #PASSW)
- the GPRS coverage is enough to permit a connection
- the GPRS has been activated with AT#GPRS=1

When a connection request comes on the input port, if the sender is not filtered by the internal firewall (see command #FRWL), an unsolicited code is reported:

+CONN FROM: <remote addr>

Where:

<remote addr> - host address of the remote machine that contacted the device.

When the connection is established the **CONNECT** indication is given and the modem goes into data transfer mode.

On connection close or when context is closed with **#GPRS=0** the socket is closed and no listen is anymore active.

If the context is closed by the network while in listening, the socket is closed, no listen is anymore active and an unsolicited code is reported:

@SKTL: ABORTED

Note: if all parameters are omitted the command returns the current socket listening **status** and the last settings of parameters **<socket type>**, **<input port>** and **<closure type>**, in the format:

@SKTL: <status>,<socket type>,<input port>,<closure type>

Where

<status> - socket listening status

0 - socket not listening

1 - socket listening

AT@SKTL?

Read command has the same effect as Execution command when parameters are omitted.





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@SKTL - Socket I	SELINT 0 / 1
AT@SKTL=?	Test command returns the allowed values for parameters <mode>, <socket type="">,</socket></mode>
	<input port=""/> and <closure type="">.</closure>
Example	Activate GPRS
_	AT#GPRS=1
	+IP: ###.###.###
	OK
	Start listening
	AT@SKTL=1,0,1024
	OK
	or
	AT@SKTL=1,0,1024,255
	OK
	Receive connection requests
	+CONN FROM: 192.164.2.1
	CONNECT
	exchange data with the remote host
	send escape sequence
	+++
	NO CARRIER
	Now listen is not anymore active
	to stop listening
	AT@SKTL=0,0,1024, 255
	OK
Note	The main difference between this command and the #SKTD is that @SKTL does
	not contact any peer, nor does any interaction with the GPRS context status, leaving
	it ON or OFF according to the #GPRS setting, therefore when the connection made
	with @SKTL is closed the context (and hence the local IP address) is maintained.

3.5.7.6.18. Socket Listen Ring Indicator - #E2SLRI

#E2SLRI - Socket Listen Ring Indicator SELINT 0 /		SELINT 0 / 1 / 2
AT#E2SLRI=[<n>]</n>	Set command enables/disables the Ring Indicator pin response to a Socket Listen connect and, if enabled, the duration of the negative going pulse generated on receipt of connect.	
	Parameter: <n> - RI enabling 0 - RI disabled for Socket Listen connect (factory default) 501150 - RI enabled for Socket Listen connect; a negative goi generated on receipt of connect and <n> is the duration in ms of</n></n>	this pulse.
AT#E2SLRI?	Read command reports whether the Ring Indicator pin response t	to a Socket Listen



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#E2SLRI - Socket Listen Ring Indicator SELINT 0 /		SELINT 0 / 1 / 2
	connect is currently enabled or not, in the format:	
	#E2SLRI: <n></n>	
AT#E2SLRI=?	Test command returns the allowed values for parameter <status></status>	>.

3.5.7.6.19. Firewall Setup - #FRWL

	*	
#FRWL - Firewall Set	<mark>up</mark>	SELINT 0 / 1
AT#FRWL[=	Execution command controls the internal firewall settings.	
<action>,</action>		
<ip_addr>,</ip_addr>	Parameters:	
<net_mask>]</net_mask>	<action> - command action</action>	
	0 - remove selected chain	
	1 - add an ACCEPT chain	
	2 - remove all chains (DROP everything); <ip_addr> and <</ip_addr>	<pre>inet_mask> has no</pre>
	meaning in this case.	
	<pre><ip_addr> - remote address to be added into the ACCEPT c</ip_addr></pre>	
	can be any valid IP address in the format: xxx.xxx.x	
	<pre><net_mask> - mask to be applied on the <ip_addr>; string type</ip_addr></net_mask></pre>	, it can be any valid
	IP address mask in the format: xxx.xxx.xxx	
	Command returns OK result code if successful.	
	Note: the firewall applies for incoming (listening) connections or	nly.
	Firewall general policy is DROP , therefore all packets that are a ACCEPT chain rule will be silently discarded.	not included into an
	When a packet comes from the IP address incoming_IP , the will be scanned for matching with the following criteria:	firewall chain rules
	incoming_IP & <net_mask> = <ip_addr> & <net_mask></net_mask></ip_addr></net_mask>	
	If criteria is matched, then the packet is accepted and the rule criteria is not matched for any chain the packet is silently droppe	
	Note: If all parameters are omitted the command reports the lichain rules registered in the Firewall settings in the format: #FRWL: <ip addr="">,<net mask=""></net></ip>	ist of all ACCEPT
	#FRWL: <ip_addr>,<net_mask></net_mask></ip_addr>	
	OK	
AT#FRWL?	Read command has the same effect as Execution command womitted.	hen parameters are
AT#FRWL=?	Test command returns the allowed values for parameter <action< b="">:</action<>	<u> </u>
	Let assume we want to accept connections only from our device	
Example	Let assume we want to accept connections only from our device	es which are on the



#FRWL - Firewall Setu	SELINT SELINT	0/1
	IP addresses ranging from 197.158.1.1 to 197.158.255.255	
	We need to add the following chain to the firewall: AT#FRWL=1,"197.158.1.1","255.255.0.0" OK	
Note	For outgoing connections made with #SKTOP and #SKTD the remot dynamically inserted into the ACCEPT chain for all the connection Therefore the #FRWL command shall be used only for defining either the or the @SKTL behaviour, deciding which hosts are allowed to connect to device.	duration. e #SKTL
	Rules are not saved in NVM, at startup the rules list will be empty.	

#FRWL - Firewall Setu	<mark>ip</mark>	SELINT 2
AT#FRWL=	Execution command controls the internal firewall settings.	
[<action>,</action>		
<ip_address>,</ip_address>	Parameters:	
<net mask="">]</net>	<action> - command action</action>	
	0 - remove selected chain	
	1 - add an ACCEPT chain	
	2 - remove all chains (DROP everything); <ip_addr> and <net_meaning case.<="" in="" th="" this=""><th>_mask> has no</th></net_meaning></ip_addr>	_mask> has no
	<pre><ip_addr> - remote address to be added into the ACCEPT chain</ip_addr></pre>	
	<pre><net_mask> - mask to be applied on the <ip_addr>; string type,</ip_addr></net_mask></pre>	it can be any valid
	IP address mask in the format: xxx.xxx.xxx	
	Command returns OK result code if successful.	
	Note: the firewall applies for incoming (listening) connections on	ly.
	Firewall general policy is DROP , therefore all packets that are no ACCEPT chain rule will be silently discarded.	t included into an
	When a packet comes from the IP address incoming_IP , the firew will be scanned for matching with the following criteria:	vall chain rules
	incoming_IP & <net_mask> = <ip_addr> & <net_mask></net_mask></ip_addr></net_mask>	
	If criteria is matched, then the packet is accepted and the rule scan criteria is not matched for any chain the packet is silently dropped	
AT#FRWL?	Read command reports the list of all ACCEPT chain rules registe	
AI#FKWL:	Firewall settings in the format:	ica ili uic
	i newan settings in the format.	
	#FRWL: <ip addr="">,<net mask=""></net></ip>	
	#FRWL: <ip addr="">,<net mask=""></net></ip>	
	"I IX " Li, " " " " " " " " " " " " " " " " " " "	



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#FRWL - Firewall	Setup SELINT 2	
	ok	
AT#FRWL=?	Test command returns the allowed values for parameter <action>.</action>	
Example	Let assume we want to accept connections only from our devices which are on IP addresses ranging from 197.158.1.1 to 197.158.255.255 We need to add the following chain to the firewall: AT#FRWL=1,"197.158.1.1","255.255.0.0" OK	the
Note	For outgoing connections made with #SKTOP and #SKTD the remote host is dynamically inserted into the ACCEPT chain for all the connection duration. Therefore the #FRWL command shall be used only for defining the #SKTL behaviour, deciding which hosts are allowed to connect to the local device. Rules are not saved in NVM, at startup the rules list will be empty.	\$

3.5.7.6.20. GPRS Data Volume - #GDATAVOL

#GDATAVOL - GPRS	S Data Volume SELINT 2
AT#GDATAVOL=	Execution command reports, for every active PDP context, the amount of data the
[<mode>]</mode>	last GPRS session (and the last GSM session, if GSM context is active) received
	and transmitted, or it will report the total amount of data received and transmitted
	during all past GPRS (and GSM) sessions, since last reset.
	Parameter:
	<mode></mode>
	0 - it resets the GPRS data counter for the all the available PDP contexts (1-5) and GSM data counter for GSM context 0
	1 - it reports the last GPRS session data counter for the all the set PDP contexts
	(i.e. all the PDP contexts with APN parameter set using +CGDCONT) (and the
	last GSM session data counter for the GSM context, if set through
	#GSMCONT), in the format:
	HCDATEANOL ALL ALL ALL ALL ALL ALL ALL ALL ALL A
	#GDATAVOL: <cidn>,<totn>,<receivedn>[<cr><lf></lf></cr></receivedn></totn></cidn>
	#GDATAVOL: <cidm>,<totm>,<receivedm>[]]</receivedm></totm></cidm>
	where:
	<cidn> - PDP context identifier</cidn>
	0 - specifies the GSM context
	15 - numeric parameter which specifies a particular PDP context definition
	<totn> - number of bytes either received or transmitted in the last GPRS (or</totn>
	GSM) session for <cidn> PDP context;</cidn>
	<sentn> - number of bytes transmitted in the last GPRS (or GSM) session for</sentn>
	<cidn> PDP context;</cidn>
	<receivedn> - number of bytes received in the last GPRS (or GSM) session for</receivedn>



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#CDATAVOL CDDC	Doto Volumo	SELINT 2
#GDATAVOL - GPRS		SELINI 2
	<cidn> PDP context;</cidn>	
	2 - it reports the total GPRS data counter, since last reset, for the contexts (i.e. all the PDP context with APN parameter set us	
	and the total GSM data counter for the GSM context, if set the	
	#GSMCONT , in the format:	
	#GDATAVOL: <cidn>,<totn>,<sentn>,<receivedn>[<cf< th=""><th>?><lf></lf></th></cf<></receivedn></sentn></totn></cidn>	?><lf></lf>
	#GDATAVOL: <cidm>,<totm>,<sentm>,<receivedm>[</receivedm></sentm></totm></cidm>	.]]
	where:	
	<cidn> - PDP context identifier</cidn>	
	0 - specifies the GSM context	1.6.:4:
	15 - numeric parameter which specifies a particular PDP of < totn> - number of bytes either received or transmitted, in e	
	GSM) session since last reset, for <cidn></cidn> PDP contex	•
	<pre><sentn> - number of bytes transmitted, in every GPRS (or C last reset, for <cidn> PDP context;</cidn></sentn></pre>	
	<pre><receivedn> - number of bytes received, in every GPRS (or since last reset, for <cidn> PDP context;</cidn></receivedn></pre>	GSM) session
	Note: last GPRS and GSM session counters are not saved in NV	/M so they are
	loosen at power off.	
	Note: total GPRS and GSM session counters are saved on NVM	1.
AT#GDATAVOL=?	Test command returns the range of supported values for parame	eter <mode>.</mode>

3.5.7.6.21. ICMP Ping Support - #ICMP

#ICMP - ICMP Ping S	#ICMP - ICMP Ping Support SELINT 2	
AT#ICMP= <mode></mode>	Set command enables/disables the ICMP Ping support. Parameter: <mode> 0 - disable ICMP Ping support (default) 1 - enable firewalled ICMP Ping support: the module is sending ECHO_REPLY only to a subset of IP Addresses pinging it; t Addresses has been previously specified through #FRWL (see 2 - enable free ICMP Ping support; the module is sending a pro ECHO_REPLY to every IP Address pinging it.</mode>	his subset of IP ee)
AT#ICMP?	Read command returns whether the ICMP Ping support is current not, in the format: #ICMP: <mode></mode>	tly enabled or
AT#ICMP=?	Test command reports the supported range of values for the <mo< th=""><th>de> parameter.</th></mo<>	de> parameter.



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3.5.7.6.22. Maximum TCP Payload Size - #TCPMAXDAT

#TCPMAXDAT - Max	imum TCP Payload Size SELINT 2
AT#TCPMAXDAT=	Set command allows to set the maximum TCP payload size in TCP header options.
<size></size>	
	Parameter:
	<size> - maximum TCP payload size accepted in one single TCP/IP datagram; it is sent in TCP header options in SYN packet.</size>
	0 - the maximum TCP payload size is automatically handled by module (default). 4961420 - maximum TCP payload size
AT#TCPMAXDAT?	Read command reports the current maximum TCP payload size, in the format:
	#TCPMAXDAT: <size></size>
AT#TCPMAXDAT=?	Test command reports the supported range of values for parameter <size></size>

3.5.7.6.23. TCP Reassembly - #TCPREASS

#TCPREASS - TCP R	#TCPREASS - TCP Reassembly SELINT 2	
AT#TCPREASS= <n></n>	Set command enables/disables the TCP reassembly feature , in order to handle fragmented TCP packets.	
	Parameter: <n> 0 - disable TCP reassembly feature (default) 1 - enable TCP reassembly feature</n>	
AT#TCPREASS?	Read command returns whether the TCP reassembly feature is enformat: #TCPREASS: <n></n>	nabled or not, in the
AT#TCPREASS=?	Test command returns the supported range of values for paramet	er < n> .

3.5.7.6.24. PING request - #PING

#PING – Send PING request		
AT#PING=	This command is used to send Ping Echo Request messages and to receive the	
<ipaddr>[,<retrynu< th=""><th>corresponding Echo Reply.</th></retrynu<></ipaddr>	corresponding Echo Reply.	
m>[, <len>[,<timeout< th=""><th></th></timeout<></len>		
>[, <ttl>]]]]</ttl>		
	Parameters:	
	<ipaddr> - address of the remote host, string type. This parameter can be either:</ipaddr>	





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#PING – Send PIN	G request
WING Senatify	- any valid IP address in the format: "xxx.xxx.xxx"
	- any host name to be solved with a DNS query
	<retrynum> - the number of Ping Echo Request to send</retrynum>
	1-64 (default 4)
	<le>> - the lenght of Ping Echo Request message</le>
	32-1460 (default 32)
	<ti>ender < <ti><ti><ti><ti><ti><ti><ti><ti><ti><ti></ti></ti></ti></ti></ti></ti></ti></ti></ti></ti></ti>
	1-600 (default 50)
	<ttl>- time to live</ttl>
	1-255 (default 128)
	Once the single Echo Reply message is receive a string like that is displayed:
	#PING: <replyid>,<ip address="">,<replytime>,<ttl></ttl></replytime></ip></replyid>
	Where:
	<replyid> - Echo Reply number</replyid>
	<pre><ip address=""> - IP address of the remote host</ip></pre>
	<rp><replytime> - time, in 100 ms units, required to receive the response<ttl> - time to live of the Echo Reply message</ttl></replytime></rp>
	Note1: when the Echo Request timeout expires (no reply received on time) the response will contain < replyTime> set to 600 and < ttl> set to 255
	Note2: To receive the corresponding Echo Reply is not required to enable separately AT#ICMP
	Note3: Before send PING Request the GPRS context must have been activated by AT#SGACT=1,1
AT#ICMP=?	Test command reports the supported range of values for the #PING command
	parameters.
Example	AT#PING="www.telit.com"
_	#PING: 01,"81.201.117.177",6,50
	#PING: 02,"81.201.117.177",5,50 #PING: 03,"81.201.117.177",6,50
	#PING: 04,"81.201.117.177",5,50
	OK

3.5.7.7. E-mail Management AT Commands

3.5.7.7.1. E-mail SMTP Server - #ESMTP

#ESMTP - E-mail SMT	Γ <mark>P Server</mark>	SELINT 0 / 1
AT#ESMTP	Set command sets the SMTP server address, used for E-mail sen	ding.
[= <smtp>]</smtp>	SMTP server can be specified as IP address or as nick name.	





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#ESMTP - E-mail SMT	TP Server	SELINT 0 / 1
	Parameter: <smtp> - SMTP server address, string type. This parameter can - any valid IP address in the format: xxx.xxx.xxx - any host name to be solved with a DNS query in the form (factory default is the empty string "") Note: the max length for <smtp> is the output of Test command. Note: If parameter is omitted then the behaviour of Set command.</smtp></smtp>	mat: <host name=""></host>
	Read command	and is the same of
AT#ESMTP?	Read Command reports the current SMTP server address, in the #ESMTP: <smtp></smtp>	format:
AT#ESMTP=?	Test command returns the max length for the parameter <smtp></smtp>	•
Example	AT#ESMTP="smtp.mydomain.com" OK	
Note	The SMTP server used shall be inside the APN space (the smtp the network operator) or it must allow the Relay, otherwise it wi e-mail.	

#ESMTP - E-mail SM	#ESMTP - E-mail SMTP Server SELINT 2		
AT#ESMTP=	Set command sets the SMTP server address, used for E-mail sending.		
[<smtp>]</smtp>	SMTP server can be specified as IP address or as nick name.		
	Parameter: <smtp> - SMTP server address, string type. This parameter can - any valid IP address in the format: xxx.xxx.xxx - any host name to be solved with a DNS query in the formation (factory default is the empty string "") Note: the max length for <smtp> is the output of Test command.</smtp></smtp>	ormat: <host name=""></host>	
AT#ESMTP?	Read Command reports the current SMTP server address, in the format: #ESMTP: <smtp></smtp>		
AT#ESMTP=?	Test command returns the max length for the parameter <smtp></smtp>	•	
Example	AT#ESMTP="smtp.mydomain.com"		
Note	OK The SMTP server used shall be inside the APN space (the smtp server provided by		
	the network operator) or it must allow the Relay, otherwise it will refuse to send the e-mail.		

3.5.7.7.2. E-mail Sender Address - #EADDR

#EADDR - E-mail Sen	<mark>der Address</mark>	SELINT 0 / 1
AT#EADDR	Set command sets the sender address string to be used for sendin	g the e-mail.





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#EADDR - E-mail S	Sender Address SELINT 0 / 1		
[= <e-addr>]</e-addr>			
	Parameter:		
	<e-addr> - sender address, string type.</e-addr>		
	- any string value up to max length reported in the Test command.		
	(factory default is the empty string "")		
	Note: If parameter is omitted then the behaviour of Set command is the same o Read command		
AT#EADDR?	Read command reports the current sender address, in the format:		
	#EADDR: <e-addr></e-addr>		
AT#EADDR=?	Test command returns the maximum allowed length of the string parameter <e< th=""></e<>		
	addr>.		
Example	AT#EADDR="me@email.box.com"		
•	OK		
	AT#EADDR?		
	#EADDR: "me@email.box.com"		
	OK		

#EADDR - E-mail Ser	nder Address SELINT 2		
AT#EADDR=	Set command sets the sender address string to be used for sending the e-mail.		
[<e-add>]</e-add>			
	Parameter:		
	<e-addr> - sender address, string type.</e-addr>		
	- any string value up to max length reported in the Test command.		
	(factory default is the empty string "")		
AT#EADDR?	Read command reports the current sender address, in the format:		
	#EADDR: <e-addr></e-addr>		
AT#EADDR=?	Test command returns the maximum allowed length of the string parameter <e-< th=""></e-<>		
	addr>.		
Example	AT#EADDR="me@email.box.com"		
1	OK		
	AT#EADDR?		
	#EADDR: "me@email.box.com"		
	OK		

3.5.7.7.3. E-mail Authentication User Name - #EUSER

#EUSER - E-mail Aut	hentication User Name	SELINT 0 / 1	
AT#EUSER	Set command sets the user identification string to be used during	g the authentication	
[= <e-user>]</e-user>	step of the SMTP.		
	Parameter:		
	<e-user> - e-mail authentication User ID, string type.</e-user>		
	- any string value up to max length reported in the Test command.		



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#EUSER - E-mail A	uthentication User Name SELINT 0 / 1
	(factory default is the empty string "")
	Note: if no authentication is required then the <e-user></e-user> parameter shall be empty".
	Note: If parameter is omitted then the behaviour of Set command is the same o Read command
AT#EUSER?	Read command reports the current user identification string, in the format:
	#EUSER: <e-user></e-user>
AT#EUSER=?	Test command returns the maximum allowed length of the string parameter <e user="">.</e>
Example	AT#EUSER="myE-Name" OK AT#EUSER? #EUSER: "myE-Name" OK
Note	It is a different user field than the one used for GPRS authentication (see #USERID).

#EUSER - E-mail Aut	hentication User Name SELINT 2
AT#EUSER= [<e-user>]</e-user>	Set command sets the user identification string to be used during the authentication step of the SMTP.
	Parameter: <e-user> - e-mail authentication User ID, string type. - any string value up to max length reported in the Test command. (factory default is the empty string "")</e-user>
	Note: if no authentication is required then the <e-user></e-user> parameter shall be empty "".
AT#EUSER?	Read command reports the current user identification string, in the format: #EUSER: <e-user></e-user>
AT#EUSER=?	Test command returns the maximum allowed length of the string parameter <e-user>.</e-user>
Example	AT#EUSER="myE-Name" OK AT#EUSER: "myE-Name" OK
Note	It is a different user field than the one used for GPRS authentication (see #USERID).

3.5.7.7.4. E-mail Authentication Password - #EPASSW





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#EPASSW - E-mail Au	<mark>ithentication Password</mark>	SELINT 0 / 1
AT#EPASSW=	Set command sets the password string to be used during the au	thentication step of
<e-pwd></e-pwd>	the SMTP.	
	Parameter: <e-pwd> - e-mail authentication password, string type. - any string value up to max length reported in the Test comme (factory default is the empty string "") Note: if no authentication is required then the <e-pwd> parame ""</e-pwd></e-pwd>	
AT#EPASSW=?	Test command returns the maximum allowed length of the st	ring parameter <e-< th=""></e-<>
111111111111111111111111111111111111111	pwd>.	and parameter to
Example	AT#USERID="myPassword" OK	
Note	It is a different password field than the one used for GPRS #PASSW).	authentication (see

#EPASSW - E-mail Au	thentication Password SELINT 2	
AT#EPASSW=	Set command sets the password string to be used during the authentication step of	
[<e-pwd>]</e-pwd>	the SMTP.	
	Parameter: <e-pwd> - e-mail authentication password, string type. - any string value up to max length reported in the Test command. (factory default is the empty string "") Note: if no authentication is required then the <e-pwd> parameter shall be empty "".</e-pwd></e-pwd>	
AT#EPASSW=?	Test command returns the maximum allowed length of the string parameter <e- pwd="">.</e->	
Example	AT#EPASSW="myPassword" OK	
Note	It is a different password field than the one used for GPRS authentication (see #PASSW).	

3.5.7.7.5. E-mail Sending With GPRS Context Activation - #SEMAIL

#SEMAIL - E-mail Ser	nding With GPRS Context Activation	SELINT 0 / 1
AT#SEMAIL= <da>,</da>	Execution command activates a GPRS context, if not previously activated by	
<subj></subj>	#EMAILACT , and sends an e-mail message. The GPRS context is deactivated	
	when the e-mail is sent.	
	Parameters:	
	da> - destination address, string type (maximum length 100 cha	
	 <subj> -</subj> subject of the message, string type (maximum length 10	00 characters).



#SEMAIL - E-mail	Sending With GPRS Context Activation SELINT 0	<mark>/ 1</mark>
	The device responds to the command with the prompt '>' and awaits for the message body text. To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing the message send ESC char (0x1B hex).	
	If e-mail message is successfully sent, then the response is OK . If message sending fails for some reason, an error code is reported.	
	Note: if the length of one of the string type parameters exceeds the maximum length, then the string is truncated.	1
	Note: Care must be taken to ensure that during the command execution, no commands are issued.	
	To avoid malfunctions is suggested to wait for the OK or ERROR / +CMS ERROR:<err></err> response before issuing further commands.	
	Note: maximum length for message body is 1024 bytes, trying to send more will cause the surplus to be discarded and lost.	data
Example	AT#SEMAIL="me@myaddress.com","subject of the mail" >message body this is the text of the mail message CTRL-Z	
	wait OK	
Note	Message has been sent. This command is obsolete. It's suggested to use the couple #EMAILACT ar #EMAILD instead of it.	nd

#SEMAIL - E-mail Ser	nding With GPRS Context Activation	SELINT 2
AT#SEMAIL=[<da>,</da>	Execution command activates a GPRS context, if not previously activated by	
<subj></subj>	#EMAILACT , and sends an e-mail message. The GPRS context is deactivated	
1	when the e-mail is sent.	
	Parameters: <da> - destination address, string type. (maximum length 100 characters) <subj> - subject of the message, string type. (maximum length 100 characters) The device responds to the command with the prompt '>' and awaits for the message body text.</subj></da>	



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#SEMAIL - E-mail	Sending With GPRS Context Activation SELINT 2
	To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing the message send ESC char (0x1B hex).
	If e-mail message is successfully sent, then the response is OK . If message sending fails for some reason, an error code is reported.
	Note: if the length of one of the string type parameters exceeds the maximum length, then the string is truncated.
	Note: Care must be taken to ensure that during the command execution, no other commands are issued.
	To avoid malfunctions is suggested to wait for the OK or ERROR / + CMS ERROR : <err> response before issuing further commands.</err>
	Note: maximum length for message body is 1024 bytes, trying to send more data will cause the surplus to be discarded and lost.
	Note: this command is not allowed if GSM context is active (see AT#SGACT=0,1).
AT#SEMAIL=?	Test command returns the OK result code.
Example	AT#SEMAIL="me@myaddress.com","subject of the mail" >message body this is the text of the mail message CTRL-Z
	wait OK
	Message has been sent.

3.5.7.7.6. E-mail GPRS Context Activation - #EMAILACT

#EMAILACT - E-mail GPRS Context Ativation SELINT 0 / 1		
AT#EMAILACT[=	Execution command deactivates/activates the GPRS context, even	entually proceeding
[<mode>]]</mode>	with the authentication with the parameters given with #PASSW	and #USERID.
	Parameter:	
	<mode> - GPRS context activation mode</mode>	
	0 - GPRS context deactivation request	
	1 - GPRS context activation request	
	·	
	Note: issuing AT#EMAILACT <cr> reports the current st</cr>	atus of the GPRS



#EMAILACT - E-mail	GPRS Context Ativation	SELINT 0 / 1	
	context for the e-mail, in the format:		
	#EMAILACT: <status></status>		
	where: <status> 0 - GPRS context deactivated</status>		
	1 - GPRS context activated		
	Note: issuing AT#EMAILACT= <cr> is the same as issuing the command AT#EMAILACT=0<cr>.</cr></cr>		
	Note: if you request a GPRS context deactivation during a call issuing either AT#GPRS=0 or AT#EMAILACT=0 and then, after the call termination, you want to request a GPRS context activation through #EMAILACT, you need to issue the following sequence of three commands		
	AT#EMAILACT=1 OK AT#EMAILACT=0 OK AT#EMAILACT=1 OK		
AT#EMAILACT?	Read command has the same effect of the ExAT#EMAILACT <cr>.</cr>	ecution command	
AT#EMAILACT=?	Test command returns the allowed values for parameter <mode></mode>	>.	
Example	AT#EMAILACT=1 OK		
	Now GPRS Context has been activated		
	AT# EMAILACT=0 OK Now GPRS context has been deactivated.		
Note	It is strongly recommended to use the same command (e.g.	#EMAILACT) to	
	activate the context, deactivate it and interrogate about its status.	-	

#EMAILACT - E-mail GPRS Context Ativation SELINT 2				
AT#EMAILACT=	Execution command deactivates/activates the PDP context #1 , eventually			
[<mode>]</mode>	proceeding with the authentication with the parameters given with #PASSW and			
	#USERID.			
	Parameter:			
	<mode> - PDP context activation mode</mode>	ode> - PDP context activation mode		
	0 - GPRS context deactivation request			
	1 - GPRS context activation request			
	•			



#EMAILACT - E-mai	il GPRS Context Ativation SEL	INT 2
	Note: at least a socket identifier needs to be associated with PDP context #1 in order to every #EMAILACT action be effective; by default the PDP context #1 is associated with socket identifiers 1 , 2 and 3 , but it is possible to modify these associations through #SCFG . Trying to issue a #EMAILACT action when no socket identifier is associated with PDP context #1 raises an error.	
	 Note: if the PDP context #1 has been activated issuing AT#EMAILA if you request to deactivate the PDP context #1 issuing AT#GPR receives the final result code OK but nothing really happens if you request to deactivate the PDP context #1 during a call issuing AT#EMAILACT=0 and then, after the call termination, you want the PDP context #1 again through #EMAILACT, you need to issufollowing sequence of three commands 	S=0 DTE ing t to activate
	AT#EMAILACT=1 OK AT#EMAILACT=0 OK	
	AT#EMAILACT=1 OK	
	(Analogous considerations if you want to request the activation of #1 issuing AT#GPRS=1, see #GPRS)	PDP context
	Note: this command is not allowed if GSM context is active (see AT#SGACT=0,1).	
AT#EMAILACT?	Read command reports the current status of the GPRS context for the format:	e-mail, in the
	#EMAILACT: <status></status>	
	where:	
	<status> 0 - GPRS context deactivated</status>	
	1 - GPRS context activated	
AT#EMAILACT=?	Test command returns the allowed values for parameter <mode></mode> .	
Example	AT#EMAILACT=1 OK Now GPRS Context has been activated	
	AT# EMAILACT=0 OK Now GPRS context has been deactivated.	
Note	It is strongly recommended to use the same command (e.g. #EMAIL A activate the context, deactivate it and interrogate about its status.	ACT) to



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3.5.7.7.7. E-mail Sending - #EMAILD

#EMAILD - E-mail Se	nding SELINT 0 / 1	
AT#EMAILD= <da>,</da>	Execution command sends an e-mail message if GPRS context has already been	
<subj></subj>	activated by either AT#EMAILACT=1 or AT#GPRS=1.	
	Parameters:	
	<da> - destination address, string type (maximum length 100 characters).</da>	
	<subj></subj> - subject of the message, string type (maximum length 100 characters).	
	The device responds to the command with the prompt '>' and awaits for the	
	message body text.	
	To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing	
	the message send ESC char (0x1B hex).	
	If e-mail message is successfully sent, then the response is OK .	
	If message sending fails for some reason, an error code is reported.	
	Note: if the length of one of the string type parameters exceeds the maximum	
	length, then the string is truncated.	
	Note: Care must be taken to ensure that during the command execution, no other	
	commands are issued.	
	To avoid malfunctions is suggested to wait for the OK or ERROR / +CMS	
	ERROR: <err> response before issuing further commands.</err>	
	Note: maximum length for message body is 1024 bytes, trying to send more data	
	will cause the surplus to be discarded and lost.	
Example	AT#EMAILD="me@myaddress.com", "subject of the mail"	
•	>message body this is the text of the mail message	
	CTRL-Z	
	wait	
	OK	
	Message has been sent.	
Note	The only difference between this command and the #SEMAIL is that this	
	command does not interact with the GPRS context status, leaving it ON or OFF	
	according to the #EMAILACT setting, thus, when the connection made with	
	#EMAILD is closed, the context status is maintained.	

