

CC864-DUAL AT-Commands Reference Guide

80332ST10044A Rev. 4 – 2010-09-02



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1. Introduction

1.1. Scope

This document contains a reference for the AT commands implemented in the CC864-DUAL, including the IS-707 AT Command set and QUALCOMM Proprietary AT command set.

1.2. Audience

This document is intended for software engineers who intend to control CC864-DUAL.

1.3. Contact Information, Support

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

For general contact, technical support, to report documentation errors and to order manuals, contact Telit's Technical Support Center at:

TS-EMEA@telit.com, TS-NORTHAMERICA@telit.com,
TS-LATINAMERICA@telit.com, TS-APAC@telit.com or use
<http://www.telit.com/en/products/technical-support-center/contact.php>

Telit appreciates feedback from the users of our information.

1.4. Product Overview

The CC864-Dual is a CDMA-1XRTT wireless module designed to have the same form, fit and function as its GSM/GPRS counterpart product family, the GC864-Dual.

This enables integrators and developers to design their applications once and take advantage of the global coverage and service flexibility allowed by the combination of the most prevalent cellular technologies worldwide.

With its ultra-compact design and extended operating temperature range, the Telit CC864-Dual is the perfect platform for m2m applications, mobile data and computing devices. It also incorporates stand alone GPS and gpsOne capability for applications in mobile environments such as telematics, personnel and asset tracking.

1.5. Document Organization

This manual contains the following main chapters:

- "Chapter 1: Introduction" provides a scope for this manual, target audience, contact and support information, and text conventions.
- "Chapter 2: AT Commands" – discusses AT commands syntax and rules



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- “Chapter 3: Basic AT Commands Reference” – contains the basic AT Command set
- “Chapter 4: Telit Specific Unified AT Commands” – contains Telit unified proprietary AT Command set
- “Chapter 5: CDMA Specific AT Command” – contains CDMA AT Command set
- “Chapter 6: Qualcomm Proprietary AT Commands” – Contains QUALCOMM proprietary AT Command set
- “Chapter 7: Sprint Specific AT Commands” – contains Sprint proprietary AT Command Set
- “Chapter 8: Aeris Specific AT Commands” – contains Aeris proprietary AT Command set

1.6. Text Conventions



Danger – This information **MUST** be followed or catastrophic equipment failure or bodily injury may occur.



Caution or Warning – Alerts the user to important points about integrating and controlling 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.

Format	Content
Courier New	AT-command examples and response sequences

1.7. Related Documents

The following documents are related to this user guide:

- CC864-DUAL Product Description
- CC864-DUAL Software User Guide – 1w0300792
- CC864-DUAL Hardware User Guide - 1w0300791



1.8. Document History

Doc rev #	Date	Changes
0	2008-12-09	First Draft for SW R09.01.001
1	2009-03-06	Data only version for SW R09.01.002
2	2009-07-02	Full product version for SW R09.01.003 (Sprint)
3	2009-10-30	<p>Addition of Aeris commands and corrections to R2 errors</p> <p>Correction of Aeris command and addition of Telit specific command</p> <p>Added two VZW commands, "#SERVICE" message information added, #TEMPMON command correction, added some additional information regarding GPS Standalone and GPSONe information updated</p> <p>Added additional Aeris and VZW commands</p> <p>Added additional VZW commands (B010,B011,B012, B013)</p> <p>Ready for AERIS release</p> <p>Full product version for SW R09.01.003 (Sprint) & R09.01.013-B013 (AERIS) & VZW development</p>
4	2010-09-02	<p>Added notes to SMS sections that are different on VZW software</p> <p>Defined #SKTSAV command behavior for VZW software, added B017 command revisions (8 commands), #SLUDP command added, other misc grammar and format changes</p> <p>#VAUX default value defined and minor updates</p> <p>#PNINFO command added, Verizon Wireless commands verified,</p> <p>DRAFT for Full product version for SW R09.01.003 (Sprint) & R09.01.013-B013 (AERIS) & R09.01.023-B021 (VZW)</p> <p>Additions and corrections from SH Choi for R4 revision</p> <p>Full product version for SW R09.01.003 (Sprint), SW R09.01.013-B013 (AERIS) & SW R09.01.023-B021 (Verizon)</p>



2. AT Commands

The CC864-DUAL can be driven via the USB or serial interface using the standard AT Commands.

The CC864-DUAL is compliant with:

- TIA/EIA/707-A.3 AT Command.
- Partial Hayes standard AT command set.
- 3GPP 27.005 specific AT Commands for Sending and writing SMS (Short Message Service).
- Partially ETSI 3GPP 27.007 specific AT Commands for controlling voice and Phonebook.

The CC864-DUAL also supports the Telit proprietary Unified AT commands where appropriate and technologically possible.

2.1. 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.

<LF> Linefeed character, is the character recognized as the 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 sub-parameter** 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 sub-parameter 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 sub-parameters, 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 sub-parameter.



2.2. AT Command Syntax

The syntax rules followed by the Telit implementation of either TIA/EIA IS-707 AT Commands, QUALCOMM proprietary AT Commands are very similar to those of standard basic and extended AT commands.

There are two types of extended commands:

Parameter type commands:

This type of command 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 sub-parameters; they also have a Read command (trailing “?”) to check the current values of sub-parameters.

Action type commands:

This type of command may be “executed”. “Executed” to invoke a particular function of the equipment, which generally involves more than the simple storage of a value for later use Action commands doesn’t store the values of any of their possible sub-parameters.

2.2.1. AT 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/”.

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** and **<CR>** is the command line terminator character
- **ATCMD2=10<CR>** where 10 is a sub-parameter.
- **AT+CMD1;+CMD2=, ,10<CR>** These are two examples of **extended commands**. They are delimited with semicolon. In the second command the sub-parameter is omitted.
- **+CMD1?<CR>** This is a Read command for checking current sub-parameter values
- **+CMD1=?<CR>** This is a test command for checking possible sub-parameter values



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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 commands in the same command line, because if one of them fails, then an error message is received but it is not possible to determine which one of them has failed the execution.

If command **V1** is enabled (verbose responses codes) and all commands in a command line have been performed successfully, result code **<CR><LF>OK<CR><LF>** is sent from the TA to the TE. If 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 **<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 have 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 the command itself is invalid, or the command cannot be performed for some reason, result code **4<CR>** is sent and no subsequent commands in the command line are processed.

Command line syntax

A command line consists of the Attention code followed by one or more commands, followed by the end of line code. The Attention code is the character pair "AT" or "at".

By default, the end of line character is the ASCII CR character (decimal 13); unless it is changed by the S3 command (see the S-Registers Table). Spaces are ignored but may be included between commands if desired.

The basic and S-register commands may follow each other on the command line without any separating delimiters. The extended format commands (those beginning with a "+" character) must be terminated by a ";" if they are followed by another command on the same line. A ";" is not required after the last command on the line.

Commands may be edited by pressing the backspace key. The backspace deletes the last character in the command line. The backspace will not delete the "AT" at the beginning of the line.

The extended commands use the extended syntax. To set a value using an extended command, use the WRITE command:

+CMD=xxx

Where CMD is the command and xxx is the value.

Some extended commands take more than one value. For example, the WRITE command for two values becomes:

+CMD=xxx,yyy



Some extended commands take character strings as values instead of numbers. In this case, the syntax is:

+CMD="character string"

Note that while spaces are ignored everywhere else, spaces are significant inside quotation marks.

To read back a value, use the READ command:

+CMD?

To determine if a particular command is supported, along with the range of values it supports, use the TEST command:

+CMD=?

An extended command must be terminated with a semicolon if another command follows it on a single line.

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

This is NOT a command, it is the error response to +Cxxx SMS commands. Syntax: **+CMS ERROR: <err>**

Parameter: **<err>** - numeric error code. The **<err>** values are reported in the table below:

Numeric Format	Meaning
0-1	ME failure
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
320	Memory failure
321	Invalid memory index
322	Memory full
331	No network service
332	Network time-out
340	Invalid transaction ID
500	unknown error



The following values are IS-41D SMS cause codes:

Network Problems

Numeric Format	Meaning
0	Address vacant
1	Address translation failure
2	Network resource shortage
3	Network failure
4	Invalid teleservice id
5	Other network problem
6	Other network problem more first

Terminal Problems

Numeric Format	Meaning
32	No page response
33	Destination busy
34	No Acknowledgement
35	Network failure
36	SMS delivery postponed
37	Destination out of service
38	Destination no longer at this address
39	Other Terminal problem
40	Other terminal problem more first
47	Other terminal problem more last
48	SMS delivery postponed more first
63	SMS delivery postponed more last

Radio Interface Problems

Numeric Format	Meaning
64	Radio if resource shortage
65	Radio if incompatible
66	Other radio if problem
67	Other radio if problem more first
95	Other radio if problem more last



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- *Result codes* that inform about the 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**).

Basic result codes

Result Codes		
Numeric form	Verbose form	Description
0	OK	Command executed.
1	CONNECT	Entering online state.
2	RING	Alerting signal received from network.
3	NO CARRIER	Unable to activate the service.
4	ERROR	Command not recognized or could not be executed.
6	NO DIALTONE	No dial tone detected within time-out period.
7	BUSY	Reorder (Busy signal) received.
8	NO ANSWER	Five seconds of silence not detected after ring back when @ dial modifier is used.

2.2.3. Notification Messages

The CC864-DUAL supports Notification Messages.

2.2.3.1. Service State Messages

“#SERVICE: 0” – No Service State

“#SERVICE: 2” – Normal Service State

“#SERVICE: 4” – CDMA Lock State (This means the device received “**Lock Order**” from the Base Station).

This could be given when A-Key mismatch occurs.



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The values set by following commands are stored in the profile extended section:

+ILRR,	+CVHU,	+CLIP,
+CLIR,	+CCWA,	#ECAM,
#SKIPESC	#E2ESC	+CALM
+CRSL,	+CMUT,	+CLVL,
#CAP,	#SRS,	#SRP,
#STM,	#DVI	#E2SMSRI,
#CODEC,	#SHFEC,	#HFMICG ³ ,
#HSMICG,	#SHFSD,	#SPKMUT,
#E2SLRI,	#ACAL	#ACALEXT

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

+CSMP
Stored by +CSAS command and restored by +CRES command

#SLED
Stored by #SLEDSAV command

#VAUX
Stored by #VAUXSAV command

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

Stored by #SKTSAV command and automatically restored at start-up; factory default values are restored by #SKTRST command.

#ESMTP,	#EADDR,	#EUSER,
#EPASSW		

Stored by #ESAV command and automatically restored at start-up; factory default values are restored by #ERST command.



3. Basic AT Commands Reference

3.1. Command Line General Format

3.1.1. Basic Action Commands

3.1.1.1. AT- Starting a Command Line / Attention Command

Description

AT is both a prefix as well as a command. (“ATtention”) is always used to start a command line to be sent from TE to TA.

Syntax

As command

Command Type	Command	Response / Action
Execute	AT	OK

As Prefix

Command Type	Command	Response / Action
Prefix	AT<Command>	Depending on <Command>

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP 27.007 (R99)



Example

```
AT+VTD=10
OK
```

3.1.1.2. Last Command Automatic Repetition – A

Description

This prefix **A/** is issued before any command line has been executed and the preceding command line is assumed to have been empty.

Note: this command works only at fixed IPR.

Note: the custom command **#/** causes the last command to be executed again; but it does not need a fixed IPR.

Syntax

As Prefix

Command Type	Command	Response / Action
Prefix	A/ a/	Depending on previous Command

3.1.1.3. Select Interface Style - #SELINT

Description

Command is used to set the interface style.

Syntax

Command Type	Command	Response / Action
Set	AT#SELINT=<v>	Sets the AT command interface style depending on parameter <v>.
Read	AT#SELINT?	Reports the current interface style.
Test	AT#SELINT=?	Reports the available range of values for parameter <v>.



Parameters

Parameter	Type	Description
<v>	Integer	<v> - AT Command interface 2 - switches the AT command interface style of the product, to the CC864-DUAL

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	

Example

```
AT#SELINT=?  
#SELINT: (2)  
  
OK  
AT#SELINT?  
#SELINT: 2  
  
OK  
AT#SELINT=2  
OK
```

3.1.2. Generic Modem Control

3.1.2.1. Set to Factory Defined Configuration - &F

Description

Set the configuration parameters to default values specified by manufacturer.



Syntax

Command Type	Command	Response / Action
Execute	AT&F[<value>]	Sets the configuration parameters to default values specified by manufacturer; it takes in consideration hardware configuration switches and other manufacturer-defined criteria.

Parameters

Parameter	Type	Description
<value>	Integer	0 - just the factory profile base section parameters are considered. 1 - either the factory profile base section and the extended section are considered (full factory profile)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	If parameter <value> is omitted, the command has the same behaviour as AT&F0
Reference	V25ter

Example

AT&F1
OK

3.1.2.2. Soft Reset – Z

Description

Command loads the base section of the specified user profile.



Syntax

Command Type	Command	Response / Action
Execute	ATZ[<n>]	Execution command loads the base section of the specified user profile and the extended section of the default factory profile.

Parameters

Parameter	Type	Description
<n>	Integer	0..1 - user profile number

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	Any call in progress will be terminated. If parameter <n> is omitted, the command has the same behaviour as ATZ0.
Reference	V25ter

Example

ATZ0
OK

3.1.2.3. Default Reset Basic Profile Designation - &Y

Description

Command defines the basic profiles which will load on start-up.



Syntax

Command Type	Command	Response / Action
Execute	AT&Y[<n>]	Execution command defines the basic profiles which will be loaded on start-up.

Parameters

Parameter	Type	Description
<n>	Integer	0..1 - profile (default is 0): the wireless module is able to store 2 complete configurations (see &W)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	Differently from command Z<n> , which loads just once the desired profile, the one chosen through command &Y will be loaded on every start-up. If parameter <n> is omitted, the command has the same behaviour as AT&Y0 .
Reference	

Example

AT&Y0

OK

3.1.2.4. Default Reset Full Profile Designation - &P

Description

Command defines which full profiles will load on start-up.



Syntax

Command Type	Command	Response / Action
Execute	AT&P[<n>]	Execution command defines which full profile will be loaded on start-up

Parameters

Parameter	Type	Description
<n>	Integer	0..1 - profile (default is 0): the wireless module is able to store 2 complete configurations (see &W)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	Differently from command Z<n> , which loads just once the desired profile, the one chosen through command &P will be loaded on every start-up. If parameter <n> is omitted, the command has the same behaviour as AT&P0 .
Reference	Telit Specifications

Example

```
AT&P0
OK
```



3.1.2.5. Store Current Configuration - &W

Description

Command stores on profile <n>, the complete configuration of the device.

Syntax

Command Type	Command	Response / Action
Execute	AT&W[<n>]	Execution command stores on profile <n> the complete configuration of the device.

Parameters

Parameter	Type	Description
<n>	Integer	0..1 - profile

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	If parameter <n> is omitted, the command has the same behaviour as AT&W0.
Reference	

Example

AT&W0

OK



3.1.3. Basic AT Parameters

3.1.3.1. Command Echo – E

Description

This command enables/disables the command echo.

Syntax

Command Type	Command	Response / Action
Set	ATE[<n>]	OK – Echo state set.
Test	ATE=?	OK

Parameters

Parameter	Type	Description
<n>	Integer	0 – disables command echo 1 – enables command echo (factory default), therefore command sent to the device are echoed back to the DTE before the response is given.

Note: if parameter is omitted, the command has the same behavior of **ATE0**

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	The parameter <n> can be saved in a profile setting, thus command echo can be defaulted on or off based on the profile settings upon power up
Reference	



Example

```

AT
OK
ATE1
OK
ATE=?
OK
AT
OK
ATE0
OK
    <--- "AT" entered here
OK
    <--- "ATE1" entered here
OK
    
```

3.1.3.2. Speaker Loudness – L

Description

This command has no effect and is included only for backward compatibility with landline modems.

Syntax

Command Type	Command	Response / Action
Execute	L[<n>]	OK – No effect.
Test	L=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



<n>	Integer	0 – Lowest speaker volume, or off 1 – Low speaker volume 2 – Medium speaker volume 3 – Highest speaker volume
-----	---------	--

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	Command has no effect.
Reference	

Example

```
ATL1
OK
ATL=?
OK
```

3.1.3.3. Speaker Mode – M

Description

This command has no effect and is included only for backward compatibility with landline modems.

Syntax

Command Type	Command	Response / Action
Execute	M[<n>]	OK – No effect.
Test	M=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



<n>	Integer	0 – Speaker always off. 1 – Speaker on until carrier detected. 2 – Speaker always on.
------------------	---------	---

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	Command has no effect.
Reference	

Example

```
ATM1
OK
ATM=?
OK
```

3.1.3.4. Quiet Result Codes – Q

Description

This command enables or disables the result codes.

Syntax

Command Type	Command	Response / Action
Set	ATQ[<n>]	OK – No effect.
Test	ATQ=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



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<n>	Integer	<p>0 – Enables result codes (factory default). 1 – Disables result codes. 2 – Disables result codes (only for backward compatibility).</p> <p>Note: After issuing either ATQ1 or ATQ2 every information text transmitted in response to commands is not affected.</p> <p>Note: if parameter is omitted, the command has the same behavior of ATQ0.</p>
------------------	---------	---

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	When result codes are disabled there will be no "OK" returned or new line. Thus, you will be typing over the command you just entered.
Reference	

Example

```

ATQ=?
OK
ATQ0
OK
ATQ1
    ← "OK" will not be displayed
  
```

3.1.3.5. Response Format – V

Description

This 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.



Syntax

Command Type	Command	Response / Action
Set	ATV[<n>]	OK – No effect.
Test	ATV=?	OK

Parameters

Parameter	Type	Description				
<n>	Integer	0 – limited headers and trailers and numeric format of result codes.				
		<table border="1"> <tr> <td>information responses</td> <td><text><CR><LF></td> </tr> <tr> <td>Result codes</td> <td><numeric code><CR><LF></td> </tr> </table>	information responses	<text><CR><LF>	Result codes	<numeric code><CR><LF>
information responses	<text><CR><LF>					
Result codes	<numeric code><CR><LF>					

1 – full headers and trailers and verbose format of result codes (factory default)

information responses	<text><CR><LF>
Result codes	<numeric code><CR><LF>

Note: The <text> portion of information responses is not affected by this setting.

Note: If parameter is omitted, the command has the same behavior of ATV0.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	When limited headers and trailers are used, you will not receive an "OK" and new line. The next command entered goes on top of the last one entered.
Reference	

Example




```

ATV=?
OK
ATV1
OK
ATV1
OK
    
```

3.1.3.6. Extended Result Codes – X

Description

This command selects the result code messages subset used by the modem to inform the **DTE** of the result of the commands.

Syntax

Command Type	Command	Response / Action
Set	ATX[<n>]	OK – No effect.
Test	ATX=?	OK

Parameters

Parameter	Type	Description
<n>	Integer	<p>0 – Sends a CONNECT message when a connection is established by blind dialing. Ignores dial tone and busy signal.</p> <p>1 – Enables additional result code CONNECT <rate>. Disable dial tone and busy detection.</p> <p>2 – Enables additional result codes CONNEC <rate> and NO DIALTONE. Disable busy detection. Enable dial tone detection.</p> <p>3 – Enables additional result codes CONNECT <rate> and BUSY. Enable busy detection. Disable dial tone detection.</p> <p>4 – Enables additional result codes CONNECT <rate>. BUSY and NO DIALTONE. Enable busy and dial tone detection.</p>

Note: Each parameter function of AT Commands is Different from AT Commands of GSM Module Family.



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GSM module Integer
Family
Parameter:
<n>

0 - send only OK, CONNECT, RING, NO CARRIER, ERROR, NO ANSWER results. Busy tones reporting are disabled.
1..4 - reports all messages (factory default is 1)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	
Reference	

Example

```
ATX=?
OK
ATX0
OK
ATX1
OK
ATX2
OK
ATX3
OK
ATX4
OK
ATX1
OK
```

3.1.3.7. Identification Information – I

Description

This command returns one or more lines of information text without command echo followed by a result code.



Syntax

Command Type	Command	Response / Action
Execute	I	<Information> OK
Test	I=?	OK

Parameters

Parameter	Type	Description
<n>	Integer	0 - numerical identifier. 1 - module checksum 2 - checksum check result 3 - manufacturer 4 - product name 5 - DOB version Note: if parameter is omitted, the command has the same behavior of "I0"

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP 27.007 (R99) V.25ter

Example

```
ATI=?
OK
ATI0
332

OK
ATI1
0
```



OK
AT12
OK
AT13
Telit

OK
AT14
CC864-DUAL

OK
AT15
DOB v.2.0

OK

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

Description

This command controls the RS232 **DCD** output behavior.

Syntax

Command Type	Command	Response / Action
Set	AT&C[<n>]	OK – No effect.
Test	AT&C=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



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<n>	Integer	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 Note: if parameter is omitted, the command has the same behavior of AT&C0
-----	---------	--

Example

```
AT&C=?
OK
AT&C0
OK
AT&C1
OK
AT&C2
OK
AT&C1
OK
```

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

Description

This command controls the Module behavior to the RS232 **DTR** transitions.

Syntax

Command Type	Command	Response / Action
Set	AT&D[<n>]	OK – No effect.
Test	AT&D=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



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<n>	Integer	<p>0 - DTR transitions are ignored. (factory default)</p> <p>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</p> <p>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</p> <p>The following values are not supported:</p> <p>3 - C108/1 operation is enabled. (Only for GSM module Family)</p> <p>4 - C108/1 operation is disabled. (Only for GSM module Family)</p> <p>Note: if parameter is omitted, the command has the same behavior of AT&D0</p>
-----	---------	--

Example

```
AT&D=?
OK
AT&D0
OK
AT&D1
OK
AT&D2
OK
AT&D3
ERROR
```

3.1.3.10. Flow Control - &K

Description

This command controls the RS232 flow control behavior.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Set	AT&K[<n>]	OK – No effect.
------------	-----------	-----------------

Parameters

Parameter	Type	Description
<n>	Integer	<p>0 - no flow control</p> <p>1 - hardware mono-directional flow control (only CTS active)</p> <p>2 - software mono-directional flow control (XON/XOFF)</p> <p>3 - hardware bi-directional flow control (both RTS/CTS active) (factory default)</p> <p>4 - software bi-directional with filtering (XON/XOFF)</p> <p>5 - pass through: software bi-directional without filtering (XON/XOFF)</p> <p>6 - both hardware bi-directional flow control (both RTS/CTS active) and software bi-directional flow control (XON/XOFF) with filtering</p> <p>Note: if parameter is omitted, the command returns OK.</p> <p>Note: &K has no Read Command. To verify the current setting of &K, simply check the settings of the active profile issuing AT&V.</p> <p>Note: Hardware flow control (AT&K3) is not active in command mode.</p>

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

Description

This command controls the RS232 DSR pin behavior.

Syntax

Command Type	Command	Response / Action
Set	AT&S[<n>]	OK



Parameters

Parameter	Type	Description
-----------	------	-------------

<n>	Integer	0 - Always High 1 - Reserved 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 UMTS traffic channel indication.

Note: in power saving mode the **DSR** pin is always tied **Low** & USB_VBUS pin is always tied Low.

Note: if parameter is omitted, the command has the same behaviour of **AT&S0**

Example

AT&S3

OK



3.1.4. Basic Call Control

3.1.4.1. Dial – D

Description

This Execution command starts a call to the phone number given as parameter.
If ";" is present, a **voice** call to the given number is performed. If no ";" is present, a CS Data call occurs. If "#777" is used you get a packet data call.

Syntax

Command Type	Command	Response / Action
Execute	ATD<number>[;]	OK (voice call is performed)

Parameters

Parameter	Type	Description
<number>	Integer	Phone number to be dialed Note: type of call (data , fax or voice) depends on last +FCLASS setting. Note: the numbers accepted are 0-9 and *, #. Note: for backwards compatibility with landline modems modifiers "T" and "P" are accepted but have no effect.

Description

This command issues a call to phone number which corresponding alphanumeric field is <str>; all available memories will be searched for the correct entry.
If ";" is present a **voice** call is performed.



Syntax

Command Type	Command	Response / Action
Execute	ATD><str>[;]	OK (voice call is performed)

Parameters

Parameter	Type	Description
<str>	Integer	Alphanumeric field corresponding to phone number; it must be enclosed in quotation marks. Note: parameter <str> is case sensitive.

Description

This command issues a call to phone number in entry location <n> of the active phonebook memory storage.

Syntax

Command Type	Command	Response / Action
Execute	ATD><n>[;]	OK (voice call is performed)

Description

This command issues a call to the last number dialed.

Syntax

Command Type	Command	Response / Action
Execute	ATDL	OK (voice call is performed)



Description

This command issues a call to the number stored in the MODULE internal phonebook position number **<nr>**.

If ";" is present a voice call is performed.

Syntax

Command Type	Command	Response / Action
Execute	ATDS=<nr>[;]	OK (voice call is performed)

Parameters

Parameter	Type	Description
<nr>	Integer	Internal phonebook position to be called.

Description

This command issues a call waiting.

Syntax

Command Type	Command	Response / Action
Execute	ATD	OK (call waiting is performed)

Example

To dial 01192520887 number:

```
ATD=01192520887;
```

```
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
```



3.1.4.2. Tone Dial – T

Description

The command means “set tone dial” but has no effect and is included for backward compatibility with landline modems only.

Syntax

Command Type	Command	Response / Action
Execute	T	OK (Command has no effect is included only for backward compatibility with landline modems)
Test	T=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP 27.007 (R99)

Example

```
ATT
OK
ATT=?
OK
```

3.1.4.3. Pulse Dial – P

Description

The command means “set pulse dial” but has no effect and is included for backward compatibility with landline modems only.



Syntax

Command Type	Command	Response / Action
Execute	P	OK (Command has no effect)
Test	P=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP 27.007 (R99)

Example

```
ATP
OK
ATP=?
OK
```

3.1.4.4. Answer – A

Description

This 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> character.

Syntax

Command Type	Command	Response / Action
Execute	ATA	OK (Incoming call is answered)



3.1.4.5. Disconnect – H

Description

Command is used to close (hang up) the current conversation (voice, data or fax). This command will end both a voice and data call at the same time if both are open.

Syntax

Command Type	Command	Response / Action
Execute	H	OK (line hangs up)
Test	H=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	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), and the 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 to command mode. A "NO CARRIER" response after the "OK" response is normal for all type of calls.
Reference	3GPP 27.007 (R99)

Example

```
ATH
OK
ATH=?
OK
```



3.1.4.6. Return To On Line Mode – 0

Description

This command is used to return to on-line mode from command mode.

Syntax

Command Type	Command	Response / Action
Execute	0	(Interface returns to on-line mode) NO CARRIER (No active connection to return to)
Test	0=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	After issuing this command, if the device is in conversation, to send other commands to the device you must return to command mode by issuing the escape sequence (see register S2) or tying low DTR pin if &D1 option is active.
Reference	GSM 27.007 (R99)

Example

```

ATO=?
OK
ATO
[On-line data session resumes]
    
```



3.1.4.7. Guard Tone - &G

Description

This command has no effect is included only for backward compatibility with landline modems.

Syntax

Command Type	Command	Response / Action
Execute	&G	OK – No effect
Test	&G=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	Command has no effect.
Reference	

Example

```
AT&G=?
OK
AT&G
OK
```

3.1.4.8. Sync/Async Mode - &Q

Description

This command has no effect is included only for backward compatibility with landline modems.

Syntax

Command Type	Command	Response / Action
Execute	&Q	OK – No effect
Test	&Q=?	OK



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	Command has no effect.
Reference	

Example

```
AT&Q=?
OK
AT&Q
OK
```

3.1.4.9. Ring (RI) Control - \R

Description

This command controls the RING output pin behavior.

Syntax

Command Type	Command	Response / Action
Set	AT\R[<n>]	Command controls the RING output pin behavior.

Parameters

Parameter	Type	Description
<n>	Integer	0 – RING on during ringing and further connection 1 – RING on during ringing (factory default) 2 – RING follows the ring signal

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



Command Information	Comment
Notes	To check the ring option status use the &V command. If parameter is omitted, the command has the same behavior of AT\R0
Reference	

Example

```
AT\R0
OK
AT\R1
OK
```

3.1.4.10. Standard Flow Control - \Q

Description

This command controls the RS232 flow control behavior.

Syntax

Command Type	Command	Response / Action
Set	AT\Q[<n>]	Command controls the RING output pin behavior.

Parameters

Parameter	Type	Description
<n>	Integer	0 - no flow control 1 - software bi-directional with filtering (XON/XOFF) 2 - hardware mono-directional flow control (only CTS active) 3 - hardware bi-directional flow control (both RTS/CTS active) (factory default)

Miscellaneous



Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	<p>If parameter is omitted, the command has the same behavior as AT\Q0</p> <p>Hardware flow control (AT\Q3) is not active in command mode.</p> <p>\Q's settings are functionally a subset of &K's ones.</p>
Reference	

Example

```
AT\Q3
OK
```

3.1.5. Basic S-Registers

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.

3.1.5.1. Number of Rings to Auto Answer – S0

Description

This command sets the number of rings required before device automatically answers an incoming call.

Syntax

Command Type	Command	Response / Action
Set	ATS0[=<n>]	OK (number of rings are set)
Read	ATS0?	the current value of S0 parameter is returned
Test	ATS0=?	OK



Parameters

Parameter	Type	Description
<n>	Integer	number of rings 0 - auto answer disabled (factory default) 1...255 - number of rings required before automatic answer.

Examples:

ATS0=?

OK

ATS0?

000

OK

ATS0=10

OK

ATS0?

010

OK

3.1.5.2. Ring Counter – S1

Description

This command counts the number of “RING”s until there are no longer any “RING” indications.

Syntax

Command Type	Command	Response / Action
Set	ATS1	S1 is incremented each time the device detects the ring signal of an incoming call. S1 is cleared as soon as no ring occurs.



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Command Type	Command	Response / Action
		Note: the form ATS1 has no effect.
Read	ATS1?	Returns the value of this parameter.
Test	ATS1=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	The format of the numbers in output is always 3 digits, left-filled with 0s
Reference	

Examples:

ATS1=?
OK

3.1.5.3. Escape Character – S2

Description

This command sets the ASCII character to be used as escape character.

Syntax

Command Type	Command	Response / Action
Set	ATS2[=<char>]	OK (escape character is set)
Read	ATS2?	the current value of S2 parameter is returned
Test	ATS2=?	Returns the OK result code



Parameters

Parameter	Type	Description
<char>	Integer	Escape character decimal ASCII 0..255 - 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 S12 to set <i>n</i>).

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	The format of the numbers in output is always 3 digits, left-filled with 0s
Reference	

Examples:

ATS2=?

OK

ATS2?

043

OK

ATS2=10

OK

ATS2?

010



3.1.5.4. Command Line Termination Character – S3

Description

This command sets the value of the character either recognized by the device as command line terminator or generated by the device as part of the header, trailer, and terminator for result codes and information text, along with **S4 parameter**.

Syntax

Command Type	Command	Response / Action
Set	ATS3=[<char>]	OK (value of the character is set)
Read	ATS3?	OK (the current value of S3 parameter is returned) Note: the format of the numbers in output is always 3 digits, left-filled with 0s
Test	ATS3=?	OK

Parameters

Parameter	Type	Description
<char>	Integer	Command line termination character (decimal ASCII) 0..127 - 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 uses the “new” value of S3 (as set during the processing of the command line)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	It is not recommended to use values 51=“3”, 65=“A”, 83=“S”, 84=“T”, 97=“a”, 115=“s”, or 116=“t”. If you use these values you will not be able to change them without physically resetting the module.

Reference



Examples:

```

ATS3=?
OK
ATS3?
013

OK
@ATS3=64 (The "A" was changed to "@" when executed)
OK@
  ATS3=013@
OK
ATS3?
013

OK
  
```

3.1.5.5. Response Formatting Character – S4

Description

This 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.

Syntax

Command Type	Command	Response / Action
Set	ATS4=[<char>]	OK (value of the character is set)
Read	ATS4?	OK (the current value of S4 parameter is returned) Note: the format of the numbers in output is always 3 digits, left-filled with 0s
Test	ATS4=?	OK



Parameters

Parameter	Type	Description
<char>	Integer	Response formatting character (decimal ASCII) 0..127 - 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 .

Examples:

```

ATS4=?
OK
ATS4?
010

OK
ATS4=69
EOK (This will cover up the "ATS4=69" execute)
ATS4=10
OK

```

3.1.5.6. Command Line Editing Character – S5

Description

This command sets the value of the character recognized by the device as a request to delete from the command line the immediately preceding character.

Syntax

Command Type	Command	Response / Action
Set	ATS5=<char>	OK – Sets command line editing character. ERROR
Read	ATS5?	Returns current value of parameter.
Test	ATS5=?	OK



Parameters

Parameter	Type	Description
<char>	Integer	0..127

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Factory Default	8 (ASCII <BS>).
Note	Current value is returned as a fixed 3 digit decimal number with leading 0's.
Reference	

Example

ATS5=?

OK

ATS5?

008

OK

ATS5=0

OK

ATS5?

000

OK

ATS5=8

OK



3.1.5.7. Connection Completion Time-Out – S7

Description

This 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 signaling of call addressing information to network (dialing), and establishment of a connection with the remote device.

Syntax

Command Type	Command	Response / Action
Set	ATS7=[<tout>]	OK – Sets sets the amount of time ERROR
Read	ATS7?	Returns current value of parameter. Note: the format of the numbers in output is always 3 digits, left-filled with 0s.
Test	ATS7=?	OK

Parameters

Parameter	Type	Description
<tout>	Integer	number of seconds 1...255 - factory default value is 60.

Example

```
ATS7=?
OK
ATS7?
060

OK
ATS7=200
OK
ATS7?
```



200

OK

3.1.5.8. Escape Prompt Delay – S12

Description

This command sets 1) the minimum period, before receipt of the first character of the three escape character sequence, during which no other character has to be detected in order to accept it as valid first character; 2) the maximum period allowed between receipt of first or second character of the three escape character sequence and receipt of the next; and 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..

Syntax

Command Type	Command	Response / Action
Set	ATS12[=<time>]	OK (escape prompt delay is set)
Read	ATS12?	the current value of S12 parameter is returned
Test	ATS12=?	Returns the OK result code

Parameters

Parameter	Type	Description
<time>	Integer	Expressed in fiftieth of a second 20..255 - factory default value is 50.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	The format of the numbers in output is always 3 digits, left-filled with 0s.

The minimum period S12 has to pass after **CONNECT**



Command Information	Comment
	result code too, before a received character is accepted as valid first character of the three escape character sequence.
Reference	

Examples:

ATS12=?

OK

ATS12?

050

OK

ATS12=20

OK

ATS12?

020

OK

3.1.5.9. Delay to DTR Off – S25

Description

This 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.

Syntax

Command Type	Command	Response / Action
Set	ATS25[=<time>]	OK (delay for ignoring the DTR is set)
Read	ATS25?	the current value of S25 parameter is returned



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Test	ATS25=?	OK
-------------	---------	----

Parameters

Parameter	Type	Description
<time>	Integer	Expressed in hundredths of a second 0...255 – factory default value is 5.
		Note: the delay is effective only if its value is greater than 5.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	The format of the numbers in output is always 3 digits, left-filled with 0s
Reference	

Examples:

ATS25=?

OK

ATS25?

005

OK

ATS25=255

OK

ATS5?

255

OK



3.1.5.10. Disconnect Inactivity Counter – S30

Description

This command defines the inactivity time-out in minutes. The device disconnects if no characters are exchanged for a time period of at least <tout> minutes.

Syntax

Command Type	Command	Response / Action
Set	ATS30[=<tout>]	OK (disconnect inactivity counter is set)
Read	ATS30?	the current value of S30 parameter is returned
Test	ATS30=?	Returns the OK result code

Parameters

Parameter	Type	Description
<tout>	Integer	Expressed in minutes 0 - disabled, disconnection due to inactivity is disabled (factory default). 1..127 - inactivity time-out value

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Notes	The format of the numbers in output is always 3 digits, left-filled with 0s
Reference	

Examples:

ATS30=?

OK

ATS30?



000

OK

ATS30=10

OK

ATS30?

010

OK

3.1.6. In-Band Control AT Commands

3.1.6.1. Available Service - +CAD

Description

This command returns the current available service state.

Syntax

Command Type	Command	Response / Action
Execute	+CAD	Returns current available service in the format: <n>
Set	+CAD=<n>	Returns current available service in the format: <n>
Read	+CAD?	Returns current available service in the format: <n>
Test	+CAD=?	Returns current available service in the format: <n>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<n>	Integer	Current Service 0 – If no service is available. 1 – If CDMA digital service is available. 2 – If TDMA digital service is available. 3 – If Analog service is available
* Values 4 to 255 reserved		

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```

AT+CAD
1

OK
AT+CAD?
1

OK
AT+CAD=?
1

OK
AT+CAD=123
1

OK
    
```

3.1.6.2. Data Compression – +DS

Description

This command manipulates the V42 compression parameters.



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Command has no effect, supported only for the purpose of cross-technology compatibility within products supporting Telit Unified AT-commands.

Syntax

Command Type	Command	Response / Action
Set	+DS=<n>	OK – Sets the compression.
Read	+DS?	Returns current data compression setting.
Test	+DS=?	Test command returns all supported values of the command.

Parameters

Parameter	Type	Description
<n>	Integer	0 - no compression, currently the only supported value.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This command has no effect. In 3G CDMA, data compression for CS Data and FAX are controlled by the network, not the individual user.
Reference	

Example

```
AT+DS=?
+DS: (0)

OK
AT+DS?
+DS: 0

OK
AT+DS=0
OK
```



3.1.6.3. Data Compression Reporting – +DR

Description

This command enables/disables the V42 data compression intermediate result code reporting upon connection.

Command has no effect, supported only for the purpose of cross-technology compatibility within products supporting Telit Unified AT-commands.

Syntax

Command Type	Command	Response / Action
Set	+DR=<n>	OK – Sets compression reporting.
Read	+DR?	Returns current data compression setting.
Test	+DR=?	Test command returns all supported values of the command.

Parameters

Parameter	Type	Description
<n>	Integer	0 - data compression reporting disabled. 1 - data compression reporting enabled upon connection

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	When enabled, the following intermediate result code is transmitted before the final result code of the connection command: +DR: <compression> (the only supported value for <compression> is “NONE”) In 3G CDMA, data compression for CS Data and FAX are controlled by the network, not the individual user.

Reference

Example



AT+DR=?
+DR: (0-1)

OK
AT+DR?
+DR: 0

OK
AT+DR=1
OK
AT+DR?
+DR: 1

OK

3.1.6.4. Manufacturer Identification – +GMI

Description

This command returns the manufacturer identification without command echo.

Syntax

Command Type	Command	Response / Action
Execute	+GMI	<id> OK
Test	+GMI=?	OK

Parameters

Parameter	Type	Description
<id>	String	Manufacturer identification string (Telit).

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP 27.007 (R99) IS-707-A-2 V.25ter

Example

```
AT+GMI=?
OK
AT+GMI
Telit

OK
```

3.1.6.5. Model Identification – +GMM

Description

This command returns the model identification without command echo.

Syntax

Command Type	Command	Response / Action
Execute	+GMM	<id> OK
Test	+GMM=?	OK

Parameters

Parameter	Type	Description
<id>	String	Model identification string (CC864-DUAL).

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



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Reference	GSM 27.007 (R99) IS-707-A-2 V.25ter
------------------	---

Example

```

AT+GMM=?
OK
AT+GMM
CC864-DUAL

OK
  
```

3.1.6.6. Revision Identification – +GMR

Description

This command returns the software revision identification without command echo.

Syntax

Command Type	Command	Response / Action
Execute	+GMR	<rev> OK
Test	+GMR=?	OK

Parameters

Parameter	Type	Description
<rev>	String	Model identification string (09.01.0xx).

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



Reference 3GPP 27.007 (R99)
IS-707-A-2
V.25ter

Example

```
AT+GMR=?
OK
AT+GMR
09.01.003

OK
```

3.1.6.7. Capabilities List – +GCAP

Description

This command returns the equipment supported command set list with command echo.

Syntax

Command Type	Command	Response / Action
Execute	+GCAP	<eqpt> OK
Test	+GCAP=?	OK

Parameters

Parameter	Type	Description
<eqpt>	String	Equipment Supported +CIS707-A: CDMA data service command set +MS: Mobile Specific command set +ES: Error control command set +DS: Data Service common modem command set +FCLASS: Fax command set

Miscellaneous



Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	GSM 27.007 (R99) IS-707-A-2 V.25ter

Example

```
AT+GCAP=?
OK
AT+GCAP
+GCAP: +CIS707-A, +MS, +ES, +DS, +FCLASS

OK
```

3.1.6.8. Electronic Serial Number – +GSN

Description

This command returns the device board serial number without command echo.

Syntax

Command Type	Command	Response / Action
Execute	+GSN	<ser> OK
Test	+GSN=?	OK

Parameters

Parameter	Type	Description
<ser>	Integer	Board serial number in 8-digit decimal.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable



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Execution Time Executed immediately, not time critical.
Reference 3GPP 27.007 (R99)
 IS-707-A-2
 V.25ter

NOTE

Example

```
AT+GSN=?
OK
AT+GSN
12345678

OK
```

3.1.6.9. Country of Installation - +GCI

Description

This command returns the installation country code according to ITU-T.35 Annex A.

Syntax

Command Type	Command	Response / Action
Set	AT+GCI=<code>	<code> OK
Read	AT+GCI?	<code> OK
Test	AT+GCI=?	OK

Example

```
AT+GCI=?
+GCI: 310(USA)

OK
AT+GCI?
```



310

OK



3.1.6.10. Display Current Configuration - &V

Description

This command returns the current configuration in the RAM.

Syntax

Command Type	Command	Response / Action
Execute	AT&V	OK (returns current configuration in the RAM)

Example

AT&V

```
DTE SPEED           : 115200
DTE FORMAT          : 8N1
AUTOBAUD            : +IPRxxx00=NO
COMMAND ECHO        : E1=YES
RESULT MESSAGES     : Q0=YES
VERBOSE MESSAGES    : V1=YES
EXTENDED MESSAGES   : X1=YES
CONSTANT DTE SPEED  : YES
FLOW CONTROL OPTIONS : &K3=HW bidirect.
CTS (C106) OPTIONS  : &B2=OFF while disc.
DSR (C107) OPTIONS  : &S3=PHONE ready->ON
DTR (C108) OPTIONS  : &D0=ignored
DCD (C109) OPTIONS  : &C1=
RI (C125) OPTIONS   : \R1=OFF dur. off-hk
POWER SAVING ON DTR : +CFUN:1=NO
DEFAULT PROFILE     : &P1=user profile 2
```

OK



3.1.6.11. Display Current Configuration and Profile - &V0

Description

This command returns all the configuration parameters settings.

Syntax

Command Type	Command	Response / Action
Execute	AT&V0	Returns all the configuration parameters settings.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This command is the same as &V, it is included only for backwards compatibility.

Example

```

AT&V0

DTE SPEED : 115200
DTE FORMAT : 8N1
AUTOBAUD : +IPRxxx00=NO
COMMAND ECHO : E1=YES
RESULT MESSAGES : Q0=YES
VERBOSE MESSAGES : V1=YES
EXTENDED MESSAGES : X1=YES
CONSTANT DTE SPEED : YES
FLOW CONTROL OPTIONS : &K3=HW bidirect.
CTS (C106) OPTIONS : &B2=OFF while disc.
DSR (C107) OPTIONS : &S3=PHONE ready->ON
DTR (C108) OPTIONS : &D0=ignored
DCD (C109) OPTIONS : &C1=follows carrier
    
```



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RI (C125) OPTIONS : \R1=OFF dur. off-hk
 POWER SAVING ON DTR : +CFUN:1=NO
 DEFAULT PROFILE : &Y0=user profile 1

OK

3.1.6.12. “S” Registers Display - &V1

Description

This command returns the values of the “S” registers in decimal and hexadecimal.

Syntax

Command Type	Command	Response / Action												
Execute	AT&V1	Execution command returns the value of the S registers in decimal and hexadecimal value in the format:												
		<table border="0"> <tr> <td></td> <td style="text-align: center;">REG DEC</td> <td></td> <td style="text-align: center;">HEX</td> </tr> <tr> <td></td> <td style="text-align: center;"><reg0></td> <td style="text-align: center;"><dec></td> <td style="text-align: center;"><hex></td> </tr> <tr> <td></td> <td style="text-align: center;"><reg1></td> <td style="text-align: center;"><dec></td> <td style="text-align: center;"><hex></td> </tr> </table>		REG DEC		HEX		<reg0>	<dec>	<hex>		<reg1>	<dec>	<hex>
	REG DEC		HEX											
	<reg0>	<dec>	<hex>											
	<reg1>	<dec>	<hex>											

Parameters

Parameter	Type	Description
<regn>	Integer	S register number 000..005 007 012 025 038
<dec>	Integer	current value in decimal notation
<hex>	Integer	current value in hexadecimal notation



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	

Example

AT&V1

REG	DEC	HEX
000	000	000
001	000	000
002	043	02B
003	013	00D
004	010	00A
005	008	008
007	060	03C
012	050	032
025	005	005
038	020	014

OK

3.1.6.13. Display Last Connection Statistics - &V2

Description

This command returns the last connection statistics & connection failure reason.

Syntax

Command Type	Command	Response / Action
Execute	AT&V2	Execution command returns the last connection statistics & connection failure reason.



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	

Example

AT&V2