#EMAILD - E-mail Sending		SELINT 2
AT#EMAILD=[<da>,</da>	Execution command sends an e-mail message if GPRS cont	ext has already
<subj></subj>	been activated by either AT#SGACT=1,1 or AT#EMAIL	ACT=1 or
	AT#GPRS=1.	
	It is also possible to send an e-mail on the GSM context, if it	it has already been



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#EMAILD - E-mail Sending	SELINT 2
	activated by AT#SGACT=0,1.
	Parameters: <da> - destination address, string type. (maximum length 100 characters) <subj> - subject of the message, string type. (maximum length 100 characters)</subj></da>
	The device responds to the command with the prompt '>' and awaits for the message body text.
	To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing the message send ESC char (0x1B hex).
	If e-mail message is successfully sent, then the response is OK . If message sending fails for some reason, an error code is reported.
	Note: if the length of one of the string type parameters exceeds the maximum length, then the string is truncated.
	Note: Care must be taken to ensure that during the command execution, no other commands are issued.
	To avoid malfunctions is suggested to wait for the OK or ERROR / +CMS ERROR:<err></err> response before issuing further commands.
	Note: maximum length for message body is 1024 bytes for versions till 7.03.02/7.02.07 and from 10.0x.xx0 till 10.0x.xx2, 1500 bytes for versions starting from 10.0x.xx3, trying to send more data will cause the surplus to be discarded and lost.
AT#EMAILD=?	Test command returns the OK result code.
Example	AT#EMAILD="me@myaddress.com", "subject of the mail" >message body this is the text of the mail message CTRL-Z
	wait OK Message has been sent.
Note	The only difference between this command (set using GPRS context) and the #SEMAIL is that this command does not interact with the GPRS context status, leaving it ON or OFF according to the #EMAILACT (#SGACT) setting, thus, when the connection made with #EMAILD is closed, the context status is maintained.

3.5.7.7.8. E-mail Parameters Save - #ESAV

#ESAV - E-mail Paran	neters Save	SELINT 0 / 1
AT#ESAV	Execution command stores the e-mail parameters in the NVM o	f the device.



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#ESAV - E-mail Parameters Save		SELINT 0 / 1
	The e-mail parameters to store are: - E-mail User Name - E-mail Password - E-mail Sender Address - E-mail SMTP server	
Note	If some parameters have not been previously specified taken.	I then a default value will be

#ESAV - E-mail Par	ameters Save SELINT 2	
AT#ESAV	Execution command stores the e-mail parameters in the NVM of the device.	
	The e-mail parameters to store are:	
	- E-mail User Name	
	- E-mail Password	
	- E-mail Sender Address	
	- E-mail SMTP server	
AT#ESAV=?	Test command returns the OK result code.	
Note	If some parameters have not been previously specified then a default value will be	.
	taken.	

3.5.7.7.9. E-mail Parameters Reset - #ERST

#ERST - E-mail Parameters Reset			<mark>0 / 1</mark>
AT#ERST	Execution command resets the e-mail parameters to the configuration and stores them in the NVM of the device.	"factory	default"
	The e-mail parameters to reset are: - E-mail User Name - E-mail Password - E-mail Sender Address - E-mail SMTP server		

#ERST - E-mail Param	FERST - E-mail Parameters Reset SELINT 2		<mark>2</mark>
AT#ERST	Execution command resets the e-mail parameters to the configuration and stores them in the NVM of the device. The e-mail parameters to reset are: - E-mail User Name - E-mail Password - E-mail Sender Address - E-mail SMTP server	"factory	default"
AT#ERST=?	Test command returns the OK result code.		



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3.5.7.7.10. SMTP Read Message - #EMAILMSG

#EMAILMSG - SMTP Read Message SELINT		SELINT 0 / 1
AT#EMAILMSG	Execution command returns the last response from SMTP server	•
AT#EMAILMSG?	Read command has the same behaviour as Execution command.	

#EMAILMSG - SMTP Read Message SELINT 2		SELINT 2
AT#EMAILMSG	Execution command returns the last response from SMTP server	•
AT#EMAILMSG=? Test command returns the OK result code.		

3.5.7.7.11. Send mail with attachment - #SMTPCL

#SMTPCL - send mail with attachment AT#SMTPCL= This command permits to send an email with different types of attachments if

<da>,<subj>,<att>
[,<filename>,<encod>]

This command permits to send an email with different types of attachments in GPRS context has already been activated (#SGACT,#EMAILACT or #GPRS).

After sending message body text (as with #EMAILD), the command switch to online mode if attachment has to be sent.

While in online mode data received on the serial port are transmitted on the SMTP socket as MIME attachment.

The escape sequence has to be sent to close the SMTP connection.

Encoding of data received on the serial port is performed if required (binary data), before transmission on the SMTP socket.

Parameters:

<da> - destination address, string type.

(maximum length 100 characters)

<subj> - subject of the message, string type.

(maximum length 100 characters)

<att> - attached file flag

0 – no attachment

1 – attach a txt file

2 – attach a binary file(jpg,bin,pdf,...)

<filename> - attached file name

(maximum length 50 characters)

<encod> -Content-Transfer-Encoding used for attachment

0 - "7bit" means data all represented as short lines of

US-ASCII data

1 – "base64" designed to represent arbitrary sequences of octets in a form that need not be humanly readable

Note: if no attachment (**att>** 0) has to be sent, the behavior is the same as with #EMAILD.



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	OK after CTRL-Z is returned(if connection was successful), the switch to online mode is not performed. Note: If a txt file (<att>=1) is attached, only <encod>0("7bit") is possible. If a binary file (<att>=2) is attached, only <encod>1("base64") is possible.</encod></att></encod></att>
	Note: if <att>=0 and <filename> is present and not empty, the attachment won't be considered Note: if <att> 1 or 2 and <filename> is not present, command</filename></att></filename></att>
AT#SMTDCI -2	will return an ERROR Test command reports the supported range of values for negree tors
AT#SMTPCL=?	Test command reports the supported range of values for parameters <da>,<subj>,<att>[,<filename>,<encod>]</encod></filename></att></subj></da>
Examples	at#smtpcl="me@myaddress.com","test1",1,"sample.txt",0 >message bodythis is the text of the mail message Send CTRL-Z CONNECT
	data received on the serial port are sent as attachment
	Send escape sequence to close the SMTP connection +++ NO CARRIER
	at#smtpcl="me@myaddress.com","test2",2,"image.jpg",1 >message bodythis is the text of the mail message Send CTRL-Z CONNECT
	data received on the serial port are base64-encoded and sent as attachment
	Send escape sequence to close the SMTP connection +++ NO CARRIER

3.5.7.7.12. calculate and update date and time - #NTP





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#NTP – calculate and update d	ate and time SELINT 2
AT#NTP=	This command permits to calculate and update date and time through NTP
<ntpaddr>,</ntpaddr>	protocol(RFC2030), sending a request to a NTP
<ntpport>,</ntpport>	server.
<update_module_clock>,</update_module_clock>	Server.
<timeout></timeout>	Parameters:
\timeout>	r arameters.
	<ntpaddr> - address of the NTP server, string type. This parameter can be either: any valid IP address in the format: "xxx.xxx.xxx.xxx" any host name to be solved with a DNS query </ntpaddr>
	<ntpport> - NTP server port to contact 165535</ntpport>
	<update_module_clock></update_module_clock>
	0 - no update module clock
	1 – update module clock
	<timeout> - waiting timeout for server response in seconds 110</timeout>
AT#NTP=?	Test command reports the supported range of values for parameters
	<pre>NTPaddr>,<ntpport>,<update_module_clock>, and <timeout></timeout></update_module_clock></ntpport></pre>
Example	at#ntp="ntp1.inrim.it",123,1,2
•	#NTP: 12/01/27,14:42:38
	OK
	at+cclk?
	+CCLK: "12/01/27,14:42:39+00"
	OK

3.5.7.8. Easy Scan® Extension AT Commands



NOTE:

it is strongly suggested to issue all the Easy Scan® Extension AT commands with **NO SIM** inserted, to avoid a potential conflict with normal module operations, such as "incoming call", "periodic location update, "periodic routing area update" and so on.





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3.5.7.8.1. Network Survey - #CSURV

#CSURV - Network Survey

SELINT 0 / 1

AT#CSURV

[=<s>,<e>]

Execution command allows to perform a quick survey through band channels, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed.

AT*CSURV

 $[=<_S>,<_e>]$

(both syntax are possible)

Parameters:

<s> - starting channel <e> - ending channel

After issuing the command the device responds with the string:

Network survey started...

and, after a while, a list of informations, one for each received carrier, is reported, each of them in the format:

(For BCCH-Carrier)

arfcn: <arfcn> bsic: <bsic> rxLev: <rxLev> ber: <ber> mcc: <mcc> mnc:

<mnc> lac: <lac> cellId: <cellId> cellStatus: <cellStatus> numArfcn:

<numArfcn> arfcn: [<arfcn1> ..[<arfcn64>]] [numChannels:

<numChannels> array: [<ba1> ..[<ba32>]] [pbcch: <pbcch> [nom: <nom>
rac: <rac> spgc: <spgc> pat: <pat> nco: <nco> t3168: <t3168> t3192:

<t3192> drxmax: <drxmax> ctrlAck: <ctrlAck> bsCVmax: <bsCVmax>

alpha: <alpha> pcMeasCh: <pcMeasCh>]]]

<CR><LF><CR><LF>

where:

<arfcn> - C0 carrier assigned radio channel (BCCH - Broadcast Control Channel)

 bsic> - base station identification code

<rxLev> - receiption level (in dBm)

 ber> - bit error rate (in %)

<mcc> - mobile country code

<mnc> - mobile network code

<lac> - location area code

<cellId> - cell identifier

<cellStatus> - cell status

..CELL SUITABLE - C0 is a suitable cell.

CELL_LOW_PRIORITY - the cell is low priority based on the received system information.

CELL FORBIDDEN - the cell is forbidden.

CELL_BARRED - the cell is barred based on the received system information.

CELL_LOW_LEVEL - the cell **<rxLev>** is low.

CELL_OTHER - none of the above e.g. exclusion timer running, no BCCH available...etc.

<numArfcn> - number of valid channels in the Cell Channel Description

<arfcnn> - arfcn of a valid channel in the Cell Channel Description (n is in the





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#CSURV - Network Survey

SELINT 0 / 1

range 1..<numArfcn>)

<numChannels> - number of valid channels in the BCCH Allocation list; the output of this information for non-serving cells depends on last #CSURVEXT setting:

- 1. if **#CSURVEXT=0** this information is displayed only for serving cell
- 2. if #CSURVEXT=1 or 2 this information is displayed also for every valid scanned BCCH carrier.

<ban> - arfcn of a valid channel in the BA list (n is in the range

- 1..<numChannels>); the output of this information for non-serving cells depends on last #CSURVEXT setting:
- 1. if **#CSURVEXT=0** this information is displayed only for serving cell
- 2. if #CSURVEXT=1 or 2 this information is displayed also for every valid scanned BCCH carrier.

(The following informations will be printed only if GPRS is supported in the cell)

<pbcch> - packet broadcast control channel

0 - pbcch not activated on the cell

1 - pbcch activated on the cell

<nom> - network operation mode

1

2

<rac> - routing area code

0..255 -

<spgc> - SPLIT PG CYCLE support

..0 - SPLIT PG CYCLE is not supported on CCCH on this cell

..1 - SPLIT PG CYCLE is supported on CCCH on this cell

<pat> - priority access threshold

0 -

3..6 -

<nco> - network control order

0..2 -

<t3168> - timer 3168

<t3192> - timer 3192

<drxmax> - discontinuous reception max time (in seconds)

<ctrlAck> - packed control ack

 bsCVmax> - blocked sequenc countdown max value

<alpha> - alpha parameter for power control

<pcMeasCh> - type of channel which shall be used for downlink measurements
for power control

0 - BCCH

1 - PDCH

(For non BCCH-Carrier)





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#CSURV - Networ	k Survey SELINT 0 / 1	
	arfcn: <arfcn> rxLev: <rxlev></rxlev></arfcn>	
	where: <arfcn> - RF channel <rxlev> - receiption level (in dBm)</rxlev></arfcn>	
	Lastly, the #CSURV output ends in two ways, depending on the last #CSURVF setting:	
	if #CSURVF=0 or #CSURVF=1 The output ends with the string:	
	Network survey ended	
	if #CSURVF=2 the output ends with the string:	
	Network survey ended (Carrier: <noarfcn> BCCh: <nobcch>)</nobcch></noarfcn>	
	where <noarfcn> - number of scanned frequencies <nobcch> - number of found BCCh</nobcch></noarfcn>	
AT#CSURV? AT*CSURV?	Read command has the same behaviour as Execution command with parameter omitted.	
Example Example	AT#CSURV	
1	Network survey started	
	arfcn: 48 bsic: 24 rxLev: -52 ber: 0.00 mcc: 610 mnc: 1 lac: 33281 cellId: 3648 cellStatus: CELL_SUITABLE numArfcn: 2 arfcn: 30 48 numChannels: 5 array: 14 19 22 48 82	
	arfcn: 14 rxLev: 8	
	Network survey ended	
Note	OK The command is executed within max. 2 minutes.	
. ,	The community to encoured within man, 2 millioner.	

#CSURV - Network Su	<mark>irvey</mark>	SELINT 2
AT#CSURV[=	AT#CSURV[= Execution command allows to perform a quick survey through band channels,	
[<s>,<e>]] starting from channel <s> to channel <e>. Issuing AT#CSURV<cr>, a full bar scan is performed.</cr></e></s></e></s>		CR>, a full band
AT*CSURV[=		
[<s>,<e>]]</e></s>	Parameters:	



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#CSURV - Network Survey

SELINT 2

(both syntax are possible; the second syntax is maintained only for backward compatibility and will not be present in future versions)

<s> - starting channel

<e> - ending channel

After issuing the command the device responds with the string:

Network survey started...

and, after a while, a list of informations, one for each received carrier, is reported, each of them in the format:

(For BCCH-Carrier)

arfcn: <arfcn> bsic: <bsic> rxLev: <rxLev> ber: <ber> mcc: <mcc> mnc:

<mnc> lac: <lac> cellId: <cellId> cellStatus: <cellStatus> numArfcn:

<numArfcn> arfcn: [<arfcn1> ..[<arfcn64>]] [numChannels:

<numChannels> array: [<ba1> ..[<ba32>]] [pbcch: <pbcch> [nom: <nom>
rac: <rac> spgc: <spgc> pat: <pat> nco: <nco> t3168: <t3168> t3192:

<t3192> drxmax: <drxmax> ctrlAck: <ctrlAck> bsCVmax: <bsCVmax>

alpha: <alpha> pcMeasCh: <pcMeasCh>]]]

<CR><LF><CR><LF>

where:

<arfcn> - C0 carrier assigned radio channel (BCCH - Broadcast Control Channel)

 bsic> - base station identification code; if #CSURVF last setting is 0,
 bsic> is a decimal number, else it is **at the most** a 2-digits octal number

<rxLev> - decimal number; it is the receiption level (in dBm)

<ber> - decimal number; it is the bit error rate (in %)

<mcc> - hexadecimal 3-digits number; it is the mobile country code

<mre> - hexadecimal 2-digits number; it is the mobile network code</ri>

<lac> - location area code; if #CSURVF last setting is 0, <lac> is a decimal
number, else it is a 4-digits hexadecimal number

<cellId> - cell identifier; if #CSURVF last setting is 0, <cellId> is a decimal number, else it is a 4-digits hexadecimal number

<cellStatus> - string type; it is the cell status

..CELL SUITABLE - C0 is a suitable cell.

CELL_LOW_PRIORITY - the cell is low priority based on the received system information.

CELL FORBIDDEN - the cell is forbidden.

CELL BARRED - the cell is barred based on the received system information.

CELL LOW LEVEL - the cell <rxLev> is low.

CELL_OTHER - none of the above e.g. exclusion timer running, no BCCH available...etc.

<numArfcn> - decimal number; it is the number of valid channels in the Cell Channel Description

<arfcnn> - decimal number; it is the arfcn of a valid channel in the Cell Channel Description (n is in the range 1..<numArfcn>)

<numChannels> - decimal number; it is the number of valid channels in the





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#CSURV - Network Survey

SELINT 2

BCCH Allocation list; the output of this information for non-serving cells depends on last #CSURVEXT setting:

- 2. if **#CSURVEXT=0** this information is displayed only for serving cell
- 3. if #CSURVEXT=1 or 2 this information is displayed also for every valid scanned BCCH carrier.
- <ban> decimal number; it is the arfcn of a valid channel in the BA list (n is in the range 1..<numChannels>); the output of this information for non-serving cells depends on last #CSURVEXT setting:
 - 2. if **#CSURVEXT=0** this information is displayed only for serving cell
 - 3. if #CSURVEXT=1 or 2 this information is displayed also for every valid scanned BCCH carrier.

(The following informations will be printed only if GPRS is supported in the cell) <pbcd> - packet broadcast control channel

- 0 pbcch not activated on the cell
- 1 pbcch activated on the cell

<nom> - network operation mode

1

2

<rac> - routing area code

0..255 -

<spgc> - SPLIT PG CYCLE support

- ..0 SPLIT PG CYCLE is not supported on CCCH on this cell
- ...1 SPLIT PG CYCLE is supported on CCCH on this cell

<pat> - priority access threshold

0 -

3..6 -

<nco> - network control order

0..2 -

<**t3168**> - timer 3168

<t3192> - timer 3192

<drxmax> - discontinuous reception max time (in seconds)

<ctrlAck> - packed control ack

<bscvmax> - blocked sequenc countdown max value

<alpha> - alpha parameter for power control

<pcMeasCh> - type of channel which shall be used for downlink measurements
for power control

0 - BCCH

1 - PDCH

(For non BCCH-Carrier)

arfcn: <arfcn> rxLev: <rxLev>





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#CSURV - Netw	vork Survey SELINT 2
"CSCICY TICE!	where:
	<arfcn> - decimal number; it is the RF channel</arfcn>
	<pre><rxlev> - decimal number; it is the receiption level (in dBm)</rxlev></pre>
	TABLET GOVERNMENT IN INCHES TO COMPANY (IN GENERAL)
	Lastly, the #CSURV output ends in two ways, depending on the last #CSURVF setting:
	if #CSURVF=0 or #CSURVF=1
	The output ends with the string:
	The output ends with the string.
	Network survey ended
	if #CSURVF=2
	the output ends with the string:
	Network survey ended (Carrier: <noarfcn> BCCh: <nobcch>)</nobcch></noarfcn>
	where
	<noarfcn> - number of scanned frequencies</noarfcn>
	<nobcch> - number of found BCCh</nobcch>
Example	AT#CSURV
Enumpre	
	Network survey started
	arfcn: 48 bsic: 24 rxLev: -52 ber: 0.00 mcc: 610 mnc: 1 lac: 33281 cellId: 3648 cellStatus:
	CELL_SUITABLE numArfcn: 2 arfcn: 30 48 numChannels: 5 array: 14 19 22 48 82
	arfcn: 14 rxLev: 8
	arien, 14 ralev. 0
	Network survey anded
	Network survey ended
	OK
Note	The command is executed within max. 2 minute.

3.5.7.8.2. Network Survey - #CSURVC

#CSURVC - Network S	Survey (Numeric Format)	SELINT 0 / 1
AT#CSURVC	Execution command allows to perform a quick survey throu	gh band channels,
[= <s>,<e>]</e></s>	starting from channel <s> to channel <e>. If parameters are o</e></s>	mitted, a full band
	scan is performed.	
AT*CSURVC		
[= <s>,<e>]</e></s>	Parameters:	
(both syntax are	<s> - starting channel</s>	
possible)	<e> - ending channel</e>	





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#CSURVC - Network Survey (Numeric Format)

SELINT 0 / 1

After issuing the command the device responds with the string:

Network survey started...

and, after a while, a list of informations, one for each received carrier, is reported, each of them in the format:

(For BCCH-Carrier)

<arfcn>,<bsic>,<rxLev>,<ber>,<mcc>,<mnc>,<lac>,<cellId>,

<cellStatus>,<numArfcn>[,<arfcn1> ..[<arfcn64>]]

[,<numChannels>[,<ba1>..[<ba32>]][,<pbcch>[,<nom>,<rac>,<spgc>,

<pat>,<nco>,<t3168>,<t3192>,<drxmax>,<ctrlAck>,<bsCVmax>,

<alpha>,<pcMeasCh>]]]

<CR><LF><CR><LF>

where:

<arfcn> - C0 carrier assigned radio channel (BCCH - Broadcast Control Channel)

 bsic> - base station identification code

<rxLev> - receiption level (in dBm)

 ber> - bit error rate (in %)

<mcc> - mobile country code

<mnc> - mobile network code

<lac> - location area code

<cellId> - cell identifier

<cellStatus> - cell status

- ..0 C0 is a suitable cell (CELL SUITABLE).
- 1 the cell is low priority based on the received system information (CELL LOW PRIORITY).
- 2 the cell is forbidden (CELL FORBIDDEN).
- 3 the cell is barred based on the received system information (CELL BARRED).
- 4 the cell <rxLev> is low (CELL LOW LEVEL).
- 5 none of the above e.g. exclusion timer running, no BCCH available...etc.. (CELL OTHER).

<numArfcn> - number of valid channels in the Cell Channel Description

<arfcnn> - arfcn of a valid channel in the Cell Channel Description (n is in the range 1..<numArfcn>)

<numChannels> - number of valid channels in the BCCH Allocation list; the output of this information for non-serving cells depends on last #CSURVEXT setting:

- 1. if **#CSURVEXT=0** this information is displayed only for serving cell
- 2. if #CSURVEXT=1 or 2 this information is displayed also for every valid scanned BCCH carrier.
- <ban> arfcn of a valid channel in the BA list (n is in the range 1..<numChannels>); the output of this information for non-serving





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#CSURVC - Network	Survey (Numeric Format)	SELINT 0 / 1
	cells depends on last #CSURVEXT setting:	
	1. if #CSURVEXT=0 this information is displayed only for serving	
	cell	
	2. if #CSURVEXT=1 or 2 this information is	displayed also for
	every valid scanned BCCH carrier.	
	(The following informations will be printed only if GPRS is supp	ported in the cell)
	<pre><pbcch> - packet broadcast control channel</pbcch></pre>	
	0 - pbcch not activated on the cell	
	1 - pbcch activated on the cell	
	<nom> - network operation mode</nom>	
	1	
	2	
	3	
	<rac> - routing area code</rac>	
	0255 -	
	<spgc> - SPLIT_PG_CYCLE support</spgc>	
	SPLIT_PG_CYCLE is not supported on CCCH on this cell	
	1 - SPLIT_PG_CYCLE is supported on CCCH on this cell	
	<pre><pat> - priority access threshold</pat></pre>	
	0 -	
	36 -	
	<nco> - network control order</nco>	
	02 -	
	<t3168> - timer 3168</t3168>	
	<t3192> - timer 3192 <drymax> discontinuous recention may time (in seconds)</drymax></t3192>	
	<pre><drxmax> - discontinuous reception max time (in seconds) <ctrlack> - packed control ack</ctrlack></drxmax></pre>	
	<pre> <</pre>	
	<alpha> - alpha parameter for power control</alpha>	
	<pre><pre><pre><pre><pre><pre><pre>pcMeasCh> - type of channel which shall be used for down</pre></pre></pre></pre></pre></pre></pre>	link measurements
	for power control	ink measurements
	0 - BCCH	
	1 - PDCH	
	(For non BCCH-Carrier)	
	<arfcn>,<rxlev></rxlev></arfcn>	
	where:	
	<arfcn> - RF channel</arfcn>	
	<rxlev> - receiption level (in dBm)</rxlev>	
	The output ends with the string:	
	T	
	Network survey ended	
AT#CSURVC?	Read command has the same behaviour as the Executio	n command with
	parameters omitted	





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#CSURVC - Netwo	rk Survey (Numeric Format) SELINT 0 / 1	
AT*CSURVC?		
Example	AT#CSURVC	
	Network survey started	
	48,24,-52,0.00,610,1,33281,3648,0,2,30 48,5,14 19 22 48 82	
	14,8	
	Network survey ended	
	OK	
Note	The command is executed within max. 2 minute.	
	The information provided by #CSURVC is the same as that provided by #CSURVC. The difference is that the output of #CSURVC is in numeric format only.	RV.

#CSURVC - Network S	S <mark>urvey (Numeric Format)</mark>	SELINT 2
AT#CSURVC[=	Execution command allows to perform a quick survey through be	and channels,
[<s>,<e>]]</e></s>	starting from channel <s> to channel <e>. Issuing AT#CSURVO</e></s>	C< CR >, a full
	band scan is performed.	
AT*CSURVC[=		
[= <s>,<e>]]</e></s>	Parameters:	
	<s> - starting channel</s>	
(both syntax are	<e> - ending channel</e>	
possible; the second		
syntax is maintained	After issuing the command the device responds with the string:	
only for backward		
compatibility and will	Network survey started	
not be present in future		
versions)	and, after a while, a list of informations, one for each received ca	arrier, is reported,
	each of them in the format:	
	(For BCCH-Carrier)	
	<pre><arfcn>,<bsic>,<rxlev>,<ber>,<mcc>,<mnc>,<lac>,<cellid></cellid></lac></mnc></mcc></ber></rxlev></bsic></arfcn></pre>	•,
	<pre><cellstatus>,<numarfcn>[,<arfcn1>[<arfcn64>]]</arfcn64></arfcn1></numarfcn></cellstatus></pre>	
	[, <numchannels>[,<ba1>[<ba32>]][,<pbcch> [,<nom>,<ra< td=""><td></td></ra<></nom></pbcch></ba32></ba1></numchannels>	
	<pat>,<nco>,<t3168>,<t3192>,<drxmax>,<ctrlack>,<bscvn< td=""><td>nax>,</td></bscvn<></ctrlack></drxmax></t3192></t3168></nco></pat>	nax>,
	<alpha>,<pcmeasch>]]]</pcmeasch></alpha>	
	<cr><lf><cr><lf></lf></cr></lf></cr>	
	where:	G + 1 G1 - 1)
	<arfcn> - C0 carrier assigned radio channel (BCCH - Broadcast</arfcn>	Control Channel)



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#CSURVC - Network Survey (Numeric Format)

SELINT 2

-

 base station identification code; if #CSURVF last setting is 0,

 decimal number, else it is at the most a 2-digits octal number
- <rxLev> decimal number; it is the receiption level (in dBm)
-
ber> decimal number; it is the bit error rate (in %)
- <mcc> hexadecimal 3-digits number; it is the mobile country code
- <mnc> hexadecimal 2-digits number; it is the mobile network code
- <lac> location area code; if #CSURVF last setting is 0, <lac> is a decimal
 number, else it is a 4-digits hexadecimal number
- <cellId> cell identifier; if #CSURVF last setting is 0, <cellId> is a decimal number, else it is a 4-digits hexadecimal number
- <cellStatus> string type; it is the cell status
- ..0 C0 is a suitable cell (CELL SUITABLE).
- 1 the cell is low priority based on the received system information (CELL LOW PRIORITY).
- 2 the cell is forbidden (CELL FORBIDDEN).
- 3 the cell is barred based on the received system information (CELL BARRED).
- 4 the cell <rxLev> is low (CELL LOW LEVEL).
- 5 none of the above e.g. exclusion timer running, no BCCH available...etc.. (CELL OTHER).
- <numArfcn> decimal number; it is the number of valid channels in the Cell Channel Description
- <arfcnn> decimal number; it is the arfcn of a valid channel in the Cell Channel Description (n is in the range 1..<numArfcn>)
- <numChannels> decimal number; it is the number of valid channels in the BCCH Allocation list; the output of this information for non-serving cells depends on last #CSURVEXT setting:
 - 1. if **#CSURVEXT=0** this information is displayed only for serving cell
 - 2. if #CSURVEXT=1 or 2 this information is displayed also for every valid scanned BCCH carrier.
- <ban> decimal number; it is the arfcn of a valid channel in the BA list (n is in the range 1..<numChannels>); the output of this information for non-serving cells depends on last #CSURVEXT setting:
 - 1. if **#CSURVEXT=0** this information is displayed only for serving cell
 - 2. if #CSURVEXT=1 or 2 this information is displayed also for every valid scanned BCCH carrier.

(The following informations will be printed only if GPRS is supported in the cell) <pbcd> - packet broadcast control channel

- 0 pbcch not activated on the cell
- 1 pbcch activated on the cell

<nom> - network operation mode

1

2

3



























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#CSURVC - Net	work Survey (Numeric Format) SELINT 2
	<rac> - routing area code</rac>
	0255 -
	<pre><spgc> - SPLIT_PG_CYCLE support</spgc></pre>
	0 - SPLIT_PG_CYCLE is not supported on CCCH on this cell
	1 - SPLIT_PG_CYCLE is supported on CCCH on this cell
	<pre><pat> - priority access threshold</pat></pre>
	0 -
	36 -
	<nco> - network control order</nco>
	02 -
	< t3168> - timer 3168
	<t3192> - timer 3192</t3192>
	<pre><drxmax> - discontinuous reception max time (in seconds)</drxmax></pre>
	<ctrlack> - packed control ack</ctrlack>
	<alpha> - alpha parameter for power control</alpha>
	<pre><pcmeasch> - type of channel which shall be used for downlink measurements</pcmeasch></pre>
	for power control
	0 - BCCH
	1 - PDCH
	(For non BCCH-Carrier)
	<arfcn>,<rxlev></rxlev></arfcn>
	where:
	<arfcn> - decimal number; it is the RF channel</arfcn>
	<pre><rxlev> - decimal number; it is the receiption level (in dBm)</rxlev></pre>
	Tiber decimal number, it is the recorption level (in abin)
	The last information from #CSURVC depends on the last #CSURVF setting:
	#CSURVF=0 or #CSURVF=1
	The output ends with the string:
	Network survey ended
	#CSURVF=2
	the output ends with the string:
	Network survey ended (Carrier: <noarfcn> BCCh: <nobcch>)</nobcch></noarfcn>
	where
	< NoARFCN > - number of scanned frequencies
	<nobcch> - number of found BCCh</nobcch>
Example	AT#CSURVC
	Network survey started
	48,24,-52,0.00,610,1,33281,3648,0,2,30 48,5,14 19 22 48 82
	TO,2T,-22,0.00,010,1,23201,30T0,0,2,30 T0,3,14 17 22 40 02





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#CSURVC - Network Survey (Numeric Format)		SELINT 2
	14,8	
	Network survey ended	
	ОК	
Note	The command is executed within max. 2 minut	te.
	The information provided by #CSURVC is the The difference is that the output of #CSURVC	

3.5.7.8.3. Network Survey - #CSURVU

#CSURVU - Network Survey Of User Defined Channels SELINT 0 / 1				
AT#CSURVU=[Execution command allows to perform a quick survey through the given channels.			
<ch1>[,<ch2>[,</ch2></ch1>				
[, <ch<i>n>]]]]</ch<i>	The result format is like command #CSURV.			
AT*CSURVU=[Parameters:			
<ch1>[,<ch2>[,</ch2></ch1>	<pre><chn> - channel number (arfcn)</chn></pre>			
[, <ch<i>n>]]]]</ch<i>				
(both syntax are	Note: issuing AT#CSURVU= <cr> is the same as issuing the command</cr>			
possible)	AT#CSURVU=0 <cr>.</cr>			
Example	AT#CSURVU=59,110			
	Network survey started			
	arfcn: 59 bsic: 16 rxLev: -76 ber: 0.00 mcc: 546 mnc: 1 lac: 54717 cellId: 21093 cellStatus: CELL_SUITABLE numArfcn 2 arfcn: 36 59			
	arfcn: 110 rxLev: -107			
	Network survey ended			
	OK			
Note	The command is executed within max. 2 minute.			

#CSURVU - Network S	Survey Of User Defined Channels SE	LINT 2
AT#CSURVU=[Execution command allows to perform a quick survey through the gi	ven channels.
<ch1>[,<ch2>[,</ch2></ch1>		
[, <ch<i>n>]]]]</ch<i>	The result format is like command #CSURV.	
AT*CSURVU=[Parameters:	
<ch1>[,<ch2>[,</ch2></ch1>	<chn> - channel number (arfcn)</chn>	
[, <ch<i>n>]]]]</ch<i>		
(both syntax are		
possible; the second		





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#CSURVU - Network S	Survey Of User Defined Channels SELINT 2	
syntax is maintained		
only for backward		
compatibility and will		
not be present in future		
versions)		
Example	AT#CSURVU=59,110	
	Network survey started	
	arfcn: 59 bsic: 16 rxLev: -76 ber: 0.00 mcc: 546 mnc: 1 lac: 54717 cellId: 21093 cellStatus: CELL_SUITABLE numArfcn 2 arfcn: 36 59	
	arfcn: 110 rxLev: -107	
	Network survey ended	
	OK	
Note	The command is executed within max. 2 minute.	

3.5.7.8.4. Network Survey - #CSURVUC

#CSURVUC - Network	Survey Of User Defined Channels (Numeric Format) SELINT 0 / 1
AT#CSURVUC=[Execution command allows to perform a quick survey through the given channels.
<ch1>[,<ch2>[,</ch2></ch1>	
[, <ch<i>n>]]]]</ch<i>	The result format is like command #CSURVC.
A TO A COLUMN A LOCAL	
AT*CSURVUC=[Parameters:
<ch1>[,<ch2>[,</ch2></ch1>	<chn> - channel number (arfcn)</chn>
[, <ch<i>n>]]]]</ch<i>	
1 '	Note: issuing AT#CSURVUC= <cr> is the same as issuing the command</cr>
possible)	AT#CSURVUC=0 <cr>.</cr>
Example	AT#CSURVUC=59,110
	Network survey started
	59,16,-76,0.00,546,1,54717,21093,0,2,36 59
	110,-107
	Network survey ended
	OK
Note	The command is executed within max. 2 minute.
	The information provided by #CSURVIIC is the same as that provided by
	· · · · · · · · · · · · · · · · · · ·
	*
Note	59,16,-76,0.00,546,1,54717,21093,0,2,36 59 110,-107 Network survey ended OK



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#CSURVUC - Network	Survey Of User Defined Channels (Numeric Format) SELINT 2	
AT#CSURVUC=[Execution command allows to perform a quick survey through the given channels.	
<ch1>[,<ch2>[,</ch2></ch1>		
[, <ch<i>n>]]]]</ch<i>	The result format is like command #CSURVC.	
AT*COUDVIIC I	Downwaters	
AT*CSURVUC=[Parameters:	
<ch1>[,<ch2>[,</ch2></ch1>	<chn> - channel number (arfcn)</chn>	
[, <ch<i>n>]]]]</ch<i>		
(both syntax are		
possible; the second syntax is maintained		
only for backward		
compatibility and will		
not be present in future		
versions)		
Example	AT#CSURVUC=59,110	
Lxample		
	Network survey started	
	59,16,-76,0.00,546,1,54717,21093,0,2,36 59	
	110,-107	
	Network survey ended	
	OK	
Note	The command is executed within max. 2 minute.	
	The information provided by #CSURVUC is the same as that provided by #CSURVU. The difference is that the output of #CSURVUC is in numeric format only.	

3.5.7.8.5. BCCH Network Survey - #CSURVB

#CSURVB - BCCH Ne	#CSURVB - BCCH Network Survey SELINT 0 / 1	
AT#CSURVB= <n></n>	Execution command performs a quick network survey throug number of available frequencies depending on last selected bar survey stops as soon as <n> BCCH carriers are found. The result format is like command #CSURV.</n>	`
	Parameter: <n> - number of desired BCCH carriers 1M</n>	
AT#CSURVB=?	Test command reports the range of values for parameter <n> in th</n>	e format:



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#CSURVB - BCCH Ne	twork Survey	SELINT 0/1
	(1-M)	
	where M is the maximum number of available fr selected band.	requencies depending on last

#CSURVB - BCCH N	etwork Survey SELINT 2
AT#CSURVB=	Execution command performs a quick network survey through M (maximum
[<n>]</n>	number of available frequencies depending on last selected band) channels. The survey stops as soon as <n> BCCH carriers are found.</n>
	The result format is like command #CSURV.
	Parameter:
	<n> - number of desired BCCH carriers</n>
	1M
AT#CSURVB=?	Test command reports the range of values for parameter < n > in the format:
	(1-M)
	where M is the maximum number of available frequencies depending on last selected band.

3.5.7.8.6. BCCH Network Survey - #CSURVBC

#CSURVBC - BCCH N	CSURVBC - BCCH Network Survey (Numeric Format) SELINT 0 / 1	
AT#CSURVBC=	Execution command performs a quick network survey through M (maximum numb	oer
<n></n>	of available frequencies depending on last selected band) channels. The survey sto as soon as <n> BCCH carriers are found.</n>	ps
	The result is given in numeric format and is like command #CSURVC.	
	Parameter:	
	<n> - number of desired BCCH carriers</n>	
	1M	
AT#CSURVBC=?	Test command reports the range of values for parameter < n > in the format:	
	(1-M)	
	where M is the maximum number of available frequencies depending on last select	ted
	band.	



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#CSURVBC - BCCH N	Network Survey (Numeric Format) SELINT 2
AT#CSURVBC=	Execution command performs a quick network survey through M (maximum
[<n>]</n>	number of available frequencies depending on last selected band) channels. The survey stops as soon as <n> BCCH carriers are found.</n>
	The result is given in numeric format and is like command #CSURVC.
	Parameter:
	<n> - number of desired BCCH carriers</n>
	1M
AT#CSURVBC=?	Test command reports the range of values for parameter < n > in the format:
	(1-M)
	where \mathbf{M} is the maximum number of available frequencies depending on last selected band.

3.5.7.8.7. Network Survey Format - #CSURVF

#CSURVF - Network	Survey Format SELINT 0 / 1	
AT#CSURVF[=	Set command controls the format of the numbers output by all the Easy Scan®	
[<format>]]</format>		
	Parameter:	
	<format> - numbers format</format>	
	0 - Decimal	
	1 - Hexadecimal values, no text	
	2 - Hexadecimal values with text	
	Note: issuing AT#CSURVF <cr> is the same as issuing the Read command.</cr>	
	Note: issuing AT#CSURVF= <cr> is the same as issuing the comma</cr>	nd
	AT#CSURVF=0 <cr>.</cr>	
AT#CSURVF?	Read command reports the current number format, as follows:	
	<format></format>	
AT#CSURVF=?	Test command reports the supported range of values for the parameter <format></format> .	_

#CSURVF - Network	#CSURVF - Network Survey Format SELINT 2	
AT#CSURVF=	Set command controls the format of the numbers output by all the	ne Easy Scan®
[<format>]</format>		
	Parameter:	
	<format> - numbers format</format>	
	0 - Decimal	
	1 - Hexadecimal values, no text	
	2 - Hexadecimal values with text	
AT#CSURVF?	Read command reports the current number format, as follows:	



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#CSURVF - Network Survey Format SELINT		
	<format></format>	
AT#CSURVF=?	Test command reports the supported range of values for the parameter <format></format>	٠.

3.5.7.8.8. <CR><LF> Removing On Easy Scan® Commands Family - #CSURVNLF

#CSURVNLF - <cr><</cr>	LF> Removing On Easy Scan® Commands Family SELINT 0 / 1
AT#CSURVNLF	Set command enables/disables the automatic CR><lf></lf> removing from each
[= <value>]</value>	information text line.
	Parameter: <value> 0 - disables <cr><lf> removing; they'll be present in the information text (factory default) 1 - remove <cr><lf> from imformation text</lf></cr></lf></cr></value>
	Note: if parameter is omitted the behaviour of Set command is the same as Read command.
AT#CSURVNLF?	Read command reports whether automatic CR><lf></lf> removing is currently enabled or not, in the format:
	<value></value>
AT#CSURVNLF=?	Test command reports the range of values for parameter <value></value> .

#CSURVNLF - <cr></cr>	<lf> Removing On Easy Scan® Commands Family SELINT 2</lf>
AT#CSURVNLF= [<value>]</value>	Set command enables/disables the automatic CR>CLF> removing from each information text line.
	Parameter: <value> 0 - disables <cr><lf> removing; they'll be present in the information text (factory default) 1 - remove <cr><lf> from imformation text</lf></cr></lf></cr></value>
AT#CSURVNLF?	Read command reports whether automatic CR><lf></lf> removing is currently enabled or not, in the format: value>
AT#CSURVNLF=?	Test command reports the range of values for parameter <value></value> .

3.5.7.8.9. Extended Network Survey - #CSURVEXT

#CSURVEXT - Extended Network Surve	<mark>y</mark>	SELINT 0 / 1	
---	----------------	--------------	--





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#CSURVEXT - Extend	CSURVEXT - Extended Network Survey SELINT 0 / 1	
AT#CSURVEXT	Set command enables/disables extended network survey.	
[= <value>]</value>		
	Parameter:	
	<value></value>	
	0 - disables extended network survey (factory default)	
	 enables extended network survey; all the network survey excommands (#CSURV, #CSURVC, #CSURVU, #CSURVU #CSURVU #CSURVBC) display the BAList for every valid scanned Bourd of the survey; all the network survey excommands (#CSURV, #CSURVC, #CSURVU, #CSURVU #CSURVU #CSURVBC) display the BAList for every valid scanned Bourd of the System Information 13 of the BCCh 	JC, #CSURVB, CCh carrier secution JC, #CSURVB, CCh carrier and, if
	Note: if parameter is omitted the behaviour of Set command is to command.	he same as Read
AT#CSURVEXT?	Read command reports whether extended network survey is curnot, in the format:	rently enabled or
	<value></value>	
AT#CSURVEXT=?	Test command reports the range of values for parameter <value< th=""><th>>,</th></value<>	>,

#CSURVEXT - Extend	led Network Survey SELINT 2	
AT#CSURVEXT [= <value>]</value>	Parameter: <value> 0 - disables extended network survey (factory default) 1 - enables extended network survey; all the network survey execution commands (#CSURV, #CSURVC, #CSURVU, #CSURVUC, #CSURVB, #CSURVBC) display the BAList for every valid scanned BCCh carrier 2 - enables extended network survey; all the network survey execution commands (#CSURV, #CSURVC, #CSURVU, #CSURVUC, #CSURVB, #CSURVBC) display the BAList for every valid scanned BCCh carrier and, if GPRS is supported in the cell, they report some GPRS informations carried by the System Information 13 of the BCCh</value>	
AT#CSURVEXT?	Read command reports whether extended network survey is currently enabled or not, in the format: <value></value>	
AT#CSURVEXT=?	Test command reports the range of values for parameter <value></value> .	

3.5.7.8.10. PLMN Network Survey - #CSURVP





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#CSURVP - PLMN Netv	#CSURVP - PLMN Network Survey SELINT 2	
AT#CSURVP= <plmn></plmn>	Execution command performs a quick network survey through channels. The survey stops as soon as a BCCH carriers belonging to the selected PLMN is found.	
	The result format is like command #CSURV.	
	Parameter:	
	<pre><plmn> - the desidered PLMN in numeric format</plmn></pre>	
AT#CSURVP=?	Test command returns OK	

3.5.7.8.11. PLMN Network Survey (Numeric Format) - #CSURVPC

#CSURVPC - PLMN	Network Survey (Numeric Format) SELINT 2	
AT#CSURVPC=	Execution command performs a quick network survey through channels. The	
<plmn></plmn>	survey stops as soon as a BCCH carriers belonging to the selected PLMN is found	
	The result is given in numeric format and is like command #CSURVC.	
	Parameter:	
	<pre><plmn> - the desidered PLMN in numeric format</plmn></pre>	
AT#CSURVPC=?	Test command returns OK	

3.5.7.9. SIM Toolkit AT Commands

3.5.7.9.1. SIM Tookit Interface Activation - #STIA

#STIA - SIM Toolkit I	nterface Activation	SELINT 2
AT#STIA=	Set command is used to activate the SAT sending of unsolicited	indications when a
[<mode></mode>	proactive command is received from SIM.	
[, <timeout>]]</timeout>		
	Parameters:	
	<mode></mode>	
	0 - disable SAT (default for all products, except GE865-QUAI	O, GE864-DUAL
	V2, GL865-DUAL, GL868-DUAL and GE910-QUAD)	
	1 - enable SAT without unsolicited indication #STN (default for	or GE865-QUAD,
	GE864-DUAL V2, GL865-DUAL, GL868-DUAL and GE93	10-QUAD)
	2 - enable SAT and extended unsolicited indication #STN (see	#STGI)
	3 - enable SAT and reduced unsolicited indication #STN (see #	(STGI)
	17 - enable SAT without unsolicited indication #STN and 3GPP alphabet used	TS 23.038
	18 - enable SAT and extended unsolicited indication #STN (see TS 23.038 alphabet used	#STGI) and 3GPP
	19 - enable SAT and reduced unsolicited indication #STN (see #TS 23.038 alphabet used	STGI)and 3GPP



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#STIA - SIM Toolkit Interface Activation

SELINT 2

- 33 enable SAT without unsolicited indication #STN and UCS2 alphabet used
- 34 enable SAT and extended unsolicited indication #STN (see #STGI)and UCS2 alphabet used
- 35 enable SAT and reduced unsolicited indication #STN (see #STGI)and UCS2 alphabet used

<timeout> - time-out for user responses

1..255 - time-out in minutes (default 10). Any ongoing (but unanswered)

proactive command will be aborted automatically after <timeout>
minutes. In this case, the terminal response is either "ME currently unable to process command", or if applicable, "No response from user". In addition an unsolicited indication will be sent to the external application:

#STN: <cmdTerminateValue>

where:

<cmdTerminateValue> is defined as <cmdType> + terminate offset;
the terminate offset equals 100.

Note: every time the SIM application issues a **proactive command** that requires user interaction an unsolicited code will be sent, if enabled with **#STIA** command, as follows:

• if <mode> parameter of #STIA command has been set to 3 (reduced unsolicited indication) an unsolicited indication will be sent, indicating the type of **proactive command** issued by the SIM:

#STN: <cmdType>

• if <mode> parameter of #STIA command has been set to 2 (extended unsolicited indication) the format of the unsolicited indication depends on the specific command:

if <*cmdType*>=1 (REFRESH)

an unsolicited notification will be sent to the user:

#STN: <cmdType>,<refresh type>

where:

<refresh type>

- 0 SIM Initialization and Full File Change Notification;
- 1 File Change Notification;
- 2 SIM Initialization and File Change Notification;
- 3 SIM Initialization;





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#STIA - SIM Toolkit Interface Activation

SELINT 2

4 - SIM Reset

In this case neither **#STGI** nor **#STSR** commands are required:

- AT#STGI is accepted anyway.
- AT#STSR=<cmdType>,0 will answer OK but do nothing.

if <cmdType>=17 (SEND SS) if <cmdType>=19 (SEND SHORT MESSAGE) if <cmdType>=20 (SEND DTMF) if <cmdType>=32 (PLAY TONE)

an unsolicited notification will be sent if allowed by SIM (see GSM 11.14):

#STN: <cmdType>[,<text>]

where:

<text> - (optional) text to be displayed to user

In these cases neither **#STGI** nor **#STSR** commands are required:

- AT#STGI is accepted anyway.
- AT#STSR=<cmdType>,0 will answer OK but do nothing.

In case of SEND SHORT MESSAGE (<**cmdType>**=19) command if sending to network fails an unsolicited notification will be sent

#STN: 119

if <cmdType>=33 (DISPLAY TEXT)

an unsolicited notification will be sent if allowed by SIM (see GSM 11.14):

#STN: <cmdType>[,<cmdDetails>[,<text>]

where:

<cmdDetails> - unsigned Integer used as a bit field.

0..255 - used as a bit field:

bit 1:

0 - normal priority

1 - high priority

bits 2 to 7: reserved for future use

bit 8:

0 - clear message after a delay

1 - wait for user to clear message

<text> - (optional) text to be displayed to user





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#STIA - SIM Toolkit Interface Activation

SELINT 2

In this case:

- 1. if <cmdDetails>/bit8 is 0 neither #STGI nor #STSR commands are required:
 - AT#STGI is accepted anyway.
 - AT#STSR=<cmdType>,0 will answer OK but do nothing.
- 2. If <cmdDetails>/bit8 is 1 #STSR command is required

if <cmdType>=40 (SET UP IDLE MODE TEXT)

an unsolicited notification will be sent:

#STN: <cmdType>[,<text>]

where:

<text> - (optional)text to be displayed to user

In these cases neither **#STGI** nor **#STSR** commands are required:

- AT#STGI is accepted anyway.
- AT#STSR=<cmdType>,0 will answer OK but do nothing.

if <cmdType>=18 (SEND USSD)

an unsolicited notification will be sent to the user:

#STN: <cmdType>[,<text>]

where:

<text> - optional text string sent by SIM

In this case:

- AT#STSR=18,20 can be sent to end USSD transaction.
- AT#STGI is accepted anyway.
- AT#STSR=<cmdType>,0 will answer OK but do nothing.

if <*cmdType*>=5 (SET UP EVENT LIST)

an unsolicited notification will be sent:

#STN: <cmdType>[,<event list mask>]

where:

<event list mask> - (optional)hexadecimal number representing the list of





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#STIA - SIM Toolkit Interface Activation

SELINT 2

events to monitor (see GSM 11.14)

- -'00' = MT call
- '01' = Call connected
- '02' = Call disconnected
- '03' = Location status
- '04' = User activity
- '05' = Idle screen available
- '06' = Card reader status (if class "a" is supported)
- '07' = Language selection
- '08' = Browser Termination (if class "c" is supported)
- '09' = Data available (if class "e" is supported)
- '0A' = Channel status (if class "e" is supported)

The hexadecimal number is actually a bit mask, where each bit, when set, indicates that the corresponding event has to be monitored (e.g., if <event list mask> is 0x0001, it means that MT call has to be monitored).

In these cases neither **#STGI** nor **#STSR** commands are required:

- AT#STGI is accepted anyway.
- AT#STSR=<cmdType>,0 will answer OK but do nothing.

All other commands:

the unsolicited indication will report just the proactive command type:

#STN: <cmdType>

Note: if the **call control** or **SMS control facility in the SIM** is activated, when the customer application makes an outgoing call, or sends an SS or USSD, or an SMS, the following **#STN** unsolicited indication could be sent, according to GSM 11.14, to indicate whether the outgoing call has been accepted, rejected or modified by the SIM, or if the SMS service centre address or destination has been changed:

#STN: <cmdTerminateValue>,<Result>[,<TextInfo>[,<Number> [,<MODestAddr>]]]

where

<cmdTerminateValue>

150 - SMS control response

160 - call/SS/USSD response

<Result>

- 0 Call/SMS not allowed
- 1 Call/SMS allowed
- 2 Call/SMS allowed with modification





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#STIA - SIM Toolkit I	Interface Activation	SELINT 2
	<number> - Called number, Service Center Address or SS Stri <modestaddr> - MO destination address in ASCII format. <textinfo> - alpha identifier provided by the SIM in ASCII for</textinfo></modestaddr></number>	
	Note: an unsolicited result code	
	#STN: 254	
	is sent if the user has indicated the need to end the proactive SIN session (AT#STSR= <cmdtype>,16 i.e. "proactive SIM applicate terminated by the user" according to GSM 11.14).</cmdtype>	
	The TA does not need to respond directly, i.e. AT#STSR is not It is possible to restart the SAT session from the main menu aga command AT#STGI=37 .	
	Note: The settings are saved on user profile and available on fol Toolkit activation/deactivation is only performed at power on.	lowing reboot. SIM
	Note: from version 10.0x.xx4 the set command returns ERROR enabled (AT#ENAUSIM? returns 1).	when USIM is
AT#STIA?	Read command can be used to get information about the SAT in format:	nterface in the
	#STIA: <state>,<mode>,<timeout>,<satprofile></satprofile></timeout></mode></state>	
	where: <state> - the device is in one of the following state: 0 - SIM has not started its application yet 1 - SIM has started its application (SAT main menu ready) <mode> - SAT and unsolicited indications enabling status (see <timeout> - time-out for user responses (see above)</timeout></mode></state>	,
	SatProfile> - SAT Terminal Profile according to GSM 11.14, Application Toolkit facilities that are supported by profile cannot be changed by the TA.	
	Note: In SAT applications usually an SMS message is sent to the containing service requests, e.g. to send the latest news. The promessage with the requested information. Before activating SAT it is recommended to set the SMS text mathematical and to enable unsolicited indications for incoming with command +CNMI.	ovider returns a ode with command
AT#STIA=?	Test command returns the range of available values for the para	meters <mode> and</mode>





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#STIA - SIM	#STIA - SIM Toolkit Interface Activation SELINT 2	
	<timeout>.</timeout>	
Note	Just one instance at a time, the one which first issued from zero), is allowed to issue SAT commands, and instance issues AT#STIA=0 . After power cycle another instance can enable SAT.	this is valid till the same
Note	A typical SAT session on AT interface starts after an received, if enabled(see above). At that point usually issued (see #STGI), and after the SAT main menu had AT#STSR=37,0,x command is issued to select an ite	an AT#STGI=37 command is as been displayed on TE an

3.5.7.9.2. SIM Tookit Get Information - #STGI

#STGI - SIM Tookit	Get Information SELINT 2
AT#STGI=	#STGI set command is used to request the parameters of a proactive command
[<cmdtype>]</cmdtype>	from the ME.
	Parameter:
	<cmdtype> - proactive command ID according to GSM 11.14 (decimal); these</cmdtype>
	are only those command types that use the AT interface; SAT
	commands which are not using the AT interface (not MMI related SAT
	commands, e.g. PROVIDE LOCAL INFORMATION) are executed
	without sending any indication to the user
	1 - REFRESH
	5 – SET UP EVENT LIST
	16 - SET UP CALL
	17 - SEND SS
	18 - SEND USSD
	19 - SEND SHORT MESSAGE
	20 - SEND DTMF
	32 - PLAY TONE
	33 - DISPLAY TEXT
	34 - GET INKEY
	35 - GET INPUT
	36 - SELECT ITEM
	37 - SET UP MENU
	40 – SET UP IDLE MODE TEXT
	Demosted common descriptions on activities on #CTCI in directions
	Requested command parameters are sent using an #STGI indication:
	#STGI: <parameters></parameters>
	where < name at the control of the c
	where <pre>parameters></pre> depends upon the ongoing proactive command as follows:



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#STGI - SIM Tookit Get Information

SELINT 2

if <cmdType>=1 (REFRESH)

#STGI: <cmdType>,<refresh type>

where:

<refresh type>

- 0 SIM Initialization and Full File Change Notification;
- 1 File Change Notification;
- 2 SIM Initialization and File Change Notification;
- 3 SIM Initialization;
- 4 SIM Reset

if <cmdType>=5 (SET UP EVENT LIST)

#STGI: <cmdType>,<event list mask>

where

<event list mask> - hexadecimal number representing the list of events to monitor
(see GSM 11.14):

- '00' = MT call
- '01' = Call connected
- '02' = Call disconnected
- '03' = Location status
- '04' = User activity
- '05' = Idle screen available
- '06' = Card reader status (if class "a" is supported)
- '07' = Language selection
- '08' = Browser Termination (if class "c" is supported)
- '09' = Data available (if class "e" is supported)
- '0A' = Channel status (if class "e" is supported)

The hexadecimal number is actually a bit mask, where each bit, when set, indicates that the corresponding event has to be monitored (e.g., if <event list mask> is 0x0001, it means that MT call has to be monitored).

if <cmdType>=16 (SET UP CALL)

#STGI: <cmdType>,<commandDetails>,[<confirmationText>], <calledNumber>

where:

<commandDetails> - unsigned integer, used as an enumeration

- 0 Set up call, but only if not currently busy on another call
- 1 Set up call, but only if not currently busy on another call, with redial
- 2 Set up call, putting all other calls (if any) on hold





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#STGI - SIM Tookit Get Information

SELINT 2

- 3 Set up call, putting all other calls (if any) on hold, with redial
- 4 Set up call, disconnecting all other calls (if any)
- 5 Set up call, disconnecting all other calls (if any), with redial

<confirmationText> - string for user confirmation stage

<calledNumber> - string containing called number

if <cmdType>=17 (SEND SS)
if <cmdType>=18 (SEND USSD)
if <cmdType>=19 (SEND SHORT MESSAGE)
if <cmdType>=20 (SEND DTMF)
if <cmdType>=32 (PLAY TONE)
if <cmdType>=40 (SET UP IDLE MODE TEXT)

#STGI: <cmdType>[,<text>]

where:

<text> - text to be displayed to user

if <cmdType>=33 (DISPLAY TEXT)

#STGI: <cmdType>,<cmdDetails>[,<text>]

where:

<cmdDetails> - unsigned Integer used as a bit field.

0..255 - used as a bit field:

bit 1:

0 - normal priority

1 - high priority

bits 2 to 7: reserved for future use

bit 8:

0 - clear message after a delay

1 - wait for user to clear message

<text> - text to be displayed to user

if <cmdType>=34 (GET INKEY)

#STGI: <cmdType>,<commandDetails>,<text>

where:

<commandDetails> - unsigned Integer used as a bit field.

0..255 - used as a bit field:

bit 1:





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#STGI - SIM Tookit Get Information

SELINT 2

- 0 Digits only (0-9, *, # and +)
- 1 Alphabet set;

bit 2:

- 0 SMS default alphabet (GSM character set)
- 1 UCS2 alphabet

bit 3:

- 0 Character sets defined by bit 1 and bit 2 are enabled
- 1 Character sets defined by bit 1 and bit 2 are disabled and the "Yes/No" response is requested

bits 4 to 7:

0

bit 8:

- 0 No help information available
- 1 Help information available

<text> - String as prompt for text.

#STGI: <cmdType>,<commandDetails>,<text>,<responseMin>,<responseMax>[,<defaultText>]

where:

<commandDetails> - unsigned Integer used as a bit field.

0..255 - used as a bit field:

bit 1:

- 0 Digits only (0-9, *, #, and +)
- 1 Alphabet set

bit 2

- 0 SMS default alphabet (GSM character set)
- 1 UCS2 alphabet

bit 3:

- 0 ME may echo user input on the display
- 1 User input shall not be revealed in any way. Hidden entry mode (see GSM 11.14) is only available when using digit input. In hidden entry mode only characters ('0'-'9', '*' and '#') are allowed.

bit 4:

- 0 User input to be in unpacked format
- 1 User input to be in SMS packed format

bits 5 to 7:

0

bit 8:

- 0 No help information available
- 1 Help information available

<text> - string as prompt for text

<responseMin> - minimum length of user input





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#STGI - SIM Tookit Get Information

SELINT 2

0..255

<responseMax> - maximum length of user input

0..255

<defaultText> - string supplied as default response text

if <cmdType>=36 (SELECT ITEM)

The first line of output is:

#STGI: <cmdType>,<commandDetails>,<numOfItems>[,<titleText>] <CR><LF>

One line follows for every item, repeated for <numOfItems>:

#STGI: <cmdType>,<itemId>,<itemText>[,<nextActionId>]

where:

<commandDetails> - unsigned Integer used as a bitfield

0..255 - used as a bit field:

bit 1:

0 - Presentation type is not specified

1 - Presentation type is specified in bit 2

bit 2:

0 - Presentation as a choice of data values if bit 1 = '1'

1 - Presentation as a choice of navigation options if bit 1 is '1'

bit 3

0 - No selection preference

1 - Selection using soft key preferred

bits 4 to 7:

0

bit 8:

0 - No help information available

1 - Help information available

<numOfItems> - number of items in the list

<titleText> - string giving menu title

<itemId> - item identifier

1..<numOfItems>

<itemText> - title of item

<nextActionId> - the next proactive command type to be issued upon execution of the menu item.

0 - no next action information available.

if <cmdType>=37 (SET UP MENU)





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#STGI - SIM Took	it Get Information SELINT	` 2
	The first line of output is:	
	#STGI: <cmdtype>,<commanddetails>,<numofitems>,<titletext> <cr><lf></lf></cr></titletext></numofitems></commanddetails></cmdtype>	
	One line follows for every item, repeated for <numofitems>:</numofitems>	
	#STGI: <cmdtype>,<itemid>,<itemtext>[,<nextactionid>]</nextactionid></itemtext></itemid></cmdtype>	
	<pre>where: <commanddetails> - unsigned Integer used as a bitfield 0255 - used as a bit field: bit 1: 0 - no selection preference 1 - selection using soft key preferred bit 2 to 7: 0 bit 8: 0 - no help information available 1 - help information available 1 - help information available <numofitems> - number of items in the list <titletext> - string giving menu title <itemid> - item identifier 1<numofitems> <itemtext> - title of item <nextactionid> - the next proactive command type to be issued upon exe</nextactionid></itemtext></numofitems></itemid></titletext></numofitems></commanddetails></pre>	cution of
	the menu item. 0 - no next action information available. Note: upon receiving the #STGI response, the TA must send #STSR combelow) to confirm the execution of the proactive command and provide an	
	required user response, e.g. selected menu item.	
AT#STGI?	The read command can be used to request the currently ongoing proactive command and the SAT state in the format	
	#STGI: <state>,cmdType> where: <state> - SAT interface state (see #STIA) <cmdtype> - ongoing proactive command An error message will be returned if there is no pending command.</cmdtype></state></state>	
AT#STGI=?	Test command returns the range for the parameters <state></state> and <cmdtyp< b=""></cmdtyp<>	e>.
Note	The unsolicited notification sent to the user:	



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#STGI - SIM Tookit Get Information

SELINT 2

#STN: 37

is an indication that the main menu of the SIM Application has been sent to the TA. It will be stored by the TA so that it can be displayed later at any time by issuing an **AT#STGI=37** command.

A typical SAT session on AT interface starts after an #STN: 37 unsolicited code is received, if enabled. At that point usually an AT#STGI=37 command is issued, and after the SAT main menu has been displayed on TE an AT#STSR=37,0,x command is issued to select an item in the menu (see below). The session usually ends with a SIM action like sending an SMS, or starting a call. After this, to restart the session from the beginning going back to SAT main menu it is usually required an AT#STSR=37,16 command.

The unsolicited notification sent to the user:

#STN:237

is an indication that the main menu of the SIM Application has been removed from the TA, and it is no longer available. In this case **AT#STGI=37** command response will be always **ERROR**.

3.5.7.9.3. SIM Tookit Send Response - #STSR

#STSR - SIM Tookit Send Response

SELINT 2

AT#STSR= [<cmdType>, <userResponse> [,<data>]] The write command is used to provide to SIM user response to a command and any required user information, e.g. a selected menu item.

Parameters:

<mdType> - integer type; proactive command ID according to GSM 11.14 (see #STGI)

<userResponse> - action performed by the user

- 0 command performed successfully (call accepted in case of call setup)
- 16 proactive SIM session terminated by user
- 17 backward move in the proactive SIM session requested by the user
- 18 no response from user
- 19 help information required by the user
- 20 USSD/SS Transaction terminated by user
- 32 TA currently unable to process command
- 34 user has denied SIM call setup request
- 35 user cleared down SIM call before connection or network release

<data> - data entered by user, depending on <cmdType>, only required if
<Result> is 0:

Get Inkey

<data> contains the key pressed by the user; used character set should be the one selected with +CSCS.





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#STSR - SIM Tookit S	Send Response SELINT 2
	Note: if, as a user response, a binary choice (Yes/No) is requested by the SIM application using bit 3 of the <commanddetails></commanddetails> parameter the valid content of the <inputstring></inputstring> is: a) "IRA", "8859-1", "PCCP437" charsets: "Y" or "y" (positive answer) and "N" or "n" (negative answer) b) UCS2 alphabet "0079" or "0059" (positive answer) and "006E" or "004E" (negative answer)
	Get Input <data> - contains the string of characters entered by the user (see above)</data>
	Select Item < data> - contains the item identifier selected by the user
	Note: Use of icons is not supported. All icon related actions will respond with no icon available.
AT#STSR?	The read command can be used to request the currently ongoing proactive command and the SAT state in the format
	#STSRI: <state>,<cmdtype> where: <state> - SAT interface state (see #STIA) <cmdtype> - ongoing proactive command</cmdtype></state></cmdtype></state>
	An error message will be returned if there is no pending command.
AT#STSR=?	Test command returns the range for the parameters <state></state> and <cmdtype></cmdtype> .

3.5.7.9.4. SIM Tookit terminal Attach - #STTA

#STTA - SIM Toolkit Terminal Attach SELINT 2	
AT#STTA= <state></state>	This command attaches/detaches the SIM Toolkit application to the AT instance reserved for this use.
	Parameters:
	<state>:</state> attached state
	0 – SIM Toolkit detaches
	1 – SIM Toolkit attaches
	If SIM Toolkit application has been already attached/detached the
	command does nothing and returns OK.
AT#STTA?	Read command reports the current <state></state> in the format:
	#STTA: <state></state>



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AT#STTA=?	Test command reports the supported range of values for parameter			
	<state></state>			
Note	The AT instance reserved for the SIM Toolkit application is the #3.			
	Issuing AT#STTA= <state> when the AT instance has been already attached to another service (CMUX, SMSATRUN/TCPATRUN, OTA)</state>			
	causes an ERROR result code to be returned.			