```
TOTAL CONNECTION TIME      : 0:03:20
CONNECTION FAILURE REASON  : powered off
```

OK

3.1.6.14. Extended "S" Registers Display - &V3

Description

This command returns the values of the "S" registers in decimal and hexadecimal.

Syntax

Command Type	Command	Response / Action									
Execute	AT&V3	Execution command returns the value of the S registers in decimal and hexadecimal value in the format:									
		<table> <thead> <tr> <th>REG</th> <th>DEC</th> <th>HEX</th> </tr> </thead> <tbody> <tr> <td><reg0></td> <td><dec></td> <td><hex></td> </tr> <tr> <td><reg1></td> <td><dec></td> <td><hex></td> </tr> </tbody> </table>	REG	DEC	HEX	<reg0>	<dec>	<hex>	<reg1>	<dec>	<hex>
REG	DEC	HEX									
<reg0>	<dec>	<hex>									
<reg1>	<dec>	<hex>									



Parameters

Parameter	Type	Description
<regn>	Integer	S register number 000..005 007 012 025 038
<dec>	Integer	current value in decimal notation
<hex>	Integer	current value in hexadecimal notation

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	

Example

AT&V3

REG	DEC	HEX
000	000	000
001	000	000
002	043	02B
003	013	00D
004	010	00A
005	008	008
007	060	03C
012	050	032
025	005	005
030	000	000
038	020	014



OK

3.1.6.15. DTE-Modem Local Flow Control – +IFC

Description

This command selects the flow control behavior of the serial port in both directions: from **DTE** to **modem** (<by_ta> option) and from **modem** to **DTE**(<by_te>)

Syntax

Command Type	Command	Response / Action
Set	AT+IFC=<by_te>, <by_ta>	OK (low control behavior of the serial port has been selected)
Read	AT+IFC?	Returns active flow control settings
Test	AT+IFC=?	Returns all supported values of the parameters <by_te> and <by_ta>.

Parameters

Parameter	Type	Description
<by_te>	Integer	Flow control option for the data received by DTE 0 - flow control None 1 - XON/XOFF filtered 2 - C105 (RTS) (factory default) 3 - XON/XOFF not filtered
<by_ta>	Integer	Flow control option for the data sent by modem 0 - flow control None 1 - XON/XOFF 2 - C106 (CTS) (factory default) Note: Hardware flow control (AT+IFC=2,2) is not active in command mode.

Example

```
AT+IFC=?
+IFC: (0-3),(0-2)
```



OK
AT+IFC?
+IFC: 2,2

OK
AT+IFC=3,1
OK
AT+IFC?
+IFC: 3,1

OK

3.1.6.16. Fixed DTE Interface Rate – +IPR

Description

This 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.

Syntax

Command Type	Command	Response / Action
Set	AT+IPR=<rate>	OK (specifies the DTE speed)
Read	AT+IPR?	Returns the current speed of the DTE
Test	AT+IPR=?	Returns all supported values for DTE speed.



Parameters

Parameter	Type	Description
<rate>	Integer	300 600 (Not supported in HyperTerminal) 1200 2400 4800 9600 19200 38400 57600 115200 230400 Note. Autobaud is not supported for CC864-DUAL. Note: If using a Serial connection and you change the baud rate with +IPR set command, you MUST change the baud rate in host UART (i.e. HyperTerminal) to match the set new baud rate. If not you will not be able to send AT commands to the module.
<by_ta>	Integer	Flow control option for the data sent by modem 0 - flow control None 1 - XON/XOFF 2 - C106 (CTS) (factory default) Note: Hardware flow control (AT+IFC=2,2) is not active in command mode.

Example

```

AT+IPR=?
+IPR: (),(300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400)

OK
AT+IPR?
+IPR: 115200

OK
AT+IPR=57600
OK
  
```



AT+IPR?
+IPR: 57600

OK
AT+IPR=115200
OK

3.1.6.17. DTE-Modem Local Rate Reporting - +ILRR

Description

Command controls whether or not the +ILRR: <rate> information text is transmitted from the modem (module) to the DTE.

Syntax

Command Type	Command	Response / Action
Set	AT+ILRR=<n>	Set command controls whether or not the +ILRR <rate> information text is transmitted.
Read	AT+ILRR?	Returns the active setting of <n>.
Test	AT+ILRR=?	Returns all the supported values of the parameter <n>.

Parameters

Parameter	Type	Description
<n>	Integer	0 – local port speed rate reporting disabled (default) 1 – local port speed rate reporting enabled

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



Reference

Example

AT+ILRR=?
+ILRR: (0-1)

OK
AT+ILRR?
+ILRR: 0

OK
AT+ILRR=1
OK
AT+ILRR?
+ILRR: 1

OK

3.1.6.18. DTE-Modem Character Framing - +ICF

Description

Command defines the asynchronous character framing to be used when auto-baud is disabled.

Syntax

Command Type	Command	Response / Action
Set	AT+ICF=<format>[,<parity>]	Set command defines the asynchronous character framing to be used when auto-baud is disabled.
Read	AT+ICF?	Returns the current settings for sub-parameters <format> and <parity>. The current setting of sub-parameter <parity> will always be represented as a 0.
Test	AT+ICF=?	Returns the range of supported values for the parameters <format> and <parity>.



Parameters

Parameter	Type	Description
<format>	Integer	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. 3 - 8 Data, 1 Stop (default)
<parity>	Integer	Determines how the parity bit is generated and checked, if present; setting this sub-parameter has no meaning. 0 - Odd (not supported) 1 - Even (not supported)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	The CC864-DUAL supports only 8 Data, 1 Stop setting.
Reference	

Example

```
AT+ICF=?
+ICF: (3),(0-1)
```

```
OK
AT+ICF?
+ICF: 3,0
```

```
OK
AT+ICF=3,1
OK
AT+ICF?
```



+ICF: 3,1

OK

3.1.6.19. Modulation Selection – +MS

Description

Command has no effect is included only for backward compatibility with landline modems without command echo.

Syntax

Command Type	Command	Response / Action
Set	+MS=<carrier> [,<automode> [,<min_rate> [,<max_rate>]]]	Set command has no effect is included only for backward compatibility with landline modems.
Read	+MS?	Returns the current modulation setting. <carrier>, <automode>, <min_rate>,<max_rate>
Test	+MS=?	Returns the range of supported values for each parameter OK

Parameters

Parameter	Type	Description
<carrier>	String	A string which specifies the preferred modem carrier to use in originating or answering a connection: V21 V22 V22B V23C V32 V34
<automode>		Enables/disables automatic modulation negotiation: 0 – disabled 1 - enabled. It has effect only if it is defined for the associated



Parameter	Type	Description
		modulation.
<min_rate>		Specifies the lowest value at which the DCE may establish a connection: 0 - unspecified
<max_rate>		Specifies the highest value at which the DCE may establish a connection: 0 - unspecified 300..14400 - rate in bps

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	

Example

```
AT+MS=?
(V21,V22,V22B,V23C,V32,V34),(0,1),(0),(0,300-14400)
```

```
OK
AT+MS?
V32,1,0,0
```

```
OK
```

3.1.7. 3GPP 27.007 Call Control

3.1.7.1. Cellular Result Codes - +CRC

Description

This command controls the extended format of incoming call indications.

Syntax



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Command Type	Command	Response / Action
Set	AT+CRC=<mode>	Sets whether or not the extended format for incoming calls is used.
Read	AT+CRC?	Returns the current value of the parameter <mode>.
Test	AT+CRC=?	Reports the supported range of values for <mode>.

Parameters

Parameter	Type	Description
<mode>	Integer	<p><mode></p> <p>0 - disables extended format reporting (default) 1 - enables extended format reporting.</p> <p>When enabled, an incoming call is indicated to the TE with unsolicited result code</p> <p>+CRING: <type></p> <p>instead of the normal RING.</p> <p>where <type> - call type: ASYNC - asynchronous data FAX - facsimile VOICE - normal voice</p>

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	



Example

```
AT+CRC=?
+CRC: (0-1)

OK
AT+CRC?
+CRC: 0

OK
AT+CRC=1
OK
AT+CRC?
+CRC: 1

OK
```

3.1.7.2. Hang Up Call - +CHUP

Description

This command cancels all active and held voice calls, also if a multi-party session is running.

Syntax

Command Type	Command	Response / Action
Execute	AT+CHUP	Ends all active or held voice calls
Test	AT+CHUP=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



Note If +CVHU is set by 1, user have to use this command (instead of ATH) for voice call disconnection

Reference

Example

```
AT+CHUP=?
OK
AT+CHUP
OK
```

3.1.7.3. Voice Hang Up Control - +CVHU

Description

This command controls the behavior on how a voice call will be hung up.

Syntax

Command Type	Command	Response / Action
Set	AT+CVHU=[<mode>]	Selects whether ATH or "drop DTR" shall cause a voice connection to be disconnected or not
Read	AT+CVHU?	Reports the current value of the <mode> parameter, in the format: +CVHU: <mode>
Test	AT+CVHU=?	Reports the range of supported values for parameter <mode>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<mode>	Integer	<p>0 - "Drop DTR" ignored but OK result code given. ATH disconnects.</p> <p>1 - "Drop DTR" and ATH ignored but OK result code given. (factory default)</p> <p>2 - "Drop DTR" behavior according to &D setting. ATH disconnects.</p>
---------------------	---------	--

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT+CVHU=?
+CVHU: (0-2)
```

```
OK
AT+CVHU?
+CVHU: 2
```

```
OK
AT+CVHU=1
OK
```



3.1.8. 3GPP 27.007 Network Service Handling

3.1.8.1. Subscriber Number - +CNUM

Description

This command returns the phone number of the device.

Syntax

Command Type	Command	Response / Action
Execute	AT+CNUM	Returns the phone number of the device has been stored in the EFS in the format: +CNUM: "",<number>,<type>
Test	AT+CNUM=?	Returns the result code OK .

Parameters

Parameter	Type	Description
<number>	string	Phone number in the format <type>
<type>	string	Type of number: 129 - national numbering scheme 145 - international numbering scheme (contains the character "+")

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	In the +CNUM: response they are currently not reported either the <alpha> information (it's always "" before the 1st comma) If the phone number is not available, return the response: +CNUM: "", "", 129



Command Information	Comment
---------------------	---------

Reference

Example

```
AT+CNUM=?
OK
AT+CNUM
+CNUM: "",9139576258,129
OK
```

3.1.8.2. Read Operator's Name - +COPN

Description

This command reports the operator's name.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------

Execute	AT+COPN	Returns the operator's name from the ME in the format:
---------	---------	---

```
+COPN:
<numeric1>,<alpha1>[<CR><LF>
+COPN: <numeric2>,<alpha2>[...]]
```

Note: In case of CDMA, the network name (operator) is not sent by network. And each CDMA carrier's list of operators is confidential and not given out. Therefore, the module only supports two result codes:

+COPN: HOME: If the value of ERI is 1.
+COPN: ROAMING: If the value of ERI is any other value.



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Test AT+COPN=? Returns the result code **OK**.

Parameters

Parameter	Type	Description
<numeric <i>n</i> >	string	operator in numeric format
<alpha <i>n</i> >	string	operator in long alphanumeric format

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```

AT+COPN=?
OK
AT+COPN
+COPN: HOME

OK
    
```



3.1.8.3. Network Registration Report - +CREG

Description

This command reports the registration status of the device.

Syntax

Command Type	Command	Response / Action
Set	AT+CREG=[<mode>]	Enables/disables network registration reports depending on the parameter <mode>.
Read	AT+CREG?	Reports the <mode> and <stat> parameter values. +CREG: <mode>,<stat>[,<SID>] Note: <SID> is reported only if <mode>=2 and the mobile is acquired on some network cell
Test	AT+CREG=?	Returns the supported range of values for <mode>.

Parameters

Parameter	Type	Description
<mode>	Integer	<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 system identification data
<stat>	Integer	If <mode>=1, network registration result code reports: +CREG: <stat> where <stat> 0 - not registered, ME is not currently searching a new



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Parameter	Type	Description
		operator to register to 1 - registered, home network 2 - Reserved 3 - registration denied 4 - Reserved 5 - registered, roaming
		If <mode>=2, network registration result code reports: +CREG: <stat>[,<SID>] where: <SID> - system identification. Note: <SID> is reported only if <mode>=2 and the mobile is acquired on some network cell.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT+CREG=?
+CREG: (0-2)

OK
AT+CREG?
+CREG:0,1
```




```
OK
AT+CREG=1
OK
AT+CREG?
+CREG:1,1
```

```
OK
AT+CREG=2
OK
AT+CREG?
+CREG:2,1,4376
```

```
OK
```

3.1.8.4. Calling Line Identification Presentation - +CLIP

Description

This command enables/disables the presentation of the CLI (Calling Line Identity) at the TE.

Syntax

Command Type	Command	Response / Action
Set	AT+CLIP=<n>	Enables/disables the presentation of the CLI (Calling Line Identity) at the TE. This command refers to the 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.
Read	AT+CLIP?	Returns the presentation status of the CLI in the format: +CLIP: <n>,<m>
Test	AT+CLIP=?	Returns the supported values of parameter <n>



Parameters

Parameter	Type	Description
<n>	Integer	<p>0 - disables CLI indication (factory default) 1 - enables CLI indication</p> <p>If enabled the device reports after each RING the response: +CLIP: <number>,<type>,"",128,<alpha>,<CLI_validity></p> <p>Note: in the +CLIP: response they are currently not reported either the sub-address information (it's always "" after the 2nd comma) and the sub-address type information (it's always 128 after the 3rd comma)</p>
<number>	String	Phone number of format specified by <type>
<type>	Integer	<p>Type of address octet in Integer format</p> <p>128 - both the type of number and the numbering plan are unknown</p> <p>129 - all type of number and ISDN/Telephony numbering plan</p> <p>145 - international type of number and ISDN/Telephony numbering plan (contains the character "+")</p>
<alpha>	String	Alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with command Select TE character set +CSCS
<CLI_validity>	Integer	<p>0 - CLI Presentation allowed 1 - CLI Presentation restricted 2 - CLI is not available</p>
<m>	Integer	2 - unknown



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	For compatibility with UC864, the value of $\langle m \rangle$ is returned
Reference	

Example

```
AT+CLIP=?
+CLIP: (0,1)
```

```
OK
AT+CLIP?
+CLIP:0,2
```

```
OK
AT+CLIP=1
OK
```



3.1.8.5. Calling Line Identification Restriction - +CLIR

Description

This command enables/disables the restriction of the CLI (Calling Line Identity) at the TE.

Syntax

Command Type	Command	Response / Action
Execute	AT+CLIR=[<n>]	<p>Execution command has no effect and is included only for backward compatibility with UC864.</p> <p>For compatibility with UC864, Parameter <n> is available only 0, 1 and 2.</p> <p>Execution command returns the OK result code</p>
Read	AT+CLIR?	For compatibility with UC864, Read command returns +CLIR: 0,2
Test	AT+CLIR=?	For compatibility with UC864, Test command returns +CLIR: {0-2}

Parameters

Parameter	Type	Description
<n>	Integer	

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	For compatibility with UC864, the value of <n> is returned



Command Information	Comment
Reference	

Example

```
AT+CLIR=?
+CLIR: (0-2)

OK
AT+CLIR?
+CLIR: 0,2
```

```
OK
AT+CLIR=1
OK
```

3.1.8.6. Call Waiting - +CCWA

Description

This command controls the presentation of an unsolicited result code of the call waiting supplementary service.

Syntax

Command Type	Command	Response / Action
Set	AT+CCWA=<n>	Sets the presentation of an unsolicited result code of the call waiting supplementary service
Read	AT+CCWA?	Reports the current value of the parameter <n>
Test	AT+CCWA=?	Reports the supported values for the parameter <n>



Parameters

Parameter	Type	Description
<n>	Integer	Enables/disables the presentation of an unsolicited result code: 0 - disable 1 - enable Note: the unsolicited result code enabled by parameter <n> is in the format: +CCWA: <number>,<type>,1,<alpha>,<cli_validity>
<number>	String	Phone number of format specified by <type>
<type>	Integer	Address in Integer format
<alpha>	String	Alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with +CSCS
<CLI_validity>	Integer	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

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	Issuing AT+CCWA<CR> is the same as issuing the Read command. Issuing AT+CCWA=<CR> is the same as issuing the command AT+CCWA=0<CR>

Reference

Example



AT+CCWA=?
+CCWA: (0,1)

OK
AT+CCWA?
+CCWA: 0

OK
AT+CCWA=1
OK

3.1.8.7. Call Holding Service - +CHLD

Description

This command controls the call holding service.

Syntax

Command Type	Command	Response / Action
Execute	AT+CHLD=<n>	Controls the network call hold service

Parameters

Parameter	Type	Description
<n>	Integer	2 - places all active calls (if any exist) on hold and accepts the other (waiting) call

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If no call is active then only OK message is sent



Reference

Example

```
AT+CHLD=2
OK
```

3.1.8.8. List Current Calls - +CLCC

Description

This command returns the list of current calls.

Syntax

Command Type	Command	Response / Action
Execute	AT+CLCC	Returns the list of current calls and their characteristics in the format: [+CLCC:<id1>,<dir>,<stat>,<mode>,<mpty>,<number>,<type>,<alpha>[<CR><LF>+CLCC:<id2>,<dir>,<stat>,<mode>,<mpty>,<number>,<type>,<alpha>[...]]]
Test	AT+CLCC=?	Returns the OK result code

Parameters

Parameter	Type	Description
<id <i>n</i> >	Integer	Call identification number
<dir>	Integer	Call direction 0 - mobile originated call 1 - mobile terminated call
<stat>	Integer	State of the call 0 - active 1 - held 2 - dialing (MO call)



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Parameter	Type	Description
		3 - alerting (MO call) 4 - incoming (MT call) 5 - waiting (MT call)
		Note: 3(alerting) and 5(waiting) are not supported for CC864-DUAL.
<mode>	Integer	Call type 0 - voice 1 - data 2 - fax 9 - unknown
<mpty>	Integer	Multiparty call flag 0 - call is not one of multiparty (conference) call parties
<number>	String	Phone number in format specified by <type>
<type>	Integer	Type of phone number octet in Integer format 129 - national at numbering scheme 145 - international numbering scheme (contains the character "+")
<alpha>	String	Alphanumeric representation of <number> corresponding to the entry found in phonebook; used character set should be the one selected with +CSCS

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If no call is active then only OK message is sent.
Reference	

Example



```
AT+CLCC=?
OK
ATD8888469773;
OK
AT+CLCC
+CLCC: 1,0,0,0,0,"8888469773",129,""
```

```
OK
ATH
OK
```

```
NO CARRIER
```

3.1.9. 3GPP 27.007 Mobile Equipment Control

3.1.9.1. Phone Activity Status - +CPAS

Description

This command reports the device status.

Syntax

Command Type	Command	Response / Action
Execute	AT+CPAS	+CPAS:<pas> OK
Test	AT+CPAS=?	Test command reports the supported range of values for <pas>.



Parameters

Parameter	Type	Description
<pas>	Integer	Phone activity status 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)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT+CPAS=?
+CPAS: (0-4)

OK
AT+CPAS
+CPAS: 0
```



```
OK
ATD1231231234
OK
AT+CPAS
+CPAS: 4
```

```
OK
```

3.1.9.2. Set Phone Functionality - +CFUN

Description

This command sets the level of functionality of the device.

Syntax

Command Type	Command	Response / Action
Set	AT+CFUN=<fun>	Selects the level of functionality.
Read	AT+CFUN?	Reports the current setting of <fun>.
Test	AT+CFUN=?	Returns the list of supported values for <fun> and <rst>.

Parameters

Parameter	Type	Description
<fun>	Integer	<p>Power saving function mode</p> <p>0 - minimum functionality, NON-CYCLIC SLEEP mode: in this mode, the AT interface is not accessible. Consequently, once you have set <fun> level 0, do not send further characters. Otherwise these characters remain in the input buffer and may delay the output of an unsolicited result code. The first wake-up event stops power saving and takes the ME back to full functionality level <fun>=1.</p> <p>1 - mobile full functionality with power saving disabled (factory default)</p> <p>2 - disable TX</p> <p>4 - disable both TX and RX</p>



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Parameter	Type	Description
<rst>	Integer	5 - mobile full functionality with power saving enabled Reset flag 0 - It is included only for backwards compatibility

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	<p>If power saving enabled, it reduces the power consumption during the idle time, thus allowing a longer standby time with a given battery capacity.</p> <p>To place the module in power saving mode, set the <fun> parameter at value = 0 or 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.</p> <p>During the power saving condition, before sending any AT command on the serial line, the DTR must be enabled and it must be waited for the CTS (RS232) line to go in ON status.</p> <p>Until the DTR line is ON, the module will not return back in the power saving condition.</p> <p>The power saving function does not affect the network behavior of the MODULE except <fun> =2 and <fun> =1, even during the power save condition the module remains registered on the network and reachable for incoming calls or SMS. If call incomes during the power save, then the module will wake up and proceed normally with the unsolicited incoming call code.</p> <p>Disabling the TX (+CFUN=2) allows the device to still “see” the available network(s), but the device will not respond to any pages or interact with the network.</p>
Reference	3GPP TS 27.007



Example

```
AT+CFUN=?
+CFUN: (0,1,2,4,5),(0)
```

```
OK
AT+CFUN?
+CFUN: 1,0
```

```
OK
AT+CFUN=4
OK
AT+CFUN?
+CFUN: 4,0
```

```
OK
AT+CFUN=1
OK
AT+CFUN?
+CFUN: 1,0
```

```
OK
```

3.1.9.3. Signal Quality - +CSQ

Description

This command reports received signal quality indicators.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	AT+CSQ	+CSQ:<rssi>,<fer>
		OK
Test	AT+CSQ=?	Test command returns the supported range of values of the parameters <rssi> and <fer>.

Parameters

Parameter	Type	Description
<rssi>	Integer	Received signal strength indication 0 - (-113) dBm or less 1 - (-111) dBm 2...30 - (-109)dBm..(-53)dBm / 2 dBm per step 31 - (-51)dBm or greater 99 - not known or not detectable
<fer>	Integer	Frame error rate (in percent) 0 - less than 0.01% 1 - 0.01% to 0.1% 2 - 0.1% to 0.5% 3 - 0.5% to 1.0% 4 - 1.0% to 2.0% 5 - 2.0% to 4.0% 6 - 4.0% to 8.0% 7 - more than 8.0% 99 - not known or not detectable

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	CC864-DUAL always return frame error rate as unknown.



Reference

Example

```
AT+CSQ=?
+CSQ: (0-31,99),(99)

OK
AT+CSQ
+CSQ: 17,99 <-- Rssi: -80dBm~-78dBm

OK
```

3.1.9.4. Select Phonebook Memory Storage - +CPBS

Description

This command selects the phonebook memory storage that will be used by the other phonebook commands.

Syntax

Command Type	Command	Response / Action
Set	AT+CPBS=<storage>	Selects phonebook memory storage <storage> , which will be used by other phonebook commands.
Read	AT+CPBS?	Returns the actual values of the parameter <storage> , the number of occupied records <used> and the maximum index number <total> , in the format: +CPBS: <storage>,<used>,<total>
Test	AT+CPBS=?	Returns the supported range of values for the parameters <storage> .

Parameters



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Parameter	Type	Description
<storage>	String	"ME" – EFS phonebook (factory default) "DC" – ME originated call list "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)
<used>	Integer	Number of occupied records
<total>	Integer	Maximum index number. The default is 200.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If <storage> is "ME", then an initial value of <used> is 1 because module's own phone number always occupies index 1 of records.
Reference	

Example

```

AT+CPBS=?
+CPBS: ("ME","DC","MC","RC")

OK
AT+CPBS?
+CPBS: "ME",1,200

OK
AT+CPBS="DC"

OK
    
```





3.1.9.5. Read Phonebook Entries - +CPBR

Description

This command returns information regarding the queried phonebook entry location.

Syntax

Command Type	Command	Response / Action
Execute	AT+CPBR=<index1> [,<index2>]	<p>Returns phonebook entries in location number range <index1>..<index2> from the current phonebook memory storage selected with +CPBS. If <index2> is omitted, only location <index1> is returned</p> <p>If the storage is "ME" then the response format is:</p> <p>[+CPBR: <index1>,<number>,<type>,<text>,<e_text> >[<CR><LF> +CPBR: <index2>,<number>,<type>,<text>,<e_text> >[...]]]</p> <p>If the storage is "DC" and "RC" then the response format is:</p> <p>[+CPBR: <index1>,<number>,<type>,<text>,<time>,<duration> >[<CR><LF> +CPBR: <index2>,<number>,<type>,<text>,<time>,<duration> >[...]]]</p> <p>If the storage is "MC" then the response format is:</p> <p>[+CPBR: <index1>,<number>,<type>,<text>,<time> >[<CR><LF> +CPBR: <index2>,<number>,<type>,<text>,<time> >[...]]]</p>
Test	AT+CPBR=?	Returns the supported range of values for parameters



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Command Type	Command	Response / Action
		<p><index<i>n</i>> and the maximum lengths of <number> and <text> fields, in the format:</p> <p>+CPBR: (<minIndex> - <maxIndex>),<nlength>,<tlength></p>

Parameters

Parameter	Type	Description
<index1>	Integer	Value in the range of location numbers of the currently selected phonebook memory storage (see +CPBS)
<index2>	Integer	Value in the range of location numbers of the currently selected phonebook memory storage (see +CPBS)
<index<i>n</i>>	Integer	Location number of the phonebook entry
<number>	String	Phone number of format <type>
<type>	Integer	Type of phone number octet in Integer format 129 - national numbering scheme 145 - international numbering scheme (contains the character "+")
<text>	String	The alphanumeric text associated to the number; used character set should be the one selected with command +CSCS
<e_text>	String	Email alphanumeric text; used character set should be the one selected with command +CSCS
<time>	Integer	Date and time in clock seconds
<duration>	Integer	Duration of the call
<minIndex>	Integer	The minimum <index> number
<maxIndex>	Integer	The maximum <index> number
<nlength>	Integer	Maximum <number> field length
<tlength>	Integer	Maximum <name> field length



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	<p>If all queried locations are empty (but available), no information text lines will be returned, while if listing fails in an ME error, +CME ERROR: <err> is returned</p> <p>Remember to select the PB storage with +CPBS command before issuing PB commands.</p>

Reference

Example

```
AT+CPBR=?
+CPBR: (1-200),36,20
```

```
OK
```



Parameter	Type	Description
<tlength>	Integer	Maximum length of field <text>

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	<p>+CPBF is not applicable if the current selected storage (see +CPBS) is either "MC", either "RC" or "DC".</p> <p>If <findtext>="" the command returns all the phonebook records.</p> <p>If no PB records satisfy the search criteria then an ERROR message is reported.</p> <p>Remember to select the PB storage with +CPBS command before issuing PB commands.</p>

Reference

Example

```

AT+CPBF=?
+CPBF: 36,20

OK
AT+CPBW=2,"18888469773",129,"Telit NA",
OK
AT+CPBF="Telit"
+CPBF: 2,"18888469773",129,"Telit NA", ""

OK

```



3.1.9.7. Write Phonebook Entry - +CPBW

Description

This command writes phonebook entry in a specified location number.

Syntax

Command Type	Command	Response / Action
Execute	AT+CPBW=[<index>] [,<number> [,<type> [,<text> [,<e_text>]]]]	Writes phonebook entry in location number <index> in the current phonebook memory storage selected with +CPBS
Test	AT+CPBW=?	Returns location range supported by the current storage as a compound value, the maximum length of <number> field, supported number format of the storage and maximum length of <text> field. The format is: +CPBW: (<minIndex> - <maxIndex>),<nlength>,(128-255),<tlength>

Parameters

Parameter	Type	Description
<index>	Integer	Value in the range of location numbers of the currently selected phonebook memory storage (see +CPBS)
<number>	String	Phone number of format <type>
<type>	Integer	The type number 129 - national numbering scheme 145 - international numbering scheme (contains the character "+")
<text>	String	The text associated to the number used character set should be the one selected with command +CSCS
<e_text>	String	Email alphanumeric text; used character set should be the one selected with command +CSCS



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Parameter	Type	Description
<minIndex>	Integer	The minimum <index> number
<maxIndex>	Integer	The maximum <index> number
<nlength>	Integer	Maximum length of field <number> ,
<tlength>	Integer	Maximum length of field <text>

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	<p>If record number <index> already exists, it will be overwritten.</p> <p>If either <number>, <type>, <text> and <e_text> are omitted, the phonebook entry in location <index> is deleted.</p> <p>In CC864-DUAL case, the index 1 has been always occupied by own phone number. So to change index 1 you have to change the own phone number. If AT+CPBW=1 is executed, the module will return "ERROR" result code.</p> <p>If either "DC", "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.</p> <p>If <index> is omitted or <index>=0, the number <number> is stored in the first free phonebook location.</p> <p>Remember to select the PB storage with +CPBS command before issuing PB commands.</p>

Reference



Example

```
AT+CPBW=?
+CPBW: (1-200),36,(128-255),20

OK
AT+CPBW=2,"18888469773",129,"Telit NA",
OK
```

3.1.9.8. Clock Management - +CCLK

Description

This command sets the real-time clock of the ME.

Syntax

Command Type	Command	Response / Action
Set	AT+CCLK[=<time>]	OK (sets the real-time clock of the ME)
Read	AT+CCLK?	Returns the current setting of the real-time clock Note: the three last characters of <time> are not returned by +CCLK? because the ME doesn't support time zone information
Test	AT+CCLK=?	OK.

Parameters

Parameter	Type	Description
-----------	------	-------------



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<time>	Integer	<p>Current time as quoted string in the format: "yy/MM/dd,hh:mm:ss±zz"</p> <p>yy - year (two last digits are mandatory), range is 00..99</p> <p>MM - month (two last digits are mandatory), range is 01..12</p> <p>dd - day (two last digits are mandatory), range is 01..31 (if the month MM has less than 31 days, the clock will be set for the next month)</p> <p>hh - hour (two last digits are mandatory), range is 00..23</p> <p>mm - minute (two last digits are mandatory), range is 00..59</p> <p>ss - seconds (two last digits are mandatory), range is 00..59</p> <p>±zz - time zone (indicates the difference, expressed in quarter of an hour,</p>
---------------------	---------	--



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	Displays time from RTC Module in PIMC
Reference	

Example

```

AT+CCLK=?
OK
AT+CCLK?
+CCLK: "80/01/08,23:07:21"

OK
AT+CCLK="08/08/25,11:55:45+00"
OK
    
```



3.1.9.9. Alarm Management - +CALA

Description

This command stores an alarm time with respective settings in the internal Real Time Clock. It is possible to set up a recurrent alarm for one or more days in the week.

Currently just one alarm can be set.

When the RTC time reaches the alarm time then the alarm starts, the behavior of the MODULE depends upon the setting **<type>** and if the device was already ON at the moment when the alarm time had come.

Syntax

Command Type	Command	Response / Action
Set	AT+CALA= " <time>"[,<n>[,<type> [, " <text>"[, " <recurr>" [, <silent>]]]]	OK (alarm time is stored)
Read	AT+CALA?	Returns the list of current active alarm settings in the ME, in the format: [+CALA: <time>,<n>,<type>[,<text>],<recurr>,<silent>]
Test	AT+CALA=?	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



Parameters

Parameter	Type	Description
<time>	Integer	Current alarm time as quoted string in the same format as defined for +CCLK command (i.e. "yy/MM/dd,hh:mm:ss±zz"), unless the <recurr> parameter is used: in this case <time> must not contain a date (i.e. "hh:mm:ss±zz")
<n>	Integer	index of the alarm 0 - The only value supported is 0.
<type>	string	alarm behavior 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. 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 90s time-out occurs. If the device is in "alarm mode" and it does not receive the #WAKE command within 90s then it shuts down. (default) 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 90s 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 90s time-out



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Parameter	Type	Description
		occurs. 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>	string	Unsolicited alarm code text string. It has meaning only if <type> is equal to 2 or 5 or 6. Text string can be at most 20 characters.
<recurr>	string	- 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. Note: The maximum string length is 13, which is enough to cover all 7 days of a week, example "1,2,3,4,5,6,7"
<silent>	Integer	Indicates if the alarm is silent or not. 0 - the alarm will not be silent; 1 - the alarm will be silent. 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 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.



Example

No text and No recurrence

```
AT+CALA="08/07/14,18:43:00+00",0,1
```

```
OK
```

```
AT+CALA?
```

```
+CALA: "08/07/14,18:43:00",0,1,, "",0
```

```
OK
```

```
AT+CALA="08/07/14,18:44:00+00",0,1, ""
```

```
OK
```

```
AT+CALA?
```

```
+CALA: "08/07/14,18:44:00",0,1,, "",0
```

No recurrence with Text

```
AT+CALA="08/07/14,18:45:00+00",0,2,"TEST1", "",1
```

```
OK
```

```
AT+CALA?
```

```
+CALA: "08/07/14,18:45:00",0,2,"TEST1", "",1
```

```
OK
```

Recurrence with Text

```
AT+CALA="18:46:00+00",0,2,"TEST2", "1,3,5",0
```

```
OK
```

```
AT+CALA?
```

```
+CALA: "08/07/14,18:46:00",0,2,"TEST2", "1,3,5",0
```



OK

3.1.9.10. Delete Alarm - +CALD

Description

This command deletes an alarm in the ME.

Syntax

Command Type	Command	Response / Action
Execute	AT+CALD=<n>	OK (alarm is deleted in the ME)
Test	AT+CALD=?	It reports the range of supported values for <n> parameter.

Parameters

Parameter	Type	Description
<n>	Integer	alarm index 0

Example

```
AT+CCLK?
+CCLK: "08/07/15,15:46:41"

OK
AT+CALA="08/07/15,15:50:00+00"
OK
AT+CALA?
+CALA: "08/07/15,15:50:00",0,2,, "",0

OK
AT+CALD=?
+CALD: {0}
```



OK
AT+CALD=0
OK
AT+CALA?
OK

3.1.9.11. Alarm Sound Mode - +CALM

Description

This command is used to select the general alert sound mode.

Syntax

Command Type	Command	Response / Action
Set	AT+CALM=<mode>	Is used to select the general alert sound mode of the device
Read	AT+CALM?	Returns the current value of parameter <mode>
Test	AT+CALM=?	Returns the supported values for the parameter <mode> as compound value:
		+CALM: {0-2}

Parameters

Parameter	Type	Description
<mode>	Integer	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

Miscellaneous



Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If silent mode is selected then incoming calls will not produce alerting sounds but only the unsolicited messages RING or +CRING
Reference	3GPP TS 27.007

Example

```
AT+CALM=?
+CALM: (0-2)
```

```
OK
AT+CALM?
+CALM: 0
```

```
OK
AT+CALM=2
OK
```

3.1.9.12. Ringer Sound Level - +CRSL

Description

This command is used to select the incoming call ringer sound level.

Syntax

Command Type	Command	Response / Action
Set	AT+CRSL=<level>	Is used to select the incoming call ringer sound level of the device.
Read	AT+CRSL?	Reports the current <level> setting of the call ringer in the format: +CRSL: <level>



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Test AT+CRSL=? Reports <level> supported values as compound value.

Parameters

Parameter	Type	Description
<level>	Integer	Ringer sound level 0 – Off 1 – low 2 – middle 3 – high 4 – progressive

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	3GPP TS 27.007

Example

AT+CRSL=?
+CRSL: (0-4)

OK
AT+CRSL?
+CRSL: 3

OK
AT+CRSL=2
OK



3.1.9.13. Loudspeaker Volume Level - +CLVL

Description

This command is used to select the volume of the internal loudspeaker audio output.

Syntax

Command Type	Command	Response / Action
Set	AT+CLVL=<level>	Is used to select the volume of the internal loudspeaker audio output of the device.
Read	AT+CLVL?	Reports the current <level> setting of the loudspeaker volume in the format: +CLVL: <level>
Test	AT+CLVL=?	Reports <level> supported values as compound value.

Parameters

Parameter	Type	Description
<level>	Integer	Loudspeaker volume 0..14

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	3GPP TS 27.007

Example

```
AT+CLVL=?
+CLVL: (0-14)
```



```
OK
AT+CLVL?
+CLVL: 10
```

```
OK
AT+CLVL=7
OK
```

3.1.9.14. Microphone Mute Control - +CMUT

Description

This command is used to enable/disable the muting of the microphone audio line.

Syntax

Command Type	Command	Response / Action
Set	AT+CMUT=<n>	Used to enable/disable the muting of the microphone audio line during a voice call
Read	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>
Test	AT+CMUT=?	Reports <n> supported values as compound value.

Parameters

Parameter	Type	Description
<n>	Integer	0 – mute off, microphone active (factory default) 1 – mute on, microphone muted

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This command mutes/activates both microphone audio paths; internal mic and external mic.
Reference	3GPP TS 27.007

Example

```
AT+CMUT=?
+CMUT: (0,1)
```

```
OK
AT+CMUT?
+CMUT: 0
```

```
OK
AT+CMUT=1
OK
```

3.1.9.15. Available AT Commands - +CLAC

Description

This command returns all of the commands that are available for the user.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	AT+CLAC	Execution command causes the ME to return the AT commands that are available for the user, in the following format: <AT cmd1>[<CR><LF><AT cmd2>[...]] where: <AT cmd<i>n</i>> - defines the AT command including the prefix AT
Test	AT+CLAC=?	Returns the OK result code.

Example

```
AT+CLAC=?
OK
```

3.1.10. Mobile Equipment Errors

3.1.10.1. Report Mobile Equipment Error - +CMEE

Description

This command enables/disables the report of result code:

+CME ERROR: <err> as an indication of an error relating to the **+Cxxx** commands issued.

Syntax

Command Type	Command	Response / Action
Set	AT+CMEE=[<n>]	Enabled (report of the result code is made) Disabled When enabled, device related errors cause the +CME ERROR: <err> final result code instead of the default ERROR final result code. ERROR is anyway returned normally when the error message is related to syntax, invalid parameters, or DTE functionality.



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Read	AT+CMEE?	It returns the current value of sub-parameter <n>: +CMEE: <n> .
Test	AT+CMEE=?	It returns the range of values for sub-parameter <n>

Parameters

Parameter	Type	Description
<n>	Integer	0 - disable +CME ERROR:<err> reports, use only ERROR report. 1 - enable +CME ERROR:<err> reports, with <err> in numeric format 2 - enable +CME ERROR: <err> reports, with <err> in verbose format

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	+CMEE has no effect on the final result code +CMS .
Reference	3GPP TS 27.007

Example

```
AT+CMEE=?
+CMEE: (0,1,2)

OK
AT+CMEE?
+CMEE: 0
```



OK
AT+CMEE=1
OK

3.1.10.2. Error Control Selection - +ES

Description

This command is used to control the manner of operation of the V.42 protocol in the modem.

Syntax

Command Type	Command	Response / Action
Set	AT+ES=<orig_req>,<orig_fallback>,<ans_fallback>	Sets V.42 error control parameter's values
Read	AT+ES?	Reports V.42 error control setting value in the format: <orig_req>,<orig_fallback>,<ans_fallback>
Test	AT+ES=?	Returns the range of values for Error control
Execute	AT+ES	Returns the OK result code

Parameters

Parameter	Type	Description
<orig_req>	Integer	Specifies the initial request mode of operation when originating a call. (Default : 3) 0 - Direct Mode 1 - Initiate call with Buffer mode only 2 - Initiate V.42 without Detection phase. If V.8 is in use, this is a request to disable V.42 Detection Phase 3 - Initiate V.42 with Detection Phase 4 - Initiate Alternative Protocol



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AT+ES
OK
AT+ES=?
+ES: (0-4),(0-4),(0-6)

OK

AT+ES?
+ES: 3,0,2

OK



3.1.11. 3GPP 27.007 Voice Control

3.1.11.1. DTMF Tones Transmission - +VTS

Description

This command allows the transmission of DTMF Tones.

Syntax

Command Type	Command	Response / Action
Execute	+VTS=<dtmfstring> [,<duration>]	OK ERROR
Test	+VTS=?	Provides the list of supported <dtmf>s and the list of supported <duration>s in the format: (list of supported <dtmf>s)[,(list of supported <duration>s)]

Parameters

Parameter	Type	Description
<dtmfstring>	String	String of <dtmf>s , i.e. ASCII characters in the set (0-9), #,* the string can be a <dtmf>s long; it allows the user to send a sequence of DTMF tones, each of them with a duration that was defined through +VTD command.
<duration>	Integer	Can be specified only if the length of first parameter is just one ASCII character 0..5 - a single DTMF tone will be transmitted for a duration depending on the network, no matter what the current +VTD setting is.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



Reference 3GPP 27.007 (R99)

Example

```
AT+VTS=?
+VTS: (0-9,#,*,A-D),(0-5)
```

```
OK
```

3.1.11.2. DTMF Tone Duration - +VTD

Description

This command sets the length of tones transmitted with the **+VTS** command.

Syntax

Command Type	Command	Response / Action
Set	+VTD=<duration>	OK ERROR
Read	+VTD?	Reports the current Tone Duration, in the format: +VTD: <duration>
Test	+VTD=?	Provides the list of supported <duration>s in the format: (list of supported <duration>s)

Parameters

Parameter	Type	Description
-----------	------	-------------



<duration>	Integer	Duration of a tone
		0 – 95ms
		1 – 150ms
		2 – 200ms
		3 – 250ms
		4 – 300ms
		5 – 350ms

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP 27.007 (R99)

Example

```
AT+VTD=?
+VTD: (0-5)
```

```
OK
AT+VTD?
+VTD: 0
```

```
OK
AT+VTD=1
OK
```

3.1.12. Battery Charger AT Commands

3.1.12.1. Battery Charge - +CBC

Description

This command returns the current Battery Charge status in the format: **+CBC:** **<bcs>**,**<bcl>**



Syntax

Command Type	Command	Response / Action
Execute	AT+CBC	Returns the current Battery Charge status
Test	AT+CBC=?	It returns parameter values supported as a compound value. +CBC: (0-3),(0-100)

Parameters

Parameter	Type	Description
<bc>	Integer	<p>battery status</p> <p>0 - ME is powered by the battery</p> <p>1 - ME has a battery connected, and charger pin is being powered</p> <p>2 - ME does not have a battery connected</p> <p>3 - Recognized power fault, calls inhibited</p> <p>Note: <bc>=1 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.</p>
<bcl>	Integer	<p>battery charge level</p> <p>0 - battery is exhausted, or ME does not have a battery connected</p> <p>25 - battery charge remained is estimated to be 25%</p> <p>50 - battery charge remained is estimated to be 50%</p> <p>75 - battery charge remained is estimated to be 75%</p> <p>100 - battery is fully charged</p> <p>Note: without battery/power connected on VBATT pins or during a power fault the unit is not working, therefore values <bc>=2 and <bc>=3 will never appear.</p>

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable



Execution Time

Executed immediately, not time critical.

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.

Example

AT+CBC=?
+CBC: (0-3),(0-100)

OK
AT+CBC
+CBC: 0,75
OK

3.1.12.2. Battery and Charger Status - #CBC

Description

This command returns the current Battery and Charger state in the format:

#CBC: <ChargerState>,<BatteryVoltage>

Syntax

Command Type	Command	Response / Action
Execute	AT#CBC	Returns the current Battery Charge status
Test	AT#CBC=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



<ChargerState>	Integer	<p>battery charger state</p> <p>0 - charger not connected</p> <p>1 - charger connected and charging</p> <p>2 - charger connected and charge completed</p> <p>Note: <bcs>=1 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.</p>
<BatteryVoltage>	Integer	<p>Battery voltage in milli-volt: it is the real battery voltage only if charger is not connected; if the charger is connected this value depends on the charger voltage.</p>

Example