3.5.7.10. Jammed Detect & Report AT Commands

3.5.7.10.1. Jammed Detect & Report - #JDR

3.5./.10.1.	Jammed Detect & Report - #JDR
<mark>#JDR - Jamm</mark>	ed Detect & Report SELINT 0 / 1
AT#JDR[=	Set command allows to control the Jammed Detect & Report feature.
[<mode> [,<mnpl>, <dcmn>]]]</dcmn></mnpl></mode>	The MODULE can detect if a communication Jammer is active in its range and give indication to the user of this condition either on the serial line with an unsolicited code or on a dedicated GPIO by rising it.
	Parameters: <mode> - behaviour mode of the Jammed Detect & Report 0 - disables Jammed Detect & Report (factory default) 1 - enables the Jammed Detect; the Jammed condition is reported on pin GPIO2/JDR GPIO2/JDR Low - Normal Operating Condition GPIO2/JDR High - Jammed Condition. 2 - enables the Jammed Detect; the Jammed condition is reported with a single unsolicited result code on serial line, in the format:</mode>
	#JDR: <status></status>
	where:
	<pre> <status> JAMMED - Jammed condition detected OPERATIVE - Normal Operating condition restored. This code will be shown only after a jammed condition has occurred. 3 - enables the Jammed Detect; the MODULE will make both the actions as for <mode>=1 and <mode>=2. 4 - enables the Jammed Detect; the Jammed condition is reported with an unsolicited code every 3s on serial line, in the format: </mode></mode></status></pre>
	#JDR: <status> where: <status> JAMMED - Jammed condition detected OPERATIVE - Normal Operating condition restored. This code will be shown only after a jammed condition has occurred.</status></status>



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#JDR - Jammed 1	Detect & Report SELINT 0 / 1
	5 - enables the Jammed Detect; the MODULE will make both the actions as for <mode>=1 and <mode>=4.</mode></mode>
	<mnpl> - Maximum Noise Power Level 0127 (factory default is 70)</mnpl>
	<dcmn> - Disturbed Channel Minimum Number 0254 (factory default is 5)</dcmn>
	Note: issuing AT#JDR<cr></cr> is the same as issuing the Read command.
	Note: issuing AT#JDR=<cr></cr> is the same as issuing the command AT#JDR=0<cr></cr> .
AT#JDR?	Read command reports the current behaviour mode, Maximum Noise Power Level and Disturbed Channel Minimum Number, in the format:
	#JDR: <mode>,<mnpl>,<dcmn></dcmn></mnpl></mode>
AT#JDR=?	Test command reports the supported range of values for the parameters <mode>,<mnpl> and <dcmn></dcmn></mnpl></mode>
Example	AT#JDR=2 OKjammer enters in the range #JDR: JAMMEDjammer exits the range #JDR: OPERATIVE
Note	If the device is installed in a particular environment where the default values are not satisfactory the two parameters <mnpl></mnpl> and <dcmn></dcmn> permit to adapt the detection to all conditions.

#JDR - Jammed Detect & Report SELINT 2		SELINT 2
AT#JDR=	Set command allows to control the Jammed Detect & Report feature.	
[<mode></mode>		
[, <mnpl>,</mnpl>	The MODULE can detect if a communication Jammer is active in its range and give	
<dcmn>]]</dcmn>	indication to the user of this condition either on the serial line with an unsolicited	
	code or on a dedicated GPIO by rising it.	
	Parameters:	
	<mode> - behaviour mode of the Jammed Detect & Report</mode>	
	0 - disables Jammed Detect & Report (factory default)	
	1 - enables the Jammed Detect; the Jammed condition is reported	ed on pin
	GPIO2/JDR	_
	GPIO2/JDR Low - Normal Operating Condition	
	GPIO2/JDR High - Jammed Condition.	
	2 - enables the Jammed Detect; the Jammed condition is reported	ed with a single



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#JDR - Jammed Detect	t & Report	SELINT 2	
	unsolicited result code on serial line, in the format:		
	#JDR: <status></status>		
	where:		
	<pre><status> JAMMED - Jammed condition detected</status></pre>		
	OPERATIVE - Normal Operating condition restored. This code		
	shown only after a jammed condition has occurred.		
	3 - enables the Jammed Detect; the MODULE will make both t	the actions as for	
	<mode>=1 and <mode>=2.</mode></mode>		
	4 - enables the Jammed Detect; the Jammed condition is report		
	unsolicited code every 3s on serial line, in the format:		
	#JDR: <status></status>		
	where:		
	<status></status>		
	JAMMED - Jammed condition detected	a aada will ba	
	OPERATIVE - Normal Operating condition restored. Thi shown only after a jammed condition has occurred.	s code will be	
	5 - enables the Jammed Detect; the MODULE will make both to	the actions as for	
	<mode>=1 and <mode>=4.</mode></mode>	are detroits do for	
	6 - enables the Jammed Detect (this value is available only for	10.00.xxx release);	
	the Jammed condition is reported in the format:		
	#JDR: <status></status>		
	where:		
	<status></status>		
	JAMMED - Jammed condition detected		
	OPERATIVE - Normal Operating condition restored. This	s code will be	
	shown only after a jammed condition has occurred	gaarahin a	
	UNKNOWN – default state before first successful PLMN	Searching	
	<mnpl> - Maximum Noise Power Level</mnpl>		
	0127 (factory default is 70)		
	<dcmn> - Disturbed Channel Minimum Number</dcmn>		
A TELLY TO DO	0254 (factory default is 5)		
AT#JDR?	Read command reports the current behaviour mode, Maximum I	Noise Power Level	
	and Disturbed Channel Minimum Number, in the format:		
	#JDR: <mode>,<mnpl>,<dcmn></dcmn></mnpl></mode>		
AT#JDR=?	Test command reports the supported range of values for the para	meters	
F 1	<mode>,<mnpl> and <dcmn></dcmn></mnpl></mode>		
Example	AT#JDR=2 OK		
	jammer enters in the range		
	#JDR: JAMMED		
	jammer exits the range		



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#JDR - Jammed	Detect & Report SELINT	2
	#JDR: OPERATIVE AT#JDR=6 #JDR: JAMMED //when jammed OK AT#JDR=6 #JDR: OPERATIVE //when in normal operating mode	
	OK AT#JDR=6 #JDR: UNKNOWN // default state before 1st PLMN searching OK	
Note	If the device is installed in a particular environment where the default value satisfactory the two parameters <mnpl></mnpl> and <dcmn></dcmn> permit to adapt the detection to all conditions.	

3.5.7.10.2. Jammed detect and report enhanced - #JDRENH

#JDRENH – Jammed detect and report enhanced SELINT 2		SELINT 2	
AT#JDRENH[= <type>[,<mod< th=""><th>This parameter allows to control Jammed De</th><th>tect & Report feature.</th></mod<></type>	This parameter allows to control Jammed De	tect & Report feature.	
e>[, <param/> [, <param2>[,<ti< th=""><th colspan="3">The MODULE can detect if a communication Jammer is active in</th></ti<></param2>	The MODULE can detect if a communication Jammer is active in		
me>]]]]	its range and give indication to the user	of this condition either on	
	the serial line with an unsolicited code	or on a dedicated GPIO by	
	rising it.		
	\mathcal{E}		
	<type></type>		
	0. Disables Jammed Detect & Report (1	Cactory default).	
	 Enables the Jammed Detect; the Jan pin GPIO2/JDR. GPIO/JDR Low – normal Operating 	-	
	GPIO/JDR High – Jammed Condition		
	2. Enables the Jammed Detect; the J with a single unsolicited result code #JDRENH: <status></status>	-	
	Where:		
	<status></status>		
	JAMMED – Jammed condition detected		
	OPERATIVE – Normal Operating condition restored. This code will be shown only after a jammed condition has		
	occurred.	a jammed condition has	





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- 3. Enables the Jammed Detect; the MODULE will make both actions as for <type>=1 and <type>=2.
- 4. Enables the Jammed Detect; the Jammed condition is reported with an unsolicited code every 3s on serial line, in format:

#JDRENH: <status>

Where:

<status>

JAMMED – Jammed condition detected

OPERATIVE – Normal Operating condition restored. This code will be shown only after a jammed condition has occurred.

5. Enables the Jammed Detect; the MODULE will make both the actions as for <type>=1 and <type>=4.

NOTE: If is used only this parameter, is accepted the "0" value only.

<mode>

Setting this parameter allows to decide which method to use to detect a jamming condition.

- 1. First Method; setting this value permits to use the first method.
- 2. Second Method; setting this value permits to use the second method.

NOTE: if are used only two parameters (with **<type>** not "0"), the parameters **<Param1>** and **<Param2>** are set to default value depending on which **<mode>** has been chosen.

<Param>

This parameter permits to set one parameter of the selected mode. So its function depends on which <**mode**> has been selected.

<mode>=1

For first method, this parameter is used to set the minimum number of BSIC FAIL for Band. Possible values are 1-50.

<mode>=2

For second method, this parameter is used to set the minimum difference





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between two power levels [dBm] for same ARFCN to signalling a jammed channel. Possible values are 1-20.

NOTE:

- 1. If are used only three parameters (with <type> not "0") the parameter <Param2> is set to default value depending on which <mode> has been chosen.
- 2. Default value for param>:
 - a. If <mode> is "1" default value is 10.
 - b. If <**mode**> is "2" default value is 5.

<Param2>

This parameter permits to set the second parameter of the selected mode. So its function depends on which <**mode**> has been selected.

<mode>=1

For first method, this parameter is used to set the minimum power [dBm] that allows counting a BSIC FAIL only if the power of that carrier is greater than this parameter. Possible values are 35 – 127 dBm.

<mode>=2

For second method, this parameter is used to set the minimum number of jammed ARFCN channel to signal a jammed situation. Possible values are 1-20.

NOTE:

Default value for param2>

- a. If <mode> is "1" default value is 110.
- b. If <mode> is "2" default value is 5.

<Time>

This parameter is used to set the Jamming notification time. It works with both method and when a jammed situation is revealed a timer starts. When this timer has been expired, if the module has not received any BSIC the module starts the jamming indication.

It is possible to set the time from 1 second to 254. If 255 is set, the module send the jamming indication when has tried to read the BSIC information from all powerful frequencies.

Possible values for this parameter are from 1 to 255.





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AT#JDRENH?	Read command reports the currently selected <type>,<mode>, <param/>, <param2> , <time> in the format:</time></param2></mode></type>		
	#JDRENH: <type>,<mode>,<param/>,<param2>,<time> .</time></param2></mode></type>		
AT#JDRENH=?	Test command reports the supported range of values for the parameters <type>,<mode>,<param/>, <param2>, <time> .</time></param2></mode></type>		

3.5.7.11. Easy Script® Extension - Python³⁰ Interpreter, AT Commands

3.5.7.11.1. Write Script - #WSCRIPT

#WSCRIPT - Write Script

SELINT 0 / 1

AT#WSCRIPT= <script_name>, <size> [,<hidden>] Execution command causes the MODULE to store a file in the Easy Script® related NVM, naming it **<script_name>**

The file should be sent using RAW ASCII file transfer.

It is important to set properly the port settings. In particular:

Flow control: hardware. Baud rate: 115200 bps

Parameters:

<script_name> - name of the file in NVM, string type (max 16 chars, case sensitive).

<size> - file size in bytes

<hidden> - file hidden attribute

0 - file content is readable with **#RSCRIPT** (default).

1 - file content is hidden, **#RSCRIPT** command will report empty file.

The device shall prompt a three character sequence

<greater_than><greater_than><greater_than>
(IRA 62, 62, 62)

after command line is terminated with **CR>**; after that a file can be entered from TE, sized **size** bytes.

The operations completes when all the bytes are received.

If writing ends successfully, the response is \mathbf{OK} ; otherwise an error code is reported.

Note: the file name should be passed between quotes; every textual script file must have .py extension, whilst every pre-compiled executable script file must have .pyo extension; file names are case sensitive.

 $^{^{\}rm 30}$ PYTHON is a registered trademark of the Python Software Foundation.





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#WSCRIPT - Write So	e <mark>ript</mark>	SELINT 0 / 1
	Note: when sending the script be sure that the line terminator is	<cr><lf> and</lf></cr>
	that your terminal program does not change it.	
	Note: with the hidden attribute it is possible to protect your files from being and copied, only the file name can be viewed, its content is hidden even if th still being run correctly. It's your care to maintain knowledge on what the file	
	contains.	
AT#WSCRIPT=?	Test command returns OK result code.	
Example	AT#WSCRIPT="First.py",54,0 >>> here receive the prompt: depending on your editor settings the prompt overrides the above line; then type or send the script, OK	•
	Script has been stored.	
Note	It's recommended to use the extension .py only for textual script extension .pyo only for pre-compiled executable script files.	files and the

#WSCRIPT - Write So	cript SELINT 2
AT#WSCRIPT=	Execution command causes the MODULE to store a file in the Easy Script®
[<script_name>,</script_name>	related NVM, naming it <script_name></script_name>
<size>,</size>	
[, <hidden>]]</hidden>	The file should be sent using RAW ASCII file transfer.
	It is important to set properly the port settings. In particular:
	Flow control: hardware.
	Baud rate: 115200 bps
	Parameters:
	<script name=""> - name of the file in NVM, string type (max 16 chars, case</th></tr><tr><th></th><th>sensitive).</th></tr><tr><th></th><th><size> - file size in bytes</th></tr><tr><th></th><th><hidden> - file hidden attribute</th></tr><tr><th></th><th>0 - file content is readable with #RSCRIPT (default).</th></tr><tr><th></th><th>1 - file content is hidden, #RSCRIPT command will report empty file.</th></tr><tr><th></th><th>The device shall prompt a five character sequence</th></tr><tr><th></th><th><pre><CR><LF><greater than><greater than></pre></th></tr><tr><th></th><th>(IRA 13, 10, 62, 62, 62)</th></tr><tr><th></th><th>after command line is terminated with CR>; after that a file can be entered from</th></tr><tr><th></th><th>TE, sized <size> bytes.</th></tr><tr><th></th><th>1L, Sized Size bytes.</th></tr><tr><th></th><th>The operations completes when all the bytes are received.</th></tr><tr><th></th><th>If writing ends successfully, the response is OK; otherwise an error code is reported.</th></tr><tr><th></th><th>Note: the file name should be passed between quotes; every textual script file must</th></tr></tbody></table></script>



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#WSCRIPT - Write	Script SELINT 2
	have .py extension, whilst every pre-compiled executable script file must have .pyo extension; file names are case sensitive.
	Note: when sending the script be sure that the line terminator is CR>CLF> and that your terminal program does not change it.
	Note: with the hidden attribute it is possible to protect your files from being viewed and copied, only the file name can be viewed, its content is hidden even if the file is still being run correctly. It's your care to maintain knowledge on what the file contains.
AT#WSCRIPT=?	Test command returns OK result code.
Example	AT#WSCRIPT="First.py",54,0 >>> here receive the prompt; then type or send the textual script, sized 54 bytes OK Textual script has been stored
Note	It's recommended to use the extension .py only for textual script files and the extension .pyo only for pre-compiled executable script files.

3.5.7.11.2. Select Active Script - #ESCRIPT

#ESCRIPT - Select Active Script SELINT 0 /		SELINT 0 / 1
AT#ESCRIPT[=	Set command selects either	
[<script_name>]]</script_name>	 a) the name of the textual script file that will be compiled Easy Script® compiler at startup according to last #ST. setting, or 	•
	b) the name of the pre-compiled executable file that will be according to last #STARTMODESCR setting.	be executed at startup
	We call this file (either textual or pre-compiled) the current sc	ript.
	Parameter:	
	<pre><script_name> - file name, string type (max 16 chars, case sensitive).</script_name></pre>	
	Note: all textual script files must have .py extension; all pre-co files must have .pyo extension.	mpiled executable
	Note: <script_name> must match to the name of a file written order to have it run.</script_name>	by #WSCRIPT in
	Note: the command does not check whether a textual script na does exist or not in the Easy Script® related NVM. If the file not present at startup then the compiler will not execute.	- =
	Note: issuing AT#ESCRIPT < CR> is the same as issuing the	Read command.



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#ESCRIPT - Select Ac	tive Script	SELINT 0 / 1
	Note: issuing AT#ESCRIPT= <cr> is the same as issuin AT#ESCRIPT=""<cr>.</cr></cr>	ng the command
AT#ESCRIPT?	Read command reports as a quoted string the file name of	the current script.
AT#ESCRIPT=?	Test command returns OK result code.	

#ESCRIPT - Select Active Script SELINT 2			
AT#ESCRIPT=	Set command selects either		
[<script_name>]</script_name>	c) the name of the textual script file that will be compiled and executed by the Easy Script® compiler at startup according to last #STARTMODESCR setting, or		
	d) the name of the pre-compiled executable file that will be executed at startup according to last #STARTMODESCR setting.		
	We call this file (either textual or pre-compiled) the current script .		
	Parameter: <script_name> - file name, string type (max 16 chars, case sensitive).</script_name>		
	Note: all textual script files must have .py extension; all pre-compiled executable files must have .pyo extension.		
	Note: <script_name></script_name> must match to the name of a file written by #WSCRIPT in order to have it run.		
	Note: the command does not check whether a textual script named <script_name></script_name> does exist or not in the Easy Script® related NVM. If the file <script_name></script_name> is not present at startup then the compiler will not execute.		
AT#ESCRIPT?	Read command reports as a quoted string the file name of the current script .		
AT#ESCRIPT=?	Test command returns OK result code.		

3.5.7.11.3. Script Execution Start Mode - #STARTMODESCR

#STARTMODESCR - Scrip	t Execution Start Mode	SELINT 0 / 1
AT#STARTMODESCR[=	AT#STARTMODESCR[= Set command sets the current script (see #ESCRIPT) execution start me	
<script_start_mode></script_start_mode>		
[, <script_start_to>]]</script_start_to>	Parameter:	
	<pre><script_start_mode> - currente script execution start n</script_start_mode></pre>	node
	0 - current script will be executed at startup only if the DTR line is found	
	Low (that is: COM is not open on a PC), otherwise the Easy Script®	
	interpreter will not execute and the MODULE will behave normally	
	answering only to AT commands on the serial port (factory default)	
	1 - current script will be executed at startup only if the user does not	
	any AT command on the serial port for the time interval specified in	
	<pre><script_start_to> parameter, otherwise the Easy Scri</script_start_to></pre>	pt® interpreter will
	not execute and the MODULE will behave normally a	nswering only to



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#STARTMODESCR - Scrip	t Execution Start Mode	SELINT 0 / 1	
	AT commands on the serial port. The DTI 2 - current script will be executed at startup the user does not send any AT command of influence on script execution. But AT commandational available on serial port ASC0 and connect See "Easy Script in Python" document for execution start mode.	on in any case. DTR line and if on the serial port have no amand interface will be used to third AT parser instance.	
	<pre><script_start_to> - current script start time-out; 1060 - time interval in seconds; this parameter is used only if parameter</script_start_to></pre>		
	Note: issuing AT#STARTMODESCR < CR> is the same as issuing to command.		
AT#STARTMODESCR?	Read command reports the current script star start time-out, in the format: #STARTMODESCR= <script_start_mode></script_start_mode>	-	
AT#STARTMODESCR=?	Test command returns the range of available v script_start_time	values for parameters	
	#STARTMODESCR: (0-2),(10-60)		

#STARTMODESCR - Script	t Execution Start Mode	SELINT 2	
AT#STARTMODESCR=	Set command sets the current script (see #ESCRIPT) execut	tion start mode.	
<script_start_mode></script_start_mode>			
[, <script_start_to>]</script_start_to>	Parameter:		
	<script_start_mode> - currente script execution start mode</script_start_mode>		
	0 - current script will be executed at startup only if the DTR	line is found	
	Low (that is: COM is not open on a PC), otherwise the Eas	y Script®	
	interpreter will not execute and the MODULE will behave	normally	
	answering only to AT commands on the serial port (factory	default).	
	1 - current script will be executed at startup only if the user does not send		
	any AT command on the serial port for the time interval specified in		
	<pre><script_start_to> parameter, otherwise the Easy Script® i</script_start_to></pre>	nterpreter will	
	not execute and the MODULE will behave normally answer	ering only to	
	AT commands on the serial port. The DTR line is not teste	d.	
	2 - current script will be executed at startup in any case. DTR line and if		
	the user does not send any AT command on the serial port have no		
	influence on script execution. But AT command interface will be		
	available on serial port ASC0 and connected to third AT pa	arser instance.	



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#STARTMODESCR - Scrip	t Execution Start Mode SELINT 2	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	See "Easy Script in Python" document for further details on this execution start mode.	
	<pre><script_start_to> - current script start time-out; 1060 - time interval in seconds; this parameter is used only if parameter</script_start_to></pre>	
AT#STARTMODESCR?	Read command reports the current script start mode and the current script start time-out, in the format: #STARTMODESCR= <script mode="" start="">, <script start timeout></th></tr><tr><th>AT#STARTMODESCR=?</th><th>Test command returns the range of available values for parameters <script_start_mode> and <script_start_timeout>, in the format: #STARTMODESCR: (0-2),(10-60)</th></tr></tbody></table></script>	

3.5.7.11.4. Execute Active Script - #EXECSCR

#EXECSCR - Execute	#EXECSCR - Execute Active Script SELINT 0 / 1	
AT#EXECSCR	Execution command causes the current script (see #ESCRIPT)	execution not at
	startup.	
	This command is useful when the execution at startup has been b	locked
	deliberately and the user wants to control execution start.	
AT#EXECSCR?	Read command has the same behaviour as execution command	
AT#EXECSCR=?	Test command returns OK result code.	

#EXECSCR - Execute	Active Script	SELINT 2
AT#EXECSCR	Execution command causes the current script (see #ESCRIPT)	execution not at
	startup.	
	This command is useful when the execution at startup has been b	locked
	deliberately and the user wants to control execution start.	
AT#EXECSCR=?	Test command returns OK result code.	

3.5.7.11.5. Read Script - #RSCRIPT

#RSCRIPT - Read Scri	<mark>pt</mark>	SELINT 0 / 1
AT#RSCRIPT=	Execution command reports the content of file <script_name></script_name> .	
<script_name></script_name>		
	Parameter:	
	<pre><script_name> - file name, string type (max 16 chars, case sens)</script_name></pre>	itive).





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#RSCRIPT - Read Scr	<mark>ipt</mark>	SELINT 0 / 1
	The device shall prompt a three character sequence	
	<less than=""><less than=""><less than=""></less></less></less>	
	(IRA 60, 60, 60)	
	followed by the file content.	
	Note: if the file <script_name></script_name> was saved with the hidden attrib file is reported with the OK result code.	oute, then an empty
	Note: If the file <script_name></script_name> is not present an error code is re	ported.
AT#RSCRIPT=?	Test command returns OK result code.	
Example	AT#RSCRIPT="First.py" hereafter receive the prompt: depending on your editor settings if the prompt overrides the above line; then the script is displayed, the prompt <	
	MDM.send('AT\r',10) Ans=MDM.receive(20) OK	

#RSCRIPT - Read Scr	<mark>ipt</mark>	SELINT 2
AT#RSCRIPT=	Execution command reports the content of file <script_name></script_name> .	
[<script_name>]</script_name>		
	Parameter:	
	<pre><script_name> - file name, string type (max 16 chars, case sens</script_name></pre>	itive).
	The device shall prompt a five character sequence	
	<cr><lf><less_than><less_than></less_than></less_than></lf></cr>	
	(IRA 13, 10, 60, 60, 60)	
	followed by the file content.	
	Note: if the file <script_name></script_name> was saved with the hidden attrib	oute, then an empty
	file is reported with the OK result code.	
	Notes If the file comint names is not an exact an eman and is no	un auta d
ATUDOCODIDE A	Note: If the file <script_name></script_name> is not present an error code is re	eported.
AT#RSCRIPT=?	Test command returns OK result code.	
Example	AT#RSCRIPT="First.py"	1 1
	hereafter receive the prompt; then the script is displayed, immed	hately after the
	prompt	
	<< <iimport mdm<="" th=""><th></th></iimport>	
	MDM.send('AT\r',10)	
	Ans=MDM.receive(20)	
	OK	



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3.5.7.11.6. List Script Names - #LSCRIPT

#LSCRIPT - List Scrip	<mark>ot Names</mark>	SELINT 0 / 1
AT#LSCRIPT	Execution command reports either the list of file names for the finithe Easy Script® related NVM and the available free NVM m format:	•
	[#LSCRIPT: <script_name1> <size1> [<cr><lf><cr><lf>#LSCRIPT: <script_namen> <sizen> <cr><lf><cr><lf>#LSCRIPT: free bytes: <free_nvm></free_nvm></lf></cr></lf></cr></sizen></script_namen></lf></cr></lf></cr></size1></script_name1>	
	where:	
	<pre><script-namen> - file name, quoted string type (max 16 chars, c</script-namen></pre>	case sensitive)
	<sizen> - size of script in bytes</sizen>	
	<pre><free_nvm> - size of available NVM memory in bytes</free_nvm></pre>	
AT#LSCRIPT?	Read command has the same behavior of Execution command.	
Example	AT#LSCRIPT #LSCRIPT: First.py 51	
	#LSCRIPT: Second.py 178	
	#LSCRIPT: Third.py 95	
	#LSCRIPT: free bytes: 20000	
	OK	

#LSCRIPT - List Scri	ot Names SELINT 2
AT#LSCRIPT	Execution command reports either the list of file names for the files currently stored
	in the Easy Script® related NVM and the available free NVM memory in the
	format:
	[#LSCRIPT: <script_name1>,<size1></size1></script_name1>
	[<cr><lf>#LSCRIPT: <script_namen>,<sizen>]]</sizen></script_namen></lf></cr>
	<cr><lf>#LSCRIPT: free bytes: <free_nvm></free_nvm></lf></cr>
	where:
	<pre><script-namen> - file name, quoted string type (max 16 chars, case sensitive)</script-namen></pre>
	<sizen> - size of script in bytes</sizen>
	<pre><free_nvm> - size of available NVM memory in bytes</free_nvm></pre>
AT#LSCRIPT=?	Test command returns OK result code.
Example	AT#LSCRIPT
	#LSCRIPT: "First.py",51
	#LSCRIPT: "Second.py",178
	#LSCRIPT: "Third.py",95
	#LSCRIPT: free bytes: 20000
	OK

#LCSCRIPT - List Scr	<mark>ipt Names</mark>	SELINT 2
AT#LCSCRIPT	Execution command reports either the list of file names for the fi	les currently stored





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#LCSCRIPT - List S	cript Names SELINT 2
TESCRIT I - LISUS	in the Easy Script® related NVM, adding CRC16 information, and the available free NVM memory in the format:
	[#LCSCRIPT: <script_name1>,<size1>[,<crc1>] [<cr><lf>#LCSCRIPT: <script_namen>,<sizen>[,<crcn>]]] <cr><lf>#LCSCRIPT: free bytes: <free_nvm></free_nvm></lf></cr></crcn></sizen></script_namen></lf></cr></crc1></size1></script_name1>
	where: <script-namen> - file name, quoted string type (max 16 chars, case sensitive) <sizen> - size of script in bytes <crcn> - CRC16 poly (x^16+x^12+x^5+1) of script in hex format</crcn></sizen></script-namen>
	<pre><free_nvm> - size of available NVM memory in bytes</free_nvm></pre> Note: CRC16 is calculated using the standard CRC16-CCITT x^16+x^12+x^5+1 polynomial (0x1021 representation) with initial value FFFF.
	Note: if one file currently stored in NVM is in use than CRC16 cannot be calculated and execution command does not report <crcn></crcn> for that file. This is always true if command is executed by a Python script because at least the file pointed by #ESCRIPT is in use.
AT#LCSCRIPT= <script_name></script_name>	Execution command reports size and CRC16 information of file <script_name></script_name> in the format:
	[#LCSCRIPT: <script_name>,<size>[,<crc>]]</crc></size></script_name>
	where: <script-name> - file name, quoted string type (max 16 chars, case sensitive) <size> - size of script in bytes <crc> - CRC16 poly (x^16+x^12+x^5+1) of script in hex format</crc></size></script-name>
	Parameter: <script_name> - file name, string type (max 16 chars, case sensitive).</script_name>
	Note: CRC16 is calculated using the standard CRC16-CCITT $x^16+x^12+x^5+1$ polynomial (0x1021 representation) with initial value FFFF.
	Note: if file <script_name></script_name> is in use than CRC16 cannot be calculated and execution command does not report <crc></crc> .
	Note: if file <script_name></script_name> is not in the list of files stored in NVM execution command exits with error message.
AT#LCSCRIPT=?	Test command returns OK result code.
Example	AT#LCSCRIPT #LCSCRIPT: "First.py",51,8FD6 #LCSCRIPT: "Second.py",178,A034



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#LCSCRIPT - List Sc	<mark>ript Names</mark>	SELINT 2
	#LCSCRIPT: "Third.py",120,7C48 #LCSCRIPT: free bytes: 20000	·
	OK	
	AT#LCSCRIPT="Second.py" #LCSCRIPT: "Second.py",178,A034	
	ОК	
	If file Third.py is already in use. AT#LCSCRIPT #LCSCRIPT: "First.py",51,8FD6 #LCSCRIPT: "Second.py",178,A034 #LCSCRIPT: "Third.py",120 #LCSCRIPT: free bytes: 20000	
	ОК	

3.5.7.11.7. Delete Script - #DSCRIPT

#DSCRIPT - Delete	Script SELINT 0 / 1
AT#DSCRIPT=	Execution command deletes a file from Easy Script® related NVM memory.
<script_name></script_name>	
	Parameter:
	<pre><script_name> - name of the file to delete, string type (max 16 chars, case</script_name></pre>
	Note: if the file <script_name></script_name> is not present an error code is reported.
AT#DSCRIPT=?	Test command returns OK result code.
Example	AT#DSCRIPT="Third.py"
	OK

#DSCRIPT - Delete Sc	ript SELINT 2
AT#DSCRIPT=	Execution command deletes a file from Easy Script® related NVM memory.
[<script_name>]</script_name>	
	Parameter:
	<pre><script_name> - name of the file to delete, string type (max 16 chars, case</script_name></pre>
	Note: if the file <script_name></script_name> is not present an error code is reported.
AT#DSCRIPT=?	Test command returns OK result code.
Example	AT#DSCRIPT="Third.py"
	OK



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3.5.7.11.8. Reboot - #REBOOT

#REBOOT - Reboot		SELINT 0 / 1
AT#REBOOT	Execution command reboots immediately the unit.	
	It can be used to reboot the system after a remote update of the schave the new one running.	ript in order to
	Note: if AT#REBOOT follows an AT command that stores some NVM, it is recommended to insert a delay of at least 5 seconds be AT#REBOOT, to permit the complete NVM storing	•
AT#REBOOT?	Read command has the same behaviour of Execution command.	
AT#REBOOT=?	Test command returns OK result code.	
Example	AT#REBOOT OK Module Reboots	

#REBOOT - Reboot	SELINT 2
AT#REBOOT	Execution command reboots immediately the unit. It can be used to reboot the system after a remote update of the script in order to have the new one running. Note: if AT#REBOOT follows an AT command that stores some parameters in NVM, it is recommended to insert a delay of at least 5 seconds before to issue AT#REBOOT, to permit the complete NVM storing Note: AT#REBOOT is an obsolete AT command; please refer to AT#ENHRST to perform a module reboot
AT#REBOOT=?	Test command returns OK result code.
Example	AT#REBOOT OK Module Reboots



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3.5.7.11.9. CMUX Interface Enable - #CMUXSCR