```
AT#CBC=?
OK
AT#CBC
#CBC: 0,395

OK
```

3.1.13. FAX Control AT Commands

3.1.13.1. Select Active Service Class – +FCLASS

Description

This command sets the wireless module in specified connection mode (data, fax, voice), therefore all the calls done afterwards will be data or voice.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Set	AT+FCLASS=<n>	Sets the wireless module in specified connection mode
Read	AT+FCLASS?	Returns current active service class without command echo.
Test	AT+FCLASS=?	Gives a list of values for parameter <n>

Parameters

Parameter	Type	Description
<n>	Integer	0 - data 1 - fax class 1 2.0 – fax class 2.0 8 - voice For CC864-DUAL, fax class 2.0 is supported As the parameter for CC864-DUAL: 0 – data or voice 1 – dummy values(OK returned, but not set) 2.0 – fax class 2.0 8 – dummy values(OK returned, but not set)

Example

```

AT+FCLASS=?
0,1,2.0,8

OK
AT+FCLASS?
0

OK
AT+FCLASS=2.0
OK
AT+FCLASS=8
OK
AT+FCLASS?
  
```



2.0

OK

3.1.13.2. Flow Control Specified by Type - +FLO

Description

This command sets the flow control behavior of the serial port in both directions: from **DTE** to **DTA** and from **DTA** to **DTE** without command echo.

Syntax

Command Type	Command	Response / Action
Set	AT+FLO=<type>	Sets the flow control for the data.
Read	AT+FLO?	Returns the current flow control setting.
Test	AT+FLO=?	Gives a list of values for parameter <type>

Parameters

Parameter	Type	Description
<type>	Integer	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

Miscellaneous

Command Information	Comment
Reference	ITU T.31 and TIA/EIA-578-A specifications
Note:	This command is a shortcut of the +IFC command. +FLO 's settings are functionally a subset &K 's ones.

Example

AT+FLO=?



(0-2)

OK

AT+FLO

OK

AT+FLO=0

OK

AT+FLO?

0

OK

3.1.13.3. Fax Compression - +CFC

Description

This command sets the fax compression type.

Syntax

Command Type	Command	Response / Action
Set	AT+CFC=<com_type>	Sets compression type
Read	AT+CFC?	Reports compression type in the format: <com_type>
Execute	AT+CFC	Returns the OK result code
Test	AT+CFC=?	Returns the range of values for fax compression

Parameters

Parameter	Type	Description
-----------	------	-------------



<com_type>	Integer	Compression type 0 – No compression 1 – V.42bis compression 2 – Modified the Modified Read compression
-------------------------	---------	---

Miscellaneous

Command Information	Comment
Reference	
Note:	Current QUALCOMM mobile does not support V.42bis compression. Mobile will only accept 0 as a valid parameter.

Example

AT+CFC=?
+CFC: (0)

OK

AT+ CFC?
+CFC: 0

OK
AT+CFC
OK

3.1.13.4. Multiplexing Mode - +CMUX

Description

This command is used to enable/disable the 3GPP 27.010 multiplexing protocol control channel.

Syntax

Command Type	Command	Response / Action
Set	AT+CMUX=<mode>	Used to enable/disable the 3GPP 27.10 multiplexing protocol control channel.



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Set	AT+CMUX=<fwd>,<rev>	<p>Used for setting the number of forward and reverse links for data calls and to indicate whether or not default service is Rate Set 1 or Rate Set 2.</p> <p>Odd multiplex (both <fwd> and <rev> are odd numbers) indicates Rate Set 1. Even multiplex (both <fwd> and <rev> are even numbers) indicates Rate Set 2.</p>
Read	AT+CMUX?	<p>Reports the current settings.</p> <p>+CMUX: <fwd>,<rev></p>
Test	AT+CMUX=?	<p>Returns the supported range of values for parameter.</p> <p>+CMUX: {1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, F, 0},{1, 2}</p>

Parameter

Parameter	Type	Description
<mode>	Integer	Multiplexer transparency mechanism 0 - basic option; it is currently the only supported value.
<fwd>		the forward MUX option specified in hexadecimal format: 1~F
<rev>		the reverse MUX option specified in hexadecimal format: 1~2

Miscellaneous

Command Information	Comment
---------------------	---------



3.1.14. Cellular Identification AT Command Extensions

3.1.14.1. Manufacture Identification – +CGMI

Description

This command returns the device manufacturer identification code without command echo.

Syntax

Command Type	Command	Response / Action
Execute	AT+CGMI	Returns the device manufacturer identification code without command echo.
Test	AT+CGMI=?	OK

Example

AT+CGMI=?

OK

AT+CGMI

Telit

OK

3.1.14.2. Model Identification – +CGMM

Description

This command returns the model identification without command echo.

Syntax

Command Type	Command	Response / Action
Execute	+CGMM	<id> OK



Test	+CGMM=?	OK
------	---------	----

Parameters

Parameter	Type	Description
<id>	String	Model identification string (CC864-DUAL).

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP 27.007 (R99)

Example

```
AT+CGMM=?
OK
AT+CGMM
CC864-DUAL

OK
```

3.1.14.3. Revision Identification – +CGMR

Description

This command returns the software revision identification without command echo.

Syntax

Command Type	Command	Response / Action
Execute	+CGMR	<rev> OK
Test	+CGMR=?	OK

Parameters



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Command Type	Command	Response / Action
Set	+CSCS=<chest>	Set command sets the current character set used by the device.
Read	+CSCS?	Read command returns the current value of the active character set.
Test	+CSCS=?	Test command returns the supported values for parameter <chset>.

Parameters

Parameter	Type	Description
<chset>	String	Character Set "IRA" – international reference alphabet (ITU-T T.50)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	
NOTE	Only IRA is supported.

Example

```
AT+CSCS=?
+CSCS: ("IRA")
```

```
OK
AT+CSCS?
+CSCS: "IRA"
```

```
OK
AT+CSCS="IRA"
OK
```



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

Description

This command returns the value of the Internal Mobile Subscriber Identity stored in the device.

Syntax

Command Type	Command	Response / Action
Execute	+CIMI	Execute command returns the IMSI stored in the device.
Test	+CIMI=?	Test command returns OK result code

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	3GPP TS 27.007
NOTE	

Example

```
AT+CIMI=?
OK
AT+CIMI
+CIMI: 310001234567890

OK
```



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<mt>	Integer	Mobile terminated messages support 0 - type not supported 1 - type supported (factory default)
<mo>	Integer	Mobile originated messages support 0 - type not supported 1 - type supported (factory default)
<bm>	Integer	Broadcast type messages support 0 - type not supported 1 - type supported (factory default)

Example

```

AT+CSMS=?
+CSMS: (0-2)

OK
AT+CSMS=2
+CSMS: 1,1,0

OK
AT+CSMS?
+CSMS: 2,1,1,0

OK
    
```

3.1.15.2. Preferred Message Storage – +CPMS

Description

This command selects memory storages <memr>, <memw> to be used for reading, writing, sending and storing SMS.

The command returns the memory storage status in the format:



+CPMS: <usedr>,<totalr>,<usedw>,<totalw>

Syntax

Command Type	Command	Response / Action
Set	AT+CPMS=<memr> [,<memw>]	Command selects the memory storage to be used for SMS
Read	AT+CPMS?	Reads command reports the message storage status in the format: +CPMS: <memr>,<usedr>,<totalr>,<memw>,<usedw>,<totalw>
Test	AT+CPMS=?	Reports the supported values for parameters <memr> , <memw>

Parameters

Parameter	Type	Description
<memr>	Integer	memory from which messages are read and deleted ME – SMS memory storage into module (default)
<memw>	Integer	memory to which writing, sending and receiving operations are made ME – SMS memory storage into module Flash
<usedr>	Integer	number of SMS stored into <memr>
<totalr>	Integer	max number of SMS that <memr> can contain
<usedw>	Integer	number of SMS stored into <memw>
<totalw>	Integer	max number of SMS that <memw> can contain

Example

```
AT+CPMS=?
+CPMS: ("ME","MT"),("ME","MT")
```



OK
AT+CPMS?
+CPMS: "MT",5,99,"MT",5,99

OK
AT+CPMS="ME","ME"
+CPMS: 5,99,5,99

OK
AT+CPMS?
+CPMS: "ME",5,99,"ME",5,99

OK

3.1.15.3. Message Format - +CMGF

Description

This command selects the format of messages used with send, list, read and write commands.

Syntax

Command Type	Command	Response / Action
Set	AT+CMGF= [<mode>]	<mode> Selects the format of messages
Read	AT+CMGF?	Reports the current value of the parameter <mode>
Test	AT+CMGF=?	Reports the supported value of <mode>parameter.

Parameters

Parameter	Type	Description
-----------	------	-------------



<mode> Integer
0 - PDU mode (factory default)
1 - Text mode

Example

AT+CMGF=?
+CMGF: (0-1)

OK
AT+CMGF?
+CMGF: 0

OK
AT+CMGF=1
OK
AT+CMGF?
+CMGF: 1

OK

3.1.15.4. Set Text Mode Parameters - +CSMP

Description

This command is used to select values for additional parameters for storing and sending SMS when the text mode is used (**AT+CMGF=1**)

Syntax

Command Type	Command	Response / Action
Set	AT+CSMP= [<callback_addr> [,<tele_id > [,<priority> [,<enc_type >]]]]	Select values for additional parameters Note: the current settings are stored through +CSAS



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Read	AT+CSMP?	Reports the current setting in the format: +CSMP: < callback_addr >,< tele_id >,< priority >,< enc_type >
Test	AT+CSMP=?	Returns the result code OK

Parameters

Parameter	Type	Description
<callback_addr>	String	<p>Callback address</p> <p>Note: The maximum length is different with every carrier. In case of Sprint and Aeris.Net: Maximum length is 32 characters In case of Verizon: Maximum length is 20 characters</p>
<tele_id>	Integer	<p>Teleservice ID</p> <p>4097 - page 4098 - SMS message (factory default)</p>
<priority>	Integer	<p>Priority</p> <p>Note: The priority is different with every carrier. In case of Sprint and Aeris.Net: 0 - Normal (factory default) 1 - Interactive 2 - Urgent 3 - Emergency</p> <p>In case of Verizon: 0 - Normal (factory default) 1 - High</p>
<enc_type>	Integer	<p>message index</p> <p>0 - 8-bit Octet (Sprint/AERIS factory default) 2 - 7-bit ASCII [Verizon factory default] 4 - 16-bit Unicode (Sprint does not support)</p>



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Parameter	Type	Description
<show>	Integer	<p>0 - do not show header values (<tooa>, <tele_id>, <priority>, <enc_type>, <length>) in +CMT, +CMGL, +CMGR result codes for SMS-DELIVERs and SMS-SUBMITs in text mode.</p> <p>For SMS-COMMANDs in +CMGR result code does not show <tooa>, <tele_id>, <priority>, <enc_type>, <length> and <data>. (factory default)</p> <p>1 - show the values in result codes</p>

Example

```

AT+CSDH=1
OK
AT+CMGL="ALL"
+CMGL: 4,"REC UNREAD","", "01196529157",20080819190757,,4098,0,0,19
TEST MESSAGE
+CMGL: 0,"STO SENT", "0123456789", "0123456789",,,4098,0,0,13
Test Message
+CMGL: 2,"STO SENT", "0123456789", "0123456789",,,4098,0,0,10
TEST TEST
+CMGL: 3,"STO SENT", "01196529157", "01196529157",,,4098,0,0,19
TEST MESSAGE
+CMGL: 1,"STO UNSENT", "123123", "",,,4098,0,0,13
TEST MESSagE

OK
AT+CSDH?
+CSDH: 1

OK
AT+CSDH=0
OK
AT+CMGL="ALL"
+CMGL: 4,"REC READ","", "01196529157",20080819190757

```



```
+CMGL: 0,"STO SENT","0123456789","0123456789",
+CMGL: 2,"STO SENT","0123456789","0123456789",
+CMGL: 3,"STO SENT","01196529157","01196529157",
+CMGL: 1,"STO UNSENT","123123","",
```

OK

3.1.15.6. Save Settings - +CSAS

Description

This command saves settings made by, **+CSMP** command in local non volatile memory.

Syntax

Command Type	Command	Response / Action
Execute	AT+CSAS [=<profile>	Settings are saved
Test	AT+CSAS=?	Returns the possible range of values for the parameter <profile> .

Parameters

Parameter	Type	Description
<profile>	Integer	(0-1) - it saves the settings to NVM (factory default) Note: If parameter is omitted the settings are saved to profile 0 in the non volatile memory.

Example

```
AT+CSAS=?
+CSAS: (0-1)
```



AT+CRES=0
OK
AT+CRES=1
OK

3.1.16. 3GPP 27.005 SMS Control

3.1.16.1. New Message Indications to Terminal Equipment - +CNMI

Description

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

Syntax

Command Type	Command	Response / Action
Set	AT+CNMI=<mode>	Selects the behavior of the device
Read	AT+CNMI?	Returns the current mode of new message notification.
Test	AT+CNMI=?	Returns the range of values for the <mode>.

Parameters

Parameter	Type	Description
-----------	------	-------------



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<mode>	Integer	<p>The information written in italics will be present depending on +CSDH last setting</p> <p>Unsolicited result codes buffering option</p> <p>0 – No Indication (factory default)</p> <p>1 – Indicate like below</p> <p>+CMTI: <memr>,<index></p> <p>2 – Indicate like below</p> <p>(PDU Mode)</p> <p>+CMT: ,<length><CR><LF><pdu></p> <p>(Text Mode)</p> <p>+CMT: <orig_num>,<callback>,<date>[,<toa>,<tele_id>,<priority>,<enc_type>,<length>]<CR><LF><data></p>
<memr>	String	Memory storage where the new message is stored "ME"
<index>	Integer	Location on the memory where SM is stored.
<length>	Integer	PDU length
<pdu>	Integer	PDU message
<orig_num>	String	Origination number
<callback>	String	Callback number
<date>	String	Received date in form as "YYYYMMDDHHMMSS"
<toa>	Integer	Type of <orig_num>
<tele_id>	Integer	<p>Teleservice ID</p> <p>4097 - page</p> <p>4098 - SMS message</p>



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<priority>	Integer	<p>Priority</p> <p>Note: The priority is different with every carrier.</p> <p>In case of Sprint and Aeris.Net:</p> <ul style="list-style-type: none"> 0 – Normal (factory default) 1 - Interactive 2 - Urgent 3 - Emergency <p>In case of Verizon:</p> <ul style="list-style-type: none"> 0 – Normal (factory default) 1 - High
<enc_type>	Integer	<p>Encoding type of message</p> <ul style="list-style-type: none"> 0 - 8-bit Octet 2 - 7-bit ASCII 4 - 16-bit Unicode
<length>	Integer	Length of message
<data>	Integer	<p>Message data</p> <p>Note: CC864-DUAL has different format from other GC-family.</p>

Example

```
AT+CNMI=?
+CNMI: (0-2)
```

```
OK
AT+CNMI=1
OK
AT+CNMI?
+CNMI: 1
```

```
OK
+CMTI: "ME",98
AT+CNMI=2
```



```

OK
AT+CNMI?
+CNMI: 2

OK
+CMT: "", "01191775982", 20071221163655, 4098, 16, 10
TEST SMS
#SMSFULL
    
```

3.1.16.2. Read Message - +CMGR

Description

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

Syntax

Command Type	Command	Response / Action
Execute	AT+CMGR=<index>	Execution command reports the message with location value <index> from <memr> message storage (<memr> is the message storage for read delete SMS as last settings of command +CPMS).
Test	AT+CMGR=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



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<index>	Integer	<p>Message index</p> <p>The parameter type and the command output depend on the last settings of command +CMGF (message format to be used)</p> <p>(PDU Mode)</p> <p>If there is at least one message to be listed the representation format is:</p> <p>+CMGR:<stat>,"",<length><CR><LF><PDU></p> <p>Case of received message from base station :</p> <p><PDU></p> <p><ori_num>,<date><tele_id><priority><enc_type><length><data></p> <p>Case of sending message to base station:</p> <p><PDU></p> <p><ori_num><callback><tele_id><priority><enc_type><length><data></p> <p>(Text Mode)</p> <p>Output format for received messages (the information written in italics will be present depending on +CSDH last setting):</p> <p>+CMGR:</p> <p><stat>,<orig_num>,<callback>,<date>[,<tooa>,<tele_id>,<priority>,<enc_type>,<length>]<CR><LF><data></p> <p>If there is either a Sent or an Unsent message in location <index> the output format is:</p> <p>+CMGR:</p> <p><stat>,<da>,<callback>[,<toda>,<tele_id>,<priority>,<enc_type>,<length>]<CR><LF><data></p>
<stat>	Integer	status of the message
<length>	Integer	length of the PDU in bytes
<PDU>	Integer	message in PDU format
<index>	Integer	message index



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<stat>	String	Status of Message <Text Mode> "REC UNREAD" – new message "REC READ" – read message "STO UNSENT" – stored message not yet sent "STO SENT" – stored message already sent
	Integer	<PDU Mode> 0 - new message 1 - read message 2 - stored message not yet sent 3 - stored message already sent
<orig_num>	String	Origination number
<callback>	String	Callback number
<da>	String	Destination address
<date>	Integer	Received date in format as : "YYYYMMDDHHMMSS"
<tooa>	Integer	Type of callback number
<toda>	Integer	Type of <da>
<tele_id>	Integer	Teleservice ID 4097 - page 4098 - SMS message
<priority>	Integer	Priority Note: The priority is different with every carrier. In case of Sprint and Aeris.Net: 0 – Normal (factory default) 1 - Interactive 2 - Urgent 3 - Emergency In case of Verizon: 0 – Normal (factory default) 1 - High



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<enc_type>	Integer	Message index 0 - 8-bit Octet 2 - 7-bit ASCII 4 - 16-bit Unicode (Sprint does not support)
<length>	Integer	Length of message
<data>	Integer	Message data Note. CC864-DUAL has different output format from other GC-family.

Example

<PDU Mode>

Case of received message from base station:

```
AT+CMGR=29
+CMGR: 1,"",52
07802811495346350808040947271002020225C3870E1C3870E1C3870E1C3870E1C387
0E1C3870E1C3870E1C3870E1C3870E1C20
```

OK

```
07      <addr_len: 7byte>
80      <type_addr: 128>
281149534635 <Origination number: 821194356453>
080804094727 <Date: 08/08/04,09:47:27>
1002    <Teleservice_id: 4098(decimal)>
02      <priority: urgent >
02      <encoding_type: ascii >
25      <data_len: 37>
C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C20
<user_data: aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa>
```

Else:

```
at+cmgr=31
```



```
+CMGR: 2,"",23
07801091346554F307801091346554F3100200000a61616161616161616161
```

OK

```
07      <addr_len: 7byte>
```

```
80      <type_addr:128>
```

<Text Mode>

```
AT+CSDH=1
```

OK

```
AT+CMGR=1
```

```
+CMGR: "REC READ",,"",01191775982",20071217190804,,4098,,16,12
```

TEST MESSAGE

OK

```
AT+CMGR=2
```

```
+CMGR: "REC READ",,"",01191775982",20071221160610,,4098,,16,9
```

TEST MESSAGE2

OK

```
AT+CMGR=3
```

```
+CMGR: "STO SENT",01191775982",01096529157",,4098,,16,9
```

TEST MESSAGE2

OK

3.1.16.3. List Message - +CMGL

Description



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This command reports the list of all the messages with status value **<stat>** stored into **<memr>** message storage (**<memr>** is the message storage for read and delete SMS as last settings of command **+CPMS**).

Syntax

Command Type	Command	Response / Action
Execute	AT+CMGL[=<stat>]	Reports the list of all the messages with status value <stat>
Test	AT+CMGL=?	Returns the values for the <stat> parameter.

Parameters

PDU Mode

Parameter	Type	Description
<index>	Integer	<p>The parameter type and the command output depend on the last settings of command +CMGF (message format to be used)</p> <p>(PDU Mode)</p> <p>If there is at least one message to be listed the representation format is:</p> <p>+CMGL:<index>,<stat>,"",<length><CR><LF><pdu>[<CR><LF> +CMGL: <index>,<stat>,"",<length><CR><LF><pdu>[...]]</p> <p>Case of received message from base station :</p> <p><PDU>:</p> <p><ori_num><date><tele_id><priority><enc_type><length><data></p> <p>Case of sending message to base station:</p> <p><PDU>:</p> <p><ori_num><callback><tele_id><priority><enc_type><length><data></p>



<stat>	Integer	0 – new message 1 – read message 2 – stored message not yet sent 3 – stored message already sent 4 – all messages
<length>	Integer	length of the PDU in bytes
<pdu>	Integer	message in PDU format

Text mode

Parameter	Type	Description
-----------	------	-------------

<index>	Integer	The parameter type and the command output depend on the last settings of command +CMGF (message format to be used)
----------------------	---------	---

(Text Mode)

If there is at least one message to be listed the representation format is (the information written in *italics* will be present depending on **+CSDH** last setting).

If there is at least a **Received** message to be listed the representation format is:

+CMGL:
<index>,*<stat>*,*<ori_num>*,*<callback>*,*<date>* [, *<tooa>*, *<tele_id>*,*<priority>*,*<enc_type>*,*<length>*]**<CR><LF><data>**

If there is at least a **Sent** or an **Unsent** message to be listed the representation format is:

+CMGL:
<index>,*<stat>*,*<da>*,*<callback>* [, *<toda>*, *<tele_id>*, *<priority>*,*<enc_type>*,*<length>*]**<CR><LF><data>**

Note. CC864-DUAL has different output format from other GC-family.

Note: If a message is present when **+CMGL="ALL"** is used it will be changed status from REC UNREAD to REC READ.



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<stat>	Integer	<p>Message Index</p> <p>“REC UNREAD” - new message</p> <p>“REC READ” - read message</p> <p>“STO UNSENT” - stored message not yet sent</p> <p>“STO SENT” - stored message already sent</p> <p>“ALL” - all messages</p>
<ori_num>	String	Origination number
<callback>	String	Callback number
<date>	String	Received date in format as : “YYYYMMDDHHMMSS”
<tooa>	Integer	Type of <orig_num>
<toda>	Integer	Type of <da>
<tele_id>	Integer	<p>Teleservice ID</p> <p>4097 - page</p> <p>4098 - SMS message</p>
<priority>	Integer	<p>Priority</p> <p>Note: The priority is different with every carrier.</p> <p>In case of Sprint and Aeris.Net:</p> <ul style="list-style-type: none"> 0 - Normal (factory default) 1 - Interactive 2 - Urgent 3 - Emergency <p>In case of Verizon:</p> <ul style="list-style-type: none"> 0 - Normal (factory default) 1 - High
<enc_type>	Integer	<p>message index</p> <ul style="list-style-type: none"> 0 - 8-bit Octet 2 - 7-bit ASCII 4 - 16-bit Unicode (Sprint does not support)
<length>	Integer	Length of message
<data>	Integer	message data



Example

<PDU Mode>

Case of received message from base station:

AT+CMGL=1

+CMGL: 29,1,"",52

07802811495346350808040947271002020225C3870E1C3870E1C3870E1C3870E1C387
0E1C3870E1C3870E1C3870E1C3870E1C20

OK

07 <addr_len: 7byte>

80 <type_addr: 128>

281149534635 <Origination number: 821194356453>

080804094727 <Date: 08/08/04,09:47:27>

1002 <Teleservice_id: 4098(decimal)>

02 <priority: urgent >

02 <encoding_type: ascii >

25 <data_len: 37>

C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C3870E1C20

<user_data: aaa>

Else:

AT+CMGL=2

+CMGL: 31,2,"",23

07801091346554F307801091346554F3100200000a6161616161616161616161

OK

07 <addr_len: 7byte>

80 <type_addr:128>

1091346554F3 <Origination_addr: 01194356453>

07 <addr_len: 7byte>

80 <type_addr:128>



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```
1096224658F1 <Callback_Number: 01692264851>  
1002 <Teleservice_id: 4098(decimal)>  
00 <priority: normal >  
00 <encoding_type: octet >  
0a <data_len: 10>  
616161616161616161616161 <data: aaaaaaaaa>
```

<PDU Mode>

AT+CMGF=0

OK

AT+CMGF?

+CMGF: 0

OK

AT+CMGL=?

(0-4)

OK

AT+CMGL=4

+CMGL: 0,2,"",15

06801949939777100200000a5465737420534D532031

+CMGL: 1,2,"",16

06801949939777100200000b5465737420534D5320320D

+CMGL: 2,2,"",15

06801949939777100200000a5465737420534D532033

+CMGL: 3,2,"",15

06801949939767100200000a5465737420534D532034

+CMGL: 4,2,"",15

06801949939767100200000a5465737420534D532035

OK



<Text Mode>

AT+CMGF=1

OK

AT+CMGF?

+CMGF: 1

OK

AT+CMGL=?

("REC UNREAD", "REC READ", "STO UNSENT", "STO SENT", "ALL")

OK

AT+CMGL="ALL"

+CMGL: 0, "STO UNSENT", "9194397977", "",

+CMGL: 1, "STO UNSENT", "9194397977", "",

+CMGL: 2, "STO UNSENT", "9194397977", "",

+CMGL: 3, "STO UNSENT", "9194397976", "",

+CMGL: 4, "STO UNSENT", "9194397976", "",

OK

3.1.17. 3GPP 27.005 Message Sending and Writing Commands

3.1.17.1. Send Message - +CMGS

(PDU Mode)

Description

This command sends a message to the network.

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) and waits for the specified number of bytes.



Note: the echoing of given characters back from the TA is controlled by echo command **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.

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>

Note: if message sending fails for some reason, an error code is reported.

Syntax

Command Type	Command	Response / Action
Execute	AT+CMGS=<length>	Sends a message to the network
Test	AT+CMGS=?	OK.

Parameters

Parameter	Type	Description
-----------	------	-------------



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If message is successfully sent to the network, then the result is sent in the format:

+CMGS: <mr>

Note: if message sending fails for some reason, an error code is reported.

Note: The limit of user data is 160 characters.

Note: CC864-DUAL has different output format from other GC-family.

Note: To discard SMS, press the “ESC” key, an “OK” response will be returned.

Syntax

Command Type	Command	Response / Action
Execute	AT+CMGS=<da>[,< toda>]	Sends a message to the network
Test	AT+CMGS=?	OK.

Parameters

Parameter	Type	Description
<da>	String	Destination address. Example: ASCII characters in the set (0 9), #, *, (A D); Note: The maximum length is different with every carrier. In case of Sprint and Aeris.Net: Maximum length is 32 characters In case of Verizon: Maximum length is 20 characters
< toda>	Integer	type of destination address 129 – number in national format 145 – number in international format (contains the “+”)
<mr>	Integer	message reference number

Example

```
AT+CMGF=1
OK
AT+CMGS="9194547830"
> Test SMS
```



+CMGS: 1
OK

3.1.17.2. Send Message from Storage - +CMSS

Description

This command sends a message to the network sends which is already stored in the **<memw>** storage (see **+CPMS**) at the location **<index>**.

If message is successfully sent to the network then the result is sent in the format:

+CMSS: <mr>

If message sending fails for some reason, an error code is reported:

+CMS ERROR:<err>

Note: to store a message in the **<memw>** storage refers to command **+CMGW**.

Syntax

Command Type	Command	Response / Action
Execute	AT+CMSS=<index>[,<da>[,<tda>]]	Sends a message to the network
Test	AT+CMSS=?	OK.

Parameters

Parameter	Type	Description
<index>	Integer	location value in the message storage <memw> of the message to send
<da>	String	destination address 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



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< toda >	Integer	type of destination address 129 - number in national format 145 - number in international format (contains the "+")
< mr >	Integer	message reference number

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	
NOTE	To avoid malfunctions is suggested to wait for the +CMSS: <mr> or +CMS ERROR: <err> response before issuing further commands.

Example

```

AT+CMGF=1
OK
AT+CMGW
> Test SMS

+CMGW: 1
OK
AT+CMSS=1,"9194547830"
+CMSS: 2
OK
    
```

3.1.17.3. Write Message to Memory - +CMGW

(PDU Mode)



Description

This command writes a new message in the <memw> memory storage.

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>

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

Syntax

Command Type	Command	Response / Action
Execute	AT+CMGW= <length>	Writes in a message in the memory storage.
Test	AT+CMGW=?	OK.

Parameters

Parameter	Type	Description
<length>	Integer	Length in bytes of the PDU to be written. 7...164
<index>	Integer	message location index in the memory <memw>

Example

AT+CMGF=0

OK

AT+CMGW=35



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

Note: To discard SMS, press the "ESC" key, an "OK" response will be returned.

Syntax

Command Type	Command	Response / Action
Execute	AT+CMGW[="<da>"[,< toda>[,< stat>]]]	Writes in a message in the memory storage.
Test	AT+CMGW=?	OK.

Parameters

Parameter	Type	Description
<da>	Integer	Destination address, string type represented in the currently selected character set (see +CSCS). Note: The maximum length is different with every carrier. In case of Sprint and Aeris.Net: Maximum length is 32 characters In case of Verizon: Maximum length is 20 characters
<toda>	Integer	Type of destination address. 129 - number in national format 145 - number in international format (contains the "+")
<stat>	Integer	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
<index>	Integer	message location index in the memory <memw>

Example

AT+CMGW=?



OK
 AT+CMGF=1
 OK
 AT+CMGW
 > Test message
 > Ctrl+Z must be used to write message

+CMGW: 1

OK
 AT+CMGW="9194397977"
 > Test SMS

+CMGW: 2

OK
 AT+CMGW="9194397977",129
 > Test SMS
 +CMGW: 3
 OK

3.1.17.4. Delete Message - +CMGD

Description

This command writes deletes the message(s) from memory **<memr>**.

Syntax

Command Type	Command	Response / Action
Execute	AT+CMGD=<index> [,<delflag>]	Deletes the messages from the memory storage.



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Test AT+CMGD=? Shows the valid memory locations and optionally the supported values of **<delflag>**.

+CMGD: (supported <index>s list)[,(supported <delflag>s list)]

Parameters

Parameter	Type	Description
<index>	Integer	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>	Integer	An Integer indicating multiple message deletion requests. 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 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 specific message location to be deleted is empty, an error message is reported. +CMS ERROR: 321 which refers to an invalid memory index.

Example

(Text Mode)
AT+CMGF=1
OK



AT+CMGD=?
+CMGD: (),(0-4)

OK
AT+CMGW
> TEST #1

+CMGW: 0

OK
AT+CMGW
> TEST #2

+CMGW: 1

OK
AT+CMGD=1,0
OK
AT+CMGL="ALL"
+CMGL: 0,"STO UNSENT","",",",
TEST #1
+CMGL: 1,"STO UNSENT","",",",
TEST #2

OK
AT+CMGD=1,4
OK
AT+CMGL="ALL"
OK



4. Telit Specific Unified AT-Commands

4.1. General Configuration AT-Commands

4.1.1.1. Manufacturer Identification - #CGMI

Description

This command returns the device manufacturer identification code with command echo.

Syntax

Command Type	Command	Response / Action
Execute	#CGMI	<mfgr> OK
Test	#CGMI=?	OK

Parameters

Parameter	Type	Description
<mfgr>	String	Manufacturer identification string.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Telit Unified Command

Example

```
AT#CGMI=?
OK
AT#CGMI
#CGMI: Telit
OK
```



4.1.1.2. Model Identification - #CGMM

Description

This command returns the device manufacturer identification code with command echo.

Syntax

Command Type	Command	Response / Action
Execute	#CGMM	<id> OK
Test	#CGMM=?	OK

Parameters

Parameter	Type	Description
<id>	String	Model identification string.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Telit Unified Command

Example

```
AT#CGMM=?
OK
AT#CGMM
#CGMM: CC864-DUAL
OK
```



4.1.1.3. Revision Identification - #CGMR

Description

This command returns the device software revision number with command echo.

Syntax

Command Type	Command	Response / Action
Execute	#CGMR	<rev> OK
Test	#CGMR=?	OK

Parameters

Parameter	Type	Description
<id>	String	Software revision number string.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Telit Unified Command

Example

```
AT#CGMR=?
OK
AT#CGMR
#CGMR: 09.01.003

OK
```



OK

< MEID module >

AT#CGSN

#CGSN: 028633115301118481

OK

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

Description

This command returns the international mobile subscriber identity, identified as the IMSI number, with command echo.

Syntax

Command Type	Command	Response / Action
Execute	AT#CIMI	Returns IMSI
Test	AT#CIMI=?	OK

Example

AT#CIMI=?

OK

AT#CIMI

#CIMI: 310009194547049

OK

4.1.1.6. Manufacturer Serial Number - #MSN

Description

This command returns the device board serial number.

Syntax



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Command Type	Command	Response / Action
Execute	AT#MSN	Returns the device board serial number. Note: the format of the numbers in output is always 8 digits, left-filled with 0s
Test	AT#MSN=?	OK

Example

```
AT#MSN=?
OK
AT#MSN
#MSN: 00501063

OK
```

4.1.1.7. Mobile Equipment Identifier - #MEID

Description

This command returns the mobile equipment identifier of the device.

Syntax

Command Type	Command	Response / Action
Read	AT#MEID?	Returns the current MEID Note: the MEID is broken down into two parts, 6-high hex values separated by a comma then the 8-low hex values.
Test	AT#MEID=?	Returns the OK result code

Example

```
AT#MEID=?
OK
AT#MEID?
```



#MEID: A10000,00000001

OK

4.1.1.8. Change Audio Path - #CAP

Description

This command switches the active audio path.

Syntax

Command Type	Command	Response / Action
Set	AT#CAP=[<n>]	Switches the active audio path depending on parameter <n>
Read	AT#CAP?	Reports the active audio path in the format: #CAP: <n>
Test	AT#CAP=?	Reports the supported values for the parameter <n>.

Parameters

Parameter	Type	Description
<n>	Integer	Audio Path 0 – audio path follows the AXE input (factory default): <ul style="list-style-type: none"> If AXE is low, hands-free is enabled; If AXE is high, internal path is enabled 1 – enables hands-free external mic/ear audio path 2 – enables internal mic/ear audio path

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



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Note The audio path are mutually exclusive, enabling one disables the other.

When changing the audio path, the volume level is set at the previously stored value for that audio path (see **+CLVL**)

Reference

Example

```
AT#CAP=?
#CAP: (0-2)

OK
AT#CAP?
#CAP: 0

OK
AT#CAP=1
OK
```

4.1.1.9. Select Ringer Sound - #SRS

Description

This command sets the ringer sound.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Set	AT#SRS=[<n>,<tout>]	<p>Sets the ringer sound depending on parameters <n> and <tout></p> <p>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.</p> <p>Note: if command is issued with <n> > 0 and <tout> = 0, the playing of the ringing is stopped (if present) and <n> ringing tone is set as current.</p> <p>Note: if command is issued with <n> = 0 and <tout> > 0 then the current ringing tone is played</p> <p>Note: if both <n> and <tout> are 0 then the default ringing tone is set as current and ringing is stopped</p>
Read	AT#SRS?	<p>Reports current selected ringing and its status in the format:</p> <p>#SRS: <n>,<status></p>
Test	AT#SRS=?	<p>Reports the supported values for the parameters <n> and <tout>.</p>

Parameters

Parameter	Type	Description
<n>	Integer	Ringer tone 0 – current ringing tone 1.. <i>max</i> – ringing tone number, where <i>max</i> can be read by issuing the Test command AT#SRS=?
<tout>	Integer	Ringing tone playing time-out in seconds 0 – ringer is stopped (if present) and current ringer sound is set 1...60 – ringer sound playing for <tout> seconds and, if <n> > 0, ringer sound <n> is set as default ringer sound.
<status>	Integer	Ringing status 0 – selected but not playing 1 – current playing



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If all parameters are omitted then the behavior of Set command is the same as Read command
Reference	

Example

```
AT#SRS=?
#SRS: (0,1-32),(0,1-60)
```

```
OK
AT#SRS?
#SRS: 10,0
```

```
OK
AT#SRS=0,30
OK
```

4.1.1.10. Select Ringer Path - #SRP

Description

This command selects the ringer path.

Syntax

Command Type	Command	Response / Action
Set	AT#SRP=[<n>]	Selects the ringer path towards whom sending ringer sounds and all signaling tones



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Read	AT#SRP?	Reports current selected ringer path in the format: #SRP: <n>
Test	AT#SRP=?	Reports the supported values for the parameter <n>

Parameters

Parameter	Type	Description
<n>	Integer	Ringer path number 0 – sound output towards current selected audio path (see command #CAP) 1 – sound output towards hands-free 2 – sound output towards handset 3 – sound output towards Buzzer Output pin GPIO7

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
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 .
Reference	

Example

```

AT#SRP=?
#SRP: (0-3)

OK
AT#SRP?
#SRP: 0

OK
AT#SRP=2
    
```



OK

4.1.1.11. Signaling Tones Mode - #STM

Description

This command enables/disables the signaling tones output on the audio path selected with the #SRP command.

Syntax

Command Type	Command	Response / Action
Set	AT#STM=<mode>	Command enables/disables the signaling tones output on the audio path selected with #SRP command.
Read	AT#STM?	Reports whether the current signaling tones status is enabled or not, in the format: #STM: <mode>
Test	AT#STM=?	Reports the supported range of values for parameter <mode>.

Parameters

Parameter	Type	Description
<mode>	Integer	Signaling tones status 0 - signaling tones disabled 1 - signaling tones enabled 2 - all tones disabled

Example

```
AT#STM=?
#STM: {0-2}

OK
AT#STM?
#STM: 1
```



OK
AT#STM=0
OK

4.1.1.12. Tone Playback - #TONE

Description

This command allows the reproduction of DTMF tones, standard free tone, standard busy tone and a set of user defined tones for a certain time.

Syntax

Command Type	Command	Response / Action
Execute	AT#TONE=<mode>	Command enables/disables the signaling tones output on the audio path selected with #SRP command.
Test	AT#TONE=?	Reports the supported range of values for parameter <tone> and <duration>.

Parameters

Parameter	Type	Description
<tone>	Integer	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>	Integer	Duration of current tone in 1/10 of Sec. 1..300 - tenth of seconds (default is 30)

Example

AT#TONE=?
#TONE: (0-9,#,* ,A-D,G-L,Y,Z),(1-300)



OK

4.1.1.13. GPIO Setting - #GPIO

Description

This command sets the value of the general purpose output pin GPIO<pin> according to <dir> and <mode> parameter. Not all configurations for the three parameters are valid.

Syntax

Command Type	Command	Response / Action
Execute	AT#GPIO=[<pin>,<mode> [,<dir>]]	Sets the value of output pin GPIO<pin> OK
Read	AT#GPIO?	Reports the read direction and value of all GPIO pins, in the format: #GPIO: <dir>,<stat>[<CR><LF>#GPIO: <dir>,<stat>[...]]
Test	AT#GPIO=?	Reports the supported range of values

Parameters

Parameter	Type	Description
<pin>	Integer	GPIO pin number; supported range is from 1 to a value that depends on the hardware.
<mode>	Integer	Depends on <dir> setting. 0 - no meaning if <dir>=0 - INPUT - output pin cleared to 0 (Low) if <dir>=1 - OUTPUT - no meaning if <dir>=2 - ALTERNATE FUNCTION1 1 - no meaning if <dir>=0 - INPUT - output pin set to 1 (High) if <dir>=1 - OUTPUT - no meaning if <dir>=2 - ALTERNATE FUNCTION2 2 - Reports the read value from the input pin if <dir>=0 - INPUT - Reports the read value from the input pin if <dir>=1 - OUTPUT - Reports a no meaning value if <dir>=2 - ALTERNATE FUNCTION



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<dir>	Integer	<p>GPIO pin direction</p> <p>0 - pin direction is INPUT</p> <p>1 - pin direction is OUTPUT</p> <p>2 - pin direction is ALTERNATE FUNCTION (see Note)</p>
--------------------	---------	--

Note: When <mode>=2 (and <dir> is omitted) the command reports the direction and value of pin **GPIO<pin>** in the format:

#GPIO: <dir>,<stat>

<stat>	Integer	<ul style="list-style-type: none"> • logic value read from pin GPIO<pin> in the case the pin <dir> is set to input; • logic value present in output of the pin GPIO<pin> in the case the pin <dir> is currently set to output; • no meaning value for the pin GPIO<pin> in the case the pin <dir> is set to alternate function.
---------------------	---------	---

Note: "ALTERNATE FUNCTION" value is valid only for following pins:

- GPIO4 - alternate function is "RF Transmission Control"
- GPIO5 - alternate function is "RF Transmission Monitor"
- GPIO6 - alternate function is "Alarm Output" (see +CALA)
- GPIO7 - alternate function is "Buzzer Output" (see #SRP)

Note: While using the pins in the alternate function, the GPIO read/write access to that pin is not accessible and shall be avoided

Example

```
AT#GPIO=?
#GPIO: (0-24),(0-2),(0-2)

OK
AT#GPIO?
#GPIO: 0,0
#GPIO: 0,1
```



```
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 2,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 3,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,0
#GPIO: 0,1
#GPIO: 0,1
```

OK

AT#GPIO=2,2

#GPIO: 0,1

OK

4.1.1.14. STAT_LED GPIO Setting - #SLED

Description

This command sets the behavior of the **STAT_LED** GPIO



Syntax

Command Type	Command	Response / Action
Set	AT#SLED=<mode> [,<on_duration> [,<off_duration>]	Sets the behavior of the STAT_LED GPIO
Read	AT#SLED?	Returns the STAT_LED GPIO current setting, in the format: #SLED: <mode>,<on_duration>,<off_duration>
Test	AT#SLED=?	Returns the range of available values for parameters <mode> , <on_duration> and <off_duration> .

Parameters

Parameter	Type	Description
<mode>	Integer	Defines how the STAT_LED GPIO is handled 0 - GPIO tied Low 1 - GPIO tied High 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>
<on_duration>	Integer	Duration of period in which STAT_LED GPIO is tied High while <mode>=3 1..100 - in tenths of seconds (default is 10)
<off_duration>	Integer	Duration of period in which STAT_LED GPIO is tied Low while <mode>=3 1..100 - 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** and holds this value until the first NVM reading.

Example

AT#SLED=?



#SLED: (0-3),(1-100),(1-100)

OK

AT#SLED?

#SLED: 2,10,10

OK

AT#SLED=0

OK

AT#SLED=1

OK

AT#SLED=2

OK

AT#SLED=3,50,50

OK

AT#SLED?

#SLED: 3,50,50

OK

AT#SLED=3,5,5

OK

AT#SLED?

#SLED: 3,5,5

OK

AT#SLED=2,10,10

OK

4.1.1.15. Save STAT_LED GPIO Setting - #SLEDSAV

Description

This command saves **STAT_LED** setting in NVM.



Syntax

Command Type	Command	Response / Action
Execute	AT#SLEDSAV	Saves STAT_LED setting in NVM.
Test	AT#SLEDSAV=?	OK

Example

```
AT#SLEDSAV=?
OK
AT#SLEDSAV
OK
```

4.1.1.16. Digital Voiceband Interface - #DVI

Description

This command controls Digital Voiceband Interface settings.

Syntax

Command Type	Command	Response / Action
Set	AT#DVI=<mode>, [<dviport>, <clockmode>]	Enables/disables the Digital Voiceband Interface Note: #DVI parameters are saved in the extended profile
Read	AT#DVI?	Reports last setting, in the format: #DVI: <mode>,<dviport>,<clockmode>
Test	AT#DVI=?	Reports the range of supported values for parameters <mode>,<dviport> and <clockmode>

Parameters



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Parameter	Type	Description
<mode>	Integer	Enables/disables the DVI. 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
<dviport>	Integer	2 - DVI port 2 will be used (factory default)
<clockmode>	Integer	0 - DVI slave 1 - DVI master (factory default)

Example

```
AT#DVI=?
#DVI: (0,1),(2),(0,1)
```

```
OK
AT#DVI?
#DVI: 0,2,1
```

```
OK
AT#DVI=1,2,1
OK
```

DVI activated for audio. DVI is configured as master providing on DVI Port #2

4.1.1.17. SMS Ring Indicator - #E2SMSRI

Description

This command enables/disables the Ring Indicator pin to an incoming SMS message.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Set	AT#E2SMSRI=[<n>]	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>.
Read	AT#E2SMSRI?	Reports the duration in ms of the pulse generated on receipt of an incoming SMS, in the format: #E2SMSRI: <n>
Test	AT#E2SMSRI=?	Reports the range of supported values for parameter <n>

Note: as seen before, the value <n>=0 means that the RI pin response to an incoming SMS is disabled.

Parameters

Parameter	Type	Description
<n>	Integer	<p>RI enabling</p> <p>0 - disables RI pin response for incoming SMS messages (factory default)</p> <p>50...1150 - 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 SMS.</p>

Example

```
AT#E2SMSRI=?
#E2SMSRI: (0,50-1150))
```

```
OK
AT#E2SMSRI?
#E2SMSRI: 0
```

```
OK
AT#E2SMSRI=50
OK
```



```
AT#E2SMSRI?  
#E2SMSRI: 50
```

OK

4.1.1.18. Set Payload Length - #SMSPSIZ

Description

This command set max payload length of SMS.