#CMUXSCR - CMUX	Interface Enable SELINT 2	
AT#CMUXSCR=	Set command enables/disables the 3GPP TS 27.010 multiplexing protocol control	
<enable>,[<rate>]</rate></enable>	channel (see +CMUX) at startup before the current script (see #ESCRIPT)	
	execution and specifies the DTE speed at which the device sends and receives	
	CMUX frames (used to fix the DTE-DCE interface speed).	
	Parameters:	
	<enable></enable> - enables/disables CMUX interface at startup.	
	0 - it disables CMUX interface at startup, before current script execution (factory	
	default)	
	1 - it enables CMUX interface at startup, before current script execution	
	<rate></rate>	
	300	
	1200	
	2400	
	4800	
	9600	
	19200	
	38400	
	57600	
	115200 (default)	
	If <rate></rate> is omitted the value is unchanged	
	11 \ Tate> is offitted the value is unchanged	
	<enable> and <rate> values are saved in NVM</rate></enable>	
AT#CMUXSCR?	Read command returns the current value of #CMUXSCR parameters in the format:	
TITE CITE TO THE SERVICE STATE OF THE SERVICE STATE	read command retains the eartest value of #Civio 18001x parameters in the format.	
	#CMUXSCR: <enable>,<rate></rate></enable>	
AT#CMUXSCR =?	Test command reports the range for the parameters <enable></enable> and <rate></rate>	



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3.5.7.12. GPS AT Commands Set

3.5.7.12.1. GPS Controller Power Management - \$GPSP

\$GPSP - GPS Contro	oller Power Management	SELINT 0 / 1 / 2	
AT\$GPSP= <status></status>	Set command allows to manage power-up or down of the GPS controller		
	Parameter:		
	<status></status>		
	0 - GPS controller is powered down		
	1 - GPS controller is powered up (default)		
	Note: for the GPS product (GE863-GPS): if the GPS controller i	s powered down	
	while VAUX pin is enabled they'll both be also powered off.		
	Note: the current setting is stored through \$GPSSAV		
AT\$GPSP?	AT\$GPSP? Read command reports the current value of the <status> parameter, in the formation of the status parameter, in the formation of the status parameter. SGPSP: <status> Note (GE864-GPS and GE865-QUAD only): the <status> parameter does not</status></status></status>		
	report the real power status of the GPS module but only the value		
	set command above. The <status></status> parameter, once stored through		
	AT\$GPSSAV command, specifies the power status of the GPS		
	OFF) at system startup	,	
AT\$GPSP=?	Test command reports the range of supported values for paramet	ter <status></status>	
Example	AT\$GPSP=0 OK		
Note	The command is available in "controlled mode" only (GE8 GE865-QUAD)	64-GPS and	

3.5.7.12.2. **GPS Reset - \$GPSR**

\$GPSR - GPS Reset		SELINT 0 / 1 / 2
AT\$GPSR=	Execution command allows resetting the GPS controller.	
<reset_type></reset_type>		
	For GM862-GPS and GE863-GPS:	
	Parameter:	
	<reset type=""></reset>	





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\$GPSR - GPS Reset	SELINT 0 / 1 / 2	
	0 – Hardware reset: the GPS receiver is reset and restarts by using the values stored in the internal memory of the GPS receiver. 1 – Coldstart (No Almanac, No Ephemeris): this option clears all data that is currently stored in the internal memory of the GPS receiver including Last Position, Almanac, Ephemeris, and Time. The stored Clock Drift however, is retained. 2 – Warmstart (No Ephemeris): this option clears all initialization data in the GPS receiver and subsequently reloads the data that is currently displayed in the Receiver Initialization Setup screen. Almanac is retained but Ephemeris is cleared. 3 – Hotstart (with stored Almanac and Ephemeris): the GPS receiver restarts by using all data that is currently stored in the internal memory of the GPS receiver; validated Almanac and Ephemeris.	
	For GE864-GPS and GE865-QUAD: 0 – Factory reset: this option clears all the GPS memory including Clock Drift and Extended Ephemeris files stored into flash memory. 1 – Coldstart (No Almanac, No Ephemeris): this option clears all data that is currently stored in the internal memory of the GPS receiver including Last Position, Almanac, Ephemeris and Time. However the stored Clock Drift and Extended Ephemeris are retained. 2 – Warmstart (No ephemeris): this option clears Ephemeris and Last Position only. Almanac and Extended Ephemeris are retained. 3 – Hotstart (with stored Almanac and Ephemeris): the GPS receiver restarts by using all data that is currently stored in the internal memory of the GPS receiver: valid Almanac, Ephemeris and Extended Ephemeris are therefore retained and used	
AT\$GPSR=?	Test command reports the range of supported values for parameter <reset type=""></reset>	
Example	AT\$GPSR=0 OK	
Note	The command is available in "controlled mode" only This command must be issued only when the GPS receiver is operating in Full Power Mode (see \$GPSPS), otherwise it might have no effect (GE864-GPS and GE865-QUAD) Since the Factory Reset (<reset_type>=0) performs a hardware reconfiguration of the GPS receiver, the issuing of two consecutive AT\$GPSR commands should be avoided, otherwise the reconfiguration might fail: an ERROR is returned in the latter case (GE864-GPS and GE865-QUAD)</reset_type>	

3.5.7.12.3. GPS Device Type Set - \$GPSD

\$GPSD - GPS Device T	Type Set	SELINT 0 / 1 / 2
AT\$GPSD=	Set command defines which GPS device is connected to the mod	ule. It dedicates
<device type=""></device>	the Serial port #1 of the module (TRACE) to receive the GPS str	ings from the GPS





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\$GPSD - GPS Device	<mark>Type Set</mark>	SELINT 0 / 1 / 2		
	module.			
	Parameter:			
	<device type=""></device>	e>		
	0 - none; the serial port is not connected to GPS device and availuse (default for GE865)	ilable for standard		
	1 - currently has no meaning, maintained for backward compati	currently has no meaning, maintained for backward compatibility serial port connected to GPS serial port: controlled mode (default for GE864-		
	3 - currently has no meaning, maintained for backward compatibility Note: In case of GM862-GPS <device type=""></device> has always value 2, if you set a other value it will give ERROR.			
	Note: the current setting is stored through \$GPSSAV			
AT\$GPSD?	Read command reports the current value of <device_type></device_type> parate format:	meter, in the		
	\$GPSD: <device_type></device_type>			
AT\$GPSD=?	Test command reports the range of supported values for paramet	ter <device_type></device_type>		
Example	AT\$GPSD=0 OK			

3.5.7.12.4. GPS Software Version - \$GPSSW

\$GPSSW - GPS Softw	\$GPSSW - GPS Software Version SELINT 0 / 1 /		
AT\$GPSSW	Execution command provides GPS Module software version in the format:		
	\$GPSSW: <sw version=""></sw>		
AT\$GPSSW?	Read command has the same meaning as the Execution command		
AT\$GPSSW=?	Test command returns the OK result code		
Example	For GM862-GPS and GE863-GPS: AT\$GPSSW \$GPSSW: GSW3.1.1_3.1.00.07-C23P1.00 OK For GE864-GPS and GE865-QUAD: AT\$GPSSW \$GPSSW: GSD4e_4.0.2-P1 05/26/2010 146 OK		
Note	The command is available in "controlled mode" only (GE864-GPS and GE865-QUAD)		



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\$GPSSW - GPS Softwa	<mark>are Version</mark>	SELINT 0 / 1 / 2
	GPS Module software version is available in few seconds a	t first GPS
	module startup (GE864-GPS and GE865-QUAD)	

3.5.7.12.5. GPS Antenna Type Definition - \$GPSAT

\$GPSAT - GPS A	ntenna LNA Control	SELINT 0 / 1 / 2
AT\$GPSAT=	Set command selects the GPS antenna used.	
<type></type>		
	For GM862-GPS and GE863-GPS	
	Parameter:	
	<type></type>	
	0 - GPS Antenna not power supplied by the module	
	1 - GPS Antenna power supplied by the module (defaul	lt)
	For GE864-GPS and GE865-QUAD	
	Parameter:	
	<type></type>	
	0 - Disable External GPS Antenna LNA (default):	
		GPS_EXT_LNA_EN
	signal is Low	
	1 - Enable External GPS Antenna LNA:	CDC EVT INA EN
		GPS_EXT_LNA_EN
	signal is High	
	Note: if current <type> is 0, either \$GPSAV and \$GPSA</type>	I have no meaning
	(GM862-GPS and GE863-GPS)	S
	Note: the current setting is stored through \$GPSSAV	
AT\$GPSAT?	Read command returns the current value of <type></type> in the	format:
	\$GPSAT: <type></type>	
AT\$GPSAT=?	Test command reports the range of supported values for p	arameter <tvne></tvne>
Example	AT\$GPSAT=1	
	OK	
Note	The command is available in "controlled mode" only (GE	864-GPS and GE865-
	QUAD)	
	This command must be issued only when the GPS received	er is operating in Full
	Power Mode (see \$GPSPS), otherwise it might have no e	
	GE865-QUAD)	neet (OLOO) of 5 and
	Since the AT\$GPSAT command performs a hardware red	
	receiver, the issuing of two consecutive AT\$GPSAT com-	
	avoided, otherwise the reconfiguration might fail: an ERF	ROR is returned in the
	latter case (GE864-GPS and GE865-QUAD)	



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If the <type></type> parameter has been set to 1, the External GPS Antenna LNA is
directly driven by the GPS receiver according to its current power mode (i.e. the
External GPS Antenna LNA is turned off whenever the GPS receiver is in power
saving mode) (GE864-GPS and GE865-QUAD)
Please refer to the HW User Guide for the compatible GPS antennas and their
usage

3.5.7.12.6. GPS Antenna Supply Voltage Readout - \$GPSAV

\$GPSAV - GPS Antenna Supply Voltage Readout SELINT 0 / 1		
AT\$GPSAV	AT\$GPSAV Execution command returns the measured GPS antenna's supply voltage in mV	
AT\$GPSAV?	Read command has the same meaning as the Execution command	
AT\$GPSAV=?	Test command returns the OK result code	
Example	AT\$GPSAV \$GPSAV:3800 OK	
Note	It has meaning only if current \$GPSAT setting is not 0	

3.5.7.12.7. GPS Antenna Current Readout - \$GPSAI

\$GPSAI - GPS Ant	GPSAI - GPS Antenna Current Readout SELINT 0 / 1 / 2	
AT\$GPSAI	Execution command reports the GPS antenna's current consumption in the format:	
	\$GPSAI: <value>[,<status>]</status></value>	
	where:	
	<value> - the measured current in mA</value>	
	<status></status>	
	0 - GPS antenna OK	
	1 - GPS antenna consumption out of the limits	
	Note: the output <status></status> is available only if the antenna protection is activated (see \$GPSAP)	
AT\$GPSAI?	Read command has the same meaning as the Execution command	
AT\$GPSAI=?	Test command returns the OK result code	
Example	AT\$GPSAI?	
	\$GPSAI:040,0	
37.	OK	
Note	It has meaning only if current \$GPSAT setting is not 0	

3.5.7.12.8. GPS Antenna Protection - \$GPSAP





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\$GPSAP - GPS Antenna Protection SELINT 0 / 1 / 2		
AT\$GPSAP= <set>[,<</set>	Set command allows to activate an automatic protection in case of high current	
value>]	consumption of GPS antenna. The protection disables the GPS antenna supply voltage.	
	Parameters: <set> 0 - deactivate current antenna protection (default)</set>	
	1 - activate current antenna protection	
	<value> - the antenna current limit value in mA</value>	
	0200	
	The parameter <value></value> has meaning only if parameter <set></set> =1, otherwise it is not accepted.	
	Note: the new setting is stored through \$GPSSAV	
AT\$GPSAP?	Read command reports the current activation status of antenna automatic	
	protection and the current antenna limit value, in the format:	
	\$GPSAP: <set>,<value></value></set>	
AT\$GPSAP=?	Test command reports the range of supported values for parameters <set></set> and	
Example	<pre><value> AT\$GPSAP=0 OK</value></pre>	
	Note: no SW control on antenna status (HW current limitation only)	
	AT\$GPSAP=1,25 OK	
	activate current antenna protection with related current limit	
	AT\$GPSAP? \$GPSAP:1,50 OK Antenna protection activated with 50mA limit	
Note	The module is already provided of an Hardware protection for the high current consumption that is automatically activated if the consumption exceeds 50mA	

3.5.7.12.9. GPS NMEA Serial Port Speed - \$GPSS

SGPSS - GPS Serial Port Speed SELINT 0 / 1		SELINT 0 / 1 / 2
AT\$GPSS= <speed></speed>	Set command allows to select the speed of the NMEA serial port	
	D	
	Parameter:	
	<speed></speed>	
	4800 - (default)	
	9600	
	19200	
	38400	





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SGPSS - GPS Serial Port Speed		SELINT 0 / 1 / 2
	57600	
	Note: the new setting is stored through \$GPSSAV	
AT\$GPSS?	Read command returns the current serial ports speed in the	format:
	\$GPSS: <speed></speed>	
AT\$GPSS=?	Test command returns the available range for <speed></speed>	

3.5.7.12.10. Unsolicited NMEA Data Configuration - \$GPSNMUN

\$GPSNMUN - Unsolic	ited NMEA Data Configuration SELINT 0 / 1 / 2
AT\$GPSNMUN=	Set command permits to activate an Unsolicited streaming of GPS data (in NMEA
<enable></enable>	format) through the standard GSM serial port and defines which NMEA sentences
[, <gga>,<gll>,</gll></gga>	will be available
<gsa>,<gsv>,</gsv></gsa>	
<rmc>,<vtg>]</vtg></rmc>	Parameters:
	<enable></enable>
	0 - NMEA data stream de-activated (default)
	1 - NMEA data stream activated with the following unsolicited response syntax: \$GPSNMUN: <cr><nmea sentence=""><cr></cr></nmea></cr>
	2 - NMEA data stream activated with the following unsolicited response syntax: <nmea sentence=""><cr></cr></nmea>
	3 - dedicated NMEA data stream; it is not possible to send AT commands; with the escape sequence '+++' the user can return to command mode
	<gga> - Global Positioning System Fix Data</gga>
	0 - disable (default)
	1 - enable
	<gll> - Geographical Position - Latitude/Longitude</gll>
	0 - disable (default)
	1 - enable
	<gsa> - GPS DOP and Active Satellites</gsa>
	0 - disable (default)
	1 - enable
	<gsv> - GPS Satellites in View</gsv>
	0 - disable (default)
	1 - enable
	<rmc> - recommended Minimum Specific GPS Data</rmc>
	0 - disable (default)
	1 - enable
	<vtg> - Course Over Ground and Ground Speed</vtg>
	0 - disable (default)
	1 - enable



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\$GPSNMUN - Unsol	icited NMEA Data Configuration SELINT 0 / 1 / 2	
AT\$GPSNMUN?	Read command returns whether the unsolicited GPS NMEA data streaming is currently enabled or not, along with the NMEA sentences availability status, in the format: \$GPSNMUN: <enable>,<gga>,<gll>,<gsa>,<gsv>,<rmc>,<vtg></vtg></rmc></gsv></gsa></gll></gga></enable>	
AT\$GPSNMUN=?	Test command returns the supported range of values for parameters <enable></enable> , <gga></gga> , <gll></gll> , <gsa></gsa> , <gsv></gsv> , <rmc></rmc> , <vtg></vtg>	
Example	AT\$GPSNMUN=1,0,0,1,0,0,0 OK These sets the GSA as available sentence in the unsolicited message AT\$GPSNMUN=0 OK Turn-off the unsolicited mode AT\$GPSNMUN? \$GPSNMUN: \$GPSNMUN: \$Greethe current frame selected (GSA) The unsolicited message will be: \$GPSNMUN: \$GPGSA,A,3,23,20,24,07,13,04,02,,,,,2.4,1.6,1.8*3C	
Reference	NMEA 01803 Specifications	
Note	The command is available in "Controlled Mode" only The available NMEA Sentences are depending on the GPS receiver used In GE863-GPS, GM862-GPS, GE864-GPS and GE865-QUAD the fields PDOP and VDOP are not available Use NMEA serial port instead if full DOP info are needed (GE863-GPS and GM862-GPS only)	

3.5.7.12.11. Get Acquired Position - \$GPSACP

\$GPSACP - Get Acq	<mark>uired Position</mark>	SELINT 0 / 1 / 2
AT\$GPSACP	Execution command returns information about the last GPS posi-	tion in the format:
	\$GPSACP: <utc>,<latitude>,<longitude>,<hdop>,<altitude< i=""><fix>,<cog>,<spkm>,<spkn>,<date>,<nsat></nsat></date></spkn></spkm></cog></fix></altitude<></hdop></longitude></latitude></utc>	»,
	where: <utc> - UTC time (hhmmss.sss) referred to GGA sentence <latitude> - format is ddmm.mmmm N/S (referred to GGA sent where: dd - degrees 0090</latitude></utc>	ence)



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\$GPSACP - Get	Acquired Position	SELINT 0 / 1 / 2
	mm.mmmm - minutes	•
	00.000059.9999	
	N/S: North / South	
	<longitude> - format is dddmm.mmmm E/W (referred to GC)</longitude>	GA sentence)
	where:	
	ddd - degrees	
	000180	
	mm.mmmm - minutes	
	00.000059.9999	
	E/W: East / West	
	<hd><hdop> - x.x - Horizontal Diluition of Precision (referred to</hdop></hd>	
	<altitude> - x.x Altitude - mean-sea-level (geoid) in meters (</altitude>	referred to GGA
	sentence)	
	0 - Invalid Fix	
	2 - 2D fix	
	3 - 3D fix	
	<pre><cog> - ddd.mm - Course over Ground (degrees, True) (refer</cog></pre>	red to VTG sentence)
	where:	red to v r d sentence)
	ddd - degrees	
	000360	
	mm - minutes	
	0059	
	<pre><spkm> - x.x Speed over ground (Km/hr) (referred to VTG)</spkm></pre>	sentence)
	<pre><spkn> - x.x- Speed over ground (knots) (referred to VTG s)</spkn></pre>	,
	<pre><date> - ddmmyy Date of Fix (referred to RMC sentence)</date></pre>	•
	where:	
	dd - day	
	0131	
	mm - month	
	0112	
	yy - year	
	0099 - 2000 to 2099	
	<nsat> - nn - Total number of satellites in use (referred to GC</nsat>	GA sentence)
	0012	
AT\$GPSACP?	Read command has the same meaning as the Execution comm	nand
AT\$GPSACP=?	Test command returns the OK result code	
Example	AT\$GPSACP \$GPSACP:080220.479,4542.82691N,01344.26820E,259.07,3,2.1,0.1,0.0,0	0.0,270705,09
	OK	
Note	The command is available in "Controlled Mode" only (Controlled Mode" only (Controlled Mode")	GE864-GPS and
	GE865-QUAD)	



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3.5.7.12.12. Direct Access to GPS Module - \$GPSCON

\$GPSCON - Direct A	SGPSCON - Direct Access to GPS Module SELINT 0 / 1 / 2	
AT\$GPSCON	Execution command allows to set the GSM baseband in transpart to have a direct access to the serial port of the GPS module. The transfer directly the received data to the GPS module, without cleaborating them.	GSM module will
	Note: the command is usable only in "controlled mode".	
	Note: in case of an incoming call from GSM, this will be visible of serial port.	on the RING pin
	Note: the escape sequence is "+++"	
	Note: the Serial Port Speed can be maximum 38400 bps (GM86 GPS)	2-GPS and GE863-
	The suggested Serial Port Speed for GE864-GPS and GE865-QI	JAD is 57600
AT\$GPSCON=?	Test command returns the OK result code	

3.5.7.12.13. Set The GPS Module In Programming Mode - \$GPSPRG

\$GPSPRG - Set Th	SGPSPRG - Set The GPS Module In Programming Mode SELINT 0 / 1 /	
AT\$GPSPRG	Execution command allows to switch on the GPS part in BOOT mode and set the GSM processor in Transparent Mode, in order to permit the re-programming of th GPS flash memory.	
	Note: the escape sequence is "+++"	
	Note: it is possible to issue \$GP\$PRG only if the Serial Port Speed is fixed 38400 bps	
AT\$GPSPRG?	Read command has the same effect as Execution command.	
AT\$GPSPRG=?	Test command returns the OK result code	

3.5.7.12.14. Set The GPS Module In Power Saving Mode - \$GPSPS

\$GPSPS - Set The GP	SGPSPS - Set The GPS Module In Power Saving Mode SELINT 0 / 1	
AT\$GPSPS[=	Set command allows to set the GPS module in Power saving mod	de.
<mode< th=""><th></th><th></th></mode<>		
[, <ptf_period>]]</ptf_period>	Parameters:	
	<mode> - the GPS receiver can operate in three modes</mode>	
	0 - full power mode, power saving disabled (default); it is the st	andard operating
	mode; power is supplied to the receiver continuously and the	e GPS receiver
	continues to operate without an interrupt.	
	1 - tricklepower mode; the power to the SiRF chipset is cycled	periodically, so



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SGPSPS - Set The GP	S Module In Power Saving Mode	SELINT 0 / 1
	that it operates only a fraction of the time; power is applied position fix is scheduled. 2 - push-to-fix mode; the GPS receiver is generally off, but turn enough to collect ephemeris data to maintain the GPS1 real-calibration so that, upon user request, a position fix can be p after power-up. <ptf_period> - push-to-fix period, numeric value in secs; when fix, the receiver turns on periodically according to this parare is 1800 sec. This parameter has meaning only when <mode>mode> NOTE: with at\$gpsps=2,x, during the push to fix period VAU VAUX can be controlled by AT#VAUX command, too.</mode></ptf_period>	only when a as on frequently time clock rovided quickly a mode is push-to- meter; default value >=2
AT\$GPSPS?	Read command returns the current power saving mode and push- the format: \$GPSPS: <mode>,<ptf period=""></ptf></mode>	to-fix period, in
AT\$GPSPS	Execution command has the same effect as the Read command	
AT\$GPSPS=?	Test command returns the available range for <mode> and <pti< th=""><th>F_Period></th></pti<></mode>	F_Period>
Note	Available in "controlled mode" only	_

\$GPSPS - Set The G	PS Module In Power Saving Mode	SELINT 2
AT\$GPSPS=	Set command allows to set the GPS module in Power saving mo	ode.
<mode></mode>		
[, <ptf_period>]</ptf_period>	Parameters:	
	<mode> - the GPS receiver can operate in three modes (four in GE865-QUAD)</mode>	GE864-GPS and
	0 - full power mode, power saving disabled (default); it is the smode; power is supplied to the receiver continuously and the continues to operate without an interrupt.	1 0
	1 - tricklepower mode; the power to the SiRF chipset is cycled that it operates only a fraction of the time; power is applied position fix is scheduled.	
	2 - push-to-fix mode; the GPS receiver is generally off, but ture enough to collect ephemeris data to maintain the GPS real-calibration so that, upon user request, a position fix can be after power-up.	time clock
	3 - micro power mode (GE864-GPS and GE865-QUAD only); is requested to the Micro Power Management low power m sufficient ephemeris data is available and a valid navigation calculated at near zero user velocity.	node as soon as
	PTF_Period> - push-to-fix period, numeric value in secs; who fix, the receiver turns on periodically according to this para is 1800 sec. This parameter has meaning only when < mode	meter; default value
	NOTE: with at \$gpsps=2,x, during the push to fix period VA	
	VAUX can be controlled by AT#VAUX command, too (GM862-GPS and
	GE863-GPS only).	
AT\$GPSPS?	Read command returns the current power saving mode and push	n-to-fix period, in



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\$GPSPS - Set The GPS Module In Power Saving Mode		SELINT 2
	the format:	
	\$GPSPS: <mode>,<ptf period=""></ptf></mode>	
AT\$GPSPS=?	Test command returns the available range for <mode></mode>	and <ptf_period></ptf_period>
Note	Available in "controlled mode" only	

3.5.7.12.15. Wake Up GPS From Power Saving Mode - \$GPSWK

\$GPSWK - Wake Up	GPS From Power Saving Mode	SELINT 0 / 1 / 2
AT\$GPSWK	Execution command allows to wake up the GPS module if set in to power saving.	sleeping mode due
	Note: if the GPS module is in tricklepower mode, it will start up, then continue to work in power saving mode.	make the fix and
	Note: if the GPS module is in push-to-fix mode, issuing \$GPSW up it before the push to fix period; after the new fix the GPS mod push-to-fix mode with the same parameters.	-
	Note: this command turns on the VAUX, so it could interfere with command (GM862-GPS and GE863-GPS only).	th AT#VAUX
	Note: if the GPS module is in micro power mode, it will be set to (same as issuing AT\$GPSPS=0 command). (GE864-GPS and GI	-
AT\$GPSWK=?	Test command returns the OK result code	•
Note	Available in "controlled mode" only	

3.5.7.12.16. Save GPS Parameters Configuration - \$GPSSAV

\$GPSSAV - Save G	PS Parameters Configuration SELINT 0 / 1 /	2
AT\$GPSSAV	Execution command stores the current GPS parameters in the NVM of the device.	,
AT\$GPSSAV=?	Test command returns the OK result code	
Example	AT\$GPSSAV OK	
Note	The module must be restarted to use the new configuration	

3.5.7.12.17. Restore To Default GPS Parameters - \$GPSRST

\$GPSRST - Restore To Default GPS Parameter			SELINT 0 / 1 / 2
AT\$GPSRST	Execution command resets the	GPS parameters to "Factory Defa	ult" configuration
	and stores them in the NVM of	the device.	
AT\$GPSRST=?	Test command returns the OK	result code	
Example	AT\$GPSRST		
1	OK		
Note	The module must be restarted t	o use the new configuration	





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3.5.7.12.18. GPS Controller Disabling - \$GPSCMODE

\$GPSCMODE - GPS (Controller Disabled at Start-up With Charger Inserted SELINT 0 / 1 / 2
AT\$GPSCMODE= <n< th=""><th>Execution command allows to keep off the GSP controller when the module is</th></n<>	Execution command allows to keep off the GSP controller when the module is
>	woken up by charger insertion.
	The GPS controller can be turned on by AT\$GPSP=1.
	Parameter:
	<n>></n>
	0 – GPS controller on at start-up (factory default)
	1 – GSP controller off at start-up with charger inserted
	Note: the new setting is stored through \$GPSSAV
AT\$GPSCMODE?	Read command reports whether GPS controller is enabled or not when the module
	is turned on by the charger insertion, in the format:
	\$GPSCMODE: <n></n>
AT\$GPSCMODE =?	reports the supported values for <n> parameter</n>

3.5.7.12.19. Get SGEE File for SiRFInstantFixTM - \$FTPGETIFIX

\$FTPGETIFIX – Get SGEE Fi	le for SiRFInstantFix TM SELINT 2
AT\$FTPGETIFIX= <filename>, <filesize></filesize></filename>	Execution command, issued during an FTP connection, opens a data connection, downloads a SGEE file from the FTP server and injects it into SiRF StarIV.
	Parameters: <filename> - file name, string type <filesize> - SGEE file size in bytes</filesize></filename>
	Note: whenever an FTP connection has not been opened yet, an ERROR result code is returned
	Note: whenever an error happens during the SGEE file injection stage, an ERROR result code is returned
	In this case the possible <i><err></err></i> values reported by <i>+CME ERROR</i> (numeric format followed by verbose format) may be:
	920 SGEE update initialization stage failed
	921 SGEE file is not newer than the last stored one
	922 SGEE update generic error
	Note: Command closure should always be handled by application. In order to avoid download stall situations a timeout should be implemented by the





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	application.
AT\$FTPGETIFIX=?	Test command returns the OK result code
Example	AT\$FTPGETIFIX="packedDifference.f2p3enc.ee",30970 OK AT\$FTPGETIFIX="packedDifference.f2p1enc.ee",10742 +CME ERROR: SGEE file is not newer than the last stored one
Note	The Command is available in "Controlled Mode" only

3.5.7.12.20. GPIO Configuration for GPS control - \$GPSGPIO

\$GPSGPIO - GPIO Configurat	ion for GPS control SELINT 2
AT\$GPSGPIO=	Execution command sets the GPIO pins to be used to drive SE868 and
<on_off>,</on_off>	SL868 GPS modules.
<system_on>,</system_on>	
<book>,</book>	Parameters:
<reset></reset>	<on_off> - GPIO pin number to be used to drive the GE/GL868's</on_off>
	ON-OFF signal (default = 4)
	<system_on> - GPIO pin number to be used to drive the</system_on>
	GE/GL868's SYSTEM-ON signal (default =
	5)
	<boot></boot> - GPIO pin number to be used to drive the
	GE/GL868's BOOT signal (default = 6)
	<reset> - GPIO pin number to be used to drive the</reset>
	GE/GL868's RESET signal (default = 7)
	Note: See the GE865 Hardware User Guide to check the number of
	available GPIO pins.
	N. des The CDIO and Generalism and the discounting of the Company
	Note: The GPIO configuration correctness and functionality (i.e. possible
	conflicts with the GPIO configuration applied through AT#GPSGPIO)
	are under the customer's sole responsibility.
	Note: the current GPIO configuration can be stored through AT\$GPSSAV
AT\$GPSGPIO?	Read command reports the currently selected configuration in the format:
	\$GPSGPIO: <on_off>,<system_on>,<boot>,<reset></reset></boot></system_on></on_off>
AT\$GPSGPIO=?	Test command returns the OK result code
Example	AT\$GPSGPIO=4,1,8,9
	OK
	AT\$GPSGPIO?
	\$GPSGPIO: 4,1,8,9



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	OK
Note	The Command is available in "Controlled Mode" only

3.5.7.12.21. GPS SiRFInstantFixTM - \$GPSIFIX

\$GPSIFIX – GPS SiRFInstantI	SELINT 2
AT\$GPSIFIX=	Set command enables/disables SiRFInstantFix TM feature available on
<enable>[,</enable>	SiRF StarIV based modules.
<cgee>,</cgee>	
<sgee>[,</sgee>	Parameters:
<update>]]</update>	<enable> - SiRFInstantFix Usage</enable>
	0 – Disable (default)
	1 – Enable
	<cgee> - Client Generated Extended Ephemeris (CGEE)</cgee>
	0 – Disable
	1 – Enable (default)
	<pre><sgee> - Server Generated Extended Ephemeris (SGEE)</sgee></pre>
	0 – Disable (default)
	1 – Enable
	<update> - SGEE File Update Mode</update>
	0 – Upon Aiding Data Requests coming from GPS chip
	1168 – Update rate in hours (168 is the max update rate in case of 7-days
	SGEE files usage)
	Note: SiRFInstantFix parameters are stored in NVM, along with all
	current GPS parameters, if OK is returned (same as AT\$GPSSAV)
	Note: if <enable>=0, the rest of parameters must be omitted otherwise ERROR is returned</enable>
	Note: if <enable>=1 and the rest of parameters is omitted, the default configuration, or a previous stored one, is used</enable>
	Note: if <sgee>=1, the <update> parameter must be set otherwise ERROR is returned</update></sgee>
	Note: if <sgee>=1 the following URC is used to warn, according to the <update> value, that the SGEE file has to be updated:</update></sgee>
	\$SIFIXEV: SGEE File Update Requested
	Note: If <sgee>=0</sgee> , the <update></update> parameter must be omitted otherwise
	ERROR is returned
	Note: SiRFInstantFix default configuration may be restored by issuing the AT\$GPSRST command
AT\$GPSIFIX?	Read command reports the currently selected SiRFInstantFix



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	configuration in the format:		
	\$GPSIFIX: <enable>[,<cgee>,<sgee>[,<update>]]</update></sgee></cgee></enable>		
AT\$GPSIFIX=?	Test command reports the supported range of values for parameters		
	<enable>, <cgee>, <sgee>,<update></update></sgee></cgee></enable>		
Example	AT\$GPSIFIX=0		
	OK		
	AT\$GPSIFIX=1,1,0		
	OK		
Note	The Command is available in "Controlled Mode" only		

3.5.7.13. SAP AT Commands Set

3.5.7.13.1. Remote SIM Enable - #RSEN

#RSEN – Remote SIM	Enable SELINT 2
AT#RSEN= <mode></mode>	Set command is used to enable/disable the Remote SIM feature. The command
[, <sapformat></sapformat>	returns ERROR if requested on a non multiplexed interface
[, <role></role>	
[, <muxch></muxch>	Parameter:
[, <beacon></beacon>	<mode></mode>
[, <scriptmode>]]]]</scriptmode>	0 - disable
	1 - enable
	<sapformat></sapformat>
	1 - binary SAP (default)
	<role></role>
	0 - remote SIM Client (default)
	• If the ME doesn't support the Easy Script Extension® or
	• <scriptmode> is omitted or</scriptmode>
	• <scriptmode> is 0</scriptmode>
	<muxch> - MUX Channel Number; mandatory if <mode>=1</mode></muxch>
	13
	If the ME support the Easy Script Extension® and
	<scriptmode> is 1</scriptmode>
	<muxch> - MDM interface number in scripts; mandatory if</muxch>
	<mode>=1</mode>
	1 - MDM interface
	2 - MDM2 interface
	 beacon> - retransmition timer of SAP Connection Request
	0 - only one transmition (default)
	1100 - timer interval in seconds.