Syntax

Command Type	Command	Response / Action
Execute	AT#SMSPSIZ=<length>	Execution command set <length> to max payload length of SMS
Read	AT#SMSPSIZ?	Reports the current length value
Test	AT#SMSPSIZ=?	Reports the supported range of value <length>

Parameters

Parameter	Type	Description
<length>	Integer	Max payload length of SMS 0-220 (default is 160)

Example

```
AT#SMSPSIZ=?  
#SMSPSIZ: (0-220)
```

OK

```
AT#SMSPSIZ?  
#SMSPSIZ: 160
```

OK



AT#SMSPSIZ=100

OK

AT#SMSPSIZ?

#SMSPSIZ: 100

OK

4.1.1.19. Software Shutdown - #SHDN

Description

This command safely shuts down the module.

Syntax

Command Type	Command	Response / Action
Execute	AT#SHDN	OK Note: after the issuing of this command any previous activity is terminated and the device will not respond to any further commands. Note: to turn it on again Hardware pin ON/OFF must be tied low .
Test	AT#SHDN=?	OK

Example

AT#SHDN=?

OK

AT#SHDN (Module powers down)

OK



4.1.1.20. Reverse Logistic Support - #RTN

Description

This command allows the user to reset some limited parameters back to their values as they came from the factory.

Syntax

Command Type	Command	Response / Action
Execute	AT#RTN=<n>	The execute command will reset the selected parameter back to its factory value.
Test	AT#RTN=?	Returns the "OK" result code

Parameters

Parameter	Type	Description
<n>	Integer	Parameter for reset. 0:MDN 1:MSID 2:Last Call Time 3:Total Call Time 4:MIP Profile - This deletes only MIP profile 1

Example

```

AT#RTN=?
OK
AT#ENG=9?           Query MDN value
#ENG: 1234567890

OK
AT#RTN=0           Reset MDN
OK
AT#ENG=9?           Query MDN value
#ENG: 0000000000
    
```



OK

4.1.1.21. Set Handset Sidetone- #SHSSD

Description

This command enables/disables the sidetone on handset audio output.

Syntax

Command Type	Command	Response / Action
Execute	AT#SHSSD=<mode>	The execute command will reset the selected parameter back to its factory value.
Read	AT#SHSSD?	Read command reports whether the headset sidetone is currently enabled or not, in the format: #SHSSD: <mode>
Test	AT#SHSSD=?	Test command returns the supported range of values of parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	Mode. 0:disables the handset sidetone 1:enables the handset sidetone (factory default)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	

Example

AT#SHSSD=?



#SHSSD: (0,1)

OK

AT#SHSSD=1 *Set Handset sidetone*

OK

AT#SHSSD? *Read Handset sidetone*

#SHSSD: 1

OK

4.1.1.22. Handset Receiver Gain- #HSRECG

Description

This command sets the handset analogue output gain.

Syntax

Command Type	Command	Response / Action
Execute	AT# HSRECG =<level>	The execute command will reset the selected parameter back to its factory value.
Read	AT# HSRECG?	Read command return the current handset analog output gain, in the format: # HSRECG: <level>
Test	AT# HSRECG =?	Test command returns the supported range of values of parameter <level>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<levle> Integer Level: handset analogue output gain.
0...6 – handset analogue output (-3dB/step, default value = 0)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	

Example

AT# HSRECG =?
HSRECG: (0-6)

OK

AT# HSRECG =1 *Set Handset Receiver Gain*
OK

AT# HSRECG? *Read Handset Receiver Gain*
HSRECG: 1

OK

4.1.1.23. Handset Receiver Gain- #HFRECG

Description

This command sets the hands-free analogue output gain.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	AT# HFRECG =<level>	The execute command will reset the selected parameter back to its factory value.
Read	AT# HFRECG?	Read command return the current hands-free analog output gain, in the format: # HFRECG: <level>
Test	AT# HFRECG =?	Test command returns the supported range of values of parameter <level>

Parameters

Parameter	Type	Description
<level>	Integer	Level: hands-free analogue output gain. 0...6 – hands-free analogue output (-3dB/step, default value = 0)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	

Example

AT# HFRECG =?
HFRECG: (0-6)

OK

AT# HFRECG =1 *Set Hands-free Receiver Gain*
OK

AT# HFRECG? *Read Hands-free Receiver Gain*
HFRECG: 1



OK

4.1.1.24. Hands-free Noise Reduction- #SHFNR

Description

This command enables/disables the noise reduction function on audio hands-free input.

Syntax

Command Type	Command	Response / Action
Execute	AT# SHFNR =<mode>	The execute command will reset the selected parameter back to its factory value.
Read	AT# SHFNR?	Read command reports whether the noise reduction function on audio hands-free input is currently enabled or not, in the format: # SHFNR: <mode>
Test	AT# SHFNR =?	Test command returns the supported range of values of parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 – disables noise reduction for handsfree mode (default) 1 – enables noise reduction for handsfree mode

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	



Example

```
AT# SHFNR =?
# SHFNR: (0,1)
```

OK

```
AT# SHFNR =1           Set Handsfree noise reduction
OK
```

```
AT# SHFNR?           Read Handsfree noise reduction
# SHFNR: 1
```

OK

4.1.1.25. Handset Noise Reduction- #SHSNR

Description

This command enables/disables the noise reduction function on audio handset input.

Syntax

Command Type	Command	Response / Action
Execute	AT# SHSNR =<mode>	The execute command will reset the selected parameter back to its factory value.
Read	AT# SHSNR?	Read command reports whether the noise reduction function on audio handset input is currently enabled or not, in the format: # SHSNR: <mode>
Test	AT# SHSNR =?	Test command returns the supported range of values of parameter <mode>

Parameters



Parameter	Type	Description
<mode>	Integer	0 – disables noise reduction for handset mode (default) 1 – enables noise reduction for handset mode

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	

Example

AT# SHSNR =?

SHSNR: (0,1)

OK

AT# SHSNR =1

Set Handset noise reduction

OK

AT# SHSNR?

Read Handset noise reduction

SHSNR: 1

OK

4.1.1.26. Hands-free Automatic Gain Control- #SHFAGC

Description

This command enables/disables the automatic gain control function on audio handsfree input.

Syntax



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Command Type	Command	Response / Action
Execute	AT# SHFAGC =<mode>	The execute command will reset the selected parameter back to its factory value.
Read	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>
Test	AT# SHFAGC =?	Test command returns the supported range of values of parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 – disables automatic gain control for hands-free mode (default) 1 – enables automatic gain control for hands-free mode

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	

Example

```
AT# SHFAGC =?
# SHFAGC: (0,1)
```

OK

```
AT# SHFAGC =1           Set Hands-free automatic gain control
```

OK



AT# SHFAGC? *Read Hands-free automatic gain control*

SHFAGC: 1

OK

4.1.1.27. Handset Automatic Gain Control- #SHSAGC

Description

This command enables/disables the automatic gain control function on audio handset input.

Syntax

Command Type	Command	Response / Action
Execute	AT# SHSAGC =<mode>	The execute command will reset the selected parameter back to its factory value.
Read	AT# SHSAGC?	Read command reports whether the automatic gain control function on audio handset input is currently enabled or not, in the format: # SHSAGC: <mode>
Test	AT# SHSAGC =?	Test command returns the supported range of values of parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 – disables automatic gain control for handset mode (default) 1 – enables automatic gain control for handset mode

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable



Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	

Example

```
AT# SHSAGC =?
# SHSAGC: (0,1)
```

OK

```
AT# SHSAGC =1           Set Handset automatic gain control
OK
```

```
AT# SHSAGC?           Read Handset automatic gain control
# SHSAGC: 1
```

OK

4.1.2. Mobile Equipment Control

4.1.2.1. Wake from Alarm Mode - #WAKE

Description

This command stops any present alarm activity and, if the module is in **alarm mode**, it exits the **alarm mode** and enters the **normal operating mode**.

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 receive any call or SM, the only commands that can be issued to the MODULE in this state are the #WAKE and #SHDN, no other command must not be issued during this state.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	AT#WAKE=[<opmode>]	Stops any eventually present alarm activity
Read	AT#WAKE?	Returns the operating status of the device in the format: #WAKE: <status>

Parameters

Parameter	Type	Description
<opmode>	Integer	Operating mode 0 - normal operating mode; the module exits the alarm mode , enters the normal operating mode , any alarm activity is stopped (e.g. alarm tone playing) and an OK result code is returned.
<status>	Integer	0 - normal operating mode 1 - alarm mode or normal operating mode with some alarm activity

Example

```
AT#WAKE?
#WAKE: 0

OK
AT#WAKE=0
OK
```

4.1.2.2. Query Temperature Overflow - #QTEMP

Description

This command queries the device internal temperature sensor for actual temperature.

Syntax



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Command Type	Command	Response / Action
Set	AT#QTEMP[=<mode>]	Has currently no effect. The interpretation of parameter <mode> is currently not implemented: any value assigned to it will simply have no effect.
Read	AT#QTEMP?	Queries the device internal temperature sensor for over temperature and reports the result in the format: #QTEMP: <temp>
Test	AT#QTEMP=?	Returns the OK response code.

Parameters

Parameter	Type	Description
<temp>	Integer	Over temperature indicator 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

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	The device should not be operated out of its temperature working range, elsewhere proper functioning of the device is not ensured.

Reference

Example

AT#QTEMP=?



```
OK
AT#QTEMP?
#QTEMP: 0

OK
```

4.1.2.3. Temperature Monitor - #TEMPMON

Description

This command sets the behavior of the temperature monitor.

Syntax

Command Type	Command	Response / Action
Set	AT#TEMPMON=<mod> [,<urcmode> [,<action> [,<hyst_time> [,<GPIO>]]]]	Sets the behavior of the module internal temperature monitor <i>Setting of the optional parameters has meaning only if <mod>=0</i>
Read	AT#TEMPMON?	Reports the current parameter settings for #TEMPMON command in the format: #TEMPMON: <urcmode>,<action> [,<hyst_time>[,<GPIO>]]
Test	AT#TEMPMON=?	Reports the supported range of values for parameters <mod>, <urcmode>, <action>, <hyst_time> and <GPIO>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<mod>	Integer	<p>0 - sets the command parameters.</p> <p>1 - triggers the measurement of the module internal temperature, reporting the result in the format:</p> <p>#TEMPMEAS: <level>,<value></p>
<level>	Integer	<p>Threshold level (see Note)</p> <p>-2 - extreme temperature lower bound</p> <p>-1 - operating temperature lower bound</p> <p>0 - normal temperature</p> <p>1 - operating temperature upper bound</p> <p>2 - extreme temperature upper bound</p>
<value>	Integer	Actual temperature expressed in Celsius degrees
<urcmode>	Integer	<p>URC presentation mode.</p> <p>0 - it disables the presentation of the temperature monitor URC</p> <p>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:</p>

#TEMPMEAS: <level>,<value>



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<action>	Integer	<p>Sum of Integers, each representing an action to be done whenever the module internal temperature reaches either operating or extreme levels (default is 0).</p> <p>If <action> is not zero, it is mandatory to set the <hyst_time> parameter too.</p> <p>0..7 - as a sum of:</p> <p>0 - no action</p> <p>1 - automatic shut-down when the temperature is beyond the extreme bounds</p> <p>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.</p> <p>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.</p>
<hyst_time>	Integer	<p>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.</p> <p>0..255 - time in seconds</p>
<GPIO>	Integer	<p>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.</p>

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



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Note

The URC presentation mode **<urcmode>** is related to the current multiplexed 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, but they are not related to the current multiplexed instance only (see **+cmux**).

In the following table typical temperature bounds are represented; you are strongly recommended to consult the “Hardware User Guide” to verify the real temperature bounds for your module.

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

Tolerance: average of +/-3°C in idle mode

Reference

Example

```
AT#TEMPMON=?
#TEMPMON: (0,1),(0,1),(0-7),(1-255),(1-21)

OK
AT#TEMPMON?
#TEMPMON: 0,0,0

OK
AT#TEMPMON=1
OK
```



#TEMPMEAS: 0,24

4.1.2.4. Auxiliary Voltage Output Control - #VAUX

Description

This command enables/disables the Auxiliary Voltage pins output.

Syntax

Command Type	Command	Response / Action
Set	AT#VAUX=<n>,<stat>	Stops any eventually present alarm activity
Read	AT#VAUX?	Reports whether the Auxiliary Voltage pin output is currently enabled or not, in the format: #VAUX: <value>
Test	AT#VAUX=?	Returns the supported range of values of parameter <n>, <stat>.

Parameters

Parameter	Type	Description
<n>	Integer	VAUX pin index 1 - there is currently just one VAUX pin
<status>	Integer	0 - output off (default value) 1 - output on 2 - query current value of VAUX pin

Note: when <stat>=2 and command is successful, it returns:

#VAUX: <value>



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<value> Integer power output status
 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: the current setting is stored through **#VAUXSAV**

Example

```
AT#VAUX=?
#VAUX: (1-1),(0-2)
```

```
OK
AT#VAUX?
#VAUX: 0
```

```
OK
AT#VAUX=1,2
#VAUX: 0
```

```
OK
AT#VAUX=1,1
OK
AT#VAUX=1,2
#VAUX: 1
```

```
OK
```



4.1.2.5. Auxiliary Voltage Output Control - #VAUXSAV

Description

This command saves the actual state of #VAUX pin to NVM. The state will be reloaded at power-up.

Syntax

Command Type	Command	Response / Action
Execute	AT#VAUXSAV	Saves the actual state of #VAUX pin to NVM.
Test	AT#VAUXSAV=?	OK

Example

```
AT#VAUXSAV=?
OK
AT#VAUXSAV
OK
```

4.1.2.6. Analog/Digital Converter Input - #ADC

Description

This command reads pin <adc> voltage, converted by ADC, and outputs it in the format: #ADC: <value>

Syntax

Command Type	Command	Response / Action
Execute	AT#ADC=<adc>,<mode> ,<dir>	Saves the actual state of #VAUX pin to NVM.
Read	AT#ADC?	OK



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Test	AT#ADC=?	Reports the supported range of values of the command parameters <adc>, <mode> and <dir>.
-------------	----------	--

Parameters

Parameter	Type	Description
<adc>	Integer	Index of pin 1 - there is currently just one VAUX pin 1 - available for CC864-DUAL, GM862-QUAD, GM862-QUAD-PY, GM862-GPS, GE863-QUAD, GE863-PY, GE863-GPS, GE864-QUAD, GE864-PY, GC864-QUAD and GC864-PY 2 - available only for GE863-QUAD, GE863-PY, GE864-QUAD, GE864-PY, GC864-QUAD and GC864-PY 3 - available only for GE863-QUAD, GE863-PY, GE864-QUAD, GE864-PY, GC864-QUAD and GC864-PY
<mode>	Integer	Required action 2 - query ADC value
<dir>	Integer	direction; its interpretation is currently not implemented 0 - no effect.

Note: The command returns the last valid measure

Example

```
AT#ADC=?
#ADC: (1-3),(2),(0)

OK
AT#ADC?
#ADC: 83
#ADC: 32
#ADC: 33
```



OK
AT#ADC=1,2
#ADC: 83

OK
AT#ADC=2,2
#ADC: 32

OK

4.1.2.7. Digital/Analog Converter Control - #DAC

Description

This command enables/disables the **DAC_OUT** pin.

Syntax

Command Type	Command	Response / Action
Set	AT#DAC=<enable>, <value>	Enables/disables the DAC_OUT pin.
Read	AT#DAC?	OK
Test	AT#DAC=?	Reports the supported range of values of the command parameters <adc> , <mode> and <dir> .

Parameters

Parameter	Type	Description
-----------	------	-------------



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<enable>	Integer	<p>Enables/disables DAC output.</p> <p>0 - disables pin; it is in high impedance status (factory default)</p> <p>1 - enables pin; the corresponding output is driven</p>
<value>	Integer	<p>Scale factor of the integrated output voltage; it must be present if <enable>=1</p> <p>0..255 - 8 bit precision</p> <p>Note: integrated output voltage = MAX_VOLTAGE * value / 255</p>

Example

```
AT#DAC=?
#DAC: (0,1),(0-255)
```

```
OK
AT#DAC?
#DAC: 0,0
```

```
OK
AT#DAC=1,100
OK
AT#DAC?
#DAC: 1,100
```

```
OK
```

4.1.2.8. V24 Output Pins Configuration - #V24CFG

Description

This command sets the AT Command serial port (UART) interface output pins mode.

Syntax



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Command Type	Command	Response / Action
Set	AT#V24CFG=<pin>,<mode>	Sets the AT Command serial port (UART) interface output pins mode.
Read	AT#V24CFG?	Returns actual mode for all the pins in the format: #V24CFG: <pin1>,<mode1>[<CR><LF> #V24CFG: <pin2>,<mode2>[...]] Where: <pin <i>n</i> > - AT command serial port interface HW pin <mode <i>n</i> > - AT commands serial port interface hardware pin mode
Test	AT#V24CFG=?	Reports supported range of values for parameters <pin> and <mode>.

Parameters

Parameter	Type	Description
<pin>	Integer	AT commands serial port interface hardware pin: 0 - DCD (Data Carrier Detect) 1 - CTS (Clear To Send) 2 - RI (Ring Indicator) 3 - DSR (Data Set Ready)
<mode>	Integer	AT commands serial port interface hardware pins 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.

Example

```
AT#V24CFG=?
#V24CFG: (0-3),(0-1)
```




```
OK
AT#V24CFG?
#V24CFG: 0, 0
#V24CFG: 1, 0
#V24CFG: 2, 0
#V24CFG: 3, 0
```

```
OK
AT#V24CFG=2,1
OK
AT#V24CFG?
#V24CFG: 0, 0
#V24CFG: 1, 0
#V24CFG: 2, 1
#V24CFG: 3, 0
```

```
OK
```

4.1.2.9. V24 Output Pins Control - #V24

Description

Set the AT Command serial port (UART) interface output pins state.

Syntax

Command Type	Command	Response / Action
Set	AT#V24=<pin> [,<state>]	Set the AT Command serial port (UART) interface output pins state.



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Read	AT#V24?	<p>Returns actual state for all the pins in the format:</p> <p>#V24: <pin1>,<state1>[<CR><LF> #V24: <pin2>,<state2>[...]]</p> <p>where</p> <p><pin<i>n</i>> - AT command serial port interface HW pin</p> <p><state<i>n</i>> - AT commands serial port interface hardware pin state</p>
Test	AT#V24=?	<p>Reports supported range of values for parameters <pin> and <state>.</p>

Parameters

Parameter	Type	Description
<pin>	Integer	<p>AT commands serial port interface hardware pin:</p> <ul style="list-style-type: none"> 0 - DCD (Data Carrier Detect) 1 - CTS (Clear To Send) 2 - RI (Ring Indicator) 3 - DSR (Data Set Ready) 4 - DTR (Data Terminal Ready) 5 - RTS (Request To Send)
<state>	Integer	<p>State of AT commands serial port interface output hardware pins (0, 1, 2, 3) when pin is in GPIO mode (see #V24CFG):</p> <ul style="list-style-type: none"> 0 - Low 1 - High

Note: if **<state>** is omitted the command returns state of the pin.

Example

```
AT#V24=?
#V24: (0-5),(0-1)
```



OK
AT#V24?
#V24: 0, 1
#V24: 1, 1
#V24: 2, 1
#V24: 3, 1
#V24: 4, 1
#V24: 5, 1

OK
AT#V24CFG=2,1
OK
AT#V24=2,0
OK
AT#V24?
#V24: 0, 1
#V24: 1, 1
#V24: 2, 0
#V24: 3, 1
#V24: 4, 1
#V24: 5, 0

OK

4.1.2.10. AXE Pin Reading - #AXE

Description

This command returns the current state of AXE pin.

Syntax



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Command Type	Command	Response / Action
Execute	AT#AXE	Command causes the ME to return the current state of AXE pin in the format: #AXE: <state>
Test	AT#AXE=?	Returns the OK result code

Parameters

Parameter	Type	Description
<stat>	Integer	0 - Low 1 - High

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT#AXE=?
OK
AT#AXE
#AXE: 1

OK
```

4.1.2.11. Dialing Mode - #DIALMODE

Description

This command sets dialing modality.



Syntax

Command Type	Command	Response / Action
Set	AT#DIALMODE=<mode>	Sets the dialing modality.
Read	AT#DIALMODE?	Returns current ATD dialling mode in the format: #DIALMODE: <mode>
Test	AT#DIALMODE=?	Returns the range of values for parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 - Issued OK immediately 1 - Reserved 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)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	
Execution Time	Executed immediately, not time critical.
Note	The setting is saved in NVM and available on following reboot



Reference

Example

```
AT#DIALMODE=?  
#DIALMODE: (0-2)
```

```
OK  
AT#DIALMODE?  
#DIALMODE: 0
```

```
OK  
AT#DIALMODE=2  
OK
```

4.1.2.12. Automatic Call - #ACAL

Description

This command enables/disables the automatic call function.

Syntax

Command Type	Command	Response / Action
Set	AT#ACAL=[<mode>]	Enables/disables the automatic call function
Read	AT#ACAL?	Reports whether the automatic call function is currently enabled or not, in the format: #ACAL: <mode>
Test	AT#ACAL=?	Returns the supported range of values for parameter <mode>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<mode> Integer
 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

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	
Execution Time	Executed immediately, not time critical.
Note	See &Z to write and &N to read the number on module internal phonebook
Reference	

Example

```
AT#ACAL=?
#ACAL: (0-1)
```

```
OK
AT#ACAL?
#ACAL: 0
```

```
OK
AT#ACAL=1
OK
```

4.1.2.13. Extended Automatic Call - #ACALEXT

Description

This command enables/disables the extended automatic call function.



Syntax

Command Type	Command	Response / Action
Set	AT#ACALEXT=<mode> ,<index>	Enables/disables the call monitoring function in the ME.
Read	AT#ACALEXT?	Reports either whether the automatic call function is currently enabled or not, and the last <index> setting in the format: #ACALEXT: <mode>,<index>
Test	AT#ACALEXT=?	Returns the range of available positions in a phonebook depends on the selected phonebook. This is the reason why the test command returns three ranges of values: the first for parameter <mode>, the second for parameter <index> when internal phonebook is chosen

Parameters

Parameter	Type	Description
<mode>	Integer	0 - disables the automatic call function (factory default) 1 - enables the automatic call function from internal phonebook If the extended automatic call function is enabled and &D2 has been issued, the transition OFF/ON of DTR causes an automatic call to the number stored in position <index> in the selected phonebook
<index>	Integer	Indicates a position in the currently selected phonebook

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes

Execution Time

Executed immediately, not time critical.

Note

Issuing **#ACALEXT** causes the **#ACAL <mode>** to be changed. Issuing **AT#ACAL=1** causes the **#ACALEXT <index>** to be set to default. It is recommended to NOT use contemporaneously either **#ACALEXT** and **#ACAL**

See **&Z** to write and **&N** to read the number on module internal phonebook

Reference

Example

```
AT#ACALEXT=?
#ACALEXT: (0-1),(0-9)
```

```
OK
AT#ACALEXT?
#ACALEXT: 0, 0
```

```
OK
AT#ACALEXT=1,0
OK
```

4.1.2.14. Extended Call Monitoring - #ECAM

Description

This command enables/disables the call monitoring function in the ME.

Syntax

Command Type	Command	Response / Action
Set	AT#ECAM=[<onoff>]	Enables/disables the call monitoring function in the ME.



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Read	AT#ECAM?	Reports whether the extended call monitoring function is currently enabled or not, in the format: #ECAM: <onoff>
Test	AT#ECAM=?	Returns the list of supported values for <onoff>

Parameters

Parameter	Type	Description
<onoff>	Integer	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 will be displayed in the format below: #ECAM: <ccid>,<ccstatus>,<calltype>,,,[<number>,<type>]
<ccid>	Integer	Call ID
<ccstatus>	Integer	Call status 0 - idle 1 - calling (MO) 2 - connecting (MO) 3 - active 4 - hold 5 - waiting (MT) 6 - alerting (MT) 9 - CNAP (Calling Name Presentation) information (MT) Note: If the value of <ccstatus> is 9 , then the modem returns the response: #ECAM: <ccid>,<ccstatus>,<calltype>,,,<alpha>,<disp_type>
<calltype>	Integer	1 - Voice 2 - Data



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<number>	Integer	Called number (valid only for <ccstatus>=1)
<type>	Integer	Type of <number> 129 - national number 145 - international number
<alpha>	String	Specific Alpha tag (max length: 65 byte)
<disp_
type>		Display type

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	
Execution Time	Executed immediately, not time critical.
Note	The unsolicited indication is sent along with usual codes (OK, NO CARRIER, BUSY...)
Reference	

Example

```
AT#ECAM=?
#ECAM: (0-1)
```

```
OK
AT#ECAM?
#ECAM: 0
```

```
OK
```

4.1.2.15. Set Notification Port - #NOPT

Description

This command sets the port output notification data (Indication data)
CC864 Family has the following 4 ports:



Telit USB Modem Port
Telit USB Auxiliary Port
Telit USB NMEA Port
UART Data Port

Notification data will be sent to the specific port is set by #NOPT.

Syntax

Command Type	Command	Response / Action
Set	AT#NOPT=<"STRING">	Sets the port output notification data (Indication data)
Read	AT#NOPT?	Reports the current notification port.
Test	AT#NOPT=?	Reports the available range of values for parameter <num>.

Parameters

Parameter	Type	Description
<"STRING">	Integer	Notification Port "USB_CDC" "USB_NMEA" "USB_AUX" "UART1"

Example

```
AT#NOPT ?
#NOPT: "USB_CDC","USB_NMEA","USB_AUX","UART1"

OK
```



```
AT#NOPT= "USB_CDC","UART1"
OK
AT#NOPT ?
#NOPT: "USB_CDC","UART1"

OK
```

4.1.2.16. RTC Status - #RTCSTAT

Description

This command is used to reset the RTC status flag.

Syntax

Command Type	Command	Response / Action
Set	AT#RTCSTAT=[<status>]	Resets the RTC status flag.
Read	AT#RTCSTAT?	Reports the current value of RTC status flag, in the format: #RTCSTAT: <status>
Test	AT#RTCSTAT=?	Returns the range of supported values for parameter <status>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<status> Integer 0 - Set RTC Status to **RTC HW OK**

Note: the initial value of RTC status flag is **RTC HW Error** and it doesn't change until a command **AT#RTCSTAT=0** is issued.

Note: if a power failure occurs and the buffer battery is down the RTC status flag is set to **1**. It doesn't change until command **AT#RTCSTAT=0** is issued.

Example

```
AT#RTCSTAT=?
#RTCSTAT: (0-1)
```

```
OK
AT#RTCSTAT?
#RTCSTAT: 0
```

```
OK
```

4.1.2.17. TeleType Writer - #TTY

Description

This command sets the TTY mode.

Syntax

Command Type	Command	Response / Action
Set	AT#TTY=<mode>	Set command selects the TTY mode.
Read	AT#TTY?	Returns currently TTY mode, in the format: #TTY: <mode>
Test	AT#TTY=?	Returns the range of values for parameter <mode>



Parameters

Parameter	Type	Description
<mode>	Integer	0 – TTY Off (default value) 1 – TTY On 2 – TTY + voice (VCO: Voice Carry Over) 3 – TTY + hear (HCO: Hearing Carry Over)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT#TTY=?
#TTY: (0-3)
```

```
OK
AT#TTY?
#TTY: 0
```

```
OK
AT#TTY=1
OK
```

4.1.2.18. Audio Codec - #CODEC

Description

This command sets the audio codec mode.



Syntax

Command Type	Command	Response / Action
Set	AT#CODEC=[<codec>]	Set command selects the audio codec mode.
Read	AT#CODEC?	Returns the current value of <codec> parameter
Test	AT#CODEC=?	Returns the range of supported values for parameter <codec>

Parameters

Parameter	Type	Description
<codec>	Integer	Audio codec 0 – EVRC 1 – QCELP

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT#CODEC=?
#CODEC: (0,1)

OK
AT#CODEC?
#CODEC: 1
```



OK
AT#CODEC=0
OK

4.1.2.19. Hands-free Echo Canceller - #SHFEC

Description

This command enables/disables the echo canceller on the audio hands-free output.

Syntax

Command Type	Command	Response / Action
Set	AT#SHFEC=[<mode>]	Enables/disables the echo canceller function on audio hands-free output
Read	AT#SHFEC?	Reports whether the echo canceller function on audio hands-free output is currently enabled or not, in the format: #SHFEC: <mode>
Test	AT#SHFEC=?	Returns the supported range of values of parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 - disables echo canceller for hands-free mode (factory default) 1 - enables echo canceller for hands-free mode

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This setting returns to default after power off



Reference

Example

```
AT#SHFEC=?  
#SHFEC: (0,1)
```

```
OK  
AT#SHFEC?  
#SHFEC: 0
```

```
OK  
AT#SHFEC=1  
OK
```

4.1.2.20. Hands-free Microphone Gain - #HFMICG

Description

This command sets the hands-free microphone input gain.

Syntax

Command Type	Command	Response / Action
Set	AT#HFMICG=[<level>]	Sets the hands-free microphone input gain
Read	AT#HFMICG?	Returns the current hands-free microphone input gain, in the format: #HFMICG: <level>
Test	AT#HFMICG=?	Returns the supported range of values of parameter <level>



Parameters

Parameter	Type	Description
<level>	Integer	Hands-free microphone input gain 0..7 – hands-free microphone gain

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT#HFMICG=?
#HFMICG: (0-7)
```

```
OK
AT#HFMICG?
#HFMICG: 4
```

```
OK
AT#HFMICG=0
OK
```

4.1.2.21. Handset Microphone Gain - #HSMICG

Description

This command sets the handset microphone input gain.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Set	AT#HSMICG=[<level>]	Sets the handset microphone input gain
Read	AT#HSMICG?	Returns the current handset microphone input gain, in the format: #HSMICG: <level>
Test	AT#HSMICG=?	Returns the supported range of values of parameter <level>

Parameters

Parameter	Type	Description
<codec>	Integer	Handset microphone input gain 0..7 - handset microphone gain

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

```
AT#HSMICG=?
#HSMICG: (0-7)

OK
AT#HSMICG?
#HSMICG: 0

OK
```



AT#HSMICG=4
OK

4.1.2.22. Set Handset Side-tone - #SHFSD

Description

This command enables/disables the side-tone on the handset audio output.

Syntax

Command Type	Command	Response / Action
Set	AT#SHFSD=[<mode>]	Enables/disables the side-tone on headset audio output
Read	AT#SHFSD?	Reports whether the headset side-tone is currently enabled or not, in the format: #SHFSD: <mode>
Test	AT#SHFSD=?	Returns the supported range of values of parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 - disables the headset side-tone (factory default) 1 - enables the headset side-tone

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This setting returns to default after power off
Reference	



Example

```
AT#SHFSD=?
#SHFSD: (0,1)
```

```
OK
AT#SHFSD?
#SHFSD: 0
```

```
OK
AT#SHFSD=1
OK
```

4.1.2.23. Speaker Mute Control - #SPKMUT

Description

This command is used to enable/disable the global muting of the speaker audio line.

Syntax

Command Type	Command	Response / Action
Set	AT#SPKMUT=<n>	Enables/disables the global muting of the speaker audio line, for every audio output (ring, incoming SMS, voice, Network coverage)
Read	AT#SPKMUT?	Reports whether the muting of the speaker audio line during a voice call is enabled or not, in the format: \$SPKMUT: <n>
Test	AT#SPKMUT=?	Reports the supported values for <n> parameter

Parameters

Parameter	Type	Description
-----------	------	-------------



<n> Integer
0 – mute off, speaker active (factory default)
1 – mute on, speaker muted

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This command mutes/activates both speaker audio paths, internal speaker and external speaker
Reference	

Example

```
AT#SPKMUT=?
#SPKMUT: (0,1)
```

```
OK
AT#SPKMUT?
#SPKMUT: 0
```

```
OK
AT#SPKMUT=1
OK
```

4.1.2.24. Audio Profile Factory Configuration - #PRST

Description

This command is used to reset the audio parameters back to default in the NV memory.

Syntax



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Command Type	Command	Response / Action
Execute	AT#PRST	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: <ul style="list-style-type: none"> - microphone line gain - earpiece line gain - side tone gain - LMS adaptation speed (step size) - 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
Test	AT#PRST=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example

AT#PRST=?

OK



AT#PRST
OK

4.1.2.25. Audio Profile Configuration Save - #PSAV

Description

This command is used to save the audio parameters in the NV memory.

Syntax

Command Type	Command	Response / Action
Execute	AT#PSAV	<p>Command saves the actual audio parameters in the NVM of the device. It is not allowed if active audio profile is 0.</p> <p>The audio parameters to store are:</p> <ul style="list-style-type: none"> - 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
Test	AT#PSAV=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



Note

Reference

Example

```
AT#PSAV=?
OK
AT#PSAV
OK
```

4.1.2.26. Audio Profile Selection - #PSEL

Description

This command is used to select the active audio profile.

Syntax

Command Type	Command	Response / Action
Set	AT#PSEL=<prof>	Selects the active audio profile
Read	AT#PSEL?	Returns the active profile in the format: #PSEL:<prof>
Test	AT#PSEL=?	Returns the supported range of values of parameter <prof>

Parameters

Parameter	Type	Description
<prof>	Integer	Current profile: 0 - standard profile 1..3 - extended profile, modifiable

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This parameter is saved in NVM issuing AT&W command
Reference	

Example

```
AT#PSEL=?
#PSEL: (0-3)
```

```
OK
AT#PSEL?
#PSEL: 0
```

```
OK
AT#PSEL=1
OK
```

4.1.2.27. Audio Profile Setting - #PSET

Description

This command is used to set the audio parameters for the active audio profile.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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<nr_w_0>	Integer	Noise reduction weighting factor (band 300-500Hz) (unused)
<nr_w_1>	Integer	Noise reduction weighting factor (band 500-4000Hz) (unused)
<add_atten>	Integer	AGC Additional attenuation (unused)
<min_atten>	Integer	AGC minimal attenuation (unused)
<max_atten>	Integer	AGC maximal attenuation (unused)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	Set and read commands are not allowed if active audio profile is 0
Reference	

Example

```

AT#PSET=?
#PSET: (-6,6),(-6,6),(-1,24),(0,2),(10,50),(-90,90),(6,42),(0,9),(0,9),(0,90),(0,90),(0,90)

OK
AT#PSEL=1
OK
AT#PSET?
#PSET: 0,0,-1,1,20,-5,6,2,2,6,0,12

OK
AT#PSET=6,6,24,2,50,90,42,9,9,90,90,90
OK
    
```



4.1.2.28. Skip Escape Sequence - #SKIPESC

Description

This command is used to enable/disable skipping the escape sequence +++ while transmitting during a data connection.

Syntax

Command Type	Command	Response / Action
Set	AT#SKIPESC=[<mode>]	Set command enables/disables skipping the escape sequence +++ while transmitting during a data connection.
Read	AT#SKIPESC?	Returns the current value of <mode> parameter
Test	AT#SKIPESC=?	Returns the range of supported values for parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 - doesn't skip the escape sequence; its transmission is enabled (factory default). 1 - skips the escape sequence; its transmission is not enabled.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Reference	

Example



AT#SKIPESC=?
#SKIPESC: (0,1)

OK
AT#SKIPESC?
#SKIPESC: 0

OK
AT#SKIPESC=1
OK
AT#SKIPESC?
#SKIPESC: 1

OK

4.1.2.29. Escape Sequence Guard Time - #E2ESC

Description

This command sets a guard time in seconds for the escape sequence in CDMA Data connection to be considered a valid one.

Syntax

Command Type	Command	Response / Action
Set	AT#E2ESC=<gt;	Set command sets a guard time in seconds for the escape sequence in CDMADC to be considered a valid one (and return to on-line command mode).
Read	AT#E2ESC?	Returns the current value of <gt; parameter
Test	AT#E2ESC=?	Returns the OK result code

Parameters



Parameter	Type	Description
<gt;	Integer	0 - guard time defined by command S12 (factory default) 1..10 - guard time in seconds

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If the Escape Sequence Guard Time is set to a value different from zero, it overrides the one set with S12 .
Reference	

Example

```
AT#E2ESC=?
OK
AT#E2ESC?
#E2ESC: 0
```

```
OK
AT#E2ESC=10
OK
AT#E2ESC?
#E2ESC: 10
```

```
OK
```

4.1.2.30. Show Address - #CGPADDR

Description

This command returns either the IP address for the CDMA context or the information for the specified <cid> whose context has been already defined.



Syntax

Command Type	Command	Response / Action
Execute	AT#CGPADDR=[<cid> [,<cid>[,...]]]	<p>Execution command returns either the IP address for the CDMA context</p> <p><cid> - context identifier</p> <p>The command returns the information for the 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:</p> <p>#CGPADDR: <cid>,<address><CR><LF></p>
Test	AT#CGPADDR=?	Returns a list of defined <cid> s.

Parameters

Parameter	Type	Description
<cid>	Integer	context identifier 1 - specifies the CDMA traffic
<address>	Integer	CDMA context identifier

Example

```
AT#SGACT=1,1
+IP: xxx.yyy.zzz.www

OK
AT#CGPADDR=1
+CGPADDR: 1,"xxx.yyy.zzz.www"

OK
AT#CGPADDR=?
```



+CGPADDR: (1)

OK

4.1.2.31. Network Time Zone - #NITZ

Description

This command returns the current system time.

Syntax

Command Type	Command	Response / Action
Read	AT#NITZ?	Returns the current system time.
Test	AT#NITZ=?	Returns the OK result code

Example

```
AT#NITZ=?
OK
AT#NITZ?
#NITZ: "08/12/22,16:54:51"
```

OK

4.1.2.32. PPP Connection Authentication Type - #GAUTH

Description

This command sets the PPP connection authentication type.

Syntax

Command Type	Command	Response / Action
Set	AT#GAUTH=[<type>]	Sets the PPP connection authentication type



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Read	AT#GAUTH?	Reports the current PPP connection authentication type, in the format: #GAUTH: <type>
Test	AT#GAUTH=?	Returns the range of supported values for parameter <type> .

Parameters

Parameter	Type	Description
<type>	Integer	Authentication type 3 – AUTO authentication (PAP and CHAP , factory default)

Note: for PPP passive mode, <type> is fixed to AUTO.

Example

```
AT#GAUTH=?
#GAUTH: (3)

OK
AT#GAUTH?
#GAUTH: 3

OK
AT#GAUTH=3
OK
```

4.2. Socket Communications

4.2.1. Authentication User ID – #USERID

Description

This command sets the user identification string to be used during the authentication step.



Syntax

Command Type	Command	Response / Action
Set	AT#USERID[=<user>]	Sets the user identification string to be used during the authentication step.
Read	AT#USERID?	Reports the current user identification string, in the format: #USERID: <user>.
Test	AT#USERID=?	Returns the maximum allowed length of the string parameter <user>.

Parameters

Parameter	Type	Description
<user> -	string	It is the authentication User Id; the max length for this value is the output of Test command, AT#USERID=? (factory default is the empty string "")

Example

```

AT#USERID=?
#USERID: (50)

OK
AT#USERID?
#USERID: ""

OK
AT#USERID="myName"
OK
    
```



```
AT#USERID?  
#USERID: "myName"
```

```
OK
```

4.2.2. Authentication Password – #PASSW

Description

This command sets the user password string to be used during the authentication step.

Syntax

Command Type	Command	Response / Action
Set	AT#PASSW=[<pwd>]	Sets the user identification string to be used during the authentication step.
Test	AT#PASSW=?	Returns the maximum allowed length of the string parameter <pwd>.

Parameters

Parameter	Type	Description
<pwd>	String	It is the authentication password; the max length for this value is the output of Test command, AT#PASSW=? (factory default is the empty string "")

Example

```
AT#PASSW=?  
#PASSW: (50)
```



```
OK
AT#PASSW="myName"
OK
```

4.2.3. Packet Size – #PKTSZ

Description

This command sets the default packet size to be used by the TCP/UDP/IP stack for data sending.

Syntax

Command Type	Command	Response / Action
Set	AT#PKTSZ=[<size>]	Sets the default packet size
Read	AT#PKTSZ?	Reports the current packet size value.
		Note: after issuing command AT#PKTSZ=0 , the Read command reports the value automatically chosen by the device.
Test	AT#PKTSZ=?	Returns the maximum allowed length of the string parameter <size>.

Parameters

Parameter	Type	Description
<size>	Integer	packet size in bytes 0 - automatically chosen by the device 1..1500 - packet size in bytes (factory default is 300)

Example

```
AT#PKTSZ=?
```



#PKTSZ: (0,1-1500)

OK

AT#PKTSZ?

#PKTSZ: 300

OK

AT#PKTSZ=1000

OK

AT#PKTSZ?

#PKTSZ: 1000

OK

4.2.4. Data Sending Time-Out – #DSTO

Description

This command sets the maximum time that the module awaits before sending anyway a packet whose size is less than the default one.

Syntax

Command Type	Command	Response / Action
Set	AT#DSTO=[<tout>]	Sets the maximum time.
Read	AT#DSTO?	Reports the current data sending time-out value.
Test	AT#DSTO=?	Returns the allowed values for the parameter <tout>.

Parameters

Parameter	Type	Description
-----------	------	-------------



<tout>	Integer	<p>packet sending time-out in 100ms units (factory default is 50)</p> <p>0 - no time-out, wait forever for packets to be completed before send.</p> <p>1..255 hundreds of ms</p> <p>Note: In order to avoid low performance issues, it is suggested to set the data sending time-out to a value greater than 5.</p> <p>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.</p>
---------------------	---------	--

Example

```

AT#DSTO=?
#DSTO: (0,1-255)

OK
AT#DSTO?
#DSTO: 50

OK
AT#DSTO=10 ->1 sec. time-out
OK
AT#DSTO?
#DSTO: 10

OK

```

4.2.5. Socket Inactivity Time-Out – #SKTTO

Description

This command sets the maximum time with no data exchanging on the socket that the module awaits before closing the socket and deactivating the CDMA Data Connection.



Syntax

Command Type	Command	Response / Action
Set	AT#SKTTO=[<tout>]	Sets the maximum time.
Read	AT#SKTTO?	Reports the current data sending time-out value.
Test	AT#SKTTO=?	Returns the allowed values for the parameter <tout>.

Parameters

Parameter	Type	Description
<tout>	Integer	socket inactivity time-out in seconds units 0 - no time-out. 1..65535 - 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 and the CDMA DATA CONNECTION context deactivated.

Example

```

AT#SKTTO=?
#SKTTO: (0,1-65535)

OK
AT#SKTTO?
#SKTTO: 90

OK
AT#SKTTO=30 ->(30 sec. time-out)

OK
AT#SKTTO?

```



#SKTTO: 30

OK

4.2.6. Socket Definition – #SKTSET

Description

This command sets the socket parameters values.

Note: the DNS Query to be successful requests that:

- the authentication parameters are set (**#USERID**, **#PASSW**)
- the CDMA coverage is enough to permit a connection

Syntax

Command Type	Command	Response / Action
Set	AT#SKTSET=[<socket type>,<remote port>,<remote address>,[<closure type>],[<local port>]]	Sets the socket parameters values.
Read	AT#SKTSET?	Reports the socket parameters values, in the format: AT#SKTSET: <socket type>,<remote port>,<remote addr>,<closure type>,<local port>.
Test	AT#SKTSET=?	Returns the allowed values for the parameters.

Parameters

Parameter	Type	Description
-----------	------	-------------



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<socket type>	Integer	socket protocol type 0 - TCP (factory default) 1 - UDP
<remote port>	Integer	remote host port to be opened 1..65535 - port number (factory default is 3333)
<remote addr>	Integer	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 in the format: <host name> (factory default is the empty string "") 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: - the authentication parameters are set (#USERID , #PASSW) - the CDMA coverage is enough to permit a connection
<closure type>	Integer	socket closure behavior for TCP 0 - local host closes immediately when remote host has closed (default) 255 - local host closes after an escape sequence (+++) Note: <closure type> parameter is valid only for TCP socket type, for UDP sockets shall be left unused.
<local port>	Integer	local host port to be used on UDP socket 1..65535 - port number Note: <local port> parameter is valid only for UDP socket type, for TCP sockets shall be left unused.

Example

```
AT#SKTSET=?
#SKTSET: (0,1),(1-65535),"host",(0,255),(1-65535)
```

OK



```

AT#SKTSET?
#SKTSET: 0,3333,"",0,256

OK
AT#SKTSET=0,1024,"123.255.020.001"
OK
AT#SKTSET?
#SKTSET: 0,1024,"123.255.020.001",0,256

OK
AT#SKTSET=1,512,"www.telit.net",255,1
OK
AT#SKTSET?
#SKTSET: 1,512,"www.telit.net",255,1

OK
    
```

4.2.7. Socket Open – #SKTOP

Description

This 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.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	AT#SKTOP	Context activation, authentication and socket open
Test	AT#SKTOP=?	OK.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	Supported for the purpose of cross-technology compatibility within products supporting Telit Unified AT-commands.
Reference	

Example

```
AT#SKTOP=?
OK
AT#SKTOP
..CDMA Data connection activation, authentication and socket open..
CONNECT
```

4.2.8. Query DNS – #QDNS

Description

This command executes a DNS query to solve the host name into an IP address. If the DNS query is successful then the IP address will be reported in the result code:

#QDNS: "<host name>",<IP address>

Note: the command has to activate the CDMA Data connection if it was not previously activated. In this case the context is deactivated after the DNS query.

Note: <IP address> is in the format: **xxx.xxx.xxx.xxx**



Syntax

Command Type	Command	Response / Action
Execute	AT#QDNS=<host name>	Executes a DNS query to solve the host name into an IP address.
Test	AT#QDNS=?	OK.

Parameters

Parameter	Type	Description
<host name>	String	Host name

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	This command requires that the authentication parameters are correctly set and that the CDMA network is present. Issuing command #QDNS will overwrite <remote addr> setting for command #SKTSET .
Reference	

Example

```
AT#QDNS=?
OK
AT#CDMADC=1
+IP: 173.112.57.217

OK
AT#QDNS="www.telit.com"
#QDNS: "www.telit.com","81.201.117.177"
```



OK
AT#CDMADC=0
OK

#DREL

4.2.9. Socket TCP Connection Time-Out- #SKTCT

Description

This command sets the TCP connection time-out for the first **CONNECT** answer from the TCP peer to be received.

Syntax

Command Type	Command	Response / Action
Set	AT#SKTCT=[<tout>]	Sets the TCP connection time-out for the first " CONNECT " answer from the TCP peer to be received.
Read	AT#SKTCT?	Reports the current TCP connection time-out.
Test	AT#SKTCT=?	Returns the allowed values for parameter <tout>

Parameters

Parameter	Type	Description
<tout>	Integer	TCP first CONNECT answer time-out in 100ms units 10..1200 - hundreds of ms (factory default value is 600). 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 CDMA Data connection and resolving the name with the DNS query (if the peer was specified by name and not by address) is not counted in this time-out.



Example

```
AT#SKTCT=?  
#SKTCT: (10-1200)
```

```
OK  
AT#SKTCT?  
#SKTCT: 600
```

```
OK  
AT#SKTCT=900  
OK
```

socket first connection answer time-out has been set to 90 s.

4.2.10. Socket Parameter Saves- #SKTSAV

Description

This command stores the current socket parameters in the NVM of the device only for Sprint and AERIS software. On Verizon software the parameters below are reset to default values after a power-reset. The User ID and Password will be auto-populated after a power-reset.

The socket parameters to store are:

- User ID
- Password
- Packet Size
- Data Sending Time-Out
- Socket Inactivity Time-Out
- Socket Type (UDP/TCP)
- Remote Port
- Remote Address



Syntax

Command Type	Command	Response / Action
Set	AT#SKTSAV	Stores the current socket parameters in the NVM of the device.
Test	AT#SKTSAV=?	OK

Parameters

Parameter	Type	Description
<tout>	Integer	TCP first CONNECT answer time-out in 100ms units 10..1200 - hundreds of ms (factory default value is 600). 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 CDMA data connection and resolving the name with the DNS query (if the peer was specified by name and not by address) is not counted in this time-out.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If some parameters have not been previously specified then a default value will be stored.
Reference	

Example

```
AT#SKTSAV=?
OK
AT#SKTSAV
OK
```



socket parameters have been saved in NVM

4.2.11. Socket Parameters Reset- #SKTRST

Description

This 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

Syntax

Command Type	Command	Response / Action
Execute	AT#SKTRST	Resets the socket parameters to the “factory default” configuration and stores them in the NVM of the device.
Test	AT#SKTRST=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



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<tout> Integer
 TCP first **"CONNECT"** answer time-out in 100ms units
 10..1200 - hundreds of ms (factory default value is 600).
 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 CDMA Data connection and resolving the name with the DNS query (if the peer was specified by name and not by address) is not counted in this time-out.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If some parameters have not been previously specified then a default value will be stored.
Reference	

Example

```
AT#SKTRST=?
OK
AT#SKTRST
OK
Socket parameters have been reset
```

4.2.12. CDMA Data Connection – #CDMADC

Description

This command deactivates/activates the CDMA data connection, eventually proceeding with the authentication with the parameters given with **#PASSW** and **#USERID**.



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In the case that the CDMA Data connection has been activated, the result code **OK** is preceded by the intermediate result code:

+IP: <ip_address_obtained>

Reports the local IP address obtained from the network.

Syntax

Command Type	Command	Response / Action
Execute	AT#CDMADC=[<mode>]	Activates/deactivates a CDMA data connection based on the <mode> parameter used.
Read	AT#CDMADC?	Reports the current status of the CDMA Data connection, in the format: #CDMADC: <status>
Test	AT#CDMADC=?	Returns the allowed values for parameter <mode>.

Parameters

Parameter	Type	Description
<mode>	Integer	CDMA Data connection activation mode 0 – CDMA Data connection deactivation request 1 – CDMA Data connection activation request
<status>	Integer	0 - CDMA Data connection deactivated 1 - CDMA Data connection activated 2 - CDMA Data connection activation pending

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	



Note

Please note that #CDMADC for CDMA products does the same thing as #GPRS for GSM products.

Reference

Example

```
AT#CDMADC=?
#CDMADC: (0,1)
```

OK

```
AT#CDMADC?
#CDMADC: 0
```

OK

```
AT#CDMADC=1
+IP: 129.137.1.1
```

OK

Now the CDMA Data connection has been activated and our IP is 129.137.1.1

```
AT#CDMADC=0
```

OK

Now the CDMA Data connection has been deactivated, IP is lost.

4.2.13. Socket Dial – #SKTD

Description

This command opens the socket towards the peer specified in the parameters.

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: For the command to be successful the following must be true:



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- the authentication parameters are set (**#USERID, #PASSW**) the CDMA coverage is enough to permit a connection
- the CDMA has been activated with **AT#CDMADC=1**

Note: If all parameters are omitted then the behavior of Set command is the same as Read command.

Syntax

Command Type	Command	Response / Action
Execute	AT#SKTD=[<socket type>,<remote port>,<remote addr>,<closure type>],[<local port>]]	Resets the socket parameters to the “factory default” configuration and stores them in the NVM of the device.
Read	AT#SKTD?	Reports the socket dial parameters values, in the format: AT#SKTD: <socket type>,<remote port>,<remote addr>,<closure type>,<local port>
Test	AT#SKTD=?	Returns the allowed values for the parameters.

Parameters

Parameter	Type	Description
<socket type>	Integer	socket protocol type 0 - TCP (factory default) 1 - UDP
<remote port>	Integer	remote host port to be opened 1..65535 - port number (factory default is 0)



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<remote addr>	Integer	Address of the remote host, string type. This parameter can be either: <ul style="list-style-type: none"> - any valid IP address in the format: xxx.xxx.xxx.xxx - any host name to be solved with a DNS query in the format: <host name> (factory default is the empty string "")
<closure type>	Integer	socket closure behavior for TCP <ul style="list-style-type: none"> 0 - local host closes immediately when remote host has closed (default) 255 - local host closes after an escape sequence (+++) Note: <closure type> parameter is valid only for TCP socket type, for UDP sockets shall be left unused.
<local port>	Integer	local host port to be used on UDP socket <ul style="list-style-type: none"> 1..65535 - port number Note: <local port> parameter is valid only for UDP socket type, for TCP sockets shall be left unused.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	Supported for the purpose of cross-technology compatibility within products supporting Telit Unified AT-commands. The main difference between this command and #SKTOP is that this command does not interact with the CDMA data connection status, leaving it ON or OFF according to the #CDMADC setting, therefore when the connection made with #SKTD is closed the data connection (and hence the local IP address) is maintained.

Reference

Example

```
AT#SKTD=?
#SKTD: (0,1),(1-65535),"host",(0,255),(1-65535)
```




```
OK
AT#SKTD?
#SKTD: 0,3333,"",0,256
```

```
OK
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
```

4.2.14. Socket Listen – #SKTL

Description

This command opens/closes the socket listening for connection requests.

Note: the command to be successful requests that:

- the authentication parameters are set (**#USERID**, **#PASSW**)
- the CDMA coverage is enough to permit a connection
- the CDMA has been activated with **AT#CDMAC=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>

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 **#CDMADC=0** the socket is closed and no listen is anymore active.

If the context is closed by the network while in listening mode, the socket is closed, listen becomes inactive and an unsolicited code is reported:

#SKTL: ABORTED

Syntax

Command Type	Command	Response / Action
Execute	AT#SKTL=[<mode>, <socket type>, <input type>, [<closure type>]]	Opens/closes the socket listening for connection requests. OK
Read	AT#SKTL?	Returns the current socket listening status and the last settings of parameters <input port> and <closure type> , in the format: #SKTL: <status>,<input port>,<closure type>
Test	AT#SKTL=?	Returns the allowed values for parameters <mode> , <socket type> , <input port> and <closure type> .

Parameters

Parameter	Type	Description
<mode>	Integer	socket mode 0 - closes socket listening 1 - starts socket listening
<socket type>	Integer	socket protocol type 0 - TCP



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<input port>	Integer	local host input port to be listened 1..65535 - port number
<closure type>	Integer	socket closure behavior for TCP 0 - local host closes immediately when remote host has closed (default) 255 - local host closes after an escape sequence (+++)
<remote addr>	Integer	host address of the remote machine that contacted the device
<status>	Integer	socket listening status 0 - socket not listening 1 - socket listening

Example

```
AT#SKTL=?
#SKTL: (0,1),(0),(1-65535),(0,255)
```

```
OK
AT#SKTL?
#SKTL: 0,0,10501,0
```

```
OK
Activate CDMA Data connection
AT#CDMADC=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

4.2.15. Socket Listen Ring Indicator – #E2SLRI

Description

This command enables/disables the Ring Indicator pin response to a Socket Listen connection and, if enabled, the duration of the negative going pulse generated on receipt of connection.

Syntax

Command Type	Command	Response / Action
Execute	AT#E2SLRI=[<n>]	Enables/disables the Ring Indicator pin response
Read	AT#E2SLRI?	Reports whether the Ring Indicator pin response to a Socket Listen connect is currently enabled or not, in the format: #E2SLRI: <n>
Test	AT#E2SLRI=?	Returns the allowed values for parameter <status> .



Parameters

Parameter	Type	Description
<n>	Integer	<p>RI enabling</p> <p>0 - RI disabled for Socket Listen connect (factory default)</p> <p>50..1150 - RI enabled for Socket Listen connect; a negative going pulse is generated on receipt of connect and <n> is the duration in ms of this pulse</p>

Examples

```
AT#E2SLRI=?
#E2SLRI: (0,50-1150)
```

```
OK
AT#E2SLRI?
#E2SLRI: 0
```

```
OK
AT#E2SLRI=1000
OK
AT#E2SLRI?
#E2SLRI: 1000
OK
```

4.2.16. Firewall Setup - #FRWL

Description

This command controls the internal firewall settings.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	<p>AT#FRWL=[<action>, <ip_address>, <net_mask>]</p>	<p>Command returns OK result code if successful.</p> <p>Note: the firewall applies for incoming (listening) connections only.</p> <p>Firewall general policy is DROP, therefore all packets that are not included into an ACCEPT chain rule will be silently discarded.</p> <p>When a packet comes from the IP address incoming_IP, the firewall chain rules will be scanned for matching with the following criteria:</p> <p>incoming_IP & <net_mask> = <ip_addr> & <net_mask></p> <p>If criteria are matched, then the packet is accepted and the rule scan is finished; if criteria are not matched for any chain the packet is silently dropped.</p>
Read	<p>AT#FRWL?</p>	<p>Reports the list of all ACCEPT chain rules registered in the Firewall settings in the format:</p> <p>#FRWL: <ip_addr>,<net_mask> #FRWL: <ip_addr>,<net_mask> ... OK</p>
Test	<p>AT#FRWL=?</p>	<p>Returns the allowed values for parameter <action>.</p>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<action>	Integer	<p>command action</p> <p>0 - remove selected chain</p> <p>1 - add an ACCEPT chain</p> <p>2 - remove all chains (DROP everything); <ip_addr> and <net_mask> has no meaning in this case</p>
<ip_address>	String	<p>remote address to be added into the ACCEPT chain; it can be any valid IP address in the format: XXX.XXX.XXX.XXX</p>
<net mask>	String	<p>mask to be applied on the <ip_addr>; it can be any valid IP address mask in the format: XXX.XXX.XXX.XXX</p>

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately.
Notes	<p>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 behavior, deciding which hosts are allowed to connect to the local device.</p> <p>Rules are not saved in NVM, at startup the rules list will be empty.</p>
Reference	

Examples

Let assume we want to accept connections only from our devices which are on the 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
```



4.3. Multi-Socket Commands

4.3.1. Socket Status - #SS

Description

This command reports the current status of the sockets in the format:

```
#SS: <connId>,<state>,<locIP>,<locPort>,<remIP>,<remPort>
[<CR><LF><connId>,<state>,<locIP>,<locPort>,<remIP>,<remPort>
[...]]
```

Syntax

Command Type	Command	Response / Action
Execute	AT#SS	Reports the current status of the sockets
Test	AT#SS=?	OK.

Parameters

Parameter	Type	Description
<connId>	Integer	Socket connection identifier, 1..6
<state>	Integer	Actual state of the socket 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.
<locIP>	Integer	IP address associated by the context activation to the socket.



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<locPort>	Integer	There are 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>	Integer	when connected to a remote machine this is the remote IP address
<remPort>	Integer	it is the port e connected to on the remote machine

Examples

```
AT#SS=?
OK
AT#SS
#SS: 1,0
#SS: 2,0
#SS: 3,0
#SS: 4,0
#SS: 5,0
#SS: 6,0

OK
```

4.3.2. Socket Info - #SI

Description

This command is used to get information about socket data traffic, in response format:

#SI: <connId>,<sent>,<received>,<buff_in>,<ack_waiting>

Syntax

Command Type	Command	Response / Action
Execute	AT#SI[=<connId>]	Used to get information about socket data traffic.



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Test AT#SI=? Reports the range for parameter <connId>.

Parameters

Parameter	Type	Description
<connId>	Integer	socket connection identifier 1..6
<sent>	Integer	total amount (in bytes) of sent data since the last time the socket connection identified by <connId> has been opened
<received>	Integer	total amount (in bytes) of received data since the last time the socket connection identified by <connId> has been opened
<buff_in>	Integer	total amount (in bytes) of data just arrived through the socket connection identified by <connId> and currently buffered, not yet read
<ack_waiting>	Integer	total amount (in bytes) of sent and not yet acknowledged data since the last time the socket connection identified by <connId> has been opened

Examples

```

AT#SI=?
#SI: (1-6)

OK

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
```

4.3.3. Context Activation - #SGACT

Description

This command is used to activate or deactivate the specified PDP context.

Syntax

Command Type	Command	Response / Action
Execute	AT#SGACT=<cid>,<stat>[,<userId>,<pwd>]	Reports the current status of the sockets
Read	AT#SGACT?	Returns the state of the context, in the format: #SGACT: <cid1>,<Stat1>.
Test	AT#SGACT=?	Reports the range for the parameters <stat>

Parameters

Parameter	Type	Description
<cid>	Integer	PDP context identifier 1 - numeric parameter which specifies a particular PDP context definition Note: <cid> is always "1" because only one PDP is supported.



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<stat>	Integer	0 - deactivate the context 1 - activate the context
<userId>	String	used only if the context requires it
<pwd>	String	used only if the context requires it
<cid1 >	Integer	always 1
<stat1>	Integer	context status 0 - context deactivated 1 - context activated

Examples

```
AT#SGACT=?
#SGACT: (1),(0,1),,
```

```
OK
AT#SGACT?
#SGACT: 1,0
```

```
OK
AT#SGACT=1,1
#DREL

#SGACT: 10.29.38.67
```

```
OK
AT#SGACT?
#SGACT: 1,1
```

```
OK
AT#SGACT=1,0
OK
```



#DREL

4.3.4. Socket Shutdown - #SH

Description

This command is used to close a socket.

Note: a socket connection can be closed only when it is in suspended mode (with pending data too). Trying to close an active socket connection will produce an error.

Syntax

Command Type	Command	Response / Action
Execute	AT#SH=<connId>	OK - Socket is closed. ERROR
Test	AT#SH=?	Returns the values for <connID> parameter.

Parameters

Parameter	Type	Description
<connId>	Integer	socket connection identifier

Example

```
AT#SH=?
#SH: (1-6)

OK
AT#SH=1
OK
AT#SH=2
OK
AT#SH=6
OK
```



4.3.5. Socket Configuration - #SCFG

Description

This command sets the socket configuration parameters.

Syntax

Command Type	Command	Response / Action
Set	AT#SCFG= <connId>,<cid>, <pktSz>,<maxTo>, <connTo>,<txTo>	OK - Socket is closed. ERROR
Read	AT#SCFG?	Returns the values for <connID> parameter.
Test	AT#SCFG=?	Returns the range of supported values for all the sub-parameters.

Parameters

Parameter	Type	Description
<connId>	Integer	socket connection identifier, 1..6
<cid>	Integer	PDP context identifier 1 - numeric parameter which specifies a particular PDP context
<pktSz>	Integer	Packet size to be used by the TCP/UDP/IP stack for data sending. 0 - automatically chosen by the device. 1..1500 - packet size in bytes.
<maxTo>	Integer	Exchange timeout (or socket inactivity timeout); if there's no data exchange within this timeout period the connection is closed. 0 - no timeout <i>n</i> - timeout value in seconds (default 90 s.)
<connTo>	Integer	Connection timeout; if we can't establish a connection to the remote within this timeout period, an error is raised. <i>n</i> - timeout value in hundreds of milliseconds (default 600)



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<txTo>	Integer	<p>Data sending timeout; after this period data are sent also if they're less than max packet size.</p> <p>0 - no timeout</p> <p>n - timeout value in hundreds of milliseconds (default 50)</p> <p>Note: these values are automatically saved in NVM.</p> <p>Note: <cid> is always "1" because only one PDP is supported.</p>
---------------------	---------	--

Example

```

AT#SCFG=?
#SCFG:(1-6),(1),(0,1-1500),(0,1-65535),(10-1200),(0,1-255)

OK
AT#SCFG?
#SCFG: 1,1,300,90,600,50
#SCFG: 2,1,300,90,600,50
#SCFG: 3,1,300,90,600,50
#SCFG: 4,1,300,90,600,50
#SCFG: 5,1,300,90,600,50
#SCFG: 6,1,300,90,600,50

OK
AT#SCFG=6,1,500,100,700,60

OK
AT#SCFG?
#SCFG: 1,1,300,90,600,50
#SCFG: 2,1,300,90,600,50
#SCFG: 3,1,300,90,600,50
#SCFG: 4,1,300,90,600,50
#SCFG: 5,1,300,90,600,50
#SCFG: 6,1,500,100,700,60
  
```



OK

4.3.6. Socket Configuration Extended - #SCFGEXT

Description

This command sets the socket configuration extended parameters.

Syntax

Command Type	Command	Response / Action
Set	AT#SCFGEXT= <connId>,<srMode>, <dataMode>,<keepalive> [,<unused_A> [,<unused_B>]]	Sets the socket configuration extended parameters.
Read	AT#SCFGEXT?	Returns the current socket extended configuration parameters values for all the six sockets, in the format: #SCFGEXT: <connId1>,<srMode1>,<dataMode1>, <keepalive1>,<unused_A1>,<unused_B1> <CR><LF> ... #SCFGEXT: <connId6>,<srMode6>,<dataMode6>, <keepalive6>,<unused_A6>,<unused_B6>
Test	AT#SCFGEXT=?	Returns the range of supported values for all the sub-parameters.

Parameters

Parameter	Type	Description
<connId>	Integer	socket connection identifier, 1..6



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<srMode>	Integer	<p>SRing URC mode</p> <p>0 - normal mode (default):</p> <p>SRING : <connId></p> <p>where:</p> <p><connId> - socket connection identifier</p> <p>1 - data amount mode:</p> <p>SRING : <connId>,<recData></p> <p>where:</p> <p><connId> - socket connection identifier</p> <p><recData> - amount of data received on the socket connection</p> <p>2 - data view mode:</p> <p>SRING : <connId>,<recData>,<data></p> <p>where:</p> <p><connId> - socket connection identifier</p> <p><recData> - amount of data received on the socket connection</p> <p><data> - received data; the presentation format depends on the sub-parameter <dataMode> value</p>
<dataMode>	Integer	<p>“data view mode” presentation format</p> <p>0 - data represented as text (default)</p> <p>1 - data represented as sequence of hexadecimal numbers (from 00 to FF)</p>
<keep alive>	Integer	<p>TCP keepalive timer timeout</p> <p>0 - TCP keepalive timer is deactivated (default)</p> <p>1..240 - TCP keepalive timer timeout in minutes</p>
<unused_A>	Integer	<p>currently not used</p> <p>0 - reserved for future use</p>
<unused_B>	Integer	<p>currently not used</p> <p>0 - reserved for future use</p>

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes	Applicable
Execution Time	Executed immediately.
Notes	< keepalive > has effect only on TCP connections. These values are automatically saved in NVM.

Reference

Example

Socket 1 set with data view **SRING**, text data mode and a **keepalive** time of 30 minutes. Socket 3 set with data amount **SRING**, hex data mode and no **keepalive**.

```
AT#SCFGEXT?
#SCFGEXT: 1,2,0,30,0,0
#SCFGEXT: 2,0,0,0,0,0
#SCFGEXT: 3,1,1,0,0,0
#SCFGEXT: 4,0,0,0,0,0
#SCFGEXT: 5,0,0,0,0,0
#SCFGEXT: 6,0,0,0,0,0
```

OK

4.3.7. Socket Dial - #SD

Description

This command opens a remote connection via socket.

Note: if the command is successful the module enters online data mode and emits the intermediate result code **CONNECT**. After the **CONNECT** the socket can be suspended using the escape sequence (+++): the module moves back to command mode and emits the final result code **OK** after the suspension and, if there are data pending on the socket, an unsolicited result code:

```
+SRING: <connId>
```

Afterwards the normal AT session can continue. The suspended connection can be resumed in anytime (unless a timeout disconnection occurs) by using the **#SO** command with the corresponding <connId>.



Syntax

Command Type	Command	Response / Action
Set	AT#SD=<connId>, <txProt>,<rPort>, <lPaddr>[,<lingerT> [,<lPort> [,<connMode>]]	Opens a remote connection via socket.
Test	AT#SD=?	Reports the range of values for all the parameters.

Parameters

Parameter	Type	Description
<connId>	Integer	Socket connection identifier 1..6
<txProt>	Integer	Transmission protocol 0 - TCP 1 - UDP
<rPort>	Integer	Remote host port to contact 1..65535
<lPaddr>	Integer	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
<lingerT>	Integer	Linger time 0 - immediate closure after remote closure 255 - local host closes only after an escape sequence (+++) Note: <lingerT> parameter is valid for TCP connections only; for UDP shall be left unused.
<lPort> -	Integer	UDP connections local port 1..65535 Note: <lPort> parameter is valid for UDP connections only; for TCP shall be left unused.



<connMode> Integer UDP connections local port
0,1 – connection modes (unused)

Example

```
AT#SD=?
#SD: (1-6),(0,1),(1-65535),,(0,255),(1-65535),(0,1)
OK
```

4.3.8. Socket Accept - #SA

Description

This command accepts an incoming socket connection after an URC.

Syntax

Command Type	Command	Response / Action
Set	AT#SA=<connId>	Accepts an incoming socket connection after an URC +SRING: <connId> .
Test	AT#SA=?	Reports the range of values for <connId> parameter.

Parameters

Parameter	Type	Description
<connId>	Integer	socket connection identifier, 1..6

Example

```
AT#SA=?
#SA: (1-6)
OK
```



4.3.9. Socket Restore - #SO

Description

This command accepts an incoming socket connection after an URC.

Syntax

Command Type	Command	Response / Action
Set	AT#SO=<connId>	Resumes socket connection which has been suspended by the escape sequence.
Test	AT#SO=?	Reports the range of values for <connId> parameter.

Parameters

Parameter	Type	Description
<connId>	Integer	socket connection identifier, 1..6

Example

```
AT#SO=?
#SO: (1-6)
```

```
OK
AT#SO=2
NO CARRIER
```

4.3.10. Socket Listen - #SL

Description

This command opens/closes a socket listening for an incoming connection on a specified port.



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Note: If successful, commands return a final result code **OK**. Then, when there is an incoming connection on the local port and if the sender is not filtered by internal firewall (see **#FRWL**), an URC is emitted:

+SRING: <connId>

Afterwards it is possible to use **#SA** to accept the connection or **#SH** to refuse it.

If the socket is closed by the network the following URC is emitted:

#SL: ABORTED

Syntax

Command Type	Command	Response / Action
Set	AT#SL=<connId>, <listenState>, <listenPort> [,<lingerT>]	Opens/closes a socket listening for an incoming connection on a specified port. OK
Read	AT#SL?	Returns all the actual listening sockets.
Test	AT#SL=?	Returns the range of supported values for all the sub-parameters.

Parameters

Parameter	Type	Description
<connId>	Integer	Socket connection identifier, 1..6
<listen State>	Integer	0 - closes socket listening 1 - starts socket listening
<listen Port>	Integer	Linger time 0 - immediate closure after remote closure 255 - local host closes only after an escape sequence (+++)

Example

AT#SL=?

#SL: (1-6),(0,1),(1-65535),(0,255)



OK

Next command opens a socket listening on port 3500

AT#SL=1,1,3500

OK

4.3.11. UDP Socket Listen - #SLUDP

Description

This command opens/closes a socket listening for an incoming connection on a specified port.

Note: If successful, commands return a final result code **OK**. Then, when there is an incoming connection on the local port and if the sender is not filtered by internal firewall (see **#FRWL**), an URC is emitted:

+SRING: <connId>

Afterwards it is possible to use **#SA** to accept the connection or **#SH** to refuse it.

Syntax

Command Type	Command	Response / Action
Set	AT#SLUDP=<connId>, <listenState>, <listenPort> [,<lingerT>]	Opens/closes a socket listening for an incoming connection on a specified port. OK
Read	AT#SLUDP?	Returns all the actual listening sockets.
Test	AT#SLUDP=?	Returns the range of supported values for all the sub-parameters.

Parameters

Parameter	Type	Description
-----------	------	-------------



<connId>	Integer	Socket connection identifier, 1..6
<listen State>	Integer	0 - closes socket listening 1 - starts socket listening
<listen Port>	Integer	Linger time 0 - immediate closure after remote closure 255 - local host closes only after an escape sequence (+++)

Example

```
AT#SLUDP=?
#SLUDP: (1-6),(0,1),(1-65535),(0,255)
```

OK

Next command opens a socket listening on port 860

```
AT#SLUDP=1,1,860,255
```

OK

```
SRING: 1
```

```
AT#SA=1
```

OK

```
CONNECT
```

```
Test
```

4.3.12. Receive Data in Command Mode - #SRECV

Description

This command permits the user to read data arrived through a connected socket, but buffered and not yet read because the module entered **command mode** before reading them; the module is notified of these data by a **SRING** URC, whose presentation format depends on the last **#SCFGEXT** setting.



Syntax

Command Type	Command	Response / Action
Execute	AT#SRECV=<connId>, <maxByte>	Permits the user to read data arrived through a connected socket, but buffered and not yet read because the module entered command mode .

Note: issuing #SRECV when there's no buffered data raises an error.

Parameters

Parameter	Type	Description
<connId>	Integer	Socket connection identifier, 1..6
<maxByte>	Integer	max number of bytes to read, 1..1500

Example

SRING URC (<srMode> be 0, <dataMode> be 0) telling data have just come through connected socket identified by <connId>=1 and are now buffered
SRING: 1

Read in text format the buffered data
AT#SRECV=1,15
#SRECV: 1,15
stringa di test

OK

SRING URC (<srMode> be 1, <dataMode> be 1) telling 15bytes data have just come through connected socket identified by <connId>=2 and are now buffered
SRING: 2,15

Read in hexadecimal format the buffered data
AT#SRECV=2,15
#SRECV: 2,15
737472696e67612064692074657374

OK



Parameter	Type	Description
<connId>	Integer	Socket connection identifier, 1..6

Example

Send data through socket number 2

AT#SSEND=2

>Test<CTRL-Z>

OK

4.4. FTP Commands

4.4.1. FTP Time-Out - #FTPTO

Description

This command sets the time-out used when opening either the FTP control channel or the FTP traffic channel.

Syntax

Command Type	Command	Response / Action
Set	AT#FTPTO[=<tout>]	Sets the time-out used when opening either the FTP control channel or the FTP traffic channel.
Read	AT#FTPTO?	Returns the current FTP operations time-out, in the format: #FTPTO: <tout>
Test	AT#FTPTO=?	Returns the range of supported values for parameter <tout>

Parameters

Parameter	Type	Description
-----------	------	-------------



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Execute	AT#FTPOPEN= [<server:port>, <username>, <password>, <mode>]	Opens an FTP connection to the FTP server.
Test	AT#FTPOPEN=?	OK

Parameters

Parameter	Type	Description
<server:port>	String	Address and port of FTP server (factory default port 21)
<username>	String	Authentication user identification string for FTP.
<password>	String	Authentication password for FTP.
<mode>	Integer	0 - active mode (factory default) 1 - passive mode

Example

```
AT#FTPOPEN=?
OK
```

4.4.3. FTP Close - #FTPCLOSE

Description

This command closes an FTP connection.

Syntax

Command Type	Command	Response / Action
Execute	AT#FTPCLOSE	Closes an FTP connection.
Test	AT#FTPCLOSE=?	OK

Example



AT#FTPCLOSE=?

OK

AT#FTPCLOSE

OK

4.4.4. FTP Put - #FTPPUT

Description

If this command is issued during an FTP connection, it opens a data connection and starts sending **<filename>** file to the FTP server.

If the data connection succeeds, a **CONNECT** indication is sent, otherwise a **NO CARRIER** indication is sent.

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.

Syntax

Command Type	Command	Response / Action
Execute	AT#FTPPUT= [<filename>]	Opens a data connection and starts sending <filename>
Test	AT#FTPPUT=?	OK

Parameters

Parameter	Type	Description
<filename>	String	Name of the file.

Example

AT#FTPPUT=?



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If this command is issued during an FTP connection, it sets the file transfer type.

Note: The command causes an **ERROR** result code to be returned if no active FTP connection has been established.

Syntax

Command Type	Command	Response / Action
Set	AT#FTPTYPE[=<type>]	Sets the file transfer type.
Read	AT#FTPTYPE?	Returns the current file transfer type, in the format: #FTPTYPE: <type>
Test	AT#FTPTYPE=?	Returns the range of available values for parameter <type> : #FTPTYPE: (0,1)

Parameters

Parameter	Type	Description
<type>	Integer	File transfer type: 0 - binary 1 - ASCII Note: The command causes an ERROR result code to be returned if no FTP connection has been opened yet.

Example

```
AT#FTPTYPE=?
#FTPTYPE: (0,1)
```

```
OK
AT#FTPTYPE?
#FTPTYPE: 1
```

```
OK
```



4.4.7. FTP Read Message - #FTPMSG

Description

This command returns the last response from the server.

Syntax

Command Type	Command	Response / Action
Execute	AT#FTPMSG	Returns the last response from the server.
Test	AT#FTPMSG=?	OK

Example

```
AT#FTPMSG=?
OK
AT#FTPMSG
#FTPMSG: 0
OK
```

4.4.8. FTP Delete - #FTPDELE

Description

If this command is issued during an FTP connection, it deletes the specified file from the remote working directory.

Note: The command causes an **ERROR** result code to be returned if no FTP connection is active.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	AT#FTPDELE= [<filename>]	OK - Deletes a file from the remote working directory ERROR
Test	AT#FTPDELE=?	OK

Parameters

Parameter	Type	Description
<filename>	String	The name of the file to delete.

Example

```
AT#FTPDELE=?
OK
```

4.4.9. FTP Print Working Directory - #FTPPWD

Description

If this command is issued during an FTP connection, it shows the current working directory on FTP server.

Syntax

Command Type	Command	Response / Action
Execute	AT#FTPPWD	OK ERROR
Test	AT#FTPPWD=?	OK

Example

```
AT#FTPPWD=?
OK
AT#FTPPWD
ERROR
```



4.4.10. FTP Change Working Directory - #FTPCWD

Description

If this command is issued during an FTP connection, it changes the working directory on the FTP server.

Note: The command causes an **ERROR** result code to be returned if no FTP connection is established.

Syntax

Command Type	Command	Response / Action
Execute	AT#FTPCWD=<dirname>	OK ERROR
Test	AT#FTPCWD=?	OK

Example

```
AT#FTPCWD=?
OK
```

4.4.11. FTP List - #FTPLIST

Description

If this command is issued during an FTP connection, it opens a data connection and starts retrieving the list of contents of the specified directory or the properties of the specified file from the server.

Note: The command causes an **ERROR** result code to be returned if no FTP connection is established.

Note: issuing **AT#FTPLIST<CR>** opens a data connection and starts retrieving the list of contents of the working directory from the server.



Syntax

Command Type	Command	Response / Action
Execute	AT#FTPLIST=[<name>]]	OK ERROR
Test	AT#FTPLIST=?	OK

Parameters

Parameter	Type	Description
<name>	String	It is the name of the directory or file.

Example

```
AT#FTPLIST=?
OK
```

4.5. Email Commands

4.5.1. Email SMTP Server - #ESMTP

Description

This command sets the SMTP server address, used for email sending only.

Syntax

Command Type	Command	Response / Action
Set	AT#ESMTP=<smtp>	SMTP server can be specified as IP address or as nick name.

Note: If parameter is omitted then the behavior of Set command is the same of Read command.



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Read	AT#ESMTP?	Reports the current SMTP server address, in the format: #ESMTP: <smtp>
Test	AT#ESMTP=?	Returns the max length for the parameter <smtp>.

Parameters

Parameter	Type	Description
<smtp>	String	SMTP server address, 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 in the format: <hostname> (factory default is the empty string "")

Miscellaneous

Command Information	Comment
Note	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 email.

Example

```
AT#ESMTP=?
#ESMTP: (50)

OK
AT#ESMTP?
#ESMTP: ""

OK
AT#ESMTP="smtp.mydomain.com"
OK
AT#ESMTP?
```



#ESMTP: "smtp.mydomain.com"

OK

4.5.2. Email Sender Address - #EADDR

Description

This command sets the sender address string to be used for sending the email.

Syntax

Command Type	Command	Response / Action
Set	AT#EADDR=<e-addr>	Sets the sender's email address. Note: If parameter is omitted then the behavior of Set command is the same of Read command.
Read	AT#EADDR?	Reports the current sender address, in the format: #EADDR: <e-addr>
Test	AT#EADDR=?	Returns the maximum allowed length of the string parameter <e-addr>.

Parameters

Parameter	Type	Description
<e-addr>	String	Sender address - any string value up to max length reported in the Test command (factory default is the empty string "")

Example

AT#EADDR=?

#EADDR: (80)

OK



```
AT#EADDR?
#EADDR: ""

OK
AT#EADDR="me@email.box.com"
OK
AT#EADDR?
#EADDR: "me@email.box.com"

OK
```

4.5.3. Email Authentication User Name - #EUSER

Description

This command sets the user identification string to be used the authentication step of SMTP.

Syntax

Command Type	Command	Response / Action
Set	AT#EUSER=<e-user>	Sets the user identification string to be used during authentication. Note: If parameter is omitted then the behavior of Set command is the same of Read command.
Read	AT#EUSER?	Reports the current user identification string, in the format: #EUSER: <e-user>
Test	AT#EUSER=?	Returns the maximum allowed length of the string parameter <e-user>

Parameters

Parameter	Type	Description
-----------	------	-------------



<e-user>	String	<p>Email authentication User ID</p> <ul style="list-style-type: none"> - any string value up to max length reported in the Test command (factory default is the empty string "") <p>Note: if no authentication is required then the <e-user> parameter shall be empty "".</p>
-----------------------	--------	--

Miscellaneous

Command Information	Comment
Note	It is a different user field than the one used for CDMA data connection authentication (see #USERID)

Example

```
AT#EUSER=?  
#EUSER: (50)
```

```
OK  
AT#EUSER?  
#EUSER: ""
```

```
OK  
AT#EUSER="myE-Name"  
OK  
AT#EUSER?  
#EUSER: "myE-Name"
```

```
OK
```

4.5.4. Email Authentication Password - #EPASSW

Description



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This command sets the password string to be used during the authentication step of SMTP.

Syntax

Command Type	Command	Response / Action
Set	AT#EPASSW=<e-pwd>	Sets the password string to be used during authentication.
Test	AT#EPASSW=?	Returns the maximum allowed length of the string parameter <e-pwd>.

Parameters

Parameter	Type	Description
<e-pwd>	String	Email authentication password - 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 "".

Miscellaneous

Command Information	Comment
Note	It is a different user field than the one used for CDMA data connection authentication (see #PASSW).

Example

```
AT#EPASSW=?
#EPASSW: (50)

OK
AT#EPASSW="myPassword"
OK
```



4.5.5. Email Sending with CDMA Data Connection Activation - #SEMAIL

Description

This command activates a CDMA Data Connection, if not previously activated by #EMAILACT, and sends an email message.

Syntax

Command Type	Command	Response / Action
Execute	AT#SEMAIL=<da>,<subj>,<att>[,<filename>]	Execution command activates a CDMA data connection, if not previously activated by #EMAILACT, and sends an e-mail message. The CDMA data connection deactivated when the email is sent.
Test	AT#SEMAIL=?	Returns the result code OK

Parameters

Parameter	Type	Description
<da>	String	Destination address
<subj>	String	Subject of the message
<att>	Integer	Attached image flag 0 - don't attach any image 1 - attach the last snapshot taken



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<filename>	String	<p>Image name (default is "snapshot.jpg")</p> <p>The device responds to the command with the prompt '>' and waits for the message body text.</p> <p>To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing the message send ESC char (0x1B hex).</p> <p>If email message is successfully sent, then the response is OK.</p> <p>If message sending fails for some reason, an error code is reported</p> <p>Note: Care must be taken to ensure that during the command execution, no other commands are issued.</p> <p>To avoid malfunctions is suggested to wait for the OK or ERROR / +CMS ERROR: <err> response before issuing further commands.</p> <p>Note: if CDMA data connection previously activated by #CDMADC it's not possible to successfully send the e-mail message and the response is the result code activation failed.</p> <p>Note: sending an e-mail with an image attachment can take quite a long time since it can be over 50Kb to send and can take more than 1 minute.</p>
-------------------------	--------	---

Miscellaneous

Command Information	Comment
Note	<p>This command is obsolete. It's suggested to use the couple #EMAILACT and #EMAILD instead of it.</p> <p>To discard Email, press the "ESC" key, an "OK" response will be returned.</p>

Example

AT#ECAM?
#ECAM: 1




```
OK
AT#SEMAIL="XXXX.YYYY@telit.com","Test Email",0
> This is a test Email• ← Ctrl-Z used to send
OK
```

```
#ECAM: 1,1,2,,,"1501",129
```

```
#ECAM: 1,3,2,,,
```

```
#ECAM: 1,0,2,,,
```

```
#ECAM: 1,1,2,,,"1501",129
```

```
#ECAM: 1,3,2,,,
```

```
#ECAM: 1,0,2,,,
```

```
#DREL ←Data release notification, email sent successfully
```

4.5.6. Email CDMA Data Connection Activation - #EMAILACT

Description

This command activates a CDMA Data Connection, so email can be sent and received.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	<code>AT#EMAILACT=[<mode>]</code>	Command deactivates/activates the CDMA data connection, eventually proceeding with the authentication with the parameters given with #PASSW and #USERID .
		Note: issuing AT#EMAILACT<CR> reports the current status of the CDMA data connection for the e-mail, in the format: #EMAILACT: <status>
Read	<code>AT#EMAILACT?</code>	Has the same effect of the Execution command AT#EMAILACT<CR> .
Test	<code>AT#EMAILACT=?</code>	Returns the allowed values for parameter <mode> .

Parameters

Parameter	Type	Description
<mode>	Integer	CDMA Data Connection activation mode 0 – CDMA Data Connection deactivation request 1 – CDMA Data Connection activation request

Example

```
AT#EMAILACT=?
#EMAILACT: {0,1}
```

```
OK
AT#EMAILACT?
#EMAILACT: 0
```

```
OK
AT#ECAM?
#ECAM: 1
```



```

OK
AT#EMAILACT=1
OK

#ECAM: 1,1,2,,,"1501",129

#ECAM: 1,3,2,,

AT#EMAILACT=0
OK

#ECAM: 1,0,2,,

```

#DREL ←Data release notification

4.5.7. Email Sending - #EMAILD

Description

This command sends an email message.

Syntax

Command Type	Command	Response / Action
Execute	AT#EMAILD=<da>,<subj>,<at t>[,<filename>]	Sends an email message if CDMA data connection has already been activated with AT#EMAILACT=1.
Test	AT#EMAILD=?	Returns the result code OK

Parameters

Parameter	Type	Description
<da>	String	Destination address
<subj>	String	Subject of the message



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<att>	Integer	<p>Attached image flag</p> <p>0 - don't attach any image</p> <p>1 - attach the last snapshot taken</p>
<filename>	String	<p>Image name (default is "snapshot.jpg")</p> <p>The device responds to the command with the prompt '>' and waits for the message body text.</p> <p>To complete the operation send Ctrl-Z char (0x1A hex); to exit without writing the message send ESC char (0x1B hex).</p> <p>If e-mail message is successfully sent, then the response is OK.</p> <p>If message sending fails for some reason, an error code is reported.</p> <p>Note: Care must be taken to ensure that during the command execution, no other commands are issued.</p> <p>To avoid malfunctions is suggested to wait for the OK or ERROR / +CMS ERROR: <err> response before issuing further commands.</p> <p>Note: sending an e-mail with an image attachment can take quite a long time since it can be over 50Kb to send and can take more than 1 minute.</p>

Miscellaneous

Command Information	Comment
Note	<p>The only difference between this command and the #SEMAIL is that this command does not interact with the CDMA data connection 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.</p> <p>Note: To discard Email, press the "ESC" key, an "OK" response will be returned.</p>

Example



AT#EMAILD=?

OK

AT#ECAM?

#ECAM: 0

OK

AT#EMAILACT=1

OK

AT#EMAILD="user@domain","Test Email #2",0

> Test email #2• ← Ctrl-Z used to send email

OK

AT#EMAILACT=0

OK

#DREL ←Data release notification

4.5.8. Email Parameters Save - #ESAV

Description

This command stores the email parameters in NV Memory of the device.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	AT#ESAV	Stores the e-mail parameters in the NVM of the device.
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		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 then a default value will be taken.
Test	AT#ESAV=?	Returns the OK result code.

Miscellaneous

Command Information	Comment
Note	If some parameters have not been previously specified then a default value will be taken.

Example

```
AT#ESAV=?
OK
AT#ESAV
OK
```

4.5.9. Email Parameters Reset - #ERST

Description

This command resets the email parameters to the “factory default” configuration and stores them in the NV Memory of the device.

Syntax



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Command Type	Command	Response / Action
Execute	AT#ERST	Command resets the e-mail parameters to the "factory default" 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
Test	AT#ERST=?	Returns the OK result code

Example

```
AT#ERST=?
OK
AT#ERST
OK
```

4.5.10. SMTP Read Message - #EMAILMSG

Description

This command is used to read the last message from the SMTP server.

Syntax

Command Type	Command	Response / Action
Execute	AT#EMAILMSG	Returns the last response from SMTP server.
Test	AT#EMAILMSG=?	Returns the OK result code

Example

```
AT#EMAILMSG=?
OK
AT#EMAILD="XXXX.YYYYY@telit.com","Test #1 from CC",0
> Test message #1 from CC864•
```



ERROR

AT#EMAILMSG

#EMAILMSG: 535 authorization failed (#5.7.0)

OK



5. CDMA Specific AT-Commands

5.1.1. Status Commands

5.1.1.1. Common Air Interface parameters - #CAI

Description

This command returns the current Common Air Interface parameters of the module with command echo.