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#RSEN – Remote	SIM Enable SELINT 2
#RSEN – Remote	<pre> <scriptmode> - script mode enable; setting this subparameter has a</scriptmode></pre>
	Note: issuing the command on a not multiplexed interface (see +CMUX) cause an ERROR to be raised in all the situations except when: • the ME supports the Easy Script Extension® and • <scriptmode> is 1 Note: if the Remote SIM feature has been activated the SAP connection status is signalled with the following URC:</scriptmode>
	#RSEN: <conn> where <conn> - connection status 0 - disconnected 1 - connected</conn></conn>
AT#RSEN?	Read command returns the SAP connection status in the format: #RSEN: <conn> where <conn> - connection status, as before</conn></conn>
AT#RSEN=?	Test command reports the range of values for all the parameters.

3.5.7.14. Telefonica OpenGate M2M AT Commands Set

For more detailed information about the AT commands dedicated for Telefonica Open Gate M2M protocol handling please consult the OpenGate M2M Protocol User Guide.

3.5.7.15. Audio Commands

These are not the only audio commands available. See par. 3.5.4.4.

3.5.7.15.1. Audio Basic configuration





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3.5.7.15.1.1. Change Audio Path - #CAP

#CAP - Change Audio	Path SELINT 0/1		
AT#CAP[=[<n>]]</n>	Set command switches the active audio path depending on parameter <n></n>		
	Dougnaton		
	Parameter:		
	<n> - audio path O and in math full area the AVE insect (Sections to Section)</n>		
	0 - audio path follows the AXE input (factory default):		
	• if AXE is low, handsfree is enabled;		
	• if AXE is high, internal path is enabled		
	1 - enables handsfree external mic/ear audio path		
	2 - enables internal mic/ear audio path		
	Note: The audio path are mutually exclusive, enabling one disables the other.		
	Note: when changing the audio path, the volume level is set at the previously stored value for that audio path (see +CLVL).		
	Note: issuing AT#CAP<cr></cr> is the same as issuing the Read command.		
	Note: issuing AT#CAP= <cr> is the same as issuing the command</cr>		
	AT#CAP=0 <cr>.</cr>		
AT#CAP?	Read command reports the active audio path in the format:		
	#CAP: <n>.</n>		
AT#CAP=?	Test command reports the supported values for the parameter <n>.</n>		

#CAP – Change Audio Path	SELINT 2
AT#CAP[=[<n>]]</n>	Set command switches the active audio path depending on parameter <n> Parameter: <n> - audio path 0 - audio path follows the AXE input (factory default): • if AXE is low, handsfree is enabled;</n></n>
	 if AXE is high, internal path is enabled 1 - enables handsfree external mic/ear audio path 2 - enables internal mic/ear audio path Note: The audio path are mutually exclusive, enabling one disables the other.
	Note: when changing the audio path, the volume level is set at the previously stored value for that audio path (see <u>+CLVL</u>).
	Note: #CAP=1 is not available for GE865-QUAD despite it is accepted, because GE865-QUAD has only one audio path.
AT#CAP?	Read command reports the active audio path in the format:



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	#CAP: <n>.</n>
AT#CAP=?	Test command reports the supported values for the parameter <n>.</n>

3.5.7.15.1.2. AXE Pin Reading - #AXE

#AXE - AXE Pin Read	ling	SELINT 2
AT#AXE	Execution command causes the ME to return the current state of format:	AXE pin in the
	#AXE: <state></state>	
	where:	
	<state></state>	
	0 - Low	
	1 - High	
AT#AXE=?	Test command returns the OK result code.	

3.5.7.15.1.3. Select Ringer Sound - #SRS

#SRS - Select Ringer S	<mark>ound</mark>	SELINT 0 / 1
AT#SRS[=	Set command sets the ringer sound.	
<n>,<tout>]</tout></n>		
	Parameters:	
	<n> - ringing tone</n>	
	0 - current ringing tone	
	1max - ringing tone number, where max can be read by command AT#SRS=?.	y issuing the Test
	<tout> - ringing tone playing time-out in seconds.</tout>	
	0 - ringer is stopped (if present) and current ringer sound is set.	
	160 - ringer sound playing for <tout></tout> seconds and, if <n>> 0</n> is set as default ringer sound.	, ringer sound <n></n>
	Note: when the command is issued with <n>> 0 and <tout>> 0 tone is played for <tout> seconds and stored as default ringing to</tout></tout></n>	
	Note: if command is issued with $\langle n \rangle > 0$ and $\langle tout \rangle = 0$, the plais stopped (if present) and $\langle n \rangle$ ringing tone is set as current.	aying of the ringing
	Note: if command is issued with $\langle n \rangle = 0$ and $\langle tout \rangle > 0$ then the tone is played.	e current ringing
	Note: if both <n> and <tout> are 0 then the default ringing tone and ringing is stopped.</tout></n>	is set as current



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#SRS - Select Ringer	Sound SELINT 0 / 1	
	Note: If all parameters are omitted then the behaviour of Set command is the same	
	as Read command	
AT#SRS?	Read command reports current selected ringing and its status in the form:	
	#SRS: <n>,<status></status></n>	
	where:	
	<n> - ringing tone number</n>	
	1 <i>max</i>	
	<status> - ringing status</status>	
	0 - selected but not playing	
	1 - currently playing	
AT#SRS=?	Test command reports the supported values for the parameters <n> and <tout></tout></n>	

#SRS - Select Ringer S	Sound	SELINT 2
AT#SRS=	Set command sets the ringer sound.	
[<n>,<tout>]</tout></n>		
	Parameters:	
	<n> - ringing tone</n>	
	0 - current ringing tone	
	1max - ringing tone number, where max can be read by issuin command AT#SRS=?.	g the Test
	<tout> - ringing tone playing timer in units of seconds.</tout>	
	0 - ringer is stopped (if present) and current ringer sound is set.	
	160 - ringer sound playing for <tout></tout> seconds and, if <n>> 0</n> is set as default ringer sound.	, ringer sound <n></n>
	Note: when the command is issued with $<$ n $>$ $>$ 0 and $<$ tout $>$ $>$ 0 , the $<$ n $>$ ringing tone is played for $<$ tout $>$ seconds and stored as default ringing tone.	
	Note: if command is issued with $\langle n \rangle > 0$ and $\langle tout \rangle = 0$, the pl is stopped (if present) and $\langle n \rangle$ ringing tone is set as current.	aying of the ringing
	Note: if command is issued with $\langle n \rangle = 0$ and $\langle tout \rangle > 0$ then the tone is played for $\langle tout \rangle$ seconds.	ne current ringing
	Note: if both <n> and <tout> are 0 then the default ringing tone and ringing is stopped.</tout></n>	is set as current
	Note: If all parameters are omitted then the behaviour of Set con as Read command	
AT#SRS?	Read command reports current selected ringing and its status in	the form:
	#SRS: <n>,<status></status></n>	
	where:	



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#SRS - Select Ringer Sound		SELINT 2
	<n> - ringing tone number</n>	
	1 <i>max</i>	
	<status> - ringing status</status>	
	0 - selected but not playing	
	1 - currently playing	
AT#SRS=?	Test command reports the supported values for the parameters	<n> and <tout></tout></n>

3.5.7.15.1.4. Select Ringer Path - #SRP

#SRP - Select Ringer P	Path SELINT 0 / 1		
AT#SRP[=[<n>]]</n>	Set command selects the ringer path towards whom sending ringer sounds and all signalling tones.		
	Parameter:		
	<n> - ringer path number</n>		
	0 - sound output towards current selected audio path (see command #CAP)		
	1 - sound output towards handsfree		
	2 - sound output towards handset		
	3 - sound output towards Buzzer Output pin GPIO7		
	Note: In order to use the Buzzer Output an external circuitry must be added to drive it properly from the GPIO7 pin, furthermore the GPIO7 pin direction must be set to Buzzer output (Alternate function); see command #GPIO.		
	Note: issuing AT#SRP<cr></cr> is the same as issuing the Read command.		
	Note: issuing AT#SRP= <cr> is the same as issuing the command AT#SRP=0<cr>.</cr></cr>		
AT#SRP?	Read command reports the selected ringer path in the format:		
	#SRP: <n>.</n>		
AT#SRP=?	Test command reports the supported values for the parameter <n>.</n>		
Example	AT#SRP=? #SRP: (0-3)		
	OK AT#SRP=3 OK		

#SRP - Select Ringe	<mark>r Path</mark>	SELINT 2
AT#SRP=[<n>]</n>	Set command selects the ringer path towards whom sending risignalling tones.	nger sounds and all
	Parameter: <n> - ringer path number 0 - sound output towards current selected audio path (see cor</n>	nmand



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#SRP - Select Ringer	Path	SELINT 2	
	#CAP)		
	1 - sound output towards handsfree		
	2 - sound output towards handset (not available for GL865-DU	JAL,	
	GL868-DUAL and GE910-QUAD)		
	3 - sound output towards Buzzer Output pin GPIO7		
Note: In order to use the Buzzer Output an external circuitry must be add			
		drive it properly from the GPIO7 pin, furthermore the GPIO7 pin direction must	
	be set to Buzzer output (Alternate function); see command #GP	PIO.	
AT#SRP?	Read command reports the selected ringer path in the format:		
	#SRP: <n>.</n>		
AT#SRP=?	Test command reports the supported values for the parameter <	n>.	
Example	AT#SRP=?		
	#SRP: (0-3)		
	OK		
	AT#SRP=3		
	OK		

3.5.7.15.1.5. Handsfree Microphone Gain - #HFMICG

#HFMICG - Handsfre	e Microphone Gain	SELINT 0 / 1
AT#HFMICG[=	Set command sets the handsfree microphone input gain	
[<level>]]</level>		
	Parameter:	
	level>: handsfree microphone input gain	
	07 - handsfree microphone gain (+6dB/step, factory default =	4)
	Note: issuing AT#HFMICG <cr> is the same as issuing the Re</cr>	ad command.
	Note: issuing AT#HFMICG= <cr> returns the OK result code.</cr>	
AT#HFMICG?	Read command returns the current handsfree microphone input g	gain, in the format:
	#HFMICG: <level></level>	
AT#HFMICG=?	Test command returns the supported range of values of paramete	er <level>.</level>

#HFMICG - Handsf	ree Microphone Gain	SELINT 2
AT#HFMICG=	Set command sets the handsfree microphone input gain	
[<level>]</level>		
	Parameter:	
	level>: handsfree microphone input gain	
	07 - handsfree microphone gain (+6dB/step, factory default	= 4)
AT#HFMICG?	Read command returns the current handsfree microphone inpu	it gain, in the format:



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#HFMICG - Handsfree Microphone Gain SELINT 2		SELINT 2
	#HFMICG: <level></level>	
AT#HFMICG=?	Test command returns the supported range of values of	parameter < level>.

3.5.7.15.1.6. Handset Microphone Gain - #HSMICG

#HSMICG - Handset I	Microphone Gain SELINT 0 / 1
AT#HSMICG[=	Set command sets the handset microphone input gain
[<level>]]</level>	
	Parameter:
	level>: handset microphone input gain
	07 - handset microphone gain (+6dB/step, factory default = 0)
	Note: issuing AT#HSMICG <cr> is the same as issuing the Read command. Note: issuing AT#HSMICG=<cr> returns the OK result code.</cr></cr>
AT#HSMICG?	Read command returns the current handset microphone input gain, in the format:
	#HSMICG: <level></level>
AT#HSMICG=?	Test command returns the supported range of values of parameter <level></level> .

#HSMICG - Handset N	<mark>Microphone Gain</mark>	SELINT 2
AT#HSMICG=	Set command sets the handset microphone input gain	
[<level>]</level>		
	Parameter:	
	level>: handset microphone input gain	
	07 - handset microphone gain (+6dB/step, factory default = 0)	
AT#HSMICG?	Read command returns the current handset microphone input gai	n, in the format:
	#HSMICG: <level></level>	
AT#HSMICG=?	Test command returns the supported range of values of paramete	r <level>.</level>

3.5.7.15.1.7. Handsfree Receiver Gain - #HFRECG

#HFRECG - Handsfi	<mark>ee Receiver Gain</mark>	SELINT 2
AT#HFRECG=	Set command sets the handsfree analogue output gain	
<level></level>		
	Parameter:	
	level>: handsfree analogue output gain	
	06 - handsfree analogue output (-3dB/step, factory default =	0)



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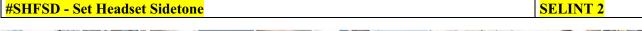
	Note: This parameter is saved in NVM issuing AT&W command.	
AT#HFRECG?	Read command returns the current handsfree analog output gain, in the format:	
	#HFRECG: <level></level>	
AT#HFRECG =?	Test command returns the supported range of values of parameter <level></level> .	

3.5.7.15.1.8. Handset Receiver Gain - #HSRECG

#HSRECG - Handset	Receiver Gain	SELINT 2
AT#HSRECG=	Set command sets the handset analogue output gain	
<level></level>		
	Parameter:	
	level>: handset analogue output gain	
	06 - handset analogue output (-3dB/step, default value = 0)	
	Note: This parameter is saved in NVM issuing AT&W command.	
AT#HSRECG?	Read command returns the current handset analog output gain, in	n the format:
	#HSRECG: <level></level>	
AT#HSRECG =?	Test command returns the supported range of values of parameter	er <level>.</level>

3.5.7.15.1.9. Set Headset Sidetone - #SHFSD

#SHFSD - Set Heads	et Sidetone SELINT 0 / 1
AT#SHFSD[=	Set command enables/disables the sidetone on headset audio output.
[<mode>]]</mode>	
	Parameter:
	<mode></mode>
	0 - disables the headset sidetone (factory default)
	1 - enables the headset sidetone.
	Note: This setting returns to default after power off.
	Note: issuing AT#SHFSD<cr></cr> is the same as issuing the Read command.
	Note: issuing AT#SHFSD= <cr> is the same as issuing the command AT#SHFSD=0<cr>.</cr></cr>
AT#SHFSD?	Read command reports whether the headset sidetone is currently enabled or not, in
	the format:
	#SHFSD: <mode></mode>
AT#SHFSD=?	Test command returns the supported range of values of parameter <mode></mode> .







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#SHFSD - Set Hea	dset Sidetone SELINT 2
AT#SHFSD=	Set command enables/disables the sidetone on headset audio output.
[<mode>]</mode>	
	Parameter:
	<mode></mode>
	0 - disables the headset sidetone (factory default)
	1 - enables the headset sidetone.
	Note: This setting returns to default after power off.
AT#SHFSD?	Read command reports whether the headset sidetone is currently enabled or not, in the format:
	#SHFSD: <mode></mode>
AT#SHFSD=?	Test command returns the supported range of values of parameter <mode></mode> .

3.5.7.15.1.10. Set Handset Sidetone - #SHSSD

#SHSSD - Set Handset	t Sidetone SEL	INT 2
AT#SHSSD=	Set command enables/disables the sidetone on handset audio output.	
<mode></mode>		
	Parameter:	
	<mode></mode>	
	0 - disables the handset sidetone	
	1 - enables the handset sidetone (factory default)	
	Note: This parameter is saved in NVM issuing AT&W command.	
AT#SHSSD?	Read command reports whether the headset sidetone is currently enab	led or not, in
	the format:	
	#SHSSD: <mode></mode>	
AT#SHSSD=?	Test command returns the supported range of values of parameter <m< th=""><th>ode>.</th></m<>	ode>.

3.5.7.15.1.11. Speaker Mute Control - #SPKMUT

#SPKMUT - Speaker 1	Mute Control	SELINT 2
AT#SPKMUT= <n></n>	Set command enables/disables the global muting of the speaker audio line,	
	for every audio output (ring, incoming sms, voice, Network coverage)	erage)
	Parameter:	
	<n></n>	
	0 - mute off, speaker active (factory default)	
	1 - mute on, speaker muted.	
	Note: this command mutes/activates both speaker audio paths, in	ternal speaker and
	external speaker.	



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#SPKMUT - Speaker I	Mute Control	SELINT 2
AT#SPKMUT?	Read command reports whether the muting of the speaker audio line during a voice call is enabled or not, in the format:	
	#SPKMUT: <n></n>	
AT#SPKMUT=?	Test command reports the supported values for <n> parameter.</n>	

3.5.7.15.1.12. Open Audio Loop - #OAP

#OAP - Open Audio L	oop SELINT 2	
AT#OAP=[<mode>]</mode>	Set command sets Open Audio Path.	
	Parameter:	
	0 - disables Open Audio Path (default)	
	1 - enables Open Audio Path	
	Note: the audio Loop will be activated on line select by the AXE pin or #CAP co mand.	m
AT#OAP?	Read command reports whether the Open Audio Path is currently enabled or not, the format:	in
	#OAP: <mode></mode>	
AT#OAP=?	Test command returns the supported range of values of parameter <mode></mode> .	
Note	The audio loop will be established between microphone and speaker using sideton scaling value.	e

3.5.7.15.1.13. Setting two frequency modes for buzzer - #BUZZERMODE

#BUZZERMODE – Se	ts two frequency modes for buzzer	SELINT 2
AT#BUZZERMODE	Set two Buzzer Frequency Modes, slow and fast.	
= <mode></mode>		
	Parameters:	
	<mode></mode>	
	0 – fast frequency (factory default)	
	1 – frequency halved	
AT#BUZZERMODE	Read command reports last setting, in the format:	
?		
	#BUZZEMODE: <mode></mode>	
AT#BUZZERMODE	Test command reports the range of supported values for parameter:	



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#BUZZERMODE – Se	ets two frequency modes for buzzer	SELINT 2
=?	<mode></mode>	

3.5.7.15.2. Tones configuration

3.5.7.15.2.1. Signaling Tones Mode - #STM

#STM - Signaling Ton	es Mode SELINT 0 / 1
AT#STM	Set command enables/disables the signaling tones output on the audio path selected
[= <mode>]</mode>	with #SRP command
	Parameter:
	<mode> - signaling tones status</mode>
	0 - signaling tones disabled
	1 - signaling tones enabled
	Note: AT#STM=0 has the same effect as AT+CALM=2; AT#STM=1 has the same effect as AT+CALM=0.
	Note: If parameter is omitted then the behaviour of Set command is the same as
	Read command
AT#STM?	Read command reports whether the current signaling tones status is enabled or not,
	in the format:
	#STM: <mode></mode>
AT#STM=?	Test command reports supported range of values for parameter <mode></mode> .

#STM - Signaling To	nes Mode SELINT 2
AT#STM=	Set command enables/disables the signaling tones output on the audio path selected
[<mode>]</mode>	with #SRP command
	Parameter: <mode> - signaling tones status 0 - signaling tones disabled 1 - signaling tones enabled 2 - all tones disabled Note: AT#STM=0 has the same effect as AT+CALM=2; AT#STM=1 has the same effect as AT+CALM=0.</mode>
AT#STM?	Read command reports whether the current signaling tones status is enabled or not, in the format:
	#STM: <mode></mode>
AT#STM=?	Test command reports supported range of values for parameter mode .



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3.5.7.15.2.2. Tone Playback - #TONE

#TONE - Tone Playba	ck SELINT 2
AT#TONE= <tone> [,<duration>]</duration></tone>	Execution command allows the reproduction of DTMF tones, standard free tone, standard busy tone and a set of user defined tones for a certain time. Parameters: <tone> - ASCII characters, range is ((0-9),#,*,(A-D),(G-L),Y,Z); - (0-9), #,*,(A-D): DTMF tone - (G-L): User Defined Tones - Y: free tone - Z: busy tone <duration> - Duration of current tone in 1/10 of Sec. 1300 - tenth of seconds (default is 30)</duration></tone>
AT#TONE=?	Test command returns the supported range of values for parameters <tone> and <duration>.</duration></tone>
Note:	See AT#UDTSET command to set user defined tones

3.5.7.15.2.3. Extended tone generation - #TONEEXT

#TONEEXT – Extend	#TONEEXT – Extended tone generation SELINT 2			
#TONEEXT - Extend AT# TONEEXT= <toneid>,<act></act></toneid>	Execution command allows the reproduction of DTMF tones, stand standard busy tone and a set of user defined tones for a infinite time running tone Parameters: < toneId > - ASCII characters in the set (0-9), #,*,(A-D),(G-L),Y,Z - (0-9), #,*,(A-D): DTMF tone - (G-L): User Defined Tones ³¹ . - y: free tone - z: busy tone < act > - Action to be performed. - 0: Stop the <toneid> if running.</toneid>	ard free tone, e, or stop the		
	- 1: Start the <toneid>.</toneid>			
AT#TONEEXT=?	Test command returns the range of supported values for parameter			
	<toneid>,<act>.</act></toneid>			

³¹ See also AT#UDTSET, AT#UDTRST and AT#UDTSAV command description following in this document.



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3.5.7.15.2.4. Tone Classes Volume - #TSVOL

#TSVOL – Tone Class	s <mark>es Volume</mark>	SELINT 2
AT#TSVOL=	Set command is used to select the volume mode for one or more	tone classes.
<class>,</class>		
<mode></mode>	Parameters:	
[, <volume>]</volume>	<class> -sum of integers each representing a class of tones which</class>	h the command
	refers to	
	1 - GSM tones	
	2 - ringer tones	
	4 - alarm tones	
	8 - signalling tones	
	16 - DTMF tones	
	32 - SIM Toolkit tones	
	64 - user defined tones	
	128 – Dial tones	
	255 - all classes	
	<mode> - it indicates which volume is used for the classes of tor <class></class></mode>	nes represented by
	0 - default volume is used	
	1 - the volume <volume></volume> is used	
	<pre><volume> - volume to be applied to the set of classes of tones re</volume></pre>	epresented by
	0max - the value of max can be read issuing the Test command	d AT#TSVOL=?
	Note: The class DTMF Tones (<class>=16) refers only to the vo generated DTMF tones. It doesn't affect the level of generated by the network as result of AT+VTS comm</class>	the DTMF
AT#TSVOL?	Read command returns for each class of tones the last setting of <mode> is not 0, of <volume> too, in the format:</volume></mode>	<mode> and, if</mode>
	#TSVOL: 1, <mode1>[,<volume1>]<cr><lf></lf></cr></volume1></mode1>	
	 #TSVOL:128, <mode128>[,<volume128>]</volume128></mode128>	
AT#TSVOL=?	Test command returns the supported range of values of parametes <mode> and <volume>.</volume></mode>	ers <class>,</class>
Example	AT#TSVOL=64,1,5	



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#TSVOL – Tone	Classes Volume	SELINT 2
	OK	<u> </u>
	AT#TSVOL? #TSVOL:1,0 #TSVOL:2,0 #TSVOL:4,1,5 #TSVOL:8,0 #TSVOL:16,1,5 #TSVOL:32,0 #TSVOL:64,1,5 #TSVOL:128,0 OK	
Note:	GSM Tones:	
Titole.	BusyToneId CongestionToneId RadioPathToneId CallWaitingToneId	
	Ringer Tone: RingingToneMOId RingingToneMTId AutoRedialConnToneId	
	Alarm Tones: AlarmToneId BatteryLowToneId SMSToneId MMSToneId PowerOnToneId PowerOffToneId NoUnitsLeftToneId	
	Signaling Tones: classzeroToneId NetworkIndToneId NoServiceToneId SignallingErrToneId AutoRedialToneId ErrorToneId CallDroppedToneId	
	DTMF Tones Local ADTMF	
	SIM Toolkit Tones SIMTDialToneId SIMTBusyToneId SIMTCongestionToneId SIMTRadioPathToneId SIMTCallDroppedToneId	



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#TSVOL – Tone Classes Volume	SELINT 2
SIMTErrorToneId	
SIMTCallWaitingToneId	
SIMTRingingToneMTId	
User Defined Tones: Tone defined with AT#UDTSET	
Dial tones:	
DialToneId	

3.5.7.15.2.5. User Defined Tone SET - #UDTSET command

#UDTSET – User Defi	ned Tone SET SELINT 2	
AT#UDTSET=	Set command sets frequency and amplitude composition for a User Defined Tone.	
<tone></tone>	Parameters:	
, <f1>,<a1></a1></f1>	<tone> - tone index (G,H,I,J,K,L)</tone>	
[, <f2>,<a2></a2></f2>	<fi>- frequency in Hz; range is (300,3000) in step of 1 Hz</fi>	
[, <f3>,<a3>]]</a3></f3>	<ai> - amplitude in dB; range is (10,100) in step of 1 dB</ai>	
	Note: $Ai = 100$ is equal to the max value of the single tone. Lower values attenuate output to the difference between 100 and the selected amplitude (ex: $Ai = 80$ is equal to $100-80 = -20$ dB).	
	Note: issuing AT&F1 or AT&Z has the effect to set the parameters with the last saved in NVM values	
	Note: $Ai = 0$ and $Fi = 0$ are only values for uninitialized parameters and can't be issued by AT command. Every time the set command is issued, the unspecified parameters are automatically reset to zero. (Ai,Fi) issuing needs also (Aj,Fj) with j <i< th=""></i<>	
AT# UDTSET?	Read command returns the current settings for the tones:	
	#UDTSET: G, <f1>,<a1>,<f2>,<a2>,<f3>,<a3> #UDTSET: H,<f1>,<a1>,<f2>,<a2>,<f3>,<a3> #UDTSET: I,<f1>,<a1>,<f2>,<a2>,<f3>,<a3> #UDTSET: J,<f1>,<a1>,<f2>,<a2>,<f3>,<a3> #UDTSET: K,<f1>,<a1>,<f2>,<a2>,<f3>,<a3> #UDTSET: K,<f1>,<a1>,<f2>,<a2>,<f3>,<a3> #UDTSET: L,<f1>,<a1>,<f2>,<a2>,<f3>,<a3></a3></f3></a2></f2></a1></f1></a3></f3></a2></f2></a1></f1></a3></f3></a2></f2></a1></f1></a3></f3></a2></f2></a1></f1></a3></f3></a2></f2></a1></f1></a3></f3></a2></f2></a1></f1></a3></f3></a2></f2></a1></f1>	
AT# UDTSET =?	Test command returns the supported range of values for <tone></tone> , <fi></fi> and <ai></ai> parameters.	



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3.5.7.15.2.6. User Defined Tone SAVE - #UDTSAV command

#UDTSAV – User Defi	ned Tone SAVe	SELINT 2
AT#UDTSAV	Execution command saves the actual values of frequency and an	plitude parameters
	that have been set with the command #UDTSET	
AT#UDTSAV =?	Test command returns the OK result code.	
Example	AT#UDTSAV	
1	OK	
	Current tones are saved in NVM	

3.5.7.15.2.7. User Defined Tone Reset - #UDTRST command

#UDTRST – User Defi	#UDTRST – User Defined Tone ReSeT SELINT 2	
AT#UDTRST	Execution command resets to the default set the actual values of frequency and amplitude parameters that can be set with the command #UDTSET.	
AT#UDTRST =?	Test command returns the OK result code.	
Example	AT#UDRST OK The default value tones are restored in NVM	

3.5.7.15.3. Audio profiles

3.5.7.15.3.1. Audio Profile Selection - #PSEL

#PSEL - Audio Profile	Selection	SELINT 2
AT#PSEL= <prof></prof>	Set command selects the active audio profile	
•		
	Parameter:	
	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	
	0 - standard profile	
	13 - extended profile, modificable.	
	Note: This parameter is saved in NVM issuing AT&W command.	



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#PSEL - Audio Profile	Selection	SELINT 2
AT#PSEL?	The read command returns the active profile in the format:	
	-	
	#PSEL: <prof></prof>	
AT#PSEL=?	Test command returns the supported range of values of parameter	r <prof>.</prof>

3.5.7.15.3.2. Audio Profile Configuration Save - #PSAV

#PSAV - Audio Pr	file Configuration Save SELINT 2		
AT#PSAV	Execution command saves the actual audio parameters in the NVM of the device.		
	It is not allowed if active audio profile is 0.		
	The audio parameters to store are:		
	- microphone line gain		
	- earpiece line gain		
	- side tone gain		
	- LMS adaptation speed		
	- LMS filter length (number of coefficients)		
	- speaker to micro signal power relation		
	 noise reduction max attenuation 		
	- noise reduction weighting factor (band 300-500Hz)		
	- noise reduction weighting factor (band 500-4000Hz)		
	- AGC Additional attenuation		
	- AGC minimal attenuation		
	- AGC maximal attenuation		
	- Uplink path biquad filters		
	- Downlink path biquad filters		
AT#PSAV=?	Test command returns the OK result code.		
Example	AT#PSAV		
	OK		
	Current audio profile is saved in NVM		

3.5.7.15.3.3. Audio Profile Factory Configuration - #PRST

#PRST - Audio Profile	e Factory Configuration		SELINT 2
AT#PRST	Execution command resets the actual audio parameters in the NVM of the device to the default set. It is not allowed if active audio profile is 0. The audio parameters to reset are:		
		ne gain	





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#PRST - Audio Profile	PRST - Audio Profile Factory Configuration SELINT 2		
	 speaker to micro signal power relation noise reduction max attenuation noise reduction weighting factor (band 300-500Hz) noise reduction weighting factor (band 500-4000Hz) AGC Additional attenuation AGC minimal attenuation AGC maximal attenuation 		
AT#PRST=?	Test command returns the OK result code.		
Example	AT#PRST OK Current audio profile is reset		

3.5.7.15.4. Audio filters

3.5.7.15.4.1. Cascaded filters - #BIQUADIN

#BIQUADIN - Uplink Pa	th Biquad Filters SELINT 2
AT# BIQUADIN=	Set command allows to configure the parameters of the two cascaded
<a_f0></a_f0>	digital biquad filters $H_{First}(z) \cdot H_{Second}(z)$ in Uplink path (sending). It is
[, <a<sub>F1></a<sub>	not allowed if active audio profile is 0.
$[,< a_{F2}>$	novanio il dalli il didicio provino di ci
[, <b<sub>F1></b<sub>	Parameters:
[, <b<sub>F2></b<sub>	$<\mathbf{a}_{Fn}>,<\mathbf{b}_{Fn}>,<\mathbf{a}_{Sn}>,<\mathbf{b}_{Sn}>$ - they all are specific parameters for the
[, <a<sub>s0></a<sub>	calculation of digital biquad filters as follows:
[, <a<sub>S1></a<sub>	
[, <a<sub>S2> [,<b<sub>S1></b<sub></a<sub>	$a_{F0} + 2 \cdot a_{F1} \cdot z^{-1} + a_{F2} \cdot z^{-2}$
[, <b<sub>S2></b<sub>	$H_{F}(z) = \frac{a_{F0} + 2 \cdot a_{F1} \cdot z^{-1} + a_{F2} \cdot z^{-2}}{1 + 2 \cdot b_{F1} \cdot z^{-1} + b_{F2} \cdot z^{-2}}$
111111111	$H_S(z) = \frac{a_{S0} + 2 \cdot a_{S1} \cdot z^{-1} + a_{S2} \cdot z^{-2}}{1 + 2 \cdot b_{S1} \cdot z^{-1} + b_{S2} \cdot z^{-2}}$
	$1 + 2 \cdot b_{S1} \cdot z^{-1} + b_{S2} \cdot z^{-2}$
	-3276832767 - each value has to be interpreted as signed fixed point
	number in two's complement format with 15 fractional
	bits in a 16 bit word (Q15)
	Note: in the above formulas pay attention to the multiplier (2) for
	parameters $\langle a_{F1} \rangle$, $\langle a_{S1} \rangle$, $\langle b_{F1} \rangle$ and $\langle b_{S1} \rangle$
	Parameters can be saved in NVM using AT#PSAV command and are
	available for audio profiles 1,2,3. For audio profile 0 the values are fixed.
AT# BIQUADIN?	Read command returns the parameters for the active profile in the format:
	#BIQUADIN:
	$\langle a_{F0}\rangle,\langle a_{F1}\rangle,\langle a_{F2}\rangle,\langle b_{F1}\rangle,\langle b_{F2}\rangle,\langle a_{S0}\rangle,\langle a_{S1}\rangle,\langle a_{S2}\rangle,\langle b_{S1}\rangle,\langle b_{S2}\rangle$
	It is not allowed if active audio profile is 0.





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AT# BIQUADIN=?	Test command returns the supported range of values for parameters $< a_{F0}>$, $< a_{F1}>$, $< a_{F2}>$, $< b_{F1}>$, $< b_{F2}>$, $< a_{S0}>$, $< a_{S1}>$, $< a_{S2}>$, $< b_{S1}>$, $< b_{S2}>$

3.5.7.15.4.2. Cascaded filters - #BIQUADOUT

#BIQUADOUT - Down	nlink Path Biquad Filters SELINT 2
AT# BIQUADOUT=	Set command allows to configure the parameters of the two cascaded digital
<a_ref></a_ref>	biquad filters $H_{First}(z) \cdot H_{Second}(z)$ in Downlink path (receiving). It is not allowed
$[,< a_{F1}>$	if active audio profile is 0.
[, <a<sub>F2></a<sub>	
[, <b<sub>F1></b<sub>	Parameters:
[, <b<sub>F2></b<sub>	$ \langle \mathbf{a}_{Fn}\rangle, \langle \mathbf{b}_{Fn}\rangle, \langle \mathbf{a}_{Sn}\rangle, \langle \mathbf{b}_{Sn}\rangle $ - they all are specific parameters for the calculation of
[, <a<sub>S0> [,<a<sub>S1></a<sub></a<sub>	digital biquad filters as follows:
[, <a<sub>S1> [,<a<sub>S2></a<sub></a<sub>	
$ \mathbf{b}_{S1} $	$H_F(z) = \frac{a_{F0} + 2 \cdot a_{F1} \cdot z^{-1} + a_{F2} \cdot z^{-2}}{1 + 2 \cdot b_{F1} \cdot z^{-1} + b_{F2} \cdot z^{-2}}$
$ \mathbf{b} = 31$ $ \mathbf{b} = 31$	$1 + 2 \cdot b_{F1} \cdot z^{-1} + b_{F2} \cdot z^{-2}$
	$a + 2 \cdot a \cdot z^{-1} + a \cdot z^{-2}$
	$H_{S}(z) = \frac{a_{S0} + 2 \cdot a_{S1} \cdot z^{-1} + a_{S2} \cdot z^{-2}}{1 + 2 \cdot b_{S1} \cdot z^{-1} + b_{S2} \cdot z^{-2}}$
	$1+2\cdot b_{S1}\cdot z^{-1}+b_{S2}\cdot z^{-2}$
	-3276832767 - each value has to be interpreted as signed fixed point number in two's complement format with 15 fractional bits in a 16 bit word (Q15)
	Note: in the above formulas pay attention to the multiplier (2) for parameters $\langle a_{F1} \rangle$, $\langle a_{S1} \rangle$, $\langle b_{F1} \rangle$ and $\langle b_{S1} \rangle$
	Parameters can be saved in NVM using AT#PSAV command and are available for audio profiles 1,2,3. For audio profile 0 the values are fixed.
AT# BIQUADOUT?	Read command returns the parameters for the active profile in the format:
	# BIQUADOUT: $, , , , , , , <_{S2}>, , $ It is not allowed if active audio profile is 0.
AT# BIQUADOUT=?	Test command returns the supported range of values for parameters $< a_{F0}>$, $< a_{F1}>$, $< a_{F2}>$, $< b_{F1}>$, $< b_{F2}>$, $< a_{S0}>$, $< a_{S1}>$, $< a_{S2}>$, $< b_{S1}>$, $< b_{S2}>$

3.5.7.15.4.3. Extended Uplink Biquad Filters - #BIQUADINEX





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#BIQUADINEX – Extended Uplink Biquad Filters SELINT 2	
AT#BIQUADINEX=	Set command allows to configure the parameters of the two extended
<a_f0></a_f0>	digital biquad filters $H_{First}(z) \cdot H_{Second}(z)$ in Uplink path (sending). It is
[, <a<sub>F1></a<sub>	not allowed if active audio profile is 0.
[, <a<sub>F2></a<sub>	not anowed if derive dudio prome is o.
[, <b<sub>F1></b<sub>	Parameters:
$[,<\mathbf{b}_{\mathrm{F2}}>$	$\langle \mathbf{a}_{Fn} \rangle, \langle \mathbf{b}_{Fn} \rangle, \langle \mathbf{a}_{Sn} \rangle, \langle \mathbf{b}_{Sn} \rangle$ - they all are specific parameters for the
[, <a<sub>s0></a<sub>	a_{Fn} , a_{Sn} , a_{Sn} , a_{Sn} , a_{Sn} - they an are specific parameters for the calculation of digital biquad filters as follows:
[, <a<sub>S1></a<sub>	calculation of digital biquad inters as follows.
[, <a<sub>S2></a<sub>	$a_{E0} + 2 \cdot a_{E1} \cdot z^{-1} + a_{E2} \cdot z^{-2}$
[, <b<sub>S1></b<sub>	$H_F(z) = \frac{a_{F0} + 2 \cdot a_{F1} \cdot z^{-1} + a_{F2} \cdot z^{-2}}{1 + 2 \cdot b_{F1} \cdot z^{-1} + b_{F2} \cdot z^{-2}}$
[, <b<sub>S2></b<sub>	
	$H_S(z) = \frac{a_{S0} + 2 \cdot a_{S1} \cdot z^{-1} + a_{S2} \cdot z^{-2}}{1 + 2 \cdot b_{S1} \cdot z^{-1} + b_{S2} \cdot z^{-2}}$
	-3276832767 - each value has to be interpreted as signed fixed point number in two's complement format with 15 fractional bits in a 16 bit word (Q15)
	Note: in the above formulas pay attention to the multiplier (2) for
	parameters $\langle \mathbf{a}_{F1} \rangle$, $\langle \mathbf{a}_{S1} \rangle$, $\langle \mathbf{b}_{F1} \rangle$ and $\langle \mathbf{b}_{S1} \rangle$ Parameters can be saved in NVM using AT#PSAV command and are available for audio profiles 1,2,3. For audio profile 0 the values are fixed.
AT#BIQUADINEX?	Read command returns the parameters for the active profile in the format:
	#BIQUADINEX: $< a_{F0}>, < a_{F1}>, < a_{F2}>, < b_{F1}>, < b_{F2}>, < a_{S0}>, < a_{S1}>, < a_{S2}>, < b_{S1}>, < b_{S2}>$
	Note: It is not allowed if active audio profile is 0; in this case an ERROR is returned.
AT#BIQUADINEX=?	Test command returns the supported range of values for parameters $< a_{F0} >$, $< a_{F1} >$, $< a_{F2} >$, $< b_{F1} >$, $< b_{F2} >$, $< a_{S0} >$, $< a_{S1} >$, $< a_{S2} >$, $< b_{S1} >$, $< b_{S2} >$

3.5.7.15.4.4. Extended Downlink Biquad Filters - #BIQUADOUTEX

#BIQUADOUTEX – Extended	Downlink Biquad Filters	SELINT 2	
AT#BIQUADOUTEX= Set command allows to configure the parameters of the two			
<a_f0></a_f0>	digital biquad filters $H_{First}(z) \cdot H_{Second}(z)$ in Downlink path (receiving		
[, <a<sub>F1></a<sub>	It is not allowed if active audio profile is 0.		
[, <a<sub>F2></a<sub>	P		





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[, <b<sub>F1></b<sub>	
[, <b<sub>F2></b<sub>	Parameters:
[, <a<sub>S0></a<sub>	$\langle a_{Fn} \rangle, \langle b_{Fn} \rangle, \langle a_{Sn} \rangle, \langle b_{Sn} \rangle$ - they all are specific parameters for the
[, <a<sub>S1></a<sub>	calculation of digital biquad filters as follows:
[, <a<sub>S2></a<sub>	
[, <b<sub>S1></b<sub>	$a_{F0} - a_{F0} + 2 \cdot a_{F1} \cdot z^{-1} + a_{F2} \cdot z^{-2}$
[, <b<sub>S2></b<sub>	$H_F(z) = \frac{a_{F0} + 2 \cdot a_{F1} \cdot z^{-1} + a_{F2} \cdot z^{-2}}{1 + 2 \cdot b_{F1} \cdot z^{-1} + b_{F2} \cdot z^{-2}}$
]]]]]]]]]	
	$H_{S}(z) = \frac{a_{S0} + 2 \cdot a_{S1} \cdot z^{-1} + a_{S2} \cdot z^{-2}}{1 + 2 \cdot b_{S1} \cdot z^{-1} + b_{S2} \cdot z^{-2}}$
	$1 + 2 \cdot b_{S1} \cdot z^{-1} + b_{S2} \cdot z^{-2}$
	-3276832767 - each value has to be interpreted as signed fixed point
	number in two's complement format with 15 fractional
	bits in a 16 bit word (Q15)
	0110 III W 10 010 ((Q10))
	Note: in the above formulas pay attention to the multiplier (2) for
	parameters $\langle a_{F1} \rangle$, $\langle a_{S1} \rangle$, $\langle b_{F1} \rangle$ and $\langle b_{S1} \rangle$
	Parameters can be saved in NVM using AT#PSAV command and are
	available for audio profiles 1,2,3. For audio profile 0 the values are fixed.
	available for audio profiles 1,2,5. For audio profile o the values are fixed.
A TEMPLOTIA DOLUTENO	Do do source de constant de co
AT#BIQUADOUTEX?	Read command returns the parameters for the active profile in the format:
	WIDNOUT A DOLUMENT
	#BIQUADOUTEX:
	<a<sub>F0>,<a<sub>F1>,<a<sub>F2>,<b<sub>F1>,<b<sub>F2>,<a<sub>S0>,<a<sub>S1>,<a<sub>S2>,<b<sub>S1>,<b<sub>S2></b<sub></b<sub></a<sub></a<sub></a<sub></b<sub></b<sub></a<sub></a<sub></a<sub>
	N. d. d. d. d. d. d. d. d. EBBOB
	Note: It is not allowed if active audio profile is 0; in this case an ERROR
	is returned.
ATHDIOUADOUTEV 9	Test command notions the supported rough of volves for reservations to
AT#BIQUADOUTEX=?	Test command returns the supported range of values for parameters $\langle a_{F0} \rangle$,
	$ < a_{F1}>, < a_{F2}>, < b_{F1}>, < b_{F2}>, < a_{S0}>, < a_{S1}>, < a_{S2}>, < b_{S1}>, < b_{S2}>$

3.5.7.15.5. Echo canceller configuration

3.5.7.15.5.1. Audio Profile Setting - #PSET

#PSET - Audio Profile	Setting	SELINT 2
AT#PSET=	Set command sets parameters for the active audio profile. It is no	t allowed if active
<scal _in=""></scal>	audio profile is 0.	
[, <scal _out=""></scal>		
[, <side_tone_atten></side_tone_atten>	Parameters:	
[, <adaption_speed></adaption_speed>	<scal_in> - microphone line digital gain</scal_in>	
[, <filter_length></filter_length>	<scal out=""> - earpiece line digital gain</scal>	
[, <rxtxrelation></rxtxrelation>	<side atten="" tone=""> - side tone attenuation</side>	
[, <nr_atten></nr_atten>		



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#PSET - Audio Profile	Setting	SELINT 2		
[, <nr_w_0></nr_w_0>	<adaption_speed> - LMS adaptation speed</adaption_speed>			
[, <nr_w_1></nr_w_1>	<pre><filter_length> - LMS filter length (number of coefficients)</filter_length></pre>			
[, <add_atten></add_atten>	<pre><rxtxrelation> - speaker to micro signal power relation</rxtxrelation></pre>			
[, <min_atten></min_atten>	<nr atten=""> - noise reduction max attenuation</nr>			
[, <max_atten></max_atten>	<nr 0="" w=""> - noise reduction weighting factor (band 300-500Hz)</nr>			
	<pre><nr_w_1> - noise reduction weighting factor (band 500-4000Hz</nr_w_1></pre>	2)		
	<add_atten> - AGC Additional attenuation</add_atten>			
	<min_atten> - AGC minimal attenuation</min_atten>			
	<max_atten> - AGC maximal attenuation</max_atten>			
AT#PSET?	Read command returns the parameters for the active profile in th	e format:		
	#PSET: <scal_in>,<scal_out>,<side_tone_atten>,<adaption_s th>,<rxtxrelation>,<nr_atten>,<nr_w_0>,<nr_w_1>,<add_at ,<max_atten></max_atten></add_at </nr_w_1></nr_w_0></nr_atten></rxtxrelation></adaption_s </side_tone_atten></scal_out></scal_in>			
	It is not allowed if active audio profile is 0.			
AT#PSET=?	Test command returns the supported range of values for the audi	o parameters.		

3.5.7.15.5.2. Handsfree Configuration - #HFCFG

#HFCFG – Handsfree Configur	ration SELINT 2
AT#HFCFG=	Set command configures AGC threshold for Double Talk detection and
<agc_rxtx_en>,</agc_rxtx_en>	digital gain in Uplink.
<agc_rxtx>,<hf_gain></hf_gain></agc_rxtx>	
	Parameters:
	<agc_rxtx_en></agc_rxtx_en>
	0 – disables different threshold for AGC
	1 – enables different threshold for AGC
	<agc_rxtx>:</agc_rxtx>
	-960960 - parameter that specifies the threshold for AGC
	< hf_gain >: 0 - disables +18dB of gain in Uplink path 1 - enables +18dB of gain in Uplink path Note: the digital gain in Uplink path should be enabled only reducing by the same amount the other analog/digital gains to avoid saturation. Note: It is not allowed if active audio profile is 0; in this case an ERROR is returned.
AT#HFCFG?	Read command reports the currently selected parameters in the format:



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	#HFCFG: <agc_rxtx_en>,<agc_rxtx>,<hf_gain></hf_gain></agc_rxtx></agc_rxtx_en>
	Note: if active audio profile is 0, then an ERROR is returned. If active audio profile is different from 0, then the default value for all the parameters is 0.
AT#HFCFG =?	Test command returns the supported range of values for all the parameters.

3.5.7.15.5.3. TX Noise Injector configuration - #TXCNI

#TXCNI – TX Noise Injector co	onfiguration S	SELINT 2
#TXCNI - TX Noise Injector co AT#TXCNI = <support> ,<gain>,<floor></floor></gain></support>	Set command enables and configures comfort noise inject Parameters: <support> 0 - disable TXCNI functionality 1 - enable TXCNI functionality</support>	
	<pre><gain> 032767 - gain value of noise injected <floor> 032767 - floor value of noise injected Note: It is not allowed if active audio profile is 0; in this is returned.</floor></gain></pre>	case an ERROR
AT#TXCNI?	Read command reports the currently selected parameters #TXCNI: <support>,<gain>,<floor> Note: if active audio profile is 0, then an ERROR is returated audio profile is different from 0, then the default value for parameters is 0.</floor></gain></support>	rned. If active
AT#TXCNI=?	Test command returns the supported range of values for	all the parameters.
Notes:	This command is available only for GE864-QUAD Auto	omotive

3.5.7.15.5.4. Handsfree Echo Canceller - #SHFEC

#SHFEC - Handsfree l	Echo	Canceller						S	ELINT	<mark>Γ 0 / 1</mark>
AT#SHFEC[=	Set	command	enables/disables	the	echo	canceller	function	on	audio	handsfree





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#SHFEC - Handsfree	Echo Canceller	SELINT 0 / 1
[<mode>]]</mode>	output.	
	Parameter: <mode> 0 - disables echo canceller for handsfree mode (factory default) 1 - enables echo canceller for handsfree mode Note: This setting returns to default after power off. Note: issuing AT#SHFEC<cr> is the same as issuing the Read Note: issuing AT#SHFEC=<cr> is the same as issuing the Read</cr></cr></mode>	command.
A THURST AND CO.	AT#SHFEC=0 <cr>.</cr>	1: 1 1 2
AT#SHFEC?	Read command reports whether the echo canceller function output is currently enabled or not, in the format: #SHFEC: <mode></mode>	on audio handsfree
AT#SHFEC=?	Test command returns the supported range of values of paramete	r <mode>.</mode>

#SHFEC - Handsfre	e Echo Canceller SELINT 2
AT#SHFEC=	Set command enables/disables the echo canceller function on audio handsfree
[<mode>]</mode>	output.
	Parameter:
	<mode></mode>
	0 - disables echo canceller for handsfree mode (factory default)
	1 - enables echo canceller for handsfree mode
	Note: This setting returns to default after power off.
AT#SHFEC?	Read command reports whether the echo canceller function on audio handsfree
	output is currently enabled or not, in the format:
	#SHFEC: <mode></mode>
AT#SHFEC=?	Test command returns the supported range of values of parameter <mode></mode> .

3.5.7.15.5.5. Handset Echo Canceller - #SHSEC

#SHSEC - Handset Ecl	<mark>ho Canceller</mark>	SELINT 2			
AT#SHSEC =	Set command enables/disables the echo canceller function on aud	dio handset output.			
<mode></mode>					
	Parameter:				
	<mode></mode>				
	0 - disables echo canceller for handset mode (default)	s echo canceller for handset mode (default)			
	1 - enables echo canceller for handset mode				
	Note: This parameter is saved in NVM issuing AT&W command.				



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#SHSEC - Handset Echo Canceller SEL						
AT#SHSEC?	Read command reports whether the echo canceller function on audio handset output is currently enabled or not, in the format:					
	#SHSEC: <mode></mode>	HSEC: <mode></mode>				
AT#SHSEC =?	Test command returns the supported range of values of parameter					
	<mode>.</mode>					

3.5.7.15.5.6. Handsfree Automatic Gain Control - #SHFAGC

#SHFAGC - Handsfro	ee Automatic Gain Control Si	ELINT 2
AT# SHFAGC =	Set command enables/disables the automatic gain control function of	on audio
<mode></mode>	handsfree input.	
	Parameter:	
	<mode></mode>	
	0 - disables automatic gain control for handsfree mode (default)	
	1 - enables automatic gain control for handsfree mode	
	Note: This parameter is saved in NVM issuing AT&W command.	
AT# SHFAGC?	Read command reports whether the automatic gain control function	on audio
	handsfree input is currently enabled or not, in the format:	
	#SHFAGC: <mode></mode>	
AT# SHFAGC =?	Test command returns the supported range of values of parameter	
	<mode>.</mode>	

3.5.7.15.5.7. Handset Automatic Gain Control - #SHSAGC

#SHSAGC - Handset A	Automatic Gain Control	SELINT 2
AT#SHSAGC =	Set command enables/disables the automatic gain control function	on on audio handset
<mode></mode>	input.	
	Parameter: <mode> 0 - disables automatic gain control for handset mode (default) 1 - enables automatic gain control for handset mode Note: This parameter is saved in NVM issuing AT&W command.</mode>	
AT#SHSAGC?	Read command reports whether the automatic gain control function handset input is currently enabled or not, in the format: #SHSAGC: <mode></mode>	ion on audio
AT#SHSAGC =?	Test command returns the supported range of values of paramete	er



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#SHSAGC - Handset Automatic Gain Control		SELINT 2
<m< th=""><th>node>.</th><th></th></m<>	node>.	

3.5.7.15.5.8. Handsfree Noise Reduction - #SHFNR

#SHFNR - Handsfr	ree Noise Reduction SELINT 2
AT#SHFNR =	Set command enables/disables the noise reduction function on audio handsfree
<mode></mode>	input.
	Parameter:
	<mode></mode>
	0 - disables noise reduction for handsfree mode (default)
	1 - enables noise reduction for handsfree mode
	Note: This parameter is saved in NVM issuing AT&W command.
AT#SHFNR?	Read command reports whether the noise reduction function on audio
	handsfree input is currently enabled or not, in the format:
	#SHFNR: <mode></mode>
AT#SHFNR =?	Test command returns the supported range of values of parameter
	<mode>.</mode>

3.5.7.15.5.9. Handset Noise Reduction - #SHSNR

#SHSNR - Handset No	ise Reduction	SELINT 2
AT# SHSNR =	Set command enables/disables the noise reduction function on au	idio handset input.
<mode></mode>		
	Parameter:	
	<mode></mode>	
	0 - disables noise reduction for handset mode (default)	
	1 - enables noise reduction for handset mode	
	Note: This parameter is saved in NVM issuing AT&W command.	
AT# SHSNR?	Read command reports whether the noise reduction function on	audio
	handset input is currently enabled or not, in the format:	
	# SHSNR: <mode></mode>	
AT# SHSNR =?	Test command returns the supported range of values of paramete	r
	<mode>.</mode>	

3.5.7.15.6. Embedded DTMF decoder

3.5.7.15.6.1. Embedded DTMF decoder enabling - #DTMF

#DTMF – Embedded DTMF de	<mark>coder enabling</mark>	SELINT 2
AT#DTMF= <mode></mode>	Set command enables/disables the embed-	ded DTMF decoder.





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	Parameters: <mode>: 0 - disable DTMF decoder (default) 1 - enables DTMF decoder 2 - enables DTMF decoder without URC notify 3 - enables Enhanced DTMF decoder Note: This functionality has to be enabled only with AT#CPUMODE=1. Note: if <mode>=1, the receiving of a DTMF tone is pointed out with an</mode></mode>
	unsolicited message through AT interface in the following format: #DTMFEV: x with x as the DTMF digit Note: the duration of a tone should be not less than 50ms.
	Note: the value set by command is not saved and a software or hardware reset restores the default value. The value can be stored in NVM using profiles. Note: When DTMF decoder is enabled, PCM playing and recording are automatically disabled (AT#SPCM will return error).
AT#DTMF?	Read command reports the currently selected <mode></mode> in the format: #DTMF: <mode></mode>
AT#DTMF =?	Test command reports supported range of values for all parameters.

3.5.7.15.6.2. Embedded DTMF decoder configuration - #DTMFCFG

DTMFCFG – Embedded DTMF decoder configuration SELINT 2		
AT#DTMFCFG= <scaling></scaling>	Set command allows configuration of the embedded D	ΓMF decoder.
, <threshold_1>,<threshold_2></threshold_2></threshold_1>		
	Parameters:	
	<scaling>:</scaling>	
	311 – this is the scaling applied to the pcm samples in order to mana arithmetic operations. The default value is 7.	
	<threshold_1>: 100020000 – this is the numeric threshold used to dete The default value is 2500.</threshold_1>	ect DTMF tones.



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	<threshold_2>: 100020000 – this is the numeric threshold used to start DTMF decoding. The default value is 1500. Note: The default values were chosen after a fine tuning, so every change should be done very carefully to avoid wrong decoding. Note: the values set by command are not saved and a software or hardware reset restores the default value. Note: Default values are referred to standard DMTF decoder (AT#DTMF=1)</threshold_2>
AT#DTMFCFG?	Read command reports the currently selected <scaling>,<threshold></threshold></scaling> in the format: # DTMFCFG: <scaling>,<threshold_1>,<threshold_2></threshold_2></threshold_1></scaling>
AT#DTMFCFG =?	Test command reports supported range of values for all parameters.

3.5.7.15.7. Digital Voice Interface

3.5.7.15.7.1. Digital Voiceband Interface - #DVI

#DVI - Digital Voiceba	and Interface SELINT 2
AT#DVI= <mode></mode>	Set command enables/disables the Digital Voiceband Interface.
[, <dviport>,</dviport>	
<clockmode>]</clockmode>	Parameters:
	<mode> - enables/disables the DVI.</mode>
	0 - disable DVI; audio is forwarded to the analog line; DVI pins can be used for other purposes, like GPIO, etc. (factory default)
	1 - enable DVI; audio is forwarded to the DVI block
	2 - enable DVI; audio is forwarded both to the DVI block and to the analog lines (Note: analog input disabled)
	<dviport></dviport>
	1 - DVI port 1 will be used (factory default)
	2 - DVI port 2 will be used. Not available for GC864-QUAD V2, GC864-DUAL V2, GE864-QUAD Automotive V2, GE864-QUAD ATEX, GE864-QUAD V2, GE864-DUAL V2, GE865-QUAD and GE910-QUAD (see Test Command for availability of this port)
	<clockmode></clockmode>
	0 - DVI slave
	1 - DVI master (factory default)
	Note: setting <clockmode>=0</clockmode> has full effect only if <dviport>=1</dviport>



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#DVI - Digital Voi	ceband Interface SELINT 2
	NOTE: DVI slave is available only on port 1
	NOTE: for further information see "Digital Voice Interface Application Note"
	(Rev. 2)
AT#DVI?	Read command reports last setting, in the format:
	#DVI: <mode>,<dviport>,<clockmode></clockmode></dviport></mode>
AT#DVI=?	Test command reports the range of supported values for parameters
	<mode>,<dviport> and <clockmode></clockmode></dviport></mode>
Example	AT#DVI=2,1,1
	OK
	D-41 1 1 DVI4: 1f 1: DVI: f 1 1: 1:
	Both analog and DVI activated for audio. DVI is configured as master providing on
	DVI Port #1

3.5.7.15.7.2. Digital voiceband interface extension - #DVIEXT

#DVIEXT - Digital Voi	ceband Interface Extension	SELINT 0,1,2
AT#DVIEXT= <config< td=""><td>Set command configures the Digital Voiceband Interface.</td><td></td></config<>	Set command configures the Digital Voiceband Interface.	
>,[<samplerate>,</samplerate>		
<sampleclock>,<audio< td=""><td>Parameters:</td><td></td></audio<></sampleclock>	Parameters:	
mode>, <edge>]</edge>	<config></config>	
	0 – Burst Mode (factory default)	
	1 – Normal Mode	
	NOTE: if Config is 0 no other parameters are allowed; otherwis	e the other
	parameters are mandatory	
	<samplerate></samplerate>	
	0 – audio scheduler sample rate 8KHz (factory default)	
	1 - reserved	
	<samplewidth></samplewidth>	
	0-16 bits per sample	
	1 – reserved	
	2 – reserved	
	3 – 24 bits per sample	
	4-32 bits per sample	
	<audiomode></audiomode>	
	0 – reserved	
	1 – Dual Mono (available only in Normal Mode)	
	2 – reserved	
	ZadnaS	
	<pre><edge></edge></pre>	1
	0 – data bit is transmitted on falling edge of clock and sampled	on rising edge of



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#DVIEXT - Digital Vo	iceband Interface Extension	SELINT 0,1,2
	clock (factory default)	
	1 – data bit is transmitted on rising edge of clock and sampled	l on falling edge of
	clock	
	NOTE: this parameter is saved in NVM issuing AT&W comma	and
AT#DVIEXT?	Read command reports last setting, in the format:	
	#DVIEXT: <config>,<samplerate>,<samplewidth>,<audio mode="">,<edge></edge></audio></samplewidth></samplerate></config>	
AT#DVIEXT=?	Test command reports the range of supported values for parameters	
	<pre><config>,<samplerate>,<samplewidth>,<audiomode>,<edg< pre=""></edg<></audiomode></samplewidth></samplerate></config></pre>	e>
Example		

3.5.7.15.8. Misellaneous commands

3.5.7.15.8.1. PCM Play and Receive - #SPCM

#SPCM - PCM Play A	SELINT 2				
AT#SPCM= <mode>[, dir]</mode>	Execution command allows user either to send speech sample coming from microphone and/or downlink audio channel to serial port, or to reproduce a PCM coming from serial port to speaker and/or uplink audio channel; both modes are also available during speech calls. Parameters: <mode>: action to be execute; 1 - reproduce PCM stream from serial to selected path. 2 - send speech from selected path to serial.</mode>				
	<dir>: Select the audio path. 0 - send/receive to/from analog front end 1 - send/receive to/from audio channel 2 - send/receive to/from both analog front end and audio channel Note: Execution command switches module in online mode, with flow control set by &Kx. Module moves back to command mode either afer entering the escape</dir>				
	sequence +++ or as a consequence of a DTR transition . Note: PCM stream format must be 8 bit, 8KHz sampling, Mono. The following table summarizes the status of audio path during a speech call for different configurations and with sidetone disabled:				
	mode = 1 mode = 2				
	dir = 0	Uplink off / Downlink on PCM stream on speaker	Uplink off / Downlink off PCM stream from microphone		



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	dir = 1	Uplink on / Downlink off PCM stream on Uplink	Uplink off / Downlink off PCM stream from Downlink	
	dir = 2	Uplink on / Downlink on PCM stream on both speaker and Uplink	Uplink off / Downlink off PCM stream from both microphone and Downlink	
	Sidetone is	active during a voice call (HF path	default configuration).	
AT#SPCM=?	Test comma	and returns the supported range of v	values for parameters	
	<mode> an</mode>		1	
	mode and an .			
	#SPCM: <mode>,<dir></dir></mode>			
Example	AT#SPCM=1,0 CONNECT +++ NO CARRIER			
	Note: after the CONNECT, PCM stream has to be sent to serial port AT#SPCM=2,0 CONNECT +++			
	NO CARRIER	2		
	Note: after 1	the CONNECT, PCM stream can be	e read from serial port	

3.5.7.15.8.2. TeleType Writer - #TTY

#TTY - TeleType Writ	ser SELINT 2
AT#TTY= <support></support>	Set command enables/disables the TTY functionality.
	Parameter: <support> 0 - disable TTY functionality (factory default) 1 - enable TTY functionality</support>
AT#TTY?	Read command returns whether the TTY functionality is currently enabled or not, in the format: #TTY: <support></support>
AT#TTY=?	Test command reports the supported range of values for parameter <support></support> .

3.5.7.16. Emergency call and ECall Management

3.5.7.16.1. Dial an emergency call - #EMRGD





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#EMRGD – dial an emergenc	y call SELINT 2
AT#EMRGD[= <par>]</par>	This command initiates an emergency call.
	Parameters: <pre> <pre> <pre></pre></pre></pre>
	#EMRGD: <serv>[,<serv]] th="" where<=""></serv]]></serv>
	<pre> "Police "Ambul" "FireBrig" "MarineGuard" "MountRescue" "MIeC" "AleC" "AleC" </pre>
	Example: AT#EMRGD=17
	#EMRGD: "Police"," MountRescue " OK
AT#EMRGD	The execution command initiates an emergency call without specifying the Service Category.



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AT#EMRGD?	The read command reports the emergency numbers received from the network (Rel5 feature) and the associated service categories in the format [#EMRGD: <num1>[,<par1>,<serv>[,<serv>[,<serv]]] <numn="" [#emrgd:="">[,<parn>,<serv>[,<serv>[,<serv]]]]< th=""></serv]]]]<></serv></serv></parn></serv]]]></serv></serv></par1></num1>		
	Where		
	<numn> Is the emergency number (that can be dialled with ATD command).</numn>		
	<pre><parn> 131 - sum of integers each representing a specific Emergency Service Category: 1 - Police 2 - Ambulance 4 - Fire Brigade 8 - Marine Guard 16 - Mountain Rescue</parn></pre>		
	32 - Manually Initiated eCall (if eCall is supported – Rel8 feature)		
	64 - Automatically Initiated eCall (if eCall is supported– Rel8 feature)		
	Example:		
	AT#EMRGD? #EMRGD: 123,2,"Ambul" #EMRGD: 910,5,"Police","FireBrig"		
	OK		
AT#EMRGD=?	Test command reports the supported range of values for parameter <par>></par> .		
	If eCall is supported 0-32,64 If eCall is not supported		
	0-31		

3.5.7.16.2. IVS push mode activation - #MSDPUSH

#MSDPUSH – IVS push mode activation SEI		SELINT 2
AT#MSDPUSH Execution command enables IVS to issue the request for MSD		
	transmission. It reuses downlink sig to the PSAP.	anal format to send a initiation message



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AT#MSDPUSH=?	Test command returns the OK result code.