Syntax

Command Type	Command	Response / Action
Read	AT#CAI?	#CAI: <sid>,<nid>,<bsid>,<packetid>,<channel>,<pilot_pn>,<mb_prev>,<bs_prev>,<in_use_prev>,<rssi>,<eci0>,<tx_adj>,<rx_state>,<rx_rate>,<tx_rate>,<service_opt>,<slot_index>,<fer>,<voice_priv>,<band>

Parameters

Index	Parameter	Type	Description
0	<sid>	Integer	Current System ID
1	<nid>	Integer	Current Network ID
2	<bsid>	Integer	Current Base Station ID
3	<packetid>	Integer	Current Packet Zone ID
4	<channel>	Integer	Current Channel Number
5	<pilot_pn>	Integer	Current Pilot PN Number
6	<mb_prev>	Integer	Current Mobile Station Protocol Revision
7	<bs_prev>	Integer	Current Base Station Protocol Revision
8	<in_use_prev>	Integer	Current In Use Protocol Revision



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Index	Parameter	Type	Description
9	<rsi>	Integer	Current RSSI Value
10	<eci0>	Integer	Current ECIO Value
11	<tx_adj>	Integer	Current TX gain
12	<rx_state>	Integer	Current Rx State
13	<rx_rate>	Integer	Current Rx Rate
14	<tx_rate>	Integer	Current Tx Rate
15	<service_opt>	Integer	Current Service Option
16	<slot_index>	Integer	Current Slot Cycle Index
17	<fer>	Integer	Current Frame Error Rate
18	<voice_priv>	Integer	Current Voice Privacy Mode
19	<band>	Integer	Current Band

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint

Example

```
AT#CAI?
#CAI: 4376,30,522,30,350,330,6,6,6,-85,-5,0,2,0,0,0,2,0,0,1
OK
```



5.1.1.2. Modem Configuration parameters - #MODEM

Description

This command returns the Modem Configuration parameters of the module with command echo.

Syntax

Command Type	Command	Response / Action
Read	AT#MODEM [=<index>]?	#MODEM: <mdn>,<msin>,<vbatt>,<temp>,<systemtime>,<calltime>,<totalcalltime>,<modemstatus>,<fwver>,<model>,<namna me>,<lock>,<prlver>,<deepsleep>

Parameters

Index	Parameter	Type	Description
0	<mdn>	Integer	Mobile Directory Number
1	<msin>	Integer	Mobile Subscriber Identifier Number
2	<vbatt>	Integer	Current Battery Voltage Level
3	<temp>	Integer	Current Temperature
4	<systemtime>	Integer	Current System Time (received from the network)
5	<calltime>	Integer	Latest Call Time
6	<totalcalltime>	Integer	Total Call Time
7	<modem_status>	Integer	Current Modem Status 0: IDLE State 1: Origination State 2: Alerting State 3: Conversation State 4: Call End State 5: Dormant Mode State
8	<fwver>	Integer	Firmware Version, Qualcomm Patch release version
9	<model>	Integer	Model Name



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Index	Parameter	Type	Description
10	<namname>	Integer	Current Nam Name Note: Not all service providers use NAM name, some providers use a string to display service provider's name. If service provider does not use this, then "UNKNOWN" will be displayed.
11	<lock>	Integer	Current Lock Status 0: Not Locked 1: Registration Lock
12	<prlver>	Integer	Current PRL Version
13	<deepsleep>	Integer	Current Deep Sleep Status 0: Wake Up 1: Deep Sleep

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint

Example

```

AT#MODEM?
#MODEM:
9194547049,9194547049,3.9,0,20080923152338TUE,000000,00000000103,0,SBAXLZ21
50,CC864-DUAL,UNKNOWN,0,10030,0

OK
AT#MODEM=0?
#MODEM: 1234567890

OK
AT#MODEM=9?
#MODEM: CC864-DUAL
    
```



OK

5.1.1.3. Mobile NAM parameters - #ENG

Description

This command returns the NAM parameters of the module with command echo.

Syntax

Command Type	Command	Response / Action
Set	AT#ENG= <index>:<value>[, <index>:<value>...]	
Read	AT#ENG[= <index>[, <index>...]]?	#ENG: <mobprev>,<mcc>,<mnc>,<accolc>,<homereg>,<termf orsid>,<termfornid>,<scm>,<sci>,<mdn>,<msin>,<pref serv>,<prefmode>,<primch_a>,<primch_b>,<scch_a>, <scch_b>,<sidnid>,<prefrc>,<slotmode>

Parameters

Index	Parameter	Type	Description
0	<mobprev>	Integer	Mobile Protocol Revision
1	<mcc>	Integer	Mobile Country Code
2	<mnc>	Integer	Mobile Network Code
3	<accolc>	Integer	Access Overload Control
4	<homereg>	Integer	MOB_TERM_HOME registration flag
5	<termforsid>	Integer	MOB_TERM_FOR_SID registration flag
6	<termfornid>	Integer	MOB_TERM_FOR_NID registration flag
7	<scm>	Integer	Station Class Mark



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Index	Parameter	Type	Description
8	<sci>	Integer	Slot Cycle Index
9	<mdn>	Integer	Mobile Directory Number
10	<msin>	Integer	Mobile Subscriber Identifier Number
11	<prefserv>	Integer	CDMA Preferred Serving System(A/B)
12	<prefmode>	Integer	Digital/Analog Mode Preference
13	<primch_a>	Integer	CDMA Primary Channel(A)
14	<princh_b>	Integer	CDMA Primary Channel(B)
15	<scch_a>	Integer	CDMA Secondary Channel(A)
16	<scch_b>	Integer	CDMA Secondary Channel(B)
17	<sidnid>	Integer	SID-NID pair
18	<prefrc>	Integer	The Preferred Forward & Reverse RC value
19	<slotmode>	Integer	Slot Mode

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint

Example

```

AT#ENG?
#ENG:
6,310,00,9,1,1,1,42,2,1234567890,9135069409,5,4,283,384,691,777,[4139,65535],[0,0],0

OK
AT#ENG=9?

```



#ENG: 1234567890

OK

AT#ENG=1:400,2:06

OK

AT#ENG=1,2?

#ENG: 400,06

OK

5.1.1.4. Change Operational Mode of Modem - #MODE

Description

This command changes the operational mode of the modem.

Syntax

Command Type	Command	Response / Action
Execute	AT#MODE= <mode>	OK – Sets mode of modem ERROR – Failed to set mode of modem
Read	AT#MODE?	Returns the current mode of the modem in the format: #MODE: <mode>

Parameters

Mode	Type	Description
OFFLINE	Text	Offline Mode – For RF Tests
RESET	Text	Resets the module
PWROFF	Text	Powers off the module
LPM	Text	Low Power Mode – RX/TX turned off, unable to receive network



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FTM	Text	Factory Test Mode – For RF Tests
ONLINE	Text	Online Mode – Returns to normal operation

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint

Example

```
AT#MODE=OFFLINE
OK
AT#MODE=LPM
OK
AT#MODE=FTM
OK
AT#MODE=ONLINE
OK
AT#MODE=RESET
OK
AT#MODE=PWROFF
OK
```

5.1.1.5. CDMA Notification - #NOTI

Description

This command returns the CDMA notification message parameters of the module with command echo.

There are CC864-DUAL specific result codes that indicate occurrence of an event not directly associated with issuance of a command from TE, such as **RING** in basic result code. This kind of result code is called the notification message or unsolicited code, and the following table shows the possible values:



Note: This message can be also used for not only a certification testing, including IOT and CDG testing, but also for customer testing.

Syntax

Command Type	Command	Response / Action
Set	AT#NOTI= [<index>, <onoff>...]	<p>Parameter:</p> <p><index> - CDMA notification selection</p> <p>0: All notification messages (1~16)</p> <p>1: "CNIP"</p> <p>2: "CNAP"</p> <p>3: "DISREC"</p> <p>4: "LOCK"</p> <p>5: "UNLOCK"</p> <p>6: "SMSFULL"</p> <p>7: "ENTERDEEP"</p> <p>8: "EXITDEEP"</p> <p>9: "ENTERDRM"</p> <p>10: "EXITDRM"</p> <p>11: "DREL"</p> <p>12: "ROAM"</p> <p>13: "ERR_CODE"</p> <p>14: "ROAMGUARD"</p> <p>15: "N11"</p> <p>16: "SERVICE"</p> <p><onoff> - Device configuration message status</p> <p>0: disable (default)</p> <p>1: enable</p>
Read	AT#NOTI?	<p>Returns the current status flag (0-disable/1-enable) for all notification messages in index value order in format.</p> <p>#NOTI: <onoff (for index 1)>,<onoff (for index 2)>, ... ,<onoff (for index 16)></p>



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Command Type	Command	Response / Action
Test	AT#NOTI=?	Returns the range of <index>,<onoff> parameters: #NOTI: (0-16),(0-1)

Parameters

Index	Type	Description
0		All notification messages (1~14)
1	Integer	#CNIP - the output when the module receives a Calling Number Identification Presentation from the network.
2	Integer	#CNAP - the output when the module receives a Calling Naming Presentation from the network.
3	Integer	#DISREC - the output when the module receives a Display Record from the network.
4	Integer	#LOCK - the output when the module receives a LOCK from the network during registering state.
5	Integer	#UNLOCK - the output when the module receive a UNLOCK from the network during locked state.
6	Integer	#SMSFULL - the output when SMS are FULL.
7	Integer	#ENTERDEEP - the output when the module enters Power save mode.
8	Integer	#EXITDEEP - the output when the module exits Power save mode.
9	Integer	#ENTERDRM - the output when the module enters Dormant state.
10	Integer	#EXITDRM - the output when the module exits Dormant state into Activate state.
11	Integer	#DREL - the output when the module releases Data call.
12	Integer	#ROAM - the RI (roaming indicator) output matching with PRL when system is changed.
13	Integer	#ERR_CODE - the output when MIP ERROR is occurred.
14	Integer	#ROAMGUARD - the output when the module moves between Domestic area and International area regarding data roaming.
15	Integer	#N11 - the output when N11 digits dialed by user



Index	Type	Description
16	Integer	#SERVICE - the output when the service state of module changed.

Parameter	Type	Description
<store_nv>	Integer	Data store option: 0 - store in RAM 1 - store in NV

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint

Example

```
AT#NOTI=?
#NOTI: (0-16),(0-1)

OK
AT#NOTI?
#NOTI: 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0

OK
AT#NOTI=0,1
OK
AT#NOTI?
#NOTI: 1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1

OK
AT#NOTI=7,0
```



OK
AT#NOTI?
#NOTI: 1,1,1,1,1,1,0,1,1,1,1,1,1,1,1,1

OK

5.1.1.6. Data Roam Guard List - #DROAMGLIST

Description

This command sets the Enhanced Roaming Indicator List (ERI list) for Data Roam Guard (DRG).

Syntax

Command Type	Command	Response / Action
Set	AT#DROAMGLIST= <value> [,<value>]	OK
Read	AT#DROAMGLIST?	Returns the current setting of ERI list. #DROAMGLIST: <value>
Test	AT#DROAMGLIST=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



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<value>	Integer or Integer range	ERI List Roam Guard ERI list values must be a comma-separated list of ERI values or range of values. #DROAMGLIST=160, 162,164 - comma-separated list of three ERI values #DROAMGLIST=160-175 - a single range of 16 ERI values #DROAMGLIST=160,165,170-175 - a combined list of eight ERI values #DROAMGLIST=160,166-170,172,175-180 - a list of 13 ERI values.
----------------------	--------------------------------	--

Note: the maximum ERI list is 100 with a range of ERI values of 0-255

Example

AT#DROAMGLIST=127

OK

AT#DROAMGLIST?

#DROAMGLIST: 127

OK

AT#DROAMGLIST=1-99,103

OK

AT#DROAMGLIST?

#DROAMGLIST: 1-99,103

OK

AT#DROAMGLIST=1-50,65-70,71-85

OK

AT#DROAMGLIST?

#DROAMGLIST: 1-50,65-70,71-85

OK



AT#DROAMGLIST=?

OK

5.1.1.7. Mobile Directory Number - \$MDN

Description

This command manipulates the Mobile Directory Number of the module.

Syntax

Command Type	Command	Response / Action
Set	\$MDN=<mdn>	OK - Sets Mobile Directory Number ERROR
Read	\$MDN?	\$MDN: <mdn> - Returns the mobile directory number with command echo.
Test	\$MDN=?	OK

Parameters

Parameter	Type	Description
<mdn>	String	The mobile directory number expressed as a 10 digit decimal phone-number.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS
Note	This command has the same operation with AT\$SPMDN



Example

```
AT$MDN=?
OK
AT$MDN?
$SPMDN: 1234567890

OK
```

5.1.1.8. Mobile Station ID - \$MSID

Description

This command manipulates the Mobile Station ID of the module.

Syntax

Command Type	Command	Response / Action
Set	\$MSID=<msid>	OK - Sets Mobile Station ID ERROR
Read	\$MSID?	\$MSID <msid> - Returns the Mobile Station ID with command echo.
Test	\$MSID=?	OK

Parameters

Parameter	Type	Description
<msid>	String	The Mobile Station ID expressed as a 10 digit decimal phone-number.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.



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Reference	Sprint
Network Compatibility	Verizon and AERIS
Note	This command has the same operation with AT\$PMSID

Example

```
AT$MSID=?
OK
AT$MSID?
$SPMSID: 0000000000

OK
```

5.1.1.9. PRL - \$PRL

Description

Read command returns the current device PRL number with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$PRL?	\$PRL <id> - Returns the current device PRL number with command echo.
Test	\$PRL=?	OK

Parameters

Parameter	Type	Description
<id>	Integer	The current device PRL number in decimal.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable



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Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS
Note	This command has the same operation with AT\$SPRL

Example

```
AT$PRL=?
OK
AT$PRL?
$PRL: 10052

OK
```

5.1.1.10. Reset - \$RESET

Description

This command is used to reset the modem.

Syntax

Command Type	Command	Response / Action
Execution	\$RESET	Immediately resets the modem.
Test	\$RESET=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Sprint



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Network Compatibility	Verizon and AERIS
Note	This command has the same operation with AT\$SPRESET

Example

```
AT$RESET=?
OK
AT$RESET
OK (Module Resets)
```

5.1.1.11. Notification of Service - +SERVICE

Description

Read command returns notification of service area without command echo.

Note: This command has the same operation with AT+SPSERVICE

Syntax

Command Type	Command	Response / Action
Read	AT+SERVICE?	<return value> 0 – No Service 1 – 1xRTT service 2 – EVDO service (Not Supported) 3 – EVDO Rev A (Not Supported) 4 – GPRS (Not Supported)
Test	AT+SERVICE=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Sprint



Network Compatibility	Verizon and AERIS
Note	This command has the same operation with AT+SPSERVICE

Example

```
AT+SERVICE=?
OK
AT+SERVICE?
+SERVICE: 0

OK
```

5.1.2. Mobile IP

5.1.2.1. Mobile IP Registration Time – #MIPREGTIME

Description

This command sets the Mobile IP Registration time.

Syntax

Command Type	Command	Response / Action
Set	AT#MIPREGTIME= <time>	OK- registration time is set ERROR
Read	AT#MIPREGTIME?	Returns name parameters in format: AT#MIPREGTIME: <time>
Test	AT#MIPREGTIME=?	Returns the range of <time> parameter AT#MIPREGTIME: (0-63)

Parameters

Parameter	Type	Description
<time>	Integer	Registration time, 0-63 (default is 30)

Example



AT#MIPREGTIME=?
#MIPREGTIME: (0-63)

OK
AT#MIPREGTIME?
#MIPREGTIME: 30

OK
AT#MIPREGTIME =10
OK
AT#MIPREGTIME?
#MIPREGTIME: 10

OK

5.1.2.2. Mobile IP Registration Retry Interval Time – #MIPRETRY

Description

This command sets the Mobile IP Registration Retry Interval time.

Syntax

Command Type	Command	Response / Action
Set	AT#MIPRETRY= <time>	OK- registration retry interval time set ERROR
Read	AT#MIPRETRY?	Returns parameters in format: AT#MIPRETRY: time
Test	AT#MIPRETRY=?	Returns the range of <time> parameter AT#MIPRETRY: (0-4)

Parameters

Parameter	Type	Description
-----------	------	-------------



Parameter	Type	Description
<time>	Integer	Registration retry interval time, 0-4 (default is 1)

Example

```
AT#MIPRETRY=?
#MIPRETRY: (0-4)
```

```
OK
AT#MIPRETRY?
#MIPRETRY: 1
```

```
OK
AT#MIPRETRY=4
OK
AT#MIPRETRY?
#MIPRETRY: 4
OK
```

5.1.2.3. Mobile IP Registration Retry Number – #MIPRETRYNUM

Description

This command sets the Mobile IP Registration Retry Number.

Syntax

Command Type	Command	Response / Action
Set	AT#MIPRETRYNUM= <num>	OK- registration retry number set ERROR
Read	AT#MIPRETRYNUM?	Returns name parameters in format: AT#MIPRETRYNUM: <num>
Test	AT#MIPRETRYNUM=?	Returns the range of <num> parameter AT#MIPRETRYNUM: (0-2)



Parameters

Parameter	Type	Description
<num>	Integer	Registration retry number

Example

```
AT#MIPRETRYNUM=?
#MIPRETRYNUM: (0-2)
```

```
OK
AT#MIPRETRYNUM?
#MIPRETRYNUM: 1
```

```
OK
AT#MIPRETRYNUM=2
OK
AT#MIPRETRYNUM?
#MIPRETRYNUM: 2
```

```
OK
AT#MIPRETRYNUM?
#MIPRETRYNUM: 2
```

```
OK
```

5.1.2.4. Mobile IP Re-Registration Setting – #MIPTFRK

Description

This command sets the Mobile IP Re-Registration Setting.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Set	AT#MIPTFRK=<onoff>	OK - re-registration setting enabled/disabled ERROR
Read	AT#MIPTFRK?	Returns parameter setting in format: AT#MIPTFRK: <onoff>
Test	AT#MIPTFRK=?	Returns the range of <onoff> parameter AT#MIPTFRK: {0-1}

Parameters

Parameter	Type	Description
<onoff>	Integer	0 - disable 1 - enable

Example

```
AT#MIPTFRK=?
#MIPTFRK: {0-1}
```

```
OK
AT#MIPTFRK?
#MIPTFRK: 0
```

```
OK
AT#MIPTFRK=1
OK
AT#MIPTFRK?
#MIPTFRK: 1
```

```
OK
```

5.1.3. Authentication

5.1.3.1. Authentication Key – #AKEY

Description



This command sets the Authentication key and Authentication key checksum value.

Syntax

Command Type	Command	Response / Action
Set	AT#AKEY= <nam>, <akey_high10>, <akey_low10>, <akey_chksum>	OK – A-Key set ERROR

Parameters

Parameter	Type	Description
<nam>	Integer	Nam number
<akey_high10>	Integer	High 10 digits of A-Key
<akey_low10>	Integer	Low 10 digits of A-Key
<akey_chksum>	Integer	A-Key checksum value (6 digits) NOTE: You must use the generated check sum value using AT#AKEYCHKSUM first

Example

```
AT#AKEY=0,1069003308,6838427706,040862
OK
```

5.1.3.2. Authentication Key Checksum – #AKEYCHKSUM

Description

This command returns the Authentication key checksum value corresponding given authentication key

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Read `AT#AKEYCHKSUM=` Returns parameter setting in format:
 `<akey_high10>`, `AT#AKEYCHKSUM : <akey_chksum>`
 `<akey_low10>`

Parameters

Parameter	Type	Description
<code><akey_high10></code>	Integer	High 10 digits of A-Key
<code><akey_low10></code>	Integer	Low 10 digits of A-Key
<code><akey_chksum></code>	Integer	A-Key checksum value (6 digits) Note: 6-digit checksum value will be different for each module because the ESN is used as part of the calculation. If the module is using a MEID, a checksum value can not be generated using this command.

Example

```
AT#AKEYCHKSUM=1069003308,6838427706
#AKEYCHKSUM: 040862
```

OK

5.1.4. Air Interface and Call Processing Commands

5.1.4.1. Preferred Radio Configuration – #PREFRC

Description

This command sets the preferred ratio configuration.

Note: This command is used to set the preferred RC for the forward and reverse channel. If you want to get the cached pref RC from NV, set parameter value to (1,2,3,4,5), otherwise both “for_rc” and “rev_rc” must be set to ‘0’.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Command Type	Command	Response / Action
Set	AT#PREFRC= <for_rc>,<rev_rc>	OK- radio configuration set ERROR
Read	AT#PREFRC?	Returns the radio configurations in format: AT#PREFRC: <for_rc>,<rev_rc>
Test	AT#PREFRC=?	Returns the range of <for_rc>, <rev_rc> parameters: AT#PREFRC: (0-5)

Parameters

Parameter	Type	Description
<for_rc>	Integer	Forward radio configuration
<rev_rc>	Integer	Reverse radio configuration

Example

AT#PREFRC=?
#PREFRC: (0-5)

OK
AT#PREFRC?
#PREFRC: 1,5

OK
AT#PREFRC=2,2
OK
AT#PREFRC?
#PREFRC: 2,2

OK
AT#PREFRC=0,1



```
OK
AT#PREFRC?
#PREFRC: 0,1
```

```
OK
```

5.1.4.2. Wake Up Modem from Power Save – #WAKEPS

Description

This command wakes up modem from power save mode.

Syntax

Command Type	Command	Response / Action
Execute	AT#WAKEPS	Wakes up modem from power save mode
Read	AT#WAKEPS?	Returns the radio configurations in format: AT#WAKEPS: <sleep>

Parameters

Parameter	Type	Description
<sleep>	Integer	Modem status: 0 - Idle 1 - Power save

Example

```
AT#WAKEPS?
#WAKEPS: 0

OK
AT#WAKEPS
OK
```



5.1.4.3. Voice Privacy Setting – #VOICEPRIV

Description

This command sets the voice privacy mode.

Syntax

Command Type	Command	Response / Action
Set	AT#VOICEPRIV= <v_privacy>	OK – Voice privacy set ERROR
Read	AT#VOICEPRIV?	Returns the voice privacy setting in format: AT#VOICEPRIV: <v_privacy>

Parameters

Parameter	Type	Description
<v_privacy>	Integer	Voice privacy setting 0 – OFF 1 – ON

Example

AT#VOICEPRIV=?

ERROR

AT#VOICEPRIV?

#VOICEPRIV: 0

OK

AT#VOICEPRIV=1

OK

AT#VOICEPRIV?

#VOICEPRIV: 1

OK



5.1.4.4. Vocoder Setting Value Reading or Writing – #PREFVOC

Description

This command sets the vocoder setting value.

Syntax

Command Type	Command	Response / Action
Set	AT#PREFVOC= <evrc>,<so1>, <so2>,<so3>	OK – Vocoder settings saved ERROR
Read	AT#PREFVOC?	Returns the vocoder setting values in format: AT#PREFVOC: <evrc>,<so1>,<so2>,<so3>

Parameters

Parameter	Type	Description
<evrc>	Integer	EVRC enable or disable
<so1>	Integer	Home page voice service option (3/32768)
<so2>	Integer	Home orig voice service option (3/32768)
<so3>	Integer	Roam orig voice service option (3/32768)

Example

```

AT#PREFVOC?
#PREFVOC: 0,3,3,3

OK
AT#PREFVOC=1,3,3,3
OK
AT#PREFVOC?
#PREFVOC: 1,3,3,3

OK
    
```



```
AT#PREFVOC=0,32768,32768,32768
OK
AT#PREFVOC?
#PREFVOC: 0,32768,32768,32768

OK
```

5.1.4.5. SMS Transmission Type Setting – #SMSAC

Description

This command sets the SMS transmission type.

Syntax

Command Type	Command	Response / Action
Set	AT#SMSAC=<var>	OK - set SMS transmission type as traffic or access ERROR
Read	AT#SMSAC?	Returns the SMS transmission type in format: AT#SMSAC: <var>
Test	AT#SMSAC=?	Returns the values for the <var> parameter.

Parameters

Parameter	Type	Description
<var>	Integer	SMS transmission type: 0 – traffic channel 1 – access channel

Example

```
AT#SMSAC=?
#SMSAC: (0-1)
```



```
OK
AT#SMSAC?
#SMSAC: 1
```

```
OK
AT#SMSAC=0
OK
AT#SMSAC?
#SMSAC: 0
```

```
OK
```

5.1.4.6. OTASP Setting – #OTASPEN

Description

This command enables or disables the OTASP function.

Note: This is operator specific, and is not supported by the Sprint Network.

Syntax

Command Type	Command	Response / Action
Set	AT#OTASPEN= <var>	OK - Set OTASP enable or disable ERROR
Read	AT#OTASPEN?	Returns the OTASP setting in format: AT#OTASPEN: <var>
Test	AT#OTASPEN=?	Returns the values for the <var> parameter.

Parameters

Parameter	Type	Description
<var>	Integer	OTASP enable or disable: 0 – disable 1 – enable (factory default)



Example

```
AT#OTASPEN=?
#OTASPEN: (0-1)
```

```
OK
AT#OTASPEN?
#OTASPEN: 1
```

```
OK
AT#OTASPEN=0
OK
AT#OTASPEN?
#OTASPEN: 0
```

```
OK
```

5.1.4.7. Configuration String - +CFG

Description

This command sets a module configuration string.

The string will be stored by the module and sent to the base station prior to dialing.

Each transmission of an AT+CFG command from Host replaces the contents of the previous string.

Syntax

Command Type	Command	Response / Action
Set	AT+CFG=<string>	OK - Sets configuration string. ERROR
Read	AT+CFG?	Returns the current string.
Test	AT+CFG=?	Returns the result code OK



Parameters

Parameter	Type	Description
<string>	String	Configuration string, may be up to 248 characters.

Example

AT+CFG=?

OK

AT+CFG?

+CFG: ""

OK

AT+CFG="data"

OK

AT+CFG?

+CFG: "data"

OK

5.1.4.8. RM interface setting – +CRM

Description

This command changes the RM Interface protocol.

Note: When the AT\$QCMIP value is changed to "1" or "2", this modifies the value of AT+CRM to 2. When AT+CRM has a value of "2", it enables network mode operation. Changing the value of AT\$QCMIP to "0" will reset the AT+CRM to its original value.

Syntax

Command Type	Command	Response / Action
Set	AT+CRM=<value>	OK- RM Interface protocol set
Read	AT+CRM?	Returns the current setting of RM Interface protocol: +CRM: <value>



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Test AT+CRM=? Reports the supported range of values for parameter.

Parameters

Parameter	Type	Description
<value>	Integer	RM Interface protocol: 0 – Circuit Data 1 – Packet Data (Relay layer packet data) 2 – Packet Data (Network layer packet data)

Example

AT+CRM=?
+CRM: (0-2)

OK
AT+CRM?
+CRM: 2

OK
AT+CRM=0
ERROR
AT\$QCMIP?
\$QCMIP: 2

OK
AT\$QCMIP=0
OK
AT+CRM=0
OK
AT+CRM?
+CRM: 0



OK
AT\$QCMIP=2
OK
AT+CRM?
+CRM: 2

OK



5.1.5. Commands for Data Session

5.1.5.1. Data Inactivity Timer - +CTA

Description

This command sets Um packet data inactivity timer.

Syntax

Command Type	Command	Response / Action
Execute	AT+CTA=<n>	OK - sets Um packet data inactivity timer ERROR
Read	AT+CTA?	Displays the current parameter setting.
Test	AT+CTA=?	Returns the possible range of values for the parameter

Parameters

Parameter	Type	Description
<n>	Integer	Um packet data inactivity timer: 0 - Traffic Channel not released during inactivity periods. 1-255 - Release the Traffic Channel after <value> 1-second intervals have elapsed since last sending or receiving RLP data frames on the Um interface. (Sprint/Aeris Default: 60 seconds) (Verizon Default: 30 Seconds)

Example

```
AT+CTA=?
+CTA: (0-255)
```

```
OK
AT+CTA?
+CTA: 60
```



```
OK
AT+CTA=30
OK
AT+CTA?
+CTA: 30
```

```
OK
```

5.1.5.2. Packet Zone ID - +PZID

Description

This command displays the current packet zone id in the Extended System Parameters Message or the In-Traffic System Parameters Message.

Syntax

Command Type	Command	Response / Action
Read	AT+PZID?	Displays the current <packet_zone_id> in the Extended System Parameters Message or the In-Traffic System Parameters Message.
Test	AT+PZID=?	OK

Parameters

Parameter	Type	Description
<packet_zone_id>	Integer	Packet zone Id

Example

```
AT+PZID=?
OK
AT+PZID?
+PZID: 30
```

```
OK
```



5.1.5.3. Interrupt Packet Data - \$GODORMANT

Description

This command Interrupts packet data session, causing data session to go dormant.

Syntax

Command Type	Command	Response / Action
Execute	\$GODORMANT	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical. Although running this AT-Command, The device would emerge from DORMANT state then become ACTIVE state as long as the device has any packets to send or receive.
Note	The device should be in Packet Data Active Session to get result "OK", In case of QNC call, Result must be "ERROR" since QNC doesn't support DORMANT.

Example

```
AT$GODORMANT
OK
```

5.1.6. Commands for Test

5.1.6.1. Test Origination – #TESTORI

Description

Command originates a (loopback) test call.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Execute	#TESTORI[= <svcz_opt>, <ori_num>]	OK – Originates test call OK – End test call if executed without any parameters ERROR
Test	#TESTORI=?	OK

Parameters

Parameter	Type	Description
<svcz_opt>	Integer	Service option for test call: 0: Rate Set 1 Loopback Service Option 1: Rate Set 2 Loopback Service Option 2: Loopback service Option 55 3: Markov Service Option 4: Markov Service Option (13K) 5: Rate Set 2 Markov Service Option 6: Rate Set 1 Markov Service Option 7: Markov Service Option 54 8: Service option for Simple TDS0
<ori_num>	Integer	Destination number for test calls (max 32 characters).

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately.
Reference	Telit
Note:	Test Origination command can use without Destination number.

Example

```
AT#TESTORI=?
OK
AT#TESTORI=1,011222333
OK
AT#TESTORI=0
OK
```



5.1.7. FOTA/OMA-DM for the Sprint Network

5.1.7.1. OMA-DM Device Configuration – +OMADM

Description

This command initiates an OMA-DM client initiated device configuration (CIDC).

Note: This AT+OMADM command is Sprint requirement and it follows the format defined by Sprint document “OMA-DM for Data Card and Modules v1.6”.

Syntax

Command Type	Command	Response / Action
Set	AT+OMADM=<onoff>	OK - Initiates OMA-DM client initiated device configuration (CIDC).
Execute	AT+OMADM=2	Initiates CIDC(OMA-DM client device configuration)
Test	AT+OMADM=?	Show the current status.

Parameters

Parameter	Type	Description
<onoff>	Integer	Device configuration function status 0: disable (default) 1: enable 2: initiate CIDC

Example

```
AT+OMADM=0
```

```
OK
```

```
AT+OMADM=?
```

```
+OMADM: 0
```

```
OK
```

```
AT+OMADM=1
```

```
OK
```



AT+OMADM?
ERROR
AT+OMADM=?
+OMADM: 1

OK

CIDC (OMA-DM client device configuration) initiation.

AT+OMADM=2
OK

5.1.7.2. OMA-DM NIPRL/CIPRL – +PRL

Description

This command initiates an OMA-DM CIPRL session, i.e. the downloading of a new /updated PRL.

Note: This AT+FUMO command is Sprint requirement and it follows the format defined by Sprint document “OMA-DM for Data Card and Modules v1.6”.

Syntax

Command Type	Command	Response / Action
Set	AT+PRL=<onoff>	Initiates OMA-DM CIPRL session.
Execute	AT+PRL=2	Checks PRL now and initiate OMA-DM PRL. (CIPRL)

Parameters

Parameter	Type	Description
<onoff>	Integer	PRL update function status: 0: disable NIPRL/CIPRL updates 1: enable NIPRL/CUIPRL update (default). 2: check now (initiate CIPRL)

Example




```
AT+PRL=2
OK
AT+PRL=1
OK
AT+PRL=0
OK
```

5.1.7.3. OMA-DM NIFUMO/CIFUMO – +FUMO

Description

This command sets OMA-DM NIFUMO/CIFUMO enable parameter.

Note: This AT+FUMO command is Sprint requirement and it follows the format defined by Sprint document “OMA-DM for Data Card and Modules v1.6”.

Syntax

Command Type	Command	Response / Action
Set	AT+FUMO=<onoff>	OK – Set FUMO update status ERROR
Execute	AT+FUMO=2	Checks and initiates OMA-DM FUMO.

Parameters

Parameter	Type	Description
<onoff>	Integer	FUMO update function status: 0: disable NIFUMO/CIFUMO 1: enable NIFUMO/CIFUMO (default) 2: check now (check and initiate CIFUMO)

Example

```
AT+FUMO=0
OK
AT+FUMO=1
OK
```



AT+FUM0=2

OK

5.1.7.4. OMA-DM Client Enable/Disable- #OMADMCEN

Description

This command enables/disabled the OMA-DM Client feature.

Syntax

Command Type	Command	Response / Action
Set	AT#OMADMCEN=<onoff>	OK - OMA-DM Client Status set ERROR
Read	AT#OMADMCEN?	Returns status in format: #OMADMCEN: <onoff>
Test	AT#OMADMCEN=?	Reports the supported values for the parameter <onoff>.

Parameters

Parameter	Type	Description
<onoff>	Integer	OMA-DM Client Status: 0: disable 1: enable(default)

Example

AT#OMADMCEN=?

#OMADMCEN: {0,1}

OK

AT#OMADMCEN?

#OMADMCEN: 1

OK

AT#OMADMCEN=0



```
OK
AT#OMADMCEN?
#OMADMCEN: 0
```

```
OK
```

5.1.7.5. Set OMA-DM Server Address – #OMADMSVADDR

Description

This command sets OMA-DM server address.

Note: URL should be started with “https://” or “http://” string.

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMSVADDR=<url>	OK- OMA-DM server address set ERROR
Read	AT#OMADMSVADDR?	Reports the current OMA-DM server address.
Test	AT#OMADMSVADDR=?	OK

Parameters

Parameter	Type	Description
<url>	URL	OMA-DM server address. Factory default server address for Sprint OMA-DM server is: https://oma.spcsdns.net/oma

Example

```
AT#OMADMSVADDR=?
OK
AT#OMADMSVADDR=https://oma.spcsdns.net/oma
OK
AT#OMADMSVADDR?
#OMADMSVADDR : https://oma.spcsdns.net/oma
```



OK

Note: URL should be started with "https://" or "http://" string.

5.1.7.6. Set OMA-DM Server Port – #OMADMSVPORT

Description

This command sets OMA-DM server port.

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMSVPORT= <port number>	OK- OMA-DM server port set ERROR
Read	AT#OMADMSVPORT?	Reports the current OMA-DM server port.
Test	AT#OMADMSVPORT=?	OK

Parameters

Parameter	Type	Description
<port number>	Integer	OMA-DM server port Factory default server port for Sprint OMA-DM server is : 443

Example

AT#OMADMSVPORT=?

OK

AT#OMADMSVPORT?

#OMADMSVPORT : 443

OK

AT#OMADMSVPORT=550

OK

AT#OMADMSVPORT?



#OMADMSVPORT: 550

OK

5.1.7.7. OMA-DM Server ID – #OMADMSVID

Description

This command sets the OMA-DM server ID.

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMSVID=<id>	OK - OMA-DM server ID set
Read	AT#OMADMSVID?	Reports the current OMA-DM server ID.
Test	AT#OMADMSVID=?	OK

Parameters

Parameter	Type	Description
<id>	Text	OMA-DM server ID. Factory default server ID for Sprint OMA-DM server is: Sprint

Example

```
AT#OMADMSVID=?
OK
AT#OMADMSVID?
#OMADMSVID: sprint

OK
AT#OMADMSVID=TEST
OK
AT#OMADMSVID?
#OMADMSVID: TEST
```



OK

5.1.7.8. OMA-DM Server Password – #OMADMSVPW

Description

This command sets OMA-DM server authentication secret.

As factory default value, an initial calculated value is used.

For factory default value calculation, please refer to the Sprint document:

“Factory Bootstrapping Algorithm in Sprint OMA-DM Client Functional Requirements v1.4.5”

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMSVPW= <password>	OK - OMA-DM server auth secret set ERROR
Read	AT#OMADMSVPW?	Reports the current OMA-DM server auth secret.
Test	AT#OMADMSVPW=?	OK

Parameters

Parameter	Type	Description
<password>	String	OMA-DM server auth secret

Example

AT#OMADMSVPW=?

OK

AT#OMADMSVPW?

#OMADMSVPW: 0000000000000000000000

OK

AT#OMADMSVPW=yMlikLJdGhj57vwr07SpHP



```
OK
AT#OMADMSVPW?
#OMADMSVPW : yMlikLJdGhj57vwr07SpHP
```

```
OK
```

5.1.7.9. OMA-DM Server Auth Data – #OMADMSVNON

Description

This command sets OMA-DM server authentication data.
Factory default server nonce for Sprint OMA-DM server is:
12345

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMSVNON= <nonce>	OK - OMA-DM server auth data (nonce) set ERROR
Test	AT#OMADMSVNON=?	OK

Parameters

Parameter	Type	Description
<nonce>	Integer	OMA-DM server auth data (nonce).

Example

```
AT#OMADMSVNON=?
OK
AT#OMADMSVNON=54321
OK
AT#OMADMSVNON=12345
OK
```



5.1.7.10. OMA-DM Client ID – #OMADMCUID

Description

This command sets the OMA-DM client ID.

Factory default client ID for Sprint OMA-DM client is the individual **MEID** (unique ESN number of the device).

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMCUID=<id>	OK – OMA-DM server client ID set ERROR
Read	AT#OMADMCUID?	Reports the current OMA-DM client ID.
Test	AT#OMADMCUID=?	OK

Parameters

Parameter	Type	Description
<id>	Text	OMA-DM server client ID.

Example

```
AT#OMADMCUID=?
OK
AT#OMADMCUID?
#OMADMCUID: MEID:A1000009DF0004

OK
AT#OMADMCUID= MEID:A1000009DF0004
OK
```

5.1.7.11. OMA-DM Client Password – #OMADMCUPW

Description



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This command sets the OMA-DM client authentication secret.

As factory default value, an initial calculated value is used.

For factory default value calculation, please refer to the Sprint document:

“Factory Bootstrapping Algorithm in Sprint OMA-DM Client Functional Requirements v1.4.5”

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMCUPW= <password>	OK - OMA-DM Client Password set ERROR
Read	AT#OMADMCUPW?	Reports the current OMA-DM Client Password.
Test	AT#OMADMCUPW=?	OK

Parameters

Parameter	Type	Description
<password>	Text	OMA-DM Client Password

Example

```

AT#OMADMCUPW=?
OK
AT#OMADMCUPW?
#OMADMCUPW: 00000000000000000000000000000000

OK
AT#OMADMCUPW=EsLIH173IYk04BMiOttgpq
OK
AT#OMADMCUPW?
#OMADMCUPW : EsLIH173IYk04BMiOttgpq

OK
    
```



5.1.7.12. OMA-DM Client Auth Data – #OMADMCUNON

Description

This command sets the OMA-DM client authentication data.

As factory default value, an initial calculated value is used.

For factory default value calculation, please refer to the Sprint document:

“Factory Bootstrapping Algorithm in Sprint OMA-DM Client Functional Requirements v1.4.5”

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMCUNON= <nonce>	OK - OMA-DM client auth data (nonce). ERROR
Test	AT#OMADMCUNON=?	OK

Parameters

Parameter	Type	Description
<nonce>	Integer	OMA-DM client auth data (nonce).

Example

AT#OMADMCUNON=?

OK

AT#OMADMCUNON=54321

OK

AT#OMADMCUNON=12345

OK

5.1.7.13. OMA-DM Proxy Server Address – #OMADM_PROXY

Description

This command sets the OMA-DM proxy server address.



Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMPROXY= <port number>, <URL>	OK -Parameters set ERROR
Read	AT#OMADMPROXY?	Reports the current OMA-DM proxy server address in format: #OMADMPROXY : <URL>:<port number>
Test	AT#OMADMPROXY=?	OK

Parameters

Parameter	Type	Description
<port number>	Integer	OMA-DM proxy server port number. Factory default for Sprint is: 80
<url>	URL	OMA-DM proxy server URL. Factory default URL for Sprint is http://68.31.28.1

Example

```

AT#OMADMPROXY=?
OK
AT#OMADMPROXY?
#OMADMPROXY : http://68.31.28.1:80

OK
AT#OMADMPROXY=120,http://www.telit.com
OK
AT#OMADMPROXY?
#OMADMPROXY: http://www.telit.com:120

OK
AT#OMADMPROXY=80,http://68.31.28.1
OK
    
```



5.1.7.14. Set OMA-DL Proxy Server Address – #OMADLPROXY

Description

This command sets the OMA-DL proxy server address.

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADLPROXY= <port number>, <URL>	OK – Parameters set ERROR
Read	AT#OMADLPROXY?	Reports the current OMA-DL proxy server address in format: #OMADLPROXY : <URL>:<port number>
Test	AT#OMADLPROXY=?	OK

Parameters

Parameter	Type	Description
<port number>	Integer	OMA-DL proxy server port number. Factory default for Sprint is: 80
<url>	URL	OMA-DL proxy server URL. Factory default URL for Sprint is http://68.31.28.1

Example

```
AT#OMADLPROXY=?
OK
AT#OMADLPROXY?
#OMADLPROXY : http://68.31.28.1:80

OK
AT#OMADLPROXY=150,http://www.telit.com
OK
AT#OMADLPROXY?
```



#OMADLPROXY: http://www.telit.com:150

OK

AT#OMADLPROXY=80,http://68.31.28.1

OK

5.1.7.15. OMA-DM Session Type – #OMADMSS

Description

This command reports the current OMA-DM session type.

Syntax

Command Type	Command	Response / Action
Read	AT#OMADMSS?	Returns the current session type
Test	AT#OMADMSS=?	Reports the supported values for the parameter <session_type>.

Parameters

Parameter	Type	Description
<session_type>	Integer	OMA-DM session type can be one of following: 0 : idle 1 : FUMO 2 : PRL 3 : DC 4 : HFA

Example

AT#OMADMSS=?

#OMADMSS: {0-4}

OK




```
AT# OMADMSS?  
# OMADMSS : 3
```

OK

5.1.7.16. OMA-DM Server Credential – #OMADMSVCR

Description

This command sets the OMA-DM server credentials.

Syntax

Command Type	Command	Response / Action
Execute	AT#OMADMSVCR= <credential>	OK- OMA-DM server credential set ERROR
Read	AT#OMADMSVCR?	OK
Test	AT#OMADMSVCR=?	OK

Parameters

Parameter	Type	Description
<credential>	Text	OMA-DM server credential Note: AT#OMADMSVCR=0 restores default server credential value.

Example

```
AT#OMADMSVCR=?  
OK  
AT#OMADMSVCR?  
#OMADMSVCR: testpassword  
  
OK  
AT# OMADMSVCR =yMlikLJdGhj57vwr07SpHP
```




```
OK
AT#OMADMSVCR?
#OMADMSVCR : yMlikLJdGhj57vwr07SpHP

OK
```

5.1.7.17. Device Configuration OK – #DCOK

Description

This command executes the module reset phase of device configuration after a CIDC DM session has successfully ended.

Note: Rebooting will happen when MDN or MSID has changed as the result of successful CIDC DM session

Syntax

Command Type	Command	Response / Action
Execute	AT#DCOK	Executes reset phase of device configuration after the CIDC DM session is successful.
Read	AT#DCOK=?	OK

Example

```
AT#DCOK=?
OK
AT#DCOK
OK
```

5.1.7.18. Device Configuration Cancel – #DCCANCEL

Description

This command cancels the current device configuration DM session.

Syntax



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Command Type	Command	Response / Action
Execute	AT#DCCANCEL	Cancels the current device configuration DM session.
Test	AT#DCCANCEL=?	OK

Example

```
AT#DCCANCEL=?
OK
AT#DCCANCEL
OK
```

5.1.7.19. Hands Free Activation – #HFA

Description

This command initiates the “Sprint Hands Free Activation” (HFA) session.

Syntax

Command Type	Command	Response / Action
Execute	AT#HFA	Initiates the Sprint Hands Free Activation (HFA) session.
Test	AT#HFA=?	OK

Example

```
AT#HFA=?
OK
AT#HFA
OK
```

5.1.7.20. Hands Free Activation OK – #HFAOK

Description



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This command executes the reset phase of an HFA after the HFA DM session is successful.

Note: Rebooting will happen when MDN or MSID has changed as the result of a successful CIDC DM session.

Syntax

Command Type	Command	Response / Action
Execute	AT#HFAOK	Initiates the reset phase of a Sprint Hands Free Activation (HFA) session.
Test	AT#HFAOK=?	OK

Example

```
AT#HFAOK=?
OK
AT#HFAOK
OK
```

5.1.7.21. Hands Free Activation Cancel – #HFACANCEL

Description

This command cancels the current HFA DM session.

Syntax

Command Type	Command	Response / Action
Execute	AT#HFACANCEL	Cancels the current HFA DM session.
Test	AT#HFACANCEL=?	OK

Example

```
AT#HFACANCEL=?
OK
AT#HFACANCEL
```



5.1.7.23. Update PRL OK – #PRLOK

Description

This command loads and activates the new PRL if PRL DM session has ended successfully and a new PRL exists.

Syntax

Command Type	Command	Response / Action
Execute	AT#PRLOK	Loads new PRL if available.
Test	AT#PRLOK=?	OK

Example

```
AT#PRLOK=?
OK
AT#PRLOK
OK
```

5.1.7.24. Load PRL Cancel – #PRLCANCEL

Description

This command cancels the current PRL update DM session.

Syntax

Command Type	Command	Response / Action
Execute	AT#PRLCANCEL	Cancels the new PRL load session.
Test	AT#PRLCANCEL=?	OK

Example

```
AT#PRLCANCEL=?
OK
AT#PRLCANCEL
```



OK

5.1.7.25. Check Firmware Update – #FUMOCHECK

Description

This command checks if there is a firmware update package waiting for update, downloaded from the OMA-DM server.

Note: Read only AT command.

Syntax

Command Type	Command	Response / Action
Read	AT#FUMOCHECK?	Returns the FUMO checking status <stat>.
Test	AT#FUMOCHECK=?	Reports the supported values for the parameter <stat>.

Parameters

Parameter	Type	Description
<stat>	Integer	FUMO checking status: 0 - FUMO checking DM session is not needed. 1 - FUMO checking DM session is needed.

Example

```
AT#FUMOCHECK=?
```

```
#FUMOCHECK: (0,1)
```

OK

```
AT#FUMOCHECK?
```

```
#FUMOCHECK: 0
```

OK



5.1.7.26. Cancel current FUMO DM session – #FUMOCANCEL

Description

This command cancels the current FUMO DM session.

Syntax

Command Type	Command	Response / Action
Execute	AT#FUMOCANCEL	Cancels the current FUMO DM session.
Test	AT#FUMOCANCEL=?	OK

Example

```
AT#FUMOCANCEL=?
OK
AT#FUMOCANCEL
OK
```

5.1.7.27. Trigger Firmware Update Agent – #FUMOUA

Description

This command is an execution command which triggers firmware update agent (FUMO UA) and returns the FUMO UA calling result.

The FUMO UA can be started when there is firmware update package to be updated.

When there is a firmware update package to be updated, this command will activate FUMO UA and return the result 1, otherwise it will return the result 0.

Note: Execute only AT command.

Syntax

Command Type	Command	Response / Action
Execute	AT#FUMOUA	Triggers firmware update agent (FUMO UA) and returns the FUMO UA calling result



Command Type	Command	Response / Action
Test	AT#FUMOUA=?	Reports the supported values for the parameter <stat>.

Parameters

Parameter	Type	Description
<stat>	Integer	FUMO update package status 0 – update agent won't be called (no update package to be applicable.) 1 – update agent is started

Example

```
AT#FUMOUA=?  
#FUMOUA: (0,1)
```

```
OK  
AT#FUMOUA  
#FUMOUA: 0
```

```
OK
```



5.2. GPS Commands

5.2.1. Stand Alone GPS Commands

5.2.1.1. GPS Controller Power Management - \$GPSP

Description

This command manages the power up or power down of the GPS controller.

Syntax

Command Type	Command	Response / Action
Set	AT\$GPSP=<status>	Manages power-up or down of the GPS controller.
Read	AT\$GPSP?	Reports the current value of the <status> parameter, in the format: \$GPSP: <status>
Test	AT\$GPSP=?	Reports the range of supported values for parameter <status>

Parameters

Parameter	Type	Description
<status>	Integer	0 - GPS controller is powered down (Default) 1 - GPS controller is powered up

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	See notes



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Note

When \$GPSP=1 you can NOT change the settings of \$GPSNMUN.

\$GPSPORT command must be set to "NMEA" before GPS controller is powered up.

The URC "#GPS_STATUS:1" notifies the user or controller that GPS has started. The URC "#GPS_STATUS:2" notifies the user or controller that GPS has stopped.

Example

```
AT$GPSP=?  
$GPSP: (0,1)
```

OK

```
AT$GPSP?  
$GPSP: 0
```

OK

```
AT$GPSP=1  
OK
```

```
#GPS_STATUS:1
```

"Standalone GPS stream is displayed on NMEA or UART depending on \$GPSNMUN setting"

```
AT$GPSP=0  
OK
```

```
#GPS_STATUS:2
```

5.2.1.2. GPS Reset - \$GPSR

Description

This command allows the reset of the GPS controller.



Syntax

Command Type	Command	Response / Action
Execution	AT\$GPSR=<reset_type>	Allows the GPS controller to be reset.
Test	AT\$GPSR=?	Reports the range of supported values for parameter <reset_type>

Parameters

Parameter	Type	Description
<reset_type>	Integer	<p>0 - Hardware reset: the GPS receiver is reset and restarts by using the values stored in the internal memory of the GPS receiver.</p> <p>1 - Coldstart (No Almanac, No Ephemeris): this option clears all data that is currently stored in the internal memory of the GPS receiver including position, almanac, ephemeris, and time. The stored clock drift however, is retained. It is available in controlled mode only.</p> <p>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. The almanac is retained but the ephemeris is cleared. It is available in controlled mode only.</p> <p>3 - Hotstart (with stored Almanac and Ephemeris): the GPS receiver restarts by using the values stored in the internal memory of the GPS receiver; validated ephemeris and almanac. It is available in controlled mode only.</p>

Miscellaneous

Command Information	Comment
Note	

Example

```
AT$GPSR=?
$GPSR: (0-3)
```

```
OK
```



AT\$GPSR=0

OK

5.2.1.3. GPS Antenna Type Definition - \$GPSAT

Description

This command selects the antenna type that will be used.

Syntax

Command Type	Command	Response / Action
Set	AT\$GPSAT=<type>	Selects the GPS antenna used
Read	AT\$GPSAT?	Returns the currently used antenna, in the format: \$GPSAT: <type>
Test	AT\$GPSAT=?	Reports the range of supported values for parameter <type>

Parameters

Parameter	Type	Description
<type>	Integer	0 - GPS Antenna not power supplied by the module 1 - GPS Antenna power supplied by the module (default)

Miscellaneous

Command Information	Comment
Note	If current <type> is 0, either \$GPSAV and \$GPSAI have no meaning. The current setting is stored through \$GPSSAV

Example

AT\$GPSAT=?
\$GPSAT: (0-1)



```
OK
AT$GPSAT?
$GPSAT: 1
```

```
OK
AT$GPSAT=0
```

```
OK
```

5.2.1.4. GPS Antenna Supply Voltage Readout - \$GPSAV

Description

This command returns the measured GPS antenna's supply voltage.

Syntax

Command Type	Command	Response / Action
Execute	AT\$GPSAV	Returns the measured GPS antenna's supply voltage in mV.
Read	AT\$GPSAV?	Has the same meaning as the Execution command
Test	AT\$GPSAV=?	Test command returns the OK result code

Miscellaneous

Command Information	Comment
Note	It has meaning only if current \$GPSAT setting is not 0

Example

```
AT$GPSAV=?
OK
AT$GPSAV?
```



\$GPSAV: 3800

OK

AT\$GPSAV

\$GPSAV: 3800

OK

5.2.1.5. GPS Antenna Current Readout - \$GPSAI

Description

This command returns the GPS antenna's current consumption.

Syntax

Command Type	Command	Response / Action
Execute	AT\$GPSAI	Reports the GPS antenna's current consumption in the format: \$GPSAI:<value>[,<status>]
Read	AT\$GPSAI?	Has the same meaning as the Execution command
Test	AT\$GPSAI=?	Test command returns the OK result code

Parameters

Parameter	Type	Description
<value>	Integer	Measured current in mA
<status>	Integer	0 - GPS antenna OK 1 - GPS antenna consumption out of the limits

Note: the output **<status>** is available only if the antenna protection is activated (see **\$GPSAP**)

Miscellaneous



Command Information	Comment
---------------------	---------

Note	It has meaning only if current \$GPSAT setting is not 0
-------------	---

Example

```
AT$GPSAI=?
OK
AT$GPSAI?
$GPSAI: 17
```

```
OK
AT$GPSAI
$GPSAI: 17
```

```
OK
```

5.2.1.6. GPS Antenna Protection - \$GPSAP

Description

This command activates an automatic protection in case of high current consumption of GPS antenna.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------

Set	AT\$GPSAP=<set> [,<value>]	Allows activating an automatic protection in case of high current consumption of GPS antenna. The protection disables the GPS antenna supply voltage.
------------	-------------------------------	---

Read	AT\$GPSAP?	Reports the current activation status of antenna automatic protection and the current antenna limit value, in the format: \$GPSAP: <set>,<value>
-------------	------------	--



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Test AT\$GPSAP=? Reports the range of supported values for parameters **<set>** and **<value>**

Parameters

Parameter	Type	Description
<set>	Integer	0 - deactivate current antenna protection (default) 1 - activate current antenna protection
<value>	Integer	Antenna current limit value in mA 0..200

If parameter **<set>=0** parameter **<value>** has no meaning and can be omitted.

Note: the new setting is stored through **\$GPSSAV**

Miscellaneous

Command Information	Comment
Note	The module is already provided of an Hardware protection for the high current consumption that is automatically activated if the consumption exceeds 50mA

Example

```
AT$GPSAP=?
$GPSAP: (0-1),(0-200)
```

```
OK
AT$GPSAP?
$GPSAP:1,50
OK
Antenna protection activated with 50mA limit
```

```
AT$GPSAP=0
OK
Note: no SW control on antenna status (HW current limitation only)
```

```
AT$GPSAP=1,25
OK
Activate current antenna protection with related current limit
```



5.2.1.7. Unsolicited NMEA Data Configuration - \$GPSNMUN

Description

This command activates an Unsolicited streaming of GPS data in NMEA format.

Syntax

Command Type	Command	Response / Action
Set	AT\$GPSNMUN=<enable> [,<GGA>,<GSA>,<GSV>, <RMC>,<VTG>]	Permits to activate an Unsolicited streaming of GPS data (in NMEA format) through the standard GSM serial port and defines which NMEA sentences will be available
Read	AT\$GPSNMUN?	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>,<GSA>,<GSV>,<RMC>,<VTG >
Test	AT\$GPSNMUN=?	Returns the supported range of values for parameters: <enable>,<GGA>,<GSA>,<GSV>,<RMC>,<VTG>

Parameters

Parameter	Type	Description
<enable>	Integer	0 - NMEA data stream de-activated (default) 1 - NMEA data stream activated with the following unsolicited response syntax: \$GPSNMUN:<CR><NMEA SENTENCE><CR> 2 - NMEA data stream activated with the following unsolicited response syntax: <NMEA SENTENCE><CR> 3 – dedicated NMEA data stream; only available on the UART port



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<GGA>	Integer	Global Positioning System Fix Data 0 - disable 1 - enable
<GSA>	Integer	GPS DOP and Active Satellites 0 - disable 1 - enable
<GSV>	Integer	GPS Satellites in View 0 - disable 1 - enable
<RMC>	Integer	Recommended Minimum Specific GPS Data 0 - disable 1 - enable
<VTG>	Integer	Course Over Ground and Ground Speed 0 - disable 1 - enable

Miscellaneous

Command Information	Comment
Reference	NMEA 01803 Specifications
Note	AT\$GPSP must be set to "0" before you can enable \$GPSNMUN and its parameters or make changes to any parameters.

Example

```
AT$GPSNMUN=?
$GPSNMUN: (0-2),(0-1),(0-1),(0-1),(0-1),(0-1),

OK
AT$GPSNMUN?
$GPSNMUN: 0,0,0,0,0,0

OK
```



AT\$GPSNMUN=2,1,1,1,1,1
OK

5.2.1.8. Get Acquired Position - \$GPSACP

Description

This command returns information about the last GPS position.

Syntax

Command Type	Command	Response / Action
Execute	AT\$GPSACP	Returns information about the last GPS position in the format: \$GPSACP: <UTC>,<latitude>,<longitude>,<hdop>,<altitude>,<fix>,<cog>,<spkm>,<spkn>,<date>,<nsat>
Read	AT\$GPSACP?	Has the same meaning as the Execution command
Test	AT\$GPSACP=?	Returns the OK result code

Parameters

Parameter	Type	Description
<UTC>	String	UTC time (hhmmss.sss) referred to GGA sentence
<latitude>	String	format is ddmm.mmmm N/S (referred to GGA sentence) where: dd – degrees, 00..90 mm.mmmm – minutes, 00.0000..59.9999 N/S: North / South
<longitude>	String	format is dddmm.mmmm E/W (referred to GGA sentence) where: ddd – degrees, 000..180 mm.mmmm – minutes, 00.0000..59.9999 E/W: East / West



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<hdop>	Integer	x.x - Horizontal Dilution of Precision (referred to GGA sentence)
<altitude>	Integer	xxxx.x Altitude - mean-sea-level (geoid) in meters (referred to GGA sentence)
<fix>	Integer	0 - Invalid Fix 2 - 2D fix 3 - 3D fix
<cog>	String	ddd.mm - Course over Ground (degrees, True) (referred to VTG sentence)where: ddd – degrees, 000..360 mm – minutes, 00..59
<spkm>	Integer	xxxx.x Speed over ground (Km/hr) (referred to VTG sentence)
<spkn>	Integer	xxxx.x- Speed over ground (knots) (referred to VTG sentence)
<date>	String	ddmmyy Date of Fix (referred to RMC sentence) where: dd – day, 01..31 mm – month, 01..12 yy – year, 00..99 - 2000 to 2099
<nsat>	Integer	nn - Total number of satellites in use (referred to GGA sentence) 00..12

Miscellaneous

Command Information	Comment
Reference	NMEA 01803 Specifications
Note	AT\$GPSACP will return gpsOne data only after a gpsOne fix is present.

Example

```
AT$GPSACP=?
OK
AT$GPSACP?
```



\$GPSACP: 182919.000,3551.0347N,07847.6357W,3.3,89.2,2,0.0,0.0,0.0,250809,05

OK

AT\$GPSACP

\$GPSACP: 183026.000,3551.0428N,07847.6355W,3.4,100.6,2,0.0,0.0,0.0,250809,05

OK

5.2.1.9. Set the GPS Module in Power Save Mode - \$GPSPS

Description

This command sets the GPS module in power saving mode.

Syntax

Command Type	Command	Response / Action
Set	AT\$GPSPS=<mode> [,<PTF_Period>]	Allows setting the GPS module in Power saving mode.
Read	AT\$GPSPS?	Returns the current power saving mode and push-to-fix period, in the format: \$GPSPS: <mode>,<PTF_Period>
Test	AT\$GPSPS=?	Returns the available range for <mode> and <PTF_Period>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<mode>	String	<p>The GPS receiver can operate in three modes</p> <p>0 - full power mode, power saving disabled (default); it is the standard operating mode; power is supplied to the receiver continuously and the GPS receiver continues to operate without an interrupt.</p> <p>1 - tricklepower mode; the power to the internal GPS chipset is cycled periodically, so that it operates only a fraction of the time; power is applied only when a position fix is scheduled.</p> <p>2 - push-to-fix mode; the GPS receiver is generally off, but turns on frequently enough to collect ephemeris data to maintain the GPS1 real time clock calibration so that, upon user request, a position fix can be provided quickly after power-up.</p>
<PTF_Period>	Integer	<p>Push-to-fix period, numeric value in seconds; when mode is push-to-fix, the receiver turns on periodically according to this parameter; default value is 1800 sec.</p> <p>00..300000</p>

Example

```
AT$GPSPS=?
$GPSPS: (0-2),(0-300000)
```

```
OK
AT$GPSPS?
$GPSPS: 0, 1800
```

```
OK
AT$GPSPS=1,10000
OK
```

5.2.1.10. Wake Up GPS from Power Save Mode - \$GPSWK

Description

This command wakes up the GPS module if set in power saving mode.

Syntax



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Command Type	Command	Response / Action
Execute	AT\$GPSWK	Allows to wake up the GPS module if set in sleeping mode due to power saving
Test	AT\$GPSWK=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Note	<p>If the GPS module is in trickle-power mode, it will start up, make the fix and then continue to work in power saving mode.</p> <p>If the GPS module is in push-to-fix mode, issuing \$GPSWK permits to wake up it before the push to fix period; after the new fix the GPS module will return in push-to-fix mode with the same parameters.</p>

Example

```
AT$GPSWK=?
OK
AT$GPSWK
OK
```

5.2.1.11. Save GPS Parameters Configuration - \$GPSSAV

Description

This command stores the current GPS parameters in the NVM.

Syntax

Command Type	Command	Response / Action
Execute	AT\$GPSSAV	Stores the current GPS parameters in the NVM of the device.
Test	AT\$GPSSAV=?	Returns the OK result code



Miscellaneous

Command Information	Comment
Note	The module must be restarted to use the new configuration

Example

```
AT$GPSSAV=?
OK
AT$GPSSAV
OK
```

5.2.1.12. Restore to Default GPS Parameters - \$GPSRST

Description

This command resets the GPS parameters to “Factory Default” configuration.

Syntax

Command Type	Command	Response / Action
Execute	AT\$GPSRST	Resets the GPS parameters to “Factory Default” configuration and stores them in the NVM of the device
Test	AT\$GPSRST=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Note	The module must be restarted to use the new configuration

Example

```
AT$GPSRST=?
OK
AT$GPSRST
OK
```



5.2.1.13. Change GPS Port from DATA to NMEA - \$GPSPORT

Description

This command changes the GPS Port type.

Syntax

Command Type	Command	Response / Action
Set	AT\$GPSPORT= <port_type>	Changes GPS port from DATA to NMEA or from NMEA to DATA.
Read	AT\$GPSPORT?	Returns the current port type, in the format: \$GPSPORT: <port_type>
Test	AT\$GPSPORT=?	Returns the available range for <port_type>

Parameters

Parameter	Type	Description
<port_type>	String	NMEA or DATA

Miscellaneous

Command Information	Comment
Note	Port type must "NMEA" if you want to see the GPS stream.

Example

```
AT$GPSPORT=?
$GPSPORT:(NMEA,DATA)

OK
AT$GPSPORT?
$GPSPORT: DATA
```



```
OK
AT$GPSPORT=NMEA
OK
```

5.2.1.14. Select GPS Antenna Path - \$GPSPATH

Description

This command determines the common path or the differential path.

Syntax

Command Type	Command	Response / Action
Set	AT\$GPSPATH=<path>	Changes antenna path for GPS.
Read	AT\$GPSPATH?	Returns the current port type, in the format: \$GPSPATH: <path>
Test	AT\$GPSPATH=?	Returns the available range for <path>

Parameters

Parameter	Type	Description
<path>	Integer	0 – Common antenna path (PCS/CELL/GPS) 1 – Differential antenna path (only GPS)

Example

```
AT$GPSPATH=?
$GPSPATH: (0-1)

OK
AT$GPSPATH?
$GPSPATH: 1

OK
AT$GPSPATH=0
OK
```



5.2.1.15. Enable or Disable NMEA Stream - \$NMEA

Description

This command enables/disables the NMEA stream inside the module.

Syntax

Command Type	Command	Response / Action
Set	\$NMEA=<n>	Sets the ability to enable or disable the NMEA stream
Test	\$NMEA=?	Reports Current status (0/1)

Parameters

Parameter	Type	Description
<n>	Integer	0 - NMEA Off 1 - NMEA On

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	
Note	

Example

```
AT$NMEA=?
$NMEA: 0

OK
AT$NMEA=1
OK
```



5.2.2. gpsOne Commands

5.2.2.1. GPS Test Mode - \$LOCMODE

Description

This command sets the next Position Location request for Assisted GPS.

Syntax

Command Type	Command	Response / Action
Set	\$LOCMODE=<mode>	Sets the next Position Location request depending on parameter <mode>
Read	\$LOCMODE?	Reports the location mode for the current next Position Location request in format: \$LOCMODE: <mode>
Test	\$LOCMODE=?	Reports the supported values for the parameter <mode>

Parameters

Parameter	Type	Description
<mode>	Integer	0 – GPS Off; 1 - User Plane MS-Assisted Call Flow 2 - User Plane MS-Based Call Flow 3 - User Plane MS-Assisted AFLT Only Call Flow

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	See notes
Execution Time	Executes immediately.
Reference	
Note	The URC “#GPS_STATUS:1” notifies the user or controller that GPS has started. The URC “#GPS_STATUS:2” notifies the user or controller that GPS has stopped.



Example

```
AT$LOCMODE=?
$LOCMODE: (0-3)
```

```
OK
AT$LOCMODE?
$LOCMODE: 0
```

```
OK
AT$LOCMODE=1
OK
```

```
#GPS_STATUS:1
```

“GPSOne fix is displayed on NMEA or UART depending on \$GPSNMUN setting”

```
#GPS_STATUS:2
```

```
#DREL
```

5.2.2.2. Clear GPS Data - \$GPSCLR

Description

This command resets all of the parameters related with GPS.

Syntax

Command Type	Command	Response / Action
Execute	\$GPSCLR	Resets all parameters related with GPS as following: <ul style="list-style-type: none"> - GPS Almanac Data - GPS Ephemeris Data - LBS User Plane PDE IP Address - LBS User Plane PDE IP Port



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Command Type	Command	Response / Action
Test	\$GPSCLR=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	
Note	This command is global and cannot clear individual pieces of data.

Example

```
AT$GPSCLR=?
OK
AT$GPSCLR
OK
```

5.2.2.3. PDE IP Address and Port - \$SPPDE

Description

This command provides the ability to write PDE IP address and port.

Syntax

Command Type	Command	Response / Action
Set	\$SPPDE=<ip>,<port>	Sets the IP address and port for PDE
Read	\$SPPDE?	Reports the current value \$SPPDE: <mode>

Parameters

Parameter	Type	Description
-----------	------	-------------



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<ip>	String	IP Address: IP1. IP2. IP3. IP4
<port>	Integer	Port: IP1. IP2. IP3. IP4, Port
<mode>		

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	
Note	Applies to User Plane GPS only

Example

```

AT$SPPDE?
$SPPDE: 0.0.0.0,0

OK
AT$SPPDE=123.456.789.123,9999
OK
AT$SPPDE?
$SPPDE: 123.456.789.123,9999

OK
    
```

5.2.2.4. GPS Lock Mode - \$GPSLOCK

Description

This command sets GPS Lock mode. Allows the user to turn on/off the location messaging (IS-801) to the network in modem.



Syntax

Command Type	Command	Response / Action
Set	\$GPSLOCK=<mode>	Sets the Lock Mode to be used with GPS
Read	\$GPSLOCK?	Reports the current value of the <mode> parameter: \$ GPSLOCK: <mode>
Test	\$GPSLOCK=?	Reports the range of supported values for parameter

Parameters

Parameter	Type	Description
<mode>	Integer	0 – GPS Unlock 1 – Mobile initiated call is locked 2 – Mobile Terminated call is locked. 3 – Except emergency call, All is locked

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	
Note	Applies to both Control and User Plane GPS

Example

```
AT$GPSLOCK=?
$GPSLOCK: (0-3)
```

```
OK
AT$GPSLOCK?
$GPSLOCK: 0
```



OK
AT\$GPSLOCK=3
OK



6. Qualcomm Proprietary AT-Commands

6.1. AT Commands for Mobile IP

6.1.1.1. Network Access Identifier – \$QCMIPNAI

Description

This command sets the network access identifier.

Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPNAI= <nai>,<store_nv>	OK ERROR
Read	AT\$QCMIPNAI?	Returns current network access identifier in format: <nai>,<store_nv> Note: if parameter is never set, read command return like \$QCMIPNAI: Unset
Test	AT\$QCMIPNAI=?	Returns the range of parameters. \$QCMIPNAI: (20,21,23-7E),(0-1) Note: 1st parameter of \$QCMIPNAI always returns (20,21,23-7E) which is the range of printable ASCII characters.

Parameters

Parameter	Type	Description
<nai>	Character	Network access identifier, (20,21,23-7E) which is the range of printable ASCII characters.
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV



Example

```
AT$QCMIPNAI=?
$QCMIPNAI: (20,21,23-7E),(0-1)

OK

AT$QCMIPNAI?
$QCMIPNAI: Unset

OK
AT$QCMIPNAI=5C9F421F@hcm.sprintpcs.com,1
OK
AT$QCMIPNAI?
5C9F421F@hcm.sprintpcs.com,1

OK
```

6.1.1.2. Primary Home Agent Address – \$QCMIPPHA

Description

This command sets the primary home agent address.

Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPPHA= <address>,<store_nv>	OK ERROR
Read	AT\$QCMIPPHA?	Returns current Primary Home Agent address. <address>,<store_nv>
Test	AT\$QCMIPPHA=?	Returns the range of parameters. \$QCMIPPHA: ((0-255).(0-255).(0-255).(0-255)),(0-1)

Parameters



Parameter	Type	Description
<address>	IP address	IP address of primary home agent address
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV

Example

```
AT$QCMIPPHA=?
$QCMIPPHA: ((0-255).(0-255).(0-255).(0-255)),(0-1)
```

```
OK
AT$QCMIPPHA?
$QCMIPPHA: 63.168.238.41,1
```

```
OK
AT$QCMIPPHA=255.255.255.255,0
OK
AT$QCMIPPHA?
$QCMIPPHA: 255.255.255.255,0
```

```
OK
AT$QCMIPPHA=63.168.238.41,1
OK
AT$QCMIPPHA?
$QCMIPPHA: 63.168.238.41,1
```

```
OK
```

6.1.1.3. Secondary Home Agent Address – \$QCMIPSHA

Description

This command sets the secondary home agent address.



Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPSHA= <address>,<store_nv>	OK ERROR
Read	AT\$QCMIPSHA?	Returns current Secondary Home Agent address. <address>,<store_nv>
Test	AT\$QCMIPSHA=?	Returns the range of parameters. \$QCMIPSHA: ((0-255).(0-255).(0-255).(0-255)),(0-1)

Parameters

Parameter	Type	Description
<address>	IP address	IP address of secondary home agent address
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV

Example

```
AT$QCMIPSHA=?
$QCMIPSHA: ((0-255).(0-255).(0-255).(0-255)),(0-1)
```

```
OK
AT$QCMIPSHA?
$QCMIPSHA: 63.168.238.41,1
```

```
OK
AT$QCMIPSHA=255.255.255.255,0
OK
AT$QCMIPSHA?
$QCMIPSHA: 255.255.255.255,0
```



```

OK
AT$QCMIPSHA=63.168.238.41,1
OK
AT$QCMIPSHA?
$QCMIPSHA: 63.168.238.41,1

OK
    
```

6.1.1.4. Home Address – \$QCMIPHA

Description

This command sets the home address.

Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPHA= <address>,<store_nv>	OK ERROR
Read	AT\$QCMIPHA?	Returns current Home address. <address>,<store_nv>
Test	AT\$QCMIPHA=?	Returns the range of parameters. \$QCMIPHA: ((0-255).(0-255).(0-255). (0-255)),(0-1)

Parameters

Parameter	Type	Description
<address>	IP address	IP address of home address
<store_nv>	Integer	Data store option 0 - store in RAM



Parameter	Type	Description
		1 - store in NV

Example

```
AT$QCMIPHA=?
$QCMIPHA: ((0-255).(0-255).(0-255).(0-255)),(0-1)
```

```
OK
AT$QCMIPHA?
$QCMIPHA: 0.0.0.0,1
```

```
OK
AT$QCMIPHA=255.255.255.255,0
OK
AT$QCMIPHA?
$QCMIPHA: 255.255.255.255,0
```

```
OK
AT$QCMIPHA=0.0.0.0,1
OK
AT$QCMIPHA?
$QCMIPHA: 0.0.0.0,1
```

```
OK
```

6.1.1.5. Home Agent Shared Secret – \$QCMIPMHSSX

Description

This command sets the MIP password.

Syntax



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Command Type	Command	Response / Action
Set	AT\$QCMIPMHSSX= <password>,<store_nv>	OK ERROR
Read	AT\$QCMIPMHSSX	Returns current setting status in format: \$QCMIPMHSSX: <set> <set> - setting status Set - parameter is set Unset - parameter is not set Note: the value is not displayed.
Test	AT\$QCMIPMHSSX=?	Returns the range of parameters. \$QCMIPMHSSX: [0x00-0xFF] (max 16 bytes), 0-1

Parameters

Parameter	Type	Description
<password>	Integer	Password
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV

Example

AT\$QCMIPMHSSX=?
\$QCMIPMHSSX: [0x00-0xFF] (max 16 bytes), 0-1

OK
AT\$QCMIPMHSSX?
\$QCMIPMHSSX: Unset

OK
AT\$QCMIPMHSSX=00,1
OK



AT\$QCMIPMHSSX?
\$QCMIPMHSSX: Set

OK

6.1.1.6. AAA Server Shared Secret – \$QCMIPMASSX

Description

This command sets the MIP password.

Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPMASSX= <password>,<store_nv>	OK ERROR
Read	AT\$QCMIPMASSX?	Returns current setting status in format: \$QCMIPMASSX: <set> <set> - setting status Set - parameter is set Unset - parameter is not set Note: the value is not displayed.
Test	AT\$QCMIPMASSX=?	Returns the range of parameters. \$QCMIPMASSX: [0x00-0xFF] (max 16 bytes), 0-1

Parameters

Parameter	Type	Description
<password>	Integer	Password
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV



Example

```

AT$QCMIPMASSX=?
$QCMIPMASSX: [0x00-0xFF] (max 16 bytes), 0-1

OK
AT$QCMIPMASSX?
$QCMIPMASSX: Unset

OK
AT$QCMIPMASSX=00,1
OK
AT$QCMIPMASSX?
$QCMIPMASSX: Set

OK

```

6.1.1.7. Home Agent Security Parameter Index – \$QCMIPMHSPI

Description

This command sets the MIP security parameter index.

Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPMHSPI= <index>,<store_nv>	OK ERROR
Read	AT\$QCMIPMHSPI?	Returns current setting values in format: \$QCMIPMHSPI: <index>,<store_nv>
Test	AT\$QCMIPMHSPI=?	Returns the range of parameters for <index> and <store_nv>

Parameters



Parameter	Type	Description
<index>	Integer	Security parameter index, 0-4294967295
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV

Example

```
AT$QCMIPMHSPi=?
$QCMIPMHSPi: (0-4294967295),(0-1)
```

```
OK
AT$QCMIPMHSPi?
$QCMIPMHSPi: 3,1
```

```
OK
AT$QCMIPMHSPi=4,0
OK
AT$QCMIPMHSPi?
$QCMIPMHSPi: 4,0
```

```
OK
```

6.1.1.8. AAA Server Security Parameter Index – \$QCMIPMASPI

Description

This command sets the MIP AAA Server security parameter index.

Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPMASPI= <index>,<store_nv>	OK ERROR



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Read	AT\$QCMIPMASPI?	Returns current setting values in format: \$QCMIPMASPI: <index>,<store_nv>
Test	AT\$QCMIPMASPI=?	Returns the range of parameters for <index> and <store_nv>

Parameters

Parameter	Type	Description
<index>	Integer	Security parameter index, 0-4294967295
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV

Example

```
AT$QCMIPMASPI=?
$QCMIPMASPI: (0-4294967295),(0-1)
```

```
OK
AT$QCMIPMASPI?
$QCMIPMASPI: 3,1
```

```
OK
AT$QCMIPMASPI=4,0
OK
AT$QCMIPMASPI?
$QCMIPMASPI: 4,0
```

```
OK
```

6.1.1.9. Reverse Tunneling Preference – \$QCMIPRT

Description

This command sets the reverse tunneling preference.



Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIPRT= <rev_tun>,<store_nv>	OK ERROR
Read	AT\$QCMIPRT?	Returns current setting values in format: \$QCMIPRT: <rev_tun>,<store_nv>
Test	AT\$QCMIPRT=?	Returns the range of parameters. \$QCMIPRT: (0-1),(0-1)

Parameters

Parameter	Type	Description
<rev_tun>	Integer	Reverse tunneling preference 0 - disable 1 - enable
<store_nv>	Integer	Preference store option 0 - store in RAM 1 - store in NV

Example

```
AT$QCMIPRT=?
$QCMIPRT: (0-1),(0-1)
```

```
OK
AT$QCMIPRT?
$QCMIPRT: 0,0
```

```
OK
AT$QCMIPRT=1,1
OK
AT$QCMIPRT?
$QCMIPRT: 1,1
```



OK

6.1.1.10. Enable/Disable Mobile IP - \$QCMIP

Description

This command enables/disables Mobile IP.

Syntax

Command Type	Command	Response / Action
Set	AT\$QCMIP=<n>	OK – Enable / Disable MIP ERROR
Read	AT\$QCMIP?	Displays the current setting.
Test	AT\$QCMIP=?	Returns the range of supported parameter <n>

Parameters

Parameter	Type	Description
<n>	Integer	<p>0 : Mobile IP disabled, Simple IP only.</p> <p>1 : Mobile IP preferred. In the initial MIP registration, if the network does not support Mobile IP, then the mobile automatically reverts to Simple IP (force a PPP Renegotiation by sending a LCP C-Req). However, if a Mobile IP session is registered, and then the mobile enters a network that does not support Mobile IP, the mobile will drop the session and inform the upper layers of the failure (for example, by dropping DCD to a laptop).</p> <p>2 : Mobile IP only. The mobile will make data calls only when Mobile IP is supported in the network. During a MIP session, if the mobile hands off to a network that does not support MIP, then the mobile will drop the session and inform the upper layers of the failure (for example, by dropping DCD to a laptop). This value is stored in NV. If module is provisioned ,the default value is 2</p>

Example



AT\$QCMIP=?
\$QCMIP: (0-2)

OK
AT\$QCMIP?
\$QCMIP: 2

OK
AT\$QCMIP=0
OK
AT\$QCMIP?
\$QCMIP: 0

OK
AT\$QCMIP=1
OK
AT\$QCMIP?
\$QCMIP: 1

OK

6.1.1.11. Active MIP Profile Selection - \$QCMIPP

Description

This command selects the active MIP user profile.

Syntax

Command Type	Command	Response / Action
Execute	AT\$QCMIPP=<n>	OK – Active profile set. ERROR



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Read	AT\$QCMIPP?	Displays the current setting
Test	AT\$QCMIPP=?	Returns the possible range of values for the parameter <n>

Parameters

Parameter	Type	Description
<n>	Integer	User profile number, 0-5.

Note: This value is stored in NV memory. This AT command is expected to be used by users to configure Dial-Up Networking

Example

```
AT$QCMIPP=?
$QCMIPP: (0-5)

OK
AT$QCMIPP?
$QCMIPP: 2

OK
```

6.1.1.12. Enable / Disable Current MIP Profile - \$QCMIEP

Description

This command enables/disables the currently active MIP profile:

Syntax

Command Type	Command	Response / Action
Execute	AT\$QCMIEP=<n>	OK – Disable/enable profile. ERROR



Read	AT\$QCMIPPEP?	Displays the current setting
Test	AT\$QCMIPPEP=?	Returns the possible range of values for the parameter <n>

Parameters

Parameter	Type	Description
<n>	Integer	0: Disable the currently active profile (profile is unavailable until it is re-enabled). 1: Enable the currently active profile.

Example

```
AT$QCMIPPEP=?
$QCMIPPEP: (0-1)
```

```
OK
AT$QCMIPPEP?
$QCMIPPEP: 1
```

```
OK
AT$QCMIPPEP=0
OK
AT$QCMIPPEP?
$QCMIPPEP: 0
```

```
OK
```

6.1.1.13. Profile Information - \$QCMIPGETP

Description

This command returns all information corresponding to the specified profile number.

Syntax



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Command Type	Command	Response / Action
Execute	AT\$QCMIPGETP=<n>	OK ERROR Note: If no profile number is entered, all information corresponding to the currently active profile is returned. If there is no profile associated with the specified number, an error is returned
Read	AT\$QCMIPGETP?	Displays the current setting
Test	AT\$QCMIPGETP=?	Returns the possible range of values for the parameter <n>

Parameters

Parameter	Type	Description
<n>	Integer	Profile number, 0-5.

Example

```
AT$QCMIPGETP=?
$QCMIPGETP: (0-5)

OK
AT$QCMIPGETP?
$QCMIPGETP: 0

OK
AT$QCMIPGETP=0
Profile:0 Disabled
NAI:Unset
Home Addr:0.0.0.0
Primary HA:255.255.255.255
Secondary HA:0.0.0.0
```



MN-AAA SPI:2
MN-HA SPI:3
Rev Tun:0
MN-AAA SS:Set
MN-HA SS:Set

OK

6.1.1.14. MN-AAA Shared Secrets - \$QCMIPMASS

Description

This command sets the MN-AAA shared secrets for the currently active MIP profile.

Syntax

Command Type	Command	Response / Action
Execute	AT\$QCMIPMASS= <val>,<store_nv>	OK (Value stored) ERROR Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if \$QCMIPP is called.
Read	AT\$QCMIPMASS?	Displays the current setting
Test	AT\$QCMIPMASS=?	Returns the possible range of values for the parameter

Parameters

Parameter	Type	Description
<val>	String	Shared secret data Note: Double quotes are only required if the string contains a comma.
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV



Example

```

AT$QCMIPMASS=secret data
OK
AT$QCMIPMASS?
$QCMIPMASS: Set

OK
AT$QCMIPMASS=?
$QCMIPMASS: (20,21,23-7E),(0-1)

OK

```

6.1.1.15. MM-HA Shared Secrets - \$QCMIPMHSS

Description

This command sets MM-HA shared secrets for the currently active MIP profile.

Syntax

Command Type	Command	Response / Action
Execute	AT\$QCMIPMHSS= <val>,<store_nv>	OK ERROR Note: If the value provisioned is not committed to NV, the temporary values will be deleted at the end of the following call or if \$QCMIPP is called.
Read	AT\$QCMIPMHSS?	Displays the current setting
Test	AT\$QCMIPMHSS=?	Returns the possible range of values for the parameter

Parameters

Parameter	Type	Description
-----------	------	-------------



Parameter	Type	Description
<val>	String	Shared secret data Note: Double quotes are only required if the string contains a comma.
<store_nv>	Integer	Data store option 0 - store in RAM 1 - store in NV

Example

```

AT$QCMIPMHSS?
$QCMIPMHSS: Unset

OK
AT$QCMIPMHSS=secret data
OK
AT$QCMIPMHSS?
$QCMIPMHSS: Set

OK
AT$QCMIPMHSS=?
$QCMIPMHSS: (20,21,23-7E),(0-1)

OK

```

6.1.1.16. Medium Data Rate - \$QCMDR

Description

This function command changes the Medium Data Rate settings.

Note: When the AT\$QCMIP=1 or 2, AT\$QCMDR is always fixed to '3' and not changeable to other values. It is necessary to change \$QCMIP=0 first to change \$QCMDR to 0~2 and it also means not using Mobile IP but Simple IP only.



Syntax

Command Type	Command	Response / Action
Set	AT\$QCMDR=<value>	OK- Set Medium Data Rate
Read	AT\$QCMDR?	Returns the current setting of Medium Data Rate: \$QCMDR: <value>
Test	AT\$QCMDR=?	Reports the supported range of values for parameter.

Parameters

Parameter	Type	Description
<value>	Integer	Set Medium Data Rate: 0 : MDR service only 1 : MDR service if available 2 : LSPD only 3 : SO 33, if available

Example

```
AT$QCMDR=?
$QCMDR: (0-3)
```

```
OK
AT$QCMDRr?
$QCMDR: 3
```

```
OK
AT$QCMDR=3
OK
```



7. Sprint Specific AT Commands

7.1.1. General Commands

7.1.1.1. Command Echo - +E

Description

This command enables/disables the command echo.

Syntax

Command Type	Command	Response / Action
Execute	AT+E<n>	OK – Echo state set ERROR – Echo set not set
Test	AT+E=?	Returns the OK result code

Parameters

Parameter	Type	Description
<n>	Integer	0 – disables command echo 1 – enables command echo (factory default), therefore command sent to the device are echoed back to the DTE before the response is given

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If parameter is omitted, the command has the same behavior of AT+E0 The parameter <n> can be saved in a profile setting, thus command echo can be defaulted on or off based on the profile settings upon power up
Network Compatibility	AERIS



Reference Sprint

Example

```

AT+E=?
OK
AT+E1
OK
AT+E0
OK
<--- "AT" entered here
OK
<--- "AT+E1" entered here
OK
AT
OK
    
```

7.1.1.2. Quiet Result Code - +Q

Description

This command enables/disables the command echo.

Syntax

Command Type	Command	Response / Action
Execute	AT+Q[0]	Returns the OK result code
Read	AT+Q?	Returns the OK result code
Test	AT+Q=?	Returns the OK result code

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Network Compatibility	AERIS
Reference	Sprint

Example

```

AT+Q=?
OK
AT+Q?
OK

AT+Q
OK

AT+Q0
OK

AT+Q1
ERROR

AT+Q10
ERROR
    
```

7.1.1.3. Response Format - +V

Description

This command set the response format.

Syntax

Command Type	Command	Response / Action
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Execute	AT+V[1]	Returns the OK result code
Read	AT+V?	Returns the OK result code
Test	AT+V=?	Returns the OK result code

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	
Network Compatibility	AERIS
Reference	Sprint

Example

```

AT+V=?
OK
AT+V?
OK

AT+V
OK

AT+V1
OK

AT+V0
ERROR

AT+V2
ERROR

AT+V10
ERROR
    
```



7.1.2. Mobile Directory Number – \$SPMDN

Description

This command manipulates the Mobile Directory Number of the module.

Syntax

Command Type	Command	Response / Action
Set	\$SPMDN=<mdn>	OK - Sets Mobile Directory Number ERROR
Read	\$SPMDN?	\$SPMDN: <mdn> - Returns the mobile directory number with command echo.
Test	\$SPMDN=?	Returns the OK result code

Parameters

Parameter	Type	Description
<mdn>	String	The mobile directory number expressed as a 10 digit decimal phone-number.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS

Example

```
AT$SPMDN=?
OK
AT$SPMDN?
$SPMDN: 1234567890
```



```
OK
AT$SPMDN=0987654321
OK
AT$SPMDN?
$SPMDN: 0987654321
```

```
OK
```

7.1.3. Mobile Station ID – \$SPMSID

Description

This command manipulates the Mobile Station ID of the module.

Syntax

Command Type	Command	Response / Action
Set	\$SPMSID=<msid>	OK - Sets Mobile Station ID ERROR
Read	\$SPMSID?	Returns the Mobile Station ID with command echo.
Test	\$SPMSID=?	OK

Parameters

Parameter	Type	Description
<msid>	String	The Mobile Station ID expressed as a 10 digit decimal phone-number.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable



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Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS

Example

```
AT$PMSID=?  
OK  
AT$PMSID?  
$PMSID: 0000000000  
  
OK  
AT$PMSID=1234567890  
OK  
AT$PMSID?  
$PMSID: 1234567890  
  
OK
```



7.1.4. Revision Identification – \$SPFWREV

Description

Read command returns device software revision number with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$SPFWREV?	Returns the software revision id string with command echo.
Test	\$SPFWREV=?	OK

Parameters

Parameter	Type	Description
<rev>	string	The software revision id variable length string.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	AERIS

Example

```
AT$SPFWREV=?
OK
AT$SPFWREV?
$SPFWREV: 09.01.003

OK
```



7.1.5. Current PRL number – \$SPPRL

Description

Read command returns the current device PRL number r with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$SPPRL?	Returns the current device PRL number with command echo.
Test	\$SPPRL=?	OK

Parameters

Parameter	Type	Description
<id>	Integer	The current device PRL number in decimal.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS

Example

```
AT$SPPRL=?
OK
AT$SPPRL?
$SPPRL: 10052

OK
```



7.1.6. Service Area – +SPSERVICE

Description

Read command returns notification of service area without command echo.

Syntax

Command Type	Command	Response / Action
Read	AT+SPSERVICE?	<return value> 0 – No Service 1 – 1xRTT service 2 – EVDO service (Not Supported) 3 – EVDO Rev A (Not Supported) 4 – GPRS (Not Supported)
Test	AT+SPSERVICE=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS

Example

```
AT+SPSERVICE=?
OK
AT+SPSERVICE?
+SPSERVICE: 0

OK
```



7.1.7. Receive Signal Strength Indicator – \$SPSIGDBM

Description

Read command returns the current receive signal strength indicator with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$SPSIGDBM?	\$SPSIGDBM <rsi> - Returns the current receive signal strength indicator.
Test	\$SPSIGDBM=?	\$SPSIGDBM: {<range>} -Returns the range of supported values

Parameters

Parameter	Type	Description
<rsi>	Integer	The current receive signal strength indicator in decimal dBm. Range is -128 ...0 dBm.
<range>	Range	The possible range of values: (-128-0).