3.5.7.16.3. Sending MSD data to IVS - #MSDSEND

#MSDSEND – Sending MSD da	nta to IVS SELINT 2
AT#MSDSEND	Execution command allows to send 140 bytes of MSD data to the IVS embedded while modem is in command mode.
	The device responds to the command with the prompt '>' and waits for the MSD to send.
	To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing the message send ESC char (0x1B hex).
	If data are successfully sent, then the response is OK . If data sending fails for some reason, an error code is reported
	Note: the maximum number of bytes to send is 140; trying to send more data will cause the surplus to be discarded and lost.
AT#MSDSEND=?	Test command returns the OK result code.

3.5.7.16.4. Initiate eCall - +CECALL

+CECALL – Initiate eCall	SELINT 2
AT+CECALL= <type of<="" th=""><th>Set command is used to trigger an eCall to the network. Based on the</th></type>	Set command is used to trigger an eCall to the network. Based on the
eCall>	configuration selected, it can be used to either trigger a test call, a reconfiguration call, a manually initiated call or an automatically initiated call. Parameters: <type ecall="" of="">: 0 - test call 1 - reconfiguration call 2 - manually initiated eCall 3 - automatically initiated eCall</type>
AT+CECALL?	Read command returns the type of eCall that is currently in progress in the



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	format:
	+CECALL: [<type ecall="" of="">]</type>
AT+CECALL=?	Test command reports the supported range of values for parameter <type< b=""> of eCall>.</type<>

3.5.7.17. SSL Commands

3.5.7.17.1. Configure general parameters of a SSL socket - #SSLCFG

#SSLCFG - Configure gen	eral parameters of a SSL socket	SELINT 2
AT#SSLCFG= <ssid>,</ssid>	This command allows configuring SSL connection paramet	ters.
<cid>,<pktsz>,</pktsz></cid>		
<maxto>,</maxto>	Parameters:	
<defto>,<txto>[,</txto></defto>	<ssid> - Secure Socket Identifier</ssid>	
<unused 1="">j,</unused>	1 - Until now SSL block manages only one socket	
<unused_2>[,</unused_2>		
<unused 3="">1,</unused>	<cid>- PDP Context Identifier.</cid>	
<unused_4>]]]]</unused_4>	1 - Until now only context one is supported.	
	<pre><pktsz> - packet size to be used by the SSL/TCP/IP stack 0 - select automatically default value (300). 11500 - packet size in bytes.</pktsz></pre>	for data sending.
	<maxto> - exchange timeout (or socket inactivity timeout) there's no data exchange within this timeout period the con 0 - no timeout 165535 - timeout value in seconds (default 90 s.)</maxto>	
	<defto> - Timeout that will be used by default whenever the parameter of each command is not set. 105000 - Timeout in tenth of seconds (default 100).</defto>	he corresponding
	<txto> - data sending timeout; in online mode after this per also if they're less than max packet size. 0 - no timeout 1255 - timeout value in hundreds of milliseconds (default)</txto>	
	Note: if secure socket is not enabled using #SSLEN only te made. Read command can be issued if at least a <ssid> is of</ssid>	
	Note: these values are automatically saved in NVM.	



SELINT 2

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AT#SSLCFG?	Read command reports the currently selected parameters in the format:
	#SSLCFG: <ssid1>,<cid>,<pktsz>,<maxto>,<defto><txto>,0,0,0,0</txto></defto></maxto></pktsz></cid></ssid1>
AT#SSLCFG =?	Test command returns the range of supported values for all the parameters.
	#SSLCFG: (1),(1),(0-1500),(0-65535),(10-5000),(0-255),(0),(0),(0),(0)

3.5.7.17.2. Opening a socket SSL to a remote server - #SSLD

#SSLD – Opens a socket SSL to a remote server

AT#SSLD=<SSId>, <rPort>,<IPAddress>, <ClosureType>[, <connMode>[, <Timeout>]] Execution command opens a remote connection via socket secured through SSL. Both command and online modes can be used. In the first case '**OK**' is printed on success, and data exchange can be performed by means of #SSLSEND and #SSLRECV commands. In online mode '**CONNECT**' message is printed, and data can be sent/received directly to/by the serial port. Communication can be suspended by issuing the escape sequence (by default +++) and restored with #SSLO command.

Parameters:

<SSId> - Secure Socket Identifier

1 - Until now SSL block manage only one socket

<**rPort>** - Remote TCP port to contact 1..65535

<IPAddress> - string type, address of SSL server

<ClosureType> - how to close SSL socket

- 0 SSL session id and keys are free then **AT#SSLFASTD** can't be used to recover the last SSL session [default].
- 1 SSL session id and keys are saved and a new connection can be made without a complete handshake using **AT#SSLFASTD**.

<connMode> - connection mode

- 0 online mode connection.
- 1 command mode connection (factory default).

<Timeout> - time-out in 100 ms units. It represents the maximum allowed TCP inter-packet delay. It means that, when more data is expected during the handshake, the module awaits <Timeout> * 100 msecs for the next





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packet. If no more data can be read, the module gives up the handshake and raises an ERROR response.

Note: IT'S NOT the total handshake timeout or, in other words, it's not the absolute maximum time between the #SSLD issue and the CONNECT/OK/ERROR response. Though by changing this parameter you can limit the handshake duration (for example in case of congested network or busy server), there's no way to be sure to get the command response within a certain amount of time, because it depends on the TCP connection time, the handshake time and the computation time (which depends on the authentication mode and on the size of keys and certificates).

10..5000 - hundreds of ms (factory default is 100)

Note: if secure socket is not enabled using **AT#SSLEN** only test requests can be made.

Note: if timeout is not set for SSL connection the default timeout value, set by **AT#SSLCFG**, is used.

Note: in online mode the socket is closed after an inactivity period (configurable with #SSLCFG, with a default value of 90 seconds), and the 'NO CARRIER' message is printed.

Note: in online mode data are transmitted as soon as the data packet size is reached or as after a transmission timeout. Both these parameters are configurable by using **#SSLCFG**.

Note: Before opening a SSL connection the GPRS context must have been activated by **AT#SGACT=x,1**.

Note: Before opening a SSL connection, make sure to have stored the needed secure data (Certificate, CA certificate, private key), using AT#SSLSECDATA, for the security level set through AT#SSLSECCFG.

AT#SSLD=?

Test command returns the range of supported values for all the parameters:

#SSLD: (1),(1-65535),,(0,1),(0,1),(10-5000)

3.5.7.17.3. Enabling a SSL socket - #SSLEN





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#SSLEN – Enable a SSL socket	SELINT 2
AT#SSLEN= <ssid>, <enable></enable></ssid>	This command enables a socket secured by SSL Parameters: <ssid> - Secure Socket Identifier 1 - Until now SSL block manages only one socket <enable> 0 - deactivate secure socket [default] 1 - activate secure socket Note: if secure socket is not enabled only test requests can be made for every SSL command except #SSLS (SSL status) which can be issued also if the socket is disabled. Read commands can be issued if at least a <ssid> is enabled. Note: these values are automatically saved in NVM. Note: an error is raised if #SSLEN=X,1 is issued when the socket 'X' is already enabled and if #SSLEN=X,0 is issued when the socket 'X' is already disabled. Note: a SSL socket cannot be disabled by issuing #SSLEN=1 if it is connected.</ssid></enable></ssid>
AT#SSLEN?	Read command reports the currently enable status of secure socket in the format: #SSLEN: <ssid>,<enable><cr><lf> OK</lf></cr></enable></ssid>
AT#SSLEN =?	Test command returns the range of supported values for all the parameters: #SSLEN: (1),(0,1)

3.5.7.17.4. Fast redial of a SSL socket - #SSLFASTD





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#SSLFASTD - Fast redial of a	SSL socket SELINT 2
AT#SSLFASTD= <ssid>[, <connmode>[, <timeout>]</timeout></connmode></ssid>	This command allows to restart the last SSL connection without a complete handshake. In this way the dial is performed faster and with a lower amount of tCP payload.
Timeout II	Parameters: <ssid> - Secure Socket Identifier</ssid>
	1 - Until now SSL block manage only one socket.
	<pre><connmode> - connection mode 0 - online mode connection. 1 - command mode connection (factory default).</connmode></pre>
	< Timeout > - time-out in 100 ms units. It represents the TCP inter-packet delay.
	Note: it DOES NOT represent the total handshake timeout. 105000 - hundreds of ms (factory default is 100).
	Note: if secure socket is not enabled using AT#SSLEN only test requests can be made.
	Note: if timeout is not set for SSL connection the default timeout value, set by AT#SSLCFG , is used.
	Note: Before opening a SSL connection the GPRS context must have been activated by AT#SGACT=X,1 .
	Note: if an error occurs during reconnection, the socket can not be reconnected and then a new connection has to be done.
	Note: if the remote server cleans SessionID cache before reconnection the full handshake will be made.
AT#SSLFASTD=?	Test command returns the range of supported values for all the parameters:
	#SSLFASTD: (1),(0,1),(10-5000)

3.5.7.17.5. Closing a SSL socket - #SSLH





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#SSLH – Close a SSL socket	SELINT 2
AT#SSLH= <ssid>[,</ssid>	This command allows closing the SSL connection.
<closuretype>]</closuretype>	
	Parameters:
	<ssid> - Secure Socket Identifier</ssid>
	1 - Until now SSL block manage only one socket.
	< ClosureType >: how to close SSL socket
	0 - SSL session id and keys are free then AT#SSLFASTD can not be used to recover the last SSL session.
	1-SSL session id and keys are saved and a new connection can be made without a complete handshake using AT#SSLFASTD .
	Note: if secure socket is not enabled using AT#SSLEN only test requests can be made.
	Note: in client side if < ClosureType > is not set the value set into AT#SSLD is used.
AT#SSLH=?	Test command returns the range of supported values for all the parameters:
	#SSLH: (1),(0,1)

3.5.7.17.6. Restoring a SSL socket after a +++ - #SSLO

#SSLO – Restore a SSL socket after a +++		SELINT 2
AT#SSLO= <ssid></ssid>	This command allows to restore a SSL connection (online mode suspended by an escape sequence (+++). After the connection re CONNECT message is printed. Please note that this is possible even if the connection has been so command mode (#SSLD with <connmode> parameter set to 1).</connmode>	
	Parameters: <ssid> - Secure Socket Identifier 1 - Until now SSL block manage only one socket.</ssid>	
	Note: if secure socket is not enabled using AT#SSLEN can be made.	I only test requests
	Note: Before opening a SSL connection the GPRS have been activated by AT#SGACT=X,1 .	context must





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	Note: if an error occur during reconnection the socket can not be reconnected then a new connection has to be done.
AT#SSLO=?	Test command returns the range of supported values for all the parameters: #SSLO: (1)

3.5.7.17.7. Reading data from a SSL socket - #SSLRECV

#SSLRECV - Read data from a	SSL socket	SELINT 2
AT#SSLRECV= <ssid>,</ssid>	This command allows receiving data from a secure soc	eket.
<maxnumbyte></maxnumbyte>		
[, <timeout>]</timeout>	Parameters:	
	<ssid> - Secure Socket Identifier</ssid>	
	1 - Until now SSL block manage only one socket.	
	<maxnumbyte> - max number of bytes to read 11000</maxnumbyte>	
	< Timeout > - time-out in 100 ms units	
	105000 - hundreds of ms (factory default is 100)	
	If no data are received the device respondes: #SSLRECV: 0 <cr><lf></lf></cr>	
	TIMEOUT <cr><lf></lf></cr>	
	<cr><lf></lf></cr>	
	OK	
	If the remote host closes the connection the device resp	oondes:
	#SSLRECV: 0 <cr><lf></lf></cr>	
	DISCONNECTED <cr><lf></lf></cr>	
	<cr><lf></lf></cr>	
	OK	



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	If data are received the device respondes: #SSLRECV: NumByteRead <cr><lf>(Data read) <cr><lf> <cr><lf> OK</lf></cr></lf></cr></lf></cr>
	Note: if secure socket is not enabled using AT#SSLEN only test requests can be made.
	Note: if timeout is not set for SSL connection the default timeout value, set through AT#SSLCFG , is used.
	Note: before receiving data from the SSL connection it has to be established using AT#SSLD .
AT#SSLRECV=?	Test command returns the range of supported values for all the parameters:
	#SSLRECV: (1),(1-1000),(10-5000)

3.5.7.17.8. Reporting the status of a SSL socket - #SSLS

#SSLS – Report the stat	#SSLS – Report the status of a SSL socket SELINT 2	
AT#SSLS= <ssid></ssid>	This command reports the status of secure sockets.	
	D	
	Parameters:	
	<ssid> - Secure Socket Identifier</ssid>	
	1 - Until now SSL block manages only one socket	
	If secure socket is connected the device responds	to the command:
	#SSLS: <ssid>,2,<ciphersuite></ciphersuite></ssid>	
	otherwise:	
	#SSLS: <ssid>,<connectionstatus></connectionstatus></ssid>	
	<connectionstatus> available values are:</connectionstatus>	
	0 – Socket Disabled	
	1 – Connection closed	
	2 – Connection open	



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	Note: this command can be issued even if the <ssid> is not enabled.</ssid>
AT#SSLS=?	Test command returns the range of supported values for all the parameters. #SSLS: (1)

3.5.7.17.9. Configuring security parameters of a SSL socket - #SSLSECCFG

#SSLSECCFG - Configure	e security parameters of a SSL socket	SELINT 2
AT#SSLSECCFG=	This command allows configuring SSL connection parameter	ers.
<ssid>,</ssid>		
<ciphersuite>,</ciphersuite>	Parameters:	
<seclevel></seclevel>	<ssid> - Secure Socket Identifier</ssid>	
	1 - Until now SSL block manage only one socket	
	<ciphersuite></ciphersuite>	
	0 - Chiper Suite is chosen by remote Server [default]	
	1 - SSL_RSA_WITH_RC4_128_MD5	
	2 - SSL_RSA_WITH_RC4_128_SHA	
	3 - TLS_RSA_WITH_AES_256_CBC_SHA	
<seclevel> 0 - No authentication [default]</seclevel>		
	1 - Manage server authentication	
	2 - Manage server and client authentication if requested by remote server	the .
	Note: if no authentication is set no security data are needed	
	(Client certificate, Server CAcertificate and Client private k	tey).
	Note: if only server authentication is managed then Server	



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	CAcertificate has to be stored through AT#SSLSECDATA .		
	Note: if server and client authentication are managed then client certificate and private key, and server CAcertificate have to be stored through AT#SSLSECDATA . Please note that private keys with password are not supported,		
	Note: only "rsa_sign" certificates are supported by the Telit Module in client authentication. The remote server must support this certificate type, otherwise the handshacke will fail.		
	Note: if secure socket is not enabled using #SSLEN only test requests can be made. Read command can be issued if at least a <ssid> is enabled.</ssid>		
	Note: these values are automatically saved in NVM.		
AT#SSLSECCFG?	Read command reports the currently selected parameters in the format:		
	#SSLSECCFG: <ssid1>,<ciphersuite>,<seclevel></seclevel></ciphersuite></ssid1>		
AT#SSLSECCFG =?	Test command returns the range of supported values for all the parameters.		
	#SSLSECCFG: (1),(0-2),(0-2)		

3.5.7.17.10. Managing the security data - #SSLSECDATA

#SSLSECDATA – Manag	<mark>ge the security data</mark>	SELINT 2	
AT#SSLSECDATA	This command allows to store, delete and read security data (Certificate,		
= <ssid>,<action>,</action></ssid>	CAcertificate, private key) into NVM.		
<datatype>[,<size>]</size></datatype>			
	Parameters:		
	<ssid> - Secure Socket Identifier</ssid>		
	1 - Until now SSL block manages only one socket.		
	<action> - Action to do.</action>		
	0 – Delete data from NVM.		
	1 – Store data into NVM.		
	2 – Read data from NVM.		
	<datatype></datatype>		
	0 – Certificate.		
	1 – CA certificate.		
	2 – RSA Private key.		



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<Size> - Size of security data to be stored 1..2047

If the **Action> parameter** is 1 (store data into NVM) the device responds to the command with the prompt '>' and waits for the data to store.

To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing the message send ESC char (0x1B hex).

If data are successfully stored, then the response is OK; if it fails for some reason, an error code is reported.

If the **Action**> parameter is 2 (read data from NVM), data specified by **DataType**> parameter is shown in the following format:

#SSLSECDATA: <connId>,<DataType> <DATA>

OK

If **DataType** data has not been stored (or it has been deleted) the response has the following format:

#SSLSECDATA: <connId>,<DataType>
No data stored

OK

Note: Secured data has to be in PEM format.

Note: private keys with password ARE NOT supported.

Note: only "rsa_sign" certificates are supported by the Telit Module in client authentication. The remote server must support this certificate type, otherwise the handshacke will fail.

Note: **<size>** parameter is mandatory if the <write> action is issued, but it has to be omitted for <delete> or <read> actions are issued.

Note: if secure socket is not enabled using **AT#SSLEN** only test requests can be made.

Note: If socket is connected an error code is reported.

AT#SSLSECDATA?

Read command reports what security data are stored in the format:





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	#SSLSECDATA: <ssid 1="">,<certisset>,<cacertisset>,<privkeyisset> <certisset>, <cacertisset>, <privkeisset> are 1 if related data are stored into NVM otherwise 0.</privkeisset></cacertisset></certisset></privkeyisset></cacertisset></certisset></ssid>
AT#SSLSECDATA =?	Test command returns the range of supported values for all the parameters: #SSLSECDATA: (1),(0-2),(0-2),(1-2047)

3.5.7.17.11. Sending data through a SSL socket - #SSLSEND

#SSLSEND – Send data throu	gh a SSL socket	SELINT 2
AT#SSLSEND= <ssid>[,</ssid>	This command allows sending data through a secure	socket.
< Timeout >]		
	Parameters:	
	<ssid> - Secure Socket Identifier</ssid>	
	1 - Until now SSL block manage only one socket.	
	< Timeout > - socket send timeout, in 100 ms units	3.
	105000 - hundreds of ms (factory default is 100)	
	The device responds to the command with the profession of the data to send.	rompt '>' and waits
	To complete the operation send Ctrl-Z char (0x1 without writing the message send ESC char (0x1)	, ·
	If data are successfully sent, then the response is	
	If data sending fails for some reason, an error co	ode is reported
	Note: the maximum number of bytes to send is 1023 data will cause the surplus to be discarded and lost.	; trying to send more
	Note: if secure socket is not enabled using AT#SSL can be made.	EN only test requests



	Note: if timeout is not set for SSL connection the default timeout value, set by AT#SSLCFG , is used. Note: Before sending data through the SSL connection it has to be established using AT#SSLD .
AT#SSLSEND=?	Test command returns the range of supported values for all the parameters: #SSLSEND: (1),(10-5000)



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4. List of acronyms

ARFCN	Absolute Radio Frequency Channel Number
AT	Attention command
BA	BCCH Allocation
ВССН	Broadcast Control Channel
CA	Cell Allocation
CBM	Cell Broadcast Message
CBS	Cell Broadcast Service
CCM	Current Call Meter
CLIR	Calling Line Identification Restriction
CTS	Clear To Send
CUG	Closed User Group
DCD	Data Carrier Detect
DCE	Data Communication Equipment
DCS	Digital Cellular System
DGPS	Differential GPS, the use of GPS measurements, which
	are differentially corrected
DNS	Domain Name System
DSR	Data Set Ready
DTE	Data Terminal Equipment
DTMF	Dual Tone Multi Fraquency
DTR	Data Terminal Ready
GGA	GPS Fix data
GLL	Geographic Position – Latitude/Longitude
GLONASS	Global positioning system maintained by the Russian
	Space Forces
GMT	Greenwich Mean Time
GNSS	Any single or combined satellite navigation system (GPS,
	GLONASS and combined GPS/GLONASS)
GPRS	Global Packet Radio Service
GPS	Global Positioning System
GSA	GPS DOP and Active satellites
GSM	Global System Mobile
GSV	GPS satellites in view
HDLC	High Level Data Link Control
HDOP	Horizontal Dilution of Precision
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
IRA	International Reference Alphabet
IWF	Interworking Function
MO	Mobile Originated
MT	either Mobile Terminated or Mobile Terminal



NMEA	National Marine Electronics Association		
NVM	Non Volatile Memory		
PCS	Personal Communication Service		
PDP	Packet Data Protocol		
PDU	Packet Data Unit		
PIN	Personal Identification Number		
PPP	Point to Point Protocol		
PUK	Pin Unblocking Code		
RLP	Radio Link Protocol		
RMC	Recommended minimum Specific data		
RTS	Request To Send		
SAP	SIM Access Profile		
SCA	Service Center Address		
SMS	Short Message Service		
SMSC	Short Message Service Center		
SMTP	Simple Mail Transport Protocol		
TA	Terminal Adapter		
ТСР	Transmission Control Protocol		
TE	Terminal Equipment		
UDP	User Datagram Protocol		
USSD	Unstructured Supplementary Service Data		
UTC	Coordinated Universal Time		
VDOP	Vertical dilution of precision		
VTG	Course over ground and ground speed		
WAAS	Wide Area Augmentation System		



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5. Document History

Revision	Date	SW	Changes	
		release	<u> </u>	
ISSUE #0	2006-08-04	7.02.01	Initial release	
ISSUE #1	2006-10-26	7.02.02	3.2.2.1 +CME ERROR: - ME Error Result Code: updated 3.2.2.2 +CMS ERROR - Message Service Failure Result Code: updated 3.2.6 Factory and user profile: updated -"GPS Commands Set" total update -updated the following commands description under SELINT 0, SELINT 1 and SELINT 2 paragraph: +COPN, +CCFC, +CCWA, +CPIN, +CIND, +CNMI, +COPS, +CMEE, #SKTD, #AUTOATT, +CALA, +CAOC, +CACM, +CAMM, +CPUC, S12 -updated under SELINT 0 and SELINT 1 command +CPAS, #FTPOPEN, \Q, #CSURV, #CSURVC -updated the following commands only under SELINT 2: +CMUX, +CLCC, +CMGL, +CMGR, #LSCRIPT -removed from the AT commands table under SELINT 0 and SELINT 1 the following commands: #CBC and #EMAILMSG -added new commands (for SELINT 2): #EXECSCR, #STARTMODESCR	
ISSUE #2	2007-03-16	7.02.03	-Revision of the whole document formAdded new commands: #ENS, +WS46, +CPOL, +PACSP, #SPN, #SLED, #SLEDSAV, #VAUXSAV, #V24CFG, #V24, #AXE, #ACALEXT, #MBN, #MWI, #SPKMUT, multisocket commands, SIM toolkit commands, \$GPSS, \$GPSCON, \$GPSPRG, \$GPSPS, \$GPSWK -3.2.6 Factory and user profile: updated -Removed AT commands for camera and #I2S1 -Updated following AT commands: +CNUM, +CPIN, +CPBW, +CPBS, +CLIP, #STGI, #FTPOPEN, \$GPSACP,	
ISSUE #3	2007-08-10		Update list of products to which this document can be applied	
ISSUE #4	2007-11-19	7.02.04	Added new commads: #CEER, #SMSMODE, #Z, #TEMPMON, #HFRECG, #HSRECG, #PRST, #PSEL, #PSAV, #PSET, #SHFAGC, #SHFNR, #SHSAGC, #SHSEC, #SHSNR, #SHSSD, #GSMAD, #CSURVP, #CSURVPC Added: 3.5.7.12 Telefonica OpenGate M2M AT Commands Set	
ISSUE #5	2008-07-09	7.02.05 / 7.03.00	modified description of AT#SD and AT#SL, New commands +CGEREP #TSVOL #REGMODE #TXMONMODE #SIMDET #ENHSIM #TTY #CPUMODE #GSMCONT #CGPADDR #NWSCANTMR #OSC32KHZ #CACHEDNS #DNS #ICMP #TCPMAXDAT #TCPREASS	





ISSUE #6	2009-08-03	SW 7.03.01 / 7.02.06 SW 10.0.1	 Applied new layout. Deleted ME Error Result Code [566 – 573] (§3.2.2.1) Reorganized the availability table (merged columns by family of product, exported GPS commands to their own table). Updated the commands whose values are automatically stored in NVM. Specified those for the SW 10.xx.xxx platform. Added/edited the following commands: #ACAL, #ATRUN, #AXE, #BIQUADIN, #CCLK, #CEER, #CESTHLCK, #CFLO, #CGDATA, #CGPADDR, #CPASMODE, #EMAIL, #EVMONI, #SMSATRUN, #SMSATRUNCFG, #SMSATWL, #TCPATRUNCFG, #TCPATRUNCFG, #TCPATRUNL, #TCPATRUNFRWL, #TCPATRUNCHDSEQ, #TCPATRUND, #TCPATRUNFRWL, #TCPATRUNCMDSEQ, #TCPATCONSER, #ATRUNDELAY, #ENAEVMONI, #ENAEVMONICFG, #FASTCCID, #FTPAPP, #FTPFSIZE, #FTPGET, #FTPGETPKT, #FTPPUT, #FTPRECV, #FTPREST, #GPIO, #GPPPCFG, #GSMAD, #GSMCONT, #HFMICG, #HFRECG, #HSMICG, #HSRECG, #I2CWR, #I2CRD, #JDR, #LCSCRIPT, #MONI, #NITZ, #OAP, #OTASNAP, #OTASUAN, #CMGS, #CMGW, #PING, #PSMRI, #QSS, #REBOOT, #SA, #SCFG, #SCFGEXT, #SD, #SERVINFO, #SGACTAUTH, #SGACTAUTH, #SGACTAUTH, #SGACTAUTH, #SGACTAUTH, #SRMOV, #SPCM, #SRECV, #SS, #SSEND, #STARTMODESCR, #SWLEVEL, #TEMPMON, #TONEEXT, #TSVOL, #VAUX, #V24MODE, #V24CFG, #Z, \$GPSACP, \$GPSAP, \$GPSCON, \$GPSPS, \$GPSWK, +CCLK, +CEER, +CFUN, +CGPADDR, +CGSMS, +CMGD, +CMGW, +CNMI, +CPBS, +CSMP, +DS, +VTS, SO. Deleted commands: AT\B, AT\K, AT\N. Specified SW10.xx.xxx default values
ISSUE #7	2010-05-07	SW 7.03.02 / 7.02.07 SW 10.0.2	 New commands added for SW 7.03.02 / 7.02.07: #SCFGEXT2, #CMGLCONCINDEX, #CODECINFO, #GSMCONTCFG, #SNUM, #SSENDEXT, +CMAR New commands added for SW 10.0.2: #PADFWD, #PADCMD; new parameters for CFUN: CFUN=1,1 Updated Timeout Table par. 3.2.4 Removed note 18 Updated Table Factory Profile and User Profile par. 3.3.1 Deleted commands: &G, &Q Updated commands: #JDR, #FTPDELE, +CNMI, #CMGW, #OTASUAN, #I2CWR, #I2CRD, #ATS38, #GSMAD, +CFUN, &D, #E2ESC, #TXMONMODE, #SNUM, #STIA, #FTPFSIZE, #COPSMODE, # SCFGEXT, #SCFGEXT2, #SD, #SELINT, #ADC, #DVI, #EMAILD, #EVMONI, #GPPPCFG, #MSCLASS, #SEMAIL, #SPCM, #SWLEVEL, #TONEEXT, #UDTSET, +CMER, #E2ESC, #SLUDP, #SIMATR
ISSUE#8	2010-07-26	SW 7.03.02 /	- Updated commands: #SCFGEXT2, S38, #SEMAIL, #EMAILD,



		7.02.07 SW 10.0.3	#CSURVF, +CMAR, #CCLK, +CMGL, +CFUN, #FTPOPEN, #OTASNAP, #OTASUAN, #AUTOBND, #STIA, #STGI, +CLCC, +CNMI, +CPMS, +CSAS, #PLMNMODE, #SMSMODE, #REGMODE, #AUTOBND, #ENHSIM, #SWLEVEL, #NITZ, #STIA, #JDR, #TSVOL New commands added for SW 10.0.3: +CPLS, +CGCMOD, #STTA, #CMEEMODE, #SGACTCFGEXT, #BASE64, #CEERNET, #ENHRST, #SII, #OTASETRI Updated references specification from 07.05, 07.07, 03.40 to 27.005, 27.007, 23.040, etc
ISSUE#9	2010-10-04	SW 10.0.4	- Added GL865-DUAL to the applicability table and the matrix
ISSUE#10		SW 7.03.02 / 7.02.07 SW 10.0.4	 New commands added for SW 10.0.4: #MSDPUSH, #MSDSEND, +CECALL, #SYSHALT, #SIMINCFG, #EMRGD, #BIQUADINEX, #BIQUADOUTEX, #TXCNI, #DTMF, #DTMFCFG, #OTAIPCFG, #OTAIPUPD, #OTASNAPIP, #OTASNAPIPCFG, #HFCFG, #SMTPCL Modified par 3.3.1 and 3.2.4 Edited #DNS command description Updated tab at 3.5.2.1 Reorganized the matrix
ISSUE #11	2011-07-12	SW 7.03.03 / 7.02.08 SW 10.0.5	 Modified commands: #CAP, #CSURV, #CSURVC, #EVMONI, #FTPGETPKT, #QDNS, #DTMF, \$GPSACP, \$GPSAT, \$GPSCON, \$GPSNMUN, \$GPSP, \$GPSPS, \$GPSR, \$GPSSW, \$GPSWK New commands: #ALARMPIN, #CFF, #SSENDUDP, #SSENDUDPEXT, #ST New paragraph added "SSL commands" 3.5.7.17: #SSLCFG, #SSLD, #SSLEN, #SSLFASTD, #SSLH, #SSLO, #SSLRECV, #SSLS, #SSLSECCFG, #SSLSECDATA, #SSLSEND
ISSUE #12	2011-09-09	SW 7.03.03 / 7.02.08 SW 10.0.5	 Updated #SIMDET, #JDR, #NITZ,#PLMNMODE, #REGMODE, #SERVINFO, #SMSMODE, #SSLSECDATA, #STIA, #SWLEVEL, #TEMPMON, +CGREG, +CSSN Edited par 3.4 Command Availability Table
ISSUE #13	2012-03-20	SW 7.03.03 / 7.02.08 SW 10.0.5 SW 13.00.000	 Added GE910-QUAD in the availability table. Specified 13.00.000 parameter in AT#CODEC command description (SELINT=2)
ISSUE #14	2012-08-20	SW 7.03.03 / 7.02.08 SW 10.0.6	 New: #BNDLOCK, #BUZZERMODE, #CHUP, #DVIEXT, #ENCALG, #FTPAPPEXT, #FTPCFG, #GPPPCFGEXT, #JDRENH, #RS485, #SLASTCLOSURE, +CSVM, #NTP, \$FTPGETIFIX, \$GPSGPIO, \$GPSIFIX Updated: #AUTOBND, #AXE, #CODEC, #DTMF, #DTMFCFG,

























		SW 13.00.002	#ENS, #FTPAPP, #FTPPUT, , #I2CRD, #I2CWR, #SCFGEXT, #SERVINFO, #SMSMODE, #SRECV, #SSEND, #SSENDUDP, #SSLD, #TXCNI, \$GPSACP, #GPSAT, \$GPSCON, \$GPSD,
			\$GPSNMUN, \$GPSP, \$GPSPS, \$GPSRST, \$GPSSAV, \$GPSSW, \$GPSWK, +CGDCONT, +CMUX, +CSMP, +CSQ, #SD, #SL, #SKTSET, #SKTD, #SKTL, @SKTL, +FMI, +FMM, +FMR, +FTS, +FRS, +FTM, +FRM, +FTH, +FRH, +FLO, +FPR, +FDD, +CBST, +CRLP, #TTY
ISSUE # 15	2012-10-18	SW 7.03.03 / 7.02.08 SW 10.0.6	 Edited par 3.2.2.1 ME Error Result Code - +CME ERROR: <err></err> Edited par 3.3.1 Factory Profile And User Profiles Edited par 3.4 Command Availability Table Updated: #FTPAPP, #FTPPUT, #SCFGEXT, #SGACTAUTH, #SLED, #SRECV, +IPR, #STIA
		SW 13.00.002	