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Note	If the module is un-provisioned (No Service state), the RSSI is always reported as -128.
Reference	Sprint
Network Compatibility	AERIS

Example

```
AT$SPSIGDBM=?
$SPSIGDBM: (-128-0)
```



```
OK
AT$PSIGDBM?
$PSIGDBM: -91
```

```
OK
```

7.1.8. Roaming Reference – \$SPROAM

Description

This command manipulates the roaming settings of the module.

Syntax

Command Type	Command	Response / Action
Set	\$SPROAM=<n>	OK –Sets the roaming mode ERROR
Read	\$SPROAM?	Returns the current roaming setting.
Test	\$SPROAM=?	OK

Parameters

Parameter	Type	Description
<n>	Integer	0 – Sprint only 1 – Automatic 2 – Roam only.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint



Network Compatibility AERIS

Example

AT\$SPROAM=?

OK

AT\$SPROAM?

\$SPROAM: 1

OK

AT\$SPROAM=0

OK

AT\$SPROAM?

\$SPROAM: 0

OK

AT\$SPROAM=2

OK

AT\$SPROAM?

\$SPROAM: 2

OK

AT\$SPROAM=1

OK

7.1.9. Data Roam Guard - \$SPRMGUARD

Description

Set command selects the Roam guard status. Read command returns current setting values and roam area.

Syntax



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Command Type	Command	Response / Action
Set	\$SPRMGUARD=<n>	Sets the Roam Guard status: OK ERROR
Read	\$SPRMGUARD?	Returns current setting values and current roam area in format: \$SPRMGUARD: <n>, <roam_area>
Test	\$SPRMGUARD=?	OK

Parameters

Parameter	Type	Description
<n>	Integer	0 - Default 1 - Always Ask 2 - Never Ask
<roam_3 area>	Integer	0- Sprint Area 1- Domestic Roam Area 2- International Roam Area

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	AERIS
Note	Use in place of #DROAMG command.

Example

```
AT$SPRMGUARD=?
OK
AT$SPRMGUARD?
```



\$SPRMGUARD: 0,0

OK

AT\$SPRMGUARD=1

OK

7.1.10. Enhanced Roaming Indicator – \$SPERI

Description

Read command returns the current roaming indicator value with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$SPERI?	\$SPERI <roam_ind> - Returns the current enhanced roaming indicator value.
Test	\$SPERI=?	OK

Parameters

Parameter	Type	Description
<roam_ind>	Signed Integer	The current enhanced roaming indicator value in decimal, as received from the network. See table for a complete definition of return value. Note: <roam_ind> of "-1" means No Service. This value is returned only between modem startup and system acquisition.

These values can be used to present roaming indication to a user, or for a host application to make communications decisions based on roaming status.

Roaming Display Number Decimal	Roaming Icon	Roaming (Banner) Display Indication	Banner (Style)	Roaming Ringer	Call Guard	Data Guard Status
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Roaming Display Number Decimal	Roaming Icon	Roaming (Banner) Display Indication	Banner (Style)	Roaming Ringer	Call Guard	Data Guard Status
-1		No Service				
0	On	Roaming Indicator On (Digital Roaming or Analog Roaming)	Solid	On	On	Off
1	Off	Roaming Indicator Off	none	Off	Off	Off
2	On	Roaming Indicator Flashing (Digital Roaming or Analog Roaming)	Flashing	On	On	Off
3	On	Out of Neighborhood	Solid	On	On	Off
4	On	Out of Building	Solid	On	On	Off
5	On	Roaming - Preferred System	Solid	On	On	Off
6	On	Roaming - Available System	Solid	On	On	Off
7	On	Roaming - Alliance Partner	Solid	On	On	Off
8	On	Roaming - Premium Partner	Solid	On	On	Off
9	On	Roaming - Full Service Functionality	Solid	On	On	Off
10	On	Roaming - Partial Service Functionality	Solid	On	On	Off
11-63 Reserved		System Identifier (Service Provider Defined)				Off
64	On	Preferred System	Solid	On	On	Off
65	On	Available System	Solid	On	On	Off
66	On	Alliance Partner	Solid	On	On	Off
67	On	Premium Partner	Solid	Off	Off	Off
68	On	Full Service Functionality	Solid	Off	Off	Off
69	On	Partial Service Functionality	Solid	On	On	Off
70	On	Analog A	Solid	On	On	Off
71	On	Analog B	Solid	On	On	Off
72	On	CDMA 800 A	Solid	On	On	Off
73	On	CDMA 800 B	Solid	On	On	Off
74	On	International Roaming	Solid	On	On	Off
75	On	Extended Network	Solid	Off	Off	Off
76	Off	Campus	Solid	Off	Off	Off
77	Off	In Building	Solid	Off	Off	Off
78	On	Regional	Solid	On	On	Off
79	On	Community	Solid	On	On	Off



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80	On	Business	Solid	On	On	Off
81	On	Zone 1	Solid	On	On	Off
82	On	Zone 2	Solid	On	On	Off
83	On	National	Solid	On	On	Off
84	On	Local	Solid	On	On	Off
85	On	City	Solid	On	On	Off
86	On	Government	Solid	On	On	Off
87	On	USA	Solid	On	On	Off
88	On	State	Solid	On	On	Off
89	On	Resort	Solid	On	On	Off
90	On	Headquarters	Solid	On	On	Off
91	On	Personal	Solid	On	On	Off
92	Off	Home	Solid	Off	Off	Off
93	On	Residential	Solid	On	On	Off
94	On	University	Solid	On	On	Off
95	On	College	Solid	On	On	Off
96	On	Hotel Guest	Solid	On	On	Off
97	On	Rental	Solid	On	On	Off
98	Off	Corporate	Solid	Off	Off	Off
99	Off	Sprint	Solid	Off	Off	Off
100	Off	Campus	Flashing	Off	Off	Off
101	Off	In Building	Flashing	Off	Off	Off
102	On	Regional	Flashing	On	On	Off
103	On	Community	Flashing	On	On	Off
104	On	Business	Flashing	On	On	Off
105	On	Zone 1	Flashing	On	On	Off
106	On	Zone 2	Flashing	On	On	Off
107	On	National	Flashing	On	On	Off
108	On	Local	Flashing	On	On	Off
109	On	City	Flashing	On	On	Off
110	On	Government	Flashing	On	On	Off
111	On	USA	Flashing	On	On	Off



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112	On	State	Flashing	On	On	Off
113	On	Resort	Flashing	On	On	Off
114	On	Headquarters	Flashing	On	On	Off
115	On	Personal	Flashing	On	On	Off
116	Off	Home	Flashing	Off	Off	Off
117	On	Residential	Flashing	On	On	Off
118	On	University	Flashing	On	On	Off
119	On	College	Flashing	On	On	Off
120	On	Hotel Guest	Flashing	On	On	Off
121	On	Rental	Flashing	On	On	Off
122	Off	Corporate	Flashing	Off	Off	Off
123	Off	Sprint	Flashing	Off	Off	Off
124	On	International	Solid	On	On	Off
125	On	International	Solid	On	On	Off
126	On	International	Solid	On	On	Off
127	Off	Premium Service	Solid	Off	Off	Off
128	Off	Enhanced Service	Solid	Off	Off	Off
129	Off	Enhanced Digital	Solid	Off	Off	Off
130	Off	Enhanced Roaming	Solid	Off	Off	Off
131	Off	Alliance Service	Solid	Off	Off	Off
132	Off	Alliance Network	Solid	Off	Off	Off
133	Off	Vision Roaming	Solid	Off	Off	Off
134	Off	Extended Service	Solid	Off	Off	Off
135	Off	Expanded Services	Solid	Off	Off	Off
136	Off	Expanded Network	Solid	Off	Off	Off
137	On	Premium Service	Solid	On	On	Off
138	On	Enhanced Service	Solid	On	On	Off
139	On	Enhanced Digital	Solid	On	On	Off
140	On	Enhanced Roaming	Solid	On	On	Off
141	On	Alliance Service	Solid	On	On	Off
142	On	Alliance Network	Solid	On	On	Off
143	On	Vision Roaming	Solid	On	On	Off



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Roaming Display Number Decimal	Roaming Icon	Roaming (Banner) Display Indication	Banner (Style)	Roaming Ringer	Call Guard	Data Guard Status
144	On	Extended Service	Solid	On	On	Off
145	On	Expanded Services	Solid	On	On	Off
146	On	Expanded Network	Solid	On	On	Off
147	On/Flashing	Premium Service	Flashing	On	On	Off
148	On/Flashing	Enhanced Service	Flashing	On	On	Off
149	On/Flashing	Enhanced Digital	Flashing	On	On	Off
150	On/Flashing	Enhanced Roaming	Flashing	On	On	Off
151	On/Flashing	Alliance Service	Flashing	On	On	Off
152	On/Flashing	Alliance Network	Flashing	On	On	Off
153	On/Flashing	Vision Roaming	Flashing	On	On	Off
154	On/Flashing	Extended Service	Flashing	On	On	Off
155	On/Flashing	Expanded Services	Flashing	On	On	Off
156	On/Flashing	Expanded Network	Flashing	On	On	Off
157	On	Premium International	Solid	On	On	Off
158	On	Premium International	Solid	On	On	Off
159	On	Premium International	Solid	On	On	Off
160	On		none	Off	Off	Off
161	On		none	Off	On	Off
162	Off		none	Off	Off	Off
163	Off		none	Off	On	Off
164	Off	Ext Voice/Data Ntwk	Solid	Off	Off	Off
165	Off	Ext Voice/Data Ntwk	Solid	Off	On	Off
166	On	Ext Voice/Data Ntwk	Solid	Off	Off	Off
167	Off	Extended Broadband	Solid	Off	Off	Off
168	Off	Extended Broadband	Solid	Off	On	Off
169	On	Extended Broadband	Solid	Off	Off	Off
170	Off	Extended Data	Solid	Off	Off	Off
171	Off	Extended Data	Solid	Off	On	Off
172	On	Extended Data	Solid	Off	Off	Off
173	Off	Extended Data Ntwk	Solid	Off	Off	Off
174	Off	Extended Data Ntwk	Solid	Off	On	Off
175	On	Extended Data Ntwk	Solid	Off	Off	Off



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176	Off	Extended Network	Solid	Off	Off	Off
177	Off	Extended Network	Solid	Off	On	Off
178	On	Extended Network	Solid	Off	Off	Off
179	Off	Extended Service	Solid	Off	On	Off
180	On	Extended Service	Solid	Off	Off	Off
181	Off	Extended Voice	Solid	Off	Off	Off
182	Off	Extended Voice	Solid	Off	On	Off
183	On	Extended Voice	Solid	Off	Off	Off
184	Off	Extended Voice & Data	Solid	Off	Off	Off
185	Off	Extended Voice & Data	Solid	Off	On	Off
186	On	Extended Voice & Data	Solid	Off	Off	Off
187	Off	Extended Voice Ntwk	Solid	Off	Off	Off
188	Off	Extended Voice Ntwk	Solid	Off	On	Off
189	On	Extended Voice Ntwk	Solid	Off	Off	Off
190	Off	Extended Voice/Data	Solid	Off	Off	Off
191	Off	Extended Voice/Data	Solid	Off	On	Off
192	On	Extended Voice/Data	Solid	Off	Off	Off
193	On	International	Solid	Off	Off	Off
194	Off	International Services	Solid	Off	Off	Off
195	Off	International Voice	Solid	Off	Off	Off
196	Off	Int'l Voice/Data	Solid	Off	Off	Off
197	Off	Int'l Voice/Data	Solid	Off	On	Off
198	On	Int'l Voice/Data	Solid	Off	Off	Off
199	Off	Ext Voice/Data Ntwk	Solid	Off	Off	On
200	On	Ext Voice/Data Ntwk	Solid	Off	On	On
201	On	Ext Voice/Data Ntwk	Solid	Off	Off	On
202	Off	Extended Broadband	Solid	Off	Off	On
203	On	Extended Broadband	Solid	Off	On	On
204	On	Extended Broadband	Solid	Off	Off	On
205	Off	Extended Data	Solid	Off	Off	On
206	On	Extended Data	Solid	Off	On	On
207	On	Extended Data	Solid	Off	Off	On



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Roaming Display Number Decimal	Roaming Icon	Roaming (Banner) Display Indication	Banner (Style)	Roaming Ringer	Call Guard	Data Guard Status
208	Off	Extended Data Ntwk	Solid	Off	Off	On
209	On	Extended Data Ntwk	Solid	Off	On	On
210	On	Extended Data Ntwk	Solid	Off	Off	On
211	Off	Extended Network	Solid	Off	Off	On
212	On	Extended Network	Solid	Off	On	On
213	Off	Extended Service	Solid	Off	Off	On
214	On	Extended Service	Solid	Off	On	On
215	On	Extended Service	Solid	Off	Off	On
216	Off	Extended Voice	Solid	Off	Off	On
217	On	Extended Voice	Solid	Off	On	On
218	On	Extended Voice	Solid	Off	Off	On
219	Off	Extended Voice & Data	Solid	Off	Off	On
220	On	Extended Voice & Data	Solid	Off	On	On
221	On	Extended Voice & Data	Solid	Off	Off	On
222	Off	Extended Voice Ntwk	Solid	Off	Off	On
223	On	Extended Voice Ntwk	Solid	Off	On	On
224	On	Extended Voice Ntwk	Solid	Off	Off	On
225	Off	Extended Voice/Data	Solid	Off	Off	On
226	On	Extended Voice/Data	Solid	Off	On	On
227	On	Extended Voice/Data	Solid	Off	Off	On
228	On	International	Solid	Off	On	On
229	On	International	Solid	Off	Off	On
230	On	International Services	Solid	Off	On	On
231	On	International Voice	Solid	Off	On	On
232	Off	Int'l Voice/Data	Solid	Off	Off	On
233	On	Int'l Voice/Data	Solid	Off	On	On
234	On	Int'l Voice/Data	Solid	Off	Off	On
235	On	Premium International	Solid	Off	On	On
236	On		none	Off	On	On
237	On		none	Off	Off	On
238	Off		none	Off	On	On
239	Off		none	Off	Off	On

Table 1, Sprint Specific Enhanced Roaming Indicator values.



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	AERIS

Example

```
AT$SPERI=?
OK
AT$SPERI?
$SPERI: 0

OK
```

7.1.11. Mobile IP Error – \$SPMIPERR

Description

Read command returns the Mobile IP Error code with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$SPMIPERR?	\$SPMIPERR <mip_err> - Returns the current mobile IP registration error code.
Test	\$SPMIPERR=?	OK

Parameters

Parameter	Type	Description
<mip_err>	Integer	Mobile IP Error code as received from the network. See separate table for a complete definition of return value.



Error Code	Description
0	No error condition.
64	Unknown error.
65	Unknown error.
66	Network error.
67	Registration failure.
68	Network error.
69	Your device requested a session lifetime that is too long.
70	System error.
71	System error.
72	System error.
73	System error.
74	System error.
75	System error.
76	System error.
79	System error.
80	Home Agent Failure. Home Agent addresses may be incorrect or the Home Agent may not be responding.
81	Home Agent Failure. Home Agent addresses may be incorrect or the Home Agent may not be responding.
82	Home Agent Failure. Home Agent addresses may be incorrect or the Home Agent may not be responding.
88	Home Agent Failure. Home Agent addresses may be incorrect or the Home Agent may not be responding.
96	System error.
97	Network error.
98	Network error.
99	Network error.
100	Network error.
101	Network error.
104	System error.
105	System error.
106	System error.
128	Unknown error.
129	Unknown error.
130	Network error.
131	Username and/or password may be incorrect.
132	Network error.
133	Username and/or password may be incorrect.
134	System error.
135	System error.
136	Unrecognizable Home Agent Addresses.



Error Code	Description
137	System error.
138	System error.
139	System error.
140	Network error.
141	Network error.

Table 2, Mobile IP Error code values.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS

Example

```
AT$SPMIPERR=?
OK
AT$SPMIPERR?
$SPMIPERR: 0

OK
```

7.1.12. Modem Reset – \$SPRESET

Description

This command is used to reset the modem.

Syntax

Command Type	Command	Response / Action
Execute	\$SPRESET	Immediately resets the modem.



Command Type	Command	Response / Action
Test	\$SPRESET=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Sprint
Network Compatibility	Verizon and AERIS

Example

```
AT$SPRESET=?
OK
AT$SPRESET
OK (Module Resets)
```

7.1.13. Network Access Identifier - \$SPNAI

Description

This command is used to display Network Access Identifier information.

Syntax

Command Type	Command	Response / Action
Read	\$SPNAI?	Immediately display Network Access Identifier.
Test	\$SPNAI=?	OK

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable



Execution Time	Executes immediately.
Reference	Sprint
Network Compatibility	AERIS
Note	Read command will always display "0", requirement by Sprint

Example

```
AT$SPNAI=?
OK
AT$SPNAI?
$SPNAI: 0

OK
```

7.1.14. Mobile IP Error - \$MIPERR

Description

Read command returns the Mobile IP Error code with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$MIPERR?	\$MIPERR <mip_err> - Returns the current mobile IP registration error code.
Test	\$MIPERR=?	OK

Parameters

Parameter	Type	Description
<mip_err>	Integer	Mobile IP Error code as received from the network. See separate table for a complete definition of return value.

Miscellaneous



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Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	Verizon and AERIS
Note	This command has the same operation with AT\$SPMIPERR

Example

```
AT$MIPERR=?
OK
AT$MIPERR?
$MIPERR: 0

OK
```

7.1.15. Current Roaming Indicator - \$ERI

Description

Read command returns the current roaming indicator value with command echo.

Syntax

Command Type	Command	Response / Action
Read	\$ERI?	\$ERI <roam_ind> - Returns the current enhanced roaming indicator value.
Test	\$ERI=?	OK

Parameters

Parameter	Type	Description
-----------	------	-------------



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<roam_ind>	Signed Integer	The current enhanced roaming indicator value in decimal, as received from the network. See table for a complete definition of return value. Note: <roam_ind> of "-1" means No Service. This value is returned only between modem startup and system acquisition.
-------------------------	----------------	--

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	AERIS
Note	This command has the same operation with AT\$SPERI

Example

```
AT$ERI=?
OK
AT$ERI?
$ERI: 0

OK
```

7.1.16. Software Revision Number - \$FWREV

Description

Read command returns device software revision number with command echo.

Syntax

Command Type	Command	Response / Action
--------------	---------	-------------------



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Read	\$FWREV?	\$FWREV <rev> - Returns the software revision id string with command echo.
Test	\$FWREV=?	OK

Parameters

Parameter	Type	Description
<rev>	String	The software revision id variable length string.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	AERIS
Note	This command has the same operation with AT\$SPFWREV

Example

```
AT$FWREV=?
OK
AT$FWREV?
$FWREV: 09.01.003

OK
```

7.1.17. Roam Settings - \$ROAM

Description

This command manipulates the roaming settings of the module.

Syntax



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Command Type	Command	Response / Action
Set	\$ROAM=<n>	OK –Sets the roaming mode ERROR
Read	\$ROAM?	\$ROAM <n> - Returns the current roaming setting.
Test	\$ROAM=?	OK

Parameters

Parameter	Type	Description
<n>	Integer	0 – Sprint only 1 – Automatic 2 – Roam only.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executed immediately, not time critical.
Reference	Sprint
Network Compatibility	AERIS
Note	This command has the same operation with AT\$SPROAM

Example

```
AT$ROAM=?
OK
AT$ROAM?
$ROAM: 1

OK
AT$ROAM=0
```



OK

7.1.18. List Commands - +LIST

Description

This command returns all of the commands that are available for the user.

Syntax

Command Type	Command	Response / Action
Execute	AT+LIST	Execution command causes the ME to return the AT commands that are available for the user, in the following format: <AT cmd1><CR><LF><AT cmd2>[...]
Test	AT+LIST=?	Returns the OK result code.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Sprint
Network Compatibility	AERIS
Note	This command has the same operation with AT+CLAC

Example

AT+LIST=?

OK

AT+LIST

ATA

ATD



ATE
...
AT\$SPRMGUARD
AT\$SPROAM
AT\$PSIGDBM

OK

7.1.19. Current Receive Signal Strength Indicator for 1xRTT - \$1RXPWR

Description

This command queries channel number and corresponding received power.

Syntax

Command Type	Command	Response / Action
		Queries channel number and corresponding received power in the format:
Read	\$1RXPWR?	1xRTT receive Power Channel Number: <ch> Diversity 0 RX: <rssi> dBm Diversity 1 RX: NA
Test	\$1RXPWR=?	Returns the OK result code

Parameters

Parameter	Type	Description
<ch>	Integer	Channel
<rssi>	Integer	Received power

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Sprint
Network Compatibility	AERIS
Note	

Example

```
AT$1RXRPWR=?
OK
AT$1RXRPWR?
1xRTT receive Power
Channel Number: 527
Diversity 0 RX: -88 dBm
Diversity 1 RX: NA

OK
```

7.1.20. Current Ec/Io for 1xRTT - \$1XECIO

Description

This command queries PN offset and corresponding pilot strength.

Syntax

Command Type	Command	Response / Action
Read	\$1XECIO?	<p>Queries PN offset and corresponding pilot strength in the format:</p> <p>1xRTT Ec/Io PN: <pn> Ec/Io: <ecio> dB</p>



Command Type	Command	Response / Action
Test	\$1XECIO=?	Returns the OK result code

Parameters

Parameter	Type	Description
<pn>	Integer	PN offset
<ecio>	Integer	Ec/Io

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Sprint
Network Compatibility	AERIS
Note	

Example

```
AT$1XECIO=?
OK
AT$1XECIO?
1xRTT Ec/Io
PN: 304
Ec/Io: -4 dB

OK
```

7.1.21. Current Statistics for 1xRTT - \$DEBUG

Description

This command queries the current statistics.



Syntax

Command Type	Command	Response / Action
Read	\$DEBUG?	<p>Queries Current Statistics in the format:</p> <p>Common Information</p> <p><curr_svc> <rsssi> <roam_ind> <pkt_call_stat> <mip_err_code> <ip_addr></p> <p>1xRTT information</p> <p><ch> <pn> <sid> <nid> <pzid> <band_class></p>
Test	\$DEBUG=?	Returns the OK result code

Parameters

Parameter	Type	Description
<curr_svc>	Integer	Current service 0 – No Service 1 – 1xRTT service
<rsssi>	Integer	Received power
<roam_ind>		Roaming Indicator (See \$SPERI for detailed information.)
<pkt_call_stat>	Integer	Packet call state 0 – Idle 1 – Connect 2 – Dormant



<mip_err_code>	Integer	Mobile IP Error Code
<ip_addr>	String	IP Address
<ch>	Integer	Channel
<pn>	Integer	PN Offset
<sid>	Integer	System ID
<nid>	Integer	Network ID
<pzid>	Integer	Packet Zone ID
<band_class>	Integer	Current Band

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Sprint
Network Compatibility	AERIS
Note	

Example

```
AT$DEBUG=?
OK
AT$DEBUG?
Common Information
Current Service: 1
RSSI: 105
Roaming Indicator: 1
Packet Call State: 0
MIP Error code: 0
```



IP address: 0.0.0.0

1xRTT Information
Channel: 527
Dominant PN: 304
SID: 2236
NID: 112
PZID: 0
Band Class: 0

7.1.22. Current Roam Guard Status - \$RMGUARD

Description

This command sets the current roam guard status.

Syntax

Command Type	Command	Response / Action
Set	\$RMGUARD=<n>	Sets roam guard status
Read	\$RMGUARD?	Queries the current roam guard status in format: \$RMGUARD: <n>
Test	\$RMGUARD=?	Returns the OK result code

Parameters

Parameter	Type	Description
<n>	Integer	Roam guard status. 0 – Default 1 – Never Ask 2 – Always Ask

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable



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Execution Time Executes immediately.

Reference Sprint

Network Compatibility AERIS

Note

Example

```
AT$RMGUARD=?  
OK  
AT$RMGUARD?  
$RMGUARD: 0
```

```
OK  
AT$RMGUARD=2  
OK
```



8. Aeris Specific AT Commands

8.1. General Commands

8.1.1. Current Hardware Revision - #HWREV

Description

This command returns the current Hardware Revision of the device.

Syntax

Command Type	Command	Response / Action
Execute	#HWREV	Returns the current HW revision of the device
Test	#HWREV=?	Returns the OK result code

Parameters

Parameter	Type	Description
-----------	------	-------------

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	AERIS
Network Compatibility	Verizon and Sprint
Note	The hundredths digit signifies memory manufacturer 1 – Spansion memory 2 – Numonyx memory

Example



AT#HWREV=?

OK

AT#HWREV

1.01

OK

8.1.2. Current NAM - #CURRNAM

Description

This command sets the NAM to be used.

Syntax

Command Type	Command	Response / Action
Set	#CURRNAM=<nam>	Sets the NAM profile to be used
Read	#CURRNAM?	Returns the current NAM number
Test	#CURRNAM=?	Returns the OK result code

Parameters

Parameter	Type	Description
<nam>	Integer	NAM number (0-based digit), 0-1

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	AERIS
Note	

Example



AT#CURRNAM=?

OK

AT#CURRNAM?

#CURRNAM: 0

OK

AT#CURRNAM=1

OK

AT#CURRNAM?

#CURRNAM: 1

OK

8.1.3. PRL Data - #PRLDATA

Description

This command allows the PRL data to be changed.

Syntax

Command Type	Command	Response / Action
Set	#PRLDATA=<nam>	
Test	#PRLDATA=?	Returns the OK result code

Parameters

Parameter	Type	Description
<nam>	Integer	NAM number (0-based digit)

Miscellaneous



Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	AERIS
Note	<p>PRL data string is hexadecimal. "Ctrl+Z" finishes the PRL data string.</p> <p>If PRL data is successfully written to the modem, then modem will be rebooted automatically.</p>

Example

```

AT#PRLDATA=?
OK
AT#PRLDATA=0
>
002f2712808080063181d0de304c4c2d7108bc20000445f18000222b88010111586008088
ad300404459180202786d• ← "Ctrl+Z" used to enter information
OK
← modem resets
#000
#SERVICE:2

```

8.1.4. Pseudo Electronic Serial Number - #ESN

Description

This command returns the pseudo ESN in hexadecimal format.

Syntax

Command Type	Command	Response / Action
Read	#ESN?	Reports Pseudo electronic serial number in the format:



Command Type	Command	Response / Action
		#ESN: <p_esn>
Test	#ESN=?	Returns the OK result code

Parameters

Parameter	Type	Description
<p_esn>	String	Pseudo electronic serial number (8-digit hexadecimal)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	AERIS
Network Compatibility	
Note	This command is only available in MEID equipped. If modem is ESN equipped, returns ERROR.

Example

< ESN module >

```
AT#ESN?  
ERROR
```

```
AT#ESN=?  
OK
```

< MEID module >

```
AT#MEID?  
#MEID: A00000,00000001
```

```
OK
```

```
AT#ESN?
```



#ESN: 801D0FC7

OK

AT#ESN=?

OK

8.1.5. Pseudo Electronic Serial Number - +ESN

Description

This command returns the pseudo ESN in decimal format.

Syntax

Command Type	Command	Response / Action
Read	+ESN?	Reports Pseudo electronic serial number in the format: +ESN: <p_esn>
Test	+ESN=?	Returns the OK result code

Parameters

Parameter	Type	Description
<p_esn>	String	Pseudo electronic serial number (11-digit decimal)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	AERIS
Network Compatibility	



Note	This command is only available in MEID equipped. If modem is ESN equipped, returns ERROR.
-------------	---

Example

< ESN module >

AT+ESN?
ERROR

AT+ESN=?
OK

< MEID module >

AT#MEID?
#MEID: A00000,00000001

OK

AT+ESN?
#ESN: 12801904583

OK

AT+ESN=?
OK

8.1.6. Clear MRU Table - #CLRMRU

Description

This command is used to clear the Most Recently Used (MRU) table.

Syntax

Command Type	Command	Response / Action
Execution	#CLRMRU	Clears the MRU table.

Miscellaneous



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Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	AERIS
Network Compatibility	Verizon
Note	After using #CLRMUR, you should reset the modem

Example

```
AT#CLMRU
OK
```

```
AT$RESET
OK
```



9. Verizon Specific AT Commands

9.1. General Commands

9.1.1. MEID & ESN - #MEIDESN

Description

This command reports the MEID or the ESN of the module.

Syntax

Command Type	Command	Response / Action
Read	#MEIDESN?	Reports MEID and ESN in the format: #MEIDESN: <meid>,<esn_dec>,<esn_hex>
Test	#MEIDESN=?	Returns the OK result code

Parameters

Parameter	Type	Description
<meid>	String	14-digit decimal of MEID
<esn_dec>	String	11-digit decimal of ESN
<esn_hex>	String	8-digit hexadecimal of ESN

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	If modem is MEID equipped, values of <esn_dec> and <esn_hex> field are all '0'. If modem is ESN equipped, values of <meid> field are all '0'.



Example

```
<ESN Module>
AT#MEIDESN?
#MEIDESN: 00000000000000,01803473407,1234FFFF,
```

OK

```
<MEID Module>
AT#MEIDESN?
#MEIDESN: A0000000000001,000000000000,00000000,
```

OK

9.1.2. Band Class - #BANDCLS

Description

This command returns the supported Band Class.

Syntax

Command Type	Command	Response / Action
Read	#BANDCLS?	Reports supported Band Class in the format: #BANDCLS: <curr_bc>, (<avail_bc_0>,<avail_bc_1>,...<avail_bc_n>)
Test	#BANDCLS=?	Returns the OK result code

Parameters

Parameter	Type	Description
<curr_bc>	Integer	Current Band Class BC0 (Band Class 0 – 800MHz Band) BC1 (Band Class 1 – 1900MHz Band)
<avail_bc>	Integer	Available band classes



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	

Example

```
AT#BANDCLS=?
OK
AT#BANDCLS?
#BANDCLS: BC1,(BC0,BC1)

OK
```

9.1.3. Alert Sound Setting - #ALERTSND

Description

This command enables/disables the alert sounds for the device.

Syntax

Command Type	Command	Response / Action
Set	#ALERTSND=[<index>, <onoff>...]	Enables or disables the modem's alert sounds.
Read	#ALERTSND?	Reports current alert sound setting in the format: #ALERTSND: <onoff(for index 1)>, <onoff(for index 2)>, ...
Test	#ALERTSND=?	Returns the OK result code



Parameters

Parameter	Type	Description
<index>	Integer	1: Ready sound (not available) (default: 0) 2: SMS alert sound. (default: 1) 3: Emergency call alert sound. (default: 0) 4: Roaming alert sound. (default: 0) 5: No service alert sound. (default: 1)
<onoff>	Integer	0: Off 1: On

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	Number of Index can be increased later Command only has functionality on Verizon software, but will return "OK" results codes for Sprint or AERIS software even though the command has no effect.

Example

```
AT#ALERTSND?
#ALERTSND: 0,1,0,0,1
```

OK

```
AT#ALERTSND=2,0
OK
AT#ALERTSND?
#ALERTSND: 0,0,0,0,1
```

OK

```
AT#ALERTSND=0,1 <- All alert sound on.
OK
AT#ALERTSND?
#ALERTSND: 1,1,1,1,1
```



```

OK
AT#ALERTSND=0,0 <- All alert sound off.
OK
AT#ALERTSND?
#ALERTSND: 0,0,0,0,0
    
```

OK

```

AT#ALERTSND=2,1
OK
AT#ALERTSND=5,1
OK
AT#ALERTSND?
#ALERTSND: 0,1,0,0,1
    
```

OK

```

AT#ALERTSND=?
OK
    
```

9.1.4. Emergency Call Tone Setting - #EMERGALERT

Description

This command sets the Emergency Call tone.

Syntax

Command Type	Command	Response / Action
Set	#EMERGALERT=<mode>	Sets the Emergency Call tone.
Read	#EMERGALERT?	Reports current Emergency call tone setting in the format: #EMERGALERT: <mode>
Test	#EMERGALERT=?	Returns the OK result code

Parameters

Parameter	Type	Description
-----------	------	-------------



<mode> Integer 0: Disable the alert tone for emergency dialing. (default)
1: Enable the alert tone for emergency dialing.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	

Example

```
AT#EMERGALERT=?
OK
AT#EMERGALERT?
#EMERGALERT: 0

OK
AT#EMERGALERT=1
OK
```

9.1.5. NAM Lock - #NAMLOCK

Description

This command enables/disables the current NAM Lock of the device.

Syntax

Command Type	Command	Response / Action
Set	#NAMLOCK=<n>	Enables or disables the NAM Lock
Read	#NAMLOCK?	Reports the current NAM LOCK setting in the



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Command Type	Command	Response / Action
		format: #NAMLOCK: <n>
Test	#NAMLOCK=?	Returns the OK result code

Parameters

Parameter	Type	Description
<n>	Integer	0: Enable NAM LOCK 1: Disable NAM LOCK (default)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Network Compatibility	
Note	

Example

```

AT#NAMLOCK=?
OK
AT#NAMLOCK?
#NAMLOCK: 0

OK
AT#NAMLOCK=1
OK
    
```



9.1.6. Enhanced Roaming Indicator data file - #ERIDATA

Description

This command sets the ERI data file.

Syntax

Command Type	Command	Response / Action
Execute	#ERIDATA	Sets the ERI data from hexadecimal string of ERI data file
Read	#ERIDATA?	Reports ERI data file version in the format: #ERIDATA: <eri_data_ver>
Test	#ERIDATA=?	Returns the OK result code

Parameters

Parameter	Type	Description
<eri_data_ver>	Integer	ERI data version number. The version number is included in the first four digits of the ERI data. All leading zeros will be ignored during the "read" command.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	ERI data string is hexadecimal. "Ctrl+Z" finishes the PRL data string. If ERI data is successfully written to the modem, then modem will be rebooted automatically.

Example

```
AT#ERIDATA=?
OK
```



```
AT#ERIDATA?
#ERIDATA: 4
```

```
OK
AT#ERIDATA
>0004308000100200002002000030020040100210566572697A6F6E20576972656C6573
7341000210566572697A6F6E20576972656C65737342108210457874656E646564204E6
574776F726B43008210457874656E646564204E6574776F726B4400A207526F616D696
E6745208210457874656E646564204E6574776F726B4620A207526F616D696E6747108
210457874656E646564204E6574776F726B48008210457874656E646564204E6574776F
726B4900A207526F616D696E674A208210457874656E646564204E6574776F726B4B20
A207526F616D696E67B22B• ←"Ctrl+Z" to enter data string
OK
```

9.1.7. Enhanced Roaming Indicator - #ERI

Description

This command returns the Enhanced Roaming Indicator information.

Syntax

Command Type	Command	Response / Action
Read	#ERI?	Reports current Roaming Indicator: #ERI: <ind_id>,<icn_img_id>,<icn_mode>,<call_prmpt_id>,<alert_id>,<enc_type>,<text_data_len>,<text_data>
Test	#ERI=?	Returns the OK result code

Parameters

Parameter	Type	Description
<ind_id>	Integer	Indicator ID
<icn_img_id>	Integer	Icon Image ID
<icn_mode>	Integer	Icon Mode



<call+prmt_id>	Integer	Call Prompt ID
<alret_id>	Integer	Alert ID
<enc_type>	Integer	Character Encoding Type
<text_data_len>	Integer	Amount of Text Data
<text_data>	String	Text Data

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	If you want detailed description of each parameter, refer Verizon specification document.

Example

```
AT#ERI?
#ERI: 64,1,0,0,0,2,16,Verizon Wireless
```

```
OK
```

```
AT#ERI=?
OK
```

9.1.8. Set Default Band - #DEFAULTBAND

Description

This command sets the Band to determine system selection.

Syntax



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Command Type	Command	Response / Action
Set	#DEFAULTBAND=<band>	Sets the Band to determine system selection
Read	#DEFAULTBAND?	Reports the current value of the < band > parameter #DEFAULTBAND: < band > .

Parameters

Parameter	Type	Description
<band>	Integer	0 – HOME Only 1 – Automatic 2 – Automatic-A 3 – Automatic-B

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	The Default Band mode is made available when the PRL has a PREF ONLY setting set to FALSE. When it is set to FALSE, the mobile station's System Select setting shall provide the options of Home Only, Automatic-A, and Automatic-B. When the PRL is set to TRUE, the mobile station's System Select shall only provide Home Only and Automatic

Example

```
AT#DEFAULTBAND?
#DEFAULTBAND:3,1

OK
AT#DEFAULTBAND=0
OK
AT#DEFAULTBAND?
#DEFAULTBAND:0,1
```



OK

9.2. Message Commands

9.2.1. Read Message - +VCMGR

Description

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

Syntax

Command Type	Command	Response / Action
Execute	+VCMGR=<index>	Reports the message with location value <index> from <memr> message storage (<memr> is the message storage for read delete SMS as last settings of command +CPMS).
Test	+VCMGR=?	Returns the OK result code

Parameters

Parameter	Type	Description
<index>	Integer	Message index Output format for received messages (the information written in italics will be present depending on +CSDH last setting): +VCMGR: <stat>,<orig_num>,<callback>,<date>[,<tooa>,<tele_id>,<priority>,<enc_type>,<length>]<CR><LF><data> If there is either a Sent or an Unsent message in location <index> the output format is the same with the upper received message



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<stat>	String	Status of Message "REC UNREAD" – new message "REC READ" – read message "STO UNSENT" – stored message not yet sent "STO SENT" – stored message already sent "ALL" – all message
<orig_num>	String	Origination number
<callback>	String	Callback number
<da>	String	Destination address
<date>	Integer	Received date or Sent date in format as : "YYYYMMDDHHMMSS"
<tooa>	Integer	Type of callback number
<toda>	Integer	Type of <da>
<tele_id>	Integer	Teleservice ID 4097 - page 4098 - SMS message
<priority>	Integer	Priority 0 - Normal 1 - High
<enc_type>	Integer	Message index 0 - 8-bit Octet 2 - 7-bit ASCII 4 - 16-bit Unicode
<length>	Integer	Length of message
<data>	Integer	Message data Note. CC864-DUAL has different output format from other GC-family.

Miscellaneous

Command Information	Comment
---------------------	---------



Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	Available only under text mode (AT+CMGF=1) Also, this included sent date as against AT+CMGR

Example

```
AT+CMGF=1
OK
AT+VCMGR=2
+VCMGR: "REC READ", "", 0111234567", 20071221160610,, 4098,, 16, 9
TEST MESSAGE2

OK
AT+VCMGR=3
+VCMGR: "STO SENT", "01191775982", "01096529157", 20071221160610,, 4098,, 16, 9
TEST MESSAGE3

OK
```

9.2.2. List Message - +VCMGL

Description

This command reports the list of all the messages with status value **<stat>** stored into **<memr>** message storage (**<memr>** is the message storage for read and delete SMS as last settings of command **+CPMS**).

Syntax

Command Type	Command	Response / Action
Execute	+VCMGL[=<stat>]	Reports the list of all the messages with status value <stat> stored into <memr> message storage (<memr> is the message storage for read and delete SMS as last



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Command Type	Command	Response / Action
		settings of command +CPMS).
Test	+VCMGL=?	Returns the values for the <stat> parameter.

Parameters

Parameter	Type	Description
		<p>If there is at least one message to be listed the representation format is (the information written in italics will be present depending on +CSDH last setting).</p> <p>If there is at least a Received message or Sent/Unsent message to be listed the representation format is:</p> <p>+VCMGL: <i><index>,<stat>,<ori_num>,<callback>,<date>[,<tooa>,<ele_id>,<priority>,<enc_type>,<length><CR><LF><data>]</i></p> <p>Note: If a message is present when +VCMGL="ALL" is used it will be changed status from REC UNREAD to REC READ.</p>
<stat>	String	<p>Status of Message</p> <p>"REC UNREAD" – new message</p> <p>"REC READ" – read message</p> <p>"STO UNSENT" – stored message not yet sent</p> <p>"STO SENT" – stored message already sent</p> <p>"ALL" – all message</p>
<orig_num>	String	Origination number
<callback>	String	Callback number
<date>	Integer	Received date or Sent date in format as : "YYYYMMDDHHMMSS"
<tooa>	Integer	Type of callback number
<toda>	Integer	Type of <da>



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<tele_id>	Integer	Teleservice ID 4097 - page 4098 - SMS message
<priority>	Integer	Priority 0 - Normal 1 - Interactive 2 - Urgent 3 - Emergency
<enc_type>	Integer	Message index 0 - 8-bit Octet 2 - 7-bit ASCII 4 - 16-bit Unicode
<length>	Integer	Length of message
<data>	Integer	Message data Note. CC864-DUAL has different output format from other GC-family.

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	Available only under text mode (AT+CMGF=1) Also, this included sent date as against AT+CMGL

Example

```

<Text Mode>
AT+CMGF=1
OK
AT+CMGF?
+CMGF: 1
    
```



OK
AT+VCMGL=?
("REC UNREAD","REC READ","STO UNSENT","STO SENT","ALL")

OK
AT+VCMGL="ALL"
+VCMGL: 0,"REC READ","9194397977","",20090828210509,
TEST MESSAGE1
+VCMGL: 1,"STO UNSENT","9194397977","0111234567",
TEST MESSAGE2

OK

9.2.3. SMS Mobile Origination - #SMSMOEN

Description

This command sets which SMS MO is available or not.

Syntax

Command Type	Command	Response / Action
Set	#SMSMOEN=<n>	Enable or disable SMS MO
Read	#SMSMOEN?	Reports the current setting of <n>.
Test	#SMSMOEN=?	Returns the range of supported values for the <n> parameter.

Parameters

Parameter	Type	Description
<n>	Integer	Enable or disable SMS MO 0: Disable SMS MO 1: Enable SMS MO (default)



Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	

Example

```
AT#SMSMOEN=?
#SMSMOEN: (0,1)
OK
AT#SMSMOEN?
#SMSMOEN: 1

OK
AT#SMSMOEN =0

OK
```

9.2.4. Service Option for SMS - #SMSSO

Description

This command sets service option for SMS.

Syntax

Command Type	Command	Response / Action
Set	#SMSSO=<n>	Selects service option
Read	#SMSSO?	Reports the current setting of <n>.
Test	#SMSSO=?	Returns the range of supported values for the



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Command Type	Command	Response / Action
		<n> parameter.

Parameters

Parameter	Type	Description
<n>	Integer	Service Option 0: service option by default value from NV. This is selected by service option set from NV(6 or 14) 6: Short Message Services (IS-637) (default) 14: Short Message Services using MUX Option 2 (TSB-79)

Miscellaneous

Command Information	Comment
Unsolicited Result Codes	Not applicable
Execution Time	Executes immediately.
Reference	Verizon
Note	

Example

```

AT#SMSSO=?
#SMSSO: (0,6,14)
OK
AT#SMSSO?
#SMSSO: 6

OK
AT#SMSSO =14
OK

```



9.2.4.1. Set Payload Length - #SMSPSIZ

Description

This command set max payload length of SMS.

Syntax

Command Type	Command	Response / Action
Execute	AT#SMSPSIZ=<length>	Execution command set <length> to max payload length of SMS
Read	AT#SMSPSIZ?	Reports the current length value
Test	AT#SMSPSIZ=?	Reports the supported range of value <length>

Parameters

Parameter	Type	Description
<length>	Integer	Max payload length of SMS 0-220 (default is 160)

Example

```
AT#SMSPSIZ=?
#SMSPSIZ: (0-220)
```

```
OK
AT#SMSPSIZ?
#SMSPSIZ: 160
```

```
OK
```

```
AT#SMSPSIZ=100
OK
```



AT#SMSPSIZ?

#SMSPSIZ: 100



10. Abbreviations

ESN (Electronic Serial Number) are control numbers used for cell phone activation in wireless carrier networks. ESN-DEC are 12 numeric digits long and ESN-HEX are 8 numeric digits long.

IMEI (International Mobile Equipment Identity) are numbers unique to every GSM and UMTS mobile phone used to identify valid devices. IMEI are 15 digits long.

MEID is used on the CC864, from which a pseudo ESN (pESN) is automatically generated. This is transparent to the user.

A **Mobile Equipment Identifier (MEID)** is a globally unique number identifying a physical piece of CDMA mobile station equipment. The number format is defined by the 3GPP2 report S.R0048 but in practical terms, it can be seen as an IMEI but with hexadecimal digits.

Manufacturer code								Serial number						CD
R	R	X	X	X	X	X	X	Z	Z	Z	Z	Z	Z	C

An MEID is 56 bits long (14 hex digits). It consists of three fields, including an 8-bit regional code (RR), a 24-bit manufacturer code, and a 24-bit manufacturer-assigned serial number. The check digit (CD) is not considered part of the MEID.



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Please note that several commands can be found under more than one heading.

This means that the commands are cross functional and common to all the domains where they can be found.

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